

MIL-N-8985/3(AS)
23 August 1982

MILITARY SPECIFICATION SHEET

NUT, CAPTIVE WASHER, SELF-LOCKING, STEEL, 180 KSI Ft_u,
450°F, (12-SPLINE) WRENCHING ELEMENT

This specification is approved for use by the Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the nuts described herein shall consist of this document and the latest issue of MIL-N-8985.

1. Application criteria. The nuts shall be used in accordance with the limitations of MS33588.
2. Tooling: During installation, wrenches in accordance with MIL-W-8982 shall be used for hand or power driven nuts.
3. Military installation: Navy - NAVWEPS-01-1A-8
Air Force - T.O. 1-1A-8
4. General requirements:
 - 4.1 Material: Nut material shall be alloy steel in accordance with MIL-S-6049 (8740) or MIL-S-5000 (4340). Washer material shall be carbon steel in accordance with AMS 5085.
 - 4.2 Heat treatment: The nut shall be heat treated to Rockwell C 36-40 in accordance with MIL-H-6875. The washer hardness shall be Rockwell C 40-45, KNOOP (402-466).
 - 4.3 Surface texture shall be in accordance with ANSI B46.1.
 - 4.4 Coating: The nut shall be cadmium plated in accordance with QQ-P-416, Type II, Class 2 or dry film lubricated in accordance with QQ-P-416, Class II (type and class are optional if nut meets the salt spray requirements). The washer shall be cadmium plated in accordance with QQ-P-416, Type II, Class 2.
 - 4.5 Lubrication: The nut shall be lubricated with lubricant in accordance with MIL-L-8937. Lubricants, except dry film lubricant, shall be soluble in cleaner specified in MIL-N-8985.
 - 4.6 Threads shall be in accordance with MIL-S-8879 before lubrication.

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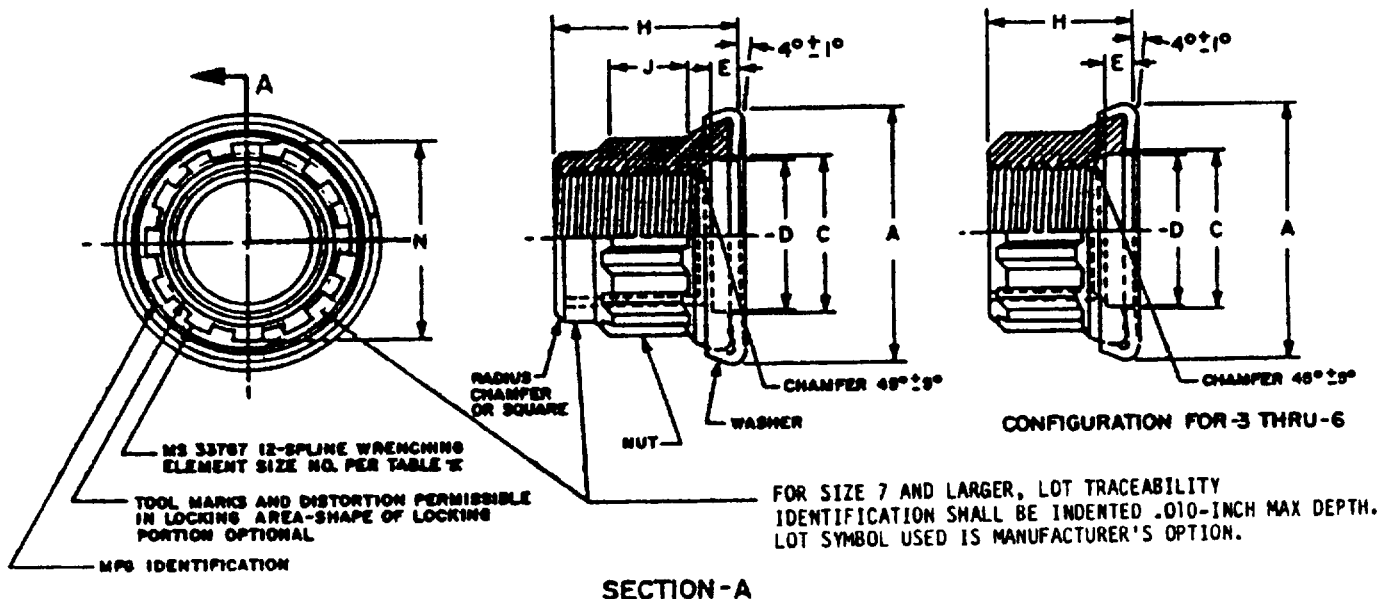
4.7 Wrenching element shall be in accordance with MS33787.

4.8 Geometric tolerance: Perpendicularity - the bearing surface shall be normal with pitch diameter of thread within X when checked in accordance with MIL-N-8985.

4.9 Concentricity: N diameter shall be concentric to pitch diameter of thread within X values T.I.R.

4.10 Dimensions shall be in inches. Dimensions apply before lubrication.

5. Illustration:



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6. Table I. Dimensions.

SIZE NUMBER		THREAD	MS33787 (12 SPLINE) ELEMENT NUMBER	A	C	D	E
NON - DRY LUBE	DRY LUBE			MAX	±.005	±.005	+.010 -.005
3	L 3	.1900-32UNJF-3B	8	.460	.288	.282	.077
4	L 4	.2500-28UNJF-3B	10	.560	.353	.347	.077
5	L 5	.3125-24UNJF-3B	12	.660	.418	.412	.077
6	L 6	.3750-24UNJF-3B	14	.760	.485	.479	.077
7	L 7	.4375-20UNJF-3B	18	.860	.552	.546	.077
8	L 8	.5000-20UNJF-3B	20	1.000	.636	.621	.077
9	L 9	.5625-18UNJF-3B	22	1.100	.765	.750	.087
10	L10	.6250-18UNJF-3B	24	1.310	.840	.825	.087
12	L12	.7500-16UNJF-3B	30	1.480	.987	.972	.092
14	L14	.8750-14UNJF-3B	34	1.690	1.111	1.096	.097
16	L16	1.0000-12UNJF-3B	38	1.834	1.253	1.238	.097
18	L18	1.1250-12UNJF-3B	44	2.100	1.425	1.410	.097
20	L20	1.2500-12UNJF-3B	48	2.250	1.500	1.485	.097
22	L22	1.3750-12UNJF-3B	52	2.480	1.650	1.635	.097
24	L24	1.5000-12UNJF-3B	56	2.690	1.780	1.765	.097

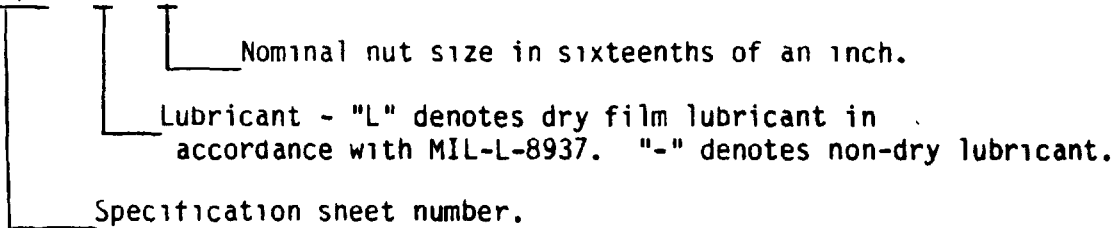
SIZE NO.		H		J	N	X	Y	ULTIMATE AXIAL STRENGTH LB MIN (a)
NON - DRY LUBE	DRY LUBE	MAX	MIN	MIN	MAX			
3	L 3	.280	.260	.080	.308	.003	.004	4,070
4	L 4	.332	.312	.100	.381	.003	.004	7,280
5	L 5	.400	.380	.120	.456	.003	.005	11,500
6	L 6	.478	.458	.152	.531	.003	.006	17,100
7	L 7	.525	.505	.168	.679	.003	.008	23,200
8	L 8	.603	.583	.190	.753	.003	.008	30,900
9	L 9	.672	.652	.230	.828	.004	.009	39,200
10	L10	.734	.714	.250	.901	.004	.010	49,000
12	L12	.879	.859	.310	1.124	.004	.012	71,000
14	L14	1.012	.992	.350	1.270	.005	.014	97,100
16	L16	1.140	1.120	.400	1.419	.006	.016	129,000
18	L18	1.337	1.317	.450	1.641	.007	.019	162,000
20	L20	1.524	1.504	.500	1.788	.007	.021	202,000
22	L22	1.659	1.639	.550	1.937	.008	.023	246,000
24	L24	1.847	1.827	.600	2.085	.008	.023	296,000

(a) AXIAL STRENGTH DETERMINED FROM FORMULA $W_a = F_{tu}A$. WHERE. A IS THE CROSS SECTIONAL AREA IN SQUARE INCHES, BASED ON THE MAXIMUM PITCH DIAMETER OF BOLT THREAD, F_{tu} IS 180 KSI AND W_a IS THE AXIAL STRENGTH IN POUNDS.

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7. Part number example and code:

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8. Military review activities:

Custodians:

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Preparing activity:

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(Project No. 5310-N034)

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DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-N-8985/3(AS) Nut Captive Washer Self-Locking Steel, 180
KSI FTU

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

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1 OCT 76

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