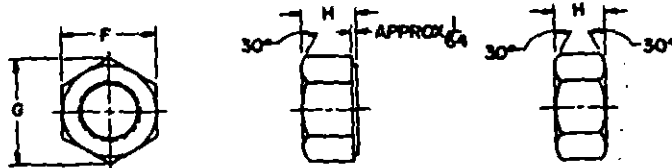


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ACCEPTABLE DESIGNS

TABLE I

REVIEWER: AT, AV, GL, IS, MI, MU, NSA  
USER: EL, MC, NE, YD, OS, SH

NOMINAL SIZE OR BASIC MAJOR DIAMETER OF THREAD		1/4 .2500	5/16 .3125	3/8 .3750	7/16 .4375	1/2 .5000	9/16 .5625	5/8 .6250
THREADS PER INCH		28	24	24	20	20	18	18
F WIDTH ACROSS FLATS	NOM.	7/16	1/2	9/16	11/16	3/4	7/8	13/16
	MAX. MIN.	.4375 .4280	.5000 .4890	.5625 .5510	.6875 .6750	.7500 .7360	.8750 .8610	.9375 .9220
C WIDTH ACROSS CORNERS	MAX.	.503	.577	.650	.794	.866	1.010	1.083
	MIN.	.488	.537	.628	.768	.840	.982	1.051
H THICKNESS	NOM.	7/32	17/64	21/64	3/8	7/16	31/64	33/64
	MAX. MIN.	.226 .212	.273 .258	.337 .320	.393 .365	.448 .427	.496 .473	.559 .535
MATERIAL	DASH NO.							
STEEL CARBON GRADE	A	1	4	7	10	13	16	19
	B	2	5	8	11	14	17	20
	C	3	6	9	12	15	18	21

This military standard has been approved by the Department of Defense and 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.

NOMINAL SIZE OR BASIC MAJOR DIAMETER OF THREAD		3/4 .7500	7/8 .8750	1 1.0000	1-1/8 1.1250	1-1/4 1.2500	1-3/8 1.3750	1-1/2 1.5000
THREADS PER INCH		16	14	12	12	12	12	12
F WIDTH ACROSS FLATS	NOM.	1-1/8	1-5/16	1-1/2	1-11/16	1-7/8	2-1/16	2-1/4
	MAX. MIN.	1.2250 1.0890	1.3125 1.2690	1.5000 1.4500	1.6875 1.6310	1.8750 1.8120	2.0625 1.9940	2.2500 2.1750
C WIDTH ACROSS CORNERS	MAX.	1.299	1.516	1.712	1.949	2.165	2.382	2.598
	MIN.	1.240	1.447	1.653	1.859	2.066	2.273	2.480
H THICKNESS	NOM.	41/64	3/4	55/64	31/32	1-1/16	1-11/64	1-9/32
	MAX. MIN.	.663 .617	.776 .724	.875 .811	.999 .939	1.094 1.030	1.206 1.118	1.317 1.245
MATERIAL	DASH NO.							
STEEL CARBON GRADE	A	22	25	28	31	34	37	40
	B	23	26	29	32	35	38	41
	C	24	27	30	33	36	39	42

NOTE: For material, protective coating, and other pertinent data, see sheet 2.  
\* CANCELLED, See Table 11.

For changes see sheet 1.

P.A. VC Other Cont 82	TITLE NUT, PLAIN, HEXAGON-CARBON STEEL, CADMIUM PLATED, UNF-2B (IN./MM)	MILITARY STANDARD MS 51968
PROCUREMENT SPECIFICATION FF-N-836	SUPERSEDES MS35690 in part	SHEET 1 OF 1

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PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

APPROVED 20 JAN 1964 REVISED (A) 10 APR 64 (B) 8 SEPT 1966 (C) 30 MAR 1970

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**MATERIAL:** Steel, Carbon, Grades X, B or C, in accordance with procurement specification. Finished nuts shall meet the required proof loads as specified in the procurement specification.

**PROTECTIVE COATING:** Cadmium plate in accordance with procurement specification.

**THREADS:** Threads shall be in accordance with Screw-Thread Standards for Federal Services, Handbook N-28.

**DIMENSIONS:** All dimensions are in inches unless otherwise specified.

**PART NUMBER:** The MS part number consists of the MS number, plus dash number. Example: MS5196A-2.

**NOTES:** (1) Reference documents shall be of the issue in effect on date of invitations for bid.  
(2) For design feature purposes, this standard takes precedence over procurement documents referenced herein.

REVIEWER: AT, AV, CL, IS, MI, MU, NSA  
USIA: EL, MC, ME, YD, CS, SH

**INTERCHANGEABILITY TABLE**

The nuts covered by the following dash numbers given in MS15690 are cancelled after 30 September 1963, as given on that document. The nuts covered by the following cancelled dash numbers given in MS3196A are cancelled after 8 SEP 1966. The cancelled nuts cannot always replace the new nuts and should be used until existing stocks are depleted. Use only the new nuts for design and replacement. Replacement shall be in accordance with Table II.

TABLE II

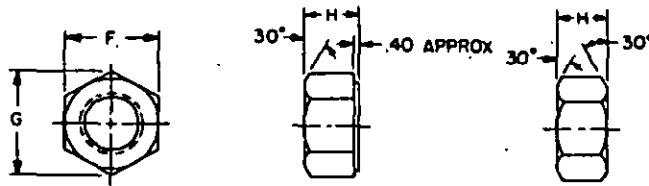
PART NUMBER			PART NUMBER			PART NUMBER		
CANCELLED MS35690	CANCELLED MS3196A	NEW MS3196A	CANCELLED MS35690	CANCELLED MS3196A	NEW MS3196A	CANCELLED MS35690	CANCELLED MS3196A	NEW MS3196A
DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
422	1	2	912	16	17	1822	31	32
423		3	923		17	1823		32
425		3	925		17	1825		32
426		2	926		17	1826		32
428		3	928		18	1828		33
429		3	929		18	1829		33
522	4	5	1022	19	20	2022	34	35
523		5	1023		20	2023		35
525		5	1025		20	2025		35
526		3	1026		20	2026		35
528		6	1028		21	2028		36
529		6	1029		21	2029		36
622	7	8	1222	22	23	2222	37	38
623		8	1223		23	2223		38
625		7	1225		23	2225		38
626		8	1226		21	2226		38
628		9	1228		21	2228		38
629		9	1229		24	2229		38
722	10	11	1422	25	25	2422	40	41
723		11	1423		26	2423		41
725		11	1425		26	2425		41
726		11	1426		26	2426		41
728		12	1428		27	2428		41
729		12	1429		27	2429		42
822	13	14	1622	28	29			
823		14	1623		29			
825		14	1625		29			
826		14	1626		29			
828		15	1628		30			
829		15	1629		30			

This military standard has been approved by the Department of Defense and is mandatory for use by all departments and agencies of the Department of Defense. Selection for all new engineering and design applications and for repairs use shall be made from this document.

APPROVED 20 JAN 1964 REVISED A 10 APR 1964 B 8 SEP 1966 C FOR CHANGES SEE SHEET 3.

P.A. MC	TITLE	MILITARY STANDARD
Other Code 81	NUT, PLAIN, HEXAGON — CARBON STEEL, CADMIUM PLATED, UNF-28 (IN / MM)	MS 51968
PROCUREMENT SPECIFICATION FF-N-436	SUPERSEDES MS35690 in part	SHEET 2 OF

FED. SUP. CLASS  
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ACCEPTABLE DESIGNS

TABLE III  
METRIC TRANSLATION OF TABLE I

NOMINAL SIZE	INCH MM	1/4 6.350	5/16 7.938	3/8 9.525	7/16 11.112	1/2 12.700	9/16 14.288	5/8 15.875
THREADS PER 25.4 MM		28	24	24	20	20	18	18
F WIDTH ACROSS FLATS	NOM	11.112	12.700	14.288	17.462	19.050	22.225	23.812
	MAX	11.112	12.700	14.288	17.462	19.050	22.225	23.812
	MIN	10.871	12.421	13.995	17.145	18.694	21.869	23.419
G WIDTH ACROSS CORNERS	MAX	12.827	14.656	16.510	20.168	21.996	25.654	27.508
	MIN	12.395	14.148	15.951	19.507	21.336	24.941	26.695
H THICKNESS	NOM	5.556	6.747	8.334	9.525	11.112	12.700	14.288
	MAX	5.740	6.934	8.560	9.779	11.379	12.994	14.799
	MIN	5.385	6.553	8.128	9.271	10.846	12.014	13.489
MATERIAL	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
GRADE B	2	5	8	11	14	17	20	23
GRADE C	3	6	9	12	15	18	21	24
NOMINAL SIZE	INCH MM	1/4 19.050	7/8 22.225	1 25.400	1-1/8 28.575	1-1/4 31.750	1-1/2 34.925	1-3/4 38.100
THREADS PER 25.4 MM		16	14	12	12	12	12	12
F WIDTH ACROSS FLATS	NOM	28.575	33.338	38.100	42.862	47.625	52.388	57.150
	MAX	28.575	33.338	38.100	42.862	47.625	52.388	57.150
	MIN	27.635	32.293	36.830	41.427	46.025	50.646	55.245
G WIDTH ACROSS CORNERS	MAX	32.995	38.506	43.991	49.505	54.991	60.501	65.969
	MIN	31.496	36.754	41.986	47.219	52.476	57.714	62.982
H THICKNESS	NOM	16.272	19.050	21.828	24.606	26.984	29.767	32.518
	MAX	16.891	19.710	22.530	25.375	27.784	30.612	33.452
	MIN	15.672	18.190	21.107	23.841	26.162	28.905	31.621
MATERIAL	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.	DASH NO.
GRADE B	21	26	29	32	35	38	41	44
GRADE C	24	27	30	33	36	39	42	45

NOTE:

All dimensions are in millimeters (MM), unless otherwise specified.

Ⓢ SHEET 3 ADDED

REVIEWER: AT, AV, GL, IS, MI, MU, NSA  
1 SEN: EL, MC, ME, YD, ZS, SM

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.

APPROVED 20 JAN 1964 REVISED Ⓢ FOR CHANGES SEE SHEET 3.

P.A. WC Other Code H2	TITLE NUT, PLAIN, HEXAGON - CARBON STEEL, CADMIUM PLATED, UNF - 2B (IN./MM)	MILITARY STANDARD MS51968
PROCUREMENT SPECIFICATION FF-N-416	SUPERSEDES MS15690 in part	SHEET 1 OF

DD FORM 672-1 (Continued)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE