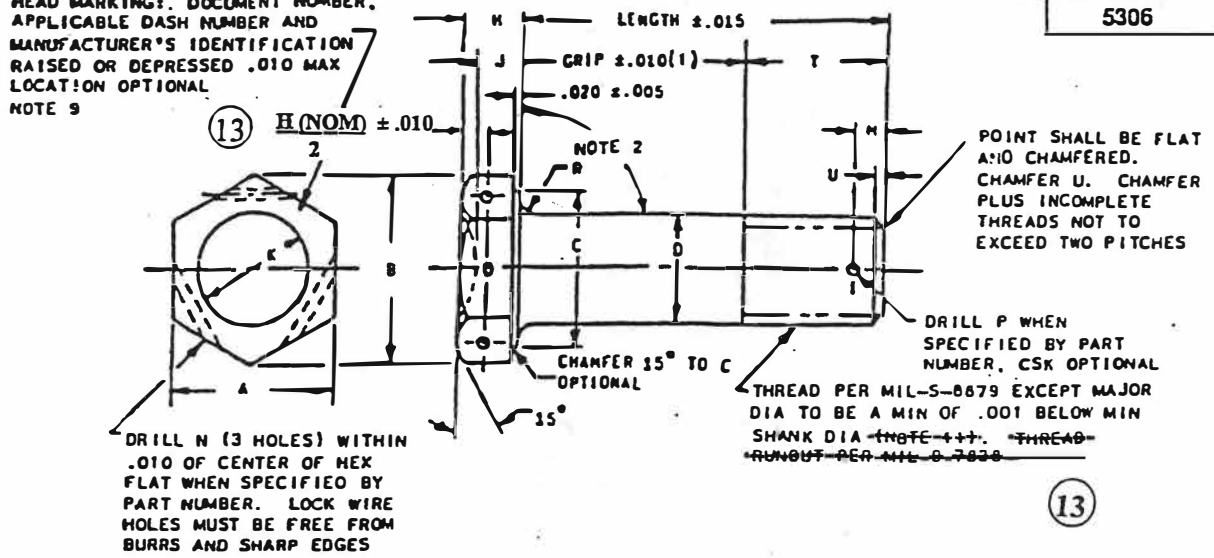
FED SUP CLASS 5306



BASIC DOCUMENT NUMBER	(11) THREAD UNJF-3A	A	(5) B REF	(3) C MIN	D DIA * BEFORE PLATE	D DIA * ~~AFTER PLATE~~	H +.015 -.000	J +.015 -.000	K DIA ±.01	M ±.010	N DIA +.010 -.000	(4) P DIA +.010 -.000	R RAD	(5) T (REF)	(5) U (REF)
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	.4360 .4354	.4370 .4360	.219	.146	.44	.201	.070	.106	.025 .015	.594	.025
NAS1308	.5000-20	.752 .741	.87	.710	.4985 .4979	.4995 .4985	.250	.167	.50	.216	.070	.106	.030 .020	.735	.025
NAS1309	.5625-18	.877 .865	1.01	.835	.5615 .5609	.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 (13)

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 (13)

CLASSIFICATION: STANDARD PART

NAS1303 THRU 1320

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_{TU} PER MIL-H-6875.

FINISH: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2. ~~PARTS WITH CLASS 3 PLATING MAY BE DELIVERED FROM SUPPLIER'S STOCK UNTIL 15 MARCH 1975. TYPE I PLATING DESIGNATED BY "W", SEE CODE.~~

SURFACE TEXTURE: HEAD TO SHANK FILLET, THREAD SIDES, THREAD ROOT, AND RUN OUT 32 RHR MAX; SHANK AND BEARING SURFACE OF HEAD 63 RHR MAX; OTHER AREAS 125 RHR MAX PER ASME B46.1 (11)

CODE: NO LETTER CODE = BOLT, UNDRILLED, TYPE II PLATING.
ADD "D" TO DASH NUMBER FOR DRILLED SHANK. (12)
(11) ADD "H" TO DASH NUMBER FOR DRILLED HEAD.
~~ADD "W" 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: MAX NOT TO EXCEED ACTUAL WIDTH ACROSS FLATS.
4. COTTER PIN HOLE CENTERLINE: WITHIN .010 AND NORMAL WITHIN 2^0 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 "Y" VALUES FIM
7. SHANK STRAIGHTNESS: WITHIN "Z" VALUES FIM PER INCH OF LENGTH.
8. DIMENSIONS IN INCHES. UNLESS OTHER WISE SPECIFIED, TOLERANCES: ANGLES $\pm 5^0$
9. CODE LETTERS "D", "H" and ~~"W"~~ NOT REQUIRED IN HEAD MARKING (11)
10. BOLTS SHALL BE FREE FROM BURRS AND SLIVERS.
11. ~~BOLT MANUFACTURERS MAY SUPPLY BOLTS WITH MIL-S-7742 THREADS UNTIL DECEMBER 31, 1969. BOLTS WITH MIL-S-7742 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.

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

APPROVAL DATE JULY 1956 REVISION (10) 5 Dec. 1996 (11) 31 Jan. 2001

NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W., WASHINGTON, D. C. 20036

DASH NO.	GRIP ±.010	LENGTH FOR SIZES INDICATED												
		NAS 1303	NAS 1304	NAS 1305	NAS 1306	NAS 1307	NAS 1308	NAS 1309	NAS 1310	NAS 1312	NAS 1314	NAS 1316	NAS 1318	NAS 1320
1	.062	.400	.487	.531	.640	.656	.797	.902	.964	1.103	1.246	1.371	1.520	1.708
2	.125	.463	.550	.594	.703	.719	.860	.965	1.027	1.166	1.309	1.434	1.583	1.771
3	.188	.526	.613	.657	.766	.782	.923	1.028	1.090	1.229	1.372	1.497	1.646	1.834
4	.250	.588	.675	.719	.828	.844	.985	1.090	1.152	1.291	1.434	1.559	1.708	1.896
5	.312	.650	.737	.781	.890	.906	1.047	1.152	1.214	1 353	1.496	1.621	1.770	1.958
6	.375	.713	.800	.844	.953	.969	1.110	1.215	1.277	1.416	1.559	1.684	1.833	2.021
7	.438	.776	.863	.907	1.016	1.032	1.173	1.278	1.340	1.479	1.622	1.747	1.896	2.084
8	.500	.838	.925	.969	1.078	1.094	1.235	1.340	1.402	1.541	1.684	1.809	1.958	2.146
9	.562	.900	.987	1.031	1.140	1.156	1.297	1.402	1.464	1.603	1.746	1.871	2.020	2.208
10	.625	.963	1.050	1.094	1.203	1.219	1.360	1.465	1.527	1.666	1.809	1.934	2.083	2.271
11	.688	1.026	1.113	1.157	1.266	1.282	1.423	1.528	1.590	1.729	1.872	1.997	2.146	2.334
12	.750	1.088	1.175	1.219	1.328	1.344	1.485	1.590	1.652	1.791	1.934	2.059	2.208	2.396
13	.812	1.150	1.237	1.281	1.390	1.406	1.547	1.652	1.714	1.853	1.996	2.121	2.270	2.458
14	.875	1.213	1.300	1.344	1.453	1.469	1.610	1.715	1.777	1.916	2.059	2.184	2.333	2.521
15	.938	1.276	1.363	1.407	1.516	1.532	1.673	1.778	1.840	1.979	2.122	2.247	2.396	2.584
16	1.000	1.338	1.425	1.469	1.578	1.594	1.735	1.840	1.902	2.041	2.184	2.309	2.458	2.646
17	1.062	1.400	1.487	1.531	1.640	1.656	1.797	1.902	1.964	2.103	2.246	2.371	2.520	2.708
18	1.125	1.463	1.550	1.594	1.703	1.719	1.860	1.965	2.027	2.166	2.309	2.434	2.583	2.771
19	1.188	1.526	1.613	1.657	1.766	1.782	1.923	2.028	2.090	2.229	2.372	2.497	2.646	2.834
20	1.250	1.588	1.675	1.719	1.828	1.844	1.985	2.090	2.152	2.291	2.434	2.559	2.708	2.896
21	1.312	1.650	1.737	1.781	1.890	1.906	2.047	2.152	2.214	2.353	2.496	2.621	2.770	2.958
22	1.375	1.713	1.800	1.844	1.953	1.969	2.110	2.215	2.277	2.416	2.559	2.684	2.833	3.021
23	1.438	1.776	1.863	1.907	2.016	2.032	2.173	2.278	2.340	2.479	2.622	2.747	2.896	3.084
24	1.500	1.838	1.925	1.969	2.078	2.094	2.235	2.340	2.402	2.541	2.684	2.809	2.958	3.146
25	1.562	1.900	1.987	2.031	2.140	2.156	2.297	2.402	2.464	2.603	2.746	2.871	3.020	3.208
26	1.625	1.963	2.050	2.094	2.203	2.219	2.360	2.465	2.527	2.666	2.809	2.934	3.083	3.271
27	1.688	2.026	2.113	2.157	2.266	2.282	2.423	2.528	2.590	2.729	2.872	2.997	3.146	3.334
28	1.750	2.088	2.175	2.219	2.328	2.344	2.485	2.590	2.652	2.791	2.934	3.059	3.208	3.396
29	1.812	2.150	2.237	2.281	2.390	2.406	2.547	2.652	2.714	2.853	2.996	3.121	3.270	3.458
30	1.875	2.213	2.300	2.344	2.453	2.469	2.610	2.715	2.777	2.916	3.059	3.184	3.333	3.521
31	1.938	2.276	2.363	2.407	2.516	2.532	2.673	2.778	2.840	2.979	3.122	3.247	3.396	3.584
32	2.000	2.338	2.425	2.469	2.578	2.594	2.735	2.840	2.902	3.041	3.184	3.309	3.458	3.646
34	2.125	2.463	2.550	2.594	2.703	2.719	2.860	2.965	3.027	3.166	3.309	3.434	3.583	3.771
36	2.250	2.588	2.675	2.719	2.828	2.844	2.985	3.090	3.152	3.291	3.434	3.559	3.708	3.896
38	2.375	2.713	2.800	2.844	2.953	2.969	3.110	3.215	3.277	3.416	3.559	3.684	3.833	4.021
40	2.500	2.838	2.925	2.969	3.078	3.094	3.235	3.340	3.402	3.541	3.684	3.809	3.958	4.146
42	2.625	2.963	3.050	3.094	3.203	3.219	3.360	3.465	3.527	3.666	3.809	3.934	4.083	4.271
44	2.750	3.088	3.175	3.219	3.328	3.344	3.485	3.590	3.652	3.791	3.934	4.059	4.208	4.396
46	2.875	3.213	3.300	3.344	3.453	3.469	3.610	3.715	3.777	3.916	4.059	4.184	4.333	4.521
48	3.000	3.338	3.425	3.469	3.578	3.594	3.735	3.840	3.902	4.041	4.184	4.309	4.458	4.646
50	3.125	3.463	3.550	3.594	3.703	3.719	3.860	3.965	4.027	4.166	4.309	4.434	4.583	4.771
52	3.250	3.588	3.675	3.719	3.828	3.844	3.985	4.090	4.152	4.291	4.434	4.559	4.708	4.896
54	3.375	3.713	3.800	3.844	3.953	3.969	4.110	4.215	4.277	4.416	4.559	4.684	4.833	5.021
56	3.500	3.838	3.925	3.969	4.078	4.094	4.235	4.340	4.402	4.541	4.684	4.809	4.958	5.146
58	3.625	3.963	4.050	4.094	4.203	4.219	4.360	4.465	4.527	4.666	4.809	4.934	5.083	5.271
60	3.750	4.088	4.175	4.219	4.328	4.344	4.485	4.590	4.652	4.791	4.934	5.059	5.208	5.396
62	3.875	4.213	4.300	4.344	4.453	4.469	4.610	4.715	4.777	4.916	5.059	5.184	5.333	5.521
64	4.000	4.338	4.425	4.469	4.578	4.594	4.735	4.840	4.902	5.041	5.184	5.309	5.458	5.646
66	4.125	4.463	4.550	4.594	4.703	4.719	4.860	4.965	5.027	5.166	5.309	5.434	5.583	5.771
68	4.250	4.588	4.675	4.719	4.828	4.844	4.985	5.090	5.152	5.291	5.434	5.559	5.708	5.896
70	4.375	4.713	4.800	4.844	4.953	4.969	5.110	5.215	5.277	5.416	5.559	5.684	5.833	6.021
72	4.500	4.838	4.925	4.969	5.078	5.094	5.235	5.340	5.402	5.541	5.684	5.809	5.958	6.146
74	4.625	4.963	5.050	5.094	5.203	5.219	5.360	5.465	5.527	5.666	5.809	5.934	6.083	6.271
76	4.750	5.088	5.175	5.219	5.328	5.344	5.485	5.590	5.652	5.791	5.934	6.059	6.208	6.396
78	4.875	5.213	5.300	5.344	5.453	5.469	5.610	5.715	5.777	5.916	6.059	6.184	6.333	6.521
80	5.000	5.338	5.425	5.469	5.578	5.594	5.735	5.840	5.902	6.041	6.184	6.309	6.458	6.646
82	5.125	5.463	5.550	5.594	5.703	5.719	5.860	5.965	6.027	6.166	6.309	6.434	6.583	6.771
84	5.250	5.588	5.675	5.719	5.828	5.844	5.985	6.090	6.152	6.291	6.434	6.559	6.708	6.896
86	5.375	5.713	5.800	5.844	5.953	5.969	6.110	6.215	6.277	6.416	6.559	6.684	6.833	7.021
88	5.500	5.838	5.925	5.969	6.078	6.094	6.235	6.340	6.402	6.541	6.684	6.809	6.958	7.146
90	5.625	5.963	6.050	6.094	6.203	6.219	6.360	6.465	6.527	6.666	6.809	6.934	7.083	7.271
92	5.750	6.088	6.175	6.219	6.328	6.344	6.485	6.590	6.652	6.791	6.934	7.059	7.208	7.396
94	5.875	6.213	6.300	6.344	6.453	6.469	6.610	6.715	6.777	6.916	7.059	7.184	7.333	7.521
96	6.000	6.338	6.425	6.469	6.578	6.594	6.735	6.840	6.902	7.041	7.184	7.309	7.458	7.646

Dash number indicates grip in .0625 increments. Intermediate or longer lengths may be specified by use of whole dash number only

(5) INACTIVE FOR DESIGN AFTER OCT. 30, 1981.
SEE NAS6603 THRU 6620.

NAS 1303 THRU 1320
SHEET 3

APPROVAL DATE July 1956 REVISION (1) 15 April 1957 (2) 31 Jan. 1960 (3) 30 Sept. 1963 (4) 15 July 1968 (5) 30 Oct. 1981

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