



INSTALLATION, OPERATION & SERVICE INSTRUCTIONS

THERM-X-TROL®

THERMAL EXPANSION ABSORBERS (ST-400C & 450C SERIES)

1400 Division Road, West Warwick, RI 02893 ▲ T: 401.884.6300 ▲ F: 401.885.2567 ▲ www.amtrol.com

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

⚠ WARNING READ CAREFULLY THE PRODUCT INSTALLATION, OPERATING AND MAINTENANCE MANUAL. 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 QUALIFIED 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 This product must be installed by a qualified professional.

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

⚠ WARNING Use only with potable water system. Do not operate in a setting with freezing temperatures or where the temperature can exceed 240°F and do not exceed the maximum working pressure specified for this Product in the Manual. Mount vertically only.

⚠ 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 leakage of the tank or connections could cause property damage to the area adjacent to the appliance or to lower floors of the structure.

⚠ WARNING **Chlorine & Aggressive Water:** The water quality can significantly influence the life of this Product. You should test for corrosive elements, acidity, total solids and other relevant contaminants, including chlorine and treat your water appropriately to insure satisfactory performance and prevent premature failure

THIS IS THE SAFETY ALERT SYMBOL. IT IS USED TO ALERT YOU TO POTENTIAL PERSONAL INJURY AND OTHER HAZARDS. OBEY ALL SAFETY MESSAGES THAT

*** All ST-C Series models come with a 1 year warranty. See reverse side for warranty information.**



FOLLOW THIS SYMBOL TO REDUCE THE RISK OF PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.



⚠ 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-pressure this Product except for any adjustments required at the time of initial installation, especially if Product 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 and lead to Product failure, serious or fatal personal injury, leakage and/or property damage.

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. Use proper safety equipment when installing.



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



⚠ IMPORTANT **GENERAL SAFETY INFORMATION - ADDITIONAL SPECIFIC SAFETY ALERTS APPEAR IN THE FOLLOWING INSTRUCTIONS.**



⚠ WARNING **CALIFORNIA PROPOSITION 65 WARNING:** This product contains a chemical known by the State of California to cause cancer and to cause birth defects or other reproductive harm. (California Installer/Contractor - California law requires that this notice be given to consumer/end user of this product.) For more information: www.amtrol.com/prop65/htm.



MARK OF THE ORIGINATOR

Pre-Installation

1. Visually inspect THERM-X-TROL® for any damage. If damage exists, return product for replacement.
2. Adjust pre-charge to equal incoming pressure.

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

- a. Tank must be connected to the system with isolation valve open.
- b. System must be pressurized to 55-60 psi or slightly higher than the pre-charge setting of the tank.
- c. Isolation valve then needs to be closed.
- d. The pre-charge pressure of the tank can now be increased to the recommended high pressure setting.
- e. Bring system up to pressure, and then open the isolation valve to the tank.

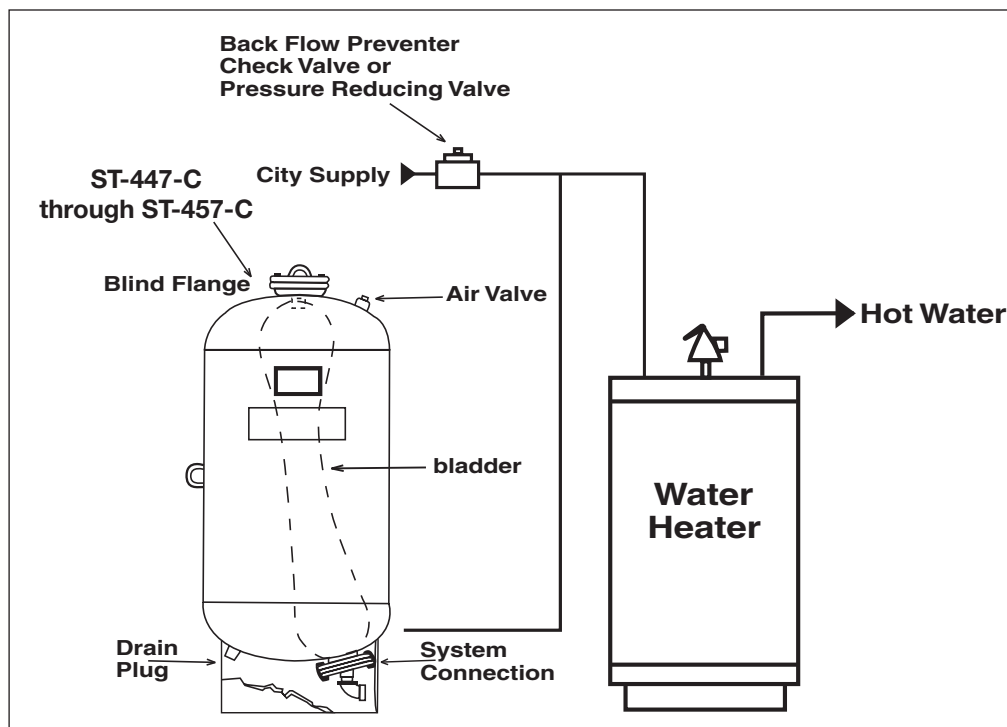
Failure to follow these instructions could result in damage to the bladder or diaphragm and void all warranties.

3. Replace and tighten plastic cap on air fitting.

Installation

1. Install the THERM-X-TROL® on the city supply line to the water heater at a point between the water heater and backflow preventer, check valve or pressure reducing valve (see Figure 1).
2. Once the THERM-X-TROL® is installed, check the city supply line line for any leakage. Make repairs if necessary.
3. Before the initial firing of the water heater, open any hot water fixture and draw water until all air is removed from the system. Turn the water heater temperature control to desired ending temperature level, (see water heater instructions).

Figure 1.



4. To relieve initial thermal expansion, slightly open a hot water faucet. Continue until water heater aquastat temperature is satisfied. Once heater is at its operating range, no further bleeding of expanded water is required.
5. The system water heater and THERM-X-TROL® will now be operational. The THERM-X-TROL® will control temperature and pressure increases caused by thermal expansion to a level well below the water heater relief valve setting.

Maintenance

1. A professional plumber should check the complete heating system, including the THERM-X-TROL®, yearly and more frequently as the system ages.

Operation

1. The THERM-X-TROL® is installed in the supply line between the backflow preventer and the water heater. Its sealed-in air pre-charge prevents water from entering it until the system pressure exceeds the pre-charge pressure.
2. As the water temperature rises, expanded water enters the THERM-X-TROL®'s non-corrosive bladder. The pre-charged air chamber absorbs the pressure increase, keeping system pressures below the relief valve setting.
3. As hot water is used, the pressure in the air chamber forces water back into the system until the THERM-X-TROL® is empty. At this point, the pressure in the air chamber once again equals the supply pressure.
4. Water temperature is not to exceed 240°F or fall below 35°F.

AMTROL INC. LIMITED PRODUCT WARRANTY

Products covered: all Products manufactured by AMTROL Inc. ("AMTROL").

This warranty cannot be transferred – it is extended only to the original Purchaser or First User of the Product. By accepting and keeping this Product you agree to all of the warranty terms and limitations of liability described below.

IMPORTANT WARNING – READ CAREFULLY THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS MANUAL ("MANUAL") to avoid serious personal injury and/or property damage and to ensure safe use and proper care of this product

Who Receives AMTROL's Product Warranty

All purchasers or first users of the new Product. The Warranty is non-transferable.

What is covered by this Warranty

AMTROL warrants to the purchaser or first user of the new Product that at the time of manufacture, the Product is free from defects in material and workmanship. **Any warranty claim must be made within one (1) year unless another time period is set forth in the Manual, measured from the time the Product was purchased.**

What AMTROL Will Do If You Have a Covered Warranty Claim

In the event of a breach of the foregoing warranty, AMTROL will at its option either make repairs to correct any defect in material or workmanship or supply and ship either new or used replacement parts or products. AMTROL will not accept any claims for labor or other costs.

What This Warranty Does Not Cover - Exclusions and Limitations

This Warranty does not cover any failure or problem unless it was caused by a defect in material or workmanship. In addition, this Warranty shall not apply:

- if the Product is not correctly installed, operated, repaired or maintained as described in the Manual provided with the Product;
- to any failure or malfunction resulting from abuse (including freezing); improper or negligent: handling, shipping (by anyone other than AMTROL), storage, use, operation, accident; or alteration, lightning, flood or any other environmental condition;
- to any failure or problem resulting from the use of the Product for any purpose other than those specified in the accompanying Manual or alteration of any part of the product;
- this Warranty does not cover labor costs, shipping charges, service charges, delivery expenses, administrative fees or any costs incurred in removing or reinstalling the Product;
- this Warranty does not cover any claims submitted to AMTROL or an AMTROL-authorized distributor or retailer more than 30 days after expiration of the applicable warranty time period described in this Warranty;
- this Warranty also does not cover repair or replacement costs not authorized in advance by AMTROL.

Additional Warranty Limitations

ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED.

Limitations of Remedies

THE REMEDIES CONTAINED IN THIS WARRANTY ARE THE PURCHASER'S OR FIRST USER'S EXCLUSIVE REMEDIES. IN NO CIRCUMSTANCES WILL AMTROL BE LIABLE FOR MORE THAN, AND PURCHASER-FIRST USER'S REMEDIES SHALL NOT EXCEED, THE PRICE PAID FOR THE PRODUCT. IN NO CASE SHALL AMTROL BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM NON-DELIVERY OR FROM THE USE, MISUSE, OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT OR FROM AMTROL'S OWN NEGLIGENCE OR OTHER TORT. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, strict liability, in tort or under any other legal theory. Such damages include, but are not limited to, inconvenience, loss or damage to property, mold, loss of profits, loss of savings or revenue, loss of use of the Products or any associated equipment, facilities, buildings or services, downtime, and the claims of third parties including customers.

What To Do If You Have a Problem Covered By This Warranty

Any covered Warranty service must be authorized by AMTROL. Contact the person from whom you purchased the Product, who must receive authorization from an AMTROL distributor or AMTROL. If you do not receive a prompt response, call AMTROL directly at 877-517-9673. Notice of a Warranty claim should be submitted by the authorized distributor to AMTROL at the following address:

AMTROL Inc., Warranty Claim Dept.
1400 Division Road, West Warwick, RI 02893

Before AMTROL determines to provide any replacement part or Product, it may as a pre-condition to making such a determination require that the warranty claimant ship the Product, postage prepaid to an authorized AMTROL distributor, or to AMTROL and provide proof of purchase evidenced by the original sales receipt or Product registration.

Replacement Product Warranty

In case of replacement of a Product or any component part, AMTROL reserves the right to make changes in the design, construction, or material of the substitute components or products, which shall be subject to all of the terms and limitations of this Warranty, except that the applicable warranty periods shall be reduced by the amount of time the warranty claimant owned the product prior to submitting notification of the warranty claim.



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