INCH-POUND

MIL-DTL-45913C
30 APRIL 1998
SUPERSEDING
MIL-N-45913B
28 October 1970

DETAIL SPECIFICATION

# NUTS, SELF-LOCKING, HEXAGON, PREVAILING TORQUE

This specification is approved for use by all Departments and Agencies of the Departments of Defense.

## 1. SCOPE

1.1 This specification establishes mechanical and performance requirements for prevailing-torque hexagon locknuts.

1.2 Classification Locknuts should be of the following types, grades and series (see 6.2).

1.2.1 Types

Type I Nut, self-locking, hexagon, UNC/UNF-2B (see MIL-DTL-45913/1 and /2).
Type II Nut, self-locking, hexagon, UNC/UNF-3B (see MIL-DTL-45913/3 and /4).
Type III Nut, self-locking, flanged, prevailing-torque.

1.2.2 Grades Three grades of carbon and alloy steel locknuts are designated as Grade 2, 5, and Grade 8 in accordance with SAE J995. Nonferrous materials as specified herein may be used for locknuts, but tensile strengths indicated below do not apply (see 6.2).

Each grade of carbon and alloy steel locknuts is suggested for use with bolts having specified minimum tensile strengths within the following values:

| Grade of Locknut | Specified Minimum Ultimate Tensile Strength of Bolt, P.S.I. | |
|---|---|---|
| Grade 2 (formerly Grade A) | not greater than | 90,000 |
| Grade 5 (formerly Grade B and F) | not greater than | 120,000 |
| Grade 8 (formerly Grade C and G) | not less than | 105,000 |
| | or greater than | 150,000 |

Beneficial comments, recommendations, additions, deletions, clarifications, etc., And data which may improve this document should be sent to: Defense Industrial Supply Center, attn.: DISC-AEEA, 700 Robbins Avenue, Philadelphia, PA 19111-5096.

1.2.3 Series Locknuts should be of the following series.

Hex locknut (regular)
Hex thin locknut (jam)
Hex thick locknut
Hex heavy locknut
Hex flanged locknut

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

| | |
|---|---|
| QQ-A-225/5 | Aluminum Alloy 2017, Bar, Rod and Wire, Rolled, Drawn or Cold Finished |
| QQ-A-225/6 | Aluminum Alloy 2024, Bar, Rod and Wire, Rolled, Drawn or Cold Finished |
| QQ-A-225/8 | Aluminum Alloy 6061, Bar, Rod, Wire, and Special Shapes; Rolled, Drawn or Cold Finished |
| QQ-A-225/10 | Aluminum Alloy 6262 Bar, Rod and Wire, Rolled, Drawn or Cold Finished |
| QQ-N-290 | Nickel Plating (Electrodeposited) |
| QQ-P-416 | Plating, Cadmium (Electrodeposited). |

DEPARTMENT OF DEFENSE

| | |
|---|---|
| MIL-A-8625 | Anodic Coatings, for Aluminum and Aluminum Alloys. |
| DOD-P-16232 | Phosphate Coatings, Heavy, Manganese or Zinc Base (For Ferrous Metals). |

STANDARDS

DEPARTMENT OF DEFENSE

| | |
|---|---|
| MIL-STD-1312-1 | Fastener Test Methods Salt Spray |
| MIL-STD-1312-6 | Fastener Test Methods Hardness |
| MIL-DTL-45913/1 | Nut, Self-Locking, Hexagon, Non-Metallic Locking Feature, 250°F, UNC/UNF-2B. |
| MIL-DTL-45913/2 | Nut, Self-Locking, Hexagon, All-Metal Locking Feature, 250°F, UNC/UNF-2B. |
| MIL-DTL-45913/3 | Nut, Self-Locking, Hexagon, Non-Metallic Locking Feature, 250°F, UNC/UNF-3B. |
| MIL-DTL-45913/4 | Nut, Self-Locking, Hexagon, All-Metal Locking Feature, 250°F, UNC/UNF-3B. |

(Unless otherwise indicated, copies of the above specifications, standards and handbooks are available from the standardization Document Order Desk, 700 Robbins Avenue Bldg 4D, Philadelphia PA 19111-5094)

2.3 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD-Adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

American Society of Mechanical Engineers (ASME):

| | |
|---|---|
| ASME B1.1 | - Unified Inch Screw Thread |
| ASME B1.3M | - Screw Thread Gaging Systems for Dimensional Acceptability Inch and Metric Screw Threads (UN, UNR, UNJ, M, and MJ) |
| ASME B1.15 | - Unified Inch Screw Thread (UNJ Thread Form) |
| ASME B18.2.1 | - Square and Hex Bolts and Screws |
| ASME B18.18.2M | - Inspection and Quality Assurance for High Volume Machine Assembly Fasteners. |
| ASME B46.1 | - Surface Texture |

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, N. Y. 10018.)

American Society for Testing and Materials Standards (ASTM):

| | |
|---|---|
| ASTM A342 | - Standard Test Methods for Permeability of Magnetic Materials |
| ASTM A967 | - Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts. |
| ASTM B633 | - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel |
| ASTM F467 | - Standard Specification for Nonferrous Nuts for General Use |
| ASTM F594 | - Standard Specification for Stainless Steel Nuts |
| ASTM F812 | - Standard Specification for Surface Discontinuities of Nuts, Inch and Metric Series |
| ASTM F1470 | - Standard Guide for Specified Mechanical Properties and Performance Inspection |
| ASTM D3951 | - Standard Practice for Commercial Packaging |

(Application for copies should be addressed to the ASTM, 100 Barr Harbor Drive, West Conshocken, PA 19428-2959).

Society of Automotive Engineers (SAE)

SAE J429 - Mechanical and Quality Requirements for Threaded Fasteners.
SAE J995 - Mechanical and Material Requirements for Steel Nuts.

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale. Pa. 15096.

3. REQUIREMENTS

3.1 Material.

3.1.1 Carbon and alloy steel. Unless otherwise specified regular hexagon and flanged hexagon locknuts shall be manufactured from carbon or alloy steel of such a quality that the locknuts shall meet the mechanical properties (proof loads and prevailing torque) specified in SAE J995 or TABLE 1.

3.1.2 Corrosion-resistant steel. Unless otherwise specified regular hexagon and flanged hexagon locknuts shall be manufactured from 300 series alloy group 1 or 316 alloy, group 2 in accordance with ASTM F594.

3.1.3 Brass. Unless otherwise specified regular hexagon and flanged hexagon locknuts shall be manufactured from UNS C46200 or C46400 in accordance with ASTM F467. The alloy shall be a three quarter hard temper.

3.1.4 Aluminum alloy. Unless otherwise specified regular hexagon and flanged hexagon locknuts shall be manufactured from QQ-A-225/5, QQ-A-225/6, QQ-A-225/8 or QQ-A-225/10. Aluminum alloy shall have a minimum tensile strength 62,000 psi.

3.2 Protective finish.

3.2.1 Carbon and alloy steel. Unless otherwise specified locknuts shall be furnished with a protective finish specified on the applicable detailed product drawing or standard.

3.2.1.2. Cadmium plating. Unless otherwise specified, cadmium plating shall be in accordance with QQ-P-416, Type II, Class 3.

3.2.1.3 Zinc plating. Unless otherwise specified, zinc plating shall be in accordance with ASTM B633, Type II, FE/ZN 5.

3.2.1.4 Phosphate coating. Unless otherwise specified phosphate coating shall be in accordance with DOD-P-16232, Type Z, Class 2.

3.2.1.5 Corrosion-resistant steel. Unless otherwise specified corrosion-resisting steel locknuts shall be passivated in accordance with ASTM A967.

3.2.1.6 Brass. Unless otherwise specified brass locknuts shall be uncoated plain.

3.2.1.7 Aluminum alloy. Unless otherwise specified aluminum alloy locknuts shall be anodized in accordance with MIL-A-8625, Type II , Class 1.

3.3 Heat treatment Shall be in accordance with SAE J995(steel locknuts).

3.4 Dimensions. Locknuts shall conform to the dimensions specified on the applicable specification sheet. The portion of the locknut containing the locking feature may have a special contour within the maximum permitted width across flats and thickness. Bearing surfaces shall be flat and perpendicular to the axis of the thread hole within a tolerance of 2°. Bearing surface roughness shall not exceed 125 Ra microinches in accordance with ASME B46.1.

3.5 Threads.

3.5.1 Thread Series and Class . Thread series, class, and tolerances shall be called out on the applicable specification sheet and be in accordance with ASME B1.1. except minor diameters where ASME B1.15 may apply Thread inspection and acceptability shall be in accordance with ASME B1.3M, System 21. Threads shall be inspected prior to installation of locking feature. Locknuts shall be checked after installation of the locking feature, and shall allow the "GO" gage to enter not less than a half turn with a basic GO thread plug gage to ensure that the locknut is functionable.

3.6 Mechanical requirements.

3.6.1 Hardness. Carbon and alloy steel locknut hardness shall be in accordance with SAE J995.

3.6.2 Magnetic permeability. The magnetic permeability of the corrosion resistant steel locknuts shall be less than 2.0 (air = 1.0) in a field strength of H= 200 oersteds.

3.7 Construction. The locknut shall be a self-contained unit or assembly, including the locking feature. The locking feature shall not operate by means of separate movement from the installation and shall not depend upon pressure on the bearing surface for locking action.

3.8 Marking. Unless otherwise specified Grade 5 and 8 locknuts, .250 nominal thread size and larger shall be marked with equally spaced identical symbols (notch, dot, letter or number) as indicated in Figure 1 or SAE J995. All locknuts shall be marked to identify the manufacturer. Such markings may be additional to the grade markings or an alteration of one or more of the three or six grade marking symbols. Marks shall be raised or depressed, at the manufacturer's option. Raised marks shall not project beyond the specified maximum height or width of the locknut. The color of the non-metallic locking element may be used to identify the manufacturer if the color has been established as the manufacturer's legitimate trademark or symbol. The shape of the all metal locking feature may also be used if it has been established as the manufacturer's legitimate trademark.

3.9 Discontinuities. Limits on presence of discontinuities shall be in accordance with ASTM F812.

4. VERIFICATION

4.1 Classification of inspections. Inspections shall be classified as quality conformance inspection (see 4.2).

4.1.1 Inspection lot. All locknuts of the same type, material, protective finish, thread series, and size produced under essentially the same conditions and offered for acceptance at one time shall be considered a lot for the inspection purposes.

4.2 Quality conformance inspection.

4.2.1 Sampling. Sampling for conformance inspection shall be in accordance with ASME B18.18.2M unless otherwise specified.

4.3.3 Proof load and prevailing torque testing (steel nuts). Locknuts shall be subjected to the proof loads and prevailing torque specified in SAE J995 or TABLE 1 of this specification.

4.3.4 Protective finish test. Nuts shall be tested in accordance with the applicable protective finish or plating specification . Each lot shall be tested for protective finish thickness and, when specified, salt spray testing.

4.3.5 Hardness test. When a hardness test is to be conducted in lieu of a proof load test it shall be conducted in accordance with MIL-STD-1312-6.

4.3.6 Magnetic permeability. Magnetic permeability shall be determined by the use of an indicator in accordance with ASTM A342. Magnetic permeability sampling shall be in accordance with ASTM F1470.

4.3.7. Discontinuities. The acceptance of locknuts shall in accordance with the requirements contained in sampling for discontinuities, ASTM F812.

4.4 Test Methods.

4.4.1 Proof load test. Steel locknuts shall be installed on a test bolt or on a hardened mandrel with a minimum of three threads projecting through the locknut. For referee test purposes, the hardened mandrel shall be used. The maximum prevailing torque occurring during the assembly of the locknut on the test bolt or mandrel shall be recorded. A tensile load equal to the specified proof load for the locknut, as given in TABLE 1 or SAE J995, shall be applied through the test bolt or mandrel, against the locknut in an axial direction. The locknut shall resist this load without thread stripping or rupture. The prevailing torque necessary to remove the locknut from the test bolt or mandrel after test shall not exceed the maximum prevailing torque occurring during assembly.

4.4.2 Prevailing torque test. Steel locknuts shall be subjected to the prevailing torque test using a load measuring device. A test bolt shall be inserted in the load measuring device. The locknut shall be advanced on the bolt until a minimum of two full bolt threads protrude through the nut. The maximum torque occurring while the locknut is being advanced through the next 360° of locknut rotation shall be recorded. This torque shall not exceed the first installation value for the applicable grade.

4.4.2.1 Tightening shall continue until locknut is seated. The length of the test bolt shall be such that seating of the locknut shall occur when a length equivalent to 6 to 9 thread pitches of the test bolt protrude through the locknut. The locknut shall be tightened until a tensile load equal to the clamp load as specified for the applicable grade is developed in the bolt. The locknut shall be backed off by the application of reverse torque until the tensile load in the bolt has been reduced to zero.

4.4.2.2 The maximum and minimum torque(s) occurring while the locknut is being backed off through the next 360° of rotation shall be recorded. The maximum torque shall not be less than the first removal (highest reading) value. The minimum torque shall not be less than the first removal (lowest reading) value. The locknut shall then be backed off until the prevailing torque element is disengaged from the bolt thread.

4.4.2.3 The locknut shall be reassembled and removed four more times. On each reassembly, the locknut shall be assembled to the initial first off position, but no clamp load shall be induced in the bolt. This portion of the test need not be conducted in the load cell. At no time during these four additional cycles shall the torque exceed the maximum first installation as specified for the applicable grade.

4.4.2.4 The maximum and minimum torque(s) occurring while the locknut is being backed off through the next 360° of rotation shall be recorded. The maximum torque shall not be less than the fifth removal (highest reading) value. The minimum torque shall not be less than the fifth removal (lowest reading) value.

4.4.3 Test equipment. A hardened threaded mandrel or bolt shall be used in conjunction with a tension testing machine for conducting the proof load test. The mandrel or bolt shall be threaded to the unified thread series and class of the locknut being tested. The mandrel or bolt shall have sufficient strength to ensure failure of the locknut.

4.4.4 Test Procedures. Locknuts shall be assembled and mounted in a tension testing machine and subjected to a load equal to the proof load specified in SAE J995 or TABLE 1. To meet the requirements of this test, the locknut shall resist the load without stripping or rupture.

4.4.5 Test bolt. The test bolt used in the prevailing-torque test of steel locknuts shall have a zinc phosphate or cadmium plated and oil finish (dry to the touch) meeting a 72 hour salt spray test when tested in accordance with Test 1 of MIL-STD-1312. Corrosion-resisting steel locknuts shall be torque tested on corrosion-resisting steel test bolts. Aluminum alloy locknuts shall be torque tested on anodized aluminum alloy test bolts. Brass locknuts shall be torque tested on plain brass test bolts.

4.4.6 Load Measuring device. The load measuring device used in the prevailing-torque test shall be an instrument capable of measuring the actual tension induced in the test bolt as the locknut is tightened. The device shall be accurate within plus or minus 5 percent of the test load.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract order or order (see 6.2) When actual packaging of material is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES:

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. A prevailing-torque type locknut is a nut which is frictionally resistant to rotation due to a self-contained prevailing-torque (locking) feature, and not because of a compressive load developed against the bearing surface of the locknut.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number and date of this specification.
b. Type, grade and series (1.2.1, 1.2.2 and 1.2.3).
c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1)
d. Material (3).
e. Protective finish, when required (3.2).
f. Thread form, series and class (3.5.1).
g. Grade marking, if required (3.8).
h. Packaging requirements (5.1).
i. Domestic manufacturing source only unless otherwise specified.

6.3 Non-metallic insert. Locknuts with non-metallic inserts should not be used in installations where temperatures exceed 250°F.

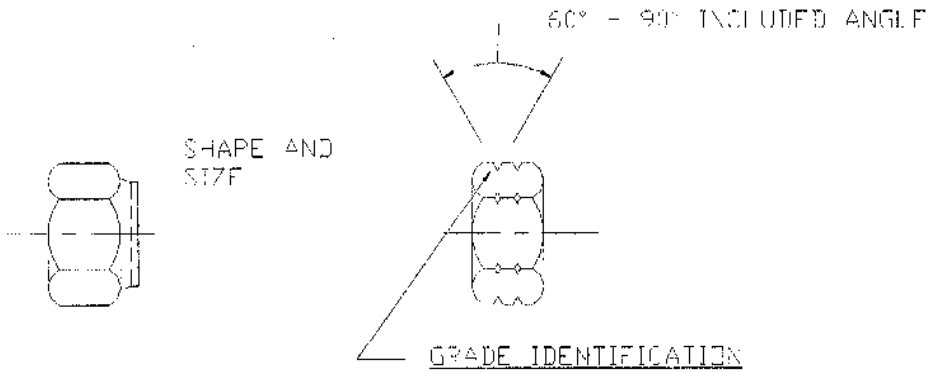
6.4 Subject term (key words) listing.

Acceptability
Brass
Grade
Stainless steel
Temper

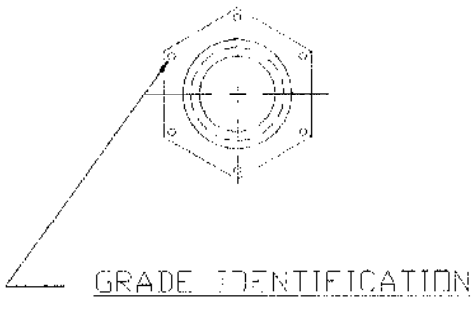
6.5 Information deleted from previous issue. Information deleted as follows:

MIL-N-45913B, Type II, Nut, Self-locking, Critical Installations has been renamed.
MIL-N-45913B, Type IV, Nut, Self-locking, Cap, General Purpose has been deleted.
MIL-N-45913B, Type V, Nut, Self-locking, Spline, General Purpose has been deleted, see MIL-DTL-25027 for locking torque.

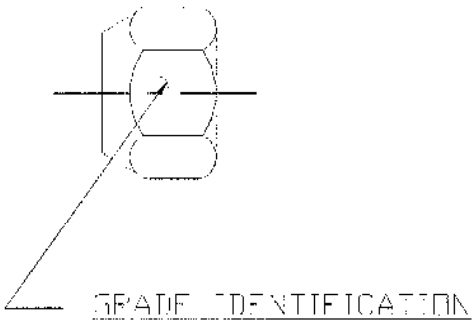
6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.




GRADE 2 NO NOTCHES
GRADE 5 ONE CIRCUMFERENTIAL NOTCH
GRADE 8 TWO CIRCUMFERENTIAL NOTCH




GRADE 2 NO MARKS
GRADE 5 THREE MARKS
GRADE 8 SIX MARKS




GRADE 2 NO NUMBER
GRADE 5 NUMBER 5
GRADE 8 NUMBER 8

| Locknut Nominal Size and Threads Per Inch | Grade 2 Nuts | | | | | | | Grade 5 Nuts | | | | | | | Grade 8 Nuts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Prevailing Torque | | | | | | | Prevailing Torque | | | | | | | Prevailing Torque | | | | |
| | | | | First Removal | | Fifth Removal | | | | | First Removal | | Fifth Removal | | | | | First Removal | | Fifth Removal | |
| | Proof Load Lb. | Clamp Load Lb. | First Install In Lb. Max | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. | Proof Load Lb. | Clamp Load Lb. | First Install In. Lb. Max | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. | Proof Load Lb. | Clamp Load Lb. | First Install In. Lb. Max | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. | Highest Read-ing Min In. Lb. | Lowest Read-ing Min In. Lb. |
| **Coarse Thread Series** | | | | | | | | | | | | | | | | | | | | | |
| .0730-64 | | | | | | | | | | | | | | | | | | | | | |
| .0860-56 | | | | | | | | | | | | | | | | | | | | | |
| .0990-48 | | | | | | | | | | | | | | | | | | | | | |
| .1120-40 | 540 | 250 | 3.0 | 1.0 | .5 | .5 | .2 | 720 | 380 | 3.0 | 1.0 | .5 | .5 | .2 | 910 | 550 | 4.0 | 1.0 | .5 | .5 | .2 |
| .1250-40 | | | | | | | | | | | | | | | | | | | | | |
| .1380-32 | 820 | 370 | 6.0 | 1.5 | .5 | 1.0 | .5 | 1,100 | 580 | 8.0 | 1.5 | .5 | 1.0 | .5 | 1,350 | 810 | 8.0 | 2.0 | 1.0 | 1.5 | .5 |
| .1640-32 | 1,250 | 580 | 9.0 | 2.0 | 1.0 | 1.5 | .5 | 1,700 | 900 | 12.0 | 2.0 | 1.0 | 1.5 | .5 | 2,100 | 1,250 | 12 | 2.5 | 1.0 | 2.0 | 1.0 |
| .1900-24 | 1,550 | 720 | 13 | 2.5 | 1.0 | 2.0 | 1.0 | 2,100 | 1,100 | 13 | 2.5 | 1.0 | 2.0 | 1.0 | 2,600 | 1,550 | 17 | 3.5 | 1.5 | 2.5 | 1.0 |
| .2160-24 | 2,200 | 1,000 | 20 | 3.5 | 1.5 | 2.5 | 1.0 | 2,900 | 1,550 | 20 | 3.5 | 1.5 | 2.5 | 1.0 | 3,650 | 2,200 | 27 | 4.5 | 2 | 3.0 | 1.5 |
| .2500-20 | 2,900 | 1,300 | 30 | 5.0 | 2.5 | 3.5 | 1.5 | 3,800 | 2,000 | 30 | 5.0 | 2.5 | 3.5 | 1.5 | 4,750 | 2,850 | 40 | 6.0 | 3 | 4.5 | 2 |
| .3125-18 | 4,700 | 2,150 | 60 | 8.0 | 4 | 5.5 | 2.5 | 6,300 | 3,350 | 60 | 8.0 | 4 | 5.5 | 2.5 | 7,850 | 4,700 | 80 | 10.5 | 5 | 7.5 | 3 |
| .3750.16 | 7,000 | 3,200 | 80 | 12 | 5 | 8.5 | 4 | 9,300 | 4,950 | 80 | 12 | 5 | 8.5 | 4 | 11,600 | 6,950 | 110 | 16 | 7.5 | 11.5 | 5 |
| .4375-14 | 9,550 | 4,400 | 100 | 17 | 7.5 | 12 | 5 | 12,800 | 6,800 | 100 | 17 | 7.5 | 12 | 5 | 15,900 | 9,600 | 135 | 23 | 10 | 16 | 7.5 |
| .5000-13 | 12,800 | 5,850 | 150 | 22 | 10 | 15 | 7.5 | 17,000 | 9,050 | 150 | 22 | 10 | 15 | 7.5 | 21,300 | 12,800 | 17 | 30 | 15 | 20 | 10 |
| | | | * ft lb. | | | | | | | * ft lb. | | | | | | | *ft lb. | | | | |
| .5625-12 | 16,400 | 7,550 | 17* | 30 | 15 | 21 | 10 | 21,800 | 11,600 | 17* | 30 | 15 | 21 | 10 | 27,300 | 16,400 | 25* | 40 | 20 | 28 | 12.5 |
| .6250-11 | 20,300 | 9,300 | 25* | 39 | 17.5 | 27 | 12.5 | 27,200 | 14,500 | 25* | 39 | 17.5 | 27 | 12.5 | 33,900 | 20,300 | 35* | 52 | 25 | 36 | 15 |
| .7500-10 | 30,000 | 13,800 | 35* | 58 | 25 | 41 | 20 | 40,100 | 21,300 | 35* | 58 | 25 | 41 | 20 | 50,100 | 30,100 | 45* | 78 | 35 | 54 | 25 |
| .8750-9 | 41,600 | 11,400 | 50* | 88 | 40 | 62 | 30 | 55,400 | 29,500 | 50* | 88 | 40 | 62 | 30 | 69,300 | 41,600 | 70* | 117 | 50 | 82 | 40 |
| 1.000-8 | 54,500 | 15,000 | 70* | 120 | 60 | 84 | 40 | 72,700 | 38,700 | 70* | 120 | 60 | 84 | 40 | 90,900 | 54,600 | 90* | 160 | 80 | 112 | 50 |
| 1.1250-7 | 68,700 | 18,900 | 75* | 150 | 70 | 105 | 50 | 80,100 | 42,100 | 75* | 150 | 70 | 105 | 50 | 115,000 | 69,000 | 100* | 200 | 100 | 140 | 70 |
| 1.2500-7 | 87,200 | 24,000 | 85* | 188 | 90 | 132 | 60 | 101,700 | 53,500 | 85* | 188 | 90 | 132 | 60 | 145,000 | 87,000 | 110* | 250 | 120 | 176 | 80 |
| 1.3750-6 | 104,000 | 28,700 | 100* | 220 | 110 | 154 | 70 | 121,300 | 63,800 | 100* | 220 | 110 | 154 | 70 | 173,000 | 104,000 | 135* | 293 | 140 | 205 | 100 |
| 1.5000.6 | 126,000 | 34,800 | 110* | 260 | 130 | 182 | 90 | 147,500 | 77,600 | 110* | 260 | 130 | 182 | 90 | 211,000 | 127,000 | 150* | 346 | 170 | 242 | 120 |
| **Fine Thread Series** | | | | | | | | | | | | | | | | | | | | | |
| .0600-80 | | | | | | | | | | | | | | | | | | | | | |
| .0730-72 | | | | | | | | | | | | | | | | | | | | | |
| .0860-64 | | | | | | | | | | | | | | | | | | | | | |
| .0990-56 | | | | | | | | | | | | | | | | | | | | | |
| .1120-48 | 600 | 270 | 3.0 | 1.0 | .5 | .5 | .2 | 790 | 420 | 3.0 | 1.0 | .5 | .5 | .2 | 990 | 600 | 4.0 | 1.0 | .5 | .5 | .2 |
| .1250-44 | | | | | | | | | | | | | | | | | | | | | |
| .1380-40 | 900 | 420 | 6.0 | 1.5 | .5 | 1.0 | .5 | 1,200 | 640 | 8.0 | 1.5 | .5 | 1.0 | .5 | 1,500 | 900 | 8.0 | 2.0 | 1.0 | 1.0 | .5 |
| .1640-36 | 1,350 | | 9.0 | 2.0 | 1.0 | 1.5 | .5 | 1,750 | 930 | 12 | 2.0 | 1.0 | 1.5 | .5 | 2,200 | 1,300 | 12 | 2.5 | 1.0 | 2.0 | 1.0 |
| .1900-32 | 1,800 | 840 | 13 | 2.5 | 1.0 | 2.0 | 1.0 | 2,400 | 1,300 | 13 | 2.5 | 1.5 | 2.0 | 1.0 | 3,000 | 1,800 | 17 | 3.5 | 1.5 | 2.5 | 1.0 |
| .2160-28 | 2,300 | 1,050 | 20 | 3.5 | 1.5 | 2.5 | 1.0 | 3,100 | 1,650 | 20 | 3.5 | 1.5 | 2.5 | 1.0 | 3,900 | 2,350 | 27 | 4.5 | 2 | 3.0 | 1.5 |
| .2500-28 | 3,300 | 1,500 | 30 | 5 | 2.5 | 3.5 | 1.5 | 4,350 | 2,300 | 30 | 5.0 | 2.5 | 3.5 | 1.5 | 5,450 | 3,250 | 40 | 6.0 | 3 | 4.5 | 2 |
| .3125-24 | 5,200 | 2,400 | 60 | 8 | 4 | 5.5 | 2.5 | 6,950 | 3,700 | 60 | 8.0 | 4 | 5.5 | 2.5 | 8,700 | 5,200 | 80 | 10.5 | 5 | 7.5 | 3 |
| .3750-24 | 7,900 | 3,600 | 80 | 12 | 5 | 8.5 | 4 | 10,500 | 5,600 | 80 | 12 | 5 | 8.5 | 4 | 13,200 | 7,900 | 110 | 16 | 7.5 | 11.5 | 5 |
| .4375-20 | 10,700 | 4,900 | 100 | 17 | 7.5 | 12 | 5 | 14,200 | 7,550 | 100 | 17 | 7.5 | 12 | 5 | 17,800 | 10,700 | 135 | 23 | 10 | 16 | 7.5 |
| .5000-20 | 14,400 | 6,550 | 150 | 22 | 10 | 15 | 7.5 | 19,200 | 10,200 | 150 | 22 | 10 | 15 | 7.5 | 24,000 | 14,400 | 17 | 30 | 15 | 20 | 10 |
| | | | * ft lb. | | | | | | | * ft lb. | | | | | | | *ft lb. | | | | |
| .5625-18 | 18,300 | 8,350 | 17* | 30 | 15 | 21 | 10 | 24,400 | 13,000 | 17* | 30 | 15 | 21 | 10 | 30,400 | 18,300 | 25* | 40 | 20 | 28 | 12.5 |
| .6250-18 | 22,900 | 10,500 | 25* | 39 | 17.5 | 27 | 12.5 | 30,700 | 16,300 | 25* | 39 | 17.5 | 27 | 12.5 | 38,400 | 23,000 | 35* | 52 | 25 | 36 | 15 |
| .7500-16 | 33,600 | 15,400 | 35* | 58 | 25 | 41 | 20 | 44,800 | 23,800 | 35* | 58 | 25 | 41 | 20 | 56,000 | 33,600 | 45* | 78 | 35 | 54 | 25 |
| .8750-14 | 45,800 | 12,600 | 50* | 88 | 40 | 62 | 30 | 61,100 | 32,400 | 50* | 88 | 40 | 62 | 30 | 76,400 | 45,800 | 70* | 117 | 50 | 82 | 40 |
| 1.0000-14 | 61,100 | 16,800 | 70* | 120 | 60 | 84 | 40 | 81,500 | 43,300 | 70* | 120 | 60 | 84 | 40 | 101,900 | 61,100 | 90* | 160 | 80 | 112 | 50 |
| 1.0000-12 | 59,700 | 16,400 | 70* | 120 | 60 | 84 | 40 | 79,600 | 42,300 | 70* | 120 | 60 | 84 | 40 | 99,500 | 59,700 | 90* | 160 | 80 | 112 | 50 |
| 1.1250-12 | 76,900 | 21,200 | 75* | 150 | 70 | 105 | 50 | 89,900 | 47,500 | 75* | 150 | 70 | 105 | 50 | 128,000 | 76,800 | 100* | 200 | 100 | 140 | 70 |
| 1.2500-12 | 96,600 | 26,600 | 85* | 188 | 90 | 132 | 60 | 113,000 | 59,700 | 85* | 188 | 90 | 132 | 60 | 161,000 | 96,600 | 110* | 250 | 120 | 176 | 80 |
| 1.3750-12 | 118,000 | 32,500 | 100* | 220 | 110 | 154 | 70 | 138,000 | 72,900 | 100* | 220 | 110 | 154 | 70 | 197,000 | 118,000 | 135* | 293 | 140 | 205 | 100 |
| 1.5000-12 | 142,000 | 39,100 | 110* | 260 | 130 | 182 | 90 | 166,000 | 87,700 | 110* | 260 | 130 | 182 | 90 | 237,000 | 142,000 | 150* | 346 | 170 | 242 | 120 |

Custodian:
Army - AR
Navy - OS
Air Force - 11

Reviewer:
Army - AT, AV, CR, MI,
Navy - MC, SH
Air Force - 82, 99

Preparing activity
DLA-IS

Project No. 5310-2308

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3 and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6 and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

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| I RECOMMEND A CHANGE: | 1. DOCUMENT NUMBER | 2. DOCUMENT DATE (YYMMDD) |
|---|---|---|
| | MIL-DTL-45913C | 980430 |

3. DOCUMENT TITLE:
NUTS, SELF-LOCKING, HEXAGON, PREVAILING TORQUE

4. NATURE OF CHANGE

5. REASON FOR RECOMMENDATION

| 6. SUBMITTER | | |
|---|---|---|
| a. NAME (Last, First, Middle Initial) | b. ORGANIZATION | |
| c. ADDRESS (Include Zip Code) | d. TELEPHONE (Include Area Code)<br>(1) Commercial<br>(2) AUTOVON (If applicable) | 7. DATE SUBMITTED (YYMMDD) |

8. PREPARING ACTIVITY DLA-IS

| a. NAME | b. TELEPHONE (Include Area Code) |
|---|---|
| Emelia Altomari | (1) Commercial (215) 697-6827<br>(2) (DSN) 442-6827 |
| c. ADDRESS (Include Zip Code)<br>Defense Industrial Supply Center<br>700 Robbins Avenue<br>Bldg. 3 (Code DISC-AESD)<br>Philadelphia, PA 19111-5096 | IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:<br>Defense Quality and Standardization Office<br>5203 Leesburg Pike, Suite 1403<br>Falls Church, VA 22041<br>TELEPHONE (703) 756-2340 AUTOVON 289-2340 |