MARWINVALVE
3170 Wasson Road • Cincinnati, OH 45209 USA
Phone 513-533-5600 • Fax 513-871-0105
marwin@richardsind.com • www.marwinvalve.com

I & M 9700 Series

Installation & Maintenance Instructions for Marwin 9700 Series Two-piece Seal Welded Ball Valves

Warning: Marwin Valve ball valves must only be used, installed and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person; continued operation may cause system failure or a general hazard.

Please read these instructions carefully!

Your Marwin Valve product will provide you with long, trouble-free service if it is correctly installed and maintained. Spending a few minutes now reading these instructions can save hours of trouble and downtime later. When making repairs, use only genuine Marwin Valve parts, available for immediate shipment from the factory.

Scope

This manual is intended as a guide to assist customers in the storage, installation, and maintenance of Marwin 9700 Series ball valves. Subsequent additions or special instructions will be provided for special valves, critical service or customer requirements.

Applicability

This manual is applicable to the 9700 Series Marwin two-piece seal welded ball valve.

Caution

To help prevent injury to personnel or damage to equipment, please read this section completely before performing any operations.

1. Valve pressure ratings are based on many variables, including valve series and size, as well as body, seat and bolt material. Verify that application does not exceed the pressure or temperature rating on the nameplate.
2. **Always** depressurize the line with the valve in the **open** position before disassembly. Cycle valve in depressurized line before removing valve.
3. Wear protective equipment and take appropriate precautions to safeguard against injury caused by the discharge of trapped fluids.
4. Use only Marwin recommended spare parts for maintenance.
5. To ensure safety and maintain warranty, never modify valve in any way without prior approval from Marwin.

Storage

A petroleum-based silicone-free oil is used as lubrication on all internal surfaces. This may be removed with a solvent if found objectionable. All valves are adequately packed in such a way as to avoid any possible damage during transport and storage.

Caution: if ball valves are not destined for immediate use, the following precautions should be taken:

1. If possible, leave the ball valves in their packing cases during the period of storage.
2. Ball valves must remain in open position during this time.
3. In order to prevent damage, protective plastic covers on valve ends should not be removed until immediately prior to installation.
4. It is advisable to store the valves in waterproof conditions. Ball valves should be protected to safeguard against humidity, moisture, dust, dirt sand, mud, salt spray and seawater.
5. All valves complete with actuators are to be stored in dry conditions.
6. Valves to be stored for a long period of time should be checked by the quality control personnel every six months; every three months when valves are automated.

Maintenance During Storage Period

- Internal surface should be inspected to check for dust or other foreign objects.
- Rust or dust must be removed by cleaning with proper solvent.
- After cleaning, ball valves must be lubricated with an adequate lubricant.
- Ball valves should be operated for at least two complete cycles before installing or returning to storage.

Installation

The ball valves may be installed in any position using standard pipe fitting practices.

Caution: Before installation of the valve:

1. Pipe must be free of tension both during and after installation.
2. Pipe must be flushed to clean dirt, welding residues, etc. which would damage ball or seats.
3. The valve should be kept in OPEN POSITION during installation and protective plastic covers must be removed only at the moment of installation.
4. Before shipment, the ball is lubricated with a petroleum-based silicone-free oil. This can be easily removed with an application compatible solvent if required.
5. Check that there is no trapped water between the ball and the body cavity. This can be removed by partially opening the valve, thereby exposing the cavity to the through port of the ball.
6. Special care should always be taken when installing automated ball valves that the ball is in the proper position.

■ Installation of Threaded-Ends

1. Unless otherwise specified, pipe threads are American National Standard Taper Pipe Threads (NPT) per ASME B1.20.1, and require that a pipe sealant be used. Use an anti-seize thread sealant to seal and prevent galling. Marwin recommends PTFE-based liquid sealant or Grafoil tape as thread sealants.

   NOTE: Use all pipe sealant products in accordance with the manufacturer's instructions and good piping practices.

2. To prevent distortion or damage to the valve, do not apply torque through the valve. When tightening valve, use wrench on the end nearest the pipe being tightened.
3. Always leak test the system before using.
4. After system reached operating temperature and pressure, check and adjust stem packing.

■ Installation of Welded-End Ball Valves (PEEK Seats Only)

NOTE: Extreme care must be used to ensure seats and seals are not damaged!

1. Inspect piping to be welded to valve for correct preparation and any damage.
2. Place valve in full open position
3. Wrap a rag that has been soaked with water around center of valve body and secure. Do not wet weld ends.
4. Tack weld one end in two spots.
5. Wait one minute, then tack weld the other end in two spots.
6. Confirm valve location, orientation, and clearance is acceptable.
7. Socket weld one end using appropriate wire / filler materials.
8. Allow to cool for at least 5 minutes.
9. Re-soak rag and re-wrap around center of valve body.
10. Repeat step 7 for opposite side.
11. Leak test the system before using.
12. After system reaches operating temperature and pressure, check and adjust stem packing.

Operation

Manual

1. Open and close the valve by turning the handle one-quarter turn (90°).
2. Valve is in open position when handle is in line with the pipe.
3. Valve is in closed position when the handle is perpendicular to the pipe.

Automated

Valves may be automated for remote operation and instrument controls. Marwin provides pneumatic and electric actuators for automation. Operation will be in accordance with Marwin Installation, Operation, and Maintenance Instructions for the relevant actuator.

For the 9700 Series, a mounting bracket and coupler is required when installing actuator. Because of the three-point mounting on the valve, split brackets should be mounted with the split against the actuator mounting surface to prevent the bracket from flexing. When an actuator is used, no stop plate is fitted to the valve since end stops are an integral part of the actuator.

See the 9700 Series bulletin for operating torques and actuator mounting dimensions.

Valve Inspection

1. Open and close the valve at least once to completely release the pressure from the valve body.
2. Remove valve from line.
3. Drain any trapped fluid from partially open valve.
4. Clean and examine the valve, paying particular attention to the visible ball surfaces as the valve is operated.
5. The surface of the ball should be free from any defect. If any are found, the valve should be replaced. Using a defective ball will be extremely detrimental to valve performance.
6. Light grease, compatible with line fluid, can be used on ball.
7. After completing the inspection, check that the valve operates smoothly by opening and closing it several times.
8. If pressure test facilities are available, test the ball valve to appropriate specifications.
   a) For stem packing leakage, see Maintenance, item 2
   b) For seat leakage, see Maintenance, item 3

Maintenance

Before starting maintenance, please read information contained in the ***Caution Section*** of the manual.

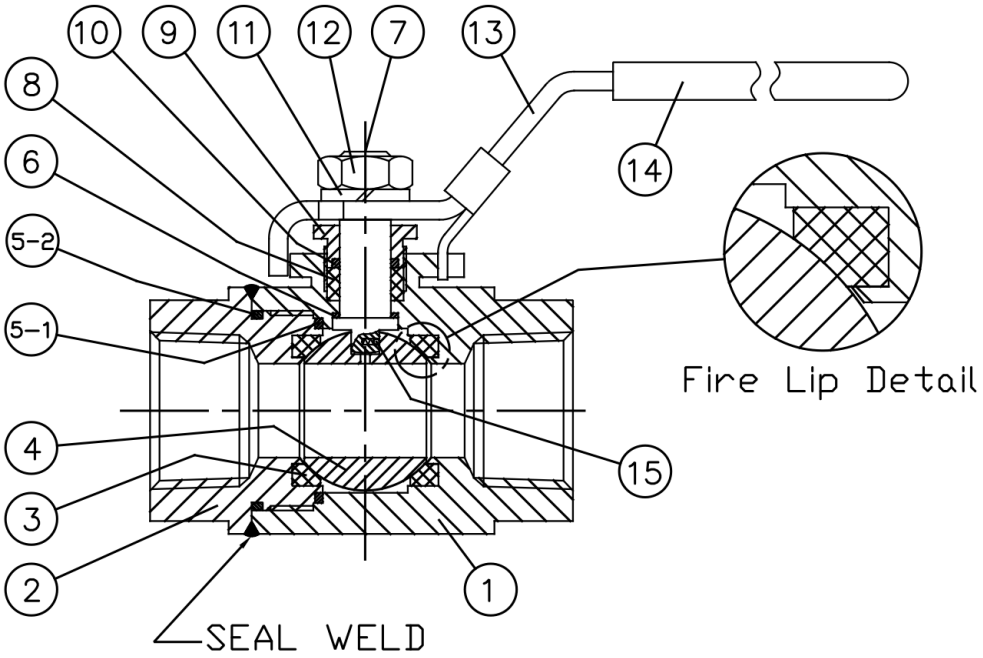
1. Ball valves, if correctly used, normally do not need any internal lubrication and maintenance. The 9700 series is seal welded, and maintenance is limited to adjusting and / or replacing packing by qualified personnel following the instructions of this manual.
2. Leakage in the stem packing area may be eliminated by increasing the torque on the gland nut (9) in one-quarter turn increments up to the value shown in the table. If leakage persists, replace stem packing.
3. If in-line or seat leakage occurs, check to be sure valve is in fully closed position. If leakage persists, the valve must be replaced

Valve Size	Gland Nut Hex	Gland Nut Torque
NPS	in.	In-lb (N.m)
1/4" F	11/16"	265 (30)
3/8" F	11/16"	265 (30)
1/2" F	11/16"	265 (30)
3/4"	3/4"	310 (35)
1" F	7/8"	400 (45)
1-1/4" F	1-3/16"	530 (60)
1-1/2" F	1-3/16"	530 (60)
2"	1-3/16"	530 (60)

Repair Parts

Replacement parts for this valve are limited to packing. Refer to the cross section view at the end of this manual. Please specify the specific valve number to ensure proper parts are ordered. Marwin Valve does not take responsibility for incorrectly ordered spare parts.

Exploded View



Item #	Part Name	Material
1	Body	CF8M / WCB
2	End Cap	CF8M / WCB
3	Seat	Delrin standard; PEEK optional
4	Ball	CF8M
5-1	Body Seal, Inner	Graphite
5-2	Body Seal, Outer	Viton
6	Thrust Washer, Stem	PTFE & Graphite
7	Stem	SS 316
8	Packing, Stem	Graphite
9	Gland Nut	SS 304
10	Thrust Washer, Packing	PTFE
11	Lock Washer	SS 304
12	Nut	SS 304
13	Handle	SS 304
14	Handle Sleeve	Vinyl
15	Anti-Static Device	SS 316 / SS 304

MARWINVALVE

3170 Wasson Road • Cincinnati, OH 45209 USA
Phone 513-533-5600 • Fax 513-871-0105
marwin@richardsind.com • www.marwinvalve.com