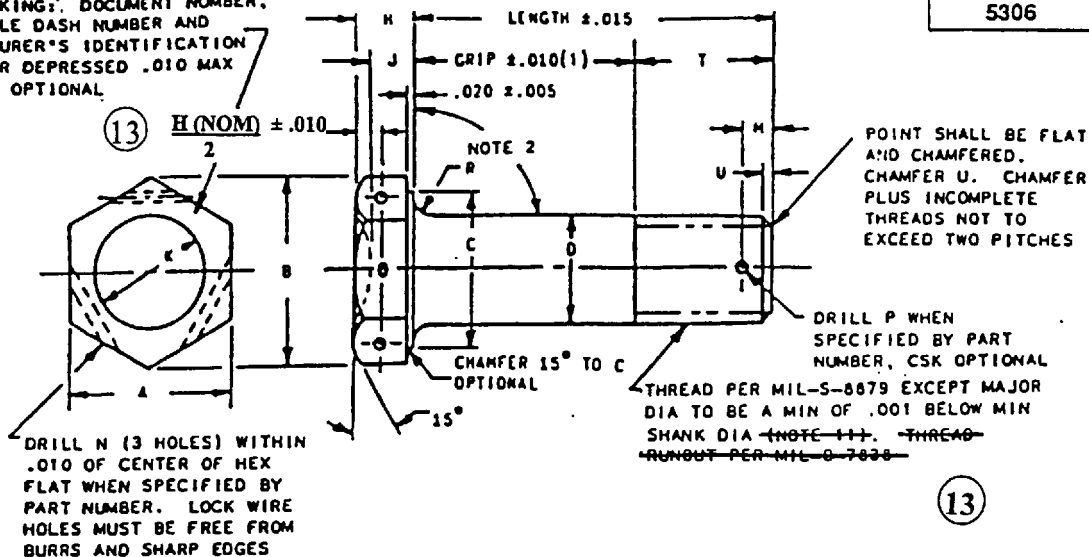


HEAD MARKING: DOCUMENT NUMBER,
APPLICABLE DASH NUMBER AND
MANUFACTURER'S IDENTIFICATION
RAISED OR DEPRESSED .010 MAX
LOCATION OPTIONAL
NOTE 9



BASIC DOCUMENT NUMBER	(11) THREAD UNJF-3A	A	(5) B REF	(3) C MIN	D DIA *		H +.015 -0.000	J +.015 -0.000	K DIA ±.01	M ±.010	N DIA +.010 -0.000	(4) P DIA +.010 -0.000	R RAD	(5) T (REF)	(5) U (REF)
					BEFORE PLATE	AFTER PLATE									
NAS1303	.1900-32	.376 .367	.43	.335	.1885 .1879	.1895 .1885	.110	.073	.19	.163	.046	.070	.020 .010	.338	.016
NAS1304	.2500-28	.439 .430	.51	.398	.2485 .2479	.2495 .2485	.125	.083	.25	.178	.046	.076	.020 .010	.425	.018
NAS1305	.3125-24	.502 .492	.58	.460	.3110 .3104	.3120 .3110	.156	.104	.31	.181	.070	.076	.020 .010	.469	.021
NAS1306	.3750-24	.564 .553	.65	.523	.3735 .3729	.3745 .3735	.188	.125	.38	.197	.070	.106	.025 .015	.578	.021
NAS1307	.4375-20	.690 .679	.79	.648	.4340 .4334	.4370 .4360	.219	.146	.44	.201	.070	.106	.025 .015	.594	.025
NAS1308	.5000-20	.752 .741	.87	.710	.4935 .4929	.4995 .4985	.250	.167	.50	.216	.070	.106	.030 .020	.735	.025
NAS1309	.5625-18	.877 .865	1.01	.835	.5605 .5599	.5615 .5605	.281	.188	.56	.218	.070	.141	.035 .020	.840	.028
NAS1310	.6250-18	.940 .928	1.09	.898	.6230 .6224	.6240 .6230	.312	.208	.62	.249	.070	.141	.040 .025	.902	.028
NAS1312	.7500-16	1.064 1.052	1.23	1.023	.7480 .7474	.7490 .7480	.375	.250	.75	.252	.070	.141	.045 .030	1.041	.031
NAS1314	.8750-14	1.252 1.239	1.44	1.210	.8730 .8724	.8740 .8730	.438	.292	.88	.257	.070	.141	.050 .035	1.184	.036
NAS1316	1.0000-12	1.440 1.427	1.66	1.398	.9980 .9974	.9990 .9980	.500	.333	1.00	.264	.070	.141	.060 .045	1.309	.042
NAS1318	1.1250-12	1.627 1.614	1.88	1.585	1.1230 1.1219	1.1240 1.1225	.562	.375	1.12	.357	.070	.141	.070 .055	1.458	.042
NAS1320	1.2500-12	1.815 1.801	2.10	1.772	1.2480 1.2469	1.2490 1.2475	.625	.417	1.25	.389	.070	.141	.075 .060	1.646	.042

* Plating thickness minimum to be .0003 inch per QQ-P-416, Class 2

Inactive for design after October 30, 1981. See NAS6603 thru 6620.
For description of status notes see NAS380.

LIST OF CURRENT SHEETS

SHT.	REV.
1	13
2	11
3	5

CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE

THIRD ANGLE PROJECTION

PROCUREMENT SPECIFICATION
NOTED

TITLE
BOLT, TENSION, HEXAGON HEAD
160 KSI Ftu

CLASSIFICATION
STANDARD PART
NAS1303 THRU 1320
SHEET 1 OF 3

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AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1250 EYE STREET, N.W.
WASHINGTON, D.C. 20005

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PROOF AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST DATE OF APPROVAL SHOWN HEREON.

APPROVAL DATE July 1956 REVISION 7 15 July 1968 8 15 March 1973 9 8 June 1981 10 30 Oct. 1981 11 17 Dec. 1993 12 5 Dec. 1996

13 31 Jan. 2001



NOM SIZE	INSPECTION DATA		
	(6) X	(6) Y	(7) Z
.1900	.005	.0045	.0040
.2500	.006	.0045	.0030
.3125	.008	.0045	.0030
.3750	.009	.006	.0025
.4375	.010	.006	.0025
.5000	.011	.006	.0020
.5625	.012	.006	.0020
.6250	.015	.006	.0020
.7500	.018	.009	.0020
.8750	.020	.009	.0020
1.0000	.022	.009	.0020
1.1250	.025	.009	.0020
1.2500	.028	.012	.0020

11

MATERIAL: ALLOY STEEL-4340 (UNS G43400) PER AMS6484, 4340 (UNS G43406) PER AMS6415, OR 8740 (UNS G87400) PER AMS6322 OR MIL-S-6049.

HEAT TREAT: DEVELOP BASIC MATERIAL PROPERTIES AS FOLLOWS, WITH CONTROLS PER MIL-H-6875.
160-180 KSI F_u PER MIL-H-6875.

FINISH: CADDIUM PLATE PER QQ-P-416, TYPE II, CLASS 2. ~~PARTS WITH CLASS 1 PLATING MAY BE DELIVERED FROM SUPPLIERS' STOCK UNTIL 15 JULY 1981. TYPE II PLATING DESIGNATED BY "H" LETTER CODE.~~

SURFACE TEXTURE: HEAD TO SHANK FILLET, THREAD SIDES, THREAD ROOT, AND RUN OUT $\frac{1}{2}$ RHR MAX; SHANK AND BEARING SURFACE OF HEAD 63 RHR MAX; OTHER AREAS 125 RHR MAX PER ASME B46.1

CODE: NO LETTER CODE = BOLT, UNDRILLED, TYPE II PLATING.

ADD "D" TO DASH NUMBER FOR DRILLED SHANK. (12)

ADD "H" TO DASH NUMBER FOR DRILLED HEAD.

~~ADD "D" TO DASH NUMBER FOR TYPE I PLATING.~~

IF MORE THAN ONE CODE LETTER IS USED IN ONE PART NUMBER, ARRANGE LETTERS ALPHABETICALLY

EXAMPLES OF PART NUMBERS:

NAS1308-10 = BOLT, .5000-20 THREAD, .625 GRIP, UNDRILLED, TYPE II PLATING

NAS1308-10D = BOLT, .5000-20 THREAD, .625 GRIP, DRILLED SHANK, TYPE II PLATING.

NAS1308-10H = BOLT, .5000-20 THREAD, .625 GRIP, DRILLED HEAD, TYPE II PLATING.

NAS1308-10W = BOLT, .5000-20 THREAD, .625 GRIP, UNDRILLED, TYPE I PLATING.

NAS1308-10DW = BOLT, .5000-20 THREAD, .625 GRIP, DRILLED SHANK, TYPE I PLATING.

NOTES:

1. GRIP LENGTH: FROM UNDER SIDE OF HEAD TO END OF FULL CYLINDRICAL PORTION OF SHANK.

2. BEARING SURFACE SQUARENESS: WITHIN .003 FIM WITH SHANK.

3. WASHER FACE DIA: MAY NOT EXCEED ACTUAL WIDTH ACROSS FLATS.

4. COTTER PIN HOLE CENTERLINE: WITHIN .010 AND NORMAL WITHIN 2° OF BOLT CENTERLINE.

5. REFERENCE DIMENSIONS ARE FOR DESIGN PURPOSES ONLY AND ARE NOT AN INSPECTION REQUIREMENT.

6. CONCENTRICITY: "C" AND "D" DIAMETERS WITHIN ".X" VALUES FIM, "D" AND THREAD PITCH DIA WITHIN ".X" VALUES FIM

7. SHANK STRAIGHTNESS: WITHIN ".Z" VALUES FIM PER INCH OF LENGTH.

8. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: ANGLES $\pm 5^{\circ}$

9. CODE LETTERS "D", "H" and "W" NOT REQUIRED IN HEAD MARKING

10. BOLTS SHALL BE FREE FROM BURRS AND SLIVERS.

11. ~~BOLT MANUFACTURERS MAY SUPPLY BOLTS WITH MIL-S-3743 THREADS UNTIL DECEMBER 31, 1999. BOLTS WITH MIL-S-3743 THREADS MAY BE USED UNTIL STOCK IS DEPLETED.~~

12. IF REQUIRED, TENSILE TESTING OF BOLTS REQUIRING CROSS-DRILLED THREADS SHALL BE PERFORMED PRIOR TO DRILLING AND THE APPLICATION OF PLATING AND/OR COATINGS. WHEN BOLTS HAVE BEEN DRILLED, STRENGTH MAY BE VERIFIED BY SHEAR TESTING, IN LIEU OF TENSILE TESTING, IN ACCORDANCE WITH MIL-STD-1312. USERS SHOULD BE AWARE THAT FASTENERS WITH CROSS-DRILLED THREADS MAY EXHIBIT A REDUCTION IN TENSILE STRENGTH.

PROCUREMENT SPECIFICATION: NAS4002 EXCEPT AS NOTED: COLD WORKING OF THE HEAD TO SHANK FILLET AND STRESS DURABILITY NOT APPLICABLE.
EXCEPT FOR 1900-32, ALL BOLTS REQUIRE 100% MAGNETIC PARTICLE INSPECTION PER ASTM E1444.

11

INACTIVE FOR DESIGN AFTER OCT. 30, 1981.
SEE NAS6603 THRU6620.

NAS 1303 THRU 1320

SHEET 2

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