



Basic MS Part No.	Thread T	A Diameter		B Diameter		C Dia	D	E	F Min	H Hex		J	K	M Dia +.005 -.000	N Max Rad
		Max	Min	Max	Min					Max	Min				
20004	1/4-28 UNF-3A	0.2492	0.2477	0.438	0.428	0.342	0.25	0.112	0.068	0.19	0.188	0.078	0.063	0.037	0.010
20005	5/16-24 UNF-3A	0.3117	0.3102	0.531	0.521	0.394	0.312	0.144	0.094	0.221	0.219	0.094			
20006	3/8-24 UNF-3A	0.3742	0.3727	0.649	0.639	0.52	0.375	0.183	0.116	0.315	0.313	0.125	0.055	0.011	
20007	7/16-20 UNF-3A	0.4367	0.4347	0.75	0.74	0.534	0.438	0.208	0.141			0.156			
20008	1/2-20 UNF-3A	0.4991	0.4971	0.828	0.818	0.625	0.5	0.247	0.169	0.3785	0.3755	0.172	0.094	0.019	
20009	9/16-18 UNF-3A	0.5616	0.5596	0.938	0.928	0.723	0.562	0.279	0.19	0.441	0.438	0.203			
20010	5/8-18 UNF-3A	0.624	0.622	1.05	1.04	0.826	0.625	0.317	0.216	0.5035	0.5005	0.234	0.022	0.022	
20012	3/4-16 UNF-3A	0.7488	0.7468	1.23	1.22	0.921	0.75	0.385	0.273	0.566	0.563	0.281			
20014	7/8-14 UNF-3A	0.8737	0.8707	1.438	1.438	1.083	0.875	0.45	0.327	0.6295	0.6257	0.344			

Basic MS Part No.	P Rad		R Rad		S Min Ref	U ±.016	V Max	W Max	Tensile Strength Lb Min	Concentricity			MATERIAL: Alloy steel. See procurement spec. FINISH: Cadmium plate, QQ-P-416, Type II, Class 3 HARDNESS: Rockwell C34 to C40. Dimensions are after plating and in inches. Unless otherwise specified, tolerances: decimals ± .010, angles ± 1°.
	Max	Min	Max	Min						X	Y	Z	
20004	0.02	0.01	0.041	0.031	0.475	0.031	0.187	0.25	6,190	0.005	0.007	0.0045	
20005					0.537				0.047	9,820	0.006		
20006	0.057	0.047	0.662	0.062	15,200	0.008	0.01	0.006					
20007					0.767	20,600	0.009		0.011				
20008	0.073	0.063	0.85	0.062	27,400	0.01	0.012	0.006					
20009					0.912	34,800	0.011		0.014				
20010	0.03	0.015	1.037	0.078	43,600	0.012	0.016	0.009					
20012					63,200	0.015	0.018						
20014			1.162	0.078	86,100	0.018	.022	0.009					

PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION
MIL-B-7838	BOLTS, INTERNAL WRENCHING 160,000 PSI FTU 96,000 AND PSI FSU	STANDARD PART M0004 THRU 20014

GRIP		MS200004 thru 20014:LENGTH ± .015								
DASH NO.	GRIP ±.010	MS 20004 1/4	MS 20005 5/16	MS 20006 3/8	MS 20007 7/16	MS 20008 1/2	MS 20009 9/16	MS 20010 5/8	MS 20012 3/4	MS 20014 7/8
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		
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
18	1.125	1.625	1.688	1.812	1.938	1.938	2.000	2.062	2.188	2.312
20	1.250	1.750	1.812	1.938	2.062	2.062	2.125	2.188	2.312	2.438
22	1.375	1.875	1.938	2.062	2.188	2.188	2.250	2.312	2.438	2.562
24	1.500	2.000	2.062	2.188	2.312	2.312	2.375	2.438	2.562	2.688
26	1.625	2.125	2.188	2.312	2.438	2.438	2.500	2.562	2.688	2.812
28	1.750	2.250	2.312	2.438	2.562	2.562	2.625	2.688	2.812	2.938
30	1.875	2.375	2.438	2.562	2.688	2.688	2.750	2.812	2.938	3.062
32	2.000	2.500	2.562	2.688	2.812	2.812	2.875	2.938	3.062	3.188
34	2.125	2.625	2.688	2.812	2.938	2.938	3.000	3.062	3.188	3.312
36	2.250	2.750	2.812	2.938	3.062	3.062	3.125	3.188	3.312	3.438
38	2.375	2.875	2.938	3.062	3.188	3.188	3.250	3.312	3.438	3.562
40	2.500	3.000	3.062	3.188	3.312	3.312	3.375	3.438	3.562	3.688
42	2.625	3.125	3.188	3.312	3.438	3.438	3.500	3.562	3.688	3.812
44	2.750	3.250	3.312	3.438	3.562	3.562	3.625	3.688	3.812	3.938
46	2.875	3.375	3.438	3.562	3.688	3.688	3.750	3.812	3.938	4.062
48	3.000	3.500	3.562	3.688	3.812	3.812	3.875	3.938	4.062	4.188
50	3.125	3.625	3.688	3.812	3.938	3.938	4.000	4.062	4.188	4.312
52	3.250	3.750	3.812	3.938	4.062	4.062	4.125	4.188	4.312	4.438
54	3.375	3.875	3.938	4.062	4.188	4.188	4.250	4.312	4.438	4.562
56	3.500	4.000	4.062	4.188	4.312	4.312	4.375	4.438	4.562	4.688
58	3.625	4.125	4.188	4.312	4.438	4.438	4.500	4.562	4.688	4.812
60	3.750	4.250	4.312	4.438	4.562	4.562	4.625	4.688	4.812	4.938
62	3.875	4.375	4.438	4.562	4.688	4.688	4.750	4.812	4.938	5.062
64	4.000	4.500	4.562	4.688	4.812	4.812	4.875	4.938	5.062	5.188
66	4.125	4.625	4.688	4.812	4.938	4.938	5.000	5.062	5.188	5.312
68	4.250	4.750	4.812	4.938	5.062	5.062	5.125	5.188	5.312	5.438
70	4.375	4.875	4.938	5.062	5.188	5.188	5.250	5.312	5.438	5.562
72	4.500	5.000	5.062	5.188	5.312	5.312	5.375	5.438	5.562	5.688
74	4.625	5.125	5.188	5.312	5.438	5.438	5.500	5.562	5.688	5.812
76	4.750	5.250	5.312	5.438	5.562	5.562	5.625	5.688	5.812	5.938
78	4.875	5.375	5.438	5.562	5.688	5.688	5.750	5.812	5.938	6.062
80	5.000	5.500	5.562	5.688	5.812	5.812	5.875	5.938	6.062	6.188
82	5.125	5.625	5.688	5.812	5.938	5.938	6.000	6.062	6.188	6.312
84	5.250	5.750	5.812	5.938	6.062	6.062	6.125	6.188	6.312	6.438
86	5.375	5.875	5.938	6.062	6.188	6.188	6.250	6.312	6.438	6.562
88	5.500	6.000	6.062	6.188	6.312	6.312	6.375	6.438	6.562	6.688
90	5.625	6.125	6.188	6.312	6.438	6.438	6.500	6.562	6.688	6.812