

**Seaward** *Products*

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**WATER HEATERS**

**OWNER'S MANUAL**

**Serial Number:** \_\_\_\_\_

# IMPORTANT SAFETY INSTRUCTIONS

## WARNING

When using electrical appliances, basic safety precautions to reduce the risk of fire, electrical shock, or injury to persons should be followed, including:

1. READ ALL INSTRUCTIONS BEFORE USING THIS WATER HEATER.
2. This water heater must be grounded. Connect only to properly grounded source. See "GROUNDING INSTRUCTIONS" found on Page 4, Item 7.
3. Install or locate this water heater only in accordance with the provided installation instructions.
4. Use this water heater only for its intended use as described in this manual.
5. Do not use an extension cord set with this water heater. If no junction box is available adjacent to the water heater, contact a qualified electrician to have one properly installed.
6. As with any appliance, close supervision is necessary when used by children.
7. Do not operate this water heater if it has a damaged power supply line, if it is not working properly, or if it has been damaged or dropped.
8. This water heater should be serviced only by qualified service personnel. Contact nearest authorized service facility for examination, repair, or adjustment.

## WARNING

This water heater is equipped with a heat exchanger. Extended engine coolant circulation through the heater may result in excessively hot water.

This water heater tank and heat exchanger is made of aluminum. Some engine manufacturers recommend that cooling system be flushed periodically. Caustic chemicals are commonly used. **DO NOT** flush caustic chemicals (such as Nalcool) through your system with the heat exchanger hooked up or damage **WILL** occur to heater.

If flushing is required by your engine manufacturer, you must isolate heater from this process. After system flushing is complete and neutralized, you can then re-plumb heater. Make sure recommended automotive type premixed ethylene glycol coolants such as Prestone, Xerex, or Peak are used for replacement. Damage that occurs to heater due to chemical reaction by caustic chemicals **IS NOT** under warranty.

# CAUTION

Hydrogen gas can be produced in a hot water system served by these heaters that have not been used for a long period of time (generally 2 weeks or more.) Hydrogen gas is extremely flammable. To reduce the risk of injury under these conditions, it is recommended that the hot water faucet be opened for several minutes at the kitchen sink before using any electrical appliance connected to the hot water system. If hydrogen is present, there will be an unusual sound such as air escaping through the pipe as the water begins to flow. There should be no smoking or open flame near the faucet at the time it is open.

Small amounts of electric currents may move to your boat through your shore cord, causing galvanic damage to your water heater. To help prevent possible damage, a galvanic isolator is recommended. Galvanic corrosion **IS NOT** covered under warranty.

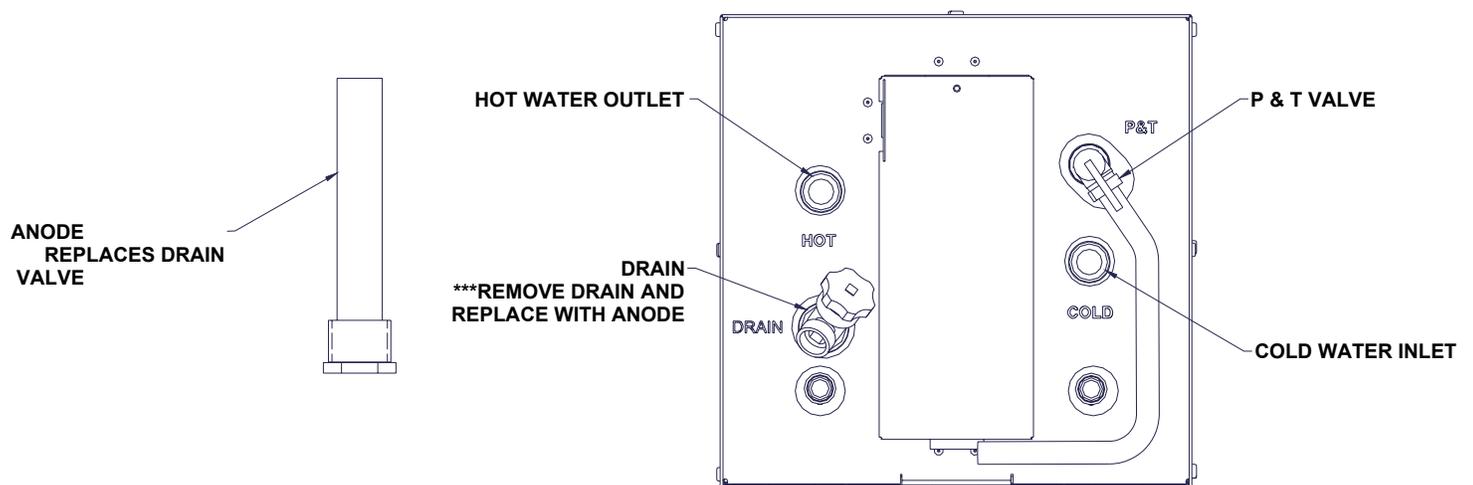
# ANODES

In a small number of instances tap water may have sufficient concentrations of dissolved salts to cause corrosion of the heater tank. Anode rods preserve the life of a water heater by corroding themselves so the water heater doesn't. These anode rods are easy to install! Simply replace the drain plug with this product to protect the water heater tank.

## Note:

**DO NOT USE ZINC ANODES. THEY WILL NOT PREVENT CORROSION TO YOUR HEATER TANK!!!!**

Magnesium 4" Anode with  $\frac{3}{4}$ " thread to replace drain valve.



## NOTICE

This temperature / pressure valve may weep during initial operation. This is normal. The valve will seat itself with use. A drain hose should be installed at this valve directed into bilge.

If the boat is connected to the dockside water system, make sure to turn off the system at the dock when not attended. Also make sure a pressure regulator is used to control pressure.

## OPERATING INSTRUCTIONS

1. Fill water system and completely fill tank.
2. Locate and turn remote electrical switch to "ON".
3. Turn switch to "OFF" position prior to draining water system.
4. The temperature / pressure valve may weep during initial operation. This is normal. The valve will seat itself with use.

**NOTE: DO NOT OPERATE HEATER WITHOUT ELEMENT BEING SUBMERGED IN WATER.**

## MAINTENANCE

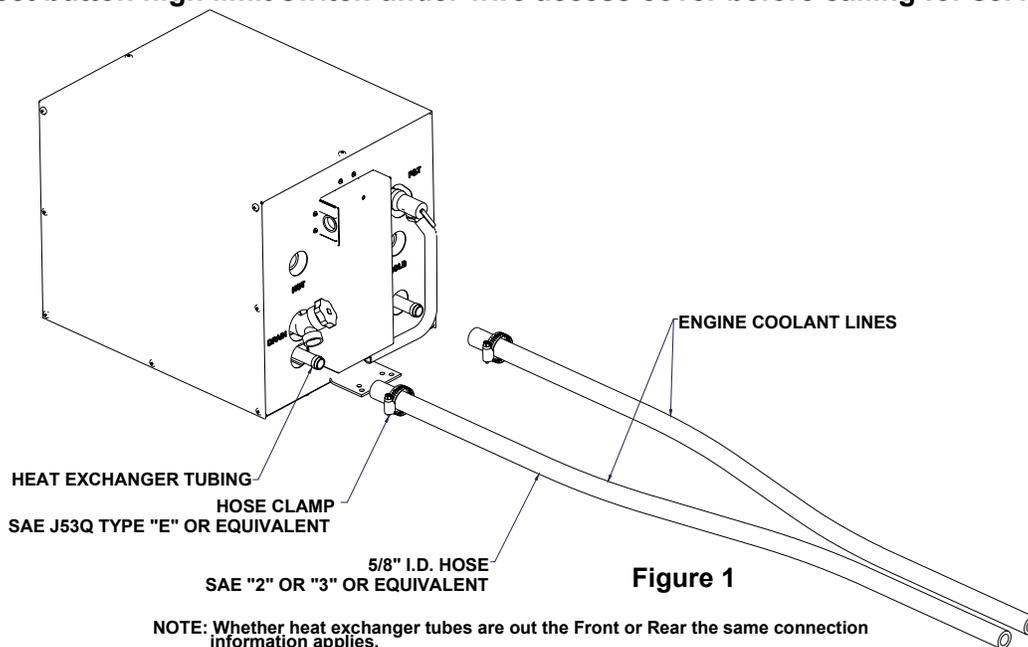
1. Check heat exchanger lines for leaks at regular intervals. A leak in the system will cause coolant loss and may damage engine.
2. Flush tank periodically to help prevent build-up of deposits.
3. Protect against damage from freezing temperatures (32° F or less)

Please review the following:

- a) Drain tank by fully opening drain valve. Open T&P valve to help relieve vacuum in tank. (See item 2 in exploded view)
- b) It is recommended you winterize your fresh water system. First complete step 3a, then follow instructions of your local supplier regarding chemicals to use and how to use them.

## CAUTION

If heater has been run without water and now fails to work, fill heater tank with water and push electric reset button high limit switch under wire access cover before calling for service.



# INSTALLATION

**NOTE: DO NOT INSTALL THE WATER HEATER ON ITS SIDE OR UP SIDE DOWN.**

1. Locate water heater at engine level as close to engine as possible.
2. Secure mounting brackets to structure with eight #12 minimum screws or ¼ - 20 minimum cap screws and nuts.
3. Connect cold water supply and hot water outlet to heater as marked, ½" N.P.T. fittings.
4. Connect heat exchanger system described in **Figure 1**. Make sure coolant system is completely purged of air and full of coolant before operating.
5. Pressure temperature relief valve is factory installed. The pressure relief shall limit the pressure to 127.5 PSI (879.3 KPA) minimum, 150 PSI (1034.2 KPA) maximum.

The valve must be oriented, provided with tubing, or otherwise installed so that discharge can exit no more than 6 inches above, or at any distance below the structural floor, and cannot contact any live electrical part.

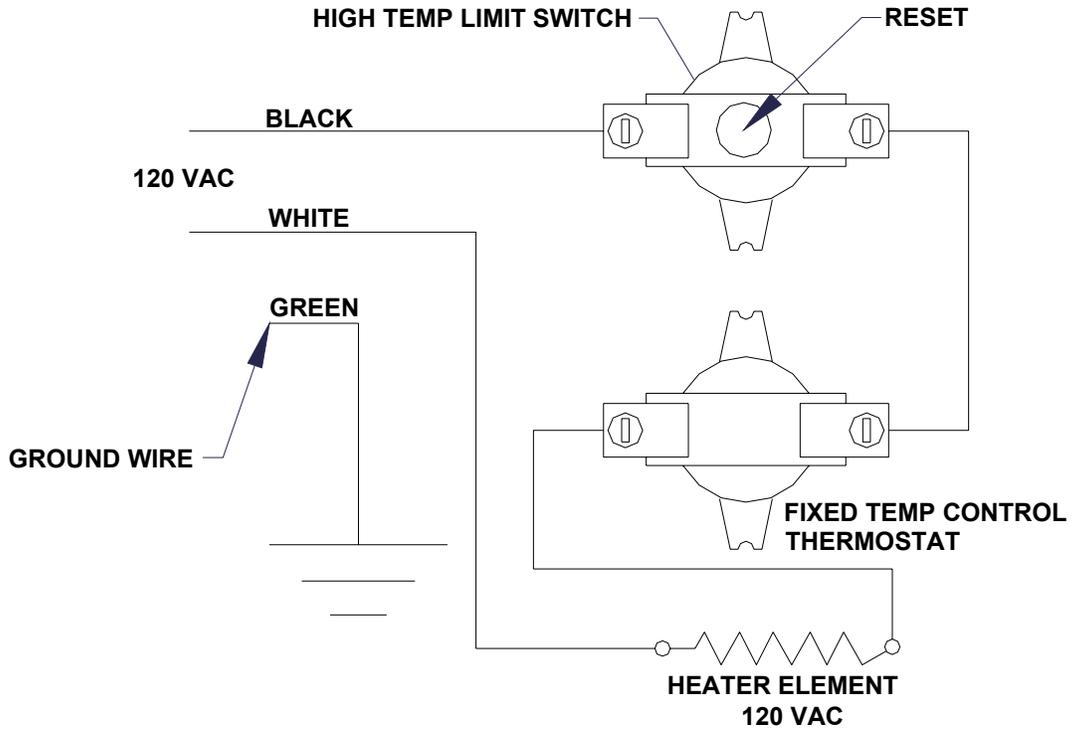
Install replacement temperature and pressure protective equipment required by local codes, but not less than a combination temperature and pressure relief valve certified as meeting the requirements for relief valves and automatic gas shutoff devices for hot water supply systems, ANSI Z21.22 by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials.

6. Connect the electrical supply by a qualified electrician. The electrical supply shall be permanent wiring, armored cable or conduit, per national electrical code NFPA 70, with a minimum capacity of 1500 watts.

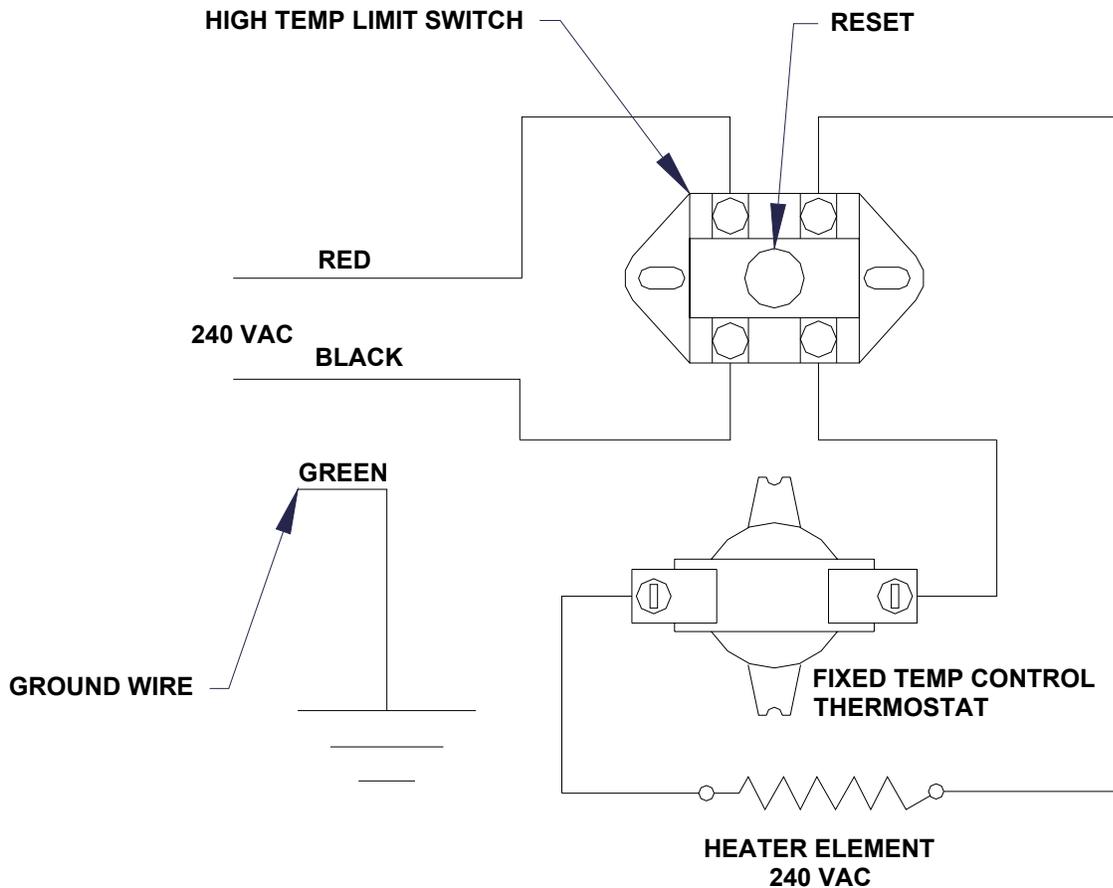
On 120 volt circuits, use a UL approved 15 amp circuit breaker. On 240 volt circuits, use a 10 amp approved circuit breaker per leg.

7. **GROUNDING INSTRUCTIONS:** The supply ground shall be connected to the green wire located in the water heater wiring compartment. Do not place switch in the grounding circuit.
8. **RESET INSTRUCTIONS:** The heater is equipped with a high limit switch which can be manually reset. If the limit switch activates, proceed as follows:
  - Turn power off at main power panel or remote switch
  - Remove wiring access cover
  - Depress red button on high temperature limit switch
  - Replace cover and turn power on
  - If temperature limit switch reactivates, contact a Seaward Products Authorized service center.

# WIRING DIAGRAM FOR 120V



# WIRING DIAGRAM FOR 240V



# **Winterizing Your Seaward Products Water Heater**

Winterizing your fresh water system is an essential procedure that will maintain the life and longevity of your Seaward Products water heater and fresh water tanks. To ensure that your fresh water system has adequate protection for winter storage, use the following recommended winterizing procedure.

## **Winterizing the Water Heater and Fresh Water System**

1. Locate the fresh water tank drain valve or plug and allow the fresh water tanks to drain until approximately 115% to 120% of the water heater capacity remains in the tanks.

Example: If water heater is 11 gallons = 12 to 13 gallons in fresh water tanks.

2. Treat the remaining fresh water left in the fresh water tanks with "Winterizing Chemicals". Winterizing chemicals are non-toxic antifreeze that is a propylene-glycol base and are safe for potable water systems.

## **NOTICE**

**DO NOT USE THE TYPE OF ANTI-FREEZE THAT IS USED TO WINTERIZE AUTOMOBILES. THIS IS NOT SAFE FOR POTABLE WATER SYSTEMS.**

## **NOTICE**

**Antifreeze can be very corrosive to the anode rod. The result will be accelerated deterioration of the rod and heavy sediment in the tank. If you intend to winterize by adding antifreeze into the system and your water heater is equipped with an anode, remove the anode rod (storing it for the winter) and replace it with a 3/4" male pipe thread drain plug.**

3. Turn off 120V or 240V AC power.
4. Turn on fresh water pump.
5. Open each faucet and water outlet one at a time until winterizing chemical is apparent at the opening.
6. Turn off fresh water pump and leave all faucets and water outlets open over winter.
7. Locate the water heater drain and pressure relief valve and allow all water to drain from water heater until empty. Leave water heater drain and pressure relief valve open over winter.

## **CAUTION**

**SPECIAL PRECAUTIONS MUST BE USED WHEN DRAINING AND FILLING AN ELECTRIC WATER HEATER. ELECTRICITY MUST BE TURNED OFF BEFORE DRAINING AND REFILLING WATER HEATER TANKS.**

## **De-Winterizing the Water Heater and Fresh Water System**

1. Close all faucets, water outlets, the water heater drain and pressure relief valve.
2. If during the winterizing procedure the anode was removed and replaced with a 3/4" male pipe thread drain plug, remove the drain plug and replace with anode.
3. Fill fresh water tanks with fresh water approximately so that 115% to 120% of the water heater capacity remains in the fresh water tanks.

Example: If water heater is 11 gallons = 12 to 13 gallons in fresh water tanks.

### **CAUTION**

**SPECIAL PRECAUTIONS MUST BE USED WHEN DRAINING AND FILLING AN ELECTRIC WATER HEATER. ELECTRICITY MUST BE TURNED OFF BEFORE DRAINING AND REFILLING WATER HEATER TANKS.**

4. Turn on fresh water pump.
5. Open each faucet and water outlet one at a time until winterizing chemical is no longer apparent at the opening. This allows the fresh water to flush the winterizing chemicals out of the fresh water system.
6. Fill fresh water tanks to 100% capacity.

### **NOTICE**

**Seaward Products recommends that while filling the fresh water storage tanks that a small amount of common household bleach be added to the fresh water system to control the possible growth of algae. If an algae condition starts it is very difficult to control.**

**Example: 1 oz of bleach for every 50 gallons of fresh water.**

7. Fresh water system is now de-winterized and ready for use.

# GALVANIC ISOLATORS

Because of overriding concerns for personal safety, a boat wired according to the prevailing standards of the ***American Boat and Yacht Council*** and plugged into a dock wired according to the ***National Electrical Code*** is subject to increased galvanic corrosion as small DC electric currents move between boat and shore through the safety ground wire in the shore cord.

Since 1986, Galvanic Isolators have been widely used to interrupt the flow of harmful, low voltage currents that may cause galvanic corrosion. Today, most U.S. built boats with factory installed 110 or 240 volt shore power systems are equipped with Galvanic Isolators.

Seaward Products feels that it is advisable to add a Galvanic Isolator to any vessel not so equipped. These devices are inexpensive and easily installed.

## **IMPORTANT NOTICE:**

The *limited two year warranty* **DOES NOT** cover damage to water heater caused by galvanic corrosion.

# LIMITED TWO YEAR WARRANTY

SEAWARD PRODUCTS warrants the products delivered will be:

- A. Free from (1) encumbrances and (2) defects in material and workmanship under the normal use and service.
- B. Will meet applicable specifications and descriptions at time of delivery to BUYER.

The obligation of SEAWARD under this warranty is limited to the repair, Rework, or replacement, at SEAWARD'S option, any part or component thereof, which examination discloses to our satisfaction to have been nonconforming or defective. SEAWARD, after establishing customer's purchase date and determining problem to be under warranty, will either repair the product at their factory or authorized service center and allow labor and parts for (2) two years from purchase date. Transportation charges are the responsibility of the customer. Conditions not covered under warranty are:

- (1) Corrosion due to electrolysis
- (2) Cracking of the tank due to freezing water
- (3) Routine maintenance that may be required

The foregoing warranty and condition shall apply to any repaired, reworked, or replaced products, part or component supplied by SEAWARD and shall in no event be liable to BUYER or BUYER'S customers for any incidental or consequential damages, or loss of use, or other losses, however occasioned.

Implied warranties of merchantability and of the fitness of the product for any purpose are warranted for a period of two years on parts and labor.

**SEAWARD makes no warranties, expressed or implied after that time.**

Some states do not allow limitation on how long an implied warranty lasts or for the exclusion or limitations of incidental or consequential damages, therefore, the above limitations may not apply to you.

This warranty is extended to the original purchaser only, unless purchased for purpose of resale. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

***Seaward Products***