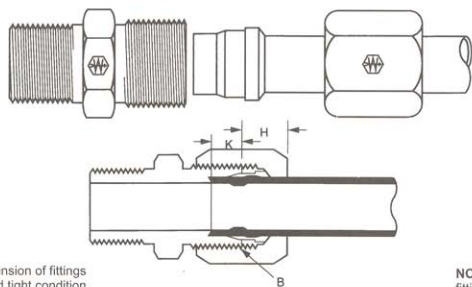


⚠ Refer to safety information regarding tubing selection on page 1.



NOTE: "H" is dimension of fittings assembled to hand tight condition.

NOTE: Illustration shows fitting fully assembled.

Tube O.D.	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2
Thread Size-B	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18	3/4-16	7/8-14	1-1/16-12	1-3/16-12	1-5/16-12	1-5/8-12	1-7/8-12	2-1/2-12
Seat Depth-K	.19	.24	.24	.26	.26	.31	.36	.36	.36	.42	.42	.49	.49
H (Ref.)	.31	.30	.39	.41	.47	.48	.53	.55	.53	.63	.56	.61	.64

#### • Typical Application

Hydraulic, instrumentation and chemical processing systems. Highly recommended for high pressure applications.

#### • Pressure

Operating pressure up to 10,000 psi depending on tube and fitting size. See steel fittings recommendations, pages 199.

#### • Vibration

Excellent resistance.

#### • Temperature Range

-65°F to +400°F (-53°C to +204°C) at maximum operating pressures. Has been used at 800°F and 1000 psi to 4000 psi depending on tube size. Stainless steel has been used at +1000°F and 2000 psi.

#### • Material

**Carbon Steel** - AISI/SAE 12L14

**Plating** - Weathercote®

**Stainless Steel** - Bodies and nuts: type 316. Sleeves: 17-4PH.

#### • Used With

Aluminum, hard or half copper, steel, stainless steel, monel, titanium and extra heavy wall tubing that cannot be flared. See page 28-32 for material compatibility.

#### • Advantages

An excellent high pressure fitting - NO TUBE FLARING. Used with extra heavy wall tubing. Broad selection of sizes and styles.

#### • Conformance

Meets specifications and standards of ASA, ASME and SAE.

#### • How to Order

For complete assembly (body, nut and sleeve) order individually by catalog number. Example: 7205x4. To order body only (less nut and sleeve), prefix the catalog number with the letter "B". Example: B7205x4. Nuts and sleeves can be ordered separately by catalog number.

#### • NOTE

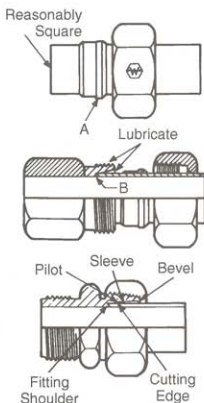
Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice. Additional information can be found in SAE J514.

#### • Assembly Instructions

See page 196.

#### • Label Set: FS-1600 (adhesive)

Refer to safety information regarding tubing selection on page 1.



## PRESETTING OPERATION

**Preset with Preset Tool:** (Preset tools are listed on page 222.)

- CAUTION:** All stainless steel sleeves should be preset in tool prior to installation.
- Slide nut and then sleeve on tube. Shoulder of sleeve "A" must be toward nut.
- Insert tube into presetting tool. Be sure that tube is bottomed on fitting tube stop at point "B". Lubricate threads, seat of fitting and shoulder of sleeve with good grade of lubricant.
- Turn nut slowly with wrench while turning tube with other hand. When the sleeve grips the tube, that is, when the tube can no longer be turned by hand – **STOP** – and note the position of the wrench. This is the "Ring Grip" point.
- Tighten nut an additional number of turns past the ring grip point per tube size and wall thickness as shown in Table 1, page 197.
- Disassemble from preset tool.

**Preset in Fitting Body:**

- Follow same procedure as when presetting with preset tool. Once the fitting nut has been turned the proper number of turns past ring grip, the fitting assembly is complete and ready for use.

**NOTE:** Only Carbon Steel Sleeves can be preset directly into the fitting body. Due to possible thread galling, the use of presetting tools is required when stainless steel fittings are to be assembled.

## FITTING INSTALLATION

- After sleeve and nut have been preset on the tubing and checked as described, the assembly is ready for installation into the Ermeto® fitting seat.
- Lubricate threads, seat of fitting and shoulder of sleeve with a good grade of lubricant compatible with system fluid.
- Insert tube assembly into fitting and tighten nut until sharp rise in torque is felt.
- Starting at the position of sharp torque rise, tighten nut 1/4 turn to complete assembly.

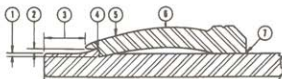
**When the assembly procedure for Ermeto fittings is followed correctly, these points will be evident:**

- Cutting edge of sleeve will be imbedded in tubing to its full depth.
- Pilot edge of sleeve should be close to or touching O.D. of tubing.
- Distance between end of tube and leading or pilot edge of sleeve will be at least 1/8".
- Metal will be piled ahead of cutting edge of sleeve under pilot.
- Contact area of sleeve will show evidence of being in perfect contact with tapered seat of fitting.
- Sleeve will show evidence of being bowed within its elastic limits.
- Back of sleeve will be in contact with tube.

**NOTE:** Performance of fitting will not be affected if sleeve rotates on tube after disassembly.

### FOR RE-INSTALLATION OF FITTING AFTER DISASSEMBLING

- Insert tube assembly into fitting, tighten nut until a sharp rise in torque is felt.
- Starting at the position of sharp torque rise, tighten nut 1/4 turn to complete the reinstallation.



Refer to safety information regarding tubing selection on page 1.

### 7000 SERIES

TABLE 1: Number of Additional Turns from "Ring Grip" for Hand Presetting Operation-Ermeto® Sleeve

Tube Size	Tube Material **	Tube Wall Thickness									
		.018	.022	.028	.035	.049	.065	.083	.095	.109	.120
2	C 1010 MIL T 8504	1-1/6 1-1/6	1-1/6 1-1/6	1-1/6 1-1/6	1-1/6 1-1/6						
3	C 1010 MIL T 8504	1-1/6 1-1/6	1-1/6 1-1/6	1-1/6 1-1/6	1 1						
4	C 1010 MIL T 8504			1-1/6 1-1/6	1-1/6 1	1-1/6 1	1 5/6				
5	C 1010 MIL T 8504			1-1/6 1-1/6	1-1/6 1-1/6	1-1/6 1	1 1				
6	C 1010 MIL T 8504				1-1/6 1-1/6	1-1/6 1	1 5/6	1 5/6			
8	C 1010 MIL T 8504				1-1/6 1-1/6	1-1/6 1	1 5/6	1 5/6	1 5/6		
10	C 1010 MIL T 8504					1-1/6 1-1/6	1 1	5/6 5/6	5/6 5/6	5/6 5/6	5/6 5/6
12	C 1010 MIL T 8504					1 1-1/6	1 1	5/6 5/6	5/6 5/6	5/6 5/6	
16	C 1010 MIL T 8504					1-1/6 1-1/6	1-1/6 1-1/6	5/6 5/6	5/6 5/6	5/6 5/6	
20	C 1010 MIL T 8504					1-1/6 1	1 1	1 1	1 1	5/6 5/6	5/6 5/6
24	C 1010 MIL T 8504								1	1	1
32	C 1010 MIL T 8504								1	1	1

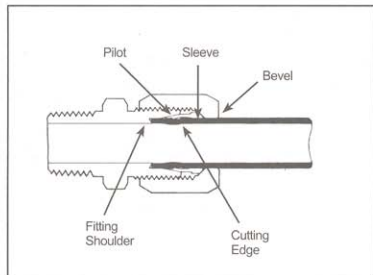
\*\* C 1010 – Carbon Steel Tubing

\*\* MIL T 8504 – Annealed Stainless Steel

STAINLESS

Refer to safety information regarding tubing selection on page 1.

Ermeto® Fittings (7000 Series) are especially designed for making leak-proof tube connections. This fitting will effectively withstand high pressure, severe vibration and extreme temperature. No special tools are needed for assembly. Simply cut tube square, preset sleeve on tubing and assemble.



### “7000” SERIES FITTINGS

Specifically designed to meet all SAE approved standards for hydraulic flareless tube fittings. Available in a complete range of standard body styles. In addition, the “7000” Series includes all body styles for SAE straight thread O-ring boss mounting. Complete size range to 2”.

### CARBON STEEL “7000” SERIES

Weatherhead Ermeto® Fittings have the exclusive “Weathercote” finish, which fully resists the effects of non-flammable hydraulic fluids.

### STAINLESS STEEL “7000” SERIES

Fittings also available in a complete range of body styles and sizes.

Standard stainless steel assemblies may be ordered by quoting the stainless steel part numbers appearing in this catalog. Standard stainless steel assemblies are composed of the following types of material:

### ERMETO® DESIGN PRINCIPLE PROVIDES POSITIVE SEAL

1. In presetting, as the nut is tightened it forces the sleeve forward into the body taper. See page 196 for preset instructions.
2. Pilot of sleeve contracts, forcing the cutting edge of sleeve to shear a groove into outer surface of the tube, making a tight joint between fitting and tube.
3. In assembling the preset sleeve and tube into the fitting body, the nut presses on the bevel at rear of sleeve causing it to clamp tightly to the tube. Resistance to vibration is concentrated at this point rather than at the sleeve cut.
4. When fully tightened, the case hardened sleeve is bowed slightly at the midsection and acts as a spring. This spring action of the sleeve maintains a constant tension between the body and the nut, and thus prevents the nut from loosening.
5. After the first assembly, the sleeve is permanently attached to the tube. Disassembly and reassembly of the fitting can be made without loss of strength or sealing qualities.

BODY – Type 316 Stainless Steel

NUT – Type 316 Stainless Steel

SLEEVE – Type 17-4PH Stainless Steel

Any deviation from the standard assembly must be ordered as component parts. Example: If Type 316 bodies and 17-4PH sleeves are to be used, they can be ordered as follows:

B7217x8 Body only (Type 316 Stainless Steel)

7176x8 Sleeves (Type 17-4PH Stainless Steel)

7105x8 Nuts (Standard Carbon Steel)

In general, the “bite-action” of the sleeves in any given material varies as shown in the following table:

### STAINLESS STEEL SLEEVES

Cat. No. 7176 sleeves are made from Armco 17-4PH precipitation hardened stainless steel. When used on “fully-annealed” to 1/8 hard tubing in the 303 to 316 stainless range, they provide the typical seal.

“7000” Series Sleeve	SLEEVE MATERIAL	TUBING USED 303 to 316 Stainless and Cupro-Nickel	“BITE-ACTION”
7165	Heat Treated Carbon Steel (Standard Carbon)	Fully annealed to 1/8 hard	Excellent
7176	17-4PH Stainless (Standard Stainless)	Fully annealed	Excellent

When stainless steel tubing is used for strength and no corrosive conditions exist, use the 7165 sleeve for better performance.

### HYDRAULIC PRESSURE DATA – ERMETO® FLARELESS FITTINGS

Ermeto® fittings have been used with success on many and varied applications far exceeding the conservative conditions presented below. Specifically:

- Temperatures up to 800°F, in carbon steel and 1000°F, in stainless steel have been handled without failure.\*
- Burst pressures up to 32,000 psi with 1/4" tubing.
- Vibration conditions of 1/8" off-center amplitude with 12" overhang in 1/4" tubing have been withstood at rated operating pressure with 4-to-1 safety factors for over ten million cycles.

Obviously under extreme conditions of pressure, temperature and/or vibration, the safety factor is proportionately reduced.

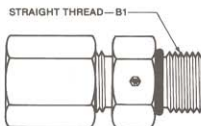
The Ermeto® flareless fitting is the ultimate hydraulic fitting available today. Special performance conditions as outlined can be accommodated; however, it is recommended that your local Weatherhead representative be consulted for engineering assistance prior to finalizing design.

The values shown in the following table are pressure ratings of Ermeto® flareless fittings under various surge conditions. They apply and are recommended for conservative operating conditions. Consult tubing selection charts on pages 22 and 23.

Size No.	Size in Inches	Maximum Pressure† No Surges PSI	Maximum Pressure† With Surges to 50%	Maximum Pressure† With Surges of 50% to 100%	Maximum Pressure† With Surges up to 150%
2	1/8	10,000	6,500	5,000	4,000
3	3/16	9,000	6,000	4,500	3,600
4	1/4	8,000	5,250	4,000	3,200
5	5/16	8,000	5,250	4,000	3,200
6	3/8	7,500	5,000	3,750	3,000
8	1/2	7,000	4,500	3,500	2,700
10	5/8	5,000	3,250	2,500	2,000
12	3/4	5,000	3,250	2,500	2,000
14	7/8	3,750	2,500	1,800	1,500
16	1	3,600	2,400	1,800	1,400
20	1-1/4	3,200	2,100	1,600	1,275
24	1-1/2	3,000	2,000	1,500	1,200
32	2	2,750	1,800	1,350	1,100

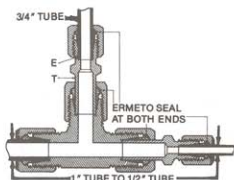
† Pressures shown do not apply to pneumatic applications or stainless steel tubing installations.

\* Zinc plating discolors at temperatures over 400°F and melts at 750°F.

Straight Thread O-Ring Thread  
Sizes

Port Size	Thread Size B1	Port Size	Thread Size B1
1/8	5/16-24	3/4	1-1/16-12
3/16	3/8-24	7/8	1-3/16-12
1/4	7/16-20	1	1-5/16-12
5/16	1/2-20	1-1/4	1-5/8-12
3/8	9/16-18	1-1/2	1-7/8-12
1/2	3/4-16	2	2-1/2-12
5/8	7/8-14		

## 7000 Series Reducer



## Enables You to Fabricate Special Fittings from Standard Parts

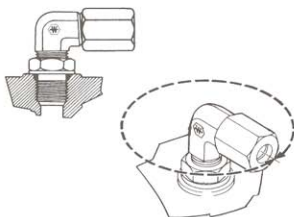
The Weatherhead reducer consists of body, nut and sleeve. It has one end (T) machined in the form of a tube with a flareless tube connection on the opposite end (E). A convenient hex wrench pad is provided to facilitate assembly.

1. Connect the tube end (T) of the reducer to the flareless fitting already assembled in the tubing system.
2. Connect the smaller O.D. tubing to end (E).

**CAUTION:** Be sure to hold reducer by the hex wrench pad while performing Step 2.

Our example of 7705x12x6x8 is made up by using reducers 7015x12x6 and 7015x12x8 with the standard 7705x12 tee.

## Straight Thread O-Ring Fitting



## Adjustable Fittings

- Permit exact positioning of tees and elbows.
  - Provide a leakproof joint.
  - Eliminate distorted bosses from overtightening.
1. Lubricate O-ring by coating with a light oil or petrolatum and push back-up washer and O-ring to the extreme rear of the O-ring groove.
  2. Turn the lock nut down until it just contacts the back-up washer.
  3. Screw fitting by hand into straight thread boss until the back-up washer contacts the face of the boss.
  4. Position the fitting by backing out (counter-clockwise) up to one full turn. Hold fitting in desired position and tighten lock nut with a wrench.
  5. Assemble tube to fitting. Re-tighten lock nut.

**NOTE:** O-Rings, lock nuts and back-up washers are preassembled on all straight thread fittings.

### Sleeve

Stainless Steel No. 7176x  
(Ref. SAE No. 080115B)



Tube O.D.	Catalog Number	L	Dia. T
1/8	7165x2-	.28	.20
3/16	7165x3-	.28	.31
1/4	7165x4-	.34	.36
5/16	7165x5-	.34	.42
3/8	7165x6-	.38	.48
1/2	7165x8-	.38	.63
5/8	7165x10-	.42	.75
3/4	7165x12-	.42	.88
7/8	7165x14-	.42	1.00
1	7165x16-	.42	1.13
1-1/4	7165x20-	.42	1.41
1-1/2	7165x24-	.42	1.66
2	7165x32-	.45	2.19

### Sleeve

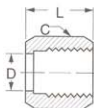


For use with diesel nuts only.

Tube O.D.	Catalog Number	L	Dia. T
1/4	8165x4	.34	.38
5/16	8165x5	.34	.44
3/8	8165x6	.38	.50

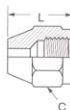
### Nut

Stainless Steel No. 7117x  
(Ref. SAE No. 080110)



Tube O.D.	Catalog Number	Hex C	L	D Dia.
1/8	7105x2-	3/8	.53	.132
3/16	7105x3-	7/16	.61	.195
1/4	7105x4-	9/16	.70	.257
5/16	7105x5-	5/8	.72	.320
3/8	7105x6-	11/16	.75	.382
1/2	7105x8-	7/8	.84	.508
5/8	7105x10-	1	.92	.634
3/4	7105x12-	1-1/4	.97	.759
7/8	7105x14-	1-3/8	1.00	.884
1	7105x16-	1-1/2	1.05	1.009
1-1/4	7105x20-	2	1.05	1.263
1-1/2	7105x24-	2-1/4	1.03	1.513
2	7105x32-	2-7/8	1.12	2.017

### Diesel Nut



Tube O.D.	Thread Size	Catalog Number	Hex C	L
1/4	9/16-18	8112x4	3/4	.94
5/16	5/8-18	8112x5	13/16	1.00
3/8	3/4-16	8112x6	15/16	1.13

### Bulkhead Nut

Stainless Steel No. 7936x  
(Ref. SAE No. 080118)



Tube O.D.	Catalog Number	Hex C	L
1/4	7924x4-	11/16	.28
3/8	7924x6-	13/16	.27
1/2	7924x8-	1	.31
5/8	7924x10	1-1/8	.36
3/4	7924x12-	1-3/8	.41
7/8	7924x14	1-1/2	.41
1	7924x16-	1-5/8	.41
1-1/4	7924x20	1-7/8	.41

\* Available in stainless steel.

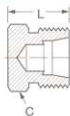
**Cap**

Stainless Steel No. 7141x



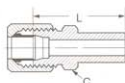
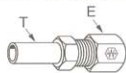
Tube O.D.	Catalog Number	Hex C	L
1/4	7129x4*	9/16	.70
3/8	7129x6*	11/16	.75
1/2	7129x8*	7/8	.84
5/8	7129x10*	1	.92
3/4	7129x12*	1-1/4	.97
1	7129x16*	1-1/2	1.05
1-1/4	7129x20	2	1.05

**Plug**

 Stainless Steel No. 7241x  
(Ref. SAE No. 080109)


Tube O.D.	Catalog Number	Hex C	L
1/8	7229x2	7/16	.63
1/4	7229x4*	1/2	.71
5/16	7229x5	9/16	.71
3/8	7229x6*	5/8	.75
1/2	7229x8*	13/16	.85
5/8	7229x10	15/16	.97
3/4	7229x12*	1-1/8	1.10
1	7229x16	1-3/8	1.10

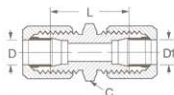
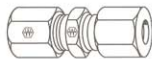
**Reducer**

 Stainless Steel No. 7027x  
(Ref. SAE No. 080123)


\* 7028x16x8

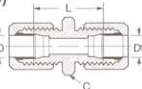
Body Size T	Tube Size E	Catalog Number	Hex C	L
3/8	1/4	7015x6x4*	1/2	1.61
1/2	1/4	7015x8x4*	9/16	1.73
1/2	3/8	7015x8x6*	5/8	1.77
5/8	1/2	7015x10x8*	13/16	1.96
3/4	3/8	7015x12x6*	13/16	1.93
3/4	1/2	7015x12x8*	13/16	2.03
1	3/4	7015x16x12*	1-1/8	2.24
1-1/4	1	7015x20x16*	1-3/8	2.28

**Small Hex Union**

 Stainless Steel No. 7317x  
(Ref. SAE No. 080101)


Tube O.D.	Tube O.D.	Catalog Number	Hex C	D	D1	L
1/8	1/8	7305x2*	7/16	.093	.093	1.02
3/16	3/16	7305x3*	7/16	.125	.125	1.11
1/4	1/4	7305x4*	1/2	.203	.203	1.18
5/16	5/16	7305x5*	9/16	.234	.234	1.18
3/8	1/4	7305x6x4*	5/8	.281	.203	1.22
3/8	3/8	7305x6*	5/8	.281	.281	1.24
1/2	3/8	7305x8x6	13/16	.422	.281	1.33
1/2	1/2	7305x8*	13/16	.422	.422	1.42
5/8	5/8	7305x10*	15/16	.500	.500	1.61
3/4	3/4	7305x12*	1-1/8	.656	.656	1.81
7/8	7/8	7305x14	1-1/4	.718	.718	1.81
1	1	7305x16*	1-3/8	.875	.875	1.81
1-1/4	1-1/4	7305x20	1-11/16	1.093	1.093	1.89
1-1/2	1-1/2	7305x24	2	1.344	1.344	1.96
2	2	7305x32	2-5/8	1.813	1.813	2.11

**Large Hex Union**

 Stainless Steel No. 7318x  
(Ref. SAE No. 080119)


Tube O.D.	Tube O.D.	Catalog Number	Hex C	D	D1	L
1/4	1/4	7306x4*	11/16	.203	.203	1.18
3/8	3/8	7306x6*	13/16	.281	.281	1.24
1/2	3/8	7306x8x6*	1	.422	.281	1.33
1/2	1/2	7306x8*	1	.422	.422	1.42
3/4	3/4	7306x12*	1-3/8	.656	.656	1.81
1	1	7306x16	1-5/8	.875	.875	1.81

\* Available in stainless steel.



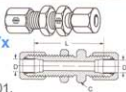
# Flareless – 7000 Series Ermeto®

## Steel Fittings

### Bulkhead Union

**Stainless Steel No. 7337x**  
(Ref. SAE No. 080601)

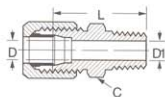
Bulkhead nut included, for replacement nuts see page 201.



Tube O.D.	Catalog Number	Hex C	D	L
1/4	7325x4	11/16	.203	1.89
3/8	7325x6	13/16	.281	1.98
1/2	7325x8	1	.422	2.22
3/4	7325x12	1-3/8	.656	2.72
1	7325x16	1-5/8	.875	2.72

### Male Connector

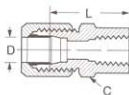
**Stainless Steel No. 7217x**  
(Ref. SAE No. 080102)



Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1 Opt.	L
1/8	1/8	7205x2	7/16	.093	.188	1.04
1/8	1/4	7205x2x4	9/16	.093	.281	1.25
3/16	1/8	7205x3	7/16	.125	.188	1.09
1/4	1/4	7205x4	1/2	.203	.188	1.12
1/4	3/8	7205x4x4	9/16	.203	.281	1.32
1/4	1/2	7205x4x6	3/4	.203	.406	1.33
1/4	3/8	7205x4x8	7/8	.203	.531	1.58
5/16	1/8	7205x5	9/16	.234	.188	1.12
5/16	1/4	7205x5x4	9/16	.234	.281	1.32
3/8	1/8	7205x6x2	5/8	.281	.188	1.15
3/8	1/4	7205x6	5/8	.281	.281	1.34
3/8	3/8	7205x6x6	3/4	.281	.406	1.35
3/8	1/2	7205x6x8	7/8	.281	.531	1.60
1/2	1/4	7205x8x4	13/16	.422	.281	1.44
1/2	3/8	7205x8	13/16	.422	.406	1.44
1/2	1/2	7205x8x8	7/8	.422	.531	1.69
1/2	3/4	7205x8x12	1-1/8	.422	.719	1.76
5/8	3/8	7205x10x6	15/16	.500	.406	1.56
5/8	1/2	7205x10	15/16	.500	.531	1.75
3/4	1/2	7205x12x8	1-1/8	.656	.531	1.88
3/4	3/4	7205x12	1-1/8	.656	.719	1.88
7/8	3/4	7205x14	1-1/4	.718	.719	1.88
1	3/4	7205x16x12	1-3/8	.875	.719	1.88
1	1	7205x16	1-3/8	.875	.938	2.07
1-1/4	1-1/4	7205x20	1-11/16	1.093	1.250	2.18
1-1/2	1-1/2	7205x24	2	1.344	1.500	2.28
2	2	7205x32	2-5/8	1.813	1.938	2.46

### Female Connector

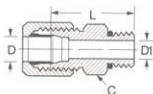
**Stainless Steel No. 7267x**  
(Ref. SAE No. 080103)



Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8	7255x2	9/16	.093	1.05
3/16	1/8	7255x3	9/16	.125	1.08
1/4	1/8	7255x4	9/16	.203	1.09
1/4	1/4	7255x4x4	3/4	.203	1.20
5/16	1/8	7255x5	9/16	.234	1.08
3/8	1/4	7255x6	3/4	.281	1.31
3/8	3/8	7255x6x6	7/8	.281	1.40
1/2	1/4	7255x8x4	7/8	.422	1.38
1/2	3/8	7255x8	7/8	.422	1.47
1/2	1/2	7255x8x8	1-1/8	.422	1.63
5/8	1/2	7255x10	1-1/8	.500	1.76
3/4	3/4	7255x12	1-3/8	.656	1.89
7/8	3/4	7255x14	1-3/8	.718	1.86
1	1	7255x16	1-5/8	.875	2.13
1-1/4	1-1/4	7255x20	2	1.093	2.22

### Straight Thread O-Ring Connector

**Stainless Steel No. 7327x**  
(Ref. SAE No. 080120)

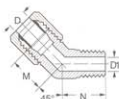


Tube O.D.	Port Size	Catalog Number	Hex C	D	L	D1 Opt.
3/16	3/16	7315x3	1/2	.125	1.04	—
1/4	1/4	7315x4	9/16	.203	1.13	—
1/4	5/16	7315x4x5	5/8	.203	1.13	—
1/4	3/8	7315x4x6	11/16	.203	1.19	.281
5/16	5/16	7315x5	5/8	.234	1.13	—
3/8	3/8	7315x6	11/16	.281	1.21	—
3/8	1/2	7315x6x8	7/8	.281	1.29	.422
1/2	1/2	7315x8	7/8	.422	1.38	—
1/2	5/8	7315x8x10	1	.422	1.51	.500
1/2	3/4	7315x8x12	1-1/4	.422	1.67	.656
5/8	5/8	7315x10	1	.500	1.57	—
3/4	3/4	7315x12	1-1/4	.656	1.79	—
3/4	1	7315x12x16	1-1/2	.656	1.82	.876
7/8	7/8	7315x14	1-3/8	.718	1.79	—
1	3/4	7315x16x12	1-3/8	.875	1.82	.656
1	1	7315x16	1-7/8	.875	1.82	—
1-1/4	1-1/4	7315x20	1-7/8	1.093	1.97	—
1-1/2	1-1/2	7315x24	2-1/8	1.344	1.97	—
2	2	7315x32	2-3/4	1.813	2.13	—

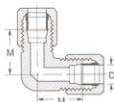
Replacement O-rings page 207.

\* Available in stainless steel.

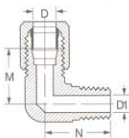
STEEL

**45° Male Elbow**  
 Stainless Steel No. 7367x  
 (Ref. SAE No. 080302)


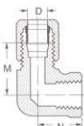
Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N	Across Flats
1/4	1/8	7355x4*	.203	.188	.70	.64	7/16
1/4	1/4	7355x4x4*	.203	.281	.83	.86	9/16
5/16	1/8	7355x5	.234	.188	.75	.64	9/16
3/8	1/4	7355x6*	.281	.281	.83	.86	9/16
1/2	3/8	7355x8*	.422	406	.98	.95	3/4
5/8	1/2	7355x10	.500	.531	1.08	1.17	7/8
3/4	3/4	7355x12	.656	.719	1.27	1.20	1-1/16
1	1	7355x16	.875	.938	1.36	1.48	1-5/16

**90° Union Elbow**  
 Stainless Steel No. 7517x  
 (Ref. SAE No. 080201)


Tube O.D.	Catalog Number	D	M	Across Flats
1/4	7505x4*	.203	.89	7/16
5/16	7505x5	.234	.95	1/2
3/8	7505x6*	.281	1.05	9/16
1/2	7505x8*	.422	1.25	3/4
5/8	7505x10*	.500	1.42	7/8
3/4	7505x12*	.656	1.58	1-1/16
7/8	7505x14*	.718	1.66	1-5/16
1	7505x16*	.875	1.73	1-5/16
1-1/4	7505x20	1.093	1.89	1-5/8
1-1/2	7505x24	1.346	2.02	1-7/8

**90° Male Elbow**  
 Stainless Steel No. 7417x  
 (Ref. SAE No. 080202)


Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N	Across Flats
1/8	1/8	7405x2*	.093	.188	.77	.72	7/16
3/16	1/8	7405x3	.125	.188	.83	.72	7/16
1/4	1/8	7405x4*	.203	.188	.89	.78	7/16
1/4	1/4	7405x4x4*	.203	.281	1.03	1.09	9/16
5/16	1/8	7405x5*	.234	.188	.95	.81	1/2
5/16	1/4	7405x5x4*	.234	.281	1.03	1.09	9/16
3/8	1/8	7405x6x2*	.281	.188	1.05	.90	9/16
3/8	1/4	7405x6*	.281	.281	1.05	1.09	9/16
3/8	3/8	7405x6x6*	.281	406	1.16	1.22	3/4
3/8	1/2	7405x6x8*	.281	531	1.24	1.47	7/8
1/2	1/4	7405x8x4*	.422	.281	1.25	1.22	3/4
1/2	3/8	7405x8*	.422	406	1.25	1.22	3/4
1/2	1/2	7405x8x8*	.422	531	1.35	1.47	7/8
5/8	3/8	7405x10x6*	.500	406	1.42	1.28	7/8
5/8	1/2	7405x10*	.500	531	1.42	1.47	7/8
3/4	1/2	7405x12x8	.656	531	1.58	1.59	1-1/16
3/4	3/4	7405x12*	.656	.719	1.58	1.59	1-1/16
7/8	3/4	7405x14	.718	.719	1.62	1.69	1-5/16
1	3/4	7405x16x12	.875	.719	1.73	1.78	1-5/16
1	1	7405x16*	.875	.938	1.73	1.97	1-5/16
1-1/4	1-1/4	7405x20	1.093	1.250	1.89	2.38	1-5/8
1-1/2	1-1/2	7405x24	1.344	1.500	2.02	2.64	1-7/8
2	2	7405x32	1.813	1.938	2.45	3.00	2-9/16

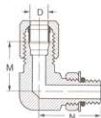
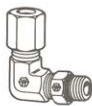
**90° Female Elbow**  
 Stainless Steel No. 7467x  
 (Ref. SAE No. 080203)


Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N	Across Flats
1/4	1/8	7455x4*	.203	.89	.66	9/16
1/4	1/4	7455x4x4*	.203	1.03	.88	3/4
3/8	1/4	7455x6*	.281	1.05	.88	3/4
3/8	3/8	7455x6x6*	.281	1.14	1.02	7/8
1/2	3/8	7455x8*	.422	1.23	1.02	7/8
1/2	1/2	7455x8x8*	.422	1.35	1.23	1-1/16
5/8	1/2	7455x10*	.500	1.42	1.23	1-1/16
3/4	3/4	7455x12*	.656	1.58	1.36	1-5/16
7/8	3/4	7455x14	.718	1.66	1.42	1-5/16
1	1	7455x16	.875	1.73	1.62	1-5/8

\* Available in stainless steel.

### 90° Elbow - Straight Thread O-Ring

Stainless Steel No. 7527x  
(Ref. SAE No. 080220)

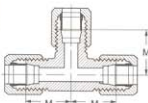
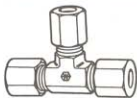


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Tube O.D.	Port Size	Catalog Number	D	M	N	Across Flats
1/4	1/4	7515x4*	.203	.89	1.03	7/16
5/16	5/16	7515x5	.234	.96	1.13	9/16
3/8	3/8	7515x6*	.281	1.05	1.25	9/16
1/2	1/2	7515x8*	.422	1.25	1.45	3/4
5/8	5/8	7515x10*	.500	1.42	1.70	7/8
3/4	3/4	7515x12*	.656	1.58	1.94	1-1/16
1	3/4	7515x16x12	.875	1.73	2.05	1-5/16
1	1	7515x16*	.875	1.73	2.05	1-5/16
1-1/4	1-1/4	7515x20	1.093	1.89	2.25	1-5/8

### Union Tee

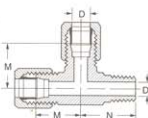
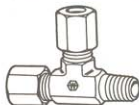
Stainless Steel No. 7717x  
(Ref. SAE No. 080401)



Tube O.D.	Catalog Number	D	M	Across Flats
3/16	7705x3	.125	.83	7/16
1/4	7705x4*	.203	.89	7/16
5/16	7705x5*	.234	.95	9/16
3/8	7705x6*	.281	1.05	9/16
1/2	7705x8*	.422	1.25	3/4
5/8	7705x10*	.500	1.42	7/8
3/4	7705x12*	.656	1.58	1-1/16
7/8	7705x14	.718	1.62	1-5/16
1	7705x16*	.875	1.73	1-5/16

### Male Run Tee

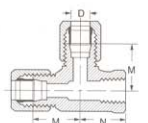
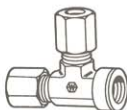
Stainless Steel No. 7767x  
(Ref. SAE No. 080424)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N	Across Flats
1/4	1/8	7755x4*	.203	.188	.89	.78	7/16
1/4	1/4	7755x4x4x4*	.203	.281	1.03	1.09	9/16
3/8	1/4	7755x6*	.281	.281	1.05	1.09	9/16
1/2	3/8	7755x8	.422	.422	1.25	1.22	3/4
1/2	1/2	7755x8x8x8*	.422	.531	1.35	1.47	7/8
5/8	1/2	7755x10	.500	.531	1.42	1.47	7/8
3/4	3/4	7755x12	.656	.719	1.58	1.59	1-1/16
1	1	7755x16	.875	.938	1.73	1.97	1-5/16

### Female Run Tee

(Ref. SAE No. 080426)



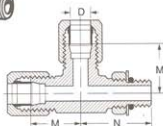
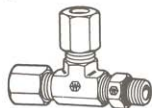
Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N	Across Flats
1/4	1/8	7805x4	.203	.89	.66	9/16
1/4	1/4	7805x4x4x4	.203	1.03	.88	3/4
3/8	1/4	7805x6	.281	1.05	.88	3/4
1/2	3/8	7805x8	.422	1.23	1.02	7/8
5/8	1/2	7805x10	.500	1.42	1.23	1-1/16
3/4	3/4	7805x12	.656	1.58	1.36	1-5/16

\* Available in stainless steel.

**Straight Thread O-Ring Run Tee**

 Stainless Steel No. **7728x**

(Ref. SAE No. 080428)



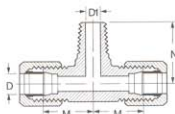
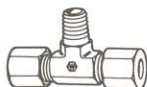
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Tube O.D.	Port Size	Catalog Number	D	M	N	Across Flats
1/4	1/4	7716x4*	.203	.89	1.03	7/16
3/8	3/8	7716x6*	.281	1.05	1.25	9/16
1/2	1/2	7716x8*	.422	1.25	1.45	3/4

**Male Branch Tee**

 Stainless Steel No. **7617x**

(Ref. SAE No. 080425)

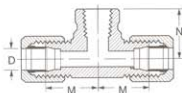


Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N	Across Flats
1/4	1/8	7605x4*	.203	.188	.89	.78	7/16
1/4	1/4	7605x4x4x4*	.203	.281	1.03	1.09	9/16
5/16	1/8	7605x5	.234	.188	.95	.81	9/16
3/8	1/4	7605x6*	.281	.281	1.05	1.09	9/16
1/2	3/8	7605x8*	.422	.406	1.25	1.22	3/4
1/2	1/2	7605x8x8x8*	.422	.531	1.35	1.47	7/8
5/8	1/2	7605x10	.500	.531	1.42	1.47	7/8
3/4	3/4	7605x12	.656	.719	1.58	1.59	1-1/16
1	1	7605x16	.875	.938	1.73	1.97	1-5/16

**Female Branch Tee**

 Stainless Steel No. **7667x**

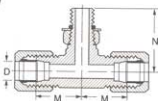
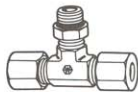
(Ref. SAE No. 080427)



Tube O.D.	Female Pipe Thread	Catalog Number	D	M	N	Across Flats
1/4	1/8	7655x4*	.203	.89	.66	9/16
1/4	1/4	7655x4x4x4*	.203	1.03	.88	3/4
3/8	1/4	7655x6*	.281	1.05	.88	3/4
1/2	3/8	7655x8*	.422	1.23	1.02	7/8
5/8	1/2	7655x10	.500	1.42	1.23	1-1/16
3/4	3/4	7655x12	.656	1.58	1.36	1-5/16
7/8	3/4	7655x14	.718	1.62	1.42	1-5/16
1	1	7655x16	.875	1.73	1.62	1-5/8
1-1/4	1-1/4	7655x20	1.093	2.08	1.70	1-7/8

### Straight Thread O-Ring Branch Tee

Stainless Steel No. 7727x  
(Ref. SAE No. 080429)

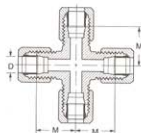
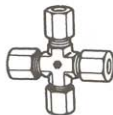


Replacement O-rings see below.

Tube O.D.	Port Size	Catalog Number	D	M	N	Across Flats
1/4	1/4	7715x4*	.203	.89	1.03	7/16
3/8	3/8	7715x6*	.281	1.05	1.25	9/16
1/2	1/2	7715x8	.422	1.25	1.45	3/4

### Cross

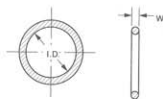
Stainless Steel No. 7967x  
(Ref. SAE No. 080501)



\*Brazed construction.

Tube O.D.	Catalog Number	D	M	Across Flats
1/4	7955x4*	.203	.89	9/16
3/8	7955x6*	.281	1.05	9/16
1/2	7955x8	.422	1.25	3/4

### Straight Thread O-Ring



Material: Buna-N 90 Durometer

Temperature Range: -40°F to +250°F  
(-40°C to +121°C)

Standard O-ring complies with SAE J515 Type CH.

Tube O.D.	Catalog Number	W	I.D.
1/16	7629x1	.058 ± .003	.185 ± .005
1/8	7629x2	.064 ± .003	.239 ± .005
3/16	7629x3	.064 ± .003	.301 ± .005
1/4	7629x4	.072 ± .003	.351 ± .005
5/16	7629x5	.072 ± .003	.414 ± .005
3/8	7629x6	.078 ± .003	.468 ± .005
7/16	7629x7	.082 ± .003	.530 ± .005
1/2	7629x8	.087 ± .003	.644 ± .005
5/8	7629x10	.097 ± .003	.755 ± .005
3/4	7629x12	.116 ± .004	.924 ± .006
7/8	7629x14	.116 ± .004	1.048 ± .006
1	7629x16	.116 ± .004	1.171 ± .006
1-1/4	7629x20	.118 ± .004	1.475 ± .010
1-1/2	7629x24	.118 ± .004	1.720 ± .010
2	7629x32	.118 ± .004	2.337 ± .010

\* Available in stainless steel.