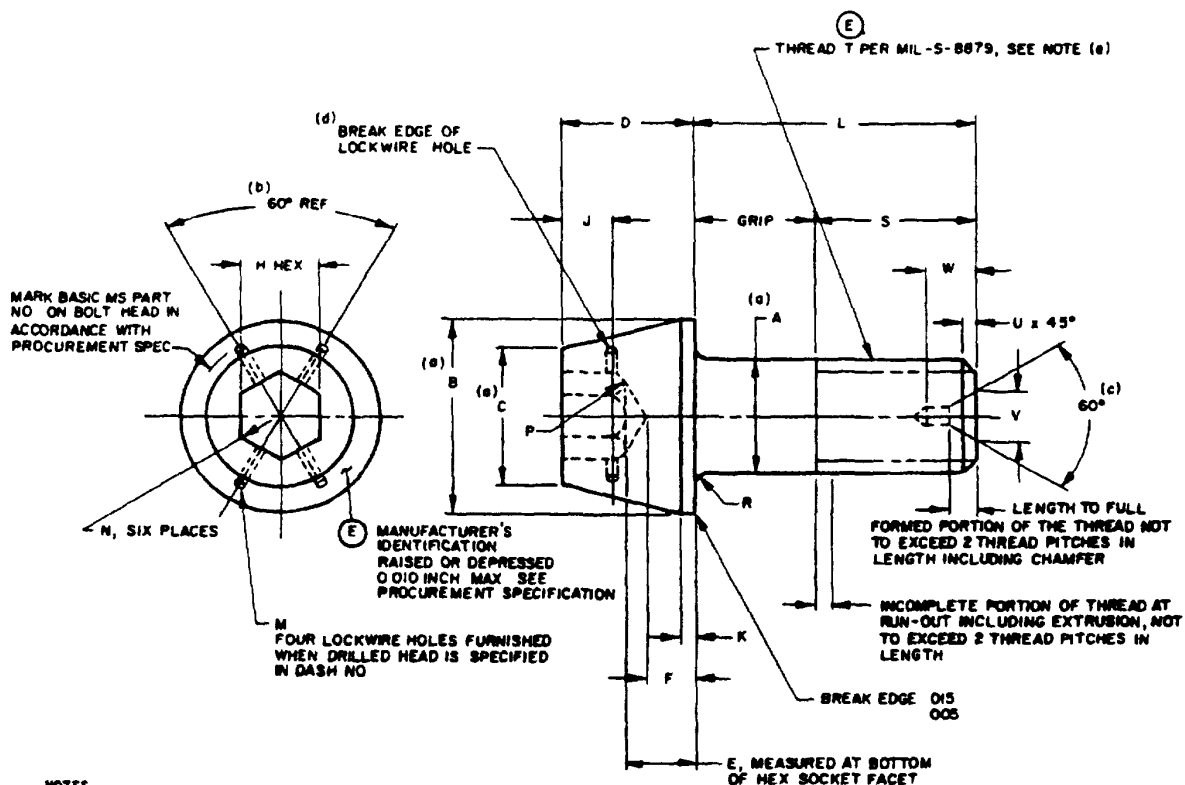


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DOORS SPECIFIED IN THE SOLICITATION MIL-B-7836



#### NOTES

- (a) DIMENSIONS A, B AND C SHALL BE CONCENTRIC TO EACH OTHER WITHIN VALUES SPECIFIED FOR X TOTAL INDICATOR READING. DIMENSIONS SHALL BE H AND C SHALL BE CONCENTRIC TO EACH OTHER WITHIN VALUES SPECIFIED FOR Y TOTAL INDICATOR READING. DIMENSION A AND THREAD PITCH DIAMETER SHALL BE CONCENTRIC TO EACH OTHER WITHIN VALUES SPECIFIED FOR Z TOTAL INDICATOR READING.
- (b) REFERENCE DIMENSIONS ARE FOR DESIGN PURPOSES AND TO PROVIDE INFORMATION ONLY. THESE DIMENSIONS ARE NOT INSPECTION OR MANUFACTURING REQUIREMENTS. S MIN REF = (L MIN) - (GRIP MAX).
- (c) ON MS20012 THRU MS20024 CENTER DRILLING OF SHANK IS OPTIONAL FOR BOLT MANUFACTURER.
- (d) COUNTERSINKING OF DRILLED HOLES IS OPTIONAL.
- (e) MS20016 (SEE TABLE 1), 1-14MS-3A IS INACTIVE FOR NEW DESIGN MS20016 THREADS ARE NOTED AS AN EXCEPTION IN MIL-B-7836
- (f) MS20012A IS CANCELLED AFTER 13 JANUARY 1990

#### REQUIREMENTS

- (1) MATERIAL ALLOY STEEL - UNS G43400, UNS G43406, UNS G41400, UNS G87400, UNS G87350
- (2) FINISH CADMIUM PLATING PER QQ-P-416, TYPE II, CLASS 2 PARTS WITH CLASS 3 PLATING MAY BE FURNISHED FROM SUPPLIER'S STOCK UNTIL 1 JANUARY 1975.
- (3) HARDNESS 34-40 HRC
- (4) DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED, TOLERANCES DECIMALS - 0.10, ANGLES ±1°
- (5) DIMENSIONS TO BE MET AFTER PLATING INTERCHANGEABILITY RELATIONSHIP
- BOLTS WITH TYPE II PLATING CAN BE USED TO REPLACE BOLTS WITH TYPE I PLATING IN ALL APPLICATIONS
- BOLTS WITH TYPE I PLATING CAN BE USED IN PLACE OF BOLTS WITH TYPE II PLATING UNTIL PRESENT STOCKS ARE DEPLETED, BUT BOLTS WITH TYPE I PLATING SHALL NOT BE USED AFTER 1 JANUARY 1964

FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID

(E) DENOTES CHANGES

PREPARING ACTIVITY NAVY - AS CUSTODIANS ARMY-AR NAVY- AIR FORCE-99 DLA- REVIEW ARMY - ER, ME, MI DLA - IS AF-R? USER ARMY - AV PROJECT NUMBER 5306-123E	MILITARY SPECIFICATION SHEET TITLE BOLTS, INTERNAL WRENCHING, 160 KSI FTU AND 50 KSI FSL	SPECIFICATION SHEET NUMBER 30 MAY 1989 <b>MS20004E THRU 20024E</b> SUPERSEDING MS20004D THRU 20024D 10 AUGUST 1981 AMSC- N/A FSC 5306
DISTRIBUTION STATEMENT A Approved for public release distribution is unlimited		Page 1 of 4

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

Form approved  
OMB No 0704-0188

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICITATION MIL-B-7838

(E)

TABLE I BOLT DIMENSIONS AND TENSILE STRENGTH

BASIC MS PART NO	(a) THREAD T	(a) A DIA		(a) B DIA		(a) C DIA	D	E	F MIN	(a) H HEX		J	K	M +.005 -.000 DIA	N MAX RAD
		MAX	MIN	MAX	MIN					MAX	MIN				
MS20004	1/4-28 UNJF-3A	.2492	.2477	.438	.428	.342	.250	.112	.068	.1900	.1880	.078		.037	.010
MS20005	5/16-24 UNJF-3A	.3117	.3102	.531	.521	.394	.312	.144	.094	.2210	.2190	.094			
MS20006	3/8-24 UNJF-3A	.3742	.3727	.649	.639	.520	.375	.183	.116	.3150	.3130	.125			.011
MS20007	7/16-20 UNJF-3A	.4367	.4347	.750	.740	.534	.438	.208	.141			.156			
MS20008	1/2-20 UNJF-3A	.4991	.4971	.828	.818	.625	.500	.247	.169	.3785	.3755	.172			
MS20009	9/16-18 UNJF-3A	.5616	.5596	.938	.928	.723	.562	.279	.190	.4410	.4380	.203			.019
MS20010	5/8-18 UNJF-3A	.6240	.6220	1.050	1.040	.826	.625	.317	.216	.5035	.5005	.234			
MS20012	3/4-16 UNJF-3A	.7488	.7468	1.230	1.220	.921	.750	.385	.273	.5660	.5630	.281			
MS20014	7/8-14 UNJF-3A	.8737	.8707	1.438	1.428	1.083	.875	.450	.327	.6295	.6257	.344			
MS20016 *	1 -14 NS -3A											.391			
MS20017	1 -12 UNJF-3A	.9985	.9955	1.625	1.615	1.249	1.000	.527	.381	.7547	.7507	.453			.022
MS20018	1-1/8-12 UNJF-3A	1.124	1.121	1.875	1.865	1.275	1.125	.589	.443			.500			
MS20020	1-1/4-12 UNJF-3A	1.249	1.246	2.125	2.115	1.598	1.250	.667	.475	1.005	1.001	.547	.125		
MS20022	1-3/8-12 UNJF-3A	1.374	1.370	2.313	2.303	1.768	1.375	.746	.531	1.131	1.126	.594			
MS20024	1-1/2-12 UNJF-3A	1.499	1.495	2.500	2.490	1.931	1.500	.823	.586	1.256	1.251	.694			
MS20012A	3/4-16 UNJF-3A	.7488	.7468	1.230	1.220	.921	.750	.385	.273	.5660	.5630	.281			.094

(E) SEE NOTE (f)

TABLE I (CONTINUED)

BASIC MS PART NO	P RAD		P RAD		(b) S MIN REF	U ±.016	(c) V MAX	(c) W MAX	(b) (c) CENTER DRILL SIZE REF	TENSILE STRENGTH LB MIN	(a) CONCENTRICITY							
	MAX	MIN	MAX	MIN							X	Y	Z					
MS20004	020	010	.041	.031	.475	.031				6,190	.005	.007	0045					
MS20005					.537					9,820	.006	.008						
MS20006					.662					15,200	.008	.010						
MS20007			.057	.047	.787	.047				20,400	.009	.011						
MS20008					.850					27,400	.010	.012						
MS20009					.912					34,800	.011	.014						
MS20010			073	063						.062	187	200		2	43,600	.012	.016	.006
MS20012										1.037					63,200	.015	.018	
MS20014										1.162					86,100	.018	.022	
MS20016 *	030	015					.078	250	260	3	112,000	.020	.025	.009				
MS20017											1.287	114,000						
MS20018											1.475	144,000	.022		.026			
MS20020					.089	.077	.094	.312	320	4	180,000	.025	.032	.012				
MS20022											1.600	219,000	.028		.035			
MS20024											1.725	263,000	.030		.039			
MS20012A	.073	.063	.030	.062	187	200	2	63,200	.015	.018	.006							

(E) SEE NOTE (f)

\* SEE NOTE (a)

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

PREPARING ACTIVITY NAVY - AS  
CUSTODIANS ARMY - AP NAVY -  
AIR FORCE - 99 DLA -  
REVIEW ARMY - EP, ME, MI DLA - IS AF - HC  
USER ARMY - AV  
PROJECT NUMBER 5306-1233

MILITARY SPECIFICATION SHEET  
TITLE BOLTS, INTERNAL WRENCHING, 160 KSI FTU  
AND 96 KSI FSL

SPECIFICATION SHEET NUMBER 30 MAY 1989  
MS20004E THRU 20024E  
SUPERSEDING  
MS20004D THRU 20024D 10 AUGUST 1981  
AMSC - N/A FSC 5306

DISTRIBUTION STATEMENT A Approved for public release, distribution is unlimited

Page 2 of 4

DD FORM 672 MAY 1988

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

14 2004

TABLE 11. DASH NOS., GRIP LENGTHS AND BOLT LENGTH.

DASH NO		GRIP		LENGTH = 015													
: 010		MS20004	MS20005	MS20006	MS20007	MS20008	MS20009	MS20010	MS20012	MS20014	MS20016	MS20017	MS20018	MS20020	MS20022	MS20024	
		1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1	1-1/8	1-1/4	1-3/8	1-1/2	
4	.250	.750															
6	.375	.875	938	1 062													
8	500	1.000	1 062	1 188	1 312	1 312											
10	.625	1.125	1 188	1.312	1 438	1 438	1.500	1.562	1.625								
12	.750	1.250	1.312	1 438	1.562	1 562	1 625	1.688	1 812								
14	.875	1.375	1.438	1 562	1 688	1 688	1 750	1 812	1 938	2 062							
16	1.000	1.500	1.562	1 688	1 812	1 812	1.875	1 938	2 062	2 188	2 312	2 312	2 438	2 562			
18	1.125	1.625	1.688	1 812	1 938	1 938	2 000	2 062	2 188	2 312	2 438	2 562	2 688	2 812	2 938		
20	1.250	1.750	1 812	1 938	2 062	2 062	2 125	2 188	2 312	2 438	2 562	2 688	2 812	2 938	3 062		
22	.375	1 875	1 938	2 062	2 188	2 188	2 250	2 312	2 438	2 562	2 688	2 812	2 938	3 062	3 188		
24	1.500	2.000	2.062	2 188	2.312	2 312	2 375	2 438	2.562	2.688	2.812	2.938	3.062	3.188	3.312		
26	1.625	2.125	2.188	2.312	2.438	2 438	2.500	2.562	2.688	2.812	2.938	3.062	3.188	3.312	3.438		
28	1.750	2.250	2.312	2 438	2.562	2 562	2.625	2.688	2.812	2.938	3.062	3.188	3.312	3.438	3.562		
30	1.875	2.375	2.438	2 562	2.688	2 688	2.750	2.812	2.938	3.062	3.188	3.312	3.438	3.562	3.688		
32	2.000	2.500	2.562	2 688	2.812	2 812	2.875	2.938	3.062	3.188	3.312	3.438	3.562	3.688	3.812		
34	2.125	2.625	2.688	2.812	2.938	2 938	3.000	3.062	3.188	3.312	3.438	3.562	3.688	3.812	3.938		
36	2.250	2.750	2.812	2.938	3.062	3 062	3.125	3.188	3.312	3.438	3.562	3.688	3.812	3.938	4.062		
38	2.375	2.875	2.938	3.062	3.188	3 188	3.250	3.312	3.438	3.562	3.688	3.812	3.938	4.062	4.188		
40	2.500	3.000	3.062	3.188	3.312	3 312	3.375	3.438	3.562	3.688	3.812	3.938	4.062	4.188	4.312		
42	2.625	3.125	3.188	3.312	3.438	3 438	3.500	3.562	3.688	3.812	3.938	4.062	4.188	4.312	4.438		
44	2.750	3.250	3.312	3.438	3.562	3 562	3.625	3.688	3.812	3.938	4.062	4.188	4.312	4.438	4.562		
46	2.875	3.375	3.438	3.562	3.688	3 688	3.750	3.812	3.938	4.062	4.188	4.312	4.438	4.562	4.688		
48	3.000	3.500	3.562	3.688	3.812	3 812	3.875	3.938	4.062	4.188	4.312	4.438	4.562	4.688	4.812		
50	3.125	3.625	3.688	3.812	3.938	3 938	4.000	4.062	4.188	4.312	4.438	4.562	4.688	4.812	4.938		
52	3.250	3.750	3.812	3.938	4.062	4 062	4.125	4.188	4.312	4.438	4.562	4.688	4.812	4.938	5.062		
54	3.375	3.875	3.938	4.062	4.188	4 188	4.250	4.312	4.438	4.562	4.688	4.812	4.938	5.062	5.188		
56	3.500	4.000	4.062	4.188	4.312	4 312	4.375	4.438	4.562	4.688	4.812	4.938	5.062	5.188	5.312		
58	3.625	4.125	4.188	4.312	4.438	4 438	4.500	4.562	4.688	4.812	4.938	5.062	5.188	5.312	5.438		
60	3.750	4.250	4.312	4.438	4.562	4 562	4.625	4.688	4.812	4.938	5.062	5.188	5.312	5.438	5.562		
62	3.875	4.375	4.438	4.562	4.688	4 688	4.750	4.812	4.938	5.062	5.188	5.312	5.438	5.562	5.688		
64	4.000	4.500	4.562	4.688	4.812	4 812	4.875	4.938	5.062	5.188	5.312	5.438	5.562	5.688	5.812		
66	4.125	4.625	4.688	4.812	4.938	4 938	5.000	5.062	5.188	5.312	5.438	5.562	5.688	5.812	5.938		
68	4.250	4.750	4.812	4.938	5.062	5 062	5.125	5.188	5.312	5.438	5.562	5.688	5.812	5.938	6.062		
70	4.375	4.875	4.938	5.062	5.188	5 188	5.250	5.312	5.438	5.562	5.688	5.812	5.938	6.062	6.188		
72	4.500	5.000	5.062	5.188	5.312	5 312	5.375	5.438	5.562	5.688	5.812	5.938	6.062	6.188	6.312		
74	4.625	5.125	5.188	5.312	5.438	5 438	5.500	5.562	5.688	5.812	5.938	6.062	6.188	6.312	6.438		
76	4.750	5.250	5.312	5.438	5.562	5 562	5.625	5.688	5.812	5.938	6.062	6.188	6.312	6.438	6.562		
78	4.875	5.375	5.438	5.562	5.688	5 688	5.750	5.812	5.938	6.062	6.188	6.312	6.438	6.562	6.688		
80	5.000	5.500	5.562	5.688	5.812	5 812	5.875	5.938	6.062	6.188	6.312	6.438	6.562	6.688	6.812		
82	5.125	5.625	5.688	5.812	5.938	5 938	6.000	6.062	6.188	6.312	6.438	6.562	6.688	6.812	6.938		
84	5.250	5.750	5.812	5.938	6.062	6 062	6.125	6.188	6.312	6.438	6.562	6.688	6.812	6.938	7.062		
86	5.375	5.875	5.938	6.062	6.188	6 188	6.250	6.312	6.438	6.562	6.688	6.812	6.938	7.062	7.188		
88	5.500	6.000	6.062	6.188	6.312	6 312	6.375	6.438	6.562	6.688	6.812	6.938	7.062	7.188	7.312		
90	5.625	6.125	6.188	6.312	6.438	6 438	6.500	6.562	6.688	6.812	6.938	7.062	7.188	7.312	7.438		
92	5.750	6.250	6.312	6.438	6.562	6 562	6.625	6.688	6.812	6.938	7.062	7.188	7.312	7.438	7.562		
94	5.875	6.375	6.438	6.562	6.688	6 688	6.750	6.812	6.938	7.062	7.188	7.312	7.438	7.562	7.688		
96	6.000	6.500	6.562	6.688	6.812	6 812	6.875	6.938	7.062	7.188	7.312	7.438	7.562	7.688	7.812		
98	6.125						7.000	7.062	7.188	7.312	7.438	7.562	7.688	7.812	7.938		
100	6.250						7.125	7.188	7.312	7.438	7.562	7.688	7.812	7.938	8.062		
102	6.375						7.250	7.312	7.438	7.562	7.688	7.812	7.938	8.062	8.188		
104	6.500						7.375	7.438	7.562	7.688	7.812	7.938	8.062	8.188	8.312		
106	6.625						7.500	7.562	7.688	7.812	7.938	8.062	8.188	8.312	8.438		
108	6.750						7.625	7.688	7.812	7.938	8.062	8.188	8.312	8.438	8.562		
110	6.875						7.750	7.812	7.938	8.062	8.188	8.312	8.438	8.562	8.688		
112	7.000						7.875	7.938	8.062	8.188	8.312	8.438	8.562	8.688	8.812		
114	7.125																
116	7.250																
118	7.375																
120	7.500																
122	7.625																
124	7.750																
126	7.875																
128	8.000																

(E) • APPLIES TO MS20012A ONLY.

PREPARING ACTIVITY NAVY - AS

CUSTODIANS ARMY AP

NAVY-

**AIR FORCE-99**

DLA-

REVIEW ARMY - EP, ME, MI DLA - IS AF-8?

USER ARMY - AV

PROJECT NUMBER 5306-123E

MILITARY SPECIFICATION SHEET

TITLE BOLTS, INTERNAL WRENCHING, 160 KSI FTU  
AND 90 KSI FSL

SPECIFICATION SHEET NUMBER 30 MAY 1989

MS20004E THRU 20024E

**SUPERSEDING**

MS20004D THRU 20024D 10 AUGUST 1981

AMSC- N/A

FSC 5306

**DISTRIBUTION STATEMENT A** Approved for public release distribution is unlimited

Page 3 of 4

DD FORM 672 MAY 1988

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDSS SPECIFIED IN THE SOLICITATION MIL-B-7838

THIS SPECIFICATION IS APPROVED FOR USE  
BY ALL DEPARTMENTS AND AGENCIES OF THE  
DEPARTMENT OF DEFENSE

150000 450000 600000 750000 900000 1050000 1200000 1350000 1500000 1650000 1800000 1950000 2100000 2250000 2400000 2550000 2700000 2850000 3000000 3150000 3300000 3450000 3600000 3750000 3900000 4050000 4200000 4350000 4500000 4650000 4800000 4950000 5100000 5250000 5400000 5550000 5700000 5850000 6000000 6150000 6300000 6450000 6600000 6750000 6900000 7050000 7200000 7350000 7500000 7650000 7800000 7950000 8100000 8250000 8400000 8550000 8700000 8850000 9000000 9150000 9300000 9450000 9600000 9750000 9900000 10050000 10200000 10350000 10500000 10650000 10800000 10950000 11100000 11250000 11400000 11550000 11700000 11850000 12000000 12150000 12300000 12450000 12600000 12750000 12900000 13050000 13200000 13350000 13500000 13650000 13800000 13950000 14100000 14250000 14400000 14550000 14700000 14850000 15000000 15150000 15300000 15450000 15600000 15750000 15900000 16050000 16200000 16350000 16500000 16650000 16800000 16950000 17100000 17250000 17400000 17550000 17700000 17850000 18000000 18150000 18300000 18450000 18600000 18750000 18900000 19050000 19200000 19350000 19500000 19650000 19800000 19950000 20100000 20250000 20400000 20550000 20700000 20850000 21000000 21150000 21300000 21450000 21600000 21750000 21900000 22050000 22200000 22350000 22500000 22650000 22800000 22950000 23100000 23250000 23400000 23550000 23700000 23850000 24000000 24150000 24300000 24450000 24600000 24750000 24900000 25050000 25200000 25350000 25500000 25650000 25800000 25950000 26100000 26250000 26400000 26550000 26700000 26850000 27000000 27150000 27300000 27450000 27600000 27750000 27900000 28050000 28200000 28350000 28500000 28650000 28800000 28950000 29100000 29250000 29400000 29550000 29700000 29850000 30000000 30150000 30300000 30450000 30600000 30750000 30900000 31050000 31200000 31350000 31500000 31650000 31800000 31950000 32100000 32250000 32400000 32550000 32700000 32850000 33000000 33150000 33300000 33450000 33600000 33750000 33900000 34050000 34200000 34350000 34500000 34650000 34800000 34950000 35100000 35250000 35400000 35550000 35700000 35850000 36000000 36150000 36300000 36450000 36600000 36750000 36900000 37050000 37200000 37350000 37500000 37650000 37800000 37950000 38100000 38250000 38400000 38550000 38700000 38850000 39000000 39150000 39300000 39450000 39600000 39750000 39900000 40050000 40200000 40350000 40500000 40650000 40800000 40950000 41100000 41250000 41400000 41550000 41700000 41850000 42000000 42150000 42300000 42450000 42600000 42750000 42900000 43050000 43200000 43350000 43500000 43650000 43800000 43950000 44100000 44250000 44400000 44550000 44700000 44850000 45000000 45150000 45300000 45450000 45600000 45750000 45900000 46050000 46200000 46350000 46500000 46650000 46800000 46950000 47100000 47250000 47400000 47550000 47700000 47850000 48000000 48150000 48300000 48450000 48600000 48750000 48900000 49050000 49200000 49350000 49500000 49650000 49800000 49950000 50100000 50250000 50400000 50550000 50700000 50850000 51000000 51150000 51300000 51450000 51600000 51750000 51900000 52050000 52200000 52350000 52500000 52650000 52800000 52950000 53100000 53250000 53400000 53550000 53700000 53850000 54000000 54150000 54300000 54450000 54600000 54750000 54900000 55050000 55200000 55350000 55500000 55650000 55800000 55950000 56100000 56250000 56400000 56550000 56700000 56850000 57000000 57150000 57300000 57450000 57600000 57750000 57900000 58050000 58200000 58350000 58500000 58650000 58800000 58950000 59100000 59250000 59400000 59550000 59700000 59850000 60000000 60150000 60300000 60450000 60600000 60750000 60900000 61050000 61200000 61350000 61500000 61650000 61800000 61950000 62100000 62250000 62400000 62550000 62700000 62850000 63000000 63150000 63300000 63450000 63600000 63750000 63900000 64050000 64200000 64350000 64500000 64650000 64800000 64950000 65100000 65250000 65400000 65550000 65700000 65850000 66000000 66150000 66300000 66450000 66600000 66750000 66900000 67050000 67200000 67350000 67500000 67650000 67800000 67950000 68100000 68250000 68400000 68550000 68700000 68850000 69000000 69150000 69300000 69450000 696000

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODIGS SPECIFIED IN THE SOLICITATION MIL-B-7838

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

Form approved  
OMB No 0704-0188

UNASSIGNED DASH NUMBERS SHALL NOT BE USED, EXCEPT THOSE DASH NUMBERS COVERED BY THE FOLLOWING CODING NOTE

DASH NUMBERS INDICATE PREFERRED GRIP LENGTHS IN .125 INCREMENTS. INTERMEDIATE GRIP LENGTHS BETWEEN THOSE LENGTHS LISTED, MAY BE SPECIFIED IN .062 INCREMENTS BY INTERMEDIATE DASH NUMBERS. LENGTH AND GRIP OF A BOLT WITH AN ODD NUMBER FOR THE DASH NUMBER WILL BE .062 GREATER THAN SHOWN FOR THE BOLTS WITH THE PRECEDING EVEN DASH NUMBER. ONLY BOLT DIAMETER FOR WHICH THERE ARE QUALIFIED PRODUCTS LISTED ON QPL-7838 SHALL BE USED FOR DESIGN.

FOR EACH BOLT DIAMETER GRIP LENGTHS GREATER OR LESS THAN THOSE DESIGNATED BY ASSIGNED DASH NUMBERS ON TABLE II ARE INACTIVE FOR DESIGN.

ADD "H" BEFORE DASH NUMBER FOR BOLT WITH DRILLED HEAD

EXAMPLES OF PART NUMBERS MS20017-18 = 1-12 BOLT, 2.438 INCH LONG, 1.125 INCH GRIP, UNDRILLED HEAD  
MS20017H18 = 1-12 BOLT, 2.438 INCH LONG, 1.125 INCH GRIP, DRILLED HEAD.

PREPARING ACTIVITY NAVY - AS  
CUSTODIANS ARMY - AR NAVY -  
AIR FORCE - 99 DLA -  
REVIEW ARMY - ER, ME, MI DLA - JS AF - 62  
USER ARMY - AV  
PROJECT NUMBER 5306-1234

MILITARY SPECIFICATION SHEET  
TITLE BOLT - INTERNAL WRENCHING, 160 KS; FTU  
AND 96 KS; FSL

SPECIFICATION SHEET NUMBER 30 MAY 1989

MS20004E THRU 20024E

SUPERSEDING  
MS20004D THRU 20024D 10 AUGUST 1981

AWSC- N/A FSC 5306

DISTRIBUTION STATEMENT A Approved for public release distribution is unlimited

Page 1 of 1

DD FORM 672 MAY 1988

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

14 0004