



# EXTROL® AX SERIES

## PRESSURIZED EXPANSION TANKS (ASME)

### INSTALLATION & OPERATION INSTRUCTIONS

Models AX-15(V)-(DD) through AX-280(V)-(DD)



**NOTE:** Inspect for shipping damage and notify freight carrier or store where purchased immediately if damage is present. To avoid risk of personal injury and property damage, if the product appears to be malfunctioning or shows signs of corrosion, call a qualified professional immediately. Current copies of the Product manual can be viewed at [www.amtrol.com](http://www.amtrol.com). Use proper safety equipment when installing.



**THIS IS THE SAFETY ALERT SYMBOL. IT IS USED TO ALERT YOU TO POTENTIAL PERSONAL INJURY AND OTHER HAZARDS. OBEY ALL SAFETY MESSAGES THAT FOLLOW THIS SYMBOL TO REDUCE THE RISK OF PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.**

**⚠️ WARNING** READ CAREFULLY THE PRODUCT INSTALLATION & OPERATION INSTRUCTIONS. FAILURE TO FOLLOW THE INSTRUCTIONS AND WARNINGS IN THE MANUAL MAY RESULT IN SERIOUS OR FATAL INJURY AND/OR PROPERTY DAMAGE, AND WILL VOID THE PRODUCT WARRANTY. THIS PRODUCT MUST BE INSTALLED BY A LICENSED PROFESSIONAL. FOLLOW ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS, IN THE ABSENCE OF SUCH CODES, FOLLOW THE CURRENT EDITIONS OF THE NATIONAL PLUMBING CODE AND NATIONAL ELECTRIC CODE, AS APPLICABLE.

**⚠️ WARNING** EXPLOSION OR RUPTURE HAZARD. THE EXPANSION TANK MUST BE OPERATED SO THAT THE PRESSURE DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE.

**⚠️ WARNING** EXPLOSION OR RUPTURE HAZARD A relief valve must be installed to prevent pressure in excess of local code requirement or maximum working pressure designated in the Product Manual, whichever is less. Do not expose Product to freezing temperatures or temperatures in excess of 240° F. Do not adjust the pre-charge or re-pressurize this Product except for any

adjustments required at the time of initial installation, especially if Product is corroded, damaged or with diminished integrity. Adjustments to pre-charge must be done at ambient temperature only. Failure to properly size the Product or follow these instructions may result in excessive strain on the system lead to Product failure, serious or fatal personal injury, leakage and/or property damage.

**⚠️ WARNING** Potable Water and Radiant Heating Warning. This Product must not be used in radiant heating, potable water or open systems of any kind. These systems contain oxygenated water which will cause internal corrosion and premature Product failure. Use a Therm-X-Trol® for potable water systems and a Radiant Extrol® for radiant heating systems. Do not install on dead-end pipe.

**⚠️ WARNING** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY  
IMPORTANT GENERAL SAFETY INFORMATION -  
ADDITIONAL SPECIFIC SAFETY ALERTS APPEAR IN THE FOLLOWING INSTRUCTIONS.**

**⚠ WARNING** **EXPLOSION HAZARD.** Failure to follow instructions in the accompanying product manual can cause rupture or explosion, possibly causing serious or fatal injury, leaking or flooding and/or property damage.

**⚠ WARNING** **FAILURE TO PROPERLY SEAL VALVE CAP WILL RESULT IN LOSS OF PRECHARGE CAUSING PRODUCT TO FAIL.**

### Location of EXTROL® Expansion Tanks

**⚠ WARNING** This Product, like most Products under pressure, may over time corrode, weaken and burst or explode, causing serious or fatal injury, leaking or flooding and/or property damage. To minimize risk, a licensed professional must install and periodically inspect and service the Product. A drip pan connected to an adequate drain must be installed if leaking or flooding could cause property damage. Do not locate in an area where leaking could cause property damage to the area adjacent to the appliance or to lower floors of the structure.

**⚠ WARNING** AX-15(DD) through AX-280(DD) models are not designed to be hung from the piping. If the tank is to be suspended from the piping, the tank and the piping needs to be properly supported in order to hold the wet weight of the tank.

The AMTROL expansion tank may be placed in any convenient position within the mechanical room (or building). If multiple tanks are installed, they should all be on the same level.

### Point of Connection

Unlike a conventional tank, the EXTROL sealed air cushion does not require replenishment so DO NOT connect to an air separator or other air collection device.

As with any expansion tank, it is recommended that the EXTROL be connected to the suction side of the pump. This will prevent the pump head from becoming subtractive which may result in entry of air and vapor formation at high points in the system.

By connecting the EXTROL on the boiler return, displacement of coolest system water into tank is ensured reducing energy waste.

Low pressure drop components such as air separators and boilers may be placed between point of connection and pump suction if desired. System design will dictate the feasibility of this.

Natural convection losses and the entry of air into tanks are eliminated by connection to the side or underside of main pipe. The piping should be pitched up and away from the EXTROL to eliminate any potential air traps.

### Installation

**⚠ WARNING** **THIS PRODUCT MUST BE INSTALLED BY A LICENSED PROFESSIONAL.**

- Note location of system connection, air charge valve and drain connection on tank.
- Remove the plug or pipe cap from the system connection.
- Remove the 1 1/2" NPT plug covering the air charge valve.
- Before making any connection to the tank, check the tank and air charge (use an accurate pressure gauge). The air pressure must be equal to the minimum system pressure at the tank location.



**IMPORTANT:** If increasing pre-charge pressure above 55 psig the following steps must be followed:

- Tank must be connected to the system with the isolation valve open.
- System must be pressurized to 13-14 psig, slightly above factory setting.
- Isolation valve needs to be shut.
- Pre-charge pressure of tank can now be increased to match system fill pressure.
- Open isolation valve and start up system.

**Failure to follow these steps could result in damage to the bladder and void all warranties.**

- After making sure the air charge is correct, replace the valve cap and the 1 1/2" plug over the air valve.
- The EXTROL may now be piped to the system (use the suggested EXTROL piping diagrams on the next page).
- Using the table below, select appropriate pipe size. Connection to each EXTROL must have a lock shield gate valve and union to allow isolation and removal if required. Make up and fill valves, whether manual or automatic, should be tied into the connecting line. This will ensure that pump operation will not affect valve operation.

### Operational Limits

Maximum Operating Pressure: As stamped on nameplate

Maximum Operating Temperature: 240 °F

Minimum Operating Temperature: 35°F (non-glycol application)

If unit is being installed in a glycol system where minimum temperatures fall below 35°F, contact the AMTROL technical service department at (401) 535-1216.

### Operating Instructions

- Check the expansion tank pre-charge before the system is filled with water. The charge is 12 psig unless noted otherwise on the tank label. Check to make sure this is the correct pre-charge pressure specified for the system.
- If the tank pre-charge pressure needs to be changed on a dry system follow the following procedure:
  - Check the expansion tank air pressures at the pre-charge connection with an accurate tire type pressure gauge. The pre-charge connection is the same kind of connection found on automobile tires.
  - If the pressure is low, charge the tank with nitrogen gas or with oil free compressed air. Check the pressure frequently during this process as you would when filling a tire with air.



**DANGER:** Excessive pressure can cause tank to explode. Exercise care when filling a tank with air so the pressure does not exceed that required or does not exceed the working pressure of the tank as stamped on the nameplate. Failure to follow these instructions will result in serious personal injury or death and property damage.

- If, after the system has been filled with water and operating, it is found that the expansion tank pre-charge must be changed use the following procedure:
  - Turn off the heat source and allow the system water to cool to ambient temperature.



**IMPORTANT:** Expansion tank cannot be properly air charged other than at ambient temperature.

- Close lock-shield valve in tank-to-system piping.
- Open drain valve to empty water from the tank.
- Check the tank air pressure at the pre-charge connection with an accurate tire type air gauge.
- Refer to 2b above.
- Close the drain valve, open the lock-shield valve and turn on the heat source.
- Relock the lock-shield valve.

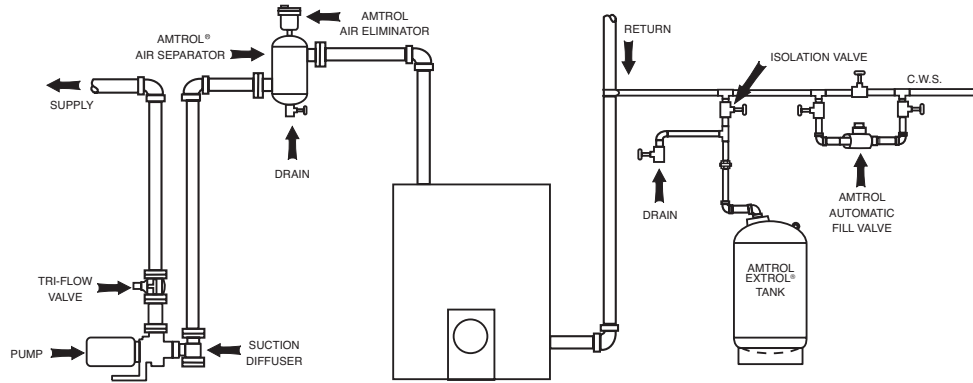
Firing Rate of Boiler MBTU/H	Length of Pipe Connecting Tank to System:		
	Below 11'	11' - 30'	31' - 100'
2,000	1/2"	3/4"	1"
4,000	3/4"	1"	1 1/4"
8,000	1"	1 1/4"	1 1/2"
12,000	1 1/4"	1 1/2"	2"
16,000	1 1/4"	2"	2 1/2"
20,000	1 1/2"	2"	2 1/2"

### Warranty

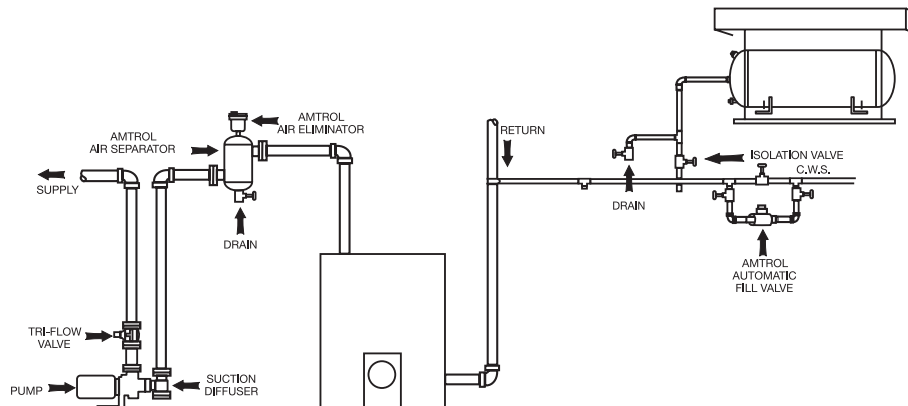
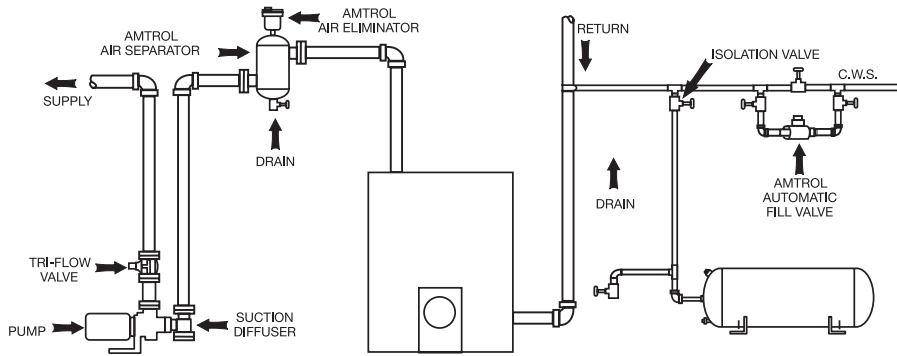
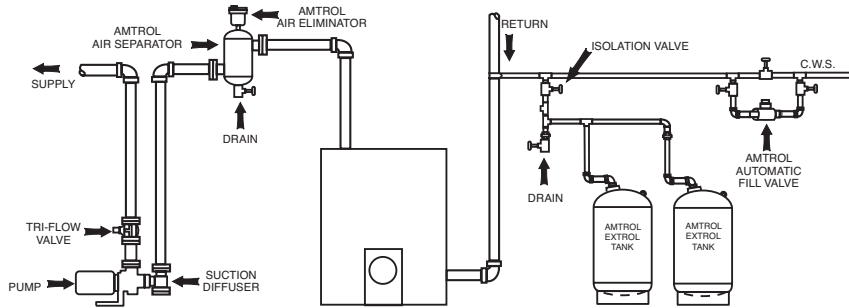
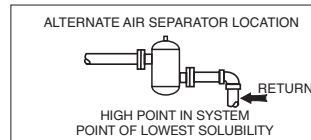
AX Series Models: One (1) Year Limited Warranty

Visit [www.amtrol.com](http://www.amtrol.com) for complete warranty details.

# Suggested Piping Diagram



# Alternate Piping Diagrams





1400 Division Road, West Warwick, RI USA 02893  
T: 800.426.8765 [www.amtrol.com](http://www.amtrol.com)

© 2019 Worthington Industries Inc.  
One or more features of this product are covered by U.S. patents, visit [www.amtrol.com/patents](http://www.amtrol.com/patents) for more information.



Part #: 9017-093 (01/19)