



# BALL VALVE OPERATING AND MAINTENANCE INSTRUCTIONS

- 1.0 The HiP ball valve can be used to pressures up to 20,000 psi depending on the tubing connections and temperature.
- 2.0 Operation
  - 2.1 The ball valve can be installed with flow in either direction.
  - 2.2 Hold the seat glands with a wrench when tightening or loosening the tubing connections.
  - 2.3 Do not operate the valve with more than 50 in·lb of torque applied to the seat glands.
  - 2.4 Pressurized media can become trapped inside the valve. This can be relieved by turning the handle to the "half-open" position before disassembling the valve.
- 3.0 Maintenance
  - 3.1 Routine maintenance consists of retightening the seat glands to compensate for seat and packing wear.
  - 3.2 With no pressure in the valve, use the following procedure.
  - 3.3 Packing gland
    - 3.3.1 Loosen the setscrews in the stop collar and remove the screw from the locking device.
    - 3.3.2 Tighten the packing gland to 40 ft·lb.
    - 3.3.3 Reposition the stop collar and locking device.
  - 3.4 Seat glands
    - 3.4.1 While securely holding the seat glands and body, loosen the tubing connections and jam nuts.
    - 3.4.2 With the handle in the closed position, hand tighten the packing both seat glands simultaneously.

**High Pressure Equipment Company**

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- 3.4.3 Gradually tighten the seat glands alternating from one gland to the other, in increments of 10 in·lb until 50 in·lb has been reached. Do not exceed 50 in·lb.
- 3.4.4 Tighten the jam nuts to 40 ft·lb while holding the body and seat glands in a wrench or vice. Securing the body and seat glands will prevent over tightening the ball seats.

## 4.0 Assembly

### 4.1 Seat glands

- 4.1.1 Lubricate all threads with an anti-seize lubricant.
- 4.1.2 Assemble the jam nut onto the seat gland. Assemble the O-ring onto the seat gland and press the ball seat onto the seat gland. Adjust the jam nut to the undercut on the seat gland and assemble into the body until the jam nut contacts the body.
- 4.1.3 Place the ball in the body with the stem slot facing the stem opening.
- 4.1.4 Assemble the stem assembly into the valve and turn the handle to the open position.
- 4.1.5 Assemble the other seat gland into the body until it contacts the ball.
- 4.1.6 Turn the handle to the closed position. Gradually tighten the seat glands alternating from one to the other, in increments of 20 in·lb, until 150 in·lb has been reached.
- 4.1.7 Simultaneously loosen both seat glands, then finger tighten both glands.
- 4.1.8 Gradually tighten the seat glands, alternating from one to the other, in increments of 10 in·lb until 50 in·lb has been reached.
- 4.1.9 Tighten the jam nuts to 40 ft·lb while holding the body and seat glands in a wrench or vice to prevent overtightening the ball seats.

### 4.2 Stem and packing

- 4.2.1 Lubricate all threads with an anti-seize lubricant.
- 4.2.2 Assemble the bearing washer, bottom washer, bottom washer, two packing rings, top washer and packing gland all onto the stem.

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- 4.2.3 Place the ball into the valve body.
- 4.2.4 Insert the stem assembly into the valve body. Lift up on the stem while tightening the packing gland to 40 ft-lb.
- 4.2.5 Place the locking device on the packing gland and secure with the set screw.
- 4.2.6 Place the handle stop collar onto the stem and tighten the set screw in the handle.
- 4.3 Stop collar
  - 4.3.1 Turn the handle to the open position.
  - 4.3.2 Rotate the handle stop clockwise until the pin in the handle contacts the stop collar, then tighten both set screws.

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