

FED. SUPPLY CLASS

5306

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME
PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE.

FORM 09-01

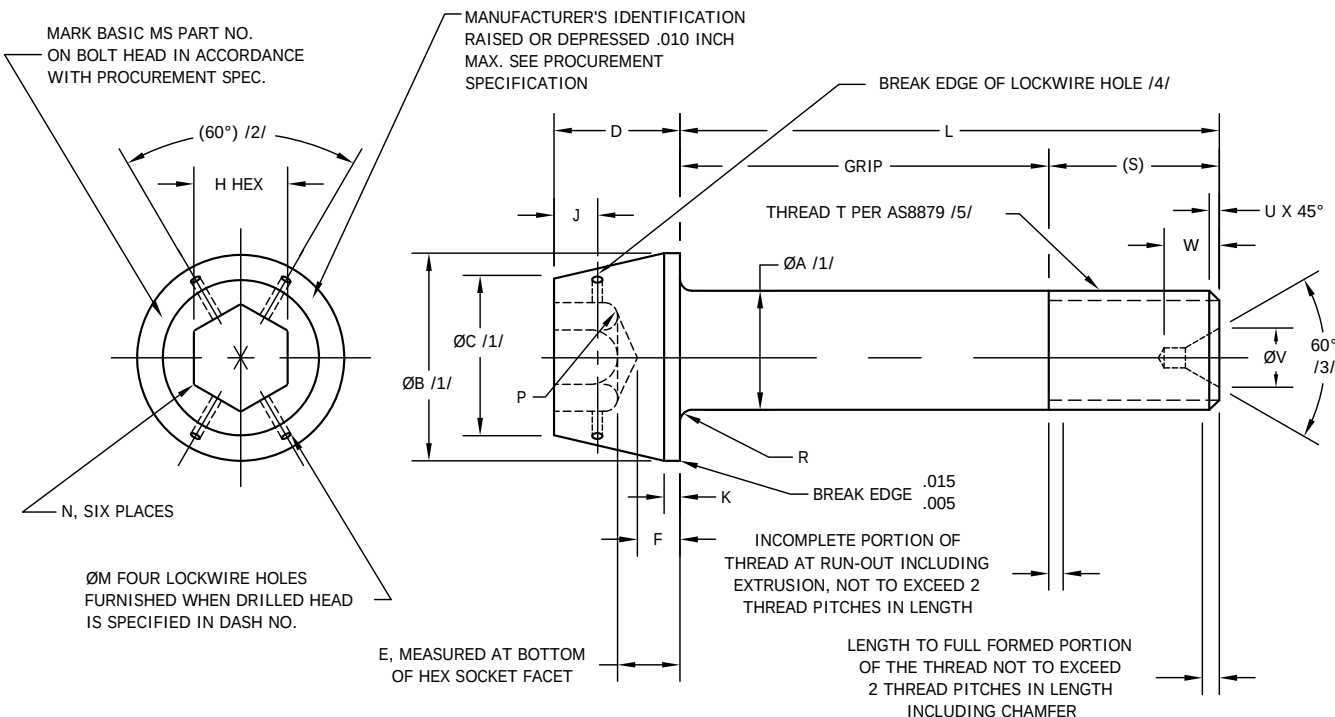


TABLE I – BOLT DIMENSIONS AND TENSILE STRENGTH

BASIC PART NO.	THREAD T /1/ /6/	ØA /1/		ØB /1/		ØC /1/	D	E	F MIN	H HEX /1/		J	K	ØM +.005 -.000	N RAD MAX
		MAX	MIN	MAX	MIN					MAX	MIN				
MS20004	1/4-28 UNJF-3A	.2492	.2477	.438	.428	.342	.250	.112	.068	.1900	.1880	.078	.063	.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			
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	.094	.055	.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	.386	.273	.5660	.5630	.281			
MS20012A /6/	3/4-16 UNJF-3A	.7488	.7468	1.230	1.220	.921	.750	.386	.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 /5/	1-14 NS-3A	.9985	.9955	1.625	1.615	1.249	1.000	.527	.381	.7547	.7507	.391	.125	.156	.022
MS20017	1-12 UNJF-3A											.453			
MS20018	1-1/8-12 UNJF-3A	1.124	1.121	1.875	1.865	1.275	1.126	.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			
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				
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				

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MS20004 THRU MS20024, REV E. PART NUMBERS REMAIN MS20004 THRU MS20024.

THIRD ANGLE PROJECTION	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 4
PROCUREMENT SPECIFICATION NASM7838	TITLE BOLTS, INTERNAL WRENCHING, 160 KSI Ft_u AND 96 KSI Fs_u	CLASSIFICATION PART STANDARD NASM20004 THRU NASM20024 SHEET 1 OF 4

TABLE I – BOLT DIMENSIONS AND TENSILE STRENGTH (CONTINUED)

BASIC PART NO.	P RAD		R RAD		(S) MIN /2/	U ±.016	V MAX /3/	W MAX /3/	CENTER DRILL SIZE REF /2/ /3/	TENSILE STRENGTH LBF MIN ④	CONCENTRICITY /1/		
	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			.057	.047	.662	.047	—	—	—	15,200	.008	.010	.006
MS20007					.787		—	—	—	20,600	.009	.011	
MS20008					—		—	—	27,400	.010	.012		
MS20009					.850		—	—	—	34,800	.011	.014	
MS20010					.912	—	—	—	43,600	.012	.016		
MS20012	.073	.063	1.037	.062	.187	.200	2	63,200	.015	.018	.009		
MS20012A /6/			~~1.037~~					86,100	.018	.022			
MS20014			.078	.250	.260	3	112,000	.020	.025				
MS20016 /5/							114,000						
MS20017							1.287	144,000	.022	.026			
MS20018							1.475	180,000	.026	.032			
MS20020			.089	.077	1.600	.094	.312	.320	4	219,000	.028	.035	.012
MS20022					1.725					263,000	.030	.039	
MS20024					1.850								

MATERIAL:

- ④ ALLOY STEEL – 4140 (UNS G41400) PER AMS6382, 4340 (UNS G43406) PER AMS6415 OR AMS6484, OR 8740 (UNS G87400) PER AMS6322, AMS6325 OR AMS6327.

HARDNESS: 34-40 HRC

FINISH:

CADMIUM PLATING PER AMS-QQ-P-416, TYPE II, CLASS 2. PARTS WITH CLASS 3 PLATING MAY BE FURNISHED FROM SUPPLIER'S STOCK UNTIL 1 JANUARY 1975.

CODE:

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 LIST 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.

EXAMPLE OF PART NUMBER:

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.

REVISION

4

NASM20004 THRU
NASM20024
SHEET 2



Documents
Sharing Hub