

# Steel Adapters Introduction

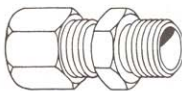
## Materials

All Weatherhead Fittings are available in a variety of alloys on special order.

**Carbon Steel Fittings** – are precision machined from AISI 12L14 carbon steel. Shaped fittings such as elbows and tees with a "C" prefix are made from hi-density forgings. Shaped fittings with a "TF" prefix are brazed. Straight fittings made from bar stock.

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

## Finishes



**Weathercote™** – is an exclusive 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 of .0002" thick, yet providing 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** – Weatherhead fittings are given an Electrolytic coating .0002" thick minimum.

**Stainless Steel** – fittings 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 Weatherhead Stainless Steel Fittings are passivated to remove microscopic foreign particles from the surface of stainless steel as required. 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. ALL Weatherhead fittings and O-rings 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 fittings are recommended for this type of fluid. O-rings 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 poly-glycols. They are non-flammable and serve the same purpose as the synthetic types. **Only Weathercote™ finish fittings 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-rings.

## O-Ring Compound and Application Chart

O-Ring Catalog Number	Base Material of Compound	Petroleum & Mineral Oil-Based Hydraulic Fluids	Straight Synthetic Hydraulic Fluids	Water-Based Hydraulic Fluids (Poly-glycols)	Air	Water	Lubricating Oils	Durometer Hardness	Temperature Range °F
_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°
MF7629x*	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 Weatherhead straight thread fittings are supplied with this type O-ring, unless otherwise specified. (Viton O-Rings are available as special order items only).

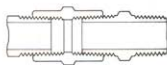
# Steel Adapters

## Forged Fittings and Adaptors

Pipe Fittings 3000 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)	6000	5000	5000	4000	4000	4000	3000	2500	2500	
Female Pipe (NPTF)	5000	5000	4000	3000	2500	2000	1500	1500	1000	

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



## Brazed Fittings (TF)

Pipe Fittings 3000 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)	5000	5000	4000	3000	2500	2000	1150	1000	1000	
Female Pipe (NPTF)	5000	5000	4000	3000	2500	2000	1150	1000	1000	

### Seal-Nut For Male Pipe Thread



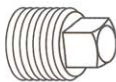
PIPE THREAD	CATALOG NUMBER
1/8	C3059x2
1/4	C3059x4
3/8	C3059x6
1/2	C3059x8
3/4	C3059x12
1	C3059x16

### Hex Socket Pipe Plug



MALE PIPE THREAD	CATALOG NUMBER
1/16	C3169x1
1/8	C3169x2
1/4	C3169x4

### Square Head Plug Pipe Thread



MALE PIPE THREAD	CATALOG NUMBER
1/8	C3179x2
1/4	C3179x4
3/8	C3179x6
1/2	C3179x8
3/4	C3179x12
1	C3179x16

### Hex Head Pipe Plug



MALE PIPE THREAD	CATALOG NUMBER
1/8	C3159x2
1/4	C3159x4
3/8	C3159x6
1/2	C3159x8
3/4	C3159x12
1	C3159x16
1-1/4	C3159x20
1-1/2	C3159x24
2	C3159x32

\*3171x

**Typical Application:** Grease, instrumentation and most hydraulic systems.

**Pressure:** See chart below.

**Vibration Rating:** Fair resistance.

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

**Plating:** Zinc; yellow dichromate finish.

**Temperature:** -65°F to +400°F

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

**Conformance:** Meets SAE specifications.

**Ordering Information:** Each fitting is ordered individually by catalog number.

**NOTE:** See page 377 for hydraulic o-ring assortment.

**LABEL SET:** FS-2000 (Adhesive)

# Steel Adapters

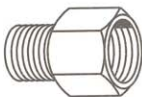
Pipe Bushing  
(Ref. SAE No. 140140)



MALE PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/4	1/8	C3109x4x20
3/8	1/8	C3109x6x20
3/8	1/4	C3109x6x40
1/2	1/8	C3109x8x20
1/2	1/4	C3109x8x40
1/2	3/8	C3109x8x60
3/4	1/4	C3109x12x40
3/4	3/8	C3109x12x60
3/4	1/2	C3109x12x80
1	3/8	C3109x16x6
1	1/2	C3109x16x80
1	3/4	C3109x16x120
1-1/4	1/2	C3109x20x8
1-1/4	3/4	C3109x20x120
1-1/4	1	C3109x20x160
1-1/2	3/4	C3109x24x12
1-1/2	1	C3109x24x16
1-1/2	1-1/4	C3109x24x20
2	1-1/4	C3109x32x20
2	1-1/2	C3109x32x24

\*3121x

Pipe Adapter  
(Ref. SAE No. 140139)



FEM. PIPE THREAD	MALE PIPE THREAD	CATALOG NUMBER
1/4	1/8	C3209x4x20
3/8	1/4	C3209x6x40
1/2	1/8	C3209x8x20
1/2	1/4	C3209x8x40
1/2	3/8	C3209x8x60
3/4	1/4	C3209x12x40
3/4	1/2	C3209x12x80
1	1/2	C3209x16x80
1	3/4	C3209x16x120
1-1/4	1	C3209x20x16
1-1/2	1-1/4	C3209x24x20
2	1-1/2	C3209x32x24

\*3221x

Straight Thread  
O-Ring To Female  
Pipe Adapter



MALE PORT SIZE	FEM. PIPE THREAD	CATALOG NUMBER
1/4	1/8	C3269x4x2
1/4	1/4	C3269x4x4
5/16	1/8	C3269x5x2
3/8	1/4	C3269x6x4
3/8	3/8	C3269x6x6
3/8	1/2	C3269x6x8
1/2	1/4	C3269x8x4
1/2	3/8	C3269x8x6
1/2	1/2	C3269x8x8
5/8	1/4	C3269x10x4
5/8	3/8	C3269x10x6
5/8	1/2	C3269x10x8
5/8	3/4	C3269x10x12
3/4	1/2	C3269x12x8
3/4	3/4	C3269x12x12
7/8	3/4	C3269x14x12
1	1/2	C3269x16x8
1	3/4	C3269x16x12
1	1	C3269x16x16
1-1/4	1	C3269x20x16
1-1/4	1-1/4	C3269x20x20
1-1/2	1-1/2	C3269x24x24
2	2	C3269x32x32

Female Straight Thread  
O-Ring To Male Pipe  
Adapter



FEM. PORT SIZE	MALE PIPE THREAD	CATALOG NUMBER
3/8	3/8	C3239x6x6
3/8	1/2	C3239x6x8
1/2	3/8	C3239x8x6
1/2	1/2	C3239x8x8
5/8	1/2	C3239x10x8

# Steel Adapters

Pipe Coupling  
(Ref. SAE No. 140138)



FEM. PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/8	1/8	C3309x2
1/4	1/8	C3309x4x2
1/4	1/4	C3309x4
3/8	1/4	C3309x6x4
3/8	3/8	C3309x6
1/2	1/4	C3309x8x4
1/2	3/8	C3309x8x6
1/2	1/2	C3309x8
3/4	1/2	C3309x12x8
3/4	3/4	C3309x12
1	3/4	C3309x16x12
1	1	C3309x16
1-1/4	1-1/4	C3309x20
1-1/2	1-1/2	C3309x24
2	2	C3309x32

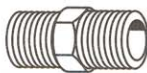
\*3321x

Male Straight Thread  
O-Ring To Male Pipe  
Adapter



MALE PORT SIZE	MALE PIPE THREAD	CATALOG NUMBER
1/4	1/8	C3249x4x2
3/8	1/4	C3249x6x4
1/2	3/8	C3249x8x6
1/2	1/2	C3249x8x8
5/8	1/2	C3249x10x8
3/4	3/4	C3249x12x12
1	1	C3249x16x16
1-1/4	1-1/4	C3249x20x20
1-1/2	1-1/2	C3249x24x24
2	2	C3249x32x32

Hex Pipe Nipple  
(Ref. SAE No. 140137)



MALE PIPE THREAD	MALE PIPE THREAD	CATALOG NUMBER
1/16	1/16	C3069x1
1/8	1/16	C3069x2x1
1/8	1/8	C3069x2
1/4	1/8	C3069x4x2
1/4	1/4	C3069x4
3/8	1/8	C3069x6x2
3/8	1/4	C3069x6x4
3/8	3/8	C3069x6
1/2	1/4	C3069x8x4
1/2	3/8	C3069x8x6
1/2	1/2	C3069x8
3/4	1/2	C3069x12x8
3/4	3/4	C3069x12
1	3/4	C3069x16x12
1	1	C3069x16
1-1/4	1-1/4	C3069x20
1-1/2	1-1/2	C3069x24
2	2	C3069x32

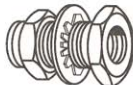
\*3081x

45° Pipe Elbow  
(Ref. SAE  
No. 140338)



FEMALE PIPE THREAD	CATALOG NUMBER
3/8	C3559x6
1/2	C3559x8
3/4	C3559x12
1	C3559x16
1/4	TF3559x4

Bulkhead  
Coupling



FEMALE PIPE THREAD	CATALOG NUMBER
1/4	W05465
1/4	W21204
3/8	W17709

\*Stainless Steel Catalog number.  
□ Available in Stainless Steel.

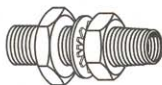
# Steel Adapters

Bulkhead  
Coupling



MALE PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/2	1/4	W05498
1/2	1/4	W05499

Bulkhead  
Coupling



MALE PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/2	1/4	W05730
1/2	1/4	W23464

See page 164 for dimensions.

Pipe Thread 45°  
Street Elbow  
(Ref. SAE No. 140339)



FEM. PIPE THREAD	MALE PIPE THREAD	CATALOG NUMBER
1/8	1/8	C3359x2 <sup>1</sup>
1/4	1/4	C3359x4 <sup>1</sup>
3/8	3/8	C3359x6 <sup>1</sup>
1/2	1/2	C3359x8 <sup>1</sup>
3/4	3/4	C3359x12 <sup>1</sup>
1	1	C3359x16 <sup>1</sup>
1-1/4	1-1/4	C3359x20 <sup>1</sup>
1-1/2	1-1/2	C3359x24 <sup>1</sup>
2	2	C3359x32 <sup>1</sup>
1/8	1/8	TF3359x2
1/4	1/4	TF3359x4
3/8	3/8	TF3359x6
1/2	1/2	TF3359x8
3/4	3/4	TF3359x12
1	1	TF3359x16
1-1/4	1-1/4	TF3359x20
1-1/2	1-1/2	TF3359x24
2	2	TF3359x32

<sup>1</sup>Special order only.

\*3371x

90° Pipe Elbow  
(Ref. SAE No. 140238)



FEM. PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/8	1/8	C3509x2 <sup>1</sup>
1/4	1/4	C3509x4 <sup>1</sup>
3/8	3/8	C3509x6 <sup>1</sup>
1/2	1/2	C3509x8 <sup>1</sup>
3/4	3/4	C3509x12 <sup>1</sup>
1	1	C3509x16
1-1/4	1-1/4	C3509x20
2	2	C3509x32
1/8	1/8	TF3509x2
1/4	1/8	TF3509x4x2
1/4	1/4	TF3509x4
3/8	1/4	TF3509x6x4
3/8	3/8	TF3509x6
1/2	3/8	TF3509x8x6
1/2	1/2	TF3509x8
3/4	1/2	TF3509x12x8
3/4	3/4	TF3509x12
1	1	TF3509x16
1-1/4	1-1/4	TF3509x20
1-1/2	1-1/2	TF3509x24

\*3521x

# Steel Adapters

## Pipe Thread 90° Street Elbow

(Ref. SAE  
No. 140239)



MALE PIPE THREAD	FEM. PIPE THREAD	CATALOG NUMBER
1/8	1/8	C3409x2 <sup>1</sup>
1/4	1/4	C3409x4 <sup>1</sup>
3/8	3/8	C3409x6 <sup>1</sup>
1/2	1/2	C3409x8 <sup>1</sup>
3/4	3/4	C3409x12 <sup>1</sup>
1	1	C3409x16 <sup>1</sup>
1-1/4	1-1/4	C3409x20
1-1/2	1-1/2	C3409x24 <sup>1</sup>
2	2	C3409x32
1/8	1/8	TF3409x2
1/4	1/8	TF3409x2x4
1/8	1/4	TF3409x4x2
1/4	1/4	TF3409x4
3/8	1/4	TF3409x4x6
1/4	3/8	TF3409x6x4
3/8	3/8	TF3409x6
1/2	3/8	TF3409x6x8
3/8	1/2	TF3409x8x6
1/2	1/2	TF3409x8
3/4	1/2	TF3409x8x12
1/2	3/4	TF3409x12x8
3/4	3/4	TF3409x12
1	1	TF3409x16
1-1/4	1-1/4	TF3409x20
1-1/2	1-1/2	TF3409x24

<sup>1</sup>Special order only.

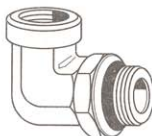
\*3421x

## 90° Male Straight Thread O-Ring to Female Pipe Elbow Long



FEM. PIPE THREAD	MALE PORT SIZE	CATALOG NUMBER
3/8	1/2	C3469x8
1/2	5/8	C3469x10
3/4	3/4	C3469x12
1	1	C3469x16

## 90° Straight Thread O-Ring Male Elbow



MALE PORT SIZE	FEM. PIPE THREAD	CATALOG NUMBER
1/2	3/8	C3459x8
5/8	1/2	C3459x10
3/4	3/4	C3459x12
1	1	C3459x16
1/4	1/8	TF3459x4
5/16	1/8	TF3459x5
3/8	1/4	TF3459x6
1/2	3/8	TF3459x8
5/8	1/2	TF3459x10
3/4	3/4	TF3459x12
7/8	3/4	TF3459x14
1	1	TF3459x16
1-1/4	1-1/4	TF3459x20
1-1/2	1-1/2	TF3459x24
2	2	TF3459x32

## 90° Male Pipe Elbow



MALE PIPE THREAD	MALE PIPE THREAD	CATALOG NUMBER
1/8	1/8	C3529x2 <sup>1</sup>
1/4	1/4	C3529x4 <sup>1</sup>
3/8	3/8	C3529x6 <sup>1</sup>
1/2	1/2	C3529x8
3/4	3/4	C3529x12
1	1	C3529x16 <sup>1</sup>
1/8	1/8	TF3529x2
1/4	1/4	TF3529x4
3/8	1/4	TF3529x6x4
3/8	3/8	TF3529x6
1/2	3/8	TF3529x8x6
1/2	1/2	TF3529x8
3/4	1/2	TF3529x12x8
3/4	3/4	TF3529x12
1	3/4	TF3529x16x12
1	1	TF3529x16
1-1/4	1-1/4	TF3529x20
1-1/2	1-1/2	TF3529x24

\*3541x

<sup>1</sup>Special order only.

# Steel Adapters

90° Straight Thread  
O-Ring Male Elbow To  
Male Pipe



MALE PORT THREAD SIZE	MALE PIPE SIZE	CATALOG NUMBER
1/4	1/8	TF3569x4
5/16	1/8	TF3569x5
3/8	1/4	TF3569x6
1/2	3/8	TF3569x8
5/8	1/2	TF3569x10
3/4	3/4	TF3569x12
7/8	3/4	TF3569x14
1	1	TF3569x16
1-1/4	1-1/4	TF3569x20
1-1/2	1-1/2	TF3569x24
2	2	TF3569x32

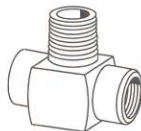
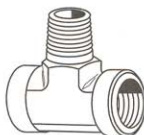
Pipe Tee  
(Ref. SAE No. 140438)



FEM. PIPE THREAD	CATALOG NUMBER
1/8	C3709x2□
1/4	C3709x4□
3/8	C3709x6□
1/2	C3709x8□
3/4	C3709x12□
1	C3709x16□
1-1/4	C3709x20
1/8	TF3709x2
1/4	TF3709x4
3/8	TF3709x6
1/2	TF3709x8
3/4	TF3709x12
1	TF3709x16
1-1/4	TF3709x20
1-1/2	TF3709x24
2	TF3709x32

\*3721x

Pipe Thread Male  
Branch Tee  
(Ref. SAE No. 140425)



MALE PIPE THD.	FEMALE PIPE THD.	CATALOG NUMBER
1/8	1/8	C3609x2
1/4	1/4	C3609x4
3/8	3/8	C3609x6 <sup>1</sup>
1/2	1/2	C3609x8 <sup>1</sup>
3/4	3/4	C3609x12 <sup>1</sup>
1	1	C3609x16
1/8	1/8	TF3609x2
1/4	1/4	TF3609x4
3/8	3/8	TF3609x6
1/2	1/2	TF3609x8
3/4	3/4	TF3609x12
1	1	TF3609x16
1-1/4	1-1/4	TF3609x20
1-1/2	1-1/2	TF3609x24

<sup>1</sup>Special order only.  
\*3621x

Pipe Thread Male  
Run Tee  
(Ref. SAE No. 140424)



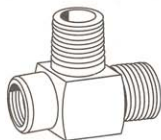
MALE PIPE THD.	FEMALE PIPE THD.	CATALOG NUMBER
1/8	1/8	C3759x2□
1/4	1/4	C3759x4□
3/8	3/8	C3759x6□
1/2	1/2	C3759x8□
3/4	3/4	C3759x12
1	1	C3759x16
1/8	1/8	TF3759x2
1/4	1/4	TF3759x4
3/8	3/8	TF3759x6
1/2	1/2	TF3759x8
3/4	3/4	TF3759x12
1	1	TF3759x16
1-1/4	1-1/4	TF3759x20
1-1/2	1-1/2	TF3759x24
2	2	TF3759x32

\*3771x

\*Stainless Steel Catalog number.  
□ Available in Stainless Steel.

# Steel Adapters

Pipe Thread Female Run Tee



FEMALE PIPE THD.	MALE PIPE THD.	CATALOG NUMBER
1/8	1/8	TF3805x2
1/4	1/4	TF3805x4
3/8	3/8	TF3805x6
1/2	1/2	TF3805x8
3/4	3/4	TF3805x12
1	1	TF3805x16
1-1/4	1-1/4	TF3805x20
1-1/2	1-1/2	TF3805x24

Pipe Cross



FEMALE PIPE THREAD	CATALOG NUMBER
1/8	C3959x2 <sup>1</sup>
1/4	C3959x4 <sup>1</sup>
3/8	C3959x6
1/2	C3959x8
3/4	C3959x12
1	C3959x16 <sup>1</sup>
1/8	TF3959x2
1/4	TF3959x4
3/8	TF3959x6
1/2	TF3959x8
3/4	TF3959x12
1	TF3959x16
1-1/4	TF3959x20
1-1/2	TF3959x24
2	TF3959x32

<sup>1</sup>Special order only.

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 247 for O-ring compound and application chart)

PORT SIZE	CATALOG NUMBER
1/16	7629x1
1/8	7629x2
3/16	7629x3
1/4	7629x4
5/16	7629x5
3/8	7629x6
7/16	7629x7
1/2	7629x8
5/8	7629x10
3/4	7629x12
7/8	7629x14
1	7629x16
1-1/4	7629x20
1-1/2	7629x24
2	7629x32