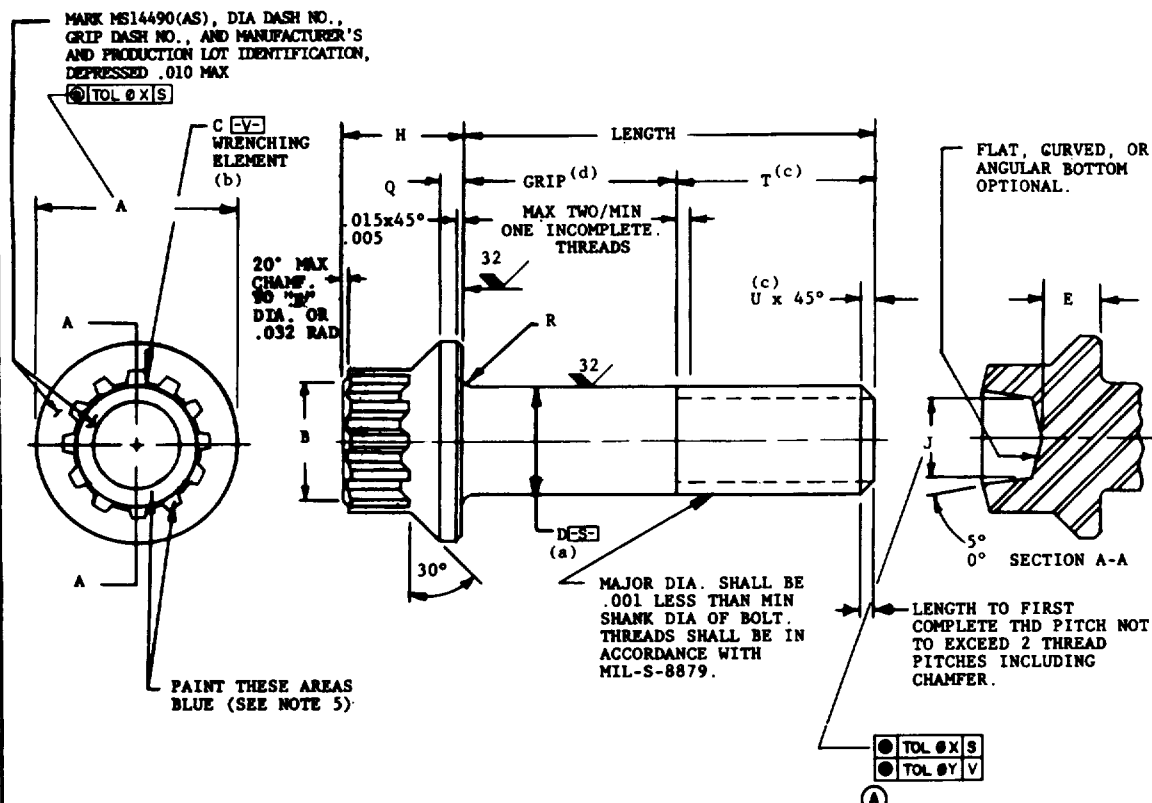


FED. SUP CLASS  
5306

## NOTES:

1. MATERIAL: INCONEL 718 PER AMS 5662, AMS 5663
2. HEAT TREATMENT: 220 KSI MIN AND 255 KSI MAX TENSILE STRENGTH AT ROOM TEMPERATURE
3. 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
4. FINISH: PASSIVATE PER QQ-P-35
5. PAINT: TOP OF BOLT WITH NO. 15102 BLUE PER TT-E-489
6. UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES  
TOLERANCES: DECIMALS  $\pm .010$   
ANGLES  $\pm 2^\circ$
7. PERFORMANCE: PER MIL-B-008906(AS) EXCEPT FOR:
  - (a) FATIGUE PER MIL-B-008906(AS) EXCEPT THAT LOADING SHALL BE AS SHOWN IN MS14490 TABLE II, AND MS14491 NUTS, MS14177 WASHERS SHALL BE USED; NO BOLT SHALL FAIL AT LESS THAN 2,000,000 CYCLES. THREADS AND BEARING SURFACE OF MS14490 BOLTS, MS14491 NUTS AND MS 14177 WASHERS SHALL BE LUBRICATED WITH MIL-T-5544 COMPOUND FOR THIS TEST.
  - (b) ELEVATED TEMPERATURE TENSILE STRENGTH AND STRESS RUPTURE TESTS ARE NOT APPLICABLE.
8. PLATING: CADMIUM PLATE IN ACCORDANCE WITH QQ-P-416, TYPE II, CLASS 2.
9. ADMINISTRATIVE AND CONTRACTUAL PROVISIONS:
  - a. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
  - b. REFERENCED GOVERNMENT DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

A DENOTES CHANGES

AMSC N/A  
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.  
This standard has been approved by the NAVAL AIR SYSTEMS COMMAND  
Department of the NAVY and is mandatory for use by  
all military activities. All other military activities are required  
to comply with this standard where suitable.

P.A. NAVY - AS Other Cost	TITLE BOLT, WHEEL, INCONEL, 220 KSI Ft <sub>u</sub> , 132 KSI Ft <sub>u</sub> , 450°F EXTERNAL WRENCHING, SPLINE DRIVE, FLANGED HEAD.	MILITARY STANDARD <b>MS14490(AS)</b>
PROCUREMENT SPECIFICATION MIL-B-008906(AS)	SUPERSEDES:	SHEET 1 OF 3

DD FORM 672-1 (Limited coordination)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

PROJECT NO. 5306-N150

PLATE NO. 17709

APPROVED 12 MAY 1986 REVISED A 9 SEP 1986

FED. SUP CLASS  
5306

TABLE I

DIA. DASH NO.	NOMINAL SIZE	THREAD UNJF-3A (a)	A DIA.		B DIA.		C (b) WRENCHING ELEMENT	D DIA.		E MIN	H ±.010	J +.010 -.030	Q ±.010
			MAX	MIN	MAX	MIN		MAX	MIN				
04	1/4	.2500-28	.438	.428	.250	.235	10	.2495	.2485	.149	.250	.125	.045
05	5/16	.3125-24	.531	.521	.375	.360	12	.3120	.3110	.187	.312	.215	.061
06	3/8	.3750-24	.649	.639	.438	.423	14	.3745	.3735	.224	.337	.260	.069
07	7/16	.4375-20	.750	.740	.500	.485	16	.4370	.4360	.262	.393	.320	.082
08	1/2	.5000-20	.828	.818	.562	.547	20	.4995	.4985	.299	.450	.380	.102
09	9/16	.5625-18	.938	.928	.625	.610	22	.5615	.5605	.336	.505	.440	.112
10	5/8	.6250-18	1.050	1.040	.688	.673	24	.6240	.6230	.374	.562	.500	.123
12	3/4	.7500-16	1.230	1.220	.812	.797	28	.7490	.7480	.449	.600	.570	.155
14	7/8	.8750-14	1.438	1.428	.938	.923	32	.8740	.8730	.523	.700	.650	.180

TABLE II

DIA. DASH NO.	R RAD		T MIN REF (c)	U REF (c)	FATIGUE LOADING		TENSILE STRENGTH		DOUBLE SHEAR STRENGTH LB MIN	CONCENTRICITY		
					LOW (r) TENSION LOAD LB ±2%	HIGH (f) TENSION LOAD LB ±2%				X	Y	Z (a)
	MAX	MIN					MAX(LB)	MIN(LB)				
04	.041	.031	.560	.045	5,800	6,850	10,300	8,890	13,000	.005	.004	
05			.663	.052	9,200	10,900	16,400	14,100	20,200	.006	.005	.0045
06			.733		13,600	16,100	24,200	20,900	29,100	.008	.006	
07	.057	.047	.823		18,400	21,800	32,800	28,300	39,700	.009	.008	
08			.903	.063	24,600	29,100	43,800	37,800	51,800	.010	.008	
09			1.000		31,100	34,500	55,500	47,900	65,600	.011	.009	.0060
10	.073	.063	1.060		38,900	43,100	69,500	59,900	81,000	.012	.010	
12			1.241	.078	56,500	62,600	100,800	86,900	117,000	.015	.012	
14			1.427		77,400	85,700	137,000	119,000	159,000	.018	.014	.0090

## NOTES:

- (a) DIMENSIONS D AND THREAD PITCH DIAMETER SHALL BE CONCENTRIC TO EACH OTHER WITHIN VALUES SPECIFIED FOR Z T.I.R.
- (b) WRENCHING ELEMENT PER MS33787. DRIVERS PER MIL-W-8982.
- (c) REFERENCE DIMENSIONS ARE FOR DESIGN PURPOSES ONLY AND ARE NOT INSPECTION OR MANUFACTURING REQUIREMENTS.  $T = H \text{ MAX (MS14156)} + 3 \text{ THDS} + .153$
- (d) GRIP LENGTH OF BOLT SHALL BE MEASURED FROM UNDERSIDE OF HEAD TO THE END OF FULL CYLINDER PORTION OF SHANK.
- (e) LOW TENSION FATIGUE LOAD IS BASED ON .65 x  $F_{tu}$  OF TABLE II.
- (f) HIGH TENSION FATIGUE LOAD FOR SIZES 1/4 THROUGH 1/2 INCH ARE BASED ON .77 x  $F_{tu}$  AND SIZES 9/16 THROUGH 7/8 INCH ARE BASED ON .72 x  $F_{tu}$  OF TABLE II.

APPROVED 12 MAY 1988 REVISED (A) FOR CHANGES SEE PAGE 1

P.A. NAVY - AS Other Cust	TITLE BOLT, WHEEL, INCONEL, 220 KSI $F_{tu}$ , 132 KSI $F_{su}$ , 450°F EXTERNAL WRENCHING, SPLINE DRIVE, FLANGED HEAD.	MILITARY STANDARD	
		MS14490(AS)	
PROCUREMENT SPECIFICATION MIL-B-008906(AS)	SUPERSEDES:	SHEET 2 OF 3	

This standard has been approved by the NAVAL AIR SYSTEMS COMMAND Department of the NAVY and is mandatory for use by that activity. All other military activities are required to comply with this standard where suitable.

**FED. SUP CLASS**  
**5306**

TABLE III

GRIP DASH NO.	GRIP ± .010	DIAMETER DASH NUMBER									
		04	05	06	07	08	09	10	12	14	
		LENGTH ± .015									
004	.250	.835	.938	—	—	—	—	—	—	—	
006	.375	.960	1.063	1.133	1.223	—	—	—	—	—	
008	.500	1.085	1.188	1.258	1.348	1.428	—	—	—	—	
010	.625	1.210	1.313	1.383	1.473	1.553	1.650	1.710	—	—	
012	.750	1.335	1.438	1.508	1.598	1.678	1.775	1.835	2.016	—	
014	.875	1.460	1.563	1.633	1.723	1.803	1.900	1.960	2.141	2.327	
016	1.000	1.585	1.688	1.758	1.848	1.928	2.025	2.085	2.266	2.452	
018	1.125	1.710	1.813	1.883	1.973	2.053	2.150	2.210	2.391	2.577	
020	1.250	1.835	1.938	2.008	2.098	2.178	2.275	2.335	2.516	2.702	
022	1.375	1.960	2.063	2.133	2.223	2.303	2.400	2.460	2.641	2.827	
024	1.500	2.085	2.188	2.258	2.348	2.428	2.525	2.585	2.766	2.952	
026	1.625	2.210	2.313	2.383	2.473	2.553	2.650	2.710	2.891	3.077	
028	1.750	2.335	2.438	2.508	2.598	2.678	2.775	2.835	3.016	3.202	
030	1.875	2.460	2.563	2.633	2.723	2.803	2.900	2.960	3.141	3.327	
032	2.000	2.585	2.688	2.758	2.848	2.928	3.025	3.085	3.266	3.452	
034	2.125	2.710	2.813	2.883	2.973	3.053	3.150	3.210	3.391	3.577	
036	2.250	2.835	2.938	3.008	3.098	3.178	3.275	3.335	3.516	3.702	
038	2.375	2.960	3.063	3.133	3.223	3.303	3.400	3.460	3.641	3.827	
040	2.500	3.085	3.188	3.258	3.348	3.428	3.525	3.585	3.766	3.952	
042	2.625	3.210	3.313	3.383	3.473	3.553	3.650	3.710	3.891	4.077	
044	2.750	3.335	3.438	3.508	3.598	3.678	3.775	3.835	4.016	4.202	
046	2.875	3.460	3.563	3.633	3.723	3.803	3.900	3.960	4.141	4.327	
048	3.000	3.585	3.688	3.758	3.848	3.928	4.025	4.085	4.266	4.452	
050	3.125	3.710	3.813	3.883	3.973	4.053	4.150	4.210	4.391	4.577	
052	3.250	3.835	3.938	4.008	4.098	4.178	4.275	4.335	4.516	4.702	
054	3.375	3.960	4.063	4.133	4.223	4.303	4.400	4.460	4.641	4.827	
056	3.500	4.085	4.188	4.258	4.348	4.428	4.525	4.585	4.766	4.952	
058	3.625	4.210	4.313	4.383	4.473	4.553	4.650	4.710	4.891	5.077	
060	3.750	4.335	4.438	4.508	4.598	4.678	4.775	4.835	5.016	5.202	
062	3.875	4.460	4.563	4.633	4.723	4.803	4.900	4.960	5.141	5.327	
064	4.000	4.585	4.688	4.758	4.848	4.928	5.025	5.085	5.266	5.452	
066	4.125	4.710	4.813	4.883	4.973	5.053	5.150	5.210	5.391	5.577	
068	4.250	4.835	4.938	5.008	5.098	5.178	5.275	5.335	5.516	5.702	
070	4.375	4.960	5.063	5.133	5.223	5.303	5.400	5.460	5.641	5.827	
072	4.500	5.085	5.188	5.258	5.348	5.428	5.525	5.585	5.766	5.952	
074	4.625	5.210	5.313	5.383	5.473	5.553	5.650	5.710	5.891	6.077	
076	4.750	5.335	5.438	5.508	5.598	5.678	5.775	5.835	6.016	6.202	
078	4.875	5.460	5.563	5.633	5.723	5.803	5.900	5.960	6.141	6.327	
080	5.000	5.585	5.688	5.758	5.848	5.928	6.025	6.085	6.266	6.452	
082	5.125	5.710	5.813	5.883	5.973	6.053	6.150	6.210	6.391	6.577	
084	5.250	5.835	5.938	6.008	6.098	6.178	6.275	6.335	6.516	6.702	
086	5.375	5.960	6.063	6.133	6.223	6.303	6.400	6.460	6.641	6.827	
088	5.500	6.085	6.188	6.258	6.348	6.428	6.525	6.585	6.766	6.952	
090	5.625	6.210	6.313	6.383	6.473	6.553	6.650	6.710	6.891	7.077	
092	5.750	6.335	6.438	6.508	6.598	6.678	6.775	6.835	7.016	7.202	
094	5.875	6.460	6.563	6.633	6.723	6.803	6.900	6.960	7.141	7.327	
096	6.000	6.585	6.688	6.758	6.848	6.928	7.025	7.085	7.266	7.452	
098	6.125	6.710	6.813	6.883	6.973	7.053	7.150	7.210	7.391	7.577	
100	6.250	6.835	6.938	7.008	7.098	7.178	7.275	7.335	7.516	7.702	
102	6.375	6.960	7.063	7.133	7.223	7.303	7.400	7.460	7.641	7.827	
104	6.500	7.085	7.188	7.258	7.348	7.428	7.525	7.585	7.766	7.952	
106	6.625	7.210	7.313	7.383	7.473	7.553	7.650	7.710	7.891	8.077	
108	6.750	7.335	7.438	7.508	7.598	7.678	7.775	7.835	8.016	8.202	
110	6.875	7.460	7.563	7.633	7.723	7.803	7.900	7.960	8.141	8.327	
112	7.000	7.585	7.688	7.758	7.848	7.928	8.025	8.085	8.266	8.452	
114	7.125	7.710	7.813	7.883	7.973	8.053	8.150	8.210	8.391	8.577	
116	7.250	7.835	7.938	8.008	8.098	8.178	8.275	8.335	8.516	8.702	
118	7.375	7.960	8.063	8.133	8.223	8.303	8.400	8.460	8.641	8.827	
120	7.500	8.085	8.188	8.258	8.348	8.428	8.525	8.585	8.766	8.952	
122	7.625	8.210	8.313	8.383	8.473	8.553	8.650	8.710	8.891	9.077	
124	7.750	8.335	8.438	8.508	8.598	8.678	8.775	8.835	9.016	9.202	
126	7.875	8.460	8.563	8.633	8.723	8.803	8.900	8.960	9.141	9.327	

DIAMETER DASH NO. AT TOP OF TABLE, PLUS GRIP DASH NO. CONSTITUTES A COMPLETE PART NO.

FIRST TWO DASH NUMBERS DESIGNATE DIAMETER IN SIXTEENTHS. LAST THREE DASH NUMBERS DESIGNATE GRIP LENGTH IN SIXTEENTHS.

UNASSIGNED DASH NUMBERS SHALL NOT BE USED.

EXAMPLE OF PART NUMBER: MS14490-05012

— .750 GRIP, 1.438 LENGTH

— 5/16-24 BOLT

— BASIC NUMBER

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P.A. NAVY - AS Other Cust	TITLE BOLT, WHEEL, INCONEL, 220 KSI F <sub>tu</sub> , 132 KSI F <sub>su</sub> , 450°F EXTERNAL WRENCHING, SPLINE DRIVE, FLANGED HEAD.	MILITARY STANDARD <b>MS14490(AS)</b>
PROCUREMENT SPECIFICATION MIL-B-008906(AS)	SUPERSEDES:	SHEET 3 OF 3

DD FORM 672-1 (Limited coordination)

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