

## USER SYMBOLS:

## REVIEWER SYMBOLS:

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

"Review/revise" information is current as of the date of this document.  
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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.

P.A.  
NAVY - AS  
Other Cues

USAF - 11  
ARMY - AV

PROCUREMENT SPECIFICATION  
MIL-B-23964

## TITLE

BOLT, SELF-RETAINING, POSITIVE LOCKING, CRES  
90 KSI F<sub>tu</sub>, 63 KSI F<sub>ty</sub>, PAN HEAD, 450°F & 650°F

## SUPERSEDES

MS21125 (ASG)

## MILITARY STANDARD

MS21125

SHEET 1 OF 6

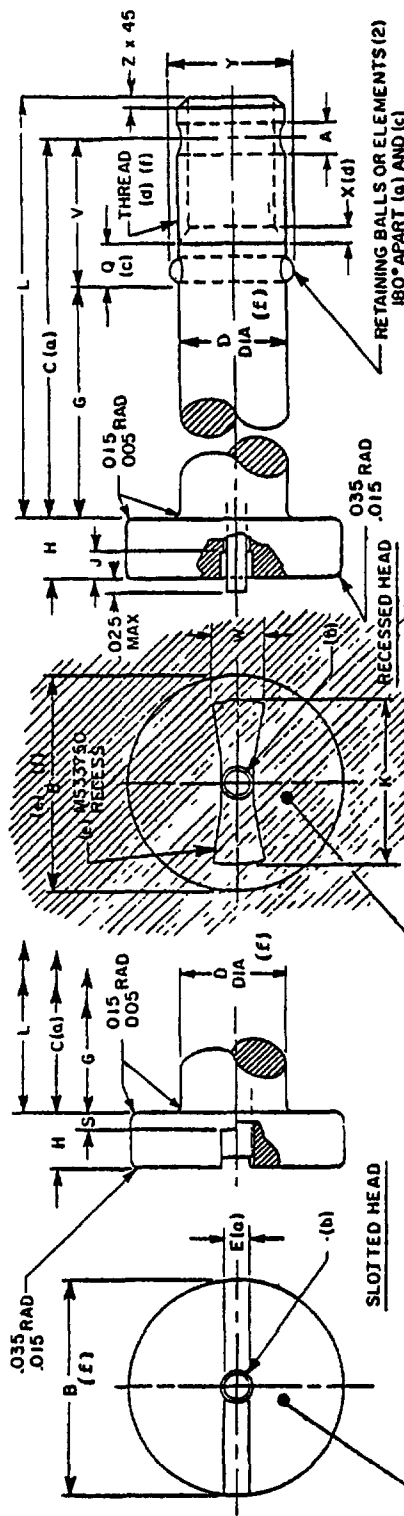
DD FORM 1342-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

PROJECT NO. 5306-0802

PLATE NO. 22085

FED SUP CLASS  
5306



INACTIVE FOR DESIGN AFTER 15 MAY 1981  
CANCELLED AFTER 1 JUN 1981 USE SLOTTED  
HEAD

F DENOTES CHANGE

APPROVED 15 DEC 67 REVISED D 12 OCT 79 E 11 MARCH 1981 F 30 APRIL 1983

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DIA DASH NO.	THREAD DESIGNATION MIL-S-8879	A		B (E)		D (F)		E		H		J		K		(C) Q		S		V		W		Y		Z		(e) RECESS NO.
		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	BASIC	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
3	.1900-32 UNJF-3A	.089	.070	.374	.360	1.894	1.889	.057	.047	.110	.095	.057	.054	.270	.094	.079	.032	.022	.293	.098	.094	.225	.215	.041	.021			2
4	.2500-28 UNJF-3A	.066	.076	.492	.477	2.492	2.487	.073	.063	.141	.126	.072	.069	.340	.125	.110	.033	.022	.333	.111	.107	.294	.284					3
5	.3125-24 UNJF-3A			.625	.610	3.117	3.112	.088	.078	.172	.157	.097	.094	.545	.156	.141	.047	.037	.375	.147	.143	.360	.370					4
6	.3750-24 UNJF-3A	.116	.106	.740	.722	3.742	3.737	.104	.094	.204	.189	.111	.107	.630	.171	.156			.421	.164	.160	.445	.435					5
7	.4375-20 UNJF-3A			.813	.795	4.367	4.362			.235	.220	.116	.114	.730	.202	.187	.063	.053	.460	.193	.188	.514	.504					6
8	.5000-20 UNJF-3A			.915	.905	4.991	4.986			.266	.251	.134	.130	.815	.234	.219	.078	.068	.523	.221	.216	.599	.589					7
9	.5625-18 UNJF-3A	.151	.141	1.035	1.015	5.616	5.611	.119	.109	.297	.282	.149	.145	.900	.265	.250	.094	.084	.628	.262	.257	.671	.661	.072	.052			8

## GENERAL DIMENSIONAL AND MECHANICAL REQUIREMENTS

- (a) COTTER PIN HOLE SHALL BE WITHIN .010 INCH OF BOLT CENTERLINE FOR BOLTS .312 DIA. AND SMALLER, AND WITHIN .015 INCH FOR BOLTS .375 DIA AND LARGER. THE PIN HOLE SHALL BE PERPENDICULAR TO BOLT CENTERLINE WITHIN 2". LOCATION OF COTTER PIN HOLE FROM TOP OF HEAD IS GIVEN IN C-(G MIN +V) ± .010. THE COTTER PIN HOLE SHALL BE PERPENDICULAR TO THE SLOT IN HEAD WITHIN 5". ORIENTATION OF BALLS OR ELEMENT TO COTTER PIN HOLE SHALL BE IN LINE WITHIN 5". BALL OR ELEMENT PROTRUSION FROM THE BOLT CENTERLINE SHALL BE EQUAL OR LESS THAN 1/2 Y MAX.
- (b) THE RETAINING DEVICE SHALL BE RELEASED ONLY BY DEPRESSING THE PLUNGER LOCATED IN THE HEAD OF THE BOLT. MAX DIAMETER OF PLUNGER FOR RECESS HEAD SHALL BE THE MIN VALUE FOR "W" DIMENSION ON MS-3750.
- (c) BALLS OR RETAINING ELEMENTS SHALL BE LOCATED WITHIN THE LIMITS OF "Q" DIMENSION, AND AT MAXIMUM PROTRUSION SHALL FIT WITHIN THE GROVES OF THE APPROPRIATE SPACER OF MS21126 AND MS21128 WITHOUT INTERFERENCE OR BINDING
- (d) THREAD: IN ACCORDANCE WITH MIL-S-4879 EXCEPT THAT INCOMPLETE THREAD LENGTH (A) SHALL BE A MAXIMUM OF 1-1/2 AND A MINIMUM OF 1/2 THREAD PITCHES IN LENGTH AND MAJOR DIA SHALL BE .001 LESS THAN THE MEASURED SHANK DIA
- (e) RECESS SHALL BE LOCATED AT TRUE POSITION "B" WITHIN .010 AND SHALL CONFORM TO MS33750 EXCEPT THAT RECESS DIMPLE IS OPTIONAL.
- (f) CONCENTRICITY. D AND B TO BE CONCENTRIC TO P.D. OF THREAD WITHIN .002 TIR AT MAXIMUM MATERIAL CONDITION.

FED. SUP CLASS  
5306P.A.  
NAVY - AS  
Other CodeUSAF - 11  
ARMY - AVPROCUREMENT SPECIFICATION  
MIL-B-23964

## TITLE

BOLT, SELF-RETAINING, POSITIVE LOCKING, CRES  
90 KSI F<sub>tu</sub>, .63 KSI F<sub>cu</sub>, PAN HEAD, 450°F & 650°F

## SUPERSEDES

MS21125(ASG)

MILITARY STANDARD

MS21125

SHEET 2 OF 6

APPROVED 15 DEC 67 REVISED 7 FOR CHANGES SEE SHEET 6

DD FORM 672-1 (Coordinated)

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PLATE NO. 2306

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DLA-IS  
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USAF-99

FED. SUP CLASS  
5306

TABLE II

GRIP DASH NO.	NOMINAL SIZE		1900 (10)		2500 (1/4)		3125 (5/16)		3750 (3/8)		4375 (7/16)		5000 (1/2)		5625 (9/16)		GRIP DASH NO.
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
03	.204	.188	.580	.560	.626	.606											03
04	.266	.250	.642	.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	1.228	1.208	1.291	1.271	1.431	1.411	10
11	.704	.688	1.080	1.060	1.126	1.106	1.185	1.165	1.246	1.226	1.290	1.270	1.353	1.333	1.494	1.474	11
12	.766	.750	1.142	1.122	1.188	1.168	1.248	1.228	1.309	1.289	1.353	1.333	1.416	1.396	1.556	1.536	12
13	.828	.812	1.205	1.185	1.251	1.231	1.310	1.290	1.371	1.351	1.415	1.395	1.478	1.458	1.619	1.599	13
14	.891	.875	1.267	1.247	1.313	1.293	1.373	1.353	1.434	1.414	1.478	1.458	1.541	1.521	1.681	1.661	14
15	.954	.938	1.330	1.310	1.376	1.356	1.435	1.415	1.496	1.476	1.540	1.520	1.603	1.583	1.744	1.724	15
16	1.016	1.000	1.392	1.372	1.438	1.418	1.498	1.478	1.559	1.539	1.603	1.583	1.666	1.646	1.806	1.786	16
17	1.078	1.062	1.455	1.435	1.501	1.481	1.560	1.540	1.621	1.601	1.665	1.645	1.728	1.708	1.869	1.849	17
18	1.141	1.125	1.517	1.497	1.563	1.543	1.623	1.603	1.684	1.664	1.728	1.708	1.791	1.771	1.931	1.911	18
19	1.203	1.188	1.580	1.560	1.626	1.606	1.685	1.665	1.746	1.726	1.790	1.770	1.853	1.833	1.994	1.974	19
20	1.266	1.250	1.642	1.622	1.688	1.668	1.748	1.728	1.809	1.789	1.853	1.833	1.916	1.896	2.056	2.036	20
21	1.328	1.312	1.705	1.685	1.751	1.731	1.810	1.790	1.871	1.851	1.915	1.895	1.978	1.958	2.119	2.099	21
22	1.391	1.375	1.767	1.747	1.813	1.793	1.873	1.853	1.934	1.914	1.978	1.958	2.041	2.021	2.181	2.161	22
23	1.454	1.438	1.830	1.810	1.876	1.856	1.935	1.915	1.996	1.976	2.040	2.020	2.103	2.083	2.244	2.224	23
24	1.516	1.500	1.892	1.872	1.938	1.918	1.998	1.978	2.059	2.039	2.103	2.083	2.166	2.146	2.306	2.286	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	2.369	2.349	25
26	1.641	1.625	2.017	1.997	2.063	2.043	2.123	2.103	2.184	2.164	2.228	2.208	2.291	2.271	2.431	2.411	26
27	1.704	1.688	2.080	2.060	2.126	2.106	2.185	2.165	2.246	2.226	2.290	2.270	2.353	2.333	2.494	2.474	27
28	1.766	1.750	2.142	2.122	2.188	2.168	2.248	2.228	2.309	2.289	2.353	2.333	2.416	2.396	2.556	2.536	28
29	1.828	1.812	2.205	2.185	2.251	2.231	2.310	2.290	2.371	2.351	2.415	2.395	2.478	2.458	2.619	2.599	29
30	1.891	1.875	2.267	2.247	2.313	2.293	2.373	2.353	2.434	2.414	2.478	2.458	2.541	2.521	2.681	2.661	30
31	1.953	1.937	2.330	2.310	2.376	2.356	2.435	2.415	2.496	2.476	2.540	2.520	2.603	2.583	2.744	2.724	31
32	2.016	2.000	2.392	2.372	2.438	2.418	2.498	2.478	2.559	2.539	2.603	2.583	2.666	2.646	2.806	2.786	32
33	2.078	2.062	2.455	2.435	2.501	2.481	2.560	2.540	2.621	2.601	2.665	2.645	2.728	2.708	2.869	2.849	33
34	2.141	2.125	2.517	2.497	2.563	2.543	2.623	2.603	2.684	2.664	2.728	2.708	2.791	2.771	2.931	2.911	34

P A NAVY - AS

Other Cust

USAF - 11  
ARMY - AV

TITLE

BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES  
90 KSI Fsu, 83 KSI Ftu, PAN HEAD, 450°F & 650°F

MILITARY STANDARD

MS21125

PROCUREMENT SPECIFICATION  
MIL-B-23964

SUPERSEDES.

MS 21125 (ASG)

SHEET 3 OF 6

DD FORM 672-1 (Coordinated)

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PLATE NO. 15320

APPROVED 15 Dec 67 REVISED (F) For changes see sheet 6

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

FED. SUP CLASS  
5306

TABLE III																	
GRIP DASH NO.	NOMINAL SIZE		1900 (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		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	
35	2.204	2.188	2.580	2.560	2.626	2.606	2.685	2.665	2.746	2.726	2.790	2.770	2.853	2.833	2.994	2.974	35
36	2.266	2.250	2.642	2.622	2.688	2.668	2.748	2.728	2.809	2.789	2.853	2.833	2.916	2.896	3.056	3.036	36
37	2.328	2.312	2.705	2.685	2.751	2.731	2.810	2.790	2.871	2.851	2.915	2.895	2.978	2.958	3.119	3.099	37
38	2.390	2.375	2.767	2.747	2.813	2.793	2.873	2.853	2.934	2.914	2.978	2.958	3.041	3.021	3.181	3.161	38
39	2.454	2.438	2.830	2.810	2.876	2.856	2.935	2.915	2.996	2.976	3.040	3.020	3.103	3.083	3.244	3.224	39
40	2.516	2.500	2.892	2.872	2.938	2.918	2.998	2.978	3.059	3.039	3.103	3.083	3.166	3.146	3.306	3.286	40
41	2.578	2.562	2.954	2.934	3.001	2.981	3.060	3.040	3.121	3.101	3.165	3.145	3.228	3.208	3.369	3.349	41
42	2.641	2.625	3.017	2.997	3.063	3.043	3.123	3.103	3.184	3.164	3.228	3.208	3.291	3.271	3.431	3.411	42
43	2.704	2.688	3.080	3.060	3.126	3.106	3.185	3.165	3.246	3.226	3.290	3.270	3.353	3.333	3.494	3.474	43
44	2.766	2.750	3.142	3.122	3.188	3.168	3.248	3.228	3.309	3.289	3.353	3.333	3.416	3.396	3.556	3.536	44
45	2.828	2.812	3.205	3.185	3.251	3.231	3.310	3.290	3.371	3.351	3.415	3.395	3.478	3.458	3.619	3.599	45
46	2.891	2.875	3.267	3.247	3.313	3.293	3.373	3.353	3.434	3.414	3.478	3.458	3.541	3.521	3.681	3.661	46
47	2.954	2.938	3.330	3.310	3.376	3.356	3.435	3.415	3.496	3.476	3.540	3.520	3.603	3.583	3.744	3.724	47
48	3.016	3.000	3.392	3.372	3.438	3.418	3.498	3.478	3.559	3.539	3.603	3.583	3.666	3.646	3.806	3.786	48
49	3.078	3.062	3.455	3.435	3.501	3.481	3.560	3.540	3.621	3.601	3.665	3.645	3.728	3.708	3.869	3.849	49
50	3.141	3.125	3.517	3.497	3.563	3.543	3.623	3.603	3.684	3.664	3.728	3.708	3.791	3.771	3.931	3.911	50
51	3.203	3.188	3.580	3.560	3.626	3.606	3.685	3.665	3.746	3.726	3.790	3.770	3.853	3.833	3.994	3.974	51
52	3.266	3.250	3.642	3.622	3.688	3.668	3.748	3.728	3.809	3.789	3.853	3.833	3.916	3.896	4.056	4.036	52
53	3.328	3.312	3.705	3.685	3.751	3.731	3.810	3.790	3.871	3.851	3.915	3.895	3.978	3.958	4.119	4.099	53
54	3.391	3.375	3.767	3.747	3.813	3.793	3.873	3.853	3.934	3.914	3.978	3.958	4.041	4.021	4.181	4.161	54
55	3.454	3.438	3.830	3.810	3.876	3.856	3.935	3.915	3.996	3.976	4.040	4.020	4.103	4.083	4.244	4.224	55
56	3.516	3.500	3.892	3.872	3.938	3.918	3.998	3.978	4.059	4.039	4.103	4.083	4.166	4.146	4.306	4.286	56
57	3.578	3.562	3.954	3.934	4.001	3.981	4.060	4.040	4.121	4.101	4.165	4.145	4.228	4.208	4.369	4.349	57
58	3.641	3.625	4.017	3.997	4.063	4.043	4.123	4.103	4.184	4.164	4.228	4.208	4.291	4.271	4.431	4.411	58
59	3.704	3.688	4.080	4.060	4.126	4.106	4.185	4.165	4.246	4.226	4.290	4.270	4.353	4.333	4.494	4.474	59
60	3.766	3.750	4.142	4.122	4.188	4.168	4.248	4.228	4.309	4.289	4.353	4.333	4.416	4.396	4.556	4.536	60
61	3.828	3.812	4.205	4.185	4.251	4.231	4.310	4.290	4.371	4.351	4.415	4.395	4.478	4.458	4.619	4.599	61

P.A. NAVY - AS Other Code USAF-11 ARMY-AV	TITLE NUTS, SLIP-RETAINING, POSITIVE LOCKING, CRES 90 KSI Fuu, 63 KSI Fuu, PAN HEAD, 450° F & 650° F	MILITARY STANDARD	
		MS21125	
PROCUREMENT SPECIFICATION MIL-B-23984	SUPERSEDES: MS 21125 (ASG)	SHEET 4 OF 6	

DD FORM 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

PLATE NO 17788

APPROVED 15 Dec 67 REVISED (F) For changes see sheet 6



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TABLE IV																	
GRIP DASH NO	NOMINAL SIZE		1900 (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		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	4.267	4.247	4.313	4.293	4.373	4.353	4.434	4.414	4.478	4.458	4.541	4.521	4.681	4.661	62
63	3.953	3.937	4.330	4.310	4.376	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	4.876	4.856	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

P.A. NAVY - AS Other Cust USAF-11 ARMY-AV		TITLE BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES 90 KSI F <sub>tu</sub> , 83 KSI F <sub>tu</sub> , PAN HEAD, 450°F & 650°F		MILITARY STANDARD MS21125	
PROCUREMENT SPECIFICATION MIL-B-23964		SUPERSEDES MS 21125 (ASG)		SHEET 5 OF 6	

USER SYMBOLS:

REVIEWER SYMBOLS:

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

This military standard is approved for use by all Departments  
For future coordination of changes to this document, draft circulation  
should be based on the information in the current DD0155.

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

TABLE V			
SIZE	SHANK DOUBLE SHEAR ULTIMATE STRENGTH LBS MIN	BOLT AND NUT ASSEMBLY ULTIMATE TENSILE STRENGTH LBS MIN	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	6,800	710
.5000	36,800	9,250	1,160
.5625	46,000	11,300	1,420

FED SUP CLASS  
5306

## NOTES

1. MATERIALS, MAGNETIC. BOLT AND PLUNGER CORROSION RESISTING STEEL PH 13-8Mo CHEMISTRY OF AMS5629  
BALLS OR ELEMENT CORROSION RESISTING STEEL PER QQ-S-763 CLASS FSC 440C  
SPRING. CORROSION RESISTING STEEL WIRE, SPRING TEMPER PER AMS 5673, 17-7 PH OR  
QQ-W-423, COMPOSITION 302, CONDITION B
2. HEAT TREATMENT: BOLT AND PLUNGER PER MIL-H-6875 TO CONDITION H1000  
BALLS. PER MIL-H-6875 TO ROCKWELL C55 TO C62
3. 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
4. PROTECTIVE TREATMENT CRES MATERIAL PASSIVATED PER QQ-P-25
5. SURFACE TEXTURE. UNTHREADED SHANK AND BEARING SURFACE SHALL BE 32 MICROINCHES. ALL OTHER SURFACES  
SHALL BE 125 MICROINCHES IN ACCORDANCE WITH MIL-STD-883C.1.
6. BOLTS SHALL BE FREE FROM BURRS AND SLIVERS
7. EXAMPLE OF PART NUMBER: SEE TABLES I, II, III, IV FOR DASH NUMBERS  
MS21125A 0416 = 2500 UNF-16 GRIP DASH NUMBER  
GRIP DASH NUMBER  
DIAMETER DASH NUMBER  
USE "0" FOR (MS33750) RECESS HEAD; OMIT "0" FOR SLOTTED HEAD  
(SEE NOTE 15)  
MATERIAL "-" FOR PH17-4, "A" FOR A-286 OR "B" FOR PH13-8Mo.  
BASIC NUMBER
8. DESIGN USAGE: FOR DESIGN AND USAGE LIMITATIONS SEE MS33602
9. MAGNETIC PERMEABILITY: FOR BOLT ASSEMBLY MADE FROM A-286 MATERIAL MAGNETIC PERMEABILITY SHALL BE LESS THAN  
2.0 (AIP-4.0) FOR A FIELD STRENGTH = 200 ORSTEADUS USING MAGNETIC PERMEABILITY INDICATOR  
PER MIL-T-17214 OR EQUIVALENT.
10. TEMPERATURE LIMITATION: 450°F MAX FOR PH 13-8Mo AND 650°F MAX. FOR A-286 MATERIAL.
11. INTERCHANGEABILITY RELATIONSHIP: BOLTS MADE FROM PH17-4 (CODE "-") ARE INACTIVE FOR NEW DESIGN  
AND CANCELLED AFTER 15 MAY 1981.  
BOLTS MADE FROM CRES PH13-8Mo (CODE "B") MAY BE SUBSTITUTED FOR BOLTS MADE FROM PH17-4 IN ALL  
APPLICATIONS.  
BOLTS MADE FROM PH17-4 (CODE "-") SHALL NOT BE USED IN PLACE OF BOLTS MADE FROM CRES PH13-8Mo.  
BOLTS MADE FROM CRES PH17-4 SHALL NOT BE PROCURED, SELECTED OR SPECIFIED FOR DESIGN  
AFTER 1 JAN 1983.
12. 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.
13. 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.
14. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
15. BOLTS WITH MS33750 RECESS ARE INACTIVE FOR DESIGN AFTER 15 MAY 1981 AND CANCELLED AFTER 1 JUN 1981.

P.A.  
NAVY - AS  
Other CustUSAF - 11  
ARMY - AV

## TITLE

BOLTS, SELF-RETAINING, POSITIVE LOCKING, CRES  
90 KSI Fcu, 63 KSI Fcu, PAN HEAD, 450°F & 650°F

MILITARY STANDARD

MS21125

PROCUREMENT SPECIFICATION  
MIL-B-23964

## SUPERSEDES

MS21125(ASQ)

SHEET 6 OF 6