

# Hydraulic & Offshore SUPPLIES

## Hip High Pressure Valves, Fittings & Tubing

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# High Pressure Equipment

## High Pressure Valves, Fittings and Tubing 30,000, 40,000 and 60,000 psi service

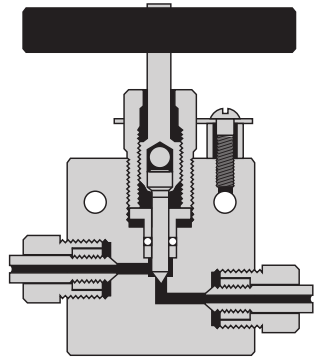
High Pressure Equipment Company has developed a line of High Pressure products to assure safe and easy plumbing for 30,000, 40,000 and 60,000 psi. These needle valves, fittings, line filters, check valves, safety heads, rupture discs, anti-vibration gland assemblies, tubing and nipples are engineered to the highest standards of repeatable quality. The reliable performance of these products has made HiP one of the world's leading suppliers of elevated pressure components.

High Pressure components use a coned-and-threaded connection which accommodates the high temperatures and pressures common in these applications. High Pressure valves are available in various tubing sizes and with body designs to satisfy widely varied requirements. A line of fittings is available to facilitate adapting to Taper Seal, Medium Pressure, or other High Pressure threaded pipe systems.

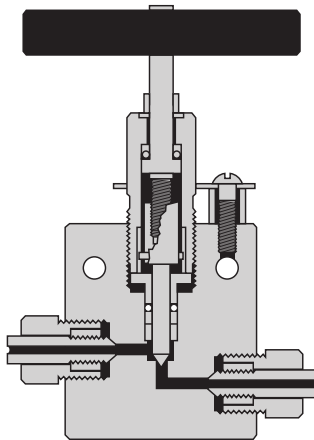


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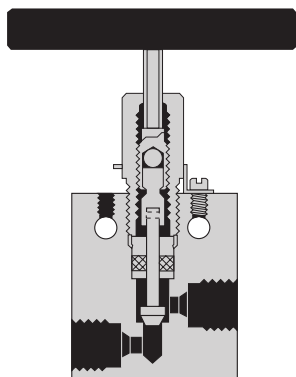
## High Pressure Equipment



HF2 ( $\frac{1}{8}$ " )



HF4 ( $\frac{1}{4}$ " ), HF6 ( $\frac{3}{8}$ " ) and HF9 ( $\frac{9}{16}$ " )



HF16 (1" )

### 30,000 psi High Pressure Valves

**High Pressure (coned & threaded)** type connections for  $\frac{1}{8}$ " ,  $\frac{1}{4}$ " ,  $\frac{3}{8}$ " ,  $\frac{9}{16}$ " and 1" O.D. tubing.

**Non-rotating tip stems** are standard for on-off service and insure long life on valve seats. Regulating tip stems are available for all valves at no additional cost, add - REG to part number.

**Glands and collars** for tubing are supplied with each valve unless otherwise requested (glands and collars shown on pages 4.8 and 4.A).

**Materials** include high tensile type 316 stainless steel bodies and hardened 17-4PH stainless steel lower section stems.

**Packing** is Teflon (450°F) standard with optional Viton (350°F), BUNA-N (200°F) and Grafoil (800°F) available at no additional cost.

**Air operators** for remote control operation are available for all valves. (Select required valve and add "HIPCO". Refer to section 7.0 for additional data).

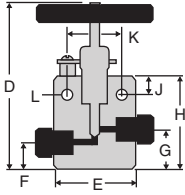
**High temperatures** can be accommodated using extended stuffing boxes (see page 6.4). These are available for all sizes except  $\frac{1}{8}$ " tubing. To order, add suffix -HT to standard valve catalog number.

#### Valve Features

- Non-rotating stem tips
- Packing below stem threads
- Type 316 ss high tensile bodies
- Positive gland lock device
- No stem adjustment needed
- Black T-handles or choice of 4 colors
- Tube sizes  $\frac{1}{8}$ " through  $\frac{9}{16}$ "

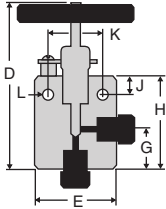
# 30,000 psi High Pressure Valves

## Two Way Straight Valves



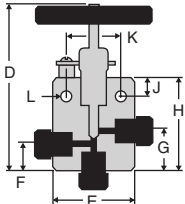
| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F       | G        | H        | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---------|----------|----------|--------|--------|-------|-----------|
| 1/8" O.D.  | 30-11HF2    | 30,000 | HF2        | 1/16"   | 3 3/4"   | 1 1/2" | 1 1/16" | 1 5/16"  | 1 13/16" | 5/16"  | 7/8"   | 9/64" | 3/4"      |
| 1/4" O.D.  | 30-11HF4    | 30,000 | HF4        | 3/32"   | 5 3/16"  | 2"     | 5/8"    | 1"       | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 30-11HF6    | 30,000 | HF6        | 1/8"    | 5 9/16"  | 2"     | 5/8"    | 1"       | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 30-11HF9    | 30,000 | HF9        | 1/8"    | 5 5/8"   | 2 5/8" | 1"      | 1 7/16"  | 2 7/8"   | 1/2"   | 1 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-11HF16   | 30,000 | HF16       | 7/16"   | 8 27/64" | 4 1/8" | 1 5/16" | 1 11/16" | 4 7/16"  | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## Two Way Angle Valves



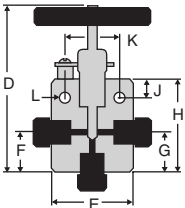
| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F | G       | H        | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---|---------|----------|--------|--------|-------|-----------|
| 1/8" O.D.  | 30-12HF2    | 30,000 | HF2        | 1/16"   | 3 3/4"   | 1 1/2" | — | 1 5/16" | 1 13/16" | 5/16"  | 7/8"   | 9/64" | 3/4"      |
| 1/4" O.D.  | 30-12HF4    | 30,000 | HF4        | 3/32"   | 5 3/16"  | 2"     | — | 1"      | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 30-12HF6    | 30,000 | HF6        | 1/8"    | 5 9/16"  | 2"     | — | 1 3/8"  | 2 13/16" | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 30-12HF9    | 30,000 | HF9        | 1/8"    | 5 5/8"   | 2 5/8" | — | 1 7/16" | 2 7/8"   | 1/2"   | 1 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-12HF16   | 30,000 | HF16       | 7/16"   | 9 11/32" | 4 1/8" | — | 2 3/8"  | 5 1/8"   | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## Three Way Valves / Two Pressure Connections



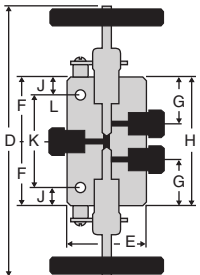
| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F       | G        | H        | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---------|----------|----------|--------|--------|-------|-----------|
| 1/8" O.D.  | 30-13HF2    | 30,000 | HF2        | 1/16"   | 3 3/4"   | 1 1/2" | 1 1/16" | 1 5/16"  | 1 13/16" | 5/16"  | 7/8"   | 9/64" | 3/4"      |
| 1/4" O.D.  | 30-13HF4    | 30,000 | HF4        | 3/32"   | 5 3/16"  | 2"     | 5/8"    | 1"       | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 30-13HF6    | 30,000 | HF6        | 1/8"    | 5 9/16"  | 2"     | 1"      | 1 3/8"   | 2 13/16" | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 30-13HF9    | 30,000 | HF9        | 1/8"    | 6 1/16"  | 2 5/8" | 1 7/16" | 1 7/8"   | 3 5/16"  | 1/2"   | 1 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-13HF16   | 30,000 | HF16       | 7/16"   | 9 23/32" | 4 1/8" | 2 3/8"  | 2 13/16" | 5 9/16"  | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## Three Way Valves / One Pressure Connection



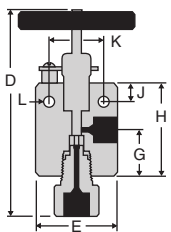
| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F       | G       | H        | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---------|---------|----------|--------|--------|-------|-----------|
| 1/8" O.D.  | 30-14HF2    | 30,000 | HF2        | 1/16"   | 3 3/4"   | 1 1/2" | 1 5/16" | 1 5/16" | 1 13/16" | 5/16"  | 7/8"   | 9/64" | 3/4"      |
| 1/4" O.D.  | 30-14HF4    | 30,000 | HF4        | 3/32"   | 5 3/16"  | 2"     | 1"      | 1"      | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 30-14HF6    | 30,000 | HF6        | 1/8"    | 5 9/16"  | 2"     | 2"      | 1 7/16" | 2 13/16" | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 30-14HF9    | 30,000 | HF9        | 1/8"    | 5 5/8"   | 2 5/8" | 2 3/16" | 1 7/16" | 2 7/8"   | 1/2"   | 1 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-14HF16   | 30,000 | HF16       | 7/16"   | 9 11/32" | 4 1/8" | 2 3/8"  | 2 3/8"  | 5 1/8"   | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## Three Way / Two Stem Connection Valves



| Tubing     | Catalog No. | psi    | Connection | Orifice | D         | E      | F       | G       | H      | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|-----------|--------|---------|---------|--------|--------|--------|-------|-----------|
| 1/8" O.D.  | 30-15HF2    | 30,000 | HF2        | 1/16"   | 5 1/4"    | 1 1/2" | 1 5/16" | 7/8"    | 2 1/2" | 5/16"  | 1 7/8" | 9/64" | 3/4"      |
| 1/4" O.D.  | 30-15HF4    | 30,000 | HF4        | 3/32"   | 9 1/4"    | 2"     | 1"      | 1 7/16" | 3 3/4" | 1/2"   | 2 3/4" | 7/32" | 1"        |
| 3/8" O.D.  | 30-15HF6    | 30,000 | HF6        | 1/8"    | 9 1/2"    | 2"     | 2"      | 1 7/16" | 4"     | 1/2"   | 3"     | 7/32" | 1"        |
| 9/16" O.D. | 30-15HF9    | 30,000 | HF9        | 1/8"    | 9 7/8"    | 2 5/8" | 2 3/16" | 1 7/16" | 4 3/8" | 1/2"   | 3 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-15HF16   | 30,000 | HF16       | 7/16"   | 11 13/16" | 4 1/8" | 3 3/8"  | 2 3/4"  | 7 3/4" | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## Replaceable Seat Valves



| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F | G       | H        | J      | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---|---------|----------|--------|--------|-------|-----------|
| 1/4" O.D.  | 30-12HF4-R  | 30,000 | HF4        | 3/32"   | 6"       | 2"     | — | 1"      | 2 7/16"  | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 30-12HF6-R  | 30,000 | HF6        | 1/8"    | 6 5/8"   | 2"     | — | 1 3/8"  | 2 13/16" | 1/2"   | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 30-12HF9-R  | 30,000 | HF9        | 1/8"    | 6 13/16" | 2 5/8" | — | 1 7/16" | 2 7/8"   | 1/2"   | 1 3/8" | 7/32" | 1 1/2"    |
| 1" O.D.    | 30-12HF16-R | 30,000 | HF16       | 7/16"   | 10 7/8"  | 4 1/8" | — | 2 3/8"  | 5 1/8"   | 1 1/8" | 2 1/2" | 9/16" | 1 3/4"    |

## High Pressure Equipment

### 40,000 psi High Pressure Valves

**High Pressure (coned & threaded)** type connections for  $\frac{9}{16}$ " O.D. tubing.

**Non-rotating tip stems** are standard for on-off service and insure long life on valve seats. Regulating tip stems are available for all valves at no additional cost, add - REG to part number.

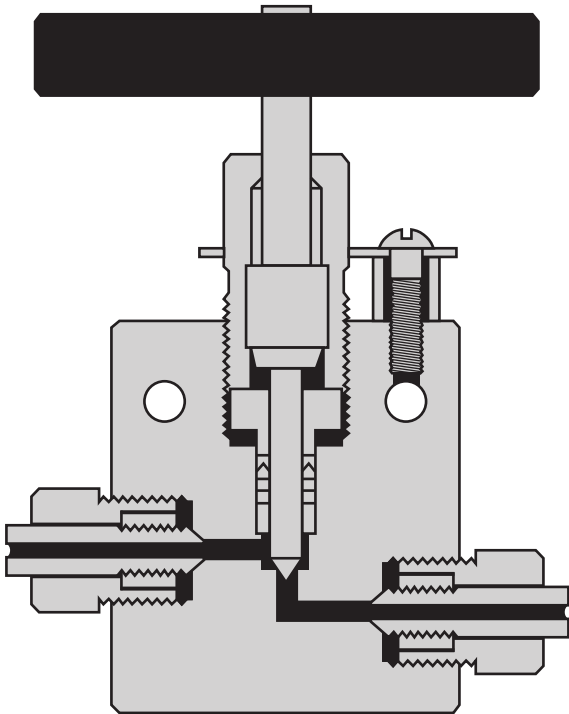
**Glands and collars** for tubing are supplied with each valve unless otherwise requested (glands and collars shown on pages 4.8 and 4.A).

**Materials** include high tensile type 316 stainless steel bodies and hardened 17-4PH stainless steel lower section stems.

**Packing set** consists of multiple Teflon packing with nylon back up, with optional Viton (350°F), BUNA-N (200°F) and Grafoil (800°F) available at no additional cost.

**Air operators** for remote control operation are available for all valves. (Select required valve and add "HIPCO". Refer to section 7.0 for additional data).

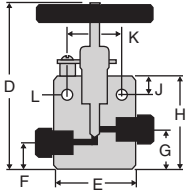
**High temperatures** can be accommodated using extended stuffing boxes (see page 6.4).



#### Valve Features

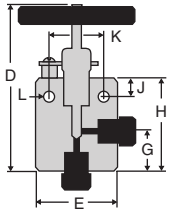
- Non-rotating stem tips
- Packing below stem threads
- Type 316 ss high tensile bodies
- Positive gland lock device
- No stem adjustment needed
- Black T-handles or choice of 4 colors

# 40,000 psi High Pressure Valves



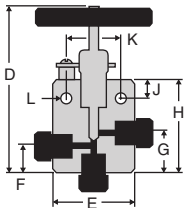
## Two Way Straight Valves

| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F  | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|----|---------|--------|------|--------|-------|-----------|
| 9/16" O.D. | 40-11HF9    | 40,000 | HF9        | 1/8"    | 5 5/8" | 2 5/8" | 1" | 1 7/16" | 2 7/8" | 1/2" | 1 5/8" | 7/32" | 1 1/2"    |



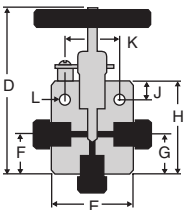
## Two Way Angle Valves

| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|---|---------|--------|------|--------|-------|-----------|
| 9/16" O.D. | 40-12HF9    | 40,000 | HF9        | 1/8"    | 5 5/8" | 2 5/8" | — | 1 7/16" | 2 7/8" | 1/2" | 1 5/8" | 7/32" | 1 1/2"    |



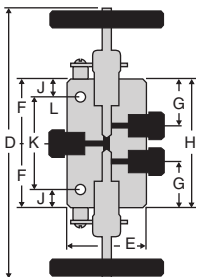
## Three Way Valves / Two Pressure Connections

| Tubing     | Catalog No. | psi    | Connection | Orifice | D       | E      | F       | G      | H       | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|---------|--------|---------|--------|---------|------|--------|-------|-----------|
| 9/16" O.D. | 40-13HF9    | 40,000 | HF9        | 1/8"    | 6 1/16" | 2 5/8" | 1 7/16" | 1 7/8" | 3 5/16" | 1/2" | 1 5/8" | 7/32" | 1 1/2"    |



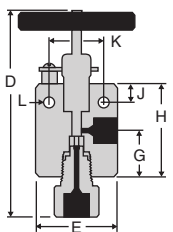
## Three Way Valves / One Pressure Connection

| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F       | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|---------|---------|--------|------|--------|-------|-----------|
| 9/16" O.D. | 40-14HF9    | 40,000 | HF9        | 1/8"    | 5 5/8" | 2 5/8" | 1 7/16" | 1 7/16" | 2 7/8" | 1/2" | 1 5/8" | 7/32" | 1 1/2"    |



## Three Way / Two Stem Connection Valves

| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F       | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|---------|---------|--------|------|--------|-------|-----------|
| 9/16" O.D. | 40-15HF9    | 40,000 | HF9        | 1/8"    | 9 7/8" | 2 5/8" | 2 3/16" | 1 7/16" | 4 3/8" | 1/2" | 3 3/8" | 7/32" | 1 1/2"    |



## Replaceable Seat Valves

| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|---|---------|--------|------|--------|-------|-----------|
| 9/16" O.D. | 40-12HF9-R  | 40,000 | HF9        | 1/8"    | 6 3/8" | 2 5/8" | — | 1 7/16" | 2 7/8" | 1/2" | 1 5/8" | 7/32" | 1 1/2"    |

## High Pressure Equipment

### 60,000 psi High Pressure Valves

**High Pressure (coned & threaded)** type connections for  $\frac{1}{8}$ ",  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{9}{16}$ " and 1" O.D. tubing.

**Non-rotating tip stems** are standard for on-off service and insure long life on valve seats. Regulating tip stems are available for all valves at no additional cost, add - REG to part number.

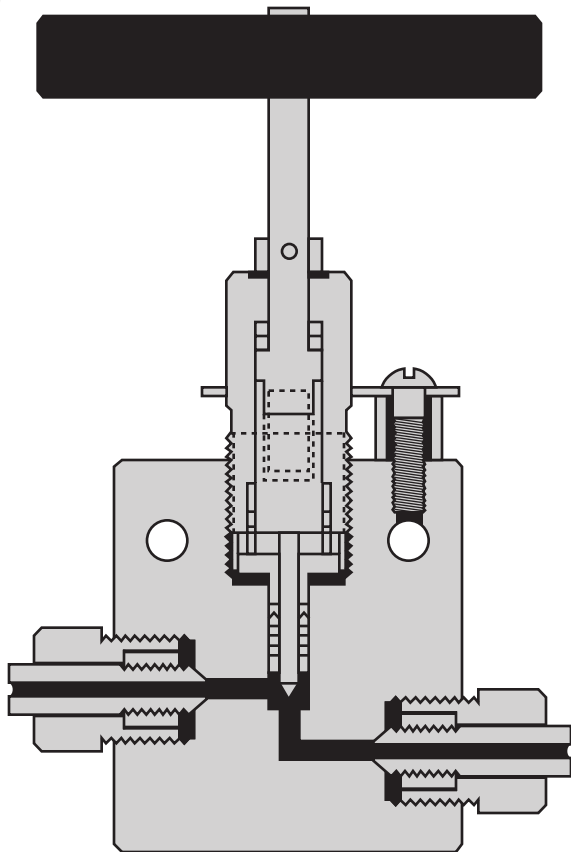
**Glands and collars** for tubing are supplied with each valve unless otherwise requested (glands and collars shown on pages 4.8 and 4.A).

**Materials** include high tensile type 316 stainless steel bodies and hardened 17-4PH stainless steel lower section stems.

**Packing set** consists of multiple Teflon packing with nylon back up, with optional Viton (350°F), BUNA-N (200°F) and Grafoil (800°F) available at no additional cost.

**Air operators** for remote control operation are available for all valves. (Select required valve and add "HIPCO". Refer to section 7.0 for additional data).

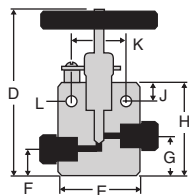
**High temperatures** can be accommodated using extended stuffing boxes (see page 6.4). These are available for all sizes except  $\frac{1}{8}$ " tubing.



#### Valve Features

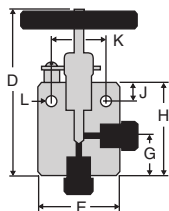
- Non-rotating stem tips
- Packing below stem threads
- Type 316 ss high tensile bodies
- Positive gland lock device
- No stem adjustment needed
- Black T-handles or choice of 4 colors
- Tube sizes  $\frac{1}{8}$ " through  $\frac{9}{16}$ "

## Two Way Straight Valves



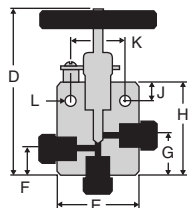
| Tubing     | Catalog No. | psi    | Connection | Orifice | D       | E      | F    | G       | H       | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|---------|--------|------|---------|---------|------|--------|-------|-----------|
| 1/8" O.D.  | 60-11HF2    | 60,000 | HF2        | 1/16"   | 5 3/16" | 2"     | 5/8" | 1 5/16" | 2 7/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 1/4" O.D.  | 60-11HF4    | 60,000 | HF4        | 1/16"   | 5 3/16" | 2"     | 5/8" | 1"      | 2 7/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 60-11HF6    | 60,000 | HF6        | 1/16"   | 5 3/16" | 2"     | 5/8" | 1"      | 2 7/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 60-11HF9    | 60,000 | HF9        | 1/16"   | 5 5/8"  | 2 5/8" | 1"   | 1 7/16" | 2 7/8"  | 1/2" | 1 3/8" | 7/32" | 1 1/2"    |

## Two Way Angle Valves



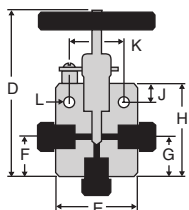
| Tubing     | Catalog No. | psi    | Connection | Orifice | D       | E      | F | G       | H        | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|---------|--------|---|---------|----------|------|--------|-------|-----------|
| 1/8" O.D.  | 60-12HF2    | 60,000 | HF2        | 1/16"   | 5 3/16" | 2"     | — | 1"      | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 1/4" O.D.  | 60-12HF4    | 60,000 | HF4        | 1/16"   | 5 3/16" | 2"     | — | 1"      | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 60-12HF6    | 60,000 | HF6        | 1/16"   | 5 3/16" | 2"     | — | 1 3/8"  | 2 13/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 60-12HF9    | 60,000 | HF9        | 1/16"   | 5 5/8"  | 2 5/8" | — | 1 7/16" | 2 7/8"   | 1/2" | 1 3/8" | 7/32" | 1 1/2"    |

## Three Way Valves / Two Pressure Connections



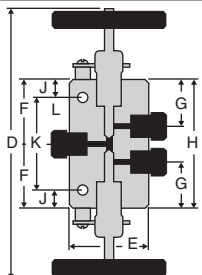
| Tubing     | Catalog No. | psi    | Connection | Orifice | D       | E      | F       | G      | H        | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|---------|--------|---------|--------|----------|------|--------|-------|-----------|
| 1/8" O.D.  | 60-13HF2    | 60,000 | HF2        | 1/16"   | 5 3/16" | 2"     | 5/8"    | 1"     | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 1/4" O.D.  | 60-13HF4    | 60,000 | HF4        | 1/16"   | 5 3/16" | 2"     | 5/8"    | 1"     | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 60-13HF6    | 60,000 | HF6        | 1/16"   | 5 3/16" | 2"     | 1"      | 1 3/8" | 2 13/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 60-13HF9    | 60,000 | HF9        | 1/16"   | 6 1/16" | 2 5/8" | 1 7/16" | 1 7/8" | 3 5/16"  | 1/2" | 1 3/8" | 7/32" | 1 1/2"    |

## Three Way Valves / One Pressure Connection



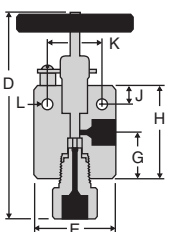
| Tubing     | Catalog No. | psi    | Connection | Orifice | D       | E      | F       | G      | H        | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|---------|--------|---------|--------|----------|------|--------|-------|-----------|
| 1/8" O.D.  | 60-14HF2    | 60,000 | HF2        | 1/16"   | 5 3/16" | 2"     | 7/8"    | 1/2"   | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 1/4" O.D.  | 60-14HF4    | 60,000 | HF4        | 1/16"   | 5 3/16" | 2"     | 1"      | 1"     | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 60-14HF6    | 60,000 | HF6        | 1/16"   | 5 3/16" | 2"     | 1 3/8"  | 1 3/8" | 2 13/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 60-14HF9    | 60,000 | HF9        | 1/16"   | 5 5/8"  | 2 5/8" | 1 7/16" | 1 7/8" | 2 7/8"   | 1/2" | 1 3/8" | 7/32" | 1 1/2"    |

## Three Way / Two Stem Connection Valves



| Tubing     | Catalog No. | psi    | Connection | Orifice | D      | E      | F       | G       | H      | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|--------|--------|---------|---------|--------|------|--------|-------|-----------|
| 1/8" O.D.  | 60-15HF2    | 60,000 | HF2        | 1/16"   | 9 1/4" | 2"     | 1 7/8"  | 1 7/16" | 3 3/4" | 1/2" | 2 3/4" | 7/32" | 1"        |
| 1/4" O.D.  | 60-15HF4    | 60,000 | HF4        | 1/16"   | 9 1/4" | 2"     | 1 7/8"  | 1 7/16" | 3 3/4" | 1/2" | 2 3/4" | 7/32" | 1"        |
| 3/8" O.D.  | 60-15HF6    | 60,000 | HF6        | 1/16"   | 9 1/2" | 2"     | 2"      | 1 7/16" | 4"     | 1/2" | 3"     | 7/32" | 1"        |
| 9/16" O.D. | 60-15HF9    | 60,000 | HF9        | 1/16"   | 9 7/8" | 2 5/8" | 2 3/16" | 1 7/16" | 4 3/8" | 1/2" | 3 3/8" | 7/32" | 1 1/2"    |

## Replaceable Seat Valves



| Tubing     | Catalog No. | psi    | Connection | Orifice | D        | E      | F | G       | H        | J    | K      | L     | Thickness |
|------------|-------------|--------|------------|---------|----------|--------|---|---------|----------|------|--------|-------|-----------|
| 1/4" O.D.  | 60-12HF4-R  | 60,000 | HF4        | 1/16"   | 6"       | 2"     | — | 1"      | 2 7/16"  | 1/2" | 1 3/8" | 7/32" | 1"        |
| 3/8" O.D.  | 60-12HF6-R  | 60,000 | HF6        | 1/16"   | 6 5/8"   | 2"     | — | 1 3/8"  | 2 13/16" | 1/2" | 1 3/8" | 7/32" | 1"        |
| 9/16" O.D. | 60-12HF9-R  | 60,000 | HF9        | 1/16"   | 6 13/16" | 2 5/8" | — | 1 7/16" | 2 7/8"   | 1/2" | 1 3/8" | 7/32" | 1 1/2"    |

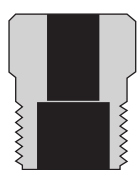

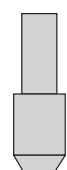


# High Pressure Equipment

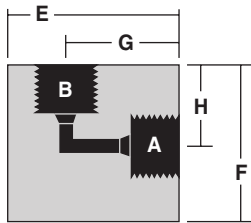
## Glands/Sleeves/Plugs/Elbows/Tees/Crosses

A complete range of elbows, tees, and crosses is available for all of the tubing connection sizes. Material is high tensile 316 stainless steel. Standard tubing glands and collars are provided unless otherwise specified.

### Connection Components

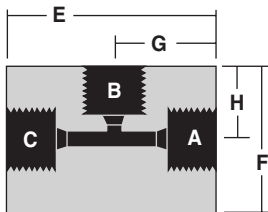
| Catalog No. | Tube Size | Gland   | Catalog No. | Tube Size | Collar  | Catalog No. | Tube Size | Plug  |
|-------------|-----------|---|-------------|-----------|---|-------------|-----------|---|
| 60-2HM2     | 1/8"      |  | 60-2H2      | 1/8"      |  | 60-7HM2     | 1/8"      |  |
| 60-2HM4     | 1/4"      |   | 60-2H4      | 1/4"      |   | 60-7HM4     | 1/4"      |   |
| 60-2HM6     | 3/8"      |   | 60-2H6      | 3/8"      |   | 60-7HM6     | 3/8"      |   |
| 60-2HM9     | 9/16"     |   | 60-2H9      | 9/16"     |   | 60-7HM9     | 9/16"     |   |
| 40-2HM9     | 9/16"     |   | 40-2H9      | 9/16"     |   | 40-7HM9     | 9/16"     |   |
| 30-2HM16    | 1"        |   | 30-2H16     | 1"        |   | 30-7HM16    | 1"        |   |

### High Pressure Elbows



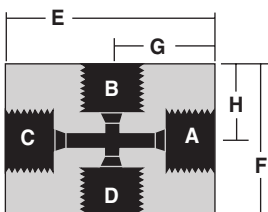
| Catalog No. | Pressure Rating psi | Connections     | A-B  | E      | F      | G       | H       | Thickness |
|-------------|---------------------|-----------------|------|--------|--------|---------|---------|-----------|
| 60-22HF2    | 60,000              | 1/8" O.D. TUBE  | HF2  | 1 1/8" | 1 1/8" | 3/4"    | 3/4"    | 3/4"      |
| 60-22HF4    | 60,000              | 1/4" O.D. TUBE  | HF4  | 1 3/8" | 1 1/2" | 7/8"    | 1"      | 1"        |
| 60-22HF6    | 60,000              | 3/8" O.D. TUBE  | HF6  | 1 3/4" | 1 1/2" | 1 1/4"  | 1"      | 1"        |
| 60-22HF9    | 60,000              | 9/16" O.D. TUBE | HF9  | 2 5/8" | 1 7/8" | 1 7/8"  | 1 1/8"  | 1 1/2"    |
| 40-22HF9    | 40,000              | 9/16" O.D. TUBE | HF9  | 2 5/8" | 1 7/8" | 1 7/8"  | 1 1/8"  | 1 1/2"    |
| 30-22HF16   | 30,000              | 1" O.D. TUBE    | HF16 | 3"     | 3"     | 2 1/16" | 2 1/16" | 1 3/4"    |

### High Pressure Tees



| Catalog No. | Pressure Rating psi | Connections     | A-B-C | E      | F       | G       | H       | Thickness |
|-------------|---------------------|-----------------|-------|--------|---------|---------|---------|-----------|
| 60-23HF2    | 60,000              | 1/8" O.D. TUBE  | HF2   | 1 1/2" | 1 1/8"  | 3/4"    | 3/4"    | 3/4"      |
| 60-23HF4    | 60,000              | 1/4" O.D. TUBE  | HF4   | 2"     | 1 3/8"  | 1"      | 7/8"    | 1"        |
| 60-23HF6    | 60,000              | 3/8" O.D. TUBE  | HF6   | 2"     | 1 9/16" | 1"      | 1 1/16" | 1"        |
| 60-23HF9    | 60,000              | 9/16" O.D. TUBE | HF9   | 2 5/8" | 2 1/8"  | 1 5/16" | 1 3/8"  | 1 1/2"    |
| 40-23HF9    | 40,000              | 9/16" O.D. TUBE | HF9   | 2 5/8" | 2 1/8"  | 1 5/16" | 1 3/8"  | 1 1/2"    |
| 30-23HF16   | 30,000              | 1" O.D. TUBE    | HF16  | 4 1/8" | 3"      | 2 1/16" | 2 1/16" | 1 3/4"    |

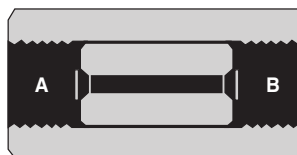
### High Pressure Crosses



| Catalog No. | Pressure Rating psi | Connections     | A-B-C-D | E      | F      | G       | H       | Thickness |
|-------------|---------------------|-----------------|---------|--------|--------|---------|---------|-----------|
| 60-24HF2    | 60,000              | 1/8" O.D. TUBE  | HF2     | 1 1/2" | 1 1/2" | 3/4"    | 3/4"    | 3/4"      |
| 60-24HF4    | 60,000              | 1/4" O.D. TUBE  | HF4     | 2"     | 1 1/2" | 1"      | 3/4"    | 1"        |
| 60-24HF6    | 60,000              | 3/8" O.D. TUBE  | HF6     | 2 1/8" | 2"     | 1 1/16" | 1"      | 1"        |
| 60-24HF9    | 60,000              | 9/16" O.D. TUBE | HF9     | 2 3/4" | 2 5/8" | 1 3/8"  | 1 5/16" | 1 1/2"    |
| 40-24HF9    | 40,000              | 9/16" O.D. TUBE | HF9     | 2 3/4" | 2 5/8" | 1 3/8"  | 1 5/16" | 1 1/2"    |
| 30-24HF16   | 30,000              | 1" O.D. TUBE    | HF16    | 4 1/8" | 4 1/8" | 2 1/16" | 2 1/16" | 1 3/4"    |

## Union Couplings (Slip Type)

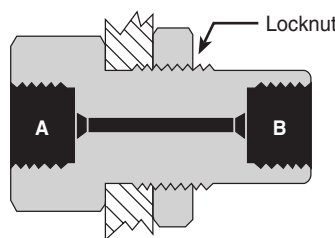
Union (slip Type) couplings are ideal for use in confined space installations. This design allows the entire coupling to be disconnected and slipped back over the tubing to facilitate assembly and disassembly. In installations where tubing is easily assembled, it is preferable (and less expensive) to use standard straight couplings (see accessories section). Standard material is high tensile 316 stainless steel. Standard tubing collars and glands are provided unless otherwise specified.



| Catalog No. | Pressure Rating psi | Connections       | A    | B      | Length | Hex Size |
|-------------|---------------------|-------------------|------|--------|--------|----------|
| 60-21HF2-U  | 60,000              | 1/8" O.D. TUBING  | HF2  | HF2    | 1 1/8" | 3/4"     |
| 60-21HF4-U  | 60,000              | 1/4" O.D. TUBING  | HF4  | HF4    | 1 3/4" | 1"       |
| 60-21HF6-U  | 60,000              | 3/8" O.D. TUBING  | HF6  | HF6    | 2"     | 1"       |
| 60-21HF9-U  | 60,000              | 9/16" O.D. TUBING | HF9  | HF9    | 2 3/8" | 1 3/8"   |
| 40-21HF9-U  | 40,000              | 9/16" O.D. TUBING | HF9  | HF9    | 2 3/8" | 1 3/8"   |
| 30-21HF16-U | 30,000              | 1" O.D. TUBING    | HF16 | 3 1/2" | 1 3/4" |          |

## Bulkhead Couplings

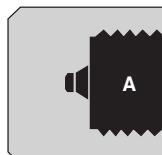
Bulkhead couplings are designed specifically for passing a tubing connection through a panel or steel barricade. These couplings include a locknut as shown. Material is high tensile 316 stainless steel. Standard tubing collars and glands are included unless otherwise specified.



| Catalog No. | Pressure Rating psi | Connections       | Panel Hole | A    | B    | Length   | Hex Size | Outside Thread |
|-------------|---------------------|-------------------|------------|------|------|----------|----------|----------------|
| 60-21HF2-B  | 60,000              | 1/8" O.D. TUBING  | 15/16"     | HF2  | HF2  | 1 13/16" | 1"       | 7/8" - 14      |
| 60-21HF4-B  | 60,000              | 1/4" O.D. TUBING  | 15/16"     | HF4  | HF4  | 2"       | 1"       | 7/8" - 14      |
| 60-21HF6-B  | 60,000              | 3/8" O.D. TUBING  | 1 1/8"     | HF6  | HF6  | 2 3/8"   | 1 3/8"   | 1 1/16" - 12   |
| 60-21HF9-B  | 60,000              | 9/16" O.D. TUBING | 1 11/16"   | HF9  | HF9  | 2 3/4"   | 1 7/8"   | 1 5/8" - 12    |
| 40-21HF9-B  | 40,000              | 9/16" O.D. TUBING | 1 11/16"   | HF9  | HF9  | 2 3/4"   | 1 7/8"   | 1 5/8" - 12    |
| 30-21HF16-B | 30,000              | 1" O.D. TUBING    | 1 15/16"   | HF16 | HF16 | 3 1/2"   | 1 7/8"   | 2 1/8" - 12    |

## Caps

Tubing end caps are offered for use in sealing off tubing ends either for temporary use or permanent use such as on small volume reservoirs. Standard material is high tensile 316 stainless steel. Standard tubing collars and glands are provided unless otherwise specified.

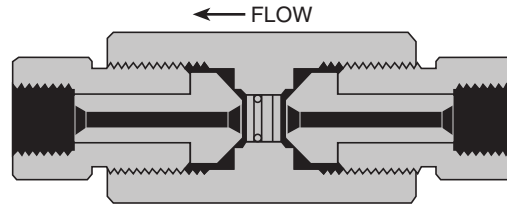


| Catalog No. | Pressure Rating psi | Connections       | A    | Length | Hex Size |
|-------------|---------------------|-------------------|------|--------|----------|
| 60-21HF2-C  | 60,000              | 1/8" O.D. TUBING  | HF2  | 7/8"   | 3/4"     |
| 60-21HF4-C  | 60,000              | 1/4" O.D. TUBING  | HF4  | 7/8"   | 3/4"     |
| 60-21HF6-C  | 60,000              | 3/8" O.D. TUBING  | HF6  | 1 1/4" | 1"       |
| 60-21HF9-C  | 60,000              | 9/16" O.D. TUBING | HF9  | 1 1/2" | 1 3/8"   |
| 40-21HF9-C  | 40,000              | 9/16" O.D. TUBING | HF9  | 1 1/2" | 1 3/8"   |
| 30-21HF16-C | 30,000              | 1" O.D. TUBING    | HF16 | 3"     | 1 3/4"   |

# High Pressure Equipment

## Line Filters

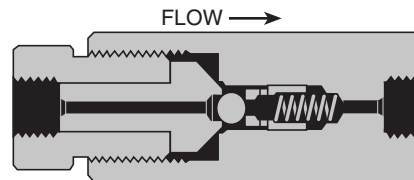
The line filters as shown utilize sintered stainless steel filter discs 3 pc./set. Porosities are available as per the chart to the right. If not otherwise specified, 100 micron filter discs are supplied. (One micron = 0.001 millimeters). Material of bodies and end covers is high tensile 316 stainless steel. Standard tubing glands and collars are provided unless otherwise specified.



| Catalog No. | Pressure Rating psi | Connections         | Length   | Hex Size | Micron Size Filter Available |   |   |    |    |     |
|-------------|---------------------|---------------------|----------|----------|------------------------------|---|---|----|----|-----|
|             |                     |                     |          |          | 0.5                          | 2 | 5 | 10 | 40 | 100 |
| 40F-51HF9   | 40,000              | 9/16" HIGH PRESSURE | 5 3/4"   | 1 1/2"   | ●                            | ● | ● | ●  | ●  | ●   |
| 60F-51HF2   | 60,000              | 1/8" HIGH PRESSURE  | 4 11/16" | 1 1/2"   | ●                            | ● | ● | ●  | ●  | ●   |
| 60F-51HF4   | 60,000              | 1/4" HIGH PRESSURE  | 4 7/8"   | 1 1/2"   | ●                            | ● | ● | ●  | ●  | ●   |
| 60F-51HF6   | 60,000              | 3/8" HIGH PRESSURE  | 5 1/4"   | 1 1/2"   | ●                            | ● | ● | ●  | ●  | ●   |
| 60F-51HF9   | 60,000              | 9/16" HIGH PRESSURE | 5 3/4"   | 1 1/2"   | ●                            | ● | ● | ●  | ●  | ●   |

## Ball Check Valves

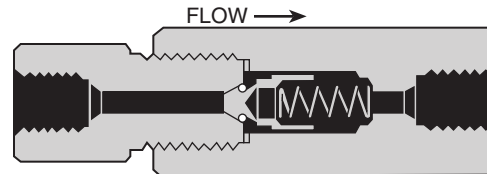
Ball type check valves insure flow in one direction only. Material for bodies and covers is 316 stainless steel (30-41HF16 body and cover are 17-4PH). Standard tubing glands and collars are provided unless otherwise specified.



| Catalog No. | psi    | Connections         | Length  | Hex                  |
|-------------|--------|---------------------|---------|----------------------|
| 40-41HF9    | 40,000 | 9/16" HIGH PRESSURE | 5 1/8"  | 1 1/2"               |
| 60-41HF2    | 60,000 | 1/8" HIGH PRESSURE  | 4 3/16" | 1 1/2"               |
| 60-41HF4    | 60,000 | 1/4" HIGH PRESSURE  | 4 1/4"  | 1 1/2"               |
| 60-41HF6    | 60,000 | 3/8" HIGH PRESSURE  | 4 5/8"  | 1 1/2"               |
| 60-41HF9    | 60,000 | 9/16" HIGH PRESSURE | 5 1/8"  | 1 1/2"               |
| 30-41HF16   | 30,000 | 1" HIGH PRESSURE    | 6 1/2"  | 2 1/2" RD with flats |

## Soft Seat Check Valves

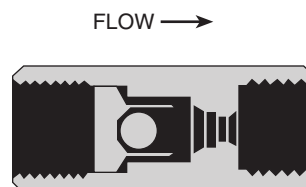
Soft seat check valves insure flow in one direction only and can be mounted in any position. These are highly reliable for both gas and liquid service. Standard O-ring (soft seat) material for the sealing surface is Buna-N (nitrile) with other materials including Teflon and Viton available on request. Temperature is limited by the choice of O-ring material. Material of all other parts is high tensile 316 stainless steel. (30-41HF16-T body and cover are 17-4PH). Standard glands and collars are provided unless otherwise specified.



| Catalog No. | psi    | Connections         | Length  | Hex                  |
|-------------|--------|---------------------|---------|----------------------|
| 30-41HF2-T  | 30,000 | 1/8" HIGH PRESSURE  | 3 3/4"  | 1"                   |
| 30-41HF4-T  | 30,000 | 1/4" HIGH PRESSURE  | 3 7/8"  | 1"                   |
| 30-41HF6-T  | 30,000 | 3/8" HIGH PRESSURE  | 3 7/8"  | 1"                   |
| 30-41HF9-T  | 30,000 | 9/16" HIGH PRESSURE | 4 1/4"  | 1 3/8"               |
| 40-41HF9-T  | 40,000 | 9/16" HIGH PRESSURE | 5 1/16" | 1 1/2"               |
| 60-41HF4-T  | 60,000 | 1/4" HIGH PRESSURE  | 4 9/16" | 1 1/2"               |
| 60-41HF6-T  | 60,000 | 3/8" HIGH PRESSURE  | 4 9/16" | 1 1/2"               |
| 60-41HF9-T  | 60,000 | 9/16" HIGH PRESSURE | 5 1/16" | 1 1/2"               |
| 30-41HF16-T | 30,000 | 1" HIGH PRESSURE    | 6 1/2"  | 2 1/2" RD with flats |

## Excess Surge Check Valves

Excess surge check valves are used to eliminate loss of pressure due to a sudden surge or opening of a pressure component in a pressurized system (such as a breakage of a gauge or test component). These check valves should be mounted in the vertical position. Only one basic size is available (60-41HF9-E) with adapters readily available to convert to other size connections. Standard tubing glands and collars are provided unless otherwise specified.

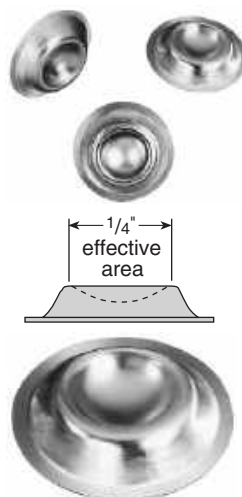


| Catalog No. | psi    | Connections                    | Length            | Hex               |
|-------------|--------|--------------------------------|-------------------|-------------------|
| 60-41HF9-E  | 60,000 | $\frac{9}{16}$ " HIGH PRESSURE | 3 $\frac{1}{8}$ " | 1 $\frac{1}{2}$ " |

## Rupture Discs

### $\frac{1}{4}$ " Angled Seat

Standard rupture discs are available from stock in burst pressures as listed in the chart to the right. These discs are 316 stainless steel (except for 1000 psi which are inconel) and may be used with any of the safety heads shown. Note that these rupture discs are manufactured with a tolerance of plus 6% and minus 3% of specified burst pressure. Samples of each batch are then tested and the actual average burst pressure is stamped on the accompanying metal tag. Factors influencing rupture disc life include corrosion, metal fatigue, and cyclic effect. Periodic replacement is recommended to prevent premature failure. It is recommended that working pressure does not exceed 70% of burst rating for maximum life cycle of the disc.



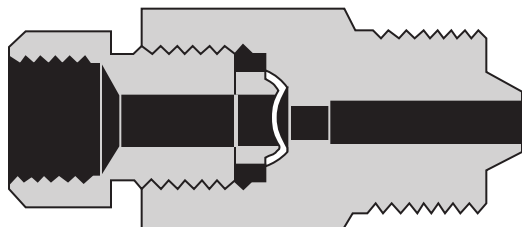
**SPECIAL DISCS** are available on special order for pressure ranges not shown above and in numerous materials and coatings. Consult factory for price and delivery.

### Standard Burst Pressures (in psi at 72°F)

|       |       |       |       |        |        |        |        |        |        |
|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1,000 | 3,000 | 5,000 | 7,000 | 9,000  | 11,000 | 17,500 | 25,000 | 37,500 | 55,000 |
| 1,500 | 3,500 | 5,500 | 7,500 | 9,500  | 11,500 | 18,000 | 27,000 | 40,000 | 60,000 |
| 2,000 | 4,000 | 6,000 | 8,000 | 10,000 | 12,500 | 20,000 | 30,000 | 45,000 | 65,000 |
| 2,500 | 4,500 | 6,500 | 8,500 | 10,500 | 15,000 | 22,500 | 35,000 | 50,000 |        |

# High Pressure Equipment

## Safety Heads



A choice of three safety head designs is available, male inlet, female inlet (straight), and tee type. The male inlet design can be inserted directly into the tubing connections of valves and various fittings such as tees and crosses, or located in pressure vessels.

Outlet connections on all sizes are  $\frac{3}{8}$ " pipe (NPT). This outlet may be connected to a suitable discharge line to vent pressure to a safe location in the event of bursting of the rupture disc. Torque required for sealing rupture discs will range from 40 to 90 foot pounds, depending upon pressure and media being used.

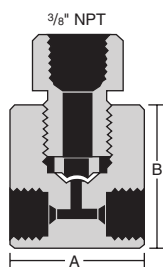
Material of bodies and hold down nuts is high tensile 316 stainless steel. Standard tubing glands and collars are provided unless otherwise specified.

**Note:** Rupture discs are **not** included and must be ordered as a separate item.



### Male Inlet Safety Heads

| Catalog No. | Pressure Rating psi | Inlet Connection               | Length           | Hex Size         |
|-------------|---------------------|--------------------------------|------------------|------------------|
| 60-61HM4    | 60,000              | $\frac{1}{4}$ " HIGH PRESSURE  | $1\frac{7}{8}$ " | $1\frac{1}{8}$ " |
| 60-61HM6    | 60,000              | $\frac{3}{8}$ " HIGH PRESSURE  | $2\frac{1}{8}$ " | $1\frac{1}{8}$ " |
| 60-61HM9    | 60,000              | $\frac{9}{16}$ " HIGH PRESSURE | $2\frac{3}{8}$ " | $1\frac{1}{2}$ " |
| 40-61HM9    | 40,000              | $\frac{9}{16}$ " HIGH PRESSURE | $2\frac{3}{8}$ " | $1\frac{1}{2}$ " |
| 30-61HM16   | 30,000              | 1" HIGH PRESSURE               | $3\frac{1}{2}$ " | $1\frac{1}{8}$ " |



### Tee Type Safety Heads

| Catalog No. | Pressure Rating psi | Inlet Connection               | A                | B                | Thickness        |
|-------------|---------------------|--------------------------------|------------------|------------------|------------------|
| 60-63HF2    | 60,000              | $\frac{1}{8}$ " HIGH PRESSURE  | $1\frac{1}{2}$ " | $1\frac{3}{4}$ " | 1"               |
| 60-63HF4    | 60,000              | $\frac{1}{4}$ " HIGH PRESSURE  | $1\frac{1}{2}$ " | $1\frac{3}{4}$ " | 1"               |
| 60-63HF6    | 60,000              | $\frac{3}{8}$ " HIGH PRESSURE  | 2"               | $1\frac{3}{4}$ " | 1"               |
| 60-63HF9    | 60,000              | $\frac{9}{16}$ " HIGH PRESSURE | $2\frac{5}{8}$ " | 2"               | $1\frac{1}{2}$ " |
| 40-63HF9    | 40,000              | $\frac{9}{16}$ " HIGH PRESSURE | 2"               | $2\frac{7}{8}$ " | $1\frac{1}{2}$ " |



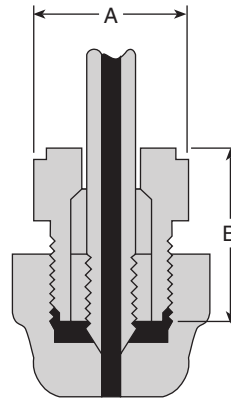
### Female Inlet (Straight) Safety Heads

| Catalog No. | Pressure Rating psi | Inlet Connection               | Length           | Hex Size         |
|-------------|---------------------|--------------------------------|------------------|------------------|
| 60-61HF2    | 60,000              | $\frac{1}{8}$ " HIGH PRESSURE  | $1\frac{7}{8}$ " | $1\frac{1}{8}$ " |
| 60-61HF4    | 60,000              | $\frac{1}{4}$ " HIGH PRESSURE  | $1\frac{7}{8}$ " | $1\frac{1}{8}$ " |
| 60-61HF6    | 60,000              | $\frac{3}{8}$ " HIGH PRESSURE  | $1\frac{7}{8}$ " | $1\frac{1}{8}$ " |
| 60-61HF9    | 60,000              | $\frac{9}{16}$ " HIGH PRESSURE | $2\frac{7}{8}$ " | $1\frac{1}{2}$ " |
| 40-61HF9    | 40,000              | $\frac{9}{16}$ " HIGH PRESSURE | $2\frac{3}{8}$ " | $1\frac{1}{2}$ " |

## Anti-Vibration Gland Assemblies

Tubing systems that are subject to extreme vibration or shock, such as mobile pressure systems or long tubing runs culminating at a compressor, will benefit from the use of High Pressure Equipment Company's Anti-Vibration Gland Assemblies. These assemblies utilize the same reliable connection geometries as the standard HiP fittings, with the added benefit of essentially unlimited vibrational fatigue life.

A coned and threaded tube, when subjected to unusual or excessive vibration, may fail prematurely and break at the last thread. The Anti-Vibration Gland Assembly acts to move the fulcrum of vibration away from the threaded portion of the tube and onto the strong, solid wall of the tubing. A wedge-like collet firmly holds the assembly in place, virtually eliminating premature tubing failure while reliably maintaining a leak-free connection between the tube and the connection seat.



### High Pressure Anti-Vibration Gland Assemblies

| Catalog No. | Pressure Rating psi | Connections         | A        | B        |
|-------------|---------------------|---------------------|----------|----------|
| 60-3HM4     | 60,000              | 1/4" HIGH PRESSURE  | 5/8"     | 1 13/16" |
| 60-3HM6     | 60,000              | 3/8" HIGH PRESSURE  | 13/16"   | 1 1/8"   |
| 60-3HM9     | 60,000              | 9/16" HIGH PRESSURE | 1 13/16" | 1 9/16"  |
| 40-3HM9     | 40,000              | 9/16" HIGH PRESSURE | 1 13/16" | 1 9/16"  |

### Anti-Vibration Components

| Tubing Size | Slotted Collet | Collet Gland | Collar |
|-------------|----------------|--------------|--------|
| 1/4"        | 2-8784         | 2-8783       | 60-2H4 |
| 3/8"        | 2-8786         | 2-8785       | 60-2H6 |
| 9/16"       | 2-8788         | 2-8787       | 60-2H9 |

# High Pressure Equipment

## High Pressure Tubing

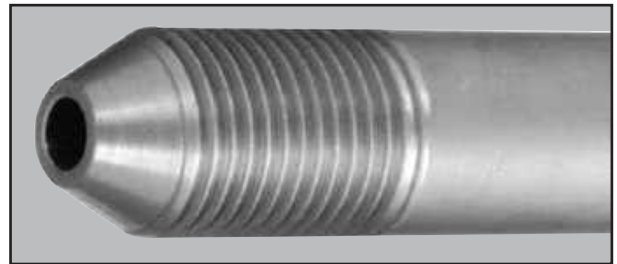
Tubing is cold drawn, seamless, and is supplied in the  $\frac{1}{8}$ " hard condition (not annealed). Tensile strength is approximately 40 percent higher than that of annealed tubing. All tubing is manufactured in strict accordance with High Pressure Equipment Company specifications to insure tolerances and bore quality. Tubing is stocked in lengths of 18 to 22 feet but may be ordered in shorter lengths with **no additional cutting charge**.

**Note:** The  $\frac{1}{8}$ " O.D. tubing sizes may be coiled for shipment. Larger sizes must be shipped in straight lengths.

|                                   | Tubing Size                                   | Working Pressure psi | Type of Connection Used              | Material | Catalog Order Number |
|-----------------------------------|---|----------------------|--------------------------------------|----------|----------------------|
| <b><math>\frac{1}{8}</math>"</b>  | $\frac{1}{8}$ " O.D. x 0.020" I.D.            | 60,000               | $\frac{1}{8}$ " HIGH PRESSURE (HF2)  | 316 SS   | 60-9H2               |
|                                   | $\frac{1}{8}$ " O.D. x 0.040" I.D.            | 30,000               | $\frac{1}{8}$ " HIGH PRESSURE (HF2)  | 316 SS   | 30-9H2               |
| <b><math>\frac{1}{4}</math>"</b>  | $\frac{1}{4}$ " O.D. x 0.083" I.D.            | 60,000               | $\frac{1}{4}$ " HIGH PRESSURE (HF4)  | 316 SS * | 60-9H4-316           |
|                                   |   |                      |                                      | 304 SS * | 60-9H4-304           |
| <b><math>\frac{3}{8}</math>"</b>  | $\frac{3}{8}$ " O.D. x $\frac{1}{8}$ " I.D.   | 60,000               | $\frac{3}{8}$ " HIGH PRESSURE (HF6)  | 316 SS   | 60-9H6-316           |
|                                   |   |                      |                                      | 304 SS   | 60-9H6-304           |
| <b><math>\frac{9}{16}</math>"</b> | $\frac{9}{16}$ " O.D. x $\frac{3}{16}$ " I.D. | 60,000               | $\frac{9}{16}$ " HIGH PRESSURE (HF9) | 316 SS   | 60-9H9-316           |
|                                   |   |                      |                                      | 304 SS   | 60-9H9-304           |
| <b><math>\frac{9}{16}</math>"</b> | $\frac{9}{16}$ " O.D. x $\frac{1}{4}$ " I.D.  | 40,000               | $\frac{9}{16}$ " HIGH PRESSURE (HF9) | 316 SS   | 40-9H9-316           |
|                                   |   |                      |                                      | 304 SS   | 40-9H9-304           |
| <b>1"</b>                         | 1" O.D. x 0.437" I.D.                         | 30,000               | 1" HIGH PRESSURE (HF16)              | 316 SS   | 30-9H16-316          |

## Nipples

Nipples as shown below are stocked in Types 304 and 316 Stainless Steel. Nipples in lengths other than those shown are supplied upon request. Nipples are not furnished with collars and glands, unless specified at time of order.



### Coned and Threaded Nipples

| Length<br>↓       | Tubing Size (O.D. x I.D.) |                             |                          |                                     |                                       |  |                |
|-------------------|---------------------------|-----------------------------|--------------------------|-------------------------------------|---------------------------------------|--|----------------|
|                   | $\frac{1}{8}$ " x 0.020"  | $\frac{1}{8}$ " x 0.040" ** | $\frac{1}{4}$ " x 0.083" | $\frac{3}{8}$ " x $\frac{1}{8}$ " * | $\frac{9}{16}$ " x $\frac{1}{4}$ " ** | $\frac{9}{16}$ " x $\frac{3}{16}$ " ** | 1" x 0.437" ** |
| psi →             | 60,000 psi                | 30,000 psi                  | 60,000 psi               | 60,000 psi                          | 40,000 psi                            | 60,000 psi                             | 30,000 psi     |
| 2"                | 60-HM2-2                  | 30-HM2-2                    |                          |                                     |                                       |  |                |
| 2 $\frac{3}{4}$ " |                           |                             | 60-HM4-2.75              |                                     |                                       |  |                |
| 3"                | 60-HM2-3                  | 30-HM2-3                    |                          | 60-HM6-3                            |                                       |  |                |
| 4"                | 60-HM2-4                  | 30-HM2-4                    |                          |                                     | 40-HM9-4                              | 60-HM9-4                               |                |
| 6"                | 60-HM2-6                  | 30-HM2-6                    | 60-HM4-6                 | 60-HM6-6                            | 40-HM9-6                              | 60-HM9-6                               | 30-HM16-6      |
| 8"                |                           |                             | 60-HM4-8                 | 60-HM6-8                            | 40-HM9-8                              | 60-HM9-8                               | 30-HM16-8      |
| 9"                | 60-HM2-9                  | 30-HM2-9                    |                          |                                     |                                       |  |                |
| 10"               |                           |                             | 60-HM4-10                | 60-HM6-10                           | 40-HM9-10                             | 60-HM9-10                              | 30-HM16-10     |
| 12"               | 60-HM2-12                 | 30-HM2-12                   | 60-HM4-12                | 60-HM6-12                           | 40-HM9-12                             | 60-HM9-12                              | 30-HM16-12     |

Specify 316 SS or 304 SS when ordering. \* Also used for 30,000 psi series. \*\* 316 SS

# High Pressure Connections

## (Coned and Threaded) 30,000/40,000/60,000 psi service

The High Pressure tubing connection is available for 1/8", 1/4", 3/8", 9/16" and 1" O.D. tubing. The tubing may be prepared with the use of tooling (see tooling section 9.0) or prepared at the factory to specified lengths. Additionally, standard length coned and threaded tubing nipples are available from stock (see page 4.12).

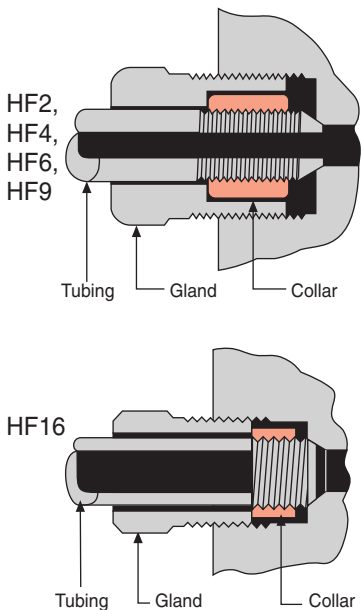
This connection has become an industry standard for use at elevated pressures and temperatures in both liquid and gas applications. It may be disassembled and retightened indefinitely.

The threads of the gland are right-hand while the threads of the collar and tubing are left-hand to prevent rotation of the collar during assembly.

**Materials.** All of the components required for make-up of a High Pressure connection (glands, collars and plugs) are produced in Type 316 stainless steel.

**Glands and collars** are provided with all valves and fittings (except nipples) unless otherwise requested. (See chart on the right for size details and catalog numbers).

| 30,000 & 60,000 psi          |                         |                         |                          | 40,000 psi               | 30,000 psi             |
|------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------------|
| HF2<br>1/8" O.D. Tubing      | HF4<br>1/4" O.D. Tubing | HF6<br>3/8" O.D. Tubing | HF9<br>9/16" O.D. Tubing | HF9<br>9/16" O.D. Tubing | HF16<br>1" O.D. Tubing |
| <b>Female Opening Detail</b> |                         |                         |                          |                          |                        |
|                              |                         |                         |                          |                          |                        |
| HF2                          | HF4                     | HF6                     | HF9                      | HF9                      | HF16                   |
| <b>Gland</b>                 |                         |                         |                          |                          |                        |
|                              |                         |                         |                          |                          |                        |
| 60-2HM2                      | 60-2HM4                 | 60-2HM6                 | 60-2HM9                  | 60-2HM9                  | 30-2HM16               |
| <b>Collar</b>                |                         |                         |                          |                          |                        |
|                              |                         |                         |                          |                          |                        |
| 60-2H2                       | 60-2H4                  | 60-2H6                  | 60-2H9                   | 60-2H9                   | 30-2H16                |
| <b>Plug</b>                  |                         |                         |                          |                          |                        |
|                              |                         |                         |                          |                          |                        |
| 60-7HM2                      | 60-7HM4                 | 60-7HM6                 | 60-7HM9                  | 40-7HM9                  | 30-7HM16               |
| <b>Tube End Prep</b>         |                         |                         |                          |                          |                        |
|                              |                         |                         |                          |                          |                        |
| HM2                          | HM4                     | HM6                     | HM9                      | HM9                      | HM16                   |





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