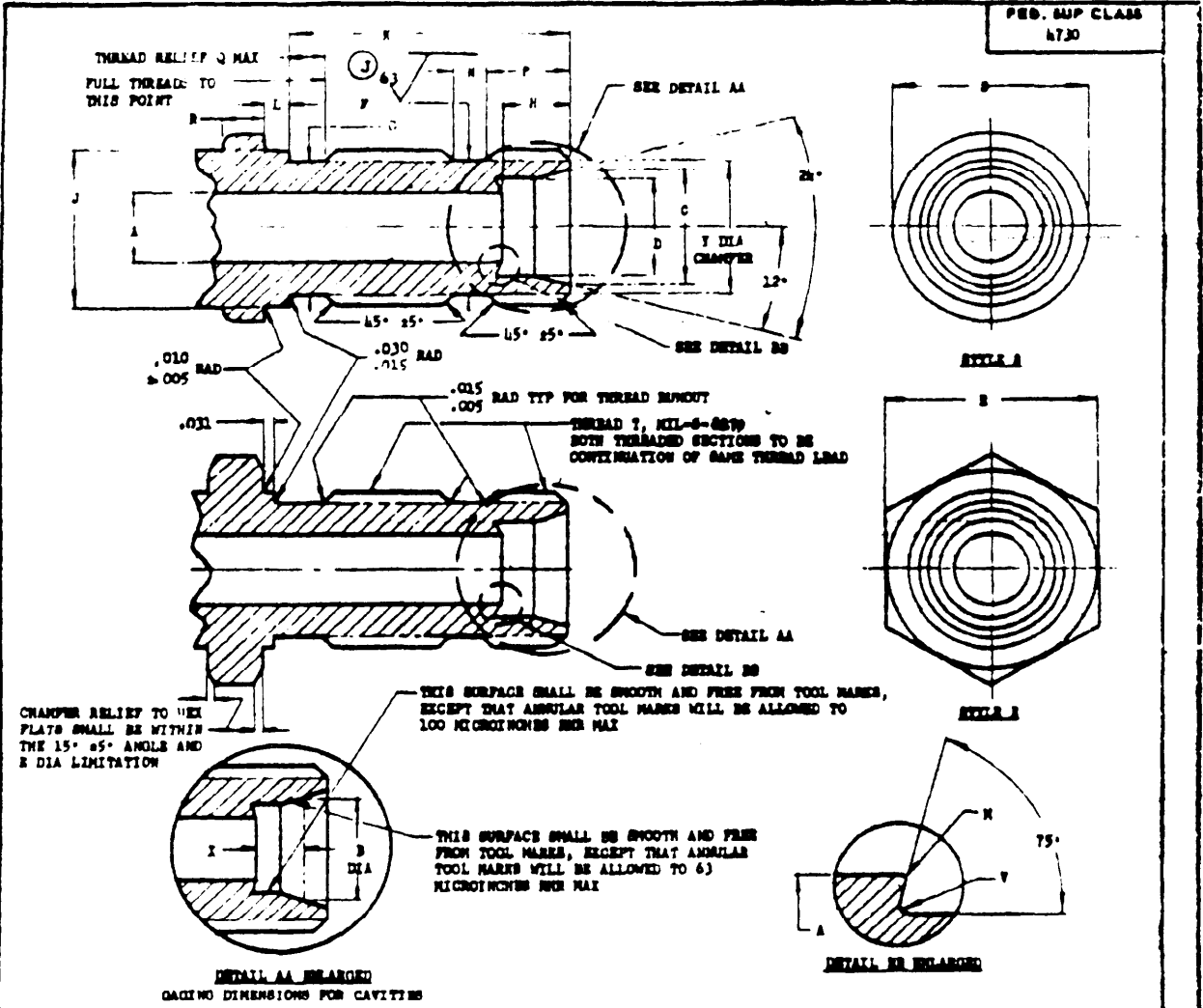


USE SYMBOLS
NAVY - 05
ARMY - CL, EL, ME, AT
AIR FORCE - 11
NAVY - 11
ARMY - AV, BC, XI
NSA - CS

Manufacture information is not... of the date of this document. For future coordination of changes in this document, direct communication should be based on the information in this document 040888.

This specification is approved for use by all Departments... of the Department of Defense... for all... and major applications and for... the... from the... Department of Defense.



1. CONCENTRICITY: D, C, AND Y (PITCH DIA) SHALL BE CONCENTRIC TO EACH OTHER WITHIN .008 TOTAL INDICATOR READING.
2. F AND T (PITCH DIA) SHALL BE CONCENTRIC TO EACH OTHER WITHIN .005 TOTAL INDICATOR READING.
22. THREAD AND FACE OF HEX SHALL BE SQUARE WITHIN W WHEN MEASURED AT DIAMETER E.
3. REMOVE ALL BURRS, SLIVERS AND SHARP EDGES.
4. SURFACE TEXTURE IN ACCORDANCE WITH ANSI B&S 1 - 1962.
5. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS ±.016, ANGLES ±1/2°.
6. ON STYLE B FITTING END, THE L DIMENSION PROVIDED FOR A WASHER TO FORM BACKING FACE AGAINST BULKHEAD, AND A .031 INCH LAND FOR POSITIONING IN BULKHEAD. ON STYLE E FITTING END NO WASHER IS REQUIRED.
7. EXAMPLE OF DESIGN IDENTIFICATION NUMBER: M511515M
 - SIZE OF FITTING END IN 16 THS
 - E - STYLE E
 - 5 - STYLE 5
 - BASIC DESIGN NUMBER

CERTAIN PROVISIONS (SCREEN THREADS, HEXAGON SIZE AND UNDERCUT DIMENSIONS) OF THIS STANDARD ARE THE SUBJECT OF INTERNATIONAL STANDARDIZATION AGREEMENT ASQC AIR STD 17/15. WHEN REVISION OR CANCELLATION OF THIS STANDARD IS INDICATED 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.

FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE IN EFFECT IN DATE OF INVITATION FOR BID. THIS IS A DESIGN STANDARD. NOT TO BE USED AS A PART NUMBER. FOR CHANGES SEE SERIES 1 00

F. A. Navy - 05 Other Code USAF - 02 AFM - AV	INTERNATIONAL INTEREST	TITLE	MILITARY STANDARD
		FITTING END, STANDARD DIMENSIONS FOR BULKHEAD FLARELESS TUBE CONNECTIONS	MS33515
PROCUREMENT SPECIFICATION NONE	EXPERIMENTAL		NAVY 1 00 1

APPROVED 1 Oct 53 REVISED 1 23 JAN 73

FED. SUP. CLAS. 4730

FORM SYMBOLS:
NAVY - 05
ARMY - 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

ARMY - 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

TABLE I - DIMENSIONS

SIZE NO.	TUNE OD	THREAD P MIL-S-8879	A ±.003	B ±.001 GAGE	C ±.001	D ±.005 -.000	E	F (a)		H ±.001	J		
								±.000 -.003	±.000 -.005		MAX	MIN	
1	1/8	.3125-14 UNF-2A	.071	.1630	.187	.135	.561	±.003 -.004	.290	.215	.188	.3125	.3053
3	3/16	.3750-14 UNF-2A	.185	.2360	.267	.196	.685		.312	.207	.234	.3750	.3678
4	1/4	.4375-20 UNF-2A	.187	.2730	.312	.261	.688		.364	.252	.231	.4375	.4294
5	5/16	.5000-20 UNF-2A	.234	.3540	.387	.324	.750		.486	.321	.250	.5000	.4919
6	3/8	.5625-18 UNF-2A	.277	.4140	.441	.386	.813		.587	.376	.280	.5625	.5538
8	1/2	.7500-16 UNF-2A	.322	.5000	.531	.474	1.000		.660	.451	.305	.7500	.7408
10	5/8	.8750-16 UNF-2A	.500	.6880	.721	.661	1.125		.772	.570	.390	.8750	.8657
12	3/4	1.0000-12 UNF-2A	.696	.8700	.907	.788	1.375		.885	.638	.350	1.0000	.9902
16	1	1.3125-12 UNF-2A	.871	1.0870	1.108	1.016	1.625		1.195	1.128	.415	1.3125	1.3023
20	1-1/8	1.6250-12 UNF-2A	1.072	1.3160	1.335	1.270	1.875		1.507	1.501	.415	1.6250	1.6156
24	1-1/2	1.8750-12 UNF-2A	1.244	1.5890	1.608	1.530	2.125		1.726	1.750	.485	1.8750	1.8656
32	2	2.5000-12 UNF-2A	1.612	2.0660	2.100	2.022	2.750		2.381	2.372	.485	2.5000	2.4904

(a) GROOVE FORMED SHALL BE SMOOTH AND FREE OF ALL THREAD MARKS. TOLERANCE ON DIMENSION F MAY BE ±.002, -.003 PROVIDED NO THREAD MARKS ARE PRESENT.

TABLE I - DIMENSIONS (CONTINUED)

SIZE NO.	TUNE OD	K	L	M MAX RAD	N ±.010 -.000	P ±.005	Q MAX	R ±.03	S ±.031 DTA	T RAD		V MAX	W ±.005	X ±.010	
										MAX	MIN				
2	1/8	.828	.094	.010	.005	.125	.270	.078	.11	.36	.010	.005	.005	.128	.850
3	3/16	.875				.131	.340	.078	.11	.500	.158	.310			
4	1/4	.938				.140	.355	.080	.12	.588	.174	.365			
6	3/8	.984				.156	.365	.098	.14	.688	.182	.440			
8	1/2	1.125				.187	.445	.109	.16	.875	.210	.460			
10	5/8	1.266				.212	.495	.122	.17	1.000	.255	.775			
12	3/4	1.375				.125	.015	.008	.140	.19	1.127	.253		.945	
16	1										1.434	.282		1.195	
20	1-1/8										1.750	.325		1.505	
24	1-1/2										2.000	.390		1.755	
32	2										2.625	.495		2.380	

Reference is made to the date of this document.
For future distributions of changes to this document, draft committees should be kept to the information in the current document.

This military standard is approved for use by all Departments
of the Department of Defense. Variation for all use
requiring that change applications and for matters not dealt
with herein.

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NAVY - 05 ARMY - 01	INTERNATIONAL SYMBOLS	TITLE FITTED END, STANDARD DIMENSIONS FOR BOLTED FLARELESS TUBE CONNECTIONS	MILITARY STANDARD MS33515
PROCURING SPECIFICATION 2088	SUPERSEDES	DATE	1 OF 2

REVISED 2 14 73 BY-PAGE 1 FOR CHANGE SHEETS 1 AND 2.