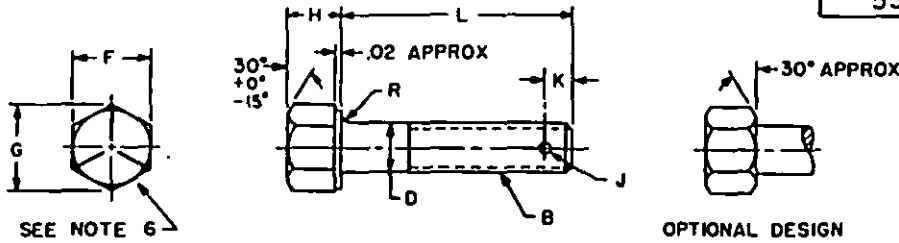


FED. SUP CLASS
5305



SEE NOTE 6

OPTIONAL DESIGN

TABLE I

NOMINAL SIZE		1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
B THREAD	UNC-2A	20	18	16	14	13	11	10	9	8
D BODY DIAMETER	MAX MIN	.2500 .2450	.3125 .3065	.3750 .3690	.4375 .4305	.5000 .4930	.6250 .6170	.7500 .7410	.8750 .8660	1.0000 .9900
F WIDTH ACROSS FLATS	MAX MIN	.4375 .4280	.5000 .4890	.5625 .5510	.6250 .6120	.7500 .7360	.9375 .9220	1.1250 1.1000	1.3125 1.2850	1.5000 1.4690
G WIDTH ACROSS CORNERS	MAX MIN	.505 .488	.577 .557	.650 .628	.722 .698	.866 .840	1.083 1.051	1.299 1.254	1.516 1.465	1.732 1.675
H HEAD HEIGHT	MAX MIN	.163 .150	.211 .195	.243 .226	.291 .272	.321 .302	.403 .378	.483 .455	.563 .531	.627 .591
J HOLE DIAMETER	+0.006 -0.002	.076	.076	.107	.107	.107	.140	.140	.140	.140
K ±.010		.109	.125	.156	.156	.172	.188	.219	.250	.250
R RADIUS	MAX MIN	.025 .015	.025 .015	.025 .015	.025 .015	.025 .015	.045 .020	.045 .020	.065 .040	.095 .060
MIN TENSILE STRENGTH - LBS		3,600	6,300	9,300	12,600	17,000	27,100	40,100	55,400	72,700

L LENGTH	TOLERANCE		DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
	SIZE 3/4 AND UNDER	SIZE 7/8 AND OVER									
.375	+0 -.031	---	301	327							
.438			302	328							
.500			303	329	355						
.562			304	330	356						
.625			305	331	357						
.750			306	332	358	384	410	433			
.875			307	333	359	385	411	434			
1.000			308	334	360	386	412	435	457		
1.250	+0 -.062	+0 -.125	309	335	361	387	413	436	458	482	506
1.500			310	336	362	388	414	437	459	483	507
1.750			311	337	363	389	415	438	460	484	508
2.000			312	338	364	390	416	439	461	485	509
2.250	+0 -.094	+0 -.188	313	339	365	391	417	440	462	486	510
2.500			314	340	366	392	418	441	463	487	511
2.750			315	341	367	393	419	442	464	488	512
3.000			316	342	368	394	420	443	465	489	513
3.250			317	343	369	395	421	444	466	490	514
3.500			318	344	370	396	422	445	467	491	515
3.750			319	345	371	397	423	446	468	492	516
4.000			320	346	372	398	424	447	469	493	517
4.250			321	347	373	399	425	448	470	494	518
4.500			322	348	374	400	426	449	471	495	519
4.750			323	349	375	401	427	450	472	496	520
5.000			324	350	376	402	428	451	473	497	521
5.500					429	452	474	498	522		
6.000					430	453	475	499	523		

NOTE: For notes and interchangeability Table see sheet 2.

(D) For changes see sheet 2.

This military standard is mandatory 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.

REVIEWER: AV, IS, AT, NSA, OS, S5
USER: ME, GL, MC, MI, TD, AS

APPROVED 16 JUL 58 REVISED (A) 16 FEB 65 (B) 16 JUL 65 (C) 14 OCT 68 (D) 1 MAY 1999

P.A. VC Other Cont 5H 82	TITLE SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), SHANK DRILLED FOR COTTER-PIN, STEEL, GRADE 5, CADMIUM PLATED, UNC-2A	MILITARY STANDARD MS51105
PROCUREMENT SPECIFICATION FF-3-83	SUPERSEDES: MS51103, BSA15, BSA15.1, BUB120, BUB120.1 and BUB121	SHEET 1 OF 2

NOTES:

1. **MATERIAL:** Medium carbon steel, grade 5, in accordance with procurement specification. Minimum ultimate tensile strength: 120,000 psi.
2. **PROTECTIVE COATING:** Cadmium plating in accordance with procurement specification.
3. **THREADS:** The threads shall be in accordance with Screw-Thread Standards for Federal Services, Handbook H2B.
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.
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.
7. **PART NUMBER:** The MS part number consists of the MS number, plus the dash number. Example: MS51105-301.
8. Referenced documents shall be of the issue in effect on date of invitations for bid.
9. For design feature purposes, this standard takes precedence over procurement documents referenced herein.

INTERCHANGEABILITY TABLE

The following table shows the interchangeability relationship between the former dash numbers of MS51103, MS51105, and the present dash numbers. Existing stock of screws may be used until depleted. Use only the screws shown as present dash numbers in new design.

TABLE II

DASH NUMBERS		DASH NUMBERS		DASH NUMBERS		DASH NUMBERS	
FORMER	PRESENT	FORMER	PRESENT	FORMER	PRESENT	FORMER	PRESENT
MS51103	MS51105	MS51103	MS51105	MS51103	MS51105	MS51103	MS51105
1	1	301	50	50	350	115	415
2	2	302	55	55	355	116	416
3	3	303	56	56	356	117	417
4	4	304	57	57	357	118	418
5	5	305	58	58	358	119	419
6	6	306	59	59	359	120	420
7	7	307	60	60	360	121	421
8	8	308	61	61	361	122	422
9	9	309	62	62	362	123	423
10	10	310	63	63	363	124	424
11	11	311	64	64	364	125	425
12	12	312	65	65	365	126	426
13	13	313	66	66	366	127	427
14	14	314	67	67	367	128	428
15	15	315	68	68	368	129	429
16	16	316	69	69	369	130	430
17	17	317	70	70	370	131	431
18	18	318	71	71	371	132	432
19	19	319	72	72	372	133	433
20	20	320	73	73	373	134	434
21	21	321	74	74	374	135	435
22	22	322	75	75	375	136	436
23	23	323	76	76	376	137	437
24	24	324	77	77	377	138	438
25	25	325	78	78	378	139	439
26	26	326	79	79	379	140	440
27	27	327	80	80	380	141	441
28	28	328	81	81	381	142	442
29	29	329	82	82	382	143	443
30	30	330	83	83	383	144	444
31	31	331	84	84	384	145	445
32	32	332	85	85	385	146	446
33	33	333	86	86	386	147	447
34	34	334	87	87	387	148	448
35	35	335	88	88	388	149	449
36	36	336	89	89	389	150	450
37	37	337	90	90	390	151	451
38	38	338	91	91	391	152	452
39	39	339	92	92	392	153	453
40	40	340	93	93	393	154	454
41	41	341	94	94	394	155	455
42	42	342	95	95	395	156	456
43	43	343	96	96	396	157	457
44	44	344	97	97	397	158	458
45	45	345	98	98	398	159	459
46	46	346	99	99	399	160	460
47	47	347	100	100	400	161	461
48	48	348	101	101	401	162	462
49	49	349	102	102	402	163	463
			103	103	403	164	464
			104	104	404	165	465
			105	105	405	166	466

REVISIONS: 15, AT, NSA, OS, BS
USER: ME, CL, MC, MI, TD, AS

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APPROVED 16 JUL 59 REVISED 16 JUL 65 14 OCT 68 FOR CHANGES SEE SHEET 2.

P.A. VC	TITLE	MILITARY STANDARD
Other Cont 82	SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT); SHANK DRILLED FOR COTTER PIN, STEEL, GRADE 5, CADMIUM PLATED, UNC-2A	MS51105
PROCUREMENT SPECIFICATION FF-S-85	SUPERSEDES: MS51103, BCA15, BCA15.1, SUB120, SUB120.1 and SUB121	SHEET 2 OF