Errata
to
ASME B1.15-1995
Unified Inch Screw Threads
(UNJ Thread Form)

The Errata corrections listed below and appearing herein apply to ASME B1.15-1995, Unified Inch Screw Threads (UNJ Thread Form). Corrections are incorporated directly into the affected pages and are indicated by a margin note, **(E)**. The pages show the corrections given below. The pages not listed are the reverse sides of the listed pages and contain no changes.

Page	Location	Change
1	1.1	*In fourth line,* 0.600 *changed to* 0.060
4	Fig. 2	*(1)* D_1 max. *changed to* D_2 max. *(2)* D_1 min. = D_2 bsc *changed to* D_2 min. = D_2 bsc *(3)* $TD_1/2$ *changed to* $TD_2/2$
5	Fig. 3	*(1)* d_1 max. = d_1 bsc *changed to* d_2 max. = d_2 bsc *(2)* d_1 min. *changed to* d_2 min. *(3)* $Td_1/2$ *changed to* $Td_2/2$ *(4) In General Note,* "(See para. 5.3)" *changed to read:* "(See para. 2.3)"
	Fig. 4	*Sentence added to Note (1) reading:* "X equal or greater than 0.15011*P*."
9	4.1	*In fourth line,* "length" *changed to read:* "lengths"
	4.3	*In second line, delete* (*T*)
10	4.4.2(b)	*In second Example, fourth line, Lead tolerance of* 0.009 in. *changed to* 0.0009 in.
11	4.4.2(c)	*In Example, fourth line,* 0.009 *changed to* 0.0009
51	A2	*Under MINOR DIAMETER:* *(1)* "d_1 basic minor diameter" *changed to* "d_1 bsc basic minor diameter" *(2)* "d_1 maximum minor diameter" *changed to* "d_1 max maximum minor diameter"

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UNIFIED INCH SCREW THREADS (UNJ THREAD FORM)

SECTION 1 GENERAL

(E) **1.1 Scope**

This Standard establishes the basic triangular profile for the UNJ thread form, provides a system of designations, lists the standard series of diameter–pitch combinations for diameters from 0.060 to 6.000 in., and specifies limiting dimensions and tolerances.

It specifies the characteristics of the UNJ inch series of threads having 0.15011*P* to 0.18042*P* designed radius at the root of the external thread, and also having the minor diameter of the external and internal threads increased above the ASME B1.1 UN and UNR thread forms to accommodate the external thread maximum root radius.

1.2 Field of Application

The UNJ screw thread is designed for aerospace inch threaded parts, or for use on other highly stressed applications requiring high fatigue strength. For aerospace applications, only Classes 3A and 3B should be used.

1.3 Assembly

Threads conforming to the UN profile (ASME B1.1) and the UNJ profile are not interchangeable because of possible interference between the UNJ external thread minor diameter and the UN internal thread minor diameter. However, the UNJ internal thread will assemble with the UN external thread.

1.4 Federal Government Use

When this Standard is approved by the Department of Defense and federal agencies and is incorporated into FED-STD-H28/4, Screw Thread Standards for Federal Services, Section 4, the use of this Standard by the federal government is subject to all the requirements and limitations of FED-STD-H28/4.

1.5 References

The latest issues of the following documents form a part of this Standard to the extent specified herein.

American National Standards

ASME B1.1, Unified Inch Screw Threads (UN and UNR Thread Form)

ASME B1.3M, Screw Thread Gaging Systems for Dimensional Acceptability

ANSI/ASME B1.7M, Nomenclature, Definitions, and Letter Symbols for Screw Threads

ASME B1.23[1], Gages and Gaging for Unified Inch J Series Screw Threads

ASME B1.30M, Screw Threads — Standard Practice for Calculating and Rounding Dimensions

[1] Proposed ASME Standard under development by The American Society of Mechanical Engineers.

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STD.ASME B1.15-ENGL 1995 ■ 0759670 0580427 693 ■

SECTION 2 PROFILE OF THREAD

2.1 Basic Profile

The basic profile is the theoretical profile corresponding to the basic dimensions of the thread major diameter, pitch diameter, and minor diameter. Profile applies to an axial plane. The basic profile is shown in Fig. 1.

2.2 Basic Thread Profile Symbols

The symbols used in the basic profile shown in Fig. 1 represent the following:

D bsc = basic major diameter of internal thread
D_2 bsc = basic pitch diameter of internal thread
D_1 bsc = basic minor diameter of internal thread
d bsc = basic major diameter of external thread
d_2 bsc = basic pitch diameter of external thread
d_1 bsc = basic minor diameter of external thread
H = height of fundamental triangle
P = pitch

Appendix A provides a complete list of symbols applicable to the UNJ thread form.

2.3 Design Profiles

The design profile for the internal thread at maximum-material conditions is the same as the basic profile, except in practice, the root is cleared above the basic major diameter, D bsc. See Fig. 2.

The design profile for the external thread at maximum-material condition for Class 3A is the basic profile with a radiused minor diameter tangent to the flanks for the upper limit profile. For Class 2A, an allowance is applied to the basic profile. The external thread crest may be flat, partially or corner rounded, tangent to the $0.125P$ flat. See Fig. 3.

2.4 Root Radius of the Thread

2.4.1 Internal Thread. For internal threads, the profile of the actual root of the thread shall at no point be below the basic profile. No root radius is specified.

2.4.2 External Thread. For external threads, the profile of the actual root of the thread shall lie within the root radius tolerance zone shown in Fig. 4. The limit dimensions of the root radius R as shown in Fig. 4 and their values are specified in Table 4. The profile shall be a continuous smoothly blended nonreversing curve, no part of which shall have a radius of less than $0.15011P$ and which is tangent to the thread flanks at not less than $0.5625H$ basic thread depth. The profile may comprise tangent flank circular arcs that are tangent to the flanks and a flat at the minor diameter provided that the minor diameter, d_3, is within the zone established in Fig. 4.

2.4.3 Incomplete Threads. Unless otherwise specified, the runout threads on externally threaded parts shall be no less than 1, nor more than 2 pitches in length. The threads shall run-out onto the shank without any abrupt change in cross-sectional area. The root radius shall be no less than the minimum radius of the full thread section.

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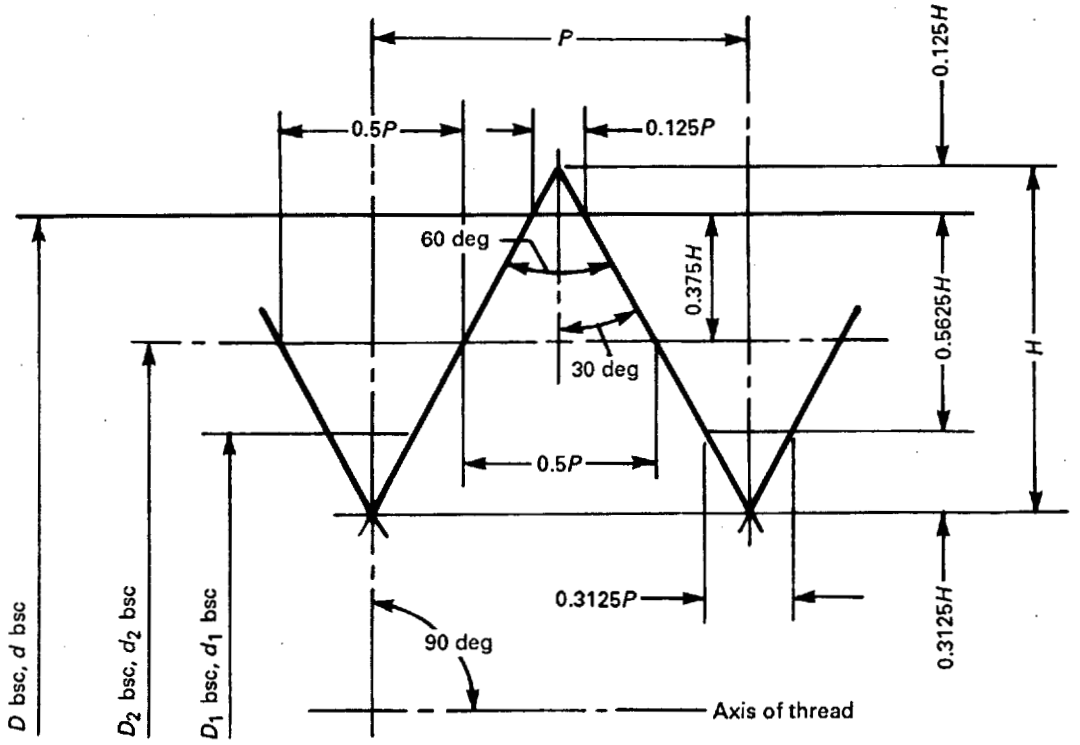
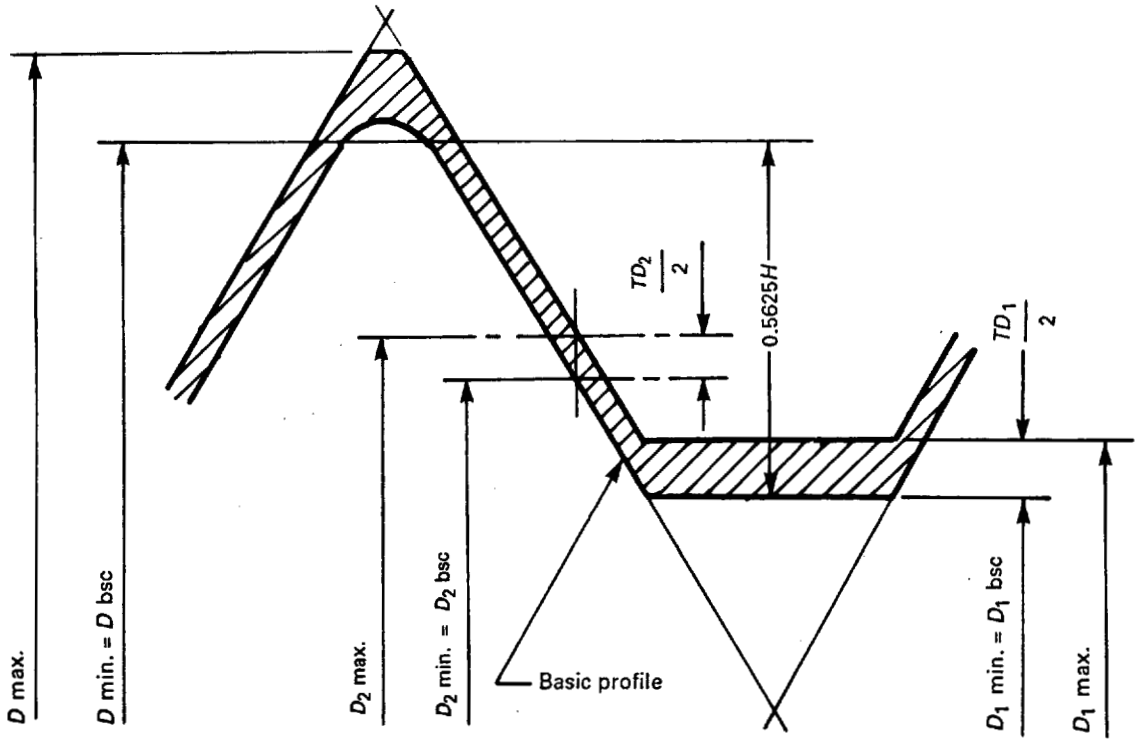
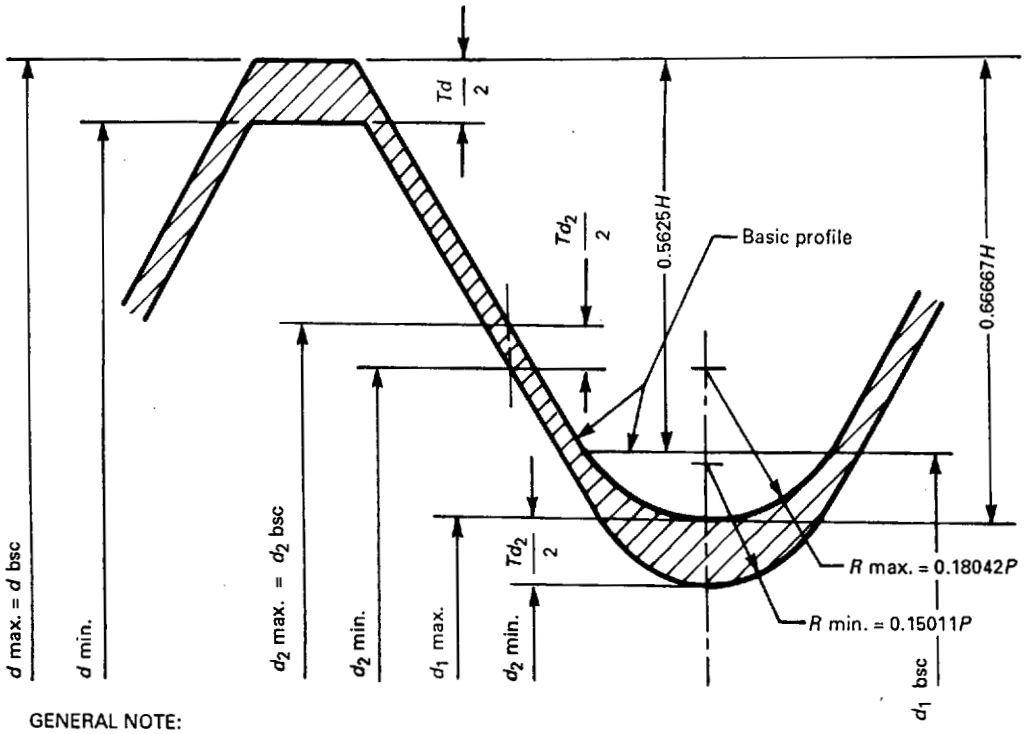


FIG. 1 BASIC PROFILE



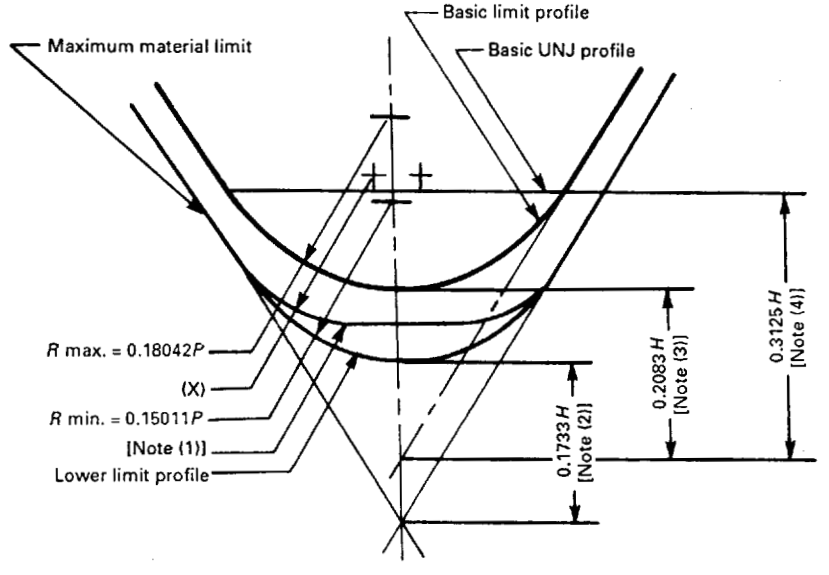
(E) FIG. 2 INTERNAL UNJ THREAD DESIGN PROFILE AND TOLERANCES

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GENERAL NOTE:
Rounded crest is optional (See para. 2.3)

(E) **FIG. 3 EXTERNAL UNJ THREAD DESIGN PROFILE AND TOLERANCES**



NOTES:
(1) Optional profile comprising two circular arcs (X) tangent to the flanks and flat at the root. X equal or greater than 0.15011*P*.
(2) Min. truncation
(3) Max. truncation
(4) Tangent flank radii (minor dia.)

(E) **FIG. 4 ROOT RADIUS OF EXTERNAL THREAD**

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SECTION 4 THREAD CHARACTERISTICS

(E) 4.1 Length of Thread Engagement, *LE*

Tolerances specified in Table 5 are based on a length of engagement equal to the basic major diameter for the UNJC, UNJF, and 8-UNJ series and are applicable for lengths of engagement up to 1.5 diameters; and a length of engagement of 9 pitches for the UNJEF, 12-UNJ, and 16-UNJ series, and are applicable for lengths of engagement of 5 to 15 pitches.

For lengths of engagement over 1.5 (to and including 3 diameters) or over 15 (to and including 30 pitches), the pitch diameter tolerances are 1.25 times the tabulated values. For lengths of engagement over 3 diameters or 30 pitches, the pitch diameter tolerances are 1.5 times the tabulated values.

In addition to increasing pitch diameter tolerances for long lengths of engagement, maximum-material gages (GO) used for acceptance shall be equal in length to the design length of engagement.

4.2 Tolerance System

The system of tolerances and allowances is based on ASME B1.1 inch screw thread system of tolerance classes. Tolerances and allowances are applied plus for internal threads and minus for external threads.

(E) 4.3 Limits of Size

The basic profile dimensions are given in Table 1. The profile dimensions and tolerances shown in Figs. 2 and 3 and their values for the standard series are specified in Table 5. For special threads for which there are no tabulated values, use the formulas in paras. 4.3.1 through 4.3.4, together with the tolerance table in Appendix B. Constants for the special thread formulas are given in Table 3.

NOTE: The dimensions and tolerances listed in Table 5 have been calculated and rounded to the procedures specified in ASME B1.30. As a consequence, a few of the values listed vary from 0.0001 in. to 0.0002 in. from listed values in previously issued standards for UN and UNJ inch threads.

4.3.1 External Threads — Class 3A

$$d \text{ max.} = d \text{ bsc}$$

$$d \text{ min.} = d \text{ max.} - Td$$

$$Td = 0.060\sqrt[3]{P^2}$$

$$d_2 \text{ max.} = d \text{ max.} - 0.649519P \text{ [see Table 3]}$$

$$d_2 \text{ min.} = d_2 \text{ max.} - Td_2$$

$$Td_2 = 0.750\ (0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.750.

$$d_3 \text{ max.} = d_2 \text{ max.} - 0.50518P \text{ [see Table 3]}$$

$$d_3 \text{ min.} = d_2 \text{ min.} - 0.56580P \text{ [see Table 3]}$$

$$Td_3 = d_3 \text{ max.} - d_3 \text{ min.}$$

$$R \text{ max.} = 0.18042P \text{ [see Table 4]}$$

$$R \text{ min.} = 0.15011P \text{ [see Table 4]}$$

4.3.2 Internal Threads — Class 3B

$$D \text{ min.} = D \text{ bsc}$$

$$D \text{ max.} = D_2 \text{ max.} + 0.79386P \text{ [see Table 3]}$$

$$D_2 \text{ min.} = D \text{ bsc} - 0.649519P \text{ [see Table 3]}$$

$$D_2 \text{ max.} = D_2 \text{ min.} + TD_2$$

$$TD_2 = 0.975\ (0.0015\sqrt[3]{D \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.975.

$$D_1 \text{ min.} = D \text{ min.} - 0.97428P \text{ [see Table 3]}$$

NOTE: Round up to the next larger fourth place decimal, unless the fifth place is zero.

$$D_1 \text{ max.} = D_1 \text{ min.} + TD_1$$

$$Td = 0.060\sqrt[3]{P^2}$$

For threads 13 threads per inch and finer:

$$TD_1 = \left(0.05\sqrt[3]{P^2} + \frac{0.03P}{D \text{ bsc}}\right) - 0.002$$

NOTE: TD_1 may not exceed $0.259809P$ or be less than $0.135315P$.

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For threads with 12 threads per inch or coarser:

$$TD_1 = 0.120P$$

4.3.3 External Threads — Class 2A

$$d \text{ max.} = d \text{ bsc} - es$$

$$es = 0.300\ (0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.300.

$$d \text{ min.} = d \text{ max.} - Td$$

$$Td = 0.060\sqrt[3]{P^2}$$

$$d_2 \text{ max.} = d \text{ max.} - 0.649519P \text{ [see Table 3]}$$

$$d_2 \text{ min.} = d_2 \text{ max.} - Td_2$$

$$Td_2 = 0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2}$$

$$d_3 \text{ max.} = d_2 \text{ max.} - 0.50518P \text{ [see Table 3]}$$

$$d_3 \text{ min.} = d_2 \text{ min.} - 0.56580P \text{ [see Table 3]}$$

$$Td_3 = d_3 \text{ max.} - d_3 \text{ min.}$$

$$R \text{ max.} = 0.18042P \text{ [see Table 4]}$$

$$R \text{ min.} = 0.15011P \text{ [see Table 4]}$$

4.3.4 Internal Threads — Class 2B

$$D \text{ min.} = D \text{ bsc}$$

$$D \text{ max.} = D_2 \text{ max.} + 0.79386P \text{ [see Table 3]}$$

$$D_2 \text{ min.} = D \text{ min.} - 0.649519P \text{ [see Table 3]}$$

$$D_2 \text{ max.} = D_2 \text{ min.} + TD_2$$

$$TD_2 = 1.300\ (0.0015\sqrt[3]{D \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 1.300.

$$D_1 \text{ min.} = D \text{ min.} - 0.97428P \text{ [see Table 3]}$$

NOTE: Round up to the nearest 0.001 in. for sizes 0.138 in. and larger.

$$D_1 \text{ max.} = D_1 \text{ min.} + TD_1$$

For threads 13 threads per inch and finer:

$$TD_1 = \left(0.05\sqrt[3]{P^2} + \frac{0.03P}{D \text{ bsc}}\right) - 0.002$$

NOTE: TD_1 may not exceed $0.259809P$ or be less than $0.135315P$.

For threads with 12 threads per inch or coarser:

$$TD_1 = 0.120P$$

4.4 Thread Form Tolerances

4.4.1 Cumulative form variation is the combined effect on functional size due to individual thread form variations in lead (pitch), helix, flank angle, taper, and roundness.

When measurement is specified for Classes 3A and 3B threads, cumulative form tolerance shall be 0.5 times pitch diameter tolerance. If not specified, control shall be by the required system gages.

4.4.2 Lead and Flank Angle Variations

(a) When individual inspection of lead (including helix) and flank angle variations are required, the allowable variations for these characteristics shall be in accordance with Tables 6 and 7 unless otherwise specified.

(b) For sizes not included in Tables 6 and 7, the allowable lead variation is equal to 0.57735 times one-half the pitch diameter tolerance. This is the lead variation which causes a change in functional diameter equal to 0.5 times the pitch diameter tolerance. The allowable flank half-angle variation in minutes of arc is equal to 30 plus 1.875 times the number of threads per inch rounded to the nearest 5 minutes for 32 threads per inch and coarser, and 62 plus 0.775 times the number of threads per inch rounded to the nearest 5 minutes for threads finer than 32 threads per inch.

EXAMPLE:
0.945-8.5 UNJS-3A; lead and angle control required.
No lead and angle tolerances were specified nor do default values appear in Tables 6 and 7. Values are calculated as follows:
Lead tolerance = $0.57735 \times 0.5\ Td_2$
Pitch diameter tolerance $Td_2 = 0.0050$
Lead tolerance = $0.57735 \times 0.5 \times 0.0050 = 0.0014$ in.
Angle tolerance (for coarser than 32 tpi) = $30 + (1.875 \times \text{tpi})$
Angle tolerance = $30 + (1.875 \times 8.5)$
= 45.94 minutes
= 45 minutes when rounded to nearest 5 minutes

EXAMPLE: (E)
0.500-41 UNJS-3B; lead and angle control required.
Lead tolerance = $0.57735 \times 0.5\ Td_2$
Pitch diameter tolerance $Td_2 = 0.0031$
Lead tolerance = $0.57735 \times 0.5 \times 0.0031 = 0.0009$ in.
Angle tolerance (for finer than 32 tpi) = $62 + (0.775 \times \text{tpi})$
Angle tolerance = $62 + (0.775 \times 41)$
= 93.78 minutes
= 1 degree and 35 minutes when rounded to nearest 5 minutes

(c) If lead and angle tolerances are specified as a pitch diameter equivalent in terms of pitch diameter tolerance, tolerances in accordance with para. 4.4.2(a) or para. 4.4.2(b) may be adjusted proportionately using 0.5 times pitch diameter tolerance as a basis.

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(E) EXAMPLE:

0.5000-20 UNJF-3A (22S); lead and angle control required — 0.4 PD tolerance.

From Table 6, allowable lead variation is 0.0009 in. This would be adjusted to 0.4/0.5 times 0.0009 which is 0.0007 in.

From Table 7, allowable angle variation is 1 degree 10 minutes or 70 minutes. This would be adjusted to 0.4/0.5 times 70 which is 56 minutes or 55 minutes when rounded.

(d) For requirements of (a) and (b) above, lead variation values tabulated or calculated are the maximum variations from specified lead between any two points not farther apart than the length of the maximum-material (GO) thread gage. Flank angle variation values are maximum variations from the basic 30 deg angle between thread flanks and perpendiculars to the thread axis.

(e) Allowable variations in lead and flank angles are maximum values. Maximum variation in these and pitch diameter tolerance cannot be taken simultaneously.

4.4.3 Runout of Major Diameter and Minor Diameter to Pitch Cylinders. When measurement is specified, maximum circular runout shall be limited to a full indicator movement equal to the pitch diameter tolerance.

4.4.4 Taper. If the pitch cylinder is conical, the difference in pitch diameters between the ends of the thread are an indication of taper. When measurement is required, it shall be specified. If not specified, allowable taper is no greater than the pitch diameter tolerance.

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TABLE 1 BASIC PROFILE DIMENSIONS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Threads per in., n	Pitch $P=\frac{1}{n}$	Pitch Line 0.5 P	Flat at Internal Thread Crest 0.3125 P	Flat at Internal Thread Root and External Thread Crest 0.125 P	Height of Sharp V Thread H 0.866025 P	Height of Internal Thread and Depth of Thread Engagement 0.5625 H = 0.487139 P	Addendum of External Thread 0.375 H = 0.324760 P	Truncation of Internal Thread Crest 0.3125 H = 0.270633 P	Truncation of Internal Thread Root and External Thread Crest 0.125 H = 0.108253 P	Half Addendum of External Thread. REFERENCE ONLY 0.1875 H = 0.16238 P
80	0.012500	0.006250	0.00391	0.00156	0.010825	0.00609	0.00406	0.00338	0.00135	0.00203
72	0.013889	0.006944	0.00434	0.00174	0.012028	0.00677	0.00451	0.00376	0.00150	0.00226
64	0.015625	0.007812	0.00488	0.00195	0.013532	0.00761	0.00507	0.00423	0.00169	0.00254
56	0.017857	0.008928	0.00558	0.00223	0.015465	0.00870	0.00580	0.00483	0.00193	0.00290
48	0.020833	0.010416	0.00651	0.00260	0.018042	0.01015	0.00677	0.00564	0.00226	0.00338
44	0.022727	0.011363	0.00710	0.00284	0.019682	0.01107	0.00738	0.00615	0.00246	0.00369
40	0.025000	0.012500	0.00781	0.00312	0.021651	0.01218	0.00812	0.00677	0.00271	0.00406
36	0.027778	0.013889	0.00868	0.00347	0.024056	0.01353	0.00902	0.00752	0.00301	0.00451
32	0.031250	0.015625	0.00977	0.00391	0.027063	0.01522	0.01015	0.00846	0.00338	0.00507
28	0.035714	0.017857	0.01116	0.00446	0.030929	0.01740	0.01160	0.00967	0.00387	0.00580
24	0.041667	0.020833	0.01302	0.00521	0.036084	0.02030	0.01353	0.01128	0.00451	0.00677
20	0.050000	0.025000	0.01562	0.00625	0.043301	0.02436	0.01624	0.01353	0.00541	0.00812
18	0.055556	0.027778	0.01736	0.00694	0.048113	0.02706	0.01804	0.01504	0.00601	0.00902
16	0.062500	0.031250	0.01953	0.00781	0.054127	0.03045	0.02030	0.01691	0.00677	0.01015
14	0.071429	0.035714	0.02232	0.00893	0.061859	0.03480	0.02320	0.01933	0.00773	0.01160
13	0.076923	0.038461	0.02404	0.00962	0.066617	0.03747	0.02498	0.02082	0.00833	0.01249
12	0.083333	0.041666	0.02604	0.01042	0.072169	0.04059	0.02706	0.02255	0.00902	0.01353
11	0.090909	0.045454	0.02841	0.01136	0.078730	0.04429	0.02952	0.02460	0.00984	0.01476
10	0.100000	0.050000	0.03125	0.01250	0.086603	0.04871	0.03248	0.02706	0.01083	0.01624
9	0.111111	0.055555	0.03472	0.01389	0.096225	0.05413	0.03608	0.03007	0.01203	0.01804
8	0.125000	0.062500	0.03906	0.01562	0.108253	0.06089	0.04059	0.03383	0.01353	0.02030
7	0.142857	0.071428	0.04464	0.01786	0.123718	0.06959	0.04639	0.03866	0.01546	0.02320
6	0.166667	0.083333	0.05208	0.02083	0.144338	0.08119	0.05413	0.04510	0.01804	0.02706
5	0.200000	0.100000	0.06250	0.02500	0.173205	0.09743	0.06495	0.05413	0.02165	0.03248
4.5	0.222222	0.111111	0.06944	0.02778	0.192450	0.10825	0.07217	0.06014	0.02406	0.03608
4	0.250000	0.125000	0.07812	0.03125	0.216506	0.12178	0.08119	0.06766	0.02706	0.04059

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APPENDIX A
SYMBOLS — UNJ THREAD DIMENSIONS AND TOLERANCES

(This Appendix is not part of ASME B1.15-1995 and is included for information only.)

A1 INTERNAL THREAD DIMENSION SYMBOLS

D	MAJOR DIAMETER, int. thd
D bsc	basic major diameter
D min	minimum major diameter
D_1	MINOR DIAMETER, int. thd
D_1 bsc	basic minor diameter
D_1 max	maximum minor diameter
D_1 min	minimum minor diameter
D_2	PITCH DIAMETER, int. thd
D_2 bsc	basic pitch diameter
D_2 max	maximum pitch diameter
D_2 min	minimum pitch diameter
D_3	MAJOR DIAMETER, int. thd (ROUNDED FORM)
D_3 max	maximum major diameter
T	TOLERANCE
TD_1	minor diameter tol., int. thd
TD_2	pitch diameter tol., int. thd

A2 EXTERNAL THREAD DIMENSION SYMBOLS (E)

d	MAJOR DIAMETER, ext. thd
d bsc	basic major diameter
d max	maximum major diameter
d min	minimum major diameter
d_1	MINOR DIAMETER, ext. thd
d_1 bsc	basic minor diameter
d_1 max	maximum minor diameter
d_2	PITCH DIAMETER, ext. thd
d_2 bsc	basic pitch diameter
d_2 max	maximum pitch diameter
d_2 min	minimum pitch diameter
d_3	MINOR DIAMETER, ext. (ROUNDED FORM)
d_3 max	maximum minor diameter
d_3 min	minimum minor diameter
R	ROOT RADIUS, ext. thd
R max	maximum root radius
R min	minimum root radius
T	TOLERANCE
Td	major diameter tol., ext. thd
Td_2	pitch diameter tol., ext. thd
Td_3	root diameter tol., ext. thd

LE	LENGTH OF THD ENGAGEMENT
LG	GAGING LENGTH
es	ALLOWANCE, external thread
H	HEIGHT, sharp vee thd
P	PITCH
α	FLANK HALF-ANGLE
UNJ	THREAD FORM SYMBOL

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Unified Inch Screw Threads

(UNJ Thread Form)

ASME B1.15-1995

The American Society of
Mechanical Engineers

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FOREWORD

(This Foreword is not part of ASME B1.15-1995.)

This Standard is similar to Military Specification MIL-S-8879 and equivalent to ISO-3161-1977 for thread Classes 3A and 3B. British Standard BS 4084:1978 including Amendment 1 is technically identical to ISO-3161-1977 except for Appendix A which provides information for a 20 UNJ constant pitch series for diameters through 3 inches.

The UNJ thread form, having the enlarged root radius in the external thread, was introduced for applications requiring high fatigue strength where working stress levels are high, in order to minimize size and weight in parts, as in aerospace applications and also for other designs in commercial products where stresses are critical. To meet these requirements, the UNJ external thread root radius is designed between $0.15011P$ to $0.18042P$ and the minor diameter of the mating internal thread is increased to ensure the necessary clearance.

This Standard includes Classes 2A and 2B UNJ screw threads. Either Class 3 or Class 2 UNJ threads are appropriate for commercial applications commensurate with the fatigue and stress levels required.

It is not recommended that Classes 2A and 2B threads be used for aerospace applications. Only UNJ thread Classes 3A and 3B meet the requirements of Military Specification MIL-S-8879.

NOTE: In what follows, the symbols H and h are used. H is defined as the height of the sharp vee thread formed by extending the thread flanks until they meet. H is equal to 0.866025 times the pitch, P. The symbol h is equal to 0.75 times H and represents the theoretical height of the American National thread form. It is still used as the basis for the value called *percent of thread*.

The UNJ thread form is the UN thread form modified to $^{9}/_{16}$ H or 75% h basic thread depth which allows the $0.18042P$ maximum root radius in the external thread. The first known U.S. standard of similar thread form was the Society of Automotive Engineers Aeronautical Standard AS 82 published in March 1942, which is a modified American National thread form to 75% h basic thread depth and specifying $0.108P$–$0.180P$ root radius in the external thread. This thread was symbolized NR, National Round, and was developed for aircraft engine applications.

Tension-tension fatigue testing of aircraft fasteners in 1942 demonstrated the importance of the external thread root contour in the fatigue life of a screw thread rolled after heat treatment. Fatigue testing isolated the following elements of good external thread root design:

- The root should be radiused, not sharp.
- Theoretically, it should be a continuous circular arc, blending smoothly with the thread flanks.
- The radius should be as large as possible within the allowable design form.
- The root contour should be smooth throughout, free of any imperfections, tool marks, or other minor notches.

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Recognizing the need for improved 160,000 psi tensile strength bolts, the Military Services published in April 1952, MIL-B-7838A bolt procurement specification for aircraft applications based on the Unified thread form having 83⅓% *h* Unified thread form. Thus, larger external root radius requires a shallower internal thread depth to clear the flank tangency point. Although the Unified internal thread standards for tap drill sizes permit depths of more than 75% *h*, production rarely used these drills because deeper tapping of internal threads is generally not considered economically practical. A few internal threads have depths as great as 70% *h*, but the vast majority lie between 60% and 68% *h*.

Since internal threads are generally less than 75% *h* basic thread depth, the root radius of the external thread was increased to 0.150*P* min. and 0.180*P* max. for the 180,000 psi and higher tensile strength bolts. This external thread form was developed in 1955 by the aerospace fastener industry and was known as the "Hi R" thread form.

Through the coordinated effort with the Aerospace Engine and Propeller Utility Standards parts Committee E25 of SAE and the AIA National Aerospace Standards Committee NASC, the Air Force and Navy developed and published in September 1960, the thread specification MIL-S-8879 which features the "Hi R" thread root radius in the external thread and the internal thread modified to 9/16 *H* basic or 75% *h* thread depth.

With the advent of aircraft gas turbine engines, the high temperature threaded fasteners developed better elevated temperature performance using MIL-S-8879 UNJ thread root radius, in that the stress-rupture life of bolts was greatly improved.

The UNJ thread form has been adopted by the aerospace industry as the all-purpose thread standard, with the exception of electrical hardware and thread sizes 0.138 and smaller, which may use the UN thread form.

Suggestions for improvement of this Standard will be welcome. They should be sent to The American Society of Mechanical Engineers, Att: Secretary, B1 Main Committee, 345 East 47th Street, New York, NY 10017.

This Standard was approved as an ASME Standard on June 22, 1993.

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UNIFIED INCH SCREW THREADS (UNJ THREAD FORM)

SECTION 1 GENERAL

1.1 Scope

This Standard establishes the basic triangular profile for the UNJ thread form, provides a system of designations, lists the standard series of diameter–pitch combinations for diameters from 0.600 to 6.000 in., and specifies limiting dimensions and tolerances.

It specifies the characteristics of the UNJ inch series of threads having 0.15011P to 0.18042P designed radius at the root of the external thread, and also having the minor diameter of the external and internal threads increased above the ASME B1.1 UN and UNR thread forms to accommodate the external thread maximum root radius.

1.2 Field of Application

The UNJ screw thread is designed for aerospace inch threaded parts, or for use on other highly stressed applications requiring high fatigue strength. For aerospace applications, only Classes 3A and 3B should be used.

1.3 Assembly

Threads conforming to the UN profile (ASME B1.1) and the UNJ profile are not interchangeable because of possible interference between the UNJ external thread minor diameter and the UN internal thread minor diameter. However, the UNJ internal thread will assemble with the UN external thread.

1.4 Federal Government Use

When this Standard is approved by the Department of Defense and federal agencies and is incorporated into FED-STD-H28/4, Screw Thread Standards for Federal Services, Section 4, the use of this Standard by the federal government is subject to all the requirements and limitations of FED-STD-H28/4.

1.5 References

The latest issues of the following documents form a part of this Standard to the extent specified herein.

American National Standards

ASME B1.1, Unified Inch Screw Threads (UN and UNR Thread Form)

ASME B1.3M, Screw Thread Gaging Systems for Dimensional Acceptability

ANSI/ASME B1.7M, Nomenclature, Definitions, and Letter Symbols for Screw Threads

ASME B1.23[1], Gages and Gaging for Unified Inch J Series Screw Threads

ASME B1.30M, Screw Threads — Standard Practice for Calculating and Rounding Dimensions

[1] Proposed ASME Standard under development by The American Society of Mechanical Engineers.

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SECTION 2 PROFILE OF THREAD

2.1 Basic Profile

The basic profile is the theoretical profile corresponding to the basic dimensions of the thread major diameter, pitch diameter, and minor diameter. Profile applies to an axial plane. The basic profile is shown in Fig. 1.

2.2 Basic Thread Profile Symbols

The symbols used in the basic profile shown in Fig. 1 represent the following:

D bsc = basic major diameter of internal thread
D_2 bsc = basic pitch diameter of internal thread
D_1 bsc = basic minor diameter of internal thread
d bsc = basic major diameter of external thread
d_2 bsc = basic pitch diameter of external thread
d_1 bsc = basic minor diameter of external thread
H = height of fundamental triangle
P = pitch

Appendix A provides a complete list of symbols applicable to the UNJ thread form.

2.3 Design Profiles

The design profile for the internal thread at maximum-material conditions is the same as the basic profile, except in practice, the root is cleared above the basic major diameter, D bsc. See Fig. 2.

The design profile for the external thread at maximum-material condition for Class 3A is the basic profile with a radiused minor diameter tangent to the flanks for the upper limit profile. For Class 2A, an allowance is applied to the basic profile. The external thread crest may be flat, partially or corner rounded, tangent to the $0.125P$ flat. See Fig. 3.

2.4 Root Radius of the Thread

2.4.1 Internal Thread. For internal threads, the profile of the actual root of the thread shall at no point be below the basic profile. No root radius is specified.

2.4.2 External Thread. For external threads, the profile of the actual root of the thread shall lie within the root radius tolerance zone shown in Fig. 4. The limit dimensions of the root radius R as shown in Fig. 4 and their values are specified in Table 4. The profile shall be a continuous smoothly blended nonreversing curve, no part of which shall have a radius of less than $0.15011P$ and which is tangent to the thread flanks at not less than $0.5625H$ basic thread depth. The profile may comprise tangent flank circular arcs that are tangent to the flanks and a flat at the minor diameter provided that the minor diameter, d_3, is within the zone established in Fig. 4.

2.4.3 Incomplete Threads. Unless otherwise specified, the runout threads on externally threaded parts shall be no less than 1, nor more than 2 pitches in length. The threads shall run-out onto the shank without any abrupt change in cross-sectional area. The root radius shall be no less than the minimum radius of the full thread section.

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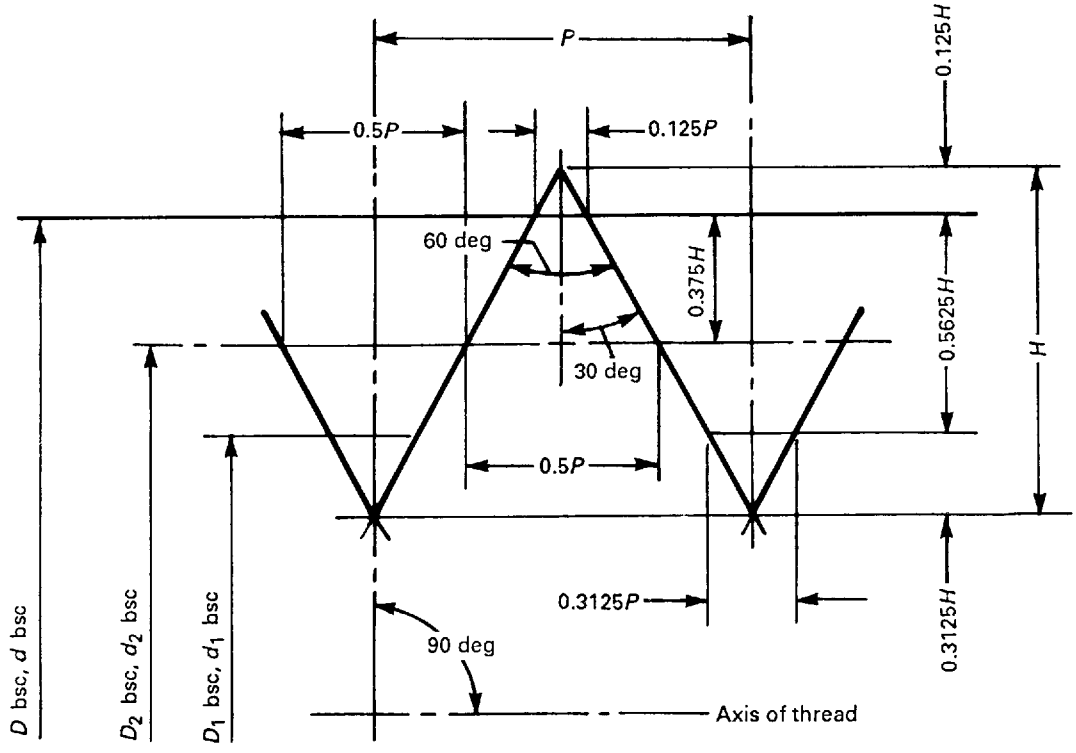


FIG. 1 BASIC PROFILE

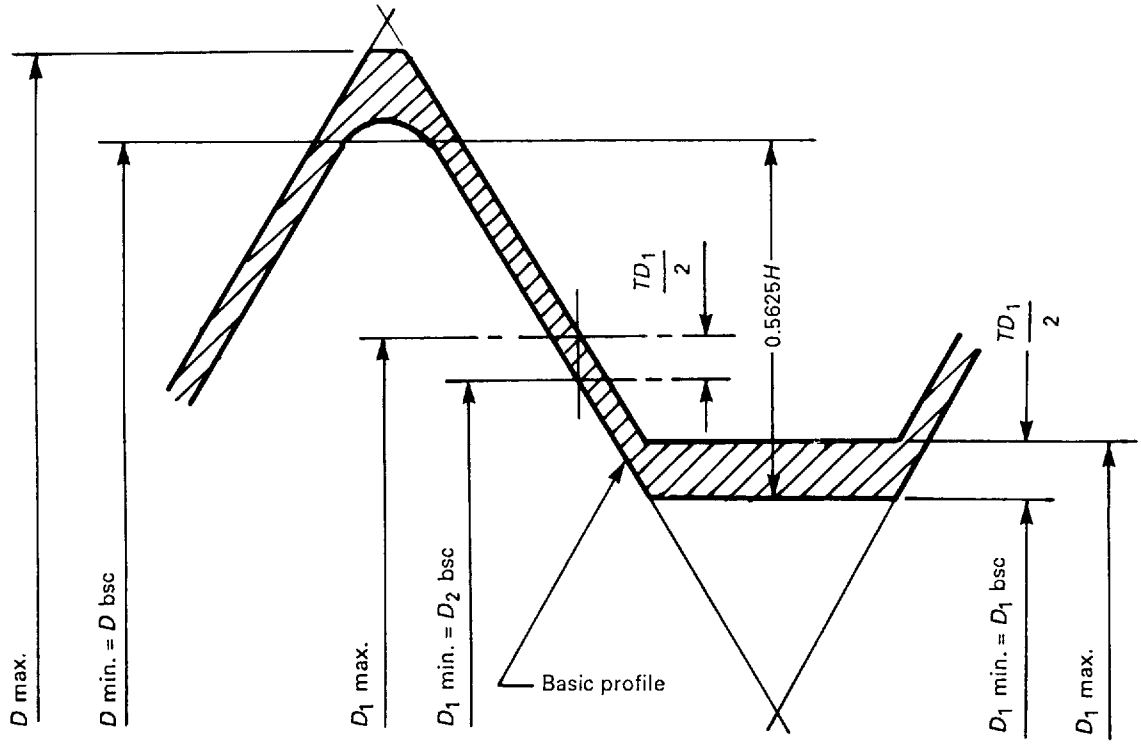
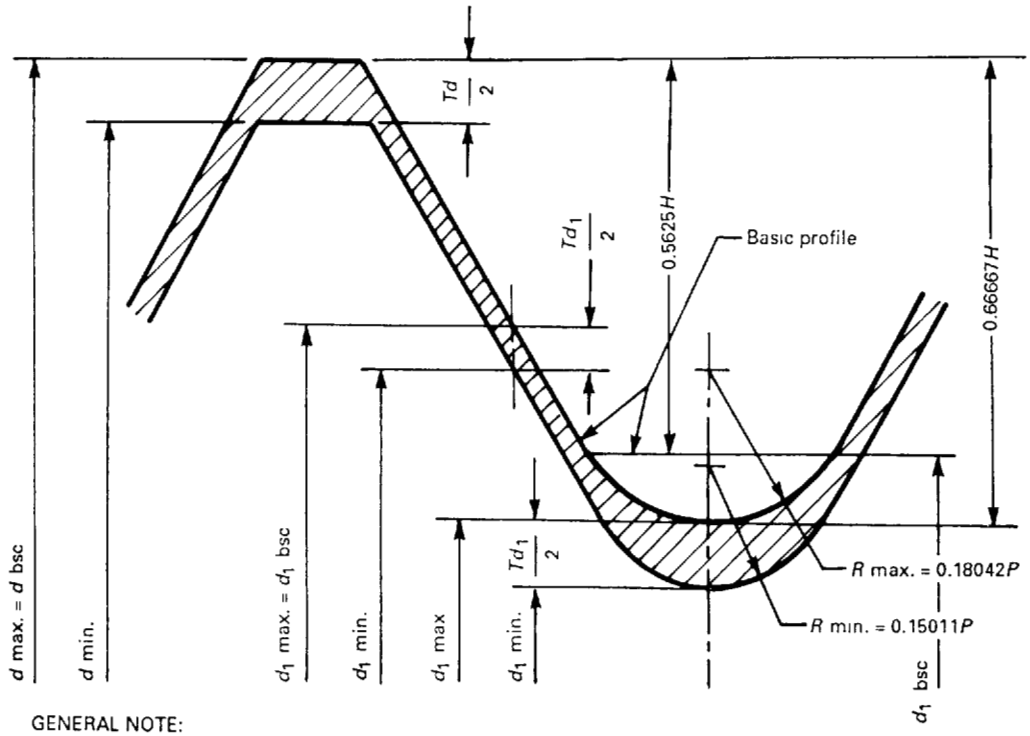


FIG. 2 INTERNAL UNJ THREAD DESIGN PROFILE AND TOLERANCES

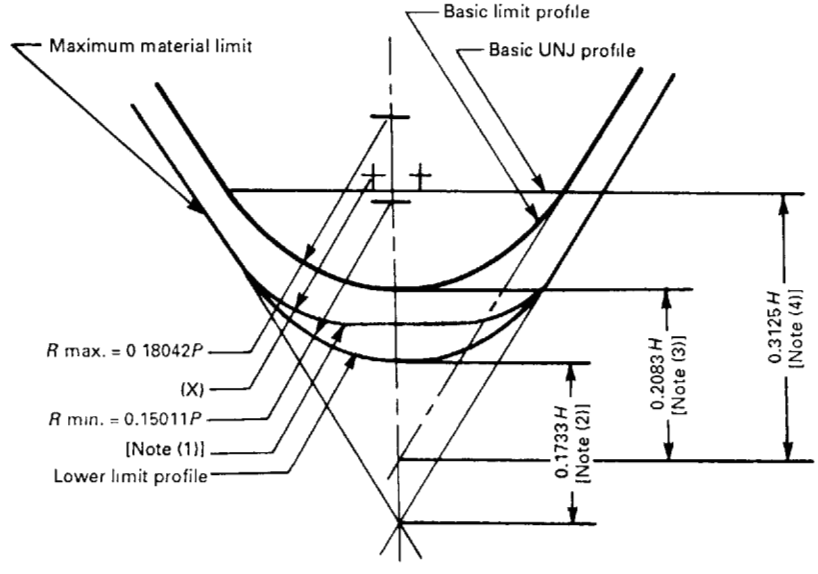
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GENERAL NOTE:
Rounded crest is optional (See para. 5.3)

FIG. 3 EXTERNAL UNJ THREAD DESIGN PROFILE AND TOLERANCES



NOTES:
(1) Optional profile comprising two circular arcs (X) tangent to the flanks and flat at the root.
(2) Min. truncation
(3) Max. truncation
(4) Tangent flank radii (minor dia.)

FIG. 4 ROOT RADIUS OF EXTERNAL THREAD

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SECTION 3 SERIES OF THREADS

This Standard includes a selected series of diameter-pitch combinations of threads extracted from ASME B1.1 as follows: coarse pitch (UNJC), fine pitch (UNJF), extra-fine pitch (UNJEF), 8 pitch (8-UNJ), 12 pitch (12-UNJ), and 16 pitch (16-UNJ). See Table 2.

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SECTION 4 THREAD CHARACTERISTICS

4.1 Length of Thread Engagement, *LE*

Tolerances specified in Table 5 are based on a length of engagement equal to the basic major diameter for the UNJC, UNJF, and 8-UNJ series and are applicable for length of engagement up to 1.5 diameters; and a length of engagement of 9 pitches for the UNJEF, 12-UNJ, and 16-UNJ series, and are applicable for lengths of engagement of 5 to 15 pitches.

For lengths of engagement over 1.5 (to and including 3 diameters) or over 15 (to and including 30 pitches), the pitch diameter tolerances are 1.25 times the tabulated values. For lengths of engagement over 3 diameters or 30 pitches, the pitch diameter tolerances are 1.5 times the tabulated values.

In addition to increasing pitch diameter tolerances for long lengths of engagement, maximum-material gages (GO) used for acceptance shall be equal in length to the design length of engagement.

4.2 Tolerance System

The system of tolerances and allowances is based on ASME B1.1 inch screw thread system of tolerance classes. Tolerances and allowances are applied plus for internal threads and minus for external threads.

4.3 Limits of Size

The basic profile dimensions are given in Table 1. The profile dimensions and tolerances (T) shown in Figs. 2 and 3 and their values for the standard series are specified in Table 5. For special threads for which there are no tabulated values, use the formulas in paras. 4.3.1 through 4.3.4, together with the tolerance table in Appendix B. Constants for the special thread formulas are given in Table 3.

NOTE: The dimensions and tolerances listed in Table 5 have been calculated and rounded to the procedures specified in ASME B1.30. As a consequence, a few of the values listed vary from 0.0001 in. to 0.0002 in. from listed values in previously issued standards for UN and UNJ inch threads.

4.3.1 External Threads — Class 3A

$$d \text{ max.} = d \text{ bsc}$$

$$d \text{ min.} = d \text{ max.} - Td$$

$$Td = 0.060\sqrt[3]{P^2}$$

$$d_2 \text{ max.} = d \text{ max.} - 0.649519P \text{ [see Table 3]}$$

$$d_2 \text{ min.} = d_2 \text{ max.} - Td_2$$

$$Td_2 = 0.750\ (0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.750.

$$d_3 \text{ max.} = d_2 \text{ max.} - 0.50518P \text{ [see Table 3]}$$

$$d_3 \text{ min.} = d_2 \text{ min.} - 0.56580P \text{ [see Table 3]}$$

$$Td_3 = d_3 \text{ max.} - d_3 \text{ min.}$$

$$R \text{ max.} = 0.18042P \text{ [see Table 4]}$$

$$R \text{ min.} = 0.15011P \text{ [see Table 4]}$$

4.3.2 Internal Threads — Class 3B

$$D \text{ min.} = D \text{ bsc}$$

$$D \text{ max.} = D_2 \text{ max.} + 0.79386P \text{ [see Table 3]}$$

$$D_2 \text{ min.} = D \text{ bsc} - 0.649519P \text{ [see Table 3]}$$

$$D_2 \text{ max.} = D_2 \text{ min.} + TD_2$$

$$TD_2 = 0.975\ (0.0015\sqrt[3]{D \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.975.

$$D_1 \text{ min.} = D \text{ min.} - 0.97428P \text{ [see Table 3]}$$

NOTE: Round up to the next larger fourth place decimal, unless the fifth place is zero.

$$D_1 \text{ max.} = D_1 \text{ min.} + TD_1$$

$$Td = 0.060\sqrt[3]{P^2}$$

For threads 13 threads per inch and finer:

$$TD_1 = \left(0.05\sqrt[3]{P^2} + \frac{0.03P}{D \text{ bsc}}\right) - 0.002$$

NOTE: TD_1 may not exceed $0.259809P$ or be less than $0.135315P$.

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For threads with 12 threads per inch or coarser:

$$TD_1 = 0.120P$$

4.3.3 External Threads — Class 2A

$$d \text{ max.} = d \text{ bsc} - es$$

$$es = 0.300\ (0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 0.300.

$$d \text{ min.} = d \text{ max.} - Td$$

$$Td = 0.060\sqrt[3]{P^2}$$

$$d_2 \text{ max.} = d \text{ max.} - 0.649519P \text{ [see Table 3]}$$

$$d_2 \text{ min.} = d_2 \text{ max.} - Td_2$$

$$Td_2 = 0.0015\sqrt[3]{d \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2}$$

$$d_3 \text{ max.} = d_2 \text{ max.} - 0.50518P \text{ [see Table 3]}$$

$$d_3 \text{ min.} = d_2 \text{ min.} - 0.56580P \text{ [see Table 3]}$$

$$Td_3 = d_3 \text{ max.} - d_3 \text{ min.}$$

$$R \text{ max.} = 0.18042P \text{ [see Table 4]}$$

$$R \text{ min.} = 0.15011P \text{ [see Table 4]}$$

4.3.4 Internal Threads — Class 2B

$$D \text{ min.} = D \text{ bsc}$$

$$D \text{ max.} = D_2 \text{ max.} + 0.79386P \text{ [see Table 3]}$$

$$D_2 \text{ min.} = D \text{ min.} - 0.649519P \text{ [see Table 3]}$$

$$D_2 \text{ max.} = D_2 \text{ min.} + TD_2$$

$$TD_2 = 1.300\ (0.0015\sqrt[3]{D \text{ bsc}} + 0.0015\sqrt{LE} + 0.015\sqrt[3]{P^2})$$

NOTE: Figures within parentheses are rounded to six decimal places before multiplying by 1.300.

$$D_1 \text{ min.} = D \text{ min.} - 0.97428P \text{ [see Table 3]}$$

NOTE: Round up to the nearest 0.001 in. for sizes 0.138 in. and larger.

$$D_1 \text{ max.} = D_1 \text{ min.} + TD_1$$

For threads 13 threads per inch and finer:

$$TD_1 = \left(0.05\sqrt[3]{P^2} + \frac{0.03P}{D \text{ bsc}}\right) - 0.002$$

NOTE: TD_1 may not exceed $0.259809P$ or be less than $0.135315P$.

For threads with 12 threads per inch or coarser:

$$TD_1 = 0.120P$$

4.4 Thread Form Tolerances

4.4.1 Cumulative form variation is the combined effect on functional size due to individual thread form variations in lead (pitch), helix, flank angle, taper, and roundness.

When measurement is specified for Classes 3A and 3B threads, cumulative form tolerance shall be 0.5 times pitch diameter tolerance. If not specified, control shall be by the required system gages.

4.4.2 Lead and Flank Angle Variations

(a) When individual inspection of lead (including helix) and flank angle variations are required, the allowable variations for these characteristics shall be in accordance with Tables 6 and 7 unless otherwise specified.

(b) For sizes not included in Tables 6 and 7, the allowable lead variation is equal to 0.57735 times one-half the pitch diameter tolerance. This is the lead variation which causes a change in functional diameter equal to 0.5 times the pitch diameter tolerance. The allowable flank half-angle variation in minutes of arc is equal to 30 plus 1.875 times the number of threads per inch rounded to the nearest 5 minutes for 32 threads per inch and coarser, and 62 plus 0.775 times the number of threads per inch rounded to the nearest 5 minutes for threads finer than 32 threads per inch.

EXAMPLE:
0.945-8.5 UNJS-3A; lead and angle control required.
No lead and angle tolerances were specified nor do default values appear in Tables 6 and 7. Values are calculated as follows:
Lead tolerance = $0.57735 \times 0.5\ Td_2$
Pitch diameter tolerance $Td_2 = 0.0050$
Lead tolerance = $0.57735 \times 0.5 \times 0.0050 = 0.0014$ in.
Angle tolerance (for coarser than 32 tpi) = $30 + (1.875 \times \text{tpi})$
Angle tolerance = $30 + (1.875 \times 8.5)$
= 45.94 minutes
= 45 minutes when rounded to nearest 5 minutes

EXAMPLE:
0.500-41 UNJS-3B; lead and angle control required.
Lead tolerance = $0.57735 \times 0.5\ Td_2$
Pitch diameter tolerance $Td_2 = 0.0031$
Lead tolerance = $0.57735 \times 0.5 \times 0.0031 = 0.009$ in.
Angle tolerance (for finer than 32 tpi) = $62 + (0.775 \times \text{tpi})$
Angle tolerance = $62 + (0.775 \times 41)$
= 93.78 minutes
= 1 degree and 35 minutes when rounded to nearest 5 minutes

(c) If lead and angle tolerances are specified as a pitch diameter equivalent in terms of pitch diameter tolerance, tolerances in accordance with para. 4.4.2(a) or para. 4.4.2(b) may be adjusted proportionately using 0.5 times pitch diameter tolerance as a basis.

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EXAMPLE:

0.5000-20 UNJF-3A (22S); lead and angle control required — 0.4 PD tolerance.

From Table 6, allowable lead variation is 0.0009 in. This would be adjusted to 0.4/0.5 times 0.009 which is 0.0007 in.

From Table 7, allowable angle variation is 1 degree 10 minutes or 70 minutes. This would be adjusted to 0.4/0.5 times 70 which is 56 minutes or 55 minutes when rounded.

(d) For requirements of (a) and (b) above, lead variation values tabulated or calculated are the maximum variations from specified lead between any two points not farther apart than the length of the maximum-material (GO) thread gage. Flank angle variation values are maximum variations from the basic 30 deg angle between thread flanks and perpendiculars to the thread axis.

(e) Allowable variations in lead and flank angles are maximum values. Maximum variation in these and pitch diameter tolerance cannot be taken simultaneously.

4.4.3 Runout of Major Diameter and Minor Diameter to Pitch Cylinders. When measurement is specified, maximum circular runout shall be limited to a full indicator movement equal to the pitch diameter tolerance.

4.4.4 Taper. If the pitch cylinder is conical, the difference in pitch diameters between the ends of the thread are an indication of taper. When measurement is required, it shall be specified. If not specified, allowable taper is no greater than the pitch diameter tolerance.

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TABLE 1 BASIC PROFILE DIMENSIONS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Threads per in., *n*	**Pitch $P=\frac{1}{n}$**	**Pitch Line 0.5 *P***	**Flat at Internal Thread Crest 0.3125 *P***	**Flat at Internal Thread Root and External Thread Crest 0.125 *P***	**Height of Sharp V Thread *H* 0.866025 *P***	**Height of Internal Thread and Depth of Thread Engagement 0.5625 *H*= 0.487139 *P***	**Addendum of External Thread 0.375 *H*= 0.324760 *P***	**Truncation of Internal Thread Crest 0.3125 *H*= 0.270633 *P***	**Truncation of Internal Thread Root and External Thread Crest 0.125 *H*= 0.108253 *P***	**Half Addendum of External Thread. REFERENCE ONLY 0.1875 *H*= 0.16238 *P***
80	0.012500	0.006250	0.00391	0.00156	0.010825	0.00609	0.00406	0.00338	0.00135	0.00203
72	0.013889	0.006944	0.00434	0.00174	0.012028	0.00677	0.00451	0.00376	0.00150	0.00226
64	0.015625	0.007812	0.00488	0.00195	0.013532	0.00761	0.00507	0.00423	0.00169	0.00254
56	0.017857	0.008928	0.00558	0.00223	0.015465	0.00870	0.00580	0.00483	0.00193	0.00290
48	0.020833	0.010416	0.00651	0.00260	0.018042	0.01015	0.00677	0.00564	0.00226	0.00338
44	0.022727	0.011363	0.00710	0.00284	0.019682	0.01107	0.00738	0.00615	0.00246	0.00369
40	0.025000	0.012500	0.00781	0.00312	0.021651	0.01218	0.00812	0.00677	0.00271	0.00406
36	0.027778	0.013889	0.00868	0.00347	0.024056	0.01353	0.00902	0.00752	0.00301	0.00451
32	0.031250	0.015625	0.00977	0.00391	0.027063	0.01522	0.01015	0.00846	0.00338	0.00507
28	0.035714	0.017857	0.01116	0.00446	0.030929	0.01740	0.01160	0.00967	0.00387	0.00580
24	0.041667	0.020833	0.01302	0.00521	0.036084	0.02030	0.01353	0.01128	0.00451	0.00677
20	0.050000	0.025000	0.01562	0.00625	0.043301	0.02436	0.01624	0.01353	0.00541	0.00812
18	0.055556	0.027778	0.01736	0.00694	0.048113	0.02706	0.01804	0.01504	0.00601	0.00902
16	0.062500	0.031250	0.01953	0.00781	0.054127	0.03045	0.02030	0.01691	0.00677	0.01015
14	0.071429	0.035714	0.02232	0.00893	0.061859	0.03480	0.02320	0.01933	0.00773	0.01160
13	0.076923	0.038461	0.02404	0.00962	0.066617	0.03747	0.02498	0.02082	0.00833	0.01249
12	0.083333	0.041666	0.02604	0.01042	0.072169	0.04059	0.02706	0.02255	0.00902	0.01353
11	0.090909	0.045454	0.02841	0.01136	0.078730	0.04429	0.02952	0.02460	0.00984	0.01476
10	0.100000	0.050000	0.03125	0.01250	0.086603	0.04871	0.03248	0.02706	0.01083	0.01624
9	0.111111	0.055555	0.03472	0.01389	0.096225	0.05413	0.03608	0.03007	0.01203	0.01804
8	0.125000	0.062500	0.03906	0.01562	0.108253	0.06089	0.04059	0.03383	0.01353	0.02030
7	0.142857	0.071428	0.04464	0.01786	0.123718	0.06959	0.04639	0.03866	0.01546	0.02320
6	0.166667	0.083333	0.05208	0.02083	0.144338	0.08119	0.05413	0.04510	0.01804	0.02706
5	0.200000	0.100000	0.06250	0.02500	0.173205	0.09743	0.06495	0.05413	0.02165	0.03248
4.5	0.222222	0.111111	0.06944	0.02778	0.192450	0.10825	0.07217	0.06014	0.02406	0.03608
4	0.250000	0.125000	0.07812	0.03125	0.216506	0.12178	0.08119	0.06766	0.02706	0.04059

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TABLE 2 THREAD SERIES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nominal Sizes, in.		Number of Threads per in.					
		Series With Increasing Pitches			Constant (Uniform) Pitch Series		
Primary	Secondary	Coarse Pitch UNJC	Fine Pitch UNJF	Extra Fine Pitch UNJEF	8-UNJ	12-UNJ	16-UNJ
0.0600		—	80	—	—	—	—
	0.0730	64	72	—	—	—	—
0.0860		56	64	—	—	—	—
	0.0990	48	56	—	—	—	—
0.1120		40	48	—	—	—	—
0.1250		40	44	—	—	—	—
0.1380		32	40	—	—	—	—
0.1640		32	36	—	—	—	—
0.1900		24	32	—	—	—	—
	0.2160	24	28	32	—	—	—
0.2500		20	28	32	—	—	—
0.3125		18	24	32	—	—	—
0.3750		16	24	32	—	—	UNJC
0.4375		14	20	28	—	—	16
0.5000		13	20	28	—	—	16
0.5625		12	18	24	—	UNJC	16
0.6250		11	18	24	—	12	16
	0.6875	—	—	24	—	12	16
0.7500		10	16	20	—	12	UNJF
	0.8125	—	—	20	—	12	16
0.8750		9	14	20	—	12	16
	0.9375	—	—	20	—	12	16
1.0000		8	12	20	UNJC	UNJF	16
	1.0625	—	—	18	8	12	16
1.1250		7	12	18	8	UNJF	16
	1.1875	—	—	18	8	12	16
1.2500		7	12	18	8	UNJF	16
	1.3125	—	—	18	8	12	16
1.3750		6	12	18	8	UNJF	16
	1.4375	—	—	18	8	12	16
1.5000		6	12	18	8	UNJF	16
	1.5625	—	—	18	8	12	16
1.6250		—	—	18	8	12	16
	1.6875	—	—	18	8	12	16
1.7500		5	—	—	8	12	16
	1.8125	—	—	—	8	12	16
1.8750		—	—	—	8	12	16
	1.9375	—	—	—	8	12	16
2.0000		4.5	—	—	8	12	16
	2.1250	—	—	—	8	12	16
2.2500		4.5	—	—	8	12	16
	2.3750	—	—	—	8	12	16
2.5000		4	—	—	8	12	16
	2.6250	—	—	—	8	12	16
2.7500		4	—	—	8	12	16
	2.8750	—	—	—	8	12	16
3.0000		4	—	—	8	12	16
	3.1250	—	—	—	8	12	16
3.2500		4	—	—	8	12	16
	3.3750	—	—	—	8	12	16

(Table 2 continues on next page)

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TABLE 2 THREAD SERIES (CONT'D)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nominal Sizes, in.		Number of Threads per in.					
		Series With Increasing Pitches			Constant (Uniform) Pitch Series		
Primary	Secondary	Coarse Pitch UNJC	Fine Pitch UNJF	Extra Fine Pitch UNJEF	8-UNJ	12-UNJ	16-UNJ
3.5000		4	—	—	8	12	16
	3.6250	—	—	—	8	12	16
3.7500		4	—	—	8	12	16
	3.8750	—	—	—	8	12	16
4.0000		4	—	—	8	12	16
	4.1250	—	—	—	—	12	16
4.2500		—	—	—	—	12	16
	4.3750	—	—	—	—	12	16
4.5000		—	—	—	—	12	16
	4.6250	—	—	—	—	12	16
4.7500		—	—	—	—	12	16
	4.8750	—	—	—	—	12	16
5.0000		—	—	—	—	12	16
	5.1250	—	—	—	—	12	16
5.2500		—	—	—	—	12	16
	5.3750	—	—	—	—	12	16
5.5000		—	—	—	—	12	16
	5.6250	—	—	—	—	12	16
5.7500		—	—	—	—	12	16
	5.8750	—	—	—	—	12	16
6.0000		—	—	—	—	12	16

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TABLE 3 CONSTANTS FOR CALCULATION FORMULAS OF THREAD PROFILE DIMENSIONS, in.

No. of Threads Per in., n	Pitch $P=\frac{1}{n}$	Twice External Thread Addendum $0.7500H=0.649519P$	Difference Between Max. Pitch Dia. and Max. Minor Dia. of Ext. Thread $0.58333H=0.505181P$	Difference Between Min. Pitch Dia. and Min. Minor Dia. of Ext. Thread $0.65336H=0.565805P$	Difference Between Max. Major Dia. and Max. Pitch Dia. of Int. Thread $0.91667H=0.793857P$	Double Height of Internal Thread $1.125H=0.974279P$	Height of External Thread $0.66667H=0.577350P$
80	0.012500	0.008119	0.00631	0.00707	0.00992	0.01218	0.00722
72	0.013889	0.009021	0.00702	0.00786	0.01103	0.01353	0.00802
64	0.015625	0.010149	0.00789	0.00884	0.01240	0.01522	0.00902
56	0.017857	0.011599	0.00902	0.01010	0.01418	0.01740	0.01031
48	0.020833	0.013532	0.01052	0.01179	0.01654	0.02030	0.01203
44	0.022727	0.014762	0.01148	0.01286	0.01804	0.02214	0.01312
40	0.025000	0.016238	0.01263	0.01414	0.01985	0.02436	0.01443
36	0.027778	0.018042	0.01403	0.01572	0.02205	0.02706	0.01604
32	0.031250	0.020297	0.01579	0.01768	0.02481	0.03045	0.01804
28	0.035714	0.023197	0.01804	0.02021	0.02835	0.03480	0.02062
24	0.041667	0.027063	0.02105	0.02358	0.03308	0.04060	0.02406
20	0.050000	0.032476	0.02526	0.02829	0.03969	0.04871	0.02887
18	0.055556	0.036084	0.02807	0.03143	0.04410	0.05413	0.03208
16	0.062500	0.040595	0.03157	0.03536	0.04962	0.06089	0.03608
14	0.071429	0.046394	0.03608	0.04041	0.05670	0.06959	0.04124
13	0.076923	0.049963	0.03886	0.04352	0.06107	0.07494	0.04441
12	0.083333	0.054127	0.04210	0.04715	0.06615	0.08119	0.04811
11	0.090909	0.059047	0.04593	0.05144	0.07217	0.08857	0.05249
10	0.100000	0.064952	0.05052	0.05658	0.07939	0.09743	0.05774
9	0.111111	0.072169	0.05613	0.06287	0.08821	0.10825	0.06415
8	0.125000	0.081190	0.06315	0.07072	0.09923	0.12178	0.07217
7	0.142857	0.092788	0.07217	0.08083	0.11341	0.13918	0.08248
6	0.166667	0.108253	0.08420	0.09430	0.13231	0.16238	0.09623
5	0.200000	0.129904	0.10104	0.11316	0.15877	0.19486	0.11547
4.5	0.222222	0.144338	0.11226	0.12573	0.17641	0.21651	0.12830
4	0.250000	0.162380	0.12630	0.14145	0.19846	0.24357	0.14434

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TABLE 4 LIMIT VALUES, EXTERNAL THREAD ROOT RADIUS *R*, in.

(1)	(2)	(3)	(4)
No. of Threads per in.	Pitch $P=\frac{1}{n}$	*R* [Note (1)]	
		Min.	Max.
80	0.012500	0.0019	0.0023
72	0.013889	0.0021	0.0025
64	0.015625	0.0023	0.0028
56	0.017857	0.0027	0.0032
48	0.020833	0.0031	0.0038
44	0.022727	0.0034	0.0041
40	0.025000	0.0038	0.0045
36	0.027778	0.0042	0.0050
32	0.031250	0.0047	0.0056
28	0.035714	0.0054	0.0064
24	0.041667	0.0063	0.0075
20	0.050000	0.0075	0.0090
18	0.055556	0.0083	0.0100
16	0.062500	0.0094	0.0113
14	0.071429	0.0107	0.0129
13	0.076923	0.0115	0.0139
12	0.083333	0.0125	0.0150
11	0.090909	0.0136	0.0164
10	0.100000	0.0150	0.0180
9	0.111111	0.0167	0.0200
8	0.125000	0.0188	0.0226
7	0.142857	0.0214	0.0258
6	0.166667	0.0250	0.0301
5	0.200000	0.0300	0.0361
4.5	0.222222	0.0334	0.0401
4	0.250000	0.0375	0.0451

NOTE:
(1) *R* min. = 0.15011*P*
R max. = 0.18042*P*

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.0600-80	UNJF	2A	0.0595	0.0563	0.0514	0.0496	0.0451	0.0425	0.0023	0.0019	2B	0.0511	0.0479	0.0542	0.0519	0.0600
		3A	0.0600	0.0568	0.0519	0.0506	0.0456	0.0435	0.0023	0.0019	3B	0.0511	0.0479	0.0536	0.0519	0.0600
0.0730-64	UNJC	2A	0.0724	0.0686	0.0623	0.0603	0.0544	0.0515	0.0028	0.0023	2B	0.0619	0.0578	0.0655	0.0629	0.0730
		3A	0.0730	0.0692	0.0629	0.0614	0.0550	0.0526	0.0028	0.0023	3B	0.0619	0.0578	0.0648	0.0629	0.0730
0.0730-72	UNJF	2A	0.0724	0.0689	0.0634	0.0615	0.0564	0.0536	0.0025	0.0021	2B	0.0631	0.0595	0.0665	0.0640	0.0730
		3A	0.0730	0.0695	0.0640	0.0626	0.0570	0.0547	0.0025	0.0021	3B	0.0631	0.0595	0.0659	0.0640	0.0730
0.0860-56	UNJC	2A	0.0854	0.0813	0.0738	0.0717	0.0648	0.0616	0.0032	0.0027	2B	0.0732	0.0686	0.0772	0.0744	0.0860
		3A	0.0860	0.0819	0.0744	0.0728	0.0654	0.0627	0.0032	0.0027	3B	0.0732	0.0686	0.0765	0.0744	0.0860
0.0860-64	UNJF	2A	0.0854	0.0816	0.0753	0.0733	0.0674	0.0645	0.0028	0.0023	2B	0.0749	0.0708	0.0786	0.0759	0.0860
		3A	0.0860	0.0822	0.0759	0.0744	0.0680	0.0656	0.0028	0.0023	3B	0.0749	0.0708	0.0779	0.0759	0.0860
0.0990-48	UNJC	2A	0.0983	0.0938	0.0848	0.0825	0.0743	0.0707	0.0038	0.0031	2B	0.0841	0.0787	0.0885	0.0855	0.0990
		3A	0.0990	0.0945	0.0855	0.0838	0.0750	0.0720	0.0038	0.0031	3B	0.0841	0.0787	0.0877	0.0855	0.0990
0.0990-56	UNJF	2A	0.0983	0.0942	0.0867	0.0845	0.0777	0.0744	0.0032	0.0027	2B	0.0862	0.0816	0.0902	0.0874	0.0990
		3A	0.0990	0.0949	0.0874	0.0858	0.0784	0.0757	0.0032	0.0027	3B	0.0862	0.0816	0.0895	0.0874	0.0990
0.1120-40	UNJC	2A	0.1112	0.1061	0.0950	0.0925	0.0824	0.0784	0.0045	0.0038	2B	0.0942	0.0877	0.0991	0.0958	0.1120
		3A	0.1120	0.1069	0.0958	0.0939	0.0832	0.0798	0.0045	0.0038	3B	0.0942	0.0877	0.0982	0.0958	0.1120
0.1120-48	UNJF	2A	0.1113	0.1068	0.0978	0.0954	0.0873	0.0836	0.0038	0.0031	2B	0.0971	0.0917	0.1016	0.0985	0.1120
		3A	0.1120	0.1075	0.0985	0.0967	0.0880	0.0849	0.0038	0.0031	3B	0.0971	0.0917	0.1008	0.0985	0.1120
0.1250-40	UNJC	2A	0.1242	0.1191	0.1080	0.1054	0.0954	0.0913	0.0045	0.0038	2B	0.1072	0.1007	0.1121	0.1088	0.1250
		3A	0.1250	0.1199	0.1088	0.1069	0.0962	0.0928	0.0045	0.0038	3B	0.1072	0.1007	0.1113	0.1088	0.1250
0.1250-44	UNJF	2A	0.1243	0.1195	0.1095	0.1070	0.0980	0.0941	0.0041	0.0034	2B	0.1088	0.1029	0.1134	0.1102	0.1250
		3A	0.1250	0.1202	0.1102	0.1083	0.0987	0.0954	0.0041	0.0034	3B	0.1088	0.1029	0.1126	0.1102	0.1250
0.1380-32	UNJC	2A	0.1372	0.1312	0.1169	0.1141	0.1011	0.0964	0.0056	0.0047	2B	0.1157	0.1076	0.1214	0.1177	0.1380
		3A	0.1380	0.1320	0.1177	0.1156	0.1019	0.0979	0.0056	0.0047	3B	0.1157	0.1076	0.1204	0.1177	0.1380
0.1380-40	UNJF	2A	0.1372	0.1321	0.1210	0.1184	0.1084	0.1043	0.0045	0.0038	2B	0.1202	0.1137	0.1252	0.1218	0.1380
		3A	0.1380	0.1329	0.1218	0.1198	0.1092	0.1057	0.0045	0.0038	3B	0.1202	0.1137	0.1243	0.1218	0.1380
0.1640-32	UNJC	2A	0.1631	0.1571	0.1428	0.1399	0.1270	0.1222	0.0056	0.0047	2B	0.1417	0.1336	0.1475	0.1437	0.1640
		3A	0.1640	0.1580	0.1437	0.1415	0.1279	0.1238	0.0056	0.0047	3B	0.1417	0.1336	0.1465	0.1437	0.1640
0.1640-36	UNJF	2A	0.1632	0.1577	0.1452	0.1424	0.1312	0.1267	0.0050	0.0042	2B	0.1442	0.1370	0.1496	0.1460	0.1640
		3A	0.1640	0.1585	0.1460	0.1439	0.1320	0.1282	0.0050	0.0042	3B	0.1442	0.1370	0.1487	0.1460	0.1640

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.1900-24	UNJC	2A	0.1890	0.1818	0.1619	0.1586	0.1409	0.1350	0.0075	0.0063	2B	0.1600	0.1494	0.1672	0.1629	0.1900
		3A	0.1900	0.1828	0.1629	0.1604	0.1418	0.1368	0.0075	0.0063	3B	0.1600	0.1494	0.1661	0.1629	0.1900
0.1900-32	UNJF	2A	0.1891	0.1831	0.1688	0.1658	0.1530	0.1481	0.0056	0.0047	2B	0.1675	0.1596	0.1736	0.1697	0.1900
		3A	0.1900	0.1840	0.1697	0.1674	0.1539	0.1497	0.0056	0.0047	3B	0.1675	0.1596	0.1726	0.1697	0.1900
0.2160-24	UNJC	2A	0.2150	0.2078	0.1879	0.1845	0.1669	0.1609	0.0075	0.0063	2B	0.1852	0.1754	0.1933	0.1889	0.2160
		3A	0.2160	0.2088	0.1889	0.1863	0.1678	0.1627	0.0075	0.0063	3B	0.1852	0.1754	0.1922	0.1889	0.2160
0.2160-28	UNJF	2A	0.2150	0.2085	0.1918	0.1886	0.1738	0.1684	0.0064	0.0054	2B	0.1896	0.1812	0.1970	0.1928	0.2160
		3A	0.2160	0.2095	0.1928	0.1904	0.1748	0.1702	0.0064	0.0054	3B	0.1896	0.1812	0.1959	0.1928	0.2160
0.2160-32	UNJEF	2A	0.2151	0.2091	0.1948	0.1917	0.1790	0.1740	0.0056	0.0047	2B	0.1929	0.1856	0.1998	0.1957	0.2160
		3A	0.2160	0.2100	0.1957	0.1933	0.1799	0.1756	0.0056	0.0047	3B	0.1929	0.1856	0.1988	0.1957	0.2160
0.2500-20	UNJC	2A	0.2489	0.2408	0.2164	0.2127	0.1911	0.1844	0.0090	0.0075	2B	0.2121	0.2013	0.2224	0.2175	0.2500
		3A	0.2500	0.2419	0.2175	0.2147	0.1922	0.1864	0.0090	0.0075	3B	0.2121	0.2013	0.2211	0.2175	0.2500
0.2500-28	UNJF	2A	0.2490	0.2425	0.2258	0.2225	0.2078	0.2023	0.0064	0.0054	2B	0.2229	0.2152	0.2311	0.2268	0.2500
		3A	0.2500	0.2435	0.2268	0.2243	0.2088	0.2041	0.0064	0.0054	3B	0.2229	0.2152	0.2300	0.2268	0.2500
0.2500-32	UNJEF	2A	0.2490	0.2430	0.2287	0.2255	0.2129	0.2078	0.0056	0.0047	2B	0.2263	0.2196	0.2339	0.2297	0.2500
		3A	0.2500	0.2440	0.2297	0.2273	0.2139	0.2096	0.0056	0.0047	3B	0.2263	0.2196	0.2328	0.2297	0.2500
0.3125-18	UNJC	2A	0.3113	0.3026	0.2752	0.2712	0.2471	0.2398	0.0100	0.0083	2B	0.2690	0.2584	0.2817	0.2764	0.3125
		3A	0.3125	0.3038	0.2764	0.2734	0.2483	0.2420	0.0100	0.0083	3B	0.2690	0.2584	0.2803	0.2764	0.3125
0.3125-24	UNJF	2A	0.3114	0.3042	0.2843	0.2806	0.2632	0.2570	0.0075	0.0063	2B	0.2799	0.2719	0.2902	0.2854	0.3125
		3A	0.3125	0.3053	0.2854	0.2827	0.2644	0.2591	0.0075	0.0063	3B	0.2799	0.2719	0.2890	0.2854	0.3125
0.3125-32	UNJEF	2A	0.3115	0.3055	0.2912	0.2880	0.2754	0.2703	0.0056	0.0047	2B	0.2881	0.2821	0.2964	0.2922	0.3125
		3A	0.3125	0.3065	0.2922	0.2898	0.2764	0.2721	0.0056	0.0047	3B	0.2881	0.2821	0.2953	0.2922	0.3125
0.3750-16	UNJC	2A	0.3737	0.3643	0.3331	0.3287	0.3015	0.2933	0.0113	0.0094	2B	0.3250	0.3141	0.3401	0.3344	0.3750
		3A	0.3750	0.3656	0.3344	0.3311	0.3028	0.2957	0.0113	0.0094	3B	0.3250	0.3141	0.3387	0.3344	0.3750
0.3750-24	UNJF	2A	0.3739	0.3667	0.3468	0.3430	0.3258	0.3194	0.0075	0.0063	2B	0.3417	0.3344	0.3528	0.3479	0.3750
		3A	0.3750	0.3678	0.3479	0.3450	0.3268	0.3214	0.0075	0.0063	3B	0.3417	0.3344	0.3516	0.3479	0.3750
0.3750-32	UNJEF	2A	0.3740	0.3680	0.3537	0.3503	0.3379	0.3326	0.0056	0.0047	2B	0.3501	0.3446	0.3591	0.3547	0.3750
		3A	0.3750	0.3690	0.3547	0.3522	0.3389	0.3345	0.0056	0.0047	3B	0.3501	0.3446	0.3580	0.3547	0.3750
0.4375-14	UNJC	2A	0.4361	0.4258	0.3897	0.3850	0.3536	0.3446	0.0129	0.0107	2B	0.3795	0.3680	0.3972	0.3911	0.4375
		3A	0.4375	0.4272	0.3911	0.3876	0.3550	0.3472	0.0129	0.0107	3B	0.3795	0.3680	0.3957	0.3911	0.4375

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.4375-16	UNJ	2A	0.4361	0.4267	0.3955	0.3909	0.3639	0.3555	0.0113	0.0094	2B	0.3868	0.3766	0.4028	0.3969	0.4375
		3A	0.4375	0.4281	0.3969	0.3935	0.3653	0.3581	0.0113	0.0094	3B	0.3868	0.3766	0.4014	0.3969	0.4375
0.4375-20	UNJF	2A	0.4362	0.4281	0.4037	0.3995	0.3784	0.3712	0.0090	0.0075	2B	0.3970	0.3888	0.4104	0.4050	0.4375
		3A	0.4375	0.4294	0.4050	0.4019	0.3797	0.3736	0.0090	0.0075	3B	0.3970	0.3888	0.4091	0.4050	0.4375
0.4375-28	UNJEF	2A	0.4364	0.4299	0.4132	0.4096	0.3952	0.3894	0.0064	0.0054	2B	0.4086	0.4027	0.4189	0.4143	0.4375
		3A	0.4375	0.4310	0.4143	0.4116	0.3963	0.3914	0.0064	0.0054	3B	0.4086	0.4027	0.4178	0.4143	0.4375
0.5000-13	UNJC	2A	0.4985	0.4876	0.4485	0.4435	0.4096	0.4000	0.0139	0.0115	2B	0.4368	0.4251	0.4565	0.4500	0.5000
		3A	0.5000	0.4891	0.4500	0.4463	0.4111	0.4028	0.0139	0.0115	3B	0.4368	0.4251	0.4548	0.4500	0.5000
0.5000-16	UNJ	2A	0.4986	0.4892	0.4580	0.4533	0.4264	0.4179	0.0113	0.0094	2B	0.4488	0.4392	0.4655	0.4594	0.5000
		3A	0.5000	0.4906	0.4594	0.4559	0.4278	0.4205	0.0113	0.0094	3B	0.4488	0.4392	0.4640	0.4594	0.5000
0.5000-20	UNJF	2A	0.4987	0.4906	0.4662	0.4619	0.4409	0.4336	0.0090	0.0075	2B	0.4591	0.4513	0.4731	0.4675	0.5000
		3A	0.5000	0.4919	0.4675	0.4643	0.4422	0.4360	0.0090	0.0075	3B	0.4591	0.4513	0.4717	0.4675	0.5000
0.5000-28	UNJEF	2A	0.4989	0.4924	0.4757	0.4720	0.4577	0.4518	0.0064	0.0054	2B	0.4708	0.4652	0.4816	0.4768	0.5000
		3A	0.5000	0.4935	0.4768	0.4740	0.4588	0.4528	0.0064	0.0054	3B	0.4708	0.4652	0.4804	0.4768	0.5000
0.5625-12	UNJC	2A	0.5609	0.5495	0.5068	0.5016	0.4647	0.4545	0.0150	0.0125	2B	0.4914	0.4814	0.5152	0.5084	0.5625
		3A	0.5625	0.5511	0.5084	0.5045	0.4663	0.4574	0.0150	0.0125	3B	0.4914	0.4814	0.5135	0.5084	0.5625
0.5625-16	UNJ	2A	0.5611	0.5517	0.5205	0.5158	0.4889	0.4804	0.0113	0.0094	2B	0.5109	0.5017	0.5280	0.5219	0.5625
		3A	0.5625	0.5531	0.5219	0.5184	0.4903	0.4830	0.0113	0.0094	3B	0.5109	0.5017	0.5265	0.5219	0.5625
0.5625-18	UNJF	2A	0.5611	0.5524	0.5250	0.5205	0.4969	0.4891	0.0100	0.0083	2B	0.5166	0.5084	0.5323	0.5264	0.5625
		3A	0.5625	0.5538	0.5264	0.5230	0.4983	0.4916	0.0100	0.0083	3B	0.5166	0.5084	0.5308	0.5264	0.5625
0.5625-24	UNJEF	2A	0.5613	0.5541	0.5342	0.5303	0.5131	0.5067	0.0075	0.0063	2B	0.5281	0.5219	0.5405	0.5354	0.5625
		3A	0.5625	0.5553	0.5354	0.5325	0.5143	0.5089	0.0075	0.0063	3B	0.5281	0.5219	0.5392	0.5354	0.5625
0.6250-11	UNJC	2A	0.6233	0.6112	0.5643	0.5588	0.5184	0.5074	0.0164	0.0136	2B	0.5474	0.5365	0.5732	0.5660	0.6250
		3A	0.6250	0.6129	0.5660	0.5619	0.5201	0.5105	0.0164	0.0136	3B	0.5474	0.5365	0.5714	0.5660	0.6250
0.6250-12	UNJ	2A	0.6234	0.6120	0.5693	0.5639	0.5272	0.5167	0.0150	0.0125	2B	0.5539	0.5439	0.5780	0.5709	0.6250
		3A	0.6250	0.6136	0.5709	0.5668	0.5288	0.5196	0.0150	0.0125	3B	0.5539	0.5439	0.5762	0.5709	0.6250
0.6250-16	UNJ	2A	0.6236	0.6142	0.5830	0.5782	0.5514	0.5428	0.0113	0.0094	2B	0.5731	0.5642	0.5906	0.5844	0.6250
		3A	0.6250	0.6156	0.5844	0.5808	0.5528	0.5454	0.0113	0.0094	3B	0.5731	0.5642	0.5890	0.5844	0.6250
0.6250-18	UNJF	2A	0.6236	0.6149	0.5875	0.5828	0.5594	0.5514	0.0100	0.0083	2B	0.5788	0.5709	0.5949	0.5889	0.6250
		3A	0.6250	0.6163	0.5889	0.5854	0.5608	0.5540	0.0100	0.0083	3B	0.5788	0.5709	0.5934	0.5889	0.6250

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.6250-24	UNJEF	2A	0.6238	0.6166	0.5967	0.5927	0.5756	0.5691	0.0075	0.0063	2B	0.5904	0.5844	0.6031	0.5979	0.6250
		3A	0.6250	0.6178	0.5979	0.5949	0.5768	0.5713	0.0075	0.0063	3B	0.5904	0.5844	0.6018	0.5979	0.6250
0.6875-12	UNJ	2A	0.6859	0.6745	0.6318	0.6264	0.5897	0.5792	0.0150	0.0125	2B	0.6164	0.6064	0.6405	0.6334	0.6875
		3A	0.6875	0.6761	0.6334	0.6293	0.5913	0.5822	0.0150	0.0125	3B	0.6164	0.6064	0.6387	0.6334	0.6875
0.6875-16	UNJ	2A	0.6861	0.6767	0.6455	0.6407	0.6139	0.6053	0.0113	0.0094	2B	0.6353	0.6267	0.6531	0.6469	0.6875
		3A	0.6875	0.6781	0.6469	0.6433	0.6153	0.6079	0.0113	0.0094	3B	0.6353	0.6267	0.6515	0.6469	0.6875
0.6875-24	UNJEF	2A	0.6863	0.6791	0.6592	0.6552	0.6381	0.6316	0.0075	0.0063	2B	0.6527	0.6469	0.6656	0.6604	0.6875
		3A	0.6875	0.6803	0.6604	0.6574	0.6393	0.6338	0.0075	0.0063	3B	0.6527	0.6469	0.6643	0.6604	0.6875
0.7500-10	UNJC	2A	0.7482	0.7353	0.6832	0.6773	0.6327	0.6207	0.0180	0.0150	2B	0.6646	0.6526	0.6927	0.6850	0.7500
		3A	0.7500	0.7371	0.6850	0.6806	0.6345	0.6240	0.0180	0.0150	3B	0.6646	0.6526	0.6907	0.6850	0.7500
0.7500-12	UNJ	2A	0.7483	0.7369	0.6942	0.6887	0.6521	0.6416	0.0150	0.0125	2B	0.6789	0.6689	0.7031	0.6959	0.7500
		3A	0.7500	0.7386	0.6959	0.6918	0.6538	0.6446	0.0150	0.0125	3B	0.6789	0.6689	0.7013	0.6959	0.7500
0.7500-16	UNJF	2A	0.7485	0.7391	0.7079	0.7029	0.6763	0.6675	0.0113	0.0094	2B	0.6977	0.6892	0.7159	0.7094	0.7500
		3A	0.7500	0.7406	0.7094	0.7056	0.6778	0.6702	0.0113	0.0094	3B	0.6977	0.6892	0.7143	0.7094	0.7500
0.7500-20	UNJEF	2A	0.7487	0.7406	0.7162	0.7118	0.6909	0.6835	0.0090	0.0075	2B	0.7081	0.7013	0.7232	0.7175	0.7500
		3A	0.7500	0.7419	0.7175	0.7142	0.6922	0.6859	0.0090	0.0075	3B	0.7081	0.7013	0.7218	0.7175	0.7500
0.8125-12	UNJ	2A	0.8108	0.7994	0.7567	0.7512	0.7146	0.7040	0.0150	0.0125	2B	0.7414	0.7314	0.7656	0.7584	0.8125
		3A	0.8125	0.8011	0.7584	0.7543	0.7163	0.7072	0.0150	0.0125	3B	0.7414	0.7314	0.7638	0.7584	0.8125
0.8125-16	UNJ	2A	0.8110	0.8016	0.7704	0.7655	0.7388	0.7301	0.0113	0.0094	2B	0.7602	0.7517	0.7782	0.7719	0.8125
		3A	0.8125	0.8031	0.7719	0.7683	0.7403	0.7329	0.0113	0.0094	3B	0.7602	0.7517	0.7766	0.7719	0.8125
0.8125-20	UNJEF	2A	0.8112	0.8031	0.7787	0.7743	0.7534	0.7460	0.0090	0.0075	2B	0.7706	0.7638	0.7857	0.7800	0.8125
		3A	0.8125	0.8044	0.7800	0.7767	0.7547	0.7484	0.0090	0.0075	3B	0.7706	0.7638	0.7843	0.7800	0.8125
0.8750-9	UNJC	2A	0.8731	0.8592	0.8009	0.7946	0.7448	0.7317	0.0200	0.0167	2B	0.7801	0.7668	0.8110	0.8028	0.8750
		3A	0.8750	0.8611	0.8028	0.7981	0.7467	0.7352	0.0200	0.0167	3B	0.7801	0.7668	0.8089	0.8028	0.8750
0.8750-12	UNJ	2A	0.8733	0.8619	0.8192	0.8137	0.7771	0.7666	0.0150	0.0125	2B	0.8039	0.7939	0.8281	0.8209	0.8750
		3A	0.8750	0.8636	0.8209	0.8168	0.7788	0.7696	0.0150	0.0125	3B	0.8039	0.7939	0.8263	0.8209	0.8750
0.8750-14	UNJF	2A	0.8734	0.8631	0.8270	0.8216	0.7909	0.7812	0.0129	0.0107	2B	0.8152	0.8055	0.8356	0.8286	0.8750
		3A	0.8750	0.8647	0.8286	0.8245	0.7925	0.7841	0.0129	0.0107	3B	0.8152	0.8055	0.8339	0.8286	0.8750
0.8750-16	UNJ	2A	0.8735	0.8641	0.8329	0.8280	0.8013	0.7926	0.0113	0.0094	2B	0.8227	0.8142	0.8407	0.8344	0.8750
		3A	0.8750	0.8656	0.8344	0.8308	0.8028	0.7954	0.0113	0.0094	3B	0.8227	0.8142	0.8391	0.8344	0.8750

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.8750-20	UNJEF	2A	0.8737	0.8656	0.8412	0.8368	0.8159	0.8085	0.0090	0.0075	2B	0.8331	0.8263	0.8482	0.8425	0.8750
		3A	0.8750	0.8669	0.8425	0.8392	0.8172	0.8109	0.0090	0.0075	3B	0.8331	0.8263	0.8468	0.8425	0.8750
0.9375-12	UNJ	2A	0.9358	0.9244	0.8817	0.8760	0.8396	0.8288	0.0150	0.0125	2B	0.8664	0.8564	0.8908	0.8834	0.9375
		3A	0.9375	0.9261	0.8834	0.8792	0.8413	0.8320	0.0150	0.0125	3B	0.8664	0.8564	0.8889	0.8834	0.9375
0.9375-16	UNJ	2A	0.9360	0.9266	0.8954	0.8904	0.8638	0.8550	0.0113	0.0094	2B	0.8852	0.8767	0.9034	0.8969	0.9375
		3A	0.9375	0.9281	0.8969	0.8932	0.8653	0.8578	0.0113	0.0094	3B	0.8852	0.8767	0.9018	0.8969	0.9375
0.9375-20	UNJEF	2A	0.9361	0.9280	0.9036	0.8991	0.8783	0.8708	0.0090	0.0075	2B	0.8956	0.8888	0.9109	0.9050	0.9375
		3A	0.9375	0.9294	0.9050	0.9016	0.8797	0.8733	0.0090	0.0075	3B	0.8956	0.8888	0.9094	0.9050	0.9375
1.0000-8	UNJC	2A	0.9980	0.9830	0.9168	0.9100	0.8537	0.8393	0.0226	0.0188	2B	0.8933	0.8783	0.9276	0.9188	1.0000
		3A	1.0000	0.9850	0.9188	0.9137	0.8556	0.8430	0.0226	0.0188	3B	0.8933	0.8783	0.9254	0.9188	1.0000
1.0000-12	UNJF	2A	0.9982	0.9868	0.9441	0.9382	0.9020	0.8910	0.0150	0.0125	2B	0.9289	0.9189	0.9535	0.9459	1.0000
		3A	1.0000	0.9886	0.9459	0.9415	0.9038	0.8944	0.0150	0.0125	3B	0.9289	0.9189	0.9516	0.9459	1.0000
1.0000-16	UNJ	2A	0.9985	0.9891	0.9579	0.9529	0.9263	0.9175	0.0113	0.0094	2B	0.9477	0.9392	0.9659	0.9594	1.0000
		3A	1.0000	0.9906	0.9594	0.9557	0.9278	0.9203	0.0113	0.0094	3B	0.9477	0.9392	0.9643	0.9594	1.0000
1.0000-20	UNJEF	2A	0.9986	0.9905	0.9661	0.9616	0.9408	0.9333	0.0090	0.0075	2B	0.9581	0.9513	0.9734	0.9675	1.0000
		3A	1.0000	0.9919	0.9675	0.9641	0.9422	0.9358	0.0090	0.0075	3B	0.9581	0.9513	0.9719	0.9675	1.0000
1.0625-8	UNJ	2A	1.0605	1.0455	0.9793	0.9725	0.9162	0.9018	0.0226	0.0188	2B	0.9558	0.9408	0.9902	0.9813	1.0625
		3A	1.0625	1.0475	0.9813	0.9762	0.9182	0.9055	0.0226	0.0188	3B	0.9558	0.9408	0.9880	0.9813	1.0625
1.0625-12	UNJ	2A	1.0608	1.0494	1.0067	1.0010	0.9646	0.9538	0.0150	0.0125	2B	0.9914	0.9814	1.0158	1.0084	1.0625
		3A	1.0625	1.0511	1.0084	1.0042	0.9663	0.9571	0.0150	0.0125	3B	0.9914	0.9814	1.0139	1.0084	1.0625
1.0625-16	UNJ	2A	1.0610	1.0516	1.0204	1.0154	0.9888	0.9800	0.0113	0.0094	2B	1.0102	1.0017	1.0284	1.0219	1.0625
		3A	1.0625	1.0531	1.0219	1.0182	0.9903	0.9828	0.0113	0.0094	3B	1.0102	1.0017	1.0268	1.0219	1.0625
1.0625-18	UNJEF	2A	1.0611	1.0524	1.0250	1.0203	0.9969	0.9889	0.0100	0.0083	2B	1.0159	1.0084	1.0326	1.0264	1.0625
		3A	1.0625	1.0538	1.0264	1.0228	0.9983	0.9914	0.0100	0.0083	3B	1.0159	1.0084	1.0310	1.0264	1.0625
1.1250-7	UNJC	2A	1.1228	1.1064	1.0300	1.0228	0.9578	0.9420	0.0258	0.0214	2B	1.0030	0.9859	1.0416	1.0322	1.1250
		3A	1.1250	1.1086	1.0322	1.0268	0.9600	0.9460	0.0258	0.0214	3B	1.0030	0.9859	1.0393	1.0322	1.1250
1.1250-8	UNJ	2A	1.1229	1.1079	1.0417	1.0348	0.9786	0.9641	0.0226	0.0188	2B	1.0183	1.0033	1.0528	1.0438	1.1250
		3A	1.1250	1.1100	1.0438	1.0386	0.9806	0.9679	0.0226	0.0188	3B	1.0183	1.0033	1.0505	1.0438	1.1250
1.1250-12	UNJF	2A	1.1232	1.1118	1.0691	1.0631	1.0270	1.0160	0.0150	0.0125	2B	1.0539	1.0439	1.0787	1.0709	1.1250
		3A	1.1250	1.1136	1.0709	1.0664	1.0288	1.0193	0.0150	0.0125	3B	1.0539	1.0439	1.0768	1.0709	1.1250

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.1250-16	UNJ	2A	1.1235	1.1141	1.0829	1.0779	1.0513	1.0425	0.0113	0.0094	2B	1.0727	1.0642	1.0909	1.0844	1.1250
		3A	1.1250	1.1156	1.0844	1.0807	1.0528	1.0453	0.0113	0.0094	3B	1.0727	1.0642	1.0893	1.0844	1.1250
1.1250-18	UNJEF	2A	1.1236	1.1149	1.0875	1.0828	1.0594	1.0514	0.0100	0.0083	2B	1.0784	1.0709	1.0951	1.0889	1.1250
		3A	1.1250	1.1163	1.0889	1.0853	1.0608	1.0539	0.0100	0.0083	3B	1.0784	1.0709	1.0935	1.0889	1.1250
1.1875-8	UNJ	2A	1.1854	1.1704	1.1042	1.0972	1.0410	1.0265	0.0226	0.0188	2B	1.0808	1.0658	1.1154	1.1063	1.1875
		3A	1.1875	1.1725	1.1063	1.1011	1.0432	1.0304	0.0226	0.0188	3B	1.0808	1.0658	1.1131	1.1063	1.1875
1.1875-12	UNJ	2A	1.1858	1.1744	1.1317	1.1259	1.0896	1.0788	0.0150	0.0125	2B	1.1164	1.1064	1.1409	1.1334	1.1875
		3A	1.1875	1.1761	1.1334	1.1291	1.0913	1.0820	0.0150	0.0125	3B	1.1164	1.1064	1.1390	1.1334	1.1875
1.1875-16	UNJ	2A	1.1860	1.1766	1.1454	1.1403	1.1138	1.1049	0.0113	0.0094	2B	1.1352	1.1267	1.1535	1.1469	1.1875
		3A	1.1875	1.1781	1.1469	1.1431	1.1153	1.1077	0.0113	0.0094	3B	1.1352	1.1267	1.1519	1.1469	1.1875
1.1875-18	UNJEF	2A	1.1860	1.1773	1.1499	1.1450	1.1218	1.1136	0.0100	0.0083	2B	1.1409	1.1334	1.1577	1.1514	1.1875
		3A	1.1875	1.1788	1.1514	1.1478	1.1233	1.1164	0.0100	0.0083	3B	1.1409	1.1334	1.1561	1.1514	1.1875
1.2500-7	UNJC	2A	1.2478	1.2314	1.1550	1.1476	1.0828	1.0668	0.0258	0.0214	2B	1.1280	1.1109	1.1668	1.1572	1.2500
		3A	1.2500	1.2336	1.1572	1.1517	1.0850	1.0709	0.0258	0.0214	3B	1.1280	1.1109	1.1644	1.1572	1.2500
1.2500-8	UNJ	2A	1.2479	1.2329	1.1667	1.1597	1.1036	1.0890	0.0226	0.0188	2B	1.1433	1.1283	1.1780	1.1688	1.2500
		3A	1.2500	1.2350	1.1688	1.1635	1.1056	1.0928	0.0226	0.0188	3B	1.1433	1.1283	1.1757	1.1688	1.2500
1.2500-12	UNJF	2A	1.2482	1.2368	1.1941	1.1879	1.1520	1.1408	0.0150	0.0125	2B	1.1789	1.1689	1.2039	1.1959	1.2500
		3A	1.2500	1.2386	1.1959	1.1913	1.1538	1.1442	0.0150	0.0125	3B	1.1789	1.1689	1.2019	1.1959	1.2500
1.2500-16	UNJ	2A	1.2485	1.2391	1.2079	1.2028	1.1763	1.1674	0.0113	0.0094	2B	1.1977	1.1892	1.2160	1.2094	1.2500
		3A	1.2500	1.2406	1.2094	1.2056	1.1778	1.1702	0.0113	0.0094	3B	1.1977	1.1892	1.2144	1.2094	1.2500
1.2500-18	UNJEF	2A	1.2485	1.2398	1.2124	1.2075	1.1843	1.1761	0.0100	0.0083	2B	1.2034	1.1959	1.2202	1.2139	1.2500
		3A	1.2500	1.2413	1.2139	1.2103	1.1858	1.1789	0.0100	0.0083	3B	1.2034	1.1959	1.2186	1.2139	1.2500
1.3125-8	UNJ	2A	1.3104	1.2954	1.2292	1.2221	1.1660	1.1514	0.0226	0.0188	2B	1.2058	1.1908	1.2405	1.2313	1.3125
		3A	1.3125	1.2975	1.2313	1.2260	1.1682	1.1553	0.0226	0.0188	3B	1.2058	1.1908	1.2382	1.2313	1.3125
1.3125-12	UNJ	2A	1.3108	1.2994	1.2567	1.2509	1.2146	1.2038	0.0150	0.0125	2B	1.2414	1.2314	1.2659	1.2584	1.3125
		3A	1.3125	1.3011	1.2584	1.2541	1.2163	1.2070	0.0150	0.0125	3B	1.2414	1.2314	1.2640	1.2584	1.3125
1.3125-16	UNJ	2A	1.3110	1.3016	1.2704	1.2653	1.2388	1.2299	0.0113	0.0094	2B	1.2602	1.2517	1.2785	1.2719	1.3125
		3A	1.3125	1.3031	1.2719	1.2681	1.2403	1.2327	0.0113	0.0094	3B	1.2602	1.2517	1.2769	1.2719	1.3125
1.3125-18	UNJEF	2A	1.3110	1.3023	1.2749	1.2700	1.2468	1.2386	0.0100	0.0083	2B	1.2659	1.2584	1.2827	1.2764	1.3125
		3A	1.3125	1.3038	1.2764	1.2728	1.2483	1.2414	0.0100	0.0083	3B	1.2659	1.2584	1.2811	1.2764	1.3125

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.3750-6	UNJC	2A	1.3726	1.3544	1.2643	1.2563	1.1801	1.1620	0.0301	0.0250	2B	1.2327	1.2127	1.2771	1.2667	1.3750
		3A	1.3750	1.3568	1.2667	1.2607	1.1825	1.1664	0.0301	0.0250	3B	1.2327	1.2127	1.2745	1.2667	1.3750
1.3750-8	UNJ	2A	1.3728	1.3578	1.2916	1.2844	1.2285	1.2137	0.0226	0.0188	2B	1.2683	1.2533	1.3031	1.2938	1.3750
		3A	1.3750	1.3600	1.2938	1.2884	1.2306	1.2177	0.0226	0.0188	3B	1.2683	1.2533	1.3008	1.2938	1.3750
1.3750-12	UNJF	2A	1.3731	1.3617	1.3190	1.3127	1.2769	1.2656	0.0150	0.0125	2B	1.3039	1.2939	1.3291	1.3209	1.3750
		3A	1.3750	1.3636	1.3209	1.3162	1.2788	1.2691	0.0150	0.0125	3B	1.3039	1.2939	1.3270	1.3209	1.3750
1.3750-16	UNJ	2A	1.3735	1.3641	1.3329	1.3278	1.3013	1.2924	0.0113	0.0094	2B	1.3227	1.3142	1.3410	1.3344	1.3750
		3A	1.3750	1.3656	1.3344	1.3306	1.3028	1.2952	0.0113	0.0094	3B	1.3227	1.3142	1.3394	1.3344	1.3750
1.3750-18	UNJEF	2A	1.3735	1.3648	1.3374	1.3325	1.3093	1.3011	0.0100	0.0083	2B	1.3284	1.3209	1.3452	1.3389	1.3750
		3A	1.3750	1.3663	1.3389	1.3353	1.3108	1.3039	0.0100	0.0083	3B	1.3284	1.3209	1.3436	1.3389	1.3750
1.4375-8	UNJ	2A	1.4353	1.4203	1.3541	1.3469	1.2910	1.2762	0.0226	0.0188	2B	1.3308	1.3158	1.3657	1.3563	1.4375
		3A	1.4375	1.4225	1.3563	1.3509	1.2932	1.2802	0.0226	0.0188	3B	1.3308	1.3158	1.3634	1.3563	1.4375
1.4375-12	UNJ	2A	1.4357	1.4243	1.3816	1.3757	1.3395	1.3286	0.0150	0.0125	2B	1.3664	1.3564	1.3910	1.3834	1.4375
		3A	1.4375	1.4261	1.3834	1.3790	1.3413	1.3318	0.0150	0.0125	3B	1.3664	1.3564	1.3891	1.3834	1.4375
1.4375-16	UNJ	2A	1.4359	1.4265	1.3953	1.3901	1.3637	1.3547	0.0113	0.0094	2B	1.3852	1.3767	1.4037	1.3969	1.4375
		3A	1.4375	1.4281	1.3969	1.3930	1.3653	1.3576	0.0113	0.0094	3B	1.3852	1.3767	1.4020	1.3969	1.4375
1.4375-18	UNJEF	2A	1.4360	1.4273	1.3999	1.3949	1.3718	1.3625	0.0100	0.0083	2B	1.3909	1.3834	1.4079	1.4014	1.4375
		3A	1.4375	1.4288	1.4014	1.3977	1.3733	1.3663	0.0100	0.0083	3B	1.3909	1.3834	1.4062	1.4014	1.4375
1.5000-6	UNJC	2A	1.4976	1.4794	1.3893	1.3812	1.3051	1.2869	0.0301	0.0250	2B	1.3577	1.3377	1.4022	1.3917	1.5000
		3A	1.5000	1.4818	1.3917	1.3856	1.3075	1.2913	0.0301	0.0250	3B	1.3577	1.3377	1.3996	1.3917	1.5000
1.5000-8	UNJ	2A	1.4978	1.4828	1.4166	1.4093	1.3535	1.3386	0.0226	0.0188	2B	1.3933	1.3783	1.4283	1.4188	1.5000
		3A	1.5000	1.4850	1.4188	1.4133	1.3556	1.3426	0.0226	0.0188	3B	1.3933	1.3783	1.4259	1.4188	1.5000
1.5000-12	UNJF	2A	1.4981	1.4867	1.4440	1.4376	1.4019	1.3905	0.0150	0.0125	2B	1.4289	1.4189	1.4542	1.4459	1.5000
		3A	1.5000	1.4886	1.4459	1.4411	1.4038	1.3940	0.0150	0.0125	3B	1.4289	1.4189	1.4522	1.4459	1.5000
1.5000-16	UNJ	2A	1.4984	1.4890	1.4578	1.4526	1.4262	1.4172	0.0113	0.0094	2B	1.4477	1.4392	1.4662	1.4594	1.5000
		3A	1.5000	1.4906	1.4594	1.4555	1.4278	1.4201	0.0113	0.0094	3B	1.4477	1.4392	1.4645	1.4594	1.5000
1.5000-18	UNJEF	2A	1.4985	1.4898	1.4624	1.4574	1.4343	1.4260	0.0100	0.0083	2B	1.4534	1.4459	1.4704	1.4639	1.5000
		3A	1.5000	1.4913	1.4639	1.4602	1.4358	1.4288	0.0100	0.0083	3B	1.4534	1.4459	1.4687	1.4639	1.5000
1.5625-8	UNJ	2A	1.5603	1.5453	1.4791	1.4717	1.4160	1.4010	0.0226	0.0188	2B	1.4558	1.4408	1.4909	1.4813	1.5625
		3A	1.5625	1.5475	1.4813	1.4758	1.4182	1.4051	0.0226	0.0188	3B	1.4558	1.4408	1.4885	1.4813	1.5625

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.5625-12	UNJ	2A	1.5607	1.5493	1.5066	1.5007	1.4645	1.4536	0.0150	0.0125	2B	1.4914	1.4814	1.5160	1.5084	1.5625
		3A	1.5625	1.5511	1.5084	1.5040	1.4663	1.4568	0.0150	0.0125	3B	1.4914	1.4814	1.5141	1.5084	1.5625
1.5625-16	UNJ	2A	1.5609	1.5515	1.5203	1.5151	1.4887	1.4797	0.0113	0.0094	2B	1.5102	1.5017	1.5287	1.5219	1.5625
		3A	1.5625	1.5531	1.5219	1.5180	1.4903	1.4826	0.0113	0.0094	3B	1.5102	1.5017	1.5270	1.5219	1.5625
1.5625-18	UNJEF	2A	1.5610	1.5523	1.5249	1.5199	1.4968	1.4885	0.0100	0.0083	2B	1.5159	1.5084	1.5329	1.5264	1.5625
		3A	1.5625	1.5538	1.5264	1.5227	1.4983	1.4913	0.0100	0.0083	3B	1.5159	1.5084	1.5312	1.5264	1.5625
1.6250-8	UNJ	2A	1.6228	1.6078	1.5416	1.5342	1.4785	1.4635	0.0226	0.0188	2B	1.5183	1.5033	1.5535	1.5438	1.6250
		3A	1.6250	1.6100	1.5438	1.5382	1.4806	1.4675	0.0226	0.0188	3B	1.5183	1.5033	1.5510	1.5438	1.6250
1.6250-12	UNJ	2A	1.6232	1.6118	1.5691	1.5632	1.5270	1.5160	0.0150	0.0125	2B	1.5539	1.5439	1.5785	1.5709	1.6250
		3A	1.6250	1.6136	1.5709	1.5665	1.5288	1.5194	0.0150	0.0125	3B	1.5539	1.5439	1.5766	1.5709	1.6250
1.6250-16	UNJ	2A	1.6234	1.6140	1.5828	1.5776	1.5512	1.5422	0.0113	0.0094	2B	1.5727	1.5642	1.5912	1.5844	1.6250
		3A	1.6250	1.6156	1.5844	1.5805	1.5528	1.5451	0.0113	0.0094	3B	1.5727	1.5642	1.5895	1.5844	1.6250
1.6250-18	UNJEF	2A	1.6235	1.6148	1.5874	1.5824	1.5593	1.5510	0.0100	0.0083	2B	1.5784	1.5709	1.5954	1.5889	1.6250
		3A	1.6250	1.6163	1.5889	1.5852	1.5608	1.5538	0.0100	0.0083	3B	1.5784	1.5709	1.5937	1.5889	1.6250
1.6875-8	UNJ	2A	1.6853	1.6703	1.6041	1.5966	1.5410	1.5259	0.0226	0.0188	2B	1.5808	1.5658	1.6160	1.6063	1.6875
		3A	1.6875	1.6725	1.6063	1.6007	1.5432	1.5300	0.0226	0.0188	3B	1.5808	1.5658	1.6136	1.6063	1.6875
1.6875-12	UNJ	2A	1.6857	1.6743	1.6316	1.6256	1.5895	1.5784	0.0150	0.0125	2B	1.6164	1.6064	1.6412	1.6334	1.6875
		3A	1.6875	1.6761	1.6334	1.6289	1.5913	1.5818	0.0150	0.0125	3B	1.6164	1.6064	1.6392	1.6334	1.6875
1.6875-16	UNJ	2A	1.6859	1.6765	1.6453	1.6400	1.6137	1.6046	0.0113	0.0094	2B	1.6352	1.6267	1.6538	1.6469	1.6875
		3A	1.6875	1.6781	1.6469	1.6429	1.6153	1.6075	0.0113	0.0094	3B	1.6352	1.6267	1.6521	1.6469	1.6875
1.6875-18	UNJEF	2A	1.6860	1.6773	1.6499	1.6448	1.6218	1.6134	0.0100	0.0083	2B	1.6409	1.6334	1.6580	1.6514	1.6875
		3A	1.6875	1.6788	1.6514	1.6476	1.6233	1.6162	0.0100	0.0083	3B	1.6409	1.6334	1.6563	1.6514	1.6875
1.7500-5	UNJC	2A	1.7473	1.7268	1.6174	1.6085	1.5164	1.4953	0.0361	0.0300	2B	1.5792	1.5552	1.6317	1.6201	1.7500
		3A	1.7500	1.7295	1.6201	1.6134	1.5191	1.5002	0.0361	0.0300	3B	1.5792	1.5552	1.6288	1.6201	1.7500
1.7500-8	UNJ	2A	1.7477	1.7327	1.6665	1.6590	1.6034	1.5883	0.0226	0.0188	2B	1.6433	1.6283	1.6786	1.6688	1.7500
		3A	1.7500	1.7350	1.6688	1.6631	1.6056	1.5924	0.0226	0.0188	3B	1.6433	1.6283	1.6762	1.6688	1.7500
1.7500-12	UNJ	2A	1.7482	1.7368	1.6941	1.6881	1.6520	1.6410	0.0150	0.0125	2B	1.6789	1.6689	1.7037	1.6959	1.7500
		3A	1.7500	1.7386	1.6959	1.6914	1.6538	1.6442	0.0150	0.0125	3B	1.6789	1.6689	1.7017	1.6959	1.7500
1.7500-16	UNJ	2A	1.7484	1.7390	1.7078	1.7025	1.6762	1.6671	0.0113	0.0094	2B	1.6977	1.6892	1.7163	1.7094	1.7500
		3A	1.7500	1.7406	1.7094	1.7054	1.6778	1.6700	0.0113	0.0094	3B	1.6977	1.6892	1.7146	1.7094	1.7500

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.8125-8	UNJ	2A	1.8102	1.7952	1.7290	1.7214	1.6658	1.6507	0.0226	0.0188	2B	1.7058	1.6908	1.7412	1.7313	1.8125
		3A	1.8125	1.7975	1.7313	1.7256	1.6682	1.6549	0.0226	0.0188	3B	1.7058	1.6908	1.7387	1.7313	1.8125
1.8125-12	UNJ	2A	1.8107	1.7993	1.7566	1.7506	1.7145	1.7034	0.0150	0.0125	2B	1.7414	1.7314	1.7662	1.7584	1.8125
		3A	1.8125	1.8011	1.7584	1.7539	1.7163	1.7068	0.0150	0.0125	3B	1.7414	1.7314	1.7642	1.7584	1.8125
1.8125-16	UNJ	2A	1.8109	1.8015	1.7703	1.7650	1.7387	1.7296	0.0113	0.0094	2B	1.7602	1.7517	1.7788	1.7719	1.8125
		3A	1.8125	1.8031	1.7719	1.7679	1.7403	1.7325	0.0113	0.0094	3B	1.7602	1.7517	1.7771	1.7719	1.8125
1.8750-8	UNJ	2A	1.8727	1.8577	1.7915	1.7838	1.7284	1.7131	0.0226	0.0188	2B	1.7683	1.7533	1.8038	1.7938	1.8750
		3A	1.8750	1.8600	1.7938	1.7881	1.7306	1.7174	0.0226	0.0188	3B	1.7683	1.7533	1.8013	1.7938	1.8750
1.8750-12	UNJ	2A	1.8732	1.8618	1.8191	1.8131	1.7770	1.7660	0.0150	0.0125	2B	1.8039	1.7939	1.8287	1.8209	1.8750
		3A	1.8750	1.8636	1.8209	1.8164	1.7788	1.7692	0.0150	0.0125	3B	1.8039	1.7939	1.8267	1.8209	1.8750
1.8750-16	UNJ	2A	1.8734	1.8640	1.8328	1.8275	1.8012	1.7921	0.0113	0.0094	2B	1.8227	1.8142	1.8413	1.8344	1.8750
		3A	1.8750	1.8656	1.8344	1.8304	1.8028	1.7950	0.0113	0.0094	3B	1.8227	1.8142	1.8396	1.8344	1.8750
1.9375-8	UNJ	2A	1.9352	1.9202	1.8540	1.8463	1.7908	1.7756	0.0226	0.0188	2B	1.8308	1.8158	1.8663	1.8563	1.9375
		3A	1.9375	1.9225	1.8563	1.8505	1.7932	1.7798	0.0226	0.0188	3B	1.8308	1.8158	1.8638	1.8563	1.9375
1.9375-12	UNJ	2A	1.9357	1.9243	1.8816	1.8755	1.8395	1.8284	0.0150	0.0125	2B	1.8664	1.8564	1.8913	1.8834	1.9375
		3A	1.9375	1.9261	1.8834	1.8789	1.8413	1.8318	0.0150	0.0125	3B	1.8664	1.8564	1.8893	1.8834	1.9375
1.9375-16	UNJ	2A	1.9359	1.9265	1.8953	1.8899	1.8637	1.8545	0.0113	0.0094	2B	1.8852	1.8767	1.9039	1.8969	1.9375
		3A	1.9375	1.9281	1.8969	1.8929	1.8653	1.8575	0.0113	0.0094	3B	1.8852	1.8767	1.9021	1.8969	1.9375
2.0000-4.5	UNJC	2A	1.9971	1.9751	1.8528	1.8433	1.7405	1.7176	0.0401	0.0334	2B	1.8102	1.7835	1.8681	1.8557	2.0000
		3A	2.0000	1.9780	1.8557	1.8486	1.7434	1.7229	0.0401	0.0334	3B	1.8102	1.7835	1.8650	1.8557	2.0000
2.0000-8	UNJ	2A	1.9977	1.9827	1.9165	1.9087	1.8534	1.8380	0.0226	0.0188	2B	1.8933	1.8783	1.9289	1.9188	2.0000
		3A	2.0000	1.9850	1.9188	1.9130	1.8556	1.8423	0.0226	0.0188	3B	1.8933	1.8783	1.9264	1.9188	2.0000
2.0000-12	UNJ	2A	1.9982	1.9868	1.9441	1.9380	1.9020	1.8908	0.0150	0.0125	2B	1.9289	1.9189	1.9538	1.9459	2.0000
		3A	2.0000	1.9886	1.9459	1.9414	1.9038	1.8942	0.0150	0.0125	3B	1.9289	1.9189	1.9518	1.9459	2.0000
2.0000-16	UNJ	2A	1.9984	1.9890	1.9578	1.9524	1.9262	1.9170	0.0113	0.0094	2B	1.9477	1.9392	1.9664	1.9594	2.0000
		3A	2.0000	1.9906	1.9594	1.9554	1.9278	1.9200	0.0113	0.0094	3B	1.9477	1.9392	1.9646	1.9594	2.0000
2.1250-8	UNJ	2A	2.1226	2.1076	2.0414	2.0335	1.9782	1.9628	0.0226	0.0188	2B	2.0183	2.0033	2.0540	2.0438	2.1250
		3A	2.1250	2.1100	2.0438	2.0379	1.9806	1.9672	0.0226	0.0188	3B	2.0183	2.0033	2.0515	2.0438	2.1250
2.1250-12	UNJ	2A	2.1232	2.1118	2.0691	2.0630	2.0270	2.0158	0.0150	0.0125	2B	2.0539	2.0439	2.0788	2.0709	2.1250
		3A	2.1250	2.1136	2.0709	2.0664	2.0288	2.0192	0.0150	0.0125	3B	2.0539	2.0439	2.0768	2.0709	2.1250

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2.1250-16	UNJ	2A	2.1234	2.1140	2.0828	2.0774	2.0512	2.0420	0.0113	0.0094	2B	2.0727	2.0642	2.0914	2.0844	2.1250
		3A	2.1250	2.1156	2.0844	2.0804	2.0528	2.0450	0.0113	0.0094	3B	2.0727	2.0642	2.0896	2.0844	2.1250
2.2500-4.5	UNJC	2A	2.2471	2.2251	2.1028	2.0931	1.9905	1.9674	0.0401	0.0334	2B	2.0602	2.0335	2.1183	2.1057	2.2500
		3A	2.2500	2.2280	2.1057	2.0984	1.9934	1.9727	0.0401	0.0334	3B	2.0602	2.0335	2.1152	2.1057	2.2500
2.2500-8	UNJ	2A	2.2476	2.2326	2.1664	2.1584	2.1032	2.0877	0.0226	0.0188	2B	2.1433	2.1283	2.1792	2.1688	2.2500
		3A	2.2500	2.2350	2.1688	2.1628	2.1056	2.0921	0.0226	0.0188	3B	2.1433	2.1283	2.1766	2.1688	2.2500
2.2500-12	UNJ	2A	2.2482	2.2368	2.1941	2.1880	2.1520	2.1408	0.0150	0.0125	2B	2.1789	2.1689	2.2038	2.1959	2.2500
		3A	2.2500	2.2386	2.1959	2.1914	2.1538	2.1442	0.0150	0.0125	3B	2.1789	2.1689	2.2018	2.1959	2.2500
2.2500-16	UNJ	2A	2.2484	2.2390	2.2078	2.2024	2.1762	2.1670	0.0113	0.0094	2B	2.1977	2.1892	2.2164	2.2094	2.2500
		3A	2.2500	2.2406	2.2094	2.2054	2.1778	2.1700	0.0113	0.0094	3B	2.1977	2.1892	2.2146	2.2094	2.2500
2.3750-8	UNJ	2A	2.3726	2.3576	2.2914	2.2833	2.2282	2.2126	0.0226	0.0188	2B	2.2683	2.2533	2.3043	2.2938	2.3750
		3A	2.3750	2.3600	2.2938	2.2878	2.2306	2.2171	0.0226	0.0188	3B	2.2683	2.2533	2.3017	2.2938	2.3750
2.3750-12	UNJ	2A	2.3731	2.3617	2.3190	2.3128	2.2769	2.2656	0.0150	0.0125	2B	2.3039	2.2939	2.3290	2.3209	2.3750
		3A	2.3750	2.3636	2.3209	2.3163	2.2788	2.2692	0.0150	0.0125	3B	2.3039	2.2939	2.3269	2.3209	2.3750
2.3750-16	UNJ	2A	2.3733	2.3639	2.3327	2.3272	2.3011	2.2918	0.0113	0.0094	2B	2.3227	2.3142	2.3416	2.3344	2.3750
		3A	2.3750	2.3656	2.3344	2.3303	2.3028	2.2949	0.0113	0.0094	3B	2.3227	2.3142	2.3398	2.3344	2.3750
2.5000-4	UNJC	2A	2.4969	2.4731	2.3345	2.3241	2.2082	2.1826	0.0451	0.0375	2B	2.2865	2.2565	2.3511	2.3376	2.5000
		3A	2.5000	2.4762	2.3376	2.3298	2.2113	2.1883	0.0451	0.0375	3B	2.2865	2.2565	2.3477	2.3376	2.5000
2.5000-8	UNJ	2A	2.4976	2.4826	2.4164	2.4082	2.3532	2.3375	0.0226	0.0188	2B	2.3933	2.3783	2.4294	2.4188	2.5000
		3A	2.5000	2.4850	2.4188	2.4127	2.3556	2.3420	0.0226	0.0188	3B	2.3933	2.3783	2.4268	2.4188	2.5000
2.5000-12	UNJ	2A	2.4981	2.4867	2.4440	2.4378	2.4019	2.3906	0.0150	0.0125	2B	2.4289	2.4189	2.4540	2.4459	2.5000
		3A	2.5000	2.4886	2.4459	2.4413	2.4038	2.3942	0.0150	0.0125	3B	2.4289	2.4189	2.4519	2.4459	2.5000
2.5000-16	UNJ	2A	2.4983	2.4889	2.4577	2.4522	2.4261	2.4168	0.0113	0.0094	2B	2.4477	2.4392	2.4666	2.4594	2.5000
		3A	2.5000	2.4906	2.4594	2.4553	2.4278	2.4199	0.0113	0.0094	3B	2.4477	2.4392	2.4648	2.4594	2.5000
2.6250-8	UNJ	2A	2.6225	2.6075	2.5413	2.5331	2.4782	2.4624	0.0226	0.0188	2B	2.5183	2.5033	2.5545	2.5438	2.6250
		3A	2.6250	2.6100	2.5438	2.5376	2.4806	2.4669	0.0226	0.0188	3B	2.5183	2.5033	2.5518	2.5438	2.6250
2.6250-12	UNJ	2A	2.6231	2.6117	2.5690	2.5628	2.5269	2.5156	0.0150	0.0125	2B	2.5539	2.5439	2.5790	2.5709	2.6250
		3A	2.6250	2.6136	2.5709	2.5663	2.5288	2.5192	0.0150	0.0125	3B	2.5539	2.5439	2.5769	2.5709	2.6250
2.6250-16	UNJ	2A	2.6233	2.6139	2.5827	2.5772	2.5511	2.5418	0.0113	0.0094	2B	2.5727	2.5642	2.5916	2.5844	2.6250
		3A	2.6250	2.6156	2.5844	2.5803	2.5528	2.5449	0.0113	0.0094	3B	2.5727	2.5642	2.5898	2.5844	2.6250

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2.7500-4	UNJC	2A	2.7468	2.7230	2.5844	2.5739	2.4581	2.4324	0.0451	0.0375	2B	2.5365	2.5065	2.6013	2.5876	2.7500
		3A	2.7500	2.7262	2.5876	2.5797	2.4613	2.4382	0.0451	0.0375	3B	2.5365	2.5065	2.5979	2.5876	2.7500
2.7500-8	UNJ	2A	2.7475	2.7325	2.6663	2.6580	2.6032	2.5873	0.0226	0.0188	2B	2.6433	2.6283	2.6796	2.6688	2.7500
		3A	2.7500	2.7350	2.6688	2.6625	2.6056	2.5918	0.0226	0.0188	3B	2.6433	2.6283	2.6769	2.6688	2.7500
2.7500-12	UNJ	2A	2.7481	2.7367	2.6940	2.6878	2.6519	2.6406	0.0150	0.0125	2B	2.6789	2.6689	2.7040	2.6959	2.7500
		3A	2.7500	2.7386	2.6959	2.6913	2.6538	2.6442	0.0150	0.0125	3B	2.6789	2.6689	2.7019	2.6959	2.7500
2.7500-16	UNJ	2A	2.7483	2.7389	2.7077	2.7022	2.6761	2.6668	0.0113	0.0094	2B	2.6977	2.6892	2.7166	2.7094	2.7500
		3A	2.7500	2.7406	2.7094	2.7053	2.6778	2.6699	0.0113	0.0094	3B	2.6977	2.6892	2.7148	2.7094	2.7500
2.8750-8	UNJ	2A	2.8725	2.8575	2.7913	2.7829	2.7282	2.7122	0.0226	0.0188	2B	2.7683	2.7533	2.8048	2.7938	2.8750
		3A	2.8750	2.8600	2.7938	2.7875	2.7306	2.7168	0.0226	0.0188	3B	2.7683	2.7533	2.8020	2.7938	2.8750
2.8750-12	UNJ	2A	2.8731	2.8617	2.8190	2.8127	2.7769	2.7655	0.0150	0.0125	2B	2.8039	2.7939	2.8291	2.8209	2.8750
		3A	2.8750	2.8636	2.8209	2.8162	2.7788	2.7690	0.0150	0.0125	3B	2.8039	2.7939	2.8271	2.8209	2.8750
2.8750-16	UNJ	2A	2.8733	2.8639	2.8327	2.8271	2.8011	2.7917	0.0113	0.0094	2B	2.8227	2.8142	2.8417	2.8344	2.8750
		3A	2.8750	2.8656	2.8344	2.8302	2.8028	2.7948	0.0113	0.0094	3B	2.8227	2.8142	2.8399	2.8344	2.8750
3.0000-4	UNJC	2A	2.9968	2.9730	2.8344	2.8237	2.7081	2.6822	0.0451	0.0375	2B	2.7865	2.7565	2.8515	2.8376	3.0000
		3A	3.0000	2.9762	2.8376	2.8296	2.7113	2.6882	0.0451	0.0375	3B	2.7865	2.7565	2.8480	2.8376	3.0000
3.0000-8	UNJ	2A	2.9974	2.9824	2.9162	2.9077	2.8531	2.8370	0.0226	0.0188	2B	2.8933	2.8783	2.9299	2.9188	3.0000
		3A	3.0000	2.9850	2.9188	2.9124	2.8556	2.8417	0.0226	0.0188	3B	2.8933	2.8783	2.9271	2.9188	3.0000
3.0000-12	UNJ	2A	2.9981	2.9867	2.9440	2.9377	2.9019	2.8905	0.0150	0.0125	2B	2.9289	2.9189	2.9541	2.9459	3.0000
		3A	3.0000	2.9886	2.9459	2.9412	2.9038	2.8940	0.0150	0.0125	3B	2.9289	2.9189	2.9521	2.9459	3.0000
3.0000-16	UNJ	2A	2.9983	2.9889	2.9577	2.9521	2.9261	2.9167	0.0113	0.0094	2B	2.9477	2.9392	2.9667	2.9594	3.0000
		3A	3.0000	2.9906	2.9594	2.9552	2.9278	2.9198	0.0113	0.0094	3B	2.9477	2.9392	2.9649	2.9594	3.0000
3.1250-8	UNJ	2A	3.1224	3.1074	3.0412	3.0326	2.9781	2.9619	0.0226	0.0188	2B	3.0183	3.0033	3.0550	3.0438	3.1250
		3A	3.1250	3.1100	3.0438	3.0374	2.9806	2.9667	0.0226	0.0188	3B	3.0183	3.0033	3.0522	3.0438	3.1250
3.1250-12	UNJ	2A	3.1231	3.1117	3.0690	3.0627	3.0269	3.0155	0.0150	0.0125	2B	3.0539	3.0439	3.0791	3.0709	3.1250
		3A	3.1250	3.1136	3.0709	3.0662	3.0288	3.0190	0.0150	0.0125	3B	3.0539	3.0439	3.0771	3.0709	3.1250
3.1250-16	UNJ	2A	3.1233	3.1139	3.0827	3.0771	3.0511	3.0417	0.0113	0.0094	2B	3.0727	3.0642	3.0917	3.0844	3.1250
		3A	3.1250	3.1156	3.0844	3.0802	3.0528	3.0448	0.0113	0.0094	3B	3.0727	3.0642	3.0899	3.0844	3.1250

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3.2500-4	UNJC	2A	3.2467	3.2229	3.0843	3.0734	2.9580	2.9320	0.0451	0.0375	2B	3.0365	3.0065	3.1017	3.0876	3.2500
		3A	3.2500	3.2262	3.0876	3.0794	2.9613	2.9379	0.0451	0.0375	3B	3.0365	3.0065	3.0982	3.0876	3.2500
3.2500-8	UNJ	2A	3.2474	3.2324	3.1662	3.1575	3.1031	3.0868	0.0226	0.0188	2B	3.1433	3.1283	3.1801	3.1688	3.2500
		3A	3.2500	3.2350	3.1688	3.1623	3.1056	3.0916	0.0226	0.0188	3B	3.1433	3.1283	3.1773	3.1688	3.2500
3.2500-12	UNJ	2A	3.2481	3.2367	3.1940	3.1877	3.1519	3.1405	0.0150	0.0125	2B	3.1789	3.1689	3.2041	3.1959	3.2500
		3A	3.2500	3.2386	3.1959	3.1912	3.1538	3.1440	0.0150	0.0125	3B	3.1789	3.1689	3.2021	3.1959	3.2500
3.2500-16	UNJ	2A	3.2483	3.2389	3.2077	3.2021	3.1761	3.1667	0.0113	0.0094	2B	3.1977	3.1892	3.2167	3.2094	3.2500
		3A	3.2500	3.2406	3.2094	3.2052	3.1778	3.1698	0.0113	0.0094	3B	3.1977	3.1892	3.2149	3.2094	3.2500
3.3750-8	UNJ	2A	3.3724	3.3574	3.2912	3.2824	3.2281	3.2117	0.0226	0.0188	2B	3.2683	3.2533	3.3052	3.2938	3.3750
		3A	3.3750	3.3600	3.2938	3.2872	3.2306	3.2165	0.0226	0.0188	3B	3.2683	3.2533	3.3023	3.2938	3.3750
3.3750-12	UNJ	2A	3.3731	3.3617	3.3190	3.3126	3.2769	3.2654	0.0150	0.0125	2B	3.3039	3.2939	3.3293	3.3209	3.3750
		3A	3.3750	3.3636	3.3209	3.3161	3.2788	3.2689	0.0150	0.0125	3B	3.3039	3.2939	3.3272	3.3209	3.3750
3.3750-16	UNJ	2A	3.3733	3.3639	3.3327	3.3269	3.3011	3.2915	0.0113	0.0094	2B	3.3227	3.3142	3.3419	3.3344	3.3750
		3A	3.3750	3.3656	3.3344	3.3301	3.3028	3.2947	0.0113	0.0094	3B	3.3227	3.3142	3.3400	3.3344	3.3750
3.5000-4	UNJC	2A	3.4967	3.4729	3.3343	3.3233	3.2080	3.1818	0.0451	0.0375	2B	3.2865	3.2565	3.3519	3.3376	3.5000
		3A	3.5000	3.4762	3.3376	3.3293	3.2113	3.1878	0.0451	0.0375	3B	3.2865	3.2565	3.3484	3.3376	3.5000
3.5000-8	UNJ	2A	3.4974	3.4824	3.4162	3.4074	3.3530	3.3367	0.0226	0.0188	2B	3.3933	3.3783	3.4303	3.4188	3.5000
		3A	3.5000	3.4850	3.4188	3.4122	3.3556	3.3415	0.0226	0.0188	3B	3.3933	3.3783	3.4274	3.4188	3.5000
3.5000-12	UNJ	2A	3.4981	3.4867	3.4440	3.4376	3.4019	3.3904	0.0150	0.0125	2B	3.4289	3.4189	3.4543	3.4459	3.5000
		3A	3.5000	3.4886	3.4459	3.4411	3.4038	3.3940	0.0150	0.0125	3B	3.4289	3.4189	3.4522	3.4459	3.5000
3.5000-16	UNJ	2A	3.4983	3.4889	3.4577	3.4519	3.4261	3.4165	0.0113	0.0094	2B	3.4477	3.4392	3.4669	3.4594	3.5000
		3A	3.5000	3.4906	3.4594	3.4551	3.4278	3.4197	0.0113	0.0094	3B	3.4477	3.4392	3.4650	3.4594	3.5000
3.6250-8	UNJ	2A	3.6223	3.6073	3.5411	3.5322	3.4780	3.4615	0.0226	0.0188	2B	3.5183	3.5033	3.5554	3.5438	3.6250
		3A	3.6250	3.6100	3.5438	3.5371	3.4806	3.4664	0.0226	0.0188	3B	3.5183	3.5033	3.5525	3.5438	3.6250
3.6250-12	UNJ	2A	3.6231	3.6117	3.5690	3.5626	3.5269	3.5154	0.0150	0.0125	2B	3.5539	3.5439	3.5793	3.5709	3.6250
		3A	3.6250	3.6136	3.5709	3.5661	3.5288	3.5190	0.0150	0.0125	3B	3.5539	3.5439	3.5772	3.5709	3.6250
3.6250-16	UNJ	2A	3.6233	3.6139	3.5827	3.5769	3.5511	3.5415	0.0113	0.0094	2B	3.5727	3.5642	3.5919	3.5844	3.6250
		3A	3.6250	3.6156	3.5844	3.5801	3.5528	3.5447	0.0113	0.0094	3B	3.5727	3.5642	3.5900	3.5844	3.6250
3.7500-4	UNJC	2A	3.7466	3.7228	3.5842	3.5730	3.4579	3.4316	0.0451	0.0375	2B	3.5365	3.5065	3.6021	3.5876	3.7500
		3A	3.7500	3.7262	3.5876	3.5792	3.4613	3.4378	0.0451	0.0375	3B	3.5365	3.5065	3.5985	3.5876	3.7500

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3.7500-8	UNJ	2A	3.7473	3.7323	3.6661	3.6571	3.6030	3.5864	0.0226	0.0188	2B	3.6433	3.6283	3.6805	3.6688	3.7500
		3A	3.7500	3.7350	3.6688	3.6621	3.6056	3.5914	0.0226	0.0188	3B	3.6433	3.6283	3.6776	3.6688	3.7500
3.7500-12	UNJ	2A	3.7481	3.7367	3.6940	3.6876	3.6519	3.6404	0.0150	0.0125	2B	3.6789	3.6689	3.7043	3.6959	3.7500
		3A	3.7500	3.7386	3.6959	3.6911	3.6538	3.6440	0.0150	0.0125	3B	3.6789	3.6689	3.7022	3.6959	3.7500
3.7500-16	UNJ	2A	3.7483	3.7389	3.7077	3.7019	3.6761	3.6665	0.0113	0.0094	2B	3.6977	3.6892	3.7169	3.7094	3.7500
		3A	3.7500	3.7406	3.7094	3.7051	3.6778	3.6697	0.0113	0.0094	3B	3.6977	3.6892	3.7150	3.7094	3.7500
3.8750-8	UNJ	2A	3.8723	3.8573	3.7911	3.7820	3.7280	3.7113	0.0226	0.0188	2B	3.7683	3.7533	3.8056	3.7938	3.8750
		3A	3.8750	3.8600	3.7938	3.7870	3.7306	3.7163	0.0226	0.0188	3B	3.7683	3.7533	3.8026	3.7938	3.8750
3.8750-12	UNJ	2A	3.8730	3.8616	3.8189	3.8124	3.7768	3.7652	0.0150	0.0125	2B	3.8039	3.7939	3.8294	3.8209	3.8750
		3A	3.8750	3.8636	3.8209	3.8160	3.7788	3.7688	0.0150	0.0125	3B	3.8039	3.7939	3.8273	3.8209	3.8750
3.8750-16	UNJ	2A	3.8732	3.8638	3.8326	3.8267	3.8010	3.7913	0.0113	0.0094	2B	3.8227	3.8142	3.8420	3.8344	3.8750
		3A	3.8750	3.8656	3.8344	3.8300	3.8028	3.7946	0.0113	0.0094	3B	3.8227	3.8142	3.8401	3.8344	3.8750
4.0000-4	UNJC	2A	3.9966	3.9728	3.8342	3.8229	3.7079	3.6815	0.0451	0.0375	2B	3.7865	3.7565	3.8523	3.8376	4.0000
		3A	4.0000	3.9762	3.8376	3.8291	3.7113	3.6876	0.0451	0.0375	3B	3.7865	3.7565	3.8487	3.8376	4.0000
4.0000-8	UNJ	2A	3.9973	3.9823	3.9161	3.9070	3.8530	3.8363	0.0226	0.0188	2B	3.8933	3.8783	3.9307	3.9188	4.0000
		3A	4.0000	3.9850	3.9188	3.9120	3.8556	3.8413	0.0226	0.0188	3B	3.8933	3.8783	3.9277	3.9188	4.0000
4.0000-12	UNJ	2A	3.9980	3.9866	3.9439	3.9374	3.9018	3.8902	0.0150	0.0125	2B	3.9289	3.9189	3.9544	3.9459	4.0000
		3A	4.0000	3.9886	3.9459	3.9410	3.9038	3.8938	0.0150	0.0125	3B	3.9289	3.9189	3.9523	3.9459	4.0000
4.0000-16	UNJ	2A	3.9982	3.9888	3.9576	3.9517	3.9260	3.9183	0.0113	0.0094	2B	3.9477	3.9392	3.9670	3.9594	4.0000
		3A	4.0000	3.9906	3.9594	3.9550	3.9278	3.9196	0.0113	0.0094	3B	3.9477	3.9392	3.9651	3.9594	4.0000
4.1250-12	UNJ	2A	4.1230	4.1116	4.0689	4.0624	4.0268	4.0152	0.0150	0.0125	2B	4.0538	4.0438	4.0794	4.0709	4.1250
		3A	4.1250	4.1136	4.0709	4.0660	4.0288	4.0188	0.0150	0.0125	3B	4.0538	4.0438	4.0773	4.0709	4.1250
4.1250-16	UNJ	2A	4.1232	4.1138	4.0826	4.0767	4.0510	4.0413	0.0113	0.0094	2B	4.0726	4.0641	4.0920	4.0844	4.1250
		3A	4.1250	4.1156	4.0844	4.0800	4.0528	4.0446	0.0113	0.0094	3B	4.0726	4.0641	4.0901	4.0844	4.1250
4.2500-12	UNJ	2A	4.2480	4.2366	4.1939	4.1874	4.1518	4.1402	0.0150	0.0125	2B	4.1788	4.1688	4.2044	4.1959	4.2500
		3A	4.2500	4.2386	4.1959	4.1910	4.1538	4.1438	0.0150	0.0125	3B	4.1788	4.1688	4.2023	4.1959	4.2500
4.2500-16	UNJ	2A	4.2482	4.2388	4.2076	4.2017	4.1760	4.1663	0.0113	0.0094	2B	4.1976	4.1891	4.2170	4.2094	4.2500
		3A	4.2500	4.2406	4.2094	4.2050	4.1778	4.1696	0.0113	0.0094	3B	4.1976	4.1891	4.2151	4.2094	4.2500
4.3750-12	UNJ	2A	4.3730	4.3616	4.3189	4.3124	4.2768	4.2652	0.0150	0.0125	2B	4.3038	4.2938	4.3294	4.3209	4.3750
		3A	4.3750	4.3636	4.3209	4.3160	4.2788	4.2688	0.0150	0.0125	3B	4.3038	4.2938	4.3273	4.3209	4.3750

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
4.3750-16	UNJ	2A	4.3732	4.3638	4.3326	4.3267	4.3010	4.2913	0.0113	0.0094	2B	4.3226	4.3141	4.3420	4.3344	4.3750
		3A	4.3750	4.3656	4.3344	4.3300	4.3028	4.2946	0.0113	0.0094	3B	4.3226	4.3141	4.3401	4.3344	4.3750
4.5000-12	UNJ	2A	4.4980	4.4866	4.4439	4.4374	4.4018	4.3902	0.0150	0.0125	2B	4.4288	4.4188	4.4544	4.4459	4.5000
		3A	4.5000	4.4886	4.4459	4.4410	4.4038	4.3938	0.0150	0.0125	3B	4.4288	4.4188	4.4523	4.4459	4.5000
4.5000-16	UNJ	2A	4.4982	4.4888	4.4576	4.4517	4.4260	4.4163	0.0113	0.0094	2B	4.4476	4.4391	4.4670	4.4594	4.5000
		3A	4.5000	4.4906	4.4594	4.4550	4.4278	4.4196	0.0113	0.0094	3B	4.4476	4.4391	4.4651	4.4594	4.5000
4.6250-12	UNJ	2A	4.6230	4.6116	4.5689	4.5622	4.5268	4.5150	0.0150	0.0125	2B	4.5538	4.5438	4.5796	4.5709	4.6250
		3A	4.6250	4.6136	4.5709	4.5659	4.5288	4.5187	0.0150	0.0125	3B	4.5538	4.5438	4.5775	4.5709	4.6250
4.6250-16	UNJ	2A	4.6232	4.6138	4.5826	4.5765	4.5510	4.5411	0.0113	0.0094	2B	4.5726	4.5641	4.5923	4.5844	4.6250
		3A	4.6250	4.6156	4.5844	4.5799	4.5528	4.5445	0.0113	0.0094	3B	4.5726	4.5641	4.5903	4.5844	4.6250
4.7500-12	UNJ	2A	4.7480	4.7366	4.6939	4.6872	4.6518	4.6400	0.0150	0.0125	2B	4.6788	4.6688	4.7046	4.6959	4.7500
		3A	4.7500	4.7386	4.6959	4.6909	4.6538	4.6437	0.0150	0.0125	3B	4.6788	4.6688	4.7025	4.6959	4.7500
4.7500-16	UNJ	2A	4.7482	4.7388	4.7076	4.7015	4.6760	4.6661	0.0113	0.0094	2B	4.6976	4.6891	4.7173	4.7094	4.7500
		3A	4.7500	4.7406	4.7094	4.7049	4.6778	4.6695	0.0113	0.0094	3B	4.6976	4.6891	4.7153	4.7094	4.7500
4.8750-12	UNJ	2A	4.8730	4.8616	4.8189	4.8122	4.7768	4.7650	0.0150	0.0125	2B	4.8038	4.7938	4.8296	4.8209	4.8750
		3A	4.8750	4.8636	4.8209	4.8159	4.7788	4.7687	0.0150	0.0125	3B	4.8038	4.7938	4.8275	4.8209	4.8750
4.8750-16	UNJ	2A	4.8732	4.8638	4.8326	4.8265	4.8010	4.7911	0.0113	0.0094	2B	4.8226	4.8141	4.8423	4.8344	4.8750
		3A	4.8750	4.8656	4.8344	4.8299	4.8028	4.7945	0.0113	0.0094	3B	4.8226	4.8141	4.8403	4.8344	4.8750
5.0000-12	UNJ	2A	4.9980	4.9866	4.9439	4.9372	4.9018	4.8900	0.0150	0.0125	2B	4.9288	4.9188	4.9546	4.9459	5.0000
		3A	5.0000	4.9886	4.9459	4.9409	4.9038	4.8937	0.0150	0.0125	3B	4.9288	4.9188	4.9525	4.9459	5.0000
5.0000-16	UNJ	2A	4.9982	4.9888	4.9576	4.9515	4.9260	4.9161	0.0113	0.0094	2B	4.9476	4.9391	4.9673	4.9594	5.0000
		3A	5.0000	4.9906	4.9594	4.9549	4.9278	4.9195	0.0113	0.0094	3B	4.9476	4.9391	4.9653	4.9594	5.0000
5.1250-12	UNJ	2A	5.1230	5.1116	5.0689	5.0622	5.0268	5.0150	0.0150	0.0125	2B	5.0538	5.0438	5.0796	5.0709	5.1250
		3A	5.1250	5.1136	5.0709	5.0659	5.0288	5.0187	0.0150	0.0125	3B	5.0538	5.0438	5.0775	5.0709	5.1250
5.1250-16	UNJ	2A	5.1232	5.1138	5.0826	5.0765	5.0510	5.0411	0.0113	0.0094	2B	5.0726	5.0641	5.0923	5.0844	5.1250
		3A	5.1250	5.1156	5.0844	5.0799	5.0528	5.0445	0.0113	0.0094	3B	5.0726	5.0641	5.0903	5.0844	5.1250
5.2500-12	UNJ	2A	5.2480	5.2366	5.1939	5.1872	5.1518	5.1400	0.0150	0.0125	2B	5.1788	5.1688	5.2046	5.1959	5.2500
		3A	5.2500	5.2386	5.1959	5.1909	5.1538	5.1437	0.0150	0.0125	3B	5.1788	5.1688	5.2025	5.1959	5.2500
5.2500-16	UNJ	2A	5.2482	5.2388	5.2076	5.2015	5.1760	5.1661	0.0113	0.0094	2B	5.1976	5.1891	5.2173	5.2094	5.2500
		3A	5.2500	5.2406	5.2094	5.2049	5.1778	5.1695	0.0113	0.0094	3B	5.1976	5.1891	5.2153	5.2094	5.2500

(Table 5 continues on next page)

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TABLE 5 LIMITING DIMENSIONS AND TOLERANCES, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	Class	External Threads								Class	Internal Threads				
			Major Diameter		Pitch Diameter		Minor Diameter		Root Radius			Minor Diameter		Pitch Diameter		Major Dia.
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Min.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
5.3750-12	UNJ	2A	5.3730	5.3616	5.3189	5.3122	5.2768	5.2650	0.0150	0.0125	2B	5.3038	5.2938	5.3296	5.3209	5.3750
		3A	5.3750	5.3636	5.3209	5.3159	5.2788	5.2687	0.0150	0.0125	3B	5.3038	5.2938	5.3275	5.3209	5.3750
5.3750-16	UNJ	2A	5.3732	5.3638	5.3326	5.3265	5.3010	5.2911	0.0113	0.0094	2B	5.3226	5.3141	5.3423	5.3344	5.3750
		3A	5.3750	5.3656	5.3344	5.3299	5.3028	5.2945	0.0113	0.0094	3B	5.3226	5.3141	5.3403	5.3344	5.3750
5.5000-12	UNJ	2A	5.4980	5.4866	5.4439	5.4372	5.4018	5.3900	0.0150	0.0125	2B	5.4288	5.4188	5.4546	5.4459	5.5000
		3A	5.5000	5.4886	5.4459	5.4409	5.4038	5.3937	0.0150	0.0125	3B	5.4288	5.4188	5.4525	5.4459	5.5000
5.5000-16	UNJ	2A	5.4982	5.4888	5.4576	5.4515	5.4260	5.4161	0.0113	0.0094	2B	5.4476	5.4391	5.4673	5.4594	5.5000
		3A	5.5000	5.4906	5.4594	5.4549	5.4278	5.4195	0.0113	0.0094	3B	5.4476	5.4391	5.4653	5.4594	5.5000
5.6250-12	UNJ	2A	5.6229	5.6115	5.5688	5.5619	5.5267	5.5148	0.0150	0.0125	2B	5.5538	5.5438	5.5799	5.5709	5.6250
		3A	5.6250	5.6136	5.5709	5.5657	5.5288	5.5185	0.0150	0.0125	3B	5.5538	5.5438	5.5776	5.5709	5.6250
5.6250-16	UNJ	2A	5.6231	5.6137	5.5825	5.5763	5.5509	5.5409	0.0113	0.0094	2B	5.5726	5.5641	5.5925	5.5844	5.6250
		3A	5.6250	5.6156	5.5844	5.5797	5.5528	5.5443	0.0113	0.0094	3B	5.5726	5.5641	5.5905	5.5844	5.6250
5.7500-12	UNJ	2A	5.7479	5.7365	5.6938	5.6869	5.6517	5.6398	0.0150	0.0125	2B	5.6788	5.6688	5.7049	5.6959	5.7500
		3A	5.7500	5.7386	5.6959	5.6907	5.6538	5.6435	0.0150	0.0125	3B	5.6788	5.6688	5.7026	5.6959	5.7500
5.7500-16	UNJ	2A	5.7481	5.7387	5.7075	5.7013	5.6759	5.6659	0.0113	0.0094	2B	5.6976	5.6891	5.7175	5.7094	5.7500
		3A	5.7500	5.7406	5.7094	5.7047	5.6778	5.6693	0.0113	0.0094	3B	5.6976	5.6891	5.7155	5.7094	5.7500
5.8750-12	UNJ	2A	5.8729	5.8615	5.8188	5.8119	5.7767	5.7648	0.0150	0.0125	2B	5.8038	5.7938	5.8299	5.8209	5.8750
		3A	5.8750	5.8636	5.8209	5.8157	5.7788	5.7685	0.0150	0.0125	3B	5.8038	5.7938	5.8276	5.8209	5.8750
5.8750-16	UNJ	2A	5.8731	5.8637	5.8325	5.8263	5.8009	5.7909	0.0113	0.0094	2B	5.8226	5.8141	5.8425	5.8344	5.8750
		3A	5.8750	5.8656	5.8344	5.8297	5.8028	5.7943	0.0113	0.0094	3B	5.8226	5.8141	5.8405	5.8344	5.8750
6.0000-12	UNJ	2A	5.9979	5.9865	5.9438	5.9369	5.9017	5.8898	0.0150	0.0125	2B	5.9288	5.9188	5.9549	5.9459	6.0000
		3A	6.0000	5.9886	5.9459	5.9407	5.9038	5.8935	0.0150	0.0125	3B	5.9288	5.9188	5.9526	5.9459	6.0000
6.0000-16	UNJ	2A	5.9981	5.9887	5.9575	5.9513	5.9259	5.9159	0.0113	0.0094	2B	5.9476	5.9391	5.9675	5.9594	6.0000
		3A	6.0000	5.9906	5.9594	5.9547	5.9278	5.9193	0.0113	0.0094	3B	5.9476	5.9391	5.9655	5.9594	6.0000

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM

Nominal Size and Threads per in.	Series Designation	External			Internal		
		Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
0.0600-80	UNJF	2A	0.0005	0.00090	2B	0.0007	0.00115
		3A	0.0004	0.00065	3B	0.0005	0.00085
0.0730-64	UNJC	2A	0.0006	0.00100	2B	0.0008	0.00130
		3A	0.0004	0.00075	3B	0.0005	0.00095
0.0730-72	UNJF	2A	0.0005	0.00095	2B	0.0007	0.00125
		3A	0.0004	0.00070	3B	0.0005	0.00095
0.0860-56	UNJC	2A	0.0006	0.00105	2B	0.0008	0.00140
		3A	0.0005	0.00080	3B	0.0006	0.00105
0.0860-64	UNJF	2A	0.0006	0.00100	2B	0.0008	0.00135
		3A	0.0004	0.00075	3B	0.0006	0.00100
0.0990-48	UNJC	2A	0.0007	0.00115	2B	0.0009	0.00150
		3A	0.0005	0.00085	3B	0.0006	0.00110
0.0990-56	UNJF	2A	0.0006	0.00110	2B	0.0008	0.00140
		3A	0.0005	0.00080	3B	0.0006	0.00105
0.1120-40	UNJC	2A	0.0007	0.00125	2B	0.0010	0.00165
		3A	0.0005	0.00095	3B	0.0007	0.00120
0.1120-48	UNJF	2A	0.0007	0.00120	2B	0.0009	0.00155
		3A	0.0005	0.00090	3B	0.0007	0.00115
0.1250-40	UNJC	2A	0.0008	0.00130	2B	0.0010	0.00165
		3A	0.0005	0.00095	3B	0.0007	0.00125
0.1250-44	UNJF	2A	0.0007	0.00125	2B	0.0009	0.00160
		3A	0.0005	0.00095	3B	0.0007	0.00120
0.1380-32	UNJC	2A	0.0008	0.00140	2B	0.0011	0.00185
		3A	0.0006	0.00105	3B	0.0008	0.00135
0.1380-40	UNJF	2A	0.0008	0.00130	2B	0.0010	0.00170
		3A	0.0006	0.00100	3B	0.0007	0.00125
0.1640-32	UNJC	2A	0.0008	0.00145	2B	0.0011	0.00190
		3A	0.0006	0.00110	3B	0.0008	0.00140
0.1640-36	UNJF	2A	0.0008	0.00140	2B	0.0010	0.00180
		3A	0.0006	0.00105	3B	0.0008	0.00135
0.1900-24	UNJC	2A	0.0010	0.00165	2B	0.0012	0.00215
		3A	0.0007	0.00125	3B	0.0009	0.00160
0.1900-32	UNJF	2A	0.0009	0.00150	2B	0.0011	0.00195
		3A	0.0007	0.00115	3B	0.0008	0.00145
0.2160-24	UNJC	2A	0.0010	0.00170	2B	0.0013	0.00220
		3A	0.0008	0.00130	3B	0.0010	0.00165
0.2160-28	UNJF	2A	0.0009	0.00160	2B	0.0012	0.00210
		3A	0.0007	0.00120	3B	0.0009	0.00155
0.2160-32	UNJEF	2A	0.0009	0.00155	2B	0.0012	0.00205
		3A	0.0007	0.00120	3B	0.0009	0.00155
0.2500-20	UNJC	2A	0.0011	0.00185	2B	0.0014	0.00245
		3A	0.0008	0.00140	3B	0.0010	0.00180

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
0.2500-28	UNJF	2A	0.0010	0.00165	2B	0.0012	0.00215
		3A	0.0007	0.00125	3B	0.0009	0.00160
0.2500-32	UNJEF	2A	0.0009	0.00160	2B	0.0012	0.00210
		3A	0.0007	0.00120	3B	0.0009	0.00155
0.3125-18	UNJC	2A	0.0012	0.00200	2B	0.0015	0.00265
		3A	0.0009	0.00150	3B	0.0011	0.00195
0.3125-24	UNJF	2A	0.0011	0.00185	2B	0.0014	0.00240
		3A	0.0008	0.00135	3B	0.0010	0.00180
0.3125-32	UNJEF	2A	0.0009	0.00160	2B	0.0012	0.00210
		3A	0.0007	0.00120	3B	0.0009	0.00155
0.3750-16	UNJC	2A	0.0013	0.00220	2B	0.0016	0.00285
		3A	0.0010	0.00165	3B	0.0012	0.00215
0.3750-24	UNJF	2A	0.0011	0.00190	2B	0.0014	0.00245
		3A	0.0008	0.00145	3B	0.0011	0.00185
0.3750-32	UNJEF	2A	0.0010	0.00170	2B	0.0013	0.00220
		3A	0.0007	0.00125	3B	0.0010	0.00165
0.4375-14	UNJC	2A	0.0014	0.00235	2B	0.0018	0.00305
		3A	0.0010	0.00175	3B	0.0013	0.00230
0.4375-16	UNJ	2A	0.0013	0.00230	2B	0.0017	0.00295
		3A	0.0010	0.00170	3B	0.0013	0.00225
0.4375-20	UNJF	2A	0.0012	0.00210	2B	0.0016	0.00270
		3A	0.0009	0.00155	3B	0.0012	0.00205
0.4375-28	UNJEF	2A	0.0010	0.00180	2B	0.0013	0.00230
		3A	0.0008	0.00135	3B	0.0010	0.00175
0.5000-13	UNJC	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00240
0.5000-16	UNJ	2A	0.0014	0.00235	2B	0.0018	0.00305
		3A	0.0010	0.00175	3B	0.0013	0.00230
0.5000-20	UNJF	2A	0.0012	0.00215	2B	0.0016	0.00280
		3A	0.0009	0.00160	3B	0.0012	0.00210
0.5000-28	UNJEF	2A	0.0011	0.00185	2B	0.0014	0.00240
		3A	0.0008	0.00140	3B	0.0010	0.00180
0.5625-12	UNJC	2A	0.0015	0.00260	2B	0.0020	0.00340
		3A	0.0011	0.00195	3B	0.0015	0.00255
0.5625-16	UNJ	2A	0.0014	0.00235	2B	0.0018	0.00305
		3A	0.0010	0.00175	3B	0.0013	0.00230
0.5625-18	UNJF	2A	0.0013	0.00225	2B	0.0017	0.00295
		3A	0.0010	0.00170	3B	0.0013	0.00220
0.5625-24	UNJEF	2A	0.0011	0.00195	2B	0.0015	0.00255
		3A	0.0008	0.00145	3B	0.0011	0.00190
0.6250-11	UNJC	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	External			Internal		
		Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
0.6250-12	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00355
		3A	0.0012	0.00205	3B	0.0015	0.00265
0.6250-16	UNJ	2A	0.0014	0.00240	2B	0.0018	0.00310
		3A	0.0010	0.00180	3B	0.0013	0.00230
0.6250-18	UNJF	2A	0.0014	0.00235	2B	0.0017	0.00300
		3A	0.0010	0.00175	3B	0.0013	0.00225
0.6250-24	UNJEF	2A	0.0012	0.00200	2B	0.0015	0.00260
		3A	0.0009	0.00150	3B	0.0011	0.00195
0.6875-12	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00355
		3A	0.0012	0.00205	3B	0.0015	0.00265
0.6875-16	UNJ	2A	0.0014	0.00240	2B	0.0018	0.00310
		3A	0.0010	0.00180	3B	0.0013	0.00230
0.6875-24	UNJEF	2A	0.0012	0.00200	2B	0.0015	0.00260
		3A	0.0009	0.00150	3B	0.0011	0.00195
0.7500-10	UNJC	2A	0.0017	0.00295	2B	0.0022	0.00385
		3A	0.0013	0.00220	3B	0.0016	0.00285
0.7500-12	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
0.7500-16	UNJF	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00190	3B	0.0014	0.00245
0.7500-20	UNJEF	2A	0.0013	0.00220	2B	0.0016	0.00285
		3A	0.0010	0.00165	3B	0.0012	0.00215
0.8125-12	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
0.8125-16	UNJ	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
0.8125-20	UNJEF	2A	0.0013	0.00220	2B	0.0016	0.00285
		3A	0.0010	0.00165	3B	0.0012	0.00215
0.8750-9	UNJC	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00305
0.8750-12	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
0.8750-14	UNJF	2A	0.0016	0.00270	2B	0.0020	0.00350
		3A	0.0012	0.00205	3B	0.0015	0.00265
0.8750-16	UNJ	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
0.8750-20	UNJEF	2A	0.0013	0.00220	2B	0.0016	0.00285
		3A	0.0010	0.00165	3B	0.0012	0.00215
0.9375-12	UNJ	2A	0.0016	0.00285	2B	0.0021	0.00370
		3A	0.0012	0.00210	3B	0.0016	0.00275
0.9375-16	UNJ	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00245

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
0.9375-20	UNJEF	2A	0.0013	0.00225	2B	0.0017	0.00295
		3A	0.0010	0.00170	3B	0.0013	0.00220
1.0000-8	UNJC	2A	0.0020	0.00340	2B	0.0025	0.00440
		3A	0.0015	0.00255	3B	0.0019	0.00330
1.0000-12	UNJF	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
1.0000-16	UNJ	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00245
1.0000-20	UNJEF	2A	0.0013	0.00225	2B	0.0017	0.00295
		3A	0.0010	0.00170	3B	0.0013	0.00220
1.0625-8	UNJ	2A	0.0020	0.00340	2B	0.0026	0.00445
		3A	0.0015	0.00255	3B	0.0019	0.00335
1.0625-12	UNJ	2A	0.0016	0.00285	2B	0.0021	0.00370
		3A	0.0012	0.00210	3B	0.0016	0.00275
1.0625-16	UNJ	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00245
1.0625-18	UNJEF	2A	0.0014	0.00235	2B	0.0018	0.00310
		3A	0.0010	0.00180	3B	0.0013	0.00230
1.1250-7	UNJC	2A	0.0021	0.00360	2B	0.0027	0.00470
		3A	0.0016	0.00270	3B	0.0020	0.00355
1.1250-8	UNJ	2A	0.0020	0.00345	2B	0.0026	0.00450
		3A	0.0015	0.00260	3B	0.0019	0.00335
1.1250-12	UNJF	2A	0.0017	0.00300	2B	0.0023	0.00390
		3A	0.0013	0.00225	3B	0.0017	0.00295
1.1250-16	UNJ	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00245
1.1250-18	UNJEF	2A	0.0014	0.00235	2B	0.0018	0.00310
		3A	0.0010	0.00180	3B	0.0013	0.00230
1.1875-8	UNJ	2A	0.0020	0.00350	2B	0.0026	0.00455
		3A	0.0015	0.00260	3B	0.0020	0.00340
1.1875-12	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
1.1875-16	UNJ	2A	0.0015	0.00255	2B	0.0019	0.00330
		3A	0.0011	0.00190	3B	0.0014	0.00250
1.1875-18	UNJEF	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
1.2500-7	UNJC	2A	0.0021	0.00370	2B	0.0028	0.00480
		3A	0.0016	0.00275	3B	0.0021	0.00360
1.2500-8	UNJ	2A	0.0020	0.00350	2B	0.0027	0.00460
		3A	0.0015	0.00265	3B	0.0020	0.00345
1.2500-12	UNJF	2A	0.0018	0.00310	2B	0.0023	0.00400
		3A	0.0013	0.00230	3B	0.0017	0.00300

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	External			Internal		
		Class	Allowable Variation in Lead, in. ●	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
1.2500-16	UNJ	2A	0.0015	0.00255	2B	0.0019	0.00330
		3A	0.0011	0.00190	3B	0.0014	0.00250
1.2500-18	UNJEF	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
1.3125-8	UNJ	2A	0.0020	0.00355	2B	0.0027	0.00460
		3A	0.0015	0.00265	3B	0.0020	0.00345
1.3125-12	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
1.3125-16	UNJ	2A	0.0015	0.00255	2B	0.0019	0.00330
		3A	0.0011	0.00190	3B	0.0014	0.00250
1.3125-18	UNJEF	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
1.3750-6	UNJC	2A	0.0023	0.00400	2B	0.0030	0.00520
		3A	0.0017	0.00300	3B	0.0023	0.00390
1.3750-8	UNJ	2A	0.0021	0.00360	2B	0.0027	0.00465
		3A	0.0016	0.00270	3B	0.0020	0.00350
1.3750-12	UNJF	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00305
1.3750-16	UNJ	2A	0.0015	0.00255	2B	0.0019	0.00330
		3A	0.0011	0.00190	3B	0.0014	0.00250
1.3750-18	UNJEF	2A	0.0014	0.00245	2B	0.0018	0.00315
		3A	0.0010	0.00180	3B	0.0014	0.00235
1.4375-8	UNJ	2A	0.0021	0.00360	2B	0.0027	0.00470
		3A	0.0016	0.00270	3B	0.0020	0.00355
1.4375-12	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
1.4375-16	UNJ	2A	0.0015	0.00260	2B	0.0020	0.00340
		3A	0.0011	0.00195	3B	0.0015	0.00255
1.4375-18	UNJEF	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00240
1.5000-6	UNJC	2A	0.0023	0.00405	2B	0.0030	0.00525
		3A	0.0018	0.00305	3B	0.0023	0.00395
1.5000-8	UNJ	2A	0.0021	0.00365	2B	0.0027	0.00475
		3A	0.0016	0.00275	3B	0.0020	0.00355
1.5000-12	UNJF	2A	0.0018	0.00320	2B	0.0024	0.00415
		3A	0.0014	0.00240	3B	0.0018	0.00315
1.5000-16	UNJ	2A	0.0015	0.00260	2B	0.0020	0.00340
		3A	0.0011	0.00195	3B	0.0015	0.00255
1.5000-18	UNJEF	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00240
1.5625-8	UNJ	2A	0.0021	0.00370	2B	0.0028	0.00480
		3A	0.0016	0.00275	3B	0.0021	0.00360

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
1.5625-12	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
1.5625-16	UNJ	2A	0.0015	0.00260	2B	0.0020	0.00340
		3A	0.0011	0.00195	3B	0.0015	0.00255
1.5625-18	UNJEF	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00240
1.6250-8	UNJ	2A	0.0021	0.00370	2B	0.0028	0.00485
		3A	0.0016	0.00280	3B	0.0021	0.00360
1.6250-12	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
1.6250-16	UNJ	2A	0.0015	0.00260	2B	0.0020	0.00340
		3A	0.0011	0.00195	3B	0.0015	0.00255
1.6250-18	UNJEF	2A	0.0014	0.00250	2B	0.0019	0.00325
		3A	0.0011	0.00185	3B	0.0014	0.00240
1.6875-8	UNJ	2A	0.0022	0.00375	2B	0.0028	0.00485
		3A	0.0016	0.00280	3B	0.0021	0.00365
1.6875-12	UNJ	2A	0.0017	0.00300	2B	0.0023	0.00390
		3A	0.0013	0.00225	3B	0.0017	0.00290
1.6875-16	UNJ	2A	0.0015	0.00265	2B	0.0020	0.00345
		3A	0.0012	0.00200	3B	0.0015	0.00260
1.6875-18	UNJEF	2A	0.0015	0.00255	2B	0.0019	0.00330
		3A	0.0011	0.00190	3B	0.0014	0.00245
1.7500-5	UNJC	2A	0.0026	0.00445	2B	0.0033	0.00580
		3A	0.0019	0.00335	3B	0.0025	0.00435
1.7500-8	UNJ	2A	0.0022	0.00375	2B	0.0028	0.00490
		3A	0.0016	0.00285	3B	0.0021	0.00370
1.7500-12	UNJ	2A	0.0017	0.00300	2B	0.0023	0.00390
		3A	0.0013	0.00225	3B	0.0017	0.00290
1.7500-16	UNJ	2A	0.0015	0.00265	2B	0.0020	0.00345
		3A	0.0012	0.00200	3B	0.0015	0.00260
1.8125-8	UNJ	2A	0.0022	0.00380	2B	0.0029	0.00495
		3A	0.0016	0.00285	3B	0.0021	0.00370
1.8125-12	UNJ	2A	0.0017	0.00300	2B	0.0023	0.00390
		3A	0.0013	0.00225	3B	0.0017	0.00290
1.8125-16	UNJ	2A	0.0015	0.00265	2B	0.0020	0.00345
		3A	0.0012	0.00200	3B	0.0015	0.00260
1.8750-8	UNJ	2A	0.0022	0.00385	2B	0.0029	0.00500
		3A	0.0016	0.00285	3B	0.0022	0.00375
1.8750-12	UNJ	2A	0.0017	0.00300	2B	0.0023	0.00390
		3A	0.0013	0.00225	3B	0.0017	0.00290
1.8750-16	UNJ	2A	0.0015	0.00265	2B	0.0020	0.00345
		3A	0.0012	0.00200	3B	0.0015	0.00260

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ●	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
1.9375-8	UNJ	2A	0.0022	0.00385	2B	0.0029	0.00500
		3A	0.0017	0.00290	3B	0.0022	0.00375
1.9375-12	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
1.9375-16	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00350
		3A	0.0012	0.00200	3B	0.0015	0.00260
2.0000-4.5	UNJC	2A	0.0027	0.00475	2B	0.0036	0.00620
		3A	0.0020	0.00355	3B	0.0027	0.00465
2.0000-8	UNJ	2A	0.0023	0.00390	2B	0.0029	0.00505
		3A	0.0017	0.00290	3B	0.0022	0.00380
2.0000-12	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
2.0000-16	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00350
		3A	0.0012	0.00200	3B	0.0015	0.00260
2.1250-8	UNJ	2A	0.0023	0.00395	2B	0.0029	0.00510
		3A	0.0017	0.00295	3B	0.0022	0.00385
2.1250-12	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
2.1250-16	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00350
		3A	0.0012	0.00200	3B	0.0015	0.00260
2.2500-4.5	UNJC	2A	0.0028	0.00485	2B	0.0036	0.00630
		3A	0.0021	0.00365	3B	0.0027	0.00475
2.2500-8	UNJ	2A	0.0023	0.00400	2B	0.0030	0.00520
		3A	0.0017	0.00300	3B	0.0023	0.00390
2.2500-12	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
2.2500-16	UNJ	2A	0.0016	0.00270	2B	0.0020	0.00350
		3A	0.0012	0.00200	3B	0.0015	0.00260
2.3750-8	UNJ	2A	0.0023	0.00405	2B	0.0030	0.00525
		3A	0.0017	0.00300	3B	0.0023	0.00395
2.3750-12	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0013	0.00230	3B	0.0017	0.00300
2.3750-16	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
2.5000-4	UNJC	2A	0.0030	0.00520	2B	0.0039	0.00675
		3A	0.0023	0.00390	3B	0.0029	0.00505
2.5000-8	UNJ	2A	0.0024	0.00410	2B	0.0031	0.00530
		3A	0.0018	0.00305	3B	0.0023	0.00400
2.5000-12	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0013	0.00230	3B	0.0017	0.00300
2.5000-16	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
2.6250-8	UNJ	2A	0.0024	0.00410	2B	0.0031	0.00535
		3A	0.0018	0.00310	3B	0.0023	0.00400
2.6250-12	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0013	0.00230	3B	0.0017	0.00300
2.6250-16	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
2.7500-4	UNJC	2A	0.0030	0.00525	2B	0.0040	0.00685
		3A	0.0023	0.00395	3B	0.0030	0.00515
2.7500-8	UNJ	2A	0.0024	0.00415	2B	0.0031	0.00540
		3A	0.0018	0.00315	3B	0.0023	0.00405
2.7500-12	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0013	0.00230	3B	0.0017	0.00300
2.7500-16	UNJ	2A	0.0016	0.00275	2B	0.0021	0.00360
		3A	0.0012	0.00205	3B	0.0016	0.00270
2.8750-8	UNJ	2A	0.0024	0.00420	2B	0.0032	0.00550
		3A	0.0018	0.00315	3B	0.0024	0.00410
2.8750-12	UNJ	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00310
2.8750-16	UNJ	2A	0.0016	0.00280	2B	0.0021	0.00365
		3A	0.0012	0.00210	3B	0.0016	0.00275
3.0000-4	UNJC	2A	0.0031	0.00535	2B	0.0040	0.00695
		3A	0.0023	0.00400	3B	0.0030	0.00520
3.0000-8	UNJ	2A	0.0025	0.00425	2B	0.0032	0.00555
		3A	0.0018	0.00320	3B	0.0024	0.00415
3.0000-12	UNJ	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00310
3.0000-16	UNJ	2A	0.0016	0.00280	2B	0.0021	0.00365
		3A	0.0012	0.00210	3B	0.0016	0.00275
3.1250-8	UNJ	2A	0.0025	0.00430	2B	0.0032	0.00560
		3A	0.0018	0.00320	3B	0.0024	0.00420
3.1250-12	UNJ	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00310
3.1250-16	UNJ	2A	0.0016	0.00280	2B	0.0021	0.00365
		3A	0.0012	0.00210	3B	0.0016	0.00275
3.2500-4	UNJC	2A	0.0031	0.00545	2B	0.0041	0.00705
		3A	0.0024	0.00410	3B	0.0031	0.00530
3.2500-8	UNJ	2A	0.0025	0.00435	2B	0.0033	0.00565
		3A	0.0019	0.00325	3B	0.0025	0.00425
3.2500-12	UNJ	2A	0.0018	0.00315	2B	0.0024	0.00410
		3A	0.0014	0.00235	3B	0.0018	0.00310

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
3.2500-16	UNJ	2A	0.0016	0.00280	2B	0.0021	0.00365
		3A	0.0012	0.00210	3B	0.0016	0.00275
3.3750-8	UNJ	2A	0.0025	0.00440	2B	0.0033	0.00570
		3A	0.0019	0.00330	3B	0.0025	0.00425
3.3750-12	UNJ	2A	0.0018	0.00320	2B	0.0024	0.00420
		3A	0.0014	0.00240	3B	0.0018	0.00315
3.3750-16	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
3.5000-4	UNJC	2A	0.0032	0.00550	2B	0.0041	0.00715
		3A	0.0024	0.00415	3B	0.0031	0.00540
3.5000-8	UNJ	2A	0.0025	0.00440	2B	0.0033	0.00575
		3A	0.0019	0.00330	3B	0.0025	0.00430
3.5000-12	UNJ	2A	0.0018	0.00320	2B	0.0024	0.00420
		3A	0.0014	0.00240	3B	0.0018	0.00315
3.5000-16	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
3.6250-8	UNJ	2A	0.0026	0.00445	2B	0.0033	0.00580
		3A	0.0019	0.00335	3B	0.0025	0.00435
3.6250-12	UNJ	2A	0.0018	0.00320	2B	0.0024	0.00420
		3A	0.0014	0.00240	3B	0.0018	0.00315
3.6250-16	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
3.7500-4	UNJC	2A	0.0032	0.00560	2B	0.0042	0.00725
		3A	0.0024	0.00420	3B	0.0031	0.00545
3.7500-8	UNJ	2A	0.0026	0.00450	2B	0.0034	0.00585
		3A	0.0019	0.00335	3B	0.0025	0.00440
3.7500-12	UNJ	2A	0.0018	0.00320	2B	0.0024	0.00420
		3A	0.0014	0.00240	3B	0.0018	0.00315
3.7500-16	UNJ	2A	0.0017	0.00290	2B	0.0022	0.00375
		3A	0.0012	0.00215	3B	0.0016	0.00280
3.8750-8	UNJ	2A	0.0026	0.00455	2B	0.0034	0.00590
		3A	0.0020	0.00340	3B	0.0025	0.00440
3.8750-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320
3.8750-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.0000-4	UNJC	2A	0.0033	0.00565	2B	0.0042	0.00735
		3A	0.0025	0.00425	3B	0.0032	0.00555
4.0000-8	UNJ	2A	0.0026	0.00455	2B	0.0034	0.00595
		3A	0.0020	0.00340	3B	0.0026	0.00445
4.0000-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

Nominal Size and Threads per in.	Series Designation	External			Internal		
		Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ●	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
4.0000-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.1250-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320
4.1250-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.2500-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320
4.2500-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.3750-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320
4.3750-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.5000-12	UNJ	2A	0.0019	0.00325	2B	0.0025	0.00425
		3A	0.0014	0.00245	3B	0.0018	0.00320
4.5000-16	UNJ	2A	0.0017	0.00295	2B	0.0022	0.00380
		3A	0.0013	0.00220	3B	0.0016	0.00285
4.6250-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
4.6250-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
4.7500-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
4.7500-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
4.8750-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
4.8750-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
5.0000-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
5.0000-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
5.1250-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
5.1250-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
5.2500-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
5.2500-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295

(Table 6 continues on next page)

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TABLE 6 ALLOWABLE VARIATIONS IN LEAD AND EQUIVALENT CHANGE IN FUNCTIONAL DIAMETER, UNJ THREAD FORM (CONT'D)

		External			Internal		
Nominal Size and Threads per in.	Series Designation	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. +	Class	Allowable Variation in Lead, in. ±	Equivalent Change in Functional Diameter, in. −
1	2	3	4	5	6	7	8
5.3750-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
5.3750-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
5.5000-12	UNJ	2A	0.0019	0.00335	2B	0.0025	0.00435
		3A	0.0014	0.00250	3B	0.0019	0.00330
5.5000-16	UNJ	2A	0.0018	0.00305	2B	0.0023	0.00395
		3A	0.0013	0.00225	3B	0.0017	0.00295
5.6250-12	UNJ	2A	0.0020	0.00345	2B	0.0026	0.00450
		3A	0.0015	0.00260	3B	0.0019	0.00335
5.6250-16	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0014	0.00235	3B	0.0018	0.00305
5.7500-12	UNJ	2A	0.0020	0.00345	2B	0.0026	0.00450
		3A	0.0015	0.00260	3B	0.0019	0.00335
5.7500-16	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0014	0.00235	3B	0.0018	0.00305
5.8750-12	UNJ	2A	0.0020	0.00345	2B	0.0026	0.00450
		3A	0.0015	0.00260	3B	0.0019	0.00335
5.8750-16	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0014	0.00235	3B	0.0018	0.00305
6.0000-12	UNJ	2A	0.0020	0.00345	2B	0.0026	0.00450
		3A	0.0015	0.00260	3B	0.0019	0.00335
6.0000-16	UNJ	2A	0.0018	0.00310	2B	0.0023	0.00405
		3A	0.0014	0.00235	3B	0.0018	0.00305

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TABLE 7 ALLOWABLE VARIATIONS IN 30 deg BASIC HALF-ANGLE OF SCREW THREADS

External and Internal Threads		
	Allowable Variation in Half-Angle of Thread	
Threads per in.	±Deg	Min.
80	2	05
72	2	00
64	1	50
56	1	45
48	1	40
44	1	35
40	1	35
36	1	30
32	1	30
28	1	20
27	1	20
24	1	15
20	1	10
18	1	05
16	1	00
14	0	55
13	0	55
12	0	50
11½	0	50
11	0	50
10	0	50
9	0	45
8	0	45
7	0	45
6	0	40
5	0	40
4½	0	40
4	0	40

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SECTION 5 DIMENSIONAL ACCOMMODATION OF COATINGS AND PLATINGS

The general rules for calculation of coating allowance are defined in Appendix C. Restrictions in paras. 5.1 through 5.5 also apply.

5.1 Coated External Threads — Class 3A

Coated or plated external threads with a pitch diameter tolerance of 0.0035 in. or less may have the minimum pitch diameter specified in Table 5 reduced by not more than 0.0010 in. The major and minor diameter limits specified in Table 5 may be reduced by not more than 0.0005 in. When the pitch diameter tolerance exceeds 0.0035 in., the minimum pitch diameter may be reduced by 0.3 times the pitch diameter tolerance, but this reduction shall not exceed 0.0015 in. The major and minor diameter limits may be reduced by not more than 0.0008 in. The material limits for coated external threads shall be as specified herein. All thread elements shall be within the size limits specified in Table 5.

5.2 Coating Threads With Dry Film Lubricant

Threads to be coated with a dry film lubricant may have the standard coating allowance applied as specified in paras. 5.1 and 5.4. If the standard coating allowance is utilized, the threads shall conform to the specified limits of size after coating. If another coating is applied before dry film lubricant, no allowance shall be allowed to accommodate the dry film lubricant, and inspection should be accomplished before coating.

5.3 Coated External Threads — Class 2A

The external thread material limits may not be reduced beyond the minimum material limits to accommodate coating. After coating, the threads shall be no larger than Class 3A material limits specified in Table 5.

5.4 Coated Internal Threads — Classes 2B and 3B

For coated or plated internal threads, the maximum values of minor diameter and pitch diameter specified in Table 5 may be increased by the same amount permitted in para. 5.1 for external thread decrease. The limits for coated or plated internal threads shall be within the values specified in Table 5.

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SECTION 6 DESIGNATION OF THREADS

6.1 Basic Designation

Unified inch screw threads are identified with the letters UN in the thread designation. The inch screw thread described in this Standard is designated by the letters UNJ to identify the inch J thread form.

6.2 Standard Thread Series Designation

Standard threads shall be designated by indicating in sequence the nominal size, the number of threads per inch, the thread series symbol, and the thread class symbol. The gaging system designator depicted in the examples may be designated at each thread callout as shown, or as a general note on the drawing, specification sheet, or applicable document.

EXAMPLES:

(*a*) *External Thread, Right Hand*

0.2500-20 UNJC-3A (22)

- Inspection system
- External thread class symbol
- Coarse pitch series symbol
- Threads per inch
- Nominal size (basic major diameter)

(*b*) *Internal Thread, Right Hand*

3.5000-12 UNJ-2B (21)

- Inspection system
- Internal thread class symbol
- Constant pitch series symbol
- Threads per inch
- Nominal size (basic major diameter)

(*c*) *External Thread, Left Hand*
0.9375-20 UNJEF-3A-LH (22)

(*d*) *External Thread, Cumulative Form Control*
1.6250-12 UNJ-3A (22S)
Cumulative form variations — 0.5 PD Tol.

(*e*) *External Thread, Angle and Lead Control*
3.7500-16 UNJ-2A (22S)
Lead and angle control required

(*f*) *Internal Thread, Runout Control*
1.5000-18 UNJEF-3B (21S)
Runout variation — 0.5 PD Tol.

6.3 Designation of Coated Threads

Coated threads shall be designated by only the standard thread designation where the coating allowances given in Section 5 are adequate relief for the applied coating. Unless otherwise specified, threaded parts to be coated shall have the standard coating allowances specified in para. 5.1 for external threads and para. 5.4 for internal threads. The thread limits shall be within tolerance, as modified by the coating allowance, before coating. After coating, the material limits in Table 5 for standard UNJ thread shall apply.

6.4 Designation of Threads Having Modified Crests

Where the limits of size of the major diameter of an external thread or the minor diameter of an internal thread are modified, the thread designation is suffixed by the letters MOD, followed by the modified diameter limits.

EXAMPLE: External thread, major diameter reduced 0.003 in.
0.2500-28 UNJF-3A MOD (22)
Major diameter 0.2405–0.2470 MOD

EXAMPLE: Internal thread, minor diameter increased 0.003 in.
0.2500-28 UNJF-3B MOD (21)
Minor diameter 0.2182–0.2259 MOD

6.5 Designation of Threads Having Special Length Requirements

Where a standard series thread has a special length of engagement differing from that for which the standard pitch diameter tolerances are applicable, the thread class symbol is prefixed by the letters SE (Special Engagement) followed by the special pitch diameter limits of size, in accordance with para. 4.1, and the length of engagement (*LE*).

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EXAMPLE: Assembly and GO gage length 2 times standard.
0.5000-20 UNJF-SE3A (22)
Pitch diameter 0.4635–0.4675
LE 1.00

0.5000-20 UNJF-SE3B (22)
Pitch diameter 0.4675–0.4727
LE 1.00

6.5.1 Where a long length of engagement is required and special length GO gages are to be used but the standard tolerances in Table 5 are required, the thread class symbol with letters SPL (special) suffix and the length of the GO thread gage shall be used as designated.

EXAMPLE: Assembly and GO gage length 2 times standard but normal size limits required.
0.5000-20 UNJF-3A SPL (22)
LG 1.00

6.6 Designation of Special Series Threads

Special diameter pitch threads developed in accordance with this Standard shall be identified by the letters UNJS for the thread series symbol in the thread designation. Below the designation shall be specified the major diameter, pitch diameter, and minor diameter of the internal thread, and the major diameter, pitch diameter, minor diameter, and root radius of the external thread. Dimensions for threads of special diameter–pitch combinations shall be computed by using the formulas in paras. 4.3.1 through 4.3.4, rounding the dimensions to four decimal places.

EXAMPLE: External threads
0.2800-28 UNJS-3A (22)
Major diameter 0.2735–0.2800
Pitch diameter 0.2542–0.2568
Minor diameter 0.2340–0.2388
Root radius 0.0054–0.0064

EXAMPLE: Internal Threads
0.2800-28 UNJS-3B (21)
Major diameter 0.2800 min.
Pitch diameter 0.2568–0.2601
Minor diameter 0.2452–0.2529

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SECTION 7 ACCEPTABILITY

Acceptability of product threads shall be in accordance with ASME B1.3M to the extent designated at each thread callout or applicable document. See para. 6.2.

Proposed standard ASME B1.23 will provide the specifications and dimensions for the gages used on unified inch J series threads. Until ASME B1.23 is issued, ANSI/ASME B1.2, with the UNJ thread minor diameter replacing the UN minor diameter, shall be used.

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APPENDIX A
SYMBOLS — UNJ THREAD DIMENSIONS AND TOLERANCES

(This Appendix is not part of ASME B1.15-1995 and is included for information only.)

A1 INTERNAL THREAD DIMENSION SYMBOLS

D	MAJOR DIAMETER, int. thd
D bsc	basic major diameter
D min	minimum major diameter
D_1	MINOR DIAMETER, int. thd
D_1 bsc	basic minor diameter
D_1 max	maximum minor diameter
D_1 min	minimum minor diameter
D_2	PITCH DIAMETER, int. thd
D_2 bsc	basic pitch diameter
D_2 max	maximum pitch diameter
D_2 min	minimum pitch diameter
D_3	MAJOR DIAMETER, int. thd (ROUNDED FORM)
D_3 max	maximum major diameter
T	TOLERANCE
TD_1	minor diameter tol., int. thd
TD_2	pitch diameter tol., int. thd

A2 EXTERNAL THREAD DIMENSION SYMBOLS

d	MAJOR DIAMETER, ext. thd
d bsc	basic major diameter
d max	maximum major diameter
d min	minimum major diameter
d_1	MINOR DIAMETER, ext. thd
d_1	basic minor diameter
d_1	maximum minor diameter
d_2	PITCH DIAMETER, ext. thd
d_2 bsc	basic pitch diameter
d_2 max	maximum pitch diameter
d_2 min	minimum pitch diameter
d_3	MINOR DIAMETER, ext. (ROUNDED FORM)
d_3 max	maximum minor diameter
d_3 min	minimum minor diameter
R	ROOT RADIUS, ext. thd
R max	maximum root radius
R min	minimum root radius
T	TOLERANCE
Td	major diameter tol., ext. thd
Td_2	pitch diameter tol., ext. thd
Td_3	root diameter tol., ext. thd

LE	LENGTH OF THD ENGAGEMENT
LG	GAGING LENGTH
es	ALLOWANCE, external thread
H	HEIGHT, sharp vee thd
P	PITCH
α	FLANK HALF-ANGLE
UNJ	THREAD FORM SYMBOL

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APPENDIX B
TOLERANCE TABLE

(This Appendix is not part of ASME B1.15-1995 and is included for information only.)

Table C1 is used in conjunction with the formulas in paras. 4.3.1 and 4.3.3 for selecting tolerances and computing limiting dimensions for special UNJS threads which are not tabulated.

TABLE C1 MAJOR DIAMETER TOLERANCE, EXTERNAL THREAD *Td*, in.

Threads per in.	*Td*	Threads per in.	*Td*
80	0.0032	16	0.0094
72	0.0035	14	0.0103
64	0.0038	13	0.0109
56	0.0041	12	0.0114
48	0.0045	11	0.0121
44	0.0048	10	0.0129
40	0.0051	9	0.0139
36	0.0055	8	0.0150
32	0.0060	7	0.0164
28	0.0065	6	0.0182
24	0.0072	5	0.0205
20	0.0081	4.5	0.0220
18	0.0087	4	0.0238

GENERAL NOTE: Major diameter tolerances are derived from the following formula:

$$Td = 0.060 \sqrt[3]{P^2}$$

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APPENDIX C
COATING OF THREADS

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Coating is one or more applications of additive finish of any material including *Dry Film* lubricants, but not including soft or liquid lubricant. On a cylindrical surface, the effect of coating is to change the diameter by twice the coating thickness — one coating thickness on each side of the cylinder. Because the coating thickness is measured perpendicular to the coated surface while the pitch diameter is measured perpendicular to the thread axis, the effect of a uniformly coated thread flank on the pitch diameter is a change four times the thickness of coating on the flank.

The diameters of external threads before coating will be smaller while the diameters of internal threads before coating will be larger than the coated diameters.

(*a*) *External Thread — Maximum and Minimum Coating Thickness Specified.* To determine before coating gaging limits, for a uniformly coated thread, decrease:

(1) maximum pitch diameter by four times maximum coating thickness;

(2) minimum pitch diameter by four times minimum coating thickness;

(3) maximum major diameter by two times maximum coating thickness;

(4) minimum major diameter by two times minimum coating thickness.

(*b*) *Nominal or Minimum Coating Thickness Specified.* If no coating thickness tolerance is given, it is recommended that a tolerance of plus 50% of the nominal or minimum thickness be assumed. Then, to determine before coating gaging limits for a uniformly coated thread, decrease:

(1) maximum pitch diameter by six times coating thickness;

(2) minimum pitch diameter by four times coating thickness;

(3) maximum major diameter by three times coating thickness;

(4) minimum major diameter by two times coating thickness.

(*c*) *Internal Threads.* Standard internal threads provide no allowance for coating thickness. To determine before coating gaging limits for a uniformly coated thread, increase:

(1) minimum pitch diameter by four times maximum coating thickness, if specified, or by six times minimum or nominal coating thickness, when a tolerance is not specified;

(2) maximum pitch diameter by four times minimum or nominal coating thickness;

(3) minimum minor diameter by two times maximum coating thickness, if specified, or by three times minimum or nominal coating thickness;

(4) maximum minor diameter by two times minimum or nominal coating thickness.

(*d*) Other considerations are essential to adequately review all possibilities and consider limitations in the threading and coating production processes before finalizing the coating process and the allowance required to accommodate the coating. A no allowance thread after coating shall not transgress the basic profile and is, therefore, subject to acceptance using a basic size GO thread gage.

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AMERICAN NATIONAL STANDARDS FOR SCREW THREADS

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TITLE OF STANDARD

Unified Inch Screw Threads (UN and UNR Thread Form) B1.1-1989
Gages and Gaging for Unified Inch Screw Threads ..... B1.2-1983(R1991)
Screw Thread Gaging Systems for Dimensional Acceptability — Inch and Metric Screw Threads (UN, UNR, UNJ, M, and MJ) B1.3M-1992
Acme Screw Threads ..... B1.5-1988(R1994)
Nomenclature, Definitions, and Letter Symbols for Screw Threads ..... B1.7M-1984(R1992)
Stub Acme Screw Threads ..... B1.8-1988(R1994)
Buttress Inch Screw Threads 7°/45° Form With 0.6 Pitch Basic Height of Thread Engagement ..... B1.9-1973(R1992)
Unified Miniature Screw Threads ..... B1.10-1958(R1988)
Microscope Objective Thread ..... B1.11-1958(R1994)
Class 5 Interference-Fit Thread ..... B1.12M-1987(R1992)
Metric Screw Threads — M Profile B1.13M-1995
Unified Inch Screw Threads (UNJ Thread Form) B1.15-1995
Gages and Gaging for Metric M Screw Threads ..... B1.16M-1984(R1992)
Metric Screw Threads for Commercial Mechanical Fasteners — Boundary Profile Defined ..... B1.18M-1982(R1987)
Gages for Metric Screw Threads for Commercial Mechanical Fasteners — Boundary Profile Defined ..... B1.19M-1984(R1992)
Pipe Threads, General Purpose (Inch) ..... B1.20.1-1983(R1992)
Dryseal Pipe Threads (Inch) ..... B1.20.3-1976(R1982)
Dryseal Pipe Threads (Metric Translation of B1.20.3-1976) ..... B1.20.4-1976(R1982)
Gaging for Dryseal Pipe Threads (Inch) B1.20.5-1991
Gaging for Dryseal Pipe Threads (Metric Translation of B1.20.5-1978) B1.20.6M-1984
Hose Coupling Screw Threads (Inch) B1.20.7-1991
Metric Screw Threads — MJ Profile B1.21M-1978
Gages and Gaging for MJ Series Metric Screw Threads ..... B1.22M-1985(R1992)
Screw Threads — Standard Practice for Calculating and Rounding Dimensions B1.30M-1992

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