

D-21-05

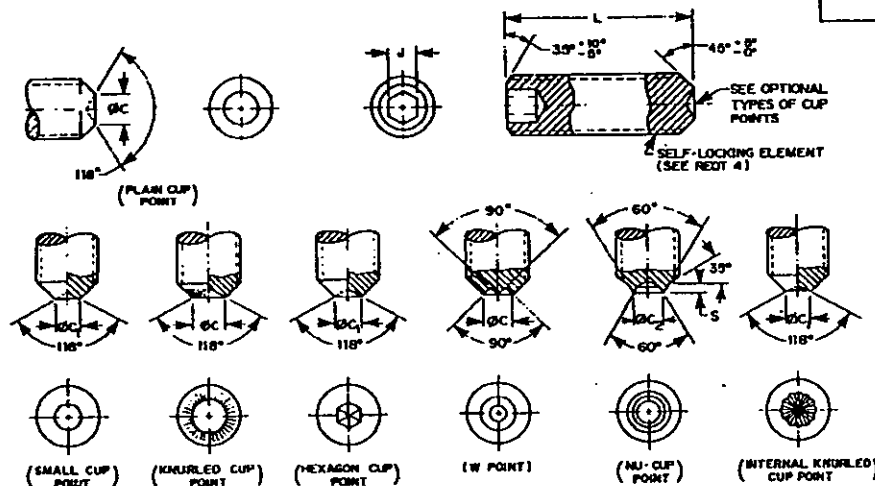
FED ELP CLASS  
S305USER ACTIVITIES:  
NAVY - MC, OS, SHREVIEWER ACTIVITIES:  
ARMY - AT  
DLA - IS  
NSA - NS

TABLE 1. DASH NUMBERS AND DIMENSIONS

NOMINAL SIZE			.060	.086	.112	.138	.164	.190	
THREADS PER INCH			80 UNF-3A	64 UNF-3A	48 UNF-3A	40 UNF-3A	36 UNF-3A	32 UNF-3A	
J	ROCKET WIDTH ACROSS FLATS	MON	.028	.035	.050	.062	.078	.094	
C	POINT	MAX MIN	.033 .027	.047 .039	.061 .051	.074 .064	.087 .076	.102 .088	
C <sub>1</sub>	POINT	MAX MIN	.032 .027	.043 .038	.056 .051	.069 .062	.082 .074	.095 .086	
C <sub>2</sub>	POINT	MAX MIN	.027 .022	.043 .038	.059 .054	.074 .068	.090 .084	.101 .095	
S	POINT LENGTH	MAX MIN	.007 .004	.010 .007	.013 .008	.017 .012	.021 .016	.024 .019	
L	LENGTH	TOLERANCE	DASH NUMBER						
			PLAIN	PLAIN	PLAIN	PLAIN	PLAIN	PLAIN	SELF- LOCKING
.125 .188 .250 .312 .375		±.010	1	9 1/2	17	27	37		120 1/2
			2	10 1/2	18	28	38	48	121
			3	11 1/2	19	29	39	49	122
					20	30	40	50	123
					21	31	41	51	124
.438 .500 .562 .625		±.020					42 1/2	52 1/2	125 1/2
							43	53	126
									127 1/2
							54		128
.750 1.000 1.250		±.020					55		129
							56		130
							57		

1/ INACTIVE FOR NEW DESIGN AFTER 29 DECEMBER 1972

(E) ENTIRE STANDARD REVISED

P.A. ARMY - AR Other Govt	INTERNATIONAL INTEREST	TITLE SETSCREW, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, UNF-3A, PLAIN AND SELF-LOCKING	MILITARY STANDARD MS51964
AIR FORCE - 99			
PROCUREMENT SPECIFICATION FF - S - 200	SUPERSEDES: MSS101B, MSS1020, BCTX4 AND IN PART MS18063, BCTX1, 1.1, 1.2, 3 AND 5, BCUX3 AND 5.1	PAGE 1 OF 3	

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

AMSC N/A

DD FORM 672-1 (UNCLASSIFIED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

5305-1716

APPROVED 29 JAN 1964 REVISED 15 SEPT 88

USER ACTIVITIES:  
NAVY - MC, OS, SH

REVIEWER ACTIVITIES:  
ARMY - AT  
DLA - IS  
NSA - NS

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TABLE 1. DASH NUMBERS AND DIMENSIONS - CONTINUED

FED. SUP. CLASS  
5305

NOMINAL SIZE		.250	.3125	.375	.4375	.500															
TOLERANCE PER DICH		28 UNF-3A	24 UNF-3A	24 UNF-3A	20 UNF-3A	20 UNF-3A															
J	POCKET WIDTH ACROSS FLATS	NOM .125	.156	.188	.219	.250															
ØC	POINT	MAX MIN	.172 .156	.212 .194	.252 .232	.291 .270															
		ØC <sub>1</sub>	POINT	MAX MIN	.125 .114	.156 .144	.187 .174	.218 .204	.250 .235												
ØC <sub>2</sub>	POINT	MAX MIN	.156 .150	.190 .185	.241 .236	.286 .281	.333 .328														
		S	POINT LENGTH	MAX MIN	.027 .022	.038 .033	.041 .036	.047 .042	.054 .049												
L LENGTH		TOLERANCE		DASH NUMBER																	
				PLAIN	SELF- LOCKING	PLAIN	SELF- LOCKING	PLAIN	SELF- LOCKING	PLAIN	PLAIN	SELF- LOCKING									
.288 .250 .312 .375	±.010	63	131	76	144	92	156	118 ✓	167	166											
		64	132		81 ✓						147	96	157								
		65	133											82	148	97	158				
		66	134															83	149	98	159
		67	135																		
68	136	85	151	100		161															
69	137				86		152	101	162												
70	138									87	153	102	163								
71	139													88	154	103	164				
72	140																	89	155	104	165
73	141	90	156	105		166															
74	142				91		157	106	167												
75	143									92	158	107	168								
76	144													93	159	108	169				
77	145																	94	160	109	170
78	146	95	161	110 ✓		171															
79	147				96		162	111 ✓	172												
80	148									97	163	112 ✓	173								
81	149													98	164	113 ✓	174				
82	150																	99	165	114 ✓	175
83	151	100	166	115 ✓		176															
84	152				101		167	116 ✓	177												
85	153									102	168	117 ✓	178								
86	154													103	169	118 ✓	179				
87	155																	104	170	119 ✓	180
88	156	105	171	120 ✓		181															
89	157				106		172	121 ✓	182												
90	158									107	173	122 ✓	183								
91	159													108	174	123 ✓	184				
92	160																	109	175	124 ✓	185
93	161	110 ✓	176	125 ✓		186															
94	162				111 ✓		177	126 ✓	187												
95	163									112 ✓	178	127 ✓	188								
96	164													113 ✓	179	128 ✓	189				
97	165																	114 ✓	180	129 ✓	190
98	166	115 ✓	181	130 ✓		191															
99	167				116 ✓		182	131 ✓	192												
100	168									117 ✓	183	132 ✓	193								
101	169													118 ✓	184	133 ✓	194				
102	170																	119 ✓	185	134 ✓	195
103	171	120 ✓	186	135 ✓		196															
104	172				121 ✓		187	136 ✓	197												
105	173									122 ✓	188	137 ✓	198								
106	174													123 ✓	189	138 ✓	199				
107	175																	124 ✓	190	139 ✓	200
108	176	125 ✓	191	140 ✓		201															
109	177				126 ✓		192	141 ✓	202												
110	178									127 ✓	193	142 ✓	203								
111	179													128 ✓	194	143 ✓	204				
112	180																	129 ✓	195	144 ✓	205
113	181	130 ✓	196	145 ✓		206															
114	182				131 ✓		197	146 ✓	207												
115	183									132 ✓	198	147 ✓	208								
116	184													133 ✓	199	148 ✓	209				
117	185																	134 ✓	200	149 ✓	210
118	186	135 ✓	201	150 ✓		211															
119	187				136 ✓		202	151 ✓	212												
120	188									137 ✓	203	152 ✓	213								
121	189													138 ✓	204	153 ✓	214				
122	190																	139 ✓	205	154 ✓	215
123	191	140 ✓	206	155 ✓		216															
124	192				141 ✓		207	156 ✓	217												
125	193									142 ✓	208	157 ✓	218								
126	194													143 ✓	209	158 ✓	219				
127	195																	144 ✓	210	159 ✓	220
128	196	145 ✓	211	160 ✓		221															
129	197				146 ✓		212	161 ✓	222												
130	198									147 ✓	213	162 ✓	223								
131	199													148 ✓	214	163 ✓	224				
132	200																	149 ✓	215	164 ✓	225
133	201	150 ✓	216	165 ✓		226															
134	202				151 ✓		217	166 ✓	227												
135	203									152 ✓	218	167 ✓	228								
136	204													153 ✓	219	168 ✓	229				
137	205																	154 ✓	220	169 ✓	230
138	206	155 ✓	221	170 ✓		231															
139	207				156 ✓		222	171 ✓	232												
140	208									157 ✓	223	172 ✓	233								
141	209													158 ✓	224	173 ✓	234				
142	210																	159 ✓	225	174 ✓	235
143	211	160 ✓	226	175 ✓		236															
144	212				161 ✓		227	176 ✓	237												
145	213									162 ✓	228	177 ✓	238								
146	214													163 ✓	229	178 ✓	239				
147	215																	164 ✓	230	179 ✓	240
148	216	165 ✓	231	180 ✓		241															
149	217				166 ✓		232	181 ✓	242												
150	218									167 ✓	233	182 ✓	243								
151	219													168 ✓	234	183 ✓	244				
152	220																	169 ✓	235	184 ✓	245
153	221	170 ✓	236	185 ✓		246															
154	222				171 ✓		237	186 ✓	247												
155	223									172 ✓	238	187 ✓	248								
156	224													173 ✓	239	188 ✓	249				
157	225																	174 ✓	240	189 ✓	250
158	226	175 ✓	241	190 ✓		251															
159	227				176 ✓		242	191 ✓	252												
160	228									177 ✓	243	192 ✓	253								
161	229													178 ✓	244	193 ✓	254				
162	230																	179 ✓	245	194 ✓	255
163	231	180 ✓	246	195 ✓		256															
164	232				181 ✓		247	196 ✓	257												
165	233									182 ✓	248	197 ✓	258								
166	234													183 ✓	249	198 ✓	259				
167	235																	184 ✓	250	199 ✓	260
168	236	185 ✓	251	200 ✓		261															
169	237				186 ✓		252	201 ✓	262												
170	238									187 ✓	253	202 ✓	263								
171	239													188 ✓	254	203 ✓	264				
172	240																	189 ✓	255	204 ✓	265
173	241	190 ✓	256	205 ✓		266															
174	242				191 ✓		257	206 ✓	267												
175	243									192 ✓	258	207 ✓	268								
176	244													193 ✓	259	208 ✓	269				
177	245																	194 ✓	260	209 ✓	270
178	246	195 ✓	261	210 ✓		271															
179	247				196 ✓		262	211 ✓	272												
180	248									197 ✓	263	212 ✓	273								
181	249													198 ✓	264	213 ✓	274				
182	250																	199 ✓	265	214 ✓	275
183	251	200 ✓	266	215 ✓		276															
184	252				201 ✓		267	216 ✓	277												
185	253									202 ✓	268	217 ✓	278								
186	254													203 ✓	269	218 ✓	279				
187	255																	204 ✓	270	219 ✓	280
188	256	205 ✓	271	220 ✓		281															
189	257				206 ✓		272	221 ✓	282												
190	258									207 ✓	273	222 ✓	283								
191	259													208 ✓	274	223 ✓	284				
192	260																	209 ✓	275	224 ✓	285
193	261	210 ✓	276	225 ✓		286															
194	262				211 ✓		277	226 ✓	287												
195	263									212 ✓	278	227 ✓	288								
196	264													213 ✓	279	228 ✓	289				
197	265																	214 ✓	280	229 ✓	290
198	266	215 ✓	281	230 ✓		291															
199	267				216 ✓		282	231 ✓	292												
200	268									217 ✓	283	232 ✓	293								
201	269													218 ✓	284	233 ✓	294				
202	270																	219 ✓	285	234 ✓	295
203	271	220 ✓	286	235 ✓		296															
204	272				221 ✓		287	236 ✓	297												
205	273									222 ✓	288	237 ✓	298								
206	274													223 ✓	289	238 ✓	299				
207	275																	224 ✓	290	239 ✓	300
208	276	225 ✓	291	240 ✓		301															
209	277				226 ✓		292	241 ✓	302												
210	278									227 ✓	293	242 ✓	303								
211	279													228 ✓	294	243 ✓	304				
212	280																	229 ✓	295	244 ✓	305
213	281	230 ✓	296	245 ✓		306															
214	282				231 ✓		297	246 ✓	307												
215	283									232 ✓	298	247 ✓	308								
216	284													233 ✓	299	248 ✓	309				
217	285																	234 ✓	300	249 ✓	310
218	286	235 ✓	301	250 ✓		311															
219	287				236 ✓		302	251 ✓	312												
220	288									237 ✓	303	252 ✓	313								
221	289													238 ✓	304	253 ✓	314				
222	290																	239 ✓	305	254 ✓	315
223	291	240 ✓	306	255 ✓		316															
224	292				241 ✓		307	256 ✓	317												
225	293									242 ✓	308	257 ✓	318								
226	294													243 ✓	309	258 ✓	319				
227	295																	244 ✓	310	259 ✓	320
228	296	245 ✓	311	260 ✓		321															
229	297				246 ✓		312	261 ✓	322												
230	298									247 ✓	313	262 ✓	323								
231	299													248 ✓	314	263 ✓	324				
232	300																	249 ✓	315	264 ✓	325
233	301	250 ✓	316	265 ✓		326															
234	302				251 ✓		317	266 ✓	327												
235	303									252 ✓	318	267 ✓	328								
236	304													253 ✓	319	268 ✓	329				
237	305																	254 ✓	320	269 ✓	330
238	306	255 ✓	321	270 ✓		331															
239	307				256 ✓		322	271 ✓	332												
240	308									257 ✓											

1/ INACTIVE FOR NEW DESIGN AFTER 29 DECEMBER 1972

TABLE 1. DASH NUMBERS AND DIMENSIONS - CONTINUED

NOMINAL SIZE		.625	.750	.875	1.000 ✓
TOLERANCE PER DICH		18 UNF-3A	16 UNF-3A	14 UNF-3A	14 UNF-3A
J SOCKET WIDTH ACROSS FLATS	NOM	.312	.375	.500	.562
ØC POINT	MAX MIN	.371 .347	.450 .425	.530 .502	.609 .579
ØC <sub>1</sub> POINT	MAX MIN	.312 .295	.375 .357	.437 .418	.500 .480
ØC <sub>2</sub> POINT	MAX MIN	.425 .420	.513 .510	—	—
S POINT LENGTH	MAX MIN	.067 .062	.081 .076	—	—
L LENGTH	TOLERANCE	DASH NUMBER			
		PLAIN	PLAIN	PLAIN	PLAIN
.250	±.010				
.312					
.375					
.438		253	268		
.500		254	269		
.625	±.020	255	270	281	295 ✓
.750		256	271	284	296 ✓
.875		257	272	285	297 ✓
1.000		258	273	286	298 ✓
1.250		259	274	287	299 ✓
1.500	±.031	260	275	288	300 ✓
1.750		261	276	289	301 ✓
2.000		262	277	290	302 ✓
2.500		263	278	291	303 ✓
3.000					

2/ INACTIVE FOR NEW DESIGN AFTER 30 JUNE 1966

P.A. <b>ARMY - AR</b> Other Dist <b>AIR FORCE-99</b>	INTERNATIONAL INTEREST	TITLE <b>SETSCREW, HEXAGON SOCKET, CUP POINT,          ALLOY STEEL, CADMIUM PLATED, UNF-3A,          PLAIN AND SELF-LOCKING</b>	<b>MILITARY STANDARD</b> <b>MS51964</b>
PROCUREMENT SPECIFICATION <b>FF-9-200</b>	SUPERSEDES <b>MS51018, MS51020, BCTX4 AND IN PART MS18063,          BCTX1, 1.1, 1.2, 3 AND 5, BCUX5 AND 5.1</b>	PAGE <b>2</b>	OF <b>3</b>

DD FORM 672-1 (UNCLASSIFIED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

5305-1716

APPROVED 29 JAN 1964  
 REVISED  
 (E) FOR CHANGES SEE PAGES 1, 2 AND 3

FED. SUP. CLASS  
5305

## REQUIREMENTS:

1. MATERIAL: ALLOY STEEL IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
2. PROTECTIVE COATING AND SURFACE TREATMENT: CADMIUM PLATED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
3. THREADS: THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/2. ACCEPTABILITY OF SCREW THREADS FOR SIZES .150 AND SMALLER SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 21. ACCEPTABILITY OF SCREW THREADS FOR SIZES .250 AND LARGER SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 22. SELF-LOCKING SCREWS SHALL BE INSPECTED PRIOR TO INSTALLATION OF LOCKING ELEMENT.
4. SELF-LOCKING ELEMENT:
  - (a). THE SELF-LOCKING ELEMENT SHALL BE IN ACCORDANCE WITH THE PROCUREMENT DOCUMENT.
  - (b). MAXIMUM RING GAGE DIAMETER THAT LOCKING REGION OF SETSCREW MUST PASS THRU FREELY OR WITH FINGER PRESSURE SHALL BE THE NOMINAL SIZE PLUS 0.010.
  - (c). MIL-F-18240 DOES NOT ESTABLISH TORQUE REQUIREMENTS FOR LENGTHS ABOVE THE DASHED LINE. ONLY A POSITIVE INDICATION OF TORQUE IS REQUIRED.
5. TOLEANCES: ANGLES  $\pm 5^\circ$ , UNLESS OTHERWISE SPECIFIED.
6. PART NUMBER: THE PART NUMBER SHALL CONSIST OF THE BASIC MS NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM TABLE I.

EXAMPLE: MS51964-1

DASH NUMBER

BASIC MS NUMBER

MS51964-1 INDICATES - SETSCREW, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, .060-80 UNF-3A; LENGTH .125; PLAIN.

## NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
3. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODDIS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

## INTERCHANGEABILITY RELATIONSHIP

SCREWS COVERED BY THE DASH NUMBERS GIVEN IN MS51018 AND MS51020 ARE CANCELLED AFTER 29 JANUARY 1964 AND SUPERSEDED BY THE SCREWS COVERED ON MS51964 HAVING THE SAME DASH NUMBERS. CANCELLED SCREWS MAY BE USED UNTIL EXISTING STOCKS ARE DEPLETED. USE ONLY MS51964 SCREWS FOR NEW DESIGN.

SCREWS COVERED BY THE DASH NUMBERS GIVEN IN MS18063 IN PART ARE CANCELLED. CANCELLED SCREWS MAY BE USED UNTIL EXISTING STOCKS ARE DEPLETED. USE ONLY THE SUPERSEDING SCREWS FOR NEW DESIGN. REPLACEMENT SHALL BE IN ACCORDANCE WITH TABLE II.

TABLE II. INTERCHANGEABILITY

CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING
MS18063	MS51964	MS18063	MS51964	MS18063	MS51964	MS18063	MS51964
DASH NUMBER		DASH NUMBER		DASH NUMBER		DASH NUMBER	
4	120	32	135	64	150	82	164
8	121	37	136	70	151	85	165
13	122	45	137	74	152	92	166
19	123	50	138	78	153	40	167
25	124	57	139	81	154	53	168
31	125	63	140	84	155	60	169
36	126	69	141	91	156	66	170
44	127	73	142	39	157	72	171
49	128	77	143	52	158	76	172
56	129	15	144	59	159	80	173
68	130	21	145	65	160	83	174
9	131	27	146	71	161	86	175
14	132	38	147	75	162	87	176
20	133	51	148	79	163	88	177
26	134	58	149				

P.A. ARMY - AR Other Code AIR FORCE - 99	INTERNATIONAL INTEREST	TITLE SETSCREW, HEXAGON SOCKET, CUP POINT, ALLOY STEEL, CADMIUM PLATED, UNF-3A, PLAIN AND SELF-LOCKING	<b>MILITARY STANDARD</b> <b>MS51964</b>
PROCUREMENT SPECIFICATION FF-S-200	SUPERSEDES: MS5018, MS51020, BCTX4 AND IN PART MS18063, BCTX1, 1.1, 1.2, 3 AND 5, BCUX5 AND 5.1	PAGE 3	OF 3

USER ACTIVITIES:  
NAVY - MC, OS, SHREVIEWER ACTIVITIES:  
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APPROVED 29 JAN 1964  
REVISED (E) FOR CHANGES SEE PAGES 1, 2 AND 3

DD FORM 672-1 (COORDINATED)

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5305-1716