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REV. WP CLASS
5305

30° TO 45°

FORM MUST BE WITHIN 120° MIN INCLUDED ANGLE AT MIN MATERIAL LIMIT

ACCEPTABLE SOCKET DESIGN

TABLE 1

NOMINAL SIZE	(#2) .086	(#4) .112	(#6) .138	(#8) .164	(#10) .190	(1/4) .250							
THREADS PER INCH UNC-3A	56	40	32	32	24	20							
D BODY DIAMETER	MAX .0860 MIN .0822	MAX .1120 MIN .1075	MAX .1380 MIN .1329	MAX .1640 MIN .1545	MAX .1900 MIN .1840	MAX .2500 MIN .2435							
A HEAD DIAMETER	MAX .140 MIN .134	MAX .183 MIN .176	MAX .226 MIN .218	MAX .270 MIN .262	MAX .3125 MIN .303	MAX .375 MIN .365							
H HEAD HEIGHT	MAX .086 MIN .083	MAX .112 MIN .108	MAX .138 MIN .134	MAX .164 MIN .159	MAX .190 MIN .185	MAX .250 MIN .244							
S HEAD SIDE HGT	MIN .077	MIN .101	MIN .124	MIN .148	MIN .171	MIN .225							
J SOCKET WIDTH	MAX .0791 MIN .0761	MAX .0952 MIN .0917	MAX .1111 MIN .1094	MAX .1426 MIN .1406	MAX .1587 MIN .1562	MAX .1900 MIN .1875							
T KEY ENGAGEMENT	MIN .074	MIN .051	MIN .064	MIN .077	MIN .090	MIN .095							
G WALL THICKNESS	MIN .029	MIN .038	MIN .047	MIN .056	MIN .065	MIN .098							
K CHAMFER OR RADIUS	MAX .003	MAX .005	MAX .005	MAX .015	MAX .005	MAX .008							
R FILLET EXTENSION	MAX .006 MIN .004	MAX .004 MIN .005	MAX .010 MIN .006	MAX .012 MIN .007	MAX .014 MIN .009	MAX .014 MIN .009							
TENSILE STRENGTH LBS - MIN	560	920	1,400	2,170	2,710	4,950							
L LENGTH	TOLERANCE	DASH NO.	DASH NO.	DASH NO.	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN
.188	+.000 -.031	1	9	18	30						57		
.250		2	10	19	31			43			58		
.375		3	11	20	32			44			59		
.500		4						45			60		
.625	+.000 -.040		12	21	33			46			61		
.750			13	22	34			47			62		
.875				23	35			48					
1.000				24	36						63		
1.250	+.000 -.060				37	.175	.210	49	.175	.167	64	.175	.167
1.500					38	.175	.210	50	.175	.167	65	.175	.167
1.750								51	.175	.167	66	.175	.167
2.000								52	.175	.167	67	.175	.167
2.250										68	1.000	1.750	
2.500										69	1.000	1.750	
2.750										70	1.000	1.750	
3.000													

For notes see sheet 1.

Ⓛ for changes see sheets 1 thru 7.

P.A. 6C
Other Cap AS 99

TITLE
① SCREW, CAP, SOCKET HEAD AND
SCREW, CAP, SOCKET HEAD, SELF-LOCKING;
ALLOY STEEL, CADMIUM PLATED, UNC-3A

MILITARY STANDARD
MS16997

PROCUREMENT SPECIFICATION
FF-5-86

SUPersedes BCW11, 1.1, 1.2; BCW12, 2.1, 2.2; BCW13, 1.1,
and 1.4; MS15455, MS15457 and MS15459 in part

SHEET 1 OF 7

5305-11H4

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 3 APR 1962 REVISED (A) 21 FEB 1963 (B) 25 MAR 1963 (C) 22 OCT 1970 (D) 31 DEC 1976

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TABLE 1 (Cont'd)														REQ. W/P CLASS 5305
NOMINAL SIZE		(5/16)	(3/4)	(7/16)	(1/2)									
THREADS PER INCH UNC-3A		15	16	14	13									
D BODY DIAMETER	MAX	.3125	.3750	.4175	.5000									
	MIN	.3053	.3675	.4294	.4919									
A HEAD DIAMETER	MAX	.4054	.4625	.6562	.750									
	MIN	.457	.550	.642	.735									
H HEAD HEIGHT	MAX	.3125	.375	.4175	.500									
	MIN	.306	.365	.430	.492									
S HEAD SIDE HGT	MIN	.291	.337	.394	.450									
J SOCKET WIDTH ACROSS FLATS	MAX	.2550	.3160	.3790	.3790									
	MIN	.2500	.3125	.3750	.3750									
T KEY ENGAGEMENT	MIN	.151	.162	.211	.245									
	MIN	.119	.145	.166	.190									
G WALL THICKNESS	MIN	.119	.145	.166	.190									
	MIN	.119	.145	.166	.190									
A CHAMFER OR RADIUS	MAX	.008	.006	.010	.010									
	MIN	.017	.020	.023	.026									
K FILLET EXTENSION	MAX	.017	.020	.023	.026									
	MIN	.012	.015	.018	.020									
TENSILE STRENGTH LBS - MIN		8,190	12,100	16,700	22,300									
I LENGTH	TOLERANCE		DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	D DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN
	SIZE .375 6 UNDER	OVER .375												
.375			75			95			117			137		
.500			76			96			118			138		
.625	+.000	+.000	77			97			119			139		
.750	-.031	-.031	78			98			120			140		
.875			79			99			121			141		
1.000			80			100			122			142		
1.250			81			101			123			143		
1.500			82			102			124			144		
1.750	+.000	+.000	83	.625	.347	103	.500	.187	125	.625	.268	145		
2.000	-.040	-.060	84	.625	.347	104	.500	.187	126	.625	.268	146	.750	.365
2.250			85	1.125	.847	105	1.000	.687	127	1.125	.768	147	.750	.365
2.500			86	1.125	.847	106	1.000	.687	128	1.125	.768	148	.750	.365
2.750			87	1.625	1.347	107	1.500	1.187	129	1.625	1.268	149	1.500	1.115
3.000			88	1.625	1.347	108	2.000	1.687	130	1.625	1.268	150	1.500	1.115
3.250			89	2.125	1.847	109	2.000	1.687	131	2.125	1.768	151	1.500	1.115
3.500			90	2.125	1.847	110	2.500	2.187	132	2.125	1.768	152	2.250	1.865
4.000	+.000	+.000				111	3.000	2.687		2.625	2.268	153	3.000	2.615
4.500	-.060	-.080				112	3.500	3.187				154	3.000	2.615
5.000												155	3.750	3.365
5.500												156	4.500	4.115
6.000												157	4.500	4.115
6.500	+.000	+.000										158	5.250	4.865
7.000	-.120	-.120										159	6.000	5.615
8.000														

For notes see sheet J.

①** INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

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APPROVED 5 APR 1982 REVISED ① For changes see sheets I thru J

P A	VC	TITLE	MILITARY STANDARD
Other Code	AS 99	① SCREW,CAP,SOCKET HEAD AND SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A	MS16997
PROCUREMENT SPECIFICATION FF-S-86		SUPERMOES BOX1, 1.1, 1.2; BOX2, 2.1, 2.2; BOX3,3, and 3.4; MS35455, MS35457 and MS35459 in part	SHEET 2 OF 7

DD FORM 672-1 (Limited circulation)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

TABLE 1 (Cont'd)													PED. SUP CLASS 5305	
NOMINAL SIZE		(5/8)		(3/4)		(7/8)		(1)						
		.625		.750		.875		1.000						
THREADS PER INCH UNC-3A		11		10		9		8						
D BODY DIAMETER	MAX	.6250		.7500		.8750		1.0000						
	MIN	.6163		.7406		.8647		.9886						
A HEAD DIAMETER	MAX	.9375		1.125		1.3125		1.500						
	MIN	.921		1.107		1.291		1.479						
H HEAD HEIGHT	MAX	.625		.750		.875		1.000						
	MIN	.616		.740		.864		.988						
S HEAD SIDE HGT	MAX	.562		.675		.787		.900						
	MIN													
J SOCKET WIDTH ACROSS FLATS	MAX	.5050		.6110		.7570		.7570						
	MIN	.5000		.6250		.7500		.7500						
T KEY ENGAGEMENT	MAX	.107		.170		.232		.295						
	MIN													
G WALL THICKNESS	MAX	.238		.285		.333		.380						
	MIN													
K CHAMFER OR RADIUS	MAX	.010		.010		.015		.015						
	MIN													
R FILLET EXTENSION	MAX	.032		.039		.044		.050						
	MIN	.024		.030		.034		.040						
TENSILE STRENGTH LBS - MIN		35,600		52,600		73,000		95,600						
L LENGTH	TOLERANCE		DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN
	SIZE .750 OVER 6 INCHES	OVER 7.60												
1.000	-.031	-.050	164											
1.250			165			187								
1.500			166			188								
1.750	+.000	+.000	167			189						226		
2.000	-.060	-.100	168			190						229		
2.250			169			191						230		
2.500			170	.750	.295	192						231		
2.750			171	.750	.295	193						232		
3.000			172	.750	.295	194	1.000	.500	210			233		
3.250			173	1.500	1.045	195	1.000	.500	211	1.000	.444	234	1.000	1.375
3.500	+.000	+.000	174	1.500	1.045	196	1.000	.500	212	1.000	.444	235	1.000	1.375
4.000	-.080	-.140	175	2.250	1.795	197	2.000	1.500	213	2.000	1.444	236	2.000	1.375
4.500			176	2.250	1.795	198	2.000	1.500	214	2.000	1.444	237	2.000	1.375
5.000			177	3.000	2.545	199	3.000	2.500	215	3.000	2.444	238	3.000	1.375
5.500			178	3.750	3.295	200	4.000	3.500	216	4.000	2.444	239	4.000	1.375
6.000			179	3.750	3.295	201	4.000	3.500	217	4.000	2.444	240	4.000	1.375
6.500	+.000	+.000	180	4.500	4.045	202	4.000	3.500	218	4.000	2.444	241	4.000	1.375
7.000	-.120	-.200	181	5.250	4.795	203	5.000	4.500	219	5.000	2.444	242	5.000	1.375
8.000			182	6.000	5.545	204	6.000	5.500	220	6.000	2.444	243	6.000	1.375

NOTES:

- MATERIAL: Alloy steel in accordance with procurement specification.
- PROTECTIVE COATING: Cadmium plating in accordance with procurement specification.
- THREADS: The threads shall be in accordance with procurement specification.
- THREAD LENGTH: Screws above heavy line, for sizes #2 thru 5/8, inclusive, shall have complete (full form) threads extending within two threads of the head as measured with a thread ring gauge, and for sizes larger than 5/8 shall have complete threads extending as close to the head as practicable.
- DIMENSIONS: All dimensions are in inches, unless otherwise specified.
- HEAD: The head may or may not be knurled at the manufacturer's option. Type of knurling optional.
- 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, design and usage limitations, see MS15981.
(c) Maximum ring gage diameter that the locking region of screw must pass thru freely or with finger pressure shall be the nominal size plus 0.010.
- TENSILE STRENGTH: Based on 160,000 PSI minimum ultimate tensile strength. Load pounds are calculated by the stress areas indicated in the Screw-Thread Standards for Federal Services, Handbook H28.
- 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: MS16997-1 Plain screw
MS16997-1L Self-locking screw
- Referenced documents shall be of the issue in effect on date of invitations for bid.
- For design feature purposes, this standard takes precedence over procurement documents referenced herein.

Ⓢ INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

P A VC		TITLE		MILITARY STANDARD	
Other Cont AS 99		Ⓢ SCREW,CAP,SOCKET HEAD AND SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A		MS16997	
PROCUREMENT SPECIFICATION FF-S-86		SUPERSEDES BCW11, 1.1, 1.2; BCW12, 2.1, 2.2; BCW13.1, and 3.A; MS33433, MS33437 and MS33439 in part		SHEET 3 OF 7	

and for repetitive use shall be made from this document, when applicable.

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DD FORM 672-1 (Limited circulation)

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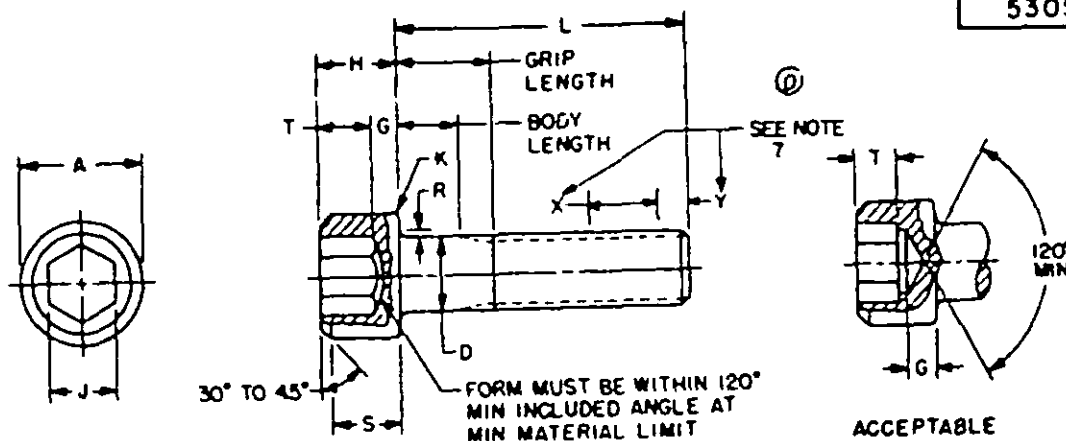
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TABLE II INTERCHANGEABILITY TABLE						PRO. SUP CLASS 5305
The screws covered by dash numbers given in MSJ5455, MSJ5457 and MSJ5459 that are replaced by applicable dash numbers in this document are cancelled after 5 April 62. Use the dash numbers given in the preceding sheets. 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. Replacement shall be in accordance with this table. Interchangeability information regarding part numbers on superseded drawings are also contained in this table.						
PART NUMBERS		PART NUMBERS		PART NUMBERS		
CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	CANCELLED	SUPERSEDING	
MSJ5455 MSJ5457 MSJ5459	MS16997	MSJ5455 MSJ5457 MSJ5459	MS16997	MSJ5455 MSJ5457 MSJ5459	MS16997	
Dash No.	Dash No.	Dash No.	Dash No.	Dash No.	Dash No.	
1	9	31	52	77	110	
2	10	32	57	78	111	
3	11	33	58	79	112	
4	12	34	59	98	137	
5	13	35	60	99	138	
6	18	36	61	100	139	
7	19	37	62	101	140	
8	20	38	63	102	141	
9	21	39	64	103	142	
10	22	40	65	104	143	
11	23	41	66	105	144	
12	24	42	67	106	145	
13	30	43	68	107	146	
14	31	44	69	108	147	
15	32	45	70	109	148	
16	33	62	93	110	149	
17	34	63	96	111	150	
18	35	64	97	112	151	
19	36	65	98	113	152	
20	37	66	99	114	153	
21	38	67	100	115	154	
22	43	68	101	116	155	
23	44	69	102	117	156	
24	45	70	103			
25	46	71	104			
26	47	72	105			
27	48	73	106			
28	49	74	107			
29	50	75	108			
30	51	76	109			
Screws covered by the following part numbers are inactive for Design and Engineering. They shall be used for maintenance of existing equipment to replace the 5/16, 7/16, 5/8, 3/4, 7/8 and 1 inch size screws used in counterbored holes or other close applications.						
PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.
INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459	MSJ5455 MSJ5457 MSJ5459
Dash No.	Dash No.	Dash No.	Dash No.	Dash No.	Dash No.	Dash No.
46	59	90	125	134	151	164
47	60	91	126	139	152	165
48	61	92	127	140	153	166
49	62	93	128	141	154	167
50	63	94	129	142	155	168
51	64	95	130	143	156	169
52	65	114	131	144	157	170
53	66	119	132	145	158	171
54	67	120	133	146	159	172
55	68	121	134	147	160	
56	69	122	135	148	161	
57	70	123	136	149	162	
58	71	124	137	150	163	
APPROVED 5 APRIL 62 REVISED ① for changes see sheets 3 thru 7						
P.A. WC Order Code AS 99		TITLE SCREW,CAP,SOCKET HEAD AND ① SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A			MILITARY STANDARD MS 16997	
PROCUREMENT SPECIFICATION FF-S-46		SUPERSEDES BCW11, 1.1, 1.2; BCW12, 2.1, 2.2; BCW13.3, and 1.4, MSJ5455, MSJ5457 and MSJ5459 in part			SHEET 4 OF 7	

DD FORM 672-1 (Continued)

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FED. MFP CLASS
5305

TABLE III
METRIC TRANSLATION OF TABLE I

NOMINAL SIZE		mm	2.184	2.845	3.505	4.166		4.826		6.350				
THREADS per 25.4mm UNC-3A			56	40	32	32		24		20				
D BODY DIAMETER	MAX	2.184	2.845	3.505	4.166		4.826		6.350					
	MIN	2.088	2.730	3.376	4.026		4.674		6.185					
A HEAD DIAMETER	MAX	3.556	4.648	5.740	6.858		7.938		9.525					
	MIN	3.404	4.470	5.537	6.655		7.696		9.271					
H HEAD HEIGHT	MAX	2.184	2.845	3.505	4.166		4.826		6.350					
	MIN	2.108	2.743	3.404	4.039		4.699		6.198					
S HEAD SIDE HGT	MIN	1.956	2.565	3.150	3.759		4.343		5.715					
J SOCKET WIDTH ACROSS FLATS	MAX	2.009	2.418	2.822	3.622		4.031		4.826					
	MIN	1.984	2.380	2.779	3.571		3.967		4.762					
T KEY ENGAGEMENT	MIN	.965	1.295	1.626	1.956		2.286		3.048					
C WALL THICKNESS	MIN	.737	.965	1.194	1.422		1.651		2.413					
K CHAMFER OR RADIUS	MAX	.076	.127	.127	.127		.127		.203					
R FILLET EXTENSION	MAX	.203	.229	.254	.305		.356		.356					
	MIN	.102	.127	.152	.179		.229		.229					
* TENSILE STRENGTH kN - MIN (D)		2.520	4.140	6.300	9.765		12.195		22.275					
L LENGTH	TOLERANCE	DASH NO.	DASH NO.	DASH NO.	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	
4.775 6.350 9.525 12.700	+0.00 -0.787	1 2 3 4	9 10 11	18 19 20	30 31 32			43 44			57 58			
15.875 19.050 22.225 25.400			12 13	21 22 23 24	33 34 35 36			45 46 47 48			59 60 61 62			
31.750 38.100 44.450 50.800		+0.00 -1.016				37 38	9.525 9.525	5.563 5.563	49 50 51 52	9.525 9.525 22.225 22.225	4.242 4.242 16.942 16.942	63 64 65 66	11.700 12.700 25.400	6.350 6.350 19.050
57.150 63.500 69.850 76.200			+0.00 -1.524										67 68 69 70	25.400 38.100 50.800

NOTE: All dimensions are in millimeters (mm), unless otherwise specified and are based on an approximate conversion factor of 25.4mm equal one inch.

P.A. VC Other Case AS 99	TITLE ① SCREW, CAP, SOCKET HEAD AND SCREW, CAP, SOCKET HEAD, SELF-LOCKING: ALLOY STEEL, CADMIUM PLATED, UNC-3A	MILITARY STANDARD MS16997
PROCUREMENT SPECIFICATION FY-S-86	SUPERSEDES BCW11, 1.1, 1.2; BCW12, 2.1, 2.2; BCW13, 1, and 1.4; MS15451, MS15452 and MS15453 IN PART	SHEET 5 OF 7

DD FORM 672-1 (Continued)

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TABLE III (Cont'd) METRIC TRANSLATION OF TABLE I												FED. SUP CLASS 5305		
NOMINAL SIZE			7.936			9.525			11.112			12.700		
THREAD per 25.4mm UNC-3A			18			16			14			13		
D BODY DIAMETER	MAX	MIN	7.936			9.525			11.112			12.700		
	7.755			9.342			10.907			12.494				
A HEAD DIAMETER	MAX	MIN	11.908			14.288			16.667			19.050		
	11.606			13.970			16.307			18.669				
H HEAD HEIGHT	MAX	MIN	7.936			9.525			11.112			12.700		
	7.772			9.347			10.922			12.497				
S HEAD SIDE HGT	MIN		7.137			8.560			10.008			11.430		
J SOCKET WIDTH ACROSS FLATS	MAX	MIN	6.426			8.026			9.627			9.627		
	6.350			7.936			9.525			9.525				
T KEY ENGAGEMENT	MIN		3.815			4.623			5.410			6.223		
G WALL THICKNESS	MIN		3.023			3.632			4.216			4.826		
A CHAMFER OR RADIUS	MAX		.203			.203			.254			.254		
R FILLET EXTENSION	MAX	MIN	.432			.509			.584			.660		
	.305			.381			.457			.533				
TENSILE STRENGTH LN - MIN (D)			36.855			34.450			25.150			100.350		
L LENGTH	TOLERANCE		DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN
	SIZE 9.525 UNDER	OVER 9.525												
9.525			75						117			117		
12.700			76			95			118			118		
15.875	+.000	-.000	77			96								
19.050	-.787	-.787	78			97			119			119		
22.225			79			98			120			120		
25.400			80			99			121			121		
31.750			81			100			122			122		
38.100			82			101			123			123		
44.450	+.000	+.000	83	15.875	8.814	102	12.700	4.750	124	15.875	6.807	124	15.875	6.807
50.800	-1.016	-1.574	84	15.875	8.814	103	12.700	4.750	125	15.875	6.807	125	15.875	6.807
57.150			85	28.575	21.514	104	25.400	17.450	126	28.575	19.507	126	28.575	19.507
63.500			86	28.575	21.514	105	25.400	17.450	127	28.575	19.507	127	28.575	19.507
69.850			87	41.275	34.214	106	38.100	30.150	128	41.275	32.207	128	41.275	32.207
76.200			88	41.275	34.214	107	38.100	30.150	129	41.275	32.207	129	41.275	32.207
82.550			89	53.975	46.914	108	50.800	42.850	130	53.975	44.907	130	53.975	44.907
88.900			90	53.975	46.914	109	50.800	42.850	131	53.975	44.907	131	53.975	44.907
103.600	+.000	+.000				110	63.500	55.550	132	66.675	57.607	132	66.675	57.607
114.300	-1.524	-2.032				111	76.200	68.250				133	76.200	68.250
127.000						112	88.900	80.950				134	76.200	68.250
139.700												135	95.250	85.471
152.400												136	114.300	104.521
165.100												137	114.300	104.521
177.800	+.000	+.000										138	133.350	123.571
203.200	-3.048	-3.048										139	152.400	142.621

NOTE: All dimensions are in millimeters (mm), unless otherwise specified and are based on an approximate conversion factor of 25.4mm equal one inch.

ⓐ ** INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

P.A.	VC	TITLE	MILITARY STANDARD
Other Cont.	AS	SCREW,CAP,SOCKET HEAD AND SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A	MS16997
	99		
PROCUREMENT SPECIFICATION FF-S-46	SUPERSEDES BCW11, 1.1, 1.2, BCW12, 2.1, 2.2; BCW13.3, AND 3.4; MS15455, MS15457 and MS15459 in part		SHEET 6 OF 7

NOTE: All dimensions are in millimeters (mm), unless otherwise specified and are based on an approximate conversion factor of 25.4mm equal one inch.

(D) ** INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

P.A. BC		TITLE		MILITARY STANDARD	
Other Code AS 99		(D) SCREW, CAP, SOCKET HEAD AND SCREW, CAP, SOCKET HEAD, SELF-LOCKING. ALLOY STEEL, CADMIUM PLATED, UNC-3A		MS16997	
PROCUREMENT SPECIFICATION FF-S-146		SUPERSEDES BCW11 1.1 1.2, BCW12 2.1, 2.2; BCW13.3, AND 3.4; MS15455, MS15457 and MS15459 in part		SHEET 6 OF 7	

DD FORM 672-1 (Continued)

PREPARED BY THE ARMY AND NAVY

APPROVED 5 APR 1962 REVISED (D) For changes see sheets 1 thru 7

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TABLE 111 (Cont'd) METRIC TRANSLATION OF TABLE I												FED SUP CLASS 5305		
NOMINAL SIZE		15.875		19.050		22.225		25.400						
THREADS per 25.4 mm UNC-3A		11		10		9		8						
D BODY DIAMETER	MAX	15.875		19.050		22.225		25.400						
	MIN	15.654		18.811		21.963		25.110						
A HEAD DIAMETER	MAX	23.812		25.575		33.138		38.100						
	MIN	23.393		24.116		32.542		37.567						
H HEAD HEIGHT	MAX	15.875		19.050		22.225		25.400						
	MIN	15.646		18.796		21.946		25.095						
S HEAD SIDE HGT	MAX	14.275		17.145		19.990		22.860						
	MIN	14.275		17.145		19.990		22.860						
J SOCKET WIDTH ACROSS FLATS	MAX	12.827		16.027		19.228		19.228						
	MIN	12.700		15.875		19.050		19.050						
T KEY ENGAGEMENT	MAX	7.798		9.398		10.973		12.573						
	MIN	7.798		9.398		10.973		12.573						
C WALL THICKNESS	MAX	6.045		7.239		8.458		9.652						
	MIN	6.045		7.239		8.458		9.652						
A CHAMFER OR RADIUS	MAX	.254		.254		.351		.381						
	MIN	.254		.254		.351		.381						
R FILLET EXTENSION	MAX	.813		.991		1.135		1.270						
	MIN	.610		.762		.864		1.016						
TENSILE STRENGTH KN - MIN		160.200		237.600		328.500		431.100						
L LENGTH	TOLERANCE		DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	(D)** DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN	DASH NO.	GRIP LENGTH MAX	BODY LENGTH MIN
	SIZE OVER & UNDER	SIZE OVER & UNDER												
25.400	-.787	-.1270	164											
31.750			165			187								
38.100			166			188								
44.450			167			189								
50.800	+.000	+.000	168			190			209			228		
57.150	-1.524	-2.540	169			191			210			229		
63.500			170	19.050	7.493	192			211			230		
69.850			171	19.050	7.493	193			212			231		
76.200			172	19.050	7.493	194	25.400	12.700	213			232		
82.550			173	35.100	26.543	195	25.400	12.700	214	25.400	11.278	233	25.400	9.525
88.900			174	38.100	26.543	196	25.400	12.700	215	25.400	11.278	234	25.400	9.525
101.600	+.000	+.000	175	57.150	45.593	197	50.800	38.100	216	25.400	11.278	235	25.400	9.525
114.300	-2.032	-3.556	176	57.150	45.593	198	50.800	38.100	217	50.800	36.678	236	50.800	14.925
127.000			177	76.200	64.643	199	76.200	61.500	218	50.800	36.678	237	50.800	14.925
139.700			178	95.250	83.693	200	76.200	61.500	219	76.200	62.078	238	76.200	60.325
152.400			179	95.250	83.693	201	101.600	88.900	220	76.200	62.078	239	76.200	60.325
165.100			180	114.300	102.743	202	101.600	88.900	221	101.600	87.478	240	101.600	85.725
177.800	+.000	+.000	181	133.350	121.793	203	127.000	114.300	222	101.600	87.478	241	101.600	85.725
203.200	-3.048	-5.080	182	152.400	140.843	204	152.400	139.700	223	127.000	112.878	242	127.000	111.125

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.

Ⓛ ** INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

P.A. VC Other Cont AS 99	TITLE Ⓛ SCREW,CAP,SOCKET HEAD AND SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A	MILITARY STANDARD MS16997
PROCUREMENT SPECIFICATION FF-S-86	SUPERSEDES BCVII, 1.1, 1.2; BCXII, 2.1, 2.2; BCXIII, 3 and 3.4, MSJ5455, MSJ5457 and MSJ5459 in part.	SHEET 7 OF 7

APPROVED 5 APR 1962
REVISED Ⓛ
FOR CHANGES SEE SHEETS 1 THRU 7

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.

(D) ** INACTIVE FOR NEW DESIGN AFTER 31 DECEMBER 1976.

P.A. VC		TITLE		MILITARY STANDARD	
Other Code AS 99		(D) SCREW,CAP,SOCKET HEAD AND SCREW,CAP,SOCKET HEAD,SELF-LOCKING: ALLOY STEEL,CADMIUM PLATED,UNC-3A		MS16997	
DOCUMENT SPECIFICATION FF-S-86		SUPERSEDES BCW11, 1.1, 1.2; BCW12, 2.1, 2.2; BCW13.1 and 3.4, MSJ5455, MSJ5457 and MSJ5459 in part.		SHEET 7 OF 7	

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