

# Adapters, Tube Fittings & Connectors

## Table of Contents

<b>Hose to Order &amp; Size Designation</b>	L-2	<b>Special Adapters</b>	L-77
<b>Steel Adapters</b>	L-3 thru 16	<b>Steel Flareless Ermeto Connectors</b>	L-78 thru 88
<b>Swivel Adapters</b>	L-17 thru 23	<b>Split Flange Adapters and Kits</b>	L-89 thru 92
<b>For-Seal Adapters</b>	L-24 thru 34	<b>STC Connectors</b>	
<b>JIC 37° Flare-Twin Fittings</b>	L-35 thru 64	How To Order, STC Overview	L-93 thru 95
<b>Steel Din Fittings</b>	L-65 thru 67	Assembly Method and Verification	L-96
<b>Straight Thread O-Rings</b>	L-68 thru 70	Female STC Cap and Male STC Plug	L-97
<b>Din Connectors</b>	L-71	STC Adapters	L-98 thru 106
<b>Metric Connectors</b>	L-72 thru 73	STC Repair Adapters	L-107
<b>BSP Connectors</b>	L-74 thru 76	Accessories and Sales Tools	L-108

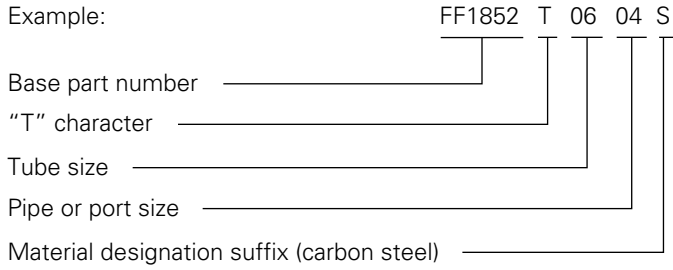


# Adapters

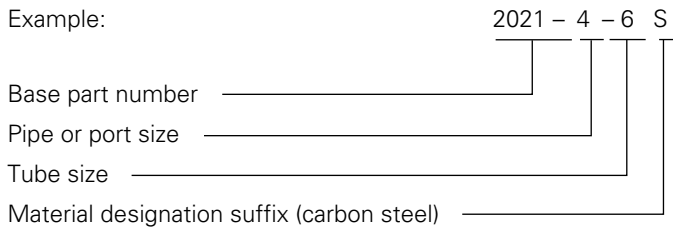
## How to Order and Size Designation

### Eaton Adapter Part Numbers

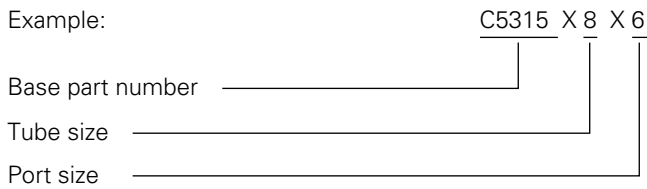
Adapter part numbers consist of a base number followed by a size designation. If the part number contains a "T" character between the base number and size designator, the first size designator signifies the tube size.



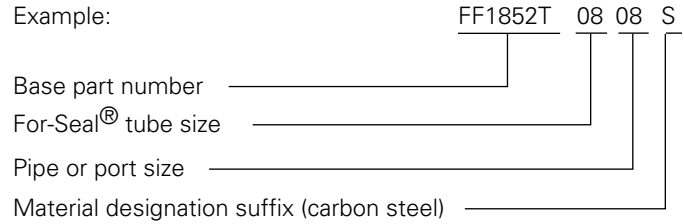
If the part number does not contain a "T" character between the base number and the size description, the first size designation signifies the port size.



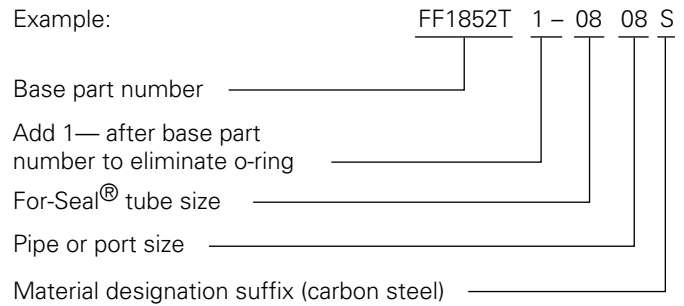
If the adapter part number contains an "X" character following the base number, the first size designation signifies the tube size.



### For-Seal® tube fitting body with o-ring, locknut and washer, where applicable.



### For-Seal® tube fitting body without o-ring



# Steel Adapters

## Introduction

### Materials

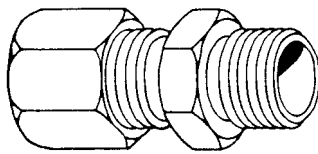
Eaton connectors are available in a variety of alloys on special order.

**Carbon Steel Adapters** – are precision machined from AISI 12L14 carbon steel. Shaped Adapters such as elbows and tees with a “C” prefix are made from high-density forgings. Straight Adapters are made from bar stock.

**Stainless Steel Adapters** – are made from type 316 stainless. Standard Ermeto flareless sleeves are made from 17-4PH precipitation-hardened stainless.

### Finishes

**Weathercote™** – is an Eaton trademark for a protective coating that far exceeds the minimum requirements of the SAE specifications for a corrosion-resistant finish for use with petroleum-based, synthetic, and water-based hydraulic fluids. It is readily identified by its dark appearance. Weathercote is an amorphous phosphate coating covered with a soluble rust-proof film resulting in a coating .0002" thick. Weathercote provides full protection against electrolytic action, thread



seizure or corrosive action of hydraulic fluids.

The lubricity of the rust-proof solvent film measurably reduces the amount of torque required to make leak-proof connections.

**Zinc Plated** – Eaton connectors are given a minimum coating .0002" thick.

**Stainless Steel** – Stainless Steel Adapters are supplied with natural surface finish, except tube nuts which are coated with a bonded dry-film lubricant (black) to reduce assembly torque and prevent galling of threads.

All Eaton Stainless Steel Adapters are passivated to remove microscopic foreign particles from the surface of stainless steel as required. The process also leaves a film of corrosion protection.

### Hydraulic Fluids

Modern hydraulic systems in use today employ a wide variety of high-quality hydraulic fluids. There are three principle types in general use today – each best suited for particular conditions. They are discussed here briefly to clarify the fitting finishes compatible with each type.

#### Petroleum or Mineral Oil-Based

**Hydraulic Fluids** – are good general purpose fluids available in a full range of viscosity specified as SAE 10, 20, 30, etc. These fluids are not fire-resistant, making them unsuitable for use where there is a potential source of ignition. Eaton Connectors can be used with these fluids.

**Straight Synthetic Hydraulic Fluids** – is a general term applied to such products as Pydraul, Lindol, Cellulubes 90, 150, 180, 220, etc., where fire hazards are high. Weathercote-finish Connectors are recommended for this type of fluid. O-ring MUST be made of a “Butyl” compound, or they will “swell” when contacted by synthetic fluids.

**Water-Based Hydraulic Fluids** – consist generally of a mixture of water and polyglycols. They are non-flammable and serve the same purpose as the synthetic types. **Only Weathercote-finish Connectors are recommended for this type of fluid.** Zinc plate finishes will be dissolved by water-based fluids and damage to expensive components may result. These water-based fluids are usually less expensive than synthetic fluids and have little or no detrimental effects on Buna-N compounds used in o-ring.

### O-ring Compound and Application Chart

O-ring Part Number	Base Material of Compound	Petroleum & Mineral Oil-Based Hydraulic Fluids	Straight Synthetic Hydraulic Fluids	Water-Based Hydraulic Fluids (Polyglycols)	Lubricating Oils		Durometer Hardness	Temp Range °F	
					Air	Water			
_x252*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
2018x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
4629x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
7629x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
MB7629x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
M7629x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	90	-40° to +250°
ZW747x*	Buna-N	Excellent	Unsuitable	Good	Excellent	Good	Excellent	70	-40° to +250°

\*Standard o-ring complies with SAE J-515 Type CH and ASTM specifications D2000. All standard Eaton connectors are supplied with this type o-ring, unless otherwise specified. (Viton o-ring are available as special order items only).



# Steel Adapters

## Ordering Information

Each adapter is ordered individually by Part number.

## Typical Application

Grease, instrumentation and most hydraulic systems.

**Pressure** See chart.

## Vibration Rating

Fair resistance.

**Material** Carbon steel –  
AISI/SAE 12L14 Stainless  
steel – Type 316.

**Plating** Zinc; clear  
trivalent chromate.

## Temperature

-65°F to +400°F.

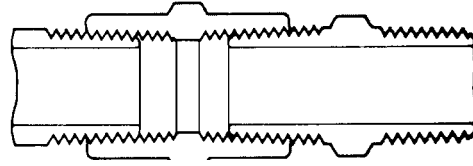
**Advantages** Dry seal pipe  
threads (NPTF), zinc plate,  
compact size, and broad  
selection of styles and sizes.

## Conformance

Meets SAE specifications.

**Note:** See page N-53 for  
hydraulic o-ring assortment.

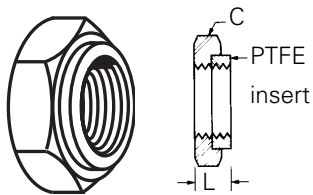
**Label Set** FS-2000 (Adhesive).



Pipe Size	1/16	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Thread Size	1/16-27	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14	1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2

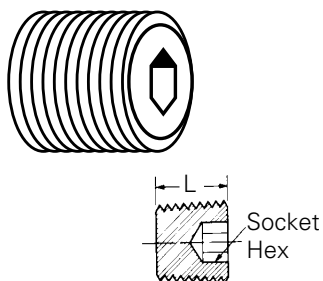
Adapters, Tube Fittings & Connectors

## Seal-Nut For Male Pipe Thread



Pipe Thread	Part Number	Hex C	L
1/8	C3059x2	5/8	.15
1/4	C3059x4	3/4	.25
3/8	C3059x6	7/8	.25
1/2	C3059x8	1-1/8	.25
3/4	C3059x12	1-5/16	.25
1	C3059x16	1-5/8	.34

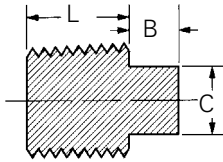
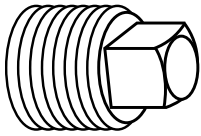
## Hex Socket Plug



Male Pipe Thread	Part Number	Socket Hex	L
1/16	C3169x1	5/32	.31
1/8	C3169x2	3/16	.30
1/4	C3169x4	1/4	.46

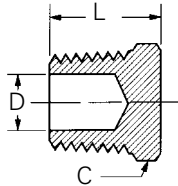
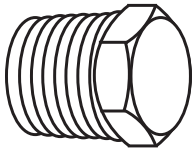
# Steel Adapters

## Square Head Plug Thread



Male Pipe Thread	Part Number	B	C	L
1/8	C3179x2	.25	9/32	.34
1/4	C3179x4	.29	3/8	.51
3/8	C3179x6	.32	7/16	.51
1/2	C3179x8	.40	9/16	.68
3/4	C3179x12	.46	5/8	.69
1	C3179x16	.52	13/16	.85

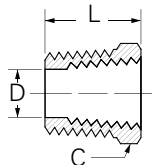
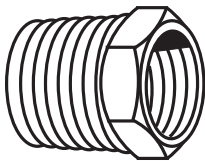
## Hex Head Plug Stainless Steel No. 3171x



Male Pipe Thread	Part Number	Hex C	L	D Opt. Dia.
1/8	C3159x2•	7/16	.56	.156
1/4	C3159x4•	9/16	.68	.250
3/8	C3159x6•	11/16	.78	.375
1/2	C3159x8•	7/8	.98	.500
3/4	C3159x12	1-1/8	1.06	.690
1	C3159x16	1-3/8	1.25	.875
1-1/4	C3159x20	1-3/4	1.56	–
1-1/2	C3159x24	2	1.62	–
2	C3159x32	2-1/2	1.75	–

• Available in Stainless Steel

## Bushing Stainless Steel No. 3121x (Ref. SAE No. 140140)

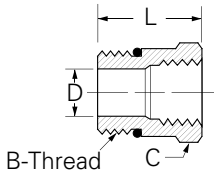
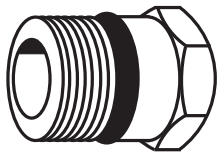


Male Pipe Thread	Female Pipe Thread	Part Number	Hex C	D	L
1/4	1/8	C3109x4x2•	5/8	.322	.85
3/8	1/8	C3109x6x2•	3/4	.332	.85
3/8	1/4	C3109x6x4	3/4	.438	.85
1/2	1/8	C3109x8x2	7/8	.332	1.10
1/2	1/4	C3109x8x4•	7/8	.438	1.10
1/2	3/8	C3109x8x6•	7/8	.562	1.10
3/4	1/4	C3109x12x4•	1-1/8	.438	1.17
3/4	3/8	C3109x12x6	1-1/8	.562	1.17
3/4	1/2	C3109x12x8	1-1/8	.703	1.17
1	3/8	C3109x16x6	1-3/8	.562	1.36
1	1/2	C3109x16x8•	1-3/8	.703	1.36
1	3/4	C3109x16x12•	1-3/8	.922	1.36
1-1/4	1/2	C3109x20x8	1-3/4	.703	1.47
1-1/4	3/4	C3109x20x12	1-3/4	.922	1.47
1-1/4	1	C3109x20x16	1-3/4	1.156	1.47
1-1/2	3/4	C3109x24x12	2	.906	1.58
1-1/2	1	C3109x24x16	2	1.141	1.58
1-1/2	1-1/4	C3109x24x20	2	1.500	1.57
2	1-1/4	C3109x32x20	2-1/2	1.484	1.75
2	1-1/2	C3109x32x24	2-1/2	1.719	1.75

• Available in Stainless Steel

# Steel Adapters

## Straight Thread O-ring to Female Pipe Adapter



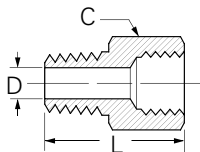
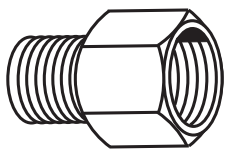
Male Port Size	Female Pipe Thread	Part Number	Straight Thread B	Hex C	D	L
1/4	1/8	C3269x4x2	7/16-20	9/16	.172	.97
1/4	1/4	C3269x4x4	7/16-20	3/4	.172	1.16
5/16	1/8	C3269x5x2	1/2-20	5/8	.234	.94
3/8	1/4	C3269x6x4	9/16-18	3/4	.297	1.09
3/8	3/8	C3269x6x6	9/16-18	7/8	.281	1.30
3/8	1/2	C3269x6x8	9/16-18	1-1/8	.281	1.44
1/2	1/4	C3269x8x4	3/4-16	7/8	.421	1.06
1/2	3/8	C3269x8x6	3/4-16	7/8	.421	1.22
1/2	1/2	C3269x8x8	3/4-16	1-1/16	.421	1.65
5/8	1/4	C3269x10x4	7/8-14	1	.422	.81
5/8	3/8	C3269x10x6	7/8-14	1	.500	1.25
5/8	1/2	C3269x10x8	7/8-14	1-1/8	.500	1.50
5/8	3/4	C3269x10x12	7/8-14	1-3/8	.500	1.62
3/4	1/2	C3269x12x8	1-1/16-12	1-1/4	.688	1.34
3/4	3/4	C3269x12x12	1-1/16-12	1-3/8	.656	1.66
7/8	3/4	C3269x14x12	1-3/16-12	1-3/8	.718	1.63
1	1/2	C3269x16x8	1-5/16-12	1-1/2	.688	1.00
1	3/4	C3269x16x12	1-5/16-12	1-1/2	.876	1.50
1	1	C3269x16x16	1-5/16-12	1-5/8	.876	1.88
1-1/4	1	C3269x20x16	1-5/8-12	1-7/8	1.080	1.00
1-1/4	1-1/4	C3269x20x20	1-5/8-12	2	1.080	2.00
1-1/2	1-1/2	C3269x24x24	1-7/8-12	2-3/8	1.344	2.00
2	2	C3269x32x32	2-1/2-12	2-7/8	1.781	2.10

Replacement o-ring page L-64.

Adapters, Tube Fittings & Connectors

## Adapter

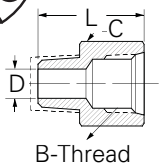
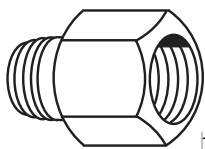
Stainless Steel No. 3221x  
(Ref. SAE No. 140139)



Female Pipe Thread	Male Pipe Thread	Part Number	Hex C	D	L
1/4	1/8	C3209x4x2•	3/4	.188	1.21
3/8	1/4	C3209x6x4	7/8	.281	1.44
1/2	1/8	C3209x8x2	1-1/8	.188	1.50
1/2	1/4	C3209x8x4	1-1/8	.281	1.68
1/2	3/8	C3209x8x6	1-1/8	.406	1.68
3/4	1/4	C3209x12x4	1-3/8	.281	1.78
3/4	1/2	C3209x12x8•	1-3/8	.531	1.93
1	1/2	C3209x16x8	1-5/8	.562	2.09
1	3/4	C3209x16x12	1-5/8	.719	2.18
1-1/4	1	C3209x20x16	2	.938	2.46
1-1/2	1-1/4	C3209x24x20	2-3/8	1.25	2.50
2	1-1/2	C3209x32x24	2-7/8	1.500	2.63

• Available in Stainless Steel

## Female Straight Thread O-ring to Male Pipe Adapter

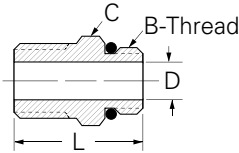
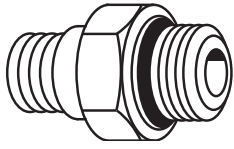


Female Port Size	Male Pipe Thread	Part Number	Straight Thread B	Hex C	D	L
3/8	3/8	C3239x6x6	9/16-18	13/16	.406	1.38
3/8	1/2	C3239x6x8	9/16-18	7/8	.500	1.61
1/2	3/8	C3239x8x6	3/4-16	1	.406	1.46
1/2	1/2	C3239x8x8	3/4-16	1	.562	1.69
5/8	1/2	C3239x10x8	7/8-14	1-1/4	.531	1.81



# Steel Adapters

## Male Straight Thread O-ring to Male Pipe Adapter

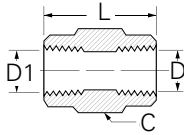
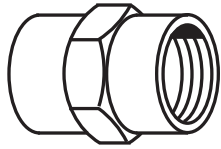


Male Port Size	Male Pipe Thread	Part Number	Straight Thread B	Hex C	D	L
1/4	1/8	C3249x4x2	7/16-20	9/16	.172	1.05
3/8	1/4	C3249x6x4	9/16-18	11/16	.281	1.30
1/2	3/8	C3249x8x6	3/4-16	7/8	.391	1.36
1/2	1/2	C3249x8x8	3/4-16	7/8	.391	1.55
5/8	1/2	C3249x10x8	7/8-14	1	.434	1.69
3/4	3/4	C3249x12x12	1-1/16-12	1-1/4	.609	1.73
1	1	C3249x16x16	1-5/16-12	1-1/2	.844	2.06
1-1/4	1-1/4	C3249x20x20	1-5/8-12	1-7/8	1.078	2.17
1-1/2	1-1/2	C3249x24x24	1-7/8-12	2-1/8	1.312	2.26
2	2	C3249x32x32	2-1/2-12	2-7/8	1.781	2.47

Replacement o-ring page L-64.

## Coupling

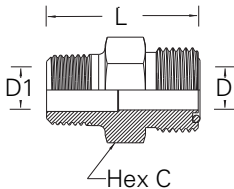
Stainless Steel No. 3321x  
(Ref. SAE No. 140138)



Female Pipe Thread	Female Pipe Thread	Part Number	Hex C	D	D1	L
1/8	1/8	C3309x2	5/8	.332	.332	.75
1/4	1/8	C3309x4x2•	3/4	.437	.332	1.13
1/4	1/4	C3309x4•	3/4	.437	.437	1.13
3/8	1/4	C3309x6x4•	7/8	.562	.437	1.13
3/8	3/8	C3309x6•	7/8	.562	.562	1.13
1/2	1/4	C3309x8x4•	1-1/8	.687	.437	1.50
1/2	3/8	C3309x8x6•	1-1/8	.687	.562	1.50
1/2	1/2	C3309x8	1-1/8	.687	.687	1.50
3/4	1/2	C3309x12x8	1-3/8	.906	.687	1.53
3/4	3/4	C3309x12•	1-3/8	.906	.906	1.53
1	3/4	C3309x16x12	1-5/8	1.125	.906	1.89
1	1	C3309x16	1-5/8	1.125	1.125	1.89
1-1/4	1-1/4	C3309x20	2	1.468	1.468	1.93
1-1/2	1-1/2	C3309x24	2-3/8	1.703	1.703	1.93
2	2	C3309x32	2-7/8	2.188	2.188	1.96

• Available in Stainless Steel

## Male FOR-SEAL® to Male Pipe Adapter



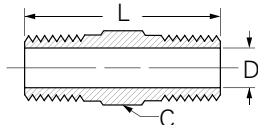
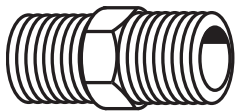
Tube O.D.	Male Pipe Thread	Part Number	Hex C	D	D1	L
3/8	3/8	4205x6x6	3/4	.264	.406	1.30
1/2	3/8	4205x8	7/8	.378	.406	1.45
1/2	1/2	4205x8x8	7/8	.378	.484	1.64
5/8	1/2	4205x10	1-1/16	.484	.531	1.82
3/4	1/2	4205x12x8	1-1/4	.406	.484	1.87
3/4	3/4	4205x12	1-1/4	.609	.719	1.94
3/4	1	4205x12x16	1-3/8	.609	.938	1.87
1	1	4205x16	1-1/2	.811	.938	2.19
1-1/4	1-1/4	4205x20	1-3/4	1.024	1.250	2.30

Replacement o-ring page L-34.

# Steel Adapters

## Hex Nipple

Stainless Steel No. 3081x  
(Ref. SAE No. 140137)

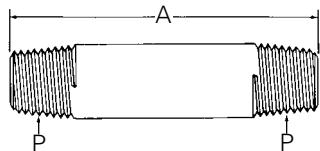


Male Pipe Thread	Male Pipe Thread	Part Number	Hex C	D	L
1/16	1/16	C3069x1	5/16	.141	.940
1/8	1/16	C3069x2x1	7/16	.141	.970
1/8	1/8	C3069x2•	7/16	.188	1.060
1/4	1/8	C3069x4x2•	5/8	.188	1.260
1/4	1/4	C3069x4•	5/8	.281	1.450
3/8	1/8	C3069x6x2	3/4	.188	1.260
3/8	1/4	C3069x6x4•	3/4	.281	1.450
3/8	3/8	C3069x6•	3/4	.406	1.450
1/2	1/4	C3069x8x4	7/8	.281	1.700
1/2	3/8	C3069x8x6	7/8	.406	1.700
1/2	1/2	C3069x8•	7/8	.531	1.890
3/4	1/2	C3069x12x8	1-1/8	.531	1.960
3/4	3/4	C3069x12•	1-1/8	.719	1.960
1	3/4	C3069x16x12	1-3/8	.719	2.160
1	1	C3069x16	1-3/8	.938	2.340
1-1/4	1-1/4	C3069x20	1-3/4	1.250	2.480
1-1/2	1-1/2	C3069x24	2	1.500	2.610
2	2	C3069x32	2-1/2	1.938	2.830

• Available in Stainless Steel

Adapters, Tube Fittings & Connectors

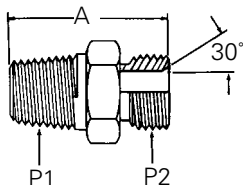
## Long Nipple



### Part No. 2084- (Dash Size)

Dash Size	Thread P (NPTF)	A	
		mm	inches
2S - 3/4	1/8-27	19,0	.75
2S - 2	1/8-27	50,8	2.00
4S - 7/8	1/4-18	22,3	.88
6S - 1	3/8-18	25,4	1.00
6S - 2	3/8-18	50,8	2.00
6S - 3	3/8-18	76,2	3.00
8S - 1 1/8	1/2-14	28,5	1.12
8S - 2 1/2	1/2-14	63,5	2.50
12S - 1 3/8	3/4-14	35,1	1.38
16S - 1 1/2	1 - 11 1/2	38,1	1.50

## NPSM Adapter



### Part No. 2015- (Dash Size)

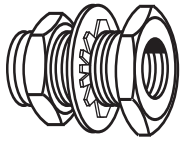
Dash Size	Thread P1 (NPTf)	Thread P2 (NPSM)	A	
			mm	inches
8 - 8S	1/2-14	1/2-14	38,1	1.50



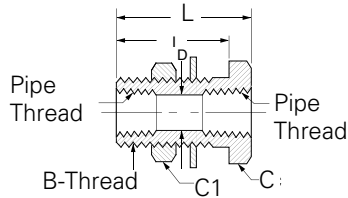
# Steel Adapters

Available in Stainless Steel

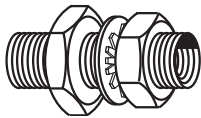
## Bulkhead Coupling



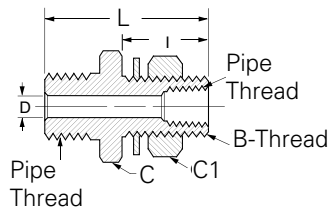
Female Pipe Thread	Part Number	Thread Size B	Hex C	Hex C1	D	I	L
1/4	W05465	3/4-16	1	1-1/16	.422	1.25	1.50
1/4	W21204	3/4-16	1	1-1/16	.422	.69	.94
3/8	W17709	1-14	1-1/8	1-3/8	.563	1.06	1.31



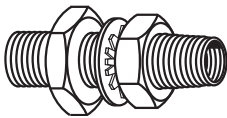
## Bulkhead Coupling



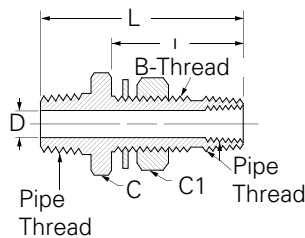
Male Pipe Thread	Female Pipe Thread	Part Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	W05498	3/4-16	1-1/4	1-1/16	.312	1.13	2.16
1/2	1/4	W05499	3/4-16	1-1/4	1-1/16	.312	1.53	2.53



## Bulkhead Coupling



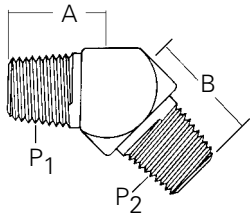
Male Pipe Thread	Female Pipe Thread	Part Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	W05730	1-14	1-1/4	1-3/8	.375	1.88	2.94
1/2	1/4	W23464	1-14	1-1/4	1-3/8	.375	2.88	3.94



# Steel Adapters

## 45° Union Elbow

(Ref. SAE 140337)

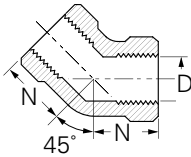
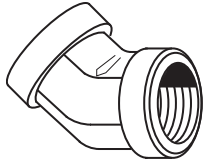


## Part No. 2247- (Dash Size)

Dash Size	Thread		A		B	
	P1 (NPTF)	P2 (NPTF)	mm	inches	mm	inches
4-4S	1/4 - 18	1/4 - 18	21,8	.86	21,8	.86
6-6S	3/8 - 18	3/8 - 18	24,1	.95	24,1	.95
8-8S	1/2 - 14	1/2 - 14	28,7	1.13	29,7	1.17
12-12S	3/4 - 14	3/4 - 14	29,7	1.17	30,5	1.20
16-16S	1 - 11 1/2	1 - 11 1/2	30,5	1.20	37,6	1.48

## 45° Female Elbow

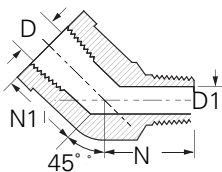
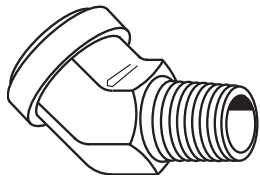
(Ref. SAE No. 140338)



Female Pipe Thread	Part Number	D	N	Across Flats
1/4	C3559x4	.437	.69	3/4
3/8	C3559x6	.562	.750	7/8
1/2	C3559x8	.687	.940	1-1/16
3/4	C3559x12	.906	1.000	1-5/16
1	C3559x16	1.125	1.190	1-5/8

## 45° Street Elbow

Stainless Steel No. 3371x  
(Ref. SAE No. 140339)

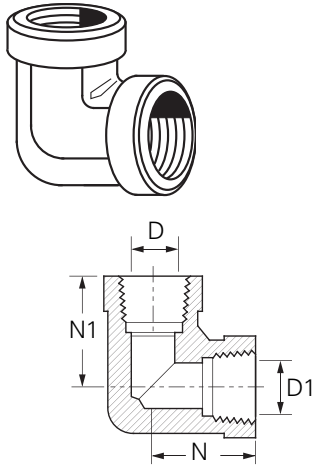


Female Pipe Thread	Male Pipe Thread	Part Number	D	D1	N1	N	Across Flats
1/8	1/8	C3359x2•	.332	.188	.47	.72	9/16
1/4	1/4	C3359x4•	.437	.281	.62	1.05	3/4
3/8	3/8	C3359x6	.562	.406	.72	1.10	7/8
1/2	1/2	C3359x8•	.687	.531	.91	1.34	1-1/16
3/4	3/4	C3359x12	.906	.719	.97	1.38	1-5/16
1	1	C3359x16	1.125	.938	1.12	1.72	1-5/8

# Steel Adapters

## 90° Female Elbow

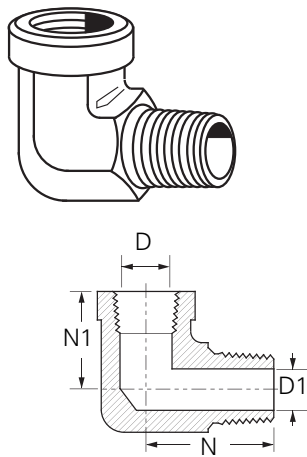
Stainless Steel No. 3521x  
(Ref. SAE No. 140238)



Female Pipe Thread	Female Pipe Thread	Part Number	D	N	Across Flats
1/8	1/8	C3509x2•	.332	.66	9/16
1/4	1/4	C3509x4•	.437	.88	3/4
1/4	1/8	C3509x4x2	.343	.88	3/4
3/8	3/8	C3509x6	.562	1.02	7/8
3/8	1/4	C3509x6x4	.437	1.02	7/8
1/2	1/2	C3509x8•	.687	1.23	1-1/16
1/2	3/8	C3509x8x6	.562	1.23	1-1/8
3/4	3/4	C3509x12•	.906	1.36	1-5/16
3/4	1/2	C3509x12x8	.687	1.23	1-3/8
1	1	C3509x16	1.125	1.62	1-5/8
1-1/4	1-1/4	C3509x20	1.468	1.70	1-7/8
2	2	C3509x32	2.188	2.39	2-3/16

## 90° Street Elbow

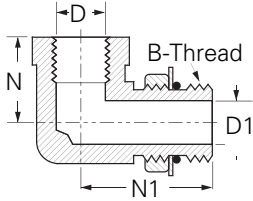
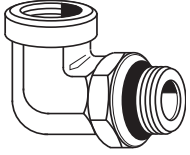
(Ref. SAE No. 140239)



Male Pipe Thread	Female Pipe Thread	Part Number	D	D1	N	N1	Across Flats
1/8	1/8	C3409x2	.332	.188	.78	.66	9/16
1/8	1/4	C3409x2x4	.437	.188	.91	.88	3/4
1/4	1/4	C3409x4	.437	.281	1.09	.88	3/4
1/4	1/8	C3409x4x2	.332	.281	1.09	.67	5/8
1/4	3/8	C3409x4x6	.562	.281	1.22	1.02	7/8
3/8	3/8	C3409x6	.562	.406	1.22	1.02	7/8
3/8	1/4	C3409x6x4	.437	.406	1.22	.91	13/16
3/8	1/2	C3409x6x8	.687	.406	1.38	1.23	1-1/8
1/2	1/2	C3409x8	.687	.531	1.47	1.23	1-1/16
1/2	3/8	C3409x8x6	.562	.531	1.47	1.05	15/16
1/2	3/4	C3409x8x12	.906	.531	1.59	1.23	1-3/8
3/4	3/4	C3409x12	.906	.719	1.59	1.36	1-5/16
3/4	1/2	C3409x12x8	.687	.719	1.59	1.23	1-1/8
1	1	C3409x16	1.125	.938	1.97	1.62	1-5/8
1-1/4	1-1/4	C3409x20	1.468	1.250	2.38	1.70	1-7/8
2	2	C3409x32	2.188	1.930	3.00	2.39	2-13/16

# Steel Adapters

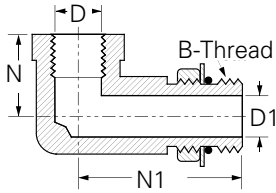
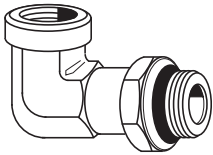
## 90° Straight Thread O-ring Male Elbow



Male Port Size	Female Pipe Thread	Part Number	Straight Thread B	D	D1	N	N1	Across Flats
3/8	1/4	C3459x6	9/16-18	.44	.30	.88	1.31	3/4
1/2	3/8	C3459x8	3/4-16	.53	.39	1.02	1.62	7/8
5/8	1/2	C3459x10	7/8-14	.65	.48	1.23	1.89	1-1/16
3/4	3/4	C3459x12	1-1/16-12	.85	.61	1.36	2.17	1-1/4
1	1	C3459x16	1-5/16-12	1.06	.84	1.62	2.41	1-5/8
1-1/4	1-1/4	C3459x20	1-5/8-12	1.47	1.08	1.70	2.38	1-5/8

Replacement o-ring page L-64.

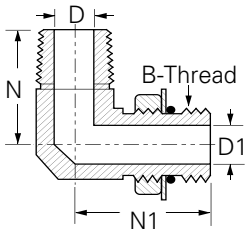
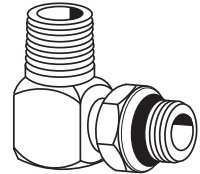
## 90° Straight Thread O-ring Female Elbow Long



Male Port Size	Female Pipe Size	Part Number	Straight Thread B	D	D1	N	N1	Across Flats
1/2	3/8	C3469x8	3/4-16	.562	.422	.63	2.94	7/8
5/8	1/2	C3469x10	7/8-14	.687	.500	.75	3.56	1-1/16
3/4	3/4	C3469x12	1-1/16-12	.906	.656	.81	4.13	1-5/16
1	1	C3469x16	1-5/16-12	1.125	.876	1.00	4.63	1-5/8

Replacement o-ring page L-64.

## 90° Straight Thread O-ring Male Elbow To Male Pipe



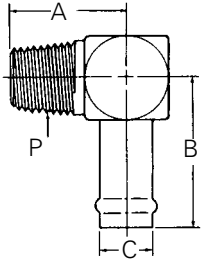
Male Port Size	Male Pipe Thread	Part Number	Straight Thread B	D	D1	N	N1	Across Flats
3/8	1/4	C3569x6	9/16-18	.297	.281	1.09	1.25	5/8
1/2	3/8	C3569x8	3/4-16	.391	.406	1.22	1.45	13/16
5/8	1/2	C3569x10	7/8-14	.484	.531	1.47	1.70	15/16
1	1	C3569x16	1-5/16-12	.844	.938	1.97	2.05	1-3/8

Replacement o-ring page L-64.

# Steel Adapters

## 90° Elbow Hose Connector

(Ref. SAE 430260)

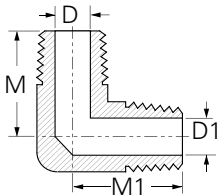
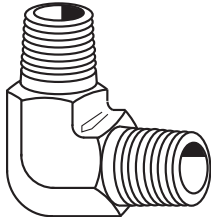


## Part No. FF1162 – (Dash Size)

Dash Size	Hose Size		Thread P (NPTF)	A		B		C	
	mm	inches		mm	inches	mm	inches	mm	inches
1212S	19,0	.75	3/4 - 14	35,8	1.41	46,5	1.83	19,0	.75
1616S	25,4	1.00	1 - 11 1/2	43,4	1.71	49,3	1.94	25,4	1.00

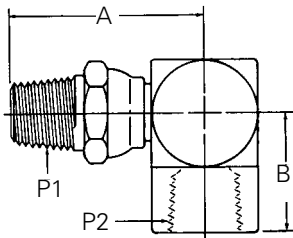
## 90° Male Elbow

Stainless Steel No. 3541x



Male Pipe Thread	Male Pipe Thread	Part Number	D	D1	M	M1 Flats	Across
1/8	1/8	C3529x2	.188	.188	.78	.78	7/16
1/4	1/4	C3529x4•	.281	.281	1.09	1.09	9/16
3/8	3/8	C3529x6•	.406	.406	1.22	1.22	3/4
3/8	1/4	C3529x6x4	.406	.281	1.28	1.19	13/16
1/2	1/2	C3529x8	.531	.531	1.47	1.47	7/8
1/2	3/8	C3529x8x6	.531	.406	1.47	1.28	15/16
3/4	3/4	C3529x12	.719	.719	1.59	1.59	1-1/16
3/4	1/2	C3529x12x8	.719	.531	1.59	1.56	1-1/8
1	3/4	C3529x16x12	.938	.719	1.97	1.72	1-3/8
1	1	C3529x16	.938	.938	1.97	1.97	1-3/8
1-1/4	1-1/4	C3529x20	1.250	1.250	2.38	2.38	1-3/4

## 90° Male Pipe Swivel to Female Pipe Rigid



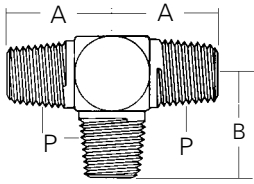
## Part No. 2252- (Dash Size)

Dash Size	Thread P1 (NPTF)		Thread P2 (NPTF)		A		B	
	mm	inches	mm	inches	mm	inches	mm	inches
4-4S	1/4 - 18	1/4 - 18	43,7	1.72	22,3	.88		
6-6S	3/8 - 18	3/8 - 18	42,9	1.69	25,9	1.02		
8-8S	1/2 - 14	1/2 - 14	54,3	2.14	31,2	1.23		
12-12S	3/4 - 14	3/4 - 14	57,2	2.25	34,5	1.36		

Not for use in applications over +212°F. Not intended to be a live swivel.

# Steel Adapters

## Union Tee

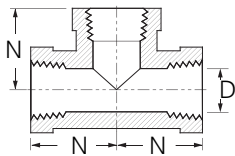
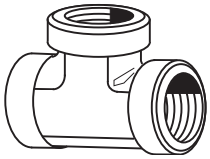


## Part No. 2257- (Dash Size)

Dash Size	Thread P (NPTF)	A		B	
		mm	inches	mm	inches
4-4S	1/4 - 18	27,7	1.09	27,7	1.09
6-6S	3/8 - 18	31,0	1.22	31,0	1.22
8-8S	1/2 - 14	37,3	1.47	37,3	1.47
12-12S	3/4 - 14	40,4	1.59	40,4	1.59

## Tee

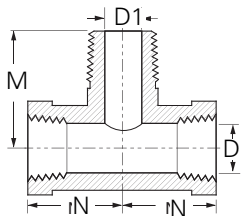
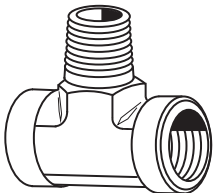
Stainless Steel No. 3721x  
(Ref. SAE No. 140438)



Female Pipe Thread	Part Number	D	N	Across Flats
1/8	C3709x2	.332	.66	9/16
1/4	C3709x4	.437	.88	3/4
3/8	C3709x6	.562	1.02	7/8
1/2	C3709x8	.687	1.23	1-1/16
3/4	C3709x12	.906	1.36	1-5/16
1	C3709x16	1.125	1.62	1-5/8
1-1/4	C3709x20	1.468	1.70	1-7/8
1-1/2	C3709x24	1.710	2.08	2-3/8

## Male Branch Tee

(Ref. SAE No. 140425)



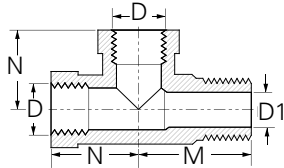
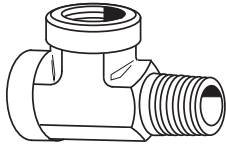
Male Pipe Thread	Female Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/8	1/8	C3609x2	.332	.188	.78	.66	9/16
1/4	1/4	C3609x4	.437	.281	1.09	.88	3/4
3/8	3/8	C3609x6	.562	.406	1.22	1.02	7/8
1/2	1/2	C3609x8	.687	.531	1.47	1.23	1-1/8
1	1	C3609x16	1.125	.938	1.97	1.62	1-5/8
3/4	3/4	C3609x12	.906	.719	1.59	1.36	1-3/8



# Steel Adapters

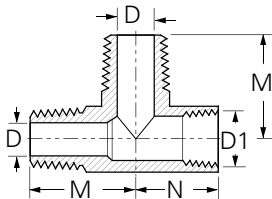
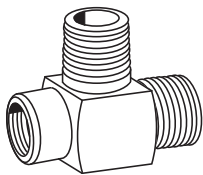
## Male Run Tee

Stainless Steel No. 3771x  
(Ref. SAE No. 140424)



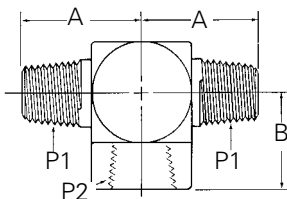
Female Pipe Thread	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/8	1/8	C3759x2	.332	.188	.78	.66	9/16
1/4	1/4	C3759x4	.437	.281	1.09	.88	3/4
3/8	3/8	C3759x6	.562	.406	1.22	1.02	7/8
1/2	1/2	C3759x8	.687	.531	1.47	1.23	1-1/16
3/4	3/4	C3759x12	.906	.719	1.59	1.36	1-5/16
1	1	C3759x16	1.125	.938	1.97	1.62	1-5/8
1-1/4	1-1/4	C3759x20	1.468	1.250	2.38	1.70	2

## Female Run Tee



Female Pipe Thread	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/4	C3805x4	.281	.437	1.09	.88	3/4
3/8	3/8	C3805x6	.406	.562	1.22	1.02	7/8
1/2	1/2	C3805x8	.531	.687	1.47	1.23	1-1/8
3/4	3/4	C3805x12	.719	.906	1.59	1.36	1-3/8
1	1	C3805x16	.938	1.125	1.97	1.62	1-5/8

## Female Branch Tee

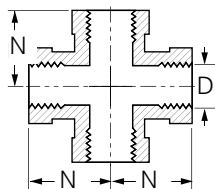
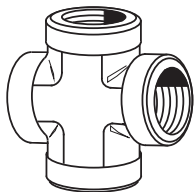


### Part No. 2256- (Dash Size)

Dash Size	Thread P1 (NPTF)	Thread P2 (NPTF)	A		B	
			mm	inches	mm	inches
4-4S	1/4 - 18	1/4 - 18	27,7	1.09	22,3	.88
6-6S	3/8 - 18	3/8 - 18	31,0	1.22	25,9	1.02
8-8S	1/2 - 14	1/2 - 14	37,3	1.47	31,2	1.23
12-12S	3/4 - 14	3/4 - 14	40,4	1.59	34,5	1.36

# Steel Adapters

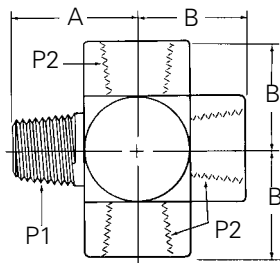
## Cross



Female Pipe Thread	Part Number	D	N	Across Flats
1/8	C3959x2	.343	.66	5/8
1/4	C3959x4	.437	.88	3/4
3/8	C3959x6	.562	1.02	7/8
1/2	C3959x8	.687	1.23	1-1/16
3/4	C3959x12	.906	1.36	1-5/16
1	C3959x16	1.125	1.62	1-5/8

Adapters, Tube Fittings & Connectors

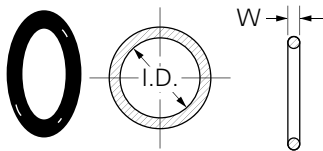
## Cross



### Part No. 208007 – (Dash Size)

Dash Size	Thread P1 (NPTF)	Thread P2 (NPTF)	A		B	
			mm	inches	mm	inches
4-4S	1/4 - 18	1/4 - 18	29,5	1.16	22,3	.88
8-8S	1/2 - 14	1/2 - 14	41,4	1.63	31,2	1.23

## 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 specification SAE J515 Type CH.

(See page L-3 for o-ring compound and application chart.)

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

# Steel Connectors

## Swivel Adapters

### 9000 Pipe Connectors

#### Typical Application

Pressure hydraulic systems.

**Material** Carbon steel

**Plating** Trivalent Zinc Plated

**Pressure** See chart.

**Sealing Method** Metal to metal, 30° cone-NPSM thread on pipe swivel end. Sealing methods vary depending on swivel adapter type.

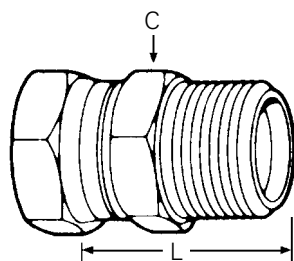
#### Pipe Hose Ends 9000 Series Pressure Rating Chart

Connection Type	End Size								
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Male Pipe (NPTF)*	5,000	5,000	4,000	3,000	2,500	2,000	1,500	1,000	1,000
Female Pipe (NPTF)*	5,000	5,000	4,000	3,000	2,500	2,000	1,500	1,500	1,000

\*Pressure ratings shown are the pressure ratings for the fitting and are not necessarily the pressure ratings applicable in an assembly with hydraulic hose. The applicable pressure rating for an assembly with hydraulic hose is the lower value specified for the hose and the fitting unless otherwise agreed to by the supplier and user.

#### Female Pipe Swivel to Male Pipe

(Ref. SAE No. 140130)

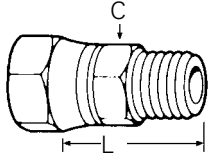


NPSM Swivel Nut	Male Pipe Thread	Part Number	Hex C	L
1/8-27	1/8-27	9205x2x2	9/16	.900
1/8-27	1/4-18	9205x2x4	11/16	1.187
1/4-18	1/8-27	9205x4x2	11/16	1.060
1/4-18	1/4-18	9205x4x4	11/16	1.200
1/4-18	3/8-18	9205x4x6	11/16	1.200
1/4-18	1/2-14	9205x4x8	7/8	1.500
3/8-18	1/4-18	9205x6x4	5/8	1.210
3/8-18	3/8-18	9205x6x6	3/4	1.240
3/8-18	1/2-14	9205x6x8	7/8	1.540
1/2-14	3/8-18	9205x8x6	7/8	1.330
1/2-14	1/2-14	9205x8x8	1	1.640
1/2-14	3/4-14	9205x8x12	1-1/4	1.620
3/4-14	1/2-14	9205x12x8	1	1.720
3/4-14	3/4-14	9205x12x12	1-1/4	1.680
3/4-14	1-11-1/2	9205x12x16	1-1/2	1.984
1-11-1/2	3/4-14	9205x16x12	1-1/2	1.800
1-11-1/2	1-11-1/2	9205x16x16	1-1/2	2.010
1-11-1/2	1-1/4-11-1/2	9205x16x20	1-11/16	2.080
1-1/4-11-1/2	1-11-1/2	9205x20x16	1-7/8	2.100
1-1/4-11-1/2	1-1/4-11-1/2	9205x20x20	1-7/8	2.140
1-1/4-11-1/2	1-1/2-11-1/2	9205x20x24	2-1/8	2.187
1-1/2-11-1/2	1-1/4-11-1/2	9205x24x20	2-1/8	2.093
1-1/2-11-1/2	1-1/2-11-1/2	9205x24x24	2-1/8	2.270
2-11-1/2	2-11-1/2	9205x32x32	2-5/8	2.420

# Steel Connectors

## Swivel Adapters

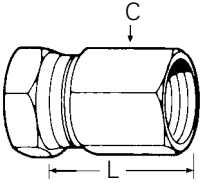
### Female 37° JIC Swivel to Male Pipe Adapter



Tube O.D.	Male Pipe Thread	Part Number	Hex C	L
1/4	1/4	9100x4x4	9/16	1.130
5/16	1/4	9100x5x4	11/16	1.170
3/8	1/4	9100x6x4	11/16	1.290
3/8	3/8	9100x6x6	11/16	1.290
1/2	3/8	9100x8x6	7/8	1.430
1/2	1/2	9100x8x8	7/8	1.610
5/8	3/8	9100x10x6	1	1.400
5/8	1/2	9100x10x8	1	1.600
3/4	1/2	9100x12x8	1-1/8	1.650
3/4	3/4	9100x12x12	1-1/8	1.650
1	3/4	9100x16x12	1-3/8	1.750
1	1	9100x16x16	1-3/8	1.940
1-1/4	1 1/4	9100x20x20	1-7/8	2.090

### Female Pipe Swivel to Female Pipe Straight

(Ref. SAE No. 140131)



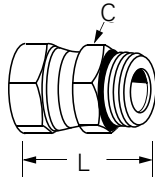
NPSM Swivel Nut	Female Pipe Thread	Part Number	Hex C	L
1/8-27	1/8-27	9255x2x2	9/16	.880
1/4-18	1/4-18	9255x4x4	11/16	1.170
1/4-18	3/8-18	9255x4x6	7/8	1.312
3/8-18	1/4-18	9255x6x4	11/16	1.250
3/8-18	3/8-18	9255x6x6	7/8	1.310
3/8-18	1/2-14	9255x6x8	1	1.453
1/2-14	3/8-18	9255x8x6	1	1.500
1/2-14	1/2-14	9255x8x8	1	1.500
3/4-14	3/4-14	9255x12x12	1-1/4	1.620
3/4-14	1-11-1/2	9255x12x16	1-1/2	1.906
1-11-1/2	1-11-1/2	9255x16x16	1-1/2	2.000
1-1/4-11-1/2	1-1/4-11-1/2	9255x20x20	1-7/8	2.000
1-1/2-11-1/2	1-1/2-11-1/2	9255x24x24	2-1/8	2.000
2-11-1/2	2-11-1/2	9255x32x32	2-5/8	2.120

# Steel Connectors

## Swivel Adapters

### Male Straight Thread O-ring to Female Pipe Swivel

(Ref. SAE No. 140157)

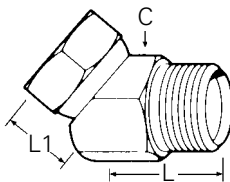


Straight Thread	NPSM Swivel Nut	Part Number	Hex C	L
7/16-20	1/4-18	9315x4x4	9/16	.970
7/16-20	3/8-18	9315x4x6	5/8	1.060
1/2-20	1/4-18	9315x5x4	5/8	1.109
9/16-18	1/4-18	9315x6x4	11/16	1.171
9/16-18	3/8-18	9315x6x6	11/16	1.090
9/16-18	1/2-14	9315x6x8	13/16	1.210
3/4-16	1/4-18	9315x8x4	7/8	1.234
3/4-16	3/8-18	9315x8x6	7/8	1.200
3/4-16	1/2-14	9315x8x8	7/8	1.260
3/4-16	3/4-14	9315x8x12	1	1.406
7/8-14	3/8-18	9315x10x6	1	1.375
7/8-14	1/2-14	9315x10x8	1	1.400
7/8-14	3/4-14	9315x10x12	1	1.546
1-1/16-12	1/2-14	9315x12x8	1-1/4	1.453
1-1/16-12	3/4-14	9315x12x12	1-1/4	1.600
1-3/16-12	3/4-14	9315x14x12	1-3/8	1.703
1-5/16-12	3/4-14	9315x16x12	1-1/2	1.734
1-5/16-12	1-11-1/2	9315x16x16	1-1/2	1.710
1-5/8-12	1-11-1/2	9315x20x16	1-7/8	1.828
1-5/8-12	1-1/4-11-1/2	9315x20x20	1-7/8	1.890
1-7/8-12	1-1/2-11-1/2	9315x24x24	2-1/8	1.953
2-1/2-12	2-11-1/2	9315x32x32	2-3/4	2.156

Replacement o-ring page L-64.

### 45° Swivel Elbow Female Pipe Swivel to Male Pipe

(Ref. SAE No. 140330)



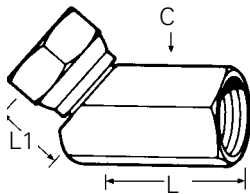
NPSM Swivel Nut	Male Pipe Thread	Part Number	Hex C	L	L1
1/8-27	1/8-27	9355x2x2	9/16	.620	.500
1/4-18	1/8-27	9355x4x2	11/16	.660	.470
1/4-18	1/4-18	9355x4x4	11/16	1.020	.670
1/4-18	3/8-18	9355x4x6	7/8	1.060	.620
1/4-18	1/2-14	9355x4x8	1	1.380	.730
3/8-18	1/4-18	9355x6x4	7/8	1.000	.750
3/8-18	3/8-18	9355x6x6	7/8	1.060	.750
3/8-18	1/2-14	9355x6x8	1	1.060	.750
1/2-14	3/8-18	9355x8x6	1	1.310	.910
1/2-14	1/2-14	9355x8x8	1	1.310	.910
1/2-14	3/4-14	9355x8x12	1-1/4	1.31	.910
3/4-14	1/2-14	9355x12x8	1-1/4	1.500	1.000
3/4-14	3/4-14	9355x12x12	1-1/4	1.500	1.000
3/4-14	1-11-1/2	9355x12x16	1-1/2	1.500	1.030
1-11-1/2	3/4-14	9355x16x12	1-1/2	1.310	1.050
1-11-1/2	1-11-1/2	9355x16x16	1-1/2	1.500	1.060
1-11-1/2	1-1/4-11-1/2	9355x16x20	1-7/8	1.800	1.300
1-1/4-11-1/2	1-1/4-11-1/2	9355x20x20	1-7/8	1.750	1.250
1-1/2-11-1/2	1-1/2-11-1/2	9355x24x24	2-1/8	1.940	1.380

# Steel Connectors

## Swivel Adapters

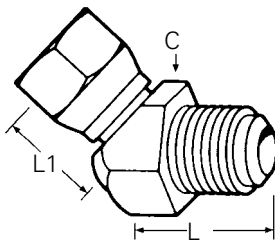
### 45° Swivel Elbow Female Pipe Swivel to Female Pipe

(Ref. SAE No. 140331)



NPSM Swivel Nut	Fem. Pipe Thread	Part Number	Hex C	L	L1
1/8-27	1/8-27	9385x2x2	1/2	.620	.500
1/4-18	1/4-18	9385x4x4	11/16	1.020	.670
1/4-18	3/8-18	9385x4x6	7/8	1.062	.625
3/8-18	3/8-18	9385x6x6	7/8	1.060	.750
3/8-18	1/2-14	9385x6x8	1	1.310	.750
1/2-14	1/2-14	9385x8x8	1	1.310	1.270
3/4-14	3/4-14	9385x12x12	1-1/4	1.500	1.000
3/4-14	1-11-1/2	9385x12x16	1-1/2	1.500	1.031
1-11-1/2	1-11-1/2	9385x16x16	1-1/2	1.500	1.090
1-1/4-11-1/2	1-1/4-11-1/2	9385x20x20	1-7/8	1.790	1.250
1-1/2-11-1/2	1-1/2-11-1/2	9385x24x24	2-1/8	1.940	1.380
2-11-1/2	2-11-1/2	9385x32x32	2-5/8	2.000	1.500

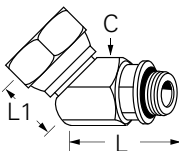
### 45° Swivel Elbow Female 45° SAE to Male 45° SAE (Steel)



Tube O.D.	Part Number	Hex C	L	L1
3/8	9154x6x6	3/4	1.400	.429
1/2	9154x8x8	1	1.760	.598
5/8	9154x10x10	1-1/4	1.920	.645

### 45° Swivel Elbow Male Straight Thread O-ring to Female Pipe Swivel 45° Elbow

(Ref. SAE No. 140357)



Straight Thread	NPSM Swivel Nut	Part Number	Hex C	L	L1
7/16-20	1/4-18	9365x4x4	11/16	1.062	.656
7/16-20	3/8-18	9365x4x6	7/8	1.062	.656
9/16-18	3/8-18	9365x6x6	7/8	1.062	.703
9/16-18	1/2-14	9365x6x8	1	1.062	.812
3/4-16	3/8-16	9365x8x6	1	1.125	.875
3/4-16	1/2-14	9365x8x8	1	1.125	.812
7/8-14	1/2-14	9365x10x8	1	1.500	.781
1-1/16-12	3/4-14	9365x12x12	1-1/4	1.500	1.046
1-5/16-12	1-11-1/2	9365x16x16	1-1/2	1.625	1.062
1-5/8-12	1-1/4-11 1/2	9365x20x20	1-7/8	1.281	1.171

Replacement o-ring page L-64.

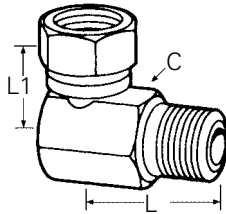


# Steel Connectors

## Swivel Adapters

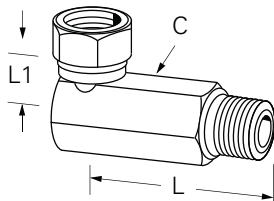
### 90° Elbow Female Pipe Swivel to Male Pipe

(Ref. SAE No. 140230)



NPSM Swivel Nut	Male Pipe Thread	Part Number	Hex C	L	L1
1/8-27	1/8-27	9405x2x2	9/16	.940	.700
1/8-27	1/4-18	9405x2x4	11/16	1.190	.750
1/4-18	1/8-27	9405x4x2	11/16	1.060	.780
1/4-18	1/4-18	9405x4x4	11/16	1.190	.750
1/4-18	3/8-18	9405x4x6	11/16	1.500	.880
1/4-18	1/2-14	9405x4x8	1	1.810	.940
3/8-18	1/4-18	9405x6x4	13/16	1.500	.950
3/8-18	3/8-18	9405x6x6	7/8	1.500	.950
3/8-18	1/2-14	9405x6x8	1	1.810	1.010
3/8-18	3/4-14	9405x6x12	1-1/4	2.000	1.120
1/2-14	3/8-18	9405x8x6	1	1.000	1.560
1/2-14	1/2-14	9405x8x8	1	1.810	1.600
1/2-14	3/4-14	9405x8x12	1-1/4	2.000	1.130
1/2-14	1-11-1/2	9405x8x16	1-1/2	2.380	1.250
3/4-14	3/4-14	9405x12x12	1-1/4	2.000	1.260
3/4-14	1-11-1/2	9405x12x16	1-1/2	2.380	1.380
1-11-1/2	3/4-14	9405x16x12	1-1/2	2.190	1.390
1-11-1/2	1-11-1/2	9405x16x16	1-1/2	2.380	1.400
1-11-1/2	1-1/4-11-1/2	9405x16x20	1-7/8	1.590	2.630
1-1/4-11-1/2	1-11-1/2	9405x20x16	1-7/8	2.530	1.670
1-1/4-11-1/2	1-1/4-11-1/2	9405x20x20	1-7/8	2.630	1.670
1-1/4-11-1/2	1-1/2-11-1/2	9405x20x24	2-1/8	2.810	1.780
1-1/2-11-1/2	1-1/2-11-1/2	9405x24x24	2-1/8	2.810	1.750
2-11-1/2	2-11-1/2	9405x32x32	2-5/8	3.120	2.080

### 90° Elbow Long - Female Pipe Swivel to Male Pipe



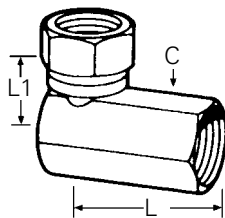
NPSM Swivel Nut	Male pipe Thread	Part Number	Hex C	L	L1
1/8-27	1/8-27	9405X2X2LL	9/16	1.90	.70
1/4-18	1/4-18	9405X4X4LL	11/16	2.57	.75
3/8-18	3/8-18	9405X6X6LL	13/16	3.16	.90
1/2-14	1/2-14	9405X8X8LL	1	3.67	1.02
3/4-14	3/4-14	9405X12X12LL	1-1/4	4.29	1.20
1-11-1/2	1-11-1/2	9405X16X16LL	1-1/2	5.06	1.46

# Steel Connectors

## Swivel Adapters

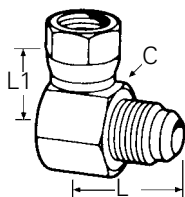
### 90° Elbow Female Pipe Swivel to Female Pipe

(Ref. SAE No. 140231)



NPSM Swivel Nut	Fem. Pipe Thread	Part Number	Hex C	L	L1
1/8-27	1/8-27	9455x2x2	9/16	.640	.700
1/4-18	1/4-18	9455x4x4	11/16	.870	.750
1/4-18	3/8-18	9455x4x6	13/16	1.000	.810
1/4-18	1/2-14	9455x4x8	1	1.250	.940
3/8-18	1/4-18	9455x6x4	13/16	1.000	.900
3/8-18	3/8-18	9455x6x6	13/16	1.000	.900
3/8-18	1/2-14	9455x6x8	1	1.250	1.000
1/2-14	3/8-18	9455x8x6	1	1.220	1.020
1/2-14	1/2-14	9455x8x8	1	1.250	1.000
1/2-14	3/4-14	9455x8x12	1-1/4	1.440	1.120
3/4-14	1/2-14	9455x12x8	1-1/4	1.440	1.250
3/4-14	3/4-14	9455x12x12	1-1/4	1.490	1.200
3/4-14	1-11-1/2	9455x12x16	1-1/2	1.750	1.380
1-11-1/2	3/4-14	9455x16x12	1-1/2	1.750	1.380
1-11-1/2	1-11-1/2	9455x16x16	1-1/2	1.750	1.400
1-1/4-11-1/2	1-1/4-11-1/2	9455x20x20	1-7/8	1.850	1.630
1-1/2-11-1/2	1-1/2-11-1/2	9455x24x24	2-1/8	2.250	1.750
2-11-1/2	2-11 1/2	9455x32x32	2-5/8	2.500	2.310

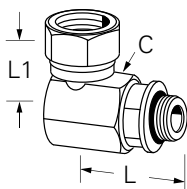
### 90° Elbow 45° SAE Female Swivel to SAE 45° Male (Steel)



Tube O.D.	Part Number	Hex C	L	L1
3/8	9151x6x6	3/4	1.00	.69
1/2	9151x8x8	1	1.25	.99
5/8	9151x10x10	1-1/4	1.44	1.09

### 90° Elbow Male Straight Thread O-ring to Female Pipe Swivel

(Ref. SAE No. 140257)



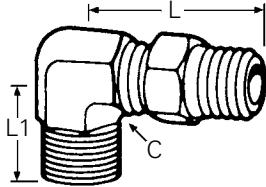
Straight Thread	NPSM Swivel Nut	Part Number	Hex C	L	L1
7/16-20	1/4-18	9515x4x4	11/16	1.090	.781
7/16-20	3/8-18	9515x4x6	7/8	1.100	.900
9/16-18	1/4-18	9515x6x4	11/16	1.187	.781
9/16-18	3/8-18	9515x6x6	7/8	1.296	.937
9/16-18	1/2-14	9515x6x8	1	1.484	1.000
3/4-16	3/8-18	9515x8x6	1	1.515	1.000
3/4-16	1/2-14	9515x8x8	1	1.515	1.000
3/4-16	3/4-14	9515x8x12	1-1/4	1.656	1.250
7/8-14	3/8-18	9515x10x6	1	1.640	1.000
7/8-14	1/2-14	9515x10x8	1	1.640	1.025
7/8-14	3/4-14	9515x10x12	1-1/4	1.781	1.250
1-1/16-12	1/2-14	9515x12x8	1-1/4	1.921	1.125
1-1/16-12	3/4-14	9515x12x12	1-1/4	1.921	1.250
1-3/16-12	3/4-14	9515x14x12	1-1/4	1.921	1.250
1-5/16-12	3/4-14	9515x16x12	1-1/2	2.093	1.375
1-5/16-12	1-11-1/2	9515x16x16	1-1/2	2.093	1.390
1-5/8-12	3/4-14	9515x20x12	1-7/8	2.484	1.562
1-5/8-12	1-1/4-11-1/2	9515x20x20	1-7/8	2.484	1.656
1-7/8-12	1-1/2-11-1/2	9515x24x24	2-1/8	2.609	1.734
2-1/2-12	2-11-12	9515x32x32	2-5/8	3.250	2.312

Replacement o-ring page L-64.

# Steel Connectors

## Swivel Adapters

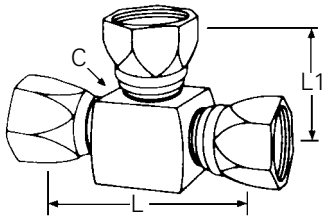
### 90° Elbow Male Pipe Swivel to Male Pipe Rigid



Male Pipe Swivel	Male Pipe Rigid	Part Number	Hex C	L	L1
1/4-18	1/4-18	9435x4x4	9/16	1.870	1.060
3/8-18	3/8-18	9435x6x6	3/4	1.950	1.220
1/2-14	1/2-14	9435x8x8	7/8	2.250	1.470

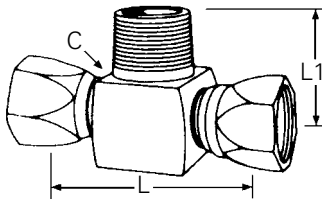
Not for use with liquids over 212°F.

### Female Pipe Swivel Tee



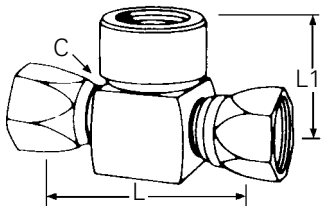
NPSM Swivel	Part Number	Hex C	L	L1
1/8-27	9705x2x2x2	1/2	1.406	.660
1/4-18	9705x4x4x4	11/16	1.720	.780
3/8-18	9705x6x6x6	7/8	1.720	.940
1/2-14	9705x8x8x8	1	2.200	1.000
3/4-14	9705x12x12x12	1-1/4	2.780	1.250
1-11-1/2	9705x16x16x16	1-1/2	3.060	1.390
1 1/4-11 1/2	9705x20x20x20	1-7/8	3.320	1.660

### Female Pipe Swivel to Male Pipe Branch Tee



Swivel Thread	NPSM Male Pipe	Part Number	Hex C	L	L1
1/8-27	1/8-27	9406x2x2x2	9/16	1.380	.940
1/4-18	1/4-18	9406x4x4x4	11/16	1.500	1.190
1/4-18	3/8-18	9406x4x4x6	7/8	1.744	1.500
1/4-18	1/2-14	9406x4x4x8	7/8	1.880	1.500
3/8-18	3/8-18	9406x6x6x6	1	1.874	1.750
3/8-18	1/2-14	9406x6x6x8	1	2.000	1.750
1/2-14	1/2-14	9406x8x8x8	1	2.000	1.810
1/2-14	3/4-14	9406x8x8x12	1-1/4	2.250	2.000
3/4-14	3/4-14	9406x12	1-1/4	2.375	2.000
1-11-1/2	1-11-1/2	9406x16x16x16	1-1/2	2.880	2.380

### Female Pipe Swivel to Female Pipe Branch Tee



NPSM Swivel Thread	Female Pipe	Part Number	Hex C	L	L1
1/8-27	1/8-27	9456x2x2x2	1/2	1.312	.687
1/4-18	1/4-18	9456x4x4x4	11/16	1.625	.937
1/4-18	3/8-18	9456x4x4x6	7/8	1.744	1.062
3/8-18	3/8-18	9456x6x6x6	7/8	1.874	.937
3/8-18	1/2-14	9456x6x6x8	1	2.000	1.250
1/2-14	1/2-14	9456x8x8x8	1	2.000	1.250
3/4-14	3/4-14	9456x12x12x12	1-1/4	2.500	1.437

### Ordering Information

Use Part number.

### Typical Application

High pressure, hydraulic, pneumatic and chemical processing.

### Pressure\*

Working pressure to 6000 PSI (1-1/4" and 1-1/2"; maximum 4000 PSI).

### Sealing Method

O-ring.

### Vibration Rating

Excellent resistance.

### Material

Generally 12L14 steel

### Plating

Eaton Carbon Steel Connectors are zinc-plated, with clear trivalent chromatic.

### Used With

Steel tubing (tubing for brazing must be non-coated).

### Advantages

Tubing is brazed for permanent leakproof connection.

### Conformance

An exclusive item with Eaton, meets SAE J1453.

**Label Set** FS-2400

### Tube Preparation and Cleaning

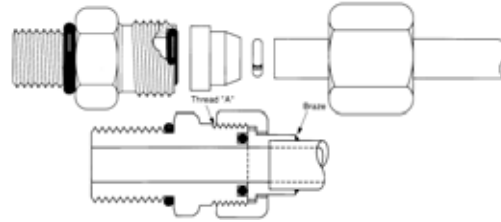
Figure 1

1. Establish the length of tubing required allowing 1/16" cut-off factor for each connection.
2. Cut the tubing to proper length keeping ends reasonably square. A fine tooth hacksaw or cutoff saw works well for this job. The use of a tubing cutter is not recommended due to possible collapse of the tube end, retarding the capillary action required for proper braze flow.
3. Clean the end of the tube with an alkaline cleaner to remove all traces of oil or grease. Deburr the end of the tube with a file and polish the outside of the tube down to bare metal with clean emery paper. Oil and grease residue must be removed first to avoid working the oily residue into the tube surface.
4. After polishing, wipe off any metal particles using a clean solvent if necessary. Avoid touching the tube end after final cleaning as this may leave greasy spots which will braze poorly. Clean the tailpiece with an alkaline cleaner.

### Note:

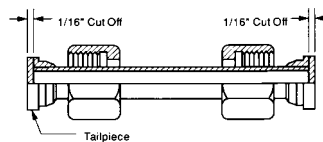
See page N-52 for hydraulic o-ring assortment.

\* Pressure ratings shown are the pressure ratings for the fitting and are not necessarily the pressure rating applicable in an assembly with hydraulic hose. The applicable pressure rating for an assembly with hydraulic hose is the lower value specified for the hose and the fitting.



<b>Tube O.D.</b>	1/4	3/8	1/2	5/8	3/4
<b>Thread</b>	9/16-18	11/16-16	13/16-16	1-14	1 3/16-12

<b>Tube O.D.</b>	7/8	1	1-1/4	1-1/2
<b>Thread</b>	1 3/16-12	1 7/16-12	1 11/16-12	2-12



### Note:

Subtract 1/16" from tube length for each connection.



**Fluxing and Brazing Cleanup**

Flux may be cleaned up using hot water and a wire brush, using care not to scratch the tailpiece sealing surface.

1. Assemble proper size braze ring into counterbore of tailpiece. The correct size brazing will be slightly smaller than the inside diameter of the counterbore.



2. Clamp the tube securely in a vise, slide nut on tube, with threads pointing outward. Coat the tube end with flux and several inches of the tube outside diameter.



3. Coat the tailpiece liberally with flux including the counterbore and braze ring.



4. In a well-ventilated area, apply heat uniformly to the tailpiece and the tube end. Watch the flux. The flux becomes completely clear when it is close to the proper brazing temperature. When ring melts, the tailpiece will settle down onto the end.



**Note:** General working knowledge of acetylene torch brazing techniques is recommended.

5. Remove tube assembly from vise and check braze joint.



6. The braze alloy will flow down through the joint and should form a continuous fillet at the tube to tailpiece joint.



**Note:** Do not overheat. Excessive heat will only cause scaling and charred flux and make the parts more difficult to clean up.

**Torque Requirements**

Tube O.D.	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2
Torque Ft-Lb. For-Seal® SW. Nut	10-12	18-20	32-35	46-50	65-70	92 100	125 140	150 165
Torque Ft-Lb O-ring Boss Straight Thread O-ring Locknut Torque	14-16	24-26	50-60	72-80	125 135	200 220	210 280	270 360

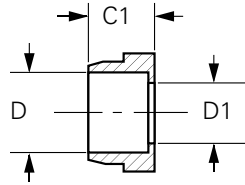
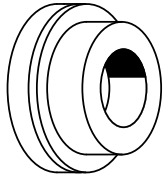
**Thread Chart**

Rated pressures are for low surge, static type applications.

Tube O.D.	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2
For-Seal Thread	9/16-18	11/16-16	13/16-16	1-14	1-3/16-12	1-7/16-12	1-11/16-12	2-12
Maximum PSI	6,000	6,000	6,000	6,000	6,000	6,000	4,000	4,000
Adjustable Hose Ends PSI	6,000	6,000	6,000	6,000	6,000	5,000	4,000	3,000

**Tailpiece Silver Braze**

(Ref. SAE No. 520115)

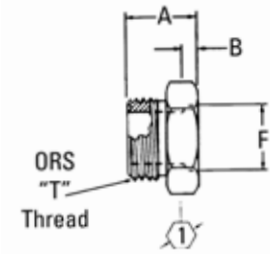


Tube O.D.	Part Number	D	D1	C1
1/4	4165x4	.256	.172	.374
3/8	4165x6	.381	.264	.374
1/2	4165x8	.506	.378	.374
3/4	4165x12	.757	.609	.551
1	4165x16	1.007	.811	.610
1-1/4	4165x20	1.257	1.024	.610
1-1/2	4165x24	1.507	1.260	.610

Oil Dipped

**FOR-SEAL Braze Adapter**

(Ref. SAE No. 520104)



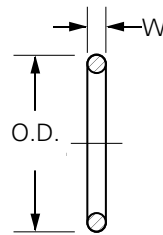
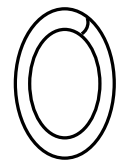
**Part No. FF1851T (Size)\***

Dash Size	Tube O.D.		Thread T1	A		B		F		①
	mm	inches		mm	inches	mm	inches	mm	inches	
1212S	19,0	.75	1 <sup>3</sup> / <sub>16</sub> -12	30,7	1.21	9,6	.38	19,0	.75	1.25

\*Eaton counterbores are dimensioned for sizes or emerged tubing. If tubing is used as received, contact Eaton for appropriate part number.

Adapters, Tube Fittings & Connectors

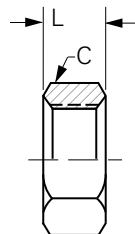
**FOR-SEAL Cadmium Free Braze Ring**



Tube O.D.	Part Number	Wire Dia.	O.D.
1/4	4640x4	.046	.250
3/8	4640x6	.046	.375
1/2	4640x8	.046	.500
5/8	4640x10	.046	.625
3/4	4640x12	.062	.750
1	4640x16	.062	1.000
1-1/4	4640x20	.062	1.250
1-1/2	4640x24	.062	1.500

**Bulkhead Nut**

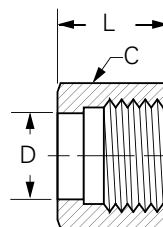
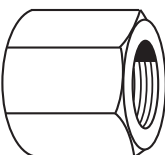
(Ref. SAE No. 520118)



Tube O.D. A	Part Number	Hex C	L
3/8	4924x6	1	.31
1/2	4924x8	1-1/8	.35
3/4	4924x12	1-1/2	.41
1	4924x16	1-3/4	.41
1-1/4	4924x20	2	.41
1-1/2	4924x24	2-3/8	.41

**Nut**

(Ref. SAE No. 520110)

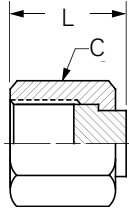
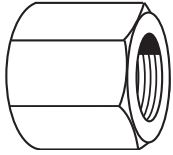


Tube O.D.	Part Number	Hex C	D	L
1/4	4105x4	11/16	.412	.58
3/8	4105x6	13/16	.531	.67
1/2	4105x8	15/16	.652	.83
5/8	4105x10	1-1/8	.829	.93
3/4	4105x12	1-3/8	.950	1.02
1	4105x16	1-5/8	1.144	1.10
1-1/4	4105x20	1-7/8	1.415	1.10
1-1/2	4105x24	2-1/4	1.727	1.10



**Cap**

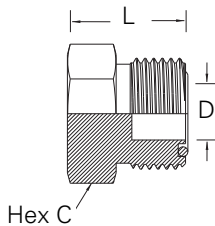
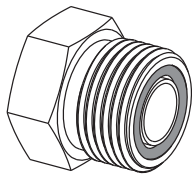
(Ref. SAE No. 520112)



Tube O.D.	Part Number	Hex C	L
1/4	4129x4	11/16	.67
3/8	4129x6	13/16	.75
1/2	4129x8	15/16	.90
5/8	4129x10	1-1/8	1.00
3/4	4129x12	1-3/8	1.10
1	4129x16	1-5/8	1.17
1-1/4	4129x20	1-7/8	1.17
1-1/2	4129x24	2-1/4	1.17

**Plug**

(Ref. SAE No. 520109)

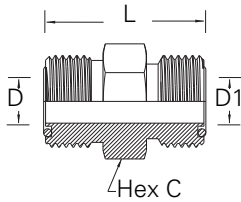
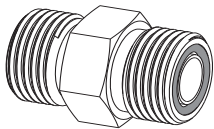


Tube O.D.	Part Number	Hex C	D	L
1/4	4229x4	5/8	.172	.659
3/8	4229x6	3/4	.264	.751
1/2	4229x8	7/8	.378	.854
5/8	4229x10	1-1/16	.484	1.020
3/4	4229x12	1-1/4	.609	1.080
1	4229x16	1-1/2	.811	1.100
1-1/4	4229x20	1-3/4	1.024	1.100
1-1/2	4229x24	2-1/8	1.260	1.100

FOR-SEAL O-ring included.

**Union**

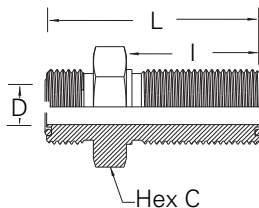
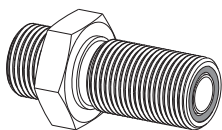
(Ref. SAE No. 520101)



Tube O.D.	Tube O.D.	Part Number	Hex C	D	D1	L
1/4	1/4	4305x4	5/8	.172	.172	1.08
3/8	1/4	4305x6x4	3/4	.264	.172	1.17
3/8	3/8	4305x6	3/4	.264	.264	1.22
1/2	3/8	4305x8x6	7/8	.378	.264	1.33
1/2	1/2	4305x8	7/8	.378	.378	1.39
5/8	1/2	4305x10x8	1-1/16	.484	.378	1.57
5/8	5/8	4305x10	1-1/16	.484	.484	1.68
3/4	1/2	4305x12x8	1-1/4	.609	.378	1.69
3/4	5/8	4305x12x10	1-1/4	.609	.484	1.80
3/4	3/4	4305x12	1-1/4	.609	.609	1.86
1	3/4	4305x16x12	1-1/2	.812	.609	1.92
1	1	4305x16	1-1/2	.811	.811	1.94
1-1/4	1-1/4	4305x20	1-3/4	1.024	1.024	2.02
1-1/2	1-1/2	4305x24	2-1/8	1.260	1.260	2.09

**Bulkhead Union**

(Ref. SAE No. 520601)

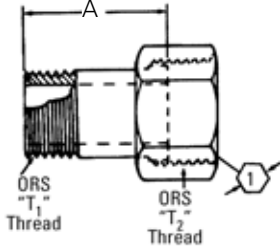


Tube O.D.	Part Number	Hex C	D	I	L
3/8	4325x6	1	.264	1.34	2.09
1/2	4325x8	1-1/8	.378	1.44	2.30
3/4	4325x12	1-1/2	.609	1.64	2.72
1	4325x16	1-3/4	.812	1.66	2.76

For bulkhead nut, see page L-26.

**FOR-SEAL  
Reducer Adapter**

(Ref. SAE No. 520123)

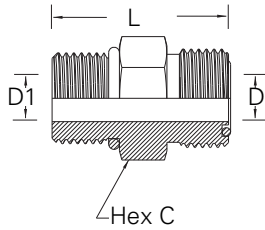
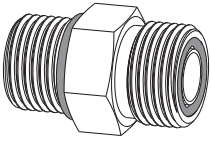


**Part No. FF2281T (Size)**

Dash Size	Tube O.D.		Thread T1	Thread T2	A		①
	mm	inches			mm	inches	
0406S	9,6	.38	9/16 - 18	11/16 - 16	19,5	.77	.81
0408S	12,7	.50	9/16 - 18	13/16 - 16	21,8	.86	.94
0608S	12,7	.50	11/16 - 16	13/16 - 16	22,3	.88	.94
0612S	19,0	.75	11/16 - 16	13/16 - 12	26,2	1.03	1.38
0812S	19,0	.75	13/16 - 16	13/16 - 12	27,9	1.10	1.38

**Straight Thread  
O-ring Connector**

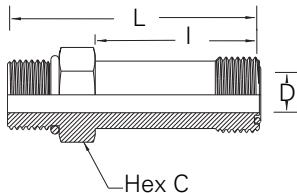
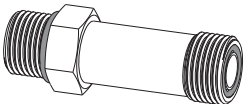
(Ref. SAE No. 520120)



Male Tube O.D.	Male Port Size	Part Number	Hex C	D	D1	L
1/4	1/4	4315x4	5/8	.172	.172	1.133
1/4	3/8	4315x4x6	11/16	.172	.172	1.202
3/8	1/4	4315x6x4	3/4	.264	.172	1.343
3/8	3/8	4315x6	3/4	.264	.264	1.252
3/8	1/2	4315x6x8	7/8	.378	.264	1.378
3/8	5/8	4315x6x10	1-1/16	.264	.484	1.530
1/2	3/8	4315x8x6	7/8	.378	.264	1.472
1/2	1/2	4315x8	7/8	.378	.378	1.441
1/2	5/8	4315x8x10	1	.378	.484	1.590
1/2	3/4	4315x8x12	1-1/4	.378	.609	1.748
5/8	5/8	4315x10	1-1/16	.484	.484	1.700
3/4	3/4	4315x12	1-1/4	.609	.609	1.918
3/4	1	4315x12x16	1-1/2	.609	.609	1.960
1	3/4	4315x16x12	1-1/2	.812	.609	2.138
1	1	4315x16	1-1/2	.811	.811	1.978
1	1-1/4	4315x16x20	1-7/8	.812	1.709	2.058
1-1/4	1	4315x20x16	1-3/4	1.024	.843	2.278
1-1/4	1-1/4	4315x20	1-7/8	1.024	1.024	2.058
1-1/2	1-1/2	4315x24	2-1/8	1.260	1.260	2.125

**Straight Thread O-ring  
Extended**

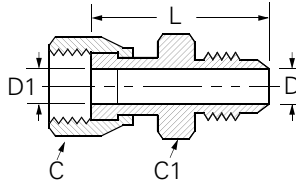
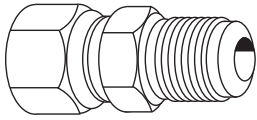
(Ref. SAE No. 520122)



Male Tube O.D.	Male Port Size	Part Number	Hex C	D	I	L
3/8	3/8	4316x6	3/4	.264	1.46	2.27
1/2	1/2	4316x8	7/8	.378	1.75	2.67
3/4	3/4	4316x12	1-1/4	.609	2.52	3.76
1	1	4316x16	1-1/2	.811	2.87	4.14

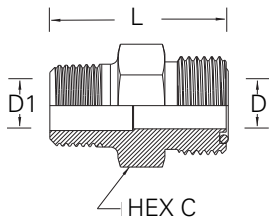
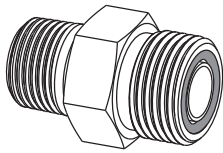
For replacement Straight Thread o-ring, see page L-64.

**Male 37° to Female FOR-SEAL**



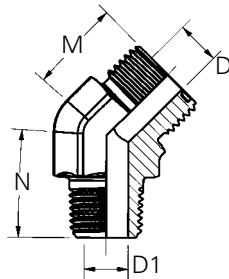
Female Tube O.D.	Male Tube Size	Part Number	Hex C	Hex C1	D	L
1/4	1/4	4213x4	11/16	5/8	.172	1.50
3/8	3/8	4213x6	13/16	3/4	.297	1.62
1/2	1/2	4213x8	15/16	7/8	.360	2.03
5/8	5/8	4213x10	1-1/8	1-1/16	.484	2.25
3/4	3/4	4213x12	1-3/8	1-1/4	.550	2.44
1	1	4213x16	1-5/8	1-1/2	.780	2.82

**Male FOR-SEAL Male Pipe Adapter**



Tube O.D.	Male Pipe Size	Part Number	Hex C	D	D1	L
3/8	3/8	4205x6x6	3/4	.264	.406	1.30
1/2	3/8	4205x8	7/8	.378	.406	1.45
1/2	1/2	4205x8x8	7/8	.378	.484	1.64
5/8	1/2	4205x10	1-1/16	.484	.531	1.82
3/4	1/2	4205x12x8	1-1/4	.406	.484	1.87
3/4	3/4	4205x12	1-1/4	.609	.719	1.94
3/4	1	4205x12x16	1-3/8	.609	.938	1.87
1	1	4205x16	1-1/2	.811	.938	2.19
1-1/4	1-1/4	4205x20	1-3/4	1.024	1.250	2.30

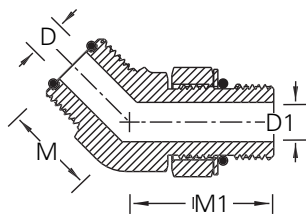
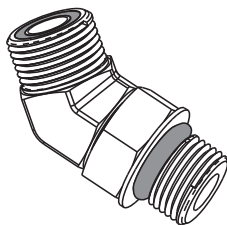
**45° Male Elbow**



Male Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/8	4355x4	.172	.188	.63	.64	9/16
3/8	1/4	4355x6	.264	.281	.74	.86	3/4
1/2	3/8	4355x8	.378	.406	.80	.95	7/8
3/4	3/4	4355x12	.609	.719	1.02	1.20	1-5/16

**Straight Thread O-ring Connector 45° Elbow**

(Ref. SAE No. 520320)



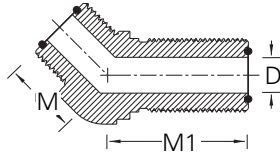
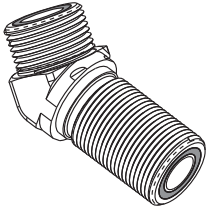
Male Tube O.D.	Male Port Size	Part Number	D	D1	M	M1	Across Flats
1/4	1/4	4365x4	.172	.172	.63	1.18	9/16
1/4	3/8	4365x4x6	.172	.264	.68	1.30	3/4
3/8	1/4	4365x6x4	.264	.172	.74	1.22	3/4
3/8	3/8	4365x6	.264	.264	.74	1.30	3/4
3/8	1/2	4365x6x8	.264	.390	.74	1.43	3/4
1/2	3/8	4365x8x6	.378	.264	.80	1.27	3/4
1/2	1/2	4365x8	.378	.390	.80	1.43	3/4
1/2	5/8	4365x8x10	.378	.484	.82	1.76	1-1/16
5/8	1/2	4365x10x8	.484	.390	.92	1.59	1-1/16
5/8	5/8	4365x10	.484	.484	.92	1.76	1-1/16
5/8	3/4	4365x10x12	.484	.609	.94	1.97	1-3/16
3/4	5/8	4365x12x10	.609	.484	1.02	1.81	1-3/16
3/4	3/4	4365x12	.609	.609	1.02	1.97	1-5/16
3/4	1	4365x12x16	.609	.811	1.16	2.06	1-5/16
1	3/4	4365x16x12	.811	.609	1.12	2.03	1-7/16
1	1	4365x16	.812	.811	1.18	2.06	1-1/2
1	1-1/4	4365x16x20	.811	1.081	1.26	2.11	1-5/8

For replacement straight thread o-ring, see page L-64.



**45° Bulkhead Elbow**

(Ref. SAE No. 520201)

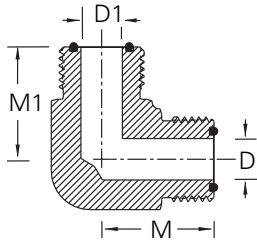
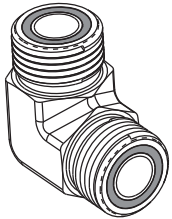


Male Tube O.D.	Part Number	D	M	M1	Across Flats
1/4	4375x4	.172	.63	1.73	9/16
3/8	4375x6	.264	.74	1.91	3/4
1/2	4375x8	.378	.80	2.01	3/4

For Bulkhead Nut, see page L-26.

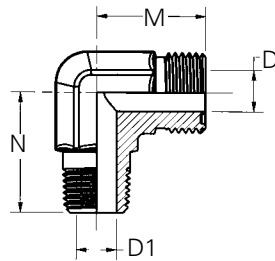
**Union 90° Elbow**

(Ref. SAE No. 520201)



Male Tube O.D.	Part Number	D	M	Across Flats
1/4	4505x4	.172	.85	9/16
3/8	4505x6	.264	.98	3/4
1/2	4505x8	.378	1.10	3/4
5/8	4505x10	.484	1.31	1-1/16
3/4	4505x12	.609	1.47	1-3/16
1	4505x16	.811	1.64	1-7/16
1-1/4	4505x20	1.045	1.76	1-5/8
1-1/2	4505x24	1.312	1.92	1-7/8

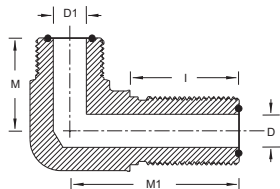
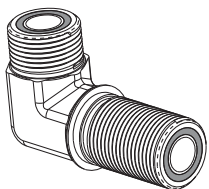
**90° Male Elbow**



Male Tube O.D.	Pipe Size	Part Number	D	D1	M	N	Across Flats
1/4	1/8	4405x4	.172	.188	.85	.78	9/16
3/8	1/4	4405x6	.264	.281	.80	1.09	3/4
1/2	3/8	4405x8	.378	.406	1.10	1.22	3/4
5/8	1/2	4405x10	.484	.531	1.31	1.47	1-1/16
3/4	3/4	4405x12	.609	.719	1.47	1.59	1-5/16
1	1	4405x16	.812	.939	1.64	1.97	1-5/8

**Bulkhead Union 90° Elbow**

(Ref. SAE No. 520701)

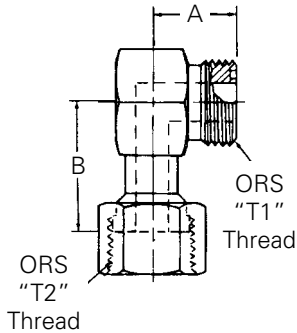


Male Tube O.D.	Port Size	Part Number	D	D1	M	M1	I	Across Flats
3/8	3/8	4525x6	.264	.264	1.02	2.05	1.34	3/4
1/2	1/2	4525x8	.378	.378	1.14	2.18	1.44	7/8
3/4	3/4	4525x12	.609	.609	1.52	2.64	1.60	1-5/16
1	1	4525x16	.811	.811	1.67	2.80	1.64	1-5/8

For Bulkhead Nut, see page L-26.

**90° Swivel Elbow**

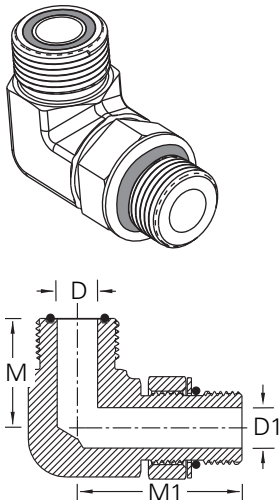
(Ref. SAE No. 520221)



Male Tube O.D.	Female Tube O.D.	Part Number	Hex C	D	D1	M	M1	Across Flats
1/4	1/4	4506x4	11/16	.172	.165	.85	1.04	9/16
3/8	3/8	4506x6	13/16	.264	.264	.98	1.19	3/4
1/2	1/2	4506x8	15/16	.378	.358	1.10	1.46	3/4
5/8	5/8	4506x10	1-1/8	.484	.453	1.31	1.59	1-1/16
3/4	3/4	4506x12	1-3/8	.609	.547	1.47	1.79	1-5/16
1	1	4506x16	1-5/8	.811	.783	1.64	2.10	1-7/16

**Straight Thread O-ring 90° Elbow**

(Ref. SAE No. 520220)

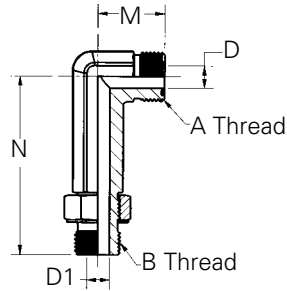


Male Tube O.D.	Port Size	Part Number	D	D1	M	M1	Across Flats
1/4	1/4	4515x4	.172	.172	.85	1.29	9/16
1/4	3/8	4515x4x6	.172	.264	.92	1.45	3/4
1/4	1/2	4515x4x8	.172	.390	.97	1.60	3/4
3/8	1/4	4515x6x4	.264	.172	.98	1.37	3/4
3/8	5/16	4515x6x5	.264	.234	.98	1.37	3/4
3/8	3/8	4515x6	.264	.264	.98	1.45	3/4
3/8	1/2	4515x6x8	.264	.390	1.04	1.60	3/4
3/8	5/8	4515x6x10	.264	.484	1.15	1.97	3/4
3/8	3/4	4515x6x12	.264	.609	1.25	2.17	1-3/16
1/2	5/8	4515x8x10	.378	.484	1.21	1.97	1-1/16
1/2	3/4	4515x8x12	.378	.484	1.32	2.17	1-1/16
1/2	3/8	4515x8x6	.378	.264	1.10	1.44	3/4
1/2	1/2	4515x8	.378	.390	1.10	1.60	3/4
5/8	5/8	4515x10	.484	.484	1.31	1.97	1-1/16
5/8	3/4	4515x10x12	.484	.609	1.41	2.17	1-3/16
5/8	1/2	4515x10x8	.484	.390	1.31	1.80	1-1/16
3/4	5/8	4515x12x10	.609	.484	1.47	2.01	1-5/16
3/4	3/4	4515x12	.609	.609	1.47	2.17	1-5/16
3/4	1	4515x12x16	.609	.811	1.62	2.35	1-5/16
3/4	1/2	4515x12x8	.609	.390	1.47	1.84	1-3/16
1	3/4	4515x16x12	.811	.609	1.64	2.32	1-5/8
1	1	4515x16	.811	.811	1.64	2.35	1-5/8
1	1-1/4	4515x16x20	.811	1.081	1.76	2.45	1-5/8
1-1/4	1	4515x20x16	1.024	.811	1.76	2.42	1-5/8
1-1/4	1-1/4	4515x20	1.024	1.081	1.76	2.45	1-7/8
1-1/2	1-1/2	4515x24	1.312	1.312	1.92	2.59	1-7/8

For replacement straight thread o-ring, see page L-64.



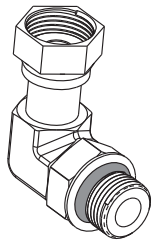
**Straight Thread O-ring  
90° Elbow - Long**



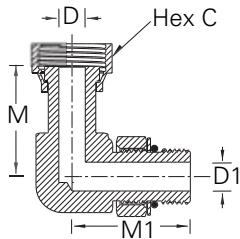
Male Tube O.D.	Male Port Size	Part Number	D	D1	M	N	Across Flats
1/2	1/2	4515x8L	.378	.398	1.10	2.95	3/4

**90° Straight Thread Swivel**

(Ref. SAE No. 520281)

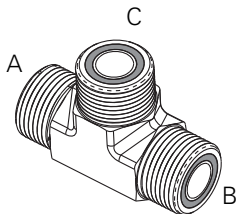


Female Tube O.D.	Port Size	Part Number	D	D1	M	M1	Hex C	Across Flats
1/4	1/4	4535x4	.165	.180	1.04	1.29	11/16	9/16
3/8	3/8	4535x6	.264	.300	1.15	1.45	13/16	3/4
1/2	1/2	4535x8	.258	.398	1.49	1.60	15/16	7/8
5/8	5/8	4535x10	.453	.498	1.62	1.97	1-1/8	1-1/16
3/4	3/4	4535x12	.547	.616	1.82	2.17	1-3/8	1-3/8
1	1	4535x16	.783	.852	2.10	2.35	1-5/8	1-5/8

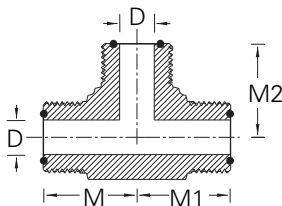


**Union Tee**

(Ref. SAE No. 520401)



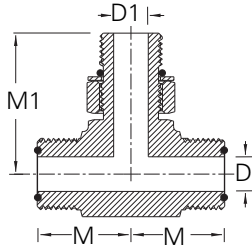
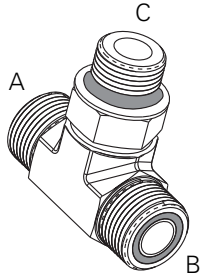
Male Tube O.D. A	Male Tube O.D. B	Male Tube O.D. C	Part Number	D	D1	M	M1	M2	Across Flats
1/4	1/4	1/4	4705x4	.172	.172	.85	.85	.85	9/16
3/8	3/8	3/8	4705x6	.264	.264	.98	.98	.98	3/4
3/8	3/8	1/2	4705x6x6x8	.264	.378	1.04	1.04	1.10	3/4
1/2	3/8	1/2	4705x8x6x8	.264	.378	.98	.98	1.10	3/4
1/2	1/2	1/2	4705x8	.378	.378	1.10	1.10	1.10	3/4
5/8	5/8	5/8	4705x10	.484	.484	1.31	1.31	1.31	1-1/16
3/4	3/4	3/4	4705x12	.609	.609	1.47	1.47	1.47	1-3/16





**Straight Thread Branch Tee**

(Ref. SAE No. 520429)

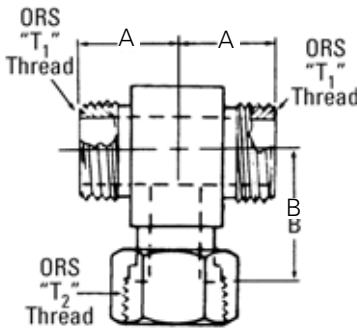


Tube O.D.	Port Size	Part Number	D	D1	M	M1	Across Flats
1/4	1/4	4715x4	.172	.172	.85	1.29	9/16
3/8	3/8	4715x6	.264	.264	.98	1.45	3/4
1/2	3/8	4715x8x6	.378	.264	1.10	1.44	3/4
1/2	1/2	4715x8	.378	.390	1.10	1.60	3/4
5/8	5/8	4715x10	.484	.484	1.31	1.97	1-1/16
3/4	3/4	4715x12	.609	.609	1.47	2.17	1-3/16
3/4	1	4715x12x16	.609	.812	1.62	2.35	1-5/8
1	1	4715x16	.811	.845	1.64	2.35	1-5/8

For replacement straight thread o-ring, see page L-64.

**Female Branch Tee**

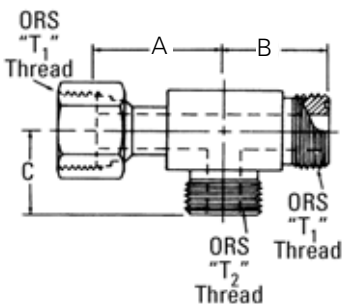
(Ref. SAE No. 520433)



Part Number	Tube OD	Thread T1	Thread T2	A	B
4707x6	3/8	11/16-16	11/16-16	0.98	1.15
4707x8	1/2	13/16-16	13/16-16	1.10	1.49

**Female Run Tee**

(Ref. SAE No. 520432)

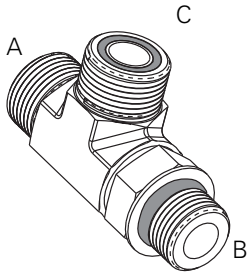


Part Number	Tube OD	Thread T1	Thread T2	A	B	C
4706x4	1/4	9/16-18	9/16-18	1.04	.85	.85
4706x6	3/8	11/16-16	11/16-16	1.15	.98	.98
4706x8	1/2	13/16-16	13/16-16	1.49	1.10	1.10
4706x10	5/8	1-14	1-14	1.62	1.31	1.31
4706x12	3/4	1 3/16-12	1 3/16-12	1.82	1.47	1.47
4706x16	1	1 7/16-12	1 7/16-12	2.10	1.64	1.64
4706x20	1-1/4	1 11/16-12	1 11/16-12	2.29	1.76	1.76



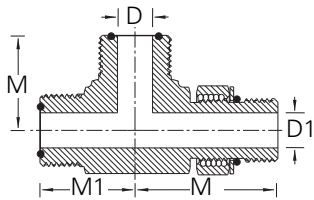
**Straight Thread Run Tee**

(Ref. SAE No. 520428)



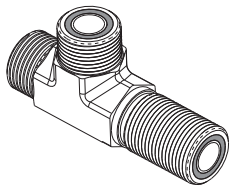
Male Tube O.D. A	Male Tube O.D. B	Male Tube O.D. C	Part Number	D	D1	M	M1	Across Flats
1/4	1/4	1/4	4716x4	.172	.172	.85	1.29	9/16
3/8	3/8	3/8	4716x6	.264	.264	.98	1.45	3/4
1/2	1/2	1/2	4716x8	.378	.391	1.10	1.60	7/8
3/4	3/4	3/4	4716x12	.609	.609	1.47	2.17	1-3/16

For replacement straight thread o-ring, see page L-64.



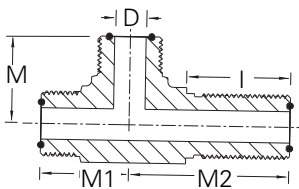
**Bulkhead Run Tee**

(Ref. SAE No. 520958)

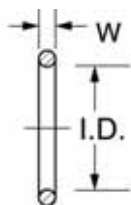


Tube O.D.	Part Number	D	I	M	M1	M2	Across Flats
3/8	4726x6	.264	1.34	1.02	1.02	2.05	3/4
1/2	4726x8	.378	1.44	1.14	1.14	2.18	3/4
3/4	4726x12	.609	1.64	1.52	1.52	2.65	1-3/16
1	4726x16	.812	1.66	1.67	1.67	2.80	1-7/16

For Bulkhead Nut, see page L-26.



**O-ring, FOR-SEAL**



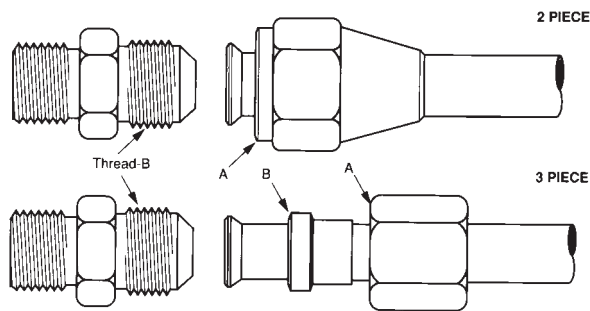
**Material:**  
Buna N, 90 Durometer

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

Standard o-ring complies with SAE specification SAE J515 Type CH

Tube O.D.	Part Number	W	I.D.
1/4	4629x4	.070 ± .005	.301 ± .005
3/8	4629x6	.070 ± .005	.364 ± .005
1/2	4629x8	.070 ± .005	.489 ± .005
5/8	4629x10	.070 ± .005	.614 ± .005
3/4	4629x12	.070 ± .005	.739 ± .005
1	4629x16	.070 ± .006	.926 ± .006
1-1/4	4629x20	.070 ± .006	1.176 ± .006
1-1/2	4629x24	.070 ± .010	1.489 ± .010

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



### Typical Application

Hydraulic, instrumentation, and chemical processing systems.

### Pressure

Refer to the pressure charts above. The maximum working pressure of an adapter is the lower working pressure of the end size. Ex: C3069x8x6, 8 = 4000 psi and 6 = 5000 psi.

Maximum working pressure is 4000 psi.

### Vibration

Good resistance. Vibration resistance decreases with increase in tube size.

Use two-piece design when greater vibration resistance is required.

### Temperature Range

-65°F to +400°F (-53°C to +204°C) at maximum operating pressures.

### Material

Carbon Steel - AISI/SAE 12L14

Stainless Steel - Type 316

Plating - Trivalent Zinc Plated

### Used With

Copper, brass, steel, aluminum, and other tubing that can be flared. See pages A-12-14 for material compatibility.

### Advantages

Zinc Plate. Choice of two- or three-piece design. Broad selection of styles and sizes. Interchangeable with all sources.

### Conformance

Meets specifications and standards of ASA, ASME, and SAE.

### How to Order

To order a three-piece assembly, prefix the catalog number with a "3". Example: To order a male connector C5205x4 with nut and sleeve assembled, order C35205x4. To order a two-piece assembly, order nut and body separately.

Example: Order male connector C5205x4 and twopiece style nut C5115x4. Bodies, nuts and sleeves can be ordered separately by catalog number. Stainless steel bodies, nuts and sleeves are ordered separately by catalog number.

To order Weathercote finish (black phosphate coating) use "W" prefix in place of "C". Example: W5205x4 (special order only).

To order with pipe sealants (Seal-AThread), add a "Z" suffix to the catalog number. Example: C5205x4Z (special order only).

### 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.

Weatherhead fittings with a "C" prefix are made from a forged construction.

**Label Set:** FS-200 (adhesive)

### Assembly Instructions

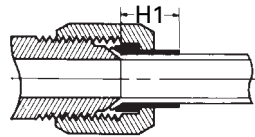
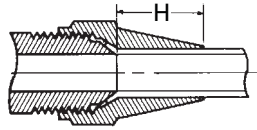
1. Cut tubing to desired length. Make sure all burrs are removed and ends are cut square.
2. Slide nut on tube. Threaded end of nut "A" must face toward fitting body. (See the drawing.)
3. Slide sleeve on tube (3-piece assembly only). Collar end "B" of sleeve must face toward fitting body. (See drawing.)
4. Flare end of tubing with 37° flaring tool.
5. Check flare diameter. For dimensional data on 37° flares, see page L-36.
6. Examine flare for excessive thinout.
7. On thin wall, welded or brazed tubing, use double flare to prevent pinch-off and cracked flares.
8. Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
9. Tighten assembly until finger tight, then until a sharp torque rise is encountered. From that point, apply one-sixth turn with a wrench.

## Dimensional Data

### Dimensional Data Two-Piece Assemblies

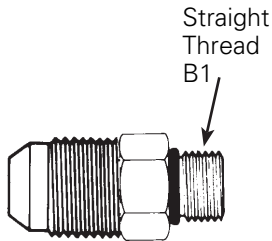
### Dimensional Data Three-Piece Assemblies

**Note:** H & H1 are dimensions of fittings assembled to hand-tight condition.



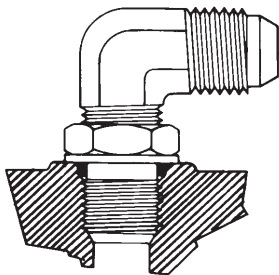
Tube O.D.	H	H1
1/8	—	.31
3/16	—	.38
1/4	.59	.36
5/16	.66	.41
3/8	.69	.47
1/2	.81	.50
5/8	.94	.64
3/4	—	.61
7/8	—	.69
1	—	.75
1-1/4	—	.73
1-1/2	—	1.05
2	—	1.08

## 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		

## Straight Thread O-ring Fitting



### Adjustable Fittings

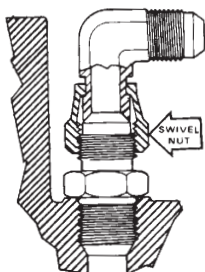
- Permit exact positioning of tees and elbows.
- Provide a leakproof joint.
- Eliminate distorted bosses from over-tightening.

1. Lubricate o-ring by coating with a light oil or petroleum 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. Retighten lock nut.

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

## Swivel Fitting

(Used with Connector)



Weatherhead swivel end fittings can be used with a straight connector when space limitations will not permit full rotation of standard straight thread elbows and tees.

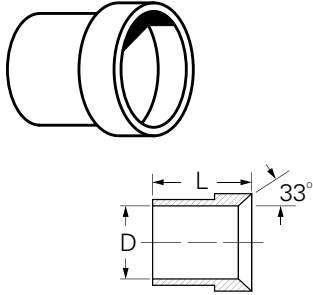
1. Screw connector into the o-ring boss and tighten.
2. Thread swivel nut onto connector.
3. Hold fitting in desired position and tighten swivel nut with a wrench.

# JIC 37° - Flare-Twin®

Available in Stainless Steel

## Sleeve 3-Piece

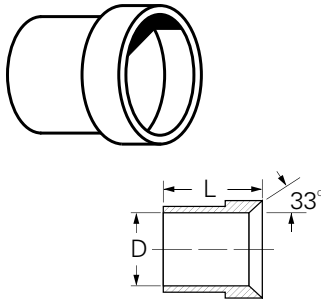
Stainless Steel No. 5177x  
(Ref. SAE No. 070115)



Tube O.D.	Part Number	D	L
1/8	C5165x2	.130	.34
3/16	C5165x3	.193	.34
1/4	C5165x4•	.255	.41
5/16	C5165x5•	.318	.44
3/8	C5165x6•	.380	.50
1/2	C5165x8•	.505	.56
5/8	C5165x10•	.631	.66
3/4	C5165x12	.756	.68
7/8	C5165x14	.881	.76
1	C5165x16•	1.006	.78
1-1/4	C5165x20	1.260	.91
1-1/2	C5165x24	1.510	1.12
2	C5165x32	2.014	1.19

## Sleeve 3-Piece Metric

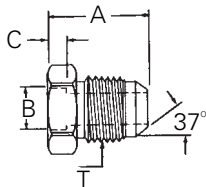
(Ref. SAE No. 070115)



Tube O.D.	mm	Part Number	D	L
1/4	6	C5165x4x6MM	.241	.41
5/16	8	C5165x5x8MM	.320	.44
3/8	10	C5165x6x10MM	.399	.50
1/2	12	C5165x8x12MM	.478	.56
5/8	14	C5165x10x14MM	.556	.66
5/8	15	C5165x10x15MM	.596	.66
5/8	16	C5165x10x16MM	.636	.66
3/4	18	C5165x12x18MM	.717	.68
7/8	20	C5165x14x20MM	.793	.76
7/8	22	C5165x14x22MM	.866	.76
1	25	C5165x16x25MM	.990	.78
1-1/4	30	C5165x20x30MM	1.191	.91
1-1/4	32	C5165x20x32MM	1.270	.91
1-1/2	38	C5165x24x38MM	1.510	1.12

Adapts Standard SAE Flare-Twin® Hose Ends for use with metric tubing.

## JIC 37° Braze Adapter



### Part No. 73014 - (Dash Size)

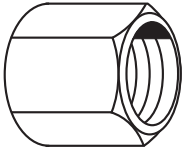
Dash Size	Tube O.D.		Thread T	A		B		C	
	mm	inches		mm	inches	mm	inches	mm	inches
4S	6,3	.25	7/16 - 20	18,8	.74	6,3	.25	4,0	.16
5S	7,9	.31	1/2 - 20	20,3	.80	7,9	.31	4,0	.16
6S	9,6	.38	9/16 - 18	20,6	.81	9,6	.38	4,0	.16
8S	12,7	.50	3/4 - 16	23,9	.94	12,7	.50	4,0	.16
10S	16,0	.63	7/8 - 14	27,2	1.07	15,7	.62	4,0	.16
12S	19,0	.75	1 1/16 - 12	31,5	1.24	19,0	.75	6,3	.25
16S	25,4	1.00	1 5/16 - 12	32,8	1.29	25,4	1.00	6,3	.25
20S	31,7	1.25	1 5/8 - 12	35,6	1.40	31,7	1.25	6,3	.25
20-16S	31,7	1.25	1 5/16 - 12	32,8	1.29	31,7	1.25	6,3	.25
32S	50,8	2.00	2 1/2 - 12	49,8	1.96	50,8	2.00	6,3	.25

# JIC 37° - Flare-Twin®

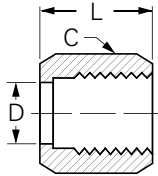
Available in Stainless Steel

## Nut 3-Piece

Stainless Steel No. 5117x  
(Ref. SAE No. 070110)

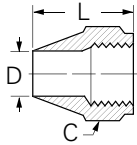
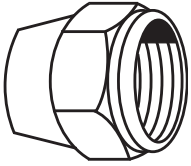


SAE Style B



Tube O.D.	Part Number	Hex C	D	L
1/8	C5105x2	3/8	.181	.55
3/16	C5105x3	7/16	.243	.61
1/4	C5105x4•	9/16	.306	.62
5/16	C5105x5•	5/8	.375	.68
3/8	C5105x6•	11/16	.441	.73
1/2	C5105x8	7/8	.571	.85
5/8	C5105x10•	1	.698	.98
3/4	C5105x12•	1-1/4	.835	1.03
7/8	C5105x14	1-3/8	.961	1.09
1	C5105x16•	1-1/2	1.089	1.13
1-1/4	C5105x20	2	1.347	1.23
1-1/2	C5105x24	2-1/4	1.617	1.42
2	C5105x32	2-7/8	2.167	1.75

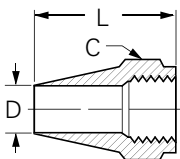
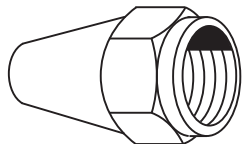
## 2-Piece Nut (Short)



Tube O.D.	Part Number	Hex C	D	L
1/4	C5125x4	9/16	.255	.59
5/16	C5125x5	5/8	.318	.59
3/8	C5125x6	11/16	.380	.66
1/2	C5125x8	7/8	.505	.81
5/8	C5125x10	1	.631	.94
3/4	C5125x12	1-1/4	.756	1.14

## 2-Piece Nut

(Ref. SAE No. 070111 (Style A))



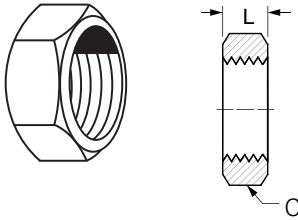
Tube O.D.	Part Number	Hex C	D	L
1/4	C5115x4	9/16	.255	1.00
5/16	C5115x5	5/8	.318	1.06
3/8	C5115x6	11/16	.380	1.09
1/2	C5115x8	7/8	.505	1.28
5/8	C5115x10	1	.631	1.48
3/4	C5115x12	1-1/4	.756	1.66
7/8	C5115x14	1-3/8	.881	1.81
1	C5115x16	1-1/2	1.006	1.94
1-1/4	C5115x20	2	1.260	2.19
1-1/2	C5115x24	2-1/4	1.510	2.31

# JIC 37° - Flare-Twin®

Available in Stainless Steel

## Bulkhead Nut

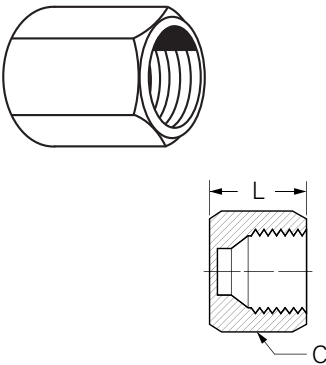
Stainless Steel No. 7936x  
(Ref. SAE No. 070118)



Tube O.D.	Part Number	Hex C	L
1/8	C5924x2	9/16	.22
3/16	C5924x3	5/8	.22
1/4	C5924x4	11/16	.25
5/16	C5924x5	3/4	.28
3/8	C5924x6•	13/16	.27
1/2	C5924x8•	1	.31
5/8	C5924x10	1-1/8	.36
3/4	C5924x12	1-3/8	.41
7/8	C5924x14	1-1/2	.41
1	C5924x16	1-5/8	.41
1-1/4	C5924x20	1-7/8	.41
1-1/2	C5924x24	2-1/8	.41
2	C5924x32	2-3/4	.41

## Cap

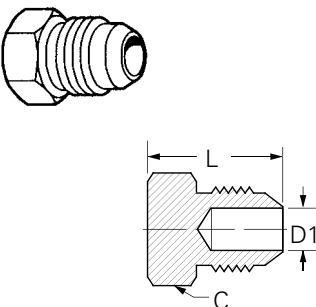
Stainless Steel No. 5141x  
(Ref. SAE No. 070112)



Tube O.D.	Part Number	Hex C	L
1/8	C5129x2	3/8	.50
3/16	C5129x3	7/16	.56
1/4	C5129x4•	9/16	.59
5/16	C5129x5	5/8	.61
3/8	C5129x6	11/16	.62
1/2	C5129x8•	7/8	.75
5/8	C5129x10	1	.84
3/4	C5129x12	1-1/4	.91
1	C5129x16	1-1/2	1.02
1-1/4	C5129x20	2	1.06
1-1/2	C5129x24	2-1/4	1.19
2	C5129x32	2-7/8	1.44

## Plug

Stainless Steel No. 5241x  
(Ref. SAE No. 070109)



Tube O.D.	Part Number	Hex C	L	D1 Opt.
1/4	C5229x4	1/2	.80	.172
5/16	C5229x5	9/16	.80	.234
3/8	C5229x6	5/8	.84	.297
1/2	C5229x8	13/16	.94	.391
5/8	C5229x10•	15/16	1.10	.484
3/4	C5229x12•	1-1/8	1.28	.609
7/8	C5229x14	1-1/4	1.31	.719
1	C5229x16	1-3/8	1.33	.844
1-1/4	C5229x20	1-11/16	1.45	1.078
1-1/2	C5229x24	2	1.65	1.312
2	C5229x32	2-5/8	2.05	1.781

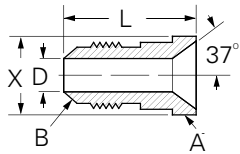
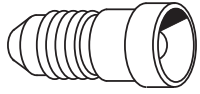


# JIC 37° - Flare-Twin®

Available in Stainless Steel

## Reducer

Stainless Steel No. 5027x  
(Ref. SAE No. 070123)



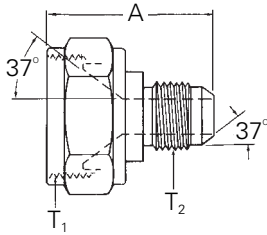
Female Reduction	Male Reduction A	Part Number	B	D	Dia. L	Hex XC
3/8	1/4	C5015x6x4	.172	.97	.502	–
1/2	1/4	C5015x8x4	.172	1.00	.682	–
1/2	3/8	C5015x8x6	.297	1.00	.682	–
5/8*	1/4	C5015x10x4	.172	1.47	–	1
5/8*	3/8	C5015x10x6	.297	1.41	–	1
5/8*	1/2	C5015x10x8	.391	1.41	–	1
3/4	1/4	C5015x12x4	.172	1.09	.972	–
3/4	3/8	C5015x12x6	.297	1.09	.972	–
3/4	1/2	C5015x12x8	.391	1.19	.972	–
3/4*	5/8	C5015x12x10	.484	1.58	–	1-1/4
7/8*	3/8	C5015x14x6	.297	1.59	–	1-3/8
7/8*	1/2	C5015x14x8	.391	1.69	–	1-3/8
7/8*	3/4	C5015x14x12	.609	1.80	–	1-3/8
1*	1/2	C5015x16x8	.391	1.72	–	1-1/2
1*	5/8	C5015x16x10	.484	1.79	–	1-1/2
1	3/4	C5015x16x12	.609	1.47	1.222	–
1*	7/8	C5015x16x14	.719	1.87	–	1-1/2
1-1/4	3/4	C5015x20x12	.609	1.50	1.534	–
1-1/4*	1	C5015x20x16	.844	2.00	–	2
1-1/2*	1-1/4	C5015x24x20	1.078	2.15	–	2-1/4
2*	1-1/2	C5015x32x24	1.312	2.61	–	2-7/8

NOTE: Two-piece design does not include nut. Order nut C5105x to use reducer.  
(\*one-piece design)

Adapters, Tube Fittings & Connectors

## Reducer

(Ref. SAE 070123)



### Part No. 221501- (Dash Size)

Dash Size	Tube O.D.		Thread T1	Thread T2	A	
	mm	inches			mm	inches
10-6S	9,6	.38	7/8 – 14	9/16 – 18	41,1	1.62
16-6S	9,6	.38	15/16 – 12	9/16 – 18	46,7	1.84
16-8S	12,7	.50	15/16 – 12	3/4 – 16	49,3	1.94
16-10S	16,0	.63	15/16 – 12	7/8 – 14	51,8	2.04
16-12S	19,0	.75	15/16 – 12	1 1/16 – 12	54,6	2.15
20-16S	25,4	1.00	1 5/8 – 12	1 5/16 – 12	56,6	2.23

Includes swivel nut

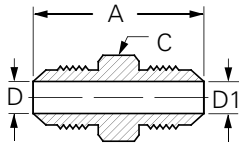
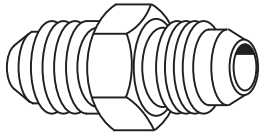


# JIC 37° - Flare-Twin®

Available in Stainless Steel

## Small Hex Union

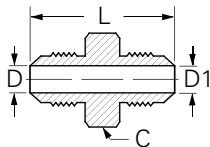
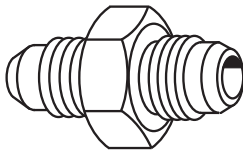
Stainless Steel No. 5317x  
(Ref. SAE No. 070101)



Tube O.D.	Tube O.D.	Part Number	Hex C	D	D1	L
1/8	1/8	C5305x2	7/16	.062	.062	1.17
3/16	3/16	C5305x3	7/16	.125	.125	1.23
1/4	1/4	C5305x4	1/2	.172	.172	1.37
5/16	1/4	C5305x5x4	9/16	.234	.172	1.37
5/16	5/16	C5305x5	9/16	.234	.234	1.37
3/8	1/4	C5305x6x4	5/8	.297	.172	1.40
3/8	5/16	C5305x6x5	5/8	.297	.234	1.40
3/8	3/8	C5305x6•	5/8	.297	.297	1.41
1/2	3/8	C5305x8x6	13/16	.391	.297	1.52
1/2	1/2	C5305x8•	13/16	.391	.391	1.62
5/8	1/2	C5305x10x8	15/16	.484	.391	1.78
5/8	5/8	C5305x10•	15/16	.484	.484	1.88
3/4	1/2	C5305x12x8	1-1/8	.609	.391	1.95
3/4	5/8	C5305x12x10	1-1/8	.609	.484	2.05
3/4	3/4	C5305x12	1-1/8	.609	.609	2.16
7/8	7/8	C5305x14	1-1/4	.719	.719	2.21
1	3/4	C5305x16x12	1-3/8	.844	.609	2.20
1	1	C5305x16•	1-3/8	.844	.844	2.25
1-1/4	1-1/4	C5305x20	1-11/16	1.078	1.078	2.43
1-1/2	1-1/2	C5305x24	2	1.312	1.312	2.75
2	2	C5305x32	2-5/8	1.781	1.781	3.40

## Large Hex Union

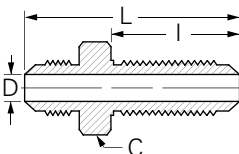
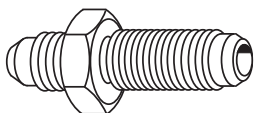
Stainless Steel No. 5318x  
(Ref. SAE No. 070119)



Tube O.D.	Part Number	Hex C	D	D1	L
1/4	C5306x4	11/16	.172	.172	1.37
5/16	C5306x5	3/4	.234	.234	1.37
3/8	C5306x6	13/16	.297	.297	1.41
1/2	C5306x8•	1	.391	.391	1.62
5/8	C5306x10	1-1/8	.484	.484	1.88
3/4	C5306x12	1-3/8	.609	.609	2.16
1	C5306x16	1-5/8	.844	.844	2.25
1-1/4	C5306x20	1-7/8	1.078	1.078	2.43

## Bulkhead Union

Stainless Steel No. 5337x  
(Ref. SAE No. 070601)

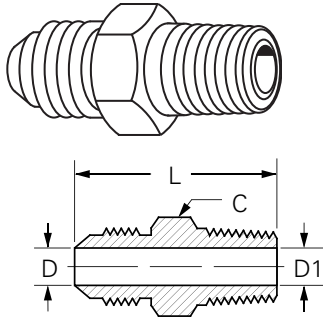


Tube O.D.	Part Number	Hex C	D	I	L
3/16	C5325x3	5/8	.125	1.14	1.90
1/4	C5325x4	11/16	.172	1.23	2.07
5/16	C5325x5	3/4	.234	1.23	2.07
3/8	C5325x6•	13/16	.297	1.31	2.18
1/2	C5325x8•	1	.391	1.47	2.44
5/8	C5325x10	1-1/8	.484	1.61	2.74
3/4	C5325x12	1-3/8	.609	1.78	3.09
1	C5325x16	1-5/8	.844	1.78	3.14
1-1/4	C5325x20	1-7/8	1.078	1.83	3.31

Bulkhead nut not included. Must be ordered separately. See page L-39 for bulkhead nut.

## Male Connector

Stainless Steel No. 5217x  
(Ref. SAE No. 070102)



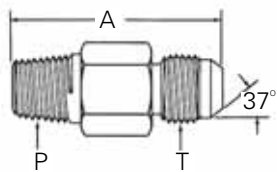
\*Optional counterbore for D1

Tube O.D.	Male Pipe Thread	Part Number	Hex C	D	D1 Opt.	L
1/8	1/8	C5205x2•	7/16	.062	.188*	1.11
3/16	1/8	C5205x3	7/16	.125	.188*	1.14
1/4	1/8	C5205x4•	1/2	.172	.188*	1.22
1/4	1/4	C5205x4x4•	9/16	.172	.281*	1.42
1/4	3/8	C5205x4x6	3/4	.172	.406*	1.42
1/4	1/2	C5205x4x8	7/8	.172	.531*	1.68
5/16	1/8	C5205x5	9/16	.234	.188	1.22
5/16	1/4	C5205x5x4•	5/8	.234	.281*	1.42
5/16	3/8	C5205x5x6	13/16	.234	.406*	1.42
3/8	1/8	C5205x6x2•	5/8	.297	.188	1.24
3/8	1/4	C5205x6•	5/8	.297	.281	1.43
3/8	3/8	C5205x6x6•	3/4	.297	.297*	1.43
3/8	1/2	C5205x6x8•	7/8	.297	.531*	1.69
1/2	1/4	C5205x8x4	13/16	.391	.281	1.53
1/2	3/8	C5205x8•	13/16	.391	.406*	1.53
1/2	1/2	C5205x8x8•	15/16	.391	.531*	1.79
1/2	3/4	C5205x8x12	1-1/8	.391	.719*	1.85
5/8	3/8	C5205x10x6	15/16	.484	.406	1.70
5/8	1/2	C5205x10	15/16	.484	.531*	1.89
5/8	3/4	C5205x10x12	1-1/8	.484	.484*	1.95
3/4	1/2	C5205x12x8•	1-1/8	.531	.531	2.06
3/4	3/4	C5205x12•	1-1/8	.609	.719*	2.06
3/4	1	C5205x12x16	1-3/8	.609	.938*	2.25
7/8	3/4	C5205x14	1-1/4	.718	.718*	2.09
1	3/4	C5205x16x12	1-3/8	.844	.719	2.25
1	1	C5205x16•	1-3/8	.844	.938*	2.30
1	1-1/4	C5205x16x20	1-11/16	.844	1.250*	2.40
1-1/4	1	C5205x20x16	1-11/16	1.078	.938	2.42
1-1/4	1-1/4	C5205x20	1-11/16	1.078	1.250*	2.45
1-1/2	1-1/4	C5205x24x20	2	1.312	1.250*	2.65
1-1/2	1-1/2	C5205x24	2	1.312	1.500*	2.68
2	2	C5205x32	2-5/8	1.781	1.938*	3.11

• Available in Stainless Steel

Adapters, Tube Fittings & Connectors

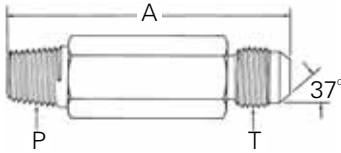
## Male Connector Long



### Part No. 202113 – (Dash Size)

Dash Size	Tube O.D.		Thread P (nptf)	Thread T	A	
	mm	inches			mm	inches
2-4S	6,3	.25	1/8 - 27	7/16 - 20	46,0	1.81
4-4S	6,3	.25	1/4 - 18	7/16 - 20	57,2	2.25
4-5S	7,9	.31	1/4 - 18	1/2 - 20	57,2	2.25
4-6S	9,6	.38	1/4 - 18	9/16 - 18	57,2	2.25
6-6S	9,6	.38	3/8 - 18	9/16 - 18	63,5	2.50
6-8S	12,7	.50	3/8 - 18	3/4 - 16	69,8	2.75
8-12S	19,0	.75	1/2 - 14	1 1/16 - 12	83,3	3.28
12-12S	19,0	.75	3/4 - 14	1 1/16 - 12	88,9	3.50
16-16S	25,4	1.00	1 - 11 1/2	1 5/16 - 12	101,6	4.00

## Male Connector Extra Long

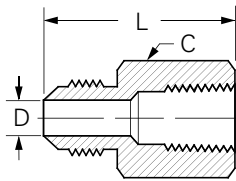
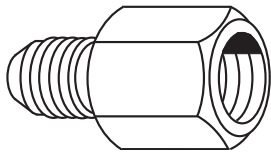


### Part No. 202114- (Dash Size)

Dash Size	Tube O.D.		Thread P (nptf)	Thread T	A	
	mm	inches			mm	inches
2-4S	6,3	.25	1/8 - 27	7/16 - 20	65,0	2.56
4-4S	6,3	.25	1/4 - 18	7/16 - 20	82,5	3.25
4-6S	9,6	.38	1/4 - 18	9/16 - 18	82,5	3.25
6-8S	12,7	.50	3/8 - 18	3/4 - 16	101,6	4.00
12-12S	19,0	.75	3/4 - 14	1 1/16 - 12	127,0	5.00

## Female Connector

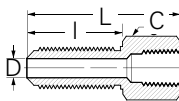
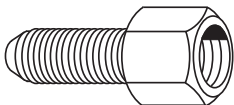
Stainless Steel No. 5267x  
(Ref. SAE No. 070103)



Tube O.D.	Fem. pipe Thread	Part Number	Hex C	D	L
1/8	1/8	C5255x2	9/16	.062	1.12
3/16	1/8	C5255x3	9/16	.125	1.13
1/4	1/8	C5255x4	9/16	.172	1.19
1/4	1/4	C5255x4x4	3/4	.172	1.39
5/16	1/8	C5255x5	9/16	.234	1.17
5/16	1/4	C5255x5x4	3/4	.234	1.39
3/8	1/4	C5255x6	3/4	.297	1.40
3/8	3/8	C5255x6x6	7/8	.297	1.46
1/2	3/8	C5255x8•	7/8	.391	1.56
1/2	1/2	C5255x8x8	1-1/8	.391	1.79
5/8	3/8	C5255x10x6	7/8	.484	1.89
5/8	1/2	C5255x10	1-1/8	.484	1.89
3/4	1/2	C5255x12x8	1-1/8	.609	2.05
3/4	3/4	C5255x12•	1-3/8	.609	2.06
7/8	3/4	C5255x14	1-3/8	.875	2.06
1	1	C5255x16	1-5/8	.844	2.35
1-1/4	1-1/4	C5255x20	2	1.078	2.49
1-1/2	1-1/2	C5255x24	2-3/8	1.312	2.62
2	2	C5255x32	2-7/8	1.781	2.97

• Available in Stainless Steel

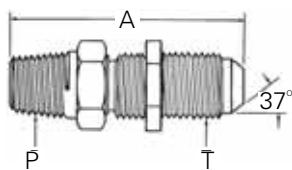
## Female Bulkhead Connector



Tube O.D.	Fem. pipe Thread	Part Number	Hex C	D	I	L
1/4	1/8	C5275x4	11/16	.172	1.23	1.84
3/8	1/4	C5275x6	13/16	.297	1.31	2.06
1/2	3/8	C5275x8	1	.391	1.47	2.35
5/8	1/2	C5275x10	1-1/8	.484	1.61	2.66
3/4	3/4	C5275x12	1-3/8	.609	1.78	2.91
1	1	C5275x16	1-5/8	.844	1.78	3.09

Bulkhead nut not included. Must be ordered separately. See page L-39 for bulkhead nut.

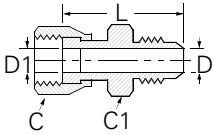
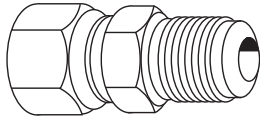
## Male Bulkhead Connector



### Part No. 2240 - (Dash Size)

Dash Size	Tube O.D.		Thread P (nptf)	Thread T	A	
	mm	inches			mm	inches
2-4S	6,3	.25	1/8 - 27	7/16 - 20	46,7	1.84
4-4S	6,3	.25	1/4 - 18	7/16 - 20	51,6	2.03
4-6S	9,6	.38	1/4 - 18	9/16 - 18	53,9	2.12
6-8S	12,7	.50	3/8 - 18	3/4 - 16	59,9	2.36
12-12S	19,0	.75	3/4 - 14	1 1/16 - 12	74,2	2.92
16-16S	25,4	1.00	1 - 11 1/2	5 5/16 - 12	79,0	3.11

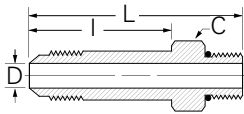
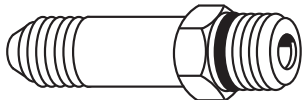
## Male JIC 37° SAE to Female FOR-SEAL®



Female Tube O.D.	Male 37° Tube Size	Part Number	Hex C1	Hex C	D	D1	L
1/4	1/4	4213x4	11/16	5/8	.172	.165	1.50
3/8	3/8	4213x6	13/16	3/4	.297	.264	1.62
1/2	1/2	4213x8	15/16	7/8	.360	.360	2.03
5/8	5/8	4213x10	1-1/8	1-1/16	.484	.453	2.25
3/4	3/4	4213x12	1-3/16	1-1/4	.550	.550	2.44
1	1	4213x16	1-5/8	1-1/2	.780	.780	2.82

## Straight Thread O-ring Extended Connector

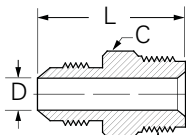
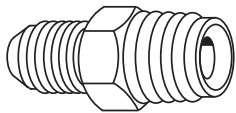
(Ref. SAE No. 070122)



Tube O.D.	Port Size	Part Number	Hex C	D	I	L
1/4	1/4	C5316x4	9/16	.172	1.39	2.08
3/8	3/8	C5316x6	11/16	.297	1.56	2.31
1/2	3/8	C5316x8x6	7/8	.297	1.56	2.38
1/2	1/2	C5316x8	7/8	.391	1.88	2.70
5/8	5/8	C5316x10	1	.484	2.09	3.04
3/4	3/4	C5316x12	1-1/4	.609	2.50	3.61
1	1	C5316x16	1-1/2	.844	2.84	3.98

Replacement o-ring page L-64.

## Adapter



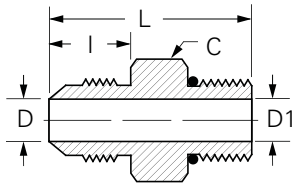
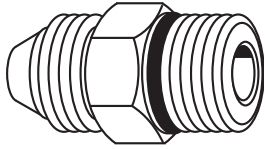
Inverted Thread

Tube O.D.	Inverted Thread	Part Number	Hex C	D	L
1/4	7/16-24	C5880x4	1/2	.172	1.08
5/16	1/2-20	C5880x5	9/16	.234	1.14
3/8	5/8-18	C5880x6	11/16	.297	1.22
1/2	3/4-18	C5880x8	13/16	.391	1.46

# JIC 37° - Flare-Twin®

## Straight Thread O-ring Connector

Stainless Steel No. 5327x  
(Ref. SAE No. 070120)



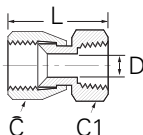
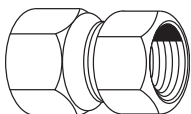
\*Optional counterbore for D1.

Replacement o-ring page L-64.

Tube O.D.	Port Size	Part Number	Hex C	D	D1 Opt.	I	L
1/8	1/8	C5315x2	7/16	.062	.062*	.45	1.06
3/16	3/16	C5315x3	1/2	.125	.125*	.48	1.10
1/4	1/4	C5315x4•	9/16	.172	.172*	.55	1.23
1/4	5/16	C5315x4x5	5/8	.172	.234*	.55	1.23
1/4	3/8	C5315x4x6	11/16	.172	.297*	.55	1.29
1/4	1/2	C5315x4x8	7/8	.172	.391*	.55	1.37
5/16	1/4	C5315x5x4	5/8	.234	.172	.55	1.23
5/16	5/16	C5315x5	5/8	.234	.234*	.55	1.23
5/16	3/8	C5315x5x6	11/16	.234	.297*	.55	1.29
3/8	1/4	C5315x6x4	11/16	.297	.172	.56	1.27
3/8	5/16	C5315x6x5	11/16	.297	.234	.56	1.27
3/8	3/8	C5315x6•	11/16	.297	.297*	.56	1.30
3/8	1/2	C5315x6x8•	7/8	.297	.391*	.56	1.38
3/8	5/8	C5315x6x10	1	.297	.484*	.56	1.50
1/2	3/8	C5315x8x6	13/16	.391	.297	.66	1.44
1/2	1/2	C5315x8	7/8	.391	.391*	.66	1.48
1/2	5/8	C5315x8x10•	1	.391	.484*	.66	1.60
1/2	3/4	C5315x8x12•	1-1/4	.391	.609*	.66	1.76
5/8	1/2	C5315x10x8	1	.484	.391	.76	1.64
5/8	5/8	C5315x10	1	.484	.484*	.76	1.70
5/8	3/4	C5315x10x12	1-1/4	.484	.609*	.76	1.86
5/8	1	C5315x10x16	1-1/2	.484	.844*	.76	1.89
3/4	1/2	C5315x12x8	1-1/4	.609	.391	.86	1.94
3/4	5/8	C5315x12x10	1-1/8	.609	.484	.86	1.88
3/4	3/4	C5315x12•	1-1/4	.609	.609*	.86	1.97
3/4	7/8	C5315x12x14	1-3/8	.609	.718*	.86	1.96
3/4	1	C5315x12x16	1-1/2	.609	.844*	.86	1.99
3/4	1-1/4	C5315x12x20	1-7/8	.609	1.078*	.86	2.08
7/8	7/8	C5315x14	1-3/8	.719	.719*	.89	1.99
1	5/8	C5315x16x10	1-1/2	.844	.484	.91	2.07
1	3/4	C5315x16x12	1-1/2	.844	.609	.91	2.04
1	1	C5315x16	1-1/2	.844	.844*	.91	2.04
1	1-1/4	C5315x16x20	1-7/8	.844	1.078*	.91	2.12
1-1/4	1	C5315x20x16	1-7/8	1.078	.844	.96	2.33
1-1/4	1-1/4	C5315x20	1-7/8	1.078	1.078*	.96	2.17
1-1/4	1-1/2	C5315x20x24	2-1/8	1.078	1.312*	.96	2.24
1-1/2	1-1/4	C5315x24x20	2-1/8	1.312	1.078*	1.08	2.53
1-1/2	1-1/2	C5315x24	2-1/8	1.312	1.312*	1.08	2.37
1-1/2	2	C5315x24x32	2-3/4	1.312	1.781*	1.08	2.53
2	1-1/2	C5315x32x24	2-3/4	1.781	1.312*	1.33	2.81
2	2	C5315x32	2-3/4	1.781	1.781	1.33	2.78

• Available in Stainless Steel

## Female JIC 37° Swivel to Female Pipe

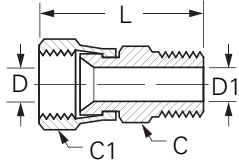
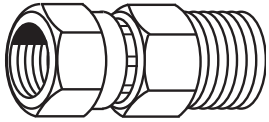


Tube O.D.	Female Pipe	Part Number	Hex C	Hex C1	L	D
1/4	1/4	C5256x4x4	9/16	3/4	1.32	.172
3/8	3/8	C5256x6x6	11/16	7/8	1.63	.297
1/2	1/2	C5256x8x8	7/8	1-1/8	1.81	.391
3/4	3/4	C5256x12	1-1/4	1-1/4	2.08	.609
1	1	C5256x16	1-1/2	1-1/2	2.62	.844

# JIC 37° - Flare-Twin®

Available in Stainless Steel

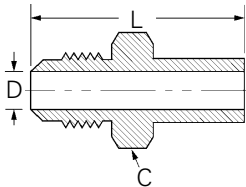
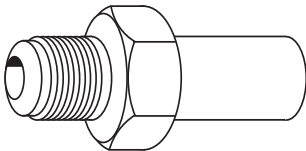
## Female JIC 37° Swivel to Male Pipe Adapter



\*Optional counterbore for D1

Tube O.D.	Male pipe size	Part Number	Hex C	Hex C1	D	D1	L
1/4	1/4	9100x4x4	9/16	9/16	.172	.281*	1.50
5/16	1/4	9100x5x4	11/16	5/8	.234	.281*	1.57
3/8	1/4	9100x6x4	11/16	11/16	.297	.281	1.69
3/8	3/8	9100x6x6	11/16	11/16	.297	.406*	1.69
1/2	3/8	9100x8x6	7/8	7/8	.391	.406*	1.87
1/2	1/2	9100x8x8	7/8	7/8	.391	.531*	2.05
5/8	3/8	9100x10x6	1	1	.484	.406	1.91
5/8	1/2	9100x10x8	1	1	.484	.531*	2.11
3/4	1/2	9100x12x8	1-1/8	1-1/4	.609	.531	2.21
3/4	3/4	9100x12x12	1-1/8	1-1/4	.609	.719*	2.21
1	3/4	9100x16x12	1-3/8	1-1/2	.844	.719	2.36
1	1	9100x16x16	1-3/8	1-1/2	.844	.938*	2.55
1-1/4	1-1/4	9100x20x20	1-7/8	2	1.078	1.250*	2.73

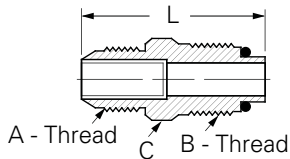
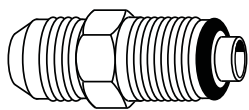
## Male JIC 37° to Male Metric Standpipe



Tube O.D.	Tube O.D. (mm)	Part Number	Hex C	L	D
1/4	6	MC5019x4x6	9/16	1.58	.16
1/4	8	MC5019x4x8	9/16	1.68	.17
3/8	10	MC5019x6x10	3/4	1.67	.28
1/2	12	MC5019x8x12	7/8	1.97	.32
1/2	14	MC5019x8x14	7/8	1.89	.39
5/8	16	MC5019x10x16	1	2.07	.47
3/4	16	MC5019x12x16	1-1/4	2.22	.47
3/4	20	MC5019x12x20	1-1/4	2.38	.61
1	22	MC5019x16x22	1-1/2	2.21	.67
1	25	MC5019x16x25	1-1/2	2.54	.79

For metric flareless nuts and sleeves see page L-66.

## Male JIC 37° to O-ring Port Adapter



Tube Size	Port Size	Part Number	Replacement O-ring	Thread A	Thread B	Hex C	L
1/4	1/4	41157x4	7629x1	7/16-20	7/16-24	7/16	1.33
3/8	3/8	41157x6	7629x3	9/16-18	5/8-18	5/8	1.47
1/2	1/2	41157x8	7629x5	3/4-16	3/4-16	3/4	1.91
5/8	5/8	41157x10	7629x7	7/8-14	7/8-14	15/16	2.23
3/4	3/4	41157x12	7629x8	1-1/16-12	1-1/16-16	1-1/8	2.13

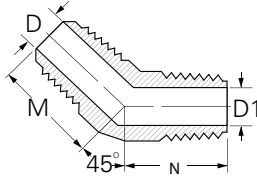
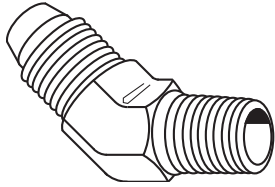
Adapters, Tube Fittings & Connectors

L

# JIC 37° - Flare-Twin®

## 45° Male Elbow

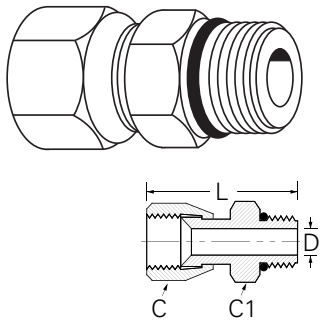
Stainless Steel No. 5367x  
(Ref. SAE No. 070302)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/8	1/8	C5355x2	.062	.188	.66	.52	7/16
3/16	1/8	C5355x3	.125	.188	.66	.52	7/16
1/4	1/8	C5355x4•	.172	.188	.72	.64	7/16
1/4	1/4	C5355x4x4	.172	.281	.83	.86	9/16
5/16	1/8	C5355x5	.234	.188	.77	.67	9/16
5/16	1/4	C5355x5x4	.234	.281	.83	.86	9/16
3/8	1/8	C5355x6x2	.297	.188	.83	.69	9/16
3/8	1/4	C5355x6•	.297	.281	.83	.86	9/16
3/8	3/8	C5355x6x6	.297	.406	.98	.95	3/4
3/8	1/2	C5355x6x8	.297	.531	1.06	1.17	7/8
1/2	3/8	C5355x8	.391	.406	.98	.95	3/4
1/2	1/4	C5355x8x4	.391	.281	.98	.95	3/4
1/2	1/2	C5355x8x8	.391	.531	.99	1.17	7/8
5/8	1/2	C5355x10	.484	.531	1.11	1.17	7/8
5/8	3/8	C5355x10x6	.484	.406	1.11	1.00	7/8
5/8	3/4	C5355x10x12	.484	.719	1.26	1.20	1-1/8
3/4	3/4	C5355x12•	.609	.719	1.28	1.20	1-1/16
3/4	1/2	C5355x12x8	.609	.531	1.28	1.20	1-1/16
3/4	1	C5355x12x16	.609	.938	1.42	1.48	1-3/8
1	1	C5355x16	.844	.938	1.47	1.48	1-5/16
1	3/4	C5355x16x12	.844	.719	1.47	1.27	1-5/16
1-1/4	1-1/4	C5355x20	1.078	1.250	1.59	1.67	1-3/4
1-1/2	1-1/2	C5355x24	1.312	1.500	1.78	1.77	1-7/8
2	2	C5355x32	1.781	1.938	2.22	2.11	2-5/8

• Available in Stainless Steel

## 37° JIC Female Swivel to Male Straight Thread O-ring

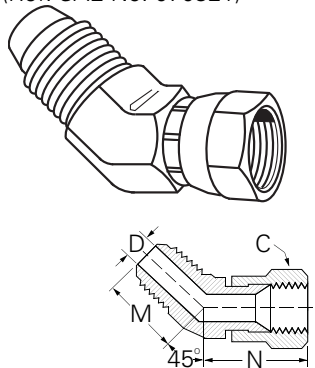


Tube O.D.	Port Size	Part Number	Hex C	Hex C1	L	D
1/4	1/4	C5216x4x4	9/16	9/16	1.32	.17
1/4	3/8	C5216x4x6	11/16	11/16	1.37	.17
3/8	3/8	C5216x6x6	11/16	11/16	1.51	.30
3/8	1/2	C5216x6x8	11/16	7/8	1.58	.30
1/2	3/8	C5216x8x6	7/8	3/4	1.62	.30
1/2	1/2	C5216x8x8	7/8	7/8	1.61	.39
5/8	5/8	C5216x10x10	1	1	1.96	.48
3/4	3/4	C5216x12x12	1-1/4	1-1/4	2.17	.61
1	1	C5216x16x16	1-1/2	1-1/2	2.30	.84
1-1/4	1-1/4	C5216x20x20	2	1-7/8	2.47	1.08
1-1/2	1-1/2	C5216x24x24	2-1/8	2-1/8	2.63	1.31
2	2	C5216x32x32	2-3/4	2-3/4	2.95	1.78

For replacement Straight Thread o-ring, see page L-64.

## 45° Elbow - Swivel Nut

Stainless Steel No. 5368x  
(Ref. SAE No. 070321)



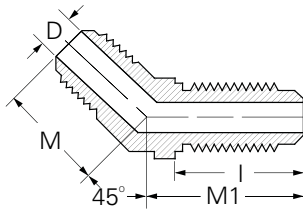
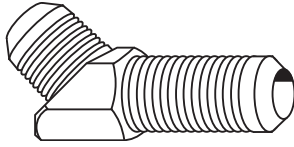
Tube O.D.	Part Number	Hex C	D	M	N	Across Flats
1/4	C5356x4	9/16	.172	.72	.94	7/16
5/16	C5356x5	5/8	.234	.77	1.00	9/16
3/8	C5356x6	11/16	.297	.83	1.12	9/16
1/2	C5356x8•	7/8	.391	.98	1.28	3/4
5/8	C5356x10	1	.484	1.11	1.44	7/8
3/4	C5356x12	1-1/4	.609	1.28	1.50	1-1/16
7/8	C5356x14	1-3/8	.718	1.39	1.62	1-5/16
1	C5356x16	1-1/2	.845	1.47	1.75	1-5/16
1-1/4	C5356x20	2	1.078	1.59	2.03	1-3/4



# JIC 37° - Flare-Twin®

## 45° Bulkhead Union Elbow

(Ref. SAE No. 070801)

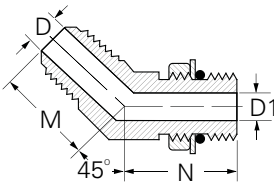
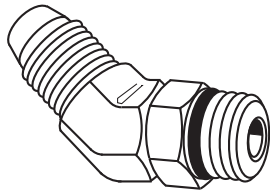


Tube O.D.	Part Number	D	M	M1	Across Flats	I
1/4	C5375x4	.172	.72	1.53	1/2	1.11
5/16	C5375x5	.234	.76	1.53	9/16	1.11
3/8	C5375x6	.297	.83	1.67	5/8	1.18
1/2	C5375x8	.391	.98	1.94	13/16	1.38
5/8	C5375x10	.484	1.11	2.17	15/16	1.52
3/4	C5375x12	.609	1.28	2.44	1-1/8	1.69
1	C5375x16	.844	1.47	2.56	1-3/8	1.69

Bulkhead nut not included. Must be ordered separately. See page L-39 for bulkhead nut.

## 45° Elbow - Straight Thread O-ring

(Ref. SAE No. 070320)

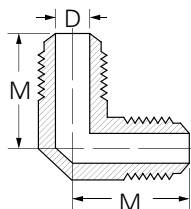
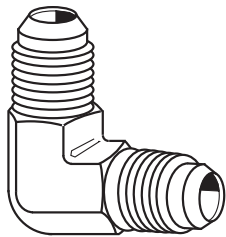


Tube O.D.	Port Size	Part Number	D	D1	M	N	Across Flats
1/4	1/4	C5365x4	.172	.172	.72	1.05	7/16
5/16	5/16	C5365x5	.234	.234	.77	1.05	9/16
3/8	3/8	C5365x6	.297	.297	.83	1.14	9/16
3/8	1/2	C5365x6x8	.297	.391	.87	1.30	13/16
1/2	1/2	C5365x8	.391	.391	.98	1.30	3/4
1/2	3/8	C5365x8x6	.391	.297	.98	1.17	13/16
1/2	5/8	C5365x8x10	.391	.484	.99	1.52	7/8
5/8	5/8	C5365x10	.484	.484	1.11	1.52	7/8
5/8	1/2	C5365x10x8	.484	.391	1.09	1.41	15/16
5/8	3/4	C5365x10x12	.484	.609	1.22	1.73	1-1/8
3/4	3/4	C5365x12	.609	.609	1.28	1.73	1-1/16
3/4	5/8	C5365x12x10	.609	.484	1.30	1.58	1-1/8
3/4	5/8	C5365x12x10	.609	.484	1.28	1.57	1-1/16
3/4	1	C5365x12x16	.609	.844	1.45	1.86	1-3/8
7/8	7/8	C5365x14	.718	.718	1.39	1.80	1-1/4
1	1	C5365x16	.844	.844	1.47	1.86	1-5/16
1	3/4	C5365x16x12	.844	.609	1.47	1.86	1-3/8
1-1/4	1-1/4	C5365x20	1.078	1.078	1.59	1.91	1-5/8

Replacement o-ring page L-64.

## 90° Union Elbow

Stainless Steel No. 5517x  
(Ref. SAE No. 070201)

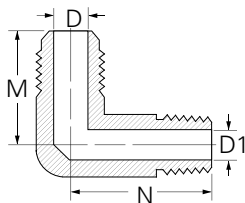
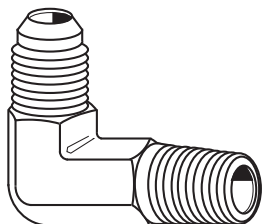


Tube O.D.	Part Number	D	M	Across Flats
1/4	C5505x4	.172	.89	7/16
5/16	C5505x5	.234	.95	1/2
3/8	C5505x6 •	.297	1.06	9/16
1/2	C5505x8	.391	1.25	3/4
5/8	C5505x10	.484	1.45	7/8
3/4	C5505x12	.609	1.66	1-1/16
1	C5505x16	.844	1.81	1-5/16
1-1/4	C5505x20	1.078	2.06	1-3/4
1-1/2	C5505x24	1.312	2.33	2

• Available in Stainless Steel

## 90° Male Elbow Long

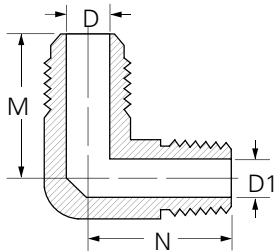
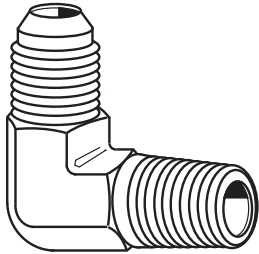
(Ref. SAE No. 071502)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/8	C5425x4	.172	.188	.89	1.17	1/2
1/4	1/4	C5425x4x4	.172	.281	.95	1.58	5/8
3/8	1/4	C5425x6	.297	.281	1.06	1.58	9/16
3/8	3/8	C5425x6x6	.297	.406	1.16	1.83	13/16
1/2	3/8	C5425x8	.391	.406	1.25	1.83	13/16
1/2	1/2	C5425x8x8	.391	.531	1.31	2.17	15/16
5/8	1/2	C5425x10	.484	.531	1.45	2.17	15/16
3/4	3/4	C5425x12	.609	.719	1.66	2.44	1-1/16
1	1	C5425x16	.844	.938	1.81	3.02	1-3/8
1-1/4	1-1/4	C5425x20	1.078	1.250	2.06	3.69	1-3/4
1-1/2	1-1/2	C5425x24	1.312	1.500	2.32	4.11	2

## 90° Male Elbow

Stainless Steel No. 5417x  
(Ref. SAE No. 070202)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/8	1/8	C5405x2	.062	.188	.77	.72	7/16
3/16	1/8	C5405x3	.125	.188	.83	.72	7/16
1/4	1/8	C5405x4•	.172	.188	.89	.78	7/16
1/4	1/4	C5405x4x4•	.172	.281	1.05	1.09	9/16
1/4	3/8	C5405x4x6	.172	.406	1.05	1.22	13/16
1/4	1/2	C5405x4x8	.172	.531	1.11	1.47	15/16
5/16	1/8	C5405x5	.234	.188	.95	.78	9/16
5/16	1/4	C5405x5x4	.234	.281	1.05	1.09	9/16
5/16	3/8	C5405x5x6	.234	.406	1.08	1.22	13/16
3/8	1/4	C5405x6	.297	.281	1.06	1.09	9/16
3/8	1/8	C5405x6x2	.297	.188	1.06	.90	9/16
3/8	3/8	C5405x6x6•	.297	.406	1.14	1.22	3/4
3/8	1/2	C5405x6x8	.297	.531	1.22	1.47	7/8
3/8	3/4	C5405x6x12	.297	.719	1.31	1.59	1-1/8
1/2	1/4	C5405x8x4•	.391	.281	1.25	1.22	3/4
1/2	3/8	C5405x8•	.391	.406	1.25	1.22	3/4
1/2	1/2	C5405x8x8	.391	.531	1.33	1.47	7/8
1/2	3/4	C5405x8x12•	.391	.719	1.42	1.59	1-1/16
5/8	3/8	C5405x10x6	.484	.406	1.45	1.28	7/8
5/8	1/2	C5405x10	.484	.531	1.45	1.47	7/8
5/8	3/4	C5405x10x12	.484	.719	1.54	1.59	1-1/16
3/4	3/4	C5405x12•	.609	.719	1.66	1.59	1-1/16
3/4	1/2	C5405x12x8	.609	.531	1.66	1.59	1-1/16
3/4	1	C5405x12x16	.609	.938	1.78	1.97	1-3/8
1	1	C5405x16	.844	.938	1.81	1.97	1-5/16
1	3/4	C5405x16x12	.844	.719	1.81	1.78	1-5/16
1	1-1/4	C5405x16x20	.844	1.250	2.00	2.37	1-3/4
1-1/4	1-1/4	C5405x20	1.078	1.250	2.06	2.38	1-5/8
1-1/4	1	C5405x20x16	1.078	.938	2.06	2.38	1-5/8
1-1/4	1-1/2	C5405x20x24	1.078	1.500	2.19	2.64	2
1-1/2	1-1/2	C5405x24	1.312	1.500	2.33	2.64	1-7/8
1-1/2	1-1/4	C5405x24x20	1.312	1.250	2.33	2.50	2
2	2	C5405x32	1.781	1.938	3.06	3.00	2-9/16

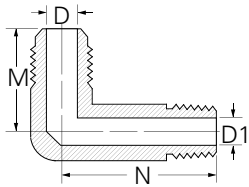
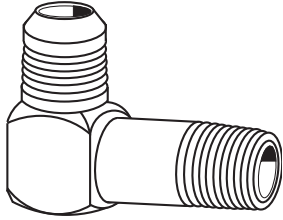
• Available in Stainless Steel



# JIC 37° - Flare-Twin®

## 90° Male Elbow Extra Long

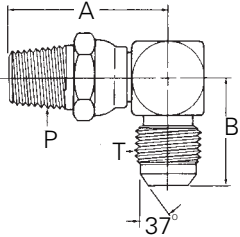
(Ref. SAE No. 071602)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/8	C5435x4	.172	.188	.89	1.56	1/2
1/4	1/4	C5435x4x4	.172	.281	.95	2.07	5/8
5/16	1/4	C5435x5x4	.234	.281	.95	2.04	9/16
3/8	1/4	C5435x6	.297	.281	1.06	2.08	5/8
3/8	3/8	C5435x6x6	.297	.406	1.06	2.42	13/16
1/2	3/8	C5435x8	.391	.406	1.25	2.42	13/16
1/2	1/2	C5435x8x8	.391	.531	1.31	2.88	15/16
5/8	1/2	C5435x10	.484	.531	1.45	2.88	15/16
3/4	3/4	C5435x12	.609	.719	1.66	3.28	1-1/8
1	1	C5435x16	.844	.938	1.81	4.05	1-3/8
1-1/4	1-1/4	C5435x20	1.078	1.250	2.06	5.00	1-3/4

Adapters, Tube Fittings & Connectors

## 90° Swivel Male Elbow

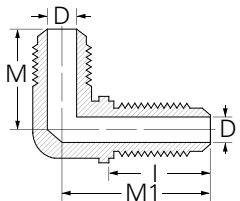
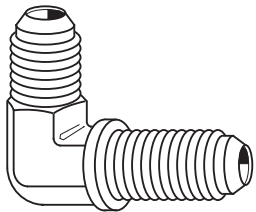


### Part No. 2249 – (Dash Size)

Dash Size	Tube O.D.		Thread P (nptf)	Thread T	A		B	
	mm	inches			mm	inches	mm	inches
4-6S	9,6	.38	1/4 - 18	9/16 - 18	40,6	1.60	26,9	1.06
6-8S	12,7	.50	3/8 - 18	3/4 - 18	43,4	1.71	31,0	1.22
12-12S	19,0	.75	3/4 - 14	1 1/16 - 12	54,3	2.14	42,2	1.66

## 90° Bulkhead Union Elbow

Stainless Steel No. 5537x  
(Ref. SAE No. 070701)



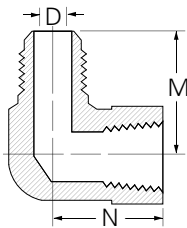
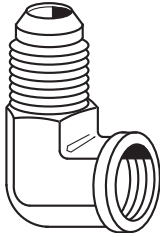
Tube O.D.	Part Number	D	I	M	M1	Across Flats
1/4	C5525x4	.172	1.11	.97	1.59	7/16
5/16	C5525x5	.234	1.11	1.03	1.62	9/16
3/8	C5525x6•	.297	1.18	1.09	1.81	9/16
1/2	C5525x8•	.391	1.38	1.36	2.11	3/4
5/8	C5525x10	.484	1.52	1.56	2.39	15/16
3/4	C5525x12	.609	1.69	1.78	2.67	1-1/16
1	C5525x16	.844	1.69	1.94	2.80	1-5/16
1-1/4	C5525x20	1.078	1.74	2.17	3.12	1-5/8

Bulkhead nut not included. Must be ordered separately.  
See page L-39 for bulkhead nut.

• Available in Stainless Steel

## 90° Female Elbow

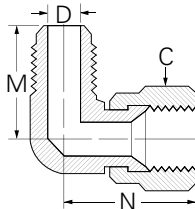
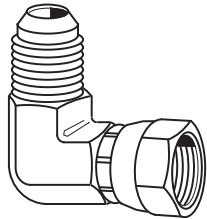
(Ref. SAE No. 070203)



Tube O.D.	Fem. Pipe Thread	Part Number	D	M	N	Across Flats
1/4	1/8	C5455x4	.172	1.08	.66	9/16
1/4	1/4	C5455x4x4	.172	1.14	.88	3/4
5/16	1/8	C5455x5	.234	1.08	.66	5/8
5/16	1/4	C5455x5x4	.234	1.30	1.02	7/8
3/8	1/8	C5455x6x2	.297	1.06	.66	9/16
3/8	1/4	C5455x6	.297	1.23	.88	3/4
3/8	3/8	C5455x6x6	.297	1.31	1.02	7/8
1/2	1/4	C5455x8x4	.391	1.23	.88	3/4
1/2	3/8	C5455x8	.391	1.42	1.02	7/8
1/2	1/2	C5455x8x8	.391	1.52	1.23	1-1/16
5/8	1/2	C5455x10	.484	1.64	1.23	1-1/16
3/4	1/2	C5455x12x8	.609	1.66	1.23	1-1/16
3/4	3/4	C5455x12	.609	1.89	1.36	1-5/16
1	1	C5455x16	.844	2.17	1.62	1-5/8
1-1/4	1-1/4	C5455x20	1.078	2.33	1.70	2
1-1/2	1-1/2	C5455x24	1.312	2.89	2.08	2-3/8
2	2	C5455x32	1.781	3.30	2.39	2-7/8

## 90° Elbow - Swivel Nut

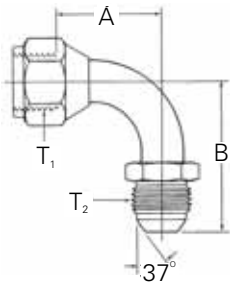
Stainless Steel No. 5518x  
(Ref. SAE No. 070221)



Tube O.D.	Part Number	Hex C	D	M	N	Across Flats
1/4	C5506x4	9/16	.172	.89	1.00	7/16
5/16	C5506x5	5/8	.234	.95	1.06	9/16
3/8	C5506x6 •	11/16	.297	1.06	1.25	9/16
1/2	C5506x8 •	7/8	.391	1.25	1.42	3/4
5/8	C5506x10	1	.484	1.43	1.62	7/8
3/4	C5506x12 •	1-1/4	.609	1.66	1.75	1-1/16
7/8	C5506x14	1-3/8	.718	1.73	1.78	1-1/4
1	C5506x16	1-1/2	.844	1.81	2.00	1-5/16
1-1/4	C5506x20	2	1.078	2.06	2.31	1-5/8
1-1/2	C5506x24	2-1/4	1.312	2.33	2.59	2
2	C5506x32	2-7/8	1.781	3.06	3.38	2-5/8

• Available in Stainless Steel

## 90° Sweep Elbow

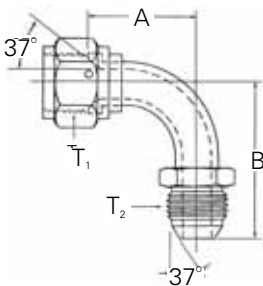


### Part No. 500454 – (Dash Size)

Dash Size	Tube O.D.		Thread T1	Thread T2	A		B	
	mm	inches			mm	inches	mm	inches
4S	6,3	.25	7/16 – 20	7/16 – 20	17,3	.68	28,5	1.12
6S	9,6	.38	9/16 – 18	9/16 – 18	21,6	.85	33,3	1.31
8S	12,7	.50	3/4 – 16	3/4 – 16	27,7	1.09	42,2	1.66
10S	16,0	.63	7/8 – 14	7/8 – 14	31,2	1.23	46,2	1.82
12S	19,0	.75	1 1/16 – 12	1 1/16 – 12	46,2	1.82	63,2	2.49
16S	25,4	1.00	1 5/16 – 12	1 5/16 – 12	60,7	2.39	70,9	2.79
20S	31,7	1.25	1 7/8 – 12	1 7/8 – 12	69,8	2.75	79,7	3.14

(Suitable for pressures through 2-wire hose)

## 90° Sweep Elbow

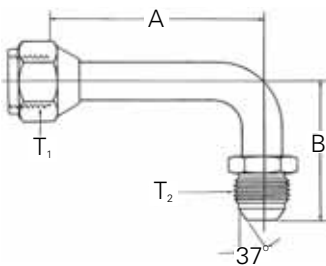


### Part No. FF5163 – (Dash Size)

Dash Size	Tube O.D.		Thread T1	Thread T2	A		B	
	mm	inches			mm	inches	mm	inches
0808S	12,7	.50	3/4 – 16	3/4 – 16	47,5	1.87	54,9	2.16
1212S	19,0	.75	1 1/16 – 12	1 1/16 – 12	59,7	2.35	71,4	2.81
1616S	25,4	1.00	1 5/16 – 12	1 5/16 – 12	77,2	3.04	71,4	2.81
2020S	31,7	1.25	1 5/8 – 12	1 5/8 – 12	86,4	3.40	94,2	3.71
2424S	38,1	1.50	1 7/8 – 12	1 7/8 – 12	100,3	3.95	110,0	4.33

(Suitable for pressures through 4-wire hose)

## 90° Sweep Elbow Long



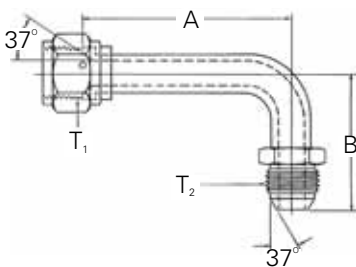
### Part No. 504095 – (Dash Size)

Dash Size	Tube O.D.		Thread T1	Thread T2	A		B	
	mm	inches			mm	inches	mm	inches
4S	6,3	.25	7/16 – 20	7/16 – 20	45,7	1.80	28,5	1.12
6S	9,6	.38	9/16 – 18	9/16 – 18	55,4	2.18	33,3	1.31
8S	12,7	.50	3/4 – 16	3/4 – 16	61,7	2.43	45,2	1.78
10S	16,0	.63	7/8 – 14	7/8 – 14	65,3	2.57	52,6	2.07
12S	19,0	.75	1 1/16 – 12	1 1/16 – 12	94,7	3.73	63,2	2.49
16S	25,4	1.00	1 5/16 – 12	1 5/16 – 12	116,3	4.58	70,9	2.79
20S	31,7	1.25	1 5/8 – 12	1 5/8 – 12	140,5	5.53	79,7	3.14

(Suitable for pressures through 2-wire hose)

## L

## 90° Sweep Elbow Long



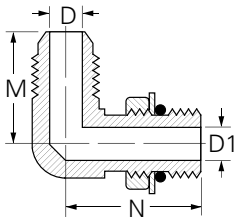
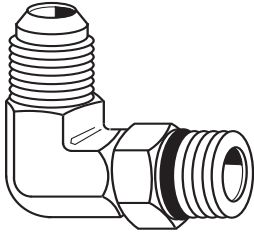
### Part No. FF5164 – (Dash Size)

Dash Size	Tube O.D.		Thread T1	Thread T2	A		B	
	mm	inches			mm	inches	mm	inches
0808S	12,7	.50	3/4 – 16	3/4 – 16	84,8	3.34	54,9	2.16
1212S	19,0	.75	1 1/16 – 12	1 1/16 – 12	112,0	4.41	71,4	2.81
1616S	25,4	1.00	1 5/16 – 12	1 5/16 – 12	133,1	5.24	71,4	2.81

(Suitable for pressures through 4-wire hose)

## 90° Elbow - Straight Thread O-ring

Stainless Steel No. 5527x  
(Ref. SAE No. 070220)



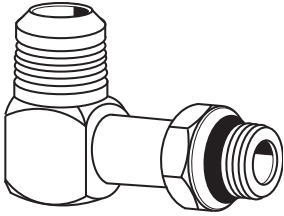
Tube O.D.	Port Size	Part Number	D	D1	M	N	Across Flats
1/4	1/4	C5515x4	.172	.172	.89	1.03	7/16
1/4	5/16	C5515x4x5	.172	.234	.95	1.12	5/8
1/4	3/8	C5515x4x6	.172	.297	.95	1.25	5/8
5/16	5/16	C5515x5	.234	.234	.95	1.13	9/16
5/16	1/4	C5515x5x4	.234	.172	.98	1.06	9/16
5/16	3/8	C5515x5x6	.234	.297	.98	1.25	5/8
3/8	3/8	C5515x6•	.297	.297	1.06	1.25	9/16
3/8	1/4	C5515x6x4	.297	.172	1.06	1.09	5/8
3/8	5/16	C5515x6x5	.297	.234	1.06	1.12	5/8
3/8	1/2	C5515x6x8	.297	.391	1.14	1.45	3/4
3/8	5/8	C5515x6x10	.297	.484	1.22	1.70	15/16
1/2	3/8	C5515x8x6	.391	.297	1.25	1.32	3/4
1/2	1/2	C5515x8•	.391	.391	1.25	1.45	3/4
1/2	5/8	C5515x8x10	.391	.484	1.33	1.70	7/8
1/2	3/4	C5515x8x12	.391	.609	1.41	1.94	1-1/8
5/8	5/8	C5515x10	.484	.484	1.45	1.70	7/8
5/8	1/2	C5515x10x8	.484	.391	1.45	1.52	15/16
5/8	3/4	C5515x10x12	.484	.609	1.55	1.94	1-1/8
3/4	3/4	C5515x12•	.609	.609	1.66	1.94	1-1/16
3/4	1/2	C5515x12x8	.609	.391	1.66	1.61	1-1/8
3/4	5/8	C5515x12x10	.609	.484	1.66	1.78	1-1/16
3/4	1	C5515x12x16	.609	.844	1.78	2.05	1-3/8
1	1	C5515x16	.844	.844	1.81	2.05	1-5/16
1	3/4	C5515x16x12	.844	.609	1.81	2.05	1-5/16
1	7/8	C5515x16x14	.844	.718	1.81	2.06	1-3/8
1	1-1/4	C5515x16x20	.844	1.078	2.00	2.25	1-3/4
1-1/4	1-1/4	C5515x20	1.078	1.078	2.06	2.25	1-5/8
1-1/4	1	C5515x20x16	1.078	.844	2.06	2.23	1-3/4
1-1/2	1-1/2	C5515x24	1.312	1.312	2.33	2.39	1-7/8
1-1/2	1-1/4	C5515x24x20	1.312	1.078	2.33	2.37	2

• Available in Stainless Steel

# JIC 37° - Flare-Twin®

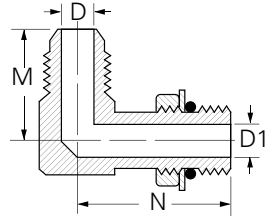
## 90° Elbow Long - Straight Thread O-ring

(Ref. SAE No. 071520)



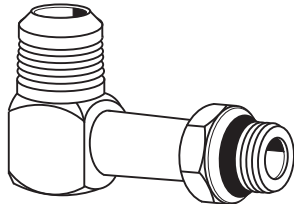
Tube O.D.	Port Size	Part Number	D	D1	M	N	Across Flats
3/8	3/8	C5515x6L	.297	.297	1.06	1.66	5/8
1/2	1/2	C5515x8L	.391	.391	1.25	1.81	13/16
3/4	3/4	C5515x12L	.609	.609	1.66	2.47	1-1/8

Replacement o-ring page L-64.



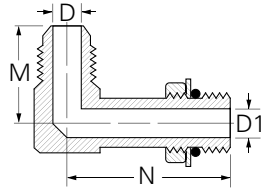
## 90° Elbow Extra Long - Straight Thread O-ring

(Ref. SAE No. 071620)

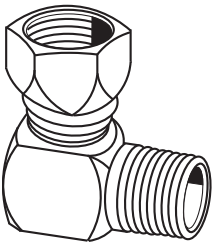


Tube O.D.	Port Size	Part Number	D	D1	M	N	Across Flats
3/8	3/8	C5515x6LL	.297	.297	1.06	2.08	5/8
1/2	1/2	C5515x8LL	.391	.391	1.25	2.50	13/16
5/8	5/8	C5515x10LL	.484	.484	1.45	3.25	15/16
3/4	3/4	C5515x12LL	.609	.609	1.66	3.34	1-1/8

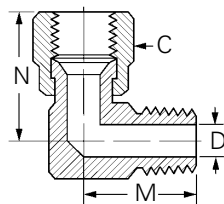
Replacement o-ring page L-64.



## 90° Male Pipe to 37° JIC Swivel

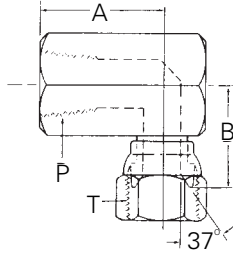


Tube O.D.	Male Pipe	Part Number	D	M	Across N	Hex Flats	C
1/4	1/8	C5406x4	.188	.78	1.00	1/2	9/16
3/8	1/4	C5406x6	.281	1.09	1.25	5/8	11/16
1/2	3/8	C5406x8	.406	1.22	1.38	13/16	7/8
5/8	1/2	C5406x10	.531	1.47	1.62	15/16	1
3/4	3/4	C5406x12	.719	1.59	1.75	1-1/8	1-1/4
1	1	C5406x16	.938	1.97	2.00	1-3/8	1-1/2
1-1/4	1-1/4	C5406x20	1.250	2.38	2.31	1-3/4	2





## 90° Female Pipe to 37° JIC Swivel

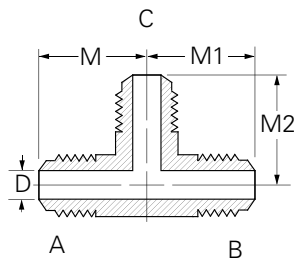
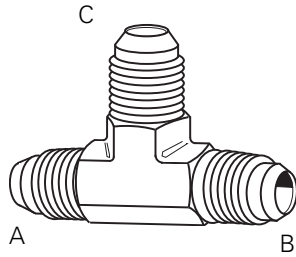


## Part No. 2244 - (Dash Size)

Dash Size	Tube O.D. mm	inches	Thread P (NPTF)	Thread T	A mm	inches	B mm	inches
8-8S	12,7	.50	1/2-14	3/4-16	31,2	1.23	27,4	1.08
8-10S	16,0	.63	1/2-14	7/8-14	31,2	1.23	28,5	1.12

## Union Tee

Stainless Steel No. 55717x  
(Ref. SAE No. 070401)

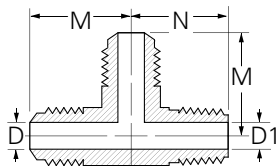
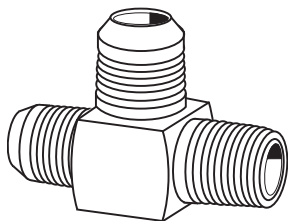
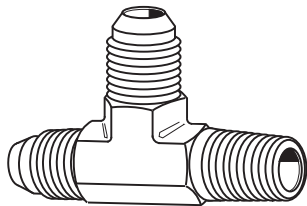


Tube O.D. A	Tube O.D. B	Tube O.D. C	Part Number	D	M	M1	M2	Across Flats
1/4	1/4	1/4	C5705x4	.172	.89	.89	.89	7/16
5/16	5/16	5/16	C5705x5	.234	.95	.95	.95	9/16
3/8	3/8	3/8	C5705x6•	.297	1.06	1.06	1.06	9/16
1/2	1/2	1/2	C5705x8•	.391	1.25	1.25	1.25	3/4
5/8	5/8	5/8	C5705x10	.484	1.45	1.45	1.45	7/8
3/4	3/4	3/4	C5705x12	.609	1.66	1.66	1.66	1-1/16
7/8	7/8	7/8	C5705x14	.718	1.73	1.73	1.73	1-5/16
1	1	1	C5705x16	.844	1.81	1.81	1.81	1-5/16
1-1/4	1-1/4	1-1/4	C5705x20	1.078	2.06	2.06	2.06	1-5/8
1-1/2	1-1/2	1-1/2	C5705x24	1.312	2.33	2.33	2.33	1-7/8

• Available in Stainless Steel

## Male Run Tee

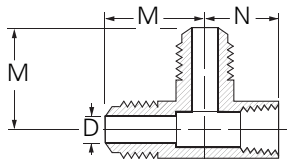
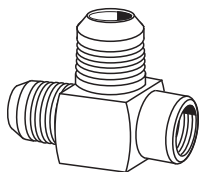
(Ref. SAE No. 070424)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/8	C5755x4	.172	.188	.89	.78	7/16
1/4	1/4	C5755x4x4x4	.172	.281	.95	1.09	9/16
3/8	1/4	C5755x6	.297	.281	1.06	1.09	9/16
3/8	3/8	C5755x6x6x6	.297	.406	1.16	1.22	9/16
1/2	3/8	C5755x8	.391	.406	1.25	1.22	3/4
1/2	1/2	C5755x8x8x8	.391	.531	1.31	1.47	7/8
5/8	1/2	C5755x10	.484	.531	1.45	1.47	7/8
3/4	3/4	C5755x12	.609	.719	1.66	1.59	1-1/16
1	1	C5755x16	.844	.938	1.81	1.97	1-5/16
1-1/4	1-1/4	C5755x20	1.078	1.250	2.06	2.38	1-3/4

## Female Run Tee

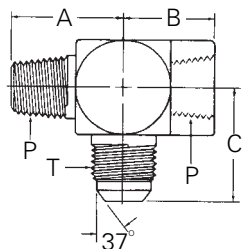
(Ref. SAE No. 070426)



Tube O.D.	Fem. Pipe Thread	Part Number	D	M	N	Across Flats
1/4	1/8	C5805x4	.172	1.08	.66	5/8
3/8	1/4	C5805x6	.297	1.23	.88	3/4
3/4	3/4	C5805x12	.609	1.89	1.36	1-3/8
1	1	C5805x16	.844	2.17	1.62	1-5/8

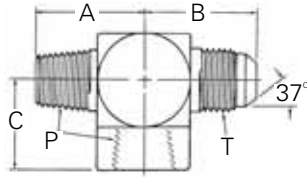
## Male Pipe/Female Pipe/37° Flare Tee

Part No. 203301 – (Dash Size)



Dash Size	Tube O.D.		Thread P (NPTF)	Thread T	A		B		C	
	mm	inches			mm	inches	mm	inches	mm	inches
2-4S	6,3	.25	1/8-27	7/16-20	19,8	.78	16,8	.66	27,4	1.08
4-6S	9,6	.38	1/4-18	9/16-18	27,7	1.09	22,3	.88	31,2	1.23
12-12S	19,0	.75	3/4-14	1 1/16-12	40,4	1.59	34,5	1.36	48,0	1.89
16-16S	25,4	1.00	1-11 1/2	1 5/16-12	50,0	1.97	41,1	1.62	55,1	2.17

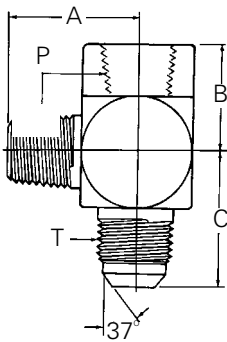
## Male Pipe/37° Flare/ Female Pipe



### Part No. 203103 – (Dash Size)

Dash Size	Tube O.D.		Thread P (NPTF)	Thread T	A		B		C	
	mm	inches			mm	inches	mm	inches	mm	inches
2-4S	6,3	.25	1/8-27	7/16-20	19,8	.78	27,4	1.08	16,8	.66
4-6S	9,6	.38	1/4-18	9/16-18	27,7	1.09	31,2	1.23	22,3	.88
6-6S	9,6	.38	3/8-18	9/16-18	31,0	1.22	33,3	1.31	25,9	1.02
6-8S	12,7	.50	3/8-18	3/4-16	31,0	1.22	36,1	1.42	25,9	1.02
8-10S	16,0	.63	1/2-14	7/8-14	37,3	1.47	41,6	1.64	31,2	1.23
12-12S	19,0	.75	3/4-14	1 1/16-12	40,4	1.59	48,0	1.89	34,5	1.36

## Male Pipe/Female Pipe 37° Flare Tee

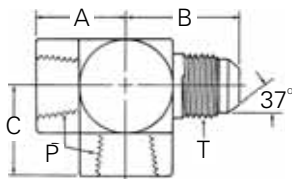


### Part No. 203006 – (Dash Size)

Dash Size	Tube O.D.		Thread P	Thread T	A		B		C	
	mm	inches			mm	inches	mm	inches	mm	inches
12-12S	19,0	.75	3/4-14	1 1/16-12	40,4	1.59	34,5	1.36	48,0	1.89

## Male JIC Run Tee

(Ref. SAE No. 070427)

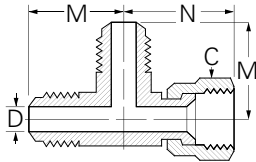
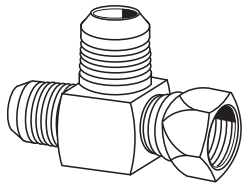
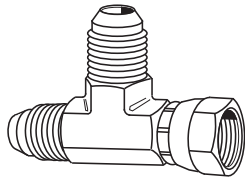


### Part No. 203104 – (Dash Size)

Dash Size	Tube O.D.		Thread P	Thread T	A		B		C	
	mm	inches			mm	inches	mm	inches	mm	inches
4-6S	9,6	.38	1/4-18	9/16-18	22,3	.88	31,2	1.23	22,3	.88

## Swivel Nut Run Tee

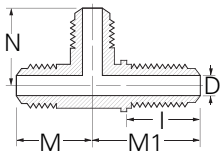
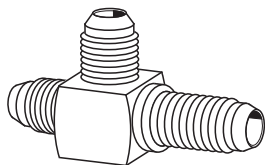
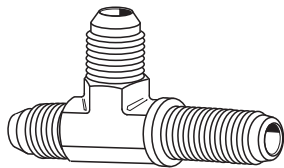
(Ref. SAE No. 070432)



Tube O.D.	Part Number	Hex C	D	M	N	Across Flats
1/4	C5706x4	9/16	.172	.89	1.00	7/16
5/16	C5706x5	5/8	.234	.95	1.06	9/16
3/8	C5706x6	11/16	.297	1.06	1.25	9/16
1/2	C5706x8	7/8	.391	1.25	1.44	3/4
5/8	C5706x10	1	.484	1.45	1.62	7/8
3/4	C5706x12	1-1/4	.609	1.66	1.75	1-1/16
1	C5706x16	1-1/2	.844	1.81	2.00	1-5/16
1-1/4	C5706x20	2	1.078	2.06	2.36	1-5/8

## Bulkhead Run Tee

(Ref. SAE No. 070958)

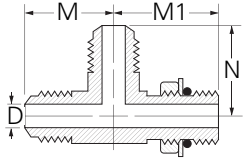
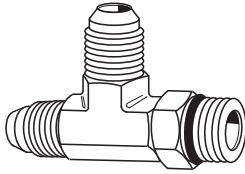


Tube O.D.	Part Number	D	I	N	M	M1	Across Flats
3/8	C5726x6	.297	1.18	1.09	1.06	1.81	9/16
1/2	C5726x8	.391	1.38	1.36	1.36	2.11	3/4

Bulkhead nut not included. Must be ordered separately.  
See page L-39 for bulkhead nut.

## Straight Thread O-ring Run Tee

(Ref. SAE No. 070428)

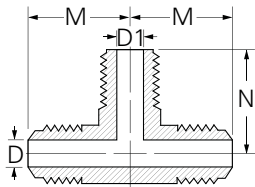
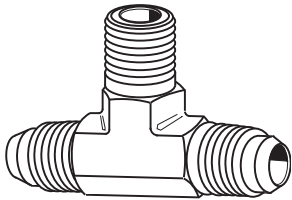


Tube O.D.	Port Size	Part Number	D	M	M1	Across Flats	N
1/4	1/4	C5716x4	.172	.89	1.03	7/16	.89
5/16	5/16	C5716x5	.234	.95	1.09	9/16	.95
3/8	3/8	C5716x6	.297	1.06	1.25	9/16	1.06
1/2	1/2	C5716x8	.391	1.25	1.45	3/4	1.25
5/8	5/8	C5716x10	.484	1.45	1.70	7/8	1.45
3/4	3/4	C5716x12	.609	1.66	1.94	1-1/16	1.66
1	1	C5716x16	.844	1.81	2.05	1-5/16	1.81
1-1/4	1-1/4	C5716x20	1.078	2.06	2.25	1-5/8	2.06

Replacement o-ring page L-64

## Male Branch Tee

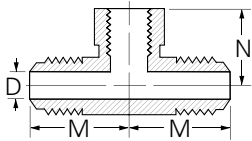
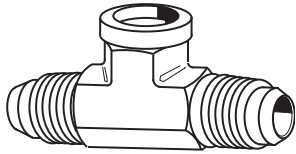
(Ref. SAE No. 070425)



Tube O.D.	Male Pipe Thread	Part Number	D	D1	M	N	Across Flats
1/4	1/8	C5605x4	.172	.188	.89	.78	7/16
1/4	1/4	C5605x4x4x4	.172	.281	1.05	1.09	9/16
5/16	1/8	C5605x5	.234	.188	.95	.78	9/16
3/8	1/4	C5605x6	.297	.281	1.06	1.09	9/16
1/2	3/8	C5605x8	.391	.406	1.25	1.22	3/4
5/8	1/2	C5605x10	.484	.531	1.45	1.47	7/8
3/4	3/4	C5605x12	.609	.719	1.66	1.59	1-1/16
1	1	C5605x16	.844	.938	1.81	1.97	1-5/16

## Female Branch Tee

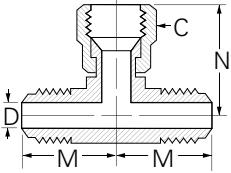
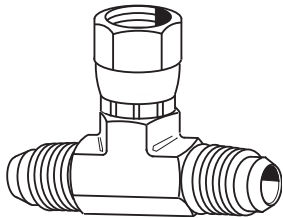
(Ref. SAE No. 070427)



Tube O.D.	Fem. Pipe Thread	Part Number	D	M	N	Across Flats
1/4	1/4	C5655x4x4x4	.172	1.14	.88	3/4
1/4	1/8	C5655x4	.172	1.08	.66	9/16
3/8	1/4	C5655x6	.297	1.23	.88	3/4
3/8	3/8	C5655x6x6x6	.297	1.30	1.02	7/8
1/2	3/8	C5655x8	.391	1.42	1.02	7/8
1/2	1/2	C5655x8x8x8	.391	1.55	1.23	1-1/8
5/8	1/2	C5655x10	.484	1.64	1.23	1-1/16
3/4	3/4	C5655x12	.609	1.89	1.36	1-5/16
1	1	C5655x16	.844	2.17	1.62	1-5/8
2	2	C5655x32	1.781	3.30	2.39	2-7/8

## Swivel Nut Branch Tee

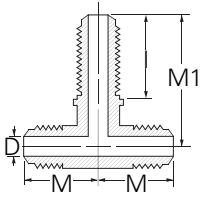
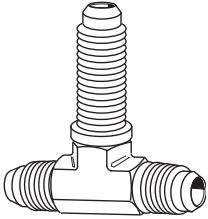
(Ref. SAE No. 070433)



Tube O.D.	Part Number	Hex C	D	M	N	Across Flats
1/4	C5707x4	9/16	.172	.89	1.00	7/16
3/8	C5707x6	11/16	.297	1.06	1.25	9/16
1/2	C5707x8	7/8	.391	1.25	1.43	3/4
3/4	C5707x12	1-1/4	.609	1.66	1.75	1-1/16
1	C5707x16	1-1/2	.844	1.81	2.00	1-5/16
1/2	C5707x8	7/8	.391	1.25	1.38	13/16
5/8	C5707x10	1	.484	1.45	1.62	7/8
1-1/4	C5707x20	2	1.078	2.06	2.31	2

## Bulkhead Branch Tee

(Ref. SAE No. 070959)

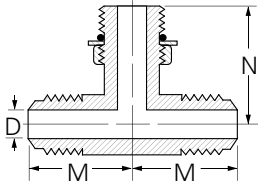
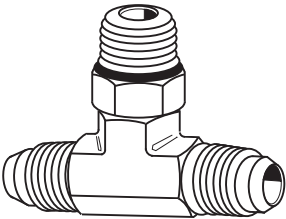


Tube O.D.	Part Number	I	D	M	M1	Across Flats
1/4	C5725x4	1.11	.172	.97	1.59	1/2
3/8	C5725x6	1.18	.297	1.06	1.81	5/8
1/2	C5725x8	1.38	.391	1.36	2.11	13/16
5/8	C5725x10	1.52	.484	1.56	2.39	15/16
3/4	C5725x12	1.69	.609	1.78	2.67	1-1/8
1	C5725x16	1.69	.844	1.94	2.80	1-3/8

Bulkhead nut not included. Must be ordered separately.  
See page L-39 for bulkhead nut.

## Straight Thread O-ring Branch Tee

(Ref. SAE No. 070429)

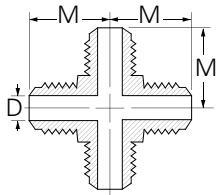
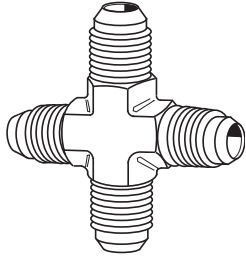


Tube O.D.	Port Size	Part Number	D	M	N	Across Flats
1/4	1/4	C5715x4	.172	.89	1.03	7/16
3/8	3/8	C5715x6	.297	1.06	1.25	9/16
1/2	1/2	C5715x8	.391	1.25	1.45	3/4
5/8	5/8	C5715x10	.484	1.45	1.70	7/8
3/4	3/4	C5715x12	.609	1.66	1.94	1-1/16
1	1	C5715x16	.844	1.81	2.05	1-5/16

Replacement o-ring listed on page L-64.

## Cross

(Ref. SAE No. 070501)

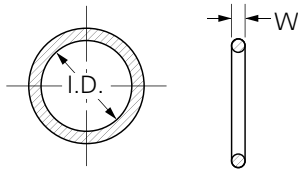


Tube O.D.	Part Number	D	M	Across Flats
3/8	C5955x6	.297	1.06	5/8
1/2	C5955x8	.391	1.25	13/16
5/8	C5955x10	.484	1.45	15/16
3/8	5967x6 •	.297	1.06	9/16

• Available in Stainless Steel

Adapters, Tube Fittings & Connectors

## Straight Thread O-ring



**Material:** Buna-N 90 Durometer-  
**Temperature Range:**

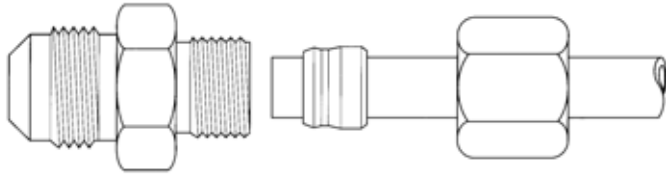
-40°F to +250°F  
(-40°C to +121°C)

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

Standard O-ring complies with  
SAE specification SAE J515  
Type CH



# Steel DIN Fittings



METRIC TUBE OD	6	8	10	12	14	15	16	18	20	22	25	28	30	38
Light	M12x1.5	M14x1.5	M16x1.5	M18x1.5	-	M22x1.5	-	M26x1.5	-	M30x2.0	-	M36x2.0	-	-
Heavy	M14x1.5	M16x1.5	M18x1.5	M20x1.5	M22x1.5	-	M24x1.5	-	M30x2.0	-	M36x2.0	-	M42x2.0	M52x2.0

### • Typical Application

Used in applications to adapt connections made to DIN (Deutsche Industrie Norme) specifications to male 37° JIC Flare.

### • Sealing Method

Three-Piece Flareless Bite Type or 60° or 24° Tube Seat, or 37° Flare.

### • Vibration Rating

Three-Piece Flareless Bite Type or 60° or 24° Tube Seat. Fair Resistance.

### • Material

Carbon Steel - SAE 12L14

### • Plating

Bodies and Sleeves - Trivalent Zinc Plated Nuts - Phosphate Coating.

### • Advantages

Provides an adapter to convert a metric hose assembly to JIC 37° allowing the use of standard hose and end fittings. Can also be used in the repair of metric tubing.

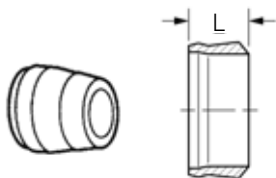
### • Presetting Instructions

1. Preset with preset tool. All sleeves should be preset in tool prior to installation.
2. Cut the tubing squarely and lightly deburr the end of the tubing inside and out.
3. Lubricate the sleeve, nut and threads with a good grade of lubricant compatible with the system fluid.
4. Slide the nut and sleeve on the tubing. The thicker end of the sleeve should be toward the nut.
5. Insert the tube into the preset tool making sure it is bottomed on the tube stop. Tighten the nut by hand as much as possible.
6. On the tube sizes up to and including 18mm O.D., tighten the nut 1-1/2 turns past hand tight. For larger tube O.D.'s, tighten the nut 1-1/4 turns past hand-tight.
7. To inspect preset, mark the nut location and remove nut.
8. To reinstall, tighten the nut 1/6 turn (one hex flat) past the previous nut location.

### • Ordering Information

Order individually by Part number. Preset tools found on page N-76.

### Metric Flareless Sleeve

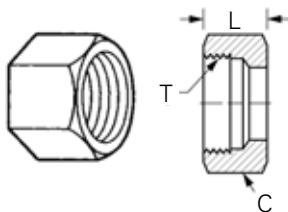


Tube O.D. (mm)	Part Number	L (mm)
6	7165x6MM	9.8
8	7165x8MM	9.5
10	7165x10MM	10.2
12	7165x12MM	9.7
14	7165x14MM	10.0
15	7165x15MM	9.8
16	7165x16MM	10.5
18	7165x18MM	9.8
20	7165x20MM	12.0
22	7165x22MM	10.5
25	7165x25MM	12.0
28	7165x28MM	11.0
30	7165x30MM	13.0

**NOTE:**  
Multiply millimeters (mm) by 0.03937 to obtain inches.

### Metric Flareless Nut Light Series

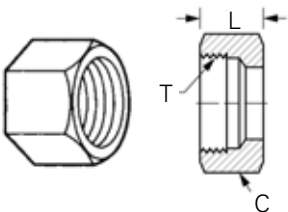
(DIN 3901/3902L)



Tube O.D. (mm)	Part Number	T Thd.	Hex C (mm)	L (mm)
6	ML7105x6	M12x1.5	14	14.5
8	ML7105x8	M14x1.5	17	14.5
10	ML7105x10	M16x1.5	19	15.5
12	ML7105x12	M18x1.5	22	15.5
15	ML7105x15	M22x1.5	27	18.0
18	ML7105x18	M26x1.5	32	19.0
22	ML7105x22	M30x2.0	36	20.3
28	ML7105x28	M36x2.0	41	22.0

### Metric Flareless Nut Heavy Series

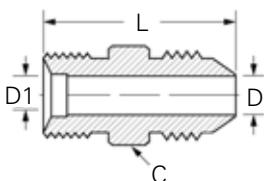
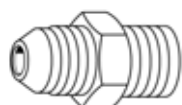
(DIN /3902S)3901



Tube O.D. (mm)	Part Number	T Thd.	Hex C (mm)	L (mm)
6	MH7105x6	M14x1.5	17	16.5
8	MH7105x8	M16x1.5	19	16.5
10	MH7105x10	M18x1.5	22	17.5
12	MH7105x12	M20x1.5	24	18.5
14	MH7105x14	M22x1.5	27	20.5
16	MH7105x16	M24x1.5	30	21.5
20	MH7105x20	M30x2.0	36	24.0
25	MH7105x25	M36x2.0	46	27.0
30	MH7105x30	M42x2.0	50	29.0
38	MH7105x38	M52x2.0	60	32.5

### Male JIC 37° to 24° Metric Tube Seat (Light)

(DIN 3901/3902L)

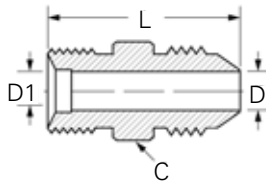
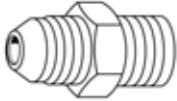


Tube O.D.	Tube O.D. (mm)	Part Number	Metric Thd.	Hex C	D	D1	L
1/4	6	MC5206x4x6	M12x1.5	5/8	.171	.171	1.22
3/8	8	MC5206x6x8	M14x1.5	3/4	.297	.240	1.22
1/2	10	MC5206x8x10	M16x1.5	7/8	.391	.322	1.41
1/2	12	MC5206x8x12	M18x1.5	15/16	.391	.398	1.48
5/8	15	MC5206x10x15	M22x1.5	1-1/16	.484	.478	1.70
3/4	18	MC5206x12x18	M26x1.5	1-3/4	.609	.596	1.91

# Steel DIN Fittings

## Male JIC 37° to 24° Metric Tube Seat (Heavy)

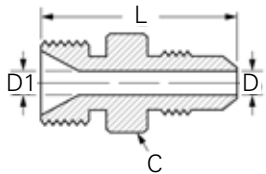
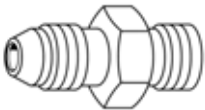
(DIN 3901/3902S)



Tube O.D.	Tube O.D. (mm)	Part Number	Metric Thd.	Hex C	D	D1	L
3/8	6	MC5208x6x6	M14x1.5	3/4	.297	.167	1.22
1/2	10	MC5208x8x10	M18x1.5	15/16	.391	.283	1.48
5/8	14	MC5208x10x14	M22x1.5	1-1/16	.484	.397	1.70
3/4	16	MC5208x12x16	M24x1.5	1-1/8	.609	.476	1.77

## Male JIC 37° to 60° Metric Tube Seat

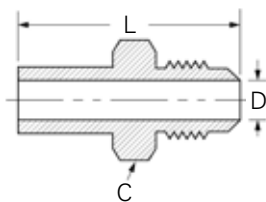
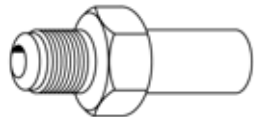
(DIN 7631)



Tube O.D.	Tube O.D. (mm)	Part Number	Metric Thd.	Hex C	D	D1	L
1/4	6	MC5207x4x6	M12x1.5	1/2	.171	.157	1.22
3/8	8	MC5207x6x8	M14x1.5	5/8	.297	.242	1.22
3/8	10	MC5207x6x10	M16x1.5	7/8	.297	.321	1.32
1/2	12	MC5207x8x12	M18x1.5	15/16	.391	.394	1.48
5/8	15	MC5207x10x15	M22x1.5	1-1/16	.472	.472	1.52
3/4	18	MC5207x12x18	M26x1.5	1-1/8	.609	.596	1.91

## Male JIC 37° to Male Metric Standpipe

(DIN 7631)



Tube O.D.	Tube O.D. (mm)	Part Number	Hex C	L	D
1/4	6MM	MC5019x4x6	9/16	1.58	.16
1/4	8MM	MC5019x4x8	9/16	1.68	.17
3/8	10MM	MC5019x6x10	3/4	1.67	.28
1/2	12MM	MC5019x8x12	7/8	1.97	.32
1/2	14MM	MC5019x8x14	7/8	1.89	.39
5/8	16MM	MC5019x10x16	1	2.07	.47
3/4	16MM	MC5019x12x16	1-1/4	2.22	.47
3/4	18MM	MC5019x12x18	1-1/4	2.12	.55
3/4	20MM	MC5019x12x20	1-1/4	2.38	.61
1	22MM	MC5019x16x22	1-1/2	2.21	.67
1	25MM	MC5019x16x25	1-1/2	2.54	.79

**NOTE:**

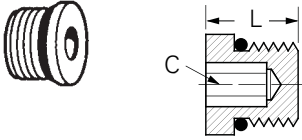
Multiply millimeters (mm) by 0.03937 to obtain inches.



# Straight Thread O-ring

## Straight Thread O-ring Hex Socket Plug

(Ref. SAE No. 090109B)

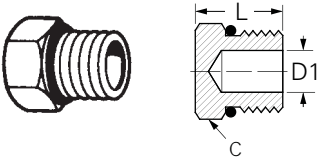


Port Size	Part Number	Hex C	L
1/8	7238x2	1/8	.40
3/16	7238x3	1/8	.40
1/4	7238x4	3/16	.47
5/16	7238x5	3/16	.47
3/8	7238x6	1/4	.50
1/2	7238x8	5/16	.58
5/8	7238x10	3/8	.65
3/4	7238x12	9/16	.77
7/8	7238x14	9/16	.77
1	7238x16	5/8	.77
1-1/4	7238x20	3/4	.78

Replacement o-ring page L-64.

## Straight Thread O-ring Hex Head Plug

(Ref. SAE No. 090109A)

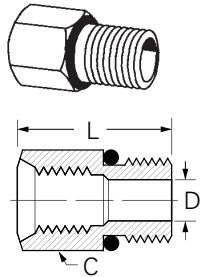


Port Size	Part Number	Hex C	L	D1 Opt.
1/8	7237x2	7/16	.60	.093
3/16	7237x3	1/2	.60	.125
1/4	7237x4	9/16	.67	.203
5/16	7237x5	5/8	.67	.234
3/8	7237x6	11/16	.73	.297
1/2	7237x8	7/8	.80	.422
5/8	7237x10	1	.93	.500
3/4	7237x12	1-1/4	1.09	.656
7/8	7237x14	1-3/8	1.09	.718
1	7237x16	1-1/2	1.12	.875
1-1/4	7237x20	1-7/8	1.20	1.093
1-1/2	7237x24	2-1/8	1.27	1.344
2	7237x32	2-3/4	1.42	1.815

Replacement o-ring page L-64.

# Straight Thread O-ring

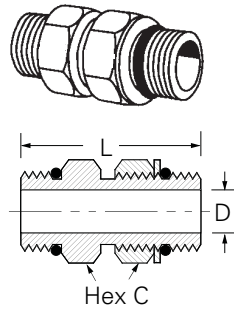
## Male Straight Thread/Female Straight Thread O-ring Boss



Male Port Size	Female Port Size	Part Number	Hex C	D	L
1/2	3/8	7033x8x6	7/8	.391	1.16
5/8	1/2	7033x10x8	1	.484	1.34
3/4	1/2	7033x12x8	1-1/4	.671	1.44
7/8	3/4	7033x14x12	1-3/8	.719	1.72
1	1/2	7033x16x8	1-1/2	.687	1.12
1	3/4	7033x16x12	1-1/2	.844	1.70
1-1/4	3/4	7033x20x12	1-7/8	.968	1.20
1-1/2	1-1/4	7033x24x20	2-1/8	1.312	1.75
2	1-1/2	7033x32x24	2-3/4	1.781	1.44

Replacement o-ring page L-64.

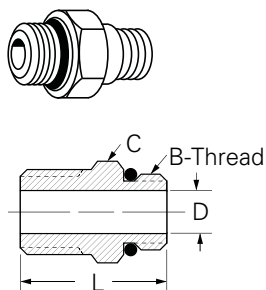
## Straight Thread O-ring Union



Port Size	Part Number	Hex C	D	L
1/4	C5314x4x4	9/16	.172	1.37
3/8	C5314x6x6	11/16	.297	1.50
1/2	C5314x8x8	7/8	.391	1.56
5/8	C5314x10x10	1	.484	1.80
3/4	C5314x12x12	1-1/4	.609	2.33
1	C5314x16x16	1-1/2	.844	2.28
1-1/4	C5314x20x20	1-7/8	1.078	2.13
1-1/2	C5314x24x24	2-1/8	1.312	2.13
2	C5314x32x32	2-3/4	1.781	2.13

Replacement o-ring page L-64.

## Male Straight Thread O-ring to Male Pipe Adapter

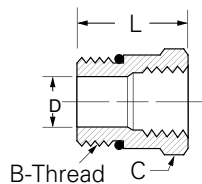
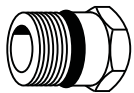


Port Size	Male Pipe Thd.	Part Number	Straight Thd B	Hex C	D	L
1/4	1/8	C3249x4x2	7/16-20	9/16	.172	1.05
3/8	1/4	C3249x6x4	9/16-18	11/16	.281	1.30
1/2	3/8	C3249x8x6	3/4-16	7/8	.391	1.36
1/2	1/2	C3249x8x8	3/4-16	7/8	.391	1.55
5/8	1/2	C3249x10x8	7/8-14	1	.484	1.69
3/4	3/4	C3249x12x12	1-1/16-12	1-1/4	.609	1.73
1	1	C3249x16x16	1-5/16-12	1-1/2	.844	2.06
1-1/4	1-1/4	C3249x20x20	1-5/8-12	1-7/8	1.078	2.17
1-1/2	1-1/2	C3249x24x24	1-7/8-12	2-1/8	1.312	2.26
2	2	C3249x32x32	2-1/2-12	2-3/4	1.781	2.47

Replacement o-ring page L-64.

# Straight Thread O-ring

## Straight Thread O-ring to Female Pipe Adapter



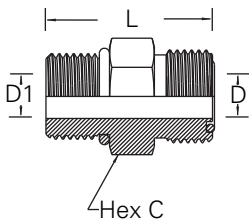
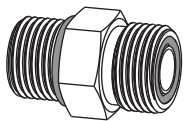
Port Size	Female Pipe Thd.	Part Number	Straight Thd B	Hex C	D	L
1/4	1/8	C3269x4x2	7/16-20	9/16	.172	.97
1/4	1/4	C3269x4x4	7/16-20	3/4	.172	1.16
5/16	1/8	C3269x5x2	1/2-20	5/8	.234	.94
3/8	1/4	C3269x6x4	9/16-18	3/4	.297	1.09
3/8	3/8	C3269x6x6	9/16-18	7/8	.281	1.30
3/8	1/2	C3269x6x8	9/16-18	1-1/8	.281	1.44
1/2	1/4	C3269x8x4	3/4-16	7/8	.421	1.06
1/2	3/8	C3269x8x6	3/4-16	7/8	.421	1.22
1/2	1/2	C3269x8x8	3/4-16	1-1/16	.421	1.65
5/8	1/4	C3269x10x4	7/8-14	1	.422	.81
5/8	3/8	C3269x10x6	7/8-14	1	.500	1.25
5/8	1/2	C3269x10x8	7/8-14	1-1/8	.500	1.50
5/8	3/4	C3269x10x12	7/8-14	1-3/8	.500	1.62
3/4	1/2	C3269x12x8	1-1/16-12	1-1/4	.688	1.34
3/4	3/4	C3269x12x12	1-1/16-12	1-3/8	.656	1.66
7/8	3/4	C3269x14x12	1-3/16-12	1-3/8	.718	1.63
1	1/2	C3269x16x8	1-5/16-12	1-1/2	.688	1.00
1	3/4	C3269x16x12	1-5/16-12	1-1/2	.876	1.50
1	1	C3269x16x16	1-5/16-12	1-5/8	.876	1.88
1-1/4	1	C3269x20x16	1-5/8-12	1-7/8	1.080	1.00
1-1/4	1-1/4	C3269x20x20	1-5/8-12	2	1.080	2.00
1-1/2	1-1/2	C3269x24x24	1-7/8-12	2-3/8	1.344	2.00
2	2	C3269x32x32	2-1/2-12	2-7/8	1.781	2.10

Replacement o-ring page L-64.

Adapters, Tube Fittings & Connectors

## Straight Thread O-ring Connector to FOR-SEAL®

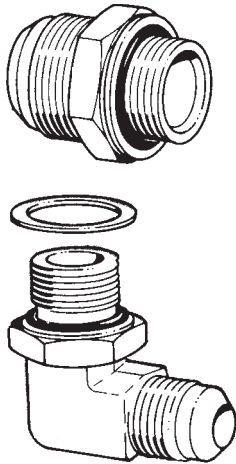
(Ref. SAE No. 520120)



Male Tube O.D.	Port Size	Part Number	Hex C	D	D1	L
1/4	1/4	4315x4	5/8	.172	.172	1.133
1/4	3/8	4315x4x6	11/16	.172	.172	1.202
3/8	1/4	4315x6x4	3/4	.264	.172	1.343
3/8	3/8	4315x6	3/4	.264	.264	1.252
3/8	1/2	4315x6x8	7/8	.378	.264	1.378
3/8	5/8	4315x6x10	1-1/16	.264	.484	1.530
1/2	3/8	4315x8x6	7/8	.378	.264	1.472
1/2	1/2	4315x8	7/8	.378	.378	1.441
1/2	5/8	4315x8x10	1	.378	.484	1.590
1/2	3/4	4315x8x12	1-1/4	.378	.609	1.748
5/8	5/8	4315x10	1-1/16	.484	.484	1.700
3/4	3/4	4315x12	1-1/4	.609	.609	1.918
3/4	1	4315x12x16	1-1/2	.609	.609	1.960
1	3/4	4315x16x12	1-1/2	.812	.609	2.138
1	1	4315x16	1-1/2	.811	.811	1.978
1	1-1/4	4315x16x20	1-7/8	.812	1.709	2.058
1-1/4	1	4315x20x16	1-3/4	1.024	.843	2.278
1-1/4	1-1/4	4315x20	1-7/8	1.024	1.024	2.058
1-1/2	1-1/2	4315x24	2-1/8	1.260	1.260	2.125

Replacement straight o-ring page L-64.

# DIN Connectors



### Typical Application

Used in applications to adapt connections and tubing to male and female swivel 37° JIC flare.

### Material

Carbon steel – SAE 12L14.

### Plating

Zinc Plated

Also metric tubing that can be flared can be adapted to a standard 37° JIC connection by the use of sleeves.

### Sealing Method

Tapered pipe thread, or o-ring, or 37° flare.

### Advantages

Provides an adapter to convert metric ports to 37° JIC allowing the use of standard hose and end fittings.

### Ordering Information

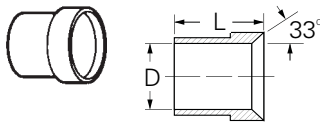
Order individually by Part number.

### Vibration Rating

Fair resistance.

### Sleeve 3-Piece Metric

(Ref. SAE No. 070115)

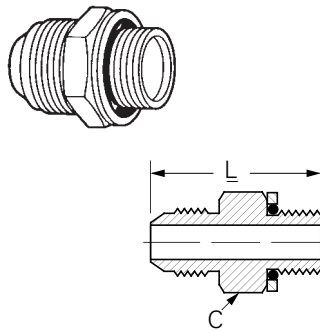


Adapts standard JIC Flare-Twin® fittings for use with metric tubing

Tube O.D. In. Size	Tube O.D. Metric	Part Number	D	L
1/4	6MM	C5165x4x6MM	.241	.41
5/16	8MM	C5165x5x8MM	.320	.44
3/8	10MM	C5165x6x10MM	.399	.50
1/2	12MM	C5165x8x12MM	.478	.56
5/8	14MM	C5165x10x14MM	.556	.66
5/8	15MM	C5165x10x15MM	.596	.66
5/8	16MM	C5165x10x16MM	.636	.66
3/4	18MM	C5165x12x18MM	.717	.68
7/8	20MM	C5165x14x20MM	.793	.76
7/8	22MM	C5165x14x22MM	.866	.76
1	25MM	C5165x16x25MM	.990	.78
1-1/4	30MM	C5165x20x30MM	1.191	.91
1-1/4	32MM	C5165x20x32MM	1.270	.91
1-1/2	38MM	C5165x24x38MM	1.500	1.12

### Male JIC 37° to Male Metric Straight Thread Connector

(Port Per ISO 9974)



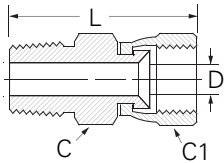
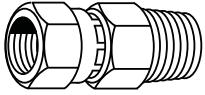
Tube O.D.	Male Thd. Metric	Part Number	L	Hex C
1/4	M10x1.0	MC5315x4x10	1.18	5/8
1/4	M12x1.5	MC5315x4x12	1.22	5/8
1/4	M14x1.5	MC5315x4x14	1.22	3/4
3/8	M14x1.5	MC5315x6x14	1.22	3/4
3/8	M16x1.5	MC5315x6x16	1.32	7/8
1/2	M18x1.5	MC5315x8x18	1.48	15/16
1/2	M22x1.5	MC5315x8x22	1.61	1-1/16
5/8	M20x1.5	MC5315x10x20	1.71	1
3/4	M22x1.5	MC5315x12x22	1.81	1-1/8
3/4	M27x2.0	MC5315x12x27	1.95	1-1/4
1	M33x2.0	MC5315x16x33	2.03	1-5/8
1-1/4	M42x2.0	MC5315x20x42	2.19	2

Replacement o-ring page L-73.

# Metric Connectors

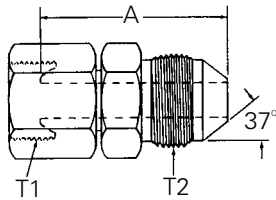
## Female JIC 37° Swivel to Male Metric Taper Pipe Thread

(Pipe Thread Per DIN 3852)



Tube O.D.	Taper Pipe Thd. Metric	Part Number	Hex C	Hex C1	D	L
1/4	M10 x 1.0	M9700x4x6	9/16	9/16	.172	1.25
5/16	M12 x 1.5	M9700x5x8	11/16	5/8	.234	1.54
3/8	M14 x 1.5	M9700x6x10	11/16	11/16	.297	1.60
1/2	M16 x 1.5	M9700x8x12	7/8	7/8	.391	1.78
5/8	M20 x 1.5	M9700x10x14	1	1	.484	1.91
3/4	M24 x 1.5	M9700x12x20	1-1/8	1-1/8	.609	2.04
1	M27 x 2.0	M9700x16x25	1-3/8	1-1/2	.845	2.30
1-1/4	M36 x 2.0	M9700x20x32	1-7/8	2	1.079	2.43

## Metric 24° (DIN 3901/3902 I. Rh)/ 37° Flare



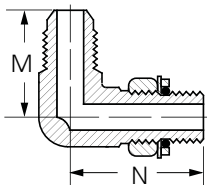
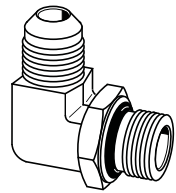
### Part No. 15.163 – (Dash Size)

Dash Size	Tube O.D. mm	inches	Thread T1	Thread T2	A mm	inches
4-4T	6,3	.25	M12 x 1.5	7/16 – 20	34,5	1.36

Adapters, Tube Fittings & Connectors

## 90° Elbow - Male JIC 37° to Male Metric Straight Thread

(For ISO 9974 Port)



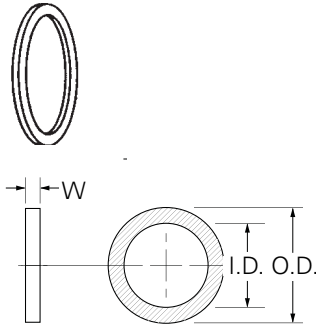
Tube O.D.	Male Thd. Metric	Part Number	M	N
1/4	M10x1.0	MC5515x4x10	.89	1.03
1/4	M12x1.5	MC5515x4x12	.95	1.09
3/8	M14x1.5	MC5515x6x14	1.06	1.25
3/8	M16x1.5	MC5515x6x16	1.14	1.45
1/2	M18x1.5	MC5515x8x18	1.26	1.47
1/2	M22x1.5	MC5515x8x22	1.33	1.70
5/8	M18x1.5	MC5515x10x18	1.41	1.60
5/8	M20x1.5	MC5515x10x20	1.45	1.70
5/8	M22x1.5	MC5515x10x22	1.45	1.70
3/4	M22x1.5	MC5515x12x22	1.66	1.78
3/4	M27x2.0	MC5515x12x27	1.66	1.94
1	M33x2.0	MC5515x16x33	1.81	2.05

Replacement retaining rings and o-ring see page L-73.



# Metric Connectors

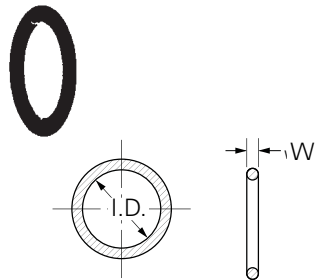
## Metric Retaining Ring



Tube O.D. (mm)	Part Number	Ring I.D. (mm)	Ring O.D. (mm)	W (mm)
10	M7630x10	11.33	14.85	1.00
12	M7630x12	13.72	17.85	1.42
14	M7630x14	15.73	19.85	1.42
16	M7630x16	17.73	21.85	1.42
18	M7630x18	19.73	23.80	1.42
20	M7630x20	21.73	25.85	1.42
22	M7630x22	23.73	27.85	1.42
27	M7630x27	29.44	32.85	1.90
33	M7630x33	35.44	39.85	1.90
42	M7630x42	44.44	49.85	1.90

## Metric O-ring

(For ISO 9974 Port)



Tube O.D.	Part Number	W (mm)	I.D. (mm)
10	M7629x10	1.60	8.10
12	M7629x12	2.40	9.30
14	M7629x14	2.10	11.40
16	M7629x16	2.40	13.30
18	M7629x18	2.40	15.60
20	M7629x20	2.46	18.00
22	M7629x22	2.46	19.80
27	M7629x27	2.95	23.47
33	M7629x33	2.95	29.74
42	M7629x42	3.00	39.20

### Material

Buna N 90 Durometer

### Temperature Range

-40°F to +250°F  
(-40°C to +121°C)

# BSP Connectors

## Typical Application:

Used in applications to adapt connections made to BSP (British Standard Pipe) specifications to male or female swivel SAE 37° flare.

## Sealing Method

Tapered (BSPT) or Parallel Pipe Thread (BSPP), O-ring or JIC 37° flare.

## Material

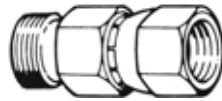
Carbon steel

## Plating

Zinc, with clear trivalent chromate

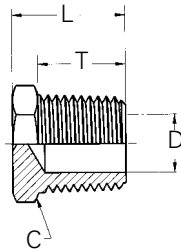
## Advantages

Provides an adapter to convert BSP ports to 37° allowing the use of standard connectors.



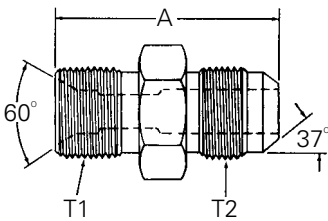
Pipe Size	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
Thread Size	1/8-28	1/4-19	3/8-19	1/2-14	5/8-14	3/4-14	1-11	1-1/4-11

## Hex Head Plug



BSPT Pipe Size	Part Number	Hex C (Mm)	L	T	D Opt. Dia.
1/2	MC3159x8	22	.98	.765	.50

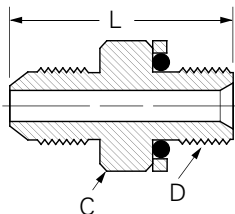
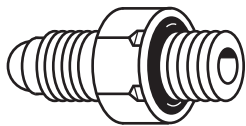
## Male Connector



## Part No. 2063 – (Dash Size)

Dash Size	Tube O.D. mm	inches	Thread T1 (BSPP)	Thread T2	A mm	inches
2-4S	6,3	.25	1/8-28	7/16-20	35,1	1.38
4-4S	6,3	.25	1/4-19	7/16-20	35,1	1.38
4-6S	9,6	.38	1/4-19	9/16-18	35,1	1.38
6-6S	9,6	.38	3/8-19	9/16-18	36,3	1.43
8-10S	16,0	.63	1/2-14	7/8-14	43,9	1.73
12-12S	19,0	.75	3/4-14	1 1/16-12	50,5	1.99
16-16S	25,4	1.00	1-11	1 5/16-12	53,1	2.09

## Male British Standard Parallel Pipe to Male 37° SAE

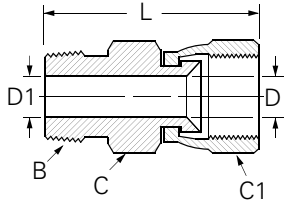
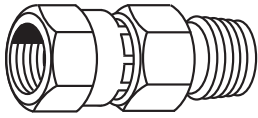


Tube O.D.	BSPP Pipe Size	Part Number	Thread B	BSPP L	Hex C
1/4	1/8	MB5315x4x2	1/8-28	1.10	5/8
1/4	1/4	MB5315x4x4	1/4-19	1.24	3/4
5/16	1/4	MB5315x5x4	1/4-19	1.24	3/4
3/8	1/4	MB5315x6x4	1/4-19	1.25	3/4
3/8	3/8	MB5315x6x6	3/8-19	1.31	7/8
1/2	3/8	MB5315x8x6	3/8-19	1.48	7/8
1/2	1/2	MB5315x8x8	1/2-14	1.67	1-1/8
5/8	3/4	MB5315x10x12	3/4-14	1.83	1-3/8
3/4	3/4	MB5315x12x12	3/4-14	1.93	1-3/8
1	1	MB5315x16x16	1-11	2.20	1-3/4
1-1/4	1-1/4	MB5315x20x20	1-1/4-11	2.32	2

Replacement retaining rings and o-ring page L-76.

# BSP Connectors

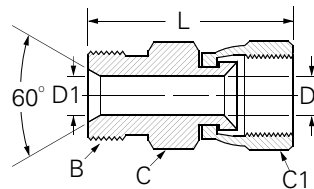
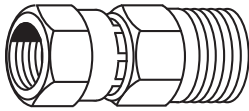
## Female 37° SAE Swivel to Male British Standard Tapered Pipe Thread



Tube O.D.	BSPT Pipe	Part Number Size	BSPT Pipe	Hex Size	Hex C1	D	D1	L
1/4	1/4	M9800x4x4	1/4	9/16	9/16	.172	.281*	1.56
5/16	1/4	M9800x5x4	1/4	11/16	5/8	.234	.281*	1.63
3/8	1/4	M9800x6x4	1/4	11/16	11/16	.297	.281	1.69
1/2	1/4	M9800x8x4	1/4	7/8	7/8	.391	.281	1.87
1/2	3/8	M9800x8x6	3/8	7/8	7/8	.391	.406*	1.87
1/2	1/2	M9800x8x8	1/2	7/8	7/8	.391	.531*	2.06
5/8	1/2	M9800x10x8	1/2	1	1	.484	.531*	2.11
3/4	1/2	M9800x12x8	1/2	1-1/8	1-1/4	.609	.531	2.21
3/4	3/4	M9800x12x12	3/4	1-1/8	1-1/4	.609	.719*	2.24
1	3/4	M9800x16x12	3/4	1-3/8	1-1/2	.845	.719	2.39
1	1	M9800x16x16	1	1-3/8	1-1/2	.845	.938*	2.55
1-1/4	1-1/4	M9800x20x20	1-1/4	1-7/8	2	1.079	1.125*	2.73

\*Optional counterbore.

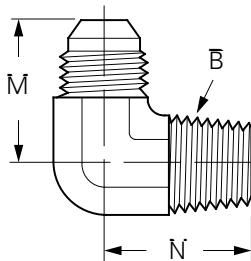
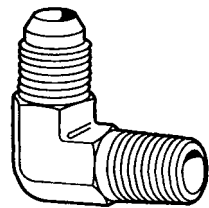
## Female 37° SAE Swivel to Male British Standard Parallel Pipe Thread



Tube O.D.	BSPP Pipe	Part Number Size	BSPT Pipe	Hex Size	Hex C1	D	D1	L
1/4	1/4	M9600x4x4	1/4	9/16	9/16	.172	.198*	1.43
5/16	1/4	M9600x5x4	1/4	5/8	11/16	.234	.198	1.50
3/8	1/4	M9600x6x4	1/4	11/16	11/16	.297	.198	1.56
3/8	3/8	M9600x6x6	3/8	11/16	11/16	.297	.322*	1.66
1/2	3/8	M9600x8x6	3/8	7/8	7/8	.391	.322	1.77
1/2	1/2	M9600x8x8	1/2	7/8	7/8	.391	.448*	1.92
5/8	1/2	M9600x10x8	1/2	1	1	.484	.448	1.97
3/4	3/4	M9600x12x12	3/4	1-1/4	1-1/8	.609	.666*	2.25
1	1	M9600x16x16	1	1-1/2	1-3/8	.845	.885*	2.48
1-1/4	1-1/4	M9600x20x20	1-1/4	2	1-7/8	1.078	1.125*	2.64

\*Optional counterbore.

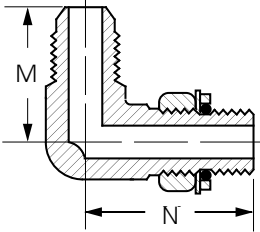
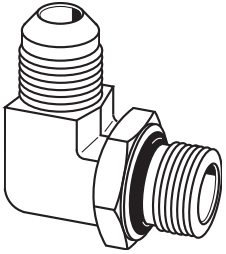
## Male British Standard Tapered Pipe to Male SAE 37° SAE 90° Elbow



Tube O.D.	BSPT Pipe Size	Part Number	BSPT Thread B	M	N	Across Flats
1/4	1/4	MC5405x4x4	1/4-19	1.05	1.09	7/16
5/16	1/4	MC5405x5x4	1/4-19	1.05	1.09	1/2
3/8	1/4	MC5405x6x4	1/4-19	1.06	1.09	9/16
3/8	3/8	MC5405x6x6	3/8-19	1.14	1.22	3/4
1/2	3/8	MC5405x8x6	3/8-19	1.25	1.22	3/4
1/2	1/2	MC5405x8x8	1/2-14	1.33	1.47	7/8
5/8	3/4	MC5405x10x12	3/4-14	1.54	1.59	1-1/16
3/4	3/4	MC5405x12x12	3/4-14	1.66	1.59	1-1/16
1	1	MC5405x16x16	1-11	1.81	1.97	1-5/16
1-1/4	1-1/4	MC5405x20x20	1-1/4-11	2.06	2.38	1-5/8

# BSP Connectors

## Male British Standard Parallel Pipe to Male 37° SAE 90° Elbow

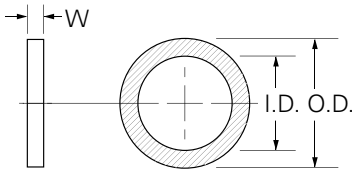


Tube O.D.	BSP Pipe Size	Part Number	BSP Thread	M	N	Across Flats
1/4	1/4	MB5515x4x4	1/4-19	1.05	1.25	9/16
5/16	1/4	MB5515x5x4	1/4-19	.95	1.25	9/16
3/8	1/4	MB5515x6x4	1/4-19	1.06	1.25	9/16
3/8	3/8	MB5515x6x6	3/8-19	1.14	1.45	3/4
1/2	3/8	MB5515x8x6	3/8-19	1.25	1.45	3/4
1/2	1/2	MB5515x8x8	1/2-14	1.33	1.70	7/8
5/8	3/4	MB5515x10x12	3/4-14	1.34	1.94	1-1/16
3/4	3/4	MB5515x12x12	3/4-14	1.66	1.94	1-1/16
1	1	MB5515x16x16	1-11	1.81	2.05	1-5/16
1-1/4	1-1/4	MB5515x20x20	1-14-11	2.06	2.25	1-5/8

Replacement retaining rings and o-ring see below.

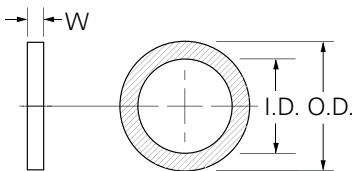
Adapters, Tube Fittings & Connectors

## British Retaining Ring



Tube O.D.	Part Number	Ring	Ring I.D.	W O.D.
1/8	MB7630x2	.45	.60	.044
1/4	MB7630x4	.63	.81	.067
3/8	MB7630x6	.77	.93	.067
1/2	MB7630x8	.91	1.12	.067
5/8	MB7630x10	1.00	1.24	.067
3/4	MB7630x12	1.12	1.37	.067
1	MB7630x16	1.44	1.74	.092
1-1/4	MB7630x20	1.76	2.18	.092
1-1/2	MB7630x24	2.02	2.43	.092

## British O-ring



Tube O.D.	Part Number	W	I.D.
1/8	MB7629x2	.070	.239
1/4	MB7629x4	.103	.424
3/8	MB7629x6	.103	.549
1/2	MB7629x8	.103	.695
5/8	MB7629x10	.103	.818
3/4	MB7629x12	.103	.924
1	MB7629x16	.139	1.171
1-1/4	MB7629x20	.139	1.484

## Material

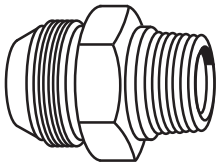
Buna N 90 Durometer

## Temperature Range

-40°F to +250°F  
(-40°C to +121°C)

# Special Adapters

## AC8111 Connector (Steel)

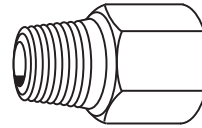


Tube Size	Male Pipe Thread	Part Number
1 (1-5/16-14)	3/4	C9240
1 (1-5/16-14)	1	C9200

**APPLICATION:** PTT Thread 30° tube to male pipe adapter for Diesel Engines.

## Restriction Pipe Adapter (Brass)

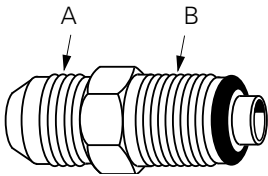
With .0625 orifice



Male Pipe Size	Fem. Pipe Thread	Part Number
1/8	1/8	1512

## JIC 37° Flare to O-ring Port (Steel)

Includes o-ring

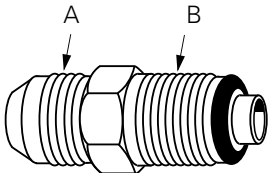


Tube Size	Thread A	Thread B	Part Number
1/4	7/16-20	7/16-24	41157x4
3/8	9/16-18	5/8-18	41157x6
1/2	3/4-16	3/4-16	41157x8
5/8	7/8-14	7/8-14	41157x10
3/4	1-1/16-12	1-1/16-16	41157x12

Includes o-ring.

## JIC 37° Flare to Metric O-ring Port Adapter (Steel)

Includes o-ring

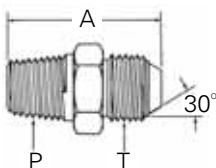


Tube Size	Thread A	Thread B	Part Number
3/8	9/16-18	M14x1.5	M41157x6x14
3/8	9/16-18	M16x1.5	M41157x6x16
3/8	9/16-18	M18x1.5	M41157x6x18

Includes o-ring.

**Application:** GM power steering with Saginaw steering and rack and pinion steering systems

## Male Pipe to 30° Flare



### Part No. 2004 - (Dash Size)

Dash Size	Tube O.D.		Thread P (nptf)	Thread T	A	
	mm	inches			mm	inches
16-16S	25,4	1.00	1 - 11 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub> - 14	51,6	2.03

# Steel Flareless

Ermeto Connectors

## Typical Application:

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

## Pressure

See chart below

## Sealing Method

3-piece bite-type

## Vibration Rating

Excellent resistance

## Material

Carbon steel

## Used With

Aluminum, hard or half-hard copper, steel, stainless steel, monel, titanium and heavy wall tubing that cannot be flared.

## Advantages

No tube flaring. Used with extra heavy wall tubing. Broad selection of styles and sizes.

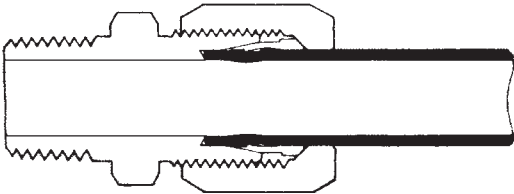
## Conformance

Meets ASA, ASME, SAE, and MS specifications and standards.

## Ordering Information

Connectors are ordered as complete assemblies. To order bodies only (less nut and sleeve), prefix Part number with the letter "B." Example: B7205x4. Order nuts and sleeves separately by Part number.

**Label Set:** FS-1600



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	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

## Preset with Preset Tool:

(Preset Tools are listed on page N-76.)

- 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 as shown in Table 1, page N-80.

Preset in Fitting Body

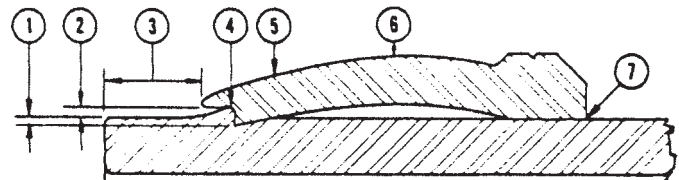
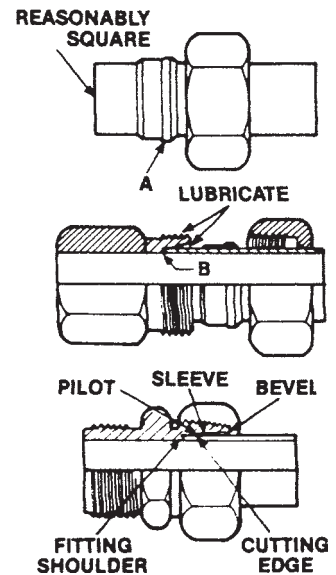
- Follow same procedure as when presetting with preset tool. Once the fitting nut has been turned the proper number of turns past ring grip, the fitting assembly is complete and ready for use.

## ⚠ WARNING

Follow the installation procedures below with care to ensure proper installation of Ermeto Connectors.

## Installation:

- After sleeve and nut have been preset on the tubing and checked as described, the assembly is ready for installation into the Ermeto connector 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 the assembly.



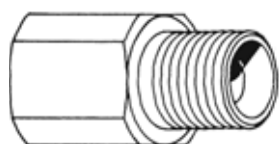
# Steel Flareless

## Ermeto Connectors

**TABLE 1**

Number of Additional Turns from “Ring Grip” for Hand Presetting Operation – Ermeto Sleeve

<b>Tube Size</b>	<b>**Tube Material</b>	<b>.018</b>	<b>.022</b>	<b>.028</b>	<b>.035</b>	<b>.049</b>	<b>.065</b>	<b>.083</b>	<b>.095</b>	<b>.109</b>	<b>.120</b>
2	C1010	1-1/6	1-1/6	1-1/6	1-1/6						
	MIL T 8504	1-1/6	1-1/6	1-1/6	1-1/6						
3	C1010	1-1/6	1-1/6	1-1/6	1						
	MIL T 8504	1-1/6	1-1/6	1-1/6	1						
4	C1010			1-1/6	1-1/6	1-1/6	1				
	MIL T 8504			1-1/6	1	1	5/6				
5	C1010			1-1/6	1-1/6	1-1/6	1				
	MIL T 8504			1-1/6	1-1/6	1	1				
6	C1010				1-1/6	1-1/6	1	1			
	MIL T 8504				1-1/6	1	5/6	5/6			
8	C1010				1-1/6	1-1/6	1	1	1		
	MIL T 8504				1-1/6	1	5/6	5/6	5/6		
10	C1010					1-1/6	1	5/6	5/6	5/6	5/6
	MIL T 8504					1-1/6	1	5/6	5/6		
12	C1010					1	1	5/6	5/6	5/6	5/6
	MIL T 8504					1-1/6	1	5/6	5/6	5/6	5/6
16	C1010					1-1/6	1-1/6	5/6	5/6	5/6	5/6
	MIL T 8504					1-1/6	1-1/6	5/6	5/6	5/6	5/6
20	C1010					1-1/6	1	1	1	5/6	5/6
	MIL T 8504					1	1	1	1	5/6	5/6
24	C1010										
	MIL T 8504								1	1	1
32	C1010										
	MIL T 8504								1	1	1



Presetting tools provide a more accurate and positive leakproof method of coupling flareless Connectors. Presetting steel Ermeto sleeves on tubing prior to the fitting assembly will permit the maximum high performance obtainable with flareless Connectors. Due to possible thread galling the use of presetting tools is required when stainless steel Connectors are to be assembled. See page N-76 for T-570-1 hydraulic preset machine.

### Ermeto Hand-Presetting Tools 7000 Series

<b>Part Number</b>	<b>Seat Size</b>	<b>Tube O.D. (Inches)</b>	<b>Thread Size</b>
T-7002	2	1/8	5/16-24
T-7003	3	3/16	3/8-24
T-7004	4	1/4	7/16-20
T-7005	5	5/16	1/2-20
T-7006	6	3/8	9/16-18
T-7008	8	1/2	3/4-16
T-7010	10	5/8	7/8-14
T-7012	12	3/4	1-1/16-12
T-7016	16	1	-5/16-12
T-7020	20	1-1/4	1-5/8-12
T-7024	24	1-1/2	1-7/8-12
T-7032	32	2	2-1/2-12

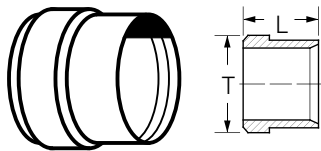


# Steel Connectors

Steel Flareless, Ermeto Connectors

## Sleeve

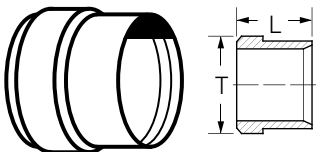
(Ref. SAE No. 080115B)



Tube O.D.	Part 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

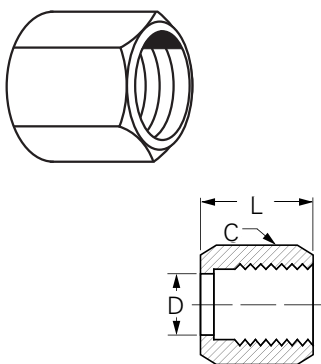
(For use with diesel nuts only)



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

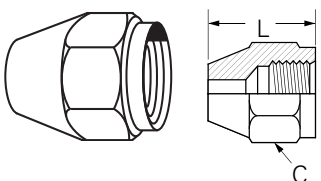
## Nut

(Ref. SAE No. 080110)



Tube O.D.	Part 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	Part 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

Adapters, Tube Fittings & Connectors

L

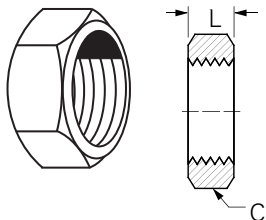


# Steel Connectors

## Steel Flareless, Ermeto Connectors

### Bulkhead Nut

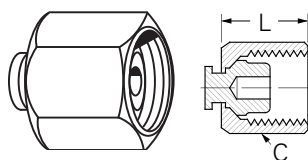
(Ref. SAE No. 080118)



Tube O.D.	Part 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

### Cap

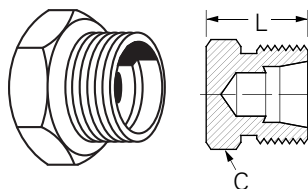
(Ref. SAE No. 080112)



Tube O.D.	Part 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

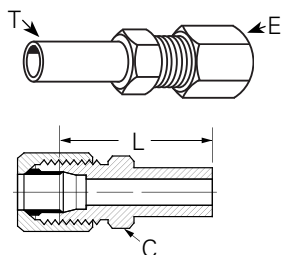
(Ref. SAE No. 080109)



Tube O.D.	Part 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

(Ref. SAE No. 080123)



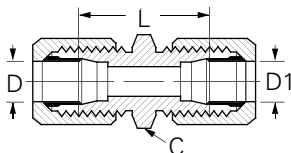
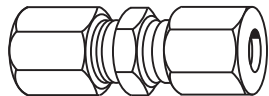
Body Size T	Tube Size E	Part Number	Hex C	L
3/8	1/4	7015x6x4	1/2	1.61
1/2	1/4	7015x8x4	9/16	1.73
1/2	3/8	7015x8x6	5/8	1.77
5/8	1/2	7015x10x8	13/16	1.96
3/4	3/8	7015x12x6	13/16	1.93
3/4	1/2	7015x12x8	13/16	2.03
1-1/4	1	7015x20x16	1-3/8	2.28

# Steel Connectors

Steel Flareless, Ermeto Connectors

## Small Hex Union

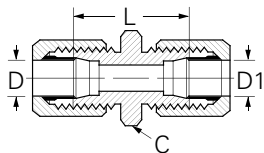
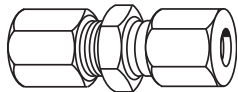
(Ref. SAE No. 080101)



Tube O.D.	Tube O.D.	Part 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

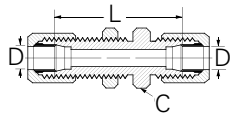
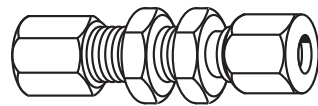
(Ref. SAE No. 080119)



Tube O.D.	Tube O.D.	Part 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

## Bulkhead Union

(Ref. SAE No. 080601)



Tube O.D.	Part 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

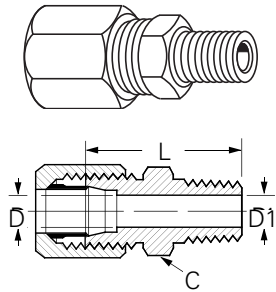
For bulkhead nuts see page L-81.

# Steel Connectors

## Steel Flareless, Ermeto Connectors

### Male Connector

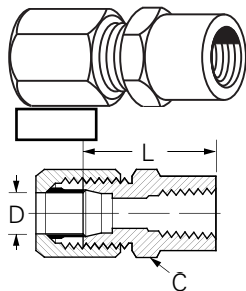
(Ref. SAE No. 080102)



Tube O.D.	Male Pipe Thread	Part 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	1/8	7205x4	1/2	.203	.188	1.12
1/4	1/4	7205x4x4	9/16	.203	.281	1.32
1/4	3/8	7205x4x6	3/4	.203	.406	1.33
1/4	1/2	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

(Ref. SAE No. 080103)



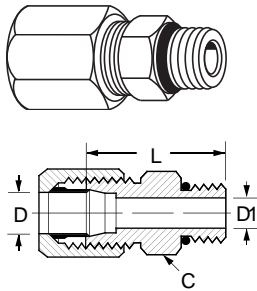
Tube O.D.	Fem. Pipe Thread	Part Number	Hex C	D	L
1/8	1/8	7255x2	9/16	.093	1.05
3/16	1/8	7255x3	9/16	.125	1.08
1/4	1/8	7255x4	9/16	.203	1.09
1/4	1/4	7255x4x4	3/4	.203	1.20
5/16	1/8	7255x5	9/16	.234	1.08
3/8	1/4	7255x6	3/4	.281	1.31
3/8	3/8	7255x6x6	7/8	.281	1.40
1/2	1/4	7255x8x4	7/8	.422	1.38
1/2	3/8	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

# Steel Connectors

Steel Flareless, Ermeto Connectors

## Straight Thread O-Ring Connector

(Ref. SAE No. 080120)



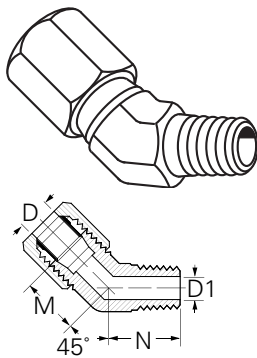
Replacement o-rings page L-64.

Tube O.D.	Port Size	Part 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	1-1/2	.875	1.82	.656
1	1	7315x16	1-1/2	.875	1.82	–
1-1/4	1-1/4	7315x20	1-7/8	1.093	1.90	–
1-1/2	1-1/2	7315x24	2-1/8	1.344	1.97	–
2	2	7315x32	2-3/4	1.813	2.13	–

Adapters, Tube Fittings & Connectors

## 45° Male Elbow

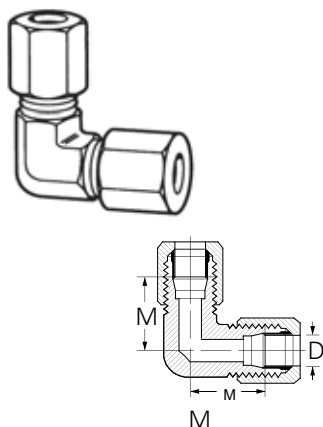
(Ref. SAE No. 080302)



Tube O.D.	Male Pipe Thread	Part 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

(Ref. SAE No. 080201)



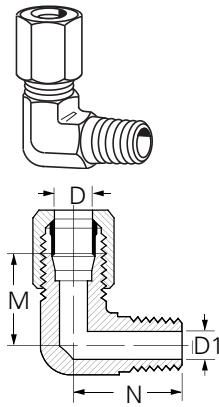
Tube O.D.	Part Number	D	M	Across Flats
1/4	7505x4	.203	.89	7/16
5/16	7505x5	.234	.95	1/2
3/8	7505x6	.281	1.05	9/16
1/2	7505x8	.422	1.25	3/4
5/8	7505x10	.500	1.42	7/8
3/4	7505x12	.656	1.58	1-1/16
7/8	7505x14	.718	1.66	1-5/16
1	7505x16	.875	1.73	1-5/16
1-1/4	7505x20	1.093	1.89	1-5/8
1-1/2	7505x24	1.346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

# Steel Connectors

## Steel Flareless, Ermeto Connectors

### 90° Male Elbow

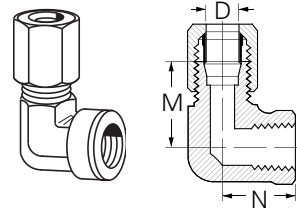
(Ref. SAE No. 080202)



Tube O.D.	Male Pipe Thread	Part 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

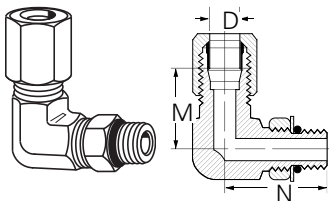
(Ref. SAE No. 080203)



Tube O.D.	Fem. Pipe Thread	Part 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

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

(Ref. SAE No. 080220)



Tube O.D.	Port Size	Part 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

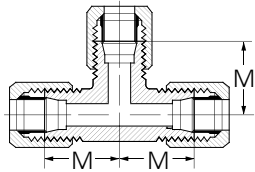
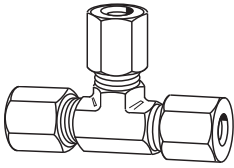
Replacement o-rings page L-64.

# Steel Connectors

Steel Flareless, Ermeto Connectors

## Union Tee

(Ref. SAE No. 080401)

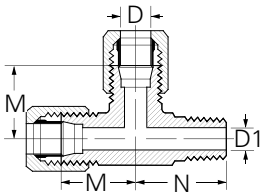
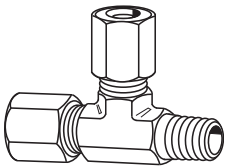


Tube O.D.	Part Number	D	M	Across Flats
3/16	7705x3	.125	.83	7/16
1/4	7705x4	.203	.89	7/16
5/16	7705x5	.234	.95	9/16
3/8	7705x6	.281	1.05	9/16
1/2	7705x8	.422	1.25	3/4
5/8	7705x10	.500	1.42	7/8
3/4	7705x12	.656	1.58	1-1/16
7/8	7705x14	.718	1.62	1-5/16
1	7705x16	.875	1.73	1-5/16

Adapters, Tube Fittings & Connectors

## Male Run Tee

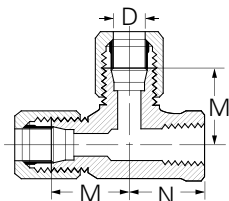
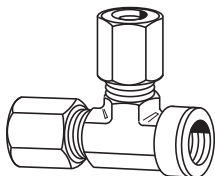
(Ref. SAE No. 080424)



Tube O.D.	Male Pipe Thread	Part 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)



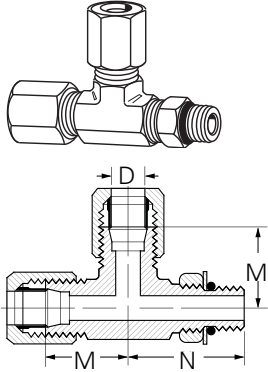
Tube O.D.	Fem. Pipe Thread	Part Number	D	M	N	Across Flats
1/4	1/8	7805x4	.203	.89	.66	9/16
1/4	1/4	7805x4x4x4	.203	1.03	.88	3/4
3/8	1/4	7805x6	.281	1.05	.88	3/4
1/2	3/8	7805x8	.422	1.23	1.02	7/8
5/8	1/2	7805x10	.500	1.42	1.23	1-1/16
3/4	3/4	7805x12	.656	1.58	1.36	1-5/16

# Steel Connectors

Steel Flareless, Ermeto Connectors

## Straight Thread O-Ring Run Tee

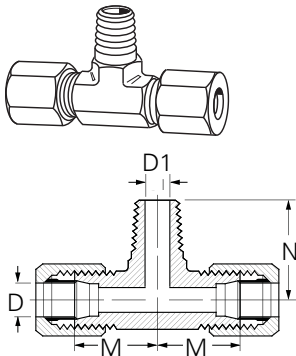
(Ref. SAE No. 080428)



Tube O.D.	Port Size	Part 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

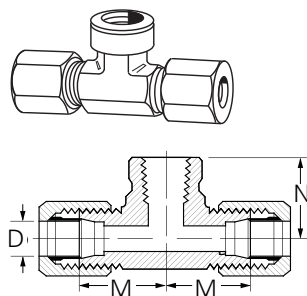
(Ref. SAE No. 080425)



Tube O.D.	Male Pipe Thd.	Part 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

(Ref. SAE No. 080427)



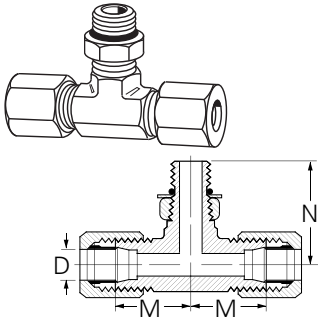
Tube O.D.	Female Pipe Thd.	Part Number	D	M	N	Across Flats
1/4	1/8	7655x4	.203	.89	.66	9/16
1/4	1/4	7655x4x4x4	.203	1.03	.88	3/4
3/8	1/4	7655x6	.281	1.05	.88	3/4
1/2	3/8	7655x8	.422	1.23	1.02	7/8
5/8	1/2	7655x10	.500	1.42	1.23	1-1/16
3/4	3/4	7655x12	.656	1.58	1.36	1-5/16
7/8	3/4	7655x14	.718	1.62	1.42	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

# Steel Connectors

Steel Flareless, Ermeto Connectors

## Straight Thread O-Ring Branch Tee

(Ref. SAE No. 080429)

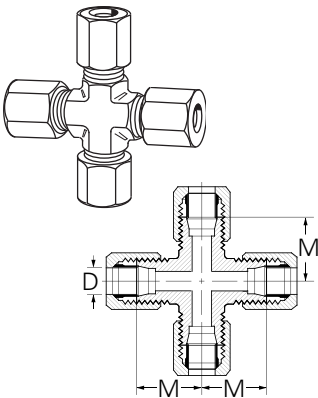


Tube O.D.	Port Size	Part Number	D	M	N	Across Flats
1/4	1/4	7715x4	.203	.89	1.03	7/16
3/8	3/8	7715x6	.281	1.05	1.25	9/16
1/2	1/2	7715x8	.422	1.25	1.45	3/4

Replacement o-rings see below.

## Cross

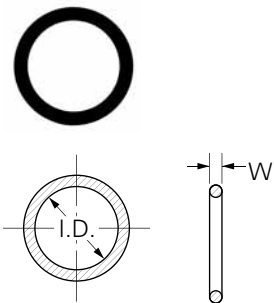
(Ref. SAE No. 080501)



Tube O.D.	Part 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

\*Brazed construction.

## 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.	Part 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

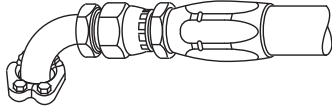


# Steel Connectors

## Split Flange Adapters and Kits

### Adapter Used With Standard Female Swivel End

(Ref. SAE Code 61)



Weatherhead split flange adapter eliminates the need for special hose ends. Interconnect pumps and valves with SAE flange outlets using low-cost standard hose assemblies to replace equipment hose assembly.

**Material**  
Low carbon steel

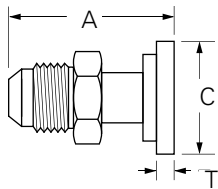
**Plating**  
Zinc, with clear Trivalent Chromate

**Pressure**  
Code 61 – 3000 PSI working pressure (32 sizes 2500 PSI W.P.).

**Label Set**  
FS-300

**Note:**  
See page N-53 for hydraulic o-ring assortment.

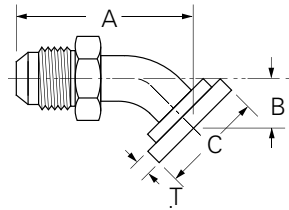
### Straight



Tube Size	Code 61 Flange Size	Part Number	A	Dia. C	T	Thread Size
1/2	1/2	50008	2.66	1.188	.265	3/4-16
1/2	3/4	50008x12	2.72	1.500	.265	3/4-16
3/4	3/4	50012	2.62	1.500	.265	1-1/16-12
1	1	50016	2.74	1.750	.315	1-5/16-12
1	1-1/4	50016x20	2.74	2.000	.315	1-5/16-12
1-1/4	1	50020x16	2.80	1.750	.315	1-5/8-12
1-1/4	1-1/4	50020	3.27	2.000	.315	1-5/8-12
1-1/2	1-1/2	50024	3.42	2.375	.315	1-7/8-12
2	2	50032	4.24	2.812	.375	2-1/2-12

O-ring not included.

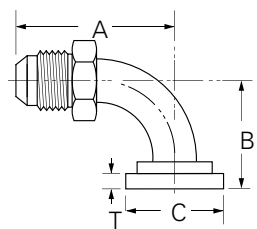
### 45° Elbow



Tube Size	Code 61 Flange Size	Part Number	A	B	Dia. C	T	Thread Size
1/2	1/2	54508	2.91	.78	1.188	.265	3/4-16
1/2	3/4	54508x12	2.93	.84	1.500	.265	3/4-16
3/4	3/4	54512	3.28	1.03	1.500	.265	1-1/16-12
1	1	54516	3.61	1.06	1.750	.315	1-5/16-12
1	1-1/4	54516x20	3.61	1.06	2.000	.315	1-5/16-12
1-1/4	1	54520x16	3.67	1.06	1.750	.315	1-5/8-12
1-1/4	1-1/4	54520	3.86	1.15	2.000	.315	1-5/8-12
1-1/2	1-1/2	54524	4.61	1.41	2.375	.315	1-7/8-12
2	2	54532	6.04	2.00	2.812	.375	2-1/2-12

O-ring not included.

### 90° Elbow



Tube Size	Code 61 Flange Size	Part Number	A	B	Dia. C	T	Thread Size
1/2	1/2	59008	2.54	1.63	1.188	.265	3/4-16
1/2	3/4	59008x12	2.54	1.69	1.500	.265	3/4-16
3/4	3/4	59012	2.81	2.13	1.500	.265	1-1/16-12
1	1	59016	3.41	2.38	1.750	.315	1-5/16-12
1	1-1/4	59016x20	3.41	2.38	2.000	.315	1-5/16-12
1-1/4	1	59020x16	3.46	2.38	1.750	.315	1-5/8-12
1-1/4	1-1/4	59020	3.71	2.62	2.000	.315	1-5/8-12
1-1/2	1-1/2	59024	4.33	3.12	2.375	.315	1-7/8-12
2	2	59032	5.71	4.50	2.812	.375	2-1/2-12

O-ring not included.

# Steel Connectors

## Split Flange Adapters and Kits

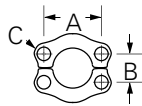
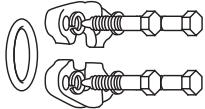
### Split Flange Kits – SAE Standard

Pressure Series (Ref. SAE Code 61) SAE J518

**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 specification SAE J515 Type CH (See page L-3 for o-ring compound and application chart).



Included in kit

Nominal Flange Size	Part Number Complete Kit	Flange Halves 2 Req'd.	O-Ring	Bolts	Lock Washer	A	B	C	Bolt Torque Range Lb. - In.
1/2	SFK-08	8x251	8x252	8x853	8x254	1.50	.69	11/32	175-225
3/4	SFK-12	12x251	12x252	12x853	12x254	1.88	.88	13/32	250-350
1	SFK-16	16x251	16x252	12x853	12x254	2.06	1.03	13/32	325-425
1-1/4	SFK-20	20x251	20x252	20x853	20x254	2.31	1.19	15/32	425-550
1-1/2	SFK-24	24x251	24x252	24x853	24x254	2.75	1.41	17/32	550-700
2	SFK-32	32x251	32x252	24x853	24x254	3.06	1.69	17/32	650-800

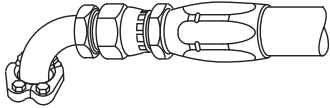
Flanges conform to SAE J518.

# Steel Connectors

## Split Flange Adapters and Kits

### Adapter Used With Standard Female Swivel End

(Ref. SAE Code 62)



Eaton split flange adapter eliminates the need for special hose ends. Interconnect pumps and valves with SAE flange outlets using low-cost standard hose assemblies to replace original equipment hose assembly.

**Material**  
Carbon steel

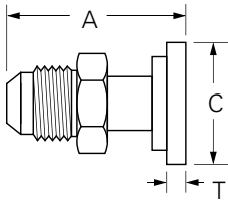
**Plating**  
Zinc, with clear Trivalent Chromate

**Pressure**  
Code 62 – 6000 PSI working pressure.

**Label Set:**  
FS-300

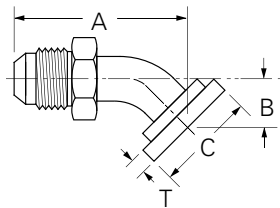
**Note:**  
See page N-53 for hydraulic o-ring assortment.

### Straight



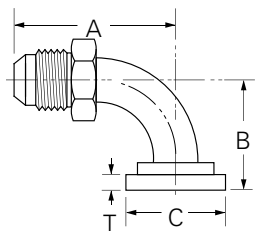
Tube Size	Code 62 Flange Size	Part Number	A	Dia. C	T	Thread Size
1/2	1/2	60008	2.32	1.25	.305	3/4-16
3/4	3/4	60012	2.64	1.62	.345	1-1/16-12
1	1	60016	3.44	1.88	.375	1-5/16-12
1-1/4	1-1/4	60020	3.97	2.12	.405	1-5/8-12
1-1/2	1-1/2	60024	4.97	2.50	.495	1-7/8-12
2	2	60032	5.22	3.12	.495	2-1/2-12

### 45° Elbow



Tube Size	Code 62 Flange Size	Part Number	A	B	Dia. C	T	Thread Size
1/2	1/2	64508	2.12	1.10	1.25	.305	3/4-16
3/4	3/4	64512	2.56	1.32	1.62	.345	1-1/16-12
1	1	64516	3.34	1.43	1.88	.375	1-5/16-12
1-1/4	1-1/4	64520	3.49	1.87	2.12	.405	1-5/8-12
1-1/2	1-1/2	64524	6.31	3.07	2.50	.495	1-7/8-12
2	2	64532	8.19	3.74	3.12	.495	2-1/2-12

### 90° Elbow



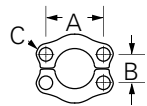
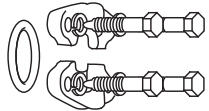
Tube Size	Code 62 Flange Size	Part Number	A	B	Dia. C	T	Thread Size
1/2	1/2	69008	1.57	2.11	1.25	.305	3/4-16
3/4	3/4	69012	1.93	2.56	1.62	.345	1-1/16-12
1	1	69016	2.35	2.90	1.88	.375	1-5/16-12
1-1/4	1-1/4	69020	2.91	3.46	2.12	.405	1-5/8-12
1-1/2	1-1/2	69024	5.44	6.53	2.50	.495	1-7/8-12
2	2	69032	7.38	8.22	3.12	.495	2-1/2-12

# Steel Connectors

## Split Flange Adapters and Kits

### Split Flange Kits – SAE High Pressure Series

(Ref. SAE Code 62) SAE J518



### 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 specifications SAE J515 Type CH (See page L-3 for o-ring compound and application chart).

### Note:

Code 62 split flange kits cannot be used with Thick Flange™ Hose Ends. Use existing split flanges.

Included in kit

Nominal Flange Size	Part Number Complete Kit	Flange Halves 2 Req'd.	O-Ring	Bolts	Lock Washer	A	B	C	Bolt Torque Range Lb. - In.
1/2	SFK62-8	8x262	8x252	8x853	8x254	1.57	.72	5/16	175-225
3/4	SFK62-12	12x262	12x252	12x863	12x254	2.00	.94	13/32	300-400
1	SFK62-16	16x262	16x252	12x863	12x254	2.25	1.09	15/32	500-600
1-1/4	SFK62-20	20x262	20x252	20x863	20x254	2.63	1.25	17/32	750-900
1-1/2	SFK62-24	24x262	24x252	24x863	24x264	3.12	1.44	21/32	1400-1600
2	SFK62-32	32x262	32x252	24x863	24x264	3.81	1.75	25/32	2400-2600

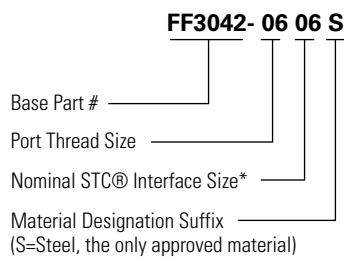
Flanges conform to SAE J518.

## How to Order STC® Adapters

### STC® Adapters:

First, state the base part number, then thread size, then the nominal STC® interface size.

(For adapters add a "0" prefix to interface and port thread sizes 6 and 8.)



List o-ring material designation suffix; omit the "S" suffix if ordering alternate o-ring materials.

Buna-N (nitrile) is the standard o-ring in Female OTC Adapters; no suffix is needed for standard Buna-N.

EPR (Ethylene Propylene Rubber) = -212

Viton™ (Fluoroelastomer) = -213

Neoprene = -352

HNBR = -461

Polyurethane = -523

Example:  
**FF3042-0606-213**

Viton is a registered trademark of E.I. DuPont.

### Seal Elastomer Data

Seal Elastomer	Application Specification	Operating Temperature Range
Buna-N/Nitrile	None	-40°F to +250°F (-40°C to +121°C)
EPR (Ethylene Propylene Rubber)	None	-65°F to +300°F (-55°C to +150°C)
Viton	MIL-R-25897	-15°F to +400°F (-25°C to +205°C)
Neoprene	None	-65°F to +300°F (-55°C to +150°C)
HNBR (Hydrogenated Nitrile Rubber)	None	-40°F to +300°F (-40°C to +150°C)
Polyurethane*	None	-40°F to +250°F (-40°C to +121°C)

#### Note:

Even though the seal temperature range can go below -40°F (-40°C) and/or above +300°F (+150°C), the temperature range of STC® is -40°F to +300°F (-40°C to +150°C), due to the fact that the release sleeve is made out of HNBR.

\* -04 STC® only comes with a polyurethane internal seal.

## Leak-Free Connections in a Snap

### Design Features

- Positive round-wire style latching mechanism
- Swivels for installation (in absence of pressure)
- Low profile; compact design
- Elastomeric o-ring seal – available in many materials
- Capable of direct porting into valve blocks or manifolds
- Dual purpose dust seal/ release sleeve
- Simple stamped release tool for disconnecting

### Benefits

- Fast reliable one-hand connections requiring no assembly tools
- Eliminates cross-threading, over or undertorquing, and hose twisting
- Installs easily in confined areas
- Zero leak performance per SAE J1176
- Direct porting eliminates adapters to maximize cost savings
- Resists external contamination
- Allows easy disconnection with release tool

## Operating Characteristics

Interface Size	Maximum Operating Pressure		Minimum Burst Pressure		Vacuum	
	psi	Bar	psi	Bar	in./Hg.	mm/Hg.
1/4"	6,000	414	24,000	1,655	29.5	750
3/8"	5,000	345	20,000	1,380	29.5	750
1/2"	4,250	295	17,000	1,175	29.5	750
5/8"	4,000	275	16,000	1,100	29.5	750
3/4"	4,000	275	16,000	1,100	29.5	750
1"	4,000	275	16,000	1,100	29.5	750

## Technology Comparison

	Threaded fittings	STC connectors
Assembly tools required	•	
Torque sensitive	•	
Limited reusability	•	
Virtually zero leakage		•
Fast, reliable connections		•
Ease of installation in confined areas – improved ergonomics		•
Ease of orienting hose ends		•
Compact design, install and remove in limited access areas		•

## What You Should Know About STC® Connectors

1. The STC® connection is not recommended for use in swivel applications. Rotation should be limited to assembly and disassembly when zero pressure is present.
2. The o-ring seal determines the temperature range and fluid compatibility of the STC® connection except when exceeding the release sleeve operating temperature of 300°F.
3. Disconnection of the STC® connection should be limited to situations where there is no pressure present.
4. Installation of the male STC® connector must be made straight into the adapter and not at an angle. Misalignment during the connection results in a higher connect force.

If the release sleeve is damaged during the connection or disconnection of the STC® connection, the male portion must be replaced – premature failure of the STC® connection may result if the replacement is not made.

Do not use the rubber sleeve as leverage to push the male half into the female half of the STC® connection.

5. Applications that involve vibration should be analyzed with the aid of Eaton prior to utilization.

6. After the STC® connection is made, pull on the connection to make sure the male STC® connector is properly inserted into the female STC® connector.

7. The use of clamps is highly recommended for long hose assemblies that utilize STC® connections; the clamp should be positioned close to the STC® connection to prevent its rotation.

8. STC® connection should not be used as a quick disconnect coupling.

9. Do not hold sleeve during assembly.



*For your own safety, do not hold the release sleeve during assembly.*

### **WARNING:**

*Do NOT disconnect STC® connection when under pressure. Failure to observe the foregoing may result in property damage or personal injury.*

# STC® Connectors

## STC® Assembly Method and Verification

### Assembly Method

Align the STC® fitting on the hose assembly with the STC® connector. Push the hose fitting into the mating connector until you feel a definite snap and a solid stop.



**Correct Method**

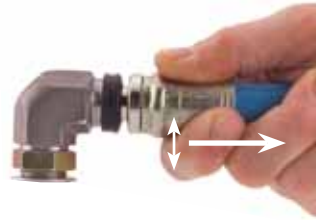


**Incorrect Method**

Do not hold sleeve during assembly

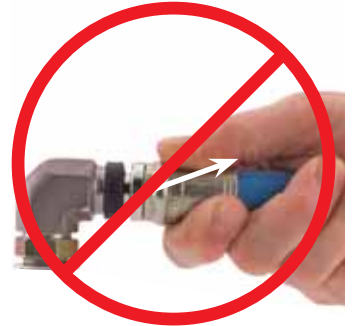
### Assembly Verification

Verify that the STC® connection has been made successfully by pulling on the connection to make sure that the male connector has been properly inserted into female connector. Be sure that the direction of pull is parallel to the axis of the STC® connection.



**Correct Method**

Pulling parallel to the connections axis



**Incorrect Method**

Pulling at an angle to connections axis



**Correct Method**

Pulling on the fitting such that the motion is parallel to the connections axis.

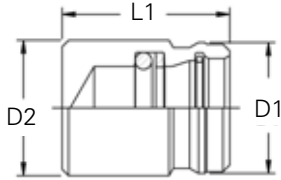


**Incorrect Method**

Subjecting the connection to a side load by pulling on the hose.



**Female STC Cap**

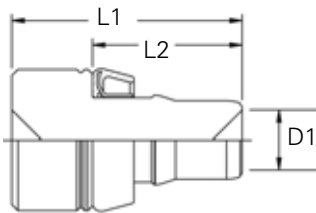


Part Number	D1		L1		D2	
	mm	in.	mm	in.	mm	in.
FF90202-06S	17,0	0.67	18,0	0.71	21,1	0.83
FF90202-08S	20,3	0.80	21,0	0.83	26,8	1.06
FF90202-10S	24,4	0.96	25,0	0.99	33,0	1.30
FF90202-12S	31,3	1.24	32,0	1.26	36,7	1.45
FF90202-16S	39,0	1.54	50,9	2.00	41,0	1.61

**NOTE:**

Female STC cap can hold pressure equal to the operating pressure of the particular STC size.

**Male STC Plug**



Part Number	D1		L1		L2	
	mm	in.	mm	in.	mm	in.
FF90384-06S	6,8	0.27	31,2	1.23	19,2	0.76
FF90384-08S	9,7	0.38	37,5	1.48	24,4	0.96
FF90384-10S	11,5	0.45	42,4	1.68	27,2	1.08
FF90384-12S	15,6	0.62	46,8	1.85	31,6	1.25
FF90384-16S	20,6	0.81	51,9	2.05	36,0	1.42

**NOTE:**

Male STC Plug can hold pressure equal to the operating pressure of the particular STC size.

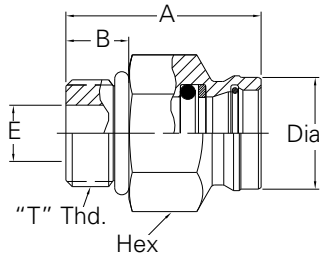


# STC® Adapters

Male SAE O-Ring to Female STC®

STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3042

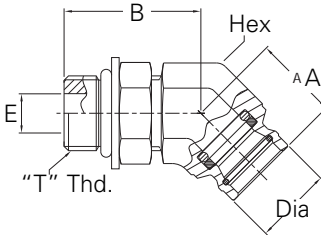


### Straight Part Number

Part Number	A mm	in.	B mm	in.	Dia. mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3042-0404-523	26,8	1.06	9,1	0.36	14,6	0.51	4,4	0.17	16,0	0.633	7/16-20 2A
FF3042-0406S	30,0	1.18	9,1	0.36	17,0	0.67	4,4	0.17	19,0	0.75	7/16-20 2A
FF3042-0606S	28,7	1.13	9,9	0.39	17,0	0.67	7,5	0.30	19,0	0.75	9/16-18 2A
FF3042-0608S	33,7	1.33	9,9	0.39	20,3	0.80	7,5	0.30	21,0	0.83	9/16-18 2A
FF3042-0806S	29,9	1.18	11,1	0.44	17,0	0.67	9,9	0.39	25,0	0.98	3/4-162A
FF3042-0808S	34,5	1.36	11,1	0.44	20,3	0.80	9,9	0.39	24,0	0.94	3/4-162A
FF3042-0810S	36,5	1.44	11,1	0.44	24,4	0.96	10,0	0.39	25,4	1.00	3/4-162A
FF3042-1008S	35,0	1.38	12,7	0.50	20,3	0.80	12,3	0.48	27,0	1.06	7/8-142A
FF3042-1010S	38,0	1.50	12,7	0.50	24,4	0.96	12,3	0.48	27,0	1.06	7/8-142A
FF3042-1012S	44,6	1.76	12,7	0.50	31,3	1.23	12,3	0.48	32,0	1.26	7/8-142A
FF3042-1210S	40,4	1.59	15,1	0.59	24,4	0.96	15,5	0.61	32,0	1.26	1 1/16-12 2A
FF3042-1212S	47,0	1.85	15,1	0.59	31,2	1.23	15,5	0.61	32,0	1.26	1 1/16-12 2A
FF3042-1616S	50,9	2.00	15,1	0.59	41,0	1.61	21,4	0.84	41,0	1.62	1 5/16-12 2A

Adapters, Tube Fittings & Connectors

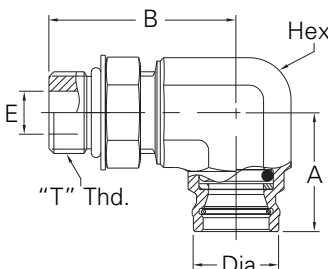
## 45° Adjustable FF3038



### 45° Part Number

Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3038-0406S	18,5	0.73	28,4	1.12	17,0	0.67	4,4	0.17	19,0	0.75	7/16-20 2A
FF3038-0606S	18,5	0.73	30,0	1.18	17,0	0.67	7,5	0.30	19,0	0.75	9/16-18 2A
FF3038-0808S	21,4	0.84	34,5	1.36	20,3	0.80	9,9	0.39	22,0	0.86	3/4-162A
FF3038-1010S	23,1	0.91	42,5	1.67	24,4	0.96	12,3	0.48	27,0	1.05	7/8-142A

## 90° Adjustable FF3046



### 90° Part Number

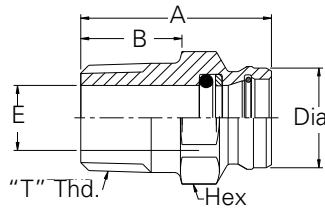
Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3046-0404-523	24,9	0.98	32,8	1.29	14,6	0.57	4,4	0.17	17,0	0.69	7/16-20 2A
FF3046-0406S	27,7	1.09	32,8	1.29	17,0	0.67	4,4	0.17	19,0	0.75	7/16-20 2A
FF3046-0606S	27,7	1.09	35,6	1.40	17,0	0.67	7,5	0.30	19,0	0.75	9/16-18 2A
FF3046-0806S	27,5	1.08	43,2	1.70	17,0	0.67	9,9	0.39	22,0	0.86	3/4-162A
FF3046-0808S	27,5	1.08	43,2	1.70	20,3	0.80	9,9	0.39	22,0	0.86	3/4-162A
FF3046-1008S	30,9	1.22	50,0	1.97	20,3	0.80	12,3	0.48	22,0	0.86	7/8-142A
FF3046-1010S	31,8	1.25	48,2	1.90	24,4	0.96	12,3	0.48	27,0	1.05	7/8-142A
FF3046-1212S	38,1	1.50	55,5	2.18	31,2	1.23	15,5	0.61	32,0	1.25	1 1/16-12 2A
FF3046-1616S	46,4	1.83	63,5	2.50	41,0	1.61	21,5	0.85	41,0	1.62	1 5/16-12 2A

# STC® Adapters

Male NPTF to Female STC®

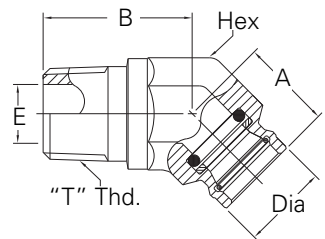
STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3089



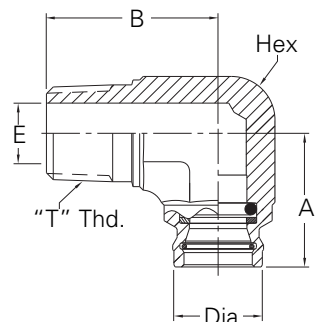
Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3089-0406S	36,8	1.45	14,6	0.57	17,0	0.67	7,1	0.28	19,0	0.75	1/4-18
FF3089-0606S	36,8	1.45	14,6	0.57	17,0	0.67	10,3	0.41	19,0	0.75	3/8-18
FF3089-0608S	38,8	1.53	14,6	0.57	20,3	0.80	10,3	0.41	21,0	0.83	3/8-18
FF3089-0806S	41,6	1.64	19,4	0.76	17,0	0.67	9,7	0.38	22,2	0.88	1/2-14
FF3089-0808S	37,8	1.49	19,4	0.76	20,3	0.80	12,3	0.48	24,0	0.94	1/2-14
FF3089-0810S	43,9	1.73	19,4	0.76	24,4	0.96	13,5	0.53	25,4	1.00	1/2-14
FF3089-1210S	43,9	1.73	19,4	0.76	24,4	0.96	16,2	0.64	27,0	1.06	3/4-14
FF3089-1212S	44,6	1.76	19,4	0.76	31,3	1.23	18,3	0.72	32,0	1.26	3/4-14

## 45° FF3093



45° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3093-0406S	18,8	0.74	26,7	1.05	17,0	0.67	7,1	0.28	19,0	0.75	1/4-18
FF3093-0606S	20,4	0.80	26,9	1.06	17,0	0.67	10,3	0.41	19,0	0.75	3/8-18
FF3093-0808S	25,6	1.01	34,0	1.34	20,3	0.80	13,5	0.53	22,0	0.86	1/2-14
FF3093-0810S	26,2	1.03	34,0	1.34	24,4	0.96	13,5	0.53	27,0	1.06	1/2-14
FF3093-1212S	32,0	1.28	35,0	1.38	31,2	1.23	18,3	0.72	32,0	1.26	3/4-14

## 90° FF3056



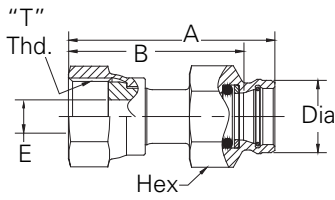
90° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3056-0606S	27,7	1.09	27,5	1.08	17,0	0.67	10,3	0.41	19,0	0.75	3/8-18
FF3056-0608S	28,2	1.11	27,7	1.09	20,3	0.80	10,3	0.41	22,0	0.86	3/8-18
FF3056-0808S	29,8	1.17	38,4	1.51	20,3	0.80	13,5	0.53	22,0	0.86	1/2-14
FF3056-1212S	37,3	1.47	41,9	1.65	31,2	1.23	18,3	0.72	32,0	1.26	3/4-14

# STC® Adapters

Female FOR-SEAL® to Female STC®

STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3236

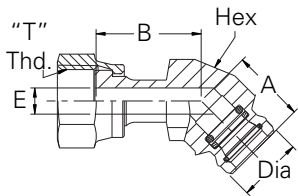


### Straight Part Number

Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3236-0606S	50,8	2.00	18,2	0.72	19,0	0.75	6,7	0.26	19,0	0.75	11/16-16 2B
FF3236-0808S	45,5	1.79	22,1	0.87	20,3	0.80	9,1	0.36	24,0	0.95	1 3/16-16 2B

Adapters, Tube Fittings & Connectors

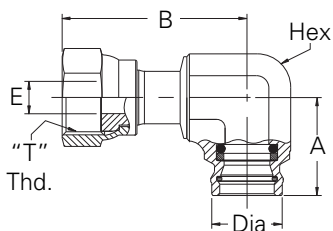
## 45° FF3362



### 45° Part Number

Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3362-0606S	18,8	0.74	26,9	1.06	17,0	0.67	6,7	0.26	19,0	0.75	11/16-16 2B

## 90° FF3246



### 90° Part Number

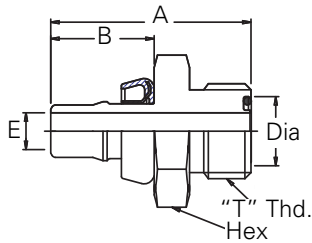
Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3246-0606S	27,7	1.09	40,6	1.60	16,5	0.65	6,7	0.26	19,0	0.75	11/16-16 2B
FF3246-0808S	27,5	1.08	51,9	2.04	19,8	0.78	9,1	0.36	22,0	0.86	13/16-16 2B

# STC® Adapters

Male FOR-SEAL® to Male STC®

STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3318T

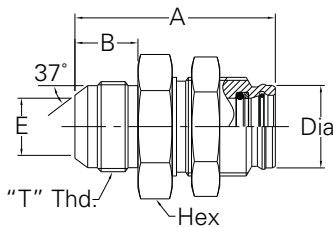


Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3318T0606S	36,5	1.44	18,8	0.74	12,6	0.50	6,7	0.26	24,0	0.95	11/16-16

# STC Adapters

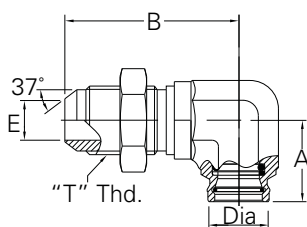
SAE 37° Male Flare to Female STC®, Bulkhead Adapters

## Straight FF3412



Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3412-1612S	73,7	2.90	23,1	0.91	31,2	1.23	20,6	0.81	46,0	1.79	15/16-12.2A

## 90° Elbow FF3044



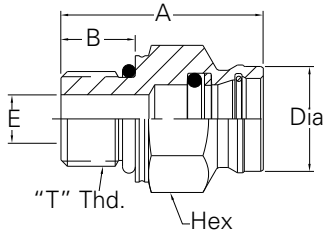
90° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3044-1210S	31,8	1.25	67,8	2.67	24,4	0.96	15,5	0.61	27,0	1.06	1-1/16-12.2A
FF3044-1616S	46,4	1.83	64,5	2.54	41,0	1.61	21,4	0.84	41,0	1.61	1-5/16-12.2A

# STC® Adapters

Male ISO 6149 O-Ring Boss (S-Series) to Female STC®

STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3061

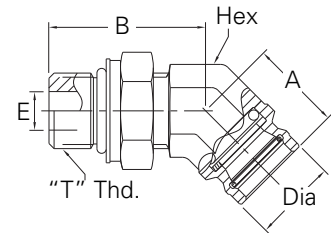


### Straight

Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3061-1006S	29,0	1.14	9,5	0.37	17,0	0.67	3,1	0.12	19,0	0.75	M10x1 6g
FF3061-1206S	30,5	1.20	11,0	0.43	17,0	0.67	4,1	0.16	19,0	0.75	M12x1.5 6g
FF3061-1406S	30,5	1.20	11,0	0.43	17,0	0.67	6,1	0.24	19,0	0.75	M14x1.5 6g
FF3061-1408S	34,8	1.37	11,0	0.43	20,3	0.80	6,1	0.24	21,0	0.82	M14x1.5 6g
FF3061-1606S	32,0	1.26	12,5	0.49	17,0	0.67	7,1	0.28	22,0	0.86	M16x1.5 6g
FF3061-1608S	36,3	1.43	12,5	0.49	20,3	0.80	7,1	0.28	22,0	0.86	M16x1.5 6g
FF3061-1610S	39,5	1.56	12,5	0.49	24,4	0.96	7,1	0.28	25,0	0.98	M16-1.5 6g
FF3061-1806S	33,5	1.32	14,0	0.55	17,0	0.67	9,1	0.36	24,0	0.94	M18-1.5 6g
FF3061-1808S	38,1	1.50	14,0	0.55	20,3	0.80	9,1	0.36	24,0	0.94	M18-1.5 6g
FF3061-1810S	39,4	1.55	14,0	0.55	24,4	0.96	9,1	0.36	25,0	0.98	M18-1.5 6g
FF3061-1812S	50,0	1.97	14,0	0.55	31,3	1.23	9,1	0.36	32,0	1.26	M18-1.5 6g
FF3061-2210S	40,4	1.59	15,0	0.59	24,4	0.96	12,1	0.48	27,0	1.06	M22-1.5 6g
FF3061-2212S	51,0	2.01	15,0	0.59	31,3	1.23	12,1	0.48	32,0	1.26	M22-1.5 6g

Adapters, Tube Fittings & Connectors

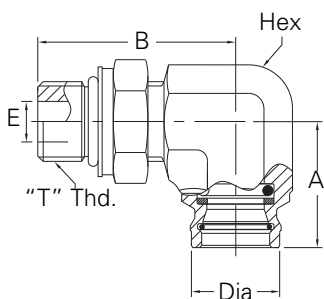
## 45° Adjustable FF3065



### 45°

Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3065-1406S	18,8	0.74	31,4	1.24	17,0	0.67	6,1	0.24	19,0	0.75	M14-1.5 6g
FF3065-1606S	18,8	0.74	33,5	1.32	17,0	0.67	7,1	0.28	19,0	0.75	M16-1.5 6g
FF3065-1808S	21,6	0.85	37,0	1.46	20,3	0.80	9,1	0.36	22,0	0.87	M18-1.5 6g
FF3065-1810S	25,9	1.02	42,5	1.67	24,4	0.96	9,1	0.36	27,0	1.06	M18-1.5 6g
FF3065-2212S	31,2	1.23	44,0	1.73	31,2	1.23	12,1	0.48	32,0	1.25	M22-1.5 6g
FF3065-2712S	30,3	1.19	52,6	2.07	31,0	1.21	15,1	0.60	36,0	1.40	M27-2 6g

## 90° Adjustable FF3067



### 90°

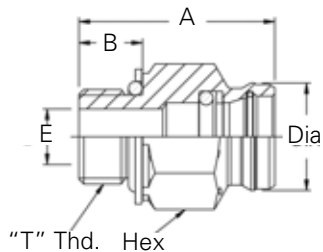
Part Number	A mm	in.	B mm	in.	DIA mm	in.	E mm	in.	HEX mm	in.	"T" THD
FF3067-1406S	24,9	0.98	35,5	1.40	17,0	0.67	6,1	0.24	19,0	0.75	M14-1.5 6g
FF3067-1606S	27,7	1.09	42,9	1.69	17,0	0.67	7,1	0.28	19,0	0.75	M16-1.5 6g
FF3067-1808S	28,2	1.11	44,3	1.74	20,3	0.80	9,1	0.36	22,0	0.87	M18-1.5 6g
FF3067-1810S	33,3	1.31	47,5	1.87	24,4	0.96	9,1	0.36	27,0	1.06	M18-1.5 6g
FF3067-2210S	33,3	1.31	49,0	1.93	24,4	0.96	12,1	0.48	27,0	1.06	M22-1.5 6g
FF3067-2212S	37,6	1.48	50,8	2.00	31,2	1.23	12,1	0.48	32,0	1.25	M22-1.5 6g
FF3067-2712S	37,6	1.48	55,5	2.18	31,2	1.23	15,1	0.60	32,0	1.26	M27-2 6g

# STC® Adapters

O-Ring Boss DIN 3852 Metric Male to Female STC®

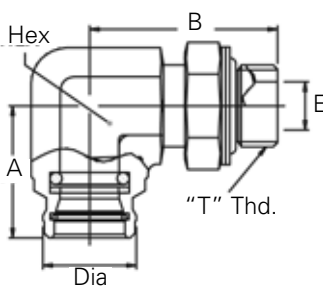
STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3284



Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3284-1608S	37,5	1.48	12,0	0.47	20,3	0.80	8,5	0.34	22,1	0.88	M18-1.5 6g
FF3284-1808S	37,0	1.46	12,0	0.47	20,3	0.80	10,5	0.42	23,8	0.94	M18-1.5 6g
FF3284-2612S	48,4	1.91	15,4	0.61	31,3	1.24	15,0	0.60	36,0	1.42	M18-1.5 6g

## 90° FF3286



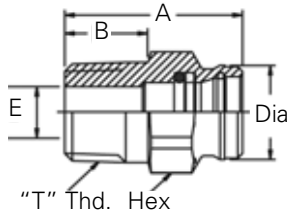
90° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3286-1808S	28.8	(1.14)	40.8	(1.61)	20.3	(0.80)	10.5	(0.42)	22.0	(0.87)	M18-1.5 6g

# STC® Adapters

Male BSPT to Female STC®

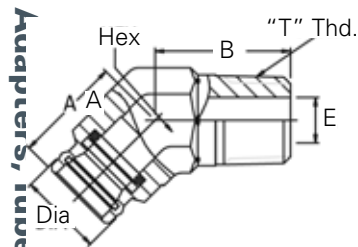
STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3503



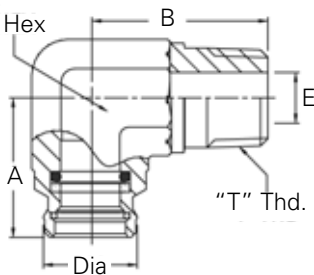
Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3503-0406S	37,1	1.47	13,0	0.51	17,0	0.67	5,0	0.20	19,0	0.75	R 1/4 - 19
FF3503-0606S	36,9	1.46	15,0	0.59	17,0	0.67	8,0	0.32	19,0	0.75	R 3/8 - 19
FF3503-0808S	38,3	1.51	18,0	0.71	20,3	0.80	11,0	0.43	24,0	0.95	R 1/2 - 14
FF3503-1212S	44,7	1.77	20,0	0.79	31,3	1.24	16,0	0.63	32,0	1.26	R 3/4 - 14

## 45° FF3505



45° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3505-0406S	18,7	0.74	13,0	0.51	17,0	0.67	5,0	0.20	19,0	0.75	R 1/4 - 19
FF3505-0606S	20,5	0.81	24,4	0.96	17,0	0.67	8,0	0.32	19,0	0.75	R 3/8 - 18
FF3505-0808S	26,2	1.04	34,0	1.34	20,3	0.80	11,0	0.43	22,0	0.87	R 1/2 - 14
FF3505-1212S	32,6	1.29	36,0	1.42	31,3	1.24	16,0	0.63	32,0	1.26	R 3/4 - 14

## 90° FF3507



90° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3507-0406S	28,1	1.11	27,5	1.08	17,0	0.67	5,0	0.20	19,0	0.75	R 1/4 - 19
FF3507-0606S	28,1	1.11	27,5	1.08	17,0	0.67	5,0	0.20	19,0	0.75	R 3/8 - 19
FF3507-0808S	30,3	1.19	38,4	1.50	20,3	0.80	11,0	0.43	22,0	0.87	R 1/2 - 14
FF3507-1212S	37,3	1.47	41,9	1.65	31,3	1.24	16,0	0.63	32,0	1.26	R 3/4 - 14

Adapters, fittings & connectors

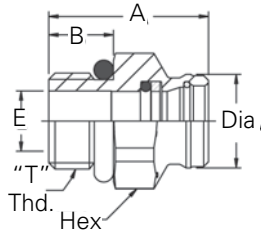


# STC® Adapters

Male BSPP (Special JIS) to Female STC®

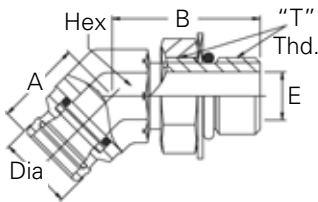
STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3509



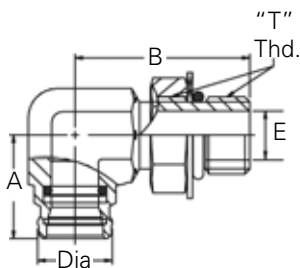
Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3509-0406S	30,1	1.19	12,0	0.47	17,0	0.67	6,1	0.24	19,0	0.75	G1/4 - 19
FF3509-0606S	28,9	1.14	12,0	0.47	17,0	0.67	9,6	0.38	22,0	0.87	G3/8 - 19
FF3509-0808S	34,6	1.37	14,0	0.55	20,3	0.80	13,1	0.52	27,0	1.07	G1/2 - 14
FF3509-1212S	47,6	1.88	16,0	0.24	31,3	1.24	18,1	0.72	32,0	1.26	G3/4 - 14

## 45° FF3511



45° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3511-0406S	16,8	0.66	32,4	1.28	17,0	0.67	6,1	0.24	19,0	0.75	G1/4 - 19
FF3511-0606S	16,8	0.66	35,0	1.38	17,0	0.67	9,6	0.38	19,0	0.75	G3/8 - 19
FF3511-0808S	23,6	0.93	40,2	1.59	20,3	0.80	13,1	0.52	22,0	0.87	G1/2 - 14
FF3511-1212S	29,9	1.18	46,7	1.85	31,3	1.24	18,1	0.72	32,0	1.26	G3/4 - 14

## 90° FF3513



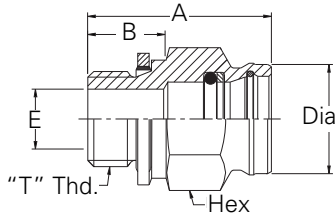
90° Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3513-0406S	28.1	1.11	37.8	1.49	17.0	0.67	6.1	0.24	19.0	0.75	G1/4 - 19
FF3513-0606S	28.1	1.11	39.5	1.56	17.0	0.67	9.6	0.38	19.0	0.75	G3/8 - 19
FF3513-0808S	28.0	1.11	47.5	1.88	20.3	0.80	13.1	0.52	22.0	0.87	G1/2 - 14
FF3513-1212S	38.0	1.50	56.4	2.23	31.3	1.24	18.1	0.72	32.0	1.26	G3/4 - 14

# STC® Adapters

Male BSPP to Female STC® -  
Meets Standard 5005 DIN 3852 Form A

STC® adapters come standard with nitrile O-rings. See page L-108 for seal options.

## Straight FF3218



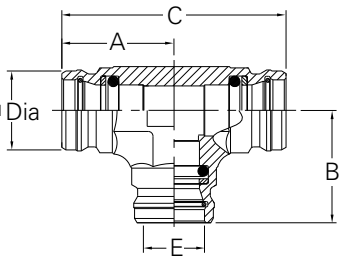
Straight Part Number	A		B		DIA		E		HEX		"T" THD
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
FF3218-0406S	31,8	1.25	14,2	0.56	17,0	0.67	6,1	0.24	19,0	0.75	G6 1/4-19A
FF3218-0606S	32,3	1.27	14,6	0.58	17,0	0.67	9,6	0.38	22,0	0.87	G6 3/8-19A
FF3218-0806S	37,0	1.46	17,2	0.68	17,0	0.67	9,1	0.36	27,0	1.06	G6 1/2-14A
FF3218-0608S	36,1	1.42	14,6	0.58	20,3	0.80	9,6	0.38	22,0	0.87	G6 3/8-19A
FF3218-0808S	38,6	1.52	17,2	0.68	20,3	0.80	12,3	0.48	27,0	1.06	G6 1/2-14A
FF3218-0810S	40,2	1.58	17,2	0.68	24,4	0.96	13,1	0.52	27,0	1.06	G6 1/2-14A
FF3218-1210S	42,2	1.66	19,2	0.75	24,4	0.96	15,5	0.61	32,0	1.26	G6 3/4-14A
FF3218-1212S	44,2	1.74	19,2	0.75	31,2	1.23	18,1	0.71	32,0	1.26	G6 3/4-14A

Adapters, Tube Fittings & Connectors

# STC® Adapters

Tee Adapter Female STC®

## FF3178

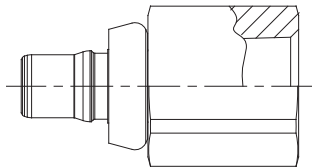


Part Number	A		B		C		DIA		E	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
FF3178-0808S	28,2	1.11	28,2	1.11	56,4	2.22	20,3	0.80	20,3	0.80

# STC® Repair Adapters

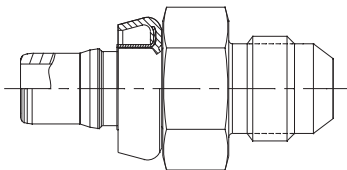
Repair adapters can be used to convert a hose assembly with male pipe, female JIC, or female ORFS hose ends into a STC® female direct port or a STC® female adapter.

## Female Pipe to Male STC®



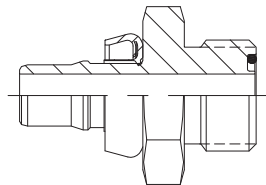
Part Number	Thread	Male STC Size
FF3233-0406S	1/4"-18	-06
FF3233-0606S	3/8"-18	-06
FF3233-0808S	1/2"-14	-08
FF3233-0810S	1/2"-14	-10
FF3233-1212S	3/4"-14	-12
FF3233-1616S	1"-11½	-16

## Male JIC to Male STC®



Part Number	Thread	Male STC Size
FF3227-0406S	7/16"-20	-06
FF3227-0606S	9/16"-18	-06
FF3227-0808S	3/4"-16	-08
FF3227-1010S	7/8"-14	-10
FF3227-1212S	1-1/16"-12	-12
FF3227-1616S	1-5/16"-16	-16

## Male ORFS to Male STC®



Part Number	Thread	Male STC Size
FF3318T0406-458	9/16"-18	-06
FF3318T0606-458	11/16"-16	-06
FF3318T0808-458	13/16"-16	-08
FF3318T1010-458	1"-14	-10
FF3318T1212-458	1-3/16"-12	-12
FF3318T1616-458	1-7/16"-12	-16



## Release Tools

- STC -04 = FF90213-01-04S
- STC -06 = FF90213-06
- STC -08 = FF90213-08
- STC -10 = FF90213-10
- STC -12 = FF90213-12
- STC -16 = FF90213-01-16S



## STC® Repair Kits (Female Halves)

### Includes

- Instructions on repairing STC® (Bulletin JA535)
- Back-up Ring
- Retaining Ring
- O-Ring

### BUNA-N/Nitrile

Size	Part Number
-06	FF12228-06
-08	FF12228-08
-10	FF12228-10
-12	FF12228-12
-16	FF12228-16

### Viton

Size	Part Number
-06	FF12230-06
-08	FF12230-08
-10	FF12230-10
-12	FF12230-12
-16	FF12230-16

### HNBR

Size	Part Number
-06	FF12229-06
-08	FF12229-08
-10	FF12229-10
-12	FF12229-12
-16	FF12229-16

### EPDM

Size	Part Number
-06	FF12231-06
-08	FF12231-08
-10	FF12231-10
-12	FF12231-12
-16	FF12231-16

## STC® Instructional Video

Part number A-MEFI-ME001-E



## Female Ring Part Numbers

### Retaining Rings

Size	Part Number
-06	FF90277-06C
-08	FF90277-08C
-10	FF90277-10C
-12	FF90277-12C
-16	FF90277-16C

### Nitrile O-rings

Size	Part Number
-06	22550-12
-08	22550-112
-10	22550-114
-12	22550-117
-16	22550-215

### Back-up Rings

Size	Part Number
-06	FF90241-12
-08	FF90241-112
-10	FF90241-114
-12	FF90241-117
-16	FF90241-215

### HNBR O-rings

Size	Part Number
-06	FF90467-12
-08	FF90467-112
-10	FF90467-114
-12	FF90467-117
-16	FF90467-215

### Viton O-rings

Size	Part Number
-06	22566-12
-08	22566-112
-10	22566-114
-12	22566-117
-16	22566-215