

# Jamesbury ball valves

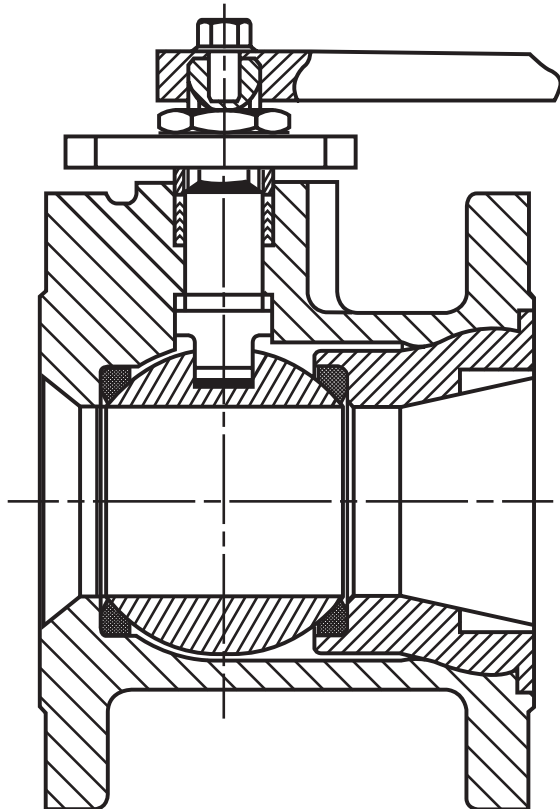
5RRF, 5RRT, & 5RFF

tank car Fire-Tite™

top loading and unloading valves

3" (DN 80)

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™ 3" (DN 80) 5RRF, 5RRT, & 5RFF Tank Car *Fire-Tite* Top Loading and Unloading Valves. Please read these instructions carefully and save them for future reference.

## 1.1 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. EXERCISE NORMAL SAFETY PRECAUTIONS TO PROTECT YOURSELF AGAINST BOTH THE FLUID AND POSSIBLE UNRELIEVED PRESSURES IN THE VALVE ITSELF.
2. CYCLE THE VALVE FROM FULLY CLOSED TO FULLY OPEN AND BACK AGAIN TWO TIMES TO RELIEVE ANY RESIDUAL PRESSURE.
3. AFTER REMOVAL AND BEFORE DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES (AS IN NO. 2).

## 2. INSTALLATION

Flow through this *Jamesbury* valve can be in either direction. In the case of a tongue and groove connection, however, the tongue is installed against the tank car. Follow the recommended practices of the gasket manufacturer when tightening flange bolts. If there is weepage past the stem seals upon installation, it means the valve may have been subject to wide temperature variations in shipment. Leaktight performance will be restored by a simple packing in the **MAINTENANCE** Section.

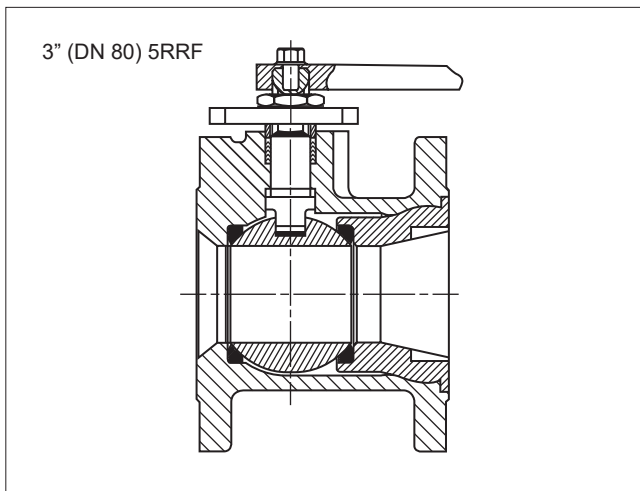


Figure 1.

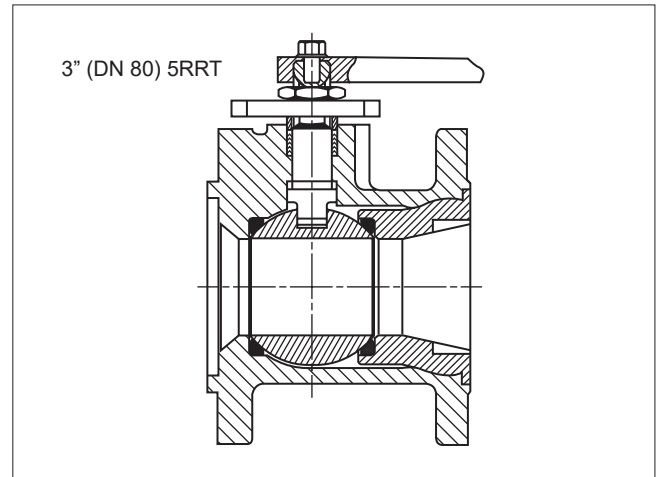


Figure 2.

## 3. MAINTENANCE

Good operating procedure requires periodic observation to ensure that the valve is functioning well. The frequency of observation will depend on the application.

Routine maintenance consists of tightening the stem nut (16) periodically to compensate for the wear caused by the stems turning against the resilient PTFE seals. If weepage occurs, tighten the nut one 1/2 turn. Stem nut torque should be about 400 in-lb.

Overhaul maintenance consists of replacing seats and seals. A standard repair kit (see **Table 1**) consisting of these parts may be obtained by contacting Valmet.

TABLE 1	
REPAIR KITS	
Valve	Kit No.
3" (DN 80) 5RRF, 5RRT & 5RFF	RKR-49-MT RKR-49-TT

### 3.1 DISASSEMBLY

1. Read the instructions in the **WARNING** Section.
2. Place the valve in the open position.
3. Remove the handle screw (18), lockwasher (19), handle (17), stem nut (16), lockwasher (33), indicator stop (12), and compression ring (21).
4. Place the valve in a vertical position with insert up.
5. Unscrew and remove the insert (2) and body seal (6).
6. Turn the ball into the closed position and remove the top seat (5) if it did not come out with the insert. Remove the ball (3). If the ball does not lift out easily, take a piece of wood or some other soft material and gently tap the ball from the end opposite the insert. This will unseat the ball without damaging it.
7. Press the stem (4) into the valve body cavity. It may be necessary to tap it with a piece of wood or some other soft material.

8. Remove the stem, then pry out and discard the old stem seals (24) and (8) and secondary stem seal (7).
9. Carefully remove the bottom seat (5) out of the body taking caution that the body seat face is not scratched while doing so.

## 3.2 ASSEMBLY

Apply a lubricant compatible with the flow medium lightly to seats, seals, ball, and stem to facilitate assembly and for ease of initial operation. Clean seat and seal areas and other parts before assembly.

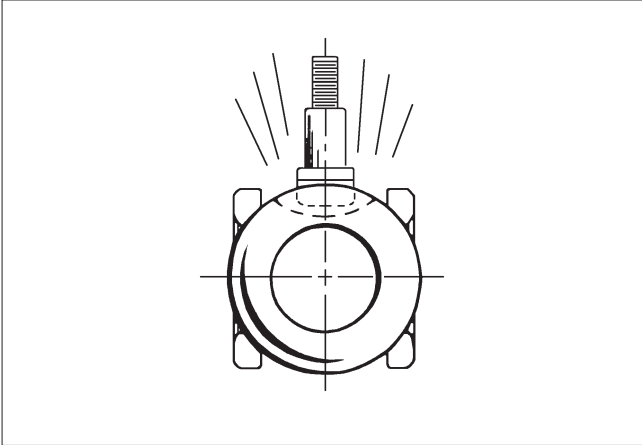


Figure 3.

1. Slide one valve seat (5) sidewise into the body cavity (1) to just below the stem hole and tilt it into place so that the proper face will come in contact with the ball (3) (see **Figure 3**) Do not scratch or cut the seat face.
2. From inside of the body cavity, insert one secondary stem seal (7) and one stem seal (8) up into the lower stem counterbore.
3. From the outside of the body, insert the set of upper stem seals (24) into the upper stem counterbore.
4. Insert the stem (4) into the body cavity (threaded end first), and press it gently up into the stem bore until resistance is felt from the lower stem seal. Be careful not to scratch seals.
5. Holding the stem in place from inside the body, drop the compression ring (21) over the threaded end of the stem protruding out of the body stem bore. Follow the same procedure with indicator stop (12) and lock washer (33). Then screw on stem nut (16).

6. Tighten down the nut until the stem comes snugly into place. Rotate the stem gently to assure proper seating. Tighten the nut until the stem seals are fully seated, then tighten the nut an additional 1/4 turn.

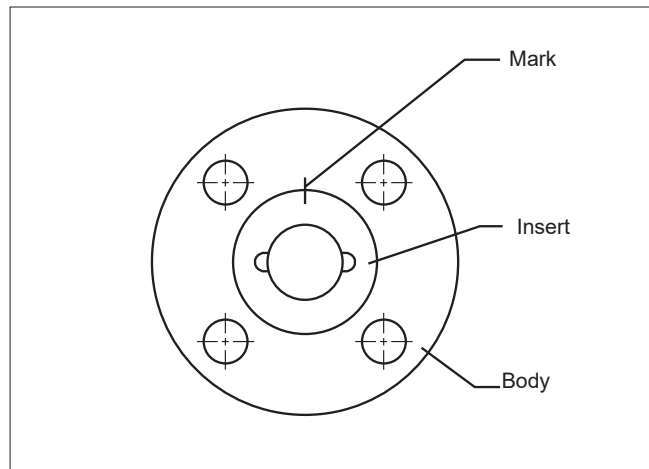


Figure 4.

7. Using a spanner wrench, screw the insert (2) into the body until it is fully seated. Mark the position as shown in (**Figure 4**). Counting the number of turns, remove the insert.
8. 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.
9. Insert the second seat (5) so that the sealing surface of the seat is towards the ball (see **Figure 6**).
10. Insert the body seal (6) and gently press it into the groove in the body.

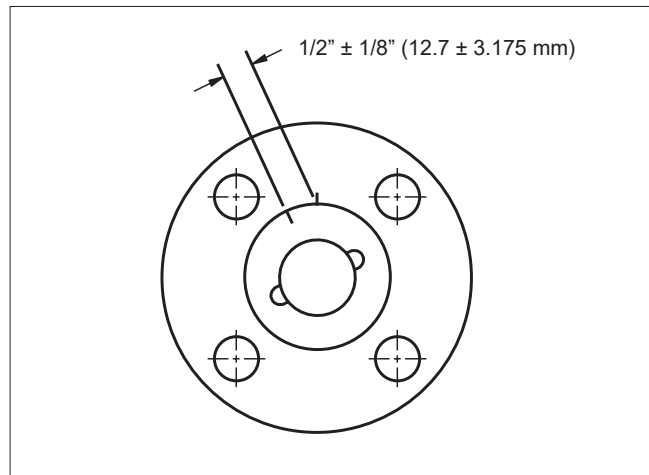


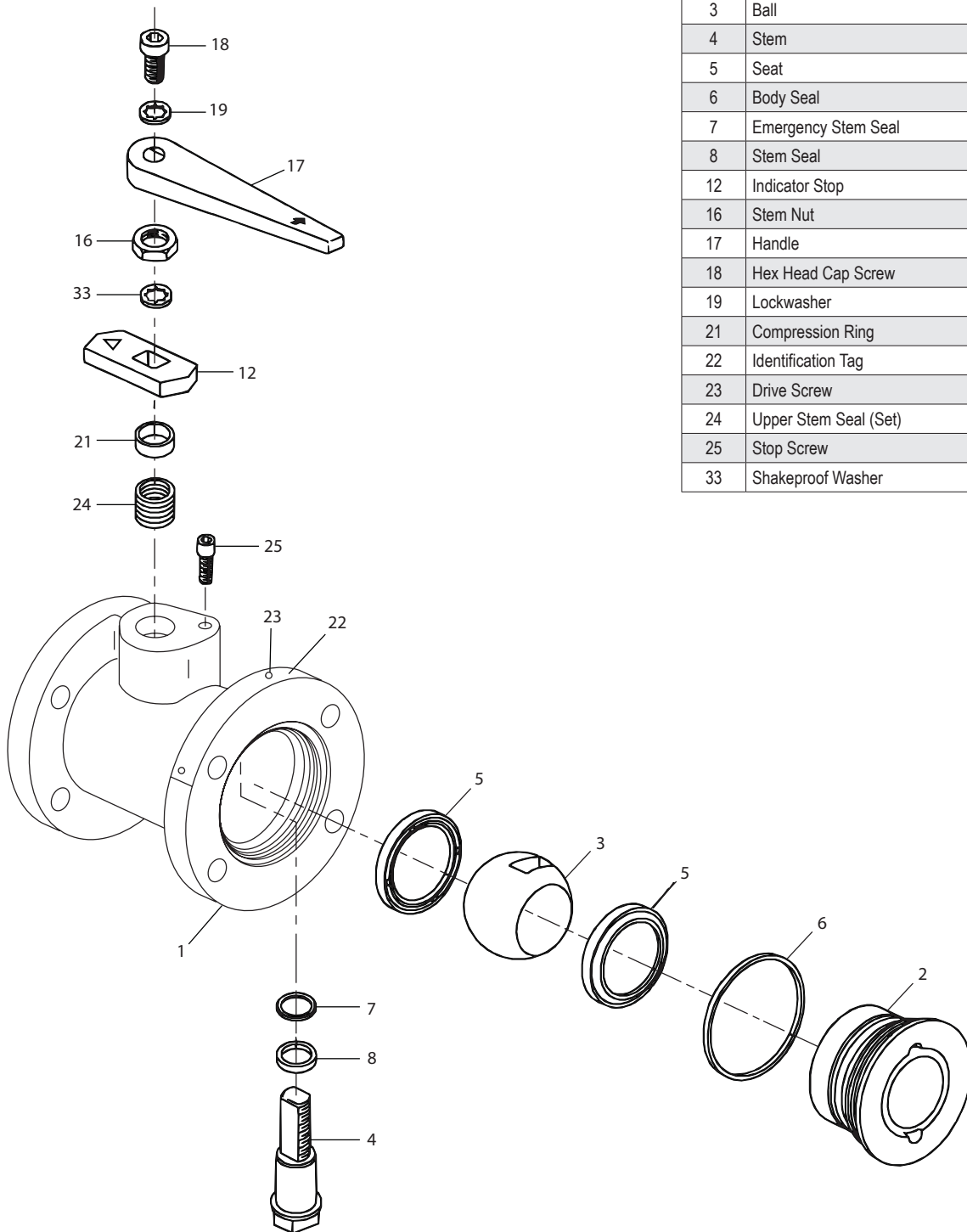
Figure 5.

11. Using a thread lubricant compatible with the media, screw the insert (2) into the body and tighten to 450 – 500 lb.-ft. (610 – 678 Nm). If a torque wrench is not available, tighten the insert the same number of turns as in Step 5 until the marks match the dimension shown in **(Figure 5)**.
12. Place the handle (17), lockwasher (19), and cap screw (18) on the valve stem and tighten securely. Cycle the valve slowly with a gentle back and forth motion to build gradually to the full quarter turn. A fast turning motion at this point may cut the seats before they have a chance to form the proper seal.

## 4. REPAIR KITS/SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at [www.neles.com/products/valves/tank-car-valves/](http://www.neles.com/products/valves/tank-car-valves/).

# EXPLODED VIEW & PARTS LIST



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	Emergency Stem Seal	1
8	Stem Seal	1
12	Indicator Stop	1
16	Stem Nut	1
17	Handle	1
18	Hex Head Cap Screw	1
19	Lockwasher	1
21	Compression Ring	1
22	Identification Tag	1
23	Drive Screw	2
24	Upper Stem Seal (Set)	1
25	Stop Screw	1
33	Shakeproof Washer	1

Figure 6.



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