Water Heater Expansion Tank Owners Manual

⚠ WARNING
READ THE RULES FOR SAFE INSTALLATION AND OPERATION AND THE INSTRUCTIONS CAREFULLY BEFORE STARTING THE INSTALLATION.

⚠ WARNING
Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or consult your local utility for further information.

Caution: Read and Follow All Safety Rules and Operating Instructions Before First Use of This Product.

Save this Manual for Future Reference.

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Thermal Expansion Tanks

In many of today's water heating systems, back flow preventers, check valves or non reversing meters are required by code. Since these devices seal off the system, preventing thermally expanded water from backing up into the supply piping, an expansion tank is required or the relief valve of the water heater will discharge on most heating cycles.

Expansion tanks must be installed in the cold water supply piping to the water heater and placed between the water heater and check valve or back flow prevention device.

Product Specifications

Tank Capacity In Gallons	Dimensions in Inches		Pipe Fitting On Tank
	Diameter	Length	
2	8 inches	12 ¾ inches	¾" Male
5	11 inches	14 ¾ inches	¾" Male
10	15 ⅜ inches	15 ⅜ inches	¾" Male

Expansion Tank Sizing Chart

Residential Use

Assumed 160°F Max. Temp And 150 PSI Max Pressure

	Inlet* Water Pressure	Water Heater Capacity (Gallons)						
		30	40	52	66	82	100	120
EXP. TANK NEEDED	40 psi	2 GAL.	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	5 GAL.
	50 psi	2 GAL.	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	5 GAL.
	60 psi	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.
	70 psi	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.
	80 psi	2 GAL.	5 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.

Commercial Use

Assumed 180°F Max. Temp And 150 PSI Max Pressure

	Inlet* Water Pressure	Water Heater Capacity (Gallons)						
		30	40	52	66	82	100	120
EXP. TANK NEEDED	40 psi	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.
	50 psi	2 GAL.	2 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.
	60 psi	2 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.	10 GAL.
	70 psi	2 GAL.	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.	10 GAL.
	80 psi	5 GAL.	5 GAL.	5 GAL.	10 GAL.	10 GAL.	10 GAL.	10 GAL.

* Highest recorded inlet water pressure in a 24 hour period or regulated water pressure

NOTE: Expansion tanks are pre–charged with a 40 psi air charge. If the inlet water pressure is higher than 40 psi, the expansion tank's air pressure must be adjusted to match that pressure but must not be higher than 80 psi.

Preparing for the New Installation

1. If you are not thoroughly familiar with plumbing and safety practices, consult your local store for further information.
2. The water heater temperature–pressure relief valve must be checked for proper operation and replaced if found to be faulty.

⚠ WARNING

When checking the temperature-pressure relief valve operation, make sure that (1) no one is in front of or around the outlet of the temperature-pressure relief valve discharge line, and (2) the water manually discharged will not cause any property damage or bodily injury. The water may be extremely hot.
If after manually operating the valve, it fails to completely reset and continues to release water, immediately close the cold water inlet to the water heater, follow draining instructions, and replace the temperature-relief valve with a new one.

Also, read and follow additional information found in the water heater owner's manual concerning the temperature–pressure relief valve.

3. Read this owner's manual and the installation rules carefully. If you don't follow the safety rules, the expansion tank will not operate properly. It could cause DEATH, SERIOUS BODILY INJURY AND/OR PROPERTY DAMAGE.
4. If incoming water pressure to the home exceeds 80 psi, a pressure reducing valve will be required. Recommended inlet water pressure is 60 psi or less.
5. In order to determine incoming water pressure and for proper adjustment of the pressure reducing valve, a pressure gauge must be installed between the pressure reducing valve and expansion tank.
6. The complete piping system, including expansion tank and pressure reducing valve, MUST be protected against below freezing temperatures. Failure to do so could cause severe water damage.
7. To safeguard against a possible dangerous malfunction of the expansion tank, review the installation instructions before putting the water supply system back into operation.

Locating the New Water Tank

Facts to Consider About The Location

1. The location selected should be indoors in an area not subject to freezing.
2. The items which must be installed in sequence in the cold water line are (1) the EXPANSION TANK must be installed at least 18 inches away from the cold water inlet fitting on the water heater, (2) the PRESSURE GAUGE, and (3) the PRESSURE REDUCING VALVE, if required. See Figure 1.
3. The expansion tank is designed to be supported by the system piping in the vertical position. If however, the expansion tank must be installed horizontally as shown in Figure 2, it must be supported by adequate strapping (not supplied).
4. The expansion tank, pipes and your connections may, in time, leak. Put the expansion tank in a place where a water leak will not damage anything. The expansion tank should be located in an area where water leakage from the tank or connections will not result in damage to the area around the expansion tank or to the lower floors of the structure. The manufacturer is not responsible for any water damage in connection with this expansion tank.

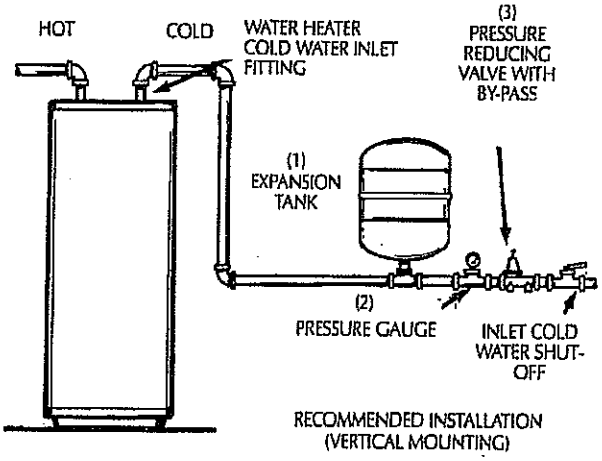

Figure 1

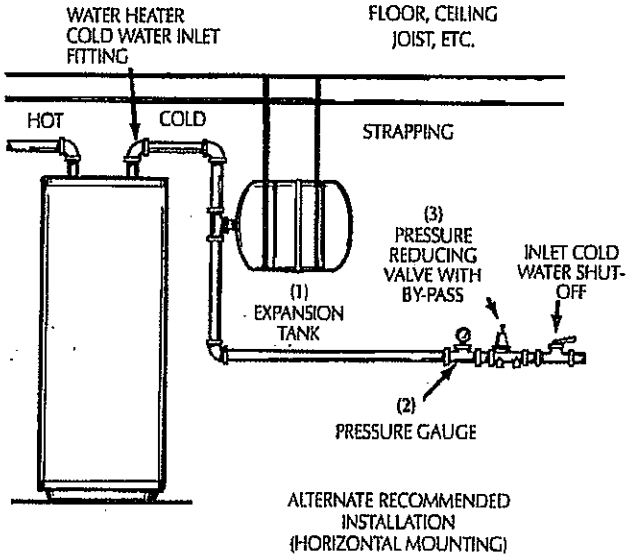

Figure 2

Installing the New Expansion Tank

Water Piping

⚠ WARNING

This expansion tank is designed for operation on the inlet cold water line and is limited to a maximum working pressure of 150 pounds per square inch (psi) at a maximum temperature of 160°F (Residential use) or, 180°F (Commercial use).

Figures 1 and 2 on page 5 show the correct valves and fittings that you will need to install your expansion tank. A threaded (¾") water connection is supplied on the tank bottom.

FOLLOW THE INSTALLATION INSTRUCTIONS FOUND IN THE PACKAGING OF THE PRESSURE REDUCING VALVE AND PRESSURE GAUGE.

1. The water supply and power (electricity or gas) must be shut off during the installation of the valves and expansion tank. Follow the instructions found on the water heater and in the owner's manual.
2. The expansion tank is designed to be supported by the system piping in the vertical position (See Figure 1). If however, the expansion tank must be installed horizontally as shown in Figure 2, it must be supported by adequate strapping (not supplied).
3. Install expansion tank, pressure gauge and pressure reducing valve, if required, as shown in Figure 1 or 2.
4. After installing the expansion tank and valves it will be necessary to expel all air from the piping. Turn the cold water inlet shutoff valve on. To purge the air, open a faucet and wait until a steady stream of water is coming from the faucet. At this time, close the faucet.

Adjusting Water Pressure

1. Recommended inlet water pressure is 60 psi or less.
2. Refer to the pressure gauge. Using the adjusting screw on the pressure reducing valve, increase or decrease the pressure as indicated on the valve.
3. Open a nearby faucet allowing water to run briefly and then close the faucet. Check pressure gauge again and make additional screw adjustments as necessary. It may be necessary to repeat this procedure several times before the pressure has been adjusted to 60 psi or less.

Checking Expansion Tank Air Charge

1. Shut off main cold water supply valve
2. Open a nearby faucet allowing water to run until it stops. This indicates the pressure has been relieved.
3. Using a tire gauge, check the expansion tank's pre-charge pressure (40 psi). The expansion tank air charge must be adjusted to match the incoming water pressure. If the air charge pressure needs to be adjusted upward, use only a manual type tire pump to increase the pressure. If the air charge needs to be reduced, depress the valve core to release pressure.
4. Open the cold water supply valve.
5. Now the water heater can be put back into operation. Follow instructions found on the water heater and in the owner's manual.

Maintenance

Water Heater Temperature–Pressure Relief Valve

The temperature–pressure relief valve on the water heater must be manually operated at least once a year.

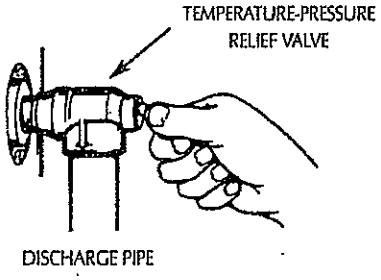

Figure 3

⚠ WARNING

When checking the temperature-pressure relief valve operation, make sure that (1) no one is in front of or around the outlet of the temperature-pressure relief valve discharge line, and (2) the water manually discharged will not cause any property damage or bodily injury. The water may be extremely hot.
If after manually operating the valve, it fails to completely reset and continues to release water, immediately close the cold water inlet to the water heater, follow draining instructions, and replace the temperature-relief valve with a new one.

Weeping Temperature–Pressure Relief Valve

If the temperature–pressure relief valve on the water heater weeps or discharges periodically, this may be due to one or more of the following:

1. The temperature–pressure relief valve may have become faulty. Follow instruction #2 in the "Preparing for the New Installation" section to determine this.
2. The inlet water pressure may be above the recommended 60 psi. Follow the instructions in the "Adjusting Water Pressure" section.
3. The expansion tank's air charge pressure may not be adjusted to match the incoming water pressure. Follow the instructions in the "Checking Expansion Tank Air Charge" section.
4. If all the above have been checked, adjusted and/or replaced, turn the water heater off and contact the local utility.

FOR THE NAME AND ADDRESS OF THE COMPANY, REFER TO THE RATING PLATE ON THE TANK.

5 YEAR TANK

PRODUCT WARRANTY

RESIDENTIAL POTABLE WATER EXPANSION TANK

5 YEAR LIMITED WARRANTY ON TANK

The "Company" warrants this expansion tank in case of a leak within five (5) years from the date of purchase or, in the absence of a Bill of Sale verifying said date, from the date indicated on the model rating plate affixed to this expansion tank; provided, however, that use of this water heater for commercial, institutional, industrial, or other non-residential purposes, shall limit the maximum duration of this tank warranty to two (2) years from date of purchase. In case of a defect, malfunction, or failure to conform to this warranty, the Company will repair or replace this expansion tank. No labor, installation, or freight (if any) charges are included in this warranty. You must pay these costs.

Prior to return of this expansion tank or part to the manufacturer for inspection, the Company will, if requested, ship a replacement expansion tank 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, EXPRESS 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 expansion 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 water heater and expansion tank are not properly installed in accordance with the latest issue of (1) the National Fire Protection Association (NFPA) No. 54; (2) the National Fuel Gas Code, American National Standards Institute (ANSI) Z223.1, if a gas water heater, or the National Electrical Code, if an electric water heater; (3) all local ordinances and regulations pertinent to water heaters; and (4) the installation and instruction manual provided with this expansion tank. Items (1) and (2) are available from your local government or public library, or by writing NFPA, Batterymarch Park, Quincy, Ma. 02269.
   c. If the expansion tank is installed outdoors. The expansion tank is intended for indoor installation only.
   d. If the water heater is not equipped with new temperature and pressure protective equipment required by local codes, but not less than a combination temperature-pressure relief valve certified by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials, as meeting the requirements for Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems, the latest edition of ANSI Z21.22. This valve must be marked with a maximum set pressure not to exceed the marked hydrostatic working pressure of the water heater.

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EXCLUSIONS AND LIMITATIONS
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e. If the water heater and expansion tank are not operated within the factory calibrated temperature limits.
f. If leaks in the tank, or defects in other parts, arise as the result of improper use, negligence in operation or accident, or from inability of the expansion 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 rating plate has been defaced or discarded and you do hot have a Bill of Sale to verify the purchase date.
h. If the expansion tank or any of its components warranted herein is used other than as the complete and integrated system into which it has been manufactured by the Company and sold to the Warrantee.
i. When the water heater and expansion tank is used for space heating and either (i) its sizing does not conform to the specifications of both the Company and the heating component manufacturer, or (ii) it is used for other than residential purposes.
j. If the water heater and expansion tank are used to heat 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 expansion 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 expansion tank containing and or being operated with desalinated (deionized) 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 an expansion tank replacement would be solicited for reasons of noise, taste, odor, discoloration, and/or rusty water.
o. If the expansion tank experiences the effects of thermal expansion or failure (reverses the bottom) due to excessive pressure.

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 water heater. 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.