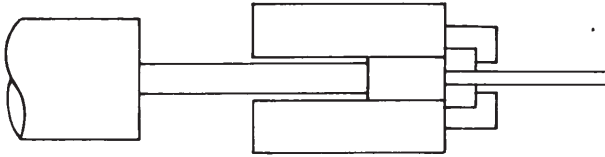


Weatherhead brass tube fittings are made from high quality UNS CA-360 brass bar. Weatherhead brass fittings are precision machined to meet SAE standards and specifications. Large, uniform wrench pad areas have standard dimensions for easy assembly and disassembly using standard open-end wrenches. On fittings where pipe threads are used, the fittings are standardized on Dryseal American National Standard Taper. Weatherhead offers the only complete line of brass fittings with these outstanding advantages.



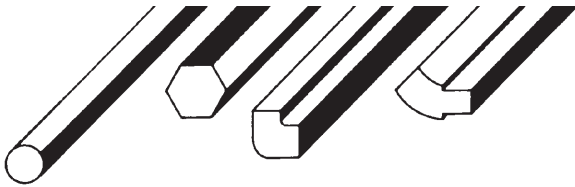
Hot Extrusion

A cast billet is heated and extruded through a die containing the desired configuration. This process recrystallizes the weaker cast structure into the stronger pressed structure of the shaped extrusion.



Cold Draw

The hot extruded shape is pulled through a die with the same configuration but less cross sectional area. This further recrystallizes and refines the structure while increasing the strength and elongation. In addition, the dimensions are brought to close tolerances.



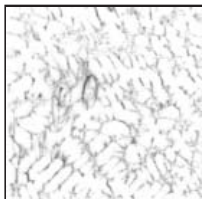
Shapes

The dies through which the billets are forced may be one of hundreds of shapes. Four of the most common shapes, used in the manufacture of Weatherhead fittings, are illustrated.

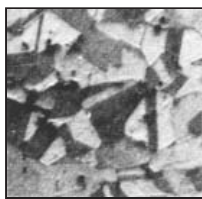


Saw and Machine

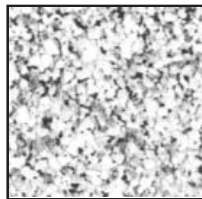
The cold bar stock is then cut into individual pieces for precision machining. After the part is machined, it is ready for the market as a strong, tough, high quality fitting. Only by using this process is it possible to get the big all-flat sides on elbows and tees, instead of the usual small wrench pads, or lack of flats altogether.



As Cast – 50x



Hot Extruded – 200x




Cold Drawn – 200x

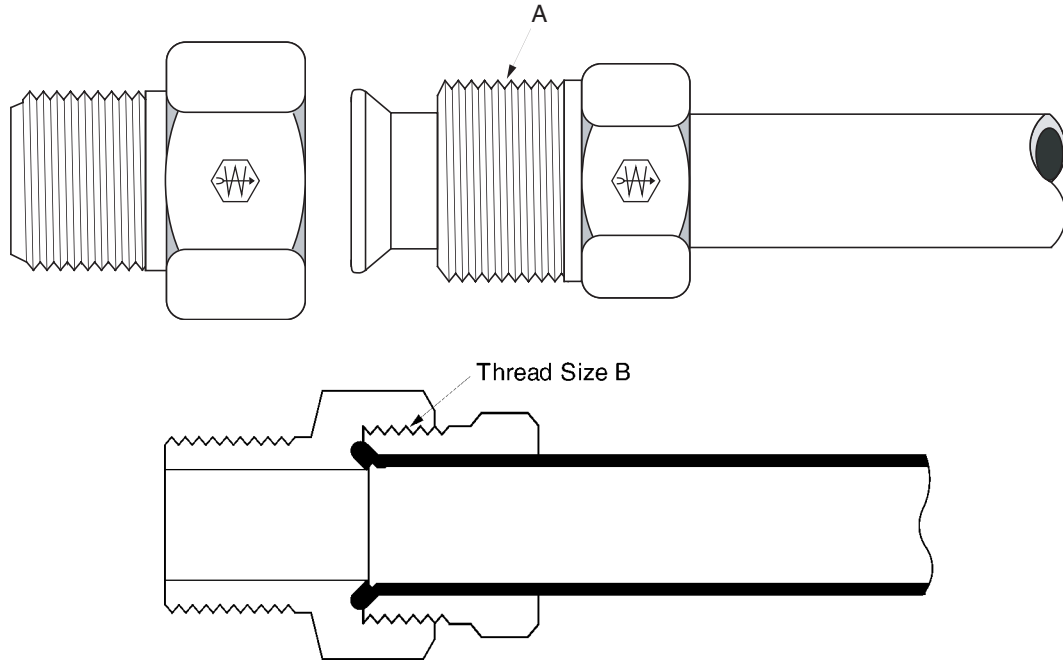
Microstructure

The photomicrographs illustrate the change in microstructure from the low strength low ductility dendritic structure of the cast billet, to the recrystallized structure of the hot extrusion, to the refined structure of the high strength high ductility cold drawn rod.

Inverted Flare

**Brass
Fittings**

 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Thread Size-B	5/16-28	3/8-24	7/16-24	1/2-20	5/8-18	11/16-18	3/4-18	7/8-18	1-1/16-16	1-3/16-16	1-5/16-16

• **Typical Application**

Hydraulic brake, power steering, fuel lines and transmission cooler lines, LP and natural gas (special order).

• **Pressure**

Working pressure up to 2000 psi depending on tube size. Will withstand burst pressure of standard tubing - up to 5000 psi with Bundy-weld (double flared) and 3500 psi with copper tubing, depending on size.

• **Vibration**

Excellent resistance.

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

• **Material**

CA360 Brass.

• **Used With**

Copper, brass, aluminum and steel hydraulic tubing that can be flared. See page 28-32 for material compatibility.

• **Advantages**

Very low cost and reusable. Seats and threads are internal and protected. Compact, excellent vibration life. Short nut affords very close tube bends. Steel or brass tube nut.

• **Conformance**

Listed by Underwriter's Laboratories (available on special order) for fuel equipment, refrigeration and gas. Meets specifications and standards of ASA, ASME, SAE and MS (Military Standards).

• **How to Order**

Order individually by catalog number.

• **NOTE:**

Refer to current price list for availability of cataloged items. Configurations and dimensions subject to change without notice. Additional information can be found in SAE J512.

• **Assembly Instructions**

1. Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
2. Slide nut on tube. Threaded end "A" of nut must face out.
3. Flare end of tube with a 45° flaring tool. See page 26 for flare data.
 - a. Measure flare diameter.
 - b. Examine flare for excessive thin out.
 - c. On thin wall, welded or brazed tubing, use double flare to prevent pinch-off and cracked flares.
4. Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
5. Tighten assembly with a wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

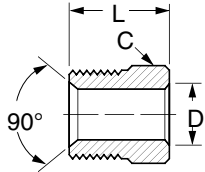
NOTE: Do not over-torque as it may damage the fittings or split the tubing at the flare.

Label Set: **W-8022** (adhesive)
CL-490 (non-adhesive)

B
R
A
S
S

Tube Nut

(Steel)
(Ref. SAE No. 040110)

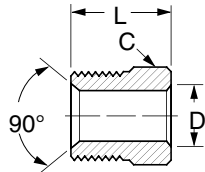


*3/8" Tube to 11/16-18 Male Thread

Tube O.D.	Catalog Number	Hex C	D	L
1/8	105x2	5/16	.132	.52
3/16	105x3	3/8	.196	.56
1/4	105x4	7/16	.259	.56
5/16	105x5	1/2	.321	.62
3/8	105x6	5/8	.384	.66
3/8	105x6x7*	11/16	.387	.66
7/16	105x7	11/16	.444	.68
1/2	105x8	3/4	.508	.74
5/8	105x10	7/8	.632	.80
3/4	105x12	1-1/16	.757	.88
7/8	105x14	1-3/16	.882	1.06
1	105x16	1-3/8	1.008	1.18

Tube Nut

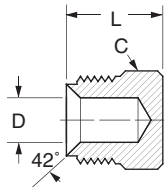
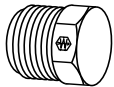
(Brass)
(Ref. SAE No. 040110)



Tube O.D.	Catalog Number	Hex C	D	L
3/16	100x3	3/8	.196	.56
1/4	100x4	7/16	.259	.56
5/16	100x5	1/2	.321	.62
3/8	100x6	5/8	.384	.66
1/2	100x8	3/4	.508	.74

Plug

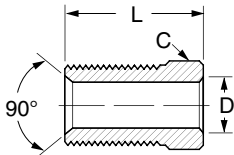
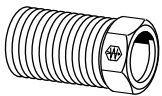
(Steel)
(Ref. SAE No. 040109)



Tube O.D.	Catalog Number	Hex C	D	L
3/16	131x3	3/8	.188	.53
1/4	131x4	7/16	.188	.54
5/16	131x5	1/2	.250	.59
3/8	131x6	5/8	.312	.66

Tube Nut Long

(Steel)

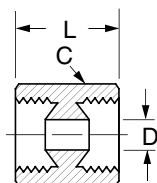
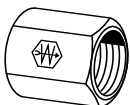


NOTE: Required for wheel cylinders with deep port connection.

Tube O.D.	Catalog Number	Hex C	D	L
3/16	7896x3	3/8	.196	.844
1/4	7896x4	7/16	.257	.812

Union

(Ref. SAE No. 040101)

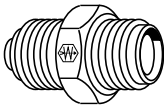


Tube O.D.	Catalog Number	Hex C	D	L
1/8	302x2	13/32	.078	.59
3/16	302x3	15/32	.125	.62
1/4	302x4	17/32	.188	.62
5/16	302x5	19/32	.219	.70
3/8	302x6	3/4	.281	.80
1/2	302x8	29/32	.406	.91

Inverted Flare

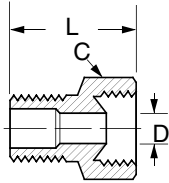
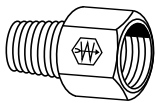
**Brass
Fittings**

Adapter SAE 45° Flare to Inv. Flare



SAE Tube Size	Inverted Male	Catalog Number	Hex C	D	L
1/4	3/16	1518	7/16	.189	1.031
1/4	1/4	1522	7/16	.188	1.031
3/8	5/16	1553	5/8	.234	1.340
3/8	3/8	1563	5/8	.282	1.380
3/8	7/16	1554	11/16	.282	1.400

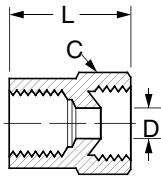
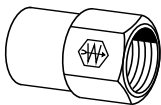
Male Connector (Ref. SAE No. 040102)



NOTE: Pipe end drill may be reduced or increased from seat dimension 'D'.

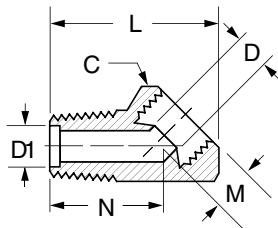
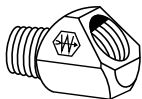
Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8	202x2	13/32	.078	.62
3/16	1/8	202x3	15/32	.125	.70
1/4	1/8	202x4	17/32	.188	.74
1/4	1/4	202x4x4	9/16	.188	.89
5/16	1/8	202x5	19/32	.219	.79
5/16	1/4	202x5x4	19/32	.220	.98
3/8	1/8	202x6x2	3/4	.281	.89
3/8	1/4	202x6	3/4	.281	1.03
3/8	3/8	202x6x6	3/4	.281	1.01
1/2	1/4	202x8x4	29/32	.406	1.08
1/2	3/8	202x8	29/32	.406	1.07
1/2	1/2	202x8x8	29/32	.406	1.26
5/8	1/2	202x10	1-1/16	.531	1.32
3/4	3/4	202x12	1-1/4	.625	1.39
7/8	3/4	202x14	1-3/8	.750	1.38

Female Connector (Ref. SAE No. 040103)



Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
3/16	1/8	252x3	1/2	.125	.75
1/4	1/8	252x4	17/32	.188	.75
5/16	1/8	252x5	19/32	.219	.78
3/8	1/4	252x6♦	3/4	.281	1.03
1/2	3/8	252x8♦	29/32	.406	1.09

45° Male Elbow (Ref. SAE No. 040302)

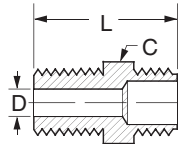


Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1	L	M	N
3/16	1/8	352x3	17/32	.125	.156	.88	.25	.55
1/4	1/8	352x4	9/16	.188	.188	.94	.27	.58
5/16	1/8	352x5	5/8	.219	.203	1.00	.34	.56
5/16	1/4	352x5x4♦	5/8	.219	.203	1.16	.23	.83
3/8	1/8	352x6x2♦	25/32	.281	.281	1.34	.38	.69
3/8	1/4	352x6	25/32	.281	.219	1.34	.41	.84
1/2	3/8	352x8♦	7/8	.406	.375	1.44	.38	.91
5/8	1/2	352x10♦	1-1/16	.531	.500	1.75	.45	1.09

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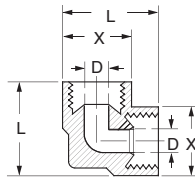
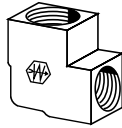
BRASS

Fuel Line Adapter



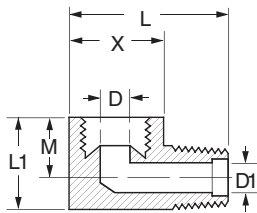
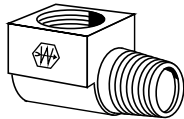
Inv. Tube Size	Male Pipe Thread	Catalog Number	Hex C	D	L
1/2-20	1/8	1514	1/2	.219	.90

90° Union Elbow (Ref. SAE No. 040201)



Tube O.D.	Catalog Number	D	L	X
1/4	502x4	.188	.77	.53
5/16	502x5♦	.219	.86	.59
3/8	502x6♦	.281	1.04	.72

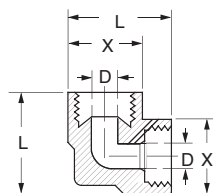
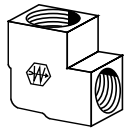
90° Male Elbow (Ref. SAE No. 040202)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	L	L1	M	X
1/8	1/8	402x2	.078	.116	.80	.47	.27	.42
3/16	1/8	402x3	.125	.125	.85	.47	.27	.47
1/4	1/8	402x4	.188	.177	.92	.55	.33	.53
1/4	1/8	431x4*	.188	.062	.91	.53	.33	.53
1/4	1/4	402x4x4	.188	.188	1.09	.58	.28	.56
5/16	1/8	402x5	.219	.219	.98	.67	.47	.59
5/16	1/4	402x5x4	.219	.219	1.16	.75	.45	.59
3/8	1/8	402x6x2	.281	.219	1.14	.75	.54	.76
3/8	1/4	402x6	.281	.281	1.32	.82	.53	.76
3/8	3/8	402x6x6	.281	.312	1.32	.84	.50	.75
1/2	1/4	402x8x4♦	.406	.281	1.47	.94	.59	.91
1/2	3/8	402x8	.406	.375	1.48	.94	.59	.91
1/2	1/2	402x8x8	.406	.406	1.67	1.09	.66	.91
5/8	3/8	402x10x6♦	.531	.437	1.62	1.11	.67	1.06
5/8	1/2	402x10♦	.531	.500	1.82	1.11	.67	1.06
3/4	1/2	402x12x8	.625	.531	2.01	1.30	.80	1.25
7/8	3/4	402x14	.750	.750	2.12	1.46	.94	1.38
1	1	402x16	.812	.812	2.44	1.70	1.02	1.50

* .062 dia. restricted hole through pipe end.
Available on special order with any restricted hole size up to .172 dia.

90° Female Elbow (Ref. SAE No. 040203)

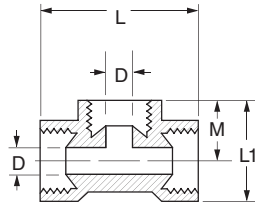
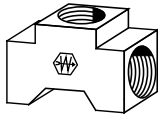


Tube O.D.	Fem. Pipe Thread	Catalog Number	D	L	X
3/16	1/8	452x3♦	.125	.81	.50
1/4	1/8	452x4	.188	.81	.53
5/16	1/8	452x5	.219	.88	.59
3/8	1/4	452x6	.281	1.05	.75

Inverted Flare

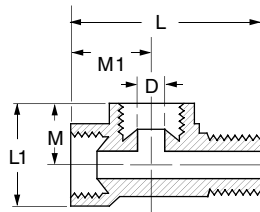
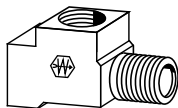
Brass
Fittings

Union Tee (Ref. SAE No. 040401)



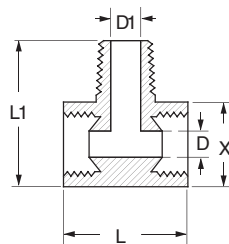
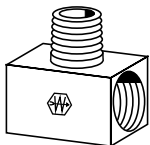
Tube O.D.	Catalog Number	D	L	L1	M
1/8	702x2	.078	.94	.53	.330
3/16	702x3	.125	1.09	.62	.390
1/4	702x4	.188	1.13	.69	.420
5/16	702x5	.219	1.25	.75	.450
3/8	702x6	.281	1.48	.94	.560
1/2	702x8♦	.406	1.76	1.12	.670
7/8	702x14	.750	2.37	1.62	.937

Male Run Tee (Ref. SAE No. 040424)



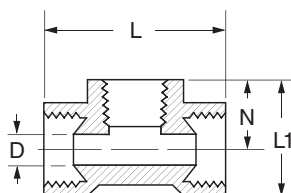
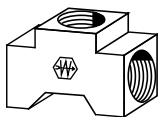
Tube O.D.	Male Pipe Thread	Catalog Number	D	L	L1	M	M1
3/16	1/8	752x3♦	.125	1.25	.62	.39	.53
1/4	1/8	752x4	.188	1.31	.69	.42	.56
5/16	1/8	752x5♦	.219	1.47	.75	.45	.62
3/8	1/4	752x6♦	.281	1.83	.94	.56	.75

Male Branch Tee (Ref. SAE No. 040425)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	L	L1	X
3/16	1/8	602x3	.125	.219	.82	.84	.47
1/4	1/8	602x4	.188	.219	.84	.91	.53
5/16	1/8	602x5	.219	.219	.95	.97	.59
3/8	1/4	602x6	.281	.344	1.16	1.31	.75


Female Branch Tee (Ref. SAE No. 040427)

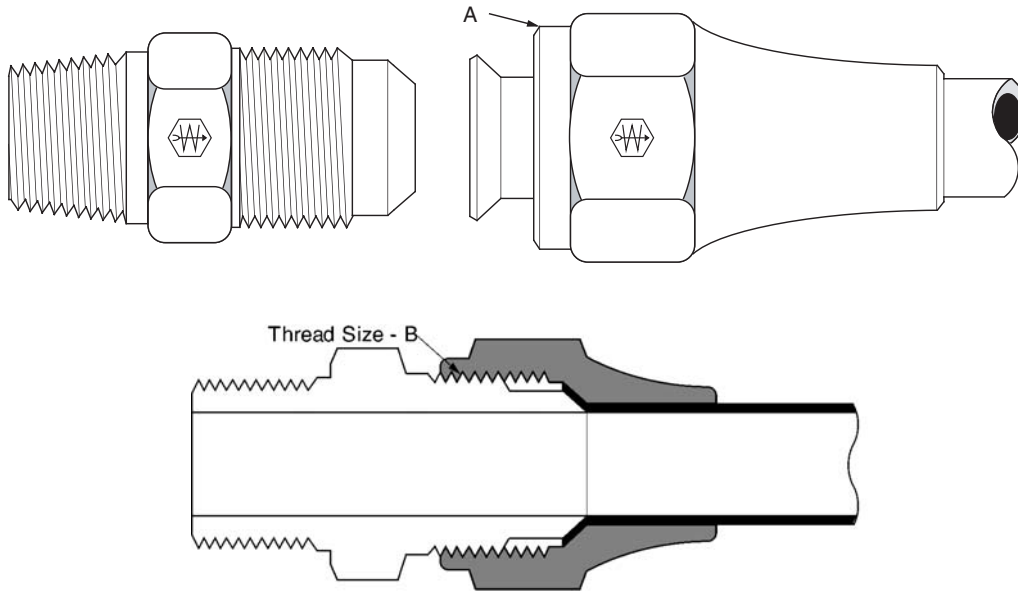


Tube O.D.	Fem. Pipe Thread	Catalog Number	D	L	L1	N
3/16	1/8	652x3	.125	1.10	.62	.39
1/4	1/8	652x4♦	.188	1.12	.69	.42
5/16	1/8	652x5♦	.219	1.26	.75	.45
3/8	1/4	652x6♦	.281	1.47	.94	.56
1/2	3/8	652x8♦	.406	1.75	1.12	.67

♦MTO - Made To Order

BRASS

 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Thread Size-B	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1-1/16-14

• **Typical Application**

LP and natural gas, flammable liquids (special order), instrumentation, refrigeration, power steering, hydraulic and pneumatic systems.

• **Pressure**

Working pressure up to 2000 psi depending on tube size. Will withstand burst pressure of standard tubing - up to 5000 psi with Bundy-weld (double flared) and 3500 psi with copper tubing, depending on size.

• **Vibration**

Good resistance - use long nut when greater vibration resistance is required.

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

• **Material**

CA360 Brass.

• **Used With**

Copper, brass, aluminum and steel hydraulic tubing that can be flared. See page 28-32 for material compatibility.

• **Advantages**

Low cost and reusability, long or short nut. Good resistance to vibration.

• **Conformance**

Listed by Underwriter's Laboratories (available on special order) for flammable liquids, refrigeration and gas. Meets specifications and standards of ASA, ASME, SAE and MS (Military Standards).

• **How to Order**

Order individually by catalog number.

• **NOTE**

Refer to current price list for availability of cataloged items. Configurations and dimensions subject to change without notice. Quotations of non-stock items available upon request. Additional information can be found in SAE J512.

• **Assembly Instructions**

1. Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
2. Slide nut on tube. Threaded end "A" of nut must face out.
3. Flare end of tube with a 45° flaring tool. See page 26 for flare data.
 - a. Measure flare diameter.
 - b. Examine flare for excessive thin out.
4. Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
5. Tighten assembly with a wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

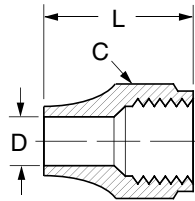
NOTE: Do not over-torque as it may damage the fitting or split the tubing at the flare.

Label Set: **W-8022** (adhesive)
CL-490 (non-adhesive)

SAE 45° Flare

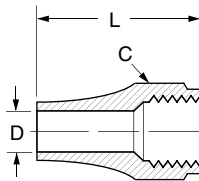
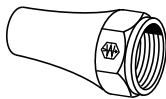
**Brass
Fittings**

Nut (Ref. SAE No. 010110)



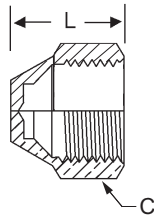
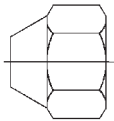
Tube O.D.	Catalog Number	Hex C	D	L
1/8	1110x2	3/8	.133	.50
3/16	1110x3	7/16	.195	.62
1/4	1110x4	9/16	.258	.75
5/16	1110x5	5/8	.320	.88
3/8	1110x6	3/4	.383	1.00
7/16	1110x7♦	13/16	.445	1.06
1/2	1110x8	7/8	.508	1.12
5/8	1110x10	1-1/16	.633	1.31
3/4	1110x12♦	1-1/4	.758	1.50

Long Nut (Ref. SAE No. 010111)



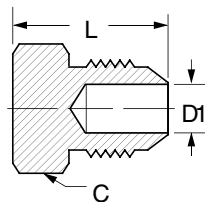
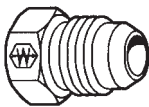
Tube O.D.	Catalog Number	Hex C	D	L
3/16	41x3	7/16	.195	.81
1/4	41x4	9/16	.258	.94
5/16	41x5	5/8	.320	1.12
3/8	41x6	3/4	.383	1.31
1/2	41x8	7/8	.508	1.62
5/8	41x10♦	1-1/16	.633	1.88

Cap



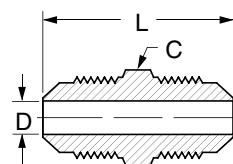
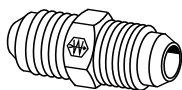
Tube O.D.	Catalog Number	Hex C	L
1/8	40x2	7/16	.40
3/16	40x3	1/2	.47
1/4	40x4	7/16	.53
5/16	40x5	5/8	.62
3/8	40x6	3/4	.69
1/2	40x8	7/8	.84
5/8	40x10	1-1/16	.97
3/4	40x12	1-5/16	1.09

Plug (Ref. SAE No. 010109)



Tube O.D.	Catalog Number	Hex C	L	D1 (opt.)
1/8	39x2	5/16	.47	.079
3/16	39x3	3/8	.58	.126
1/4	39x4	7/16	.69	.189
5/16	39x5	1/2	.79	.220
3/8	39x6	5/8	.88	.282
1/2	39x8	3/4	1.06	.408
5/8	39x10	7/8	1.19	.502
3/4	39x12	1-1/16	1.31	.627

Union (Ref. SAE No. 010101)

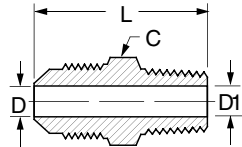
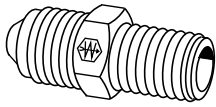


Tube O.D.	Catalog Number	Hex C	D	L
1/8	42x2♦	5/16	.078	.92
3/16	42x3	3/8	.125	1.06
1/4	42x4	7/16	.188	1.19
5/16	42x5	1/2	.219	1.34
3/8	42x6	5/8	.281	1.50
1/2	42x8	3/4	.406	1.81
5/8	42x10	7/8	.500	2.12
3/4	42x12♦	1-1/16	.625	2.44

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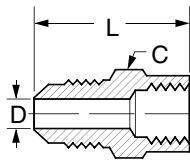
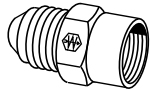
Male Connector
(Ref. SAE No. 010102)



*Counterbore is optional.

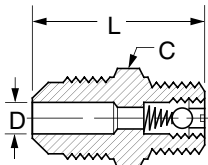
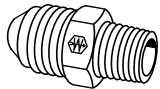
Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1	L
1/8	1/8	48x2	7/16	.078	.219	.90
3/16	1/8	48x3	7/16	.125	.219	1.00
1/4	1/8	48x4	7/16	.188	.188	1.06
1/4	1/4	48x4x4	9/16	.188	.312	1.26
5/16	1/8	48x5	1/2	.219	.219	1.16
5/16	1/4	48x5x4	9/16	.219	.219	1.34
3/8	1/8	48x6x2	5/8	.281	.219	1.25
3/8	1/4	48x6	5/8	.281	.281	1.44
3/8	3/8	48x6x6	11/16	.281	.281	1.44
3/8	1/2	48x6x8	7/8	.281	.562*	1.69
1/2	1/4	48x8x4	3/4	.406	.312	1.62
1/2	3/8	48x8	3/4	.406	.406	1.62
1/2	1/2	48x8x8	7/8	.406	.562	1.81
5/8	3/8	48x10x6	7/8	.500	.406	1.81
5/8	1/2	48x10	7/8	.500	.500	2.00
3/4	1/2	48x12	1-1/16	.625	.562	2.18
3/4	3/4	48x12x12	1-1/16	.625	.625	2.18

Female Connector
(Ref. SAE No. 010103)



Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
3/16	1/8	46x3*	9/16	.125	.97
1/4	1/8	46x4	9/16	.188	1.03
1/4	1/4	46x4x4	11/16	.188	1.25
5/16	1/8	46x5	9/16	.219	1.06
5/16	1/4	46x5x4*	11/16	.219	1.28
3/8	1/8	46x6x2*	5/8	.281	1.12
3/8	1/4	46x6	11/16	.281	1.31
3/8	3/8	46x6x6	13/16	.281	1.38
3/8	1/2	46x6x8*	1	.281	1.62
1/2	1/4	46x8x4*	3/4	.406	1.41
1/2	3/8	46x8	13/16	.406	1.50
1/2	1/2	46x8x8*	1	.406	1.75
5/8	3/8	46x10x6*	7/8	.500	1.59
5/8	1/2	46x10*	1	.500	1.81
5/8	3/4	46x10x12*	1-1/4	.500	1.90

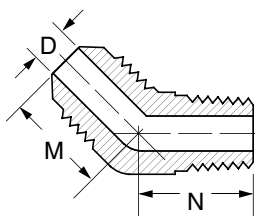
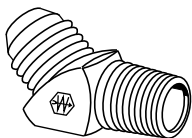
Male Ball Check Connector



Ball & Spring position may be reversed to change flow/check direction. Min pressure 3 psi.

Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/4	1/8	43x4	7/16	.125	1.06
3/8	1/4	43x6	5/8	.219	1.31

45° Male Elbow
(Ref. SAE No. 010302)

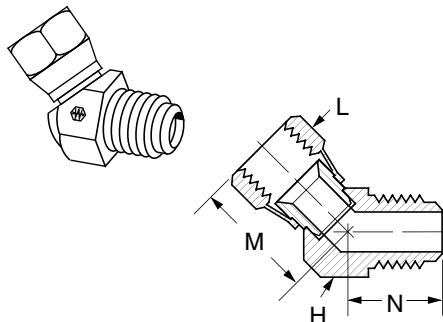


Tube O.D.	Male Pipe Thread	Catalog Number	D	M	N
1/4	1/8	54x4	.188	.67	.64
1/4	1/4	54x4x4	.188	.73	.87
5/16	1/8	54x5	.219	.78	.64
3/8	1/4	54x6	.281	.89	.86
3/8	3/8	54x6x6*	.281	.93	.95
1/2	3/8	54x8	.406	1.06	.95
1/2	1/2	54x8x8	.406	1.12	1.17
5/8	3/8	54x10x6	.500	1.23	.98
5/8	1/2	54x10	.500	1.23	1.17

SAE 45° Flare

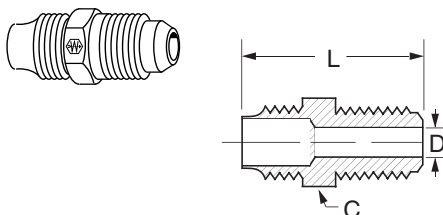
**Brass
Fittings**

45° Elbow - Female 45° Flare Swivel to Male SAE 45° (Steel)



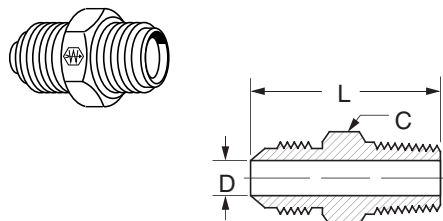
Tube O.D.	Catalog Number	M	N	Hex H	Hex L
3/8	9154x6x6	1.14	1.40	3/4	3/4
1/2	9154x8x8	1.04	1.76	1	7/8
5/8	9154x10x10	1.16	1.92	1-1/4	1

AC Type Adapter



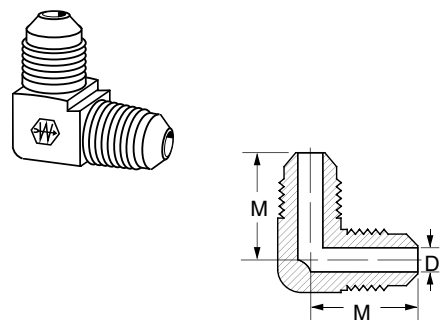
Tube Size	SAE Tube Size	Catalog Number	Hex C	D	L
1/4	1/4	1521	7/16	.188	1.094

Adapter SAE 45° Flare to Inv. Flare



SAE Tube Size	Inverted Male	Catalog Number	Hex C	D	L
1/4	3/16	1518	7/16	.189	1.031
1/4	1/4	1522	7/16	.188	1.031
3/8	5/16	1553	5/8	.234	1.340
3/8	3/8	1563	5/8	.282	1.380
3/8	7/16	1554	11/16	.282	1.400

90° Union Elbow (Ref. SAE No. 010201)

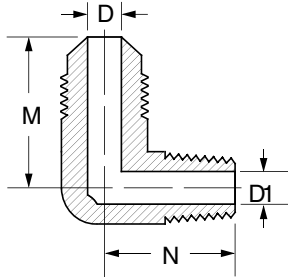
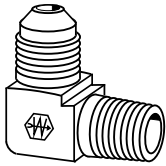


Tube O.D.	Catalog Number	D	M
1/4	55x4♦	.188	.86
5/16	55x5♦	.219	.91
3/8	55x6♦	.281	1.04
1/2	55x8	.406	1.20
5/8	55x10♦	.500	1.41
3/4	55x12♦	.625	1.64

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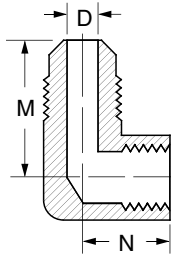
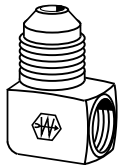
BRASS

90° Male Elbow
(Ref. SAE No. 010202)



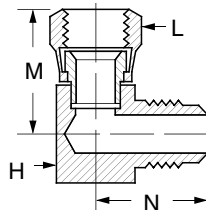
Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/8	1/8	49x2	.078	.219	.62	.69
3/16	1/8	49x3	.125	.219	.75	.75
1/4	1/8	49x4	.188	.219	.81	.76
1/4	1/4	49x4x4	.188	.312	.88	.94
1/4	3/8	49x4x6	.188	.375	.94	1.03
5/16	1/8	49x5	.219	.219	.91	.78
5/16	1/4	49x5x4	.219	.312	.95	.92
3/8	1/8	49x6x2	.281	.219	1.03	.91
3/8	1/4	49x6	.281	.312	.97	1.06
3/8	3/8	49x6x6	.281	.406	1.06	1.09
3/8	1/2	49x6x8	.281	.438	1.16	1.28
1/2	1/4	49x8x4	.406	.281	1.22	1.19
1/2	3/8	49x8	.406	.406	1.22	1.12
1/2	1/2	49x8x8	.406	.406	1.26	1.36
5/8	3/8	49x10x6	.500	.410	1.41	1.23
5/8	1/2	49x10	.500	.562	1.41	1.38
3/4	1/2	49x12	.625	.531	1.62	1.50
3/4	3/4	49x12x12	.625	.750	1.59	1.62

90° Female Elbow
(Ref. SAE No. 010203)



Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N
1/4	1/8	50x4	.188	.88	.47
1/4	1/4	50x4x4	.188	.97	.66
5/16	1/4	50x5x4♦	.219	1.03	.66
3/8	1/4	50x6	.281	1.09	.69
3/8	3/8	50x6x6♦	.281	1.16	.69
1/2	3/8	50x8♦	.406	1.28	.75
1/2	1/2	50x8x8♦	.406	1.38	.94
5/8	1/2	50x10	.500	1.50	1.00
5/8	3/4	50x10x12♦	-	-	-

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

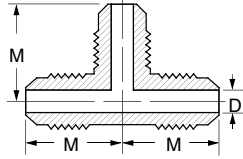
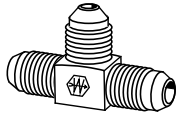


Tube O.D.	Catalog Number	M	N	Hex H	Hex L
3/8	9151x6x6	1.09	1.00	3/4	3/4
1/2	9151x8x8	1.43	1.25	1	7/8
5/8	9151x10x10	1.60	1.44	1-1/4	1

SAE 45° Flare

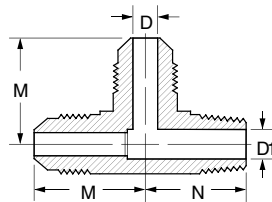
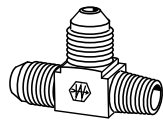
**Brass
Fittings**

Union Tee (Ref. SAE No. 010401)



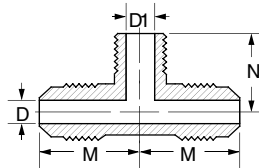
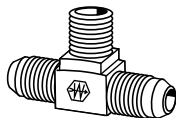
Tube O.D.	Catalog Number	D	M
3/16	44x3♦	.125	.73
1/4	44x4	.188	.86
5/16	44x5♦	.219	.89
3/8	44x6♦	.281	1.04
1/2	44x8	.406	1.20
5/8	44x10♦	.500	1.42

Male Run Tee (Ref. SAE No. 010424)



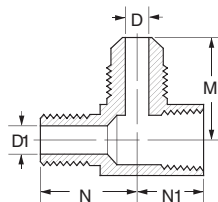
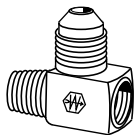
Tube O.D.	Male Pipe Thread	Catalog Number	D	D1 Opt.	M	N
1/4	1/8	51x4	.188	.219	.86	.76
5/16	1/4	51x5x4x5♦	.219	.312	.97	.94
3/8	1/4	51x6♦	.281	.281	1.04	1.04
3/8	3/8	51x6x6x6♦	.281	.406	1.06	1.09
1/2	3/8	51x8♦	.406	.406	1.20	1.10
1/2	1/2	51x8x8x8♦	.406	.562	1.28	1.38
5/8	1/2	51x10♦	.500	.500	1.42	1.38

Male Branch Tee (Ref. SAE No. 010425)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/4	1/8	45x4	.188	.219	.81	.78
1/4	1/4	45x4x4x4♦	.188	.312	.91	.94
5/16	1/4	45x5x5x4♦	.219	.312	.97	.94
3/8	1/4	45x6♦	.281	.344	1.00	1.06
3/8	3/8	45x6x6x6♦	.281	.406	1.06	1.09
1/2	3/8	45x8♦	.406	.406	1.22	1.12
1/2	1/2	45x8x8x8♦	.406	.562	1.28	1.38
5/8	1/2	45x10♦	.500	.562	1.41	1.38
3/4	1/2	45x12♦	.625	.562	1.62	1.50


Adapter Tee (Female to Male Pipe on Run)

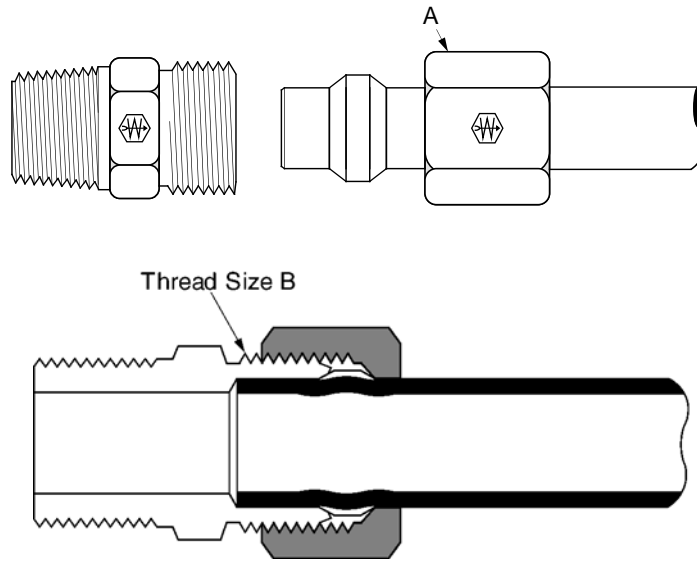


Tube O.D.	M&F Pipe Thread	Catalog Number	D	D1	M	N	N1
1/4	1/8	56x4♦	.188	.188	.78	.76	.46

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BRASS

 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
Thread Size-B	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/4-18

• Typical Application

Instrumentation, hydraulic and pneumatic systems.

• Pressure

Working pressure up to 2000 psi with a 4:1 safety factor depending on tube size. When using plastic tubing, use the working pressure for type used.

• Vibration

Fair resistance - use long nut when greater vibration resistance is needed.

• Temperature Range

-65°F to +250°F (-53°C to +121°C) with metal tubing. When using compatible plastic tubing do not exceed the tubing temperature range. (Refer to tubing temperature range.)

• Material

CA360 Brass.

• Used With

Aluminum, copper and Weatherhead plastic tubing.
Plastic tubing, except for PT230, requires 2030x insert. Not recommended for steel tubing. See page 28-32 for material compatibility, and pages 33-35 for plastic tubing.

• Advantages

Low cost. Easy to assemble, no flaring. Available with long or short nut. Broad selection of styles and sizes.

• Conformance

Listed by Underwriter's Laboratories (available on special order) for flammable liquids. Meets specifications and standards of ASA, ASME and SAE.

• How to Order

Compression fittings are ordered as complete assemblies (body, nut and sleeve). To order assembly supplied with long nuts, simply add the prefix "1" to the catalog number. Example: 68x4 with long nut becomes 168x4. Nuts and sleeves can be ordered separately by catalog number. To order bodies only (less nut and sleeve), prefix catalog number with letter "B". Example: B68x4.

• 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 J512.

• Assembly Instructions

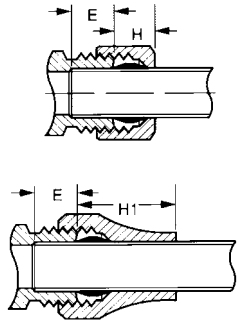
1. Cut tubing to desired length.
2. Slide nut and then sleeve on tube. Threaded end "A" of nut must face toward fitting.
3. Insert tubing into fitting body. Be sure tubing is bottomed on fitting shoulder.
4. Lubricate threads and assemble nut to fitting body.
5. Tighten nut hand tight. From that point, tighten with a wrench the number of turns indicated in the chart below.

Tube Size	Additional Turns From Hand Tight
1/8" thru 1/4"	1-1/4
5/16"	1-3/4
3/8" thru 1"	2-1/4

Label Set: **W-8022** (adhesive)
CL-490 (non-adhesive)

Compression

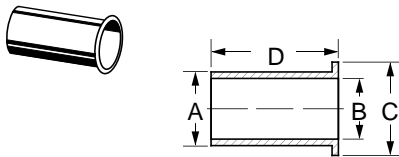
Brass Fittings



NOTE: H and H1 are hand tight dimensions.

Tube O.D.	E Tube Stop Depth	H	H1 (Long Nut)
1/8	.19	.23	—
3/16	.22	.25	.47
1/4	.25	.29	.56
5/16	.28	.30	.66
3/8	.31	.27	.70
1/2	.38	.42	.88
5/8	.38	.42	.92
3/4	.44	.49	1.18

Tube Support for Plastic Tubing



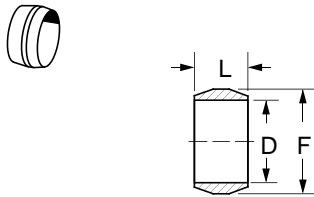
Use only with PT200 and PT240 Tubing.

* For Tubing with .126 I.D./062 wall thickness.

** For tubing with .170 I.D./040 wall thickness.

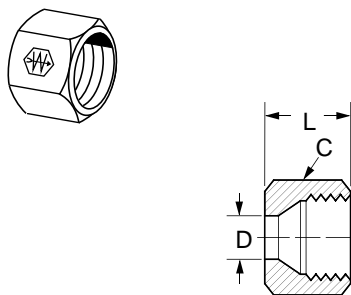
Tube O.D.	Catalog Number	Dia. A	Dia. B	Dia. C	Length D
1/4	2030x4*	1/8	3/32	11/64	19/32
1/4	2030x44**	11/64	9/64	7/32	17/32
5/16	2030x5	3/16	5/32	15/64	5/8
3/8	2030x6	1/4	7/32	11/32	41/64
1/2	2030x8	3/8	11/32	7/16	13/16
5/8	2030x10	1/2	29/64	35/64	13/16
3/4	2030x12	9/16	33/64	11/16	1-1/32

Compression Sleeve (Ref. SAE No. 060115)



Tube O.D.	Catalog Number	D	F	L
1/8	60x2	.13	.19	.19
3/16	60x3	.19	.27	.22
1/4	60x4	.26	.34	.25
5/16	60x5	.32	.41	.25
3/8	60x6	.38	.47	.25
7/16	60x7	.44	.53	.31
1/2	60x8	.51	.59	.38
5/8	60x10	.63	.72	.38
3/4	60x12♦	.76	.88	.44

Nut (Ref. SAE No. 060110)

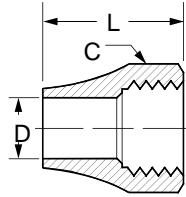
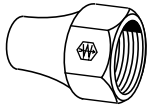


Tube O.D.	Catalog Number	Hex C	D	L
1/8	61x2	3/8	.13	.38
3/16	61x3	7/16	.19	.41
1/4	61x4	1/2	.26	.44
5/16	61x5	9/16	.32	.44
3/8	61x6	5/8	.38	.47
7/16	61x7	11/16	.44	.50
1/2	61x8	13/16	.51	.62
5/8	61x10	15/16	.63	.62
3/4	61x12♦	1-3/16	.76	.69

♦MTO - Made To Order

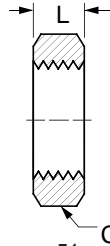
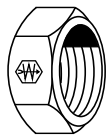
Long Nut

(Ref. SAE No. 060111)



Tube O.D.	Catalog Number	Hex C	D	L
3/16	1611x3	7/16	.193	.62
1/4	1611x4	9/16	.260	.75
5/16	1611x5♦	5/8	.320	.84
3/8	1611x6	11/16	.380	.88
1/2	1611x8♦	13/16	.510	1.06
5/8	1611x10♦	15/16	.637	1.08
3/4	1611x12♦	1-1/8	.760	1.38
1	1611x16♦	1-3/8	1.020	1.59

Bulkhead Nut

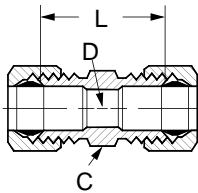
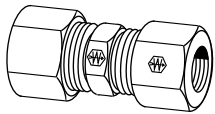


Used on **74x** Bulkhead Unions. Ref. page 51.

Tube O.D.	Catalog Number	Hex C	L	Thread Size
1/4	0102x4	9/16	.25	7/16-24
5/16	0102x5	5/8	.25	1/2-24
3/8	0102x6	11/16	.25	9/16-24
1/2	0102x8	15/16	.38	11/16-20

Union

(Ref. SAE No. 060101BA)

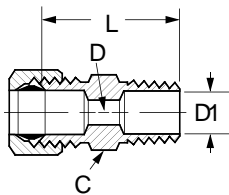
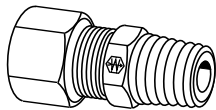


Assembly with long nut **162x**

Tube O.D.	Catalog Number	Hex C	D	L
1/8	62x2	5/16	.094	.66
3/16	62x3	3/8	.125	.76
1/4	62x4	7/16	.188	.79
5/16	62x5	1/2	.250	.88
3/8	62x6	9/16	.312	.97
1/2	62x8	11/16	.406	1.10
5/8	62x10	13/16	.500	1.25
3/4	62x12♦	1	.562	1.44

Male Connector

(Ref. SAE No. 060102BA)

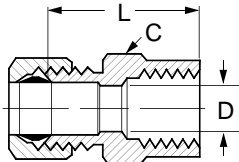
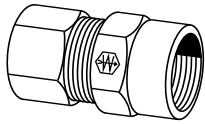


Assembly with long nut **168x**

*Available only as assembly with long nut.

Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1 Opt.	L
1/8	1/16	68x2x1	3/8	.094	—	.78
1/8	1/8	68x2	7/16	.094	.094	.78
3/16	1/8	68x3	7/16	.125	.125	.84
3/16	1/4	68x3x4♦	9/16	.125	.125	1.03
1/4	1/8	68x4	7/16	.188	.188	.88
1/4	1/4	68x4x4	9/16	.188	.312	1.06
5/16	1/8	68x5	1/2	.250	.234	.91
5/16	1/4	68x5x4	9/16	.250	.250	1.09
3/8	1/8	68x6x2	9/16	.312	.250	.97
3/8	1/4	68x6	9/16	.312	.312	1.17
3/8	3/8	68x6x6	11/16	.312	.312	1.16
3/8	1/2	68x6x8	7/8	.312	.562	1.34
7/16	1/4	68x7♦	5/8	.312	.312	1.19
1/2	1/4	68x8x4	11/16	.406	.281	1.22
1/2	3/8	68x8	11/16	.406	.406	1.22
1/2	1/2	68x8x8	7/8	.406	.406	1.41
5/8	1/2	68x10	7/8	.500	.500	1.50
3/4	1/2	68x12♦	1	.562	.562	1.62
3/4	3/4	68x12x12♦	1-1/16	.562	.875	1.62

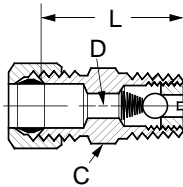
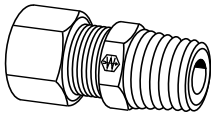
Female Connector (Ref. SAE No. 060103BA)



Assembly with long nut **166x**

Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8	66x2	9/16	.094	.75
3/16	1/8	66x3	9/16	.125	.78
1/4	1/8	66x4	9/16	.188	.78
1/4	1/4	66x4x4	11/16	.188	1.03
5/16	1/8	66x5	9/16	.250	.81
5/16	1/4	66x5x4♦	11/16	.250	1.03
3/8	1/8	66x6x2	9/16	.312	.84
3/8	1/4	66x6	11/16	.312	1.06
1/2	3/8	66x8	13/16	.406	1.12
5/8	1/2	66x10♦	1	.500	1.38

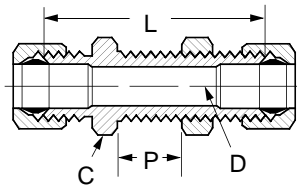
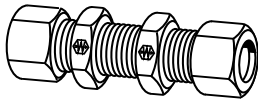
Male Ball Check Connector



Assembly with long nut **163x**. Min. working pressure 3 psi. Ball and spring position may be reversed to change flow/check direction. Ball check valves are neither tested nor adjusted prior to sale.

Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/4	1/8	63x4	7/16	.125	.88
5/16	1/8	63x5	1/2	.125	.91
3/8	1/4	63x6	9/16	.219	1.16

Bulkhead Union

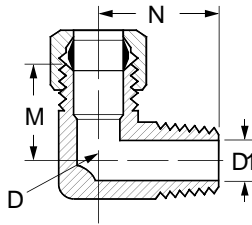
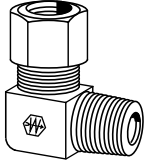


Assembly with long nut **174x**
For Bulkhead Nuts, ref. page 50, included with assembly.

Tube O.D.	Catalog Number	Hex C	D	L	Max. P
1/4	74x4	9/16	.188	1.57	.52
3/8	74x6♦	11/16	.312	1.76	.55

♦MTO - Made To Order

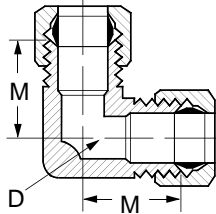
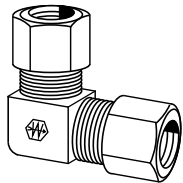
90° Male Elbow
(Ref. SAE No. 060202BA)



Assembly with long nut **169x**
*Available only as assembly with long nuts

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/8	1/16	69x2x1	.104	.125	.54	.66
1/8	1/8	69x2	.094	.219	.60	.67
3/16	1/8	69x3	.125	.219	.62	.69
1/4	1/8	69x4	.188	.219	.62	.75
1/4	1/4	69x4x4	.188	.188	.62	.75
5/16	1/8	69x5	.250	.234	.62	.75
5/16	1/4	69x5x4	.250	.312	.69	.84
3/8	1/8	69x6x2	.312	.234	.69	.69
3/8	1/4	69x6	.312	.344	.75	.94
3/8	3/8	69x6x6	.312	.438	.84	.94
3/8	1/2	69x6x8	.312	.531	1.06	1.12
7/16	1/4	69x7♦	.312	.312	.84	1.00
1/2	1/4	69x8x4	.406	.312	.84	.94
1/2	3/8	69x8	.406	.406	.94	1.12
1/2	1/2	69x8x8	.406	.531	.94	1.31
5/8	1/2	69x10	.500	.562	1.06	1.31
3/4	1/2	69x12♦	.562	.562	1.19	1.50
3/4	3/4	69x12x12♦	.562	.562	1.19	1.31
1	1	169x16*	.875	.938	1.31	1.62

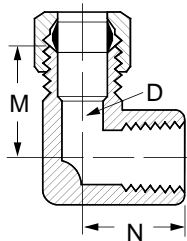
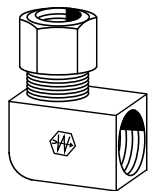
90° Union Elbow
(Ref. SAE No. 060201BA)



Assembly with long nut **165x**

Tube O.D.	Catalog Number	D	M
3/16	65x3♦	.125	.59
1/4	65x4	.188	.60
5/16	65x5	.250	.62
3/8	65x6	.312	.73
1/2	65x8	.406	.94

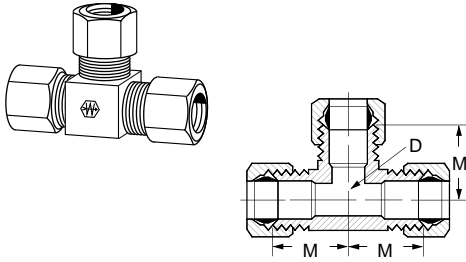
90° Female Elbow
(Ref. SAE No. 060203BA)



Assembly with long nut **170x**

Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N
3/16	1/8	70x3	.125	.69	.56
1/4	1/8	70x4	.188	.69	.56
3/8	1/4	70x6♦	.312	.81	.75
1/2	3/8	70x8♦	.406	1.00	.88

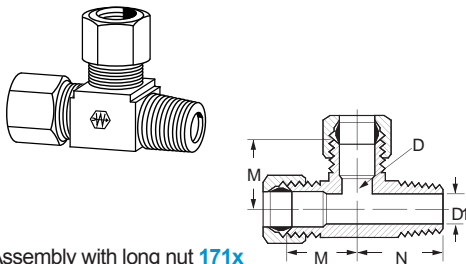
Union Tee (Ref. SAE No. 060401BA)



Assembly with long nut **164x**

Tube O.D.	Catalog Number	D	M
3/16	64x3	.125	.60
1/4	64x4	.188	.62
5/16	64x5	.250	.60
3/8	64x6	.312	.73
1/2	64x8	.406	.94

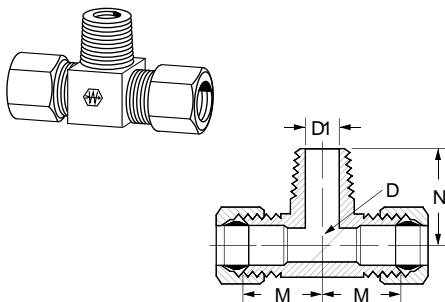
Male Run Tee (Ref. SAE No. 060424BA)



Assembly with long nut **171x**
* Optional Counterbore

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
3/16	1/8	71x3	.125	.219*	.64	.68
1/4	1/8	71x4	.188	.219*	.64	.73
1/4	1/4	71x4x4x4*	.188	.281*	.66	.80
5/16	1/8	71x5*	.250	.219*	.65	.72
3/8	1/4	71x6	.312	.344*	.75	.94

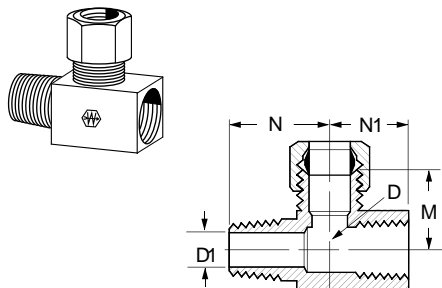
Male Branch Tee (Ref. SAE No. 060425BA)



Assembly with long nut **172x**

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
3/16	1/8	72x3*	.125	.219	.62	.69
1/4	1/8	72x4	.188	.219	.64	.73
1/4	1/4	72x4x4x4	.188	.281	.78	.85
5/16	1/8	72x5	.250	.234	.66	.70
3/8	1/4	72x6	.312	.344	.78	.91
1/2	3/8	72x8	.406	.406	.96	1.09

Adapter Tee (Female to Male Pipe on Run)

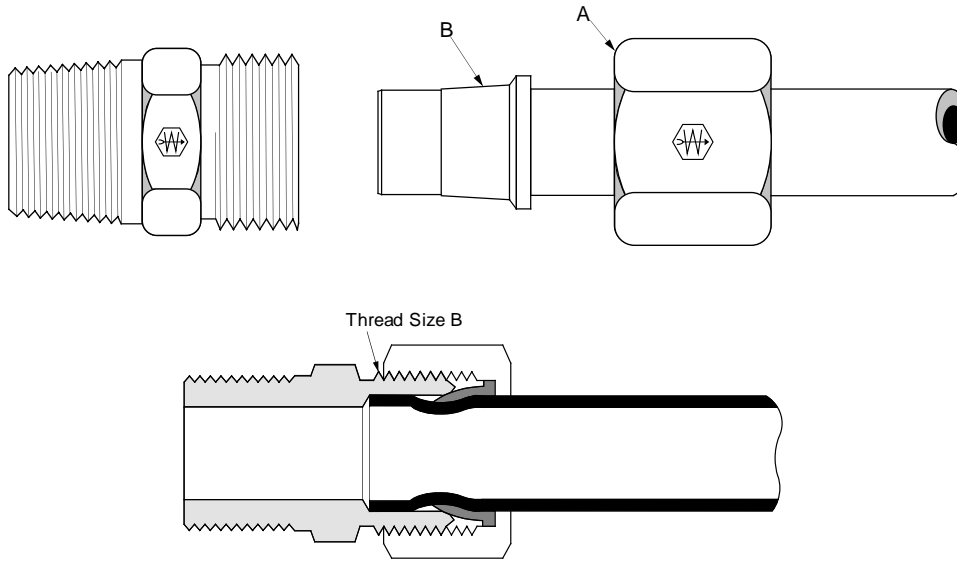


Assembly with long nut **176x**

Tube O.D.	M&F Pipe Thread	Catalog Number	D	D1	M	N	N1
1/4	1/8	76x4*	.188	.219	.59	.63	.47

*MTO - Made To Order

⚠ Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
Thread Size-B	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/4-18

• Typical Application

Instrumentation, hydraulic and pneumatic systems.

• Pressure

Working pressure up to 2000 psi with a 4:1 safety factor depending on tube size. When using plastic tubing, use the working pressure for type used.

• Vibration

Good resistance - use long nut when greater vibration resistance is needed.

• Temperature Range

-65°F to +250°F (-53°C to +121°C) with metal tubing. When using compatible plastic tubing do not exceed the tubing temperature range. (Refer to tubing temperature range.)

• Material

CA360 Brass.

• Used With

Aluminum, copper and Weatherhead plastic tubing.
Plastic tubing, except for PT230, requires 2030x insert. Not recommended for steel tubing. See page 28-32 for material compatibility, and pages 33-35 for plastic tubing.

• Advantages

Selfaligning - no need to disassemble fitting to line up sleeve on tube. Low cost. Easy to assemble, no flaring. Available with long or short nut. Broad selection of styles and sizes.

• Conformance

An exclusive item with Weatherhead, user approvals only.

• How to Order

Selfalign fittings are ordered as complete assemblies (body, nut and sleeve). To order assembly supplied with long nuts, simply add the prefix "1" to the catalog number. Example: 681x4 with long nut becomes 1681x4. Nuts and sleeves can be ordered separately by catalog number. To order bodies only (less nut and sleeve), prefix catalog number with the letter "B" and drop suffix number. Example: B68x4.

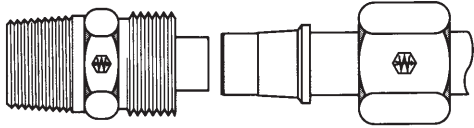
• NOTE

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.

• Assembly Instructions

1. Cut tubing to desired length.
2. Slide nut and then sleeve on tube. Threaded end of nut "A" and small end of sleeve "B" must face toward fitting.
3. Insert tubing into fitting body. Be sure tubing is bottomed on fitting shoulder.
4. Lubricate threads and assemble nut to fitting body.
5. Tighten with wrench to the "ring grip" point.
 - a. Ring Grip is the point when the cutting edge of the sleeve grips the tube. This is determined by turning tube slowly but firmly by hand while tightening the nut with a wrench until tube can no longer be turned by hand and a sharp increase in torque is noticed.
6. Tighten additional turns past "ring grip" as indicated on chart. Ref. to page 55.

Label Set: **CL-500** (non-adhesive)



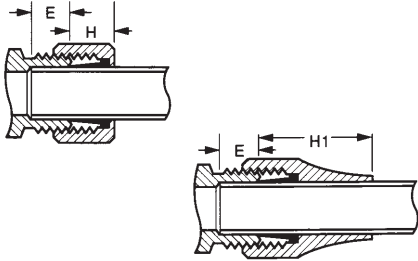
SELFALIGN® ASSEMBLY DATA CHART

Fitting Size	Annealed Copper and Soft Aluminum Tubing		Nylon Tubing			
			Type "T" Thin Wall		Type "H" Thick Wall	
	Wall	Turns*	Wall	Turns*	Wall	Turns*
2	.030	1-1/3	—	—	—	—
3	.030	1-1/3	.023	1-2/3	.039	1-1/3
4	.030	1-2/3	.030	2	.050	1-2/3
5	.032	1-2/3	.036	1-2/3	.062	2-2/3
6	.032	2	.040	1-2/3	.075	2
8	.032	2	—	—	—	—
10	.035	2	—	—	—	—
12	.049	2	—	—	—	—
16	.065	2-1/4	—	—	—	—

*Turns from "Ring Grip".

Ring Grip is the point when the cutting edge of the sleeve grips the tube. This is determined by turning tube slowly but firmly by hand while tightening the nut with a wrench until tube can no longer be turned by hand and a sharp increase in torque is noted.

NUT ASSEMBLY COMPARISON



Tube O.D.	E Tube Stop Depth	H (Std. Nut)	H1 (Long Nut)
1/8	.19	.24	—
3/16	.22	.25	.49
1/4	.25	.35	.61
5/16	.28	.30	.70
3/8	.31	.31	.75
1/2	.38	.36	.83
5/8	.38	.41	.92
3/4	.44	.41	1.14

NOTE: H and H1 are hand tight dimensions.

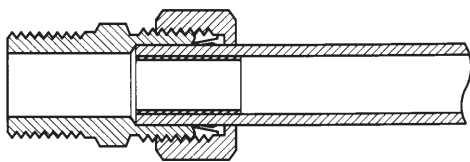


Illustration shows Selfalign® fitting used with soft plastic tubing and brass insert.

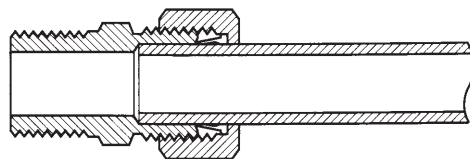
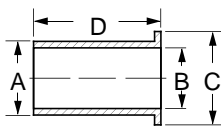
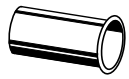


Illustration shows Selfalign® fitting used on rigid plastic tubing, no insert.

Tube Supports for Plastic Tubing



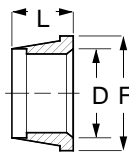
Use only with PT200 and PT240 Tubing.

* For tubing with .126 I.D./ .062 wall.

** For tubing with .170 I.D./ .040 wall.

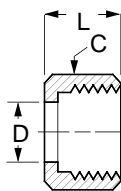
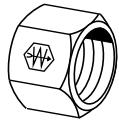
Tube O.D.	Catalog Number	Dia. A	Dia. B	Dia. C	Length D
1/4	2030x4*	1/8	3/32	11/64	19/32
1/4	2030x44**	11/64	9/64	7/32	17/32
5/16	2030x5	3/16	5/32	15/64	5/8
3/8	2030x6	1/4	7/32	11/32	41/64
1/2	2030x8	3/8	11/32	7/16	13/16
5/8	2030x10	1/2	29/64	35/64	13/16
3/4	2030x12	9/16	33/64	11/16	1-1/32

Sleeve



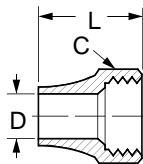
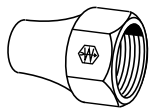
Tube O.D.	Catalog Number	D	F	L
1/8	601x2	.130	.25	.20
3/16	601x3	.193	.31	.20
1/4	601x4	.256	.38	.26
5/16	601x5	.318	.44	.26
3/8	601x6	.381	.50	.26
1/2	601x8	.507	.62	.30
5/8	601x10	.630	.72	.36
3/4	601x12	.755	.88	.38
1	601x16	1.005	1.19	.50

Nut



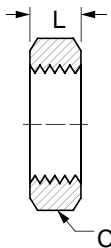
Tube O.D.	Catalog Number	Hex C	D	L
1/8	611x2	3/8	.14	.38
3/16	611x3	7/16	.19	.38
1/4	611x4	1/2	.26	.44
5/16	611x5	9/16	.32	.44
3/8	611x6	5/8	.38	.44
1/2	611x8	13/16	.51	.52
5/8	611x10	15/16	.64	.56
3/4	611x12	1-3/16	.76	.56

Long Nut



Tube O.D.	Catalog Number	Hex C	D	L
3/16	1611x3	7/16	.193	.62
1/4	1611x4	9/16	.260	.75
3/8	1611x6	11/16	.380	.88

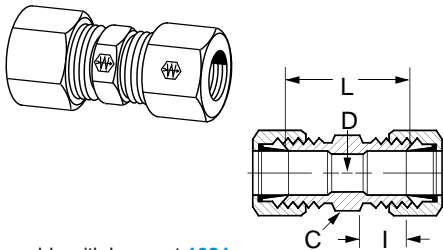
Bulkhead Nut



Tube O.D.	Catalog Number	Hex C	L
1/4	0102x4	9/16	.25
5/16	0102x5	5/8	.25
3/8	0102x6	11/16	.25
1/2	0102x8	15/16	.38

Use on 741x Bulkhead Unions. Ref. page 58.

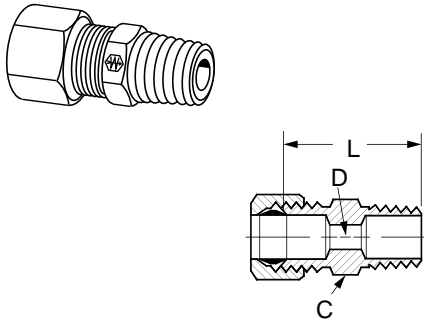
Union



Assembly with long nut **1621x**

Tube O.D.	Catalog Number	Hex C	D	I	L
1/8	621x2	5/16	.094	.25	.66
3/16	621x3	3/8	.125	.28	.76
1/4	621x4	7/16	.188	.31	.79
5/16	621x5	1/2	.250	.34	.88
3/8	621x6	9/16	.312	.38	.97
1/2	621x8	11/16	.406	.44	1.10
5/8	621x10	13/16	.500	.50	1.25

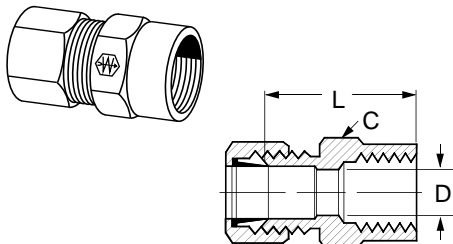
Male Connector



Assembly with long nut **1681x**
*Available only as assembly with long nut.

Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/16	681x2x1	3/8	.094	.78
1/8	1/8	681x2	7/16	.094	.78
3/16	1/8	681x3	7/16	.125	.84
1/4	1/8	681x4	7/16	.188	.88
1/4	1/4	681x4x4	9/16	.188	1.06
5/16	1/8	681x5	1/2	.234	.91
5/16	1/4	681x5x4	9/16	.250	1.09
3/8	1/8	681x6x2	9/16	.250	.97
3/8	1/4	681x6	9/16	.312	1.17
3/8	3/8	681x6x6	11/16	.312	1.16
3/8	1/2	681x6x8	7/8	.312	1.34
1/2	1/4	681x8x4	11/16	.281	1.22
1/2	3/8	681x8	11/16	.406	1.22
1/2	1/2	681x8x8	7/8	.406	1.41
5/8	1/2	681x10	7/8	.500	1.50
1	1	1681x16*	1-3/8	.875	2.00

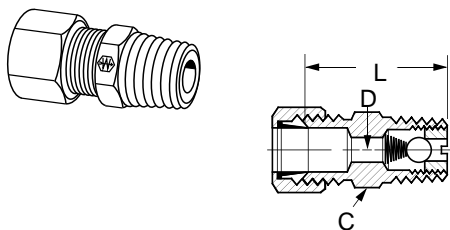
Female Connector



Assembly with long nut **1661x**

Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8	661x2	9/16	.094	.75
3/16	1/8	661x3	9/16	.125	.78
1/4	1/8	661x4	9/16	.188	.78
1/4	1/4	661x4x4	11/16	.188	1.03
5/16	1/8	661x5	9/16	.250	.81
3/8	1/8	661x6x2	9/16	.312	.84
3/8	1/4	661x6	11/16	.312	1.06
1/2	3/8	661x8	13/16	.406	1.12

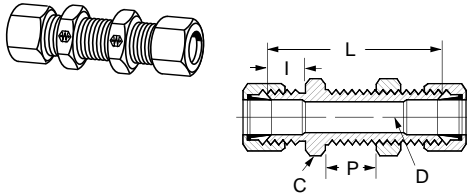
Male Ball Check Connector



Assembly with long nut **1631x**. Min. pressure 3 psi. Ball and spring position may be reversed to change flow/check direction. Ballcheck valves are neither tested nor adjusted prior to sale.

Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/4	1/8	631x4	7/16	.125	.88
3/8	1/4	631x6	9/16	.219	1.16

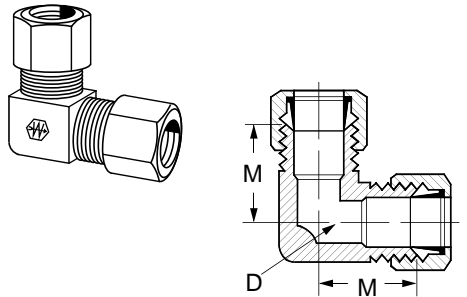
Bulkhead Union



Assembly with long nut **1741x**
For Bulkhead Nuts, ref. page 56.

Tube O.D.	Catalog Number	Hex C	D	I	L	Max. P
1/4	741x4	9/16	.188	.33	1.58	.52

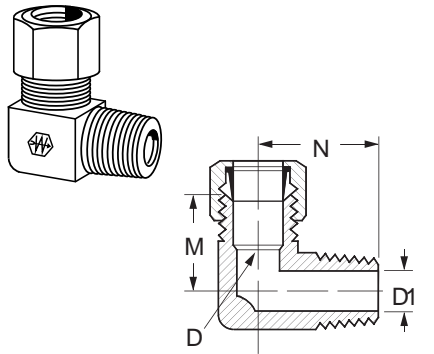
90° Union Elbow



Assembly with long nut **1651x**

Tube O.D.	Catalog Number	D	M
1/4	651x4	.188	.60
3/8	651x6	.312	.73

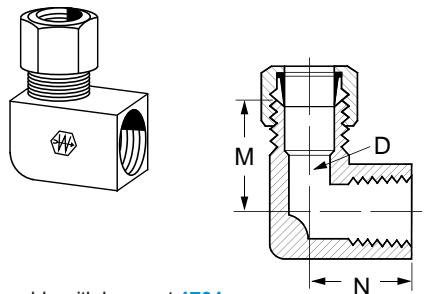
90° Male Elbow



Assembly with long nut **1691x**.
*Available only as assembly with long nut.

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/8	1/16	691x2x1	.109	.125	.54	.66
1/8	1/8	691x2	.094	.219	.60	.67
3/16	1/8	691x3	.125	.188	.62	.69
1/4	1/8	691x4	.188	.219	.62	.75
1/4	1/4	691x4x4	.188	.219	.62	.75
5/16	1/8	691x5	.250	.250	.62	.75
5/16	1/4	691x5x4	.250	.312	.69	.84
3/8	1/8	691x6x2	.312	.234	.69	.69
3/8	1/4	691x6	.312	.344	.75	.94
3/8	3/8	691x6x6	.312	.438	.84	.94
3/8	1/2	691x6x8	.312	.531	1.06	1.12
1/2	1/4	691x8x4	.406	.312	.84	.94
1/2	3/8	691x8	.406	.406	.94	1.12
1/2	1/2	691x8x8	.406	.531	.94	1.31
5/8	1/2	691x10	.500	.562	1.06	1.31
1	1	1691x16*	.875	.938	1.31	1.62

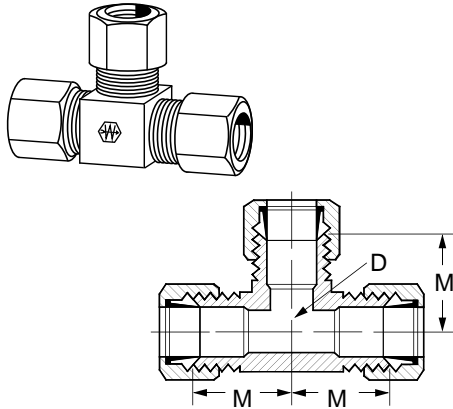
90° Female Elbow



Assembly with long nut **1701x**

Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N
3/16	1/8	701x3	.125	.69	.56
1/4	1/8	701x4	.188	.69	.56

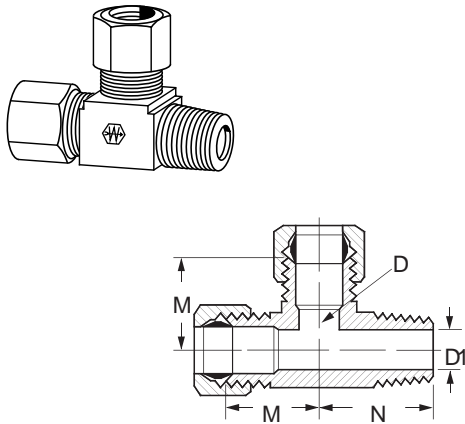
Union Tee



Assembly with long nut [1641x](#)

Tube O.D.	Catalog Number	D	M
3/16	641x3	.125	.60
1/4	641x4	.188	.62
5/16	641x5	.250	.60
3/8	641x6	.312	.73
1/2	641x8	.406	.94

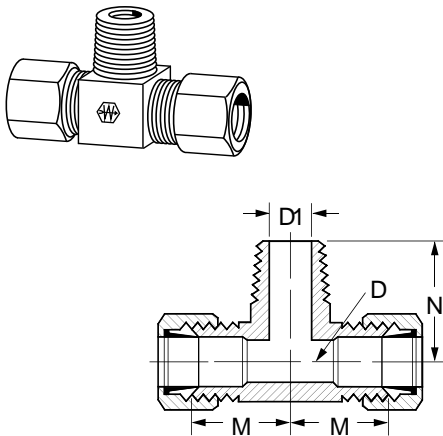
Male Run Tee



Assembly with long nut [1711x](#)

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1 Opt.	M	N
3/16	1/8	711x3	.125	.219	.62	.69
1/4	1/8	711x4	.188	.219	.62	.75
3/8	1/4	711x6	.312	.344	.75	.94

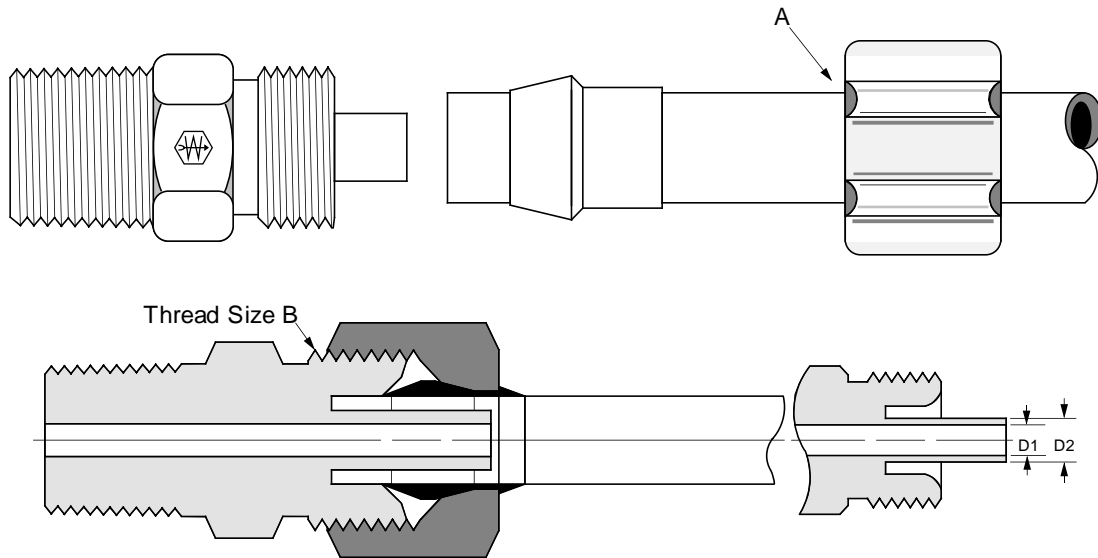
Male Branch Tee



Assembly with long nut [1721x](#)

Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/4	1/8	721x4	.188	.219	.62	.75
1/4	1/4	721x4x4x4	.188	.281	.78	.85
3/8	1/4	721x6	.312	.344	.75	.94
1/2	3/8	721x8	.406	.406	.94	1.12

⚠ Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Size	x2	x3	x46	x4	x5	x6	x8
Tube O.D.	1/8	3/16	1/4	1/4	5/16	3/8	1/2
Thread Size-B	5/16-24	3/8-24	3/8-24	3/8-24	7/16-24	1/2-24	11/16-20
Flow Dia. (D1)	.094*	.125*	.078	.125	.141	.203	.312
Support Dia. (D2)	-	-	.120	.166	.180	.245	.370

*No tube support in assembly – Flow Diameter for body only.

• Typical Application

Pneumatic instrumentation circuits, lubricant and cooling lines.

• Pressure

Working pressure up to 500 psi with a 4:1 safety factor depending on tube size. When using plastic tubing, use the working pressure for type used.

• Vibration

Excellent resistance.

• Temperature Range

-65°F to +250°F (-53°C to +121°C) with brass sleeve and metal tubing. When using compatible plastic tubing do not exceed the tubing temperature range. (Refer to tubing temperature range.)

• Material

CA360 Brass body, plastic sleeve.

• Used With

Aluminum, copper and hard plastic tubing requires brass sleeve.

• Used With (Continued)

Weatherhead PT200 and PT240 plastic tubing use plastic sleeve. Not recommended for steel tubing. See page 28-32 for material compatibility and pages 33-34 for plastic tubing.

• Advantages

No flaring of tubing required. Easy installation, captive sleeve, pre-assembled for installation and can be reassembled.

• Conformance

An exclusive item with Weatherhead. User approvals only.

• How to Order

Order 1/4" O.D. tubing with .040 wall, use suffix x4. Example: 1262x4. When .062 wall is desired, use suffix x46. Example: 1262x46.

Ordered as complete assemblies (body, nuts and sleeves) by catalog number. Nuts, sleeves and nut/sleeve assemblies can be ordered separately by catalog number.

NOTE: 1/8" and 3/16" tube O.D. assemblies are supplied with brass sleeves and no inserts.

• NOTE

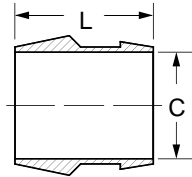
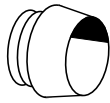
Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.

• Assembly Instructions

1. Cut tubing to desired length.
2. Slide nut/sleeve assembly on tube. Threaded end "A" of nut must face toward fitting.
3. Bottom tubing into fitting.
4. **Plastic sleeve** - tighten nut, hand tight.
Brass sleeve - tighten nut, hand tight, then additional 3/4 turn.

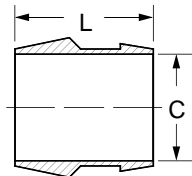
Label Set: **FS-2100** (adhesive)
CL-498 (non-adhesive)

Plastic Sleeve



Tube O.D.	Catalog Number	C	L
1/4	1260x4	.259	.34
5/16	1260x5	.321	.39
3/8	1260x6	.384	.41
1/2	1260x8	.509	.44

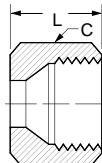
Brass Sleeve



NOTE: 1/8" and 3/16" sleeve configurations vary from style illustrated

Tube O.D.	Catalog Number	C	L
1/4	1260x2B♦	.130	.34
3/16	1260x3B♦	.192	.30
1/4	1260x4B♦	.263	.31
5/16	1260x5B♦	.320	.36
3/8	1260x6B♦	.384	.38
1/2	1260x8B♦	.510	.41

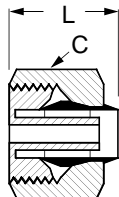
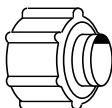
Brass Nut



NOTE: 1/8" and 3/16" Nuts are flat Hex type

Tube O.D.	Catalog Number	Dia. C	L
1/8	1261x2	3/8	.38
3/16	1261x3	7/16	.38
1/4	1261x4	7/16	.34
5/16	1261x5♦	1/2	.34
3/8	1261x6	9/16	.38
1/2	1261x8♦	13/16	.44

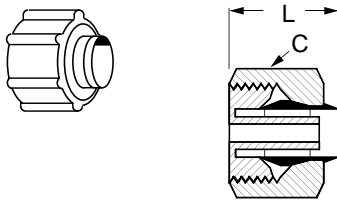
Brass Nut/Plastic Sleeve Assembly



Tube O.D.	Catalog Number	Dia. C	L
1/4	1261x4A	7/16	.43
3/8	1261x6A	9/16	.49

♦MTO - Made To Order

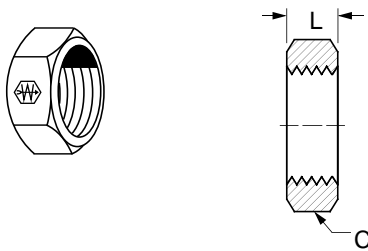
Brass Nut/Brass Sleeve Assembly



NOTE: 1/8" and 3/16" Nuts are flat Hex type

Tube O.D.	Catalog Number	Dia. C	L
1/4	1261x4B♦	9/16	.43
3/8	1261x6B♦	13/16	.49

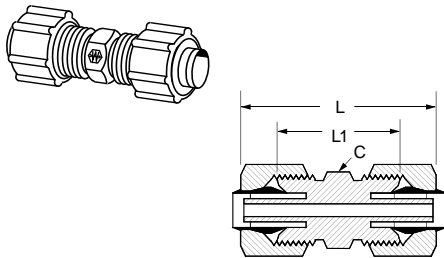
Brass Bulkhead Nut



For use with 1274x Bulkhead Unions, ref. pages 63 & 64.

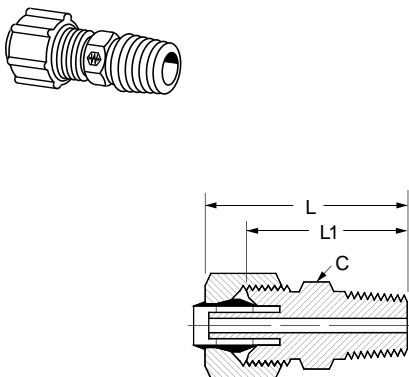
Tube O.D.	Catalog Number	Hex C	L
1/8	1202x2♦	5/16	.25
1/4	1202x4♦	9/16	.19
5/16	1202x5♦	5/8	.19
3/8	1202x6♦	11/16	.19
1/2	1202x8♦	7/8	.19

Union



Tube O.D.	Catalog Number	Hex C	L	L1
1/8	1262x2♦	5/16	—	.66
1/4	1262x4	3/8	1.00	.69
3/8	1262x6	1/2	1.03	.72
1/2	1262x8♦	11/16	1.28	.84

Male Connector

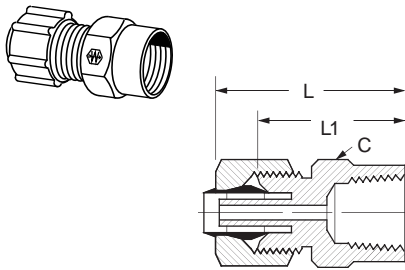


Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	L	L1
1/8	1/8	1268x2♦	7/16	—	.78
3/16	1/8	1268x3♦	7/16	—	.84
1/4	1/16	1268x4x1	7/16	.97	.81
1/4	1/8	1268x4	7/16	.97	.81
1/4	1/4	1268x4x4	9/16	1.15	1.00
1/4	3/8	1268x4x6♦	11/16	1.18	1.03
5/16	1/8	1268x5♦	7/16	.97	.81
5/16	1/4	1268x5x4♦	9/16	1.16	1.00
3/8	1/8	1268x6x2	1/2	1.00	.84
3/8	1/4	1268x6	9/16	1.19	1.03
3/8	3/8	1268x6x6	11/16	1.19	1.03
1/2	1/4	1268x8x4♦	11/16	1.31	1.09
1/2	3/8	1268x8	11/16	1.31	1.09
1/2	1/2	1268x8x8♦	11/16	1.62	1.03

*10-32 Straight Thread

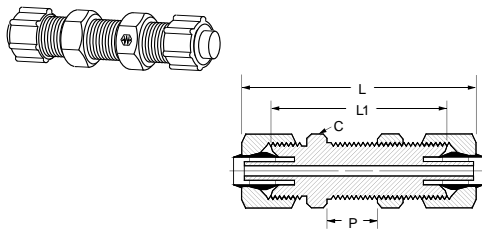
♦MTO - Made To Order

Female Connector



Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	L	L1
1/8	1/8	1266x2	9/16	—	.75
1/4	1/8	1266x4	1/2	.87	.72
1/4	1/4	1266x4x4	5/8	1.09	.93
3/8	1/4	1266x6	5/8	1.09	.94

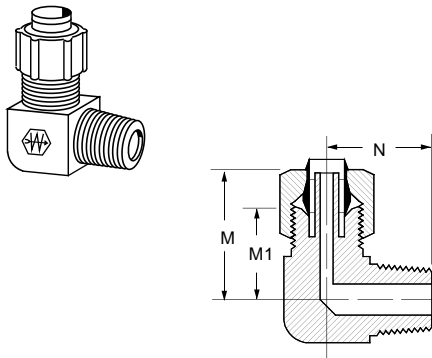
Bulkhead Union



For Bulkhead Nuts, ref. page 62.

Tube O.D.	Catalog Number	Hex C	L	L1	Max. P
1/4	1274x4♦	9/16	1.56	1.25	.38
5/16	1274x5♦	5/8	1.56	1.25	.38
3/8	1274x6♦	11/16	1.68	1.38	.47
1/2	1274x8♦	7/8	2.09	1.66	.63

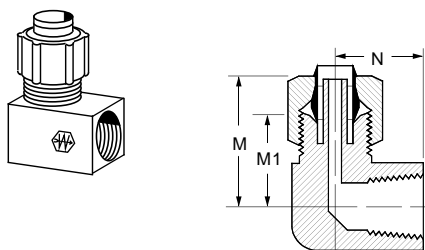
Male Elbow



"L" Suffix designates long leg elbow

Tube O.D.	Male Pipe Thread	Catalog Number	M	M1	N
3/16	1/8	1269x3♦	—	.59	.66
1/4	1/16	1269x4x1	.75	.59	.72
1/4	1/8	1269x4	.75	.59	.72
1/4	1/4	1269x4x4	.81	.66	.94
1/4	1/4	1269x4x4L♦	.81	.66	1.38
1/4	3/8	1269x4x6	.84	.69	1.08
5/16	1/8	1269x5♦	.75	.59	.72
3/8	1/8	1269x6x2	.88	.66	.75
3/8	1/4	1269x6	.87	.72	1.00
3/8	3/8	1269x6x6	.87	.72	1.08
1/2	3/8	1269x8♦	1.06	.84	1.12

Female Elbow

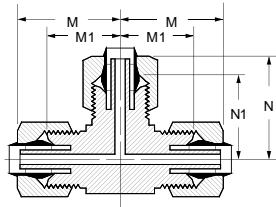
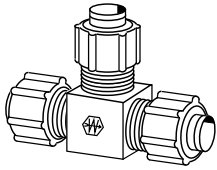


Tube O.D.	Fem. Pipe Thread	Catalog Number	M	M1	N
1/4	1/8	1270x4	.87	.66	.56
1/4	1/4	1270x4x4	.96	.75	.69
5/16	1/8	1270x5♦	.92	.66	.56
3/8	1/4	1270x6♦	.86	.75	.69
1/2	3/8	1270x8♦	1.19	.91	.94

♦MTO - Made To Order

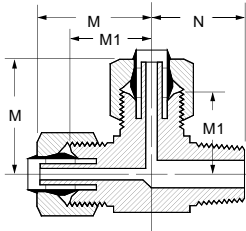
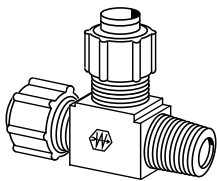
BRASS

Union Tee



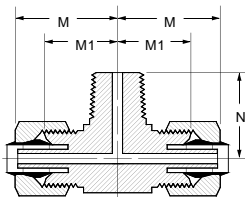
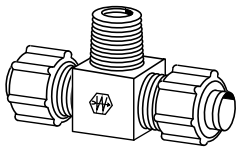
Tube O.D.	Catalog Number	M	M1	N	N1
1/4	1264x4	.75	.59	.75	.59
5/16	1264x5♦	.75	.59	.75	.59
3/8x3/8x1/4	1264x6x6x4♦	.88	.72	.81	.65
3/8	1264x6	.87	.72	.87	.72
1/2	1264x8♦	1.06	.84	1.06	.84

Male Run Tee




Tube O.D.	Male Pipe Thread	Catalog Number	M	M1	N
1/4	1/8	1271x4	.75	.59	.72
1/4	1/4	1271x4x4x4♦	.81	.66	.94
5/16	1/8	1271x5♦	.75	.59	.72
3/8	1/4	1271x6♦	.87	.72	1.00
1/2	3/8	1271x8♦	1.06	.84	1.12

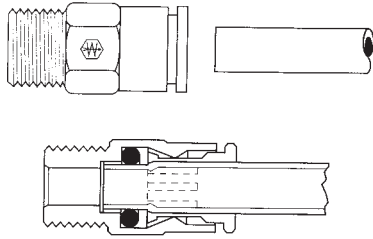
Male Branch Tee



Tube O.D.	Male Pipe Thread	Catalog Number	M	M1	N
1/4	1/8	1272x4♦	.75	.59	.72
1/4	1/4	1272x4x4x4♦	.81	.66	.94
5/16	1/8	1272x5♦	.75	.59	.72
3/8	1/4	1272x6♦	.87	.72	1.00
1/2	3/8	1272x8♦	1.06	.84	1.12

 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.

Push > Connect®

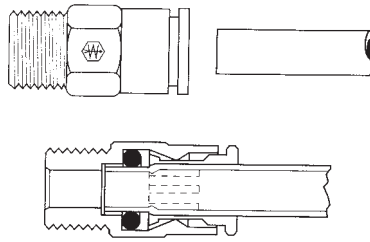


- **Typical Application:** Compressed air, pneumatic instrumentation, circuit, lubricant and cooling lines.
- **Pressure:** Up to 250 psi depending on tube size.
- **Sealing Method:** O-Ring of Buna-N Construction. (Viton available on request by special order.)
- **Temperature Range:** When using compatible plastic tubing do not exceed the tubing temperature range (Refer to tubing temperature range).
- **Material:** Brass, Nickel Plated.
- **Vacuum:** Fittings rated at 29.5 inches of mercury vacuum.
- **Used With:** PT230 and TP160 nylon, and PT240 Polyethylene tubing. See page 28-32 for material compatibility and pages 33-34 for plastic tubing.
- **Advantages:** Ease of assembly. No tools required, reusability of fittings and the time savings of assembly and disassembly.
- **Hex Dimensions:** All hexes are in inches.
- **How to Order:** Individually by catalog number.
- **NOTE:** Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.
- **Assembly Instructions**
 1. To connect, simply push the tubing into the fitting.
 2. To disconnect, depress the collet ring with two fingers and withdraw.

Label Set: CL-499 (non-adhesive)

See Push > Connect®
Fittings on pages 66-70.

Push > Connect® Metric



Nominal Size	2	4	5MM	6	8
Thread					
MM			M5 x .8		
BSPT	1/8 (2PT)	1/4 (4PT)		3/8 (6PT)	1/2 (8PT)
BSPP	1/8 (2PP)	1/4 (4PP)		3/8 (6PP)	1/2

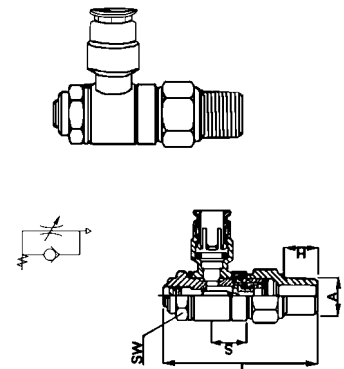
- **Typical Application:** Compressed air, pneumatic instrumentation, circuit, lubricant and cooling lines.
- **Pressure:** Up to 250 psi depending on tube size.
- **Sealing Method:** O-Ring of Buna-N Construction. (Viton available on request by special order.)
- **Temperature Range:** -40°F to 200°F (-40°C to 93°C).
- **Material:** Brass, Nickel Plated.
- **Used With:** MTP160 nylon tubing. See page 28-32 for material compatibility and page 34 for plastic tubing.
- **Advantages:** Ease of assembly. No tools required, reusability of fittings and the time savings of assembly and disassembly.
- **Hex Dimensions:** All hexes are metric.
- **How to Order:** Individually by catalog number.
- **NOTE:** Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.
- **Assembly Instructions**
 1. To connect, simply push the tubing into the fitting.
 2. To disconnect, depress the collet ring with two fingers and withdraw.

SUFFIX CHART

MM - Metric Screw Thread
MMS - Metric Screw Thread Swivel
MRP - Metric Red Plug
PP - British Parallel Plug
PPS - British Parallel Pipe Swivel
PT - British Tapered Pipe
PTS - British Tapered Pipe Swivel

See Push > Connect®
Fittings on pages 71-74.

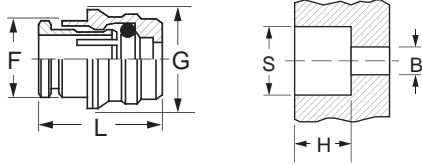
Push > Connect® Flow Controls



- **Typical Application:** Compressed air, pneumatic instrumentation, circuit, lubricant and cooling lines. Also excellent for assembly equipment and cylinder control.
- **Pressure:** Up to 250 psi depending on tube size.
- **Sealing Method:** O-Ring of Buna-N Construction. (Viton available on request by special order.)
- **Temperature Range:** 0°F to +160°F (-17.8°C to +71°C)
- **Material:** Brass, Nickel Plated.
- **Used With:** PT230 and TP160 nylon, and PT240 Polyethylene tubing. See page 28-32 for material compatibility and pages 33-35 for plastic tubing.
- **Advantages:** Ease of assembly. No tools required, reusability of fittings and the time savings of assembly and disassembly. These flow controls have a simple design, but offer excellent ability to control the speed of a cylinder or motor.
- **Hex Dimensions:** All hexes are in inches.
- **How to Order:** Individually by catalog number.
- **NOTE:** Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.
- **Assembly Instructions**
 1. To connect, simply push the tubing into the fitting.
 2. To disconnect, depress the collet ring with two fingers and withdraw.

See Push > Connect®
Fittings on pages 75 & 76.

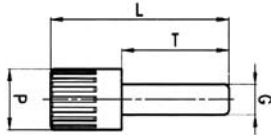
Cartridge



Cartridge body is not Nickel-plated.

Tube O.D.	Catalog Number	F	G	L	S	H	B
1/8	1161x2	.34	.35	.59	.344	.433	.14
5/32	1161x2.5	.34	.35	.57	.344	.433	.14
1/4	1161x4	.46	.48	.65	.470	.472	.16
5/16	1161x5	.54	.56	.67	.549	.551	.25
3/8	1161x6	.62	.64	.79	.627	.590	.32
1/2	1161x8	.74	.76	.83	.746	.629	.42

**Plug
(Plastic)**



Tube O.D.	Catalog Number	L	P	T
1/8	1129x2	1.04	.24	.65
5/32	1129x2.5	1.04	.24	.65
1/4	1129x4	1.10	.32	.71
5/16	1129x5	1.20	.39	.81
3/8	1129x6	1.38	.47	.91
1/2	1129x8	1.42	.55	.94

Double Union



NOTE: Joins Push>Connect® Fittings.

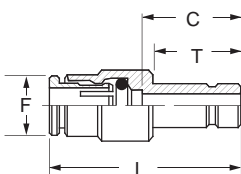
Tube O.D.	Catalog Number	L
1/8	1105x2	1.28
5/32	1105x2.5	1.28
1/4	1105x4	1.40
5/16	1105x5	1.59
3/8	1105x6	1.81
1/2	1105x8	1.89

Reducer



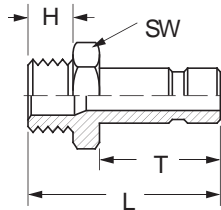
A

B



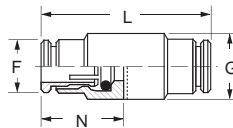
Tube O.D. A	Tube O.D. B	Catalog Number	C	F	L	T
1/8	1/4	1109x2x4	.79	.39	1.38	.71
5/32	1/4	1109x2.5x4	.79	.39	1.34	.71
1/4	3/8	1109x4x6	.86	.51	1.50	.91
1/4	1/2	1109x4x8	.86	.51	1.50	.91
3/8	1/2	1109x6x8	1.00	.67	1.80	.94

Stem Adapter



Tube O.D.	Male Pipe Thread	Catalog Number	H	T	L	SW (mm)
1/8	1/8	1180x2	.37	.65	1.20	12
1/8	1/4	1180x2x4	.51	.65	1.36	14
5/32	1/8	1180x2.5	.37	.65	1.20	12
5/32	1/4	1180x2.5x4	.51	.65	1.36	14
1/4	1/8	1180x4	.37	.71	1.26	12
1/4	1/4	1180x4x4	.51	.71	1.42	14
5/16	1/8	1180x5	.37	.81	1.36	12
5/16	1/4	1180x5x4	.51	.81	1.34	14
3/8	1/4	1180x6	.51	.91	1.61	17
3/8	3/8	1180x6x6	.51	.91	1.61	19
1/2	3/8	1180x8	.51	.94	1.65	19
1/2	1/2	1180x8x8	.71	.94	1.87	22

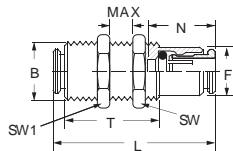
Union



NOTE: Joins tubing.

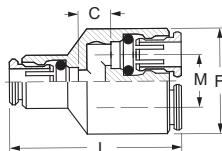
Tube O.D.	Catalog Number	F	G	L	N
1/8	1162x2	.35	.39	1.26	.59
5/32	1162x2.5	.35	.39	1.18	.55
1/4	1162x4	.46	.47	1.40	.64
5/16	1162x5	.54	.55	1.23	.69
3/8	1162x6	.64	.67	1.67	.79
1/2	1162x8	.72	.75	1.75	.83

Bulkhead Union



Tube O.D.	Catalog Number	B	F	L	N	MAX	SW (mm)	SW1 (mm)	T
1/8	1174x2	M10x1	.35	1.26	.59	.35	14	14	.83
5/32	1174x2.5	M10x1	.35	1.18	.55	.32	14	14	.79
1/4	1174x4	M14x1	.49	1.40	.64	.37	17	17	.83
5/16	1174x5	M16x1	.54	1.50	.69	.41	19	19	.83
3/8	1174x6	M18x1	.64	1.67	.77	.47	22	22	.93
1/2	1174x8	M20x1	.72	1.75	.83	.53	24	24	.98

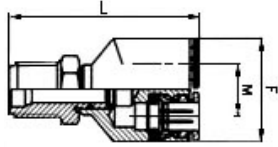
Union "Y"



Tube O.D.	Catalog Number	C	F	L	M
1/8	1107x2	.24	.83	1.42	.39
5/32	1107x2.5	.24	.83	1.34	.39
1/4	1107x4	.24	.96	1.52	.49

NOTE: UNF thread seal with nylon washer included.

Swivel Male "Y"

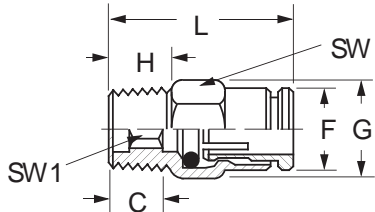


*UNF Thread

NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	F	M	L
1/8	10-32*	1108x2AS	.83	.39	1.12
1/8	1/8	1108x2S	.83	.39	1.32
5/32	1/8	1108x2.5S	.83	.39	1.29
1/4	1/8	1108x4S	.96	.49	1.40

Male Connector

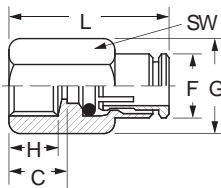
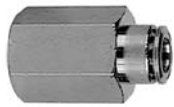


*UNF Thread

Allen wrench use permits close quarter installation not possible with a standard wrench.

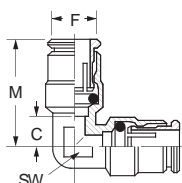
Tube O.D.	Male Pipe Thread	Catalog Number	C	F	G	H	L	SW (mm)	SW1 (mm)
1/8	10-32*	1168x2A	.26	.35	.41	.18	.85	9	2
1/8	1/8	1168x2	.26	.35	.55	.37	.85	12	2
1/8	1/4	1168x2x4	.39	.35	.63	.51	.98	14	2
5/32	10-32*	1168x2.5A	.26	.35	.41	.18	.81	9	2
5/32	1/8	1168x2.5	.26	.35	.55	.37	.81	12	2.5
5/32	1/4	1168x2.5x4	.39	.35	.63	.51	.94	14	2.5
1/4	10-32*	1168x4A	.27	.46	.55	.18	.91	12	2
1/4	1/8	1168x4	.35	.46	.55	.37	.98	12	4
1/4	1/4	1168x4x4	.44	.46	.63	.51	1.08	14	4
1/4	3/8	1168x4x6	.46	.46	.87	.51	1.10	19	4
5/16	1/8	1168x5	.45	.54	.63	.37	1.14	14	5
5/16	1/4	1168x5x4	.45	.54	.63	.51	1.14	14	6
5/16	3/8	1168x5x6	.45	.54	.87	.51	1.14	19	6
3/8	1/8	1168x6x2	.59	.64	.78	.51	1.38	17	7
3/8	1/4	1168x6	.59	.64	.78	.51	1.38	17	7
3/8	3/8	1168x6x6	.39	.64	.87	.51	1.18	19	7
3/8	1/2	1168x6x8	.47	.64	1.00	.71	1.26	22	7
1/2	3/8	1168x8	.53	.72	.87	.51	1.36	19	10
1/2	1/2	1168x8x8	.53	.72	1.00	.71	1.36	22	10

Female Connector



Tube O.D.	Fem. Pipe Thread	Catalog Number	C	F	G	H	L	SW (mm)
1/8	1/8	1166x2	.41	.35	.64	.34	1.00	14
1/8	1/4	1166x2x4	.55	.35	.78	.47	1.14	17
5/32	1/8	1166x2.5	.41	.35	.64	.34	.96	14
5/32	1/4	1166x2.5x4	.55	.35	.78	.47	1.10	17
1/4	1/8	1166x4	.43	.46	.64	.34	1.06	14
1/4	1/4	1166x4x4	.56	.46	.78	.47	1.20	17
3/8	1/4	1166x6	.57	.64	.78	.47	1.36	17
3/8	3/8	1166x6x6	.59	.64	1.00	.49	1.38	22

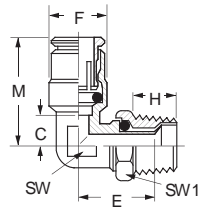
Union Elbow



Tube O.D.	Catalog Number	C	F	M	SW (mm)
1/8	1165x2	.24	.39	.83	9
5/32	1165x2.5	.24	.39	.79	9
1/4	1165x4	.27	.50	.91	10
5/16	1165x5	.30	.59	.98	12
3/8	1165x6	.34	.69	1.12	14
1/2	1165x8	.39	.77	1.22	17

NOTE: UNF Thread seals with nylon washer, included.

Swivel Male Elbow

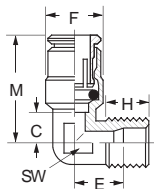


*UNF Thread

NOTE: Swivel for installation purposes only.

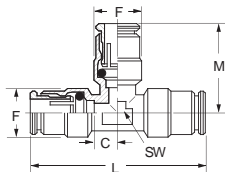
Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	M	SW (mm)	SW1 (mm)
1/8	10-32*	1169x2AS	.24	.53	.39	.18	.83	9	8
1/8	1/8	1169x2S	.24	.71	.39	.37	.83	9	12
1/8	1/4	1169x2x4S	.24	.87	.39	.51	.83	9	14
5/32	10-32*	1169x2.5AS	.24	.53	.39	.18	.79	9	8
5/32	1/8	1169x2.5S	.24	.71	.39	.37	.79	9	12
5/32	1/4	1169x2.5x4S	.24	.87	.39	.51	.83	9	14
1/4	1/8	1169x4S	.27	.73	.50	.37	.91	10	12
1/4	1/4	1169x4x4S	.27	.81	.50	.51	.91	10	14
1/4	3/8	1169x4x6S	.29	.87	.50	.51	.93	12	19
5/16	1/8	1169x5S	.30	.77	.59	.37	.98	12	12
5/16	1/4	1169x5x4S	.30	.85	.59	.51	.98	12	14
5/16	3/8	1169x5x6S	.30	.87	.59	.51	.98	12	19
3/8	1/8	1169x6x2S	.34	.75	.64	.20	1.10	14	14
3/8	1/4	1169x6S	.34	.89	.69	.51	1.12	14	14
3/8	3/8	1169x6x6S	.34	.91	.69	.51	1.12	14	19
3/8	1/2	1169x6x8S	.34	1.04	.69	.71	1.12	14	22
1/2	1/4	1169x8x4S	.39	.95	.77	.51	1.22	17	14
1/2	3/8	1169x8S	.39	.95	.77	.51	1.22	17	19
1/2	1/2	1169x8x8S	.39	1.12	.77	.71	1.22	17	22

Male Elbow



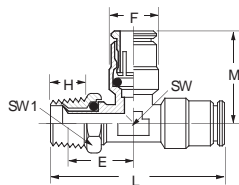
Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	M	SW (mm)
1/4	1/8	1169x4	.27	.53	.50	.38	.91	10
1/4	1/4	1169x4x4	.27	.59	.50	.51	.91	10
3/8	1/4	1169x6	.34	.69	.69	.51	1.12	14
3/8	3/8	1169x6x6	.34	.69	.69	.51	1.12	14

Union Tee



Tube O.D.	Catalog Number	C	F	L	M	SW (mm)
1/8	1164x2	.24	.39	1.65	.83	9
5/32	1164x2.5	.24	.39	1.57	.79	9
1/4	1164x4	.27	.50	1.81	.91	10
5/16	1164x5	.30	.59	1.97	.98	12
3/8	1164x6	.34	.69	2.24	1.12	14
1/2	1164x8	.39	.77	2.44	1.22	19

Male Run Tee Swivel



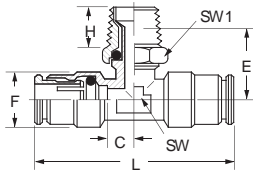
*UNF Thread

NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	E	F	H	L	M	SW (mm)	SW1 (mm)
1/8	10-32*	1171x2AS	.53	.39	.18	1.53	.83	9	8
1/8	1/8	1171x2S	.59	.35	.20	1.59	.80	9	12
5/32	10-32*	1171x2.5AS	.53	.39	.18	1.50	.79	9	8
5/32	1/8	1171x2.5S	.59	.35	.20	1.57	.79	9	12
5/32	1/4	1171x2.5x4S	.63	.35	.26	1.67	.79	9	14
1/4	1/8	1171x4S	.61	.46	.20	1.69	.89	10	12
1/4	1/4	1171x4x4S	.65	.46	.26	1.79	.89	10	14
1/4	3/8	1171x4x6S	.65	.46	.29	1.83	.89	12	19
3/8	1/4	1171x6S	.77	.64	.26	2.17	1.10	14	14
3/8	3/8	1171x6x6S	.77	.64	.29	2.26	1.10	14	19
3/8	1/2	1171x6x8S	.79	.64	.34	2.22	1.10	14	22
1/2	1/4	1171x8x4S	.81	.72	.26	2.26	1.20	17	13
1/2	3/8	1171x8S	.81	.72	.29	2.30	1.20	17	19
1/2	1/2	1171x8x8S	.83	.72	.34	2.36	1.20	17	22

NOTE: UNF Thread seals with nylon washer, included.

Male Branch Tee Swivel

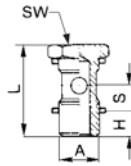


*UNF Thread

NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	L	SW (mm)	SW1 (mm)
1/8	10-32*	1172x2AS	.24	.53	.39	.18	1.61	.35	.32
1/8	1/8	1172x2S	.24	.59	.35	.20	1.57	.35	.47
5/32	10-32*	1172x2.5AS	.24	.53	.39	.18	1.57	.35	.32
5/32	1/8	1172x2.5S	.24	.59	.35	.20	1.57	.35	.47
5/32	1/4	1172x2.5x4S	.24	.63	.35	.26	1.57	.35	.55
1/4	1/8	1172x4S	.28	.60	.46	.20	1.77	.39	.47
1/4	1/4	1172x4x4S	.28	.65	.46	.26	1.77	.39	.55
1/4	3/8	1172x4x6S	.28	.65	.46	.29	1.77	.47	.75
3/8	1/4	1172x6S	.34	.77	.64	.26	2.20	.55	.55
3/8	3/8	1172x6x6S	.34	.77	.64	.29	2.20	.55	.75
3/8	1/2	1172x6x8S	.34	.79	.64	.34	2.20	.55	.87
1/2	1/4	1172x8x4S	.39	.80	.72	.26	2.40	.67	.55
1/2	3/8	1172x8S	.39	.80	.72	.29	2.40	.67	.75
1/2	1/2	1172x8x8S	.39	.83	.72	.34	2.40	.67	.87

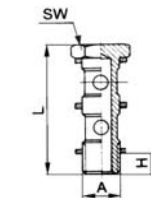
Stud Manifolds



*UNF Thread

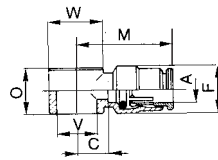
Male Pipe Thread A	Catalog Number	H	L	S (mm)	SW (mm)
10-32*	1184x1xA	.16	.71	.18	.32
1/8	1184x1x2	.24	1.06	.34	.55
1/4	1184x1x4	.35	1.16	.34	.67
3/8	1184x1x6	.35	1.18	.34	.75

Stud Manifolds



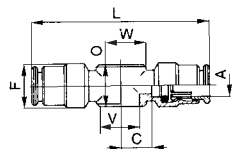
Male Pipe Thread A	Catalog Number	H	L	SW (mm)
1/8	1185x2x2	.24	1.69	.55
1/4	1185x2x4	.32	1.79	.67
3/8	1185x2x6	.32	1.81	.75

Banjo



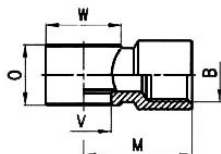
Tube O.D. A	Catalog Number	C	F	M	O	V	W
5/32	1181x2.5A	.20	.35	.75	.35	.20	.35
1/8	1181x2x2	.32	.39	.89	.57	.39	.55
5/32	1181x2.5x2	.32	.39	.89	.57	.39	.55
1/4	1181x4x2	.35	.50	.98	.57	.39	.55
1/4	1181x4x4	.43	.50	1.06	.57	.52	.71
3/8	1181x6x4	.39	.69	1.18	.57	.52	.71
3/8	1181x6x6	.45	.69	1.24	.57	.66	.83

Double Banjo



Tube O.D. A	Catalog Number	C	F	L	O	V	W
5/32	1182x2.5A	.20	.35	1.50	.35	.21	.35
1/4	1182x4x2	.32	.51	1.89	.57	.39	.55
1/4	1182x4x4	.39	.51	2.09	.57	.52	.71
3/8	1182x6x4	.39	.69	2.32	.57	.52	.71
3/8	1182x6x6	.45	.69	2.44	.57	.66	.83

Female Banjo



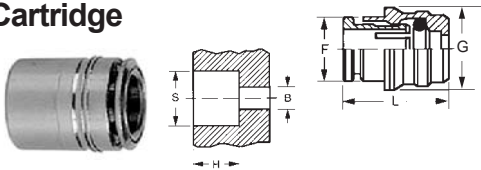
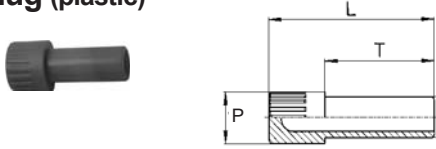
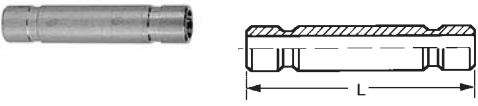
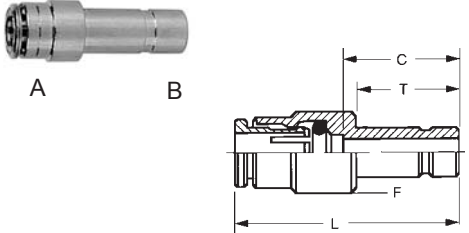
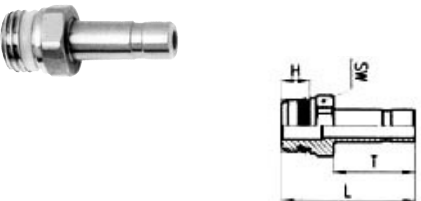
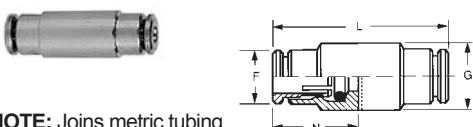
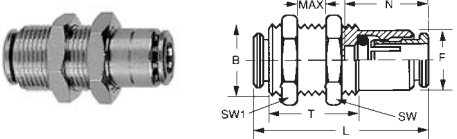
*UNF Thread

Female Pipe Thread B	Catalog Number	V	O	M	W
10-32*	1183xAxA	10-32	.35	.41	.35
1/8	1183x2x2	1/8	.57	.83	.55
1/4	1183x4x4	1/4	.57	1.02	.71
3/8	1183x6x6	3/8	.57	1.12	.83

NOTE: UNF Thread seals with nylon washer, included.

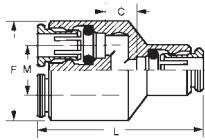
Push > Connect® Metric

**Brass
Fittings**

<p>Cartridge</p> 	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>F</th> <th>G</th> <th>L</th> <th>S</th> <th>H</th> <th>B</th> </tr> </thead> <tbody> <tr><td>4</td><td>1161x4M</td><td>8.6</td><td>9.0</td><td>14.5</td><td>8.75</td><td>11.0</td><td>3.5</td></tr> <tr><td>5</td><td>1161x5M</td><td>9.6</td><td>10.0</td><td>15.5</td><td>9.75</td><td>11.5</td><td>3.5</td></tr> <tr><td>6</td><td>1161x6M</td><td>11.8</td><td>12.2</td><td>16.5</td><td>11.95</td><td>12.0</td><td>4.0</td></tr> <tr><td>8</td><td>1161x8M</td><td>13.8</td><td>14.2</td><td>18.0</td><td>13.95</td><td>14.0</td><td>6.0</td></tr> <tr><td>10</td><td>1161x10M</td><td>15.8</td><td>16.2</td><td>20.5</td><td>15.95</td><td>15.0</td><td>8.0</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	F	G	L	S	H	B	4	1161x4M	8.6	9.0	14.5	8.75	11.0	3.5	5	1161x5M	9.6	10.0	15.5	9.75	11.5	3.5	6	1161x6M	11.8	12.2	16.5	11.95	12.0	4.0	8	1161x8M	13.8	14.2	18.0	13.95	14.0	6.0	10	1161x10M	15.8	16.2	20.5	15.95	15.0	8.0																																				
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4	1161x4M	8.6	9.0	14.5	8.75	11.0	3.5																																																																														
5	1161x5M	9.6	10.0	15.5	9.75	11.5	3.5																																																																														
6	1161x6M	11.8	12.2	16.5	11.95	12.0	4.0																																																																														
8	1161x8M	13.8	14.2	18.0	13.95	14.0	6.0																																																																														
10	1161x10M	15.8	16.2	20.5	15.95	15.0	8.0																																																																														
<p>Plug (plastic)</p> 	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>L</th> <th>P</th> <th>T</th> </tr> </thead> <tbody> <tr><td>4</td><td>1129x4MRP</td><td>25.0</td><td>8</td><td>16.0</td></tr> <tr><td>5</td><td>1129x5MRP</td><td>25.5</td><td>8</td><td>16.5</td></tr> <tr><td>6</td><td>1129x6MRP</td><td>26.5</td><td>8</td><td>17.5</td></tr> <tr><td>8</td><td>1129x8MRP</td><td>29.5</td><td>12</td><td>19.5</td></tr> <tr><td>10</td><td>1129x10MRP</td><td>32.0</td><td>12</td><td>19.5</td></tr> <tr><td>12</td><td>1129x12MRP</td><td>35.5</td><td>16</td><td>23.5</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	L	P	T	4	1129x4MRP	25.0	8	16.0	5	1129x5MRP	25.5	8	16.5	6	1129x6MRP	26.5	8	17.5	8	1129x8MRP	29.5	12	19.5	10	1129x10MRP	32.0	12	19.5	12	1129x12MRP	35.5	16	23.5																																																	
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10	1129x10MRP	32.0	12	19.5																																																																																	
12	1129x12MRP	35.5	16	23.5																																																																																	
<p>Double Union</p>  <p>NOTE: Joins Metric Push>Connect® fittings.</p>	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>L</th> </tr> </thead> <tbody> <tr><td>4</td><td>1105x4M</td><td>32.5</td></tr> <tr><td>5</td><td>1105x5M</td><td>35.0</td></tr> <tr><td>6</td><td>1105x6M</td><td>35.5</td></tr> <tr><td>8</td><td>1105x8M</td><td>40.5</td></tr> <tr><td>10</td><td>1105x10M</td><td>46.0</td></tr> <tr><td>12</td><td>1105x12M</td><td>48.0</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	L	4	1105x4M	32.5	5	1105x5M	35.0	6	1105x6M	35.5	8	1105x8M	40.5	10	1105x10M	46.0	12	1105x12M	48.0																																																															
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Tube O.D. A (mm)	Tube O.D. B (mm)	Catalog Number	C	F	L	T																																																																															
4	5	1109x4Mx5M	20.0	10	34.0	18.0																																																																															
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6	8	1109x6Mx8M	22.5	13	38.5	20.5																																																																															
6	10	1109x6Mx10M	21.0	13	36.5	23.0																																																																															
6	12	1109x6Mx12M	22.0	13	37.5	24.0																																																																															
8	10	1109x8Mx10M	25.0	14	42.5	23.0																																																																															
8	12	1109x8Mx12M	22.5	14	40.0	24.0																																																																															
10	12	1109x10Mx12M	25.5	17	45.5	24.0																																																																															
<p>Stem Adapter</p> 	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Thd. Size BSPP D</th> <th>Catalog Number</th> <th>H</th> <th>T</th> <th>L</th> <th>SW (mm)</th> </tr> </thead> <tbody> <tr><td>4</td><td>1/8</td><td>1180x4Mx2PP</td><td>5.5</td><td>16.5</td><td>27.8</td><td>12</td></tr> <tr><td>5</td><td>1/8</td><td>1180x5Mx2PP</td><td>5.5</td><td>18.0</td><td>29.3</td><td>12</td></tr> <tr><td>6</td><td>1/8</td><td>1180x6Mx2PP</td><td>5.5</td><td>18.0</td><td>29.3</td><td>12</td></tr> <tr><td>6</td><td>1/4</td><td>1180x6Mx4PP</td><td>7.0</td><td>18.0</td><td>31.0</td><td>14</td></tr> <tr><td>8</td><td>1/8</td><td>1180x8Mx2PP</td><td>5.5</td><td>20.5</td><td>31.8</td><td>12</td></tr> <tr><td>8</td><td>1/4</td><td>1180x8Mx4PP</td><td>7.0</td><td>20.5</td><td>33.5</td><td>14</td></tr> <tr><td>10</td><td>1/4</td><td>1180x10Mx4PP</td><td>7.0</td><td>23.0</td><td>36.0</td><td>14</td></tr> <tr><td>10</td><td>3/8</td><td>1180x10Mx6PP</td><td>8.0</td><td>23.0</td><td>37.3</td><td>19</td></tr> <tr><td>12</td><td>3/8</td><td>1180x12Mx6PP</td><td>8.0</td><td>24.0</td><td>38.3</td><td>19</td></tr> </tbody> </table>	Tube O.D. (mm)	Thd. Size BSPP D	Catalog Number	H	T	L	SW (mm)	4	1/8	1180x4Mx2PP	5.5	16.5	27.8	12	5	1/8	1180x5Mx2PP	5.5	18.0	29.3	12	6	1/8	1180x6Mx2PP	5.5	18.0	29.3	12	6	1/4	1180x6Mx4PP	7.0	18.0	31.0	14	8	1/8	1180x8Mx2PP	5.5	20.5	31.8	12	8	1/4	1180x8Mx4PP	7.0	20.5	33.5	14	10	1/4	1180x10Mx4PP	7.0	23.0	36.0	14	10	3/8	1180x10Mx6PP	8.0	23.0	37.3	19	12	3/8	1180x12Mx6PP	8.0	24.0	38.3	19														
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<p>Union</p>  <p>NOTE: Joins metric tubing.</p>	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>F</th> <th>G</th> <th>L</th> <th>N</th> </tr> </thead> <tbody> <tr><td>4</td><td>1162x4M</td><td>8.8</td><td>10</td><td>30.0</td><td>14.0</td></tr> <tr><td>5</td><td>1162x5M</td><td>9.8</td><td>11</td><td>33.0</td><td>15.0</td></tr> <tr><td>6</td><td>1162x6M</td><td>11.7</td><td>12</td><td>34.0</td><td>15.5</td></tr> <tr><td>8</td><td>1162x8M</td><td>13.7</td><td>14</td><td>38.0</td><td>17.5</td></tr> <tr><td>10</td><td>1162x10M</td><td>16.3</td><td>17</td><td>41.5</td><td>19.5</td></tr> <tr><td>12</td><td>1162x12M</td><td>18.3</td><td>19</td><td>44.5</td><td>21.0</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	F	G	L	N	4	1162x4M	8.8	10	30.0	14.0	5	1162x5M	9.8	11	33.0	15.0	6	1162x6M	11.7	12	34.0	15.5	8	1162x8M	13.7	14	38.0	17.5	10	1162x10M	16.3	17	41.5	19.5	12	1162x12M	18.3	19	44.5	21.0																																										
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<p>Bulkhead Union</p> 	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>B</th> <th>F</th> <th>L</th> <th>N</th> <th>MAX</th> <th>SW (mm)</th> <th>SW1 (mm)</th> <th>T</th> </tr> </thead> <tbody> <tr><td>4</td><td>1174x4M</td><td>M10x1</td><td>8.6</td><td>30.0</td><td>14.0</td><td>10.5</td><td>14</td><td>14</td><td>20.0</td></tr> <tr><td>5</td><td>1174x5M</td><td>M12x1</td><td>9.8</td><td>33.0</td><td>14.5</td><td>10.5</td><td>17</td><td>17</td><td>20.0</td></tr> <tr><td>6</td><td>1174x6M</td><td>M14x1</td><td>12.5</td><td>34.0</td><td>15.5</td><td>10.5</td><td>17</td><td>17</td><td>20.0</td></tr> <tr><td>8</td><td>1174x8M</td><td>M16x1</td><td>14.5</td><td>38.0</td><td>17.5</td><td>11.5</td><td>19</td><td>19</td><td>21.0</td></tr> <tr><td>10</td><td>1174x10M</td><td>M18x1</td><td>16.3</td><td>42.5</td><td>20.0</td><td>13.0</td><td>22</td><td>22</td><td>23.5</td></tr> <tr><td>12</td><td>1174x12M</td><td>M20x1</td><td>18.3</td><td>44.5</td><td>21.0</td><td>14.5</td><td>24</td><td>24</td><td>25.0</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	B	F	L	N	MAX	SW (mm)	SW1 (mm)	T	4	1174x4M	M10x1	8.6	30.0	14.0	10.5	14	14	20.0	5	1174x5M	M12x1	9.8	33.0	14.5	10.5	17	17	20.0	6	1174x6M	M14x1	12.5	34.0	15.5	10.5	17	17	20.0	8	1174x8M	M16x1	14.5	38.0	17.5	11.5	19	19	21.0	10	1174x10M	M18x1	16.3	42.5	20.0	13.0	22	22	23.5	12	1174x12M	M20x1	18.3	44.5	21.0	14.5	24	24	25.0														
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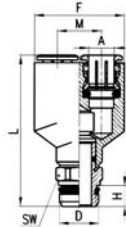
BRASS

Union "Y"



Tube O.D. (mm)	Catalog Number	F	C	L	M
4	1107x4M	18.0	6.0	33.0	10.0
6	1107x6M	24.5	7.0	39.0	12.5
8	1107x8M	29.5	9.0	44.0	14.5
10	1107x10M	33.5	15.5	53.5	16.0

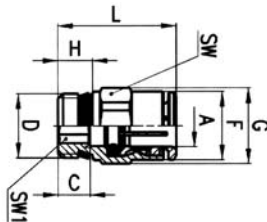
Male "Y"



*M5 metric screw thread.

Tube O.D. (mm) A	Thread Size BSP D	Catalog Number	F	H	M	L	SW (mm)
4	1/8	1108x4Mx2PT	18.0	5.5	10.0	38.0	12
4	M5*	1108x4Mx5MM	18.0	—	10.0	27.0	N/A
6	1/8	1108x6Mx2PT	24.5	5.5	12.5	41.5	12
6	M5*	1108x6Mx5MM	24.5	—	12.5	31.0	N/A
8	1/8	1108x8Mx2PT	29.5	5.5	14.5	48.5	14
8	1/4	1108x8Mx4PT	29.5	7.0	14.5	50.0	14

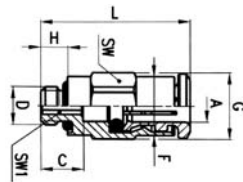
Male Connector (Universal BSPT/BSPP)



Allen wrench use permits close quarter installation not possible with a standard wrench.

Tube O.D. (mm) A	Thread Size BSP D	Catalog Number	C	F	G	H	L	SW (mm)	SW1 (mm)
4	1/8	1168x4Mx2PT	3.8	8.8	13.2	5.5	18.0	12	2.5
4	1/4	1168x4Mx4PT	6.0	8.8	15.2	7.0	19.5	14	2.5
5	1/8	1168x5Mx2PT	3.8	9.8	13.2	5.5	19.0	12	3.0
5	1/4	1168x5Mx4PT	5.5	9.8	15.2	7.0	20.0	14	3.0
6	1/8	1168x6Mx2PT	5.0	11.7	13.2	5.5	20.5	12	4.0
6	1/4	1168x6Mx4PT	5.5	11.7	15.2	7.0	21.0	14	4.0
8	1/8	1168x8Mx2PT	7.5	13.7	15.2	5.5	25.0	14	5.0
8	1/4	1168x8Mx4PT	6.5	13.7	15.2	7.0	24.0	14	6.0
8	3/8	1168x8Mx6PT	6.5	13.7	20.5	8.0	23.5	19	6.0
10	1/4	1168x10Mx4PT	8.5	16.3	18.5	7.0	28.5	17	7.0
10	3/8	1168x10Mx6PT	5.5	16.3	20.5	8.0	25.5	19	8.0
10	1/2	1168x10Mx8PT	5.0	16.3	24.5	9.0	25.0	22	8.0
12	1/4	1168x12Mx4PT	10.5	18.3	20.5	7.0	31.5	19	7.0
12	3/8	1168x12Mx6PT	9.5	18.3	20.5	8.0	30.5	19	9.0
12	1/2	1168x12Mx8PT	6.0	18.3	24.5	9.0	27.0	22	10.0

Male Connector (BSPP)

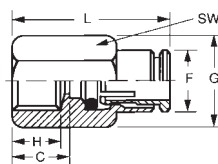
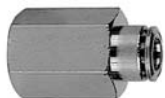


*M5 metric screw thread.

Allen wrench use permits close quarter installation not possible with a standard wrench.

Tube O.D. (mm) A	Thread Size BSP D	Catalog Number	C	F	G	H	L	SW (mm)	SW1 (mm)
4	M5*	1168x4Mx5MM	5.5	7.8	8.8	3.5	19.5	8	2
5	M5*	1168x5Mx5MM	5.5	8.8	9.9	3.5	20.5	9	2
6	M5*	1168x6Mx5MM	5.5	11.7	13.2	3.5	21.5	12	2

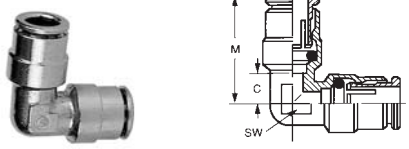
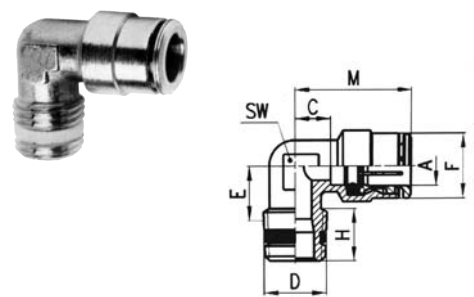
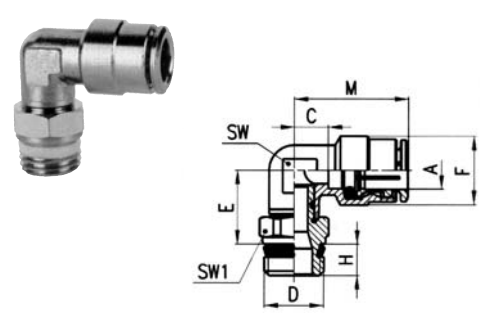
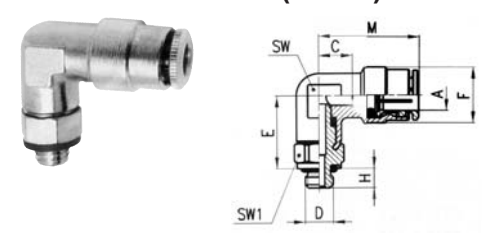
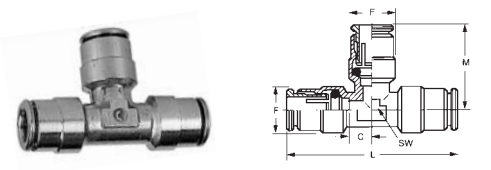
Female Connector (BSPP)



*M5 is M profile thread.

Tube O.D. (mm)	Thread Size BSP D	Catalog Number	C	F	G	H	L	SW (mm)
4	1/8	1166x4Mx2PP	9.5	9.0	15.2	7.5	23.5	14
4	M5*	1166x4Mx5MM	6.5	8.8	9.9	5.0	20.5	9
6	1/8	1166x6Mx2PP	9.5	11.7	15.2	7.5	25.5	14
6	1/4	1166x6Mx4PP	13.0	11.7	18.5	11.0	29.0	17
8	1/8	1166x8Mx2PP	10.0	13.7	15.3	7.5	27.5	14
8	1/4	1166x8Mx4PP	13.5	13.7	18.5	11.0	31.0	17
10	1/4	1166x10Mx4PP	13.5	16.3	18.5	11.0	33.0	17

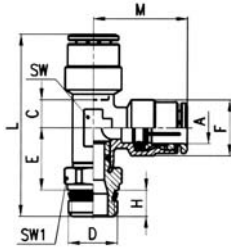
NOTE: M5 has 0.8 mm thread pitch. M5 seals with nylon washer, included.

<p>Union Elbow</p> 	<table border="1"> <thead> <tr> <th>Tube O.D. (mm)</th> <th>Catalog Number</th> <th>C</th> <th>F</th> <th>M</th> <th>SW (mm)</th> </tr> </thead> <tbody> <tr><td>4</td><td>1165x4M</td><td>6.0</td><td>10.0</td><td>20</td><td>9</td></tr> <tr><td>5</td><td>1165x5M</td><td>6.0</td><td>11.0</td><td>21</td><td>9</td></tr> <tr><td>6</td><td>1165x6M</td><td>6.5</td><td>13.0</td><td>22</td><td>10</td></tr> <tr><td>8</td><td>1165x8M</td><td>7.5</td><td>15.0</td><td>25</td><td>12</td></tr> <tr><td>10</td><td>1165x10M</td><td>8.5</td><td>17.5</td><td>28</td><td>14</td></tr> <tr><td>12</td><td>1165x12M</td><td>10.0</td><td>19.5</td><td>31</td><td>16</td></tr> </tbody> </table>	Tube O.D. (mm)	Catalog Number	C	F	M	SW (mm)	4	1165x4M	6.0	10.0	20	9	5	1165x5M	6.0	11.0	21	9	6	1165x6M	6.5	13.0	22	10	8	1165x8M	7.5	15.0	25	12	10	1165x10M	8.5	17.5	28	14	12	1165x12M	10.0	19.5	31	16																																																																																																																						
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NOTE: M5 has 0.8 mm thread pitch. M5 seals with nylon washer, included.

BRASS

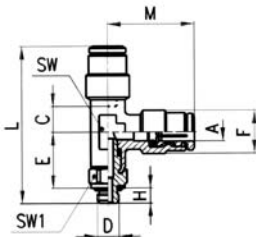
Male Run Tee Swivel (Universal BSPT/BSPP)



NOTE: Swivel for installation purposes only.

Tube O.D. A (mm)	Thread Size BSP D	Catalog Number	C	E	F	H	L	M	SW (mm)	SW1 (mm)
4	1/8	1171x4Mx2PTS	6.0	14.5	10.0	5.5	40.0	20.0	9	12
5	1/8	1171x5Mx2PTS	6.0	14.5	11.0	5.5	41.0	21.0	9	12
5	1/4	1171x5Mx4PTS	6.0	14.5	11.0	7.0	42.5	21.0	9	14
6	1/8	1171x6Mx2PTS	6.5	15.0	12.7	5.5	42.5	22.5	10	12
6	1/4	1171x6Mx4PTS	6.5	15.0	12.7	7.0	44.0	22.5	10	14
8	1/8	1171x8Mx2PTS	7.5	16.0	15.0	5.5	46.5	25.0	12	12
8	1/4	1171x8Mx4PTS	7.5	16.0	15.0	7.0	48.0	25.0	12	14
8	3/8	1171x8Mx6PTS	7.5	16.5	15.0	8.0	49.5	25.0	12	19
10	1/4	1171x10Mx4PTS	8.5	18.5	17.5	7.0	54.0	28.5	14	14
10	3/8	1171x10Mx6PTS	8.5	18.5	17.5	8.0	55.5	28.5	14	19
12	3/8	1171x12Mx6PTS	10.0	19.5	19.5	8.0	59.0	31.0	16	19

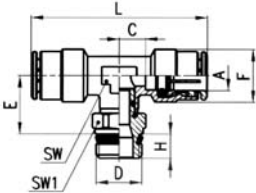
Male Run Tee Swivel (BSPP)



NOTE: Swivel for installation purposes only.
*M5 metric screw thread

Tube O.D. A (mm)	Thread Size BSPP D	Catalog Number	C	E	F	H	L	M	SW (mm)	SW1 (mm)
4	M5*	1171x4Mx5MMS	6	13	10	3.5	36.5	20	9	8
5	M5*	1171x5Mx5MMS	6	13	11	3.5	37.5	21	9	8

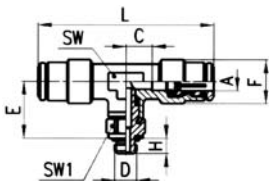
Male Branch Tee Swivel (BSPT)



NOTE: Swivel for installation purposes only.

Tube O.D. A (mm)	Thread Size BSP D	Catalog Number	C	E	F	H	L	SW (mm)	SW1 (mm)
4	1/8	1172x4Mx2PTS	6.0	14.5	10.0	5.5	40	9	12
5	1/8	1172x5Mx2PTS	6.0	14.5	11.0	5.5	42	9	12
5	1/4	1172x5Mx4PTS	6.0	14.5	11.0	7.0	42	9	14
6	1/8	1172x6Mx2PTS	6.5	15.0	12.7	5.5	44	10	12
6	1/4	1172x6Mx4PTS	6.5	15.0	12.7	7.0	44	10	14
8	1/8	1172x8Mx2PTS	7.5	16.0	15.0	5.5	50	12	12
8	1/4	1172x8Mx4PTS	7.5	16.0	15.0	7.0	50	12	14
8	3/8	1172x8Mx6PTS	7.5	16.5	15.0	8.0	50	12	19
10	1/4	1172x10Mx4PTS	8.5	18.5	17.5	7.0	57	14	14
10	3/8	1172x10Mx6PTS	8.5	19.0	17.5	8.0	57	14	19
12	1/4	1172x12Mx4PTS	10.0	20.0	19.5	7.0	62	16	17
12	3/8	1172x12Mx6PTS	10.0	20.0	19.5	8.0	62	16	19
12	1/2	1172x12Mx8PTS	10.0	20.5	19.5	9.0	62	16	22

Male Branch Tee Swivel (BSPP)



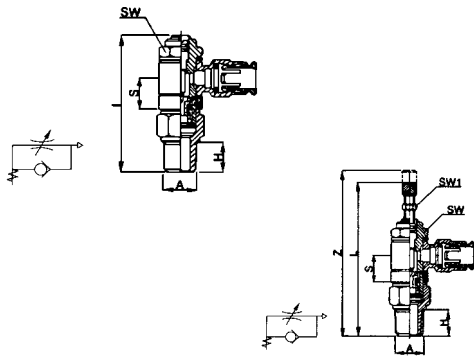
NOTE: Swivel for installation purposes only.
*M5 metric screw thread

Tube O.D. A (mm)	Thread Size BSPP D	Catalog Number	C	E	F	H	L	SW (mm)	SW1 (mm)
4	M5*	1172x4Mx5MMS	6	13	10	3.5	40	9	8
5	M5*	1172x5Mx5MMS	6	13	11	3.5	42	9	8

NOTE: M5 has 0.8 mm thread pitch. M5 seals with nylon washer, included.

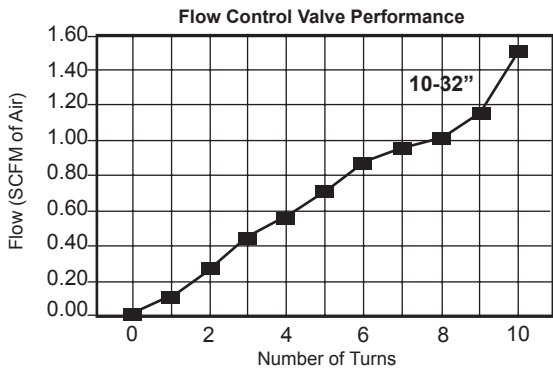
RIGHT ANGLE FLOW CONTROL AND NEEDLE VALVES

SCU-MCU

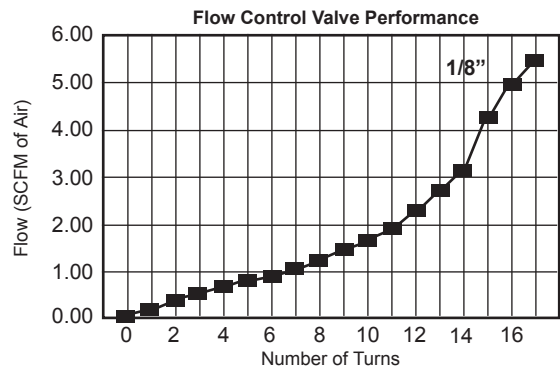


Technical Data

Valve:	Flow Regulator
Regulation:	Adjustable Screw
Material:	Brass; Nickel Plated
Seals:	Buna-N
Threads:	10-32UNF-1/8-1/4-3/8NPTF
Tube Sizes:	1/8 - 5/32 - 1/4 - 3/8
Operating Pressures:	to 150 PSI
Nominal Diameter:	10-32 UNF = .059 - 1/8 = .078 1/4 = .157 - 3/8 = .275

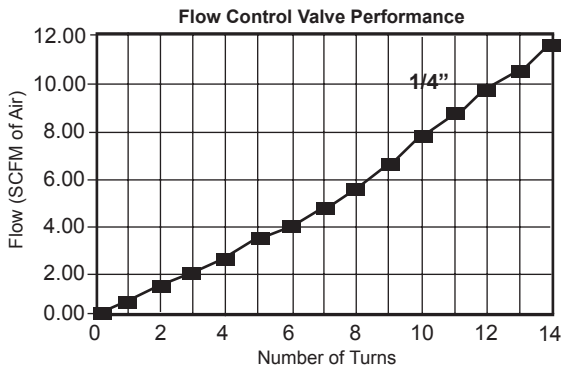


Air flow (SCFM) from B to A
With adjustment open 1.9
With adjustment closed 1.4

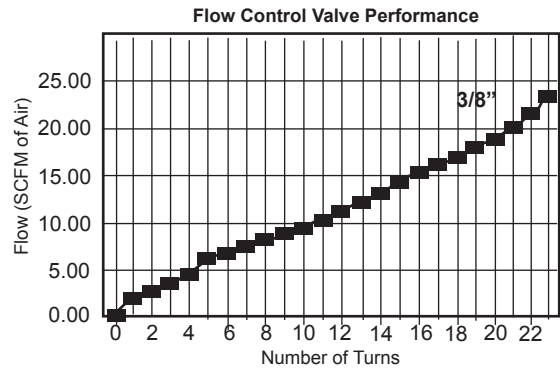


Air flow (SCFM) from B to A
With adjustment open 5.7
With adjustment closed 3.6

Air flow is determined with 85 PSI at the in port and with 70 PSI at the outlet



Air flow (SCFM) from B to A
With adjustment open 15
With adjustment closed 8



Air flow (SCFM) from B to A
With adjustment open 23
With adjustment closed 13

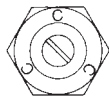
Air flow is determined with 85 PSI at the in port and with 70 PSI at the outlet

NOTE: We reserve the right to alter these specifications without prior notice.

BRASS

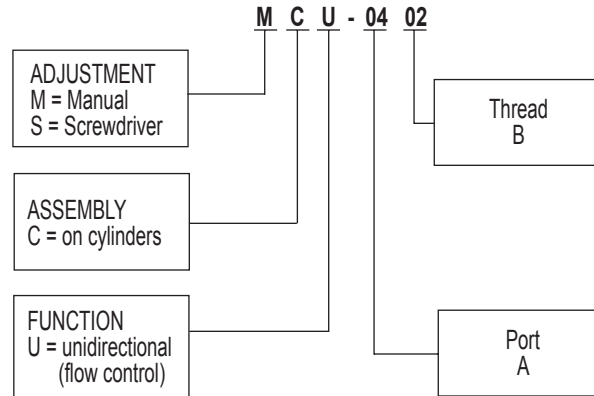
These unidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders.

Identification of flow control



SCU
MCU

Coding of Banjo flow controllers

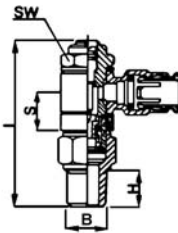
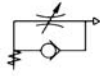


SCU



Thread B

*UNF Thread



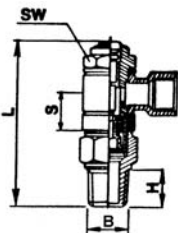
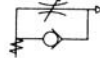
Catalog Number	Tube O.D.	B NPTF	S	H	L	SW (mm)
A55SCUx2.5x2	5/32	1/8	.51	.37	2.00	14
A55SCUx4x2	1/4	1/8	.51	.37	2.00	14
A55SCUx4x4	1/4	1/4	.45	.51	2.25	17
A55SCUx6x4	3/8	1/4	.45	.51	2.25	17
A55SCUx6x6	3/8	3/8	.48	.51	2.44	19

SCU



Thread B

*UNF Thread



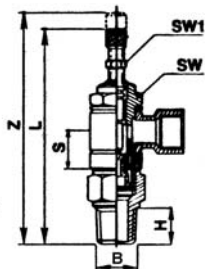
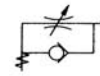
Catalog Number	Banjo Female Thread	B NPTF	S	H	L	SW (mm)
A557SCUxAxA	5/16	10-32*	.22	.18	1.14	8
A557SCUx2x2	1/8	1/8	.51	.37	2.00	14
A557SCUx4x4	1/4	1/4	.45	.51	2.25	17
A557SCUx6x6	3/8	3/8	.48	.51	2.44	19

MCU



Port A

Thread B



Catalog Number	Banjo Female Thread	B NPTF	S	H	L	Z	SW (mm)	SW1 (mm)
A557MCUx2x2	1/8	1/8	.51	.37	2.38	2.56	14	7
A557MCUx6x6	3/8	3/8	.48	.51	2.95	3.25	19	10

Weatherhead[®] is proud to announce three design changes to Weatherhead's Push > Connect[™] fittings. The introduction of a low profile, sure-seal design for male NPTF threaded fittings is here. Also, an improved collet design will allow use with all types of tubing from Nylon to 90A durometer Polyurethane, including Polyethylene, and PVC tubing. Lastly, the male swivel design provides greater strength and stability.

Below is a summary of features and benefits for the newly named **Push > Connect[™] Plus**.

Perfect thread seal – A captured Teflon[®] ring around the base of the hex shoulder, seals similar to a reusable (SAE type) seal eliminates thread sealant and loose particles associated with thread sealant.

Lower profile – Push > Connect[™] Plus has a lower profile for those tight places. A shorter thread design eliminates exposed threads where dirt and bacteria can collect (ideal for food processing and hygienic applications).

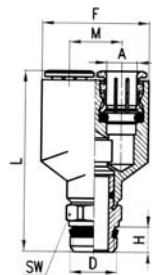
More versatility – The new brass collet is designed for use with all types of tubing from Nylon to 90A durometer Polyurethane, including Polyethylene, and PVC tubing.

Super-quick installations – New short thread length means fewer turns and super-quick installations.

Improved swivel design – Strength and stability have been engineered into the new male swivel.

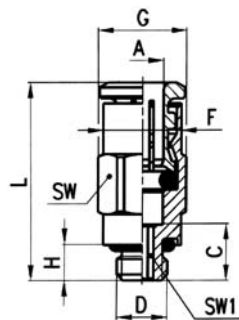
The new part will have a 'P' in the part number to signify the new design. An example of this change is previous #1169x4S becomes #1169Px4S and the price for old and new is the same. Current Push > Connect[™] parts with 10-32UNF threads and ending in 'A' (eg. 1168x2A) will continue with the current thread design.

Swivel Male "Y"



Tube O.D.	Male Pipe Thread	Catalog Number	F	H	M	L
1/8	1/8	1108Px2S	.83	.20	.39	1.28
5/32	1/8	1108Px2.5S	.83	.20	.39	1.28
1/4	1/8	1108Px4S	.96	.20	.49	1.40

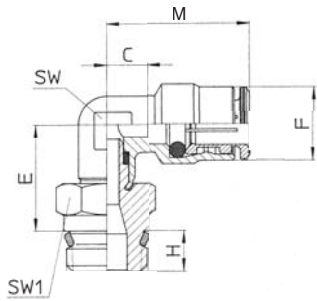
Male Connector



Tube O.D.	Male Pipe Thread	Catalog Number	F	G	H	L	SW (mm)	SW1 (mm)
1/8	10-32*	1168Px2A	.346	.411	.177	.846	9	2.0
1/8	1/8	1168Px2	.346	.551	.200	.728	12	2.5
1/8	1/4	1168Px2x4	.346	.629	.255	.807	14	2.5
5/32	10-32*	1168x2.5A	.346	.411	.177	.807	9	2.0
5/32	1/8	1168Px2.5	.346	.551	.200	.728	12	2.5
5/32	1/4	1168Px2.5x4	.346	.629	.255	.807	14	2.5
1/4	10-32*	1168x4A	.460	.551	.177	.905	12	2.0
1/4	1/8	1168Px4	.460	.551	.200	.807	12	4.0
1/4	1/4	1168Px4x4	.460	.629	.255	.846	14	4.0
1/4	3/8	1168Px4x6	.460	.866	.294	.885	19	4.0
5/16	1/8	1168Px5	.539	.629	.200	.945	14	5.0
5/16	1/4	1168Px5x4	.539	.629	.255	.945	14	6.0
5/16	3/8	1168Px5x6	.539	.866	.294	.924	19	6.0
3/8	1/8	1168Px6x2	.641	.776	.200	1.082	17	5.0
3/8	1/4	1168Px6	.641	.776	.255	1.102	17	7.0
3/8	3/8	1168Px6x6	.641	.866	.294	.945	19	7.0
3/8	1/2	1168Px6x8	.641	1.004	.335	.984	22	7.0
1/2	3/8	1168Px8	.720	.866	.294	1.161	19	10.0
1/2	1/4	1168Px8x4	.720	.866	.255	1.161	19	7.0
1/2	1/2	1168Px8x8	.720	1.004	.335	1.062	22	10.0

*UNF Thread

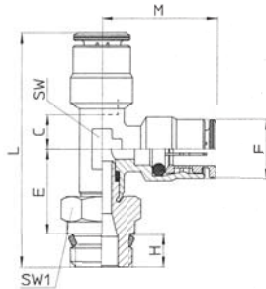
Swivel Male Elbow



NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	M	SW (mm)	SW1 (mm)
1/8	1/8	1169Px2S	.24	.59	.35	.20	.81	9	12
1/8	1/4	1169Px2x4S	.24	.63	.35	.26	.81	9	14
5/32	1/8	1169Px2.5S	.24	.59	.35	.20	.79	9	12
5/32	1/4	1169Px2.5x4S	.24	.63	.35	.26	.79	9	14
1/4	1/8	1169Px4S	.27	.63	.46	.20	.89	10	12
1/4	1/4	1169Px4x4S	.27	.65	.46	.26	.89	10	14
1/4	3/8	1169Px4x6S	.27	.65	.46	.29	.89	12	19
5/16	1/8	1169Px5S	.30	.65	.54	.20	.96	12	12
5/16	1/4	1169Px5x4S	.30	.69	.54	.26	.96	12	14
5/16	3/8	1169Px5x6S	.30	.69	.54	.29	.96	12	19
3/8	1/8	1169Px6x2S	.34	.75	.64	.20	1.10	14	14
3/8	1/4	1169Px6S	.34	.77	.64	.26	1.10	14	14
3/8	3/8	1169Px6x6S	.34	.77	.64	.29	1.10	14	19
3/8	1/2	1169Px6x8S	.34	.79	.64	.34	1.10	14	22
1/2	1/4	1169Px8x4S	.39	.81	.72	.26	1.20	17	17
1/2	3/8	1169Px8S	.39	.81	.72	.29	1.20	17	19
1/2	1/2	1169Px8x8S	.39	.83	.72	.36	1.20	17	22

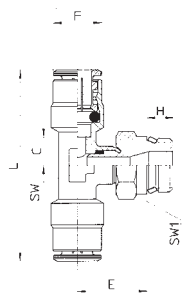
Male Run Tee Swivel



NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	L	M	SW (mm)	SW1 (mm)
1/8	1/8	1171Px2S	.24	.59	.35	.20	1.59	.81	9	12
5/32	1/8	1171Px2.5S	.24	.59	.35	.20	1.57	.79	9	12
5/32	1/4	1171Px2.5x4S	.24	.63	.35	.26	1.67	.79	9	14
1/4	1/8	1171Px4S	.27	.61	.46	.20	1.69	.89	10	12
1/4	1/4	1171Px4x4S	.27	.65	.46	.26	1.79	.89	10	14
1/4	3/8	1171Px4x6S	.27	.65	.46	.29	1.83	.89	12	19
3/8	1/4	1171Px6S	.34	.77	.64	.26	2.13	1.10	14	14
3/8	3/8	1171Px6x6S	.34	.77	.64	.29	2.17	1.10	14	19
3/8	1/2	1171Px6x8S	.34	.79	.64	.34	2.22	1.10	14	22
1/2	1/4	1171Px8x4S	.39	.81	.72	.26	2.26	1.20	17	17
1/2	3/8	1171Px8S	.39	.81	.72	.29	2.30	1.20	17	19
1/2	1/2	1171Px8x8S	.39	.83	.72	.34	2.36	1.20	17	22

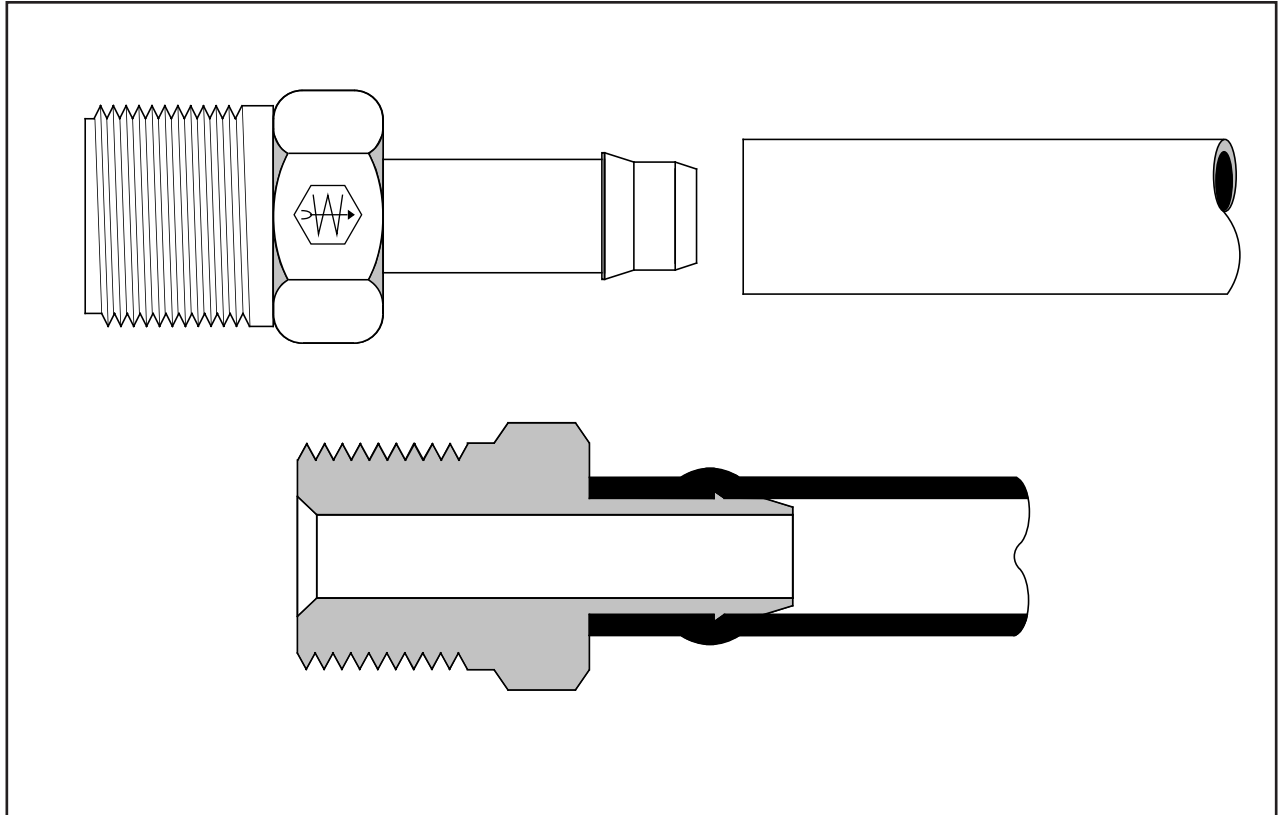
Male Branch Tee Swivel



NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	C	E	F	H	L	SW (mm)	SW1 (mm)
1/8	1/8	1172Px2S	.24	.59	.35	.20	1.61	9	12
5/32	1/8	1172Px2.5S	.24	.59	.35	.20	1.57	9	12
5/32	1/4	1172Px2.5x4S	.24	.63	.35	.26	1.57	9	14
1/4	1/8	1172Px4S	.27	.61	.46	.20	1.77	10	12
1/4	1/4	1172Px4x4S	.27	.65	.46	.26	1.77	10	14
1/4	3/8	1172Px4x6S	.27	.65	.46	.29	1.77	12	19
3/8	1/4	1172Px6S	.34	.77	.64	.26	2.20	14	14
3/8	3/8	1172Px6x6S	.34	.77	.64	.29	2.20	14	19
3/8	1/2	1172Px6x8S	.34	.79	.64	.34	2.20	14	22
1/2	1/4	1172Px8x4S	.39	.81	.72	.26	2.40	17	17
1/2	3/8	1172Px8S	.39	.81	.72	.29	2.40	17	19
1/2	1/2	1172Px8x8S	.39	.83	.72	.34	2.40	17	22

⚠ Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



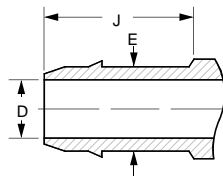
BRASS

- **Typical Application**
Temperature control circuits, test apparatus, lubricant, coolant lines, pneumatic circuits, vacuum and fluid systems.
- **Pressure**
Will withstand burst pressures of plastic tubing.
- **Vibration**
Excellent resistance.
- **Temperature Range**
Depends on tubing used.
- **Material**
CA360 Brass.

- **Used With**
PT240 Polyethylene tubing. See page 28-32 for material compatibility and page 33-35 for plastic tubing.
- **Advantages**
Quick connecting - no tube preparation. Hand assembly. Low cost one-piece push-on design. Barbed lip provides safe, positive connection. Compact size permits use in extremely tight areas.
- **Conformance**
An exclusive item with Weatherhead. User approvals only.

- **How to Order**
Individually by catalog number.
- **NOTE**
Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.
- **Assembly Instructions**
 1. Push the tubing over insert.
 2. Bottom the tubing against fitting body.

Label Set: **FS-1000** (adhesive)
CL-496 (non-adhesive)

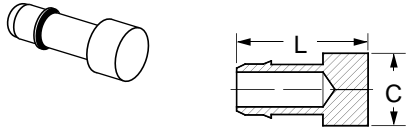


Common Dimensions of Barbed End

Tubing O.D.	D	E	J
5/32	.062	.113	.38
*3/16	.078	.125	.50
1/4	.127	.189	.50
3/8	.196	.270	.50
1/2	.312	.395	.63

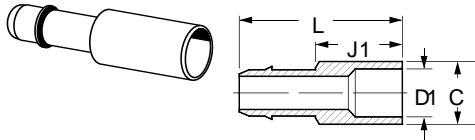
*No barb on 3/16" size.

Plug



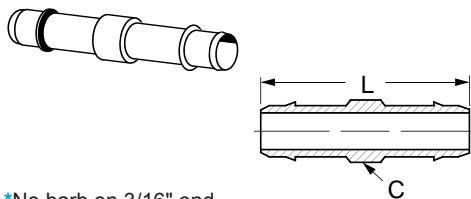
Tubing O.D.	Catalog Number	Dia. C	L
1/4	1073x4	.31	.75
3/8	1073x6	.40	.75
1/2	1073x8♦	.53	.88

Solder Connector



Tubing O.D.	Solder Conn.	Catalog Number	Dia. C	D1	J1	L
1/4	1/4	1079x4x4	5/16	.25	.50	1.00

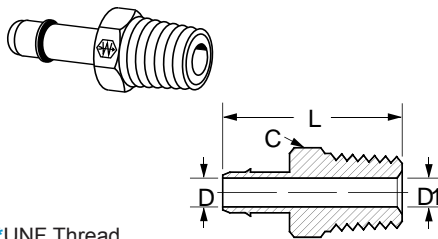
Union



*No barb on 3/16" end.
"L" Suffix designates long Union.

Tubing O.D.	Catalog Number	Dia. C	L
1/4x3/16*	1062x4x3	1/4	1.25
1/4	1062x4	1/4	.81
1/4	1062x4L	1/4	1.25
3/8x1/4	1062x6x4	5/16	1.19
3/8	1062x6	5/16	1.19
1/2x1/4	1062x8x4♦	1/2	1.33
1/2x3/8	1062x8x6	1/2	1.33
1/2	1062x8	1/2	1.45

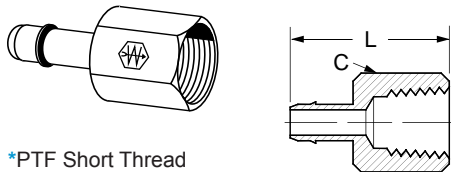
Male Connector



*UNF Thread

Tubing O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1 Opt.	L
5/32	1/8	1068x2.5x2	7/16	.06	.19	.98
1/4	1/16	1068x4x1	5/16	.12	-	1.06
1/4	1/8	1068x4	7/16	.12	.19	1.06
1/4	1/4	1068x4x4	9/16	.12	.28	1.28
3/8	1/8	1068x6x2	7/16	.19	-	1.09
3/8	1/4	1068x6	9/16	.19	.28	1.28
3/8	1/2	1068x6x8♦	7/8	.19	.56	1.41
1/2	3/8	1068x8	11/16	.31	-	1.38

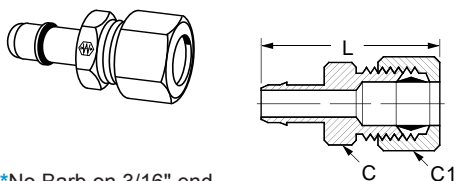
Female Connector



*PTF Short Thread

Tubing O.D.	Fem. Pipe Thread	Catalog Number	Hex C	L
1/4	1/8*	1066x4	1/2	1.00
1/4	1/4	1066x4x4	11/16	1.25
3/8	1/4	1066x6♦	11/16	1.25

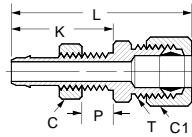
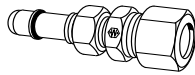
Compression Connector



*No Barb on 3/16" end
For replacement nuts and sleeves see page 49.

Tubing O.D.	Comp. Tube Size	Catalog Number	Hex C	Hex C1	L
3/16*	1/4	1078x3x4	7/16	1/2	1.29
1/4	1/4	1078x4x4	7/16	1/2	1.29

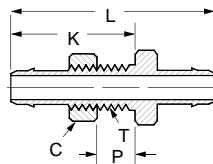
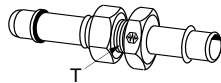
Bulkhead Compression Connector



For replacement compression nuts and sleeves, see page 49.

Tubing O.D.	Comp. Tube Size	Catalog Number	Hex C	Hex C1	K	L	Max. P	T Thread
1/4	1/4	1067x4x4	7/16	1/2	.88	1.66	.19	5/16-24 UNF
3/8	3/8	1067x6x6♦	9/16	5/8	1.06	1.94	.31	3/8-24 UNF

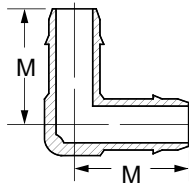
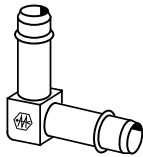
Bulkhead Union



For replacement nuts and sleeves, see page 50.

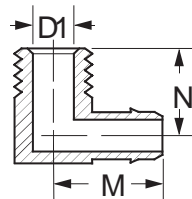
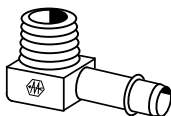
Tubing O.D.	Thread T	Catalog Number	Hex C	K	L	Max. P
1/4	5/16-24 UNF	1074x4	7/16	1.06	1.74	.31
3/8	3/8-24 UNF	1074x6	1/2	1.06	1.74	.31

Union Elbow



Tubing O.D.	Catalog Number	M
1/4	1065x4	.70
3/8	1065x6	.67
1/2	1065x8	.86

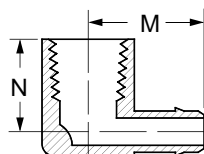
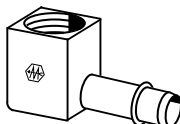
90° Male Elbow



*PTF Short Thread

Tubing O.D.	Male Pipe Thread	Catalog Number	D1	M	N
1/4	1/16	1069x4x1	.156	.67	.55
1/4	1/8	1069x4	.250	.72	.63
1/4	1/4*	1069x4x4	.312	.78	.65
3/8	1/8	1069x6x2	.250	.74	.59
3/8	1/4*	1069x6	.312	.78	.62
1/2	3/8*	1069x8	.406	.98	.81

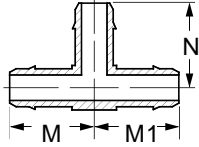
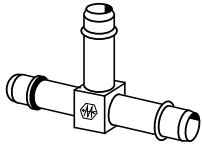
90° Female Elbow



Tubing O.D.	Fem. Pipe Thread	Catalog Number	M	N
1/4	1/8	1070x4	.75	.58
3/8	1/8	1070x6x2	.78	.48
3/8	1/4	1070x6	.84	.81

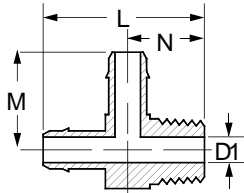
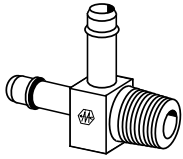
♦MTO - Made To Order

Union Tee



Tubing O.D.	Catalog Number	M	N	M1
1/4	1064x4	.70	.70	.70
3/8x3/8x1/4	1064x6x6x4	.70	.74	.70
3/8	1064x6	.68	.67	.68
3/8x1/2x3/8	1064x6x8x6	.67	.73	.79
1/2x1/2x1/4	1064x8x8x4	.82	.80	.82
1/2x1/2x3/8	1064x8x8x6	.79	.73	.79
1/2	1064x8	.86	.86	.86

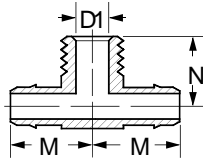
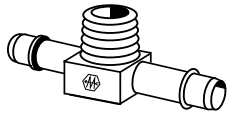
Male Run Tee



*PTF Short Thread

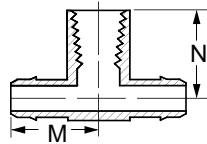
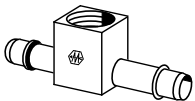
Tubing O.D.	Male Pipe Thread	Catalog Number	D1	L	M	N
1/4	1/8	1071x4	.188	1.21	.71	.59
3/8	1/8	1071x6x2	.188	1.26	.71	.59
3/8	1/4*	1071x6*	.312	1.26	.78	.61

Male Branch Tee



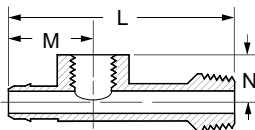
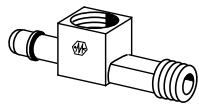
Tubing O.D.	Male Pipe Thread	Catalog Number	D1	M	N
1/4	1/16	1072x4x1♦	.156	.67	.55
1/4	1/8	1072x4	.188	.72	.59
3/8	1/8	1072x6x2	.188	.72	.59
3/8	1/4	1072x6	.312	.78	.62

Female Branch Tee




Tubing O.D.	Female Pipe Thread	Catalog Number	M	N
1/4	1/8	1077x4	.77	.48

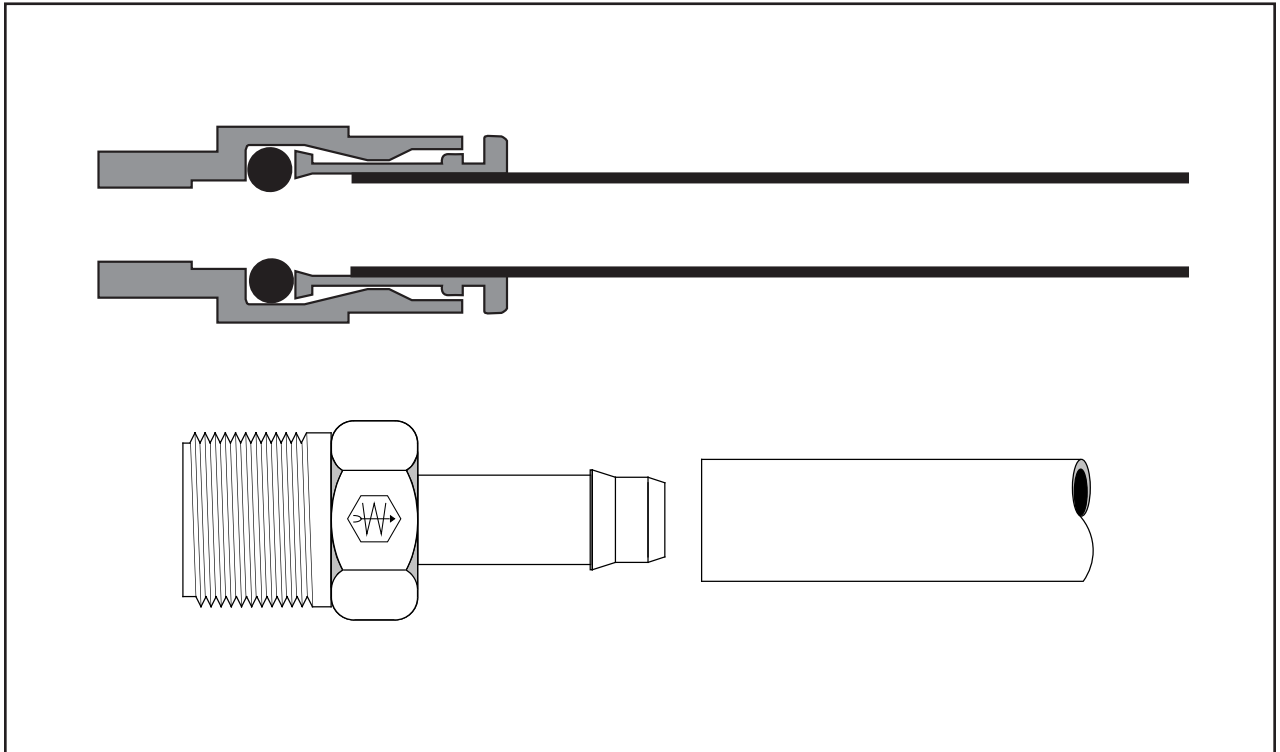
Adapter Tee



*PTF Special Short Thread

Tubing O.D.	M&F Pipe Thread	Catalog Number	L	M	N
1/4	1/8*	1075x4	2.00	.75	.39

 Refer to safety information regarding tubing selection on page 1.



- **Typical Application**

Air brake systems except where temperatures exceed +200°F or where battery acid can drip on tubing. Not for fuel, water or oil.

- **Pressure**

Vacuum to 150 psi.

- **Vibration**

Moderate vibration resistance.

- **Material**

CA360 Brass (Body & Collet).
EP (Ethylene Propylene) - O-ring.

- **Used With**

NT100 Nylon Tubing - SAE J844
Type A and B. See page 33 for NT100 Nylon Tubing data.

- **Temperature Range**

-40°F to +200°F (-40°C to +93°C)

- **Advantages**

Easy, fast assembly, one-piece fitting, reusable Field Serviceable (See collet repair kits, page 58).

- **Conformance**

Meets D.O.T. FMVSS 571.106 and SAE J1131 air brake system performance requirements.

- **How to Order**

Order individually by catalog number (parts are standard with thread sealant).

- **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 J2494.

- **Assembly Instructions**

See following page.

- **Cartridge Information**

Encapsulated – For insertion into single bore cavity in substitution for pipe thread ports. Meets proposed SAE specifications for encapsulated press in style Air Brake Fittings. Note: Weatherhead Encapsulated Cartridges are specifically designed for installation into a thermoplastic (Nylon/Glass filled Nylon/Acetal) or a soft metal (Aluminum/Brass) cavity. For cavity dimensions contact 1-800-336-5005.

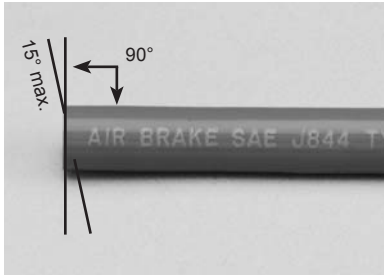
Four-Step Cartridge – When you clean sheet a component design, the Four-Step Cartridge is an economical substitute for the encapsulated design. Special order only.

Select the design that is right for you. For applications where manifolds (manufactured from aluminum, plastic and brass) and air tanks (manufactured from steel and plastic composites) are used, contact Weatherhead Technical Support at 1-800-776-3262 for quotes based on your specific requirements and volumes.

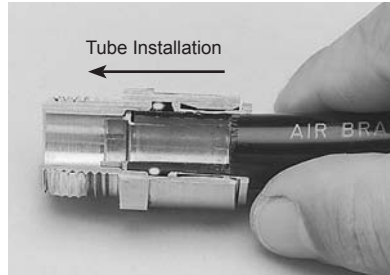
Label Set: **FS-3300** (adhesive)
CL-503 (non-adhesive)

Assembly

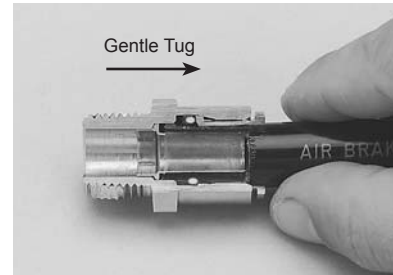
1. Using a tube cutter, make a square cut edge (maximum 15° cutting angle allowed).



2. Insert tubing straight into fitting until a solid stop is felt. The tubing grip and seal (on O-ring) is now accomplished.

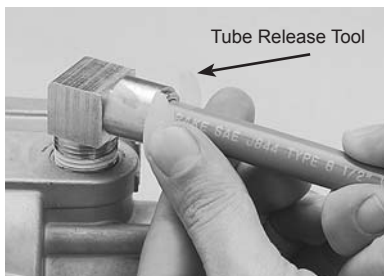


3. Gently tug on tubing to ensure tubing is secure.

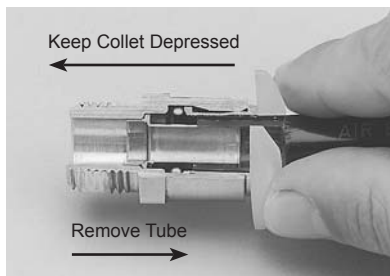


Disassembly

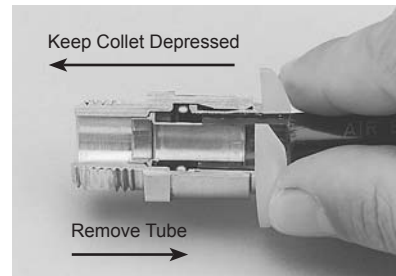
1. Check to be sure there isn't any air pressure.



2. Depress collet head using fingers or Weatherhead® tube-release tool to release grip on tubing.



3. With the collet depressed, pull the tubing from the fitting.

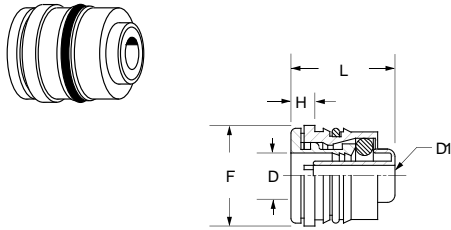


Quick > Connect[®] Air Brake

**Brass
Fittings**

Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

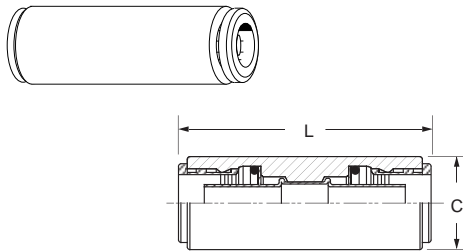
Encapsulated Cartridge



NOTE: For design installation reference page 83 under Encapsulated heading.

Tube O.D.	Catalog Number	Dia F	L	D1	D	H
5/32	1861x2.5	.38	.62	.12	.165	.17
3/16	1861x3	.44	.62	.12	.195	.16
1/4	1861x4	.56	.65	.13	.263	.17
3/8	1861x6	.69	.81	.22	.388	.19
1/2	1861x8	.81	.83	.34	.513	.19
5/8	1861x10	.97	.99	.40	.638	.24
3/4	1861x12	1.12	.99	.52	.763	.24

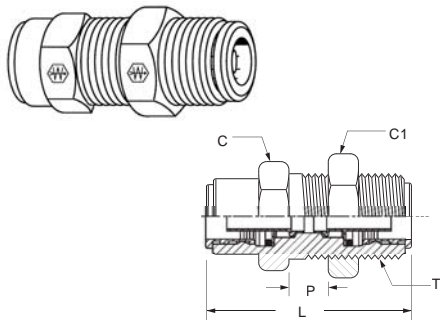
Union (Ref. SAE No. AA0101)



NOTE: Joins tubing

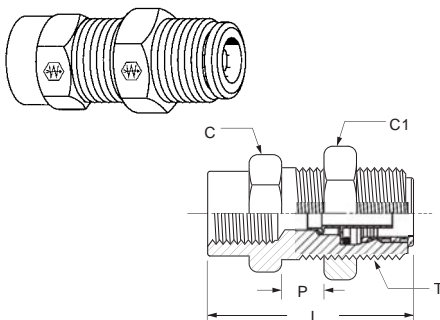
Tube O.D.	Catalog Number	Dia C	L
5/32	1862x2.5	.44	1.41
3/16	1862x3	.44	1.62
1/4	1862x4	.53	1.62
3/8	1862x6	.69	1.94
1/2	1862x8	.83	1.96
5/8	1862x10	.96	2.51

Quick Connect Bulkhead Union (Ref. SAE No. AA0601)



Tube O.D.	Tread T	Catalog Number	Hex C	Hex C1	L	Max P
1/4	9/16-24	1874x4x4	5/8	11/16	1.62	.47
3/8	3/4-16	1874x6x6	7/8	15/16	1.96	.66
1/2	7/8-14	1874x8x8	1	1	2.00	.83
5/8	1-14	1874x10x10	1	1-1/4	2.42	1.00

Female Bulkhead Union (Ref. SAE No. AA0603)

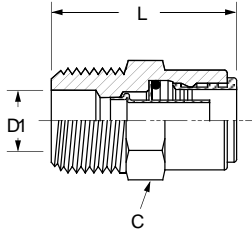
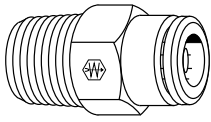


Tube O.D.	Thread T	Female Pipe Thread	Catalog Number	Hex C	Hex C1	L
1/4	9/16-24	1/4	1873x4x4	5/8	11/16	1.45
3/8	3/4-16	3/8	1873x6x6	7/8	15/16	1.59
1/2	1-14	1/2	1873x8x8	1	1-1/4	1.97

BRASS

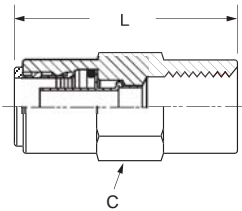
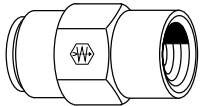
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

Male Connector
(Ref. SAE No. AA0102)



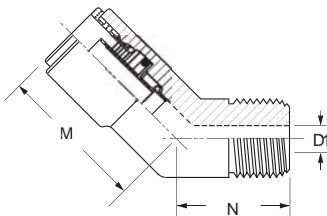
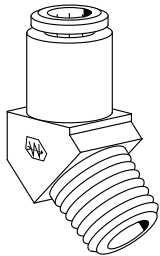
Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D1	L
5/32	1/16	1868x2.5x1	3/8	.09	.92
5/32	1/8	1868x2.5	7/16	.25	.92
3/16	1/8	1868x3	1/2	.25	.92
1/4	1/8	1868x4	9/16	.19	.95
1/4	1/4	1868x4x4	9/16	.34	1.18
1/4	3/8	1868x4x6	11/16	.41	1.17
3/8	1/8	1868x6x2	11/16	.19	1.33
3/8	1/4	1868x6	11/16	.31	1.29
3/8	3/8	1868x6x6	11/16	.41	1.27
3/8	1/2	1868x6x8	7/8	.53	1.47
1/2	1/4	1868x8x4	13/16	.31	1.46
1/2	3/8	1868x8	13/16	.41	1.35
1/2	1/2	1868x8x8	7/8	.53	1.50
5/8	3/8	1868x10x6	1	.41	1.72
5/8	1/2	1868x10	1	.53	1.71
3/4	1/2	1868x12	1-1/16	.53	1.72

Female Connector
(Ref. SAE No. AA0103)



Tube O.D.	Female Pipe Thread	Catalog Number	Hex C	L
1/4	1/8	1866x4	9/16	1.33
1/4	1/4	1866x4x4	11/16	1.58
3/8	1/8	1866x6x2	11/16	1.45
3/8	1/4	1866x6	11/16	1.69
3/8	3/8	1866x6x6	13/16	1.75
1/2	1/4	1866x8x4	13/16	1.66
1/2	3/8	1866x8	13/16	1.73
1/2	1/2	1866x8x8	1	1.97

45° Male Elbow
(Ref. SAE No. AA0302)



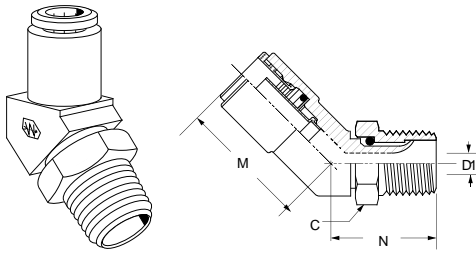
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
1/4	1/8	1880x4	.19	.95	.59
1/4	1/4	1880x4x4	.31	.95	.59
3/8	1/8	1880x6x2	.25	1.05	.48
3/8	1/4	1880x6	.31	1.05	.69
3/8	3/8	1880x6x6	.41	1.10	.63
3/8	1/2	1880x6x8	.53	1.20	.70
1/2	1/4	1880x8x4	.31	1.20	.87
1/2	3/8	1880x8	.41	1.10	.73
1/2	1/2	1880x8x8	.53	1.10	.76
5/8	3/8	1880x10x6	.41	1.25	.82
5/8	1/2	1880x10	.53	1.39	.90
3/4	1/2	1880x12	.53	1.26	.98

Quick > Connect[®] Air Brake

**Brass
Fittings**

Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

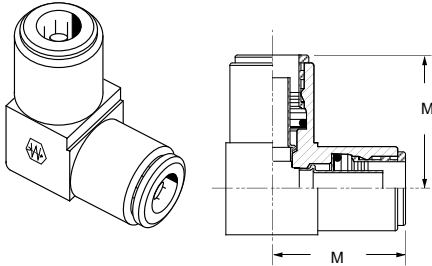
45° Elbow - Swivel Male (Ref. SAE No. AA03DD)



NOTE: Swivel for installation purposes only.

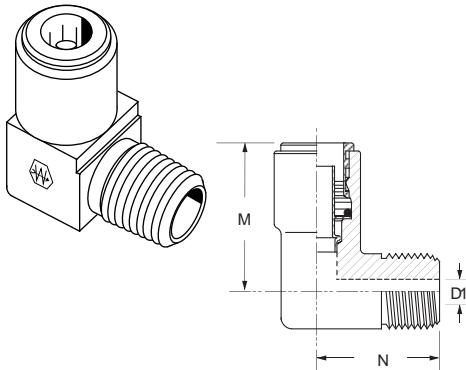
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N	Hex C
1/4	1/8	1880x4S	.13	.82	.60	7/16
1/4	1/4	1880x4x4S	.22	.98	.60	9/16
3/8	1/8	1880x6x2S	.13	1.20	.68	7/16
3/8	1/4	1880x6S	.22	1.20	.82	9/16
3/8	3/8	1880x6x6S	.30	1.20	.97	11/16
1/2	1/4	1880x8x4S	.22	1.20	1.20	9/16
1/2	3/8	1880x8S	.30	1.04	1.07	11/16
1/2	1/2	1880x8x8S	.42	1.08	1.22	7/8

90° Union Elbow (Ref. SAE No. AA0201)



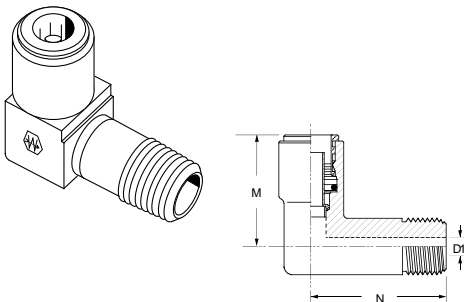
Tube O.D.	Catalog Number	M
1/4	1865x4	.93
3/8	1865x6	1.15
1/2	1865x8	1.24

90° Male Elbow (Ref. SAE No. AA0302)



Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
5/32	1/16	1869x2.5x1	.13	.75	.59
5/32	1/8	1869x2.5	.19	.75	.59
3/16	1/8	1869x3	.19	.84	.69
1/4	1/8	1869x4	.19	.92	.68
1/4	1/4	1869x4x4	.31	.92	.81
1/4	3/8	1869x4x6	.41	1.03	.82
3/8	1/8	1869x6x2	.19	1.08	.80
3/8	1/4	1869x6	.31	1.13	.96
3/8	3/8	1869x6x6	.41	1.20	.99
3/8	1/2	1869x6x8	.53	1.27	1.07
1/2	1/4	1869x8x4	.31	1.23	1.00
1/2	3/8	1869x8	.41	1.25	.98
1/2	1/2	1869x8x8	.53	1.25	1.11
5/8	3/8	1869x10x6	.41	1.44	1.09
5/8	1/2	1869x10	.53	1.48	1.22

90° Male Elbow Long

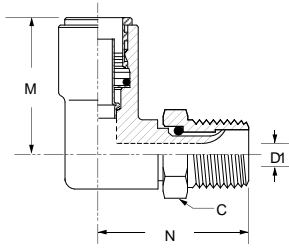
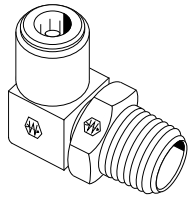


Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
3/8	1/4	1869x6L	.31	1.21	1.55

BRASS

Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

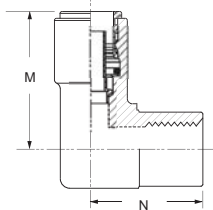
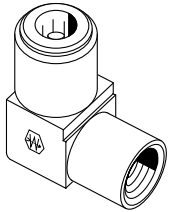
90° Swivel Male Elbow (Ref. SAE No. AA02DD)



NOTE: Swivel for installation purposes only.

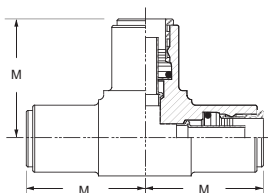
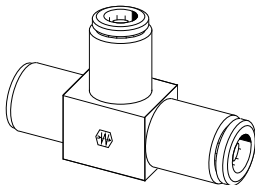
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N	Hex C
1/4	1/8	1869x4S	.13	.89	.88	7/16
1/4	1/4	1869x4x4S	.22	.99	1.06	9/16
1/4	3/8	1869x4x6S	.30	.98	1.06	11/16
3/8	1/8	1869x6x2S	.13	1.03	.97	7/16
3/8	1/4	1869x6S	.22	1.10	1.14	9/16
3/8	3/8	1869x6x6S	.30	1.12	1.15	11/16
3/8	1/2	1869x6x8S	.42	1.18	1.40	7/8
1/2	1/4	1869x8x4S	.22	1.08	1.20	9/16
1/2	3/8	1869x8S	.30	1.13	1.27	11/16
1/2	1/2	1869x8x8S	.42	1.20	1.47	7/8
5/8	3/8	1869x10x6S	.42	1.35	1.34	11/16
5/8	1/2	1869x10S	.42	1.38	1.54	7/8

90° Female Elbow (Ref. SAE No. AA0203)



Tube O.D.	Female Pipe Thread	Catalog Number	M	N
1/4	1/8	1870x4	1.03	.83
1/4	1/4	1870x4x4	1.04	.78
3/8	1/8	1870x6x2	1.13	.96
3/8	1/4	1870x6	1.28	1.09
3/8	3/8	1870x6x6	1.21	1.07
1/2	1/4	1870x8x4	1.25	1.11
1/2	3/8	1870x8	1.22	1.11
1/2	1/2	1870x8x8	1.33	1.07

Union Tee (Ref. SAE No. AA0401)



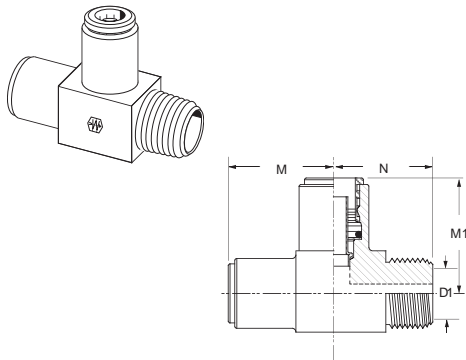
Tube O.D.	Catalog Number	M
1/4	1864x4	.93
3/8	1864x6	1.15
1/2	1864x8	1.22

Quick > Connect[®] Air Brake

**Brass
Fittings**

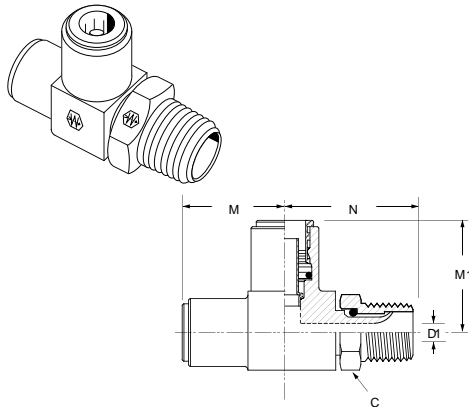
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

Male Run Tee (Ref. SAE No. AA0424)



Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N
1/4	1/8	1871x4	.19	.93	.93	.64
1/4	1/4	1871x4x4	.19	.93	.94	.82
3/8	1/4	1871x6	.31	1.14	1.14	.91
3/8	3/8	1871x6x6	.41	1.15	1.15	.91
3/8x1/4	1/4	1871x6x4x4	.31	1.14	1.07	.96
3/8	1/2	1871x6x8	.53	1.09	1.08	1.11
1/2	3/8	1871x8	.41	1.09	1.10	1.22

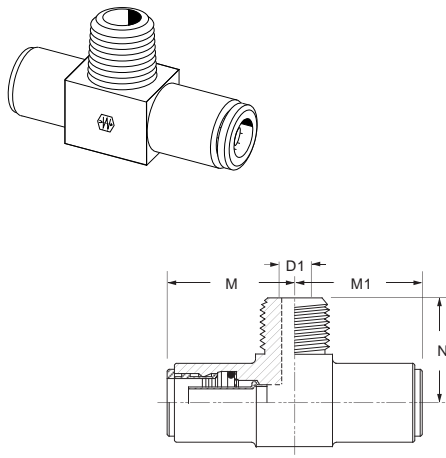
Swivel Male Run Tee (Ref. SAE No. AA04EE)



NOTE: Swivel for installation purposes only.

Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N	Hex C
1/4	1/8	1871x4S	.13	.92	.92	.82	7/16
1/4	1/4	1871x4x4S	.22	.93	.92	1.07	9/16
3/8	1/4	1871x6S	.22	1.15	1.15	1.20	9/16
3/8	3/8	1871x6x6S	.30	1.15	1.15	1.20	11/16
1/2	1/4	1871x8x4S	.22	1.21	1.18	1.22	9/16
1/2	3/8	1871x8S	.30	1.21	1.23	1.34	11/16
1/2	1/2	1871x8x8S	.42	1.21	1.19	1.42	7/8

Male Branch Tee (Ref. SAE No. AA0425)

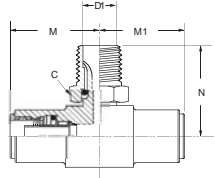
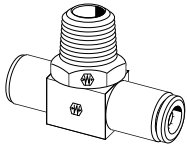


Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N
3/16	1/8	1872x3	.19	.75	.74	.64
1/4	1/8	1872x4	.19	.93	.93	.64
1/4	1/4	1872x4x4	.19	.93	.93	.82
3/8	1/4	1872x6	.31	1.15	1.15	.91
3/8	3/8	1872x6x6	.31	1.15	1.15	.92
1/2	1/4	1872x8x4	.31	1.22	1.22	.98
1/2	3/8	1872x8	.41	1.24	1.24	.99
1/2	1/2	1872x8x8	.53	1.22	1.22	1.12

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Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

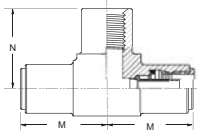
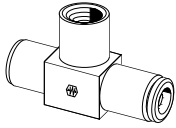
Swivel Male Branch Tee (Ref. SAE No. AA04FF)



NOTE: Swivel for installation purposes only.

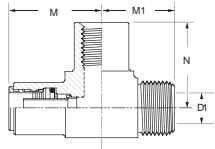
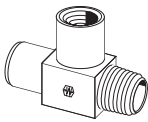
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N	Hex C
1/4	1/8	1872x4S	.13	.93	.93	.80	7/16
1/4	1/4	1872x4x4S	.22	.93	.93	1.04	9/16
3/8	1/8	1872x6x2S	.13	1.15	1.15	.94	7/16
3/8	1/4	1872x6S	.22	1.15	1.15	1.14	9/16
3/8	3/8	1872x6x6S	.30	1.15	1.15	1.17	11/16
1/2	1/4	1872x8x4S	.22	1.23	1.23	1.21	9/16
1/2	3/8	1872x8S	.30	1.24	1.24	1.24	11/16
1/2	1/2	1872x8x8S	.42	1.21	1.19	1.42	7/8

Female Branch Tee



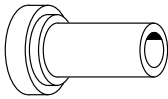
Tube O.D.	Female Pipe Thread	Catalog Number	M	N
3/8	1/4	1877x6	1.16	.78

Adapter Tee

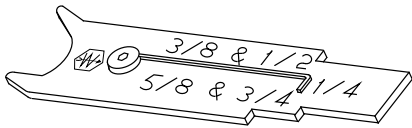


Tube O.D.	Male Pipe Thread	Female Pipe Thread	Catalog Number	D1	M	N	M1
3/8	3/8	1/4	1883x6x6x4	.41	1.28	1.00	.95

Plugs, Pressure (Nylon)



Tube O.D.	Catalog Number
1/4	1829x4
3/8	1829x6
1/2	1829x8



1800T • Collet Service Tool

The Collet Service Tool, made from sturdy plated steel, is designed to assist in field servicing O-Rings of Q-CAB® fittings. Use the half moon radius section to pry up and remove the collet and use the movable piano wire to remove the O-Ring. Notches are used to mark the tubing with insertion depth in five tubing sizes.



1800TRK • Tube Release Kit

The 1800TRK tube release kit is designed to ease the removal of tubing from Q-CAB® fittings. The individual tools are manufactured of a sturdy engineering plastic. All six tube sizes currently offered in Q-CAB® can be serviced with the five tools that make up the 1800TRK kit.

Tube O.D.	Repair Kit Part #
5/32	1800Kx2.5
3/16	1800Kx3
1/4	1800Kx4
3/8	1800Kx6
1/2	1800Kx8
5/8	1800Kx10
3/4	1800Kx12

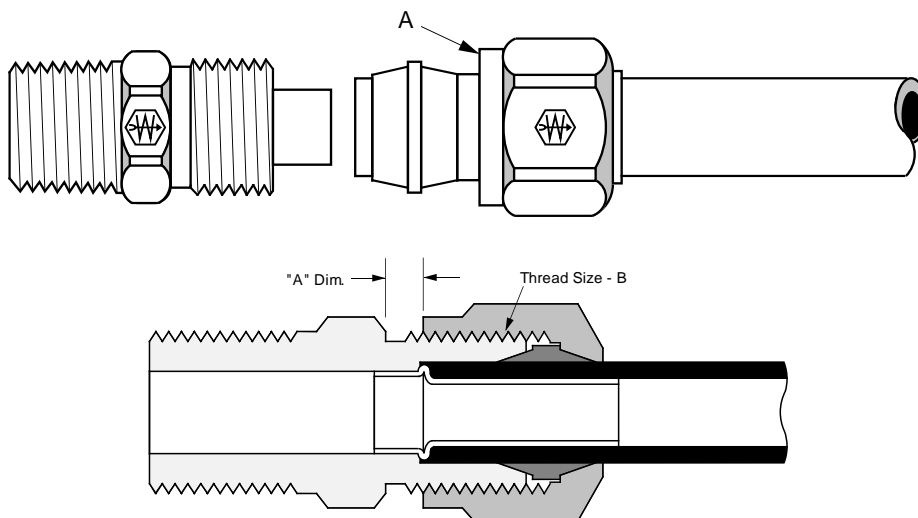
Collet Repair Kits

Consisting of a replacement collet and a replacement o-ring, the collet repair kits provide an opportunity to repair damaged Q-CAB® Fittings.

Air Brake - Nylon Tubing

Brass Fittings

 Refer to safety information regarding tubing selection on page 1.



Tube O.D.	1/4	3/8	1/2	5/8	3/4
Thread Size-B	7/16-24	17/32-24	11/16-20	13/16-18	1-18

• Typical Application

Air brake systems except where temperatures exceed +200°F or where battery acid can drip on tubing.

• Pressure

Maximum operating pressure of 150 psi.

• Vibration

Fair resistance.

• Temperature Range

-40°F to +200°F (-40°C to +93°C)

• Material

CA360 Brass.

• Used With

NT100 Nylon Tubing - SAE J844 Type A and B. See page 33 for NT100 Nylon Tubing data.

• Advantages

Easy to assemble (no tube preparation or flaring required.) Built in tube support. May be used with copper tubing by replacing nut, sleeve and insert with long nut and spherical sleeve. Insert should be removed for copper tubing use. See page 97 for details.

• Conformance

Meets specifications and standards of SAE and DOT FMVSS 571.106.

• How to Order

For complete assemblies (body, nuts and sleeves), order by catalog number. Example: 1468x4x4. To order body only (less nut and sleeve), add prefix "B" to catalog number and change "14" to "13". Example: B1368x4x4. Nuts, sleeve and insert can be ordered separately by catalog number.

To order complete assembly with pipe sealant (Seal-A-Thread), add suffix "Z" to catalog number. Example: 1468x4x4Z (special order only).

To order complete assembly with gauge ring, add suffix "K" to catalog number. Example: 1468x4x4K (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 J246.

• Assembly Instructions

1. Cut tubing to desired length.
2. Slide nut and then sleeve on tubing. Threaded end of nut "A" must face toward fitting body.
3. Insert tubing into the preassembled fitting. Be sure tubing is bottomed in fitting.
4. Tighten nut to required torque as indicated on chart. Another check on proper assembly is dimension A also noted on chart. A gauge ring also assures installation to specification. See page 96.

Tube Size	Torque	A Dimension
1/4	85 to 115 in. lbs.	.085/.105
3/8	12 to 17 ft. lbs.	.125/.145
1/2	25 to 33 ft. lbs.	.100/.120
5/8	26 to 35 ft. lbs.	.115/.135
3/4	38 to 50 ft. lbs.	.180/.200

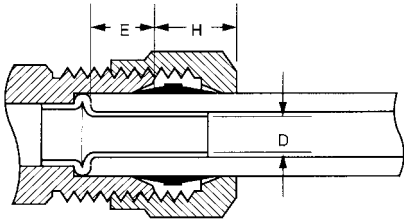
Disassembly: Remove nut and pull tubing out of fitting body. Insert will remain in tubing.

Reassembly: Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and torque as in Step 4.

Label Set: **FS-900** (adhesive)
CL-16-3 (non-adhesive)

BRASS

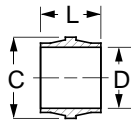
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.



Tube O.D.	E Tube Stop	H*	D
1/4	.20	.32	.133
3/8	.26	.42	.215
1/2	.39	.45	.340
5/8	.39	.48	.398
3/4	.51	.50	.523

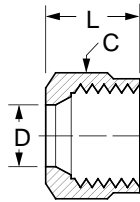
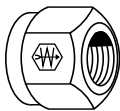
*NOTE: H is hand tight dimensions.

Sleeve (Ref. SAE No. 100115)



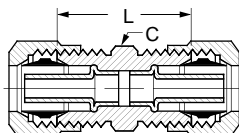
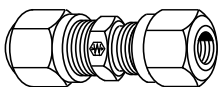
Tube O.D.	Catalog Number	Dia. C	D	L
1/4	1460x4	.359	.256	.30
3/8	1460x6	.479	.384	.39
1/2	1460x8	.625	.509	.43
5/8	1460x10	.745	.635	.48
3/4	1460x12	.922	.760	.53

Nut (Ref. SAE No. 100110)



Tube O.D.	Catalog Number	Hex C	D	L
1/4	1461x4	9/16	.256	.45
3/8	1461x6	5/8	.384	.63
1/2	1461x8	13/16	.509	.72
5/8	1461x10	15/16	.634	.77
3/4	1461x12	1-1/8	.760	.81

Union (Ref. SAE No. 100101BA)



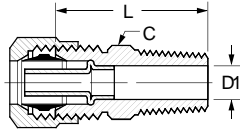
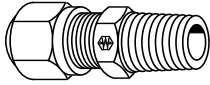
Tube O.D.	Catalog Number	Hex C	L
1/4	1462x4	7/16	.85
3/8	1462x6	9/16	1.10
1/2	1462x8	11/16	1.31
5/8	1462x10	13/16	1.43
3/4	1462x12	1	1.60

Air Brake - Nylon Tubing

**Brass
Fittings**

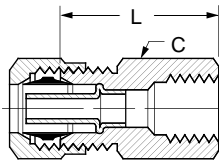
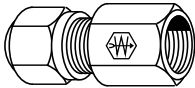
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

Male Connector (Ref. SAE No. 100102BA)



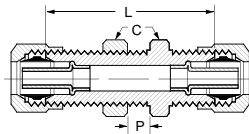
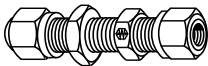
Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D1	L
1/4	1/16	1468x4x1	7/16	.125	.90
1/4	1/8	1468x4	7/16	.188	.88
1/4	1/4	1468x4x4	9/16	.188	1.09
1/4	3/8	1468x4x6	11/16	.188	1.12
3/8	1/8	1468x6x2	9/16	.188	1.02
3/8	1/4	1468x6	9/16	.312	1.20
3/8	3/8	1468x6x6	11/16	.312	1.23
3/8	1/2	1468x6x8	7/8	.312	1.42
1/2	1/4	1468x8x4	11/16	.312	1.32
1/2	3/8	1468x8	11/16	.406	1.32
1/2	1/2	1468x8x8	7/8	.406	1.51
1/2	3/4	1468x8x12	1-1/16	.406	1.57
5/8	3/8	1468x10x6	13/16	.406	1.38
5/8	1/2	1468x10	7/8	.531	1.57
5/8	3/4	1468x10x12	1-1/16	.750	1.63
3/4	1/2	1468x12	1	.531	1.67
3/4	3/4	1468x12x12	1-1/16	.660	1.70

Female Connector (Ref. SAE No. 100103BA)



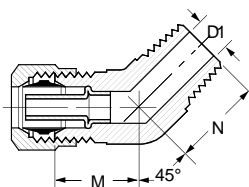
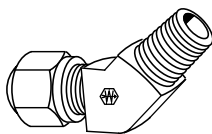
Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	L
1/4	1/8	1466x4	9/16	.85
3/8	1/8	1466x6x2♦	9/16	1.01
3/8	1/4	1466x6	11/16	1.19
3/8	3/8	1466x6x6	7/8	1.19
1/2	3/8	1466x8	7/8	1.28

Bulkhead Union



Tube O.D.	Catalog Number	Hex C	L	Max. P
1/4	1474x4	9/16	1.38	.25
3/8	1474x6	11/16	1.62	.25
1/2	1474x8♦	13/16	1.88	.25
5/8	1474x10♦	15/16	2.09	.25

45° Male Elbow (Ref. SAE No. 100302BA)



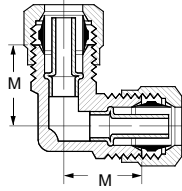
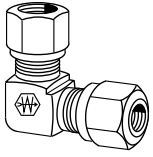
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
1/4	1/8	1480x4	.188	.50	.64
1/4	1/4	1480x4x4	.312	.61	.86
3/8	1/4	1480x6	.312	.72	.86
3/8	3/8	1480x6x6	.406	.76	.95
1/2	1/4	1480x8x4	.312	.85	.95
1/2	3/8	1480x8	.406	.85	.95
1/2	1/2	1480x8x8	.531	.88	1.17
5/8	1/2	1480x10	.531	.94	1.17

♦MTO - Made To Order

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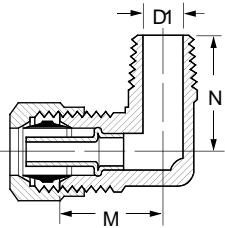
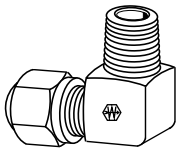
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

Union Elbow
(Ref. SAE No. 100201BA)



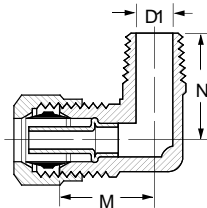
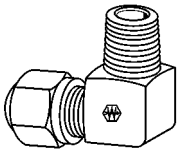
Tube O.D.	Catalog Number	M
1/4	1465x4♦	.63
3/8	1465x6♦	.80
1/2	1465x8♦	.94
5/8	1465x10♦	1.10

90° Male Elbow
(Ref. SAE No. 100202BA)



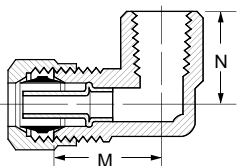
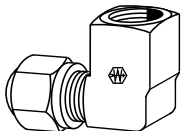
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
1/4	1/8	1469x4	.188	.63	.67
1/4	1/4	1469x4x4	.312	.69	.88
1/4	3/8	1469x4x6	.406	.74	.87
3/8	1/8	1469x6x2	.188	.73	.75
3/8	1/4	1469x6	.312	.80	.93
3/8	3/8	1469x6x6	.406	.85	.92
3/8	1/2	1469x6x8	.531	.95	1.11
1/2	1/4	1469x8x4	.312	.87	1.00
1/2	3/8	1469x8	.406	.94	1.00
1/2	1/2	1469x8x8	.531	1.04	1.19
5/8	3/8	1469x10x6	.406	1.01	1.06
5/8	1/2	1469x10	.531	1.10	1.25
5/8	3/4	1469x10x12	.750	1.21	1.25
3/4	1/2	1469x12	.531	1.20	1.34

90° Male Elbow - Long
(Ref. SAE No. 100202BA)



Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	N
3/8	1/4	1469x6L	.312	.80	1.44
1/2	3/8	1469x8L	.406	.94	1.38

90° Female Elbow
(Ref. SAE No. 100203BA)



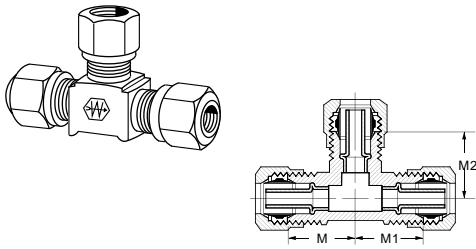
Tube O.D.	Fem. Pipe Thread	Catalog Number	M	N
1/4	1/8	1470x4	.70	.54
3/8	1/4	1470x6♦	.90	.78
3/8	3/8	1470x6x6♦	.95	.78
1/2	3/8	1470x8♦	1.04	.83
1/2	1/2	1470x8x8♦	1.14	1.02
5/8	1/2	1470x10x10x8♦	1.15	1.08

Air Brake – Nylon Tubing

**Brass
Fittings**

Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

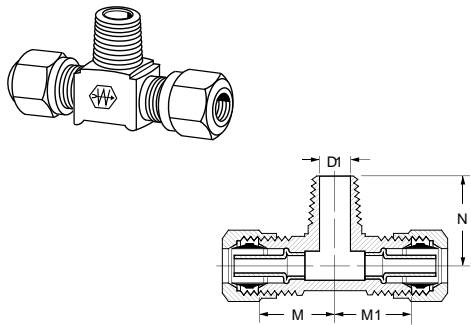
Union Tee (Ref. SAE No. 100401BA)



NOTE: Dimensions read left, right, center.

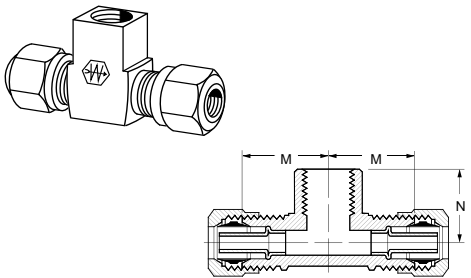
Tube O.D.	Catalog Number	M	M1	M2
1/4	1464x4	.63	.63	.63
1/4x3/8x3/8	1464x4x6x6♦	.70	.80	.80
3/8x3/8x1/4	1464x6x6x4	.72	.72	.69
3/8	1464x6	.80	.80	.80
1/2x1/2x3/8	1464x8x8x6	.86	.86	.85
1/2	1464x8	.94	.94	.94

Male Branch Tee (Ref. SAE No. 100425BA)



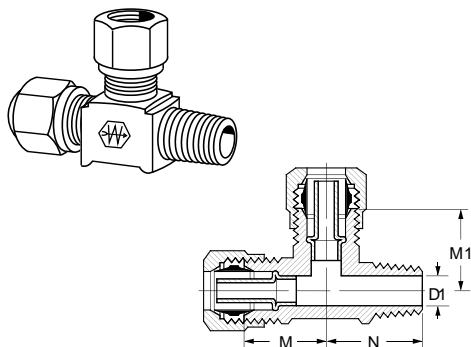
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N
1/4	1/8	1472x4	.188	.63	.63	.67
3/8x1/4	1/4	1472x6x4x4	.312	.80	.69	.93
3/8	1/8	1472x6x6x2♦	.188	.73	.73	.75
3/8	1/4	1472x6	.312	.80	.80	.93
3/8	3/8	1472x6x6x6	.406	.85	.85	.92
1/2x3/8	3/8	1472x8x6x6	.406	.94	.85	1.00
1/2	1/4	1472x8x8x4	.312	.87	.87	1.00
1/2	3/8	1472x8	.406	.94	.94	1.00
5/8	1/4	1472x10x10x4♦	.312	1.13	1.13	1.12

Female Branch Tee



Tube O.D.	Fem. Pipe Thread	Catalog Number	M	N
3/8	1/4	1477x6	.90	.78
1/2	1/4	1477x8x8x4♦	.97	.83
5/8	1/4	1477x10x10x4	1.04	.89

Male Run Tee (Ref. SAE No. 100424BA)



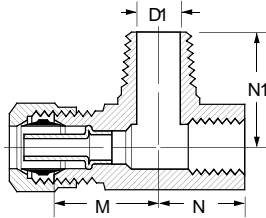
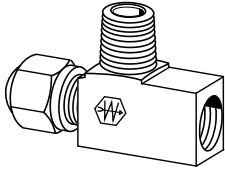
Tube O.D.	Male Pipe Thread	Catalog Number	D1	M	M1	N
1/4	1/8	1471x4	.188	.64	.64	.67
3/8x1/4	1/4	1471x6x4x4	.312	.72	.69	.88
3/8	1/4	1471x6	.312	.80	.80	.93
3/8	3/8	1471x6x6x6	.406	.85	.85	.92
1/2	3/8	1471x8♦	.406	.94	.94	1.10

♦MTO - Made To Order

BRASS

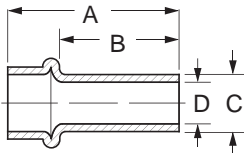
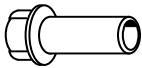
Use with Weatherhead NT100 Air Brake Tubing (SAE J844), see page 33.

Adapter Tee



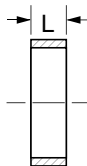
Tube O.D.	Fem. Pipe Thread	Male Pipe Thread	Catalog Number	D1	M	N	N1
3/8	1/4	1/4	1482x6x4x4*	.312	.88	.75	.94
3/8	1/4	3/8	1482x6x4x6*	.402	.94	.75	1.00

Insert (Brass)



Tube O.D.	Catalog Number	A	B	C	D
1/4	1484x4	.64	.46	.163	.133
3/8	1484x6	.76	.58	.245	.215
1/2	1484x8	.94	.76	.370	.340
5/8	1484x10	1.06	.84	.434	.398
3/4	1484x12	1.21	1.00	.559	.523

Gauge Ring



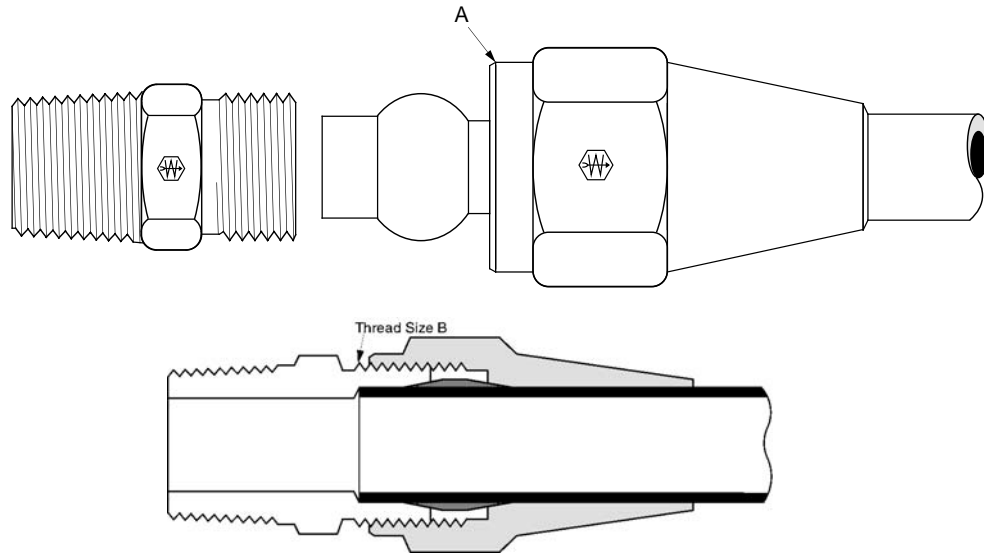
Tube O.D.	Catalog Number	L
1/4	1485x4	.085/.105
3/8	1485x6	.125/.145
1/2	1485x8	.100/.120
5/8	1485x10	.115/.135
3/4	1485x12	.180/.200

NOTE: Nut screwed to Gauge Ring assures installation to specifications.

Air Brake - Copper Tubing

Brass Fittings

 Refer to safety information regarding tubing selection on page 1.



Tube O.D.	1/4	3/8	1/2	5/8	3/4	1
Thread Size-B	7/16-24	17/32-24	11/16-20	13/16-18	1-18	1-1/4-16

• **Typical Application**

Air brake systems.

• **Pressure**

Maximum operating pressure of 150 psi.

• **Vibration**

Fair resistance.

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C) with copper tubing.

• **Material**

CA360 Brass.

• **Used With**

Copper tubing in air brake systems.

• **Advantages**

Easy to assemble (no flaring). May be used with nylon tubing by replacing long nut and spherical sleeve with insert, rigid sleeve and nut. See page 91 for details.

• **Conformance**

Meets specifications and standards of SAE and DOT.

• **How to Order**

For complete assemblies (body, nuts and sleeves), order by catalog number. Example: 1368x4. To order body only (less nut and sleeve), add prefix "B" to catalog number. Example: B1368x4. Nuts and sleeve can be ordered separately by catalog number.

To order complete assembly with pipe sealant (Seal-A-Thread), add suffix "Z" to catalog number. Example: 1368x4Z (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 J246.

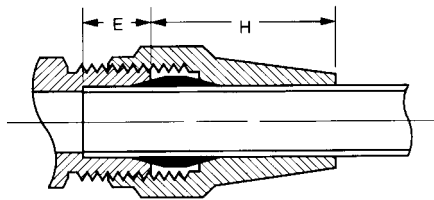
• **Assembly Instructions**

1. Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
2. Slide nut and then sleeve on tubing. Threaded end of nut "A" must face toward fitting body.
3. Insert tubing into fitting. Be sure tubing is bottomed on fitting shoulder.
4. Thread nut onto fitting body until it is hand tight.
5. From that point, tighten with a wrench the number of turns indicated in the chart below.

Tube Size	Additional Number of Turns from Hand Tight
1/4, 3/8	1-3/4
1/2, 5/8, 3/4	3-1/4

Label Set: **FS-800** (adhesive)
CL-491 (non-adhesive)

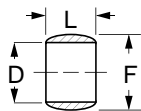
B
R
A
S
S



NOTE: H is hand tight dimensions.

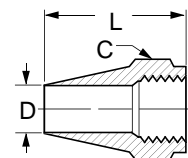
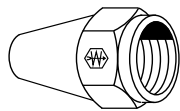
Tube O.D.	E Tube Depth	H
1/4	.25	.58
3/8	.31	.87
1/2	.44	.95
5/8	.44	1.05
3/4	.56	1.25

Sleeve (Ref. SAE No. 120115)



Tube O.D.	Catalog Number	D	F	L
1/4	1360x4	.255	.322	.250
3/8	1360x6	.382	.461	.313
1/2	1360x8	.507	.594	.375
5/8	1360x10	.632	.734	.438
3/4	1360x12	.758	.874	.500

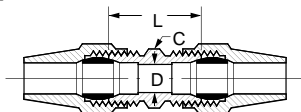
Nut (Ref. SAE No. 120111)



*Compressor Nut with V groove Hex.

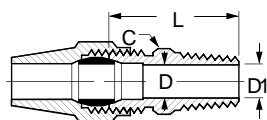
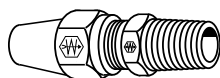
Tube O.D.	Catalog Number	Hex C	D	L
1/4	1361x4	9/16	.256	.75
3/8	1361x6	5/8	.384	1.13
1/2	1361x8	13/16	.509	1.25
5/8	1361x10	15/16	.634	1.38
5/8	1361x10V*♦	1	.634	1.38
3/4	1361x12	1-1/8	.760	1.56

Union (Ref. SAE No. 120101BA)



Tube O.D.	Catalog Number	Hex C	D	L
1/4	1362x4	7/16	.188	.85
3/8	1362x6	9/16	.312	1.10
1/2	1362x8	11/16	.406	1.31
5/8	1362x10	13/16	.531	1.43
3/4	1362x12	1	.656	1.60
1	1362x16	1-1/4	.875	1.78

Male Connector (Ref. SAE No. 120102BA)

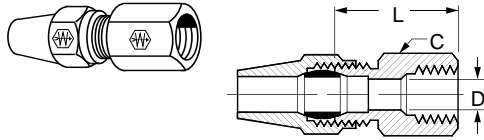


Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1	L
1/4	1/8	1368x4	7/16	.188	.188	.88
1/4	1/4	1368x4x4	9/16	.188	.188	1.09
3/8	1/8	1368x6x2	9/16	.312	.188	1.02
3/8	1/4	1368x6	9/16	.312	.312	1.20
3/8	3/8	1368x6x6	11/16	.312	.406 opt.	1.23
3/8	1/2	1368x6x8	7/8	.312	.531 opt.	1.42
1/2	1/4	1368x8x4	11/16	.406	.312	1.32
1/2	3/8	1368x8	11/16	.406	.406	1.32
1/2	1/2	1368x8x8	7/8	.406	.531 opt.	1.51
5/8	3/8	1368x10x6	13/16	.531	.406	1.38
5/8	1/2	1368x10	7/8	.531	.531	1.57
3/4	1/2	1368x12	1	.656	.531	1.67
3/4	3/4	1368x12x12	1-1/16	.656	.719 opt.	1.70

Air Brake - Copper Tubing

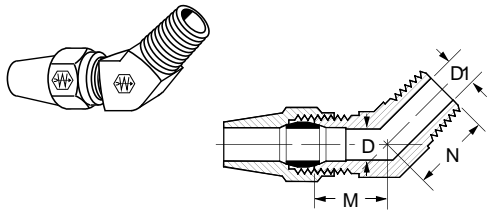
**Brass
Fittings**

Female Connector (Ref. SAE No. 120103BA)



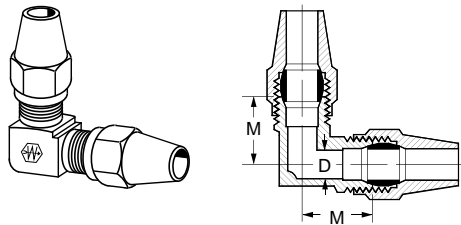
Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
3/8	1/4	1366x6	11/16	.312	1.19
3/8	3/8	1366x6x6	7/8	.312	1.19
1/2	3/8	1366x8	7/8	.406	1.28

45° Male Elbow (Ref. SAE No. 120302BA)



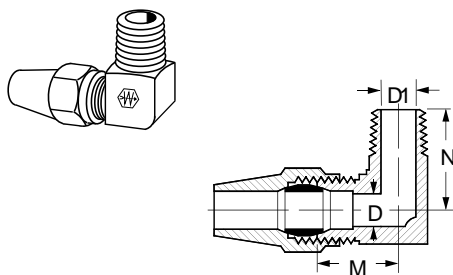
Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
3/8	1/4	1380x6	.312	.312	.72	.86
3/8	3/8	1380x6x6	.312	.406	.76	.95
1/2	3/8	1380x8	.406	.406	.85	.95
5/8	1/2	1380x10	.531	.531	.94	1.17

Union Elbow (Ref. SAE No. 120201BA)



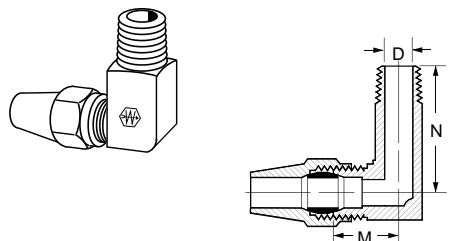
Tube O.D.	Catalog Number	M	D
3/8	1365x6♦	.80	.312
1/2	1365x8♦	.94	.406
5/8	1365x10♦	1.10	.531

90° Male Elbow (Ref. SAE No. 120202BA)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/4	1/8	1369x4	.188	.188	.63	.67
1/4	1/4	1369x4x4	.188	.312	.69	.88
3/8	1/8	1369x6x2	.312	.188	.73	.75
3/8	1/4	1369x6	.312	.312	.80	.93
3/8	3/8	1369x6x6	.312	.406	.85	.92
3/8	1/2	1369x6x8	.312	.531	.95	1.11
1/2	1/4	1369x8x4	.406	.312	.87	1.00
1/2	3/8	1369x8	.406	.406	.94	1.00
1/2	1/2	1369x8x8	.406	.531	1.04	1.19
5/8	3/8	1369x10x6	.531	.406	1.01	1.06
5/8	1/2	1369x10	.531	.531	1.10	1.25

90° Male Elbow - Long

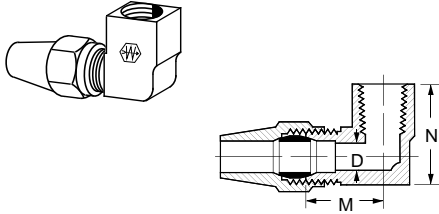


Tube O.D.	Male Pipe Thread	Catalog Number	D	M	N
3/8	1/8	1369x6x2L♦	.188	.75	1.88
3/8	1/4	1369x6L	.312	.81	1.44
1/2	3/8	1369x8L	.406	1.25	1.38
3/4	1/2	1369x12L♦	.531	1.31	1.81

♦MTO - Made To Order

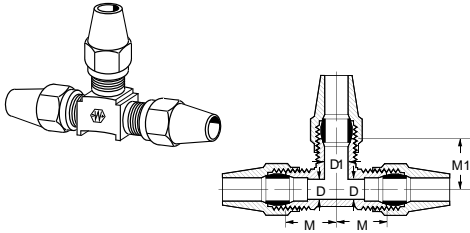
BRASS

90° Female Elbow
(Ref. SAE No. 120203BA)



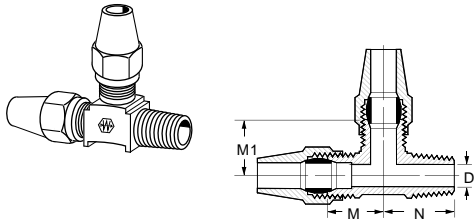
Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N
1/2	3/8	1370x8♦	.406	1.04	.83

Union Tee
(Ref. SAE No. 120401BA)



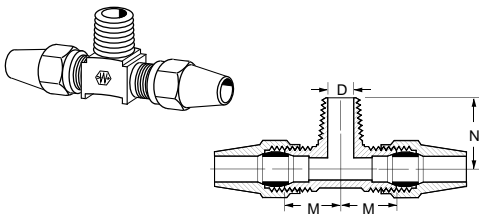
Tube O.D.	Catalog Number	M	M1	D	D1
3/8	1364x6	.80	.80	.312	.312
3/8x3/8x1/2	1364x6x6x8♦	.86	.86	.312	.406
1/2	1364x8	.94	.94	.406	.406

Male Run Tee
(Ref. SAE No. 120424BA)



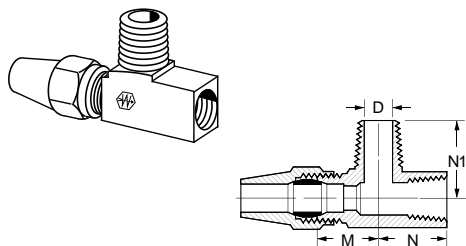
Tube O.D.	Male Pipe Thread	Catalog Number	D	M	M1	N
3/8	1/4	1371x6	.312	.80	.80	.93
3/8	3/8	1371x6x6x6	.406	.85	.85	.92
1/2	3/8	1371x8♦	.406	.94	.94	1.00

Male Branch Tee
(Ref. SAE No. 120425BA)



Tube O.D. A	Tube O.D. B	Male Pipe Thread	Catalog Number	D	M	N
3/8	3/8	1/8	1372x6x6x2♦	.188	.73	.75
3/8	3/8	1/4	1372x6	.312	.80	.93
3/8	3/8	3/8	1372x6x6x6	.406	.85	.92
1/2	1/2	3/8	1372x8	.406	.94	1.00
5/8	1/2	1/2	1372x10x8x8♦	.530	1.120	1.060

Adapter Tee



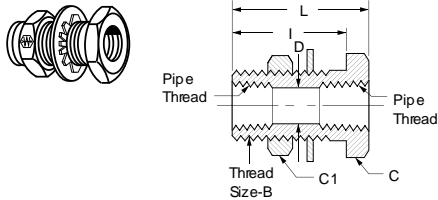
Tube O.D.	M&F Pipe Thread	Catalog Number	D	M	N	N1
3/8	1/4	1382x6x4x4♦	.312	.88	.75	.94

♦MTO - Made To Order

Air Brake – Copper Tubing

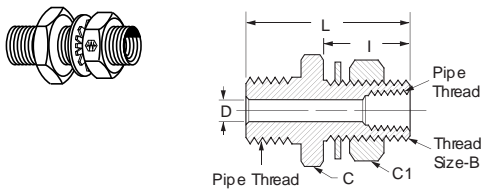
**Brass
Fittings**

Bulkhead Coupling (Brass)



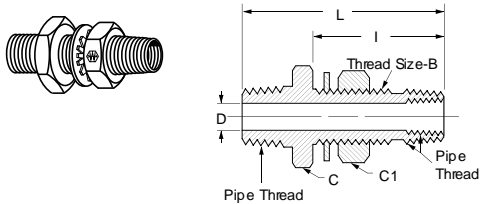
Fem. Pipe Thread	Catalog Thread	Thread Size B	Hex C	Hex C1	D	I	L
1/4	1344	3/4-16	1	15/16	.422	1.25	1.50
1/4	1345	3/4-16	1	15/16	.422	.69	.94
3/8	1346	1-14	1-1/8	1-3/8	.563	1.06	1.31
1/2	1351	1-1/8-14	1-1/4	1-3/8	.703	1.19	1.50

Bulkhead Coupling (Brass)



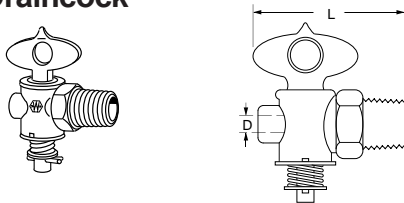
Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	1340	3/4-16	1-1/4	15/16	.312	1.13	2.16
1/2	1/4	1341	3/4-16	1-1/4	15/16	.312	1.53	2.53

Bulkhead Coupling (Brass)



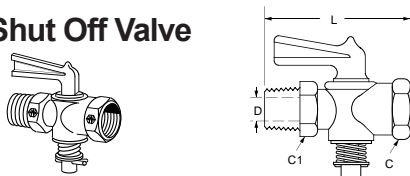
Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	1342	1-14	1-1/4	1-3/8	.375	1.88	2.94
1/2	1/4	1343	1-14	1-1/4	1-3/8	.375	2.88	3.94

Draincock



Male Pipe Thread	Catalog Number	D	L
1/4	W15310	.188	1.56

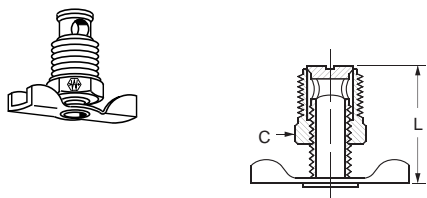
Shut Off Valve



Rating: 125 psi with one 1/4" bubble in 5 seconds permissible key leakage.

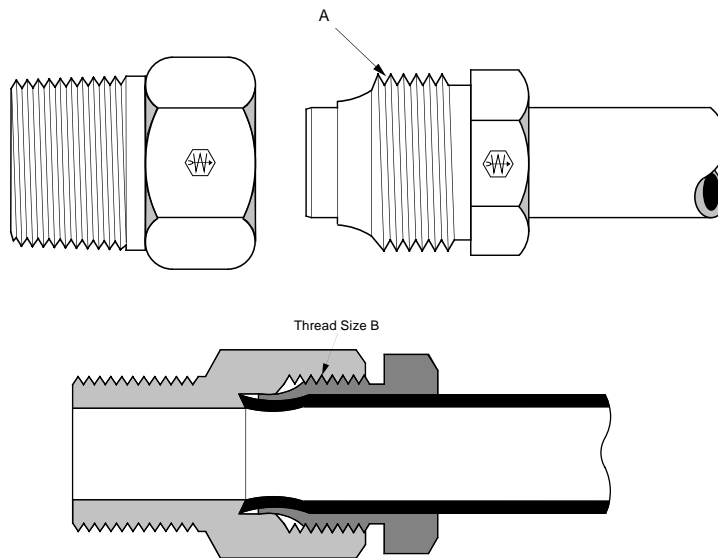
Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Hex C	Hex C1	D	L
1/4	1/4	W20332	5/8	3/4	.218	1.81

External Seat Draincock



Male Pipe Thread	Catalog Number	Hex C	L
1/4	145	9/16	1.00

BRASS



Tube O.D.	1/8	3/16	1/4	5/16	3/8
Thread Size-B	5/16-24	3/8-24	7/16-24	1/2-20	9/16-20

• **Typical Application**

Oil, air, water and lubrication systems.

• **Pressure**

Operating pressure of 500 psi for 1/8" to 1/4" sizes, 250 psi for 5/16" and 3/8" sizes.

• **Vibration**

Fair resistance.

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

• **Material**

CA360 Brass.

• **Used With**

Aluminum and copper tubing. Not recommended for steel tubing.

• **Advantages**

Easy to assemble, no flaring. Two (2) piece construction.

• **Conformance**

Meets ASA and ASME specifications.

• **How to Order**

Order individually by catalog number.

• **NOTE**

Refer to current price list for availability of cataloged items. Quotations and delivery of non-stock items supplied on request. Configurations and dimensions subject to change without notice.

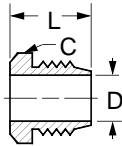
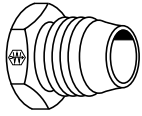
• **Assembly Instructions**

1. Cut tubing to desired length.
2. Slide nut on end of tube. Threaded end "A" of nut must face toward fitting.
3. Insert tube into fitting body. Be sure tube is bottomed on fitting shoulder.
4. Lubricate threads and assemble nut to fitting body.
5. Tighten nut, hand tight. From hand tight, tighten with a wrench 1-1/2 additional turns to form proper seal.

Threaded Sleeve

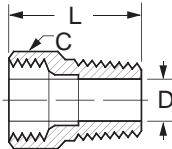
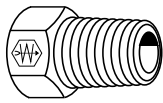
**Brass
Fittings**

Nut



Tube O.D.	Catalog Number	Hex C	D	L
1/8	6100x2	3/8	.130	.50
3/16	6100x3	7/16	.193	.53
1/4	6100x4	1/2	.255	.56
3/8	6100x6♦	5/8	.380	.61

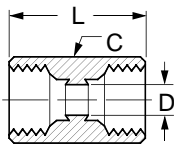
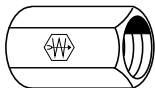
Male Connector



Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8	6200x2	7/16	.078	.62
1/8	*	6200x2x21	7/16	.080	.62
3/16	1/8	6200x3	7/16	.141	.69
1/4	1/8	6200x4	1/2	.188	.75
3/8	1/4	6200x6♦	5/8	.312	.97

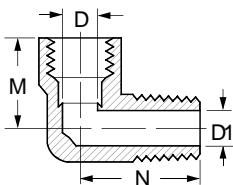
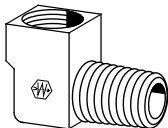
*Thread Size 1/4-28 Tapered Male Thread

Union



Tube O.D.	Catalog Number	Hex C	D	L
1/4	6300x4♦	1/2	.187	1.00

Male Elbow

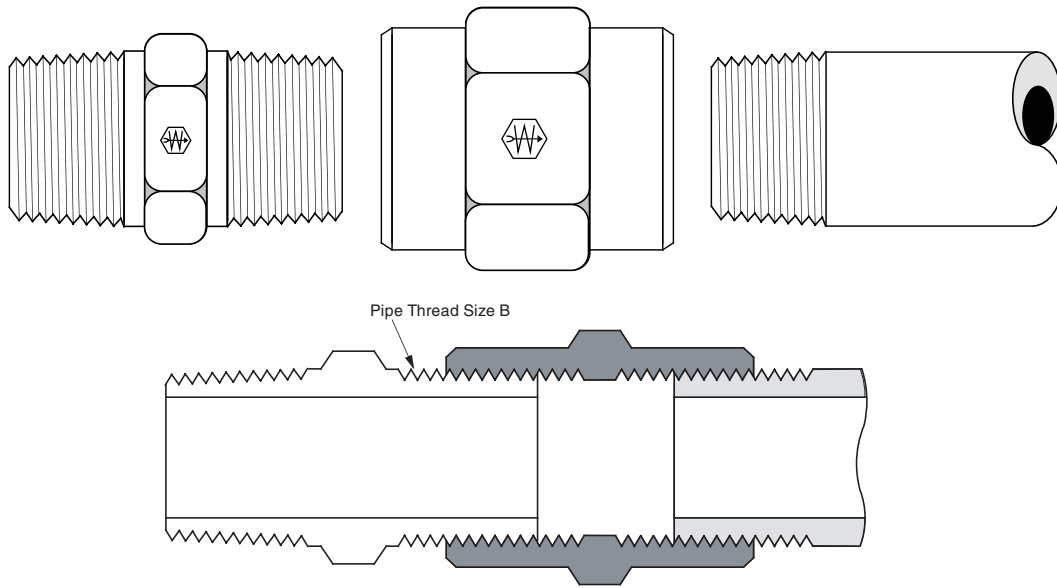


Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/8	1/8	6400x2	.073	.125	.50	.66
1/8	*	6400x2x21	.078	.080	.50	.52
3/16	1/8	6400x3	.141	.156	.56	.62
1/4	1/8	6400x4	.188	.188	.52	.62

*Thread Size 1/4-28 Tapered Male Thread

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B
R
A
S
S



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

• **Typical Application**

Grease, refrigeration, instrumentation and hydraulic systems. Fuel, LP and natural gas available on special order.

• **Pressure**

Operating pressure up to 1200 psi.

• **Vibration**

Fair resistance.

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C).

• **Material**

CA360 Brass.

• **Used With**

Brass, bronze and iron pipe.

• **Advantages**

Dryseal pipe threads (NPTF). Large range of sizes and configurations

• **Conformance**

Listed by Underwriters Laboratories (available on special order) for fuel equipment, refrigeration and gas. Meets specifications and standards of ASA, ASME and SAE.

• **How to Order**

Order individually by catalog number. Example: 3325x4. To order with pipe sealant (Seal-A-Thread), add a "Z" suffix to the catalog number. (Special order only). Example: 3325x4Z.

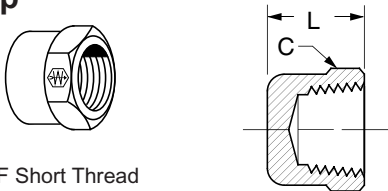


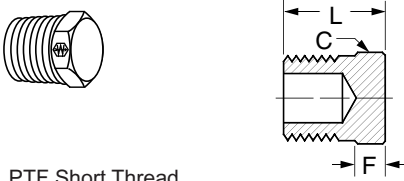
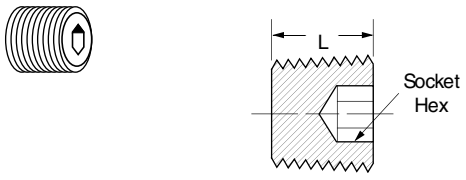
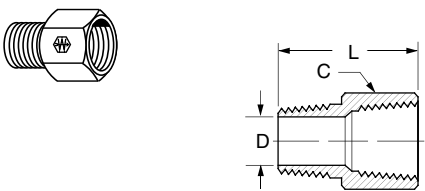
• **NOTE**

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 J530 Automotive Pipe Fittings and SAE J531 Drain Plugs.

• **Assembly Instructions**

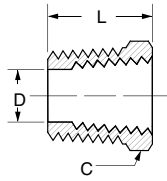
1. Tighten approximately 2-1/2 turns past hand tight.
2. Fittings with Seal-A-Thread tighten two turns past hand tight. Brittle materials require special cautions.

- **Label Set:** **W-8022** (adhesive)
CL-490 (non-adhesive)

<p>Cap</p>  <p>*PTF Short Thread</p>	<table border="1"> <thead> <tr> <th>Fem. Pipe Thread</th> <th>Catalog Number</th> <th>Hex C</th> <th>L</th> </tr> </thead> <tbody> <tr> <td>1/8*</td> <td>3129x2</td> <td>9/16</td> <td>.50</td> </tr> <tr> <td>1/4*</td> <td>3129x4</td> <td>11/16</td> <td>.59</td> </tr> <tr> <td>3/8*</td> <td>3129x6</td> <td>13/16</td> <td>.68</td> </tr> </tbody> </table>	Fem. Pipe Thread	Catalog Number	Hex C	L	1/8*	3129x2	9/16	.50	1/4*	3129x4	11/16	.59	3/8*	3129x6	13/16	.68																																						
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♦MTO - Made To Order

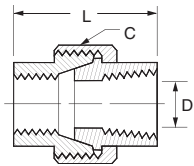
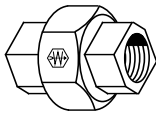
Bushing (Ref. SAE No. 130140)



*PTF Short Thread
**Optional Counterbore

Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/4*	1/8	3220x4x2	5/8	.339	.59
3/8	1/8	3220x6x2	11/16	.328	.75
3/8*	1/4	3220x6x4	11/16	.438	.69
1/2*	1/8	3220x8x2	7/8	.530**	.75
1/2*	1/4	3220x8x4	7/8	.438**	.75
1/2*	3/8	3220x8x6	7/8	.562	.75
3/4*	3/8	3220x12x6	1-1/8	.562	.88
3/4*	1/2	3220x12x8	1-1/8	.703	.88

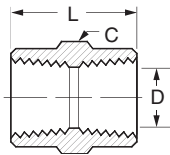
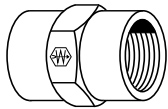
Union



*PTF Short Thread

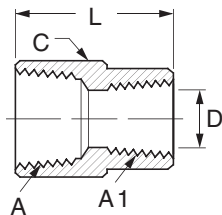
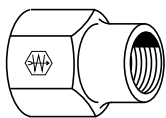
Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/8*	3250x2♦	7/8	.339	.97
1/4*	3250x4	1-1/16	.438	1.31
3/8	3250x6♦	1-5/16	.560	1.66
1/2	3250x8	1-9/16	.703	1.81

Coupling (Ref. SAE No. 130138)



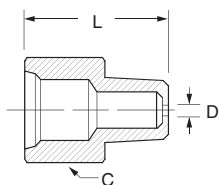
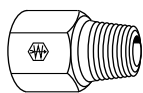
Fem. Pipe Thread	Catalog Number	Hex C	D	L
1/16	3300x1	7/16	.339	.75
1/8	3300x2	9/16	.339	.75
1/4	3300x4	3/4	.438	1.12
3/8	3300x6	7/8	.578	1.12
1/2	3300x8	1-1/16	.703	1.50
3/4	3300x12	1-1/4	.906	1.53

Reducer Coupling (Ref. SAE No. 130138)



Fem. Pipe Thread A	Fem. Pipe Thread A1	Catalog Number	Hex C	D	L
1/4	1/8	3300x4x2	3/4	.339	.96
3/8	1/8	3300x6x2	7/8	.339	.94
3/8	1/4	3300x6x4	7/8	.438	1.16
1/2	3/8	3300x8x6	1-1/16	.562	1.38

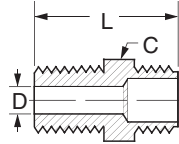
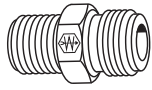
Restriction Pipe Adapter (With .0625 Orifice)



*PTF short thread.

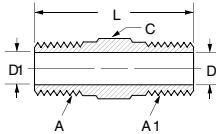
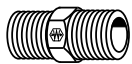
Male Pipe Thread	Female Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8*	1512	1/2	.0625	.75

Fuel Line Adapter



Inv. Tube Size	Male Pipe Thread	Catalog Number	Hex C	D	L
1/2-20	1/8	1514	1/2	.219	.90

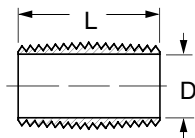
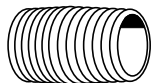
Hex Nipple (Ref. SAE No. 130137)



*Optional Counterbore .312

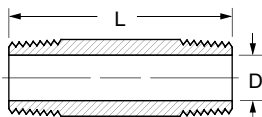
Male Pipe Thread A	Male Pipe Thread A1	Catalog Number	Hex C	D	D1	L
1/16	1/16	3325x1	3/8	.125	.125	.978
1/8	1/16	3325x2x1	7/16	.230	.156	.955
1/8	1/8	3325x2	7/16	.219	.219	.97
1/4	1/8	3325x4x2	9/16	.219	.219*	1.19
1/4	1/4	3325x4	9/16	.312	.312	1.38
3/8	1/8	3325x6x2	11/16	.219	.438	1.22
3/8	1/4	3325x6x4	11/16	.312	.438	1.41
3/8	3/8	3325x6	11/16	.438	.438	1.41
1/2	1/2	3325x8	7/8	.562	.562	1.81
3/4	3/4	3325x12	1-1/16	.750	.750	1.94

Close Nipple



Male Pipe Thread	Catalog Number	D	L
1/8	3326x2	.281	.75
1/4	3326x4	.375	.88
3/8	3326x6	.500	1.00
1/2	3326x8	.625	1.12
3/4	3326x12	.750	1.38

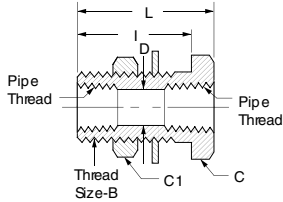
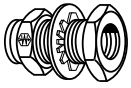
Long Nipple



Male Pipe Thread	Catalog Number	D	L
1/8	3327x2	.281	1.50
1/8	3328x2	.281	2.00
1/8	3329x2	.281	2.50
1/8	3330x2	.281	3.00
1/8	3331x2♦	.281	3.50
1/4	3327x4	.375	1.50
1/4	3328x4	.375	2.00
1/4	3329x4	.375	2.50
1/4	3330x4	.375	3.00
3/8	3327x6	.480	1.50
3/8	3328x6	.490	2.00
3/8	3329x6	.480	2.50
3/8	3330x6	.480	3.00
3/8	3331x6♦	.480	3.50
1/2	3328x8	.625	2.00
1/2	3329x8	.625	2.50
1/2	3330x8	.625	3.00
3/4	3328x12♦	.750	2.00
3/4	3329x12	.750	2.50

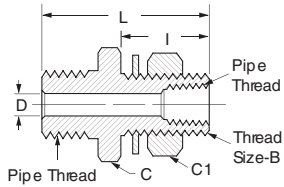
♦MTO - Made To Order

Bulkhead Coupling (Brass)



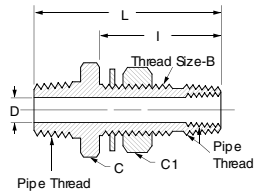
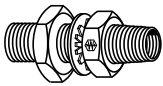
Fem. Pipe Thread	Catalog Thread	Thread Size B	Hex C	Hex C1	D	I	L
1/4	1344	3/4-16	1	15/16	.422	1.25	1.50
1/4	1345	3/4-16	1	15/16	.422	.69	.94
3/8	1346	1-14	1-1/8	1-3/8	.563	1.06	1.31
1/2	1351	1-1/8-14	1-1/4	1-3/8	.703	1.19	1.50

Bulkhead Coupling (Brass)



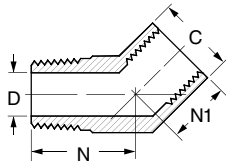
Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	1340	3/4-16	1-1/4	15/16	.312	1.13	2.16
1/2	1/4	1341	3/4-16	1-1/4	15/16	.312	1.53	2.53

Bulkhead Coupling (Brass)



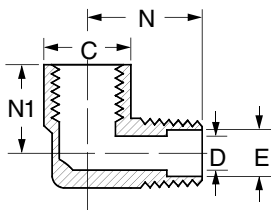
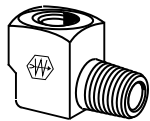
Male Pipe Thread	Fem. Pipe Thread	Catalog Number	Thread Size B	Hex C	Hex C1	D	I	L
1/2	1/4	1342	1-14	1-1/4	1-3/8	.375	1.88	2.94
1/2	1/4	1343	1-14	1-1/4	1-3/8	.375	2.88	3.94

**45° Street Elbow
(Ref. SAE No. 130339)**



Male Pipe Thread	Fem. Pipe Thread	Catalog Number	C	D	N	N1
1/8	1/8	3350x2	9/16	.219	.50	.38
1/4	1/4	3350x4	11/16	.312	.74	.56
3/8	3/8	3350x6	13/16	.438	.78	.56
1/2	1/2	3350x8	1	.562	1.00	.76
3/4	3/4	3350x12	1-1/4	.750	1.06	.75

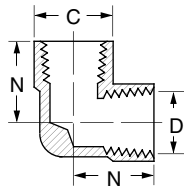
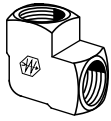
**90° Street Elbow
(Ref. SAE No. 130239)**



Fem. Pipe Thread	Male Pipe Thread	Catalog Number	C	D	E	N	N1
1/8	1/8	3400x2	9/16	.219	.25	.66	.47
1/8*	1/8**	3400x2W	1/2	.188	.25	.57	.34
1/4	1/8	3400x4x2	11/16	.219	—	.72	.53
1/4*	1/4**	3400x4W	11/16	.266	.36	.78	.45
1/4	1/4	3400x4	11/16	.312	—	.91	.72
3/8	3/8	3400x6	13/16	.438	—	.97	.78
1/2	1/2	3400x8	1	.562	—	1.25	1.03
3/4	3/4	3400x12	1-1/4	.750	—	1.38	1.12

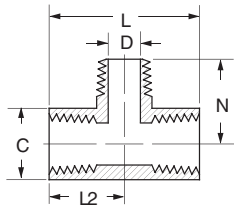
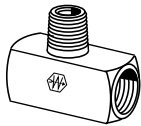
* PTF Short Thread
** PTF Special Short Thread

90° Elbow (Ref. SAE No. 130238)



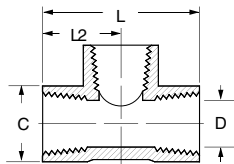
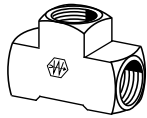
Fem. Pipe Thread	Catalog Number	C	D	N
1/8	3500x2	9/16	.339	.55
1/4	3500x4	11/16	.438	.78
3/8	3500x6	13/16	.562	.84
1/2	3500x8	1	.703	1.09
3/4	3500x12	1-1/4	.906	1.16

Male Branch Tee (Ref. SAE No. 130425)



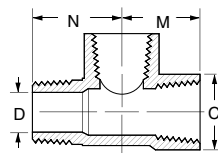
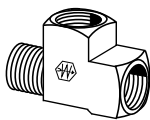
Fem. Pipe Thread	Male Pipe Thread	Catalog Number	C	D	L	L2	N
1/8	1/8	3600x2	9/16	.219	1.10	.55	.66
1/4	1/4	3600x4	11/16	.312	1.56	.78	.91
3/8	3/8	3600x6	13/16	.438	1.68	.84	.97
1/2	1/2	3600x8	1	.562	2.18	1.09	1.25
3/4	3/4	3600x12	1-1/4	.750	2.31	1.16	1.38

Tee (Ref. SAE No. 130438)



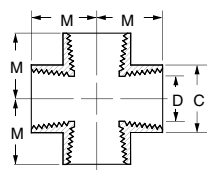
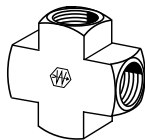
Fem. Pipe Thread	Catalog Number	C	D	L	L2
1/16	3700x1♦	7/16	.141	.96	.48
1/8	3700x2	9/16	.339	1.10	.55
1/4	3700x4	11/16	.438	1.56	.78
3/8	3700x6	13/16	.562	1.68	.84
1/2	3700x8	1	.703	2.18	1.09
3/4	3700x12	1-1/4	.906	2.32	1.16

Male Run Tee (Ref. SAE No. 130424)



Fem. Pipe Thread	Male Pipe Thread	Catalog Number	C	D	M	N
1/8	1/8	3750x2	9/16	.219	.55	.66
1/4	1/4	3750x4	11/16	.312	.78	.90
3/8	3/8	3750x6	13/16	.438	.84	.97
1/2	1/2	3750x8	1	.562	1.09	1.25
3/4	3/4	3750x12	1-1/4	.750	1.16	1.38

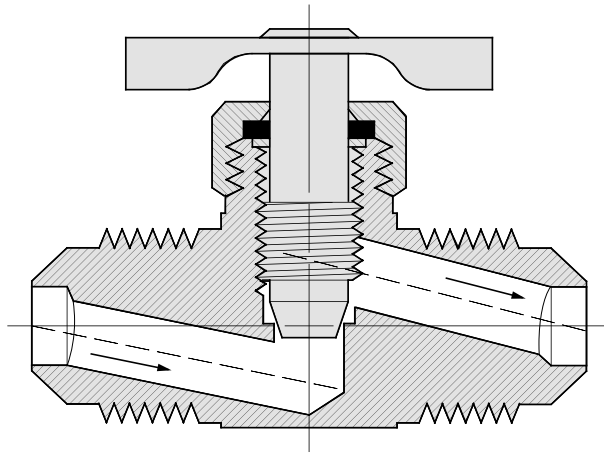
Cross



Fem. Pipe Thread	Catalog Number	C	D	M
1/8	3950x2	1/2	.339	.50
1/4	3950x4	11/16	.438	.75
3/8	3950x6	7/8	.562	.81
1/2	3950x8	1	.703	1.09
3/4	3950x12♦	1-1/4	.906	1.16

♦MTO - Made To Order

 Refer to safety information regarding tubing selection on page 1.



• **Typical Application**

Instrumentation, hydraulic and pneumatic systems.

• **Pressure**

150 psi maximum. (Does not include plastic tubing.)

• **Temperature Range**

-65°F to +250°F (-53°C to +121°C) with metal tubing. For valves using compatible tubing, refer to the tubing temperature range.

• **Material**

Brass bodies, steel handles except where noted. POLYLINE® valves have brass bodies and brass handles.

• **Used With**

Copper, aluminum, steel and plastic tubing where applicable. When using POLYLINE® valves, use aluminum and copper tubing with brass sleeve only. Plastic tubing may be used with either brass or plastic sleeve.

• **Advantages**

Metal-to-metal seat, with fine thread screwdown, enables valves to seat positively, adjust easily and hold to any amount of flow up to capacity of the valve.

• **Conformance**

Designed for automotive and industrial use. Not intended for natural gas, LPG, nuclear or aircraft applications.

• **How to Order**

Order valve body, nuts and sleeves by catalog number. Order valve with SELFALIGN® nuts and sleeves by adding suffix "S". Example: A6763 becomes A6763S. Order valves less nuts and sleeves by adding prefix "B". Example: A6763 becomes B6763.

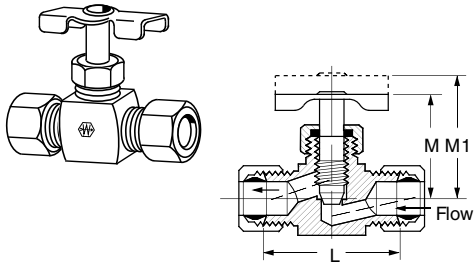
• **Assembly Instructions**

1. Install with the pressure against the seat. Inspection of a straight valve discloses one opening to be higher than the other. Pressure should always be directed against the seat in angle valves, not the stem threads.

Needle Valves

**Brass
Fittings**

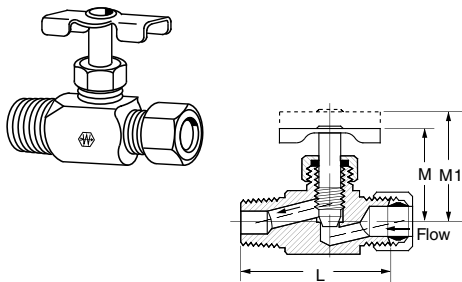
Compression Double



"S" suffix designates Selfalign® with nuts and sleeves.

Tube O.D.	Catalog Number	L	M	M1
3/16	A6763	1.06	.88	1.03
3/16	A6763S	1.06	.88	1.03
1/4	A6765	1.13	.88	1.03
1/4	A6765S	1.13	.88	1.03
5/16	A6770	1.13	.88	1.03
3/8	A6775	1.50	1.13	1.31
3/8	A6775S	1.50	1.13	1.31

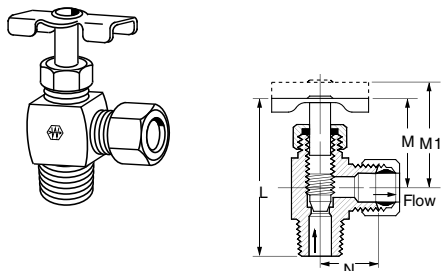
Compression Straightway



"S" suffix designates Selfalign® with nuts and sleeves.

Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1
3/16	1/8	A6690	1.16	.88	1.03
3/16	1/8	A6690S	1.16	.88	1.03
1/4	1/8	A690	1.19	.88	1.03
1/4	1/8	A690S	1.19	.88	1.03
5/16	1/8	A660	1.18	.90	1.05
5/16	1/4	A6755	1.28	.91	1.09
5/16	1/4	A6755S	1.28	.91	1.09
3/8	1/4	A6760	1.82	1.31	1.46
3/8	1/4	A6760S	1.82	1.31	1.46

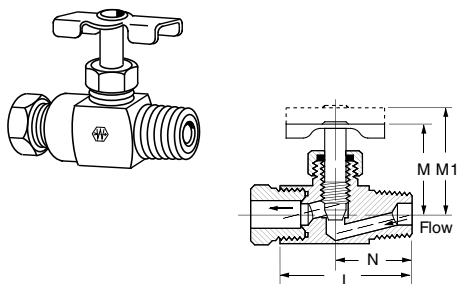
Compression Angle



"S" suffix designates Selfalign® with nuts and sleeves.

Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1	N
3/16	1/8	A6845	1.50	.82	1.07	.50
3/16	1/8	A6845S	1.50	.82	1.07	.50
1/4	1/8	A555	1.53	.83	1.05	.53
1/4	1/8	A555S	1.53	.83	1.05	.53
5/16	1/8	A655	1.56	.84	1.09	.52
5/16	1/8	A655S	1.56	.84	1.09	.52
5/16	1/4	A6855	1.73	.92	1.28	.69
5/16	1/4	A6855S	1.73	.92	1.28	.69
3/8	1/4	A6860	1.64	.83	1.28	.78
3/8	1/4	A6860S	1.64	.83	1.28	.78

Inverted Straightway

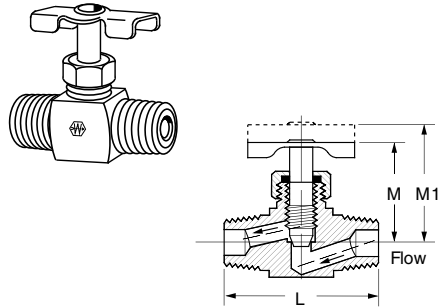


For replacement nut use [105x4](#). See page 38.
"B" prefix designates less inverted nut.

Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1	N
1/4	1/8	A735	1.38	.84	1.01	.69
1/4	1/8	B735	1.38	.84	1.01	.69

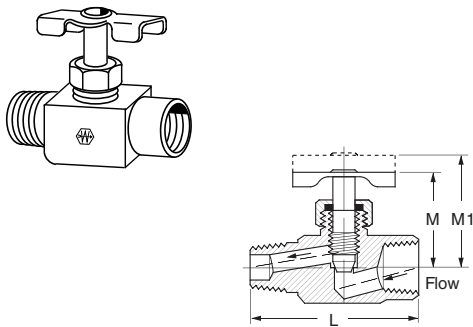
BRASS

Male Pipe Double



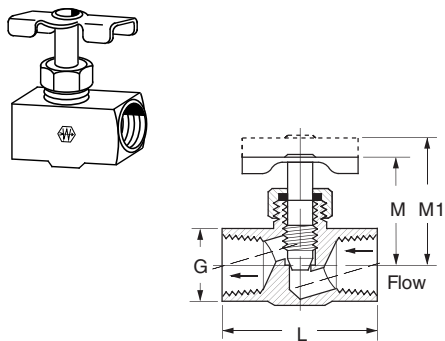
Male Pipe Thread	Catalog Number	L	M	M1
1/8	6810	1.38	.66	.80
1/4	6815	1.62	1.08	1.23

Male to Female Pipe



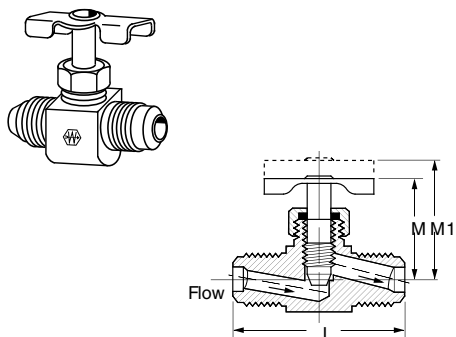
Fem. Pipe Thread	Male Pipe Thread	Catalog Number	L	M	M1
1/8	1/8	6820	1.18	.88	1.03
1/4	1/4	6825	1.88	1.09	1.24

Female Pipe



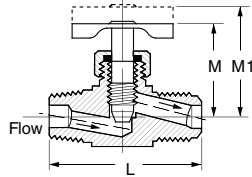
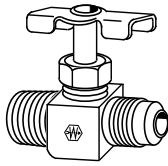
Fem. Pipe Thread	Catalog Number	L	M	M1	G
1/8	6800	1.12	.88	1.03	.50
1/4	6805	1.62	1.11	1.26	.69

SAE 45° Flare Double



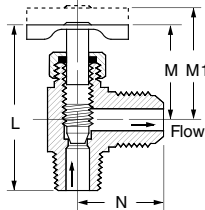
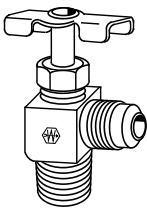
Tube O.D.	Catalog Number	L	M	M1
1/4	6715	1.38	.87	1.03

SAE 45° Flare Straightway



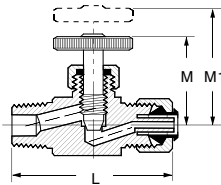
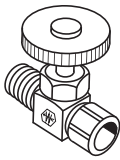
Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1
1/4	1/8	530	1.31	.88	1.03
1/4	1/4	6700	1.38	.88	1.09
5/16	1/8	630	1.38	.95	1.13
5/16	1/4	695	1.44	.87	1.02
3/8	1/4	700	1.68	1.00	1.15

SAE 45° Flare Angle



Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1	N
1/4	1/8	320	1.54	.86	1.07	.68
5/16	1/8	325	1.59	.94	1.22	.88
5/16	1/4	6703	1.94	1.00	1.31	.90
3/8	1/4	330	1.84	.90	1.21	.97

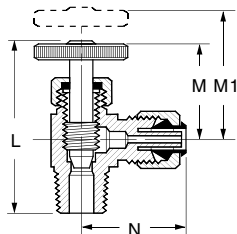
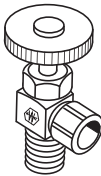
Polyline® Straightway



Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1
1/4	1/8	A690P	1.19	.86	1.01
3/8	1/4	A6760P	1.50	1.18	1.33

For replacement Polyline® nuts and sleeves, see page 61. Supplied with plastic sleeve.
Temperature Range: -40°F to +150°F with plastic sleeve.

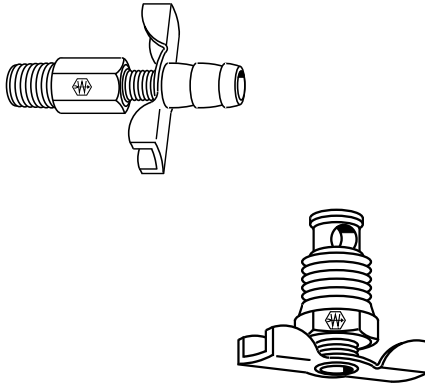
Polyline® Angle



Tube O.D.	Male Pipe Thread	Catalog Number	L	M	M1	N
1/4	1/8	A555P	1.50	.82	1.04	.48
1/4	1/4	A556P	1.70	.84	1.06	.56
3/8	1/4	A6860P	1.85	.99	1.44	.64

For replacement Polyline® nuts and sleeves, see page 61. Supplied with plastic sleeve.
Temperature Range: -40°F to +150°F with plastic sleeve.

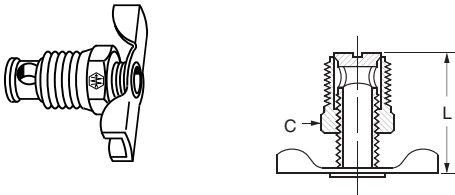
⚠ Refer to safety information regarding tubing selection on page 1.



Drain Cocks and Drain Valves have been a specialty with Weatherhead since 1919. Millions are in use. The original design has proved so efficient that it is still the leader with most original equipment manufacturers. The metal-to-metal seat requires only hand tightening to assure positive leak-proof performance.

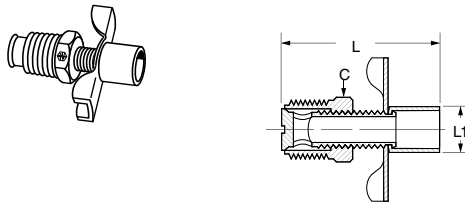
- **Material:** brass bodies/steel handles, except where noted.
- **Pressure:** 150 psi maximum (does not include hose or plastic tubing.)
- **Used With:** Copper, aluminum, steel, hose and plastic tubing where applicable.
- **Temperature:** -65°F to +250°F (-53°C to +121°C). (Refer to tubing temperature range.)
- **Conformance:** Designed for automotive or industrial use. Not intended for natural gas, LPG, nuclear or aircraft applications, except as noted.

External Seat



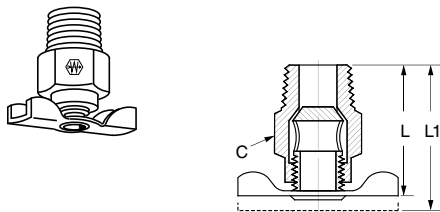
Male Pipe Thread	Catalog Number	Hex C	L
1/8	135	7/16	.90
1/4	145	9/16	1.00
3/8	270	11/16	1.25
1/2	108	7/8	1.52

External Seat



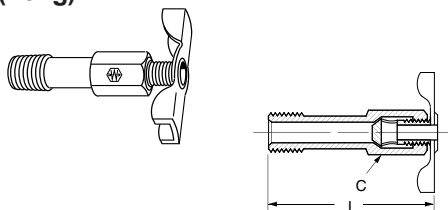
Male Pipe Thread	Catalog Number	Hex C	L	L1
1/4	6788	9/16	1.56	.44

Internal Seat



Male Pipe Thread	Catalog Number	Hex C	L	L1
1/8	130	17/32	1.15	1.30
1/4	140	5/8	1.32	1.50
1/4	190	9/16	1.25	1.41
3/8	230	11/16	1.34	1.50

Internal Seat (Long)

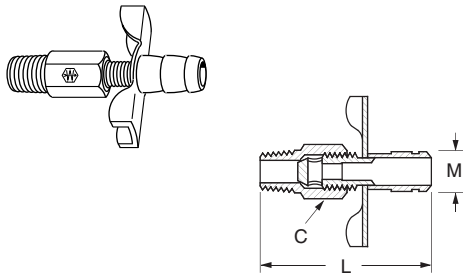


Male Pipe Thread	Catalog Number	Hex C	L
1/8	185	7/16	1.72

Drain Cocks

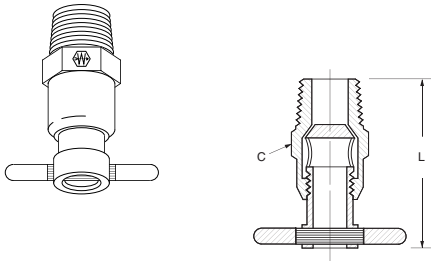
**Brass
Fittings**

Internal Seat



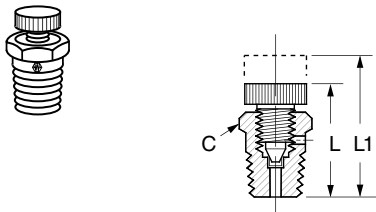
Male Pipe Thread	Catalog Number	Hex C	L	M
1/8	6783	13/32	1.63	.344

Internal Seat Drain Valve



Male Pipe Thread	Catalog Number	Hex C	L
1/8	1424A	1/2	1.219
1/4	1425A	9/16	1.313
3/8	1426A	11/16	1.688

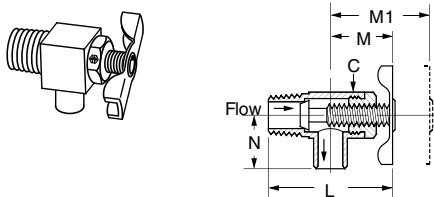
Air Vent



Set screw has 10-32 national fine thread.

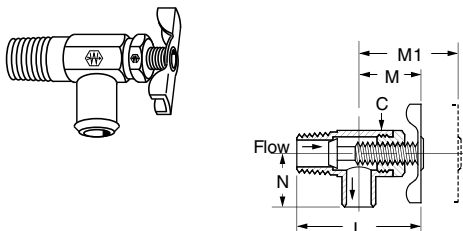
Male Pipe Thread	Catalog Number	Hex C	L	L1
1/8	705	13/32	.78	.88

Angle Bib Drain



Male Pipe Thread	Catalog Number	Square C	L	M	M1	N
1/8	150	7/16	1.12	.57	.95	.38
1/4	120	5/8	1.76	.94	1.50	.66

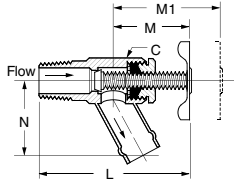
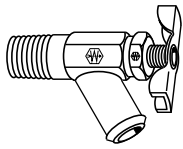
Angle Bib Drain



Hose I.D.	Male Pipe Thread	Catalog Number	Square C	L	M	M1	N
3/8	1/4	6660	9/16	1.33	.62	1.01	.66

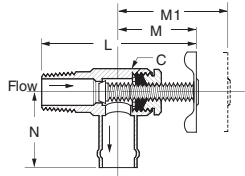
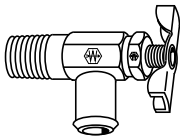
BRASS

Hose to Pipe (Steel Body)



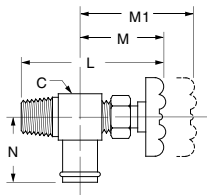
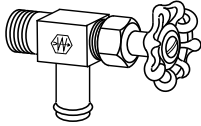
Hose Size	Male Pipe Thread	Catalog Number	Hex C	L	M	M1	N
5/8	3/8	211273A	11/16	2.85	1.41	1.91	1.30

Hose to Pipe (Steel Body)



Hose I.D.	Male Pipe Thread	Catalog Number	Square C	L	M	M1	N
5/8	3/8	211280A	11/16	2.85	1.10	1.47	1.19

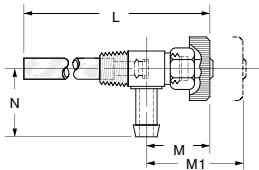
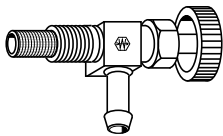
Pipe to Hose Shut-Off (Brass Body)



Red color coded aluminum handle.
Handle Catalog Number [1427](#).

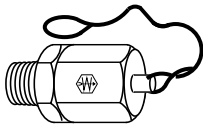
Hose Size	Male Pipe Thread	Catalog Number	Square C	L	M	M1	N
3/8	3/8	1422	3/4	2.93	1.78	2.25	1.12
5/8	3/8	1423	13/16	2.93	1.81	2.25	1.35
3/4	3/8	1433	15/16	3.00	1.81	2.25	1.35
3/4	1/2	1451	15/16	3.12	1.93	2.25	1.35

Gasoline Shut-Off with Screen Filter



Hose Size	Male Pipe Thread	Catalog Number	L	M	M1	N
1/4	1/8	6600	3.36	.80	.97	.84

Air Tank Drain Valve



NOTE: Pull cable sideways.
*No loop on cable end.

Male Pipe Thread	Cable Length	Catalog Number
1/4	7"	1421-7
1/4	18"	1421-18
1/4	24"	1421-24
1/4	32"	1421-32
1/4	60"	1421-60
1/4	60"	1421-60A*

Truck Valves

Brass Fittings

Typical Application: Used extensively in the trucking industry for cooling and fuel line applications.

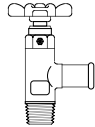
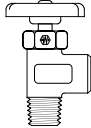
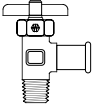
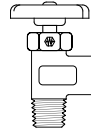
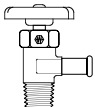
Material: Forged brass bodies, steel handles.

Pressure Range: 200 psi maximum.

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

Conformance: Designed for trucking use. Not intended for natural gas, LPG, nuclear or aircraft applications.

Note: Buna-N o-ring sealed; Viton available on special order.

Truck Valve 	Hose I.D.	Pipe Thread	Catalog Number	Truck Valve 	Female Pipe Thread	Male Pipe Thread	Catalog Number
	5/8	1/2	7502		1/2	1/2	7508
Truck Valve 	Hose I.D.	Pipe Thread	Catalog Number	Truck Valve 	Female Pipe Thread	Male Pipe Thread	Catalog Number
	5/8	3/8	7504		3/8	3/8	7509
Truck Valve 	Hose I.D.	Pipe Thread	Catalog Number				
	3/8	3/8	7506				

BRASS

Plastic Drain Cocks

Brass Fittings

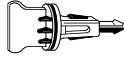



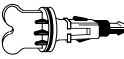

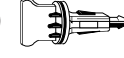
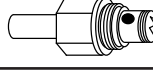

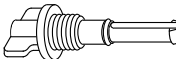


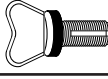

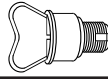
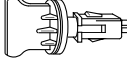
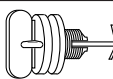

Material: Nylon 6 Fiber Reinforced.


Pressure Range: Up to 25 psi.

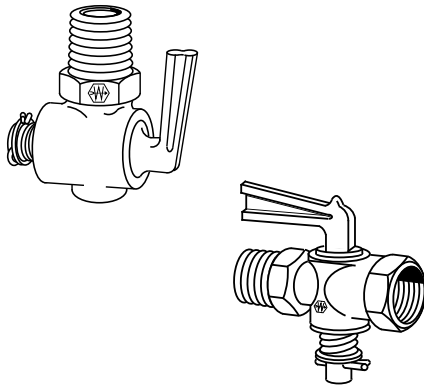
Used With: Automotive Radiators

Temperature: -50°F to +180°F (-46°C to +82°C)

Conformance: Designed for automotive use. Not intended for natural gas, LPG, nuclear or aircraft applications.

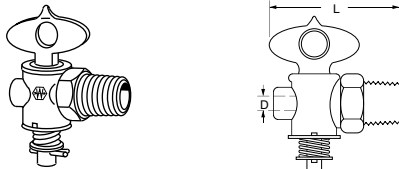
Chrysler 	Thread Captive	Catalog Number 110	M12x1.5 	Thread M12x1.5	Catalog Number 119
GM 	Thread Oversized	Catalog Number 111	Ford and Mazda 	Thread M10x1.25	Catalog Number 121
Ford (Long) 	Thread Captive	Catalog Number 112	M14x2.0 	Thread M14x2.0	Catalog Number 122
Ford (Short) 	Thread Captive	Catalog Number 113	Chrysler 	Thread 5/8-18	Catalog Number 123
M12x1.25 	Thread M12x1.25	Catalog Number 114	Ford 	Thread M14x2.0	Catalog Number 124
M14x1.25 	Thread M14x1.25	Catalog Number 115	Chrysler 	Thread 5/8-18	Catalog Number 125
M10x1.25 	Thread M10x1.25	Catalog Number 116	Chrysler 	Thread 5/8-18	Catalog Number 126
M14x1.25 	Thread M14x1.25	Catalog Number 117	GM 	Thread Captive	Catalog Number 127
M10x1.25 	Thread M10x1.25	Catalog Number 118	GM 	Thread 1/2-18	Catalog Number 128

 Refer to safety information regarding tubing selection on page 1.



Pressure Range: 30 psi working pressure, except where noted.
Used With: Copper, aluminum, steel and plastic tubing where applicable.
Material: Brass bodies and handles.
Temperature: -65°F to +250°F (-53°C to +121°C) with metal tubing. For use with plastic tubing, refer to the tubing temperature range.
Conformance: Designed for automotive or industrial use. Not intended for natural gas, LPG, nuclear or aircraft applications, except as noted.
Ordering Information: Order valve body, nut and sleeves by catalog number. Order valves with Selfalign® nuts and sleeves by adding suffix "S". Example: A694S. Order valves less nut and sleeve by adding prefix "B". Example: B694.
NOTE: Ground Plug Drains and Shut-Offs use a universal lubricant satisfactory for use with most common fluids. However the lubricant may wash out at higher pressures or with some exotic fluids.

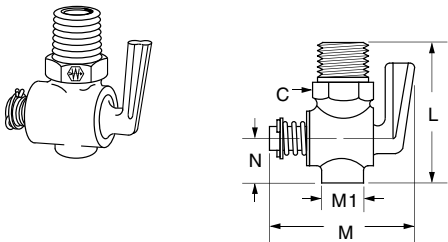
Draincock



Ratings: Valves are designed to hold air pressure of 150 psi with one 1/4" bubble in 5 seconds permissible key leakage.

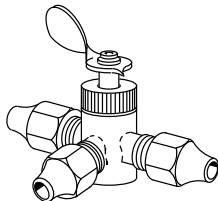
Male Pipe Thread	Catalog Number	D	L
1/4	W15310	.188	1.56

Ground Plug Drain



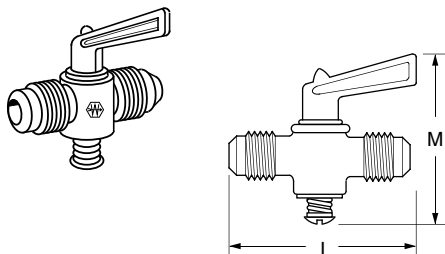
Male Pipe Thread	Catalog Number	Hex C	L	N	M	M1
1/8	6891	9/16	1.93	.75	1.63	.87
1/4	6892	5/8	1.62	.75	1.75	1.03
3/8	6893	11/16	1.72	1.00	2.31	1.22

Compression Flareless 3 Way Shut-Off



Tube O.D.	Catalog Number	Replacement Nuts	Replacement Sleeves
5/16	A6793	1611x5*	60x5

SAE 45° Flare Double



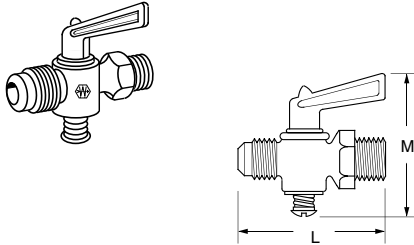
Tube O.D.	Catalog Number	L	M
1/4	6719	1.88	1.88
5/16	6724	1.88	1.88
3/8	6729	2.00	1.88

*MTO - Made To Order

Ground Plug & Multiple Shut-Offs

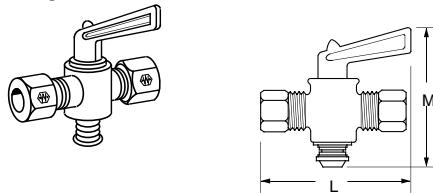
**Brass
Fittings**

SAE 45° Flare Straightway



Tube O.D.	Male Pipe Thread	Catalog Number	L	M
1/4	1/8	537	2.00	1.88
5/16	1/8	632	2.03	1.88
5/16	1/4	702	2.03	1.88
3/8	1/4	703	2.06	1.88

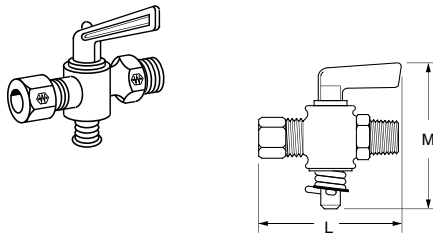
Compression Double



"S" suffix designates Selfalign® with Nuts and Sleeves.

Tube O.D.	Catalog Number	L	M
1/4	A6769	2.12	1.88
1/4	A6769S	2.12	1.88
5/16	A6774	2.19	1.88
3/8	A6779	2.25	1.88
3/8	A6779S	2.25	1.88

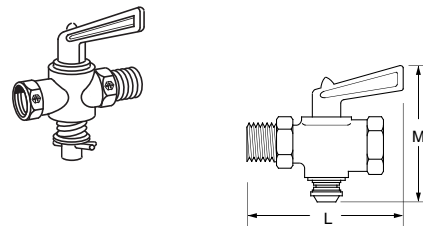
Compression Straightway



"S" suffix designates Selfalign® with Nuts and Sleeves.

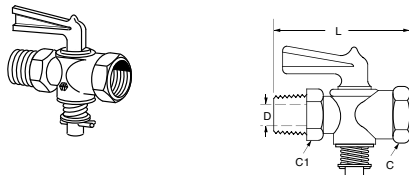
Tube O.D.	Male Pipe Thread	Catalog Number	L	M
1/4	1/8	A694	2.19	1.88
1/4	1/8	A694S	2.19	1.88
1/4	1/4	A6754	2.19	1.88
1/4	1/4	A6754S	2.19	1.88
5/16	1/8	A664	2.19	1.88
5/16	1/4	A6759	2.25	1.88
3/8	1/4	A6764	2.38	1.88
3/8	1/4	A6764S	2.38	1.88

Male to Female Pipe



Male Pipe Thread	Female Pipe Thread	Catalog Number	L	M
1/8	1/8	6824	2.00	1.88
1/4	1/4	6829	2.12	1.88

Truck Shut Off Male to Female Pipe

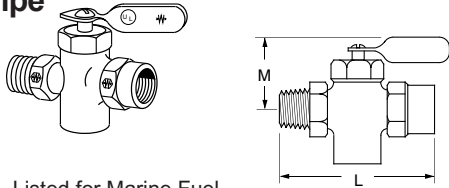


Ratings: Valves are designed to hold air pressure of 125 psi with one 1/4" bubble in 5 seconds permissible key leakage.

Male Pipe Thread	Female Pipe Thread	Catalog Number	Hex C	Hex C1	L	D
1/4	1/4	W20332	5/8	3/4	1.96	.219

BRASS

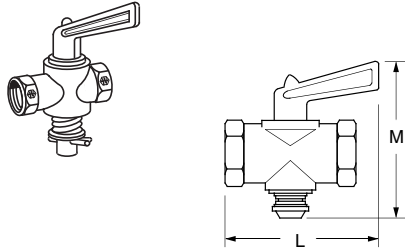
Marine Shut Off Male to Female Pipe



UL Listed for Marine Fuel.

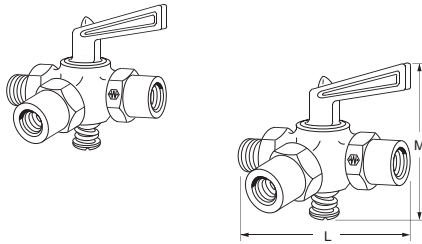
Male Pipe Thread	Female Pipe Thread	Catalog Number	L	M
1/4	1/4	6828	2.22	1.97

Female Pipe Double



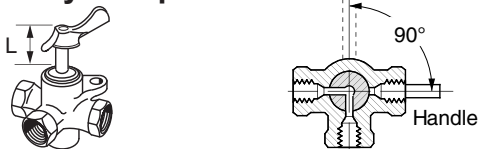
Female Pipe Thread	Catalog Number	L	M
1/8	6804	1.46	1.88
1/4	6809	1.70	1.88

3 Way Shut-Off



Male Pipe Thread	Female Pipe Thread	Catalog Number	L	M
1/8	1/8	6737	2.12	1.88

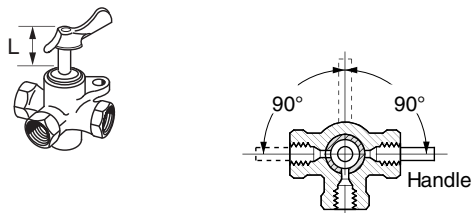
3 Way Multiple Shut-Off



Replacement Handle: Catalog Number **6746**.
Includes Screw.
Click-washer assembly positively holds valve in desired position and gives a pronounced click.

Female Pipe Thread	L Stem	Catalog Number
1/4	1.37	6749
3/8	1.37	6709

4 Way Multiple Shut-Off




Replacement Handle: Catalog Number **6746**.
Includes Screw.
Click-washer assembly positively holds valve in desired position and gives a pronounced click.

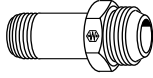
Female Pipe Thread	L Stem	Catalog Number
1/4	1.37	6747
1/4	2.37	6748
3/8	1.37	6707
3/8	2.37	6708

Special Adapters

**Brass
Fittings**

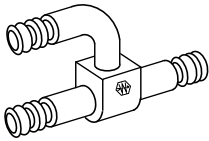
 Refer to safety information regarding tubing selection on page 1.

Turbocharger Discharge Connector



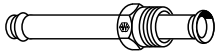
Male Straight Thread	Male Pipe Thread	Catalog Number	Hex C	D	L
1 AC-811 30° Flare Tube	3/4	1408	1-3/8	.719	3.25

Wiper Tee



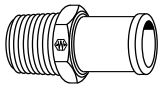
Hose I.D.	Catalog Number	M	M1	N
1/4	1410	.88	1.00	1.02

Transmission Oil Coolant Line Adapter



Tube O.D.	Inverted Nut	Catalog Number	Hex C	L
5/16	5/16	1428	1/2	4.50
3/8	3/8	1429	5/8	4.50

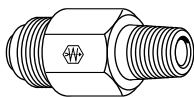
Water Line Connector



Hose I.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
5/8	3/8	05710B-106	3/4	.464	1.50
5/8	1/2	05710B-108	7/8	.531	1.88
3/4	1/2	05712B-108	7/8	.594	1.88


For additional 057B Series ends consult the Boston Weatherhead Hose Assembly Catalog.

Truck Oil Line Extended SAE 45° Flare Fitting (Replaces Roto Master No. 10-35)

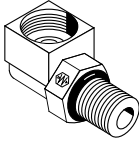


SAE 45° Tube Size	Male Pipe Thread	Catalog Number	Hex C	D	L
3/8	1/4	1432	5/8	.282	1.90

BRASS

 Refer to safety information regarding tubing selection on page 1.

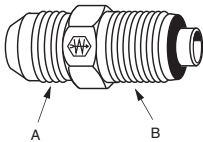
Ford Transmission Elbow



Includes O-Rings.

Tube O.D.	Straight Male Pipe Thread	Catalog Number	M	N
5/16-28	1/8-27	1437	.94	.47

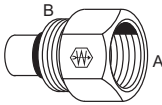
Power Steering Male 37° JIC Adapter (Brass)



Includes O-Ring.

Tube O.D.	Thread A	Thread B	Catalog Number	Hex C	D	L
1/4	7/16-20	9/16-18	1440	9/16	.172	1.42
3/8	9/16-18	5/8-18	1439	5/8	.266	1.49

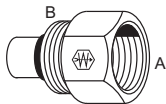
Metric Power Steering Adapter



Includes O-Ring.

Tube O.D.	Inverted Thread A	Thread B	Catalog Number	Hex C	D	L
3/8	5/8-18	M14x1.5	1445	3/4	.266	1.18
3/8	5/8-18	M16x1.5	1446	3/4	.266	1.18
3/8	5/8-18	M18x1.5	1447	3/4	.266	1.18

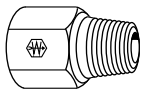
Ford Power Steering Fitting



Includes O-Ring.

Inverted Thread A	Male O-Ring B	Catalog Number	Hex C	D	L
5/8-18	11/16-18	1444	3/4	.266	1.38

Restriction Pipe Adapter (With .0625 Orifice)



* PTF short thread.

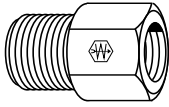
Male Pipe Thread	Female Pipe Thread	Catalog Number	Hex C	D	L
1/8	1/8*	1512	1/2	.0625	.75

Special Adapters

**Brass
Fittings**

 Refer to safety information regarding tubing selection on page 1.

Carburetor to Fuel Line Adapter (Ford)



For use with **59x4**

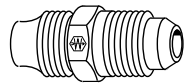
Tube O.D.	Thread Size	Male Pipe Thread	Catalog Number	Hex C	D	L
1/4	1/2-20	1/8	1513	9/16	.219	1.06

Fuel Line Adapter



Inverted Male	Male Pipe Thread	Catalog Number	Hex C	D	L
1/2-20	1/8	1514	1/2	.219	.90

AC Type Adapter



Tube O.D.	S.A.E. 45° Tube Size	Catalog Number	Hex C	D	L
1/4	1/4	1521	7/16	.188	1.09

Adapter SAE 45° Flare to Inv. Flare




SAE 45° Tube Size	Inverted Male	Catalog Number	Hex C	D	L
1/4	3/16	1518	7/16	.189	1.03
1/4	1/4	1522	7/16	.189	1.03
3/8	5/16	1553	5/8	.234	1.34
3/8	3/8	1563	5/8	.282	1.38
3/8	7/16	1554	11/16	.282	1.40

Carburetion Inlet (Steel)

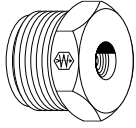


Inv. Seat	Male Thread	Catalog Number	Hex C	D	L
3/8	7/8-20	1596	1	.281	.91
5/16	7/8-20	1597	1	.217	.91

BRASS

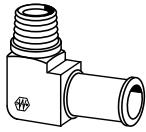
 Refer to safety information regarding tubing selection on page 1.

Special Steel Bushing



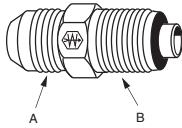
Male Thread	Female Pipe Thread	Catalog Number	Hex C	D	L
1-1/16-16UN-2A	1/8	7977	1-1/8	.328	.94
1-1/16-16UN-2A	3/8	7978	1-1/8	.562	.94

Water Line Elbow



Hose I.D.	Male Pipe Thread	Catalog Number	D	M	N
5/8	3/8	05710B-C06	.500	1.25	1.35

Male JIC 37° Flare to O-Ring Port Adapter (Steel)



Tube Size A	Port Size B	Catalog Number	Thread B	Hex C	D	L
1/4	1/4	41157x4	7/16-24	7/16	.122	1.33
3/8	3/8	41157x6	5/8-18	5/8	.262	1.47
1/2	1/2	41157x8	3/4-16	3/4	.368	1.91
5/8	5/8	41157x10	7/8-14	15/16	.472	2.23
3/4	3/4	41157x12	1-1/16-16	1-1/8	.609	2.13

Includes O-Ring.

Male JIC 37° Flare to Metric O-Ring Port Adapter (Steel) (with o-ring)

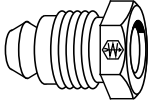


Tube O.D.	Thread B	Catalog Number	Hex C	D	L
3/8	M14x1.5	M41157x6x14	3/4	.266	1.62
3/8	M16x1.5	M41157x6x16	3/4	.266	1.62
3/8	M18x1.5	M41157x6x18	3/4	.266	1.62

Includes O-Ring.

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

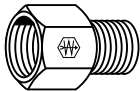
Ford Nut



For use with **1513**
(Nut similar to **59x4** for 3/16" tube, use **6100x3**)

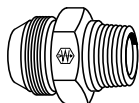
Tube Size	Thread Size	Catalog Number	Hex C	D	L
1/4	1/2-20	59x4	1/2	.258	.64

Transmission Coolant Line Adapters (GMC)



Inv. Female	Inv. Male	Catalog Number	Hex C	D	L
3/8 (5/8-18)	5/16 (1/2-20)	7915	3/4	.250	1.00
5/16 (1/2-20)	3/8 (5/8-18)	7916	5/8	.220	.94

AC8111 (Steel) Connector

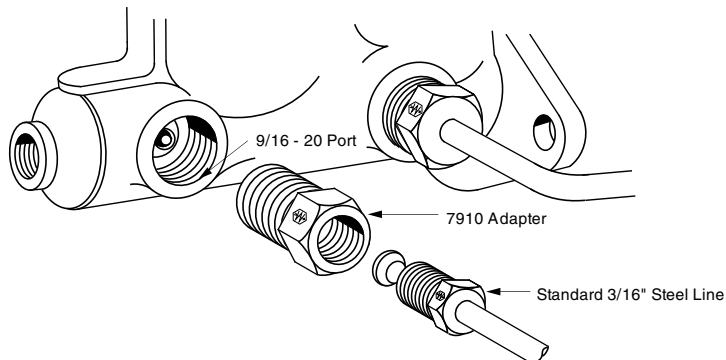


Application: PTT Thread 30° tube to male pipe adapter for diesel engines.

Tube Size	Male Pipe	Catalog Number	Hex C	D	L
1 (1-5/16-14)	1	C9200	1-3/8	.844	2.04
1 (1-5/16-14)	3/4	C9240	1-3/8	.800	1.84


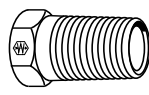
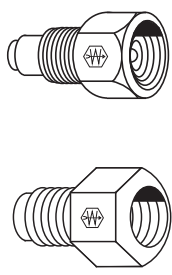
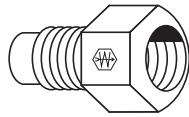
 Refer to safety information regarding tubing selection on page 1.

Adapters can be used to adapt standard steel brake lines to the different size ports used in dual master cylinders. The tube O.D. is the outside diameter of the steel brake line. Thread size can be determined by measuring with a U.S. or Metric screw pitch gauge. See page 16.

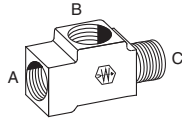


STANDARD INVERTED FLARE TUBE AND THREAD SIZE

Tube Size	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Thread Size	5/16-28	3/8-24	7/16-24	1/2-20	5/8-18	11/16-18	3/4-18	7/8-18	1-1/16-16	1-3/16-16	1-5/16-16

<p>Standard Tube Nut (Steel)</p>  <p>*11/16-18 Thread</p>	<p>Tube Size</p> <p>1/8 3/16 1/4 5/16 3/8 3/8 7/16 1/2 5/8 3/4 7/8 1</p> <p>Catalog Number</p> <p>105x2 105x3 105x4 105x5 105x6 105x6x7* 105x7 105x8 105x10 105x12 105x14 105x16</p>	<p>Long Tube Nut (Steel)</p> 	<p>Tube O.D.</p> <p>3/16 1/4</p> <p>Thread Size</p> <p>3/8-24 7/16-24</p> <p>Catalog Number</p> <p>7896x3 7896x4</p>
	<p>Dual Master Cylinder Adapter</p>  <p>Inverted Male Thread</p> <p>3/16 5/16</p> <p>Inverted Female Thread</p> <p>3/16 3/16</p> <p>Catalog Number</p> <p>1441 7897</p>		<p>Dual Master Cylinder Adapter</p>  <p>† Seat may be used for 3/16", 1/4", 5/16" Tube Connection with 1/2-20 Thread. *Seals On Hex Face (E)</p> <p>Inverted Male Thread (Exceptions Noted)</p> <p>3/16(9/16-18) 3/16(9/16-18) 3/16(9/16-20) 3/16 1/4 7/16-20 1/4 (9/16-18) 1/4 5/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16 3/8 NPTF 3/8</p> <p>Inverted Female Thread (Exceptions Noted)</p> <p>3/16 3/16(1/2-20) 3/16 1/4 3/16 1/4 1/4 5/16† 3/16 3/16 3/16(9/16-18) 1/4 1/4 5/16 3/8 5/16 5/16</p> <p>Catalog Number</p> <p>7911 7913 7910 7828 7818 7732* 7908 7917 7817* 7909 7912 7727* 7829 1074* 7915 7771 7916</p>

Towed Trailer Brake Tee



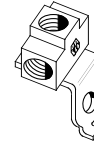
Inverted Seat		Male Thread		Catalog Number
A	B	C		
3/16 (3/8-24)	3/16 (3/8-24)	3/16 inv. (3/8-24)		7900
3/16 (1/2-20)	3/16 (3/8-24)	1/2-20 inv.		7906
3/16 (9/16-18)	3/16 (3/8-24)	3/16 inv. (9/16-18)		7933
3/16 (9/16-20)	3/16 (3/8-24)	3/16 inv. (9/16-20)		7905
3/16 (7/16-24)	3/16 (3/8-24)	1/4 inv. (7/16-24)		7914
1/4 (7/16-24)	3/16 (3/8-24)	1/4 inv. (7/16-24)		7901
1/4 (9/16-18)	3/16 (3/8-24)	1/4 inv. (9/16-18)		7904
1/4 (7/16-24)	1/4 (7/16-24)	1/4 inv. (7/16-24)		7898

Spring Lock



1/2" Clip or Spring Lock **5188**

Strap Tee Assembly



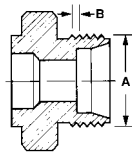
*Has flat strap

Inv. Seat	Bolt Hole	Catalog Number
3/16 (3)	11/32	7812
1/4 (3)	11/32	7765*

Metric Hydraulic Brake Fittings

How to Measure Metric Threads

Metric threads are measured and specified by the thread diameter in millimeters and the pitch in millimeters per thread. If dimension "A" is 22mm and dimension "B" (crest to crest distance) is 1.5mm, then the metric thread size is M22 x 1.5.

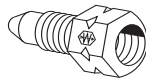


Brake Fittings



Inv. Seat	Bolt Hole	Catalog Number
1/4	19/32	7709

Metric Adapter

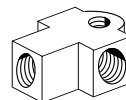


Male Thread	Tube O.D./ Female Thread	Catalog Number
M10 x 1.0	3/16 (3/8-24)	1442*
M11 x 1.5	3/16 (M10 x 1.0)	7935**
M12 x 1.0	3/16 (M10 x 1.0)	7936**
M13 x 1.5	3/16 (M10 x 1.0)	7937**

*Use S Series Brake Lines. (standard flare)

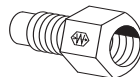
**Use SJ Series Steel Brake Lines. (standard flare)

Rear Axle Tee



Inv. Seat	Bolt Hole	Hose End Port	Catalog Number
3/16 (2)	9/32	3/8-24	7805

Metric Adapter

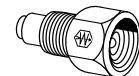


Male Thread	Tube O.D./ Female Thread	Catalog Number
M10 x 1.0	3/16 (3/8-24)	1443*

*Use S Series Brake Lines. (standard flare)

**Use SJ Series Steel Brake Lines. (standard flare)

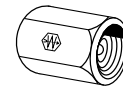
Adapter Standard to Metric Bubble



Female Std. Fl. Seat	Male Bubble Fl. Tube	Catalog Number
3/16" (3/8-24 thread)	4.762 (3/16") (10x1.25 thread)	7970

Used on Fiat applications when converting 3/16" (3/8-24) inverted flare brake lines to 3/16" (10x1.25) metric thread bubble flare.

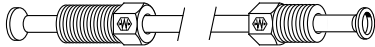
Metric Union



Bubble Fl. Seat	Thread Size	Catalog Number
3/16"	10 x 1.0	7975

For joining Edelmann 6300 Series metric thread bubble flare 3/16" brakelines.

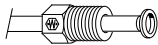
Steel Brake Lines for Domestic Vehicles
Standard Flare – “S” Series



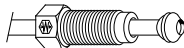
NOTE: 3/16" and 1/4" tube assemblies have one long (7896x) and one short (105x) inverted nut.

Length	Catalog Number 3/16" O.D.	Catalog Number 1/4" O.D.	Catalog Number 5/16" O.D.	Catalog Number 3/8" O.D.
6"	S306	—	—	—
8"	S308	S408	—	—
10"	S310	—	—	—
12"	S312	S412	S512	S612
20"	S320	S420	S520	S620
30"	S330	S430	S530	S630
40"	S340	S440	S540	S640
51"	S351	S451	S551	S651
60"	S360	S460	S560	S660
72"	S372	—	—	—
UNION	302x3	302x4	302x5	302x6

Steel Brake Lines for Imported Vehicles
Standard Flare – “SJ” Series



Bubble Flare – “SB” and “SC” Series



*Uses bubble flare
**Single notch on hex

Length	British Vehicles* 3/8-24 Thread Catalog Number 3/16" O.D.	Japanese Vehicles 10-1.0mm**Thread Catalog Number 3/16" O.D.	European Vehicles* 10-1.0mm Thread Catalog Number 3/16" O.D.
8"	SB308	SJ308	SC308
12"	SB312	SJ312	SC312
20"	SB320	SJ320	SC320
30"	SB330	SJ330	SC330
40"	SB340	SJ340	SC340
51"	SB351	SJ351	SC351
60"	SB360	SJ360	SC360
UNION	7940	7934A	7941

Brake Line Unions for Domestic and Imported Vehicles



Description	Catalog No.
3/16" line to 3/16" line (3/8–24 thread), (Standard Flare) ‘S’ Series	302x3
1/4" line to 1/4" (7/16–24 thread), (Standard Flare) ‘S’ Series	302x4
5/16" line to 5/16" line (1/2–20 thread), (Standard Flare) ‘S’ Series	302x5
3/8" line to 3/8" line (5/8–18 thread), (Standard Flare) ‘S’ Series	302x6
British line to British line (3/8–24 thread), (ISO flare) ‘SB’ Series (Steel)	7940
European line to European line (10–1.0mm thread), (Bubble Flare) ‘SC’ Series (Steel)	7941
Japanese line to Japanese line (10–1.0mm thread), (Standard Flare) ‘SJ’ Series (Brass)	7934A