

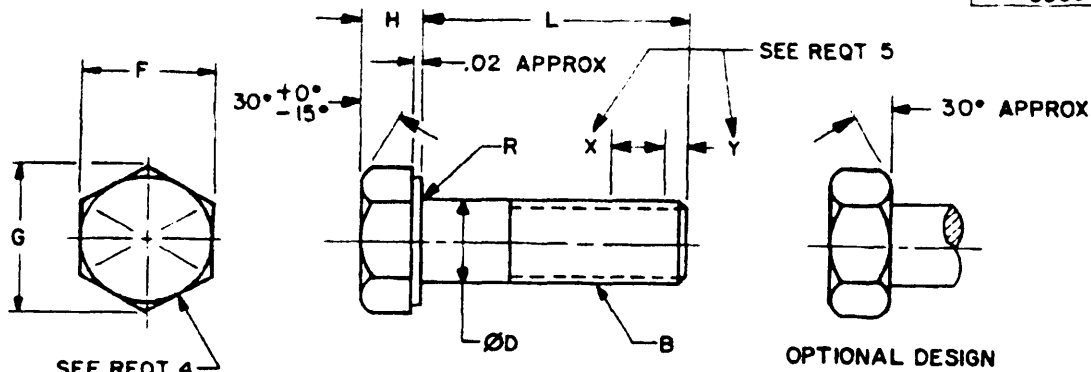
FED SPEC CLASS  
5305

TABLE 1. DASH NUMBERS AND DIMENSIONS.

NOMINAL SIZE			1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8
B THREADS PER INCH			20UNC-2A	18UNC-2A	16UNC-2A	14UNC-2A	13UNC-2A	12UNC-2A	11UNC-2A	10UNC-2A	9UNC-2A
Ø D	BODY DIAMETER	MAX	.2500	.3125	.3750	.4375	.5000	.5625	.6250	.7500	.8750
		MIN	.2450	.3065	.3690	.4305	.4930	.5545	.6170	.7410	.8660
F	WIDTH ACROSS FLATS	MAX	.4375	.5000	.5625	.6250	.7500	.8125	.9375	1.1250	1.3125
		MIN	.4280	.4890	.5510	.6120	.7360	.7980	.9220	1.1000	1.2850
G	WIDTH ACROSS CORNERS	MAX	.505	.577	.650	.722	.866	.938	1.083	1.299	1.516
		MIN	.488	.557	.628	.698	.840	.910	1.051	1.254	1.465
H	HEAD HEIGHT	MAX	.163	.211	.243	.291	.323	.371	.405	.483	.563
		MIN	.150	.195	.226	.272	.302	.348	.378	.455	.531
R	RADIUS	MAX	.025	.025	.025	.025	.025	.045	.045	.045	.065
		MIN	.015	.015	.015	.015	.015	.020	.020	.020	.040
1/ MIN TENSILE STRENGTH - LBS			4,750	7,850	11,600	15,900	21,300	27,300	33,900	50,100	69,300
L LENGTH	TOLERANCE		DASH NO.	DASH NO.	DASH NO.	DASH 2/ NO.	DASH NO.	DASH 2/ NO.	DASH NO.	DASH NO.	DASH 2/ NO.
	SIZE .750 AND UNDER	SIZE .875									
.375	+0 -.031	+0 -.062	1	27	53	79	104	130	155	179	202
.438			2	28	54						
.500			3	29	55						
.562			4	30	56						
.625			5	31	57						
.750			6	32	58						
.875			7	33	59						
1.000			8	34	60						
1.125	+0 -.062	+0 -.125	9	35	61	86	110	136	159	182	204
1.250			10	36	62	87	111	137	160	183	205
1.375			11	37	63	88	112	138	161	184	206
1.500			12	38	64	89	113	139	162	185	207
1.750			13	39	65	90	114	140	163	186	208
2.000			14	40	66	91	115	141	164	187	209
2.250	+0 -.094	+0 -.188	15	41	67	92	116	142	165	188	210
2.500			16	42	68	93	117	143	166	189	211
2.750			17	43	69	94	118	144	167	190	212
3.000			18	44	70	95	119	145	168	191	213
3.250			19	45	71	96	120	146	169	192	214
3.500			20	46	72	97	121	147	170	193	215
3.750			21	47	73	98	122	148	171	194	216
4.000			22	48	74	99	123	149	172	195	217
4.250			23	49	75	100	124	150	173	196	218
4.500			24	50	76	101	125	151	174	197	219
4.750			25	51	77	102	126	152	175	198	220
5.000			26	52	78	103	127	153	176	199	221
5.500					128	154	177	200	222		
6.000					129		178	201	223		

1/ SEE NOTE 2

2/ INACTIVE FOR NEW DESIGN AFTER 21 JUN 76

Ⓒ DENOTES CHANGES

PA AR Other Cust 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISH HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED PLAIN AND SELF-LOCKING, UNC-2A Ⓒ	MILITARY STANDARD MS90728
PROCUREMENT SPECIFICATION ANSI B18.2.1-1981	SUPPLIES MS35301, MS35303, MS35305, BCVX7 IN PART, BUBX14, 14.1, 15, 15.1, 16 AND 16.1	PAGE 1	OF 3

USER ACTIVITIES:  
ARMY - MC  
NAVY - MC, OS, YDREVIEWER ACTIVITIES:  
ARMY - AT, AV, MI  
AIR FORCE - 82  
NSA - NS  
DLA - ISDISTRIBUTION S  
AGENT A. Approved for public release; distribution is unlimited.  
This military standard is approved for use by all Departments and Agencies of the Department of Defense.  
Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.APPROVED  
7 MAY 63  
REVISED  
Ⓐ 14 OCT 68  
Ⓑ 1 MAY 69  
Ⓒ 22 OCT 70  
Ⓓ 21 JUNE 76  
Ⓔ 20 DEC 83  
Ⓕ 30 OCT 84  
Ⓖ 4 NOV 88

FED. SUP. CLASS  
5305

TABLE 1. DASH NUMBERS AND DIMENSIONS.

NOMINAL SIZE		1	1-1/8	1-1/4	1-3/8	1-1/2	1-3/4	2	2-1/4	2-1/2
B THREADS PER INCH		8UNC-2A	7UNC-2A	7UNC-2A	6UNC-2A	6UNC-2A	5UNC-2A	4-1/2UNC-2A	4-1/2UNC-2A	4UNC-2A
Ø D	BODY DIAMETER	MAX	1.0000	1.1250	1.2500	1.3750	1.5000	1.7500	2.0000	2.5000
		MIN	.9900	1.1140	1.2380	1.3630	1.4880	1.7380	1.9880	2.4880
F	WIDTH ACROSS FLATS	MAX	1.5000	1.6875	1.8750	2.0625	2.2500	2.6250	3.0000	3.7500
		MIN	1.4690	1.6310	1.8120	1.9940	2.1750	2.5380	2.9000	3.6250
G	WIDTH ACROSS CORNERS	MAX	1.732	1.949	2.165	2.382	2.598	3.031	3.464	4.390
		MIN	1.675	1.859	2.066	2.273	2.480	2.893	3.306	4.133
H	HEAD HEIGHT	MAX	.627	.718	.813	.878	.974	1.134	1.263	1.583
		MIN	.591	.658	.749	.810	.902	1.054	1.175	1.479
R	RADIUS	MAX	.095	.095	.095	.095	.095	.095	.095	.095
		MIN	.060	.060	.060	.060	.060	.060	.060	.060
1/ MIN TENSILE STRENGTH - LBS			90,900	114,400	145,400	173,200	210,800	227,900	299,750	479,850

L LENGTH	TOLERANCE	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
1.000	+0 -.062	224								
1.125		225	245							
1.250		226	246	265						
1.375	+0	227	247	266	284					
1.500	-.125	228	248	267	285	302				
1.750		229	249	268	286	303	319			
2.000		230	250	269	287	304	320			
2.250		231	251	270	288	305	321	335		
2.500		232	252	271	289	306	322	336		
2.750		233	253	272	290	307	323	337	349	361
3.000		234	254	273	291	308	324	338	350	362
3.250		235	255	274	292	309	325	339	351	363
3.500	+0	236	256	275	293	310	326	340	352	364
3.750	-.188	237	257	276	294	311	327	341	353	365
4.000		238	258	277	295	312	328	342	354	366
4.250		239	259	278	296	313	329	343	355	367
4.500		240	260	279	297	314	330	344	356	368
4.750		241	261	280	298	315	331	345	357	369
5.000		242	262	281	299	316	332	346	358	370
5.500		243	263	282	300	317	333	347	359	371
6.000		244	264	283	301	318	334	348	360	372

1/ SEE NOTE 2

## REQUIREMENTS:

1. MATERIAL: ALLOY STEEL, SAE GRADE 8, IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
- ③ 2. PROTECTIVE COATING: ZINC COATING IN ACCORDANCE WITH ASTM B633, TYPE 11, SC3.
3. THREADS: THE THREADS SHALL BE IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
4. IDENTIFICATION MARKING: HEADS SHALL BE MARKED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
5. SELF-LOCKING ELEMENT:
  - (a) THE SELF-LOCKING ELEMENT SHALL BE A PATCH TYPE OR LONGITUDINAL STRIP IN ACCORDANCE WITH MIL-F-18240.
  - (b) FOR "X" AND "Y" DIMENSIONS AND DESIGN AND USAGE LIMITATIONS, SEE MS15981.
  - (c) MAXIMUM RING GAGE DIAMETER THAT LOCKING REGION OF SCREW MUST PASS THRU FREELY OR WITH FINGER PRESSURE SHALL BE THE NOMINAL SIZE PLUS 0.010.
6. PART NUMBER: THE PART NUMBER SHALL CONSIST OF THE BASIC MS SHEET NUMBER PLUS THE DASH NUMBER TAKEN FROM TABLE 1 OR 11 AS APPLICABLE. FOR SCREWS WITH SELF-LOCKING ELEMENT ADD THE LETTER "L" AFTER THE DASH NUMBER.

EXAMPLE: MS90728-236

DASH NUMBER

BASIC MS SHEET NUMBER

- ③ MS90728-236 INDICATES - SCREW, CAP, HEXAGON HEAD, ALLOY STEEL, SAE GRADE 8, ZINC COATED, NOMINAL SIZE 1.000-8UNC-2A, LENGTH 3.500, NO SELF-LOCKING ELEMENT.

P.A. Other Cust	AR 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISH HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED PLAIN AND SELF-LOCKING, UNC-2A ③	MILITARY STANDARD MS90728
PROCUREMENT SPECIFICATION ANSI B18.2.1-1981	SUPERSEDES MS35301, MS35303, MS35305, BCVX7 IN PART, BUBX14, 14.1, 15, 15.1, 16 AND 16.1	PAGE 2	OF 3	

DD FORM 672-1

5305-1748

USER ACTIVITIES:  
ARMY - ME  
NAVY - MC, OS, YD

REVIEWER ACTIVITIES:  
ARMY - AT, AV, MI  
AIR FORCE - 82  
NSA - NS  
DLA - IS

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

REVISED ③ FOR CHANGES SEE PAGES 1, 2 AND 3  
APPROVED 7 MAY 63

FED. SUP. CLASS  
5305

7. QUALITY ASSURANCE PROVISIONS: QUALITY ASSURANCE PROVISIONS SHALL BE IN ACCORDANCE WITH ANSI B18.18.1M-1982. THREAD INSPECTION METHOD ACCEPTABILITY SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 21 AND ANSI B18.18.1M-1982, INSPECTION LEVEL B.
8. PACKAGING: PACKAGING SHALL BE IN ACCORDANCE WITH ASTM D3951-82.
9. THREAD LENGTH: MINIMUM THREAD LENGTH SHALL BE TWICE THE DIAMETER PLUS .250 INCH. THE TOLERANCE SHALL BE .187 INCH OR 2-1/2 THREADS WHICHEVER IS GREATER. ON SCREWS 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 INCH AND 3-1/2 THREADS FOR SIZES LARGER THAN 1 INCH.

## NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. BASED ON MINIMUM ULTIMATE TENSILE STRENGTH OF 150,000 PSI FOR DIAMETERS THRU 1-1/2 INCHES AND 120,000 PSI FOR DIAMETERS OVER 1-1/2 INCHES, TENSILE STRENGTHS ARE CALCULATED BY THE STRESS AREAS INDICATED IN FED-STD-H28, APPENDIX A5, 3, STRENGTH FACTORS.
3. CROSS REFERENCE OF PART NUMBERS: THE SCREWS COVERED BY DASH NUMBERS GIVEN IN MS35301, MS35303 AND MS35305, ARE CANCELLED AFTER THE DATES INDICATED ON THE CANCELLED DOCUMENTS. USE DASH NUMBERS USED IN THIS STANDARD. THE CANCELLED SCREWS CANNOT ALWAYS REPLACE THE NEW SCREWS AND SHOULD BE USED UNTIL EXISTING STOCKS ARE DEPLETED. USE ONLY THE NEW SCREWS FOR DESIGN AND REPLACEMENT. DASH NUMBERS REPRESENTING OLD AND NEW SCREWS ARE IDENTICAL, MAKING IT UNNECESSARY TO PREPARE AN INTERCHANGEABILITY TABLE.
4. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
5. FOR DESIGN FEATURE PURPOSES THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
- ⑥ 6. THIS MILITARY STANDARD IS NOT INTENDED FOR USE IN AIRBORNE APPLICATIONS.

USER ACTIVITIES:  
ARMY - ME  
NAVY - MC, OS, YD

REVIEWER ACTIVITIES:  
ARMY - AT, AV, MI  
AIR FORCE - 82  
NSA - NS  
DLA - IS

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

APPROVED 7 MAY 63 REVISED ⑥ FOR CHANGES SEE PAGES 1, 2 AND 3

P.A. AR Other Cust 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISH HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED PLAIN AND SELF-LOCKING, UNC-2A ⑥	<b>MILITARY STANDARD</b> <b>MS90728</b>
PROCUREMENT SPECIFICATION ANSI B18.2.1-1981	SUPERSEDES MS35301, MS35303, MS35305, BCVX7 IN PART, BUBX14, 14.1, 15, 15.1, 16 AND 16.1	PAGE 3	OF 3

DD 672-1

5305-1748

