

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 DODISS 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

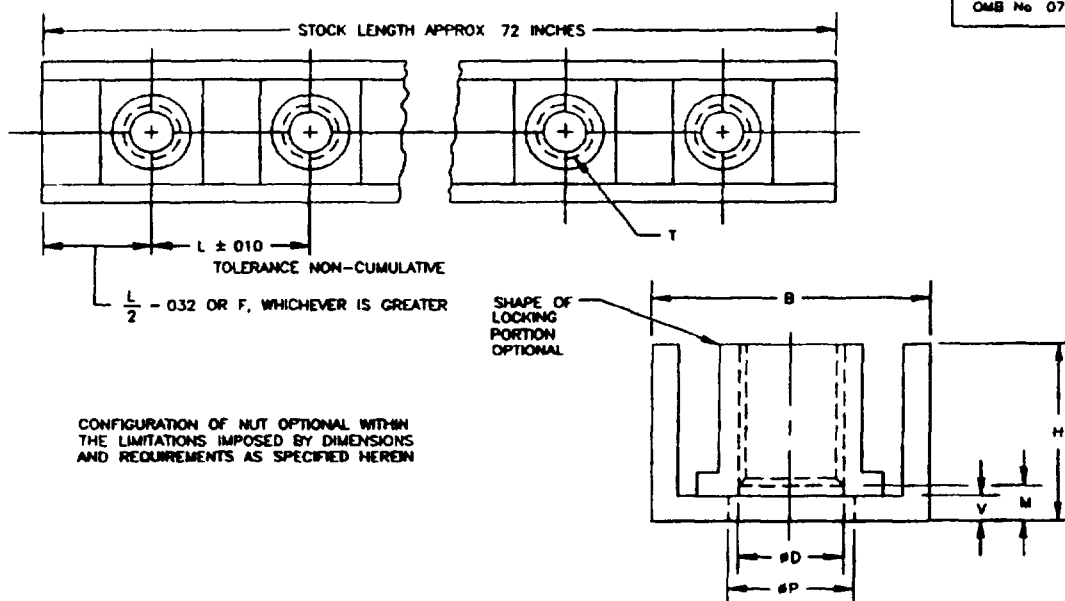


TABLE I DASH NUMBERS AND DIMENSIONS

| FIRST DASH NUMBERS           |                          | T<br>THREAD<br>SIZES | B<br>MAX | ØD<br>MIN | F<br>MIN | 1/<br>H<br>MAX | L<br>MIN<br>SPACING<br>AVAILABLE | M<br>MIN | 2/<br>ØP |     | V<br>MAX | AXIAL<br>STRENGTH<br>LBS/MIN | WEIGHT                     |                     |
|------------------------------|--------------------------|----------------------|----------|-----------|----------|----------------|----------------------------------|----------|----------|-----|----------|------------------------------|----------------------------|---------------------|
| NON-DRY<br>FILM<br>LUBRICANT | DRY<br>FILM<br>LUBRICANT |                      |          |           |          |                |                                  |          | MAX      | MIN |          |                              | NUT<br>ELEMENTS<br>LBS/100 | CHANNEL<br>LBS/INCH |
| -08                          | L08                      | 184-32 UNJC-3B       | 416      | 168       | 343      | 250            | 825                              | 062      | 270      | 184 | 035      | 1 720                        | 19                         | 0028                |
| -3                           | L3                       | 190-32 UNJF-3B       | 416      | 194       | 343      | 250            | 825                              | 062      | 270      | 210 | 035      | 2 460                        | 20                         | 0028                |
| -4                           | L4                       | 250-28 UNJF-3B       | 516      | 254       | 408      | 281            | 750                              | 062      | 330      | 270 | 045      | 4 580                        | 43                         | 0032                |
| -5                           | L5                       | 3125-24 UNJF-3B      | 809      | 317       | 489      | 328            | 875                              | 062      | 393      | 333 | 045      | 7 390                        | 64                         | 0053                |
| -6                           | L6                       | 375-24 UNJF-3B       | 726      | 379       | 562      | 344            | 1 000                            | 062      | 455      | 395 | 055      | 11 450                       | 1 08                       | 0073                |

- 1/ "H" MAX APPLIES TO NUT ELEMENT AND CHANNEL. MIN "H" NOT SPECIFIED, LIMITED ONLY BY STRENGTH REQUIREMENTS OF SPECIFICATION  
2/ HOLE IN CHANNEL MUST PROVIDE FOR FULL FLOAT OF NUT ELEMENT BUT NEED NOT BE CIRCULAR

TABLE II DASH NUMBERS AND DIMENSIONS

| SECOND<br>DASH<br>NUMBER | L<br>NUT<br>ELEMENT<br>SPACING | MAXIMUM<br>NUMBER<br>OF NUT<br>ELEMENT(S) |
|--------------------------|--------------------------------|-------------------------------------------|
| -5                       | 825                            | 115                                       |
| -6                       | 750                            | 98                                        |
| -7                       | 875                            | 82                                        |
| -8                       | 1 000                          | 72                                        |
| -9                       | 1 125                          | 64                                        |
| -10                      | 1 250                          | 57                                        |
| -11                      | 1 375                          | 52                                        |
| -12                      | 1 500                          | 48                                        |
| -13                      | 1 625                          | 44                                        |
| -14                      | 1 750                          | 41                                        |
| -15                      | 1 875                          | 38                                        |
| -16                      | 2 000                          | 36                                        |
| -18                      | 2 250                          | 32                                        |
| -20                      | 2 500                          | 28                                        |
| -24                      | 3 000                          | 24                                        |

(H) DENOTES CHANGE(S)

INCH-POUND

|                                                                                                                             |  |                                                                                                                                             |  |                                                                                                                               |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| PREPARING ACTIVITY DLA-IS<br>CUSTODIANS ARMY- AV NAVY- AS<br>AIR FORCE- 99 DLA-<br>REVIEW CR MI<br>PROJECT NUMBER 5310-1951 |  | MILITARY SPECIFICATION SHEET<br>TITLE<br>NUT, SELF-LOCKING GANG CHANNEL,<br>FLOATING, LOW HEIGHT, STEEL,<br>125 KSI F <sub>tu</sub> , 250°F |  | SPECIFICATION SHEET NUMBER<br><b>MS21063</b> 15 APR 94<br>REV H<br>SUPERSEDING<br>MS21063 G 21 NOV 1988<br>AMSC- N/A FSC 5310 |  |  |  |  |  |
| DISTRIBUTION STATEMENT A. Approved for public release distribution is unlimited                                             |  |                                                                                                                                             |  |                                                                                                                               |  |  |  |  |  |
| Page 1 of 3                                                                                                                 |  |                                                                                                                                             |  |                                                                                                                               |  |  |  |  |  |

DD Form 672, MAY 88

PREVIOUS EDITIONS ARE OBSOLETE

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# REQUIREMENTS

## 1 MATERIAL

NUT ELEMENT - CARBON STEEL COMPOSITIONS 1035 (UNS G10350), 1040 (UNS G10400) AND 1050 (UNS G10500) IN ACCORDANCE WITH ASTM A29, ASTM A827 OR QQ-S-700, 1042 (UNS G10420), IN ACCORDANCE WITH ASTM A29 ALLOY STEEL, GRADES 4130 (UNS G41300) 4340 (UNS G43400) AND 8740 (UNS G87400) IN ACCORDANCE WITH ASTM A29

CHANNEL - ALUMINUM ALLOY 1100 ANNEALED (UNS A91100) IN ACCORDANCE WITH QQ-A-250/1 ALUMINUM ALLOY 2024, TEMPER T4 (UNS A92024) IN ACCORDANCE WITH QQ-A-250/4 ALUMINUM, ALLOY 7075, TEMPER T6 (UNS A97075) IN ACCORDANCE WITH QQ-A-250/12 OR QQ-A-250/13 (ALCLAD)

## 2 LENGTH TO BE STOCKED IN 72-INCH LENGTHS ONLY

## 3 FINISH NUT ELEMENTS - CADMIUM PLATE IN ACCORDANCE WITH QQ-P-416 TYPE II, CLASS 2 DRY FILM LUBRICATED NUT ELEMENTS IN ACCORDANCE WITH QQ-P-416 TYPE AND CLASS ARE OPTIONAL IF THE NUT ELEMENTS WILL MEET THE SALT SPRAY REQUIREMENTS OF QQ-P-416 TYPE II CHANNEL - IN ACCORDANCE WITH PROCUREMENT SPECIFICATION

## 4 LUBRICANT DRY FILM LUBRICANT ON NUT ELEMENT ONLY APPROVED IN ACCORDANCE WITH MIL-N-25027 NON-DRY FILM LUBRICANTS SHALL BE SOLUBLE IN THE CLEANER SPECIFIED IN MIL-S-8802

## 5 DIMENSIONING AND TOLERANCING DIMENSIONING AND TOLERANCING SHALL BE IN ACCORDANCE WITH ANSI Y14.5M

## 6 HARDNESS NUT ELEMENTS SHALL HAVE A HARDNESS OF 49HRC MAX

## 7 THREADS THREADS BEFORE LUBRICATION IN ACCORDANCE WITH MIL-S-8879

## 8 SURFACE TEXTURE SURFACE TEXTURE UNLESS OTHERWISE SPECIFIED SHALL NOT EXCEED 125 MICRONS, IN ACCORDANCE WITH ANSI/ASME B46.1

## 9 FLOAT OF NUT ELEMENT FLOAT OF NUT ELEMENT PORTION OF ASSEMBLY SHALL NOT BE LESS THAN .030 NOR MORE THAN .040 LONGITUDINALLY AND NOT LESS THAN .010 NOR MORE THAN .030 LATERALLY FROM CENTERED POSITION NUT ELEMENT SHALL BE CAPABLE OF ENGAGEMENT WITH A BOLT IN THE MAXIMUM MISALIGNMENT POSITION MAXIMUM AXIAL FLOAT .020 INCH FOR -.08 AND -.3 .030 FOR LARGER SIZES

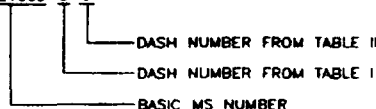
## 10 ASSEMBLY THE ASSEMBLY SHALL PROVIDE A BEARING SURFACE FOR THE NUT ELEMENT WITHIN THE HOUSING THE CENTERLINE OF THE CHANNEL SHALL NOT DEVIATE FROM A STRAIGHT LINE BY MORE THAN .015 IN ANY 12 INCHES THE NUT ELEMENT AND BASE PORTION OF THE ASSEMBLY SHALL FORM ONE INTEGRAL UNIT

## 11 EDGES BREAK SHARP CORNERS AND REMOVE ALL BURRS

## 12 CODE FIRST DASH NUMBER DESIGNATES THREAD SIZE SECOND DASH NUMBER DESIGNATES NUT ELEMENT SPACING IN EIGHTHS OF AN INCH THIRD DASH NUMBER INDICATES NUMBER OF NUT ELEMENTS WHEN LESS THAN STOCK LENGTH (APPROX 72 INCHES) IS DESIRED LETTER "L" BEFORE FIRST DASH NUMBER DESIGNATES DRY FILM LUBRICATED NUT ELEMENTS

## 13 PART NUMBER THE PART NUMBER SHALL CONSIST OF THE BASIC MS NUMBER FOLLOWED BY A DASH NUMBER FROM TABLE I AND TABLE II AND A THIRD DASH NUMBER IF SPECIFIED (SEE REQUIREMENT 12)

EXAMPLE MS21063-3-6



MS21063-3-6 INDICATES NUT SELF-LOCKING GANG CHANNEL, FLOATING LOW HEIGHT, STEEL 125 KSI F<sub>u</sub>, 250° F, GANG CHANNEL ASSEMBLY CONSISTING OF NINETY-SIX 190-32 UNJF-3B CADMIUM PLATED NUT ELEMENTS SPACED AT 750 INCH

MS21063L4-7-10 INDICATES NUT SELF-LOCKING GANG CHANNEL, FLOATING LOW HEIGHT, STEEL, 125 KSI F<sub>u</sub>, 250° F, GANG CHANNEL ASSEMBLY CONSISTING OF TEN 250-28 UNJF-3B CADMIUM PLATED DRY FILM LUBRICATED NUT ELEMENTS SPACED AT 875 INCH

PREPARING ACTIVITY DLA-15

CUSTODIANS ARMY- AV NAVY- AS

AIR FORCE- 99 DLA-

REVIEW CR, MI

PROJECT NUMBER 5310-1951

DISTRIBUTION STATEMENT A. Approved for public release distribution is unlimited

### MILITARY SPECIFICATION SHEET

#### TITLE

NUT, SELF-LOCKING GANG CHANNEL,  
FLOATING, LOW HEIGHT, STEEL,  
125 KSI F<sub>u</sub>, 250° F

SPECIFICATION SHEET NUMBER

MS21063

15 APR 94  
REV H

SUPERSEDING

MS21063 G 21 NOV 1988

AMSC- N/A

FSC 5310

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#### NOTES

- 1 ALL DIMENSIONS ARE IN INCHES DIMENSIONS TO BE MET PRIOR TO LUBRICATION
- 2 IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE
- 3 REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN
- 4 DESIGN AND USAGE LIMITATIONS THESE NUTS ARE DESIGNED TO DEVELOP THE TENSILE STRENGTHS OF BOLTS AND SCREWS WITH AN ULTIMATE TENSILE STRENGTH OF 125 KSI BASED ON THE CROSS SECTION AREA AT THE BASIC ROOT DIAMETER OF THE THREADS THESE NUTS ARE DESIGNED TO BE USED ON 3A EXTERNAL THREADS THESE NUTS SHALL BE USED IN ACCORDANCE WITH THE LIMITATIONS OF MS33358 ONLY NUTS FOR WHICH THERE ARE QUALIFIED PRODUCTS LISTED ON QPL 25027 SHALL BE USED

#### INTERCHANGEABILITY RELATIONSHIP

MS21063 NUTS CAN UNIVERSALLY REPLACE NAS688 THRU NAS692 AND NAS1034 THRU NAS1038 NUTS OF LIKE THREAD SIZE LUBRICANT (DRY FILM OR NON-DRY FILM), PLATING NUT ELEMENT SPACING NUMBER OF NUT ELEMENTS AND MATERIAL BUT THESE NAS688 THRU NAS692 AND NAS1034 THRU NAS1038 NUTS CANNOT UNIVERSALLY REPLACE MS21063 NUTS

#### INTERCHANGEABILITY TABLE

| CANCELLED PART NUMBERS <sup>1/</sup> |          | SUBSTITUTIVE PART NUMBERS <sup>1/</sup> |
|--------------------------------------|----------|-----------------------------------------|
| NAS1034PX                            | NAS688PX | MS21063-06                              |
| NAS1035PX                            | NAS689PX | MS21063-3                               |
| NAS1036PX                            | NAS690PX | MS21063-4                               |
| NAS1037PX                            | NAS691PX | MS21063-5                               |
| NAS1038PX                            | NAS692PX | MS21063-6                               |
| NAS1034P                             | NAS688P  | MS21063L08                              |
| NAS1035P                             | NAS689P  | MS21063L3                               |
| NAS1036P                             | NAS690P  | MS21063L4                               |
| NAS1037P                             | NAS691P  | MS21063L5                               |
| NAS1038P                             | NAS692P  | MS21063L6                               |

<sup>1/</sup> NUT ELEMENT SPACING DASH NUMBER IS IDENTICAL FOR BOTH CANCELLED AND CORRESPONDING SUBSTITUTIVE PART NUMBERS

|                                                                                                                      |                                                                                                                               |                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
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