

Table of Contents: Series L2 IOM

1	SCOPE/USE	2
2	INSTALLATION	2
	Table 1: Flange Bolt Torques	2
	Table 2: Body Stud and Packing Gland Torques	3
3	MANUAL OPERATION	3
4	AUTOMATED OPERATION.....	3
5	DISASSEMBLY.....	4
6	REPAIR KITS	4
7	BILL OF MATERIALS.....	4
	½” – 4” Valves.....	4
	6” – 8” Valves.....	5

1 SCOPE/USE

- 1.1 For your safety, read this manual completely before installation or servicing.
- 1.2 A-T Controls Series L2 Lined Ball Valves are designed to be compatible with ASME Class 150 flanges.
- 1.3 Maximum results and optimum valve life can be maintained under normal service conditions, in accordance with pressure/temperature ratings, and corrosion chart data.
- 1.4 Before installing or servicing, please ensure the line pressure has been relieved, and any hazardous fluids have been drained or purged from the system.
- 1.5 Ensure that all Lockout Tagout procedures for the system have been properly implemented.

2 INSTALLATION

- 2.1 Check the tag on the valve and product catalog to ensure that the valve’s material and operating pressure are suitable for the application. The tag on the valve is located on one of the ASME Class 150 flanges.
- 2.2 A-T Controls Series L2 Ball valves are bi-directional, and can be installed with flow in either direction. The valve can be mounted in any position that allows proper clearance of handles, gears, actuators, or accessories. Gears equipped with chain wheels should be mounted to avoid contact with the valve and pipeline. Confirm that the operator can be easily accessed, and the open/close indicator can be viewed easily.
- 2.3 Before installation of a valve, the pipeline must be flushed clean of debris, burrs, and welding residues. If this step is not completed, the PFA lining on the body/ball of the valve, or the seats may be damaged.
- 2.4 The pipe must be free from tension and in proper alignment for correct installation of the valve. Failure to check for tension and proper alignment could cause valve failure.
- 2.5 **A gasket is required for Series L2 Lined Ball Valves if the sealing surface is not polymeric.** The torque ranges below in Table 1 are flange bolt torques. Tighten the bolts using a “crisscross” pattern, tightening to first 20% of the required torque, then 80% of the required torque, and finally 100% of the required torque. Over torquing may damage the valve and piping system. **Note: it is recommended to check torques 24 hours after initial installation because of possible cold flow from PTFE gaskets:**

Flange Torques Series L2 Valves								
Size	½" – 1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"
Torque (ft*lbs)	25-35	40-50	40-50	65-80	40-50	75-95	75-95	100-125

Table 1: Flange Bolt Torques

- 2.6 If the valve is leaking from the packing gland or body cavity, please check torque of the Body Stud Nuts (item 10 in the bill of materials of the valve) or Packing Gland Nuts (item number 8 in the bill of materials of the valve) using the following values in Table 2. Please note tightening the Packing Gland Nuts/ Body Stud Nuts will increase the torque of the valve. In some cases, valve initial break torque will be high, but torque should drop after a few operations of the valve. Tighten the body bolts using a “crisscross” pattern, tightening to first 50% of the required torque, then 80% of the required torque, and finally 100% of the required torque. **Retorquing both Body Stud Nuts and Packing Gland Nuts is recommended after thermal cycling:**

Valve Size	Body Stud Torque (in*lbs)	Gland Bolt Torque (in*lbs)	Valve Size	Body Stud Torque (in*lbs)	Gland Bolt Torque (in*lbs)
1/2"	160	71	2-1/2"	400	90
3/4"	160	71	3"	575	90
1"	160	71	4"	1600	222
1-1/2"	225	90	6"	1770	310
2"	225	90	8"	2215	310

Table 2: Body Stud and Packing Gland Torques

3 MANUAL OPERATION

Caution: A-T Controls recommends a manual gear operator for all valves 6" and larger.

HANDLE: To **OPEN** the valve: turn the handle in the counter-clockwise direction. The handle will be parallel to the pipeline when fully open.

To **CLOSE** the valve: turn the handle in the clockwise direction. The handle will be perpendicular to the pipeline when fully closed.

GEAR: To **OPEN** the valve: turn the handwheel counter-clockwise. The indicator will be pointing to the open position and stop rotating when fully opened. The flow can be adjusted by stopping the indicator anywhere between open and close.

To **CLOSE** the valve: turn the handwheel clockwise. The indicator will be pointing to the close position and the hand wheel will stop rotating when fully closed. The flow can be adjusted by stopping the indicator anywhere between open and close.

Note: Leaving the valve in the partially open position with excessive flow may cause wiredraw and reduce valve life.

4 AUTOMATED OPERATION

A-T Controls Series L2 Lined Ball Valves can be mounted with quarter turn actuators with a properly designed mounting kit. Valves with actuators should be checked for proper valve stem alignment. Angular or linear misalignment may result in high operational torque and unnecessary wear on the valve stem. See the actuator IOM for information on the operating and mounting the actuator.

5 DISASSEMBLY

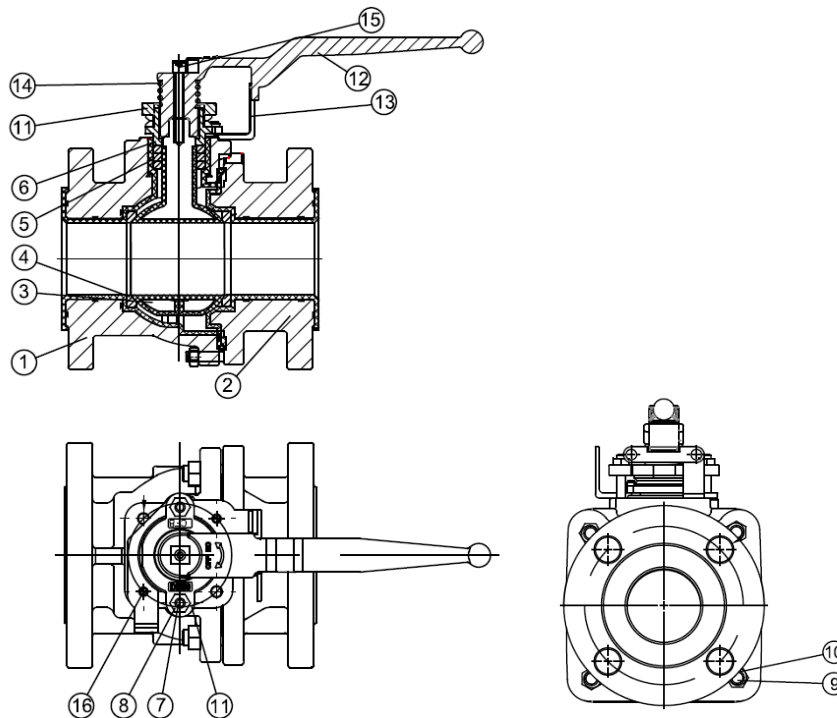
A-T Controls Series L2 Lined Ball Valves are not designed to be disassembled and repaired in the field. This valve is not repairable and should be replaced with a new valve in the case of valve failure.

6 REPAIR KITS

Repair kits are not available for the Series L2 because the valves are not repairable.

7 BILL OF MATERIALS

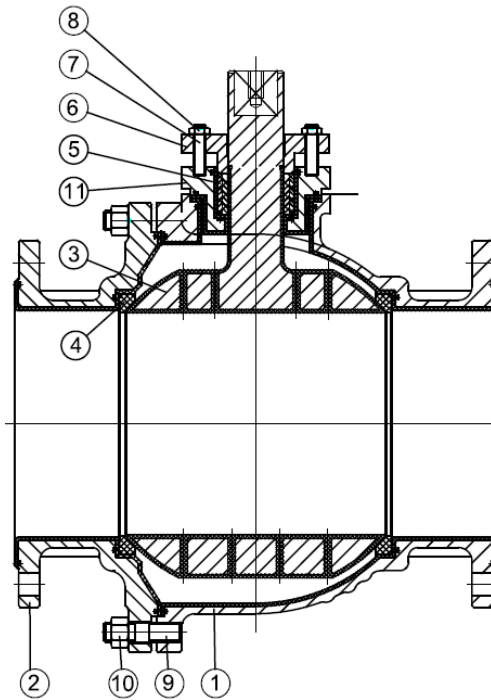
½” – 4” Valves



NO.	Part Name	QTY	Stainless Steel	Carbon Steel
1	BODY	1	ASTM A351 GRADE CF8M + PFA	ASTM A216 GRADE WCB + PFA
2	END CAP	1	ASTM A351 GRADE CF8M + PFA	ASTM A216 GRADE WCB + PFA
3	BALL/STEM	1	ASTM A351 GRADE CF8M/XM-19 + PFA	ASTM A351 GRADE CF8/XM-19 + PFA
4	SEAT	2	PTFE	
5	PACKING	1 SET	PTFE	
6	GLAND BUSHING	1	304SST	
7	PACKING GLAND BOLT	2	ASTM A193 GRADE B8	
8	PACKING GLAND NUT	2	ASTM A193 GRADE 8	
9	BODY STUD	*	ASTM A193 GRADE B8	
10	BODY STUD NUT	*	ASTM A193 GRADE 8	
11	PACKING GLAND	1	304SST	
12	HANDLE	1	304SST	
13	LOCKING PLATE	1	304SST	
14	ANTI-STATIC SPRING	1	304SST	
15	HANDLE SCREW	1	304SST	
16	LOCKING PLATE BOLT	2	304SST	

*Qty 4 for ½” – 2”, qty 6 for 2-1/2” – 4”

6” – 8” Valves



NO.	Part Name	QTY	Stainless Steel	Carbon Steel
1	BODY	1	ASTM A351 GRADE CF8M + PFA	ASTM A216 GRADE WCB + PFA
2	END CAP	1	ASTM A351 GRADE CF8M + PFA	ASTM A216 GRADE WCB + PFA
3	BALL/STEM	1	ASTM A351 GRADE CF8M/XM-19 + PFA	ASTM A351 GRADE CF8/XM-19 + PFA
4	SEAT	2	PTFE	
5	PACKING	1 SET	PTFE	
6	GLAND BUSHING	1	304SST	ASTM A216 GRADE WCB
7	PACKING GLAND BOLT	2	ASTM A193 GRADE B8	
8	PACKING GLAND NUT	2	ASTM A193 GRADE 8	
9	BODY STUD	*	ASTM A193 GRADE B8	
10	BODY STUD NUT	*	ASTM A193 GRADE 8	
11	PACKING GLAND	1	304SST	ASTM A216 GRADE WCB

*Qty 10 for 6”, qty 12 for 8”

A-T Controls product, when properly selected, is designed to perform its intended function safely during its useful life. However, the purchaser or user of A-T Controls products should be aware that A-T Controls products might be used in numerous applications under a wide variety of industrial service conditions. Although A-T Controls can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser / user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of A-T Controls products. The user should read and understand the installation operation maintenance (IOM) instructions included with the product and train its employees and contractors in the safe use of A-T Controls products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only. Because A-T Controls is continually improving and upgrading its product design, the specifications, dimensions and information contained in this literature are subject to change without notice. Should any question arise concerning these specifications, the purchaser/user should contact A-T Controls.

For product specifications go to <https://a-tcontrols.com/downloads/>

A-T Controls, Inc. • 9955 International Boulevard, Cincinnati, OH 45246 • Phone: (513) 247-5465 • Fax: (513) 247-5462 • www.atcontrols.com