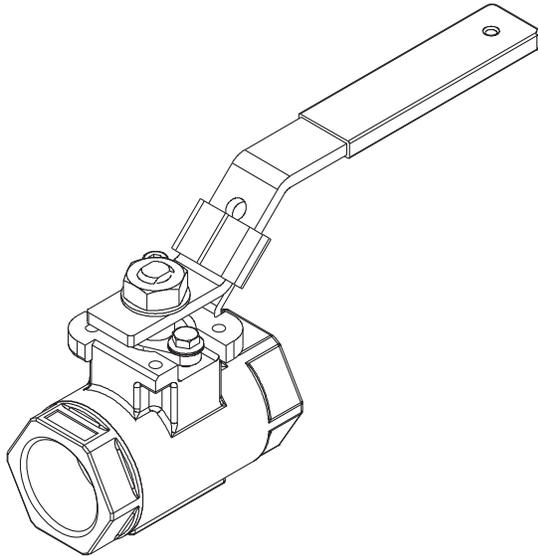


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INSTALLATION, MAINTENANCE, AND OPERATING INSTRUCTIONS

1/4" – 2" (DN 8 – 50) ELIMINATOR® MODEL B BALL VALVES WITH ISO BONNET



Read entire instructions carefully before installation or servicing

1 GENERAL

This instruction manual contains important information regarding the installation, operation and troubleshooting of the Jamesbury® 1/4" – 2" (DN 8 – 50) Eliminator Model B Ball Valves with ISO Bonnet. Please read these instructions carefully and save for further reference.

1.1 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.
3. **SEAL WELDING OF NPT JOINTS** - FOR WELDED APPLICATIONS, SOCKET WELD END VALVES ARE RECOMMENDED.

WHEN SEAL WELDING NPT THREADED END CONNECTIONS, TAKE THE FOLLOWING PRECAUTIONS:

- A. USE THE ANSI RATED PRODUCT (E.G. 1" 9FA2236XTB) WHICH INCLUDES A BODY JOINT SEAL WELD.
- B. USE A WELDING PROCEDURE THAT ENSURES THE TEMPERATURE OF THE VALVE BODY DOES NOT EXCEED THE VALVE SEAT RATING.

4. **SEAT AND BODY RATINGS** - THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATING. READ THE NAME TAG 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.

2 INSTALLATION

Screwed end valves have NPT threads. To insure a leaktight joint, liberal use of a compatible pipe joint compound is necessary. The Eliminator may be installed for flow in either direction. It is recommended, however, that a screwed valve be installed with the body cap facing upstream. 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 (**see Figure 1**).

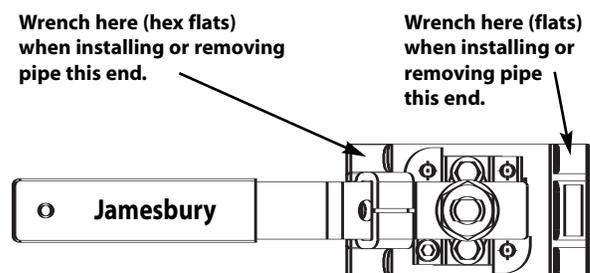


Figure 1

3 MAINTENANCE

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 1		
Hex Head Cap Screw Torque		
Valve Size	Torque IN•LBS	Torque N•m
1/4" & 3/4" (DN 8 & 20)	15	1.7
1" & 1-1/4" (DN 25 & 30)	20	2.3
1-1/2" & 2" (DN 40 & 50)	32	3.6

2. **Overhaul Maintenance** consists of replacing seats and seals. A standard Service Kit consisting of these parts may be obtained from your Metso Automation Distributor **(See Table 4)**.

NOTE: Service 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

This section covers disassembly of the non-welded valve after removal from the piping. Welded products cannot be disassembled.

1. Comply fully with the steps in the **WARNING** Section on page 1 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 body cap (2) **NOTE:** Thread locking compound is used to prevent unwanted rotation of the body cap (2). Heat may be required for disassembly.
7. Remove and discard the old body seal (6). Be careful not to damage the sealing surfaces.
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. Press 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).
11. Use a wire brush to remove any remaining thread lock compound from the body cap (2) and body (1) threads. Be careful not to scratch or damage the body seal surfaces

3.2 ASSEMBLY

NOTE: Service 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 3)**.
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 3)**.
6. Holding the stem in place from the inside, install the stem seal (8) and the compression plate (20).
7. Place the disc springs (31) on the hex head cap screws (29). Disc spring orientation is shown in **(Figure 3)**. 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. To prepare for final assembly, obtain a torque wrench. When assembling without a torque wrench, install the body cap (2) into the body (1) without the second seat or the body seal. Tighten firmly by hand or snug with a wrench.

(text continued on page 4)

EXPLODED VIEW AND PARTS

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
10***	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

* Fire-Tite valves only
 ** Non Fire-Tite valves only
 *** Used for graphite upper stem seals only.

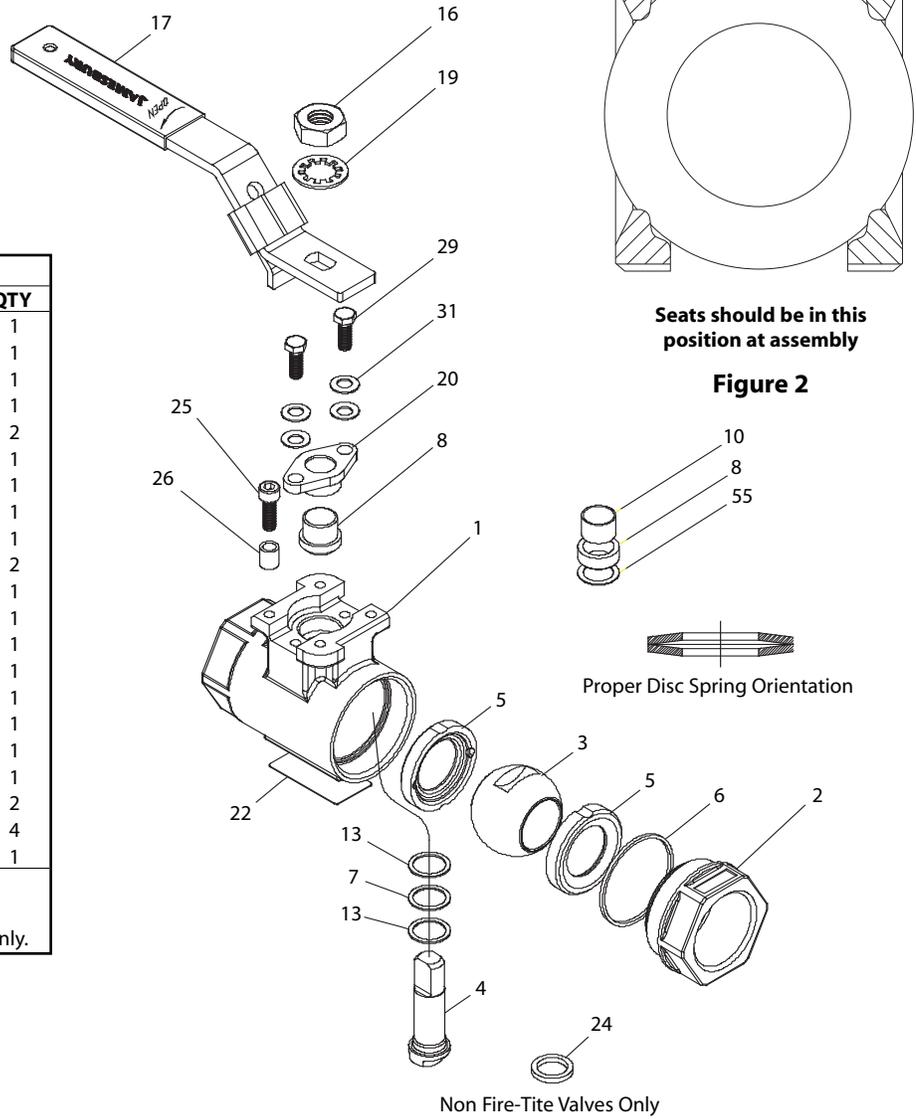


Figure 3

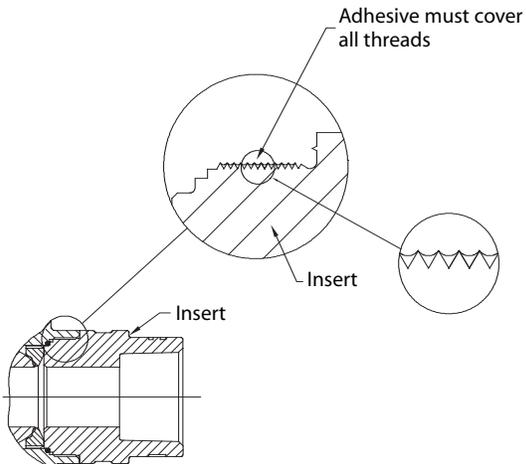


Figure 4

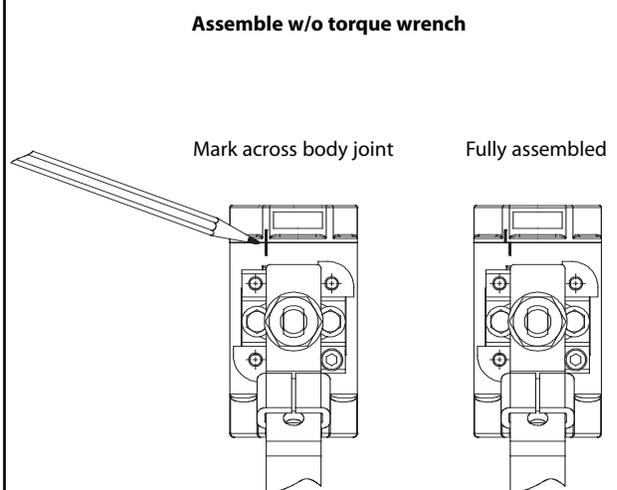


Figure 5

Draw a line across the body joint to identify the fully installed position (**See Figure 5**). The line should be clearly visible on both the body (1) and the body cap (2). Remove the body cap (2) and continue with the assembly.

11. Insert the second seat (5) with the flat facing up. Insert the body seal (6).
12. Apply Loctite™ 272 or equivalent thread locking compound to the threads in a single generous bead, 360 degrees around the body cap (2) threads. Spread the compound until threads are evenly coated. Ideally, thread roots will be filled with the compound with only the crests protruding (**See Figure 4**).
13. Install the body cap (2) hand tight. Wipe away excess Loctite.
14. With a torque wrench, tighten the body cap (2) to the torque listed in (**Table 2**). When assembling without a torque wrench, tighten the body cap (2) until fully installed and the lines made in step 10 show the body cap (2) has rotated past the fully aligned position (**Figure 5**). Wipe away excess Loctite.
15. Install handle (17), lockwasher (19) and handle nut (16) and tighten to torque listed in (**Table 3**).
16. Cycle the valve slowly to ensure smooth operation.

4 SERVICE KITS

We recommend that valves be directed to our service center for maintenance. The service centers are equipped to provide rapid turn around at reasonable cost and offer new valve warranty with all reconditioned valves. Standard Service Kits (**Table 4**) include seats, seals, and stem bearings.

5 REPAIR KITS/SPARE PARTS

For further information or assistance on repair kits and spare parts visit our website at www.Jamesbury.com

TABLE 2		
Insert Torques		
Valve Size		Torque – FT•LBS (N•m)
inches	DN	
1/4 – 3/4	8 – 20	150 (203)
1	25	250 (339)
1-1/4	30	350 (476)
1-1/2	40	400 (542)
2	50	500 (678)

TABLE 3		
Handle Nut Torque		
Valve Size		Torque – FT•LBS (N•m)
inches	DN	
1/4 – 3/4	8 – 20	9 (12)
1, 1-1/4	25, 30	23 (31)
1-1/2, 2	40, 50	33 (45)

TABLE 4 – SERVICE KITS						
SERVICE KITS	VALVE SIZE – INCHES (MM)					
VALVE SIZE	1/4" – 1/2" (DN 8 – 15)	3/4" (DN 20)	1" (DN 25)	1-1/4" (DN 30)	1-1/2" (DN 40)	2" (DN 50)
XTREME® Seats	RKN-354-XT	RKN-355-XT	RKN-356-XT	RKN-357-XT	RKN-358-XT	RKN-359-XT
PTFE Seats	RKN-354-TT	RKN-355-TT	RKN-356-TT	RKN-357-TT	RKN-358-TT	RKN-359-TT
DELTRIN Seats	RKN-354-RT	RKN-355-RT	RKN-356-RT	RKN-357-RT	RKN-358-RT	RKN-359-RT
UHMW Seats	RKN-354-UU	RKN-355-UU	RKN-356-UU	RKN-357-UU	RKN-358-UU	RKN-359-UU

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