Ball Valves

4-Way Series

Pressures to 10,000 psi (690 bar)

Parker Autoclave Engineers high-pressure ball valves have been designed to provide superior quality for maximum performance within a variety of valve styles, sizes, and process connections. Some of the more unique design innovations include an integral one-piece trunnion mounted style ball and stem that eliminates the shear failure common in two piece designs, re-torqueable seat glands that result in longer seat life, and a low friction stem seal that reduces actuation torque and enhances cycle life.

These ball valves can also be modified to incorporate the use of special materials, seals for high temperature applications, subsea models, and valve actuators.

When it comes to high-pressure applications, these ball valves with the associated high-pressure components, provide the critical performance demanded by the high pressure market.

Ball Valve Features:

- One-piece, trunnion mounted style, stem design eliminates shear failure found in two piece designs and reduces the effects of side loading.
- Re-torqueable seat glands for longer seat life.
- Carbon filled PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- Full-port flow path minimizes pressure drop.
- 316 cold worked stainless steel construction.
- Low friction pressure assisted graphite filled PTFE stem seal increases cycle life and reduces operating torque.
- Quarter turn crossover, and the half turn four way switching models available.
- Viton o-rings for operation from 0°F (-17.8°C) to 400°F (204°C).
- Optional o-rings available for high-temperature applications.
- Optional wetted materials.
- Wide selection of tube and pipe end fittings available.
- Electric and pneumatic actuator options.

Applications:

- Laboratories
- Test Stands
- Control Panels
- Chemical Research
- Pilot Plants
- Water Blast Pumping Unit
- High volume chemical injection skids.
### Pressures to 10,000 psi (690 bar) .375" (9.52mm) Orifice

<table>
<thead>
<tr>
<th>Connection</th>
<th>MAWP @ Room Temperature</th>
<th>Minimum Orifice inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW500</td>
<td>10,000 psi (690 bar)</td>
<td>.375 (9.52)</td>
</tr>
<tr>
<td>SF375CX20</td>
<td>10,000 psi (690 bar)</td>
<td>.203 (5.16)</td>
</tr>
<tr>
<td>SF562CX20</td>
<td>10,000 psi (690 bar)</td>
<td>.312 (7.92)</td>
</tr>
<tr>
<td>SF750CX20</td>
<td>10,000 psi (690 bar)</td>
<td>.375 (9.52)</td>
</tr>
<tr>
<td>1/4” NPT</td>
<td>10,000 psi (690 bar)</td>
<td>.375 (9.52)</td>
</tr>
<tr>
<td>3/8” NPT</td>
<td>10,000 psi (690 bar)</td>
<td>.375 (9.52)</td>
</tr>
<tr>
<td>1/2” NPT</td>
<td>10,000 psi (690 bar)</td>
<td>.375 (9.52)</td>
</tr>
</tbody>
</table>

Valve Cv=2.5

MAWP: Maximum Allowable Working Pressure

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### Ordering Procedure

For complete information on available end connections and material options, see next page. 4-way ball valves are furnished complete with tube or pipe connections.

Typical catalog number: **4B 6 S 10 M9**

- **4B**: 4-way crossover
- **4BS**: 4-way switching
- **6**: Ball Orifice Diameter - 6-3/8” (9.52 mm)
- **S**: Material - S - 316SS (For material options contact factory)
- **10**: Pressure (X 1000 psi)
- **M9**: End Connection - M9 - SF562CX20 (See Chart on next page)
- **XXX**: Options - HT - High Temperature (Ball Valve Actuators, see next page)

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NOTE: Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.
## End Connection Options

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>End Connection Number</th>
<th>Connection</th>
<th>Room Temperature</th>
<th>Hex Inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B6S10L8</td>
<td>L8</td>
<td>SW500</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10L8</td>
<td>L8</td>
<td>SW500</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10M6</td>
<td>M6</td>
<td>SF375CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10M6</td>
<td>M6</td>
<td>SF375CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10M9</td>
<td>M9</td>
<td>SF562CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10M9</td>
<td>M9</td>
<td>SF562CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
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<tr>
<td>4B6S10M12</td>
<td>M12</td>
<td>SF750CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10M12</td>
<td>M12</td>
<td>SF750CX20</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10P4</td>
<td>P4</td>
<td>1/4&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10P4</td>
<td>P4</td>
<td>1/4&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10P6</td>
<td>P6</td>
<td>3/8&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10P6</td>
<td>P6</td>
<td>3/8&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
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</tr>
<tr>
<td>4B6S10P8</td>
<td>P8</td>
<td>1/2&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
</tr>
<tr>
<td>4B6S10P8</td>
<td>P8</td>
<td>1/2&quot; NPT</td>
<td>10,000 psi (690 bar)</td>
<td>1.38 (35.05)</td>
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</tbody>
</table>

MAWP: Maximum Allowable Working Pressure

See ball valve option/details section for end connection details, material, and high temperature options.

## Ball Valve Options

### Pneumatic Actuator:
- AO - Air-to-open/Spring to close
- AC - Air-to-close/Spring to open
- AOC - Air-to-open-and-close (double action)

### Electric Actuator:
- E01 - 120 volt AC 50/60 Hz
- E02 - 220 volt AC 50/60 Hz
- E03 - 24 VDC

### Actuator Operating Temperature:
- Pneumatic: 0°F to 175°F (-17°C to 79°C)
- Electric: 0°F to 160°F (-17°C to 71°C)

Note: Consult factory for additional actuator information.

### High Temperature Option:
- HT for media temperatures up to 500°F (260°C)
- HT - for media temperature up to 500°F (260°C)

## Valve Maintenance

### Repair Kits:
- Add “R” to the front of valve catalog first 4 (5 for switching) numbers for proper repair kit.
  (Example: R4B6S)

Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

All general terms and conditions of sale, including limitations of our liability, apply to all products and services sold.
Ball Valve Dimensions - inches (mm)

<table>
<thead>
<tr>
<th>VALVE MODELS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Block Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B6S/4BS6S</td>
<td>5.81 (147.57)</td>
<td>6.79 (172.47)</td>
<td>3.50 (88.90)</td>
<td>5.13 (130.18)</td>
<td>10.25 (260.35)</td>
<td>1.63 (41.28)</td>
<td>2.63 (66.68)</td>
<td>1.13 (33.34)</td>
<td>0.41 (10.32)</td>
<td>0.28 (7.11)</td>
<td>2.97 (75.39)</td>
<td>3.50 (88.90)</td>
</tr>
</tbody>
</table>

Ball Valve Panel Mounting Dimensions - inches (mm)

<table>
<thead>
<tr>
<th>VALVE MODELS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<th>J</th>
<th>K</th>
<th>L</th>
<th>Block Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B6S/4BS6S</td>
<td>2.63 (66.68)</td>
<td>1.31 (33.34)</td>
<td>1.88 (47.63)</td>
<td>0.28 (7.11)</td>
<td></td>
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</tr>
</tbody>
</table>

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