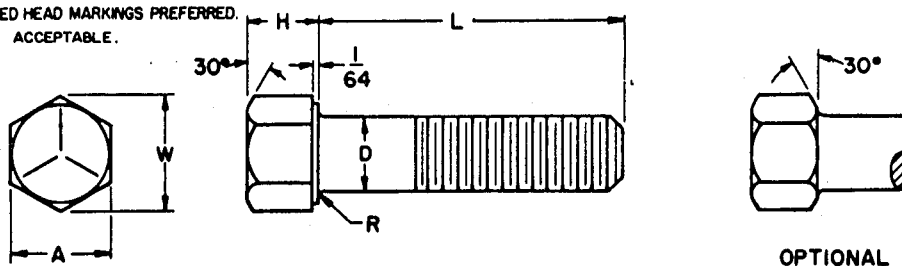


FED. SUP CLASS
5305NOTE: RAISED HEAD MARKINGS PREFERRED.
STAMPING ACCEPTABLE.

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 .2500 Min .2450	.3125 .3065	.3750 .3690	.4375 .4305	.5000 .4930	.5625 .5545	.6250 .6170
WIDTH ACROSS FLATS	A	Max .4375 Min .4280	.5000 .4890	.5625 .5510	.6250 .6120	.7500 .7360	.8125 .7930	.9375 .9220
WIDTH ACROSS CORNERS	W	Max .5050 Min .4880	.5770 .5570	.6500 .6230	.7220 .6980	.8660 .8400	.9380 .9100	1.0830 1.0510
HEAD HEIGHT	H	Max .1630 Min .1500	.2110 .1950	.2430 .2260	.2910 .2720	.3230 .3020	.3710 .3480	.4030 .3750
RADIUS	R	Max .023 Min .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
3/8			1	27	53			
7/16			2	28	54			
1/2			3	29	55	104		
9/16			4	30	56	105	130	
5/8			5	31	57	106	131	155
3/4			6	32	58	107	132	156
7/8			7	33	59	108	133	157
1			8	34	60	109	134	158
1-1/8			9	35	61	110	135	159
1-1/4			10	36	62	111	136	160
1-3/8			11	37	63	112	137	161
1-1/2			12	38	64	113	138	162
1-3/4			13	39	65	114	139	163
2			14	40	66	115	140	164
2-1/4			15	41	67	116	141	165
2-1/2			16	42	68	117	142	166
2-3/4			17	43	69	118	143	167
3			18	44	70	119	144	168
3-1/4			19	45	71	120	145	169
3-1/2			20	46	72	121	146	170
3-3/4			21	47	73	122	147	171
4			22	48	74	123	148	172
4-1/4			23	49	75	124	149	173
4-1/2			24	50	76	125	150	174
4-3/4			25	51	77	126	151	175
5			26	52	78	127	152	176
5-1/2						128	153	177
6						129	154	178

Ⓐ CANCELLED
SEE SHEET 2

MATERIAL: Medium Carbon Steel, Grade 5 of procurement specification. Minimum tensile strengths: 120,000 psi for diameters through 3/4"; 110,000 psi for 7/8" and 1" diameters; 105,000 psi for diameters 1-1/8" through 1-1/2"; 90,000 psi for diameters over 1-1/2".

FINISH: Phosphate, Specification MIL-C-16232, Type II.

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: MS35299-1.
(4) All dimensions in inches.

Ⓐ 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), MEDIUM CARBON STEEL, PHOSPHATE FINISH, UNC-2A	MS35299
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES:	SHEET 1 OF 3	

NOTICE.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have furnished, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder, or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

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.

FED. SUP CLASS
5305

NOTICE.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility, nor any obligation whatsoever, and the fact that the Government may have furnished, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any right or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

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

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

Ⓐ CANCELLED AFTER 26 April 1963. USE MS90725. INTERCHANGEABILITY RELATIONSHIP - MS90725 can replace the cancelled screws of the same size. The cancelled MS35299 cannot always replace MS90725 and should be used until existing stock is depleted. Then use only the superseding MS screws of the same size for design and replacement.

Ⓐ CANCELLED
SEE NOTE

P.A.	WC	TITLE	MILITARY STANDARD
Other Cust	SHIPS ASD	SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), MEDIUM CARBON STEEL, PHOSPHATE FINISH, UNC-2A	MS35299
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES:	SHEET	2 OF

FED. SUP CLASS
5305

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government hereby incurs no responsibility, nor any obligation whatsoever, and the fact that the Government may have furnished furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOMINAL SIZE		1-3/4	2	2-1/4	2-1/2			
THREADS PER INCH		5UNC	4-1/2UNC	4-1/2UNC	4UNC			
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
1-3/4		+0 -1/8	319 320					
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		+0 -3/16	325	339	351	363		
3-1/2			326	340	352	364		
3-3/4			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.

Ⓐ CANCELLED
SEE SHEET 2

P.A. Other Cust	WC SHIPS ASD	TITLE SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), MEDIUM CARBON STEEL, PHOSPHATE FINISH, UNC-2A	MILITARY STANDARD MS35299
PROCUREMENT SPECIFICATION PF-S-85	SUPERSEDES:	SHEET 3	OF