# Low Pressure

*Pressures to 15,000 psi (1034 bar)*

Since 1945 Parker Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Parker Autoclave Engineers a reputation for reliable, efficient product performance. Parker Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, research, and oil and gas industries.

## *Low Pressure Fittings and Tubing Features:*

- Single-ferrule compression sleeve.
- Fast easy make-up of connection.
- Available sizes are 1/16”, 1/8”, 1/4”, 3/8”, & 1/2”.
- Fittings manufactured from cold worked 316 stainless steel.
- Tubing is manufactured from dual rated 316/316L and 304/304L annealed stainless steel.
- All items available in special materials.
- Operating temperatures from -100°F (-73°C) to 650°F (343°C).
- Molybdenum disulfide-coated gland nuts to prevent galling.

The Low Pressure Series uses Parker Autoclave Engineers' SpeedBite connection. This single-ferrule compression sleeve connection delivers fast, easy make-up and reliable bubble-tight performance, in liquid or gas service.

Parker

Autoclave Engineers

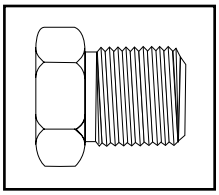
www.autoclave.com

## Pressures to 15,000 psi (1034 bar)

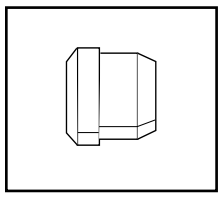
Parker Autoclave Engineers Low Pressure Fittings are designed for use with low pressure valves and tubing. These fittings feature improved SpeedBite compression connections with larger orifices for excellent flow capabilities. Parker Autoclave Engineers fittings and components are manufactured of cold-worked type 316 stainless steel. Optional materials are available upon request.

## Connection Components

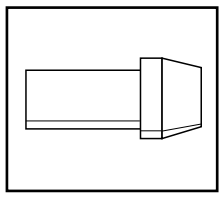
All valves and fittings are supplied complete with appropriate glands and compression sleeves. To order these components separately, use order numbers listed. When using plug, sleeve is not required.



**Gland**
SMN ( )



**Sleeve**
SSL ( )



**Plug**
SP ( )

Add tube size ( )
1/8" - 20
1/4" - 40
3/8" - 60
1/2" - 80

Example: 1/4" Gland - SMN 40

Note: Special material glands may be supplied with four flats in place of standard hex.

† When ordering glands separately for 10V Series 1/4" and 3/8" valves, substitute 10N for SMN.

1/16" tubing system components are available in the mini-fitting series. 1/16" tubing components can be used in 10V Series valves and fittings if required. Consult factory for information on 1/16" tubing assembly in 1/8" tubing components.

To ensure proper fit use Parker Autoclave Engineers tubing. For mounting hole option add suffix PM to catalog number. Consult factory for mounting hole dimensions.

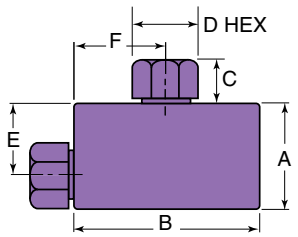
### Elbow

| Catalog Number | Connection Type | Outside Diameter Tube | Pressure Rating psi (bar)* | Minimum Opening | Dimensions - inches (mm) A | B | C | D Typical | E | F | G Thickness | Block Thickness | Fitting Pattern |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SL2200 | W125 | 1/8 | 15,000 | 0.094 | 1.00 | 1.50 | 0.31 | 0.38 | 0.75 | 0.75 | | 0.62 | |
| | | **(3.18)** | **(1034.19)** | **(2.39)** | **(25.40)** | **(38.10)** | **(7.87)** | **(9.53)** | **(19.05)** | **(19.05)** | | **(15.75)** | |
| SL4400 | SW250 | 1/4 | 15,000 | 0.188 | 1.38 | 2.00 | 0.44 | 0.63 | 1.00 | 1.00 | | 0.75 | **See Figure 1** |
| | | **(6.35)** | **(1034.19)** | **(4.78)** | **(35.05)** | **(50.80)** | **(11.18)** | **(15.88)** | **(25.40)** | **(25.40)** | | **(19.05)** | |
| SL6600 | SW375 | 3/8 | 15,000 | 0.250 | 1.38 | 2.00 | 0.53 | 0.75 | 1.00 | 1.00 | | 0.75 | |
| | | **(9.53)** | **(1034.19)** | **(6.35)** | **(35.05)** | **(50.80)** | **(13.46)** | **(19.05)** | **(25.40)** | **(25.40)** | | **(19.05)** | |
| SL8800 | SW500 | 1/2 | 10,000 | 0.375 | 1.75 | 2.50 | 0.53 | 0.93 | 1.25 | 1.25 | | 1.00 | |
| | | **(12.70)** | **(689.46)** | **(9.53)** | **(44.45)** | **(63.50)** | **(13.46)** | **(23.62)** | **(31.75)** | **(31.75)** | | **(25.40)** | |

*Maximum pressure rating is based on the lowest rating of any component.
Actual working pressure may be determined by tubing pressure rating, if lower.

*All dimensions for reference only and subject to change.*
For prompt service, Parker Autoclave Engineers stocks select products. Consult your local representative.

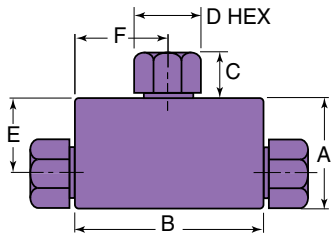
**Figure 1**




**Elbow**

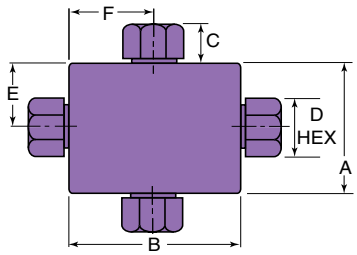
| Catalog Number | Connection Type | Outside Diameter Tube | Pressure Rating psi (bar)* | Minimum Opening | Dimensions - inches (mm) | | | | | | | Block Thickness | Fitting Pattern |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | B | C | D Typical | E | F | G Thickness | | |
| **Tee** | | | | | | | | | | | | | |
| ST2220 | W125 | 1/8 (3.18) | 15,000 (1034.19) | 0.094 (2.39) | 1.00 (25.40) | 1.50 (38.10) | 0.31 (7.87) | 0.38 (9.53) | 0.75 (19.05) | 0.75 (19.05) | | 0.62 (15.75) | See Figure 2 |
| ST4440 | SW250 | 1/4 (6.35) | 15,000 (1034.19) | 0.188 (4.78) | 1.38 (35.05) | 2.00 (50.80) | 0.44 (11.18) | 0.63 (15.88) | 1.00 (25.40) | 1.00 (25.40) | | 0.75 (19.05) | |
| ST6660 | SW375 | 3/8 (9.53) | 15,000 (1034.19) | 0.250 (6.35) | 1.38 (35.05) | 2.00 (50.80) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) | 1.00 (25.40) | | 0.75 (19.05) | |
| ST8880 | SW500 | 1/2 (12.70) | 10,000 (689.46) | 0.375 (9.53) | 1.75 (44.45) | 2.50 (63.50) | 0.53 (13.46) | 0.93 (23.62) | 1.25 (31.75) | 1.25 (31.75) | | 1.00 (25.40) | |
| **Cross** | | | | | | | | | | | | | |
| SX2222 | W125 | 1/8 (3.18) | 15,000 (1034.19) | 0.094 (2.39) | 1.50 (38.10) | 1.50 (38.10) | 0.31 (7.87) | 0.38 (9.53) | 0.75 (19.05) | 0.75 (19.05) | | 0.62 (15.75) | See Figure 3 |
| SX4444 | SW250 | 1/4 (6.35) | 15,000 (1034.19) | 0.188 (4.78) | 2.00 (50.80) | 2.00 (50.80) | 0.44 (11.18) | 0.63 (15.88) | 1.00 (25.40) | 1.00 (25.40) | | 0.75 (19.05) | |
| SX6666 | SW375 | 3/8 (9.53) | 15,000 (1034.19) | 0.250 (6.35) | 2.00 (50.80) | 2.00 (50.80) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) | 1.00 (25.40) | | 0.75 (19.05) | |
| SX8888 | SW500 | 1/2 (12.70) | 10,000 (689.46) | 0.375 (9.53) | 2.50 (63.50) | 2.50 (63.50) | 0.53 (13.46) | 0.93 (23.62) | 1.25 (31.75) | 1.25 (31.75) | | 1.00 (25.40) | |
| **Straight Coupling** | | | | | | | | | | | | | |
| 15F2211 | W125 | 1/8 (3.18) | 15,000 (1034.19) | 0.094 (2.39) | 0.50 (12.70) | 1.25 (31.75) | 0.31 (7.87) | 0.38 (9.53) | | | | | See Figure 4 |
| 6F4422 | SW250 | 1/4 (6.35) | 15,000 (1034.19) | 0.188 (4.78) | 0.62 (15.75) | 1.62 (41.15) | 0.44 (11.18) | 0.63 (15.88) | | | | | |
| 6F6622 | SW375 | 3/8 (9.53) | 15,000 (1034.19) | 0.250 (6.35) | 0.75 (19.05) | 1.75 (44.45) | 0.53 (13.46) | 0.75 (19.05) | | | | | |
| 4F8822 | SW500 | 1/2 (12.70) | 10,000 (689.46) | 0.375 (9.53) | 1.00 (25.40) | 2.00 (50.80) | 0.53 (13.46) | 0.93 (23.62) | | | | | |
| **Bulkhead Coupling** | | | | | | | | | | | | | |
| 15BF2211 | W125 | 1/8 (3.18) | 15,000 (1034.19) | 0.094 (2.39) | 0.690 (17.53) | 1.75 (44.45) | 0.31 (7.87) | 0.38 (9.53) | 0.38 (9.53) | 0.75 (19.05) | 0.38 (9.53) | | See Figure 5 |
| 6BF4422 | SW250 | 1/4 (6.35) | 15,000 (1034.19) | 0.188 (4.78) | 0.940 (23.88) | 1.88 (47.75) | 0.44 (11.18) | 0.63 (15.88) | 0.50 (12.70) | 1.00 (25.40) | 0.38 (9.53) | | |
| 6BF6622 | SW375 | 3/8 (9.53) | 15,000 (1034.19) | 0.250 (6.35) | 0.940 (23.88) | 1.88 (47.75) | 0.53 (13.46) | 0.75 (19.05) | 0.50 (12.70) | 1.00 (25.40) | 0.38 (9.53) | | |
| 4BF8822 | SW500 | 1/2 (12.70) | 10,000 (689.46) | 0.375 (9.53) | 1.120 (28.45) | 2.38 (60.45) | 0.53 (13.46) | 0.93 (23.62) | 0.78 (19.81) | 1.38 (35.05) | 0.38 (9.53) | | |

**Figure 2**



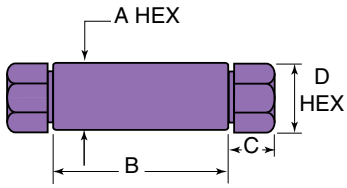

**Tee**

**Figure 3**



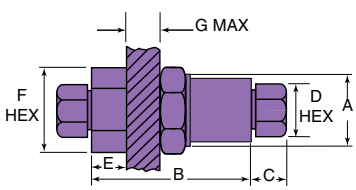

**Cross**

**Figure 4**




**Straight Coupling**

**Figure 5**




(A=Panel hole drill size)

**Bulkhead Coupling**

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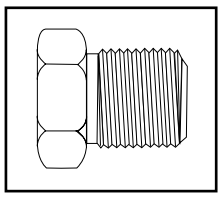
## Pressure to 15,000 psi (1034 bar)

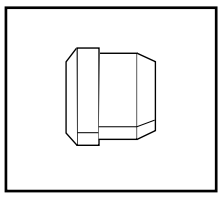
All Parker Autoclave Engineers valves and fittings are supplied complete with appropriate glands and compression sleeves. To order these components separately, use order numbers listed. When using plug, sleeve is not required.



### Gland
SMN ( )

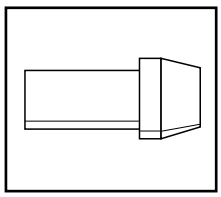
Add gland size ( )  Example: SMN - 10
- 1/16" - 10
- 1/16" - 10-10mm
- 1/8" - 20
- 1/8" - 20-10mm

Note: Gland sizes differ as folllows:
- Standard is 3/8 hex
- 10 mm is 10 millimeter hex



### Sleeve
SSL ( )

Add tube size for sleeve and plug ( )  Example: 1/8" Sleeve SSL20
- 1/16" - 10
- 1/8" - 20



### Plug
SP ( )

Note: Special material glands may be supplied with four flats in place of standard hex.

| Catalog Number | Connection Type | Outside Diameter Tube | Pressure Rating psi (bar)* | Minimum Opening | Dimensions - inches (mm) | | | | | | | Block Thickness | Fitting Pattern |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | B | C | D Typical | E | F | | | |
| **Elbow** | | | | | | | | | | | | | |
| | | | | | **3/8 inch hex glands (D Dimension)** | | | | | | | | |
| MLE1100 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.00 **(25.40)** | 1.00 **(25.40)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | **See Figure 1** |
| MLE2200 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.00 **(25.40)** | 1.00 **(25.40)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| | | | | | **10 millimeter hex glands (D Dimension)** | | | | | | | | |
| ML1100 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.00 **(25.40)** | 1.00 **(25.40)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| ML2200 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.00 **(25.40)** | 1.00 **(25.40)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |

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Actual working pressure may be determined by tubing pressure rating, if lower.

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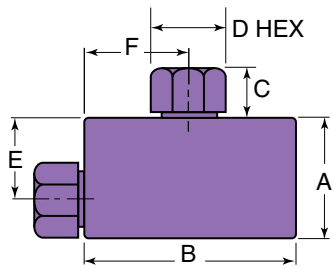
**Figure 1**




**Elbow**

| Catalog Number | Connection Type | Outside Diameter Tube | Pressure Rating psi (bar)* | Minimum Opening | Dimensions - inches (mm) | | | | | | | Block Thickness | Fitting Pattern |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | B | C | D Typical | E | F | | | |
| **Tee** | | | | | **3/8 inch hex glands (D Dimension)** | | | | | | | | |
| MTE1110 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.00 **(25.40)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | **See Figure 2** |
| MTE2220 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.00 **(25.40)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| | | | | | **10 millimeter hex glands (D Dimension)** | | | | | | | | |
| MT1110 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.00 **(25.40)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| MT2220 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.00 **(25.40)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| **Cross** | | | | | **3/8 inch hex glands (D Dimension)** | | | | | | | | |
| MXE1111 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.38 **(34.93)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | **See Figure 3** |
| MXE2222 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.38 **(34.93)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.38 **(9.53)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| | | | | | **10 millimeter hex glands (D Dimension)** | | | | | | | | |
| MX1111 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 1.38 **(34.93)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| MX2222 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 1.38 **(34.93)** | 1.38 **(34.93)** | 0.31 **(7.87)** | 0.39 **(10.00)** | 0.69 **(17.45)** | 0.69 **(17.45)** | | 0.56 **(14.27)** | |
| **Straight Couplings** | | | | | **3/8 inch hex glands (D Dimension)** | | | | | | | | |
| MCE1100 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 0.50 **(12.70)** | 1.25 **(31.75)** | 0.31 **(7.87)** | 0.38 **(9.53)** | | | | | **See Figure 4** |
| MCE2200 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 0.50 **(12.70)** | 1.25 **(31.75)** | 0.31 **(7.87)** | 0.38 **(9.53)** | | | | | |
| | | | | | **10 millimeter hex glands (D Dimension)** | | | | | | | | |
| MC1100 | W062 | 1/16 **(1.59)** | 15,000 **(1034.20)** | 0.055 **(1.40)** | 0.50 **(12.70)** | 1.25 **(31.75)** | 0.31 **(7.87)** | 0.39 **(10.00)** | | | | | |
| MC2200 | W125 | 1/8 **(3.18)** | 15,000 **(1034.20)** | 0.093 **(2.36)** | 0.50 **(12.70)** | 1.25 **(31.75)** | 0.31 **(7.87)** | 0.39 **(10.00)** | | | | | |

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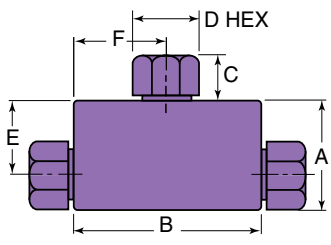
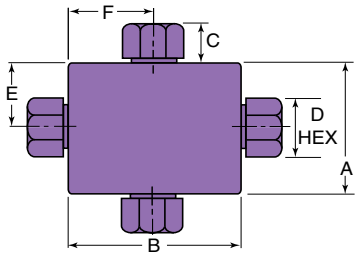
**Figure 2**



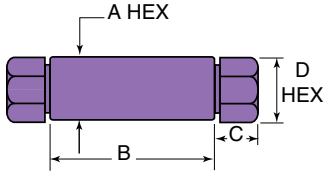

**Tee**

**Figure 3**




**Cross**

**Figure 4**




**Straight Coupling**

# Fittings and Tubing - Low Pressure Tubing

## Pressures to 15,000 psi (1034 bar)

Parker Autoclave Engineers offers a complete selection of annealed, seamless stainless steel tubing designed to match the performance standards of Parker Autoclave low pressure valves and fittings. Parker Autoclave Engineers low pressure tubing is furnished in random lengths between 20 feet (6 meters) and 26.5 feet (8.0 meters). The average is 24 feet (7.3 meters). The tubing is available in five sizes and a variety of materials. In order to ensure proper sleeve "bite" into tubing, Parker Autoclave Engineers specifies and controls the strength levels of both the tube and sleeve materials.

### Inspection and Testing

Parker Autoclave Engineers low pressure tubing is inspected for compliance with specified defect restrictions as well as carburization or intergranular carbide precipitation. The tubing outside diameter and wall thickness is controlled within close tolerance to assure proper fit. Sample pieces of tube (for each lot) are tested to confirm mechanical properties for proper compression sleeve "bite" and pressure capability. Furthermore, the sample tubes are pressure tested as a final check.

### Special Materials

In addition to the type 316/316L and 304/304L stainless steel tubing listed in this section, Parker Autoclave Engineers has a limited stock of hard-to-obtain shorter lengths of the following tubing materials:

*Monel 400*, Inconel 600*, Titanium Grade 2*, Nickel 200*, Hastelloy C276** - (* Trademark names)

Please consult factory for stock availabilty.

### Tubing Tolerance

| Nominal Tubing Size inches (mm) | Tolerance/Outside Diameter inches (mm) |
|---|---|
| 1/16 (1.59) | .064/.062 (1.62/1.57) |
| 1/8 (3.18) | .128/.125 (3.25/3.18) |
| 1/4 (6.35) | .254/.250 (6.45/6.35) |
| 3/8 (9.53) | .379/.375 (9.74/9.53) |
| 1/2 (12.70) | .505/.500 (12.83/12.70) |

| Catalog Number | Tube Materials | Fits Connection Type | Tube Size Inches (mm) | | | Flow Area in.² (mm²) | Working Pressure psi (bar)* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Outside Diameter | Inside Diameter | Wall Thickness | | 0 - 100°F -17.8 to 37.8°C | 200°F 93°C | 400°F 204°C | 600°F 316°C | 650°F 343°C |
| MS15-070 | 316SS | W062 | 1/16 **(1.59)** | 0.026 **(0.66)** | 0.018 **(0.46)** | 0.0005 **(0.32)** | 15,000 **(1034.20)** | 15,000 **(1034.20)** | 14,400 **(992.83)** | 13,600 **(937.67)** | 12,600 **(868.73)** |
| MS15-200 | 316SS | W125 | 1/8 **(3.18)** | 0.052 **(1.32)** | 0.036 **(0.91)** | 0.002 **(1.29)** | 15,000 **(1034.20)** | 15,000 **(1034.20)** | 14,400 **(992.83)** | 13,600 **(937.67)** | 12,600 **(868.73)** |
| MS15-166† | 304SS | | | 0.069 **(1.75)** | 0.028 **(0.71)** | 0.004 **(2.58)** | 9,950 **(686.02)** | 9,400 **(648.10)** | 8,550 **(589.49)** | 8,450 **(582.60)** | 8,000 **(551.57)** |
| MS15-203 | 316SS | W250 or SW250 | 1/4 **(6.35)** | 0.084 **(2.13)** | 0.083 **(2.11)** | 0.029 **(18.71)** | 15,000 **(1034.16)** | 15,000 **(1034.16)** | 14,400 **(992.83)** | 13,600 **(937.67)** | 12,600 **(868.73)** |
| MS15-055 | 316SS | | | 0.125 **(3.18)** | 0.062 **(1.57)** | 0.012 **(7.74)** | 11,650 **(803.23)** | 11,650 **(761.86)** | 11,250 **(775.65)** | 10,600 **(730.83)** | 9,850 **(679.12)** |
| MS15-161† | 304SS | | | 0.180 **(4.57)** | 0.035 **(0.89)** | 0.026 **(16.77)** | 5,450 **(375.76)** | 5,150 **(355.07)** | 4,700 **(324.05)** | 4,600 **(317.15)** | 4,400 **(303.36)** |
| MS15-069 | 316SS | | | 0.180 **(4.57)** | 0.035 **(0.89)** | 0.026 **(16.77)** | 5,450 **(375.76)** | 5,450 **(375.76)** | 5,250 **(361.97)** | 4,950 **(341.29)** | 4,600 **(317.15)** |
| MS15-158† | 304SS | | | 0.194 **(4.93)** | 0.028 **(0.71)** | 0.029 **(18.71)** | 4,600 **(317.15)** | 4,350 **(299.92)** | 3,950 **(272.34)** | 3,900 **(272.34)** | 3,700 **(255.10)** |
| MS15-204 | 316SS | W375 or SW375 | 3/8 **(9.53)** | 0.139 **(3.53)** | 0.118 **(3.00)** | 0.015 **(9.79)** | 15,000 **(1034.16)** | 15,000 **(1034.16)** | 14,400 **(992.83)** | 13,600 **(937.67)** | 12,600 **(868.73)** |
| MS15-184 | 304SS | | | 0.195 **(4.95)** | 0.090 **(2.29)** | 0.030 **(19.35)** | 10,000 **(689.46)** | 9,400 **(648.10)** | 8,600 **(592.94)** | 8,500 **(586.05)** | 8,450 **(582.60)** |
| MS15-084 | 316SS | | | 0.195 **(4.95)** | 0.090 **(2.29)** | 0.030 **(19.35)** | 10,000 **(689.46)** | 10,000 **(689.46)** | 9,650 **(665.33)** | 9,000 **(620.52)** | 8,400 **(579.15)** |
| MS15-155† | 304SS | | | 0.250 **(6.35)** | 0.062 **(1.57)** | 0.049 **(31.61)** | 7,500 **(517.10)** | 7,100 **(489.52)** | 6,450 **(444.70)** | 6,350 **(437.81)** | 6,050 **(417.13)** |

| Catalog Number | Tube Materials | Fits Connection Type | Tube Size Inches (mm) Outside Diameter | Inside Diameter | Wall Thickness | Flow Area in.² (mm²) | Working Pressure psi (bar)* 0 - 100°F -17.8 to - 37.8°C | 200°F 93°C | 400°F 204°C | 600°F 316°C | 650°F 343°C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MS15-062 | 316SS | W375 or SW375 | 3/8 **(9.53)** | 0.250 **(6.35)** | 0.062 **(1.57)** | 0.049 **(31.61)** | 7,500 **(517.10)** | 7,500 **(517.10)** | 7,200 **(496.41)** | 6,800 **(468.84)** | 6,300 **(434.36)** |
| MS15-162† | 304SS | | | 0.305 **(7.75)** | 0.035 **(0.89)** | 0.073 **(47.10)** | 3,800 **(262.00)** | 3,550 **(244.76)** | 3,250 **(224.08)** | 3,200 **(220.63)** | 3,050 **(210.29)** |
| MS15-205 | 316SS | W500 or SW500 | 1/2 **(12.70)** | 0.270 **(6.86)** | 0.118 **(3.00)** | 0.055 **(35.48)** | 10,000 **(689.46)** | 10,000 **(689.46)** | 9,650 **(665.33)** | 9,000 **(620.52)** | 8,400 **(579.15)** |
| MS15-208† | 304SS | | | 0.270 **(6.86)** | 0.118 **(3.00)** | 0.055 **(35.48)** | 10,000 **(689.46)** | 9,400 **(648.10)** | 8,600 **(592.94)** | 8,500 **(586.05)** | 8,450 **(582.60** |
| MS15-065 | 316SS | | | 0.375 **(9.53)** | 0.062 **(1.57)** | 0.110 **(70.97)** | 5,500 **(379.21)** | 5,500 **(379.21)** | 5,250 **(361.97)** | 4,950 **(341.29)** | 4,600 **(317.15)** |
| MS15-165† | 304SS | | | 0.402 **(10.21)** | 0.048 **(1.22)** | 0.127 **(81.94)** | 4,000 **(275.79)** | 3,750 **(258.55)** | 3,400 **(234.42)** | 3,400 **(234.42)** | 3,200 **(220.63)** |

*Maximum pressure rating is based on the lowest rating of any component.
Actual working pressure may be determined by tubing pressure rating, if lower.

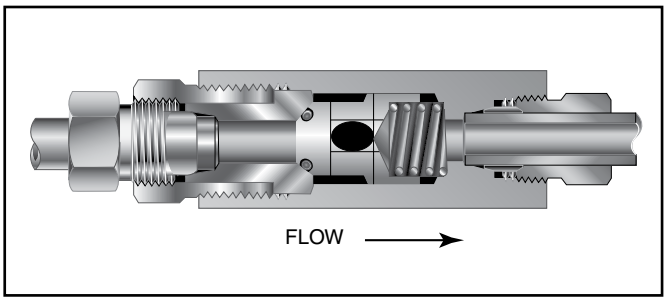
†Items are being discontinued. Contact the factory for available stock

*All dimensions for reference only and subject to change.*
For prompt service, Parker Autoclave Engineers stocks select products.
Consult your local representative.

# Fittings and Tubing - Low Pressure Check Valves

## Pressures to 15,000 psi (1034 bar)

### O-Ring Check Valves



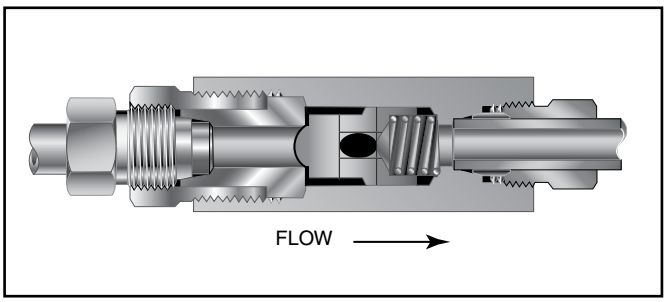

Minimum operating temperature for standard o-ring check valves 0°F (-17.8°C).
For low temperature option to -100°F (-73°C) add suffix LTTO (Low temperature spring & PTFE o-ring).

Provide unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure*, valve shuts off. **(Not for use as relief valve.)**

**Materials:** 316 Stainless Steel: body, cover, poppet and cover gland. 300 Series Stainless Steel: spring
Standard O-ring: Viton, for operation to 400° F (204°C). Buna-N or PTFE available for 250°F (121°C) or 400°F (204°C) respectively; specify when ordering.

***Cracking Pressure:** 20 psi (1.38 bar) ±30%. Springs for higher cracking pressures (up to 100 psi (6.89bar)) available on special order for O-ring style check valves only.

### Ball Check Valves




Minimum operating temperature for standard ball check valves 0°F (-17.8°C).
For low temperature option to -100°F (-73°C) add suffix LT (Low temperature spring).

Prevent reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes. With all-metal components, valve can be used up to 650°F (343°C). See Technical Information section for connection temperature limitations. **(Not for use as a relief valve.)**

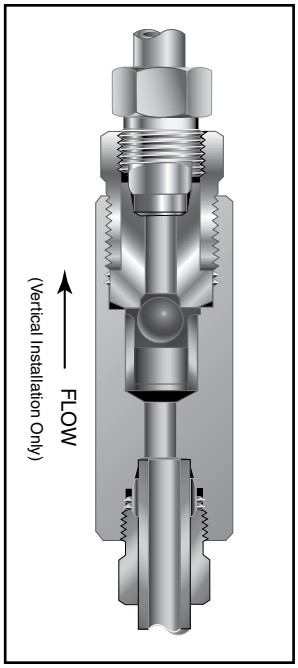
**Ball and poppet are an integral design** to assure positive, in-line seating without "chatter". Poppet is designed essentially for axial flow with minimum pressure drop.

**Materials:** 316 Stainless Steel: body, cover, cover gland, ball poppet. 300 Series Stainless Steel: spring

***CAUTION:** While testing has shown O-Rings to provide satisfactory service life, both cyclic and shelf life may vary widely with differing service conditions, properties of reactants, pressure and temperature cycling and age of the O-ring. FREQUENT INSPECTIONS SHOULD BE MADE to detect any deterioration, and O-rings replaced as required.*

***CAUTION:** See Tubing section for proper selection of tubing.*
***NOTE:** For optional material see Needle Valve Options section.*

## Ball Type Excess Flow Valves



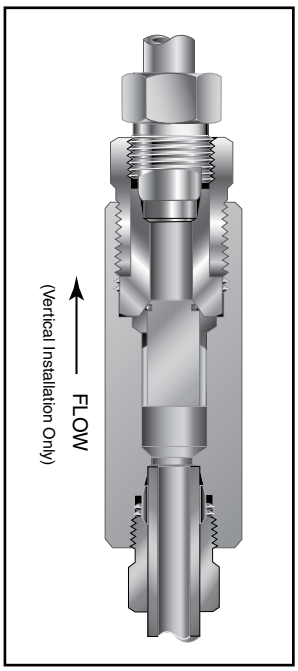

Protects pressure gauges and pressure instrumentation from sudden surges in flow or venting in the event of line failure.

**Materials:** 316 Stainless Steel: body, cover, gland nut and sleeve. 300 Series Stainless Steel: ball

**Vertical Installation:** Since this type of check valve employs a non-spring loaded ball, valve MUST be installed in VERTICAL position with arrow on valve body pointing UP. (cover gland up).

**Resetting Valve:** Equalize the pressure across the ball. The ball will drop and reset automatically.

## O-Ring Type Excess Flow Valves




Protects pressure gauges and other pressure instrumentation from sudden surges in flow due to operator error or line failure. This valve provides dependable, tight shut-off.

**Materials:** 316 Stainless Steel: body, cover and sleeve. O-Ring: Viton for operation to 400°F (204°C). Buna-N or PTFE available for 250°F (121°C) or 400°F ( 204°C) respectively; specify when ordering.

**Vertical Installation:** Since this type of check valve employs a non-spring loaded poppet, valve MUST be installed in VERTICAL position with arrow on valve body pointing UP. (cover gland up).

**Resetting Valve:** Equalize the pressure across the poppet. The poppet will drop and reset automatically.

***CAUTION:*** *While testing has shown O-Rings to provide satisfactory service life, both cyclic and shelf life may vary widely with differing service conditions, properties of reactants, pressure and temperature cycling and age of the O-ring. FREQUENT INSPECTIONS SHOULD BE MADE to detect any deterioration, and O-rings replaced as required.*

***CAUTION:*** *See Tubing section for proper selection of tubing.*
***NOTE:*** *For optional material see Needle Valve Options section.*

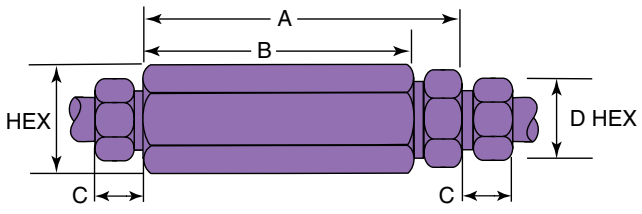
| Catalog Number | Fits Connection Type | Pressure Rating psi (bar)* | Orifice inches (mm) | Rated $C_V$ | Dimensions - inches (mm) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | B | C | D Typical | Hex |
| **O-Ring Check Valves** | | | | | | | | | |
| SW02200 | W125 | 15,000 (1034.19) | 0.094 (2.39) | 0.15 | 2.25 (57.15) | 1.88 (47.75) | 0.31 (7.87) | 0.50 (12.70) | 0.63 (15.88) |
| SW04400 | SW250 | 15,000 (1034.19) | 0.188 (4.78) | 0.63 | 3.18 (80.77) | 2.56 (65.02) | 0.44 (11.18) | 0.63 (16.00) | 0.81 (20.57) |
| SW06600 | SW375 | 15,000 (1034.19) | 0.250 (6.35) | 1.70 | 3.56 (90.42) | 3.00 (76.20) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) |
| SW08800 | SW500 | 10,000 (689.46) | 0.375 (9.53) | 3.40 | 4.18 (106.17) | 3.50 (88.90) | 0.53 (13.46) | 0.93 (23.62) | 1.38 (35.05) |
| **Ball Check Valves** | | | | | | | | | |
| SWB2200 | W125 | 15,000 (1034.19) | 0.094 (2.39) | 0.15 | 2.25 (57.15) | 1.88 (47.75) | 0.31 (7.87) | 0.50 (12.70) | 0.63 (15.88) |
| SWB4400 | SW250 | 15,000 (1034.19) | 0.188 (4.78) | 0.63 | 3.18 (80.77) | 2.56 (65.02) | 0.44 (11.18) | 0.63 (16.00) | 0.81 (20.57) |
| SWB6600 | SW375 | 15,000 (1034.19) | 0.250 (6.35) | 1.70 | 3.56 (90.42) | 3.00 (76.20) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) |
| SWB8800 | SW500 | 10,000 (689.46) | 0.375 (9.53) | 3.40 | 4.18 (106.17) | 3.50 (88.90) | 0.53 (13.46) | 0.93 (23.62) | 1.38 (35.05) |
| **Ball Type Excess Flow Valves** | | | | | | | | | |
| SWK2202 | W125 | 15,000 (1034.19) | 0.094 (2.39) | 0.012† | 2.25 (57.15) | 1.88 (47.75) | 0.31 (7.87) | 0.50 (12.70) | 0.63 (15.88) |
| SWK4402 | SW250 | 15,000 (1034.19) | 0.188 (4.78) | 0.037† | 3.18 (80.77) | 2.56 (65.02) | 0.44 (11.18) | 0.63 (16.00) | 0.81 (20.57) |
| SWK6602 | SW375 | 15,000 (1034.19) | 0.250 (6.35) | 0.104† | 3.56 (90.42) | 3.00 (76.20) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) |
| SWK8802 | SW500 | 10,000 (689.46) | 0.375 (9.53) | 0.212† | 4.18 (106.17) | 3.50 (88.90) | 0.53 (13.46) | 0.93 (23.62) | 1.38 (35.05) |
| **O-Ring Type Excess Flow Valves** | | | | | | | | | |
| SWK04400 | SW-250 | 15,000 (1034.19) | 0.188 (4.78) | 3†† | 3.12 (79.25) | 2.56 (65.02) | 0.44 (11.18) | 0.63 (16.00) | 0.81 (20.57) |
| SWK06600 | SW-375 | 15,000 (1034.19) | 0.250 (6.35) | 5†† | 3.50 (88.90) | 3.00 (76.20) | 0.53 (13.46) | 0.75 (19.05) | 1.00 (25.40) |
| SWK08800 | SW-500 | 10,000 (689.46) | 0.375 (9.53) | 10†† | 4.31 (109.47) | 3.50 (88.90) | 0.53 (13.46) | 0.93 (23.62) | 1.38 (35.05) |

Note:
All check valves are furnished complete with connection components unless otherwise specified.
The 1/16" Tubing System is a complete system for use with all 1/8" components for pressure to 15,000 psi (1034 bar). Consult factory.
† - Check Flow** - water, GPM
†† - Check Flow** - CFM, nitrogen @ 500 psi (34.47 bar), RT
** - For flow using alternate fluids, consult Parker Autoclave Engineers.

*Maximum pressure rating is based on the lowest rating of any component.
Actual working pressure may be determined by tubing pressure rating, if lower.

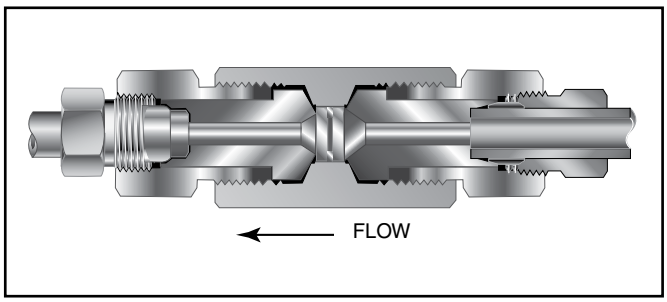
*All dimensions for reference only and subject to change.*
For prompt service, Parker Autoclave stocks select products. Consult your local representative.

**Figure 1**



## Pressures to 15,000 psi (1034 bar)

### Dual-Disc Line Filters

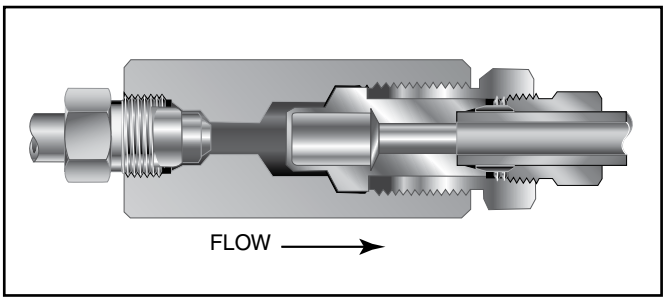



Dual-Disc Line Filters are utilized in numerous industrial, chemical processing, aerospace, nuclear and other applications. With the dual-disc design, large contaminant particles are trapped by the upstream filter element before they can reach and clog the smaller micron-size downstream element. Filter elements can be easily replaced.

**Materials:** 316 Stainless Steel: Body, covers and gland nuts. Filters: 316L Stainless Steel.

**Filter Elements:** Downstream/upstream micron size 35/65 is standard. 5/10 or 10/35 also available when specified. Other element combinations available on special order.

### Cup-Type Line Filters




High Flow Cup-Type Line Filters are recommended in low pressure systems requiring both high flow rates and maximum filter surface area. Widely used in the industrial and chemical processing fields, the cup design offers as much as six times the effective filter area as compared to disc-type units. In addition, the filter elements can be quickly and easily replaced.

**Materials:** 316 Stainless Steel: Body, covers and gland nuts. Filter: 316L Stainless Steel.

**Filter Elements:** 300 Series Stainless Steel sintered cup. Standard elements available in choice of 5, 35 or 65 micron sizes. ***Note:*** *Filter ratings are nominal.*

***NOTE 1:*** *All filters furnished complete with connection components unless otherwise specified. All dimensions for reference only and subject to change. For optional materials, see Needle Valve Options section*

***NOTE 2:*** *Parker Autoclave Engineers disc and cup type filters are designed to filter small amounts of process particles. It is recommended that all fluids are thoroughly cleaned prior to entering the higher pressure system.*

***NOTE 3:*** *Special material filters may be supplied with four flats in place of standard hex.*

***NOTE 4:*** *Pressure differential not to exceed 1,000 psi (69 bar) in a flowing condition.*

***NOTE 5:*** *Larger micron size filter element is installed on the upstream (inlet) side.*

# Low Pressure Line Filters

| Catalog Number | Pressure Rating psi (bar)* | Orifice inches (mm) | Micron Size** | Connection Size and Type | Effective Filter Element Area in.$^2$ (mm$^2$) | Dimensions - inches (mm) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | A | B | C | D Typical | Hex |

## Dual-Disc Line Filters

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SLF2200 | 15,000 (1034.19) | .094 **(2.39)** | 35/65 | W125 | .06 **(38.70)** | 2.31 **(58.67)** | 1.25 **(31.75)** | 0.31 **(7.87)** | .50 **(12.70)** | 0.62 **(15.74)** |
| SLF2200-5/10 | | | 5/10 | | | | | | | |
| SLF2200-10/35 | | | 10/35 | | | | | | | |
| SLF4400 | 15,000 (1034.19) | .125 **(3.18)** | 35/65 | SW250 | .15 **(96.77)** | 2.94 **(75.56)** | 1.68 **(42.67)** | 0.44 **(11.17)** | .63 **(15.88)** | 0.81 **(20.57)** |
| SLF4400-5/10 | | | 5/10 | | | | | | | |
| SLF4400-10/35 | | | 10/35 | | | | | | | |
| SLF6600 | 15,000 (1034.19) | .125 **(3.18)** | 35/65 | SW375 | .15 **(96.77)** | 2.94 **(75.56)** | 1.68 **(42.67)** | 0.53 **(13.46)** | .75 **(19.05)** | 1.00 **(25.40)** |
| SLF6600-5/10 | | | 5/10 | | | | | | | |
| SLF6600-10/35 | | | 10/35 | | | | | | | |
| SLF8800 | 10,000 (689.46) | .188 **(4.78)** | 35/65 | SW500 | .25 **(161.29)** | 3.56 **(90.42)** | 1.94 **(49.27)** | 0.53 **(13.46)** | .93 **(23.62)** | 1.18 **(29.97)** |
| SLF8800-5/10 | | | 5/10 | | | | | | | |
| SLF8800-10/35 | | | 10/35 | | | | | | | |

## Cup-Type Line Filters

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SWF4-5 | 15,000 (1034.19) | .188 **(4.78)** | 5 | SW250 | 0.81 **(522.57)** | 3.18 **(80.77)** | 2.56 **(65.02)** | 0.44 **(11.17)** | 0.63 **(15.88)** | 0.81 **(20.57)** |
| SWF4-35 | | | 35 | | | | | | | |
| SWF4-65 | | | 65 | | | | | | | |
| SWF6-5 | 15,000 (1034.19) | .312 **(7.92)** | 5 | SW375 | 0.81 **(522.57)** | 3.56 **(90.42)** | 3.00 **(76.20)** | 0.53 **(13.46)** | 0.75 **(19.05)** | 1.00 **(25.40)** |
| SWF6-35 | | | 35 | | | | | | | |
| SWF6-65 | | | 65 | | | | | | | |
| SWF8-5 | 10,000 (689.46) | .438 **(11.13)** | 5 | SW500 | 1.53 **(987.09)** | 4.18 **(106.17)** | 3.50 **(88.90)** | 0.53 **(13.46)** | .93 **(23.62)** | 1.38 **(35.05)** |
| SWF8-35 | | | 35 | | | | | | | |
| SWF8-65 | | | 65 | | | | | | | |

** Larger micron size filter element is installed on upstream (inlet) side. All filters furnished complete with connection components unless otherwise specified.

*Other micron sizes available on special order. Change last digits of the catalog number accordingly. For optional materials, see Needle Valve Options section.*

*The 1/16" Tubing System is a complete system for use with all 1/8" components for pressure to 15,000 psi (1034 bar). Consult factory.*

*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower.

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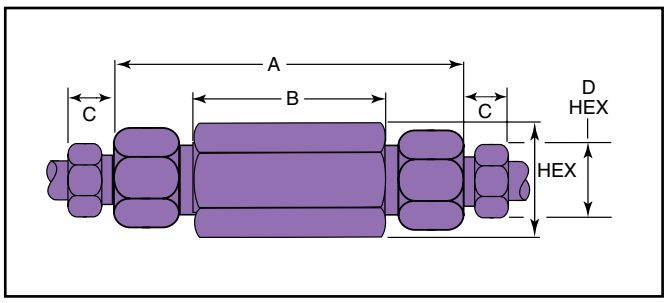
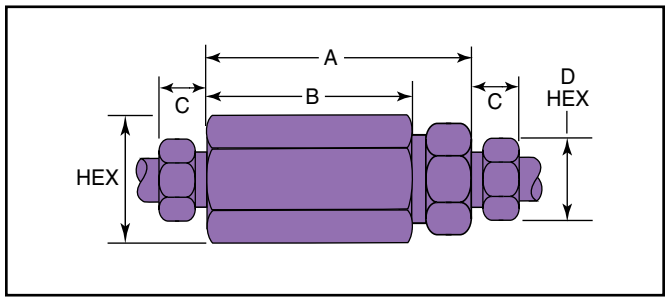
## Dual-Disc Line Filters




## Cup-Type Line Filters



**WARNING**

**FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE**.

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02-0123SE January2013

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**Caution!** Do not mix or interchange parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

**Caution!** Parker Autoclave Engineers Valves, Fittings and Tools are not designed to work with common commercial instrument tubing and will only work with tubing built to Parker Autoclave Engineers AES Specifications. Failure to do so will void warranty.

**ISO-9001** Certified