

# 37° Flared Tube Fittings



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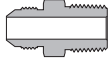
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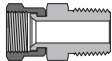
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## Features

- ⦿ Fittings are designed and manufactured in compliance with SAE J514
- ⦿ The hardened threads with smooth surface finish avoid galling and help to extend the fitting service life
- ⦿ Radius junction design for elbows provides smooth flow path
- ⦿ Stainless steel nut threads are silver-plated to minimize the friction with the body threads
- ⦿ Every fitting is marked with size, material and heat number
- ⦿ Fittings are easy to disconnect and retighten
- ⦿ All male threads are protected by plastic caps

## Technical Data

- ⦿ Size range from 1/8" to 2" and 3 mm to 50 mm.
- ⦿ Thread Specification:

Thread Type	Reference Specification
NPT	ASME B1.20.1, SAE AS71051
Unified (SAE)	ASME B1.1, SAE J475

- ⦿ The working temperature of FITOK 37° flare tube fittings is the same as that of FITOK 6D series tube fittings.
- ⦿ Working Pressure:

Nom. SAE Dash Size	Nom. Tube O.D. Size (in.)	37° Flare St. Thread	SAE St. Thread Union and Bulkhead (psig/bar)
2	1/8	5/16-24	5000 (345)
3	3/16	3/8-24	5000 (345)
4	1/4	7/16-20	5000 (345)
5	5/16	1/2-20	5000 (345)
6	3/8	9/16-18	5000 (345)
8	1/2	3/4-16	4500 (310)
10	5/8	7/8-14	3500 (241)
12	3/4	1 1/16-12	3500 (241)
14	7/8	1 3/16-12	3000 (207)
16	1	1 5/16-12	3000 (207)
20	1 1/4	1 5/8-12	2500 (172)
24	1 1/2	1 7/8-12	2000 (138)
32	2	2 1/2-12	1500 (103)

1. Working pressures given are for fittings of stainless steel only. Contact FITOK Group or our authorized distributors for working pressure of other materials.
2. Four times safety factor applied for above working pressure.

## Materials

Material	Bar Stock	Forging	Designator
316 Stainless Steel	ASTM A276 ASME SA479, EN 1.4401	ASTM A182, ASME SA182, EN 1.4401	SS
Aluminum	ASTM B211	ASTM B247	AL
Brass	ASTM B16/B453	ASTM B283	B
Carbon Steel	ASTM A108	ASTM A105	CS

## Ordering Information

Add the material designator as a prefix to the basic ordering number to get the complete ordering number.

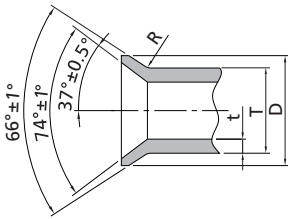
**For example:**

1. Male connector with 1/4" tube, 1/4 NPT thread and 316 stainless steel material, the complete ordering number is **SS-CM-AN4-NS4**.
2. Sleeve with 6 mm tube and 316 stainless steel material, the complete ordering number is **SS-SL-AN6M**.

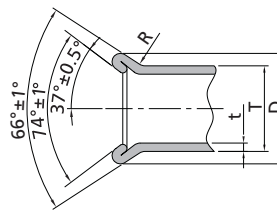
## Flaring Operation

Tube flaring is carried out in two different ways, single wall flare on thick wall tubes and double wall flare on thin wall tubes to reinforce same. Refer to the table below:

### Thick Tubes



### Thin Tubes

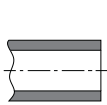


Fractional Tubing			
T-Tube O.D. in	Dimensions		
	D (mm)	t (in.)	R (mm)
1/4	8.6-9.1	0.020-0.065	0.8
5/16	10.2-10.9	0.020-0.065	0.8
3/8	11.6-12.4	0.020-0.065	1.0
1/2	16.0-16.7	0.028-0.083	1.5
5/8	19.3-20.0	0.035-0.095	1.5
3/4	23.3-24.1	0.035-0.109	2.0
7/8	26.4-27.1	0.035-0.109	2.0
1	29.7-30.4	0.035-0.120	2.3
1 1/4	37.5-38.3	0.049-0.120	2.3
1 1/2	43.2-43.9	0.049-0.120	2.8
2	59.2-59.9	0.065-0.134	2.8

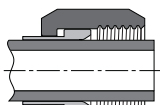
Metric Tubing			
T-Tube O.D. (mm)	Dimensions		
	D (mm)	t (mm)	R (mm)
6	8.4-9.2	0.5-1.5	0.8
8	10.1-10.8	0.5-1.5	0.8
10	12.0-12.5	0.5-1.5	1.0
12	16.0-16.7	1.0-2.0	1.5
14	18.8-19.5	1.0-2.5	1.5
15	19.4-20.0	1.0-2.5	1.5
16	19.4-20.0	1.0-2.5	1.5
18	23.5-24.0	1.0-3.0	2.0
20	24.0-24.5	1.0-3.0	2.0
22	26.2-27.2	1.0-3.0	2.0
25	29.5-30.2	1.0-3.0	2.3
30	37.4-38.0	1.5-3.0	2.3
32	37.6-38.3	1.5-3.0	2.3
38	43.5-44.5	1.5-3.0	2.8
50	58.9-59.6	1.5-3.5	2.8

## Installation Instructions

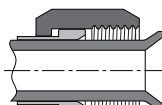
1. Cut the tube to the proper length.
2. Insert the tube into the nut and sleeve.
3. Form the flare to 37° dimension according to SAE J533. See flaring operation.
4. Finger-tighten the nut.
5. Tighten the nut 1/4 turn with wrench while holding steady the body of the fitting.



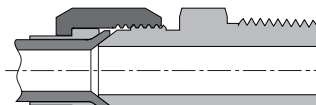
Step 1



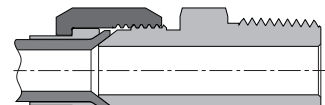
Step 2



Step 3



Step 4



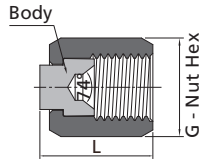
Step 5

## Cautions:

- ⊙ Do not loosen or tighten fittings when system is pressurized.
- ⊙ Please use proper thread sealants on tapered pipe threads.

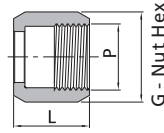
## Dimensions

### Tube cap assembly



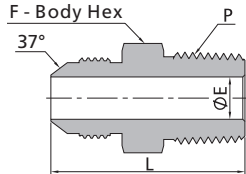
SAE 070112A					
T-Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	G	
1/8	3	-TCA-AN2	0.60 (15.3)	0.37 (9.5)	
3/16	4	-TCA-AN3	0.66 (16.8)	0.44 (11.1)	
1/4	6	-TCA-AN4	0.67 (17.1)	0.56 (14.3)	
5/16	8	-TCA-AN5	0.77 (19.5)	0.63 (15.9)	
3/8	10	-TCA-AN6	0.81 (20.5)	0.69 (17.5)	
1/2	12	-TCA-AN8	0.94 (23.9)	0.87 (22.2)	
5/8	16	-TCA-AN10	1.07 (27.1)	1.00 (25.4)	
3/4	18	-TCA-AN12	1.24 (31.6)	1.25 (31.8)	
7/8	22	-TCA-AN14	1.26 (32.0)	1.37 (34.9)	
1	25	-TCA-AN16	1.29 (32.8)	1.50 (38.1)	
1 1/4	32	-TCA-AN20	1.39 (35.4)	2.00 (50.8)	
1 1/2	38	-TCA-AN24	1.70 (43.2)	2.25 (57.2)	
2	50	-TCA-AN32	2.07 (52.6)	2.87 (73.0)	

### Nuts



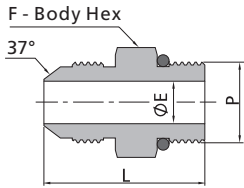
SAE 070110					
Tube O.D.		P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)	
in.	mm			L	G
1/8	3	5/16-24	-N-AN2	0.55 (14.0)	0.37 (9.5)
3/16	4	3/8-24	-N-AN3	0.61 (15.5)	0.44 (11.1)
1/4	6	7/16-20	-N-AN4	0.62 (15.8)	0.56 (14.3)
5/16	8	1/2-20	-N-AN5	0.68 (17.3)	0.63 (15.9)
3/8	10	9/16-18	-N-AN6	0.73 (18.5)	0.69 (17.5)
1/2	12	3/4-16	-N-AN8	0.85 (21.6)	0.87 (22.2)
5/8	16	7/8-14	-N-AN10	0.98 (24.9)	1.00 (25.4)
3/4	18	1 1/16-12	-N-AN12	1.03 (26.2)	1.25 (31.8)
7/8	22	1 3/16-12	-N-AN14	1.09 (27.7)	1.37 (34.9)
1	25	1 5/16-12	-N-AN16	1.13 (28.7)	1.50 (38.1)
1 1/4	32	1 5/8-12	-N-AN20	1.23 (31.2)	2.00 (50.8)
1 1/2	38	1 7/8-12	-N-AN24	1.42 (36.1)	2.25 (57.2)
2	50	2 1/2-12	-N-AN32	1.75 (44.5)	2.87 (73.0)

### Male Connectors



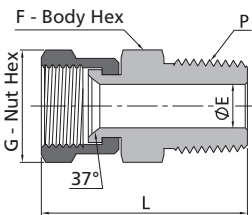
SAE 070102						
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)		
in.	mm			L	E	F
1/8	3	1/8	-CM-AN2-NS2	1.11 (28.2)	0.06 (1.6)	0.44 (11.1)
3/16	4	1/8	-CM-AN3-NS2	1.14 (29.0)	0.13 (3.2)	0.44 (11.1)
1/4	6	1/8	-CM-AN4-NS2	1.22 (31.0)	0.17 (4.4)	0.50 (12.7)
1/4	6	1/4	-CM-AN4-NS4	1.42 (36.0)	0.17 (4.4)	0.56 (14.3)
1/4	6	1/2	-CM-AN4-NS8	1.68 (42.7)	0.17 (4.4)	0.87 (22.2)
5/16	8	1/8	-CM-AN5-NS2	1.22 (31.0)	0.19 (4.8)	0.56 (14.3)
5/16	8	1/4	-CM-AN5-NS4	1.42 (36.1)	0.24 (6.0)	0.56 (14.3)
3/8	10	1/8	-CM-AN6-NS2	1.25 (31.8)	0.19 (4.8)	0.63 (15.9)
3/8	10	1/4	-CM-AN6-NS4	1.43 (36.3)	0.28 (7.1)	0.63 (15.9)
3/8	10	3/8	-CM-AN6-NS6	1.43 (36.3)	0.30 (7.5)	0.75 (19.1)
3/8	10	1/2	-CM-AN6-NS8	1.67 (42.5)	0.30 (7.5)	0.87 (22.2)
1/2	12	1/4	-CM-AN8-NS4	1.53 (38.9)	0.28 (7.1)	0.81 (20.6)
1/2	12	3/8	-CM-AN8-NS6	1.53 (38.9)	0.39 (9.9)	0.81 (20.6)
1/2	12	1/2	-CM-AN8-NS8	1.79 (45.5)	0.39 (9.9)	0.87 (22.2)
1/2	12	3/4	-CM-AN8-NS12	1.85 (47.0)	0.39 (9.9)	1.13 (28.6)
5/8	16	3/8	-CM-AN10-NS6	1.70 (43.1)	0.38 (9.6)	0.94 (23.8)
5/8	16	1/2	-CM-AN10-NS8	1.89 (48.0)	0.48 (12.3)	0.94 (23.8)
5/8	16	3/4	-CM-AN10-NS12	1.95 (49.5)	0.48 (12.3)	1.13 (28.6)
3/4	18	3/4	-CM-AN12-NS12	2.06 (52.3)	0.61 (15.5)	1.13 (28.6)
3/4	18	1	-CM-AN12-NS16	2.25 (57.1)	0.61 (15.5)	1.37 (34.9)
7/8	22	3/4	-CM-AN14-NS12	2.09 (53.1)	0.62 (15.7)	1.25 (31.8)
1	25	3/4	-CM-AN16-NS12	2.11 (53.5)	0.62 (15.7)	1.37 (34.9)
1	25	1	-CM-AN16-NS16	2.30 (58.4)	0.85 (21.5)	1.37 (34.9)
1 1/4	32	1	-CM-AN20-NS16	2.42 (61.5)	0.88 (22.4)	1.69 (42.9)
1 1/4	32	1 1/4	-CM-AN20-NS20	2.45 (62.2)	1.08 (27.5)	1.69 (42.9)
1 1/2	38	1 1/4	-CM-AN24-NS20	2.68 (68.1)	1.13 (28.6)	2.00 (50.8)
1 1/2	38	1 1/2	-CM-AN24-NS24	2.68 (68.1)	1.30 (33.0)	2.00 (50.8)
2	50	2	-CM-AN32-NS32	3.11 (79.0)	1.77 (45.0)	2.63 (66.7)

Male Connectors



SAE 070120								
Tube O.D.		P-SAE Nominal Size	P-SAE/MS Thread Specification	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm				L	E	F	
1/8	3	2	5/16-24	-CM-AN2-ST5	1.06 (26.9)	0.06 (1.6)	0.44 (11.1)	
3/16	4	3	3/8-24	-CM-AN3-ST6	1.10 (27.9)	0.13 (3.2)	0.50 (12.7)	
1/4	6	4	7/16-20	-CM-AN4-ST7	1.23 (31.2)	0.17 (4.4)	0.56 (14.3)	
1/4	6	5	1/2-20	-CM-AN4-ST8	1.23 (31.2)	0.17 (4.4)	0.63 (15.9)	
1/4	6	6	9/16-18	-CM-AN4-ST9	1.30 (33.0)	0.17 (4.4)	0.69 (17.5)	
1/4	6	8	3/4-16	-CM-AN4-ST12	1.37 (34.8)	0.17 (4.4)	0.87 (22.2)	
5/16	8	5	1/2-20	-CM-AN5-ST8	1.23 (31.2)	0.24 (6.0)	0.63 (15.9)	
3/8	10	6	9/16-18	-CM-AN6-ST9	1.30 (33.0)	0.30 (7.5)	0.69 (17.5)	
3/8	10	8	3/4-16	-CM-AN6-ST12	1.38 (35.1)	0.30 (7.5)	0.87 (22.2)	
3/8	10	10	7/8-14	-CM-AN6-ST14	1.50 (38.1)	0.30 (7.5)	1.00 (25.4)	
1/2	12	6	9/16-18	-CM-AN8-ST9	1.44 (36.6)	0.30 (7.5)	0.81 (20.6)	
1/2	12	8	3/4-16	-CM-AN8-ST12	1.48 (37.6)	0.39 (9.9)	0.87 (22.2)	
1/2	12	10	7/8-14	-CM-AN8-ST14	1.60 (40.6)	0.39 (9.9)	1.00 (25.4)	
1/2	12	12	1 1/16-12	-CM-AN8-ST17	1.76 (44.7)	0.39 (9.9)	1.25 (31.8)	
5/8	16	8	3/4-16	-CM-AN10-ST12	1.60 (40.6)	0.42 (10.7)	0.94 (23.8)	
5/8	16	10	7/8-14	-CM-AN10-ST14	1.70 (43.2)	0.48 (12.3)	1.00 (25.4)	
5/8	16	12	1 1/16-12	-CM-AN10-ST17	1.86 (47.2)	0.48 (12.3)	1.25 (31.8)	
3/4	18	8	3/4-16	-CM-AN12-ST12	1.78 (45.2)	0.42 (10.7)	1.25 (31.7)	
3/4	18	10	7/8-14	-CM-AN12-ST14	1.83 (46.4)	0.50 (12.7)	1.25 (31.7)	
3/4	18	12	1 1/16-12	-CM-AN12-ST17	1.97 (50.0)	0.61 (15.5)	1.25 (31.8)	
3/4	18	16	1 5/16-12	-CM-AN12-ST21	2.00 (50.8)	0.61 (15.5)	1.50 (38.1)	
7/8	22	14	1 3/16-12	-CM-AN14-ST19	1.99 (50.5)	0.72 (18.3)	1.37 (34.9)	
7/8	22	16	1 5/16-12	-CM-AN14-ST21	2.02 (51.3)	0.72 (18.3)	1.50 (38.1)	
1	25	12	1 1/16-12	-CM-AN16-ST17	2.01 (51.1)	0.66 (16.7)	1.37 (34.9)	
1	25	14	1 3/16-12	-CM-AN16-ST19	2.04 (51.8)	0.72 (18.3)	1.37 (34.9)	
1	25	16	1 5/16-12	-CM-AN16-ST21	2.04 (51.8)	0.85 (21.5)	1.50 (38.1)	

Rotatable Male Connectors

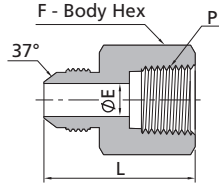


Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)				
in.	mm			L	E	G	F	
1/8	3	1/8	-CM-AS2-NS2	1.18 (30.0)	0.06 (1.6)	0.44 (11.1)	0.44 (11.1)	
3/16	4	1/8	-CM-AS3-NS2	1.26 (32.0)	0.13 (3.2)	0.50 (12.7)	0.44 (11.1)	
1/4	6	1/8	-CM-AS4-NS2	1.35 (34.2)	0.17 (4.4)	0.56 (14.3)	0.50 (12.7)	
5/16	8	1/8	-CM-AS5-NS2	1.38 (35.0)	0.24 (6.0)	0.63 (15.9)	0.56 (14.3)	
3/8	10	1/4	-CM-AS6-NS4	1.58 (40.2)	0.30 (7.5)	0.69 (17.5)	0.63 (15.9)	
1/2	12	3/8	-CM-AS8-NS6	1.68 (42.7)	0.39 (9.9)	0.87 (22.2)	0.81 (20.6)	
5/8	16	1/2	-CM-AS10-NS8	2.02 (51.3)	0.48 (12.3)	1.00 (25.4)	0.94 (23.8)	
3/4	18	3/4	-CM-AS12-NS12	2.15 (54.5)	0.61 (15.5)	1.25 (31.8)	1.13 (28.6)	
7/8	22	3/4	-CM-AS14-NS12	2.20 (56.0)	0.71 (18.0)	1.37 (34.9)	1.25 (31.8)	
1	25	1	-CM-AS16-NS16	2.51 (63.7)	0.85 (21.5)	1.50 (38.1)	1.37 (34.9)	
1 1/4	32	1 1/4	-CM-AS20-NS20	2.71 (68.9)	1.08 (27.5)	2.00 (50.8)	1.69 (42.9)	
1 1/2	38	1 1/2	-CM-AS24-NS24	3.06 (77.6)	1.30 (33.0)	2.25 (57.2)	2.00 (50.8)	
2	50	2	-CM-AS32-NS32	3.66 (92.9)	1.77 (45.0)	2.87 (73.0)	2.63 (66.7)	

Tube Fittings

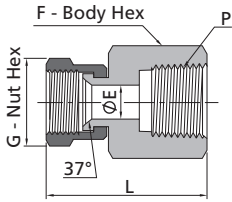
# A-98 37° Flared Tube Fittings

## Female Connectors



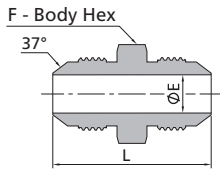
SAE 070103							
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	
1/8	3	1/8	-CF-AN2-NS2	1.12 (28.4)	0.06 (1.6)	0.56 (14.3)	
3/16	4	1/8	-CF-AN3-NS2	1.13 (28.7)	0.13 (3.2)	0.56 (14.3)	
1/4	6	1/8	-CF-AN4-NS2	1.19 (30.2)	0.17 (4.4)	0.56 (14.3)	
1/4	6	1/4	-CF-AN4-NS4	1.39 (35.3)	0.17 (4.4)	0.75 (19.1)	
5/16	8	1/8	-CF-AN5-NS2	1.17 (29.7)	0.24 (6.0)	0.56 (14.3)	
5/16	8	1/4	-CF-AN5-NS4	1.39 (35.3)	0.24 (6.0)	0.75 (19.1)	
3/8	10	1/4	-CF-AN6-NS4	1.40 (35.6)	0.30 (7.5)	0.75 (19.1)	
3/8	10	3/8	-CF-AN6-NS6	1.46 (37.1)	0.30 (7.5)	0.87 (22.2)	
1/2	12	3/8	-CF-AN8-NS6	1.56 (39.6)	0.39 (9.9)	0.87 (22.2)	
1/2	12	1/2	-CF-AN8-NS8	1.80 (45.6)	0.39 (9.9)	1.13 (28.6)	
5/8	16	1/2	-CF-AN10-NS8	1.89 (48.0)	0.48 (12.3)	1.13 (28.6)	
3/4	18	1/2	-CF-AN12-NS8	2.05 (52.1)	0.61 (15.5)	1.13 (28.6)	
3/4	18	3/4	-CF-AN12-NS12	2.06 (52.3)	0.61 (15.5)	1.37 (34.9)	
7/8	22	3/4	-CF-AN14-NS12	2.06 (52.3)	0.72 (18.3)	1.37 (34.9)	
1	25	1	-CF-AN16-NS16	2.35 (59.7)	0.85 (21.5)	1.63 (41.3)	
1 1/4	32	1 1/4	-CF-AN20-NS20	2.49 (63.2)	1.08 (27.5)	2.00 (50.8)	
1 1/2	38	1 1/2	-CF-AN24-NS24	2.62 (66.5)	1.30 (33.0)	2.37 (60.3)	
2	50	2	-CF-AN32-NS32	2.97 (75.4)	1.77 (45.0)	2.87 (73.0)	

## Rotatable Female Connectors



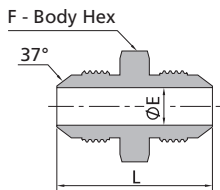
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	G	F
1/8	3	1/8	-CF-AS2-NS2	1.42 (36.1)	0.06 (1.6)	0.44 (11.1)	0.56 (14.3)
3/16	4	1/8	-CF-AS3-NS2	1.47 (37.3)	0.13 (3.2)	0.50 (12.7)	0.56 (14.3)
1/4	6	1/8	-CF-AS4-NS2	1.56 (39.7)	0.17 (4.4)	0.56 (14.3)	0.56 (14.3)
5/16	8	1/8	-CF-AS5-NS2	1.59 (40.5)	0.24 (6.0)	0.63 (15.9)	0.56 (14.3)
3/8	10	1/4	-CF-AS6-NS4	1.80 (45.8)	0.30 (7.5)	0.69 (17.5)	0.75 (19.1)
1/2	12	3/8	-CF-AS8-NS6	1.85 (47.0)	0.39 (9.9)	0.87 (22.2)	0.87 (22.2)
5/8	16	1/2	-CF-AS10-NS8	2.03 (51.6)	0.48 (12.3)	1.00 (25.4)	1.13 (28.6)
3/4	18	3/4	-CF-AS12-NS12	2.62 (66.6)	0.61 (15.5)	1.25 (31.8)	1.37 (34.9)
7/8	22	3/4	-CF-AS14-NS12	2.67 (67.8)	0.71 (18.0)	1.37 (34.9)	1.37 (34.9)
1	25	1	-CF-AS16-NS16	2.89 (73.5)	0.85 (21.5)	1.50 (38.1)	1.63 (41.3)
1 1/4	32	1 1/4	-CF-AS20-NS20	3.07 (78.1)	1.08 (27.5)	2.00 (50.8)	2.00 (50.8)
1 1/2	38	1 1/2	-CF-AS24-NS24	3.41 (86.7)	1.30 (33.0)	2.37 (60.3)	2.37 (60.3)
2	50	2	-CF-AS32-NS32	3.52 (89.3)	1.77 (45.0)	2.87 (73.0)	2.63 (66.7)

## Unions



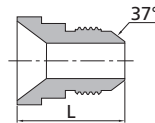
SAE 070101					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-U-AN2	1.17 (29.7)	0.06 (1.6)	0.44 (11.1)
3/16	4	-U-AN3	1.23 (31.2)	0.13 (3.2)	0.44 (11.1)
1/4	6	-U-AN4	1.37 (34.8)	0.17 (4.4)	0.50 (12.7)
5/16	8	-U-AN5	1.37 (34.8)	0.24 (6.0)	0.56 (14.3)
3/8	10	-U-AN6	1.41 (35.8)	0.30 (7.5)	0.63 (15.9)
1/2	12	-U-AN8	1.62 (41.1)	0.39 (9.9)	0.81 (20.6)
5/8	16	-U-AN10	1.88 (47.8)	0.48 (12.3)	0.94 (23.8)
3/4	18	-U-AN12	2.16 (54.9)	0.61 (15.5)	1.13 (28.6)
7/8	22	-U-AN14	2.21 (56.1)	0.72 (18.3)	1.25 (31.8)
1	25	-U-AN16	2.25 (57.2)	0.85 (21.5)	1.37 (34.9)
1 1/4	32	-U-AN20	2.43 (61.7)	1.08 (27.5)	1.69 (42.9)
1 1/2	38	-U-AN24	2.75 (69.8)	1.30 (33.0)	2.00 (50.8)
2	50	-U-AN32	3.40 (86.4)	1.77 (45.0)	2.63 (66.7)

## Large Hex Unions



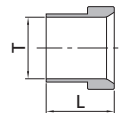
SAE 070119					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-HUN-AN2	1.17 (29.7)	0.06 (1.6)	0.56 (14.3)
3/16	4	-HUN-AN3	1.23 (31.2)	0.13 (3.2)	0.63 (15.9)
1/4	6	-HUN-AN4	1.37 (34.8)	0.17 (4.4)	0.69 (17.5)
5/16	8	-HUN-AN5	1.37 (34.8)	0.24 (6.0)	0.75 (19.1)
3/8	10	-HUN-AN6	1.41 (35.8)	0.30 (7.5)	0.81 (20.6)
1/2	12	-HUN-AN8	1.62 (41.1)	0.39 (9.9)	1.00 (25.4)
5/8	16	-HUN-AN10	1.88 (47.8)	0.48 (12.3)	1.13 (28.6)
3/4	18	-HUN-AN12	2.16 (54.9)	0.61 (15.5)	1.37 (34.9)
7/8	22	-HUN-AN14	2.21 (56.1)	0.72 (18.3)	1.50 (38.1)
1	25	-HUN-AN16	2.25 (57.2)	0.85 (21.5)	1.63 (41.3)
1 1/4	32	-HUN-AN20	2.43 (61.7)	1.08 (27.5)	1.87 (47.6)
1 1/2	38	-HUN-AN24	2.75 (69.8)	1.30 (33.0)	2.13 (54.0)
2	50	-HUN-AN32	3.40 (86.4)	1.77 (45.0)	2.75 (69.9)

## Reducing Adapters



SAE 070123				
Tube O.D.		Basic Ordering Number	L in.(mm)	
in.-mm	in.-mm			
3/8-10	1/4-6	-RA-AN6-AN4	0.97 (24.6)	
1/2-12	1/4-6	-RA-AN8-AN4	1.00 (25.4)	
1/2-12	3/8-10	-RA-AN8-AN6	1.00 (25.4)	
5/8-16	1/4-6	-RA-AN10-AN4	1.03 (26.2)	
5/8-16	3/8-10	-RA-AN10-AN6	1.03 (26.2)	
3/4-18	1/4-6	-RA-AN12-AN4	1.09 (27.7)	
3/4-18	3/8-10	-RA-AN12-AN6	1.09 (27.7)	
3/4-18	1/2-12	-RA-AN12-AN8	1.19 (30.2)	
7/8-22	3/8-10	-RA-AN14-AN6	1.13 (28.7)	
7/8-22	5/8-16	-RA-AN14-AN10	1.33 (33.7)	
1-25	1/4-6	-RA-AN16-AN4	1.22 (31.0)	
1-25	3/8-10	-RA-AN16-AN6	1.22 (31.0)	
1-25	1/2-12	-RA-AN16-AN8	1.27 (32.3)	
1-25	5/8-16	-RA-AN16-AN10	1.38 (35.1)	
1-25	3/4-18	-RA-AN16-AN12	1.47 (37.3)	
1 1/4-32	3/4-18	-RA-AN20-AN12	1.53 (38.8)	
1 1/4-32	1-25	-RA-AN20-AN16	1.59 (40.3)	
1 1/2-38	1/2-12	-RA-AN24-AN8	1.56 (39.6)	
1 1/2-38	3/4-18	-RA-AN24-AN12	1.63 (41.4)	
1 1/2-38	1-25	-RA-AN24-AN16	1.63 (41.4)	
2-50	1 1/2-38	-RA-AN32-AN24	1.91 (48.5)	

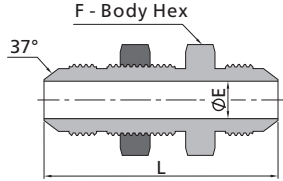
## Sleeves



SAE 070115				
T-Tube O.D.		Basic Ordering Number		L in.(mm)
in.	mm	in.	mm	
1/8	3	-SL-AN2	-SL-AN3M	0.34 (8.6)
3/16	4	-SL-AN3	-SL-AN4M	0.34 (8.6)
1/4	6	-SL-AN4	-SL-AN6M	0.41 (10.4)
5/16	8	-SL-AN5	-SL-AN8M	0.44 (11.2)
3/8	10	-SL-AN6	-SL-AN10M	0.50 (12.7)
1/2	12	-SL-AN8	-SL-AN12M	0.56 (14.2)
5/8	16	-SL-AN10	-SL-AN16M	0.66 (16.8)
3/4	18	-SL-AN12	-SL-AN18M	0.68 (17.3)
7/8	22	-SL-AN14	-SL-AN22M	0.76 (19.3)
1	25	-SL-AN16	-SL-AN25M	0.78 (19.8)
1 1/4	32	-SL-AN20	-SL-AN32M	0.91 (23.1)
1 1/2	38	-SL-AN24	-SL-AN38M	1.12 (28.4)
2	50	-SL-AN32	-SL-AN50M	1.19 (30.2)

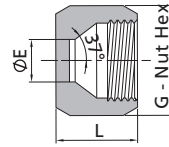


**Bulkhead Unions**



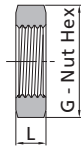
SAE 070601					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
3/16	4	-BU-AN3	1.90 (48.3)	0.13 (3.2)	0.63 (15.9)
1/4	6	-BU-AN4	2.07 (52.6)	0.17 (4.4)	0.69 (17.5)
5/16	8	-BU-AN5	2.07 (52.6)	0.24 (6.0)	0.75 (19.1)
3/8	10	-BU-AN6	2.18 (55.4)	0.30 (7.5)	0.81 (20.6)
1/2	12	-BU-AN8	2.44 (62.0)	0.39 (9.9)	1.00 (25.4)
5/8	16	-BU-AN10	2.74 (69.6)	0.48 (12.3)	1.13 (28.6)
3/4	18	-BU-AN12	3.09 (78.5)	0.61 (15.5)	1.37 (34.9)
7/8	22	-BU-AN14	3.12 (79.2)	0.72 (18.3)	1.50 (38.1)
1	25	-BU-AN16	3.14 (79.8)	0.85 (21.5)	1.63 (41.3)
1 1/4	32	-BU-AN20	3.31 (84.1)	1.08 (27.5)	1.87 (47.6)
1 1/2	38	-BU-AN24	3.52 (89.4)	1.30 (33.0)	2.13 (54.0)
2	50	-BU-AN32	4.20 (106.7)	1.77 (45.0)	2.75 (69.9)

**Tube Caps**



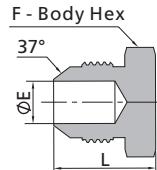
SAE 070112					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	G
1/8	3	-TC-AN2	0.50 (12.7)	0.06 (1.6)	0.37 (9.5)
3/16	4	-TC-AN3	0.56 (14.3)	0.13 (3.2)	0.44 (11.1)
1/4	6	-TC-AN4	0.59 (15.1)	0.17 (4.4)	0.56 (14.3)
5/16	8	-TC-AN5	0.61 (15.5)	0.24 (6.0)	0.63 (15.9)
3/8	10	-TC-AN6	0.63 (15.9)	0.30 (7.5)	0.69 (17.5)
1/2	12	-TC-AN8	0.75 (19.1)	0.39 (9.9)	0.87 (22.2)
5/8	16	-TC-AN10	0.84 (21.4)	0.48 (12.3)	1.00 (25.4)
3/4	18	-TC-AN12	0.91 (23.0)	0.61 (15.5)	1.25 (31.8)
7/8	22	-TC-AN14	0.97 (24.6)	0.72 (18.3)	1.37 (34.9)
1	25	-TC-AN16	1.02 (25.8)	0.85 (21.5)	1.50 (38.1)
1 1/4	32	-TC-AN20	1.06 (27.0)	1.08 (27.5)	2.00 (50.8)
1 1/2	38	-TC-AN24	1.19 (30.2)	1.30 (33.0)	2.25 (57.2)
2	50	-TC-AN32	1.44 (36.5)	1.77 (45.0)	2.87 (73.0)

**Bulkhead Lock Nuts**



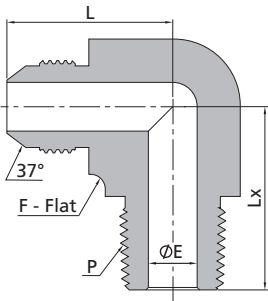
SAE 070118				
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)	
in.	mm		L	G
3/16	4	-BN-AN3	0.22 (5.6)	0.63 (15.9)
1/4	6	-BN-AN4	0.28 (7.1)	0.69 (17.5)
5/16	8	-BN-AN5	0.28 (7.1)	0.75 (19.1)
3/8	10	-BN-AN6	0.27 (6.9)	0.81 (20.6)
1/2	12	-BN-AN8	0.31 (7.9)	1.00 (25.4)
5/8	16	-BN-AN10	0.36 (9.1)	1.13 (28.6)
3/4	18	-BN-AN12	0.41 (10.4)	1.37 (34.9)
7/8	22	-BN-AN14	0.41 (10.4)	1.50 (38.1)
1	25	-BN-AN16	0.41 (10.4)	1.63 (41.3)
1 1/4	32	-BN-AN20	0.41 (10.4)	1.87 (47.6)
1 1/2	38	-BN-AN24	0.41 (10.4)	2.13 (54.0)
2	50	-BN-AN32	0.41 (10.4)	2.75 (69.9)

**Tube Plugs**



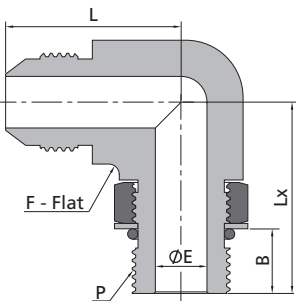
SAE 070109					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-TP-AN2	0.70 (17.8)	0.06 (1.6)	0.44 (11.1)
3/16	4	-TP-AN3	0.73 (18.5)	0.13 (3.2)	0.44 (11.1)
1/4	6	-TP-AN4	0.80 (20.3)	0.17 (4.4)	0.50 (12.7)
5/16	8	-TP-AN5	0.80 (20.3)	0.24 (6.0)	0.56 (14.3)
3/8	10	-TP-AN6	0.84 (21.3)	0.30 (7.5)	0.63 (15.9)
1/2	12	-TP-AN8	0.94 (23.9)	0.39 (9.9)	0.81 (20.6)
5/8	16	-TP-AN10	1.10 (27.9)	0.48 (12.3)	0.94 (23.8)
3/4	18	-TP-AN12	1.28 (32.5)	0.61 (15.5)	1.13 (28.6)
7/8	22	-TP-AN14	1.31 (33.3)	0.72 (18.3)	1.25 (31.8)
1	25	-TP-AN16	1.33 (33.8)	0.85 (21.5)	1.37 (34.9)
1 1/4	32	-TP-AN20	1.45 (36.8)	1.08 (27.5)	1.69 (42.9)
1 1/2	38	-TP-AN24	1.65 (41.9)	1.30 (33.0)	2.00 (50.8)
2	50	-TP-AN32	2.05 (52.1)	1.77 (45.0)	2.63 (66.7)

Male Elbows



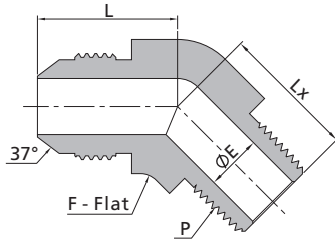
SAE 070202								
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)				
in.	mm			L	E	F	Lx	
1/8	3	1/8	-LM-AN2-NS2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.72 (18.3)	
3/16	4	1/8	-LM-AN3-NS2	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	0.72 (18.3)	
1/4	6	1/8	-LM-AN4-NS2	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	0.78 (19.8)	
1/4	6	1/4	-LM-AN4-NS4	1.06 (26.9)	0.17 (4.4)	0.56 (14.3)	1.09 (27.7)	
5/16	8	1/8	-LM-AN5-NS2	0.95 (24.1)	0.19 (4.8)	0.56 (14.3)	0.78 (19.8)	
5/16	8	1/4	-LM-AN5-NS4	1.06 (26.9)	0.24 (6.0)	0.56 (14.3)	1.09 (27.7)	
3/8	10	1/8	-LM-AN6-NS2	1.06 (26.9)	0.19 (4.8)	0.56 (14.3)	0.90 (22.8)	
3/8	10	1/4	-LM-AN6-NS4	1.06 (26.9)	0.28 (7.1)	0.56 (14.3)	1.09 (27.7)	
3/8	10	3/8	-LM-AN6-NS6	1.14 (29.0)	0.30 (7.5)	0.69 (17.5)	1.22 (31.0)	
3/8	10	1/2	-LM-AN6-NS8	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	1.47 (37.3)	
1/2	12	1/4	-LM-AN8-NS4	1.25 (31.8)	0.28 (7.1)	0.81 (20.6)	1.22 (31.0)	
1/2	12	3/8	-LM-AN8-NS6	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.22 (31.0)	
1/2	12	1/2	-LM-AN8-NS8	1.33 (33.7)	0.39 (9.9)	0.81 (20.6)	1.47 (37.3)	
1/2	12	3/4	-LM-AN8-NS12	1.42 (36.0)	0.35 (9.0)	1.00 (25.4)	1.59 (40.4)	
5/8	16	3/8	-LM-AN10-NS6	1.45 (36.8)	0.39 (9.9)	0.81 (20.6)	1.30 (33.0)	
5/8	16	1/2	-LM-AN10-NS8	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.47 (37.3)	
5/8	16	3/4	-LM-AN10-NS12	1.53 (38.9)	0.48 (12.3)	1.00 (25.4)	1.59 (40.4)	
3/4	18	3/4	-LM-AN12-NS12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.59 (40.4)	
3/4	18	1	-LM-AN12-NS16	1.66 (42.2)	0.61 (15.5)	1.25 (31.8)	1.98 (50.4)	
7/8	22	3/4	-LM-AN14-NS12	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.69 (42.9)	
1	25	3/4	-LM-AN16-NS12	1.81 (46.0)	0.72 (18.3)	1.37 (34.9)	1.78 (45.2)	
1	25	1	-LM-AN16-NS16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	1.97 (50.0)	
1 1/4	32	1	-LM-AN20-NS16	2.06 (52.3)	0.94 (23.8)	1.69 (42.9)	2.35 (59.6)	
1 1/4	32	1 1/4	-LM-AN20-NS20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.38 (60.5)	

Positionable Male Elbows



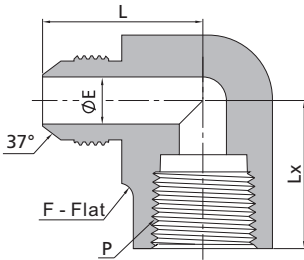
SAE 070220									
Tube O.D.		P-SAE Nominal Size	P-SAE/MS Thread Specification	Basic Ordering Number	Dimensions, in. (mm)				
in.	mm				L	E	F	Lx	B
1/8	3	2	5/16-24	-LP-AN2-ST5	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.89 (22.6)	0.33 (8.4)
3/16	4	3	3/8-24	-LP-AN3-ST6	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	0.89 (22.6)	0.33 (8.4)
1/4	6	4	7/16-20	-LP-AN4-ST7	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	1.03 (26.2)	0.39 (9.8)
5/16	8	5	1/2-20	-LP-AN5-ST8	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)	1.13 (28.7)	0.39 (9.8)
3/8	10	6	9/16-18	-LP-AN6-ST9	1.06 (26.9)	0.30 (7.5)	0.63 (15.9)	1.25 (31.8)	0.43 (11.0)
1/2	12	8	3/4-16	-LP-AN8-ST12	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.45 (36.8)	0.49 (12.5)
5/8	16	10	7/8-14	-LP-AN10-ST14	1.45 (36.8)	0.48 (12.3)	0.94 (23.8)	1.70 (43.2)	0.56 (14.2)
3/4	18	12	1 1/16-12	-LP-AN12-ST17	1.66 (42.2)	0.61 (15.5)	1.25 (31.8)	1.94 (49.3)	0.65 (16.5)
7/8	22	14	1 3/16-12	-LP-AN14-ST19	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	2.00 (50.8)	0.65 (16.5)
1	25	16	1 5/16-12	-LP-AN16-ST21	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	2.05 (52.1)	0.65 (16.5)
1 1/4	32	20	1 5/8-12	-LP-AN20-ST26	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.25 (57.2)	0.65 (16.5)
1 1/2	38	24	1 7/8-12	-LP-AN24-ST30	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)	2.39 (60.7)	0.65 (16.5)

45° Male Elbows



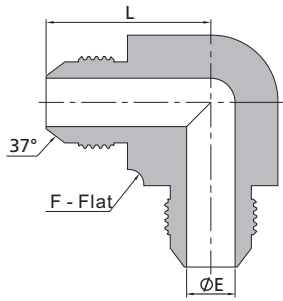
SAE 070302							
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	Lx
1/8	3	1/8	-VM-AN2-NS2	0.69 (17.5)	0.06 (1.6)	0.44 (11.1)	0.52 (13.2)
3/16	4	1/8	-VM-AN3-NS2	0.69 (17.5)	0.13 (3.2)	0.44 (11.1)	0.52 (13.2)
1/4	6	1/8	-VM-AN4-NS2	0.72 (18.3)	0.17 (4.4)	0.50 (12.7)	0.64 (16.3)
5/16	8	1/8	-VM-AN5-NS2	0.77 (19.6)	0.19 (4.8)	0.56 (14.3)	0.64 (16.3)
3/8	10	1/4	-VM-AN6-NS4	0.83 (21.1)	0.28 (7.1)	0.56 (14.3)	0.86 (21.8)
1/2	12	3/8	-VM-AN8-NS6	0.98 (24.9)	0.39 (9.9)	0.69 (17.5)	0.95 (24.1)
5/8	16	1/2	-VM-AN10-NS8	1.11 (28.2)	0.48 (12.3)	0.81 (20.6)	1.17 (29.7)
3/4	18	3/4	-VM-AN12-NS12	1.28 (32.5)	0.61 (15.5)	1.06 (27.0)	1.20 (30.5)
7/8	22	3/4	-VM-AN14-NS12	1.42 (36.0)	0.72 (18.3)	1.25 (31.8)	1.30 (33.0)
1	25	1	-VM-AN16-NS16	1.47 (37.3)	0.85 (21.5)	1.37 (34.9)	1.48 (37.6)
1 1/2	38	1 1/2	-VM-AN24-NS24	1.78 (45.2)	1.30 (33.0)	2.00 (50.8)	1.77 (45.0)

Female Elbows



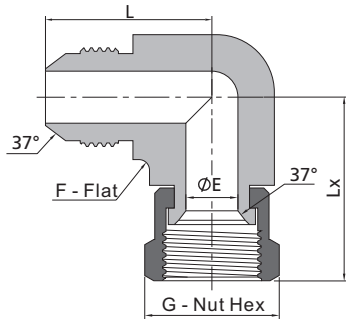
SAE 070203							
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	Lx
1/8	3	1/8	-LF-AN2-NS2	1.00 (25.4)	0.06 (1.6)	0.56 (14.3)	0.66 (16.8)
3/16	4	1/8	-LF-AN3-NS2	1.03 (26.2)	0.13 (3.2)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/8	-LF-AN4-NS2	1.08 (27.4)	0.17 (4.4)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/4	-LF-AN4-NS4	1.22 (30.9)	0.17 (4.4)	0.81 (20.6)	0.88 (22.4)
5/16	8	1/8	-LF-AN5-NS2	1.08 (27.4)	0.24 (6.0)	0.56 (14.3)	0.66 (16.8)
5/16	8	1/4	-LF-AN5-NS4	1.22 (30.9)	0.24 (6.0)	0.81 (20.6)	0.88 (22.4)
3/8	10	1/8	-LF-AN6-NS2	1.06 (26.9)	0.30 (7.5)	0.63 (15.9)	0.66 (16.8)
3/8	10	1/4	-LF-AN6-NS4	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	0.88 (22.4)
3/8	10	3/8	-LF-AN6-NS6	1.31 (33.2)	0.30 (7.5)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/4	-LF-AN8-NS4	1.24 (31.6)	0.39 (9.9)	0.81 (20.6)	0.88 (22.4)
1/2	12	3/8	-LF-AN8-NS6	1.42 (36.1)	0.39 (9.9)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/2	-LF-AN8-NS8	1.42 (36.1)	0.39 (9.9)	1.06 (27.0)	1.23 (31.2)
5/8	16	1/2	-LF-AN10-NS8	1.64 (41.7)	0.48 (12.3)	1.06 (27.0)	1.23 (31.2)
3/4	18	1/2	-LF-AN12-NS8	1.66 (42.1)	0.61 (15.5)	1.25 (31.8)	1.23 (31.2)
3/4	18	3/4	-LF-AN12-NS12	1.89 (48.0)	0.61 (15.5)	1.37 (34.9)	1.36 (34.5)
7/8	22	3/4	-LF-AN14-NS12	1.86 (47.2)	0.72 (18.3)	1.37 (34.9)	1.42 (36.1)
1	25	1	-LF-AN16-NS16	2.17 (55.1)	0.85 (21.5)	1.69 (42.9)	1.62 (41.1)
1 1/4	32	1 1/4	-LF-AN20-NS20	2.33 (59.2)	1.08 (27.5)	2.00 (50.8)	1.70 (43.2)

Union Elbows



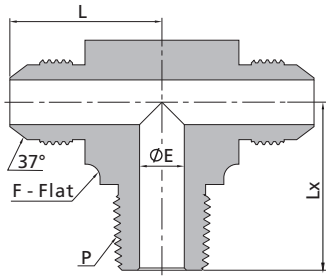
SAE 070201					
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-LU-AN2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)
3/16	4	-LU-AN3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)
1/4	6	-LU-AN4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)
5/16	8	-LU-AN5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)
3/8	10	-LU-AN6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)
1/2	12	-LU-AN8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)
5/8	16	-LU-AN10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)
3/4	18	-LU-AN12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)
7/8	22	-LU-AN14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)
1	25	-LU-AN16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)
1 1/4	32	-LU-AN20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)
1 1/2	38	-LU-AN24	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)

Rotatable Union Elbows



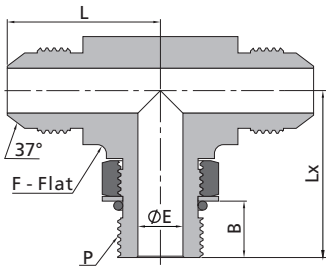
SAE 070221							
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)				
in.	mm		L	E	F	Lx	G
1/8	3	-LU-AN2-AS2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.97 (24.6)	0.44 (11.1)
3/16	4	-LU-AN3-AS3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	1.00 (25.4)	0.50 (12.7)
1/4	6	-LU-AN4-AS4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	1.00 (25.4)	0.56 (14.3)
5/16	8	-LU-AN5-AS5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)	1.06 (26.9)	0.63 (15.9)
3/8	10	-LU-AN6-AS6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)	1.25 (31.8)	0.69 (17.5)
1/2	12	-LU-AN8-AS8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.38 (35.1)	0.87 (22.2)
5/8	16	-LU-AN10-AS10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.62 (41.1)	1.00 (25.4)
3/4	18	-LU-AN12-AS12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.75 (44.4)	1.25 (31.8)
7/8	22	-LU-AN14-AS14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.78 (45.2)	1.37 (34.9)
1	25	-LU-AN16-AS16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	2.00 (50.8)	1.50 (38.1)
1 1/4	32	-LU-AN20-AS20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.31 (58.7)	2.00 (50.8)
1 1/2	38	-LU-AN24-AS24	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)	2.59 (65.8)	2.37 (60.3)

Male Branch Tees



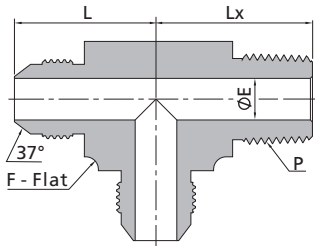
SAE 070425								
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)				
in.	mm			L	E	F	Lx	
1/8	3	1/8	-TTM-AN2-NS2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.72 (18.3)	
3/16	4	1/8	-TTM-AN3-NS2	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	0.72 (18.3)	
1/4	6	1/8	-TTM-AN4-NS2	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	0.78 (19.8)	
1/4	6	1/4	-TTM-AN4-NS4	1.06 (26.9)	0.17 (4.4)	0.56 (14.3)	1.09 (27.7)	
5/16	8	1/8	-TTM-AN5-NS2	0.95 (24.1)	0.19 (4.8)	0.56 (14.3)	0.78 (19.8)	
5/16	8	1/4	-TTM-AN5-NS4	1.06 (26.9)	0.24 (6.0)	0.56 (14.3)	1.09 (27.7)	
3/8	10	1/8	-TTM-AN6-NS2	1.06 (26.9)	0.19 (4.8)	0.56 (14.3)	0.90 (22.8)	
3/8	10	1/4	-TTM-AN6-NS4	1.06 (26.9)	0.28 (7.1)	0.56 (14.3)	1.09 (27.7)	
3/8	10	3/8	-TTM-AN6-NS6	1.14 (29.0)	0.30 (7.5)	0.69 (17.5)	1.22 (31.0)	
3/8	10	1/2	-TTM-AN6-NS8	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	1.47 (37.3)	
1/2	12	1/4	-TTM-AN8-NS4	1.25 (31.8)	0.28 (7.1)	0.81 (20.6)	1.22 (31.0)	
1/2	12	3/8	-TTM-AN8-NS6	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.22 (31.0)	
1/2	12	1/2	-TTM-AN8-NS8	1.33 (33.7)	0.39 (9.9)	0.81 (20.6)	1.47 (37.3)	
1/2	12	3/4	-TTM-AN8-NS12	1.42 (36.0)	0.39 (9.9)	1.00 (25.4)	1.59 (40.4)	
5/8	16	3/8	-TTM-AN10-NS6	1.45 (36.8)	0.39 (9.9)	0.81 (20.6)	1.30 (33.0)	
5/8	16	1/2	-TTM-AN10-NS8	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.47 (37.3)	
5/8	16	3/4	-TTM-AN10-NS12	1.53 (38.9)	0.48 (12.3)	1.00 (25.4)	1.59 (40.4)	
3/4	18	3/4	-TTM-AN12-NS12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.59 (40.4)	
3/4	18	1	-TTM-AN12-NS16	1.66 (42.2)	0.61 (15.5)	1.25 (31.8)	1.98 (50.4)	
7/8	22	3/4	-TTM-AN14-NS12	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.69 (42.9)	
1	25	3/4	-TTM-AN16-NS12	1.81 (46.0)	0.72 (18.3)	1.37 (34.9)	1.78 (45.2)	
1	25	1	-TTM-AN16-NS16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	1.97 (50.0)	
1 1/4	32	1	-TTM-AN20-NS16	2.06 (52.3)	0.94 (23.8)	1.69 (42.9)	2.35 (59.6)	
1 1/4	32	1 1/4	-TTM-AN20-NS20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.38 (60.5)	

Positionable Male Branch Tees



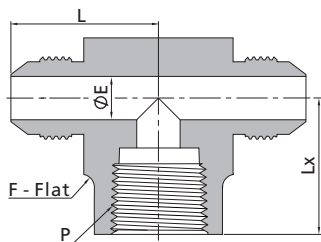
SAE 070429									
Tube O.D.		P-SAE Nominal Size	P-SAE/MS Thread Specification	Basic Ordering Number	Dimensions, in. (mm)				
in.	mm				L	E	F	Lx	B
1/8	3	2	5/16-24	-TTP-AN2-ST5	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.89 (22.6)	0.33 (8.4)
3/16	4	3	3/8-24	-TTP-AN3-ST6	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	0.89 (22.6)	0.33 (8.4)
1/4	6	4	7/16-20	-TTP-AN4-ST7	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	1.03 (26.2)	0.39 (9.8)
5/16	8	5	1/2-20	-TTP-AN5-ST8	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)	1.13 (28.7)	0.39 (9.8)
3/8	10	6	9/16-18	-TTP-AN6-ST9	1.06 (26.9)	0.30 (7.5)	0.63 (15.9)	1.25 (31.8)	0.43 (11.0)
1/2	12	8	3/4-16	-TTP-AN8-ST12	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.45 (36.8)	0.49 (12.5)
5/8	16	10	7/8-14	-TTP-AN10-ST14	1.45 (36.8)	0.48 (12.3)	0.94 (23.8)	1.70 (43.2)	0.56 (14.2)
3/4	18	12	1 1/16-12	-TTP-AN12-ST17	1.66 (42.2)	0.61 (15.5)	1.25 (31.8)	1.94 (49.3)	0.65 (16.5)
7/8	22	14	1 3/16-12	-TTP-AN14-ST19	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	2.00 (50.8)	0.65 (16.5)
1	25	16	1 5/16-12	-TTP-AN16-ST21	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	2.05 (52.1)	0.65 (16.5)
1 1/4	32	20	1 5/8-12	-TTP-AN20-ST26	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.25 (57.2)	0.65 (16.5)
1 1/2	38	24	1 7/8-12	-TTP-AN24-ST30	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)	2.39 (60.7)	0.65 (16.5)

Male Run Tees



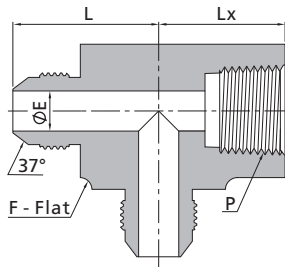
SAE 070424							
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	Lx
1/8	3	1/8	-TMT-AN2-NS2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.72 (18.3)
3/16	4	1/8	-TMT-AN3-NS2	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	0.72 (18.3)
1/4	6	1/8	-TMT-AN4-NS2	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	0.78 (19.8)
1/4	6	1/4	-TMT-AN4-NS4	1.06 (26.9)	0.17 (4.4)	0.56 (14.3)	1.09 (27.7)
5/16	8	1/8	-TMT-AN5-NS2	0.95 (24.1)	0.19 (4.8)	0.56 (14.3)	0.78 (19.8)
5/16	8	1/4	-TMT-AN5-NS4	1.06 (26.9)	0.24 (6.0)	0.56 (14.3)	1.09 (27.7)
3/8	10	1/8	-TMT-AN6-NS2	1.06 (26.9)	0.19 (4.8)	0.56 (14.3)	0.90 (22.8)
3/8	10	1/4	-TMT-AN6-NS4	1.06 (26.9)	0.28 (7.1)	0.56 (14.3)	1.09 (27.7)
3/8	10	3/8	-TMT-AN6-NS6	1.14 (29.0)	0.30 (7.5)	0.69 (17.5)	1.22 (31.0)
3/8	10	1/2	-TMT-AN6-NS8	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	1.47 (37.3)
1/2	12	1/4	-TMT-AN8-NS4	1.25 (31.8)	0.28 (7.1)	0.81 (20.6)	1.22 (31.0)
1/2	12	3/8	-TMT-AN8-NS6	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.22 (31.0)
1/2	12	1/2	-TMT-AN8-NS8	1.33 (33.7)	0.39 (9.9)	0.81 (20.6)	1.47 (37.3)
1/2	12	3/4	-TMT-AN8-NS12	1.42 (36.0)	0.39 (9.9)	1.00 (25.4)	1.59 (40.4)
5/8	16	3/8	-TMT-AN10-NS6	1.45 (36.8)	0.39 (9.9)	0.81 (20.6)	1.30 (33.0)
5/8	16	1/2	-TMT-AN10-NS8	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.47 (37.3)
5/8	16	3/4	-TMT-AN10-NS12	1.53 (38.9)	0.48 (12.3)	1.00 (25.4)	1.59 (40.4)
3/4	18	3/4	-TMT-AN12-NS12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.59 (40.4)
3/4	18	1	-TMT-AN12-NS16	1.66 (42.2)	0.61 (15.5)	1.25 (31.8)	1.98 (50.4)
7/8	22	3/4	-TMT-AN14-NS12	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.69 (42.9)
1	25	3/4	-TMT-AN16-NS12	1.81 (46.0)	0.72 (18.3)	1.37 (34.9)	1.78 (45.2)
1	25	1	-TMT-AN16-NS16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	1.97 (50.0)
1 1/4	32	1	-TMT-AN20-NS16	2.06 (52.3)	0.94 (23.8)	1.69 (42.9)	2.35 (59.6)
1 1/4	32	1 1/4	-TMT-AN20-NS20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.38 (60.5)

Female Branch Tees



SAE 070427							
Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	Lx
1/8	3	1/8	-TTF-AN2-NS2	1.00 (25.4)	0.06 (1.6)	0.56 (14.3)	0.66 (16.8)
3/16	4	1/8	-TTF-AN3-NS2	1.03 (26.2)	0.13 (3.2)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/8	-TTF-AN4-NS2	1.08 (27.4)	0.17 (4.4)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/4	-TTF-AN4-NS4	1.22 (30.9)	0.17 (4.4)	0.81 (20.6)	0.88 (22.4)
5/16	8	1/8	-TTF-AN5-NS2	1.08 (27.4)	0.24 (6.0)	0.56 (14.3)	0.66 (16.8)
5/16	8	1/4	-TTF-AN5-NS4	1.22 (30.9)	0.24 (6.0)	0.81 (20.6)	0.88 (22.4)
3/8	10	1/8	-TTF-AN6-NS2	1.06 (26.9)	0.30 (7.5)	0.63 (15.9)	0.66 (16.8)
3/8	10	1/4	-TTF-AN6-NS4	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	0.88 (22.4)
3/8	10	3/8	-TTF-AN6-NS6	1.31 (33.2)	0.30 (7.5)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/4	-TTF-AN8-NS4	1.24 (31.6)	0.39 (9.9)	0.81 (20.6)	0.88 (22.4)
1/2	12	3/8	-TTF-AN8-NS6	1.42 (36.1)	0.39 (9.9)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/2	-TTF-AN8-NS8	1.42 (36.1)	0.39 (9.9)	1.06 (27.0)	1.23 (31.2)
5/8	16	1/2	-TTF-AN10-NS8	1.64 (41.7)	0.48 (12.3)	1.06 (27.0)	1.23 (31.2)
3/4	18	1/2	-TTF-AN12-NS8	1.66 (42.1)	0.61 (15.5)	1.25 (31.8)	1.23 (31.2)
3/4	18	3/4	-TTF-AN12-NS12	1.89 (48.0)	0.61 (15.5)	1.37 (34.9)	1.36 (34.5)
7/8	22	3/4	-TTF-AN14-NS12	1.86 (47.2)	0.72 (18.3)	1.37 (34.9)	1.42 (36.1)
1	25	1	-TTF-AN16-NS16	2.17 (55.1)	0.85 (21.5)	1.69 (42.9)	1.62 (41.1)
1 1/4	32	1 1/4	-TTF-AN20-NS20	2.33 (59.2)	1.08 (27.5)	2.00 (50.8)	1.70 (43.2)

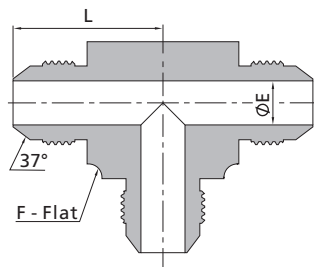
Female Run Tees



SAE 070426

Tube O.D.		P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
in.	mm			L	E	F	Lx
1/8	3	1/8	-TFT-AN2-NS2	1.00 (25.4)	0.06 (1.6)	0.56 (14.3)	0.66 (16.8)
3/16	4	1/8	-TFT-AN3-NS2	1.03 (26.2)	0.13 (3.2)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/8	-TFT-AN4-NS2	1.08 (27.4)	0.17 (4.4)	0.56 (14.3)	0.66 (16.8)
1/4	6	1/4	-TFT-AN4-NS4	1.22 (30.9)	0.17 (4.4)	0.81 (20.6)	0.88 (22.4)
5/16	8	1/8	-TFT-AN5-NS2	1.08 (27.4)	0.24 (6.0)	0.56 (14.3)	0.66 (16.8)
5/16	8	1/4	-TFT-AN5-NS4	1.22 (30.9)	0.24 (6.0)	0.81 (20.6)	0.88 (22.4)
3/8	10	1/8	-TFT-AN6-NS2	1.06 (26.9)	0.30 (7.5)	0.63 (15.9)	0.66 (16.8)
3/8	10	1/4	-TFT-AN6-NS4	1.23 (31.2)	0.30 (7.5)	0.81 (20.6)	0.88 (22.4)
3/8	10	3/8	-TFT-AN6-NS6	1.31 (33.2)	0.30 (7.5)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/4	-TFT-AN8-NS4	1.24 (31.6)	0.39 (9.9)	0.81 (20.6)	0.88 (22.4)
1/2	12	3/8	-TFT-AN8-NS6	1.42 (36.1)	0.39 (9.9)	0.94 (23.8)	1.02 (25.9)
1/2	12	1/2	-TFT-AN8-NS8	1.42 (36.1)	0.39 (9.9)	1.06 (27.0)	1.23 (31.2)
5/8	16	1/2	-TFT-AN10-NS8	1.64 (41.7)	0.48 (12.3)	1.06 (27.0)	1.23 (31.2)
3/4	18	1/2	-TFT-AN12-NS8	1.66 (42.1)	0.61 (15.5)	1.25 (31.8)	1.23 (31.2)
3/4	18	3/4	-TFT-AN12-NS12	1.89 (48.0)	0.61 (15.5)	1.37 (34.9)	1.36 (34.5)
7/8	22	3/4	-TFT-AN14-NS12	1.86 (47.2)	0.72 (18.3)	1.37 (34.9)	1.42 (36.1)
1	25	1	-TFT-AN16-NS16	2.17 (55.1)	0.85 (21.5)	1.69 (42.9)	1.62 (41.1)
1 1/4	32	1 1/4	-TFT-AN20-NS20	2.33 (59.2)	1.08 (27.5)	2.00 (50.8)	1.70 (43.2)

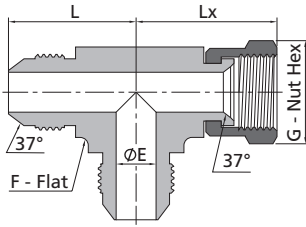
Union Tees



SAE 070401

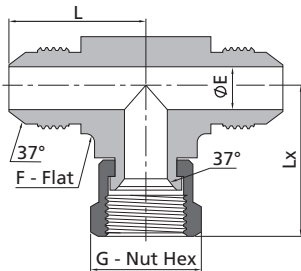
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-TTT-AN2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)
3/16	4	-TTT-AN3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)
1/4	6	-TTT-AN4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)
5/16	8	-TTT-AN5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)
3/8	10	-TTT-AN6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)
1/2	12	-TTT-AN8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)
5/8	16	-TTT-AN10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)
3/4	18	-TTT-AN12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)
7/8	22	-TTT-AN14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)
1	25	-TTT-AN16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)
1 1/4	32	-TTT-AN20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)
1 1/2	38	-TTT-AN24	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)

Rotatable Run Tees



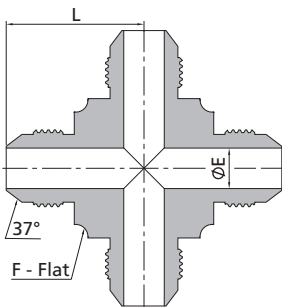
Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)				
in.	mm		L	E	F	Lx	G
1/8	3	-TTT-AN2-AS2-AN2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.97 (24.6)	0.44 (11.1)
3/16	4	-TTT-AN3-AS3-AN3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	1.00 (25.4)	0.50 (12.7)
1/4	6	-TTT-AN4-AS4-AN4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	1.00 (25.4)	0.56 (14.3)
5/16	8	-TTT-AN5-AS5-AN5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)	1.06 (26.9)	0.63 (15.9)
3/8	10	-TTT-AN6-AS6-AN6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)	1.25 (31.8)	0.69 (17.5)
1/2	12	-TTT-AN8-AS8-AN8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.38 (35.1)	0.87 (22.2)
5/8	16	-TTT-AN10-AS10-AN10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.62 (41.1)	1.00 (25.4)
3/4	18	-TTT-AN12-AS12-AN12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.75 (44.4)	1.25 (31.8)
7/8	22	-TTT-AN14-AS14-AN14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.78 (45.2)	1.37 (34.9)
1	25	-TTT-AN16-AS16-AN16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	2.00 (50.8)	1.50 (38.1)
1 1/4	32	-TTT-AN20-AS20-AN20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.31 (58.7)	2.00 (50.8)
1 1/2	38	-TTT-AN24-AS24-AN24	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)	2.59 (65.8)	2.37 (60.3)

Rotatable Branch Tees



Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)				
in.	mm		L	E	F	Lx	G
1/8	3	-TTT-AN2-AN2-AS2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)	0.97 (24.6)	0.44 (11.1)
3/16	4	-TTT-AN3-AN3-AS3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)	1.00 (25.4)	0.50 (12.7)
1/4	6	-TTT-AN4-AN4-AS4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)	1.00 (25.4)	0.56 (14.3)
5/16	8	-TTT-AN5-AN5-AS5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)	1.06 (26.9)	0.63 (15.9)
3/8	10	-TTT-AN6-AN6-AS6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)	1.25 (31.8)	0.69 (17.5)
1/2	12	-TTT-AN8-AN8-AS8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)	1.38 (35.1)	0.87 (22.2)
5/8	16	-TTT-AN10-AN10-AS10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)	1.62 (41.1)	1.00 (25.4)
3/4	18	-TTT-AN12-AN12-AS12	1.66 (42.2)	0.61 (15.5)	1.06 (27.0)	1.75 (44.4)	1.25 (31.8)
7/8	22	-TTT-AN14-AN14-AS14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)	1.78 (45.2)	1.37 (34.9)
1	25	-TTT-AN16-AN16-AS16	1.81 (46.0)	0.85 (21.5)	1.37 (34.9)	2.00 (50.8)	1.50 (38.1)
1 1/4	32	-TTT-AN20-AN20-AS20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)	2.31 (58.7)	2.00 (50.8)
1 1/2	38	-TTT-AN24-AN24-AS24	2.33 (59.2)	1.30 (33.0)	2.00 (50.8)	2.59 (65.8)	2.37 (60.3)

Union Crosses



Tube O.D.		Basic Ordering Number	Dimensions, in. (mm)		
in.	mm		L	E	F
1/8	3	-C-AN2	0.77 (19.6)	0.06 (1.6)	0.44 (11.1)
3/16	4	-C-AN3	0.83 (21.1)	0.13 (3.2)	0.44 (11.1)
1/4	6	-C-AN4	0.89 (22.6)	0.17 (4.4)	0.50 (12.7)
5/16	8	-C-AN5	0.95 (24.1)	0.24 (6.0)	0.56 (14.3)
3/8	10	-C-AN6	1.06 (26.9)	0.30 (7.5)	0.56 (14.3)
1/2	12	-C-AN8	1.25 (31.8)	0.39 (9.9)	0.81 (20.6)
5/8	16	-C-AN10	1.45 (36.8)	0.48 (12.3)	0.81 (20.6)
3/4	18	-C-AN12	1.78 (45.2)	0.61 (15.5)	1.25 (31.8)
7/8	22	-C-AN14	1.80 (45.7)	0.72 (18.3)	1.25 (31.8)
1	25	-C-AN16	2.02 (51.2)	0.85 (21.5)	1.69 (42.9)
1 1/4	32	-C-AN20	2.06 (52.3)	1.08 (27.5)	1.69 (42.9)



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