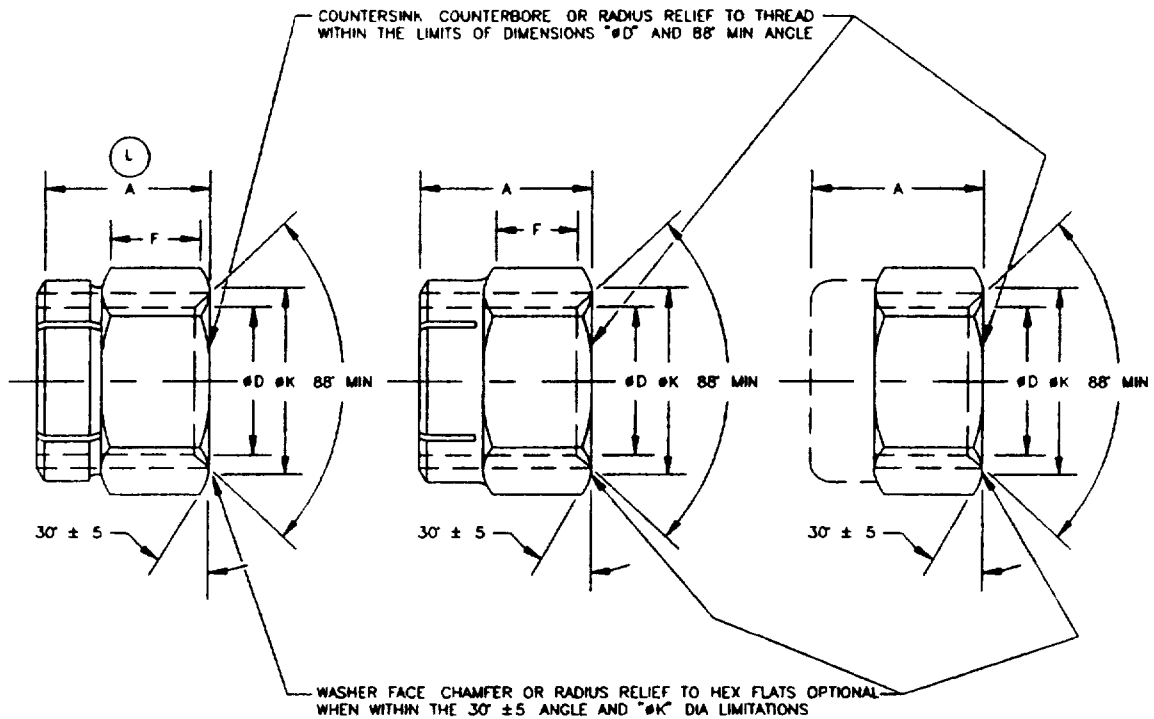


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDSS SPECIFIED IN THE SOLICITATION MIL-N-25027



STYLE A

STYLE B

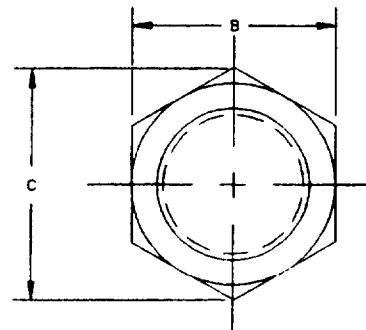
ELLIPTICAL LOCK

EITHER STYLE A OR B TO BE SUPPLIED AT MANUFACTURERS OPTION

SEGMENTED BEAM LOCK

NOTE

CONFIGURATION OF NUT OPTIONAL LIMITATIONS IMPOSED ONLY ON DIMENSIONS AND REQUIREMENTS SPECIFIED HEREIN SEE EXAMPLE OF PART NUMBERS



TYPICAL END VIEW

(L) DENOTES CHANGE(S)

INCH - POUND

PREPARING ACTIVITY DLA-IS
CUSTODIANS ARMY- AR NAVY- AS
AIR FORCE- 99 DLA-
REVIEW AT AV ER GL MI OS SH 11 82
USER
PROJECT NUMBER 5310-2029

MILITARY SPECIFICATION SHEET
TITLE
NUT, SELF-LOCKING
HEXAGON-REGULAR HEIGHT,
450°F 125 KSI Flu

SPECIFICATION SHEET NUMBER
MS21045 5 NOV 94
REV L
SUPERSEDING
MS21045 K 30 AUG 94
AMSC- N/A FSC 5310

DISTRIBUTION STATEMENT

A Approved for public release distribution is unlimited

Page 1 of 4

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

DD Form 672, MAY 88

PREVIOUS EDITIONS ARE OBSOLETE

TABLE I. DIMENSIONS AND TOLERANCES

| DASH NUMBERS | | | (a) THREAD MIL-S-8879 | A | | B | | C | ØD ± 0.020 | F | (b) BEARING SURFACE SQUARE- NESS | AXIAL STRENGTH LBS MIN | WEIGHT LBS/100 REF | ØK MIN |
|-------------------|------------|------|-----------------------------|-------|-------|-------|-------|-------|---------------|-----|--|------------------------------|--------------------------|-----------|
| STEEL | | CRES | | MAX | MIN | MAX | MIN | | | | | | | |
| NON DRY LUB | DRY LUB | | | | | | | | | | | | | |
| 04 | L04 | C04 | 1120-40UNJC-3B | 167 | 133 | 251 | 243 | 268 | 136 | 044 | 004 | 750 | 16 | 223 |
| 06 | L06 | C06 | 1380-32UNJC-3B | 188 | 160 | 313 | 305 | 339 | 161 | 072 | 004 | 1,130 | 30 | 285 |
| 08 | L08 | C08 | 1640-32UNJC-3B | 250 | 219 | 345 | 336 | 374 | 188 | 091 | 004 | 1 720 | 50 | 316 |
| 3 | L3 | C3 | 1900-32UNJF-3B | 250 | 208 | 376 | 367 | 410 | 210 | 085 | 004 | 2 460 | 58 | 347 |
| 4 | L4 | C4 | 2500-28UNJF-3B | 328 | 240 | 439 | 430 | 482 | 273 | 116 | 005 | 4,580 | 99 | 410 |
| 5 | L5 | C5 | 3125-24UNJF-3B | 360 | 271 | 502 | 492 | 552 | 336 | 123 | 006 | 7 390 | 1 40 | 472 |
| 6 | L6 | C6 | 3750-24UNJF-3B | 469 | 318 | 564 | 553 | 622 | 390 | 153 | 006 | 11,450 | 2 15 | 533 |
| 7 | L7 | C7 | 4375-20UNJF-3B | 469 | 435 | 690 | 679 | 766 | 467 | 178 | 007 | 16 450 | 3 40 | 669 |
| 8 | L8 | C8 | 5000-20UNJF-3B | 610 | 575 | 752 | 741 | 837 | 531 | 221 | 007 | 21,110 | 4 70 | 721 |
| 9 | L9 | C9 | 5625-18UNJF-3B | 704 | 623 | 877 | 865 | 978 | 594 | 243 | 008 | 26,810 | 7 80 | 845 |
| 10 | L10 | C10 | 6250-18UNJF-3B | 766 | 732 | 940 | 928 | 1 051 | 656 | 274 | 008 | 34 130 | 9 50 | 908 |
| 12 | L12 | C12 | 7500-16UNJF-3B | 891 | 855 | 1 064 | 1 052 | 1 191 | 787 | 316 | 009 | 50 020 | 13 60 | 1 032 |
| 14 | L14 | C14 | 8750-14UNJF-3B | 1 016 | 965 | 1 252 | 1 239 | 1 403 | 918 | 570 | 010 | 68,440 | 21 00 | 1 219 |
| 16 | L16 | C16 | 1 0000-12UNJF-3B | 1 141 | 1 010 | 1 440 | 1 427 | 1 615 | 1 044 | 635 | 011 | 92 180 | 31 00 | 1 407 |
| 18 | L18 | C18 | 1 1250-12UNJF-3B | 1 266 | 1 130 | 1 627 | 1 614 | 1 826 | 1 171 | 710 | 012 | 116 700 | 46 00 | 1 594 |
| 20 | L20 | C20 | 1 2500-12UNJF-3B | 1 454 | 1 300 | 1 814 | 1 801 | 2 038 | 1 295 | 795 | 013 | 147 940 | 65 00 | 1 781 |

- (a) THREADS IN ACCORDANCE WITH MIL-S-8879
- (b) BEARING SURFACE (ØK) SHALL BE SQUARE WITH PITCH DIAMETER WHEN MEASURED ON ACCORDANCE WITH MIL-N-25027
- (c) DIMENSIONS ACROSS FLATS MAY INCLUDE DEFORMATION OF SELF-LOCKING DEVICE

| | | |
|---|--|---|
| PREPARING ACTMITY DLA-IS CUSTODIANS ARMY- AR NAVY- AS AIR FORCE- 99 DLA- REVIEW AT, AV, ER, GL, MI, OS, SH, 11, 82 USER PROJECT NUMBER 5310-2029 | MILITARY SPECIFICATION SHEET TITLE NUT, SELF-LOCKING HEXAGON-REGULAR HEIGHT 45°F 125 KSI Ftu | SPECIFICATION SHEET NUMBER MS21045 5 NOV 94 REV L SUPERSEDING MS21045 K 30 AUG 94 AMSC- N/A FSC 5310 |
| DISTRIBUTION STATEMENT A Approved for public release distribution is unlimited | | Page <u>2</u> of <u>4</u> |

DD Form 672, MAY 88

USE IF EXTENSION ARE OBSOLETE

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDSS SPECIFIED IN THE SOLICITATION MIL-N-25027

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDSS SPECIFIED IN THE SOLICITATION MIL-N-25027

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

Form Approved
OMB No. 0704-0188

REQUIREMENTS

- 1 MATERIALS. ALLOY STEEL GRADE 8740 (UNS G87400) PER AMS 6322
 CARBON STEEL GRADE 1008 (UNS G10080) PER ASTM A29
 CARBON STEEL GRADE 1010 (UNS G10100) PER AMS 5050
 CARBON STEEL GRADE 1015 (UNS G10150) PER AMS 5080
 CARBON STEEL GRADE 1018 (UNS G10180) PER AMS 5069
 CARBON STEEL GRADE 1021 (UNS G10210) PER ASTM A29
 CARBON STEEL GRADE 1022 (UNS G10220) PER AMS 5070
 CARBON STEEL GRADE 1030 (UNS G10300) PER ASTM A29
 CARBON STEEL GRADE 1035 (UNS G10350) PER AMS 5080
 CARBON STEEL GRADE 1046 (UNS G10460) PER ASTM A29
 CARBON STEEL GRADE 1110 (UNS G11100) PER ASTM A29
 CARBON STEEL GRADE 1117 (UNS G11170) PER AMS 5022
 CARBON STEEL GRADE 1118 (UNS G11180) PER ASTM A29
 CARBON STEEL GRADE 1137 (UNS G11370) PER AMS 5024
 CARBON STEEL GRADE 11L37 (UM6 G11374) PER AMS 5020
 CARBON STEEL GRADE 1213 (UNS G12130) PER ASTM A29
 CARBON STEEL GRADE 12L14 (UNS G12144) PER ASTM A29
 CARBON STEEL GRADE 15B21H (UNS H15211) PER SAE J1268
 CORROSION RESISTANT STEEL TYPE 303 (UNS S30300) PER AMS 5640
 CORROSION RESISTANT STEEL TYPE (UNS S30430) PER ASTM A493
 CORROSION RESISTANT STEEL XM21 (UNS S30452) PER ASTM A276
 CORROSION RESISTANT STEEL TYPE 304L (UNS S30403) PER AMS 5647
 CORROSION RESISTANT STEEL TYPE A-286 (UNS S66286) PER AMS 5732 OR 5737
 CORROSION RESISTANT STEEL TYPE A-305 (UNS S30500) PER AMS 5686
- 2 COATING. STEEL NUTS (WITHOUT DRY FILM LUBRICATION) CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416 TYPE II CLASS 2 DRY FILM LUBRICATED STEEL NUTS IN ACCORDANCE WITH QQ-P-416 TYPE AND CLASS OPTIONAL IF THE NUTS WILL MEET THE SALT SPRAY REQUIREMENTS OF QQ-P-416 TYPE II ALUMINUM COATING, ION VAPOR DEPOSITED PER MIL-C-83488
- 3 PASSIVATE. CORROSION RESISTANT STEEL NUTS PER QQ-P-35 BEFORE DRY FILM LUBRICATED
- 4 LUBRICANT. DRY FILM LUBRICANT APPROVED IN ACCORDANCE WITH MIL-N-25027 NON DRY LUBRICANT SHALL BE SOLUBLE IN THE CLEANER SPECIFIED IN MIL-S-8802
- 5 SURFACE ROUGHNESS. IN ACCORDANCE WITH ANSI/ASME B46.1 UNLESS OTHERWISE SPECIFIED THE SURFACE ROUGHNESS SHALL NOT EXCEED 125 MICROINCHES
- 6 PERFORMANCE. SEE PROCUREMENT SPECIFICATION EXCEPT DRY FILM LUBRICATED CRES NUTS LIMITED TO FIVE REUSE CYCLES
- 7 MAGNETIC PERMEABILITY. IN ACCORDANCE WITH MIL-N-25027

NOTES.

- 1 DIMENSIONS IN INCHES
- 2 BREAK ALL SHARP EDGES AND REMOVE ALL BURRS AND SLIVERS
- 3 EXAMPLE OF PART NUMBER
 MS21045-4 = 2500-28 STEEL NUT, CADMIUM PLATED SOLUBLE LUBRICANT SEGMENTED BEAM LOCK OR ELLIPTICAL LOCK
 MS21045L4 = 2500-28 STEEL NUT CADMIUM PLATED DRY FILM LUBRICANT SEGMENTED BEAM LOCK OR ELLIPTICAL LOCK
 MS21045C4 = 2500-28 CORROSION RESISTANT STEEL NUT DRY FILM LUBRICANT SEGMENTED BEAM LOCK OR ELLIPTICAL LOCK
 MS21045-4S = 2500-28 STEEL NUT CADMIUM PLATED SOLUBLE LUBRICANT SEGMENTED BEAM LOCK
 MS21045-4E = 2500-28 STEEL NUT CADMIUM PLATED SOLUBLE LUBRICANT ELLIPTICAL LOCK
- 4 AN ADDITIONAL DASH "S" CODE INDICATES SEGMENTED BEAM LOCK "E" CODE INDICATES ELLIPTICAL BEAM LOCK "A" CODE INDICATES ION VAPOR DEPOSITED ALUMINUM COATING
- 5 DESIGN AND USAGE LIMITATIONS THESE NUTS ARE DESIGNED TO DEVELOP THE TENSILE STRENGTH OF BOLTS AND SCREWS WITH AN ULTIMATE STRESS (F_{tu}) OF 125 KSI BASED ON THE CROSS SECTIONAL AREA AT THE BASIC ROOT DIAMETER OF THE THREAD THESE NUTS ARE DESIGNED TO BE USED ON 3A EXTERNAL THREADS PER MIL-S-8879 THESE NUTS SHALL BE USED IN ACCORDANCE WITH THE LIMITATIONS OF MS33588
- 6 INTERCHANGEABILITY RELATIONSHIP (STATUS NOTE) EXCEPT FOR THE AN363 7/16-20 THREAD SIZE NUTS MS21045 NUTS CAN UNIVERSALLY REPLACE THE ALL METAL AN363 AND NAS1021 NUTS OF LIKE MATERIAL PLATING AND AND THREAD SIZE BUT THESE AN363 AND NAS1021 NUTS CANNOT UNIVERSALLY REPLACE THE MS21045 NUTS
- 7 BIDS SHALL BE SOLICITED ONLY FROM THE MANUFACTURERS LISTED ON OPL-25027
- 8 IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS DOCUMENT AND THE REFERENCES CITED HEREIN THE TEXT OF THIS DOCUMENT SHALL TAKE PRECEDENCE
- 9 UNLESS OTHERWISE SPECIFIED ISSUES OF REFERENCED DOCUMENTS ARE THOSE IN EFFECT AT THE TIME OF SOLICITATION

| | | |
|---|--|------------------------------------|
| PREPARING ACTMITY DLA-IS | MILITARY SPECIFICATION SHEET | SPECIFICATION SHEET NUMBER |
| CUSTODIANS ARMY- AR NAVY- AS | TITLE | MS21045 |
| AIR FORCE- 99 DLA- | NUT SELF-LOCKING HEXAGON-REGULAR HEIGHT 450F 125 KSI F _{tu} | 5 NOV 94 REV L |
| REVIEW AT, AV ER, GL, MI, OS, SM, 11, 82 | | SUPERSEDING MS21045 K 30 AUG 94 |
| USER | | AMSC- N/A FSC 5310 |
| PROJECT NUMBER 5310-2029 | | |
| DISTRIBUTION STATEMENT | | Page 3 of 4 |
| A Approved for public release distribution is unlimited | | |

DD Form 672, MAY 88

FORMER EDITIONS ARE OBSOLETE

TABLE II INTERCHANGEABILITY TABLE

| SEE INTERCHANGEABILITY RELATIONSHIP, STATUS NOTE | | | | | | | |
|--|---------|--------------------------|------|-----------------------|---------|--------------------------|------|
| CANCELLED PART NUMBER | | SUBSTITUTIVE PART NUMBER | | CANCELLED PART NUMBER | | SUBSTITUTIVE PART NUMBER | |
| AN363 | NAS1021 | MS21045 | | AN363 | NAS1021 | MS21045 | |
| - | - | A04 | L04 | - | - | A7 | L7 |
| -532 | - | A06 | L06 | -813 | - | - | NONE |
| C632 | B632 | - | C06 | -820 | - | A8 | L8 |
| -832 | - | A08 | L08 | C820 | B820 | - | C8 |
| C832 | B832 | - | C08 | -913 | - | - | NONE |
| -1024 | - | - | NONE | -918 | - | A9 | L9 |
| -1032 | - | A3 | L3 | C918 | B918 | - | C9 |
| C1032 | B1032 | - | C3 | -1011 | - | - | NONE |
| -420 | - | - | NONE | -1018 | - | A10 | L10 |
| -428 | - | A4 | L4 | C1018 | B1018 | - | C10 |
| C428 | B428 | - | C4 | -1210 | - | - | NONE |
| -518 | - | - | NONE | -1216 | - | A12 | L12 |
| -524 | - | A5 | L5 | C1216 | B1216 | - | C12 |
| C524 | B524 | - | C5 | - | - | A14 | L14 |
| -616 | - | - | NONE | - | - | A16 | L16 |
| -624 | - | A6 | L6 | - | - | A17 | NONE |
| C624 | B624 | - | C6 | - | - | A18 | L18 |
| -714 | - | - | NONE | - | - | A20 | L20 |
| -720 | - | - | NONE | - | - | - | - |

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDSS SPECIFIED IN THE SOLICITATION MIL-N-25027

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

| | | |
|---|---|--|
| PREPARING ACTIVITY DLA-IS CUSTODIANS ARMY- AR NAVY- AS AIR FORCE- 99 DLA- REVIEW AT AV ER, GL, MI OS, SH 11 B2 USER PROJECT NUMBER 5310-2029 | MILITARY SPECIFICATION SHEET TITLE NUT SELF-LOCKING HEXAGON-REGULAR HEIGHT 450F 125 KSI FtU | SPECIFICATION SHEET NUMBER MS21045 5 NOV 94 REV L SUPERSEDING MS21045 K 30 AUG 94 AMSC- N/A FSC 5310 |
| DISTRIBUTION STATEMENT A. Approved for public release distribution is unlimited | | Page 4 of 4 |

DD Form 672, MAY 88