

In-Line Pump Tank Owners Manual

16002-V3M
16005-V3M
16007-V3M

ALL TECHNICAL AND WARRANTY QUESTIONS: SHOULD BE DIRECTED TO THE LOCAL DEALER FROM WHOM THE WATER TANK WAS PURCHASED. IF YOU ARE UNSUCCESSFUL, PLEASE WRITE TO THE COMPANY LISTED ON THE WARRANTY SHEET WHICH CAME WITH THE WATER TANK.

WARNING

READ THE GENERAL SAFETY SECTION BEGINNING ON INSIDE COVER AND THEN THIS ENTIRE MANUAL BEFORE INSTALLING OR OPERATING THIS WATER TANK.



WARNING: It is unlawful in CALIFORNIA & VERMONT (effective 1/1/2010); MARYLAND (effective 1/1/2012); LOUISIANA (effective 1/1/2013) and the UNITED STATES OF AMERICA (effective 1/4/2014) to use any product in the installation or repair of any public water system or any plumbing in a facility or system that provides water for human consumption if the wetted surface area of the product has a weighted average lead content greater than 0.25%. This prohibition does not extend to service saddles used in California, Louisiana or under USA Public Law 111-380.

Save this Manual for Future Reference.

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General Safety

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause **DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE**. Refer to this manual for assistance or consult your local Sears Service Center for further information.

WARNING

This water tank is designed and intended for cold (ambient temperature) water storage at a maximum pressure of 100 PSIG, any use other than with cold water, or at a sustained or instantaneous pressure in excess of 100 PSIG is unsafe. A pressure relief valve of adequate size must be incorporated in the system. The relief valve must be selected to pass the full capacity of the pump when the pressure in this tank is 100 PSIG or less. Consult pump manufacturer for pump capacity at relief pressure. 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 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 damage property, the relief valve must be allowed to 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 valve, or have any reducing couplings or other restriction.
- 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

Review the Installation Check List before turning on electric power to safeguard against possible dangerous malfunction of the water tank.

WARNING

The complete pump, tank, pressure relief valve, pressure switch 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**.

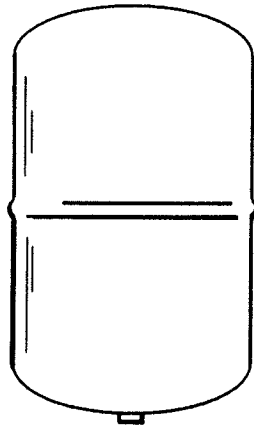
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Introduction

Thank You for purchasing this pump tank. Properly installed and maintained, it should give you years of trouble free service.

Specifications



TANK VOLUME IN GALLONS	DIMENSIONS IN INCHES		DRAW IN GALLONS @ PUMP PRESSURES			STYLE	WATER CONNECTIONS
	DIAMETER	LENGTH	20-40	30-50	40-60		
2.0	8 ³ / ₈	12 ⁷ / ₁₆	0.7	0.6	—	IN LINE	3/4" M-NPT
4.6	11 ³ / ₈	14 ⁷ / ₁₆	1.7	1.4	—	IN LINE	3/4" M-NPT
7.3	11 ³ / ₈	21 ¹ / ₈	2.7	2.3	—	IN LINE	3/4" M-NPT
14.0	15 ³ / ₈	21 ¹ / ₈	5.2	4.3	3.8	IN LINE	1" F-NPT

Maximum working pressure is 100 P.S.I.

Preparing for the New Installation

1. Read the "General Safety" section, page 2 of this manual first and then the entire manual carefully. If you don't follow the safety rules, the water tank will not operate properly. It could cause DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE. This manual contains instructions for the installation, operation, and maintenance of this water tank. It also contains warnings throughout the manual that you must read and be aware of. All warnings and all instructions are essential to the proper operation of the water tank and your safety. Since we cannot put everything on the first few pages, READ THIS ENTIRE MANUAL BEFORE ATTEMPTING TO INSTALL OR OPERATE THE WATER TANK.
2. If after reading this manual you have any questions or do not understand any portion of the instructions, call a qualified Service Agent.
3. The installation must conform with the instructions in this manual; local plumbing, pump, and well codes and electric utility requirements.
4. Carefully plan the place where you are going to put the water tank. Correct connections are very important in preventing death from possible electrical shock and fires. Examine the location to ensure the water tank complies with the "Locating the New Water Tank" section.
5. The water tank must be located in an area not subject to freezing. Failure to do so voids the warranty.

WARNING

The complete pump, tank, pressure relief valve, pressure switch 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.

WARNING

This water storage tank is designed for operation on cold well water systems limited to a maximum working pressure of 100 pounds per square inch (P.S.I.).

WARNING

A pressure relief valve of adequate size must be incorporated in the system. The relief valve must be selected to pass the full capacity of the pump when the pressure in this tank is 100 P.S.I. or less. Failure to follow these instructions can cause tank to blow-up and result in DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE.

6. Always test water from well for purity before using. Check your local health department for testing procedure.
7. Review the "Installation Checklist" in the "Installing the New Water Tank" section before turning "ON" electric power to the pump to safeguard against possible dangerous malfunction of the water tank.

Materials and Basic Tools Needed

Materials Needed

You may or may not need all of these materials, depending on your type of installation.

PLASTIC PIPE INSTALLATION

- Plastic Pipe and Fittings (as required to complete the job).
- Teflon Tape (DO NOT use pipe joint compound on plastic fittings).

GALVANIZED STEEL PIPE INSTALLATION

- Galvanized Pipe and Fittings (as required to complete the job).
- Pipe Joint Compound or Teflon Tape.

Basic Tools

You may or may not need all of these tools, depending on your type of installation. These tools can be purchased at your local store.

PLASTIC PIPE INSTALLATION

- Pipe Wrenches
- Screwdriver
- Knife or Saw to Cut Plastic Pipe

GALVANIZED STEEL PIPE INSTALLATION

- Pipe Wrenches
- Screwdriver
- Pipe Cutting and Threading Tools

Removing the Old Water Tank

1. Turn "OFF" electrical supply to the pump at the fuse or circuit breaker box.

WARNING

HAZARD OF ELECTRICAL SHOCK! Failure to turn "OFF" electric power to the pump will result in the possibility of DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

2. Turn "OFF" the water supply between the water tank and house. In the event this is not possible, the water heater must be turned off and drained. Refer to the water heater manual for this procedure.
3. Connect a hose to a drain valve in the piping system, run the end of the hose to an adequate drain, and drain the water tank.
4. When the water tank is drained, remove the hose and close the drain valve. Disconnect and remove the old water tank.

Locating the New Water Tank

Facts to Consider About the Location

You should carefully choose an indoor location for the new water tank. **This water tank is not intended for outdoor installation and is rated for cold water storage only.**

Whether replacing an old water tank or putting the water tank in a new location, the following critical points must be observed.

1. The location selected should be indoors as close to and as centralized with the water piping system as possible.
2. The water tank must be located in an area not subject to freezing. Failure to do so voids the warranty.

WARNING

The complete pump, tank, pressure relief valve, pressure switch 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.

3. This water tank, as all water tanks, will eventually leak. Do not install without adequate drainage provisions where water flow will cause damage.

CAUTION

The installation of the water tank must be accomplished in such a manner that if the tank or any connections should leak, the flow of water will not cause damage to the area adjoining the water tank, or to the lower floors of the structure. Under no circumstances is the manufacturer to be held liable for any water damage in connection with this water tank.

4. The location selection must provide adequate clearances for servicing and proper operation of the water tank.

Installing the New Water Tank

Water Piping

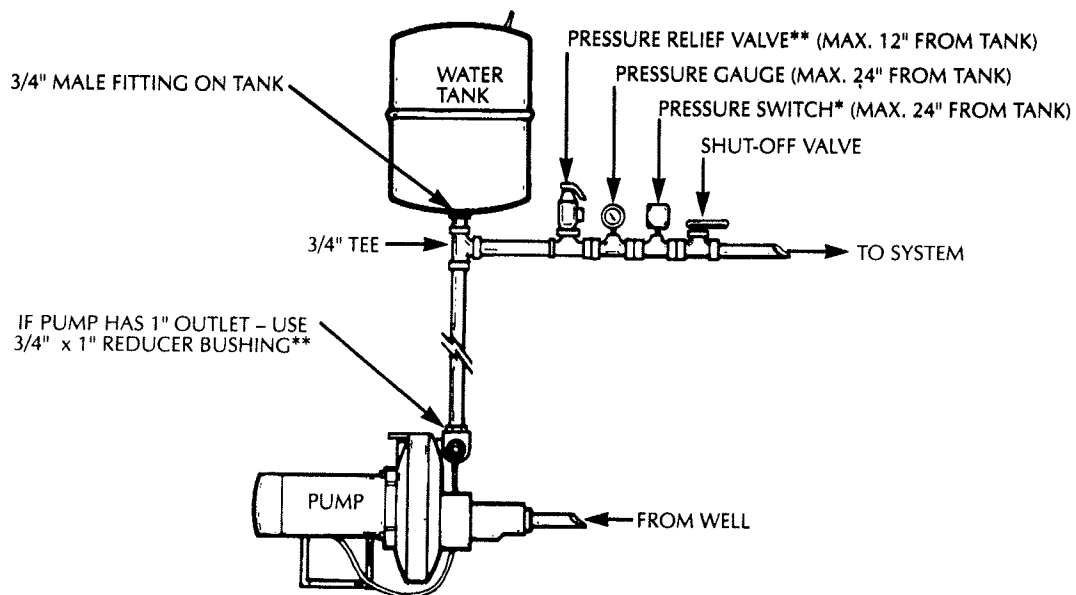
Remove plastic plugs in all fittings of the water tank. The illustrations below show the correct valves and fittings that you will need to install your water tank according to your type of pump. Install the water tank according to the pump installation.

IMPORTANT: DO NOT use any type of lubricant other than water on hose and plastic fittings. Do not connect brass fittings to galvanized fittings unless a dielectric union is placed between connections.

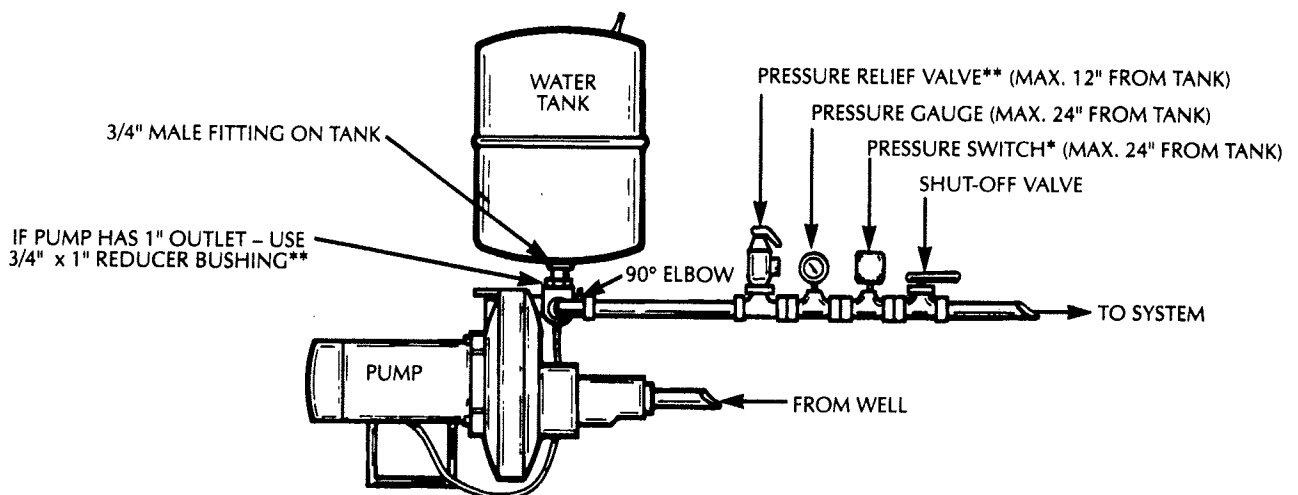
This water tank is designed to be supported by the system piping, either directly above the pump or in a convenient place in the piping system as close to the pump as possible. Do not install this tank in a horizontal position when it is only supported by the system piping.

When pump and tank are in different locations, the pressure switch should be at the tank location. Or compensating adjustment must be made for pressure loss due to head of water, i.e., one P.S.I. for every two feet of elevation.

TANK INSTALLED IN-LINE REMOTE FROM PUMP



TANK INSTALLED DIRECTLY ON PUMP



NOTES: *OPTIONAL...MUST BE INSTALLED IF PUMP DOES NOT HAVE A PRESSURE SWITCH
**NOT FURNISHED...MUST BE PURCHASED LOCALLY.

Installing the New Water Tank (cont'd)

Pressure Relief Valve

WARNING

This water tank is designed and intended for cold (ambient temperature) water storage at a maximum pressure of 100 PSIG, any use other than with cold water, or at a sustained or instantaneous pressure in excess of 100 PSIG is unsafe. A pressure relief valve of adequate size must be incorporated in the system. The relief valve must be selected to pass the full capacity of the pump when the pressure in this tank is 100 PSIG or less. Consult pump manufacturer for pump capacity at relief pressure. 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 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 damage property, the relief valve must be allowed to 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 valve, or have any reducing couplings or other restriction.

-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

Do not install a shutoff valve between the tank and the pressure relief valve. Failure to follow these instructions can cause the tank to blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

WARNING

Do not install a shutoff valve, plug or cap in your pressure relief valve drain line. Failure to follow these instructions can cause the tank to blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

Filling the Water Tank

It will be necessary to expel all air from the piping after new installations, repriming and after the pump has been disassembled for repair. To purge the air, first open a faucet, the greatest distance from the pump. With the pump being allowed to run, wait until a steady stream of water is coming from the faucet. At this time, close and open the faucet several times. This will allow the water tank to fill with water.

If after this, air in the lines still occurs, check on the suction side of the pump (piping to pump from well) for piping leaks.

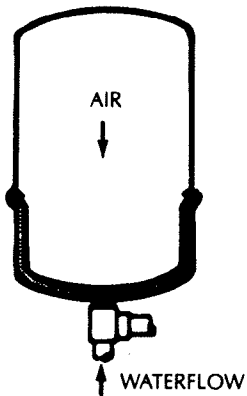
Installation Checklist

1. Is the pressure relief valve installed correctly? See "Pressure Relief Valve" in the "Installing the New Water Tank" section.
2. Will a water leak damage anything? See the "Locating the Water Tank" section.
3. Is the water tank and system filled with water? See "Filling the Water Tank" in the "Installing the New Water Tank" section.
4. Turn on electricity to the pump.

For Your Information

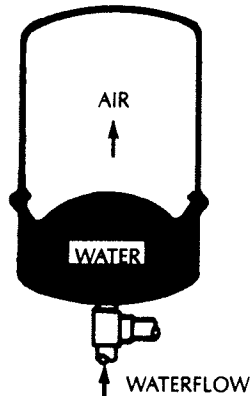
Operational Conditions

How Water Tanks OPERATE



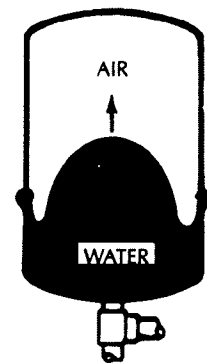
Start-Up Cycle

The diaphragm is pressed against the bottom of the chamber.



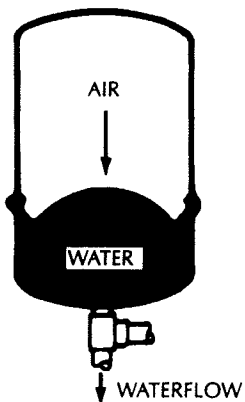
Fill Cycle

Water is pumped into the reservoir, which presses the diaphragm upward into the air chamber.



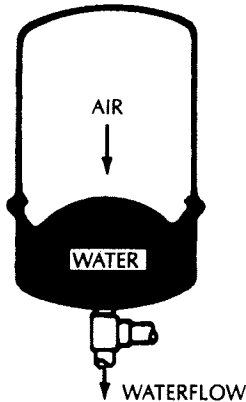
Hold Cycle

Pump-cutoff pressure is attained. The diaphragm reaches its most extended position and the reservoir is now filled to its rated capacity.

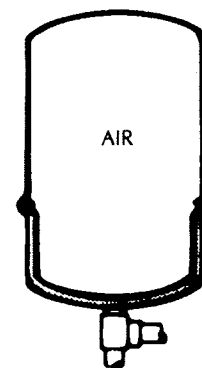


Delivery Cycle

Pump remains shut off while air pressure in the top chamber presses the diaphragm delivering water to system.



Water is being drawn from the tank: Compressed air in the tank forces water out.



Tank is completely empty: Now the pump will start. A complete new cycle begins.

For Your Information (cont'd)

TO CHECK AIR CHARGE

It will be necessary to expel all air from the piping after new installations, repriming and after the pump has been disassembled for repair. To purge the air, first open a faucet, the greatest distance from the pump. With the pump being allowed to run, wait until a steady stream of water is coming from the faucet. At this time, close and open the faucet several times. This will allow the water tank to fill with water.

If after this, air in the lines still occurs, check on the suction side of the pump (piping to pump from well) for piping leaks.

The water tank has been shipped with a factory precharge of 40 P.S.I. If your pump start-up pressure is different from the 40 P.S.I. precharge, with an empty tank, adjust the tank pressure 2 P.S.I. below the pump start-up pressure. This can be accomplished by simply bleeding air or adding air through the air valve located on top of the tank and measuring with an accurate tire pressure gauge. If the tanks precharge pressure needs to be increased; then use an air compressor or a portable air storage tank to increase the air pressure in the water tank. Raise the pressure slowly, checking it periodically with an accurate tire pressure gauge, until the desired pressure is reached.

If drawdown (amount of water that comes out of tank between pump stops and starts) decreases significantly, check as follows:

1. Turn "OFF" electric power to the pump, open faucet near tank, and drain completely.

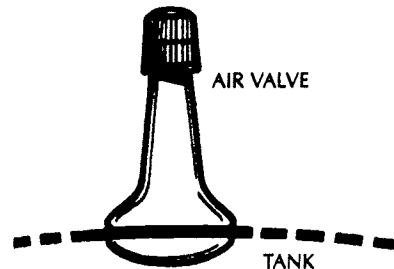
WARNING

Do not exceed a maximum precharge pressure of 60 P.S.I. Failure to follow these instructions can cause tank blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

WARNING

HAZARD OF ELECTRICAL SHOCK! Failure to turn "OFF" electric power to the pump will result in the possibility of DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

2. At the air valve in top of tank (see illustration below), check air pressure with an accurate tire pressure gauge. The air pressure should be 2 P.S.I. below the pump pressure switch cut-in setting.



3. If the air pressure is below the cut-in setting, add air to the tank. Use an air compressor or a portable air storage tank to increase the air pressure to be 2 P.S.I. below the pump pressure switch cut-in setting. Raise the pressure slowly, checking it periodically with an accurate tire pressure gauge, until the desired pressure is reached.

WARNING

Do not exceed a maximum precharge pressure of 60 P.S.I. Failure to follow these instructions can cause tank blow-up and result in DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

4. Use soap or liquid detergent to check for air leaks around the air valve.

TO CHECK PUMP PRESSURE SWITCH

1. Start the pump and allow the pressure switch to shut it off.
2. Check the tank air pressure with the tire gauge, It should be the same as the cut-off pressure for your system. (See "Drawdown Performance Chart" in the "For Your Information" section.)
3. If the pressure reading is different from your system recommended pressure, the switch should be adjusted.
4. Turn "OFF" the electric power to the pump.

WARNING

HAZARD OF ELECTRICAL SHOCK! Failure to turn "OFF" electric power to the pump will result in the possibility of DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

5. Remove the pressure switch cover. You will find adjusting instructions inside the cover. The amount of adjustment can only be determined by running the pump through a cycle.

Periodic Maintenance

Pressure Relief Valve Operation

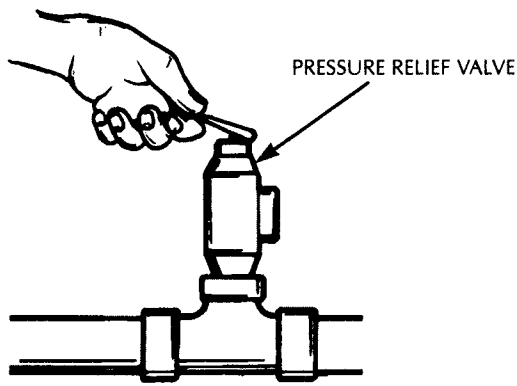
The pressure relief valve must be manually operated at least once a year. Failure to install and maintain a new properly listed pressure relief valve will release the manufacturer from any claim which might result from excessive water pressure.

Service

If a condition persists or you are uncertain about the operation of the water tank, let a qualified person check it out.

WARNING

When checking the pressure relief valve; make sure that the water manually discharged will not cause any property damage.



If after manually operating the valve it fails to completely reset and continues to release water, immediately shut off the pump and open a cold water faucet to drain the water out of the water tank and piping. Then replace the pressure relief valve with a new one (rated at 100 P.S.I. max.).

Turn on electricity to pump and shut off the cold water faucet when water has a steady and constant flow.

Notes

**FOR THE NAME AND ADDRESS OF THE COMPANY,
REFER TO THE SERIAL PLATE ON THE PUMP TANK**

**5 YEAR
PRODUCT WARRANTY
WATER CHAMBER PUMP TANK**

5 YEAR LIMITED WARRANTY ON TANK

The "Company" warrants the 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 serial plate affixed to this tank; provided, however that use of this tank for commercial, institutional, industrial or other nonresidential purposes, shall limit the maximum duration of this tank warranty to one (1) year from date of purchase. 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 pump tank or part to the manufacturer for inspection, the Company will, if requested, ship a replacement pump tank or part C.O.D. and later provide such reimbursement as subsequent inspection indicates is due under these warranties.

EXCLUSIONS AND LIMITATIONS OF THIS LIMITED WARRANTY:

1. THE LIMITED WARRANTY PROVIDED HEREIN IS 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. This warranty 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 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 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 arise as the result of improper use, negligence in operation or accident, or from inability of the tank 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 serial 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 1½ 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.)

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EXCLUSIONS AND LIMITATIONS (continued)

- i. If the tank or any of its components warranted herein is used other than as the complete and integrated system into which they have been manufactured by the Company and sold to the Warrantee.
 - 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 pump 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.