

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 DOORS SPECIFIED IN THE SOLICITATION: MIL-N-25077

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

Form Approved  
OMB No. 0704-0188

CONFIGURATION OF NUT OPTIONAL WITHIN THE LIMITATIONS IMPOSED BY DIMENSIONS AND REQUIREMENTS SPECIFIED HEREIN.

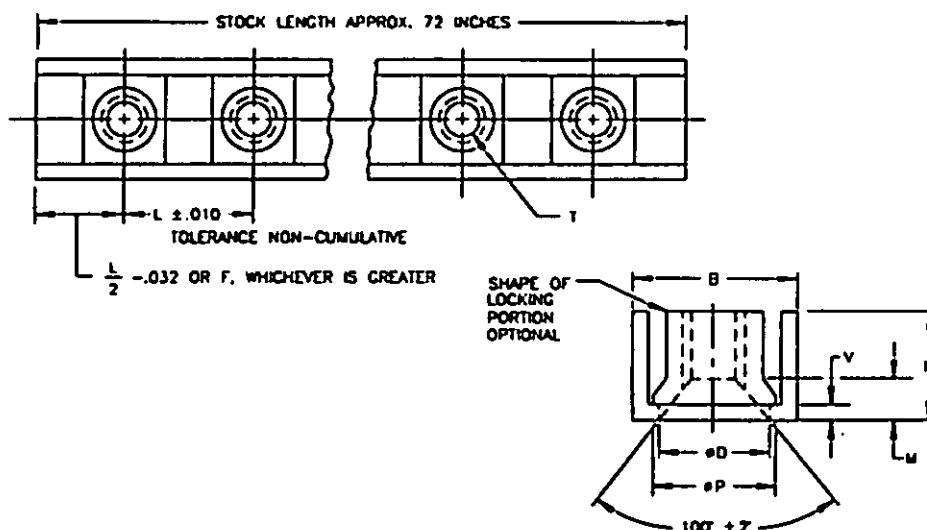


TABLE I. DASH NUMBERS AND DIMENSIONS

FIRST DASH NUMBER		T THREAD SIZES	B MAX	ØD MIN	F MIN	H MAX	L MIN SPACING AVAILABLE	M REF	ØP <sup>2/</sup>		V MAX	AXIAL STRENGTH LBS/MIN	WEIGHT	
NON-DRY FILM LUBRICANT	DRY FILM LUBRICANT								MAX	MIN			NUT ELEMENTS LBS/100	CHANNEL LBS/INCH
-08	L08	.164-32 UNJC-3B	.593	.360	.406	.272	.750	.084	.491	.385	.035	1,720	.24	.0038
-3	L3	.190-32 UNJF-3B	.593	.406	.406	.281	.750	.093	.491	.431	.035	2,460	.28	.0038
-4	L4	.250-28 UNJF-3B	.874	.535	.562	.340	1.000	.107	.620	.560	.045	4,580	.60	.0052

- 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 DASH NUMBER	L NUT ELEMENT SPACING	MAXIMUM NUMBER OF NUT ELEMENTS
-5	.625	113
-6	.750	88
-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

(C) DENOTES CHANGE(S)

INCH-POUND

PREPARING ACTIVITY: DLA-15

CUSTODIANS: ARMY- AV

NAVY- AS

AIR FORCE- 11

DLA-

REVIEW: CR, WL 82

PROJECT NUMBER: 5310-1953

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

# MILITARY SPECIFICATION SHEET

TITLE

NUT, SELF-LOCKING GANG CHANNEL 100  
CSK, FLOATING, LOW HEIGHT, STEEL  
125 KSI Ftu, 250°F

SPECIFICATION SHEET NUMBER

MS21066

15 APR 84  
REV G

SUPERSEDING

MS21066 F 30 SEP 87 (SEE NOTE 3)

AMSC-

N/A

FSC 5310

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DD Form 672, MAY 88

PREVIOUS EDITIONS ARE OBSOLETE

## 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 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 (ALCAD).

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 MICROINCHES, 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 -4.10. 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 WS NUMBER FOLLOWED BY A DASH NUMBER FROM TABLE I AND TABLE II AND A THIRD DASH NUMBER, IF SPECIFIED (SEE REQUIREMENT 12).

EXAMPLE: MS21066-3-6

DASH NUMBER FROM TABLE II

DASH NUMBER FROM TABLE I

BASIC WS NUMBER

MS21066-3-6 INDICATES: NUT, SELF-LOCKING GANG CHANNEL, 100° CSK, FLOATING, LOW HEIGHT, STEEL; 125 KSI Flt, 250° F; GANG CHANNEL ASSEMBLY CONSISTING OF NINETY-SIX .180-32 UNJF-3B, CADMIUM PLATED NUT ELEMENTS SPACED AT .750 INCH.

MS21066L4-7-10 INDICATES: NUT, SELF-LOCKING GANG CHANNEL, 100° CSK, FLOATING, LOW HEIGHT, STEEL; 125 KSI Flt, 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-IS  
CUSTODIANS: ARMY- AV NAVY- AS  
AIR FORCE- 11 DLA-  
REVIEW: CR, MI, 82

PROJECT NUMBER: 5310-1953

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

## MILITARY SPECIFICATION SHEET

## TITLE

NUT, SELF-LOCKING GANG CHANNEL, 100°  
CSK, FLOATING, LOW HEIGHT, STEEL,  
125 KSI Flt, 250° F

## SPECIFICATION SHEET NUMBER

MS21066

15 APR 94  
REV C

## SUPERSEDING

MS21066 F 30 SEP 87 (SEE NOTE 5)

AMSC- N/A

FSC 5310

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DD Form 672, MAY 88

PREVIOUS EDITIONS 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 DODSS SPECIFIED IN THE SOLICITATION: MIL-N-25027

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

## 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 WSJ3588. ONLY NUTS FOR WHICH THERE ARE QUALIFIED PRODUCTS LISTED ON OPL 25027 SHALL BE USED.
5. WS21066 SUPERSEDES NAS 693 THRU 695, NAS 1039 THRU 1041 IN PART.

INTERCHANGEABILITY RELATIONSHIP

WS21066 NUTS CAN UNIVERSALLY REPLACE NAS693 THRU NAS1041 NUTS OF LIKE THREAD SIZE, LUBRICANT (DRY FILM OR NON-DRY FILM); PLATING, NUT ELEMENT SPACING, NUMBER OF NUT ELEMENTS AND MATERIAL; BUT THESE NAS693 THRU NAS1041 NUTS CANNOT UNIVERSALLY REPLACE WS21066 NUTS.

INTERCHANGEABILITY TABLE

CANCELLED PART NUMBERS <sup>1/</sup>		SUBSTITUTIVE PART NUMBERS <sup>1/</sup>
NAS693PX	NAS1039PX	WS21066-08
NAS694PX	NAS1040PX	WS21066-3
NAS695PX	NAS1041PX	WS21066-4
NAS693P	NAS1039P	WS21066L08
NAS694P	NAS1040P	WS21066L3
NAS695P	NAS1041P	WS21066L4

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

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

PREPARING ACTIVITY: DLA-15 CUSTODIANS: ARMY-AY      NAVY-AS AIR FORCE-11      DLA- REVIEW: CR, M, B2 PROJECT NUMBER: 5310-1953		SPECIFICATION SHEET NUMBER <b>MS21066</b> 15 APR 84 REV C
TITLE NUT, SELF-LOCKING GANG CHANNEL, 100 CSK, FLOATING, LOW HEIGHT, STEEL, 125 KSI FN, 250F		SUPERSEDING MS21066 F      30 SEP 87 (SEE NOTE 5) AMSC-      N/A      FSC 5310
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