



High Pressure Equipment Company

Ball Valve Operating and Maintenance Instructions

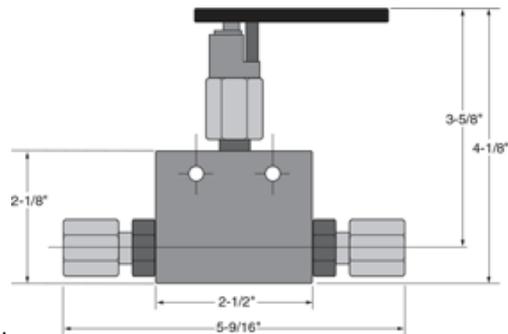


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Ball Valve Information

Description:

High Pressure Equipment offers two styles of ball valves (free floating and trunion) to provide effective shut-off of liquid or gas flow. Two-way ball valves offer complete shut-off with a convenient 1/4 turn. Valve actuators are available for remote control of HiP ball valves. Virtually all metal components are stainless steel to insure consistent operation under even the most severe applications. Teflon packing provides reliable leak-free service up to 400°F. Other packings, including Polypak and Grafoil are available upon request.



Catalog No.	Tube Size	Conn*	Pressure Rating @RT	Minimum Orifice	C _v
15-16AF1	1/16"	AF1	15,000 psi	0.052	0.09
15-16AF2	1/8"	AF2	15,000 psi	0.094	0.20
10-16AF4	1/4"	AF4	10,000 psi	0.125	0.45
10-16AF6	3/8"	AF6	10,000 psi	0.250	2.70
20-16LF4	1/4"	LF4	20,000 psi	0.109	0.31
20-16LF6	3/8"	LF6	20,000 psi	0.203	1.70
20-16LF9	9/16"	LF9	20,000 psi	0.250	2.70
20-16HF2	1/8"	HF2	20,000 psi	0.062	0.12
20-16HF4	1/4"	HF4	20,000 psi	0.094	0.20
20-16HF6	3/8"	HF6	20,000 psi	0.125	0.45
20-16HF9	9/16"	HF9	20,000 psi	0.188	1.45
15-16NFA	1/8"	1/8" NPT	15,000 psi	0.250	2.70
15-16NFB	1/4"	1/4" NPT	15,000 psi	0.250	2.70
15-16NFC	3/8"	3/8" NPT	15,000 psi	0.250	2.70
15-16NFD	1/2"	1/2" NPT	15,000 psi	0.250	2.70

* Other connections available upon request. Consult factory.

Ball Valve Operating and Maintenance Instructions:

Ball Valve Seat Gland Assembly Instructions:

1. Lubricate all threads with an anti-seize lubricant.
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.
3. Place the ball in the body with the stem slot facing the stem opening.
4. Assemble the stem assembly into the valve and turn the handle to the open position.
5. Assemble the other seat gland into the body until it contacts the ball.
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.
7. Simultaneously loosen both seat glands, then finger tighten both glands.
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.
9. Tighten the jam nuts to 40 ft-lb while holding the body and seat glands in a wrench or vice to prevent over tightening the ball seats.

Ball Valve Stem and Packing Assembly Instructions:

1. Lubricate all threads with an anti-seize lubricant.
2. Assemble the bearing washer, bottom washer, two packing rings, top washer, and packing gland all onto the stem.
3. Place the ball into the valve body.
4. Insert the stem assembly into the valve body. Lift up on the stem while tightening the packing gland to 40 ft-lb.
5. Place the locking device on the packing gland and secure with the set screw.
6. Place the handle stop collar onto the stem and tighten the set screw in the handle.

Ball Valve Stop Collar Assembly Instructions:

1. Turn the handle to the open position.
2. Rotate the handle stop clockwise until the pin in the handle contacts the stop collar, then tighten both set screws.

Ball Valve Operation Instructions:

1. The ball valve can be installed with flow in either direction.
2. Hold the seat glands with a wrench when tightening or loosening the tubing connections.
3. Do not operate the valve with more than 50 in-lb of torque applied to the seat glands.
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.

Ball Valve Maintenance:

Routine maintenance consists of retightening the seat glands to compensate for seat and packing wear.

With no pressure in the valve, use the following procedure:

1. Packing Gland
 - a. Loosen the setscrews in the stop collar and remove the screw from the locking device.
 - b. Tighten the packing gland to 40 ft-lb.
 - c. Reposition the stop collar and locking device.
2. Seat Glands:
 - a. While securely holding the seat glands and body, loosen the tubing connections and jam nuts.
 - b. With the handle in the closed position, hand tighten both seat glands simultaneously.
 - c. 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.
 - d. 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.