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NOTE: RAISED HEAD MARKINGS PREFERRED. STAMPING ACCEPTABLE.			FED. SUP CLASS 5305							
NOMINAL SIZE			1/4	5/16	3/8	7/16	1/2	9/16	5/8	
THREADS PER INCH			20UNC	18UNC	16UNC	14UNC	13UNC	12UNC	11UNC	
BODY DIAMETER	D	{ Max Min	.2500 .2450	.3125 .3065	.3750 .3690	.4375 .4305	.5000 .4930	.5625 .5545	.6250 .6170	
WIDTH ACROSS FLATS	A	{ Max Min	.4375 .4280	.5000 .4890	.5625 .5510	.6250 .6120	.7500 .7360	.8125 .7930	.9375 .9220	
WIDTH ACROSS CORNERS	W	{ Max Min	.5050 .4880	.5770 .5570	.6500 .6280	.7220 .6980	.8660 .8400	.9380 .9100	1.0330 1.0510	
HEAD HEIGHT	H	{ Max Min	.1630 .1500	.2110 .1950	.2430 .2260	.2910 .2720	.3230 .3020	.3710 .3480	.4030 .3780	
RADIUS	R	{ Max Min	.023 .009	.023 .009	.023 .009	.023 .009	.023 .009	.041 .021	.041 .021	
LENGTH	L	Tolerance	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	
3/8	+0 -1/32		1	27	53					
7/16			2	28	54	79				
1/2			3	29	55	80	104			
9/16			4	30	56	81	105	130		
5/8			5	31	57	82	106	131	155	
3/4			6	32	58	83	107	132	156	
7/8	+0 -1/16		7	33	59	84	108	133	157	
1			8	34	60	85	109	134	158	
1-1/8			9	35	61	86	110	135	159	
1-1/4			10	36	62	87	111	136	160	
1-3/8			11	37	63	88	112	137	161	
1-1/2			12	38	64	89	113	138	162	
1-3/4	+0 -3/32		13	39	65	90	114	139	163	
2			14	40	66	91	115	140	164	
2-1/4			15	41	67	92	116	141	165	
2-1/2			16	42	68	93	117	142	166	
2-3/4			17	43	69	94	118	143	167	
3			18	44	70	95	119	144	168	
3-1/4			19	45	71	96	120	145	169	
3-1/2			20	46	72	97	121	146	170	
3-3/4			21	47	73	98	122	147	171	
4			22	48	74	99	123	148	172	
4-1/4			23	49	75	100	124	149	173	
4-1/2			24	50	76	101	125	150	174	
4-3/4			25	51	77	102	126	151	175	
5			26	52	78	103	127	152	176	
5-1/2							128	153	177	
6					129	154	178			

Ⓐ CANCELLED
SEE SHEET 2

MATERIAL: Alloy Steel, Grade 8 of procurement specification. Minimum tensile strengths: 150,000 PSI for diameters through 1-1/2"; 125,000 PSI for diameters over 1-1/2".

FINISH: Cadmium or Zinc plated, Specification QQ-P-416, Type II, Class C, or Specification QQ-Z-325, Type II, Class 3.

THREADS: The threads shall be in accordance with Screw-Thread Standards for Federal Services Handbook H-28.

MINIMUM THREAD LENGTH: Shall be twice the diameter plus 1/4" for lengths up to and including 6". The tolerance shall be plus 3/16" or 2-1/2 threads, whichever is greater. On products that are too short for minimum thread lengths, the distance from the bearing surface of the head to the first complete thread shall not exceed the length of 2-1/2 threads, for sizes up to and including 1" and 3-1/2 threads for sizes larger than 1".

NOTES: (1) Referenced documents of issue in effect on date of invitation for bids shall apply.
(2) In case of conflict with any referenced document, this standard will govern.
(3) The MS part number consists of the MS sheet number, plus the dash number. Example: MS 35303-1
(4) All dimensions in inches.

Ⓐ For changes see sheets 1, 2 and 3.

This military standard is approved by the Department of Defense and is mandatory on all activities. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

P.A.	WC	TITLE	MILITARY STANDARD MS 35303
Other Cust	SHIPS ASD	SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), ALLOY STEEL, CADMIUM OR ZINC FINISH, UNC-2A	
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES:	SHEET	1 OF 3

APPROVED MAR 4, 1954 REVISED Ⓐ 7 MAY 63

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5305

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NOMINAL SIZE		3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2	
THREADS PER INCH		10UNC	9UNC	8UNC	7UNC	7UNC	6UNC	6UNC	
BODY DIAMETER	D	{Max Min	.7500 .7410	.8750 .8660	1.0000 0.9900	1.1250 1.1140	1.2500 1.2390	1.3750 1.3630	1.5000 1.4880
WIDTH ACROSS FLATS	A	{Max Min	1.1250 1.1000	1.3125 1.2850	1.5000 1.4690	1.6875 1.6310	1.8750 1.8120	2.0625 1.9940	2.2500 2.1750
WIDTH ACROSS CORNERS	W	{Max Min	1.2990 1.2540	1.5160 1.4650	1.7320 1.6750	1.9490 1.8590	2.1650 2.0660	2.3820 2.2730	2.5980 2.4800
HEAD HEIGHT	H	{Max Min	.4830 .4550	.5630 .5310	.6270 .5910	.7180 .6580	.8130 .7490	.8780 .8100	.9740 .9020
RADIUS	R	{Max Min	.041 .021	.062 .041	.093 .062	.093 .062	.093 .062	.093 .062	.093 .062
LENGTH	L	TOLERANCE		Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number
		Size 3/4 and under	Size 7/8 and over						
3/4		+0	+0	179					
7/8		-1/32	-1/16	180	202				
1				181	203	224			
1-1/8				182	204	225	245		
1-1/4				183	205	226	246	265	
1-3/8		+0	+0	184	206	227	247	266	284
1-1/2		-1/16	-1/8	185	207	228	248	267	285
1-3/4				186	208	229	249	268	286
2				187	209	230	250	269	287
2-1/4				188	210	231	251	270	288
2-1/2				189	211	232	252	271	289
2-3/4				190	212	233	253	272	290
3				191	213	234	254	273	291
3-1/4				192	214	235	255	274	292
3-1/2				193	215	236	256	275	293
3-3/4		+0	+0	194	216	237	257	276	294
4		-3/32	-3/16	195	217	238	258	277	295
4-1/4				196	218	239	259	278	296
4-1/2				197	219	240	260	279	297
4-3/4				198	220	241	261	280	298
5				199	221	242	262	281	299
5-1/2				200	222	243	263	282	300
6				201	223	244	264	283	301

CANCELLED - SEE NOTE

NOTE: For illustration, material, finish and other pertinent data, see sheet 1.

(A) CANCELLED AFTER 7 May 1963. USE MS90728. INTERCHANGEABILITY RELATIONSHIP - MS90728 can replace the cancelled screws of the same size. The cancelled MS35303 cannot always replace MS90728 and should be used until existing stock is depleted. Then use only the superseding MS screws of the same size for design and replacement.

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APPROVED MAR 4, 1954 REVISED (A) FOR CHANGES SEE SHEETS 1, 2 AND 3

P. A. WC	TITLE	MILITARY STANDARD
Other Cust SHIPS ASD	SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), ALLOY STEEL, CADMIUM OR ZINC FINISH, UNC-2A	MS 35303
PROCUREMENT SPECIFICATION PF-S-85	SUPERSEDES:	SHEET 2 OF

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NOMINAL SIZE	1-3/4		2		2-1/4		2-1/2								
THREADS PER INCH	5 UNC		4-1/2 UNC		4-1/2 UNC		4 UNC								
BODY DIAMETER	D	{ Max Min	1.7500 1.7380	2.0000 1.9880	2.2500 2.2380	2.5000 2.4880									
WIDTH ACROSS FLATS	A	{ Max Min	2.6250 2.5380	3.0000 2.9000	3.3750 3.2620	3.7500 3.6250									
WIDTH ACROSS CORNERS	W	{ Max Min	3.0310 2.8930	3.4640 3.3060	3.8970 3.7190	4.3300 4.1330									
HEAD HEIGHT	H	{ Max Min	1.1340 1.0540	1.2630 1.1750	1.4230 1.3270	1.5830 1.4790									
RADIUS	R	{ Max Min	.093 .062	.093 .062	.093 .062	.093 .062									
LENGTH	L	Tolerance	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number	Dash Number					
					Ⓐ CANCELLED SEE SHEET 2										
1-3/4		+0	319												
2		-1/8	320												
2-1/4			321	335											
2-1/2			322	336											
2-3/4			323	337							349	361			
3			324	338							350	362			
3-1/4			325	339							351	363			
3-1/2		+0	326	340							352	364			
3-3/4		-3/16	327	341							353	365			
4			328	342							354	366			
4-1/4			329	343							355	367			
4-1/2			330	344							356	368			
4-3/4			331	345							357	369			
5			332	346							358	370			
5-1/2			333	347	359	371									
6			334	348	360	372									

NOTE: For illustration, material, finish and other pertinent data, see sheet 1.

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PROCUREMENT SPECIFICATION PF-S-85	SUPERSEDES:	SHEET	OF
			3