

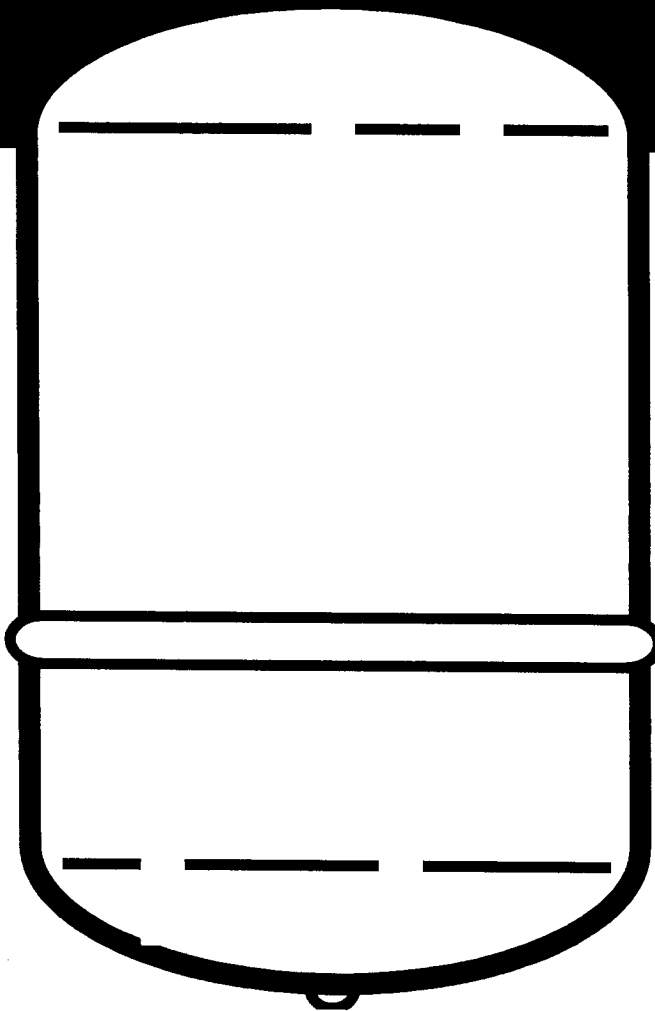


INSTALLATION MANUAL

RET SERIES THERMAL EXPANSION TANKS

**CONSUMER HOT-LINE:
1-800-942-3343**

MONDAY - FRIDAY • 7 AM to 5 PM
EASTERN STANDARD TIME



**IN-LINE SERIES:
MODELS
RET2 & RET5**

**WARRANTY: PRODUCT DEFECTS COVERED 1 YEAR FROM DATE OF
MANUFACTURE. RECEIPT AND PRODUCT DATE CODE REQUIRED FOR
WARRANTY CLAIM.**

WATER ACE PUMP COMPANY • ASHLAND, OHIO 44805-1969

IMPORTANT INSTRUCTIONS BEFORE INSTALLATION

Failure to follow these instructions may cause serious bodily injury and/or property damage.

1. All piping and electrical wiring must adhere to state and local codes. Check with appropriate community agencies, or contact your local electrical and pump professionals.
2. A pressure relief valve must be installed in the piping adjacent to the expansion tank.
3. The following may cause severe damage to tank and/or piping and will void warranty:
 - Failure to protect tank against below-freezing temperatures.
 - Pumping chemicals or corrosive liquids.
 - Pumping gasoline or other flammable liquids.
 - Operation at pressures greater than 150 PSI with no relief valve.
 - Pumping liquids hotter than 200°F.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE. Refer to this manual for further assistance.

WARNING

This water tank is designed and intended for hot or cold water storage at a maximum pressure of 150 PSIG. Any use other than with water, or at a sustained or instantaneous pressure in excess of 150 PSIG is UNSAFE. A pressure relief valve of adequate size must be incorporated in the system. The manufacturer of this tank does not accept any liability or other responsibility for personal injury or property damage resulting from improper use, installation, or operation of this tank, or of the system of which it is a part.

Failure to follow these instructions can cause tank to blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

Install a 100 P.S.I. or less pressure relief valve directly into a fitting of the plumbing. Position the valve downward and provide tubing so that any discharge will exit only within 6 inches above or at any distance below the structural floor. Be certain that no contact is made with any live electrical part. The discharge opening must not be blocked or reduced in size under any circumstances. Excessive length, over 15 feet, or the use of more than two elbows can cause restriction and reduce the discharge capacity of the valve.

No valve or other obstruction is to be placed between the relief valve and the tank. Do not connect tubing directly to discharge drain unless a 6" air gap is provided. To prevent bodily injury, hazard to life, or discharge water in quantities should circumstances demand. If the discharge pipe is not connected to a drain or other suitable means, the water flow may cause property damage.

The Discharge Pipe:

- Must not be smaller in size than the outlet pipe size of the pressure relief valve, or have any reducing couplings or other restrictions.

- Must not be plugged or blocked.
- Must be installed so as to allow complete drainage of both the pressure relief valve, and the discharge pipe.
- Must not have any valve between the relief valve and tank.

WARNING

The complete pump, tank, pressure relief valve, and piping system MUST be protected against below freezing temperature. Failure to do so could cause tank to blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

HYDRO-PNEUMATIC EXPANSION TANK

WARNING

This hydro-pneumatic tank is designed and intended for hot or cold water storage at a maximum pressure of 150 pounds per square inch gauge (150 PSIG). Any use other than water or at a sustained or instantaneous pressure in excess of 150 PSIG is UNSAFE. A pressure relief valve of adequate size must be incorporated in the system. This tank, as all tanks, will eventually leak. Do not install without adequate drainage provisions where water leakage will cause damage. Failure to follow these instructions can cause tank blow-up and result in SERIOUS OR FATAL INJURY.

CAUTION

The water storage tanks are designed for operation on water systems with working pressure not to exceed 150 PSI. Pressure exceeding this could become hazardous, and will void any and all guarantees, either written, or implied.

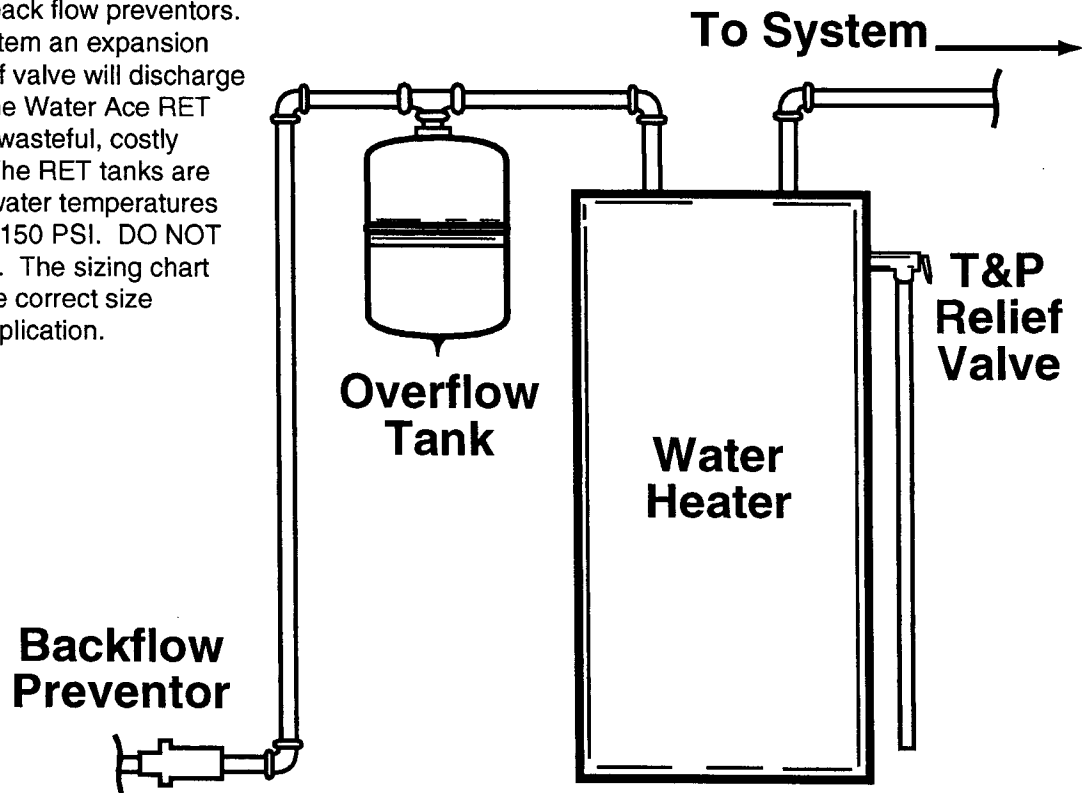
IMPORTANT

It will be necessary to expel all air from piping after new installations. To purge the air, first open a faucet the greatest distance from the tank. With the water being allowed to run, wait until a steady stream of water is coming from the faucet. At this time, close the faucet for several short intervals.

The expansion tank has been shipped with a factory precharge of 40 PSI. If the tank gets out of adjustment it can be adjusted by simply bleeding air from valve in the top of the tank with an accurate pressure gauge. Using the same standard air charging valve in the top of the tank, a tire pump or compressor unit can be used to raise the tank pressure. Raise the pressure slowly, checking it periodically with an accurate tire pressure gauge, until the desired pressure is reached. This should be done with the water shut off, the tank empty of water and a valve in the system opened.

RET SERIES IN-LINE TANKS EXPANSION TANKS FOR HOT WATER HEATERS

Many local codes require back flow preventors. Since this seals off the system an expansion tank is required or the relief valve will discharge on every heating cycle. The Water Ace RET series tanks eliminate this wasteful, costly and dangerous practice. The RET tanks are designed to be used with water temperatures to 200°F and pressures to 150 PSI. **DO NOT USE A STANDARD TANK.** The sizing chart will allow you to choose the correct size expansion tank for your application.



WATER TEMP.	WATER HEATER SIZE IN GALLONS						
	30	40	52	66	82	100	120
120°	RET2	RET2	RET2	RET2	RET5	RET5	RET5
140°	RET2	RET2	RET2	RET5	RET5	RET5	RET5

WATER TEMPERATURES IN EXCESS OF 110°F CAN CAUSE SCALDING OF SENSITIVE SKIN ESPECIALLY A CHILD OR INFANT, TO LOW OF TEMPERATURES MAY PROMOTE BACTERIAL GROWTH. CHECK WITH LOCAL CODES AND HEALTH OFFICIALS TO DETERMINE THE BEST SETTING FOR YOUR WATER HEATER.

CHECKING AIR PRESSURE

The RET Series Thermal Expansion Tanks are preset from the factory with 40 PSI of air pressure, because this is the normal house pressure. If the house water pressure is different, air should be either added or let out. If the house pressure is 30 PSI the air pressure should be lowered to 30 PSI if it is 60 PSI it should be raised to 60 PSI. The air pressure can be checked with a tire gage. Check the air pressure with the tank empty of water, to empty the tank of water turn the main water line off and open a hot water valve.

It is important that you read your city system pressure correctly. If you read it when it is already hot and expanded you will get false readings. If you have a pressure gage in your line, you should open one hot water valve and let the water run for 15 minutes to reduce the line pressure, then shut the valve off and then read the pressure immediately. If you don't have a pressure gage in your line you can either call your local water department or you can get a close approximation from your Expansion Tank. If you follow the above procedure with your tank installed and read the air pressure from your tank you will have an approximate system pressure. (In this case read the pressure with the tank full of water). If the air pressure reads 50 PSI you need to shut-off your main water line, open a valve let the water out of the tank, and fill the tank with 50 PSI of air pressure.

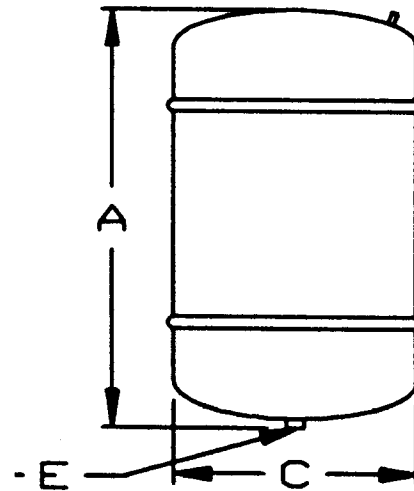
PURPOSE OF EXPANSION TANKS

When water is heated it expands. Provision must be made for this expansion in a closed hot water system. This precharged diaphragm tank stores the expanded

hot water then returns **Air Free** water to the system when the temperature drops.

TANK SPECIFICATIONS

Tank Model	RET2	RET5
Capacity in gallons	2	5
Precharge Pressure in PSI	40	40
Dimensions in inches		
A	12-9/16	14-3/4
C	8-3/8	11-3/8
Discharge Connection E	3/4" NPTM	3/4" NPTM
Weight in pounds	5	8



LIMITED WARRANTY

1 YEAR LIMITED WARRANTY ON TANK: The "COMPANY" warrants this expansion tank in case of a leak within one (1) year from the date of purchase or in the absence of a Bill of Sale verifying said date, from the date indicated on the model and rating plate affixed to this tank. In case of a defect, malfunction, or failure to conform to this warranty, the Company will repair or replace this tank. No labor, installation, or freight (if any) charges are included in this warranty. You must pay these costs.

Prior to return of the expansion tank or part to the manufacturer for inspection, the Company will, if requested, ship a replacement expansion tank or part C.O.D. and later provide such reimbursement as subsequent inspection indicates is due under these warranties.

EXCLUSIONS AND LIMITATIONS OF THESE LIMITED WARRANTIES:

1. THE LIMITED WARRANTIES PROVIDED HEREIN ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE; PROVIDED, HOWEVER, THAT IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE ONE-YEAR PERIOD FROM DATE OF PURCHASE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
2. THE COMPANY SHALL HAVE NO LIABILITY HEREUNDER, EITHER DIRECT OR CONTINGENT, FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.
3. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
4. These warranties shall be void and shall have no effect:
 - a. If the design or structure of the tank is, or is attempted to be, modified or altered in any way, including, but not limited to, by attaching non-Company approved appliances or equipment.
 - b. If the tank is not properly installed in accordance with all local ordinances and regulations pertinent to tanks and the installation and instruction manual provided with this tank.
 - c. If the expansion tank is installed outdoors. This tank is intended for indoor installation only.
 - d. If the tank is not equipped with new pressure protective equipment required by local codes, but not less than a pressure relief valve certified by a nationally recognized testing laboratory that maintains periodic inspection of production

- e. of listed equipment or materials, as meeting the requirements for Relief Valves. This valve must be marked with a maximum set pressure not to exceed the marked hydrostatic working pressure of the tank.
 - e. If the tank is not operated within the factory calibrated limits.
 - f. If leaks in the tank, or defects in other parts, arise as the result of improper use, negligence in operation, accident, or from inability of the tank or any of its parts to function because of repairs, adjustments, or replacements improperly made outside the Company's factory, or because of fire, floods or lightning.
 - g. If the model and rating plate has been defaced or discarded and you do not have a Bill of Sale to verify the purchase date.
 - h. If (1) installed in an area where leakage of the tank or connections would result in damage to the area adjacent to the tank or (2) where such a location is unavoidable, a suitable drain pan is not installed under the tank. When a drain pan must be used, the pan must be 1-1/2 inches deep and must have a minimum length of at least 2 inches greater than the diameter of the tank and must be piped to an adequate drain. (See Installation Manual.)
 - i. If the tank is used for any purpose other than expansion for hydronic space heating and cooling systems.
 - j. If the tank is used with pools, whirlpools, or hot tubs, or with any equipment or system that uses heavily chlorinated or otherwise nonpotable water.
 - k. If leaks in the tank or defects in other parts occur as a result of the tank being exposed to a highly corrosive atmospheric condition.
 - l. If leaking in the tank or defects in other parts occur as the result of the tank containing and/or being operated with desalinated (de-ionized) water.
 - m. If leaks in the tank or defects in other parts arise as a result of sizing that does not comply with the manufacturer's currently published sizing guides or sizing recommended by the manufacturer.
 - n. If this expansion tank or any part has been under water.
 - o. If a new certified pressure relief valve (rated 75 p.s.i. max.) is not installed and properly maintained.
5. Replacements and/or repairs furnished under these warranties do not carry a new warranty, only the unexpired portion of the original warranty.
 6. The terms of this warranty may not be varied by any person, whether or not purporting to represent or to act on behalf of the Company.
 7. In order to obtain service under these warranties you must promptly notify the installing contractor or dealer, giving the nature of the problem and the model and serial number of the tank. If for any reason the installer or dealer cannot be located or fails to provide satisfactory warranty service, you should write the Company with the above information.



Water Ace Pump Co. • 1101 Myers Parkway • Ashland, Ohio 44805-1969