

Ball Valves

4-Way Series

Pressures to 10,000 psi (690 bar)

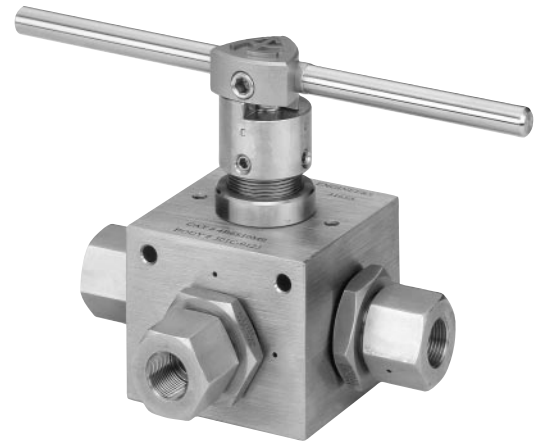
Autoclave Engineers high-pressure ball valves have been designed to provide superior quality for maximum performance within a variety of valve styles, sizes, and process connections. Some of the more unique design innovations include an integral one-piece trunnion mounted style ball and stem that eliminates 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.

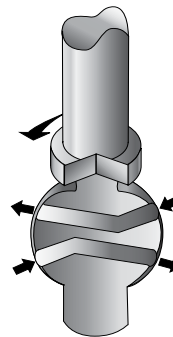
When it comes to high-pressure applications, these ball valves with the associated high-pressure components, provide the critical performance demanded by the high pressure market.

AE Ball Valve Features:

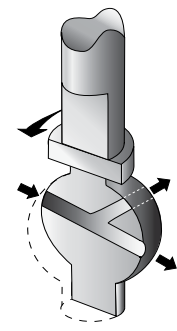
- One-piece, trunnion mounted style, stem design eliminates shear failure found in two piece designs and reduces the effects of side loading.
- Re-torqueable seat glands for longer seat life.
- PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- Full-port flow path minimizes pressure drop.
- 316 cold worked stainless steel construction.
- Low friction pressure assisted graphite filled Teflon 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.



Flow Configuration



4-Way
Crossover
90° Turn



4-Way
Switching
180° Turn

Applications:

- Laboratories
- Test Stands
- Control Panels
- Chemical Research
- Pilot Plants
- Water Blast Pumping Unit
- High volume chemical injection skids.

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Ball Valves - 4-Way Series

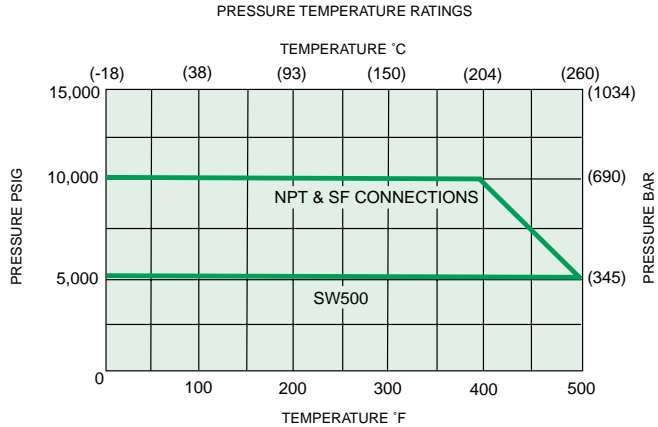
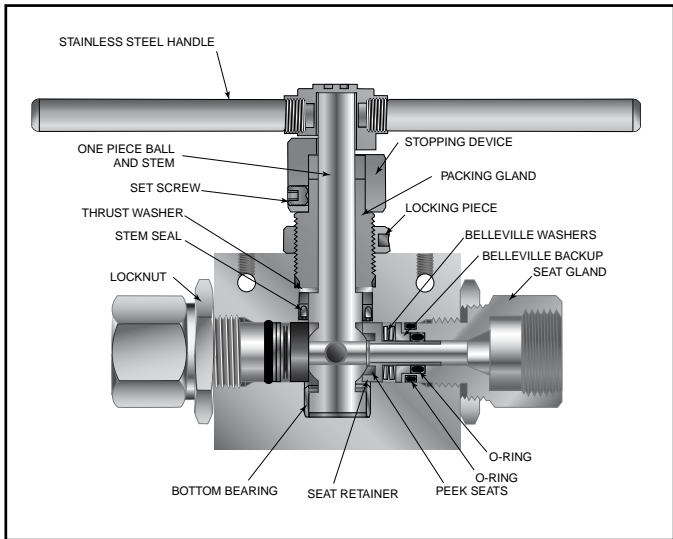
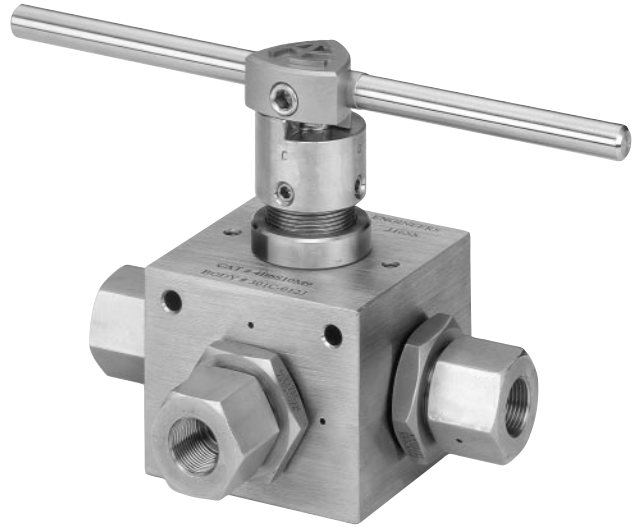
Ball Valves - 4-Way Series (3/8" orifice)

Pressures to 10,000 psi (690 bar) .375" (9.52mm) Orifice

| Connection | MAWP @ Room Temperature | Minimum Orifice inches(mm) |
|------------|-------------------------|----------------------------|
| SW500 | 10,000 psi (690 bar) | .375 (9.52) |
| SF375CX20 | 10,000 psi (690 bar) | .203 (5.16) |
| SF562CX20 | 10,000 psi (690 bar) | .312 (7.92) |
| SF750CX20 | 10,000 psi (690 bar) | .375 (9.52) |
| 1/4" NPT | 10,000 psi (690 bar) | .375 (9.52) |
| 3/8" NPT | 10,000 psi (690 bar) | .375 (9.52) |
| 1/2" NPT | 10,000 psi (690 bar) | .375 (9.52) |

Valve C_v=2.5

MAWP: Maximum Allowable Working Pressure



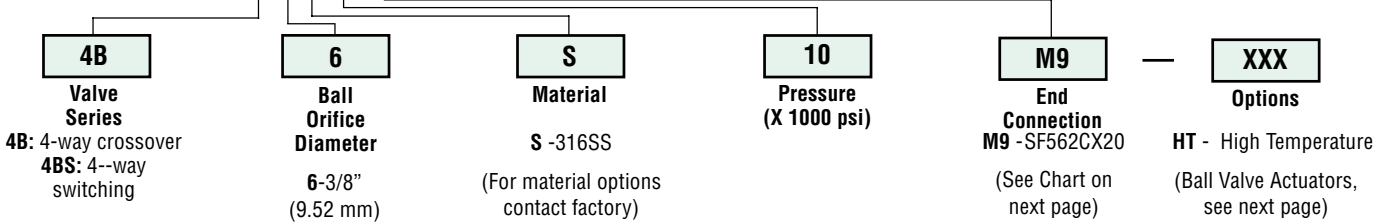
*pressure ratings are determined by the end connections chosen, see chart.

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

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**



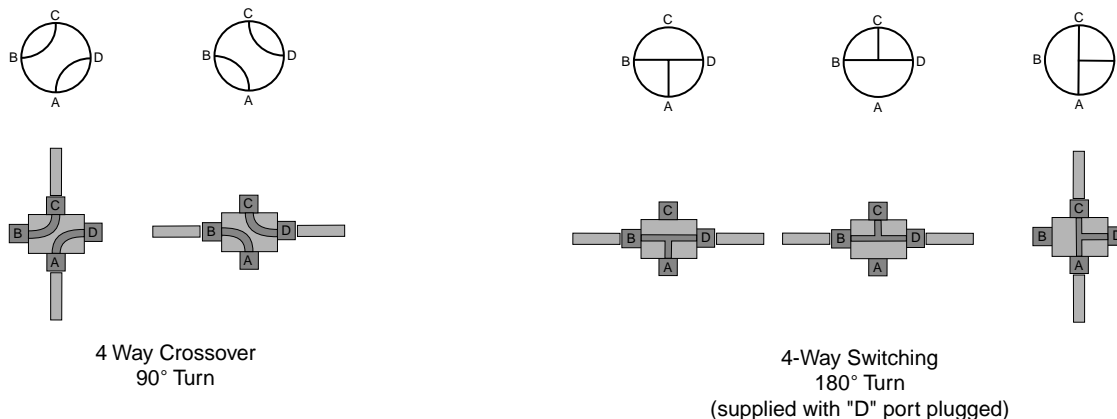
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End Connection Options

| Catalog Number | End Connection Number | Connection | MAWP @ Room Temperature | Hex Inches(mm) |
|-------------------------|-----------------------|------------|-------------------------|----------------|
| 4B6S10L8 4BS6S10L8 | L8 | SW500 | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10M6 4BS6S10M6 | M6 | SF375CX20 | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10M9 4BS6S10M9 | M9 | SF562CX20 | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10M12 4BS6S10M12 | M12 | SF750CX20 | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10P4 4BS6S10P4 | P4 | 1/4" NPT | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10P6 4BS6S10P6 | P6 | 3/8" NPT | 10,000 psi (690 bar) | 1.38 (35.05) |
| 4B6S10P8 4BS6S10P8 | P8 | 1/2" NPT | 10,000 psi (690 bar) | 1.38 (35.05) |

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
- AOC - Air-to-open-and-close (double action)

Electric Actuator -

- EO1 - 120 volt AC 50/60 Hz
- EO2 - 220 volt AC 50/60 Hz

Actuator Operating Temperature:

- Pneumatic: -20°F to 175°F (-29°C to 79°C)
- Electric: -20°F to 160°F (-29°C to 71°C)

Note: Consult factory for additional actuator information.

High Temperature Option:

- HT - for media temperature up to 500°F (260°C)

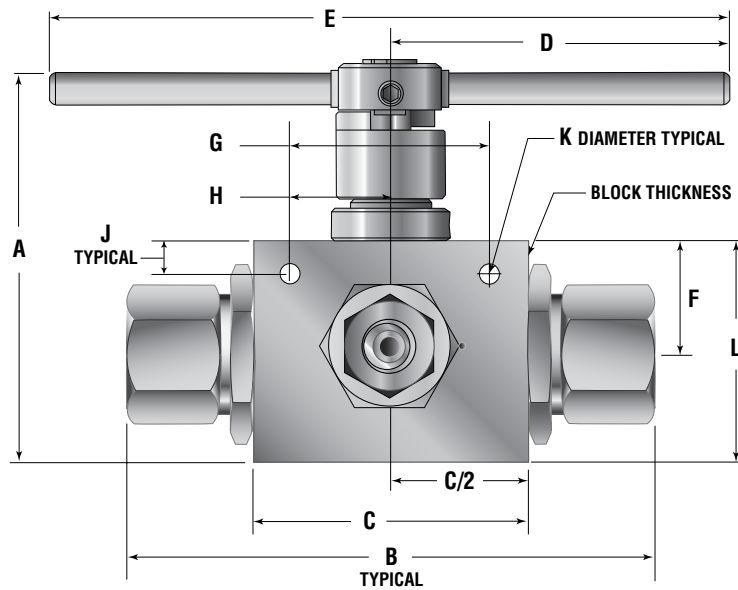
Valve Maintenance

Repair Kits: add "R" to the front of valve catalog first 4 (5 for switching) numbers for proper repair kit.
(Example: **R4B6S**)

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

Ball Valve Dimensions - inches (mm)

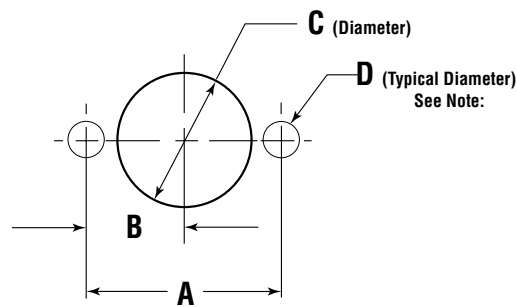
| VALVE MODEL | |
|------------------------|-------------------|
| 4B6S/4BS6S | |
| A | 5.78 (146.81) |
| B | 6.67 (169.42) |
| C | 3.50 (88.90) |
| D | 5.13 (130.18) |
| E | 10.25 (260.35) |
| F | 1.63 (41.28) |
| G | 2.63 (66.68) |
| H | 1.13 (33.34) |
| J | 0.41 (10.32) |
| K | 0.28 (7.11) |
| L | 2.97 (75.39) |
| Block Thickness | 3.50 (88.90) |



Ball Valve Panel Mounting Dimensions - inches (mm)

| VALVE MODELS | |
|--------------|-----------------|
| 4B6S/4BS6S | |
| A | 2.63 (66.68) |
| B | 1.31 (33.34) |
| C | 1.78 (45.21) |
| D | 0.28 (7.11) |

Note: Body mounting 1/4" - 20 threads



All dimensions are for reference only and are subject to change without notice.

! WARNING !

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