

Jamesbury ball valves

5RA3 Fire-Tite™ tank car
top loading and unloading valve
2" (DN 50)

Installation, maintenance and
operating instructions

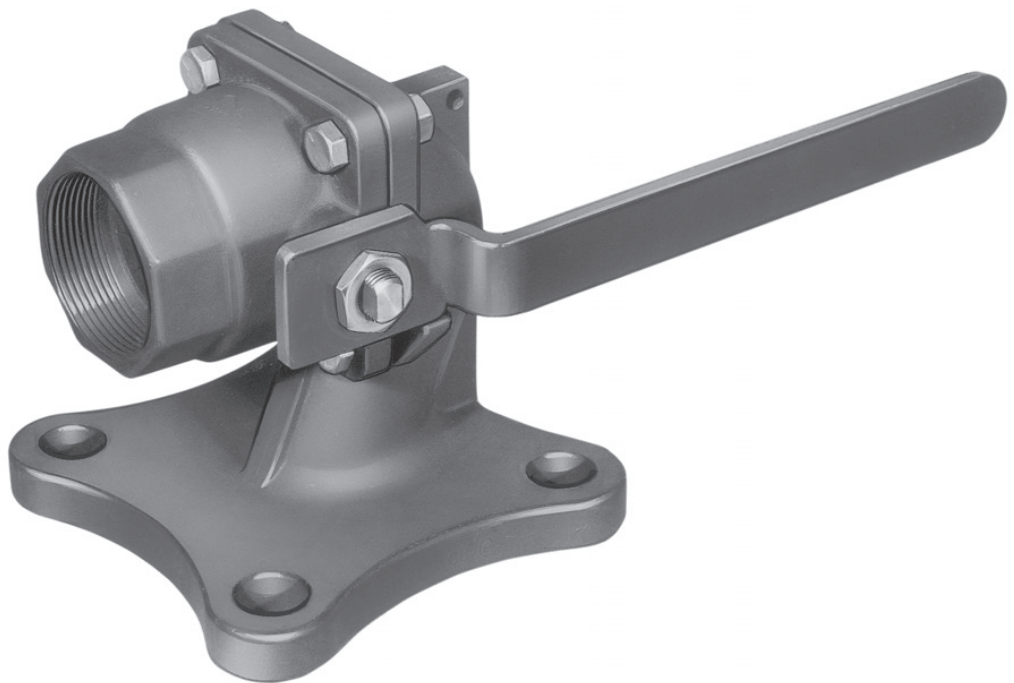


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READ THESE INSTRUCTIONS FIRST!

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™ 2" (DN 50) 5RA3 Fire-Tite Tank Car Top Loading and Unloading Valve. Please read these instructions carefully and save them for further reference.

WARNING

FOR YOUR SAFETY, IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVAL OF THE VALVE FROM THE TANK CAR OR BEFORE ANY DISASSEMBLY.

- 1. WHAT'S IN THE TANK CAR?**
BE SURE YOU KNOW WHAT FLUID IS IN THE CAR. IF THERE IS ANY DOUBT, DOUBLE CHECK WITH THE PROPER SUPERVISOR.
- 2. ARE YOU PROTECTED?**
WEAR ANY PROTECTIVE CLOTHING AND EQUIPMENT NORMALLY REQUIRED TO AVOID INJURY FROM THE PARTICULAR FLUID IN THE CAR.
- 3. DO NOT REMOVE THE VALVE FROM A LOADED OR PRESSURIZED TANK CAR.**
- 4. TURN THE VALVE FROM FULLY CLOSED TO FULLY OPEN AND BACK AGAIN AT LEAST TWICE BEFORE REMOVAL FROM THE EMPTY TANK CAR IN ORDER TO RELIEVE ANY RESIDUAL PRESSURES.**
- 5. AFTER REMOVAL AND BEFORE DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES (AS IN NO. 4).**

2. INSTALLATION

Refer to the **MAINTENANCE** Section for stem packing adjustment.

If there is weepage past the stem seals upon installation, it means the valve may have been subject to wide temperature variations in shipment. Tight sealing will be restored by a simple packing adjustment described in the **MAINTENANCE** Section.

Follow the recommended practices of the gasket manufacturer when tightening bolts holding the valve to the tank car.

3. DISASSEMBLY

NOTE: If complete disassembly becomes necessary, replacement of all seats and seals is recommended. Refer to the repair kit chart.

1. Read the instructions in the **WARNING** Section.
2. Remove the valve from the car and cycle the valve several times again. Leave the ball in the closed position.
3. With Model A valves, remove the stem nut (13) and handle (12). With Model B, remove the top stem nut (13), the lockwasher (10), the handle (12), and the bottom stem nut (13).

4. With Model A, remove and discard the old spring washers.
5. Remove the compression ring (11).
6. Unfasten the four body bolts (14) and remove the body (1).
7. Remove the ball (3).

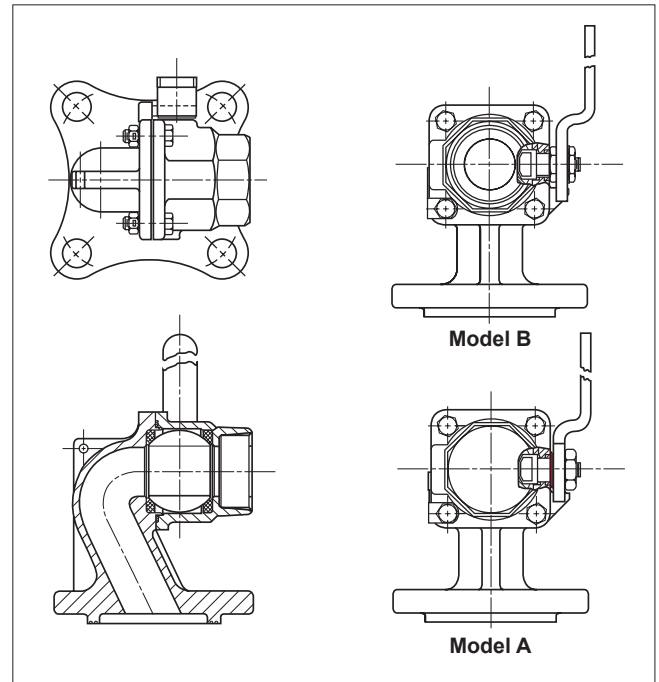


Figure 1.

8. Remove and discard the body seal (6) and seats (5).
9. Press the stem (4) from the top into the valve body and remove it through the end of the body. 10. Pry out from the inside and discard the old bottom stem seal (9) and the secondary stem seal (8) being careful not to scratch any sealing surfaces in the valve body.
10. Pry out from the inside and discard the old bottom stem seal (9) and the secondary stem seal (8) being careful not to scratch any sealing surfaces in the valve body.
11. Remove the top stem seal (7).

4. ASSEMBLY

1. Clamping the body (1) securely in a vise, drop in one seat (5) with the first surface on the bottom (see **Figure 2**).
2. From the inside, insert the secondary stem seal (8) first and then the red tinted lower stem seal (9). Insert the upper stem seal (7) from the outside of the valve.
3. Insert the stem (4) through the flanged end of the body (1) and, being careful not to scratch the seals, press it gently up into the stem hole. **DO NOT** attempt to push the stem all the way up into place. Push it up only until you encounter resistance from the lower seal.

EXPLODED VIEW & PARTS LIST

PARTS LIST		
ITEM	PART NAME	QTY
1	Body	1
2	Body Cap	1
3	Ball	1
4	Stem	1
5	Seat	2
6	Body Seal	1
7	Upper Stem Seal	1
8	Secondary Stem Seal	1
9	Lower Stem Seal	1
10	Lockwasher	1*
11	Compression Ring	1
12	Handle	1
13	Stem Nut	2**
14	Hex Head Cap Screw	4
15	Hex Nut (Center Lock)	4
17	Nameplate	1

* None with Model A.

** One with Model A.

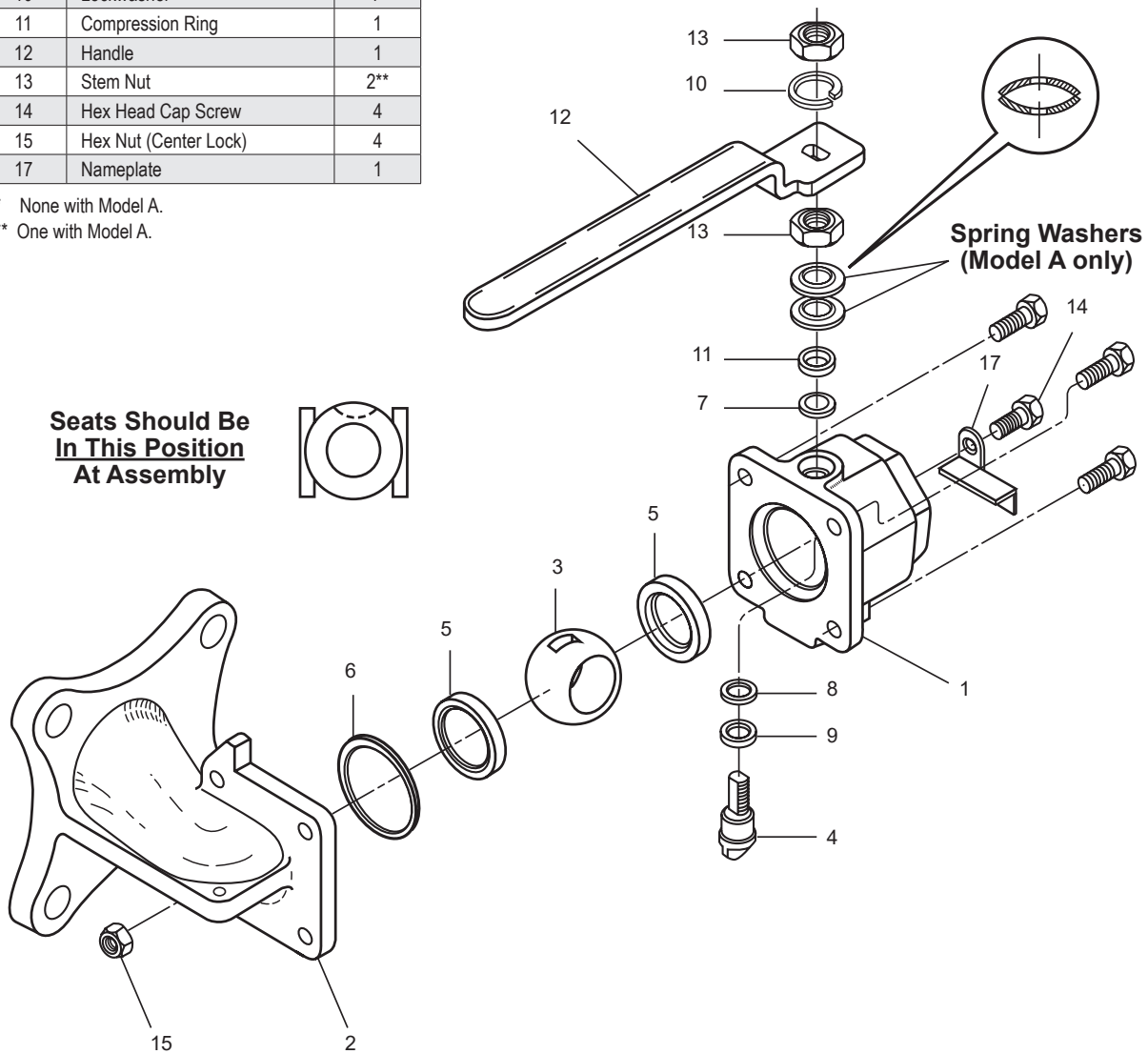


Figure 2.

4. Holding the stem in place from the bottom, drop on the compression ring (11).
 - A. With Model A valves, put on the pair of spring washers (as shown in **Figure 2**), the handle (12) and screw on the stem nut (13): Tighten down the nut until the stem is fully seated, then tighten the nut an additional 1/8 to 1/4 turn.
 - B. With Model B valves, screw on the bottom stem nut (13). Tighten down the nut until the stem is fully seated, then tighten the nut an additional 1/8 to 1/4 turn. Put the handle (12) and the lockwasher (10) on the stem. Screw on the top stem nut (13) finger tight, then tighten an additional 1/8 to 1/4 turn.
5. Insert the ball (3) rotating it onto the stem (4) in the closed position. If necessary, turn the stem blade to align with the ball slot.
6. Insert the body seal (6) and gently place it into the groove in the body.
7. Insert the second seat (5) in the body cap (2) so that the sealing surface of the seat is towards the ball (see **Figure 2**).
8. **NOTE:** The handle stop is part of the body cap (2). When assembling the valve, be sure the handle stop that projects from the body cap is in the lower right hand corner as the body (1) and body cap (2) by inserting the four body bolts (14). Bolt-heads should be on the body. Attach the nameplate (17).
9. Screw on the four hex nuts (15) until they are snug. Be careful to see that the body and cap are properly aligned. The extended edge of the handle should just touch the handle stop on the cap and the ball should be in the closed position. Using 2 FT•LBS (2.7 N•m) increments, tighten the bolts alternately in a diagonal pattern, as you would the lug nuts on an auto wheel, to 32 – 35 FT•LBS (43 – 48 N•m) **DO NOT TIGHTEN ONE NUT COMPLETELY, THEN PROCEED TO THE NEXT.**
10. Install the handle (11) so that it points away from the threaded port of the valve. Compare the handle orientation against that shown in (**Figures 2 and 3**). If orientation does not correspond to these illustrations, reposition the handle as required.
11. Cycle the valve slowly twice to insure permanent positioning of the ball between the two seats.

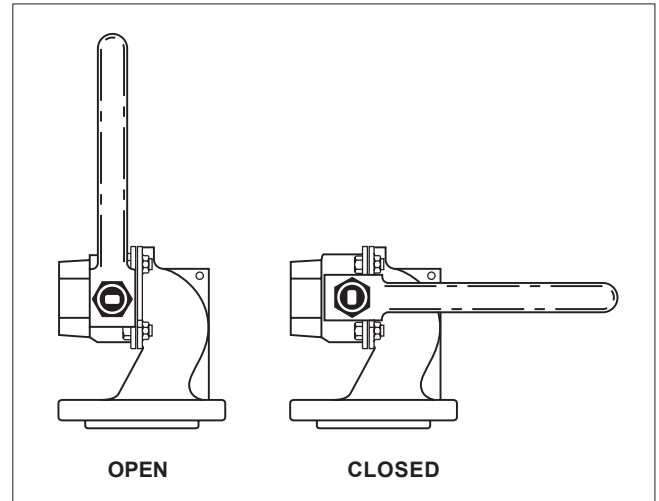


Figure 3.

5. MAINTENANCE

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

Routine maintenance consists of tightening the single stem nut on Model A valves, or the bottom stem nut on Model B valves (loosening the top stem nut is necessary to allow tightening the bottom stem nut – retighten top nut after tightening bottom nut) 1/8 to 1/4 turn periodically to compensate for the wear caused by the stem turning against the resilient PTFE seal. Stem nut torque should be about 180 in. -lb.

6. REPAIR KIT

The repair kit for this valve contains one pair of seats, a body seal, two stem seals, a pair of spring washers, a secondary stem seal, and maintenance instructions. Repair kit designation is RKC-20TT. **NOTE:** Spring washers are used only on Model A valves having a single stem nut. They are not required on Model B valves with two stem nuts.

7. SERVICE/SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at www.neles.com/products/valves/railroad-valves/catalogue-of-tank-car-valves/.

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