

Jamesbury™ flanged ball valves Series 7000 & 9000

Series 7000, Model A, Standard Bore,
Class 150 & 300, 1/2" - 2" (DN 15 - 50);

Series 9000, Model A, Full Bore,
Class 150 & 300, 1/2" - 1-1/2" (DN 15 - 40);
with ISO bonnet

Installation, maintenance and
operating instructions

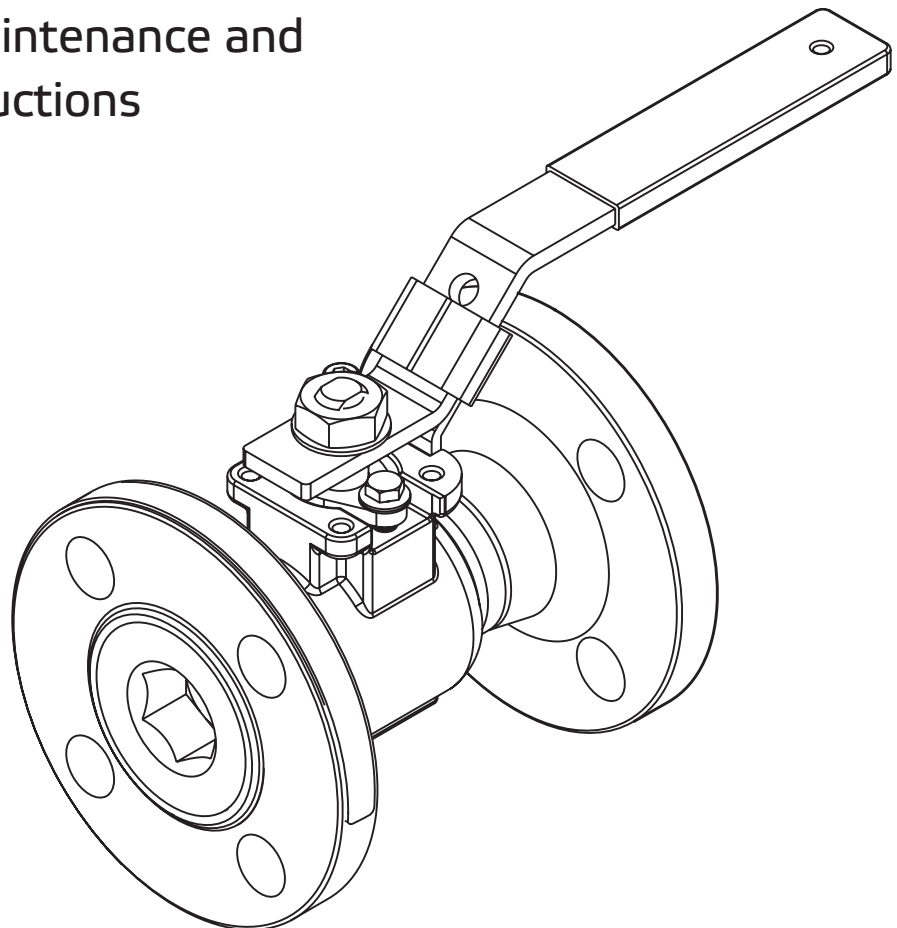


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READ THESE INSTRUCTIONS FIRST!

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™ 1/2" – 2" (DN 15 – 50) Standard Bore Series 7000 and the 1/2" – 1-1/2" (DN 15 – 40) Full Bore Series 9000 Flanged Ball Valves with ISO Bonnet. Please read these instructions carefully and save for further reference.

WARNING:

AS THE USE OF THE VALVE IS APPLICATION SPECIFIC, A NUMBER OF FACTORS SHOULD BE TAKEN INTO ACCOUNT WHEN SELECTING A VALVE FOR A GIVEN APPLICATION. THEREFORE, SOME OF THE SITUATIONS IN WHICH THE VALVES ARE USED ARE OUTSIDE THE SCOPE OF THIS MANUAL.

IF YOU HAVE ANY QUESTIONS CONCERNING THE USE, APPLICATION OR COMPATIBILITY OF THE VALVE WITH THE INTENDED SERVICE, CONTACT VALMET FOR MORE INFORMATION.

1.1 SAFETY PRECAUTIONS

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 SPRINGRETURN ACTUATORS ARE IN THE FULL EXTENDED/ RELAXED STATE BEFORE PERFORMING ANY VALVE MAINTENANCE. FAILURE TO DO THIS MAY RESULT IN DAMAGE OR PERSONAL INJURY!

WARNING:

WHEN HANDLING THE VALVE OR VALVE/ACTUATOR ASSEMBLY, TAKE ITS WEIGHT INTO ACCOUNT!

REFERENCE THE APPLICABLE TECHNICAL BULLETIN FOR VALVE WEIGHTS.

NEVER LIFT THE VALVE OR VALVE/ACTUATOR ASSEMBLY BY THE ACTUATOR, POSITIONER, LIMIT SWITCH OR THEIR PIPING. PLACE LIFTING DEVICES SECURELY AROUND THE VALVE BODY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE OR PERSONAL INJURY FROM FALLING PARTS (SEE FIGURE 2).

2. INSTALLATION

1. Place valve in OPEN position.
2. Valve may be installed for flow in either direction. However, it is recommended that the valve be installed with the insert facing upstream.

WARNING:

THE VALVE SHOULD BE TIGHTENED BETWEEN FLANGES USING APPROPRIATE GASKETS AND FASTENERS COMPATIBLE WITH THE APPLICATION, AND IN COMPLIANCE WITH APPLICABLE PIPING CODES AND STANDARDS. CENTER THE FLANGE GASKETS CAREFULLY WHEN FITTING THE VALVE BETWEEN FLANGES. DO NOT ATTEMPT TO CORRECT PIPELINE MISALIGNMENT BY MEANS OF FLANGE BOLTING!

3. MAINTENANCE

Although Jamesbury valves are designed to work under severe conditions, proper preventative maintenance can significantly help to prevent unplanned downtime and in real terms reduce the total cost of ownership. Valmet recommends inspecting valves at least every five (5) years. The inspection and maintenance frequency depends on the actual application and process condition.

WARNING

FOR YOUR SAFETY, TAKE THE FOLLOWING PRECAUTIONS BEFORE REMOVING THE VALVE FROM THE LINE, OR BEFORE ANY DISASSEMBLY.

1. DURING REMOVAL AND DISASSEMBLY, WEAR ANY PROTECTIVE EQUIPMENT NORMALLY REQUIRED TO PROTECT AGAINST DISCHARGE OF TRAPPED FLUID.
2. DEPRESSURIZE THE LINE AND VALVE AS FOLLOWS:
 - A. PLACE THE VALVE IN THE OPEN POSITION AND DRAIN THE LINE.
 - B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BODY CAVITY BEFORE REMOVAL FROM THE LINE.
 - C. AFTER REMOVAL AND BEFORE ANY DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.

NOTE: OPTIONAL ROUND AND OVAL HANDLES ARE AVAILABLE FOR THESE VALVES IN PLACE OF LEVER HANDLES.

1. **Routine maintenance** consists of tightening the compression plate hex head cap screws periodically to compensate for the wear caused by the stem turning against the stem seals. Check to make sure that the compression plate hex head cap screws are tightened to the torque listed in (Table 1).

Table 1A		
Hex Head Cap Screw Torque Standard Bore Series 7000		
Valve Size	Torque IN•LBS	Torque N•m
1/2" & 3/4" (DN 15 & 20)	15	1.7
1" (DN 25)	20	2.3
1-1/2" & 2" (DN 40 & 50)	32	3.6

Table 1B		
Hex Head Cap Screw Torque Full Bore Series 9000		
Valve Size	Torque IN•LBS	Torque N•m
1/2" (DN 15)	15	1.7
3/4" & 1" (DN 20 & 25)	20	2.3
1-1/2" (DN 40)	32	3.6

2. **Overhaul maintenance** consists of replacing seats and seals. A standard Repair Kit consisting of these parts may be obtained from your Valmet distributor (See Table 4).

NOTE: Repair Kits contain the seats and stem seals for both the fire-tested and non-fire-tested valves. Refer to the Assembly Section for details on the correct installation of these parts.

3.1 DISASSEMBLY

1. Comply fully with the steps in the **WARNING** sections prior to working on the valve.
2. Open and close the valve and leave in the closed position.
3. Remove the handle nut (16), lockwasher (19), and handle (17).
4. Remove hex head cap screws (29), disc springs (31) and compression plate (20).
5. Clamp the valve body (1) securely in a vise.
6. Unscrew and remove the insert (2). **NOTE:** Use caution when loosening the insert, especially during the initial break.
7. Remove and discard the old body seal (6). Be careful not to damage the sealing surfaces. May include support ring (9) used with graphite seal.
8. With the ball in the closed position, remove ball (3) and seats (5). **NOTE:** A piece of wood or other soft material may be used to unseat the parts from the opposite side. Be careful not to damage the ball or seating surfaces in the body.
9. Push the stem (4) into the body (1) and remove it through the open end.
10. Carefully pry out and discard the stem seal (8) and stem bearing (24) being careful not to damage the bearing surfaces. **NOTE:** Fire-Tite® construction contains a secondary stem seal (7) and 2 stem bearings (13), in place of the non-Fire-Tite stem bearing (24). Also PEEK® seats have an additional upper stem bearing (10) and an anti extrusion ring (55).

3.2 ASSEMBLY

NOTE: Repair Kits contain replacement seals for Fire-Tite and non-Fire-Tite constructions.

1. Inspect the parts to ensure sealing surfaces are in good condition and all parts are properly cleaned and prepared for assembly.
2. Clamp the body (1) securely in a vise with the body joint opening facing up.
3. Insert the seat (5) into the body (1) with the flat side down, as shown in (Figure 2).
4. Place the stem bearing (24) on the stem (4). **NOTE:** Fire-Tite valves have 2 stem bearings (13) and a secondary stem seal (7) as shown in (Figure 1).
5. Insert the stem (4) with the bearing(s) into the valve body and through the stem bore in the body, as shown in (Figure 1).
6. Holding the stem in place from the inside, install the stem seal (8) and the compression plate (20). For PEEK seats, install upper bearing (10) and anti extrusion ring (55) into the packing bore prior to installing the stem seal (8).
7. Place the disc springs (31) on the hex head cap screws (29). Disc spring orientation is shown in (Figure 1). Install the hex head cap screws through the compression plate and bring them down hand tight.
8. While pressing the stem (4) outward from inside the body, tighten the hex head cap screws to the torque provided in (Table 1). Apply torque evenly, alternating between the two cap screws so that the compression plate will be parallel with the valve body bonnet.

9. Align the stem to the ball slot. Insert the ball (3) so that the internal stem blade fits into the ball slot.
10. Insert the second seat (5) with the flat facing up. Insert the body seal (6). **NOTE:** Some sizes of graphite body seals contain an additional support ring (9). Install support ring (9) prior to inserting body seal (6).
11. Screw the insert (2) into the body (1) and tighten to the Torque listed in (**Table 2**).
12. With ball (3) in the open position, install handle (17) over the non-insert flange, lockwasher (19) and handle nut (16) and tighten to torque listed in (**Table 3**). Handle **MUST** be in this orientation as shown in (**Figure 1**).
13. Cycle the valve slowly to ensure smooth operation.

3.3 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!

4. REPAIR KITS/SPARE PARTS

We recommend that valves be directed to our service centers for maintenance. The service centers are equipped to provide rapid turn-around at a reasonable cost and offer new valve warranty with all reconditioned valves.

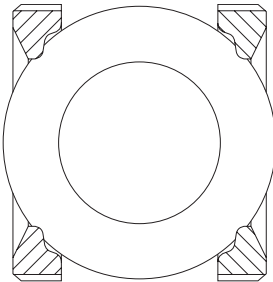
NOTE: When sending goods to the service center for repair, do not disassemble them. Clean the valve carefully and flush the valve internals. Include the material safety datasheet(s) (MSDS) for all media flowing through the valve. Valves sent to the service center without MSDS datasheet(s) will not be accepted. Send valves to the service center in the half open position.

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

NOTE: When ordering spare parts, always include the following information:

- a. Valve catalog code from identification plate,
- b. If the valve is serialized – the serial number (from identification plate).
- c. From **Figure 1**, the ballooned part number, part name and quantity required.

EXPLODED VIEW AND PARTS



Seats should be in this position at assembly
FIGURE 2

Stop screw (25) with bushing (26) **MUST** be in this location.



Proper Disc Spring Orientation

PARTS LIST		
ITEM	PART NAME	QTY
1	Body	1
2	Insert	1
3	Ball	1
4	Stem	1
5	Seat	2
6	Body Seal	1
7*	Secondary Stem Seal	1
8	Stem Seal	1
9***	Support Ring	1
10****	Upper Stem Bearing	1
13*	Stem Bearing	2
16	Handle Nut	1
17	Handle	1
19	Shakeproof Washer	1
20	Compression Plate	1
22	Identification Tag	1
24**	Stem Bearing Non-Fire-Tite	1
25	Socket Head Cap Screw	1
26	Spacer	1
29	Hex Head Cap Screw	2
31	Disc Spring	4
55****	Anti Extrusion Ring	1
70	Upper Grounding Spring	1
71	Lower Grounding Spring	1
72	Retaining Ring	1

* Fire-Tite valves only

** Non-Fire-Tite valves only

*** Use Item 9 for 1" and 1-1/2" (DN 25 and 40) 9000,
1-1/2" and 2" (DN 40 and 50) 7000 graphite seals only

****Used for upper graphite stem seals only

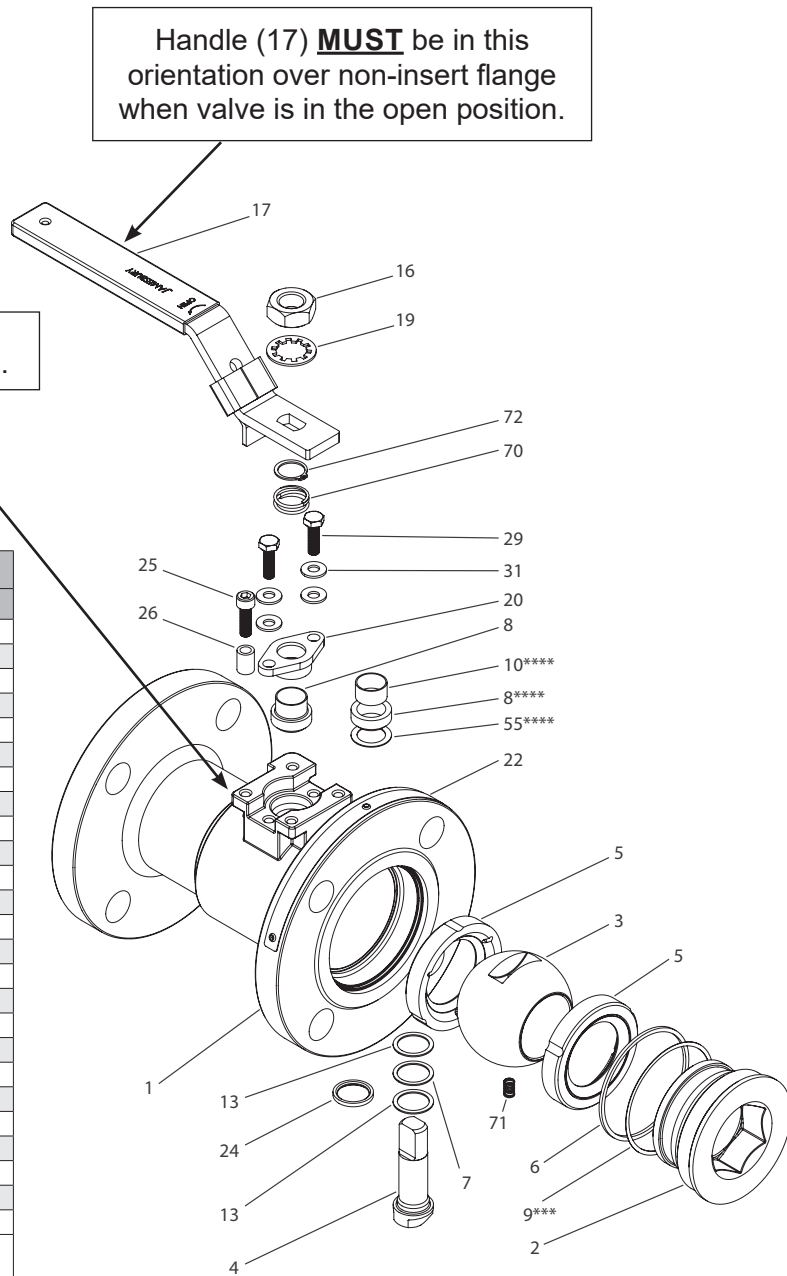


Figure 1

Table 2A	
Insert Torques Standard Bore Series 7000	
Valve Size	Torque – FT•LBS (N•m)
Inches (DN)	
1/2 – 3/4 (15 – 20)	100 (136)
1 (25)	150 (203)
1-1/2 (40)	250 (339)
2 (50)	350 (476)

Table 2B	
Insert Torques Full Bore Series 9000	
Valve Size	Torque – FT•LBS (N•m)
Inches (DN)	
1/2 (15)	100 (136)
3/4 (20)	150 (203)
1 (25)	200 (271)
1-1/2 (40)	350 (476)

Table 3A	
Handle Nut Torque Standard Bore Series 7000	
Valve Size	Torque – FT•LBS (N•m)
Inches (DN)	
1/2 – 3/4 (15 – 20)	9 (12)
1 (25)	23 (31)
1-1/2 (40 – 50)	33 (45)

Table 3B	
Handle Nut Torque Full Bore Series 9000	
Valve Size	Torque – FT•LBS (N•m)
Inches (DN)	
1/2 (15)	9 (12)
3/4 – 1 (20 – 25)	23 (31)
1-1/2 (40)	33 (45)

TABLE 4A					
Repair Kits Standard Bore Series 7000					
Repair Kits	Valve Size				
	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	1-1/2" (DN 40)	2" (DN 50)
Xtreme™ Seats	RKN-354XT	RKN-355XT	RKN-356XT	RKN-358XT	RKN-359XT
PTFE Seats	RKN-354TT	RKN-355TT	RKN-356TT	RKN-358TT	RKN-359TT
UHMW Seats	RKN-354UU	RKN-355UU	RKN-356UU	RKN-358UU	RKN-359UU
PEEK Seats	RKN-354LG	RKN-355LG	RKN-356LG	RKN-358LG	RKN-359LG

TABLE 4B				
Repair Kits Full Bore Series 9000				
Repair Kits	Valve Size			
	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	1-1/2" (DN 40)
Xtreme™ Seats	RKN-354XT	RKN-356XT	RKN-357XT	RKN-359XT
PTFE Seats	RKN-354TT	RKN-356TT	RKN-357TT	RKN-359TT
UHMW Seats	RKN-354UU	RKN-356UU	RKN-357UU	RKN-359UU
PEEK Seats	RKN-354LG	RKN-356LG	RKN-357LG	RKN-359LG

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