

# APOLLO®

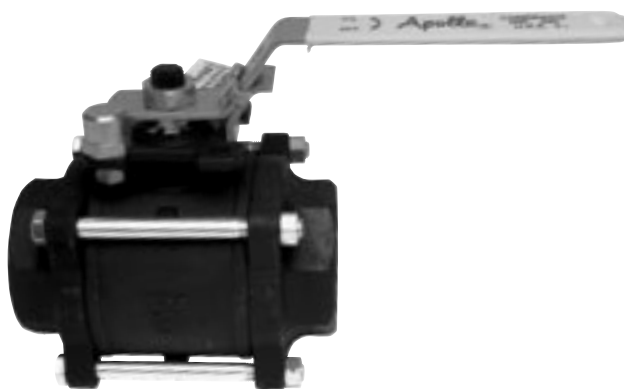
## INSTALLATION, OPERATION AND MAINTENANCE GUIDE

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

83R-100 SERIES

85R-100 SERIES

86R-100 SERIES



## **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. Pipe connections to be threaded into these valves should be accurately threaded, and free of dirt and metal shavings. Two full wraps of PTFE thread sealant (Teflon tape) should be applied to the threaded portion of the pipe prior to installation in the valve.
2. Use two wrenches when making the pipe joint. Apply one wrench on the end cap nearest the joint being tightened to prevent transmitting torque through the body bolts.

### **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.

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

## 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)

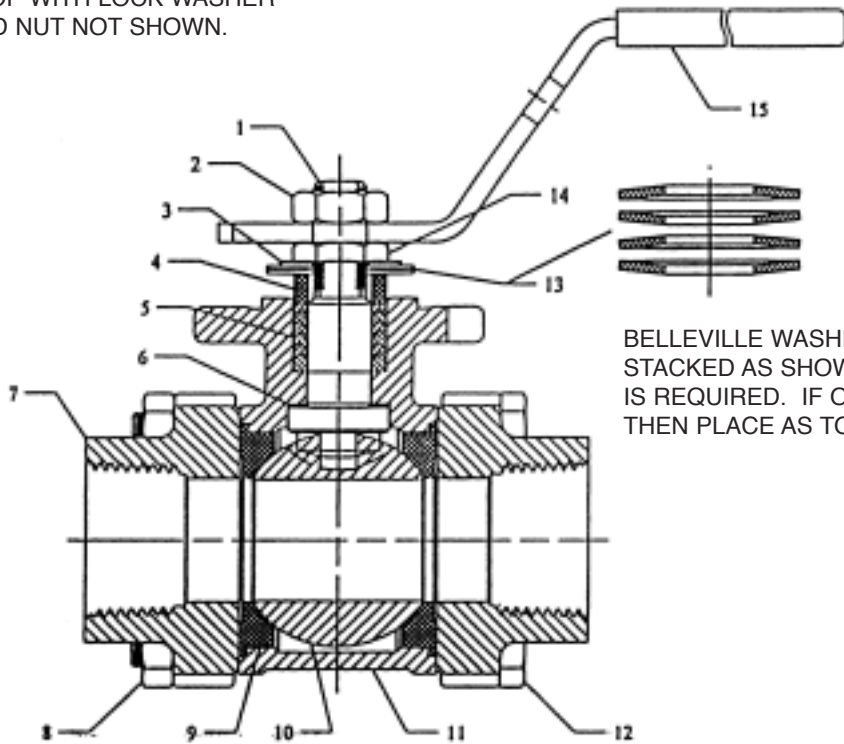
### TORQUE CHARTS

83R-100 86R-100	85R-100	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-100 86R-100	85R-100	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: ALWAYS TEST VALVE AND SYSTEM PRIOR TO PUTTING INTO SERVICE.**

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)
- 2. JAM NUT
- 3. LOCK TAB PLATE
- 4. GLAND
- 5. PACKING SET
- 6. THRUST BEARING
- 7. END CAP (2)
- 8. BODY BOLT NUT (4)

- 9. SEAT (2)
- 10. BALL
- 11. BODY
- 12. BODY BOLT (4)
- 13. BELLEVILLE WASHERS  
(QUANTITIES VARY PER SIZE)
- 14. LOW PROFILE NUT
- 15. LEVER/GRIP ASSEMBLY