Kit Contents:
- Seats (2)
- Packing
- Packing supports (2)
- Stem springs (3)
- Lubricant
- Ball
- Sealant
- Back seat (2)
- Metal Safety Data Sheets
- Instruction sheet

**NOTE:** Do not remove flange seals from package until ready to use. The MS-LT-R101/VS for the 63 and 65 series has a suggested minimum cure time of 24 hours for maximum performance.

Refer to Fig. 1 exploded view throughout the disassembly and reassembly instructions.

**WARNING:** Before servicing any installed valve, you must:
- depressurize system
- cycle valve

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**NOTE:** To replace ball and seats only, skip to step 23 and continue.

1. Loosen and remove the eight body bolts.
2. Remove center body from between the flange ends.
3. Remove and discard both sets of flange seals, back seats, and seals.
4. Rotate ball to the closed position. Remove and discard the ball.
5. Clean the stem threads and the sealing surface groove areas of the center body.
6. Using the handle to retain the stem, use a wrench to remove the stem nut, stem spring, stop plate, handle, and grounding spring.
7. Discard stem spring and set aside remaining components for reuse.
8. Using the handle to retain the stem, loosen and remove the lower stem nut. Set aside for reuse.
10. Using the handle to retainer the stem, loosen and remove the lower stem nut. Set aside for reuse.
11. Remove the stem bearings from the stem and discard.
12. Clean the stem and packing bore area of the valve center body and set aside for reuse.
13. Lubricate the center body packing bore area, the stem shaft, stem shoulder, and both sides of each stem bearing with the MS-LT-WL7 lubricant. **NOTE:** If using a stainless steel stem and nut, lubricate the threads and both components with MS-LT-WL7.
14. Place two (2) stem bearings onto the stem. Tighten the stem with the stem flats parallel to the flange sealing surface and insert into the center body packing bore.
15. Place the packing components into the packing bore in the order noted: lower packing support, packing, upper packing support, stem bearing, and gland. Be careful not to scratch the components. Be sure sealing areas are free of old sealant.
16. Place the two stem springs. The first one positioned concave side DOWN, the second concave side UP.
17. Thread the lower stem nut onto the stem.
18. Using the handle to retain the stem, tighten the lower stem nut to the value listed in the torque chart in step 20.
19. Place the grounding spring, handle, stop plate, stem spring (concave side UP) and upper stem nut on the stem.
20. Using the handle to retain the stem, tighten the upper stem nut to the value listed in the torque chart in step 20.
21. Place the grounding spring, handle, stop plate, stem spring (concave side UP) and upper stem nut on the stem.
22. Place the ball into the center body so that its slot engages the stem tang. Rotate ball 90° to the open position.
23. Lubricate the exterior of the new ball with a heavy, even coat of MS-LT-WL13 lubricant.
24. Place the ball into the center body so that its slot engages the stem tang. Rotate ball 90° to the open position.

Follow steps 25 through 37—ONE SIDE AT A TIME.

**NOTE:** For T67M and T68M skip to step 27.

**NOTE:** MS-LT-R101/VS has a suggested minimum cure time of 24 hours for maximum performance.

**MS-INS-T60M**
**CP Revision H**
**May, 2008**

**MS-T63M**
**MS-T65M**
**MS-T67M**
**MS-T68M**

**Torque Value**

<table>
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<tr>
<th>Value</th>
<th>MS-T63M</th>
<th>MS-T65M</th>
<th>MS-T67M</th>
<th>MS-T68M</th>
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<tr>
<td>in.∙lb (N∙m)</td>
<td>75 (8.5)</td>
<td>150 (17.0)</td>
<td>200 (22.6)</td>
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**Fig. 1 Exploded View**

**Maintenance Instructions for T60M Thermal Series Ball Valves**

**Valve Series**
- T63M
- T65M
- T67M
- T68M

**Torque Chart**

<table>
<thead>
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Follow steps 25 through 37—ONE SIDE AT A TIME.

**NOTE:** For T67M and T68M skip to step 27.

**NOTE:** MS-LT-R101/VS has a suggested minimum cure time of 24 hours for maximum performance.

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To install a new flange seal:

25. Open the appropriate sealant package, remove the cap and attach the syringe tip to the syringe.

26. Using the syringe, lay a bead of the appropriate sealant in the corner of the center body flange seal groove area, in a continuous circle, leaving no gaps. Refer to Fig. 2. Approximate bead size is 1/16 in. diameter for all series. Sealant should be no larger than 1/3 the height of the groove and no more than 1/3 the width of the groove.

27. For T67M and T68M, apply a thin even coat of MS-LT-WL7 lubricant to the entire flange seal.

28. Carefully and evenly, place and press the flange seal into the center body cavity. T67M and T68M series flange seals have a thin stainless steel cap with a thin Grafoil® backsheet that must face away from the ball.

29. Without getting sealant/lubricant on the ball, spread any extruded sealant/lubricant evenly around the internal diameter of the flange seal.

30. Apply a heavy, even coat of MS-LT-WL13 lubricant to the rounded side of the new seat.

31. Insert the seat, with the rounded side towards the ball and the concave side away from the ball, into the center body.

32. Install the back seat into the concave side of the seat. Be sure back seat is flat and does not slip out during assembly.

33. Apply another bead of sealant to the top of the flange seal, in a continuous circle, leaving no gaps. Refer to Fig. 3. Sealant bead should be the same size as the bead made in step 26. Be careful the sealant does not touch the ball.

34. If flanges are welded into system, repeat steps 25 through 33 for the opposite side before proceeding to step 35. Skip step 38.

35. Position flange against the center body. DO NOT ALLOW THE FLANGE TO SLIDE AROUND ON THE CENTER BODY.

36. Apply MS-LT-NNS-1 lubricant to the first 13 to 15 threads of the body bolts.

37. Thread lubricated body bolts through the flange and into the center body and tighten finger-tight.

38. Repeat steps 25 through 37 for the second flange and flange seal installation (opposite side of valve).

39. Torque the body bolts according to the Valve Series. Repeat the torque sequence, in the alphabetic- cal pattern, to the values listed in the 2nd, 3rd, 4th and 5th columns of the Torque Chart.

40. Tighten the body bolts to the value listed in the 1st column of the Torque Chart according to the Valve Series. Repeat the torque sequence, in the alphabetic- cal pattern, to the values listed in the 2nd, 3rd, 4th and 5th columns of the Torque Chart.

NOTE: For T67M and T68M skip to step 34.

33. Apply another bead of sealant to the top of the flange seal, in a continuous circle, leaving no gaps. Refer to Fig. 3. Sealant bead should be the same size as the bead made in step 26. Be careful the sealant does not touch the ball.

34. If flanges are welded into system, repeat steps 25 through 33 for the opposite side before proceeding to step 35. Skip step 38.

35. Position flange against the center body. DO NOT ALLOW THE FLANGE TO SLIDE AROUND ON THE CENTER BODY.

36. Apply MS-LT-WL13 lubricant to the first 13 to 15 threads of the body bolts.

37. Thread lubricated body bolts through the flange and into the center body and tighten finger-tight.

38. Repeat steps 25 through 37 for the second flange and flange seal installation (opposite side of valve).

39. Torque the body bolts according to the Torque Sequence (illustration shown). (Sequence is alphabetic- cal.)

Torque Chart

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<tr>
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