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MS-INS-C60V
CPC Revision C
March, 2001

MAINTENANCE INSTRUCTIONS FOR C60V CHLORINE SERVICE BALL VALVES

Contents of kit:

Upper Packing (1)	Seat Subassemblies (2)	Lower Packing (1)
O-Rings (2)	Packing Support (1)	Stem Springs (3) (none in 62 series)
Gland (1)	Stem Bearing (1)	Lubricant (1)
Material Safety Data Sheet (1)		

Caution: When handling or maintaining chlorine valves, it is the end users responsibility to follow his or her own company policy. Chlorine series valves meet the Chlorine Institute Pamphlet #6, Piping Systems for Dry Chlorine. The user should always review the valve design to ensure that it meets the particular system's requirements. Chlorine is toxic and a powerful oxidizer. Qualified personnel should design chlorine systems and thorough safety procedures should be followed for operation and maintenance of the particular system.

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

WARNING: Residual material may be left in the valve and system.

NOTE: It is important to refer to the exploded view drawing while following the maintenance instructions.

1. Drain the system and leave the valve in the open position. Note the position of the handle, as it must be reassembled in the same way to indicate the proper direction of valve flow.
2. Using the handle to retain the stem, use a wrench and remove the upper stem nut, stem spring, stop plate, handle, and grounding spring.

NOTE: 62 Series will not have a stem spring here.

3. Discard the stem spring. Set the other parts aside as they will be reused.
4. Loosen the four body bolts, removing only the black bolt.
5. Swing out the center body.
6. Remove and discard the seat subassemblies and O-rings.

NOTE: Before removing the ball, make note of the vent hole position as it must face the same position when reassembled. (This is the upstream position when the valve is closed).

7. Rotate the stem 1/4 turn to allow for ball removal. Stabilize the ball to keep it from falling out and being damaged. Remove the seat support rings and vented ball from the center body. Set these aside as they will be reused.

NOTE: To replace seats only, complete step #7 and skip to step #27.

8. Using the handle to retain the stem, remove the lower stem nut and set aside.
9. **62 Series:** Remove stem springs and gland. Set springs aside for later use. Discard gland.
   63-68 Series: Remove and discard the stem springs and gland.
10. Being careful not to scratch the packing bore area or the stem, pry the packing and packing supports out through the packing bore of the valve.
11. Discard the upper packing, lower packing and packing support as new ones are provided in the kit.
12. Keeping the stem flats parallel to the flange sealing surfaces, tilt and remove the stem from the body.
13. Remove the stem bearing from the stem and discard.
14. Clean the stem and body bore, being careful not to scratch or nick them.
15. Lubricate the new stem bearing, stem shank, and packing bore with MS-LT-240-AC.

NOTE: Do not lubricate the stem threads.

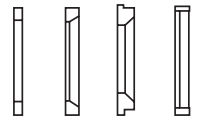
16. Place the stem bearing on the stem with the chamfer side up. Tilt the stem with the stem flats parallel to the flange sealing surface and insert into the packing bore.
17. Orient the vented ball as noted before step #7. (This is the upstream side when the valve is closed).
18. Place the vented ball into the center body such that the stem tang is engaged.
19. With the lever handle, rotate the stem 90° until the ball is in the open position. Remove the handle.
20. Lubricate the upper and lower packing with MS-LT-240-AC.
21. Insert the lower packing, upper packing, packing support and gland into the body bore.
22. Place the first stem spring concave side down and the second spring concave side up on the stem.
    NOTE: 62 Series will use stem springs removed in step 9.
23. Screw the lower stem nut onto the stem. Be sure this stem nut is roll marked with an M to designate the material alloy 400. (The upper stem nut is carbon steel material).
24. Use the handle to retain the stem and torque the lower stem nut to the values listed below.

Series	62	63	65	67	68
Torque in•lb (N•m)	25 (2.8)	50 (5.7)	100 (11.3)	150 (17.0)	150 (17.0)

25. Place the grounding spring, handle (refer to position noted in step 1), stop plate, stem spring (concave side up), and upper stem nut on the stem. **NOTE:** 62 series will not have a stem spring.
26. Torque the stem nut using the same torque values listed in step 24.

Follow steps #27 through 33 one side at a time.

27. Carefully clean the seat support rings and sealing surfaces of the flanges.
28. Position the seat support rings into the center body groove. Refer to drawing below.



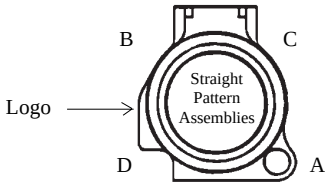
62, 63 65 67 68

NOTE: The 65 and 67 series support rings have a chamfer, the 68 series has a lip. Face the chamfer or lip towards the ball.

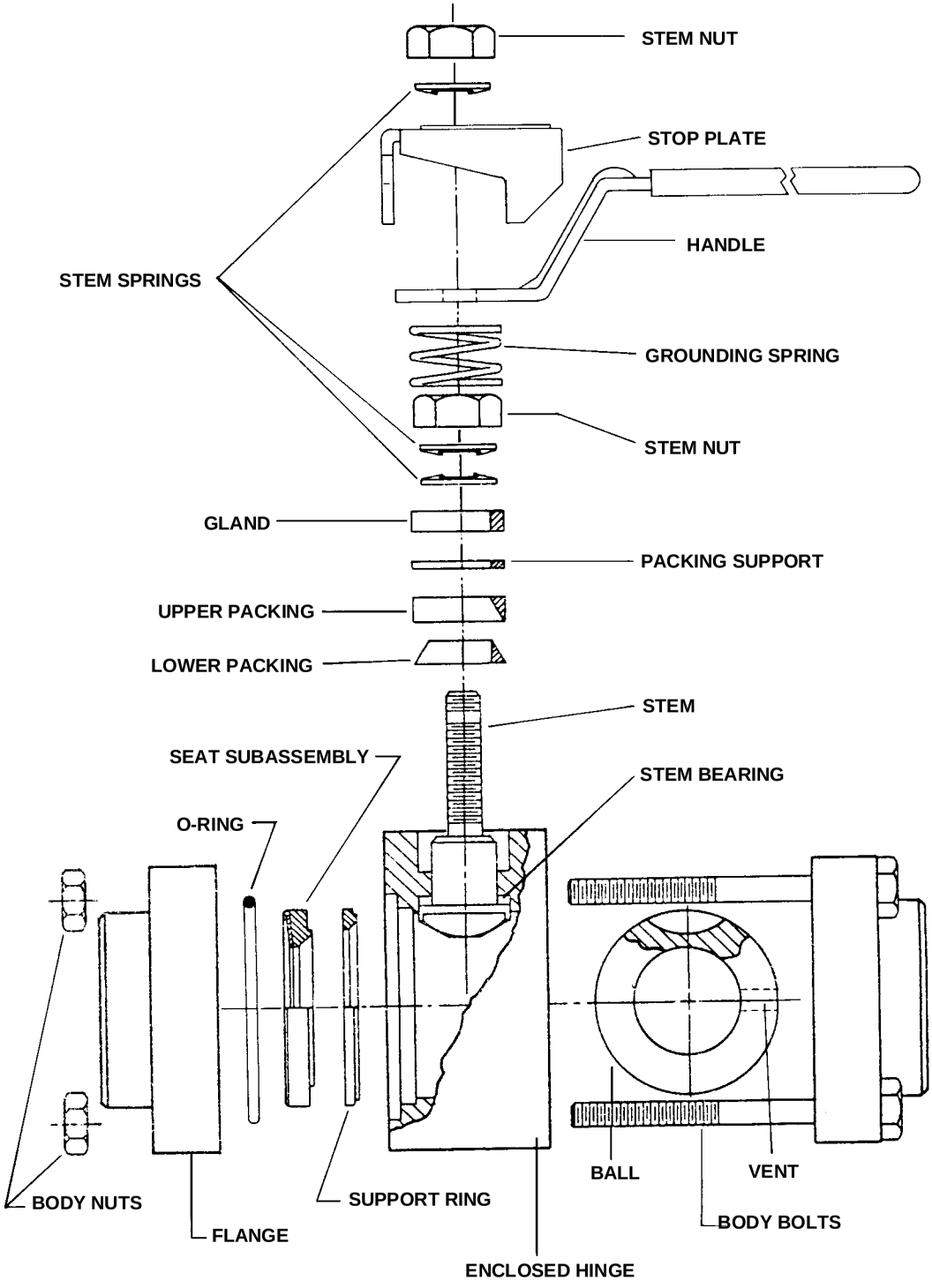
29. Place the seat subassemblies into the center body with the metal seat spring away from the ball.
30. Lubricate the O-ring with MS-LT-240-AC.
31. Position the O-rings into the center body.
32. Swing the center body back into position and reinstall the black bolt and nut.
33. Torque the body bolts to the value listed in the 1st column of the torque chart according to the valve series and in the sequence shown. Repeat the torque sequence in the alphabetical pattern to the values listed in the 2nd, 3rd, 4th, and 5th columns of the torque chart.

BODY BOLT TORQUE CHART
in•lb (N•m)

SERIES	1st	2nd	3rd	4th	5th
62	5 (0.57)	10 (1.1)	20 (2.3)	40 (4.5)	40 (4.5)
63	10 (1.1)	20 (2.3)	40 (4.5)	100 (11.3)	100 (11.3)
65	25 (2.8)	50 (5.7)	100 (11.3)	300 (33.9)	300 (33.9)
67	35 (4.0)	75 (8.5)	150 (17.0)	400 (45.2)	400 (45.2)
68	40 (4.5)	100 (11.3)	200 (22.6)	600 (67.8)	600 (67.8)



34. Test the product prior to reinstallation in system.


STEM NUT
STOP PLATE
HANDLE
STEM SPRINGS
GROUNDING SPRING
STEM NUT
GLAND
PACKING SUPPORT
UPPER PACKING
LOWER PACKING
STEM
SEAT SUBASSEMBLY
STEM BEARING
O-RING
BODY NUTS
FLANGE
SUPPORT RING
ENCLOSED HINGE
BALL
VENT
BODY BOLTS