



# Operation and Maintenance Manual

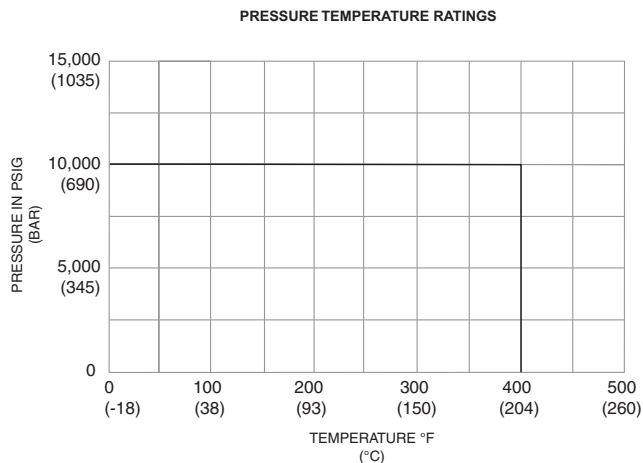
## AE High Pressure Ball Valve Series 2B16

### Section 1.0

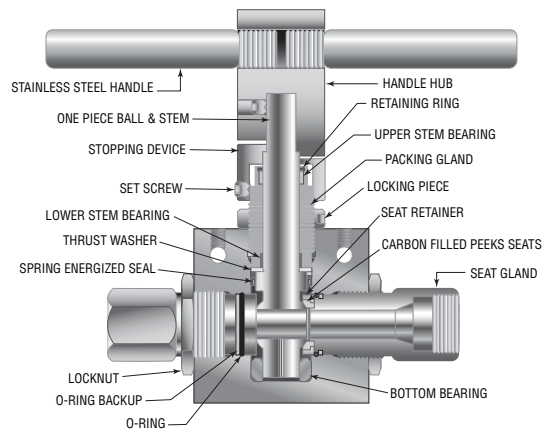
#### Description

The AE high pressure ball valve can be used at pressures up to 10,000 psi (690 bar), depending on the tubing connections and operating temperatures.

The maximum operating media pressure at room temperature is etched on the valve body. The curve shown below can be used to find the maximum operating pressure at various media temperatures.



**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 INSPECTION SHOULD BE MADE TO DETECT ANY DETERIORATION AND O-RINGS REPLACED AS REQUIRED.



### Section 2.0

#### Installation

The ball valve can be installed with the flow in either direction.

Refer to the instruction section of the Parker Autoclave Engineers' Valve, Fitting and Tubing Catalog for proper tubing connection installation.

Refer to the manufacturer's literature when using air or electric operators.

### Section 3.0

#### Precautions

Hold the seat glands with a wrench when tightening or loosening the tubing connections.

**DO NOT OPERATE THE VALVE WITH MORE THAN 80 FT-LBS APPLIED TO THE SEAT GLANDS.**

Ball valves can trap pressurized media inside the valve. Relieve this pressure by turning the handle to the "half-open" position before disassembling the valve.

## Section 4.0

### Maintenance

Routine maintenance consists of tightening the seat glands periodically to compensate for seat wear. With no pressure in the valve, use the following procedures:

#### 4.1 Seat Glands

- 4.1.1 While holding the seat glands and the body secure, loosen the tubing connections.
- 4.1.2 Loosen locknuts from seat glands.
- 4.1.3 With the handle in the “Full Open” position, gradually tighten the glands alternating from one gland to the other in increments of 10 ft-lbs until 80 ft-lbs has been reached.

**DO NOT APPLY MORE THAN 80 FT-LBS**

- 4.1.4 While holding seat gland, secure with a wrench, tighten seat gland locking pieces.

## Section 5.0

### Assembly

#### General Assembly Procedure 1” Port 2-Way Ball Valve

- 1. Insert the bottom bearing into the bottom of the body.
- 2. Assemble PEEK bearing into packing gland and secure by installing retaining ring.
- 3. Using packing gland, delicately slide the stem seal and backup onto the upper shoulder of stem and lubricate the seal with o-ring grease.

- 4. Generously lubricate both sides of the thrust washer with Jet Lube MP-50 and assemble the washer onto the stem behind the stem seals backup ring.
- 5. Lubricate the packing gland threads with Jet Lube MP-50 and slip the packing gland over the stem.
- 6. Lubricate the bottom bearing area and ball of the stem with o-ring grease.
- 7. With the ball hole parallel to the side ports, insert the stem assembly into the body center opening.
- 8. Screw the packing gland into the body until the opening of the ball is aligned properly. *Note: Stem is free to move downward so be careful not to push stem itself.*
- 9. When ball is aligned, back the packing gland out two complete turns while holding the stem in place, making sure the stem does not rotate.
- 10. Assemble locking pieces onto the seat glands and lubricate the seat gland threads with Jet Lube MP-50.
- 11. Assemble the o-ring backup ring onto the seat gland groove.
- 12. Assemble the o-ring onto the seat gland groove in front of the backup.
- 13. Lubricate both the seal and backup outside the diameters with o-ring grease.
- 14. Set aside seat glands.
- 15. Place the seat assemblies that have already been pre-compressed inside the retainers over the nose of the seat gland.
- 16. Screw the seat glands into the body. Hand tight on both sides.
- 17. Keeping the ball in the full open position, torque seat glands to 80 ft-lb in 10 ft-lb alternating increments.
- 18. While holding seat glands in place with a wrench, securely tighten locking pieces on the seat glands against the body with a spanner wrench.
- 19. Screw packing gland snug into body with a small wrench. **DO NOT OVER TIGHTEN. STOP WHEN YOU FEEL PACKING GLAND STOP ON STEM/THRUST WASHER.**
- 20. Assemble locking piece onto packing gland against the body using a spanner wrench.
- 21. Position stopping device loosely on top of packing gland and attach the hub and flat screw onto the flat of the stem. Turn stopping device clockwise until it hits the flat on the hub. Tighten the (2) set screws on the stopping device onto the packing gland.
- 22. Screw the two handles into the hub.

#### 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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