SAE The Engineering Resource For Advancing Mobility

400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE STANDARD

AS 1376

Issued 3-77
Revised 12-85

Rev. B

WRENCH PADS, FLUID FITTING, ALTERNATE MACHINED SHAPES OF, DESIGN STANDARD FOR

(THIS IS A DESIGN STANDARD, NOT TO BE USED AS A PART NUMBER)

SCOPE: THIS AEROSPACE STANDARD PROVIDES ALTERNATE DIMENSIONS AND SHAPES FOR FLUID FITTING BODIES MACHINED FROM BAR STOCK, OVERSIZE FORGINGS OR OTHER APPROVED ALTERNATE MATERIALS.

REFERENCES: FITTINGS PER MIL-F-18280, MIL-F-5509, AS1576 AND OTHER STANDARDS (SEE PAGE 8).

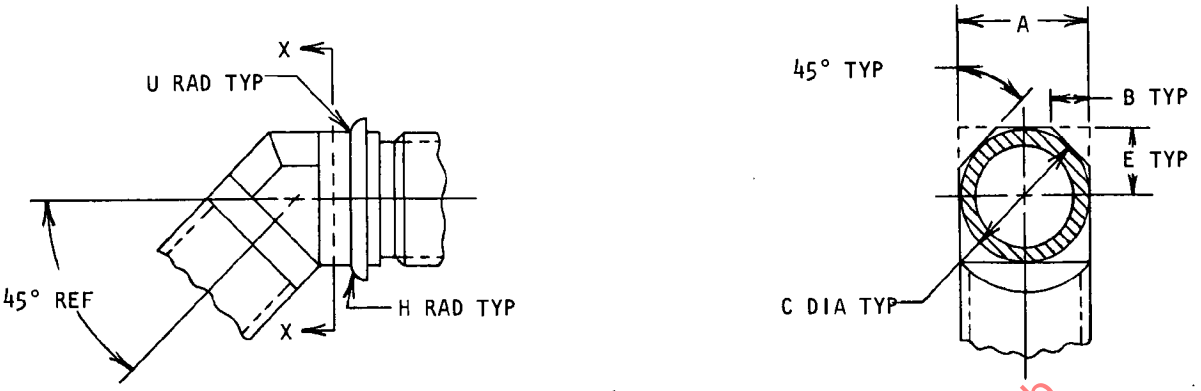
REQUIREMENTS:

1. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.
2. ALL MACHINED SURFACES SHALL BE SMOOTH TO 125 MICROINCHES Ra MAX PER ANSI B46.1.
3. ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED: DECIMALS ±.016: ANGLES ± 5°.
4. SLIGHT FLATS ON C DIA OF TRANSITION ZONE SHALL NOT BE CAUSE FOR REJECTION.
5. ON ELBOWS AND TEES, 45° MILLING CUTS ARE TO BE MADE AS SHOWN TO REDUCE WEIGHT ON SIZE 8 AND LARGER STANDARD FITTINGS, SIZE 10 AND LARGER REDUCED ENVELOPE FITTINGS, AND SIZE 6 AND LARGER INTERNALLY THREADED FITTINGS.
6. EXAMPLE OF DRAWING CALLOUT: WHEN MACHINED FROM ALTERNATE MATERIAL, THE CENTER BODY DIMENSIONS SHALL CONFORM TO AS1376, TABLE XX. (SIZE MAY BE SPECIFIED AFTER TABLE CALLOUT).

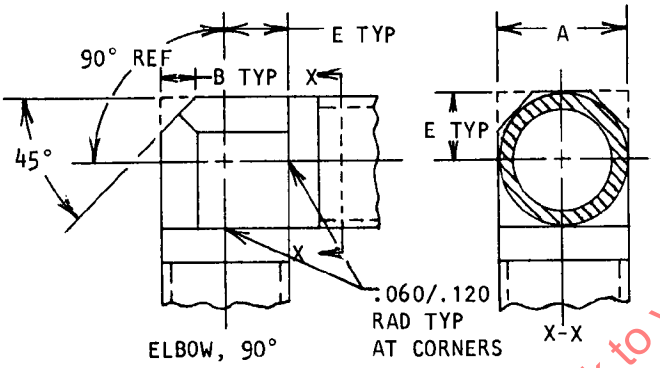
TABLE 1 STANDARD FITTING DIMENSIONS
SEE FIGURE 1

TUBE SIZE	TUBE O.D.	A	B	C DIA	E ±.008	H RAD	U RAD
-02	1/8	.312	-	.312	.156	.062	.062
-03	3/16	.375	-	.375	.188		
-04	1/4	.438	-	.438	.219		
-05	5/16	.500	-	.500	.250	.094	
-06	3/8	.562	-	.562	.281		.094
-08	1/2	.750	.221	.750	.375		
-10	5/8	.875	.257	.875	.438		.125
-12	3/4	1.062	.312	1.062	.531		
-16	1	1.312	.386	1.312	.656	.125	
-20	1-1/4	1.625	.478	1.625	.812		.188
-24	1-1/2	1.875	.551	1.875	.938		
-32	2	2.562	.754	2.562	1.281		

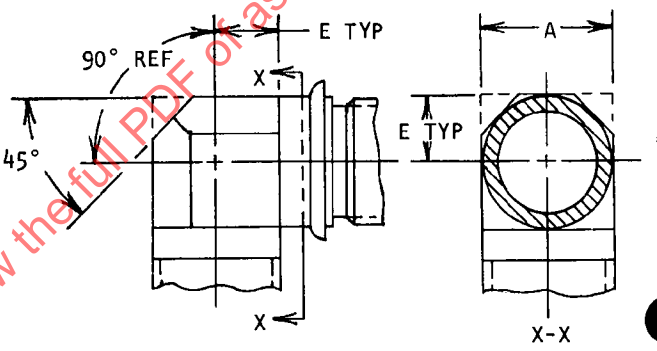
FIGURE 1
STANDARD AND REDUCED ENVELOPE FITTINGS



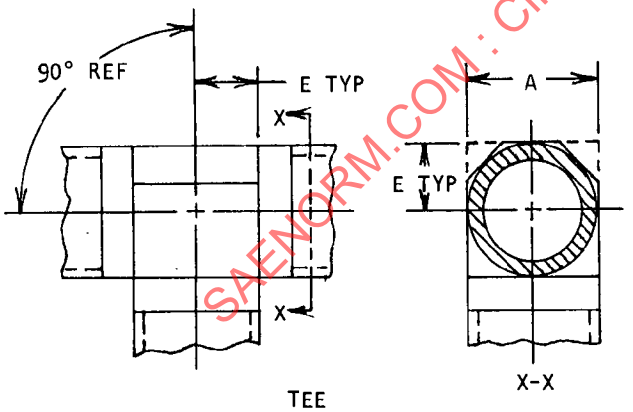
ELBOW, 45° BULKHEAD



ELBOW, 90°



ELBOW, 90° BULKHEAD



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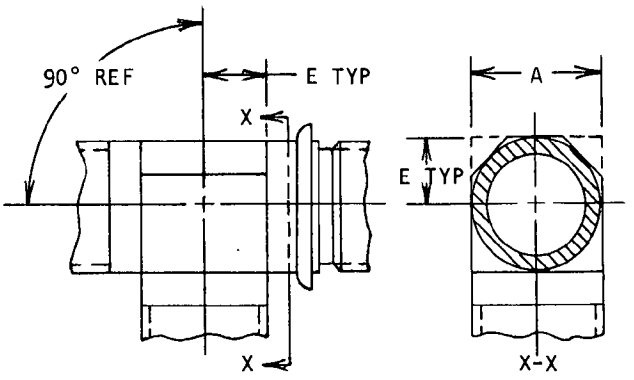
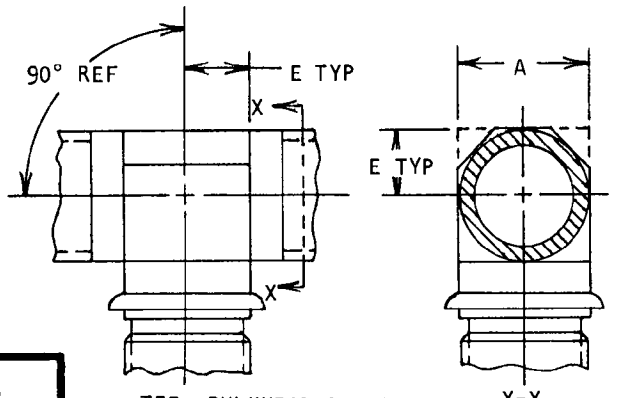


TEE, BULKHEAD ON RUN



TEE, BULKHEAD ON SIDE

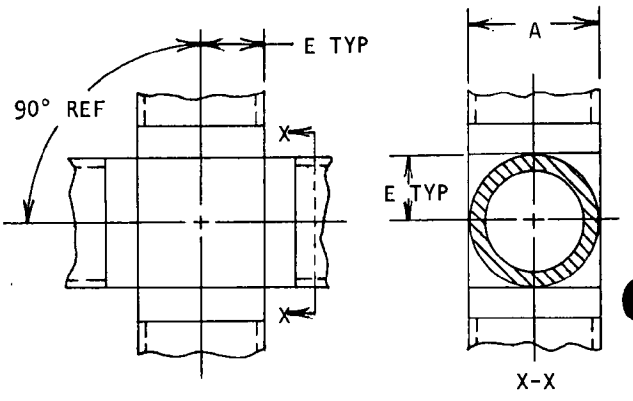


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TABLE II
REDUCED ENVELOPE FITTING DIMENSIONS
SEE FIGURE I

TUBE SIZE	TUBE O.D.	A	B	C DIA	E ±.008	H RAD	U RAD
-04	1/4	.390	—	.350	.195	.062	.062
-06	3/8	.453	—	.453	.226	.094	.094
-08	1/2	.577	—	.577	.288		
-10	5/8	.702	.206	.702	.351		.125
-12	3/4	.890	.261	.890	.445		
-16	1	1.140	.334	1.140	.570	.125	
-20	1 1/4	1.290	.379	1.290	.645		.188

TABLE III
FLARED TO HOSE AND HOSE TO HOSE FITTINGS
SEE FIGURE I

DASH NO.	HOSE I.D.	TUBE O.D.	A	B	E ±.008
4	1/4	1/4	.438	—	.219
6	3/8	3/8	.562	—	.281
8	1/2	1/2	.750	.221	.375
10	5/8	5/8	.875	.257	.438
12	3/4	3/4	1.062	.312	.531
16	1	1	1.312	.386	.656
20	1 1/4	1 1/4	1.625	.478	.812
24	1 1/2	1 1/2	1.875	.551	.938

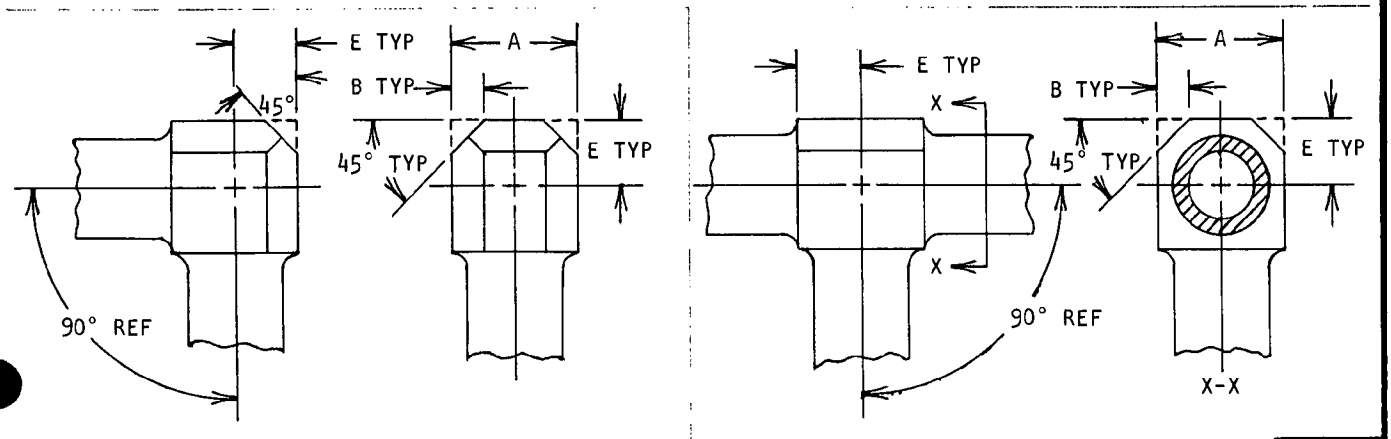
TABLE IV
DYNAMIC BEAM SEAL AND SHRINK-FIT
COMPATIBLE FITTING DIMENSIONS
SEE FIGURE I

TUBE SIZE	TUBE O.D	A	B	C DIA	E ±.008	H RAD	U RAD
04	1/4	.375	—	.375	.188	.062	.062
06	3/8	.500	—	.500	.250	.094	.094
08	1/2	.562	—	.562	.281		
10	5/8	.688	.202	.688	.344		.125
12	3/4	.875	.257	.875	.438		
14	7/8	1.125	.331	1.125	.562	.125	
16	1						
20	1 1/4	1.375	.404	1.375	.688		.188
24	1 1/2	1.625	.478	1.625	.812		

TABLE V
WELD FITTING DIMENSIONS
SEE FIGURE II

SIZE	TUBE O.D.	A	B	E ±.008
-04	1/4	.390	—	.195
-05	5/16	.453	—	.226
-06	3/8	.453	—	.226
-08	1/2	.577	—	.288
-10	5/8	.702	.206	.351
-12	3/4	.890	.261	.445
-16	1	1.140	.334	.570
-20	1 1/4	1.290	.379	.645

FIGURE II
WELD FITTINGS



ELBOW 90°

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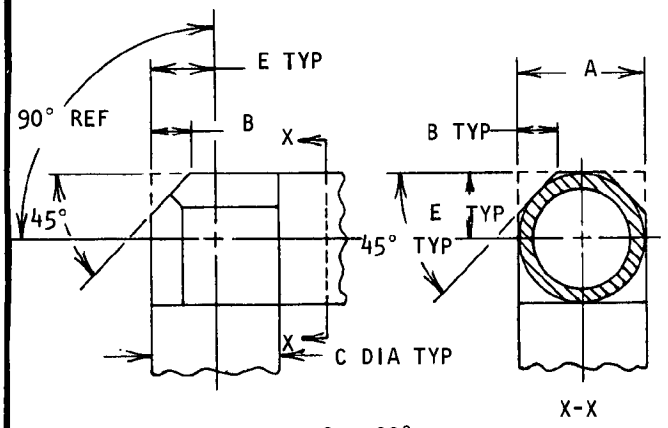
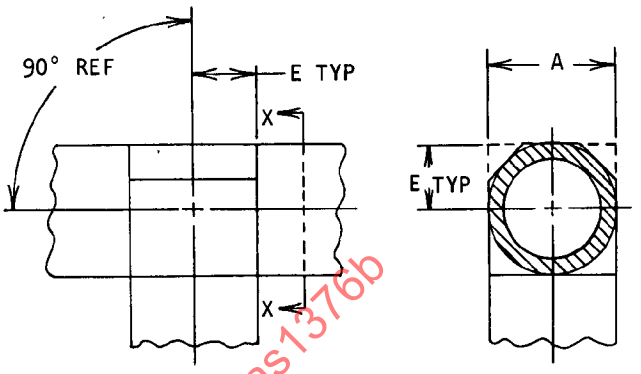
FIGURE III
FITTINGS WITH INTERNAL SCREW THREADS



ELBOW, 90°



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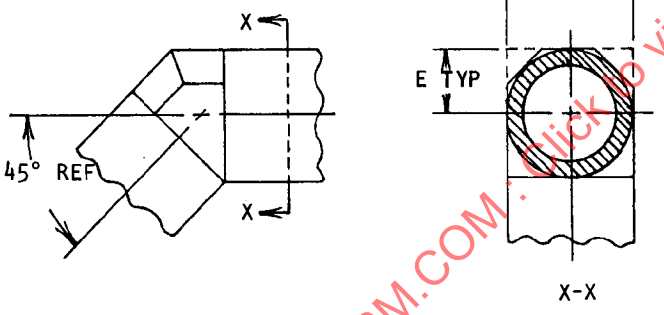

ELBOW, 45°

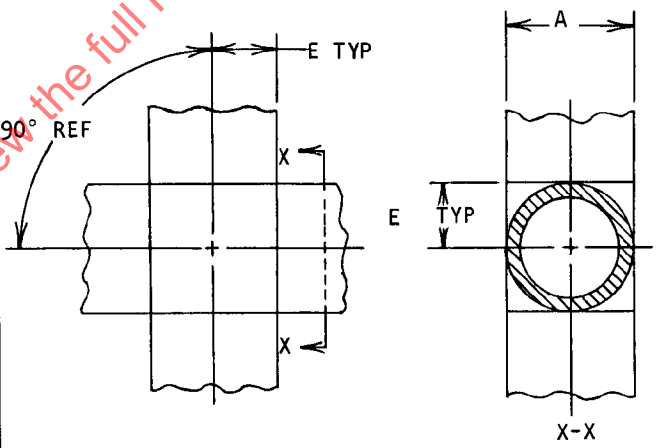

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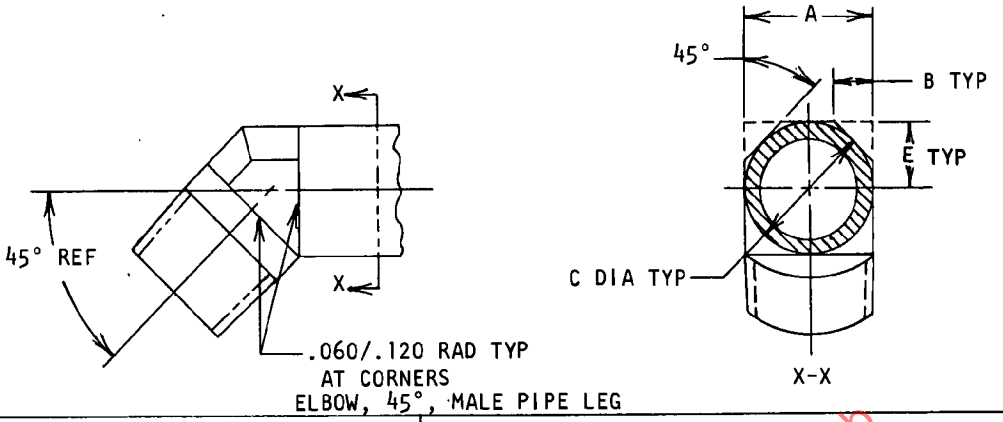
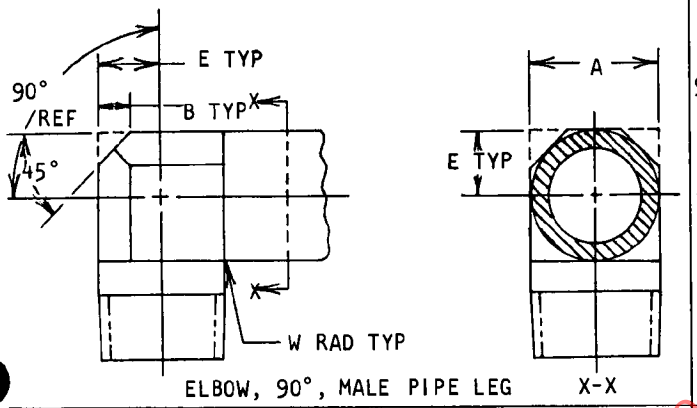
TABLE VI
INTERNAL SCREW THREAD FITTING DIMENSIONS
SEE FIGURE III

TUBE SIZE	TUBE O.D.	THREAD SIZE REF	A	B	C DIA	E ±.008
-04	1/4	.4375	.750	-	.688	.375
-05	5/16	.5000	.750	-	.750	.375
-06	3/8	.5625	.812	.239	.813	.406
-08	1/2	.7500	1.062	.313	1.062	.531
-10	5/8	.8750	1.188	.349	1.188	.594
-12	3/4	1.0625	1.438	.423	1.438	.719
-16	1	1.3125	1.688	.496	1.688	.844
-20	1 1/4	1.6250	2.000	.588	2.000	1.000

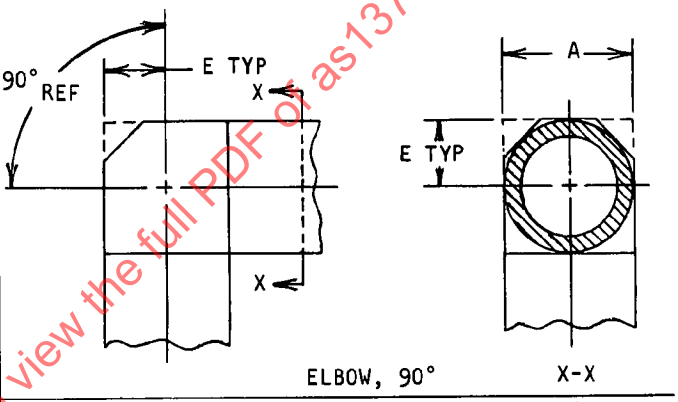
FIGURE IV
FITTINGS WITH INTERNAL PIPE THREADS



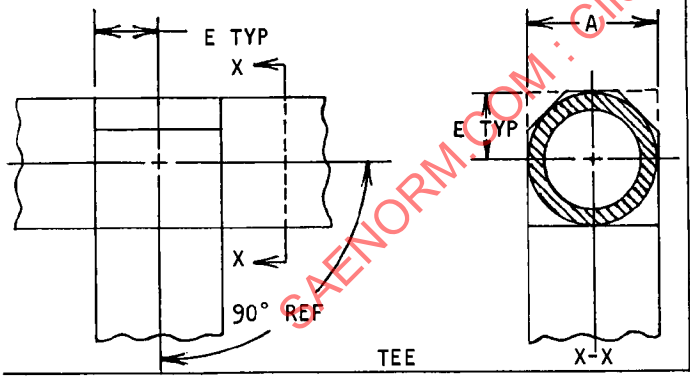
ELBOW, 45°, MALE PIPE LEG



ELBOW, 90°, MALE PIPE LEG



ELBOW, 90°



TEE X-X

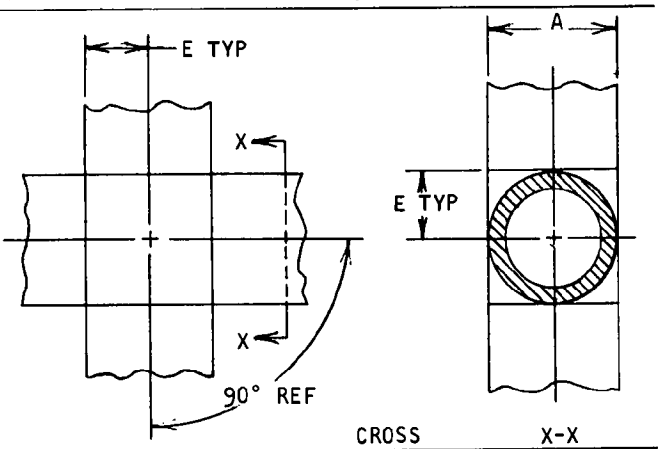


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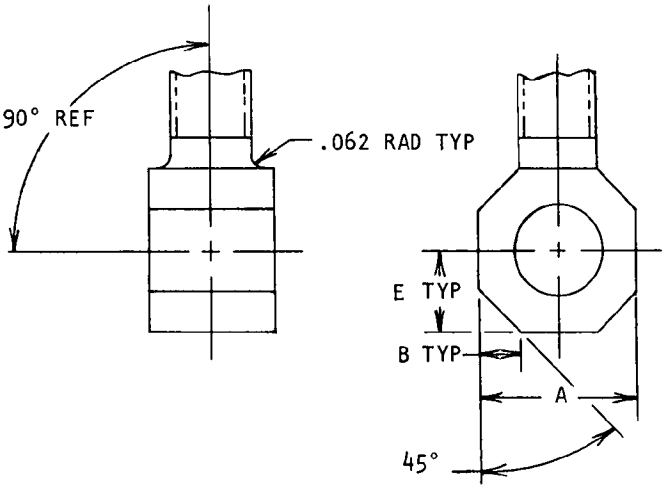
TABLE VII
INTERNAL PIPE THREAD FITTING DIMENSIONS
SEE FIGURE IV

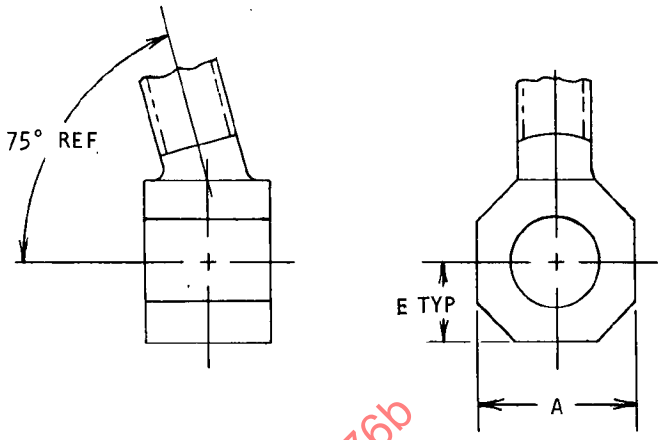
DASH NUMBER *	PIPE THREAD SIZE REF.	A	B	C DIA	E ±.008	W
-1	1/8	.625	-	.578	.312	.063
-2	1/4	.813	-	.781	.406	.094
-3	3/8	.938	.276	.922	.469	
-4	1/2	1.188	.349	1.156	.594	.125
-6	3/4	1.375	.404	1.359	.688	
-8	1	1.750	.515	1.688	.875	
-10	1 1/4	2.156	.634	2.125	1.078	.156

*DASH NUMBER IS PIPE SIZE IN 1/8 INCHES

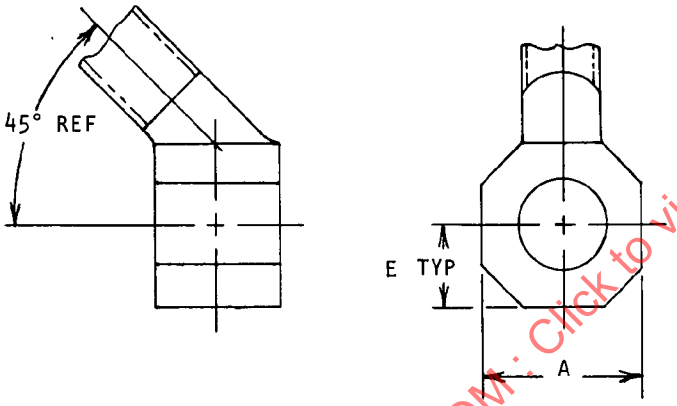
FIGURE V
MULTIPLE CONNECTOR AND UNIVERSAL FITTINGS
(BANJO FITTINGS)



ELBOW, 90°



ELBOW, 75°



ELBOW, 45°

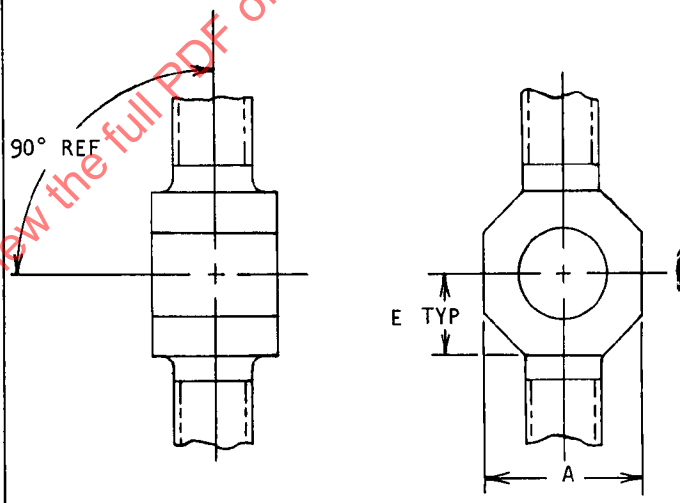


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TABLE VIII
MULTIPLE CONNECTOR AND
UNIVERSAL FITTING DIMENSIONS
SEE FIGURE V

TUBE SIZE	TUBE O.D.	A	B	E ±.008
-04	1/4	.812	.238	.406
-05	5/16	.812	.238	.406
-06	3/8	1.000	.293	.500
-08	1/2	1.188	.348	.594
-10	5/8	1.375	.403	.688
-12	3/4	1.688	.494	.844
-16	1	2.062	.604	1.031