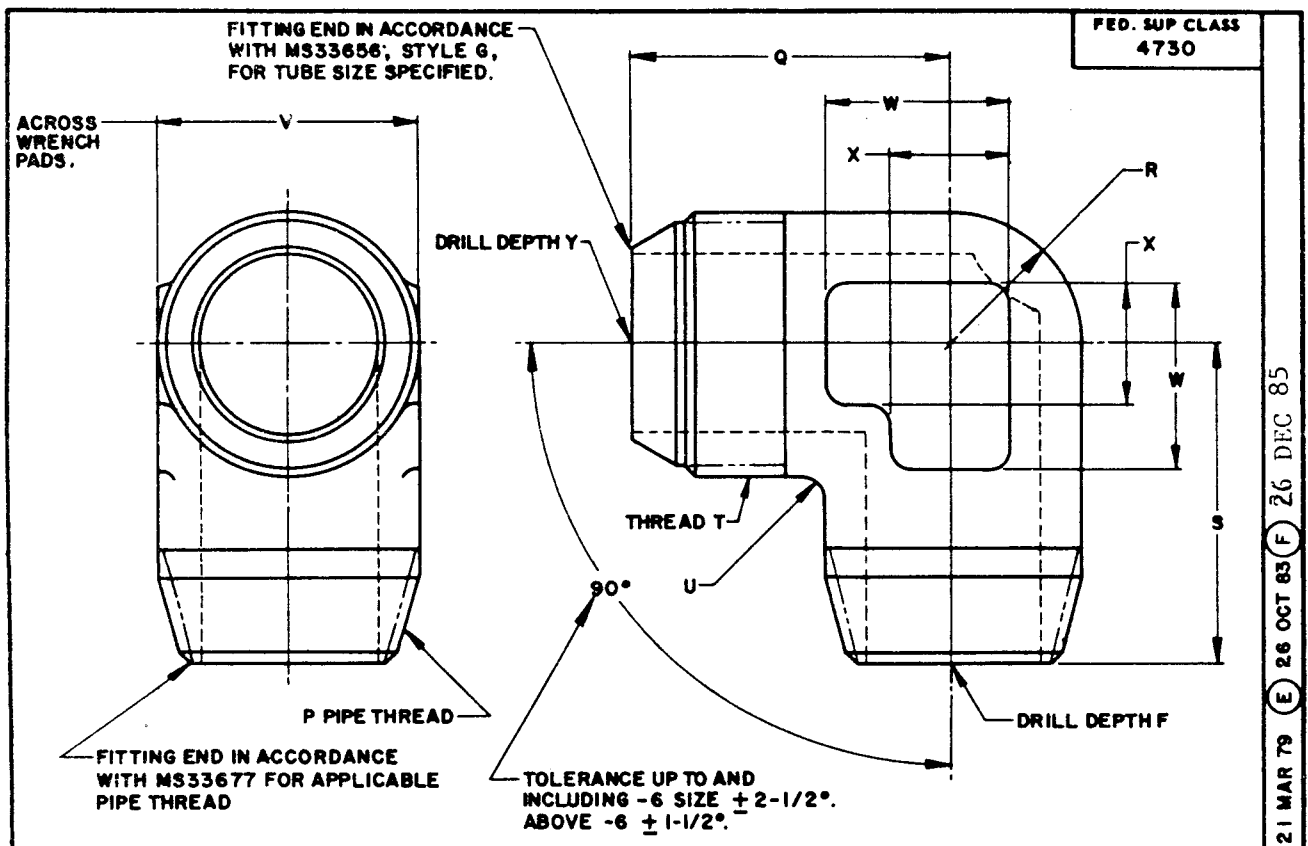


User activities: ~~ARMY - ME~~
~~NAVY - AS~~

Review activities: ~~ARMY - ME~~
~~NAVY - AS~~

DLA-CS

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- (a) AT OPTION OF MANUFACTURER, BASIC DIMENSIONS Q AND S MAY BE .016 LESS THAN DIMENSIONS SPECIFIED IN TABLE, PROVIDED DIMENSIONS Y AND F, RESPECTIVELY, ARE ALSO MADE .016 LESS THAN DIMENSIONS SPECIFIED. DIMENSIONS, AS LISTED, SHALL APPLY WHEN RETOOLING IS REQUIRED.
- MATERIAL: STEEL; ALUMINUM ALLOY; COPPER ALLOY; CORROSION RESISTANT STEEL (CRES); BARS, SHAPES, OR FORGINGS (SEE PROCUREMENT SPECIFICATION).
- FINISH: SEE PROCUREMENT SPECIFICATION.
- BREAK ALL SHARP EDGES AND REMOVE ALL HANGING BURRS AND SLIVERS.
- DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCE: DECIMALS +.016.
- NO CODE LETTER IN PART NUMBER FOR CARBON STEEL. ADD B AFTER DASH NUMBER FOR COPPER ALLOY.
- ADD D AFTER DASH NO. FOR ALUMINUM ALLOY. (EXCEPT 7075-T73)
- ADD J AFTER DASH NO. FOR CRES, CLASS 304.
- ADD K AFTER DASH NO. FOR CRES, CLASS 316.
- ADD S AFTER DASH NO. FOR CRES, CLASS 347.
- ADD W AFTER DASH NO. FOR 7075-T73 ALUMINUM ALLOY.
- EXAMPLE OF PART NUMBERS: MS20822-4 - ELBOW, 1/4 TUBING AND 1/8 PIPE THREAD, CARBON STEEL.
MS20822-4B - ELBOW, 1/4 TUBING AND 1/8 PIPE THREAD, COPPER ALLOY.
MS20822-4D - ELBOW, 1/4 TUBING AND 1/8 PIPE THREAD, ALUMINUM ALLOY. (EXCEPT 7075-T73).
MS20822-8S - ELBOW, 1/2 TUBING AND 3/8 PIPE THREAD, CRES, CLASS 347.
MS20822-8J - ELBOW, 1/2 TUBING AND 3/8 PIPE THREAD, CRES, CLASS 304.
MS20822-8K - ELBOW, 1/2 TUBING AND 3/8 PIPE THREAD, CRES, CLASS 316.
MS20822-8W - ELBOW, 1/2 TUBING AND 3/8 PIPE THREAD.

(F) CERTAIN PROVISIONS OF THE DESIGN CHARACTERISTICS OF THIS STANDARD (SCREW THREADS, HEXAGON SIZES AND UNDERCUT DIMENSIONS) ARE THE SUBJECT OF INTERNATIONAL STANDARDIZATION AGREEMENT ABC AIR STD 17/15. WHEN REVISION OR CANCELLATION OF THIS STANDARD IS PROPOSED, THE DEPARTMENTAL CUSTODIANS WILL INFORM THEIR RESPECTIVE DEPARTMENTAL STANDARDIZATION OFFICES SO THAT APPROPRIATE ACTION WILL BE TAKEN RESPECTING THE INTERNATIONAL AGREEMENT CONCERNED.

FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.

INACTIVE FOR DESIGN AFTER 9 JAN 1964, EXCEPT FOR USE ON OXYGEN SYSTEMS AND GROUND SERVICE EQUIPMENT. SEE MIL-STD-962 FOR STATUS CRITERIA.

CANCELLED

P.A. AIR FORCE - 82 Other Case	TITLE ELBOW, FLARED TUBE AND PIPE THREADS, 90°	MILITARY STANDARD MS 20822
NAVY - AS AIR FORCE - 99	SUPERSEDES: AN622	SHEET 1 OF 2
PROCUREMENT SPECIFICATION MIL - F - 5509		

APPROVED 30 JAN 57 REVISED A 8 AUG 60 B 9 JAN 64 C 16 JUN 78 D 21 MAR 79 E 26 OCT 83 F 26 DEC 85

FED. SUP CLASS 4730

(F)

DASH NO	THREAD T (REF)	F
- 2	.312 24UNJF-3A	.719
- 3	.375 24UNJF-3A	.781
- 4	.437 20UNJF-3A	1.094
- 4 - 4		.844
- 5	500 20UNJF-3A	1.094
- 5 - 4		.969
- 6 - 2	.562 18UNJF-3A	1.125
- 6		1.250
- 6 - 6		1.500
- 6 - 8		1.281
- 8	.750 16UNJF-3A	1.594
-10	.875 14UNJF-3A	1.688
-10 -12		1.750
-12 - 8	1.062-12UNJ -3A	1.719
-12		2.062
-12 -16		1.844
-16 -12	1.312-12UNJ -3A	2.094
-16		2.469
-20	1.625-12UNJ -3A	2.594
-21		3.094
-25	1.875-12UNJ -3A	3.219
-28	2.250-12UNJ -3A	
-32	2.500-12UNJ -3A	

User activities: ARMY - ME
NAVY - AS
AIR FORCE - 99

Review activities: ARMY - ME
NAVY - AS
AIR FORCE - 99

DLA - CS

DASH NO	TUBING OD	PIPE THREAD END		(a) Q +.047 -.000	R RAD	(a) S +.047 -.000	U RAD	V	W APPROX	X APPROX	Y
		THD P ANPT	MS33677 STYLE								
2	1/8		B	.766	.156	.719		.312	312	.188	.797
3	3/16		B	.828	.188	.719		.375			.849
4	1/4	1/8		A	.891	.219	.781	.062	.438	.375	.250
4 - 4		1/4	1.031		.281	1.062	.094	.562	.500		
5	5/16	1/8	A	.953	.250	.781	.062	.500	.469		1.090
5 - 4		1/4		1.031	.281	1.062					.312
6 - 2	3/8	1/8	A	1.062		1.094		.562	.500		1.125
6		1/4		1.188	.344	1.188		.750	.625		
6 - 6	3/8	3/8	A	1.312	.438	1.438		.875	.750		1.500
6 - 8		1/2		1.250	.375	1.219		.750	.625	.438	
8	1/2	3/8	A	1.453	.438	1.469	.094	.875	.750		1.516
10	5/8	1/2		A	1.625		1.562		1.062	.875	.500
10-12		3/4	1.656		.531	1.594					
12 - 8	3/4	1/2	B	1.781		1.938					1.719
12		3/4		1.812	.656	1.719		1.312	1.000	.625	2.094
12-16	1	1	A	2.062	.812	2.375		.875	.500	.625	1.938
16-12		3/4		2.031		1.969		1.062	.625		
16	1	1	B	2.203	.938	2.500		1.625	1.250	.750	2.188
20		1-1/4		1	A	2.062	.812	2.375	.125	1.625	1.250
21	1-1/4	1	A	2.203		.938	2.500		1.875	1.438	.875
25	1-1/2	1-1/4		A	2.812	1.125	2.781	.188	2.250	1.625	1.062
28	1-3/4	1-1/2	A		3.062	1.250	2.000	.250	2.562	1.875	1.188
32	2	2									

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APPROVED 30 JAN 57 REVISED (C) FOR CHANGES SEE PAGES 1, 2 & 3. 16 JUN 78 (F) FOR CHANGES SEE PAGES 1 & 2.

P.A. AIR FORCE - 82 Other Cast	TITLE ELBOW, PIPE TO TUBE, 90°	MILITARY STANDARD
ARMY - ME, AV NAVY - AS AIR FORCE - 99		MS20822
PROCUREMENT SPECIFICATION MIL-F-5509	SUPERSEDES: AN822	SHEET 2 OF 2