

FED. SUP CLASS
5306

REVIEWER SYMBOLS:
NAVY - AS
USAF - 99
ARMY - AV
DIA - 1S

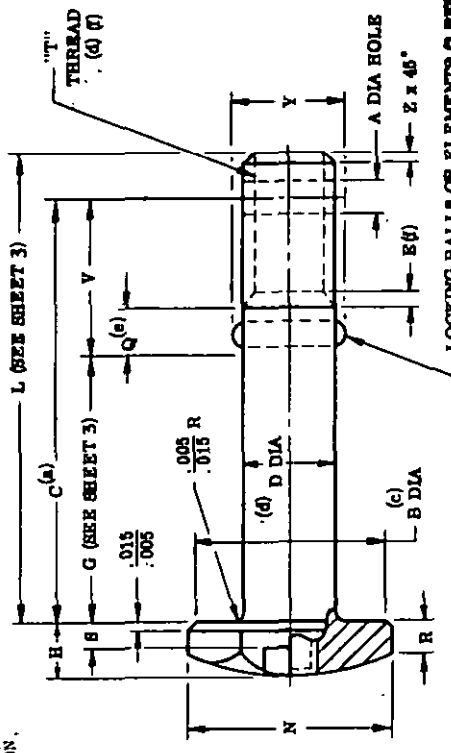
USER SYMBOLS:

"Revision/user information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DODISS."

DISTRIBUTION STATEMENT: APPROVED FOR PUBLIC RELEASE. DISTRIBUTION IS UNLIMITED.

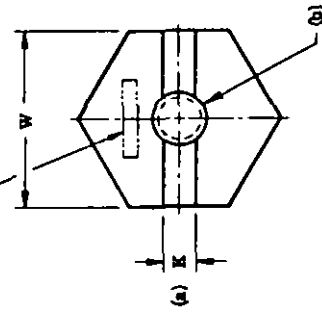
This military standard is approved for use by all Departments & Agencies of the Department of Defense. Selection for all new engineering and safety specifications and for repetitive use shall be made from this document.

MARK MS3369A (FOR A-286 MATERIAL) OR MS3369B (FOR PH 13-8MO MATERIAL) AND MANUFACTURERS IDENTIFICATION, RAISED OR DEPRESSED .010 MAX.



LOCKING BALLS OR ELEMENTS (2 REQUIRED) 180° APART (a) AND (c)

(D) DENOTES CHANGE



P.A. NAVY - AS Other Cust USAF - 11 ARMY - AV	TITLE	MILITARY STANDARD
	BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI F _{tu} , 63 KSI F _{cu} , HEXAGON SLOTTED HEAD, 450°F AND 650°F	MS3369
PROCUREMENT SPECIFICATION	SUPERSEDES	SHEET 1 OF 8
MTL-B-23964	MS3369 (AS)	

APPROVED 7 APR 1969 REVISED (B) 12 OCT 79 (C) 11 MARCH 1991 (D) 20 JUN 85

FED. SUP CLASS
5306

REVIEWER SYMBOLS:
NAVY - AS
USAF - 99
ARMY - AV
DLA - IS

*Reference information is current as of the date of this document.
For future coordination of changes to this document, draft circulation
should be based on the information in the current DD015.

This military standard is approved for use by all Departments
of the Department of Defense. Selection for all new
engineering and design applications and for reprinting use shall
be made from this document.

TABLE I

DASH NO.	"T" THREAD DESIGNATION	A		B		D		H		K		N		Q		R		S		V		W		Y		Z		
		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	BASIC	MAX	MIN	MAX	MIN	MAX	MIN	MAX
-3	1800-32UNJF-3A	.080	.070	.335	.1894	.1889	.110	.095	.057	.047	.413	.094	.079	.083	.063	.033	.033	.393	.376	.367	.225	.215	.041	.021				
-4	2500-28UNJF-3A	.086	.076	.398	.2492	.2487	.141	.126	.073	.063	.488	.125	.110	.104	.084			.333	.439	.430	.294	.284						
-5	3125-24UNJF-3A			.660	.3117	.3112	.172	.157	.088	.078	.557	.156	.141	.125	.105	.047	.037	.375	.502	.492	.360	.370						
-6	3750-24UNJF-3A			.522	.3743	.3737	.204	.189	.104	.094	.638	.171	.156	.146	.128			.421	.584	.559	.445	.435	.067	.037				
-7	4375-20UNJF-3A	.116	.106	.585	.4387	.4383	.235	.220	.119	.109	.688	.202	.187	.168	.148	.083	.053	.480	.627	.617	.514	.504						
-8	5000-20UNJF-3A			.710	.4991	.4986	.266	.251	.119	.109	.840	.234	.219	.188	.168	.078	.068	.533	.753	.741	.599	.589						
-9	5625-18UNJF-3A	.151	.141	.835	.6616	.6611	.297	.282	.135	.125	.910	.265	.250	.208	.188	.084	.084	.638	.877	.865	.681	.681	.072	.052				
-10	6250-18UNJF-3A	.151	.141	.898	.6261	.6236	.328	.313	.135	.125	1.050	.305	.290	.228	.208	.125	.115	.682	.940	.928	.756	.746	.072	.052				
-12	7500-16UNJF-3A	.151	.141	1.022	.7491	.7486	.391	.376	.151	.141	1.200	.343	.328	.271	.251	.140	.130	.815	1.064	.052	.893	.883	.087	.067				

(D)

GENERAL DIMENSIONAL AND MECHANICAL REQUIREMENTS:

- (a) COTTER PIN HOLE SHALL BE WITHIN .010 INCH OF BOLT CENTERLINE FOR BOLTS 5/16 DIA AND SMALLER; AND WITHIN .015 INCH FOR BOLTS 3/8 DIA AND LARGER. THE PIN HOLE SHALL BE PERPENDICULAR TO BOLT CENTERLINE WITHIN ±2°. LOCATION OF COTTER PIN HOLE FROM BEARING SURFACE IS GIVEN BY C = (C MIN + V) ±.010. THE COTTER PIN HOLE SHALL BE PERPENDICULAR TO THE SLOT IN HEAD WITHIN ±5°. ORIENTATION OF BOLLS OR ELEMENT TO COTTER PIN HOLE SHALL BE IN LINE WITHIN ±3°.
- (b) THE RETAINING DEVICE SHALL BE RELEASED ONLY BY DEPRESSING THE PLUNGER LOCATED IN THE HEAD OF THE BOLT.
- (c) RADIUS RELIEF OR CHAMFER TO "B" DIA.
- (d) CONCENTRICITY: D DIA SHALL BE CONCENTRIC TO P. D. OF THREAD WITHIN .002 TIR AT MAXIMUM MATERIAL CONDITION.
- (e) BOLLS OR RETAINING ELEMENTS SHALL BE LOCATED WITHIN THE LIMITS OF Q DIMENSION AND AT MAXIMUM PROTRUSION SHALL FIT WITHIN THE GROOVES OF THE APPROPRIATE SPACER OF MS21126 AND MS21128 WITHOUT INTERFERENCE OR BINDING. BALL OR ELEMENT PROTRUSION FROM THE BOLT CENTERLINE SHALL BE EQUAL TO OR LESS THAN 1/2 Y MAX.
- (f) THREAD: IN ACCORDANCE WITH MIL-S-8879 EXCEPT THAT INCOMPLETE THREAD LENGTH (E) SHALL BE A MAXIMUM OF 1-1/2 AND A MINIMUM OF 1/2 THREAD PITCHES IN LENGTH AND THE MAJOR DIA SHALL BE .001 LESS THAN THE MEASURED SHANK DIA.

P.A. NAVY - AS Other Cust USAF-11 ARMY-AV	TITLE	MILITARY STANDARD
	BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI F _u , 63 KSI F _{cu} , HEXAGON SLOTTED HEAD, 450°F AND 650°F	MS3369
PROCUREMENT SPECIFICATION MIL-B-23964	SUPERSEDES MS3369 (AS)	SHEET 2 OF 8

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

FED. SUP CLASS
6306

REVIEWER SYMBOLS:
NAVY - AS
NAVY - 99
ARMY - AV
DLA - IS

*Revision/user information is current as of the date of this document.
For future coordination of changes to this document, draft circulation should be based on the information in the current DD133.

This military standard is approved for use by all Departments, Agencies of the Department of Defense. Selection for all new engineering and design applications and for replacing use shall be made from this document.

TABLE II

GRIP DATE NO.	NOMINAL SIZE		.1900 (10)		.2500 (1/4)		.3125 (5/16)		.3750 (3/8)		.4375 (7/16)		.5000 (1/2)		.5625 (9/16)		GRIP DATE NO.
	THREAD DESIGNATION		22 UNJF-3A		28 UNJF-3A		24 UNJF-3A		24 UNJF-3A		20 UNJF-3A		20 UNJF-3A		18 UNJF-3A		
	G-GRIP LENGTH	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
03	.204	.188	.580	.560	.626	.608											03
04	.266	.250	.643	.622	.688	.668	.748	.728	.809	.789							04
05	.328	.312	.705	.685	.751	.731	.810	.790	.871	.851							05
06	.390	.375	.767	.747	.813	.793	.873	.853	.934	.914	.978	.958	1.041	1.021			06
07	.454	.438	.830	.810	.876	.856	.935	.915	.996	.976	1.040	1.020	1.103	1.083	1.244	1.224	07
08	.516	.500	.892	.872	.938	.918	.998	.978	1.059	1.039	1.103	1.083	1.166	1.146	1.306	1.286	08
09	.578	.562	.955	.935	1.001	.981	1.060	1.040	1.121	1.101	1.165	1.145	1.228	1.208	1.369	1.349	09
10	.641	.625	1.017	.997	1.063	1.043	1.123	1.103	1.184	1.164	1.248	1.228	1.311	1.291	1.451	1.431	10
11	.704	.688	1.080	1.060	1.126	1.106	1.185	1.165	1.246	1.226	1.310	1.290	1.373	1.353	1.513	1.493	11
12	.766	.750	1.142	1.122	1.188	1.168	1.248	1.228	1.309	1.289	1.373	1.353	1.436	1.416	1.576	1.556	12
13	.828	.812	1.205	1.185	1.251	1.231	1.310	1.290	1.371	1.351	1.435	1.415	1.498	1.478	1.638	1.618	13
14	.891	.875	1.267	1.247	1.313	1.293	1.373	1.353	1.434	1.414	1.498	1.478	1.561	1.541	1.701	1.681	14
15	.954	.938	1.330	1.310	1.376	1.356	1.435	1.415	1.496	1.476	1.560	1.540	1.623	1.603	1.763	1.743	15
16	1.016	1.000	1.392	1.372	1.438	1.418	1.498	1.478	1.559	1.539	1.623	1.603	1.686	1.666	1.826	1.806	16
17	1.078	1.062	1.455	1.435	1.501	1.481	1.560	1.540	1.621	1.601	1.685	1.665	1.748	1.728	1.888	1.868	17
18	1.141	1.125	1.517	1.497	1.563	1.543	1.623	1.603	1.684	1.664	1.748	1.728	1.811	1.791	1.951	1.931	18
19	1.203	1.188	1.580	1.560	1.626	1.606	1.685	1.665	1.746	1.726	1.810	1.790	1.873	1.853	1.993	1.973	19
20	1.266	1.250	1.643	1.623	1.688	1.668	1.748	1.728	1.809	1.789	1.873	1.853	1.936	1.916	2.076	2.056	20
21	1.328	1.312	1.705	1.685	1.751	1.731	1.810	1.790	1.871	1.851	1.935	1.915	1.998	1.978	2.138	2.118	21
22	1.391	1.375	1.767	1.747	1.813	1.793	1.873	1.853	1.934	1.914	1.998	1.978	2.061	2.041	2.201	2.181	22
23	1.454	1.438	1.830	1.810	1.876	1.856	1.935	1.915	1.996	1.976	2.060	2.040	2.123	2.103	2.263	2.243	23
24	1.516	1.500	1.892	1.872	1.938	1.918	1.998	1.978	2.059	2.039	2.123	2.103	2.186	2.166	2.326	2.306	24
25	1.578	1.562	1.954	1.934	2.001	1.981	2.060	2.040	2.121	2.101	2.165	2.145	2.228	2.208	2.368	2.348	25
26	1.641	1.625	2.017	1.997	2.063	2.043	2.123	2.103	2.184	2.164	2.248	2.228	2.311	2.291	2.451	2.431	26
27	1.704	1.688	2.080	2.060	2.126	2.106	2.185	2.165	2.246	2.226	2.310	2.290	2.373	2.353	2.513	2.493	27
28	1.766	1.750	2.142	2.122	2.188	2.168	2.248	2.228	2.309	2.289	2.373	2.353	2.436	2.416	2.576	2.556	28
29	1.828	1.812	2.205	2.185	2.251	2.231	2.310	2.290	2.371	2.351	2.435	2.415	2.498	2.478	2.638	2.618	29
30	1.891	1.875	2.267	2.247	2.313	2.293	2.373	2.353	2.434	2.414	2.498	2.478	2.561	2.541	2.701	2.681	30
31	1.953	1.937	2.330	2.310	2.376	2.356	2.435	2.415	2.496	2.476	2.560	2.540	2.623	2.603	2.763	2.743	31
32	2.016	2.000	2.392	2.372	2.438	2.418	2.498	2.478	2.559	2.539	2.623	2.603	2.686	2.666	2.826	2.806	32
33	2.078	2.062	2.455	2.435	2.501	2.481	2.560	2.540	2.621	2.601	2.685	2.665	2.748	2.728	2.888	2.868	33
34	2.141	2.125	2.517	2.497	2.563	2.543	2.623	2.603	2.684	2.664	2.748	2.728	2.811	2.791	2.951	2.931	34

P.A. NAVY - AS Other Cust USAF - 11 ARMY - AV	TITLE BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI Fm, 63 KSI Fm, HEXAGON SLOTTED HEAD, 450° F AND 650° F	MILITARY STANDARD MS 3369	
		PROCUREMNT SPECIFICATION MIL-B-23064	SUPERSEDES MS3369 (AS)

APPROVED 7 APR 1969 REVISED FOR CHANGES SEE SHEET 2

FED. SUP CLASS
5306

REVIEWER SYMBOLS:
NAVY - AS
USAF - 99
ARMY - AV
DIA - IS

* Action/user information is current as of the date of this document.
For future coordination of changes to this document, draft circulation
should be based on the information in the current 000133.

This military standard is approved for use by all Departments
of Agencies of the Department of Defense. Selection for all new
engineering and design applications and for repetitive use shall
be made from this document.

TABLE II. (CONTINUED)

GRIP DASH NO.	NOMINAL SIZE		.6250 (5/8)		.7500 (3/4)		GRIP DASH NO.
	THREAD DESIGNATION		18 UNJF - 3A		16 UNJF - 3A		
	G-GRIP LENGTH	L-LENGTH	MAX	MIN	MAX	MIN	
03	.204	.188					03
04	.266	.250					04
05	.328	.312					05
06	.390	.375					06
07	.454	.438					07
08	.516	.500					08
09	.578	.562					09
10	.641	.625					10
11	.704	.688					11
12	.766	.750					12
13	.828	.812					13
14	.891	.875					14
15	.954	.938					15
16	1.016	1.000					16
17	1.078	1.062					17
18	1.141	1.125					18
19	1.203	1.188					19
20	1.266	1.250	2.187	2.167			20
21	1.328	1.312	2.249	2.229			21
22	1.391	1.375	2.312	2.292			22
23	1.454	1.438	2.375	2.355			23
24	1.516	1.500	2.437	2.417	2.523	2.503	24
25	1.578	1.562	2.499	2.479	2.585	2.565	25
26	1.641	1.625	2.562	2.542	2.648	2.628	26
27	1.704	1.688	2.625	2.605	2.711	2.691	27
28	1.766	1.750	2.687	2.667	2.773	2.753	28
29	1.828	1.812	2.749	2.729	2.835	2.815	29
30	1.891	1.875	2.812	2.792	2.898	2.878	30
31	1.953	1.937	2.874	2.854	2.960	2.940	31
32	2.016	2.000	2.937	2.917	3.023	3.003	32
33	2.078	2.062	2.998	2.979	3.085	3.065	33
34	2.141	2.125	3.063	3.042	3.148	3.128	34

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

P.A. NAVY - AS Other Cust USAF - 11 ARMY - AV	TITLE	MILITARY STANDARD
	BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI F _{tu} , 63 KSI F _{tu} , HEXAGON SLOTTED HEAD, 450°F AND 650°F	MS3369
PROCUREMENT SPECIFICATION MIL-B-23964	SUPERSEDES. MS3369 (AS)	SHEET 4 OF 8

REVIEWER SYMBOLS:
NAVY - AS
USAF - 99
ARMY - AV
DLA - 15

"Revision/user information is current as of the date of this document. For future coordination of changes to this document, direct circulation should be based on the information in the current DD0155."

This military standard is approved for use by all Departments & Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

TABLE III

GRIP DASH NO.	NOMINAL SIZE		.1800 (10)		.2500 (1/4)		.3125 (5/16)		.3750 (3/8)		.4375 (7/16)		.5000 (1/2)		.5625 (9/16)		GRIP DASH NO.	
	THREAD DESIGNATION		32 UNJF-3A		28 UNJF-3A		24 UNJF-3A		24 UNJF-3A		20 UNJF-3A		20 UNJF-3A		18 UNJF-3A			
	G-GRIP LENGTH		L-LENGTH	MIN	MAX	L-LENGTH	MIN	MAX	L-LENGTH	MIN	MAX	L-LENGTH	MIN	MAX	L-LENGTH	MIN		MAX
35	2.204	2.188	2.560	2.606	2.665	2.746	2.726	2.790	2.853	2.833	2.894	2.974	3.036	3.099	3.161	3.224	3.286	35
36	2.266	2.250	2.642	2.688	2.748	2.809	2.789	2.853	2.915	2.895	2.958	3.021	3.083	3.146	3.208	3.271	3.333	36
37	2.328	2.312	2.705	2.751	2.810	2.871	2.851	2.915	2.978	2.958	3.021	3.083	3.146	3.208	3.271	3.333	3.395	37
38	2.390	2.375	2.767	2.813	2.873	2.934	2.914	2.978	3.041	2.998	3.061	3.124	3.187	3.250	3.313	3.376	3.439	38
39	2.454	2.438	2.830	2.876	2.935	2.996	2.976	3.040	3.103	3.083	3.146	3.209	3.272	3.335	3.398	3.461	3.524	39
40	2.516	2.500	2.892	2.938	2.998	3.059	3.039	3.103	3.166	3.146	3.209	3.272	3.335	3.398	3.461	3.524	3.587	40
41	2.578	2.562	2.954	2.999	3.060	3.121	3.101	3.165	3.228	3.208	3.271	3.334	3.397	3.460	3.523	3.586	3.649	41
42	2.641	2.625	3.017	3.063	3.123	3.184	3.164	3.228	3.291	3.271	3.334	3.397	3.460	3.523	3.586	3.649	3.712	42
43	2.704	2.688	3.080	3.126	3.185	3.246	3.226	3.290	3.353	3.333	3.396	3.459	3.522	3.585	3.648	3.711	3.774	43
44	2.766	2.750	3.142	3.188	3.248	3.309	3.289	3.353	3.415	3.395	3.458	3.521	3.584	3.647	3.710	3.773	3.836	44
45	2.828	2.812	3.205	3.251	3.310	3.371	3.351	3.415	3.478	3.458	3.521	3.584	3.647	3.710	3.773	3.836	3.899	45
46	2.891	2.875	3.267	3.313	3.373	3.434	3.414	3.478	3.541	3.521	3.584	3.647	3.710	3.773	3.836	3.899	3.962	46
47	2.954	2.938	3.330	3.376	3.435	3.496	3.476	3.540	3.603	3.583	3.646	3.709	3.772	3.835	3.898	3.961	4.024	47
48	3.016	3.000	3.392	3.438	3.498	3.559	3.539	3.603	3.666	3.646	3.709	3.772	3.835	3.898	3.961	4.024	4.087	48
49	3.078	3.062	3.455	3.501	3.560	3.621	3.601	3.665	3.728	3.708	3.771	3.834	3.897	3.960	4.023	4.086	4.149	49
50	3.141	3.125	3.517	3.563	3.623	3.684	3.664	3.728	3.791	3.771	3.834	3.897	3.960	4.023	4.086	4.149	4.212	50
51	3.203	3.188	3.580	3.626	3.685	3.746	3.726	3.790	3.853	3.833	3.896	3.959	4.022	4.085	4.148	4.211	4.274	51
52	3.266	3.250	3.642	3.688	3.748	3.809	3.789	3.853	3.916	3.896	3.959	4.022	4.085	4.148	4.211	4.274	4.337	52
53	3.328	3.312	3.705	3.751	3.810	3.871	3.851	3.915	3.978	3.958	4.021	4.084	4.147	4.210	4.273	4.336	4.399	53
54	3.391	3.375	3.767	3.813	3.873	3.934	3.914	3.978	4.041	4.021	4.084	4.147	4.210	4.273	4.336	4.399	4.462	54
55	3.454	3.438	3.830	3.876	3.935	3.996	3.976	4.040	4.103	4.083	4.146	4.209	4.272	4.335	4.398	4.461	4.524	55
56	3.516	3.500	3.892	3.938	3.998	4.059	4.039	4.103	4.166	4.146	4.209	4.272	4.335	4.398	4.461	4.524	4.587	56
57	3.578	3.562	3.954	4.001	4.060	4.121	4.101	4.165	4.228	4.208	4.271	4.334	4.397	4.460	4.523	4.586	4.649	57
58	3.641	3.625	4.017	4.063	4.123	4.184	4.164	4.228	4.291	4.271	4.334	4.397	4.460	4.523	4.586	4.649	4.712	58
59	3.704	3.688	4.080	4.126	4.185	4.246	4.226	4.290	4.353	4.333	4.396	4.459	4.522	4.585	4.648	4.711	4.774	59
60	3.766	3.750	4.142	4.188	4.248	4.309	4.289	4.353	4.416	4.396	4.459	4.522	4.585	4.648	4.711	4.774	4.837	60
61	3.828	3.812	4.205	4.251	4.310	4.371	4.351	4.415	4.478	4.458	4.521	4.584	4.647	4.710	4.773	4.836	4.899	61

P.A.
NAVY - AS
Other Cust
USAF - 11
ARMY - AV

TITLE
BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES
90 KSI F_u, 63 KSI F_u, HEXAGON SLOTTED HEAD, 450° F
AND 650° F

SUPERSEDES
MS3369 (AS)

MILITARY STANDARD
MS 3369
SHEET 5 OF 8

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

REVIEWER SYMBOLS:

NAVY-AS
USAF-99
ARMY-AV
DLA-IS

Revision/User information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current 000153.

This military standard is approved for use by all Departments & Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

FED. SUP CLASS
5306

TABLE III (CONTINUED)

GRIP DASH NO.	NOMINAL SIZE	.6250 (5/8)		.7500 (3/4)		GRIP DASH NO.	
		18 UNJF-3A		16 UNJF-3A			
		L-LENGTH		L-LENGTH			
G-GRIP LENGTH		MAX	MIN	MAX	MIN		
35	2.204	2.188	3.125	3.105	3.211	3.191	35
36	2.266	2.250	3.187	3.167	3.273	3.253	36
37	2.328	2.312	3.249	3.229	3.335	3.315	37
38	2.390	2.375	3.312	3.292	3.398	3.378	38
39	2.454	2.438	3.375	3.355	3.461	3.441	39
40	2.516	2.500	3.437	3.417	3.523	3.503	40
41	2.578	2.562			3.585	3.565	41
42	2.641	2.625			3.648	3.628	42
43	2.704	2.688			3.711	3.691	43
44	2.766	2.750			3.773	3.753	44
45	2.828	2.812			3.835	3.815	45
46	2.891	2.875			3.898	3.878	46
47	2.954	2.938			3.961	3.941	47
48	3.016	3.000			4.023	4.003	48
49	3.078	3.062					
50	3.141	3.125					
51	3.203	3.188					
52	3.266	3.250					
53	3.328	3.312					
54	3.391	3.375					
55	3.454	3.438					
56	3.516	3.500					
57	3.578	3.562					
58	3.641	3.625					
59	3.704	3.688					
60	3.766	3.750					
61	3.828	3.812					

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

P.A. NAVY-AS Other Cust USAF-11 ARMY-AV	TITLE	MILITARY STANDARD
	BOLTS, SELF-RETAINING, POSITIVE LOCKING CRES 90 KSI F _{tu} 63 KSI F _{cu} HEXAGON SLOTTED HEAD, 450°F AND 650°F	MS3369
PROCUREMENT SPECIFICATION MIN-B-23964	SUPERSEDES MS3369 (AS)	SHEET 6 OF 8

FED. SUP CLASS
5306

REVIEWER SYMBOLS:
NAVY - AS
USAF - 92
ARMY - AV
DLA - IS

*Revision/endorsement information is current as of the date of this document.
For future coordination of changes to this document, draft circulation
should be based on the information in the current DD133.

This military standard is approved for use by all Departments
& Agencies of the Department of Defense. Selection for all new
engineering and design applications and for repetitive use shall
be made from this document.

TABLE IV

GRIP DASH NO.	NOMINAL SIZE		.1900 (10)		.2500 (1 1/4)		.3125 (5/16)		.3750 (3/8)		.4375 (7/16)		.5000 (1/2)		.5625 (9/16)		GRIP DASH NO.
	THREAD DESIGNATION		32 UNJF-3A		28 UNJF-3A		24 UNJF-3A		24 UNJF-3A		20 UNJF-3A		20 UNJF-3A		18 UNJF-3A		
	G-GRIP LENGTH		L-LENGTH		L-LENGTH		L-LENGTH		L-LENGTH		L-LENGTH		L-LENGTH		L-LENGTH		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
62	3.891	3.875	4.287	4.247	4.313	4.293	4.373	4.353	4.434	4.414	4.478	4.458	4.541	4.521	4.581	4.561	62
63	3.953	3.937	4.330	4.310	4.378	4.356	4.435	4.415	4.496	4.476	4.540	4.520	4.603	4.583	4.744	4.724	63
64	4.016	4.000	4.392	4.372	4.438	4.418	4.498	4.478	4.559	4.539	4.603	4.583	4.666	4.646	4.806	4.786	64
65	4.078	4.062	4.455	4.435	4.501	4.481	4.560	4.540	4.621	4.601	4.665	4.645	4.728	4.708	4.869	4.849	65
66	4.141	4.125	4.517	4.497	4.563	4.543	4.623	4.603	4.684	4.664	4.728	4.708	4.791	4.771	4.931	4.911	66
67	4.203	4.188	4.580	4.560	4.626	4.606	4.685	4.665	4.746	4.726	4.790	4.770	4.853	4.833	4.994	4.974	67
68	4.266	4.250	4.642	4.622	4.688	4.668	4.748	4.728	4.809	4.789	4.853	4.833	4.916	4.896	5.056	5.036	68
69	4.328	4.312	4.705	4.685	4.751	4.731	4.810	4.790	4.871	4.851	4.915	4.895	4.978	4.958	5.119	5.099	69
70	4.391	4.375	4.767	4.747	4.813	4.793	4.873	4.853	4.934	4.914	4.978	4.958	5.041	5.021	5.181	5.161	70
71	4.454	4.438	4.830	4.810	4.878	4.858	4.935	4.915	4.996	4.976	5.040	5.020	5.103	5.083	5.244	5.224	71
72	4.516	4.500	4.892	4.872	4.938	4.918	4.998	4.978	5.059	5.039	5.103	5.083	5.166	5.146	5.306	5.286	72
73	4.578	4.562	4.954	4.934	5.001	4.981	5.060	5.040	5.121	5.101	5.165	5.145	5.228	5.208	5.369	5.349	73
74	4.641	4.625	5.017	4.997	5.063	5.043	5.123	5.103	5.184	5.164	5.228	5.208	5.291	5.271	5.431	5.411	74
75	4.704	4.688	5.080	5.060	5.126	5.106	5.185	5.165	5.246	5.226	5.290	5.270	5.353	5.333	5.494	5.474	75
76	4.766	4.750	5.142	5.122	5.188	5.168	5.248	5.228	5.309	5.289	5.353	5.333	5.416	5.396	5.556	5.536	76
77	4.828	4.812	5.205	5.185	5.251	5.231	5.310	5.290	5.371	5.351	5.415	5.395	5.478	5.458	5.619	5.599	77
78	4.891	4.875	5.267	5.247	5.313	5.293	5.373	5.353	5.434	5.414	5.478	5.458	5.541	5.521	5.681	5.661	78
79	4.953	4.937	5.330	5.310	5.376	5.356	5.435	5.415	5.496	5.476	5.540	5.520	5.603	5.583	5.744	5.724	79
80	5.016	5.000	5.392	5.372	5.438	5.418	5.498	5.478	5.559	5.539	5.603	5.583	5.666	5.646	5.806	5.786	80
81	5.078	5.062	5.455	5.435	5.501	5.481	5.560	5.540	5.621	5.601	5.665	5.645	5.728	5.708	5.869	5.849	81
82	5.141	5.125	5.517	5.497	5.563	5.543	5.623	5.603	5.684	5.664	5.728	5.708	5.791	5.771	5.931	5.911	82
83	5.203	5.188	5.580	5.560	5.626	5.606	5.685	5.665	5.746	5.726	5.790	5.770	5.853	5.833	5.994	5.974	83
84	5.266	5.250	5.642	5.622	5.688	5.668	5.748	5.728	5.809	5.789	5.853	5.833	5.916	5.896	6.056	6.036	84
85	5.328	5.312	5.705	5.685	5.751	5.731	5.810	5.790	5.871	5.851	5.915	5.895	5.978	5.958	6.119	6.099	85
86	5.390	5.375	5.767	5.747	5.813	5.793	5.873	5.853	5.934	5.914	5.978	5.958	6.041	6.021	6.181	6.161	86
87	5.454	5.438			5.876	5.856	5.935	5.915									
96	6.016	6.000			6.438	6.418											
97	6.078	6.062			6.501	6.481											
111	6.953	6.937			7.376	7.356											

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

P.A. NAVY - AS Other Civil USAF - 11 ARMY - AV	TITLE	MILITARY STANDARD
	BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI Fm, 63 KSI Fm, HEXAGON SLOTTED HEAD, 450° F AND 650° F	MS 3369
PROCUREMENT SPECIFICATION MIL-B-23964	SUPERSEDES MS3369 (AS)	SHEET 7 OF 8

USERS SYMBOLS:

REVIEWER SYMBOLS:

NAVY - AS
USAF - 99
ARMY - AV
DLA - IS

"Review/Use" information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DD015.

This military standard is approved for use by all Departments & Agencies of the Department of Defense. Selection for all new engineering and design applications and for restrictive use that is made from this document.

TABLE V			
SIZE	SHANK DOUBLE SHEAR ULTIMATE STRENGTH LBS MIN	BOLT AND NUT ASSEMBLY ULTIMATE TENSILE STRENGTH LBS MIN SEE NOTE 13	RETAINING DEVICE ULTIMATE TENSILE LOAD LBS MIN
.1900	5,150	1,110	110
.2500	9,200	2,040	230
.3125	14,400	3,250	510
.3750	20,800	5,050	575
.4375	28,000	8,800	710
.5000	36,800	9,250	1,160
.5625	46,000	11,800	1,420
.6250	57,500	15,050	2,070
.7500	82,500	22,000	2,950

FED. SUP CLASS
5306

NOTES:

- MATERIALS: BOLT AND PLUNGER: CORROSION RESISTING STEEL PH 13-8 Mo CHEMISTRY OF AMS 5629
BALLS OR ELEMENT: CORROSION RESISTING STEEL PER QQ-S-763 CLASS FSC 400C
SPRING: CORROSION RESISTING STEEL WIRE, SPRING TEMPER PER AMS 5673, 17-7 PH OR QQ-W-423, CLASS F5302, CONDITION B
- HEAT TREATMENT: BOLT AND PLUNGER: PER MIL-H-6875 TO CONDITION H1000
BALLS: PER MIL-H-6875 TO ROCKWELL C50 TO C62
- MATERIALS, NONMAGNETIC: BOLT AND PLUNGER: CORROSION RESISTING STEEL A-286 CHEMISTRY OF AMS 5737
BALLS OR ELEMENT: CORROSION RESISTING STEEL PER MIL-S-7720
SPRING: NICKEL-CHROMIUM-IRON ALLOY PER QQ-W-390 CONDITION C OR NICKEL-ALLOY SPRING PER AMS 5699, SPRING TEMPER
- HEAT TREATMENT: BALLS: PER MIL-H-6875 TO ROCKWELL C25 MINIMUM
- PROTECTIVE TREATMENT: CRES MATERIAL PASSIVATED PER QQ-P-35
- SURFACE TEXTURE: UNTHREADED SHANK AND BEARING SURFACE UNDER HEAD SHALL BE 32 MICROINCHES, ALL OTHER SURFACES SHALL BE 125 MICROINCHES IN ACCORDANCE WITH ANSI B46.1
- BOLTS SHALL BE FREE FROM BURRS AND SLIVERS.
- EXAMPLE OF PART NUMBER:

MS3369A 416 = .2500 UNJF-3A BOLT, 1 INCH NOMINAL GRIP, A-286 MATERIAL

 - SEE TABLES I, II, III AND IV FOR DASH NUMBERS
 - GRIP DASH NUMBER
 - DIAMETER DASH NUMBER
 - MATERIAL - "A" FOR A-286, "B" FOR PH 13-8Mo, "C" FOR PH 17-4
 - MS NUMBER
- DESIGN USAGE: FOR DESIGN AND USAGE LIMITATIONS, SEE MS33602.
- MAGNETIC PERMEABILITY: FOR BOLT ASSEMBLY MADE FROM A-286 MATERIAL MAGNETIC PERMEABILITY SHALL BE LESS THAN 2.0 (AIR-1.0) FOR A FIELD STRENGTH = 200 ORSTEADS USING MAGNETIC PERMEABILITY INDICATOR PER MIL-I-17214 or EQUIVALENT.
- TEMPERATURE LIMITATION: 450°F MAX. FOR PH 13-8Mo AND 650°F MAX. FOR A-286 MATERIAL.
- INTERCHANGEABILITY RELATIONSHIP: BOLTS MADE FROM PH 17-4 (CODE "-") ARE INACTIVE FOR NEW DESIGN AND CANCELLED AFTER 15 MAY 1981.
BOLTS MADE FROM CRES PH 13-8 Mo (CODE "B") MAY BE SUBSTITUTED FOR BOLTS MADE FROM PH 17-4 IN ALL APPLICATIONS.
BOLTS MADE FROM PH 17-4 (CODED "-") SHALL NOT BE USED IN PLACE OF BOLTS MADE FROM CRES PH 13-8 Mo.
BOLTS MADE FROM CRES PH 17-4 SHALL NOT BE USED AFTER 1 JAN 1982.
- TENSILE LOAD IS BASED ON THE AREA AT THREAD MINOR DIAMETER IN FED-STD-H28/2 AND 62.5 KSI Fcu.
- BOLT PLUNGER MANUFACTURED FROM PH 13-8Mo AND A-286 MATERIAL SHALL BE COATED WITH DRY FILM LUBRICANT PER MIL-L-8937 AND MIL-L-46010 RESPECTIVELY.
- REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
- FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.

APPROVED 7 APR 1969 REVISED (D) FOR CHANGES SEE SHEET 2

P.A. NAVY - AS Other Cust	TITLE BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI Fcu, 63 KSI Fcu, HEXAGON SLOTTED HEAD, 450°F AND 650°F	MILITARY STANDARD MS3369
USAF - 11 ARMY - AV	PROCUREMENT SPECIFICATION MIL-B-23964	SHEET 8 OF 8
	SUPERSEDES. MS3365(AS)	