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## 1 USE

- 1.1 **For your safety, read this manual completely before installation or servicing.**
- 1.2 A-T Controls, Inc. LB Series Lined Ball Valves are designed to be compatible with ANSI 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.
- 2.2 A-T Controls, Inc LB Series 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.
- 2.5 A gasket is required for LB Series Lined Ball Valves if the sealing surface is not polymeric. The torque ranges below 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 LB Series 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

- 2.6 If the valve is leaking from the packing gland or body cavity, please check torque of the Body Nut (item 6 in the bill of materials of the valve) or Gland Nut (item number 14 in the bill of materials of the valve) using the following values. Please note tightening the Gland Nuts will increase the torque of the valve. Tighten the body 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. Retorquing body bolts/Gland Nuts is recommended after thermal cycling:

Valve Size	Body Bolt Torque (in*lbs)	Gland Bolt Torque (in*lbs)	Valve Size	Body Bolt Torque (in*lbs)	Gland Bolt Torque (in*lbs)
1/2"	132 - 172	75	2-1/2"	900 - 1170	125
3/4"	132 - 172	75	3"	900 - 1170	175
1"	172 - 200	75	4"	750 - 975	250
1-1/2"	260 - 286	125	6"	1175 - 1525	300
2"	450 - 585	125	8"	CF*	CF*

\*Consult factory

### 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 valve will be parallel to the pipeline when fully open.

To **CLOSE** the valve: turn the handle in the clockwise direction. The valve 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', Inc LB Series 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.

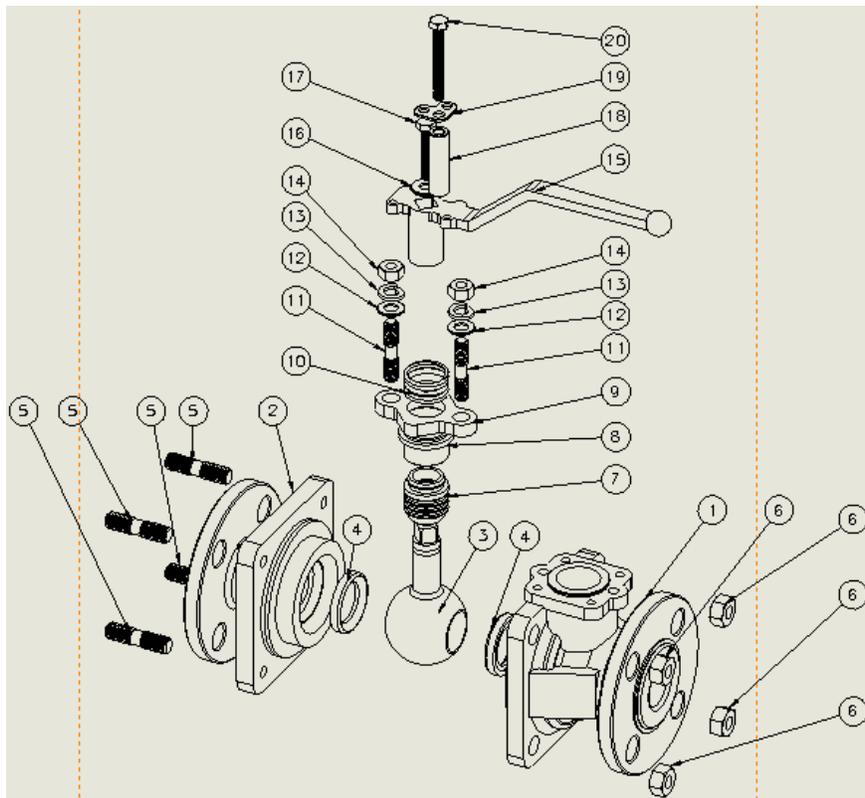
## 5 DISASSEMBLY

A-T Controls, Inc. LB Series 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 LB Series because the valves are not repairable.

## 7 BILL OF MATERIALS



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	1	ASTM A351 GRADE CF8M/PFA	ASTM A351 GRADE CF8/PFA
4	SEAT	2	PTFE	PTFE
5	BODY STUDS	1/2" - 2-1/2" - QTY 4 3" - 4" - QTY 6 6" - QTY 8 8" - QTY 10	ASTM A193 GRADE B8	ASTM A193 GRADE B8
6	BODY NUT	1/2" - 2-1/2" - QTY 4 3" - 4" - QTY 6 6" - QTY 8 8" - QTY 10	ASTM A193 GRADE 8	ASTM A193 GRADE 8
7	PACKING	1	PTFE	PTFE
8	PACKING BUSHING	1	AISI 304	AISI 304
9	PACKING GLAND	1	ASTM A351 GRADE CF8	ASTM A351 GRADE CF8
10	ANTI-STATIC SPRING	1	AISI 321	AISI 321
11	GLAND STUD	2	AISI 304	AISI 304
12	GLAND FLAT WASHER	2	AISI 321	AISI 321
13	GLAND SPLIT WASHER	2	AISI 321	AISI 321
14	GLAND NUT	2	AISI 304	AISI 304
15	HANDLE	1	ASTM A351 GRADE CF8	ASTM A351 GRADE CF8
16	HANDLE WASHER	1	AISI 321	AISI 321
17	HANDLE BOLT	1	AISI 304	AISI 304
18	HANDLE STOP	1	AISI 304	AISI 304
19	HANDLE LOCK	1	AISI 321	AISI 321
20	HANDLE LOCK BOLT	1	AISI 304	AISI 304

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 <http://download.a-tcontrols.com/>

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