

McCannaflo[®] Ball Valve

1/4" – 2" Threaded Ends

Installation, Operating and Maintenance Instructions

A study of the sectioned drawings will reveal the simple construction of McCannaflo threaded end ball valves. This line of valves has the "free floating" ball principle. The ball is not fixed but is free to move with the line pressure. As a result of this feature, these valves are capable of tight shut-off with flow in either direction or dead-ended, regardless of

the position of the valve in the line. The downstream seat, which is opposite the pressurized side of a closed valve must carry the load exerted by the line pressure on the ball, while the upstream seat is subject to little load or wear. For this reason it is sometimes possible to increase useful seat life by turning the valve end-for-end in the pipe line.

No.	Description
1	Handle
2	Stem
3	Stop Pins (2)
4	Handle Retainer Nut
5	Travel Stop
6	Gland Ring
7	Belleville Washer
8	Ball
9	Seats (2)
10	Stem Seal Set
11	Body
12	Adaptor Gaskets (2)
13	Grounding Washer
14	Adjusting Nut
15	Adaptors (2)

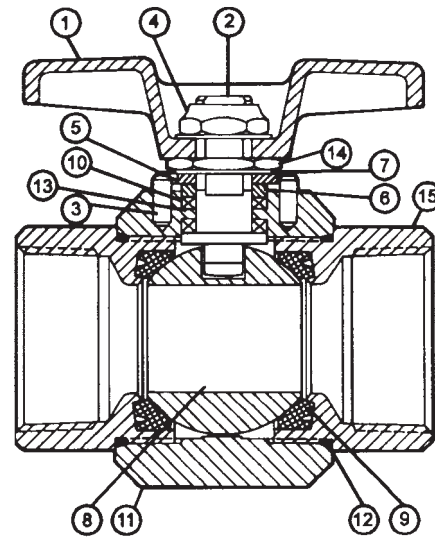


FIGURE 1

1. Installation

These valves may be installed in any position, and flow may be from either direction. Special valves are marked to indicate special service or flow direction. If valve has been furnished with means for body cavity pressure relief, Installation Bulletin V-572 should be carefully read before installation.

The hex end pieces (adaptors (15) are bottomed out in a very tight metal to metal fit in factory assembly. This should prevent the inadvertent loosening of the adaptors (15) when any normal piping force is used in either direction. If it is necessary to back off piping to line up equipment in new systems, it is still important to grip the adaptor (15) next to the pipe being adjusted with a strap or parallel jaw wrench. Do not use wrenches on the round body portion.

2. Stem Seal Adjustment

If leakage is evident in stem packing area, tighten the adjusting nut 1/4 turn. If leak still persists, repeat above. Replacement of stem seals (10) is indicated if the leak is still apparent after 1/2 turn.

3. Disassembly for Seal Replacement

— WARNING —

- A. Begin with the valve partially open in a depressurized line.
- B. Hold the valve by the hexagonal adaptor (15) nearest to the pipe to be disengaged. Unscrew the pipe from the adaptor (15).

- C. Unscrew the valve by using a wrench on the adaptor (15) that is still in the pipe line.
- D. Hold valve in a vise by one adaptor (15) and unscrew the other adaptor (15). Considerable force may be required. It does not matter which adaptor (15) comes loose, as the adaptors are identical.
- E. Turn the handle (1) to the closed position. The ball (8) may now be rolled out of the body (11).
- F. Clean and inspect the ball (11) and the other valve parts. If the ball (8) is scratched or gouged it must be replaced.
- G. Pry the seats (9) out of the adaptors (15) and discard.
- H. If the stem seals (10) leaked in service they must be replaced. Remove the handle retainer nut (4), handle (1), adjusting nut (14), Belleville washer (7), travel stop (5) and gland ring (6). Depending on the valve size, age and handle type, the valve may have only the handle retainer nut (4), handle (1) and gland ring (6).
- I. Push the stem (2) down through the body (11) and out one end. Remove upper and lower stem seals (10) and grounding washer (13). Save the grounding washer.

- A. Press the lower stem seal (10) into the counterbore. The raised outer edge should face into the counterbore. Insert stem (2) through the body (11). Press grounding washer (13) into upper counterbore with fingers up. Press upper stem seal (10) into counterbore with the raised outer edge pointing into the valve. Tap down with gland ring (6).
- B. Add other handle and travel stop parts in the reverse order of disassembly. Do not add handle retainer nut (4) or adjusting nut (14). Turn handle (1) to assure that the handle (1) will be lined up exactly with the pipeline by a counterclockwise rotation. If this is not possible, T-handle (1) on 1/4" to 3/4" valve must be turned end for end or travel stop (5) turned end for end. When proper cycle is established, adjusting nut (14) may be installed. Tighten to torque values shown in figure 2. Cycle handle (1) several times and recheck adjusting nut torque. Attach handle (1) permanently and tighten handle retainer nut (4). Where only one nut is used, attach handle (1) and adjust stem seals (10) by tightening handle retainer nut (4).
- C. Press seats (9) into the recess of the adaptors (15) with the flat side against the adaptor (15) and the spherical bevel facing into the valve body cavity.
- D. Discard the old adaptor gasket (12) if the adaptor (15) has been removed or loosened. Slip on a new gasket (12) and use care to prevent twisting or cutting. If both adaptors (15) have been removed, thread one adaptor (15) in finger tight. If adhesive is used, first check for compatibility with line fluid. Do not use TFE tape in the adaptor/body joints.
- E. Turn handle (1) perpendicular to valve. Insert ball (8) into body (11) in closed position so that ball slot lines up with stem (2) tang.
- F. Thread second adaptor (15) into body (11) with the ball (8) in place in full open or full closed position. Using wrench and vise or two wrenches on adaptor flats only, tighten adaptors (15) until a tight metal to metal fit is achieved with the body ends. Make sure that adaptor gaskets (12) are not pinched during tightening. They should be completely contained within the slightly beveled body opening. Cycle valve several times before installing in the line.
- G. It may be necessary to adjust stem seal tightness as the stem seals (10) relax to best fit position underline conditions. Follow procedures in the stem seal adjustment section of this bulletin.

4. Reassembly

NOTE: The valve may be assembled and operated dry, though lubrication will aid in assembly and reduce initial operating torque.

Stem Nut Torque	
Valve Size	Torque (in-lb)
1/4" – 3/8"	30
1/2" – 3/4"	60
1" – 2"	120

FIGURE 2

Any lubricant used must be compatible with the line fluid. With this in mind, light lubrication of parts may be read into each assembly step as desired.

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For more information about Flowserve Corporation, contact www.flowserve.com or call USA 1-800-225-6989.

FLOWSERVE CORPORATION
FLOW CONTROL DIVISION
 1978 Foreman Drive
 Cookeville, Tennessee 38501 USA
 Phone: 931 432 4021
 Facsimile: 931 432 3105
www.flowserve.com