



Installation, Operation & Maintenance

Full-Flo Series Ball Valve

Model: F150 / Model F300

F150 and F300 2-Piece Ball Valves

Warnings & Safety Instruction

Stayflow can not anticipate all of the situations a user may encounter while installing and using valves. The user must know and follow all applicable industry specifications on the safe installation and use of these valves. Mis-application of the product may result in injuries or property damage. Refer to product catalogues, brochures and IOM for additional product safety information or contact factory technical service.

- 1 Keep hands and objects away from the valve ports at all times. Actuated valve could be accidentally operated, resulting in serious injury or damage.
- 2 Before removing a valve from the line always make sure the line has been depressurized and drained.
- 3 Utmost caution must be taken when handling a valve that has toxic, corrosive, flammable or a contaminant media flowing through its pipeline.
- 4 The following safety precautions are recommended when dismantling valves with hazardous media:
 - A. Wear eye shield, protective headgear, clothing, gloves and footwear.
 - B. Have available running water.
 - C. Have a suitable fire extinguisher when media is flammable.
- 5 Do not try to operate a valve that exhibits any sign of leakage. Isolate the valve and repair or replace it.

DESIGN

Split body, two-piece construction, allows ease in maintenance of valve ball and seat, without special tools. This line of valves utilizes the "free floating" ball principle. The ball is not fixed, but is free to move with the line pressure. As a result, these valves are capable of tight shut-off with the 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 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 pipeline.

USE

Maximum results and long life of valves can be maintained under normal working conditions and in accordance with pressure/temperature chart.

MANUAL OPERATIONS

The opening and closing of the valve is done by turning the handle a ¼ turn (90 degrees)

The valve in open position: the handle is in-line with the valve or pipeline.

The valve in closed position: the handle is across or perpendicular to pipeline.

AUTOMATED OPERATION

Valves with actuators should be checked for actuator-valve alignment. Angular or linear misalignment will result in high operational torque.

GENERAL INFORMATION FOR ON-SITE INSTALLATION

The valve may be fitted in any position on the pipeline. Before installing the valve, the pipe should be clean of dirt, burrs and welding residues, or you will damage the seats and ball surface.

DISASSEMBLY & CLEANING PROCEDURES

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 reassembly.

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

As shipped from the factory, valves contain a silicone based lubricant. This is for break-in and may be removed, if it is objectionable for a particular application, by disassembling and solvent washing.

DISASSEMBLY FOR SEAL & PACKING

Stem seal leakage may be corrected without disassembly. Tighten the packing gland nuts until leakage stops. If leakage continues or valve's operating torque becomes excessive, the seals are worn and replacement will be necessary. **WARNING:** do not remove packing gland while line is under pressure! Begin with the valve partially open in a depressurized line.

1. Remove the flange bolts and nuts and lift valve from line for servicing. **NOTE:** care should be taken to avoid scratching or damaging serrated gasket. These valves can be heavy depending on what size you are repairing. They should be adequately supported before removal from the line has begun.
2. Loosen handle set screw and remove handle and stop plate. Next, remove gland nuts, gland flange and gland.
3. Remove body end nuts, using proper wrench size. Lift off body end. One seat should come out with body end.
4. Remove body seal.
5. To take out the ball, rotate stem so ball is in fully closed position. Lift ball from body, using a strap and lift device, if necessary. **NOTE:** extreme caution should be taken to avoid damage to the ball.
6. Take out the other seat.
7. Stem must be removed from inside the body. (tap on the top of stem with rubber coated tool should loosen it. The thrust washer should come out with the stem. Then remove the stem packing.)

VISUAL INSPECTION

Clean and inspect metal parts. It is not necessary to replace the ball and stem unless the seating surfaces have been damaged by abrasion or corrosion. We strongly recommend replacement of all soft parts whenever the valve is disassembled for reconditioning. This is the surest protection against subsequent leakage after valve assembly. The replacement parts can be ordered in kit form. **NOTE:** the valve may be assembled and operated dry where no lubricants are allowed in the system; however, a light lubricant or mating parts will aid in assembly and reduce initial opening torque. Lubricant used must be compatible with the intended line fluid.

ASSEMBLY

Install one seat in the body cavity with the spherical curvature facing the ball.

Install thrust washer on stem and slide the stem up through the body.

Install packing and packing gland with packing gland bolts. Install stop plate, handle and handle retainer nut.

Turn the handle to the CLOSED position. Line up the ball slot with stem tang and slide the ball into position.

Turn the handle to the OPEN position to hold the ball in place. Install the remaining seat into body side.

Put body seal gasket into shoulder counter-bore at flange in valve body.

Put body end back into body and line up end flange.

Because the body flange bolt pattern is different from the line flange bolt pattern, it is possible to assemble the valve such that the bolt holes in the line flanges don't line up. Be certain to align end flanges bolt holes to straddle valve center lines.

NOTE: be careful not to damage body seal when putting body end into body. Install body end nuts and tighten in a "star" pattern to the torque specified below.

WARNING: extreme care must be exercised during adjustment of body end nuts to make sure that complete engagement of studs with body flange is maintained. There should be at least one stud thread exposed on each side. Cycle the valve slowly, with a gentle back and forth motion to build gradually to a full quarter turn. By cycling slowly, the seat lips will assume a permanent seal shape against the ball. A fast turning motion, at this point, may cut the seats before they have a chance to form the proper seal. Test valve, if possible, prior to placing valve back into line position.

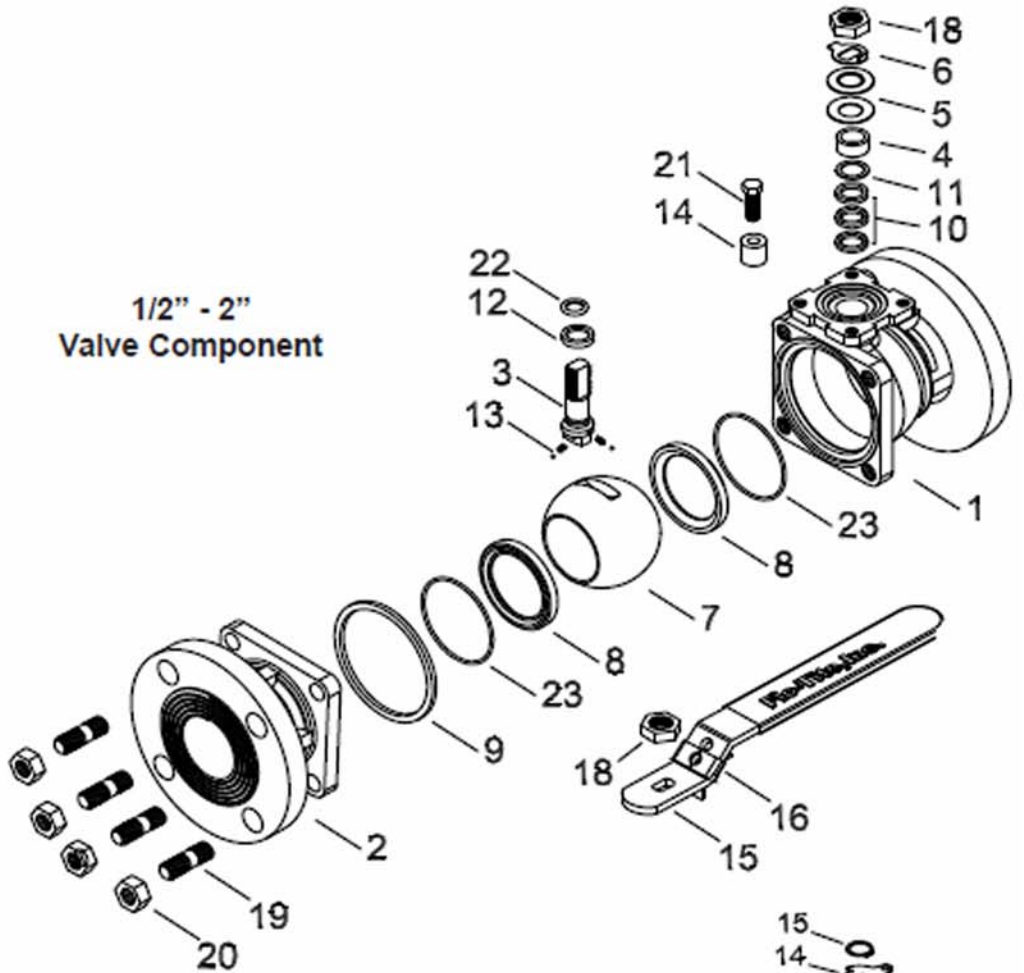
WARNING: if not properly secured, the valve can separate from the pressure source, resulting in possible injury. Always join the valve to companion flanges of same pressure rating as valve and secure with a full set of flange bolts.

BODY BOLT TORQUES (in-lb)

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"
F150	148	148	243	243	547	547	547	547	547	1042	1042	1563	1563
F300	148	148	243	243	547	547	547	1042	1042	1042	1563	2561	3472

No.	Part List
1	Body
2	End Cap
3	Stem
4	Packing Follower
5	Belleville Washer
6	Locker Washer
7	Ball
8	Seat
9	Gasket
10	Stem Packing
11	Packing Protector
12	Thrust Washer
13	Anti-Static
14	Valve Stop
15	Handle
16	Locking Device
17	Handle Sleeve
18	Thin Nut
19	Body Stud
20	Body Nut
21	Bolt
22	O-Ring
23	Seat O-Ring

**1/2" - 2"
Valve Component**



No.	Part List
1	Body
2	End Cap
3	Stem
4	Packing Gland
5	Packing Follower
6	Ball
7	Seat
8	Stem Packing
9	Packing Protector
10	Gasket
11	Thrust Washer
12	O-Ring
13	Anti-Static
14	Travel Stop
15	Snap Ring
16	Handle
17	Gland Bolt
18	Stop Housing
19	Housing Bolt
20	Body Stud
21	Body Nut
22	O-Ring
23	Set Screw

**2.5" - 12"
Valve Component**

