

# **APOLLO<sup>®</sup>**

## **INSTALLATION, OPERATION AND MAINTENANCE GUIDE**

### **For Apollo Actuator Ready 3-Piece Ball Valves:**

83R-200 SERIES  
83R-700 SERIES  
85R-200 SERIES  
86R-200 SERIES  
86R-700 SERIES  
401R-200 SERIES



 **CONBRACO**  
Ball Valve Division

## **INSTALLATION, OPERATION AND MAINTENANCE OF APOLLO ACTUATOR READY "AR" 3-PC. BALL VALVES**

Valves must be installed in piping systems that comply with the applicable portions of ANSI B31. Special consideration should be taken with respect to expansions and contractions of the piping system and media flowing through it.

### **INSTALLATION**

1. For socket weld & butt weld valves, tack valve in place.
2. Ensure that the valve is in the OPEN position. (Valve must be in the open position for removal of the body center section to allow the ball sphere to clear the end caps.)
3. Remove the body center section and set aside in a clean place.
4. Finish welding the end caps in place.
5. Check and clean faces of end caps of any welding splatters, scale or oxides.
6. Re-assemble the body center section (using the two additional new seats furnished) between the end caps. Replace the body bolt that was removed and hand tighten all four hex nuts.
7. Torque the hex nuts in 1/4-turn increments, using a crossed pattern, until the proper torque setting is reached. (Refer to Torque Chart)

NOTE: When bolts are properly torqued, the end caps will be flush against the body center section on both sides. Improper torque can warp the end caps, permanently damaging the unit.

### **OPERATION**

If the valve uses a lever:

The levers are marked showing proper rotation for "ON" and "OFF" positions. Rotation is clockwise for "OFF" and counterclockwise for "ON".

#### **If valve uses an actuator:**

The valve is "ON" when the red indicator plugs on the actuator are aligned (i.e. parallel) with the piping and actuator body. Conversely, when the red indicator plugs are perpendicular to the piping and actuator body, the valve is "OFF" and a no flow condition is indicated.

### **MAINTENANCE**

Normal stem packing wear can be compensated for by tightening the low profile nut under valve lever. The bent tab on the locking plate must be bent down prior to adjusting the nut. Turning the nut a quarter turn clockwise is usually sufficient. If no leakage is detected upon flowing the valve, a locking plate tab must be turned up on a nut flat. If leakage is observed, continue to tighten the nut in clockwise eighth-turn increments until leakage stops.

## GENERAL REPAIR OF THE VALVE

**CAUTION:** Do not disassemble valve while under pressure! Special care must be taken if hazardous media is used in piping system.

1. Open valve. (Valve must be in the open position to allow the ball sphere to clear the end caps.)
2. Remove one top bolt and loosen the remaining three bolts approximately three full turns.
3. Remove the body center section.
4. Remove lever nut by turning counter-clockwise and remove lever.
5. Bend down tab on lock tab washer and remove low profile nut by turning counterclockwise. Remove lock tab washer, belleville washers (if applicable) and gland ring from stem and push stem down into the body to remove.
6. Stem packing may be cut with a knife to facilitate removal, but be careful not to damage packing box.
7. Replace bearing, stem packing, lock tab washer and belleville washers as furnished in service kit. Inspect the ball and stem for excessive wear and replace if necessary. Contact Conbraco Industries Inc. for replacement part information.
8. Reverse the above procedures to reassemble.
9. Replace the new or rebuilt body center section.
10. Replace the body bolt that was removed in Step 2 and hand tighten all four hex nuts.
11. Torque the hex nuts in 1/4-turn increments, using a crossed pattern, until the proper setting is reached. (Refer to Torque Chart)

### TORQUE CHARTS

83R-200 83R-700 86R-200 86R-700	85R-200	BOLT TORQUE IN/LBS
1/4" to 1"	3/4" to 1-1/4"	100
1-1/4" to 1-1/2"	1-1/2" to 2"	150
2"	N/A	270

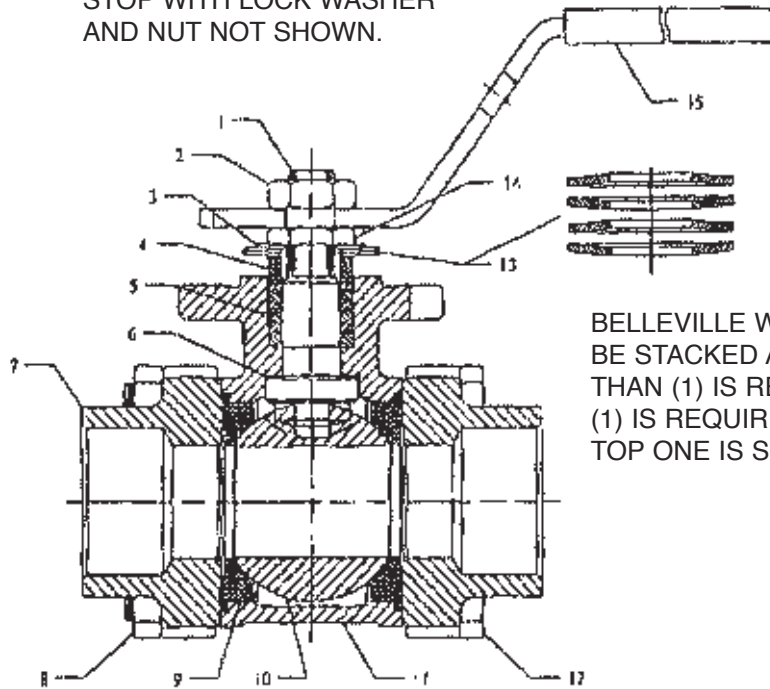
83R-200 83R-700 86R-200 86R-700	85R-200	STEM NUT TORQUE IN/LBS
1/4" to 1/2"	3/4"	50
3/4" to 1"	1" to 1- 1/4"	75
1-1/4" to 2"	1-1/2" to 2"	150

NOTE: If belleville washers are being added to valve, see illustration (page 4) for washer location.

**NOTE: ALWAYS TEST VALVE AND SYSTEM PRIOR TO PUTTING INTO SERVICE.**

# ACTUATOR READY 3-PC. BALL VALVE

STOP WITH LOCK WASHER  
AND NUT NOT SHOWN.



BELLEVILLE WASHERS SHOULD  
BE STACKED AS SHOWN IF MORE  
THAN (1) IS REQUIRED. IF ONLY  
(1) IS REQUIRED, THEN PLACE AS  
TOP ONE IS SHOWN.

- |                          |  |
|--------------------------|--|
| 1. STEM (BLOW-OUT-PROOF) | 9. SEAT (2)  |
| 2. JAM NUT               | 10. BALL   |
| 3. LOCK TAB PLATE        | 11. BODY   |
| 4. GLAND                 | 12. BODY BOLT (4)                                    |
| 5. PACKING SET           | 13. BELLEVILLE WASHERS<br>(QUANTITIES VARY PER SIZE) |
| 6. THRUST BEARING        | 14. LOW PROFILE NUT                                  |
| 7. END CAP (2)           | 15. LEVER/GRIP ASSEMBLY                              |
| 8. BODY BOLT NUT (4)     |  |