



# **RENCOR**

**CONTROLS, INC.**

## **REPAIR PROCEDURE**

### **For METAL SEATED BALL VALVES**



The following is the Standard Procedure that Rencor Controls uses for the inspection and repair of Metal Seated Ball Valves:

1. Upon receipt, assure that all Process media has been drained from the valve and steam cleans the valve prior to any testing.
2. Prior to any disassembly, proceed as follows:
  - A. Hydro Test the Body according to ASME B16.34 paragraph 7.1 and record any leakage. If the valve fails, disassemble and proceed with repair per 2-C below.
  - B. Conduct a seat leak test in both directions according to ASME B16.104 Class V and record the results. Cycle the valve a few times and repeat the seat leak test. If the valve fails, dis-assemble and proceed with repair per 2-C below.
  - C. Disassemble the valve, inspect the following, and record the findings:

- Note the condition of the flanges and record any deviation from B16.5 and damage that requires repair.
- Note the general overall condition of the body internals. Inspecting for any body wear or damage that results in a body wall that violates paragraph 6.1.1 of B16.34 1996.
- Note the condition of the seats.
- Note the surface condition of the ball.
- Check the diameter of the ball.
- Check the TIR roundness of the ball.
- Check the straightness of the stem.
- Note the condition of the stem adjacent to the packing.



3. Replace or Repair the Stem/Ball and Seats as required. If the ball is damaged, but repairable, and/or the chrome plating is discontinuous, resurface the ball with Dimalloy. Match lap ball and seat sets.

4. Bead-Blast all non-critical areas.

5. Weld up any body damage that requires the addition of metal to achieve conformance to B16.34 1996, paragraph 6.1.1.

6. Re-assemble the valve with the following:

- A. New body gasket, seat seals and stem packing.
- B. The proper metal-to-metal clearances for the Service.



7. Hydro-Test according to B16.34 1996 Shell Test paragraph 7.1.

8. Seat leak test in both directions in accordance with ASME B16.104, Class V.

9. Cycle the valve to assure smooth operation.





For your information the following is the procedure Rencor Controls uses for the inspection and repair of the Metal Seated Ball Valves

- 1) Upon receipt, assure that all Process media has been drained from the valves. Also, steam cleans the valves prior to any testing.
- 2) Prior to any disassembly proceed as follows:
  - a) Hydro Test the Body according to ASME B16.34 paragraph 7.1 and record any leakage. If the valve fails, disassemble and proceed with repair per c) below.
  - b) Conduct a seat leak test in both directions according to ASME B16.104 Class V and record the results. Cycle the valve a few times and repeat the seat leak test. If the valve fails dis-assemble and proceed with repair per c) below.
  - c) Disassemble the valve and inspect the following and record the findings: Bead blast all non critical areas.
    - Note the condition of the flanges and record any deviation from B16.5 and damage that requires repair.
    - The general over all condition of the body internals. Note: any body wear or damage that results in a body wall that violates paragraph 6.1.1 of B16.34 1996.
    - The condition of the seats
    - The surface condition of the ball
    - Check the diameter of the ball
    - Check the TIR roundness of the ball
    - The straightness of the stem
    - The condition of the stem adjacent to the packing.



- 3) Replace or repair the Stem/ball and seats as required. If the ball is damaged, but repairable, and/or the chrome plating is discontinuous, resurface the ball with stellite. Match lap ball and seat sets.
- 4) Weld up any body damage that requires the addition of metal to achieve conformance to B16.34 1996, paragraph 6.1.1. Submit all welder certification, weld procedure certification to IP for approval prior to weld repair.



- 5) Re-assemble the valve with the following:
  - a) New body gasket, seat seals and stem packing. The proper metal-to-metal clearances for the Service.
  - b) Hydro-Test according to B16.34 1996 Shell Test paragraph 7.1. To be witnessed and signed off by Quality Assurance personnel.
  - c) Seat leak test in both directions in accordance with ASME B16.104 Class V. To be witnessed and signed off by Quality Assurance personnel.

- 6) Cycle the valve to assure smooth operation.
- 7) Assure all Markings conform to ASME B16.34 paragraph 4 and MSS SP-25
- 8) Certified test report completed by Quality Assurance and filed with a copy sent to the customer.



Regards,

Rencor Controls, Inc.

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