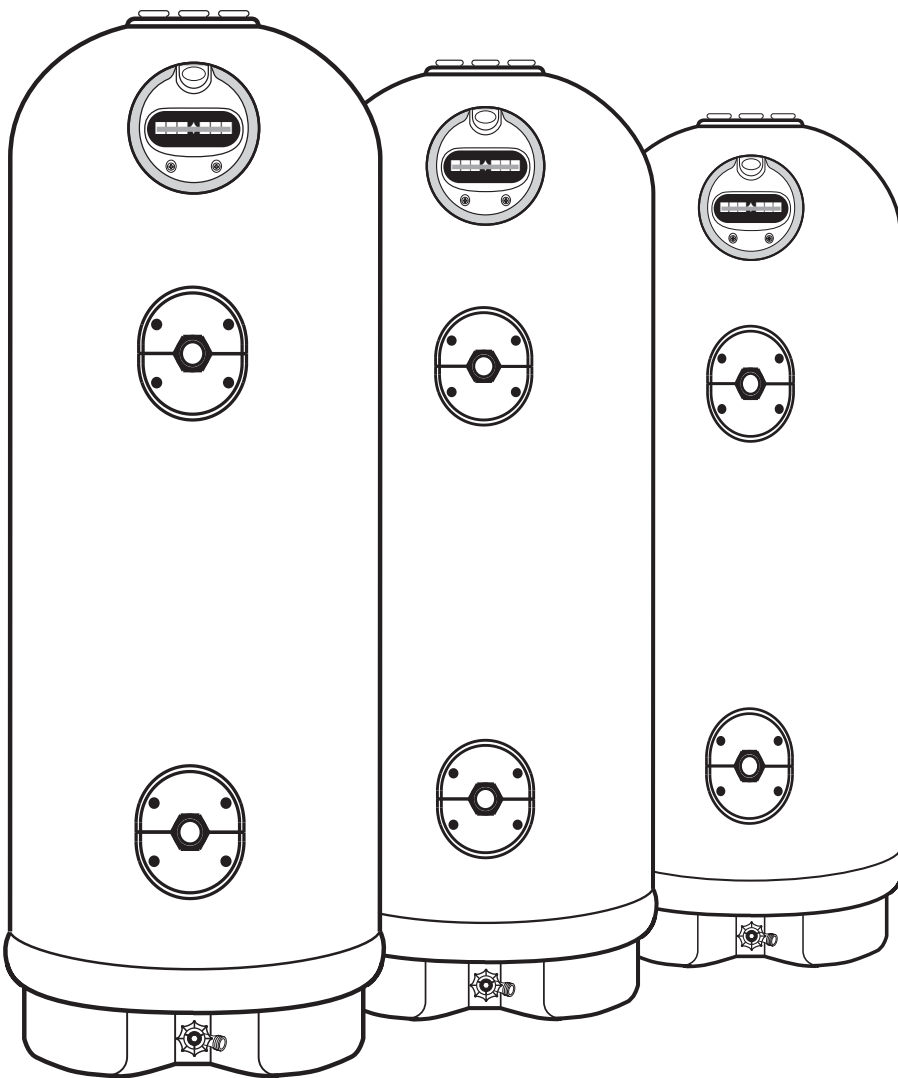


# Marathon Thermal Storage Tanks

50, 85, & 105 Gallon





The purpose of this manual is twofold: one, to provide the installer with the basic directions and recommendations for the proper installation of the storage tank; and two, for the owner-operator, to explain the features, operation, safety precautions, maintenance and troubleshooting of the storage tank. This manual also includes a parts list.

It is imperative that all persons who are expected to install, operate or adjust this storage tank read the instructions carefully so they may understand how to perform these operations. If you do not understand these instructions or any terms within it, seek professional advice.

Any questions regarding the operation, maintenance, service or warranty of this storage tank should be directed to the seller from whom it was purchased. If additional information is required, refer to the section on "If you need service."

**Do not destroy this manual. Please read carefully and keep in a safe place for future reference.**

 **Recognize this symbol as an indication of Important Safety Information!**

 **California Proposition 65 Warning: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.**



## Safety Information

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## Installation Instructions

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## FOR YOUR RECORDS

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Write the model and serial numbers here:

# \_\_\_\_\_

# \_\_\_\_\_

You can find them on a label on the appliance.

**Staple sales slip or cancelled check here.**

Proof of the original purchase date is needed to obtain service under the warranty.



## READ THIS MANUAL

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Inside you will find many helpful hints on how to use and maintain your storage tank properly. A little preventive care on your part can save you time and money over the life of your storage tank.

You'll find many answers to common problems in the Troubleshooting Guide. If you review the chart of Troubleshooting Tips first, you may not need to call for service.



## READ THE SAFETY INFORMATION

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**Your safety and the safety of others are very important. There are many important safety messages in this manual and on your appliance. Always read and obey all safety messages.**



**This is the safety alert symbol. Recognize this symbol as an indication of Important Safety Information! This symbol alerts you to potential hazards that can kill or hurt you and others.**

All safety messages will follow the safety alert symbol and either the word "DANGER", "WARNING", "CAUTION" or "NOTICE".

These words mean:



**DANGER**

**An imminently hazardous situation that will result in death or serious injury.**



**WARNING**

**A potentially hazardous situation that could result in death or serious injury and/or damage to property.**



**CAUTION**

**A potentially hazardous situation that may result in minor or moderate injury.**

**NOTICE:**

**Attention is called to observe a specified procedure or maintain a specific condition.**

# IMPORTANT SAFETY INFORMATION. READ ALL INSTRUCTIONS BEFORE USING.

---

## WARNING!

For your safety, the information in this manual must be followed to minimize the risk of fire or explosion, electric shock, or to prevent property damage, personal injury, or loss of life.

Be sure to read and understand the entire Use and Care Manual before attempting to install or operate this storage tank. It may save you time and cost. Pay particular attention to the Safety Instructions. Failure to follow these warnings could result in serious bodily injury or death. Should you have problems understanding the instructions in this manual, or have any questions, STOP, and get help from a qualified service technician.



## FOR INSTALLATIONS IN THE STATE OF CALIFORNIA

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California Law requires that residential water heaters and storage tanks must be braced, anchored or strapped to resist falling or horizontal displacement due to earthquake motions. For residential storage tanks up to 52 gallon capacity, a brochure with generic earthquake bracing instructions can be obtained from: Office of the State Architect, 1102 Q Street, Suite 5100, Sacramento, CA 95814 or you may call 916-445-8100 or ask a storage tank dealer.

However, applicable local codes shall govern installation. For residential storage tanks of a capacity greater than 52 gallons, consult the local building jurisdiction for acceptable bracing procedures.



## SAFETY PRECAUTIONS

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- Read this manual entirely before installing or operating the storage tank.
- Be sure your appliance is properly installed in accordance with local codes and the provided installation instructions.
- **Do not** attempt to repair or replace any part of your storage tank unless it is specifically recommended in this manual. All other servicing should be referred to a qualified technician.



READ AND FOLLOW THIS SAFETY INFORMATION  
CAREFULLY.

---

SAVE THESE INSTRUCTIONS

# Installing the storage tank.

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## Local Installation Regulations

This storage tank must be installed in accordance with these instructions, local or federal codes.

If the storage tank is to be installed in a restaurant, or other location where NSF International listing is required, it must be weather sealed to the floor, a raised base, or on a shelf so that seepage cannot accumulate under it; or elevated to provide at least (6) inches of clearance from the floor.

In order to meet NSF International requirements for Standard 5, the base of the storage tank must be sealed to the floor to prevent seepage underneath. Apply a 3/8" bead of RTV Silicone completely around the floor edge of the base of the tank.

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## Location

**The location chosen for the storage tank must take into consideration the following:**

Locate the storage tank in a clean dry area as near as practical to the area of greatest heated water demand. Long un-insulated hot water lines can waste energy and water.

The storage tank and water lines should be protected from freezing temperatures. Do not install the storage tank in outdoor unprotected areas or near any other appliances

where high temperatures are present, such as wood burning stoves, boilers, or furnaces. High temperatures can warp or otherwise damage the non-metallic construction of this storage tank.

Make certain the floor underneath the storage tank is strong enough to sufficiently support the weight of the storage tank once it is filled with water.

Unit Capacity (Gallons)	Unit Capacity (Imperial Gallons)	Unit Capacity (Liters)	Dimensions (Inches)		Shipping Weight (lbs)	Approximate Full Weight (lbs)
			Height <sup>1</sup>	Diameter		
50	40	189	66 3/4	23 1/2	100	517
85	70	322	70 1/4	28 1/4	134	843
105	84	397	70 3/4	30 1/4	152	1,028

<sup>1</sup> Height includes factory installed Temperature and Pressure Relief Valve.

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## Thermal Expansion

Determine if a check valve exists in the inlet water line. Check with your local water utility. It may have been installed in the cold water line as a separate back flow preventer, or it may be part of a pressure reducing valve, water meter or water softener. A check valve located in the cold water inlet line can cause what is referred to as a “closed water system”. A cold water inlet line with no check valve or back flow prevention device is referred to as an “open” water system.

As water is heated, it expands in volume and creates an increase in the pressure within the water system. This action is referred to as “thermal expansion”. In an “open” water system, expanding water which exceeds the capacity of the storage tank flows back into the city main where the pressure is easily dissipated.

A “closed water system”, however, prevents the expanding water from flowing back into the main supply line, and the result of “thermal expansion” can create a rapid and dangerous

pressure increase in the storage tank and system piping. This rapid pressure increase can quickly reach the safety setting of the relief valve, causing it to operate during each heating cycle. Thermal expansion, and the resulting rapid and repeated expansion and contraction of components in the storage tank and piping system can cause premature failure of the relief valve, and possibly the heater itself. Replacing the relief valve will not correct the problem!

The suggested method of controlling thermal expansion is to install an expansion tank in the cold water line between the storage tank and the check valve (refer to the illustration on the page 8). The expansion tank is designed with an air cushion built in that compresses as the system pressure increases, thereby relieving the over pressure condition and eliminating the repeated operation of the relief valve. Other methods of controlling thermal expansion are also available. Contact your installing contractor, water supplier or plumbing inspector for additional information regarding this subject.

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## Inspect Storage tank

Inspect the storage tank for possible damage.

# Installing the storage tank.

## Temperature and Pressure Relief Valve

**▲WARNING:** The pressure rating of the relief valve must not exceed 150 PSI, the maximum working pressure of the storage tank as marked on the rating plate.

Connect the outlet of the relief valve to a suitable open drain so that the discharge water cannot contact live electrical parts or persons and to eliminate potential water damage.

Piping used should be of a type approved for hot water distribution. The discharge line must be no smaller than the outlet of the valve and must

pitch downward from the valve to allow complete drainage (by gravity) of the relief valve and discharge line. The end of the discharge line should not be threaded or concealed and should be protected from freezing. No valve of any type, restriction or reducer coupling should be installed in the discharge line.

**A new combination temperature and pressure relief valve, complying with the Standard for Relief Valves and Automatic Gas Shut-Off Devices for Hot Water Supply Systems, ANSI Z21.22, is supplied and must be installed in the opening provided and marked for the purpose on the storage tank. No valve of any type should be installed between the relief valve and the tank. Local codes shall govern the installation of relief valves.**

## Vacuum Relief Valve

**NOTICE:** Do NOT remove or tamper with the vacuum relief valve for any reason. Doing so will void the manufacturer's warranty.

The vacuum relief valve, which must be used when installing the storage tank, is factory installed.

The cold water inlet has a vacuum relief valve installed. Certain conditions in the field may produce a vacuum or negative pressure condition inside the storage tank. This negative pressure can cause the tank to fail. The vacuum relief valve provides a means to eliminate the negative

pressure or vacuum by admitting air into the tank to equalize the pressure.

It is not recommended to pull a vacuum on the unit.

If a vacuum is pulled on the unit, refer to the "To Fill the Storage tank" section to ensure the unit is full of water before operating.

## Drain Pan

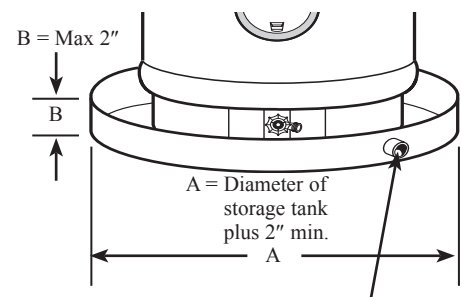
**NOTICE:** Auxiliary catch pan MUST conform to local codes.

The storage tank should not be located in an area where leakage of the tank or connections will result in damage to the area adjacent to it or to lower floors of the structure. It is recommended that a suitable catch pan, adequately drained, be installed under the storage tank.

Catch pan kits are available from the store where the storage tank was purchased, or any water heater distributor.

Under no circumstance will the manufacturer be held liable for any

water damage in connection with this storage tank.



To open drain, this line should be at least 3/4" ID and pitched for proper drainage.

---

## Water Supply Connections - Top of Storage Tank

**NOTICE: Do not attempt to turn any fitting connected to the storage tank union hex nuts that are tightened. Doing so will damage the storage tank and void the manufacturer's warranty.**

Refer to the illustration on next page for suggested typical installation. The installation of unions or flexible copper connectors is recommended on the hot and cold water connections so that the storage tank may be easily disconnected for servicing if necessary. The HOT and COLD water connections are clearly marked and are 3/4" NPT on all models. Install a shut-off valve in the cold water line near the storage tank.

The cold water connection, hot water connection, and the temperature and pressure relief valve may be temporarily disconnected from the unit to ease installation by loosening the union hex nuts connecting the fittings to the storage tank. The connection of these parts to the unit use seal rings to form a water tight connection. Re-use

the rubber seal rings that are provided with the heater when re-installing the components. Do NOT use pipe sealant on this joint. Do NOT torque the union hex nuts to over 35 ft-lbs when reinstalling the components. Failure to properly reconnect the fittings provided with the storage tank will void the manufacturer's warranty.

**SOLDER WITH CARE!!!** If sweat connections are used, do NOT apply heat directly to any component directly connected to the storage tank. This includes the cold water connection, hot water connection, temperature and pressure relief valve and the drain valve. Doing so will damage the storage tank beyond repair and void the manufacturer's warranty.

---

## Water Connection Ports – On Sidewall of Unit

Two water connection ports are located on the sidewall of the tank. These ports have 1-1/4" female NPT fittings. (tapered pipe thread).

Teflon pipe tape or "dope" are recommended for these two connections.

Fittings must be held securely (and not

turn) during tightening / installation / removal. Failure to do so may result in catastrophic damage to the storage tank.

It is recommended that a threaded union be installed near the tank.

Maximum flow rate through ports is 20 GPM.

---

## To Fill the Storage tank

Make certain the drain valve is completely closed.

Open the shut-off valve in the cold water supply line.

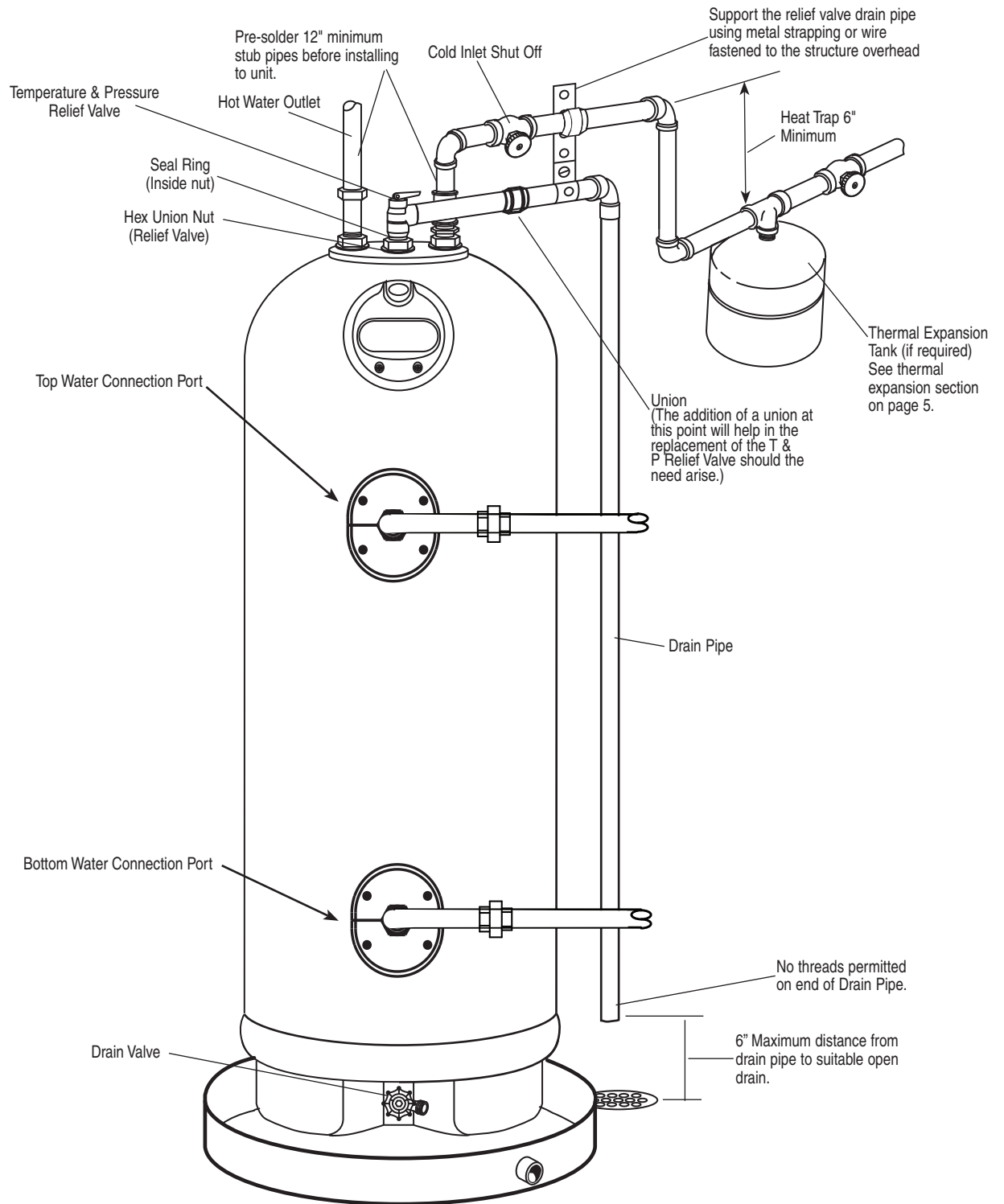
Open each hot water faucet slowly to

allow the air to vent from the storage tank and piping.

A steady flow of water from the hot water faucet(s) indicates a full storage tank.

# Installing the storage tank.

## Typical Installation





---

**▲WARNING: If local codes require external application of insulation blanket kits the manufacturer's instructions included with the kit must be carefully followed.**

## **Insulation Blankets**

Insulation blankets, available to the general public, for external use on storage tanks are not necessary. The purpose of an insulation blanket is to reduce the standby heat loss encountered with storage tanks.

The manufacturer's warranty does not cover any damage or defect caused by installation, attachment or use of any type of energy saving or other unapproved devices (other than those authorized by the manufacturer) into, onto or in conjunction with the storage tank. The use of unauthorized energy saving devices may shorten the life of the storage tank and may endanger life and property.

The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized devices.

**▲CAUTION: If local codes require the application of an external insulation blanket to this storage tank, pay careful attention to the following so as not to restrict the proper function and operation of the storage tank:**

- Do not cover the operating or warning labels attached to the storage tank or attempt to relocate them on the exterior of insulation blanket.
- Do not cover the vacuum valve, or pressure and temperature relief valve.
- Inspect the insulation blanket frequently.

# Installation Checklist

---

## A. Storage tank Location

- Close to area of heated water demand.
- Indoors and protected from freezing temperatures.
- Area free of flammable vapors.
- Provisions made to protect area from water damage.
- Sufficient room to service unit.

---

## B. Water Supply

- Storage tank completely filled with water.
- Air purged from storage tank and piping.
- Water connections tight and free of leaks.

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## C. Relief Valve

- Temperature and Pressure Relief Valve properly installed and discharge line run to open drain.
- Discharge line protected from freezing.

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# Operating the storage tank.

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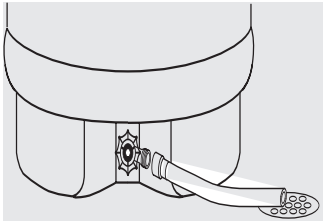
## Safety Precautions

- A** This storage tank will not control the water temperature.
- B** Maximum operating temperature of water in tank = 170° F.
- C** Temperature & Pressure Safety Relief valve opens at: 210° F, and/or 150 PSI..
- D** Maximum flow rate permissible through ports on side wall of tank = 20 GPM.

## Care and cleaning of the storage tank.

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### Draining the Storage tank



**⚠DANGER:** Before manually operating the relief valve, make certain no one will be exposed to the hot water released by the valve. The water drained from the tank may be hot enough to present a scald hazard and should be directed to a suitable drain to prevent injury or damage.

**NOTICE:** Additional instructions for draining the unit are located on the storage tank.

In order to drain the storage tank, turn off the cold water supply. Open a hot

water faucet first or lift the handle on the relief valve (and keep open) to admit air to the tank during draining. (This will relieve the pressure in the line.)

Attach a garden hose to the drain valve on the storage tank and direct the stream of water to a drain. Open the valve.

Please reference the "To Fill the Storage tank" section for instructions on how to refill the unit.

**⚠DANGER:** Before manually operating the relief valve, make certain no one will be exposed to the danger of coming in contact with the hot water released by the valve. The water may be hot enough to create a scald hazard. The water should be released into a suitable drain to prevent injury or property damage.

### Routine Preventative Maintenance

Properly maintained, your storage tank will provide years of dependable trouble-free service.

It is suggested that a routine preventive maintenance program be established and followed by the user.

At least once a year, lift and release the lever handle on the temperature pressure relief valve, located near the top of the storage tank, to make certain the valve operates freely. Allow several gallons to flush through the discharge line to an open drain.

A storage tank's tank can act as a settling basin for solids suspended in the water. It is therefore not uncommon for hard water deposits to accumulate in the bottom of the tank. It is suggested that a few quarts of water be drained from the storage tank's tank every month to clean the tank of these

deposits.

Rapid closing of faucets or solenoid valves in automatic water using appliances can cause a banging noise heard in a water pipe. Strategically located risers in the water pipe system or water hammer arresting devices can be used to minimize the problem.

Periodically check for external water leaks at all connection points.

**NOTICE:** If the temperature and pressure relief valve on the storage tank discharges periodically, this may be due to thermal expansion in a closed water system. Contact the water supplier or your plumbing contractor on how to correct this. Do not plug the relief valve outlet.

### Vacation and Extended Shut-Down

If the storage tank is to remain idle for an extended period of time, the water to the appliance should be turned off to conserve energy.

If the storage tank is installed in a location where it could freeze when not operational, all water must be drained from the unit and piping. If

the tank is full of water and freezes, the tank will break. See the "Draining the Storage tank" section for details on draining the unit. Freeze damage is not covered under the manufacturer's warranty.

## Before You Call For Service...

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### Troubleshooting Tips

Save time and money! Review the chart on this page first and you may not need to call for service.

Problem	Possible Causes	What to Do
<b>Rumbling noise upon start-up</b>	Normal settling of internal components.	<ul style="list-style-type: none"><li>● No action required.</li></ul>
<b>Relief valve producing popping noise or draining</b>	Pressure build up caused by thermal expansion in a closed system.	<ul style="list-style-type: none"><li>● This is an unacceptable condition and must be corrected. Contact the water supplier or plumbing contractor on how to correct this. Do not plug the relief valve outlet.</li></ul>

## Replacement Parts.

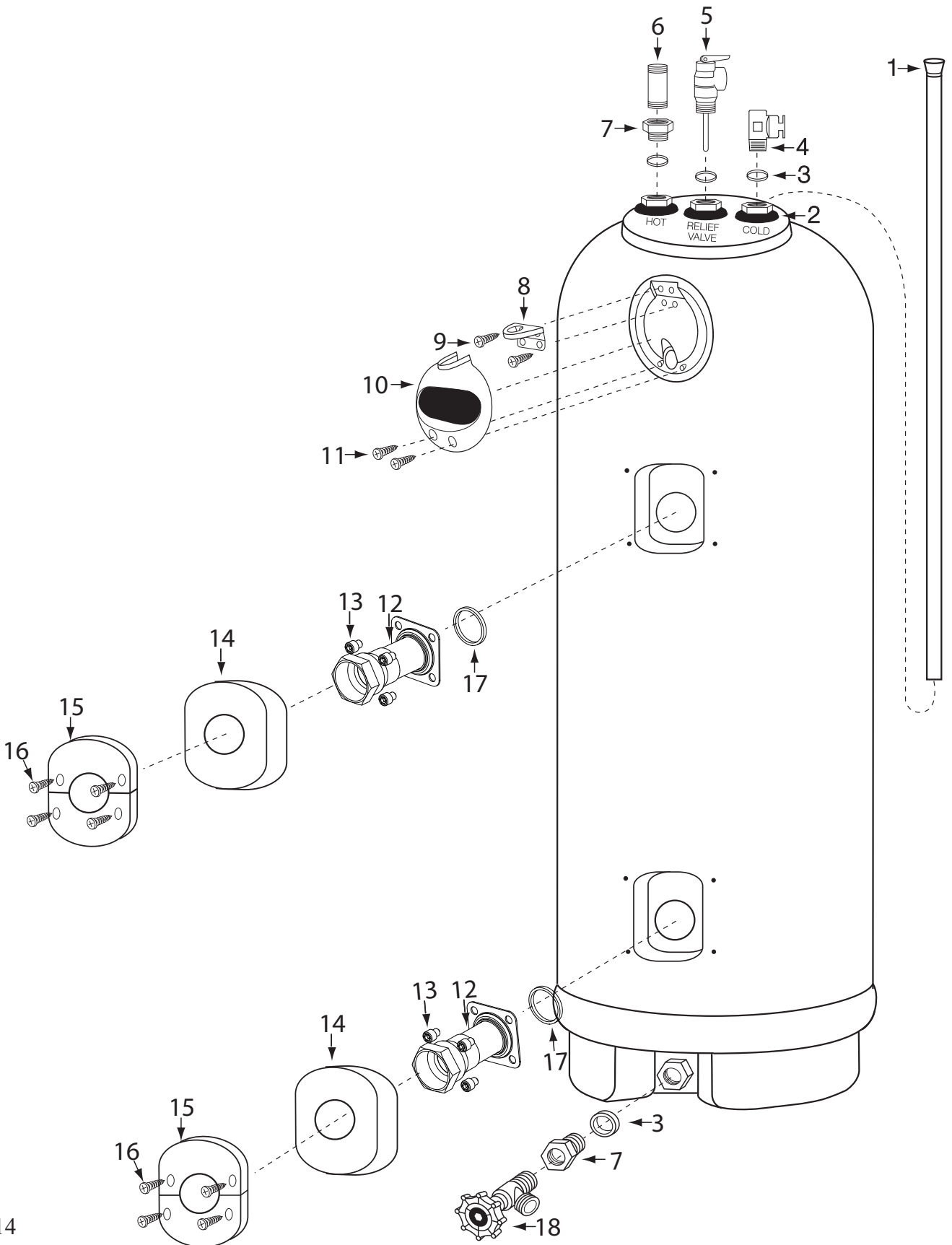
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Key No.	Description
1	Dip Tube
2	Grommet, Large
	Grommet, Small
3	Seal Ring, Large
	Seal Ring, Small
4	Vacuum Valve
5	Temperature and Pressure Relief Valve
6	Nipple, 3/4" NPT x 3"
7	Reducer Bushing, 3/4" NPT x 1" NPT - (105 Gallon Only)
8	Knock-Out Bracket
9	Screw, #8 x 3/4"
10	Junction Box Cover
11	Screw #8-16 x 5/8"
12	Water Connection Fitting
13	Screw, SHCS - 5/16-18 x 1/2" and Lock Washer
14	Cavity Insulation
15	Cover Plate
16	Screw, #10-16 x 5/8"
17	Gasket
18	Drain Valve
▲	Drain Pan
▲	Use and Care Manual

▲ Not Illustrated

# Replacement Parts.

50, 85, 105 gallon models.



# IF YOU NEED SERVICE

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1. Should you have any questions about your new storage tank, or if it requires repair, or routine maintenance, it is suggested that you first contact your installer, plumbing contractor or previously agreed upon service agency. In the event the firm has moved, or is unavailable, refer to the telephone directory, commercial listings or local utility for qualified service assistance.
2. Should your problem not be solved to your complete satisfaction, you should then contact the Manufacturer's National Service Department at the following address:

3107 Sibley Memorial Highway  
Eagan, MN 55121-1604  
Phone: 1-800-321-6718.

When contacting the manufacturer, the following information will be requested:

- a. Model and serial number of the storage tank as shown on the rating plate attached to the jacket of the unit.
- b. Address where the storage tank is located and physical location in the dwelling.
- c. Name and address of installer and any service agency who performed service on the storage tank.
- d. Date of original installation and dates any service work was performed.
- e. Details of the problems as you can best describe them.
- f. List of people, with dates, who have been contacted regarding your problem.

Additional service information can be found at [www.marathonheaters.com](http://www.marathonheaters.com) and [www.rheem.com](http://www.rheem.com).

# LIMITED WARRANTY

## GENERAL

Water Heater Innovations, Inc. warrants its products to be free from factory defects in workmanship and material, and will furnish a replacement for any part which fails in normal use, within the applicable Warranty Periods stated below. If an exact replacement storage tank is not available for any reason, Water Heater Innovations, Inc. reserves the right to provide a comparable model. Replacements furnished will be warranted for only the unused portion of the applicable original Warranty Period. This Limited Warranty does not cover installation service or labor costs, which will be your responsibility.

## THE EFFECTIVE DATE

The Effective Date is the date of original installation if properly documented; otherwise it is the date of manufacture plus NINETY (90) days.

## APPLICABLE WARRANTY PERIODS

The Applicable Warranty Period varies depending on the use or application and upon what part fails.

**Residential Use:** If the thermal storage tank is installed in a single family dwelling owned by the original purchaser of the thermal storage tank, then subject to proof of purchase of the thermal storage tank:

- For as long as the original purchaser owns the home and does not move the thermal storage tank, Water Heater Innovations, Inc. will furnish a replacement storage tank if the tank fails. If the home is sold the tank warranty converts to FIFTEEN (15) years from the date to manufacture and the remainder of the FIFTEEN (15) years transfers to the second owner.
- For a Warranty Period of FIVE (5) years from the Effective Date or SIX (6) years from the date of manufacture, whichever is greater, Water Heater Innovations, Inc. will furnish a replacement for any other parts of the thermal storage tank that fail.

**Commercial Use:** If the thermal storage tank is installed in a residential rental property, a commercial building or in an agricultural application such as a dairy barn:

- For a Warranty Period of TEN (10) years from the Effective Date, Water Heater Innovations, Inc. will furnish a replacement thermal storage tank if the tank fails.
- For a Warranty Period of FIVE (5) years from the Effective Date, Water Heater Innovations, Inc. will furnish a replacement for any other parts that fail on a thermal storage tank installed in a residential rental property or in a leasing program.
- For a Warranty Period of THREE (3) years from the Effective Date, Water Heater Innovations, Inc. will furnish a replacement for any other parts that fail on a thermal storage tank installed in agricultural applications such as dairy barns.

**Industrial Use:** In an application where the heated water is used as a part of an industrial or commercial process:

- For a Warranty Period of FIVE (5) years from the Effective Date, Water Heater Innovations, Inc. will furnish a replacement thermal storage tank in industrial/commercial applications if the tank fails.
- For a Warranty Period of ONE (1) year from the Effective Date, Water Heater Innovations, Inc. will furnish a replacement for any other parts that fail on a thermal storage tank installed in industrial/commercial applications.

## EXCLUSIONS

This Warranty Will Not Apply:

1. To defects or malfunctions resulting from failure to install, operate or maintain the unit in accordance with the instructions provided;
2. To damage from abuse, accident, fire, flood, freeze and the like;
3. To damage or failure caused by operating the unit with an empty or partially empty tank;
4. In the event the tank failure occurs due to the storage tank being operated at excessive water temperatures, or the storage tank is not supplied with potable water, or if the tank is subjected to pressures exceeding the rating plate, which must not be altered, defaced, or removed
5. To defects or damage caused by the use of any attachment, including any energy saving device, not authorized by Water Heater Innovations, Inc.;
6. To units installed outside of the 50 states (and the District of Columbia) of the United States and the provinces of Canada;
7. To units not installed in accordance with applicable local codes, ordinances and good trade practices;
8. To the thermal storage tank is moved from its original installation location;
9. To damage or failures resulting from the thermal storage tank being modified in any way;

## SERVICE LABOR RESPONSIBILITY

This Limited Warranty does not cover any labor expense for service, removal, or re-installation. All such expenses are your responsibility.

## SHIPPING COSTS

Water Heater Innovations, Inc. will pay the transportation costs for the replacement to a convenient delivery point selected by us. You must pay any local cartage, including the cost of returning the replaced item to a convenient shipping location selected by us, if required.

## HOW TO MAKE A CLAIM

To obtain warranty service, contact the dealer where the thermal storage tank was purchased. The ORIGINAL DATED RECEIPT OR OTHER PROOF OF PURCHASE AND DATE OF INSTALLATION, accompanied by the model and serial numbers, are required. If you are unable to contact the original dealer, contact any other dealer in your area that sells or services non-metallic thermal storage tanks, or if necessary contact Water Heater Innovations, Inc.'s Warranty Department at our address indicated below. The item to be replaced must be made available in exchange for the replacement for inspection of the claimed defect.

## EXCLUSIVE WARRANTY - LIMITATION OF LIABILITY

No one is authorized to make any other warranties on our behalf. **ANY IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE APPLICABLE WARRANTY PERIODS SPECIFIED ABOVE. OUR SOLE LIABILITY WITH RESPECT TO ANY DEFECT SHALL BE SET FORTH IN THIS WARRANTY AND ANY CLAIMS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGE FROM WATER LEAKAGE) ARE EXCLUDED.** Some states do not allow limitations on how long an implied warranty lasts, or for the exclusion of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

We suggest you immediately complete the information on the enclosed Warranty Registration Card and return it to us. Complete the Purchase Information section and retain it along with this warranty certificate, in the event warranty service is needed. Reasonable proof of the date of installation must be presented; otherwise the Effective Date will be based upon the date of manufacture plus **NINETY (90) DAYS**.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

A Subsidiary of Rheem Manufacturing  
In California: 1-800-321-6718  
(651) 688-8827  
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Water Heater Innovations, Inc.  
3107 Sibley Memorial Highway  
Eagan, Minnesota 55121