Jamesbury™ Value-line™ ball valves high-pressure 2-piece

Series 5H & 5HW

1/4" – 2" (DN 6 – 50)

Installation, maintenance and operating instructions

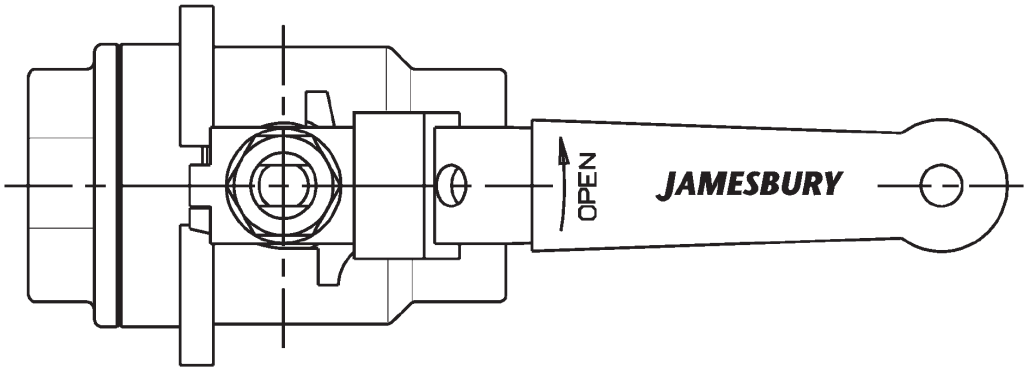


Table of contents

READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer’s representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

This instruction manual contains important information regarding the installation, operation and troubleshooting of the Jamesbury Series 5H and 5HW VALUE-LINE 1/4”-2” (DN 6 - 50) 2-Piece High Pressure Ball Valves. Please read these instructions carefully and save them for further reference.

WARNING

FOR YOUR SAFETY AND PROTECTION, IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVING THE VALVE FROM SERVICE OR BEFORE ANY DISASSEMBLY OF THE VALVE.

1. AT ALL TIMES DURING THIS ENTIRE PROCEDURE, KEEP HANDS OUT OF THE VALVE. A REMOTELY ACTUATED VALVE COULD CLOSE AT ANY TIME AND RESULT IN SERIOUS INJURY.
2. KNOW WHAT MEDIA IS IN THE LINE. IF THERE IS ANY DOUBT, CHECK WITH THE PROPER AUTHORITY.
3. WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE MEDIA INVOLVED.
4. DEPRESSURIZE THE LINE AND VALVE AS FOLLOWS:
   - **A.** OPEN THE VALVE AND DRAIN THE LINE.
   - **B.** CLOSE AND OPEN THE VALVE TO RELIEVE ANY RESIDUAL PRESSURE THAT MAY BE IN THE VALVE PRIOR TO REMOVING THE VALVE FROM SERVICE. LEAVE THE VALVE IN THE OPEN POSITION.
   - **C.** AFTER REMOVAL AND PRIOR TO ANY DISASSEMBLY, DRAIN ANY REMAINING MEDIA BY PLACING THE VALVE IN THE VERTICAL POSITION AND CAREFULLY OPEN AND CLOSE THE VALVE SEVERAL TIMES.
5. WHEN INSTALLING OR REMOVING PIPING FROM THE VALVE, PLACE A WRENCH ON THE BODY OR THE BODY CAP NEAREST THE END BEING WORKED. MAKE CERTAIN BODY CAP END OF THE VALVE DOES NOT TURN OUT OF THE VALVE BODY. (BODY/BODY CAP JOINT IS A RIGHT HAND THREAD).

WARNING:

DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS!

EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE MAY CAUSE DAMAGE AND LEAD TO UNCONTROLLED PRESSURE RELEASE. DAMAGE OR PERSONAL INJURY MAY RESULT.

WARNING:

SEAT AND BODY RATINGS!

THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATINGS. READ THE IDENTIFICATION PLATE AND CHECK BOTH RATINGS. THIS PRODUCT IS AVAILABLE WITH A VARIETY OF SEAT MATERIALS. SOME OF THE SEAT MATERIALS HAVE PRESSURE RATINGS THAT ARE LESS THAN THE BODY RATINGS. ALL OF THE BODY AND SEAT RATINGS ARE DEPENDENT ON VALVE TYPE AND SIZE, SEAT MATERIAL, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS!

WARNING:

BEWARE OF BALL MOVEMENT!

KEEP HANDS, OTHER PARTS OF THE BODY, TOOLS AND OTHER OBJECTS OUT OF THE OPEN FLOW PORT. LEAVE NO FOREIGN OBJECTS INSIDE THE PIPELINE. WHEN THE VALVE IS ACTUATED, THE BALL FUNCTIONS AS A CUTTING DEVICE. DISCONNECT ANY PNEUMATIC SUPPLY LINES, ANY ELECTRICAL POWER SOURCES AND MAKE SURE SPRINGS IN SPRING-RETURN ACTUATORS ARE IN THE FULL EXTENDED/RELAXED STATE BEFORE PERFORMING ANY VALVE MAINTENANCE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULTS IN DAMAGE OR PERSONAL INJURY!

2. TRANSPORTATION AND STORAGE

Check the valve and the accompanying devices for any damage that may have occurred during transport.

Store the valve carefully. Storage indoors in a dry place is recommended.

Do not remove the flow port protectors until installing the valve. Move the valve to its intended location just before installation. The valve is usually delivered in the open position.

If the valve(s) are to be stored for a long duration, follow the recommendations of IMO-S1.

3. INSTALLATION

The valve may be installed for flow in either direction. It is recommended, however, that a screwed valve be installed with the body cap facing upstream. Screwed end valves have NPT threads. To insure a leaktight joint, liberal use of a compatible pipe joint compound is necessary. Figure 351 and 356 valves may be installed for flow in either direction. Use standard piping practices when installing valves with threaded parts. When tightening the valve to the pipe, apply the wrench to the end nearest the pipe being worked. Adjust packing prior to installation. See MAINTENANCE Section of this IMO. (See **Figure 1**) Include compatible pipe fitting compound or PTFE tape.

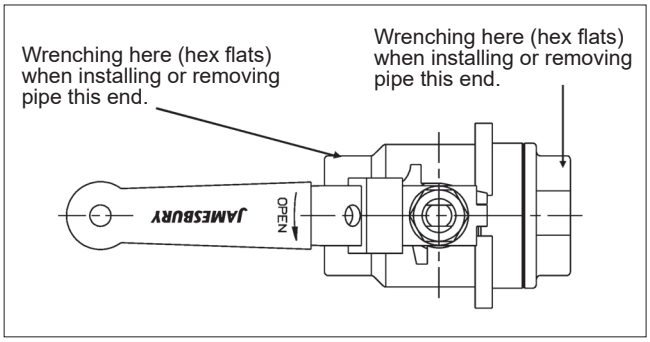


Figure 1.

4. MAINTENANCE

Periodically observe the valve to be sure of proper performance. More frequent observation is recommended under extreme operating conditions.

Routine maintenance consists of tightening the stem nut 1/4-turn periodically to compensate for the wear caused by the stem's turning against the resilient PTFE seal.

4.1 DISASSEMBLY

If complete disassembly becomes necessary, replacement of all seats and seals is recommended. Refer to Service Kit chart.

1. Remove the valve. Then remove the upper stem nut (16), lockwasher (9), handle (15), and lower stem nut (16). (See **Figure 2**)
2. Remove the compression ring (18).
3. Unscrew and remove the body cap (2) and body seal (6). Heat may be required.
4. If the ball (3) and seats (5) do not fall from the body with the ball in the fully closed position, use a piece of wood or some other soft material to gently tap the ball (from the end opposite the body cap). This will unseat these parts without damaging the ball.
5. Press the stem (4) from the top into the valve body and remove it through the body cap end of the body.
6. Using a wire brush, clean the body cap thread and body threads to remove any excess thread lock.
7. Using a pointed instrument, pry out and discard the old stem seals (7), stem bearings (8), and FIRE-TITE bearing (13), if applicable. Be very careful not to scratch any sealing surfaces in the valve body (surfaces on which seats and seals rest).

4.2 ASSEMBLY

1. Clamping valve body (1) securely in a vise, drop in one seat (5) with the flat surface on the bottom. (See **Figure 2**)
2. Insert from the inside a stem bearing (8), a FIRE-TITE seal (13), and another stem bearing (8) into the lower stem bore.
3. Insert the stem (4) through the open end of the body (1), being careful not to scratch the stem bearings and stem bearing surfaces. Press it gently up into the stem hole.
4. Holding the stem bearing in place from inside the valve, install two stem seals (7), the compression ring (18), and thread on one of the stem nuts (16) until the stem starts to turn.
5. Place a wrench through the body on the bottom of the stem blade to hold the stem stationary. Place another wrench on the stem nut (16), and turn the nut down until the seals bottom and the stem comes snugly into place. Tighten the stem nut (16) until snug, plus an additional 1/4-1/2 turn.
6. Align the stem blade inside the valve body (1) with the ball (3). Insert the ball (3) and rotate the stem (4) to the ball fully closed position.
7. Insert second seat (5) into the body (1) so that the sealing surface of the seat is towards the ball. Insert the body seal (6).
8. Apply Loctite® 272 or equivalent, one bead 360˚ around the body cap (2) covering a minimum of two threads.
9. Insert the body cap (2), screw it down and tighten to the required torque, (**See Table 1 for Body Cap Torque specifications**).

Table 1

Service Data

Valve Size	Body Cap Assembly Torque	Service Kit (*DELRIN* Seats)
1/4" – 1/2" (DN 8 – 15)	100 lb.-ft. (136 Nm)	RKN-220-RT
3/4" (DN 20)	225 lb.-ft. (305 Nm)	RKN-221-RT
1" (DN 25)	225 lb.-ft. (305 Nm)	RKN-221-RT
1-1/4" (DN 30)	275 lb.-ft. (373 Nm)	RKN-222-RT
1-1/2" (DN 40)	350 lb.-ft. (475 Nm)	RKN-223-RT
2" (DN 50)	600 lb.-ft. (814 Nm)	RKN-224-RT

4.3 TESTING THE VALVE

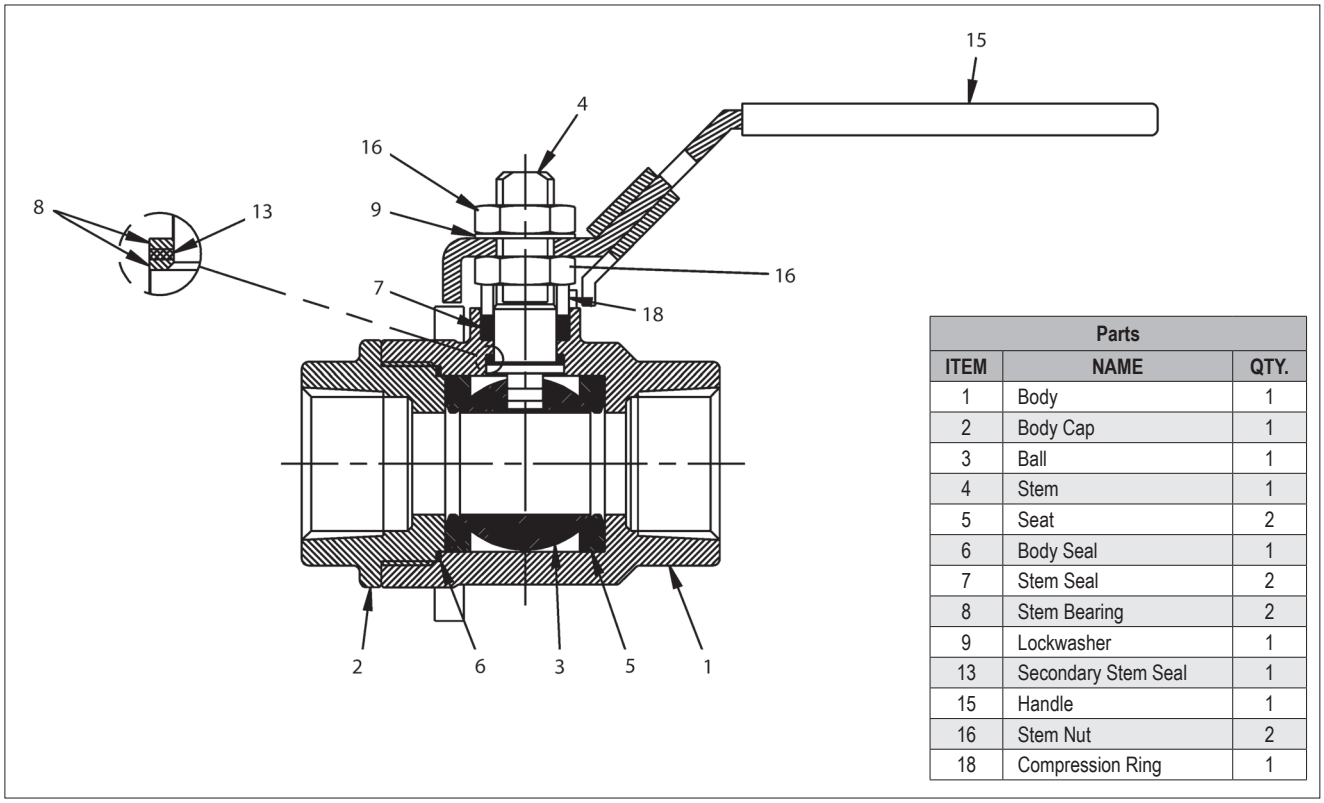
WARNING:
WHEN PRESSURE TESTING, EXERCISE CAUTION AND MAKE SURE ALL EQUIPMENT USED IS IN GOOD WORKING CONDITION AND APPROPRIATE FOR THE INTENDED PRESSURE.

If the valve is to be tested prior to returning to service make sure the test pressures are in accordance with an applicable standard.

When testing the valve for external tightness, keep the ball in the half open position.

If testing the valve seat tightness, please contact Valmet for advice.

WARNING:
WHEN PERFORMING ANY TESTS, NEVER EXCEED THE MAXIMUM OPERATING PRESSURE OR MAXIMUM SHUT-OFF PRESSURE LISTED ON THE IDENTIFICATION PLATE!



Parts		
ITEM	**NAME**	**QTY.**
1	Body	1
2	Body Cap	1
3	Ball	1
4	Stem	1
5	Seat	2
6	Body Seal	1
7	Stem Seal	2
8	Stem Bearing	2
9	Lockwasher	1
13	Secondary Stem Seal	1
15	Handle	1
16	Stem Nut	2
18	Compression Ring	1

Figure 2.

5. SERVICE KITS

Service kits include two seats (5), two stem seals (7), two stem bearings (8), a secondary seal (13), and one body seal (6).

6. REPAIR KITS/ SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at **www.valmet.com/flowcontrol**.

Parts		
ITEM	**NAME**	**QTY.**
1	Body	1
2	Body Cap	1
3	Ball	1
4	Stem	1
5	Seats	2
6	Body Seal	1
7	Stem Seals	2
8	Stem Bearings	2
9	Lockwasher	1
13	Secondary Stem Seal	1
15	Handle	1
16	Stem Nut	2
18	Compression Ring	1

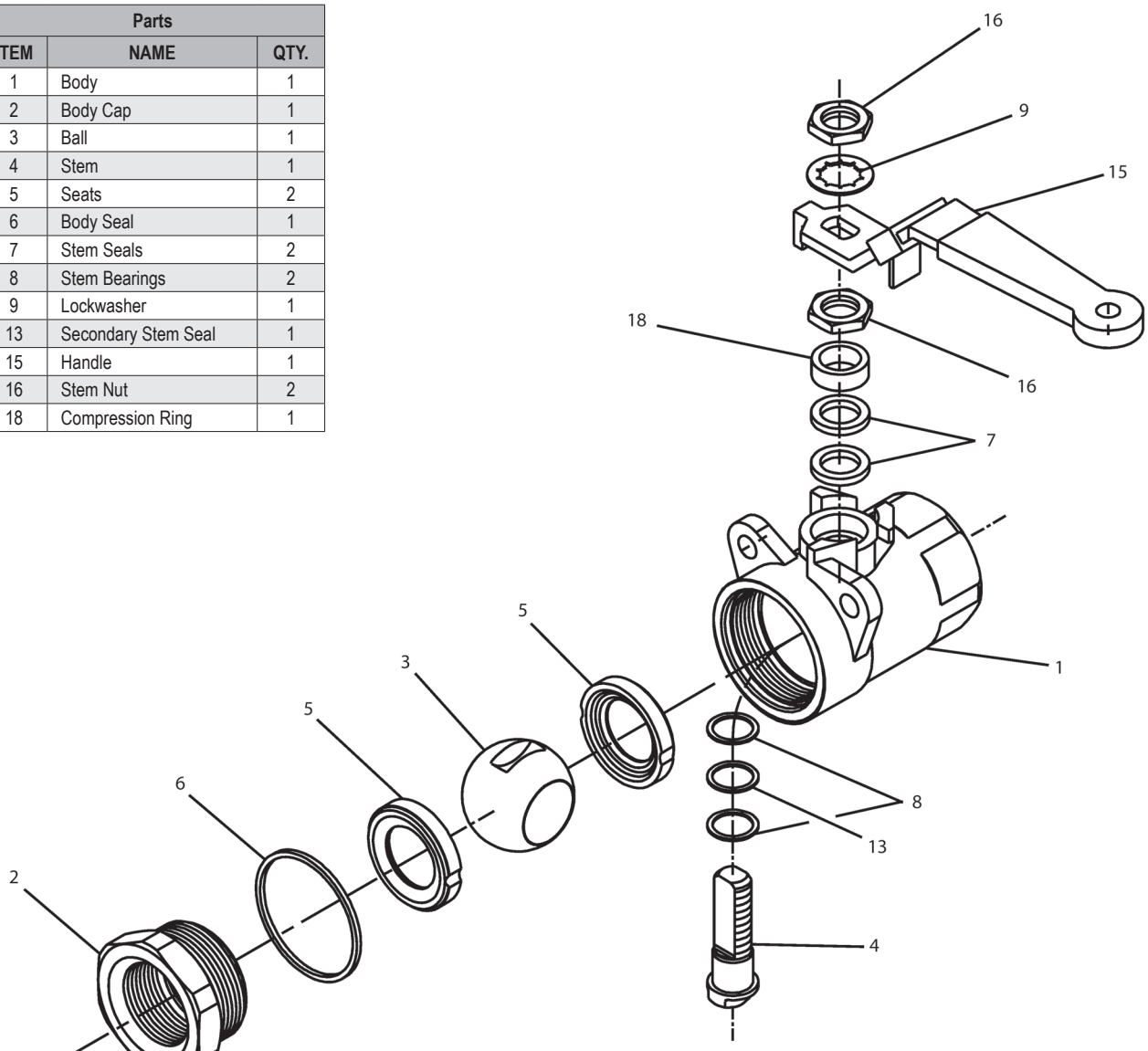


Figure 3.

Valmet Flow Control Oy
Vanha Porvoontie 229, 01380 Vantaa, Finland.
flowcontrol@valmet.com
Tel. +358 10 417 5000.
www.valmet.com/flowcontrol