

JAER Series

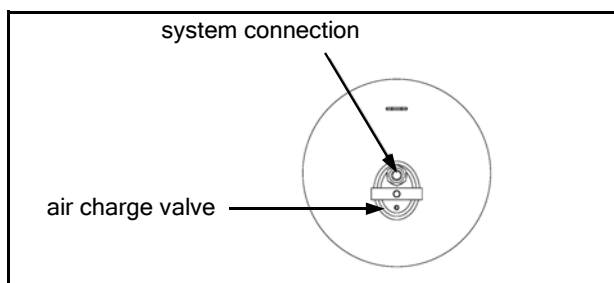
ASME Type IV Bladder Type Expansion Tanks For Hydronic Heating, Radiant, & Chilled Water Systems

GENERAL INSTRUCTIONS

1. Type IV bladder type expansion tanks may be installed in a vertical or horizontal position.
2. In order to properly check or modify the air charge pressure on the tank after the system is filled with water, shut-off and drain valves must be installed in the piping connected to the tank.
3. The drain valve is used to flush the system and to drain the water out of the tank prior to changing the air charge pressure.
4. An automatic air vent must be installed in the piping to the expansion tank to vent off accumulated air.
5. A pressure gauge must be installed to properly monitor the system pressure at the tank.
6. A minimum overhead clearance of approximately 18" is required to remove and replace the bladder if necessary.

INSTALLATION INSTRUCTIONS

1. Note the location of the NPT system connection, Schrader type air charge valve, and drain plug.



2. Inspect the connections and the tank for signs of damage that may have occurred during shipping.
3. Locate the nameplate and verify that the tank is suitable for the operating conditions of the system. The marked maximum allowable working pressure (MAWP) must be greater than or equal to the maximum system operating pressure. The marked maximum design temperature must be greater than or equal to the maximum system operating temperature.

OPERATING / MAINTENANCE INSTRUCTIONS

1. All Type IV bladder tanks are shipped from the factory with a pre-charge air pressure of 12 PSIG. Use an accurate pressure gauge to check the air charge pressure prior to installation. Notify the factory immediately if a loss of pressure has occurred.
2. Prior to installation, set the desired air charge pressure. In most cases, the air charge pressure in the tank is set equal to or slightly below the system fill pressure at the tank location. Note that the air charge pressure for the standard JAER Series tank must not exceed 80 PSIG. If an air charge pressure of more than 80 PSIG is required, a high pressure fill tube may be required.
3. Charge the tank with nitrogen or with oil-free compressed air. Check the pressure frequently during the filling process.
4. **⚠ WARNING** Excessive pressure may cause the tank to fail. Failure to follow these instructions may result in serious personal injury and property damage.
5. Connect the tank to the system. Each piping connection must include a lock shield gate valve and union to allow for the tank to be isolated from the system or safely removed if necessary.
6. **⚠ WARNING** Do not remove the drain plug on the tank or loosen the holddown nut on the cover plate. Removing the drain plug or loosening the holddown nut will cause a loss of air charge pressure.
7. Check the air charge pressure before filling the system with water. Verify that the air charge pressure is correct for the system.
8. Leak check all connections on the tank, including the cover plate seal, with a suitable leak detector solution.
9. When filling the system with water, all valves in the piping leading to the tank must be open to ensure that the air in the bladder is displaced by the system water.
10. If the air charge pressure needs to be changed after the system is filled with water, follow these steps:
 - a. Shut off the heat source and allow the system water to cool to ambient temperature.
 - b. **IMPORTANT:** To accurately set the air charge pressure, the tank must be charged with air or nitrogen at ambient temperature.
 - c. Close the lock shield valve in the piping to the tank.

OPERATING / MAINTENANCE INSTRUCTIONS

- d Open the drain valve and allow the water to drain from the tank.
 - e Check the air charge pressure with an accurate pressure gauge and charge the tank to the desired set pressure.
 - f Close the drain valve, open the lock shield valve, and turn on the system heat source.
11. During normal system operation, follow standard preventative maintenance procedures.
 12. **IMPORTANT:** Periodically check the tank for signs of leakage or corrosion and monitor the air charge pressure to ensure safe and efficient operation of the tank and system.
 13. Loss of the air charge pressure is typically an indication that either the Schrader air charge valve may be leaking or the bladder may be leaking.

SCHRADER VALVE INSPECTION AND REPLACEMENT

1. Depress the center valve core stem on the Schrader air charge valve.
2. If only air escapes, the Schrader valve needs to be replaced.
3. Prepare the tank for service. Refer to items 10a through 10d in the operating instructions starting on Page 1.
4. **▲ WARNING** Do not remove the valve core stem until the pressure in the expansion tank reaches zero. Depress the valve stem and slowly vent off the air pressure. Failure to follow these instructions may result in serious personal injury and property damage.
5. Replace the Schrader valve core and follow the instructions for properly charging the tank as outlined on Page 1.
6. Leak check all connections on the tank, including the cover plate seal, with a suitable leak detector solution.

BLADDER REPLACEMENT INSTRUCTIONS

1. Depress the valve core stem on the air charge valve.
2. If a combination of water and air escapes, the bladder needs to be replaced.
3. Prepare the tank for service. Shut off the heat source and allow the system water to cool to ambient temperature.
4. Close the lock shield valve in the piping to the tank.
5. Open the drain valve and allow the water to drain from the bladder.
6. Depress the valve stem on the Schrader valve to vent off the air pressure. Remove the valve core to bleed all of the remaining air charge.
7. Remove the drain plug in the tank shell.
8. Disconnect the system connection at the top of the tank and siphon any remaining water out of the bladder.

9. Loosen the holddown nut on top of the bar that secures the cover plate to the handhole opening.
10. While holding the stud, remove the holddown nut, bar, and gasket.
11. Grip the cover plate and remove the stud.
12. Rotate the cover plate 90°, tilt it on an angle, and pull the cover plate with the bag attached through the handhole (see Figure 1).
13. Wash down the inside of the tank as necessary.
14. Dry out the inside of the tank.
15. Examine the inside of the tank. Clean out any remaining dirt and remove any rust blisters. If the cover plate area is corroded, the tank will not seal properly. Replace the tank if necessary.
16. Remove the clamp and fill tube from the bladder.
17. Install the fill tube, clamp, and cover plate on the new bladder. Secure the clamp tightly around the steel pipe nipple (Figure 2).
18. Fold the new bag lengthwise and insert it through the handhole.
19. Using water from a spray bottle, lubricate the bladder to make it easier to fit through the opening.
20. Insert the stud into the cover plate and position the new gasket between the cover plate and the tank opening.
21. While holding the stud, replace the bar and holddown nut.
22. Tighten the holddown nut using 60 to 70 ft-lbs. of torque. Make sure that the gasket and cover plate are centered on the handhole opening.
23. Re-install the drain plug. Use a thread lubricant or sealant and make sure that the plug is properly tightened.
24. Install the Schrader valve core stem and charge the tank to the system fill pressure. Refer to items 1 through 8 in the operating instructions on Page 1.
25. Use a leak detector solution or soapy water to leak check the drain plug, Schrader valve, and the gasket seal around the handhole.
26. Connect the tank to the system.



Figure 1



Figure 2