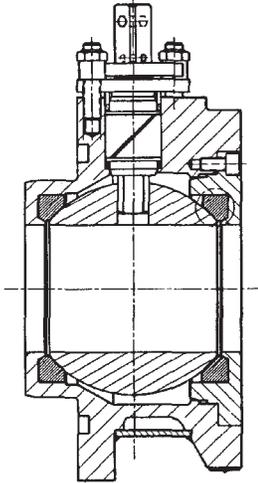


IMO - R6

Issue Date: 11/01

INSTALLATION, MAINTENANCE, AND OPERATING INSTRUCTIONS

4" (DN100) SUZRL AND 4" (DN100) SUZRS MODEL A TANK CAR FIRE-TITE® BOTTOM UNLOADING VALVES



Read entire instructions carefully before installation or servicing

1 INSTALLATION

Refer to the MAINTENANCE section for stem packing adjustment.

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 ship-ment. Tight sealing will be restored by a simple packing adjustment described in the MAINTENANCE section.

2 DISASSEMBLY

1. Read the instructions in the WARNING section.
2. Place the valve in the open position.

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.

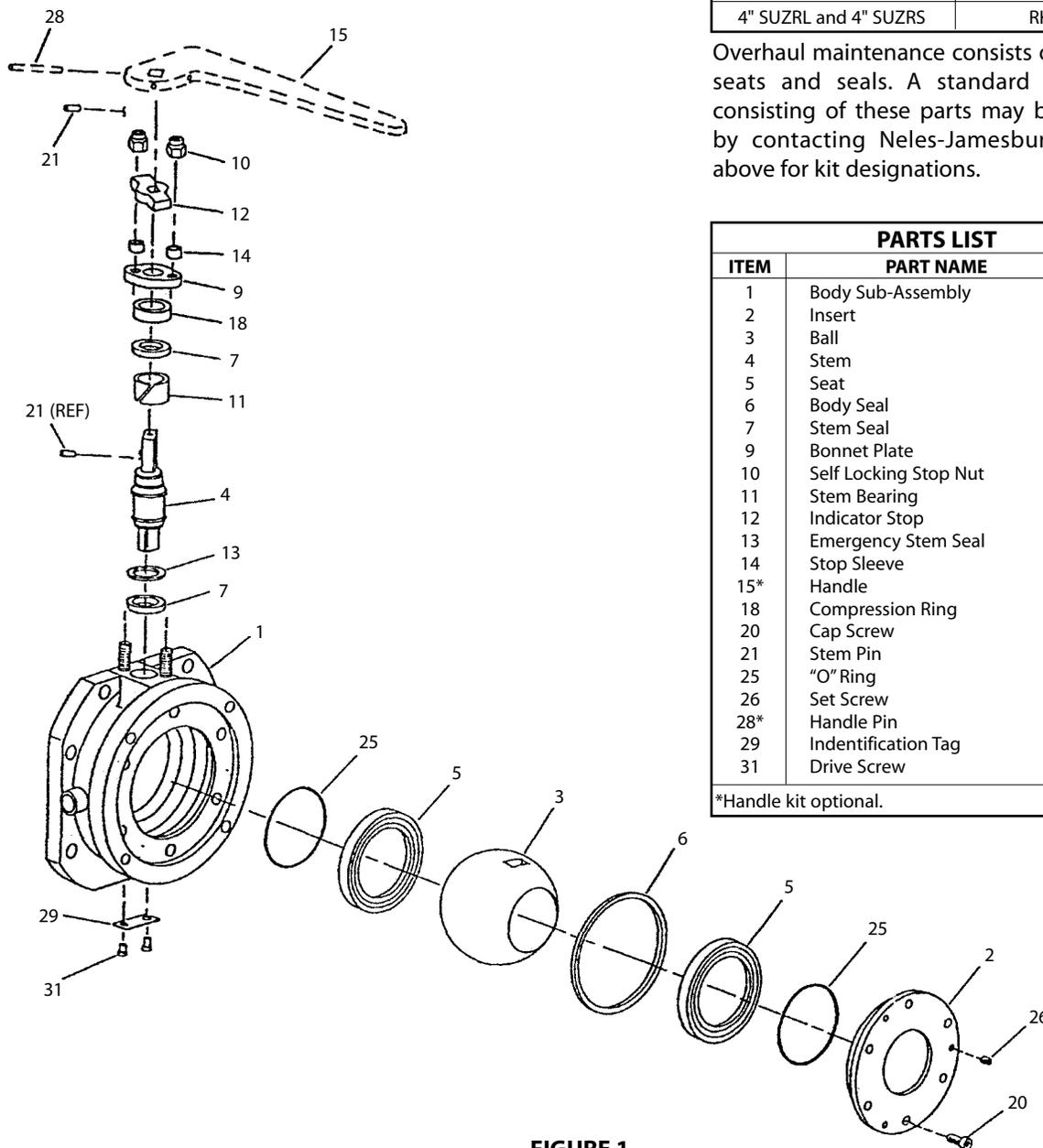
1. EXERCISE NORMAL SAFETY PRECAUTIONS TO PROTECT YOURSELF AGAINST BOTH THE FLUID AND POSSIBLE UN-RELIEVED PRESSURES IN THE VALVE ITSELF.
2. AFTER REMOVAL FROM THE CAR AND BEFORE DISASSEMBLY, CYCLE THE VALVE SEVERAL TIMES TO RELIEVE ANY RESIDUAL PRESSURE.

3. Remove the handle pin (28), handle (15), stem pin (21) self locking stop nuts (10), stop sleeves (14), indicator stop (12) and bonnet plate (9).
4. Pull out the stem (4), with the compression ring (18), top stem seal (7) and stem bearing (11). After the stem has been removed from the valve body, remove the emergency stem seal (13) and lower stem seal (7).
5. Place the valve in the vertical position with the insert up.
6. Remove the body insert socket head cap screws (20) and jack the insert (2) out of the valve body by tightening the jacking screws (26) evenly and alternately. When the insert is free of the valve body remove the top seat (5) and "O" ring (25) from the insert cavity after breaking the tack welds.
7. Replace the stem (4) back into the valve body stem bore and into the ball drive slot. Turn the stem so that the ball (3) rests in the closed position. Remove the stem.
8. Remove the body seal (6) and the ball (3) from the valve body.
9. Break the tack welds and remove the bottom seat (5) and "O" ring (25) from the valve body. Use care to prevent damage to the seat face and sealing surface of the valve body.
10. Clean the valve body and all re-usable components before reassembly.

3 ASSEMBLY

A good lubricant compatible with the flow media should be applied lightly to seats, seals, ball and stem to facilitate assembly and for ease of the initial operation.

- Slide the first valve seat (5) with "O" ring (25) into the valve body seat cavity (1), so that the bevel surface of the seat will be adjacent to the ball (3) (See figure 2). While clamped firmly and centered, tack weld the seat to the body (Figure 3).
- Place the ball (3) into the valve body (1) in the closed position. Insert the stem (4) as a temporary means of holding the ball.
- Install the second seat (5) with "O" ring (25) into the insert (2) so that the bevel surface of the seat will be adjacent to the ball (3). While clamped firmly and centered, tack weld the seat to the insert (2) (Figure 3). Install the body seal (6) into the machined sealing area of the body with the chamfer on the I.D. facing away from the ball.
- Adjust the jacking screws (26) so they do not protrude through the insert or above the insert face.
- Fit the insert (2) into the valve body aligning the mounting holes in the insert with threaded holes in the body.



SERVICE KITS

VALVE	KIT NO.
4" SUZRL and 4" SUZRS	RKR-39

Overhaul maintenance consists of replacing seats and seals. A standard service kit consisting of these parts may be obtained by contacting Neles-Jamesbury, Inc. See above for kit designations.

PARTS LIST

ITEM	PART NAME	QTY
1	Body Sub-Assembly	1
2	Insert	1
3	Ball	1
4	Stem	1
5	Seat	2
6	Body Seal	1
7	Stem Seal	2
9	Bonnet Plate	1
10	Self Locking Stop Nut	2
11	Stem Bearing	1
12	Indicator Stop	1
13	Emergency Stem Seal	1
14	Stop Sleeve	2
15*	Handle	1
18	Compression Ring	1
20	Cap Screw	6
21	Stem Pin	1
25	"O" Ring	2
26	Set Screw	3
28*	Handle Pin	1
29	Identification Tag	1
31	Drive Screw	2

*Handle kit optional.

FIGURE 1

6. Compress the insert into the body with the body insert cap screws (20) by tightening them evenly and alternately until the insert is bottomed and all cap screws are tight. (torque 25-35 ft.-lbs.)
7. Remove the stem (4) and install a stem seal (7) into the valve body stuffing box. Place the emergency seal (13) on top of the stem seal. Pre-assemble the stem (4) and stem bearing (11) as per Figure 4. Lubricate as noted with compatible lubricant. Install the stem/stem bearing assembly into the stem hole in the valve body (1). Exercise caution so that the stem bearing remains in place on the stem as it is being installed into the body stem bore.
8. Slide the second stem seal (7) over the stem (4) and into the body stuffing box. Slide the compression ring (18) over the stem and up against the stem seal. Slide the bonnet plate (9) over the stem and lined up with the body studs until it makes contact with the compression ring. Then gently tap the bonnet plate until the stem seal is seated on the stem shoulder.
9. Place one stop sleeve (14) and one bonnet nut (10) onto each bonnet stud.
10. Tighten each bonnet nut (10) evenly and alternately until they make contact with the bonnet plate (9). Then with a torque wrench, evenly apply 70-80 in.-lbs. of torque to each nut.
11. Place the indicator stop (12) over the stem (4). A tamperproof pin in the stem will only allow the indicator stop onto the stem one way. At this point the stem with the indicator stop mounted and located between stop sleeves (14) is positioned so that a counterclockwise rotation of the stem will open the valve.
12. Retain the indicator stop by inserting the stem pin (21) into the stem (4). (See Figure 5)
13. Place the valve handle on the valve stem and rotate the ball slowly with a gentle back and forth motion to build gradually to the full quarter turn. A quick turning motion at this point may cut the seats before they have a chance to flow into place.
14. Secure the handle (15) on the stem (4) with the handle pin (28) so that the handle is parallel with the ball port.

4 MAINTENANCE

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

Stem Packing Adjustment - Routine maintenance consists of tightening the two self locking stop bonnet nuts (10) periodically to compensate for the wear caused by the stem's turning against the resilient TFE seals. Tighten the bonnet nuts equally 1/2 turn. If weepage still occurs, tighten another 1/2 turn.

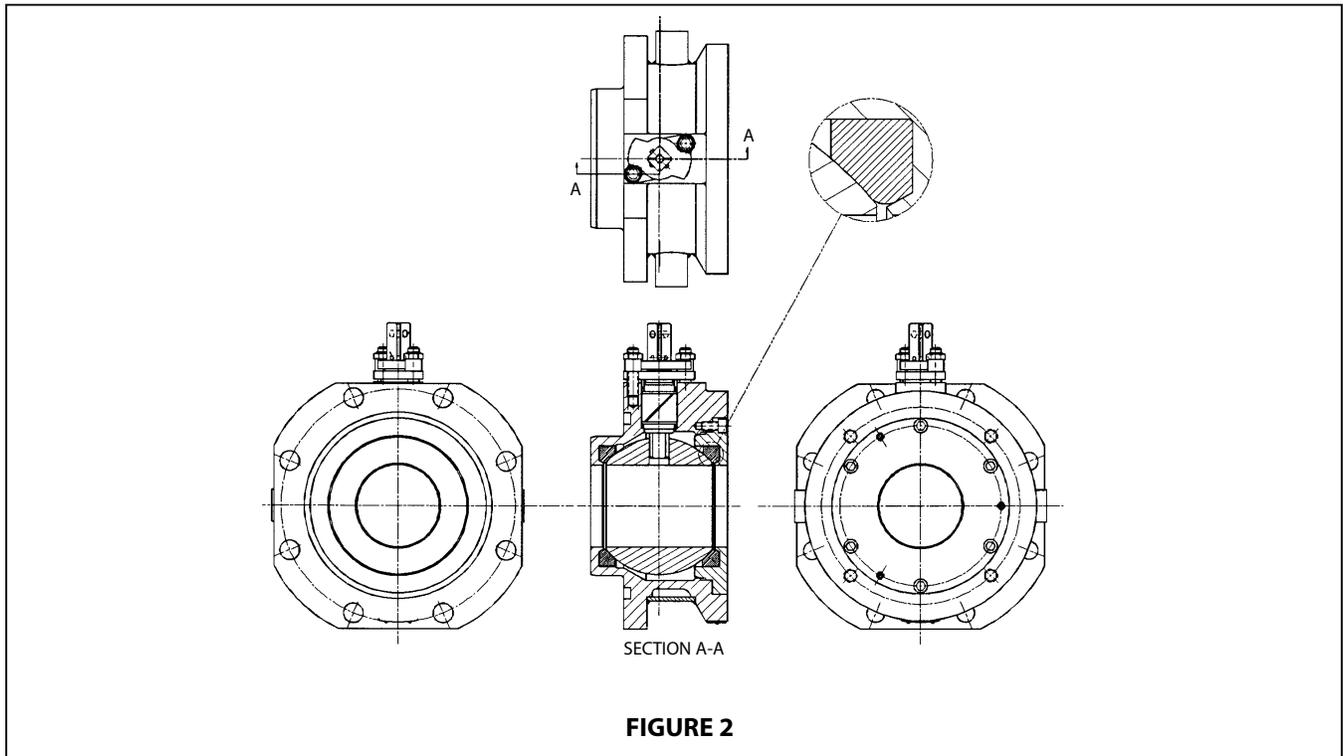
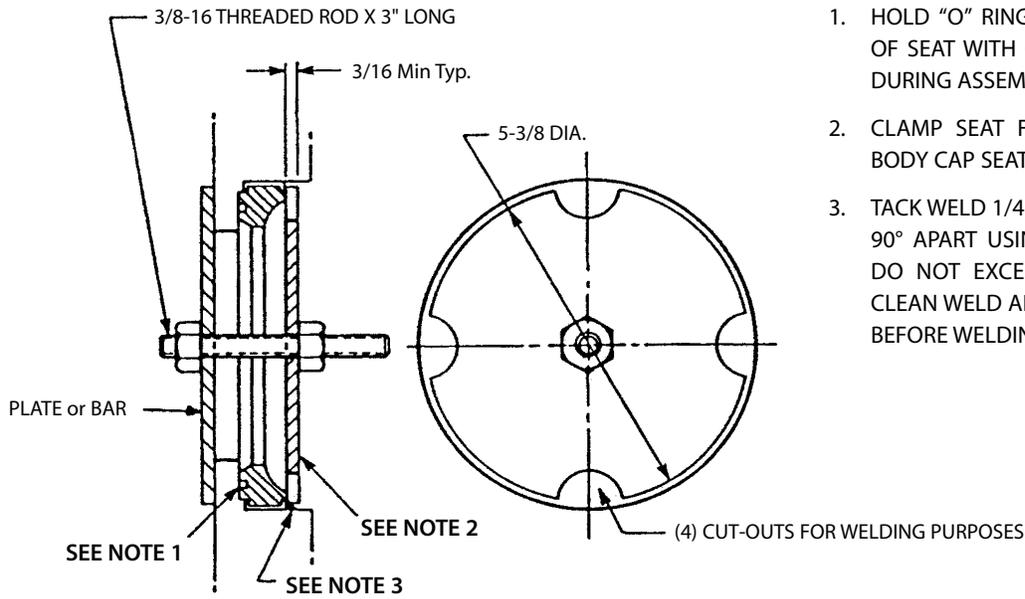


FIGURE 2

TOOL FOR COMPRESSING SEAT AND SEAL



1. HOLD "O" RING IN PLACE IN BACK OF SEAT WITH COMPATIBLE GREASE DURING ASSEMBLY.
2. CLAMP SEAT FIRMLY IN BODY OR BODY CAP SEAT CAVITY.
3. TACK WELD 1/4" LONG IN (4) PLACES 90° APART USING 308L WELD ROD. DO NOT EXCEED 300°F AT WELD. CLEAN WELD AREAS TO BARE METAL BEFORE WELDING.

NOTE: DIMENSIONS ARE IN INCHES

FIGURE 3

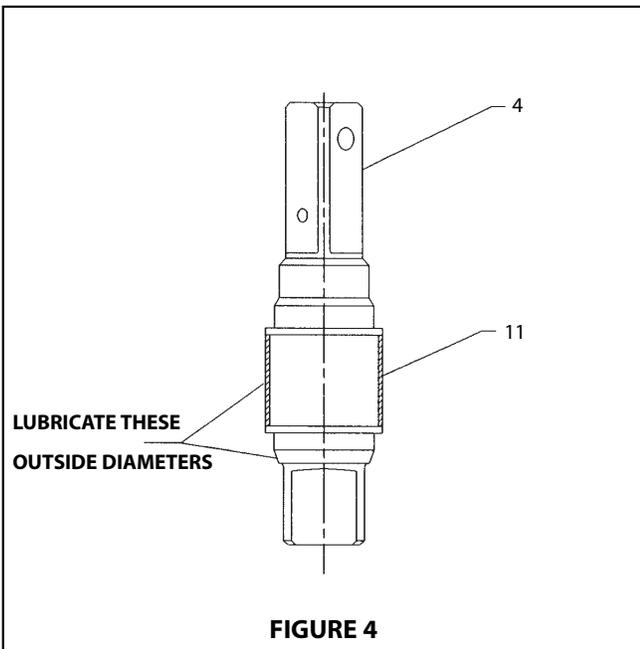


FIGURE 4

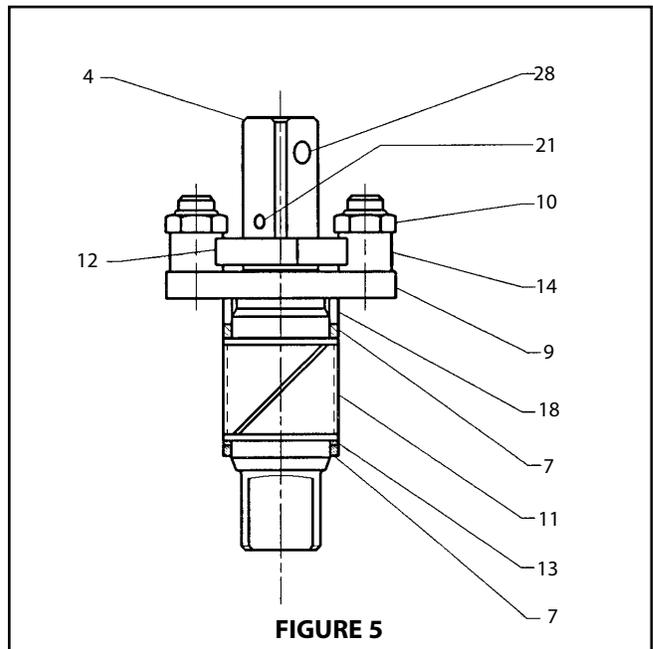


FIGURE 5

Metso Automation, Field Systems Division

Europe, Levytie 6, P.O.Box 310, 00811 Helsinki, Finland. Tel. int +358 20 483 150. Fax int. +358 20 483 151

Europe (UK), 8 Pipers Wood Industrial Park, Waterlooville, Hampshire PO7 7XU UK. Tel. int +44 (0)23 9223 8500. Fax int. +44 (0)23 9223-8510

North America, 44 Bowditch Drive, P.O.Box 8044, Shrewsbury, Massachusetts, 01545-8044 USA. Tel. int. +1 508 852 0200. Fax int. +1 508 852 8172

North America, 3100 Medlock Bridge Road, Suite 250, Norcross, GA 30071, USA. Tel. int. +1 770 446 7818. Fax int. +1 770 242 8386

Latin America, Av. Central, 181- Cháracas Reunidas, 12238-430, São Jose dos Campos. Tel. int. +55 12 335 3500. Fax int. +55 12 335 3535

Asia Pacific, 501 Orchard Road, #05-09 Wheelock Place, 238880 Singapore. Tel. int. +65 735 5200. Fax int. +65 735 2955

www.jamesbury.com • www.metsoautomation.com

