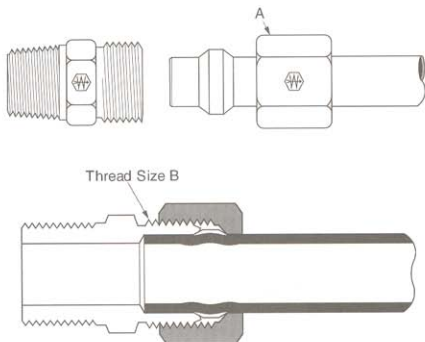
 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



|               |         |        |         |        |         |        |          |          |      |          |
|---------------|---------|--------|---------|--------|---------|--------|----------|----------|------|----------|
| 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

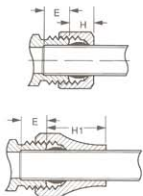
- Cut tubing to desired length.
- Slide nut and then sleeve on tube. Threaded end "A" of nut must face toward fitting.
- Insert tubing into fitting body. Be sure tubing is bottomed on fitting shoulder.
- Lubricate threads and assemble nut to fitting body.
- Tighten nut hand tight. From that point, tighten 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

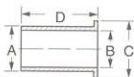
**Brass  
Fittings**



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

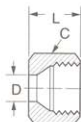
(Ref. SAE No. 060115)



| 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

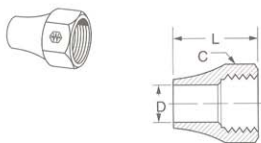
(Ref. SAE No. 060110)



| 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 |

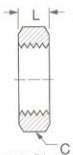
## Long Nut

(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

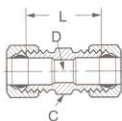


Used on 74x Bulkhead Unions. Ref. page 51.

| 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)

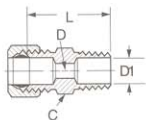


Assembly with long nut 162x

| 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)

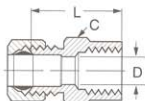


Assembly with long nut 168x

\*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 |

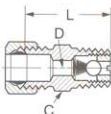
### Female Connector (Ref. SAE No. 060103BA)



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 |

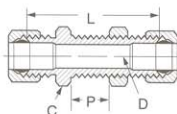
### Male Ball Check Connector



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



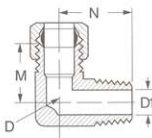
Assembly with long nut **174x**

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    |

**90° Male Elbow**

(Ref. SAE No. 060202BA)

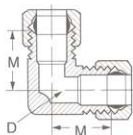

 Assembly with long nut **169x**

\*Available only as assembly with long nuts

| Tube<br>O.D. | Male Pipe<br>Thread | Catalog<br>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**

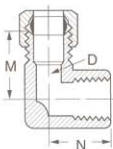
(Ref. SAE No. 060201BA)


 Assembly with long nut **165x**

| Tube<br>O.D. | Catalog<br>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**

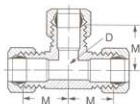
(Ref. SAE No. 060203BA)


 Assembly with long nut **170x**

| Tube<br>O.D. | Fem. Pipe<br>Thread | Catalog<br>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)

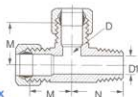


Assembly with long nut 164x

| 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)



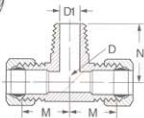
Assembly with long nut 171x

\* 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)

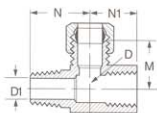
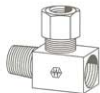


Assembly with long nut 172x

| 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