

USER ACTIVITIES:
ME MU PA CL WV OB MC NSA

REVIEWER ACTIVITIES:
AT AV MI EA

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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NOMINAL SIZE			1/4	5/16	3/8	7/16	1/2	9/16	5/8
B	THREAD	UNF-2A	28	24	24	20	20	18	18
D	BODY DIAMETER	MAX MIN	.2500 .2450	.3125 .3065	.3750 .3690	.4375 .4305	.5000 .4930	.5625 .5545	.6250 .6170
F	WIDTH ACROSS FLATS	MAX MIN	.4375 .4280	.5000 .4890	.5625 .5510	.6250 .6120	.7500 .7360	.8125 .7980	.9375 .9220
G	WIDTH ACROSS CORNERS	MAX MIN	.505 .488	.577 .557	.650 .628	.722 .698	.866 .840	.938 .910	1.083 1.051
H	HEAD HEIGHT	MAX MIN	.163 .150	.211 .195	.243 .226	.291 .272	.323 .302	.371 .348	.403 .378
R	RADIUS	MAX MIN	.025 .015	.025 .015	.025 .015	.025 .015	.025 .015	.045 .020	.045 .020
* MIN TENSILE STRENGTH - LBS			5,450	8,700	13,200	17,800	24,000	30,400	38,400

L LENGTH	TOLERANCE	DASH NO.	DASH NO.	DASH NO.	DASH** NO.	DASH NO.	DASH** NO.	DASH NO.
.375	+0 -.031	1	27	53	79	104	130	155
.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	9	35	61	86	110	135	159
1.250		10	36	62	87	111	136	160
1.375		11	37	63	88	112	137	161
1.500		12	38	64	89	113	138	162
1.750		13	39	65	90	114	139	163
2.000		14	40	66	91	115	140	164
2.250		+0 -.094	15	41	67	92	116	141
2.500	16		42	68	93	117	142	166
2.750	17		43	69	94	118	143	167
3.000	18		44	70	95	119	144	168
3.250	19		45	71	96	120	145	169
3.500	20		46	72	97	121	146	170
3.750	21		47	73	98	122	147	171
4.000	22		48	74	99	122	148	172
4.250	23		49	75	100	124	149	173
4.500	24		50	76	101	125	150	174
4.750	25		51	77	102	126	151	175
5.000	26		52	78	103	127	152	176
5.500						128	153	177
6.000						129	154	178

NOTE: FOR NOTES AND ADDITIONAL SIZES SEE SHEET 2.

CROSS REFERENCE OF PART NUMBERS

THE SCREWS COVERED BY DASH NUMBERS GIVEN IN MS35302, MS35304 AND MS35306 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.

Ⓡ DENOTES CHANGES

P.A. AR Other Cust 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED, UNF-2A, PLAIN AND SELF-LOCKING Ⓡ	MILITARY STANDARD MS90727
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES	SEE NOTE 12	SHEET 1 OF 5

APPROVED 6 MAY 63 REVISED ⓐ 1 AUG 67 ⓑ 14 OCT 68 ⓒ 1 MAY 1969 ⓓ 22 OCT 1970 ⓔ 21 JUNE 1978 ⓕ 4 NOV 88

014911

FED SUP CLASS
5305

TABLE II

NOMINAL SIZE			3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2
B	THREAD	UNF-2A	16	14	12	12	12	12	12
D	BODY DIAMETER	MAX MIN	.7500 .7410	.8750 .8660	1.0000 .9900	1.1250 1.1140	1.2500 1.2390	1.3750 1.3630	1.5000 1.4880
F	WIDTH ACROSS FLATS	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
G	WIDTH ACROSS CORNERS	MAX MIN	1.299 1.254	1.516 1.465	1.732 1.675	1.949 1.859	2.165 2.066	2.382 2.273	2.598 2.480
H	HEAD HEIGHT	MAX MIN	.483 .455	.563 .531	.627 .591	.718 .658	.813 .749	.878 .810	.974 .902
R	RADIUS	MAX MIN	.045 .020	.065 .040	.095 .060	.095 .060	.095 .060	.095 .060	.095 .060
* MIN TENSILE STRENGTH - LBS			56,000	76,400	99,400	128,400	161,000	197,200	237,200

L LENGTH	TOLERANCE		DASH NO.	DASH** NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
	SIZE .750	SIZE .875 AND OVER							
.750 .875 1.000	+0 -.031	+0 -.062	179 180 181	202 201	224				
1.125 1.250 1.375 1.500 1.750 2.000	+0 -.062	+0 -.125	182 183 184 185 186 187	204 205 206 207 208 209	225 226 227 228 229 230	245 246 247 248 249 250	265 266 267 268 269	284 285 286 287	302 303 304
2.250 2.500 2.750 3.000 3.250 3.500 3.750 4.000 4.250 4.500 4.750 5.000 5.500 6.000	+0 -.094	+0 -.188	188 189 190 191 192 193 194 195 196 197 198 199 200 201	210 211 212 213 214 215 216 217 218 219 220 221 222 223	231 232 233 234 235 236 237 238 239 240 241 242 243 244	251 252 253 254 255 256 257 258 259 260 261 262 263 264	270 271 272 273 274 275 276 277 278 279 280 281 282 283	288 289 290 291 292 293 294 295 296 297 298 299 300 301	305 306 307 308 309 310 311 312 313 314 315 316 317 318

NOTES:

1. MATERIAL: ALLOY STEEL, GRADE 8, IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
- (F) 2. PROTECTIVE COATING: ZINC COATING IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
3. THREADS: THE THREADS SHALL BE IN ACCORDANCE WITH SCREW-THREAD STANDARDS FOR FEDERAL SERVICES, HANDBOOK H28.
4. THREAD LENGTH: MINIMUM THREAD LENGTH SHALL BE TWICE THE DIAMETER PLUS 1/4 INCH. THE TOLERANCE SHALL BE PLUS 3/16 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.
5. DIMENSIONS: ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.
6. HEAD MARKING: HEADS SHALL BE MARKED IN ACCORDANCE WITH MIL-HDBK-131. RAISED MARKINGS ARE PREFERRED, STAMPINGS ARE ACCEPTABLE.

P.A. Other Cust AR 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED, UNF-2A, PLAIN AND SELF-LOCKING (F)	MILITARY STANDARD MS90727
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES SEE NOTE I2	SHEET 2	OF 5

USER ACTIVITIES:
ME MU PA CL WV OB MC NSAREVIEWER ACTIVITIES:
AT AV MI EA

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APPROVED 6 MAY 63 REVISED (A) 1 AUG 67 (B) 14 OCT 68 (C) MAY 1969 (D) 22 OCT 1970 (E) FOR CHANGES SEE SHEETS 1,2,3,4, AND 5

FED SUP CLASS
5305USER ACTIVITIES:
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7. 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.

8. PART NUMBER: THE MS PART NUMBER CONSISTS OF THE MS NUMBER, PLUS THE DASH NUMBER. FOR SCREWS WITH SELF-LOCKING ELEMENT ADD THE LETTER "L" AFTER THE DASH NUMBER.

EXAMPLE: MS90727-1 PLAIN SCREW.
MS90727-1L SELF-LOCKING SCREW.

- *9. BASED ON MINIMUM ULTIMATE TENSILE STRENGTH OF 150,000 p.s.i. TENSILE STRENGTHS ARE CALCULATED BY THE STRESS AREAS INDICATED IN SCREW-THREAD STANDARDS FOR FEDERAL SERVICES, HANDBOOK H28.
10. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.
11. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
12. SUPERSEDES: MS35302 IN PART, MS35304 AND MS35306, BCAX8, BCXK7 IN PART, BQLX4, BUBX17, 17.1, 18, 18.1, 19 AND 19.1.

- *13. INACTIVE FOR NEW DESIGN AFTER 21 JUNE 1976.

- (F) 14. THIS MILITARY STANDARD IS NOT INTENDED FOR USE IN AIRBORNE APPLICATIONS.

APPROVED 6 MAY 63 REVISED (A) 1 AUG 67 (B) 14 OCT 68 (C) 1 MAY 1969 (D) 22 OCT 1970 (E) FOR CHANGES SEE SHEETS 1, 2, 3, 4, AND 5

P.A. AR Other Cust 99	INTERNATIONAL INTEREST	TITLE SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), ALLOY STEEL, GRADE 8, ZINC COATED, UNF-2A, PLAIN AND SELF-LOCKING (F)	MILITARY STANDARD MS90727
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES SEE NOTE 12	SHEET 3	OF 5

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AMSC N/A

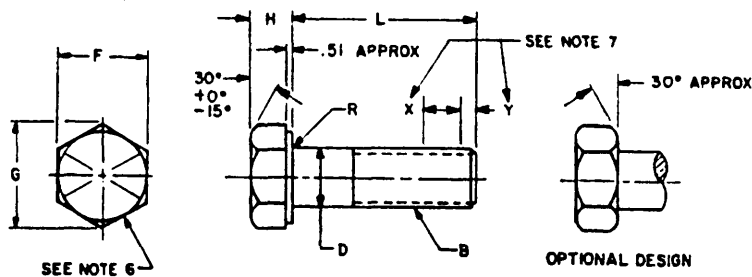


TABLE III
METRIC TRANSLATION OF TABLE I

NOMINAL SIZE	MM	6.350	7.938	9.525	11.112	12.700	14.288	15.875
B THREAD PITCH		0.907	1.058	1.058	1.270	1.270	1.411	1.411
D BODY DIAMETER	MAX MIN	6.350 6.223	7.938 7.785	9.525 9.373	11.112 10.935	12.700 12.522	14.288 14.084	15.875 15.672
F WIDTH ACROSS FLATS	MAX MIN	11.112 10.871	12.700 12.421	14.288 13.995	15.875 15.545	19.050 18.694	20.638 20.269	23.812 23.419
G WIDTH ACROSS CORNERS	MAX MIN	12.827 12.395	14.656 14.148	16.510 15.951	18.339 17.729	21.996 21.336	23.825 23.114	27.508 26.695
H HEAD HEIGHT	MAX MIN	4.140 3.810	5.359 4.953	6.172 5.740	7.391 6.909	8.204 7.671	9.423 8.839	10.236 9.601
R RADIUS	MAX MIN	.635 .381	.635 .381	.635 .381	.635 .381	.635 .381	1.143 .508	1.143 .508
* MIN TENSILE STRENGTH-KN		24.525	39.150	59.400	80.100	108.000	136.800	172.800
L LENGTH	TOLERANCE	DASH NO.	DASH NO.	DASH NO.	DASH NO.**	DASH NO.	DASH NO.**	DASH NO.
9.525	+0 -.787	1	27	53	79	104	130	
11.125		2	28	54				
12.700		3	29	55				
14.275		4	30	56				
15.875		5	31	57	82	106	131	155
19.050		6	32	58	83	107	132	156
22.225		7	33	59	84	108	133	157
25.400		8	34	60	85	109	134	158
28.575	+0 -1.575	9	35	61	86	110	135	159
31.750		10	36	62	87	111	136	160
34.925		11	37	63	88	112	137	161
38.100		12	38	64	89	113	138	162
44.450		13	39	65	90	114	139	163
50.800		14	40	66	91	115	140	164
57.150		15	41	67	92	116	141	165
63.500		16	42	68	93	117	142	166
69.850	+0 -2.388	17	43	69	94	118	143	167
76.200		18	44	70	95	119	144	168
82.550		19	45	71	96	120	145	169
88.900		20	46	72	97	121	146	170
95.250		21	47	73	98	122	147	171
101.600		22	48	74	99	123	148	172
107.950		23	49	75	100	124	149	173
114.300		24	50	76	101	125	150	174
120.650		25	51	77	102	126	151	175
127.000		26	52	78	103	127	152	176
139.700						128	153	177
152.400						129	154	178

NOTE:

- ALL DIMENSIONS ARE IN MILLIMETERS (mm), UNLESS OTHERWISE SPECIFIED AND ARE BASED ON AN APPROXIMATE CONVERSION FACTOR OF 25.4 mm EQUAL ONE INCH.
- FOR ADDITIONAL SIZES SEE SHEET 4.
- INACTIVE FOR NEW DESIGN AFTER 21 JUNE 1976.

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PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES SEE NOTE 12	SHEET 4	OF 5

DD FORM 672-1 (COORDINATED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

5305-1747

969 (D) 22 OCT 1970 (F) FOR CHANGES SEE SHEETS 1,2,3,4, AND 5

REVISED (A) 1 AUG 1967 (B) 14 OCT 1968 (C) 1

APPROVED 6 MAY 63

FED. SUP CLASS
5305TABLE IV
METRIC TRANSLATION OF TABLE II

NOMINAL SIZE		MM	19.050	22.225	25.400	28.575	31.750	34.925	38.100
B THREAD PITCH			1.588	1.814	2.117	2.117	2.117	2.117	2.117
D BODY DIAMETER	MAX		19.050	22.225	25.400	28.575	31.750	34.925	38.100
	MIN		18.821	21.996	25.146	28.296	31.471	34.620	37.795
F WIDTH ACROSS FLATS	MAX		28.575	33.338	38.100	42.862	47.625	52.388	57.150
	MIN		27.940	32.639	37.313	41.427	46.025	50.648	55.245
G WIDTH ACROSS CORNERS	MAX		32.995	38.506	43.993	49.505	54.991	60.503	65.989
	MIN		31.852	37.211	42.545	47.219	52.476	57.734	62.992
H HEAD HEIGHT	MAX		12.268	14.300	15.926	18.237	20.650	22.301	24.740
	MIN		11.557	13.487	15.011	16.713	19.025	20.574	22.911
R RADIUS	MAX		1.143	1.651	2.413	2.413	2.413	2.413	2.413
	MIN		.508	1.016	1.524	1.524	1.524	1.524	1.524
**MIN TENSILE STRENGTH-KN			252.000	343.800	447.300	577.800	724.500	887.400	1067.400
L LENGTH	TOLERANCE		DASH NO.	DASH** NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
	SIZE 19.050	SIZE 22.225 AND OVER							
19.050	+0	+0	179	202 203	224	245	265	284	302
22.225	-.787	-1.575	180						
25.400			181						
28.575	+0	+0	182						
31.750			183						
34.925			184						
38.100			185						
44.450			186						
50.800			187						
57.150	+0	+0	188	210	231	251	270	288	305
63.500			189	211	232	252	271	289	306
69.850			190	212	233	253	272	290	307
76.200			191	213	234	254	273	291	308
82.550			192	214	235	255	274	292	309
88.900			193	215	236	256	275	293	310
95.250			194	216	237	257	276	294	311
101.600			195	217	238	258	277	295	312
107.950			196	218	239	259	278	296	313
114.300			197	219	240	260	279	297	314
120.650	-2.388	-4.775	198	220	241	261	280	298	315
127.000			199	221	242	262	281	299	316
133.350			200	222	243	263	282	300	317
139.700			201	223	244	264	283	301	318
152.400									

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PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES: SEE NOTE 12	SHEET 5	OF 5

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