



# Operation and Maintenance Manual

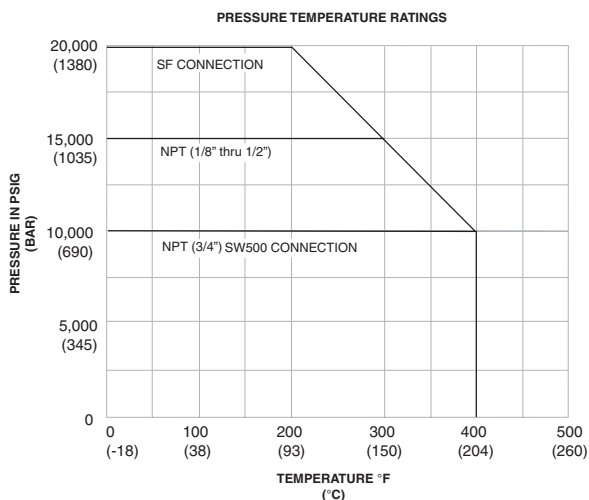
## AE High Pressure Ball Valve Series 2B6

### Section 1.0 Description

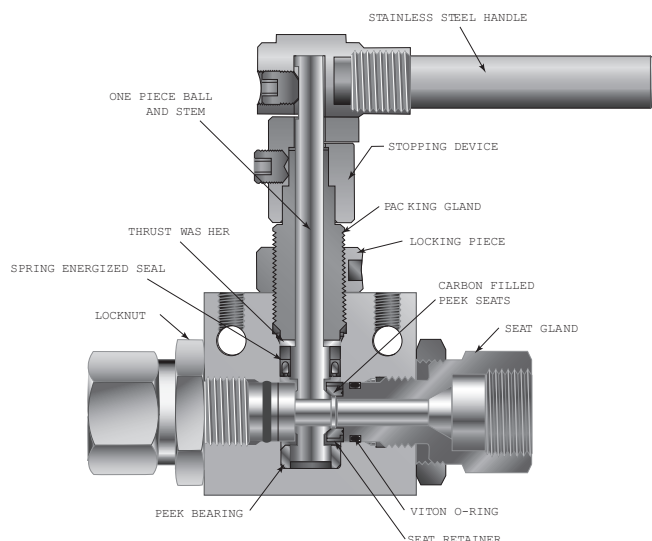
The AE high pressure ball valve can be used at pressure up to 20,000 psi (1380 bar) depending on the tubing connections and operating temperatures.

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.

### Pressure/Temperature Curve



**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 DETEIORATION 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 Autoclave Engineers' Valve, Fitting and Tubing Catalog for proper tubing connection installation.

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

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## 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 150 IN. LBS.(17 Nm) 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 locknut 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 25 in. lbs. (2.8 Nm) until 150 in. lbs. (17 Nm) has been reached.

**DO NOT APPLY MORE THAN 150 IN. LBS. (17 Nm)**

4.1.4 While holding seat gland, secure with a wrench, tighten seat gland locknuts.

## Section 5.0

### Assembly

General Assembly Procedure 3/8” Port 2-Way Ball Valve

1. Drop bottom bearing into center opening of the body.
2. Using packing gland, delicately slide the stem seal and backup onto the upper shoulder of stem. Lubricate the OD of seal with O-ring grease.
3. With the stem flat to the left, assemble packing gland with stem & stem seal with backup into the body center opening until the seal assembly fully enters the bore of the body.
4. Remove packing gland only.
5. Lubricate both sides of the thrust washer and packing gland threads with Jet Lube and slip the thrust washer onto the stem.
6. With the stem flat to the left, screw the packing gland into the body center opening until the opening of the ball is aligned properly. Back packing gland out one turn.
7. Assemble seat gland locknut onto seat gland.
8. Install O-rings onto the seat glands and lube the O-rings with O-ring grease.
9. Press seats into seat retainers and press these seat assemblies firmly onto the nose of the seat glands.
10. Lubricate seat gland threads with Jet Lube and insert seat glands into body hand tight on both sides.
11. Keeping ball in full open position, pre-torque seat glands to 30 ft. lbs. (41 Nm) in 10 ft. lb. (13.5 Nm) alternating increments.
12. Back seat glands off on both sides and retorque to 150 in. lbs. (17 Nm) in 25 in. lbs. (2.8 Nm) alternating increments.
13. Tighten seat gland locknuts to the valve body while holding seat glands with wrench.
14. Hand tighten packing gland.
15. Assemble locking piece onto packing gland and tighten locking piece to body with a spanner wrench.
16. Position stopping device loosely on top of packing gland and attach the handle onto the flat of the stem. Turn stopping device clockwise until it hits the handle hub. Tighten the (2) set screws on the stopping device onto the packing gland.

#### 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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