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ARMY - AT, MI

REVIEWER SYMBOLS:
ARMY - ME, AR
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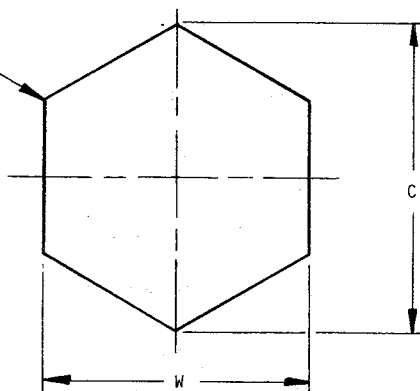
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CORNERS' CONTOUR
SHALL BE WITHIN THE
LIMITS DEFINED BY
THE DIA C MIN, W MIN
AND W MAX



FED. SUP CLASS
53GP

THIS STANDARD ESTABLISHES DIMENSIONS
OF STANDARD HEXAGONS FOR FASTENERS

NOMINAL ACROSS FLATS	BASIC SIZE ACROSS FLATS	LIMITS OF SIZE ACROSS FLATS		C ACROSS CORNERS
		MIN (a)	MAX (b)	MINIMUM (c) (d)
5/32	.1562	.150	.1562	.171
* 3/16	.1875	.181	.1880	.207
7/32	.2188	.212	.2190	.242
(A) 1/4	.2500	.243	.2500	.277
9/32	.2812	.274	.2812	.313
* 5/16	.3125	.305	.3140	.348
* (A) 11/32	.3438	.336	.3450	.383
(A) 3/8	.3750	.367	.3760	.410
* 7/16	.4375	.429	.4380	.480
* 1/2	.5000	.492	.5020	.552
* 9/16	.5625	.554	.5640	.623
5/8	.6250	.616	.6270	.694
* 11/16	.6875	.678	.6900	.764
* 3/4	.7500	.741	.7530	.836
13/16	.8125	.803	.8160	.907
* 7/8	.8750	.865	.8780	.978
* 15/16	.9375	.928	.9420	1.050
1	1.0000	.990	1.0040	1.120
(A) 1-1/16	1.0625	1.053	1.0650	1.192
* (A) 1-3/16	1.1875	1.177	1.1910	1.346
1-1/8	1.1250	1.115	1.1290	1.263
1-3/16	1.1875	1.177	1.1910	1.334
(A) 1-1/4	1.2500	1.239	1.2540	1.405
1-5/16	1.3125	1.302	1.3170	1.476
(A) 1-7/16	1.4375	1.427	1.4430	1.619
* 1-1/2	1.5000	1.489	1.5050	1.690
* 1-5/8	1.6250	1.614	1.6310	1.832
* (A) 1-11/16	1.6875	1.676	1.6930	1.903
* 1-13/16	1.8125	1.801	1.8190	2.046
* (A) 1-7/8	1.8750	1.863	1.8820	2.117
2	2.0000	1.988	2.0080	2.259
* (A) 2-1/16	2.0625	2.050	2.0710	2.330
* (A) 2-1/8	2.125	2.113	(f) 2.1270	2.402
* (A) 2-1/4	2.250	2.238	2.2590	2.545
2-3/16	2.1875	2.175	2.1970	2.473
2-3/8	2.3750	2.360	2.3850	2.684

THIS IS A DESIGN STANDARD AND NOT TO BE USED AS A PART NO.

(A) REVISED AND REDRAWN

P.A. NAVY - AS Other Cust USAF - 11 ARMY - AV	INTER- NATIONAL INTEREST *	TITLE WRENCHING ELEMENT, EXTERNAL HEXAGON, FOR THREADED FASTENERS	MILITARY STANDARD MS21132
PROCUREMENT SPECIFICATION NONE	SUPERSEDES:	SHEET 1 OF 2	

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- (A) (a) MINIMUM DIMENSION ACROSS FLATS = $W - 0.01 \sqrt[4]{W}$ WHERE "W" IS THE BASIC SIZE EXPRESSED AS THE COMPLETE DECIMAL EQUIVALENT OF THE FRACTIONAL SIZE.
- (b) THE ABOVE DIMENSIONS ARE COMPATIBLE WITH FED-STD-346 GAGES, WRENCH OPENINGS.
- (c) FOR SIZES SMALLER THAN 3/8 (.375), DIMENSIONS ACROSS CORNERS C MINIMUM = (1.141) X (W MINIMUM).
- (d) FOR SIZES 3/8 (.375) AND LARGER, DIMENSIONS ACROSS CORNERS C MINIMUM = (1.141) X (W MINIMUM) - (.009).
- (e) THE HEXAGON SIZES LISTED HERE ARE BASED ON THE FOLLOWING CRITERIA:
1. THE SIZE REQUIRED TO ENVELOP THE OUTSIDE DIAMETER OF THE MINIMUM BEARING AREA OF THE BOLT HEAD AND NUT FACE REQUIRED BY THE BEARING YIELD STRENGTH OF THE BOLTED MATERIAL.
 2. BOLTED MATERIAL BEARING YIELD STRENGTH OF 83 KSI.
 3. TENSION BOLT MATERIAL TENSILE STRENGTH OF 125 KSI.
 4. SHEAR BOLT MATERIAL ULTIMATE TENSILE STRENGTH OF 160 KSI.
 5. SIZES FOR WHICH WRENCHES ARE AVAILABLE.
 6. SIZES ARE NOT BASED ON THE DESIGN REQUIREMENTS OF FLANGED OR RING BASE BOLT HEADS OR NUTS.
- (f) MAXIMUM DIMENSION ACROSS FLATS = $W + 0.002$.

* CERTAIN PROVISIONS (LIMITS FOR ACROSS FLATS DIMENSIONS (W)) OF THIS STANDARD ARE THE SUBJECT OF INTERNATIONAL STANDARDIZATION AGREEMENT ASCC 17/2 AIR STD. WHEN REVISION, OR CANCELLATION OF THIS STANDARD IS PROPOSED WHICH WILL AFFECT OR VIOLATE THE INTERNATIONAL AGREEMENT CONCERNED, THE PREPARING ACTIVITY WILL TAKE APPROPRIATE RECONCILIATION ACTION THROUGH INTERNATIONAL STANDARDIZATION CHANNELS, INCLUDING DEPARTMENTAL STANDARDIZATION OFFICES, IF REQUIRED.

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PROCUREMENT SPECIFICATION NONE	SUPERSEDES:		SHEET 2 OF 2