

MAINTENANCE INSTRUCTIONS FOR "60M" SERIES SWING-OUT BALL VALVES

Contents of kit:

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|-------------------|---------------------------------|
| (2) Metal seats | (1) Packing support |
| (2) Stem bearings | (3) Tubes of lubricant |
| (3) Stem springs | (1) Instruction Sheet |
| (2) Quad-rings | (3) Material Safety Data Sheets |
| (1) Ball | (1) Gland |
| (1) Lower packing | |
| (1) Upper packing | |

* Handle all parts carefully and clean before reassembly.

* DO NOT drop, nick or scratch ball or stem.

1. Drain the system. Cycle the valve open and closed once to relieve any pressure trapped between the seats. Leave valve in the open position. Note the position of the handle before disassembly as it must be reassembled in the same way to indicate the proper direction of valve flow.

NOTE: To replace the seats, ball and quad-rings only, disregard steps 2-10 and proceed to step 11. To use entire maintenance kit, follow all steps.

2. Using a wrench, remove stem nut, stem spring, stop plate, handle and grounding spring.
3. Loosen the body bolts. Remove only the black body bolt. Swing out the center body. Remove backseats and set aside as they will be reused. Remove and discard the seats and quad-rings. Cycle valve to closed position. Remove the ball and discard.

NOTE: Check stem, center body, flanges and body bolts for wear, corrosion or damage.

4. Remove lower stem nut, stem springs, and gland. Push stem into center body. Pry packing support, upper packing and lower packing out of body using an awl or screwdriver. Be careful not to scratch or nick the stem or packing bore in the body. This may result in a leak path necessitating valve replacement. Remove stem from center body. Remove stem bearings from stem.
5. Clean the stem and packing bore.
6. Lubricate stem shank (**do not lubricate the stem threads**) and both sides of each stem bearing with the appropriate lubricant listed below:

STEM SHANK	MS-LT-WL8-1
PACKINGS	MS-LT-1
BEARINGS	MS-LT-WL8-1

7. Put stem bearings on stem and insert stem up and into the center body. Hold the stem in the center body.
8. Lubricate new packings with lube listed in step #6 and place packings and packing support over stem and push into the packing bore. Refer to drawing on reverse side for proper orientation. Place gland and two stem springs on stem. The first spring concave side down and the second spring concave side up. Wipe all lubricants off stem threads.
9. Thread stem nut onto stem. Using the handle to retain the stem, torque nut as listed in the chart in step #10.
10. Place grounding spring, handle (positioned same as before disassembly) stop plate, stem spring (concave side up) and stem nut on stem. Torque nut as shown in the chart below:

SERIES	63M	65M	67M	68M
TORQUE (in.-lbs)	50	100	150	150

Note: Go to step 12.

11. Loosen the body bolts. Remove only the black body bolt. Swing out the center body. Remove backseats and set aside as they will be reused. Remove and discard the seats and

quad-rings. Cycle valve to the closed position. Remove the ball and discard.

12. Before installing metal seats, backseats, quad-rings and ball, carefully clean the center body and sealing surfaces of the flanges.
13. Lubricate the new ball, metal seats, and quad-rings with the appropriate lubricant listed below:

Ball	MS-LT-WL13
Seats	MS-LT-WL13
Quad-rings	MS-LT-1

14. Place the ball into the body cavity so that its slot engages the stem tang. Rotate the ball to the open position.
15. Insert quad-rings, seats and backseats into each side of the center body. Be sure backseats do not slip out of seats during assembly. The curved position of the seat should rest against the ball.
16. Swing the center body back into place. Reinstall the black body bolt and nut. Rotate the ball to the closed position.
17. Torquing Body Bolts: To assure uniform flange to body contact, engage the nuts onto the bolts/studs such that the flanges come into light contact with the body seals prior to applying torque. With the valve in the fully **closed position**, starting with the enclosed body bolt, tighten the body bolts in a cross pattern according to the torque valves listed in the chart below:

TORQUE SEQUENCE IN.-LBS

SERIES	1st	2nd	3rd	4th	5th
63M	10	20	40	100	100
65M	25	50	100	300	300
67M	35	75	150	400	400
68M	40	100	200	600	600

