FLOWSERVE

McCANNA/MARPAC Valves

MMAIM2012

3" - 10" JRP1/JRP3 Flanged One-piece Ball Valves

Installation, Operation and Maintenance Instructions

CAUTION: Flowserve recommends that all product which must be stored prior to installation be stored indoors, in an environment suitable for human occupancy. Do not store product in areas where exposure to: relative humidity above 85%, acid or alkali fumes, radiation above normal background, ultraviolet light, or temperatures above 120°F or below 40°F may occur. Do not store within 50 feet of any source of ozone.

A. INSTALLATION

1. Standard valves may be installed for flow or vacuum in either direction. Use care to exclude pipe sealants from valve cavity.
2. When installing, use standard gaskets suitable for the specific service. Tighten flange bolts or studs evenly.

B. OPERATION

1. The operation consists of turning the handle and/or stem ¼ turn clockwise to close, and ¼ turn counterclockwise to open. When stop plate pointer and/or stem groove is in line with the pipeline, the valve is open. These valves may also be automated.
2. These valves will provide bubble-tight shutoff when used in accordance with Flowserve's published pressure/temperature chart.
3. It is not good practice to leave a ball valve partially open (throttling operation) without knowledge of the pressure drop and flow at that position. These conditions should be checked with Flowserve.
4. Media which can solidify, crystallize or polymerize should not be allowed to stand in ball valve cavities.
5. Torque Requirements: Operating torque requirements will vary depending on the length of time between cycles, line pressure, type of valve seats and the media in the system. For a detailed analysis of valve torque requirements, see McCANNA/MARPAC's Actuator Sizing Manual.

NOTE: *Media which contain fine powders (25 microns or less) will significantly raise ball valve torque requirements.*

C. MAINTENANCE

If seepage is noted at stem, tighten retaining nut ⅛ turn at a time until seepage stops.

CAUTION: Excessive tightening causes higher torque and shorter stem seal life.

D. REBUILDING

⚠ WARNING: BALL VALVES CAN TRAP PRESSURIZED FLUIDS IN BALL CAVITY WHEN CLOSED.

If the valve has been used to control hazardous media, it must be decontaminated before disassembly. It is recommended that the following steps are taken for safe removal and disassembly:

- Relieve the line pressure. Operate the valve prior to attempting removal from line.
- Place valve in half-open position and flush the line to remove any hazardous material from valve body.
- All persons involved in the removal and disassembly of the valve should wear the proper protective clothing such as face shield, gloves, apron, etc.

CAUTION: If the seats and seals installed differ from those removed, the valve nameplate must be replaced or remarked to indicate the altered materials and ratings or valve tagged to so indicate.

NOTE: *JRP1/JRP3 Revision OF valves do not have retaining screws. Consult your distributor or Flowserve for end plug removal tools to facilitate removal of screwed ring insert retainer.*

1. a. Disassembly of Valve:
    1) Place valve in open position. Unscrew all flange bolts or studs and nuts and remove valve from line.

2) With valve in closed position, remove end plug retaining screws.

3) Remove end plug. If necessary, drive end plug from valve using wooden drift applied to ball.

4) Remove body seal, ball, seats and seat back seals (if any).

b. Removing Stem Assembly:

GENERAL NOTE: *Due to different valve series and body styles, one or two metal stem centering washers may be used and the stem seal may be one-piece or three-piece.*

1) Remove handle assembly (if any) by loosening handle screw.

2) Remove retaining nut. Prevent stem from rotating by holding stem with wrench.

3) Remove stop or valve stem spacer (actuated valves). Remove and discard Belleville washer(s) (if any). Remove and retain the follower.

4) Push stem into body cavity and remove. Remove stem seal(s), stem seal protector (if any) and thrust bearing. Remove and retain stem centering washer(s).

c. Visual Inspection:

1) The ball and the surfaces against which the seats and seals are installed should be undamaged, clean and free of pit marks and scratches. Light marring from the action of the ball against the seats is normal and will not affect the operation of the valve. Flaws which can be seen but barely detected with finger tips are acceptable.

2) The stem and body surfaces that the thrust bearing and stem seals contact, must be undamaged, clean and free of pit marks and scratches.

d. Reassembly:

CAUTION: Care must be used when handling graphite stem seals, thrust bearing, body seals and seat back seals. These parts can be easily damaged by squeezing the O.D. of the seal. Parts are to be handled on the flat surfaces rather than the O.D. These parts will not work if they are cracked or broken. Light flaking of the material is acceptable. If resistance is encountered when installing stem seals over the stem, use follower to gently push the stem seal down.

1) Lightly lubricate the ball, seats, seat back seals (if used), body seal, stem seal(s), stem seal protector (if any) and thrust bearing with a lubricant compatible with media being handled. White petroleum jelly is a good general purpose lubricant.

2) To reassemble stem, reinstall stem centering washer(s) into the recesses in the body. When only one washer is used, it goes inside recess on top of the body and under the stem seal(s). Place new thrust bearing onto stem and insert through body cavity. The thrust bearing can be distinguished from the stem seals by the darker color of the 25% filled fluoropolymer used in the thrust bearing. Assemble new stem seal(s) over the top of the stem and down into the recess in the top of the body. The follower is installed on top of the stem seal(s). For valves with graphite stem seal(s), the stem seal is metallic silver gray and thicker than the thrust bearing. A Belleville washer is also added, concave side up over follower (3" - 8" sizes only). Place stop (or spacer) onto valve stem.

3) When stem assembly is complete, place retaining nut onto stem. Using handle or wrench to prevent rotation, tighten retaining nut to fully compress packing or fully flatten Belleville(s), if used, then backed off ⅛ turn. Excessive tightening causes higher torque and shorter stem seal life.

4) Insert far seat and seat back seal (if any) in body. Make sure seat rests firmly on back surface of recess. If the seat back seal is not correctly positioned it could be damaged or cause the valve to leak.

5) With valve in closed position (stop plate pointer and/or stem groove going across the pipeline), insert ball into body so that stem slot engages tang on stem.

6) Install and make sure body seal rests squarely on seal surface of body.

CAUTION: If the body seal is installed on the end plug, it will be damaged. Insert seat and seat seal (if any) in recess of end plug, and slide the end plug into the body as far as it will go.

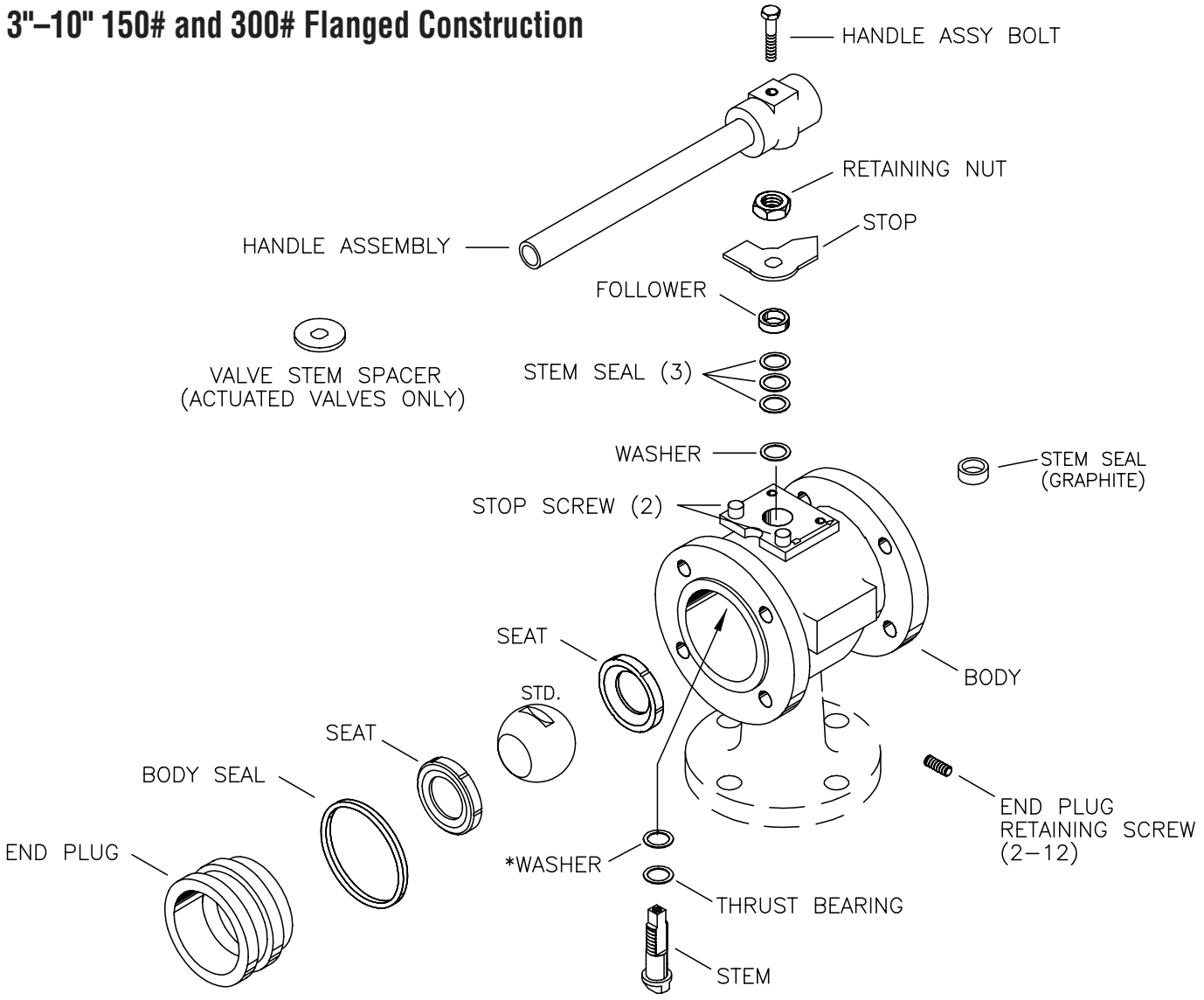
7) Secure end plug in place by threading in the end plug retaining screws and tightening each one firmly. Proper installation will allow no more than .010 protrusion of the end plug beyond the valve body.

8) Replace handle assembly (wrench block and extension) and tighten hex head screw (manual valves only).

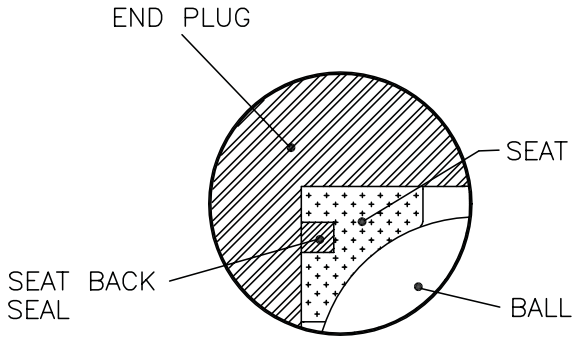
9) Upon reinstallation of the valve in the line, retighten the end plug retaining screws after the flange bolts are fully torqued.

After the valve is assembled, it should be cycled a few times to ensure that the valve operates smoothly with no chattering of the ball. The normal operation is an initial high torque to "break" from the closed position to a smooth running lower torque mid-cycle, to a high torque at the end of the 90° cycle or open position. The torque is similar when closing.

3"–10" 150# and 300# Flanged Construction



NOTE:
FLANGED VALVE IS SHOWN.
*THIS WASHER IS NOT USED ON ALL VALVE STYLES, USE EXISTING WASHER WHEN PRESENT.



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