



OWNER'S MANUAL

FOR

WATER HEATERS

CAUTION: READ INSTRUCTIONS BEFORE OPERATING APPLIANCE.

MODEL: F600, F650, F750, F1100, F1150, F1200,
F1250, H2000, H2050, H2200, H2250,
H2850, HF2000, HF2050, HF2200, HF2250,
S600, S650, S700, S750, S1100, S1150,
S1200, S1250, S1800, S1900

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.

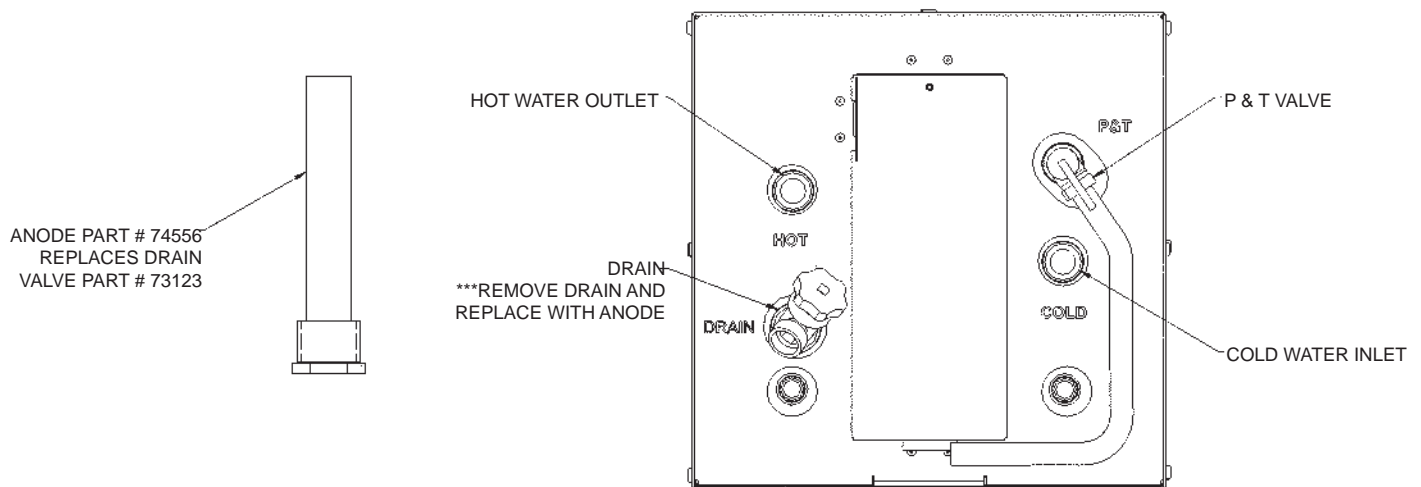
ANODES

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!!!!

Part No. 74556, Magnesium 4" Anode with 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 and directed overboard.

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

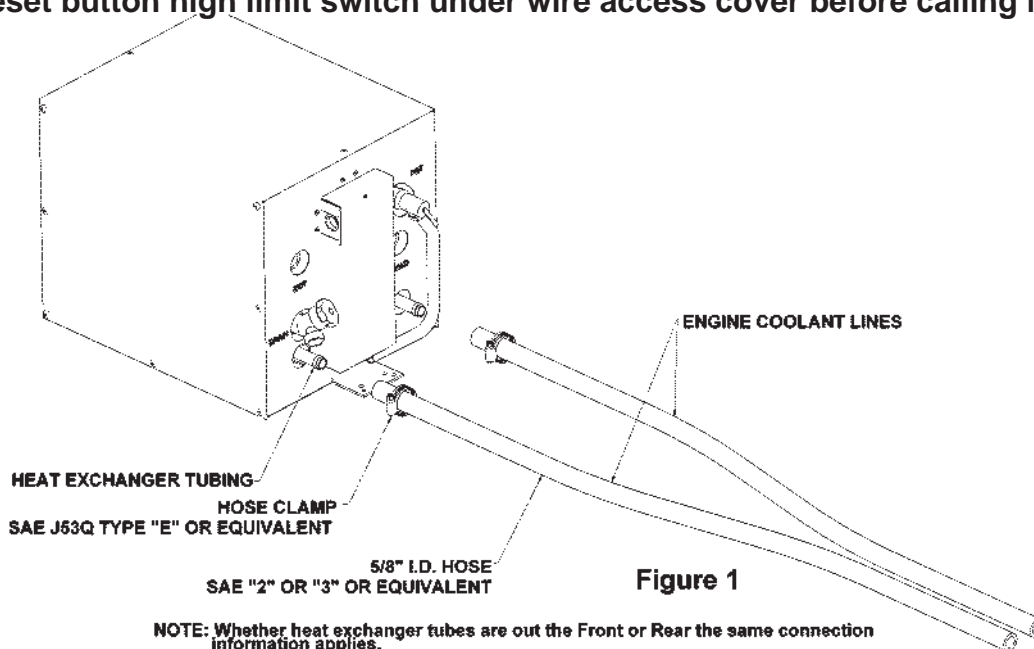
1. Check heat exchanger lines for leaks at regular intervals. A leak in the system will cause coolant loss and may damage engine.
2. Flush tank periodically to help prevent build-up of deposits.
3. Protect against damage from freezing temperatures (32° F or less)

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 UPSIDE 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 1/4 - 20 minimum cap screws and nuts.
3. Connect cold water supply and hot water outlet to heater as marked, 1/2" 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.

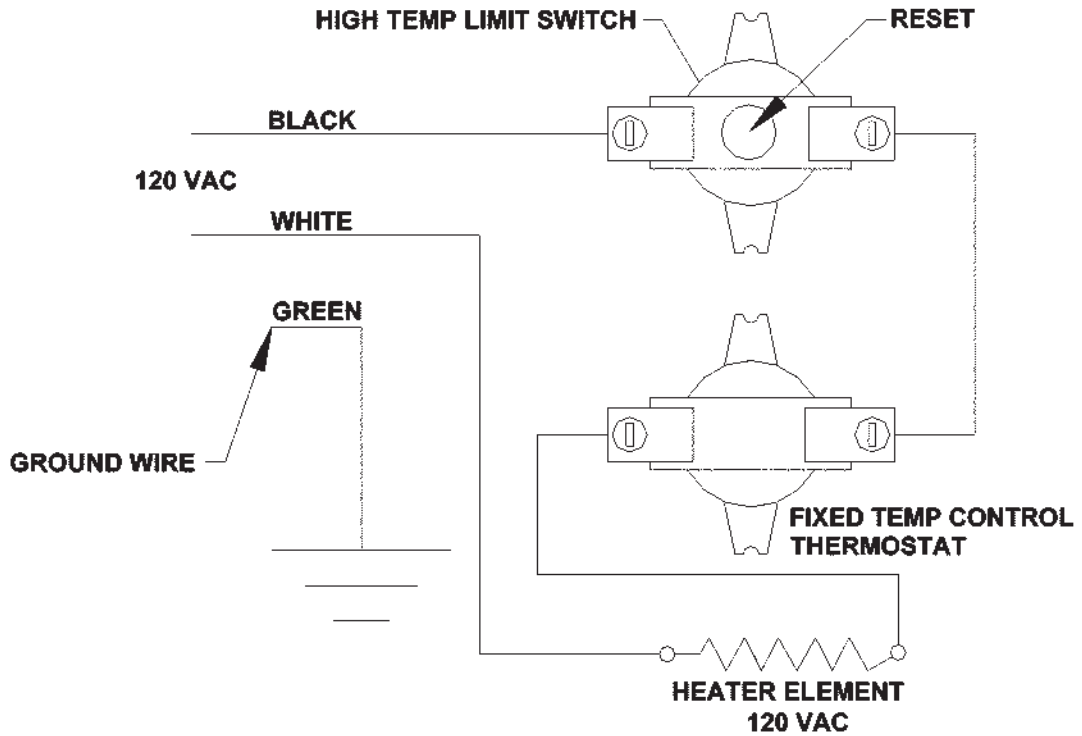
Install replacement temperature and pressure protective equipment required by local codes, but not less than a combination temperature and pressure relief valve certified as meeting the requirements for relief valves and automatic gas shutoff devices for hot water supply systems, ANSI Z21.22 by a nationally 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.

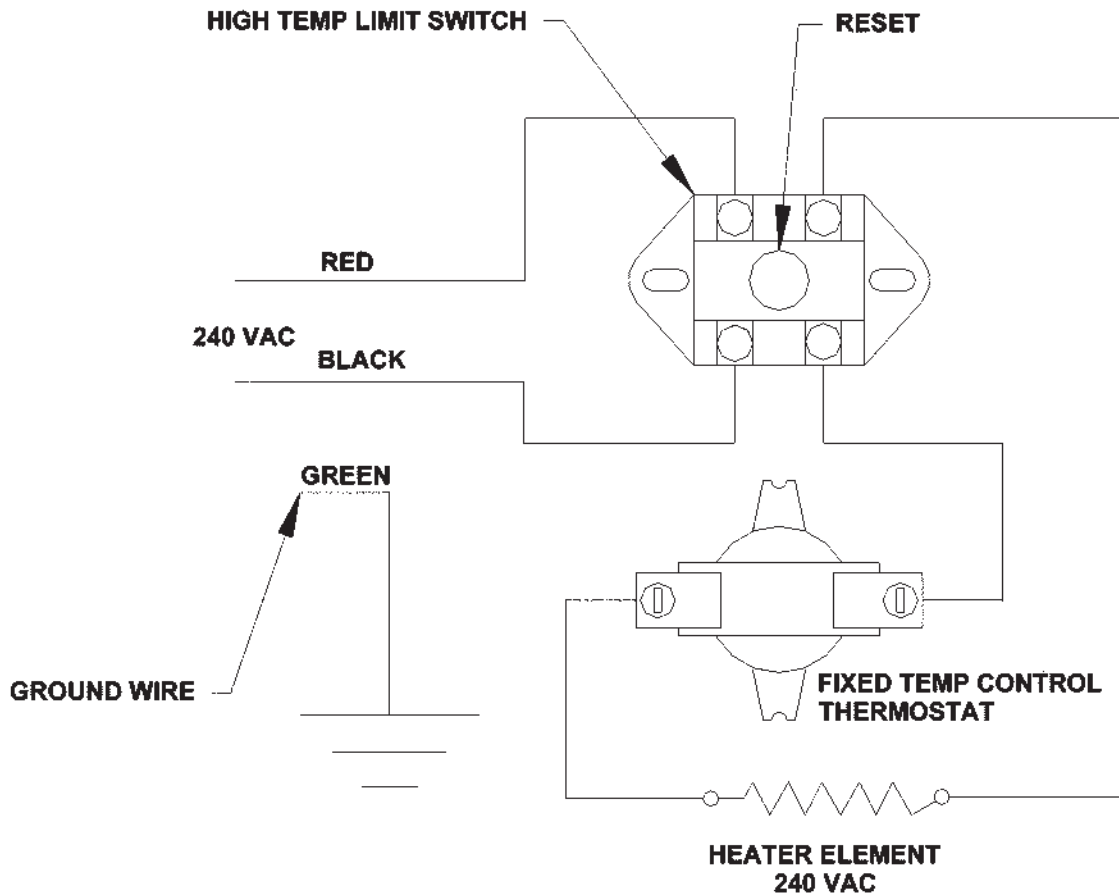
On 120 volt circuits, use a UL approved 15 amp circuit breaker. On 240 volt circuits, use a 10 amp approved circuit breaker per leg.

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 Whale-Seaward Authorized service center.

WIRING DIAGRAM FOR 120V



WIRING DIAGRAM FOR 240V



Winterizing Your Whale® Heat Water Heater

Winterizing your fresh water system is an essential procedure that will maintain the life and longevity of your Whale Heat 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 portable water systems.

NOTICE

DO NOT USE THE TYPE OF ANTI-FREEZE THAT IS USED TO WINTERIZE AUTOMOBILES. THIS IS NOT SAFE FOR PORTABLE 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

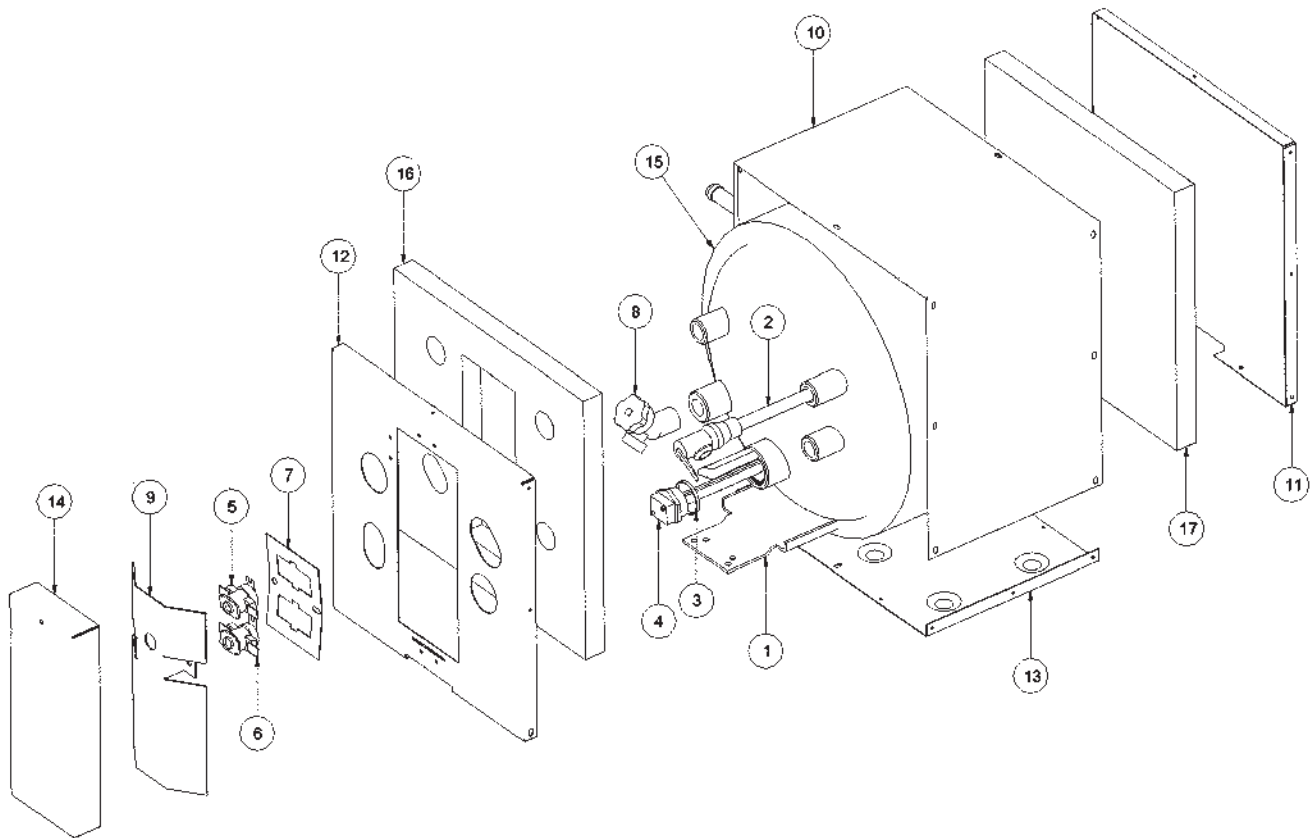
Whale Heat recommends that while filling the fresh water storage tanks that a small amount of common household bleach be added to the fresh water system to control the possible growth of algae. If an algae condition starts it is very difficult to control.

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

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

PARTS LIST MODELS S300W

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	ALL MODELS	80727	TANK ASSEMBLY
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	S300W	75586	1250W HEATING ELEMENT
5	S300W	74563	HIGH LIMIT SWITCH, 120V
6	ALL MODELS	73129	THERMOSTAT
7	S300W	73148	PLATE, THERMOSTAT MOUNTING 120V
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	ALL MODELS	75552	WRAP, WHITE
11	ALL MODELS	73290	BACK PANEL, WHITE
12	ALL MODELS	80652	FRONT PANEL, WHITE
13	ALL MODELS	75553	BASE, WHITE
14	ALL MODELS	74669	ACCESS, COVER WHITE
15	ALL MODELS	73146	INSULATION, WRAP
16	ALL MODELS	73147	INSULATION, FRONT
17	ALL MODELS	73330	INSULATION, BACK

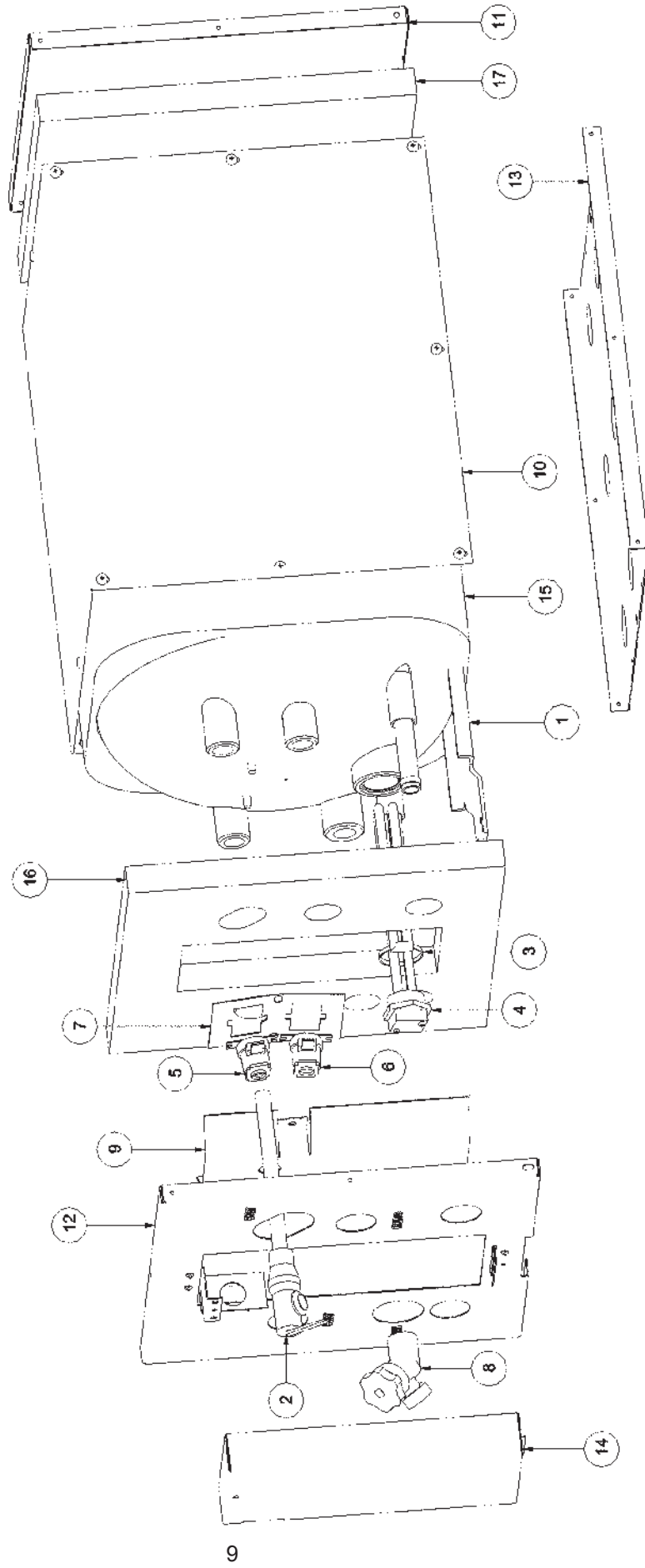


PARTS LIST MODELS

H2000, H2050, H2200, H2250, H2500, HF2000, HF2050, HF2200, HF2250

H2000E, H2050E, H2200E, H2250E

ALL MODELS ENDING WITH AN "E" ARE ELECTRIC ONLY



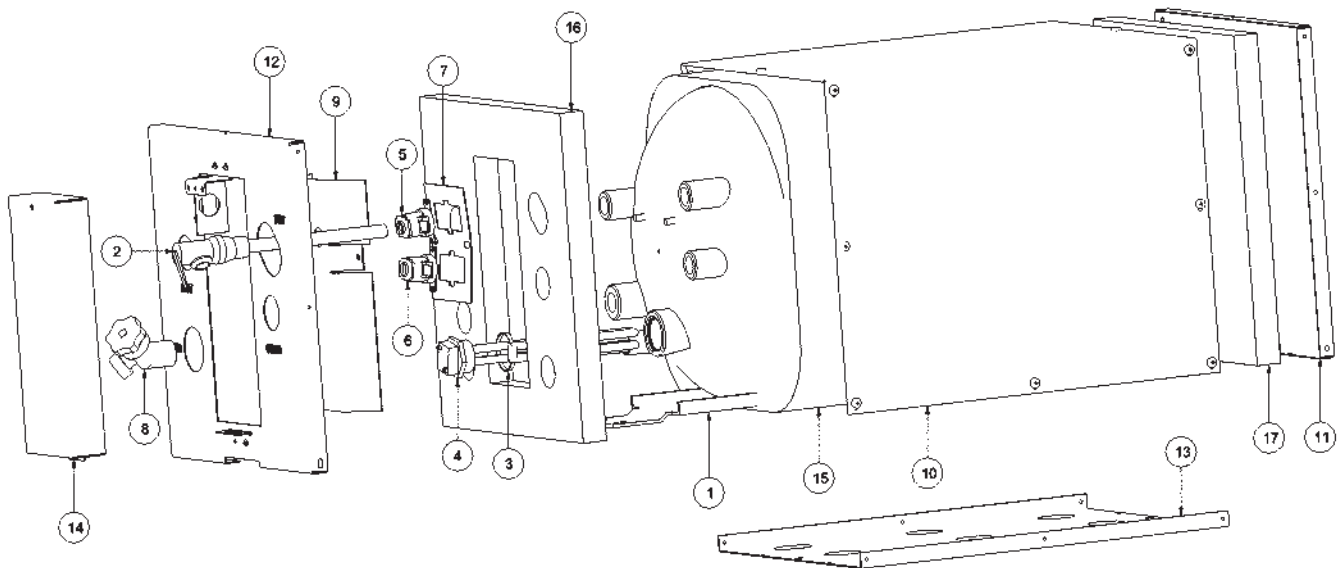
SEE PAGE 10 FOR PART LIST BREAKDOWN

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	H2000 / H2050 / H2200 / H2250	80355	TANK ASSEMBLY
	H2000E / H2050E / H2200E / H2250E	E80355E	TANK ASSEMBLY ELECTRIC ONLY
	HF2000 / HF2050 / HF2200 / HF2250	80351	TANK ASSEMBLY
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	ALL 120V MODELS	74031	1500W HEATING ELEMENT
	ALL 240V MODELS	74032	
5	ALL 120V MODELS	74563	HIGH LIMIT SWITCH
	ALL 240V MODELS	74607	
6	ALL MODELS	73129	THERMOSTAT
7	ALL 120V MODELS	73148	PLATE, THERMOSTATE MOUNTING
	ALL 240V MODELS	73171	
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	H2000 / HF2000 / H2050 / HF2050	74000	WRAP, GALVANIZE
	H2000 / HF2000 / H2050 / HF2050	74675	WRAP, WHITE
	H2200 / HF2200 / H2250 / HF2250	74001	WRAP, S.S.
11	H2000 / H2050	73169	BACK PANEL, GALVANIZE
	H2000 / H2050 / HF2000 / HF2050	74667	BACK PANEL, WHITE
	H2200 / H2250	73290	BACK PANEL, S.S.
	HF2000 / HF2050	73941	BACK PANEL, GALVANIZE
	HF2200 / HF2250	73942	BACK PANEL, S.S.
12	H2000 / H2050	80654	FRONT PANEL, GALVANIZE
	H2000 / H2050	80658	FRONT PANEL, WHITE
	H2200 / H2250	80657	FRONT PANEL, S.S.
	HF2000 / HF2050	80655	FRONT PANEL, GALVANIZE
	HF2000 / HF2050	80659	FRONT PANEL, WHITE
	HF2200 / HF2250	80656	FRONT PANEL, S.S.
13	H2000 / H2050 / HF2000 / HF2050	74002	BASE, GALVANIZE
	H2000 / H2050 / HF2000 / HF2050	74668	BASE, WHITE
	H2200 / H2250 / HF2200 / HF2250	74003	BASE, S.S.
14	ALL MODELS	73141	ACCESS, COVER GALVANIZE
		73291	ACCESS, COVER S.S.
		74669	ACCESS, COVER WHITE
15	ALL MODELS	74616	INSULATION, WRAP
16	H2000 / H2050 / H2200 / H2250	73176	INSULATION, FRONT
	HF2000 / HF2050 / HF2200 / HF2250	74227	
17	H2000 / H2050 / H2200 / H2250	73331	INSULATION, BACK
	HF2000 / HF2050 / HF2200 / HF2250	74228	

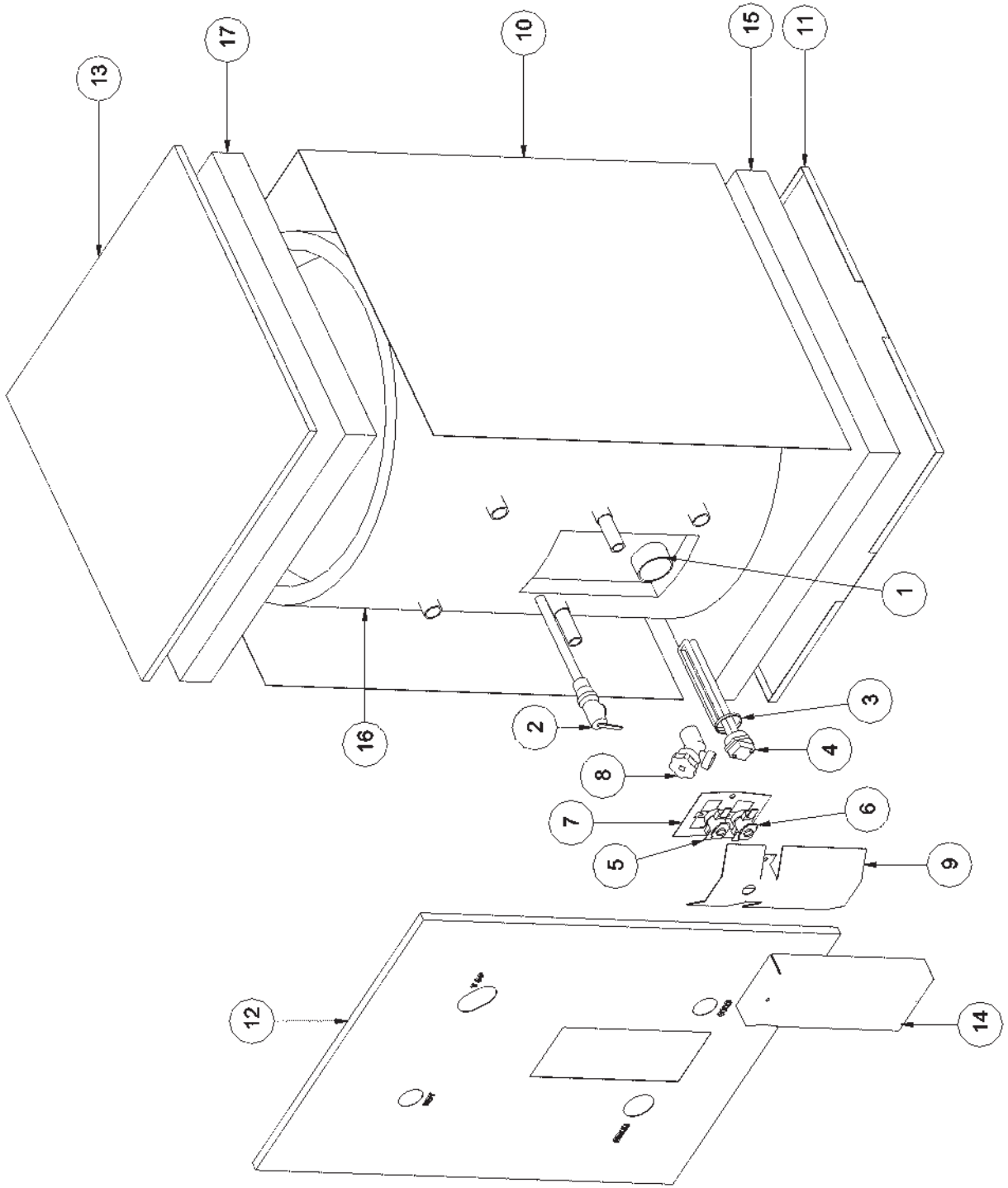
PARTS LIST MODELS

H2850EW-3000, H2850EW-4500, H2850ES-3000, H2850ES-4500

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	H2850ES-3000, H2850ES-4500	80491	TANK ASSEMBLY
	H2850EW-3000, H2850EW-4500	80491	TANK ASSEMBLY
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	H2850ES-3000, H2850EW-3000	74715	3000W HEATING ELEMENT
	H2850ES-4500, H2850EW-4500	75086	4500W HEATING ELEMENT
5	240V	74607	HIGH LIMIT SWITCH
6	ALL MODELS	73129	THERMOSTAT
7	ALL MODELS	73171	PLATE, THERMOSTATE MOUNTING
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	H2850ES-3000, H2850ES-4500	75234	WRAP, S.S.
	H2850EW-3000, H2850EW-4500	75055	WRAP, WHITE
11	H2850ES-3000, H2850ES-4500	73290	BACK PANEL, S.S.
	H2850EW-3000, H2850EW-4500	74667	BACK PANEL, WHITE
12	H2850ES-3000, H2850ES-4500	73289	FRONT PANEL, S.S.
	H2850EW-3000, H2850EW-4500	74666	FRONT PANEL, WHITE
13	H2850ES-3000, H2850ES-4500	75235	BASE, S.S
	H2850EW-3000, H2850EW-4500	75056	BASE, WHITE
14	H2850ES-3000, H2850ES-4500	73291	ACCESS, COVER S.S.
	H2850EW-3000, H2850EW-4500	74669	ACCESS, COVER WHITE
15	ALL MODELS	74616	INSULATION, WRAP
16	ALL MODELS	73176	INSULATION, FRONT
17	ALL MODELS	73331	INSULATION, BACK



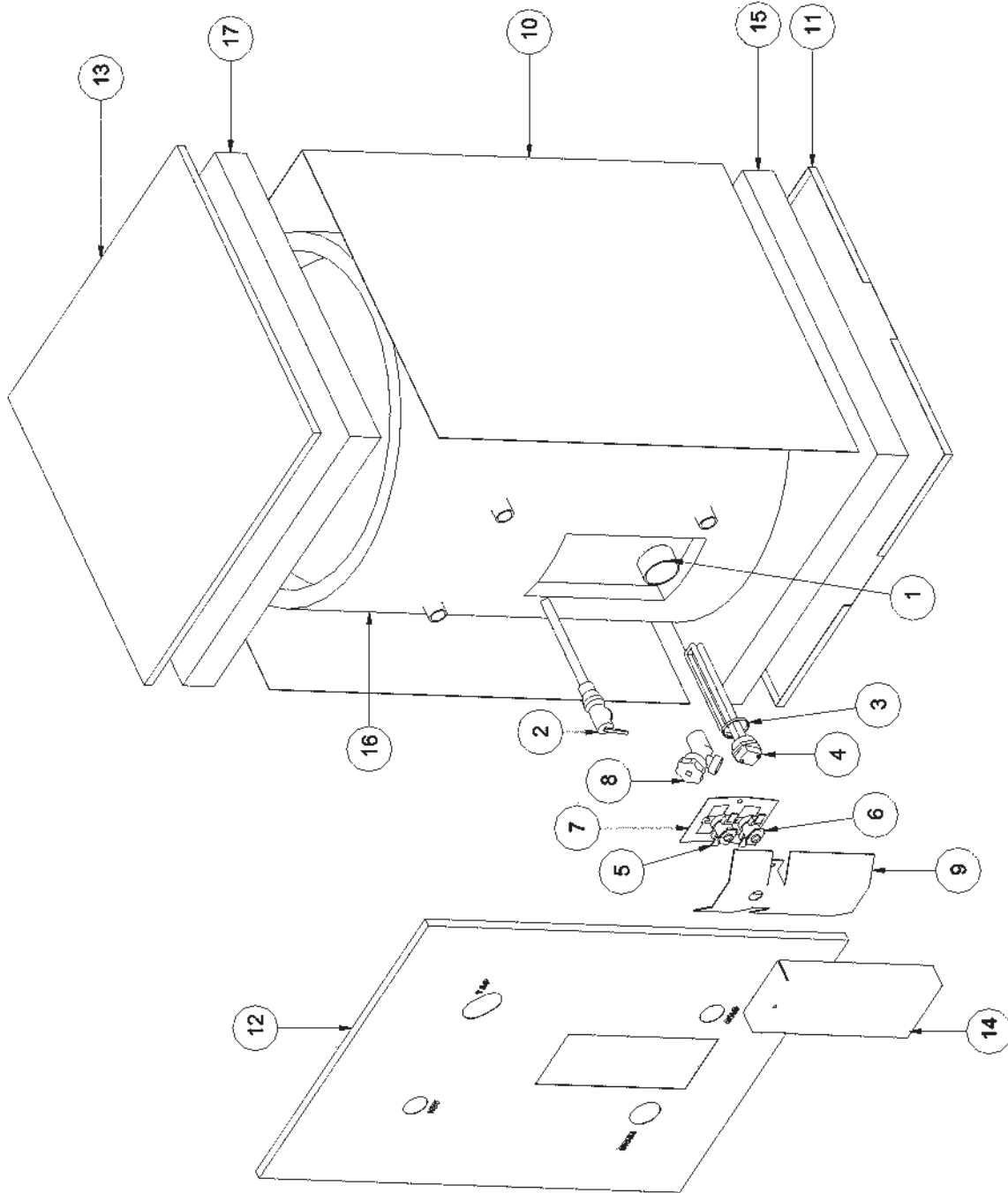
**PARTS LIST MODELS
S1800 / S1850 / S1900 / S1950**



SEE PAGE 13 FOR PART LIST BREAKDOWN

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	ALL MODELS	80263	TANK ASSEMBLY
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	S1800 / S1900	74031	1500W HEATING ELEMENT 120V
	S1850 / S1950	74032	1500W HEATING ELEMENT 240V
5	S1800 / S1900	74563	HIGH LIMIT SWITCH 120V
	S1850 / S1950	74607	HIGH LIMIT SWITCH 240V
6	ALL MODELS	73129	THERMOSTAT
7	S1800 / S1900	73148	PLATE, THERMOSTAT MOUNTING
	S1850 / S1950	73171	
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	S1800 / S1850	73395	WRAP, GALVANIZE
	S1800 / S1850	74687	WRAP, WHITE
	S1900 / S1950	73405	WRAP, S.S.
11	S1800 / S1850	73396	BOTTOM PANEL, GALVANIZE
	S1800 / S1850	74688	BOTTOM PANEL, WHITE
	S1900 / S1950	73406	BOTTOM PANEL, S.S
12	S1800 / S1850	73397	FRONT PANEL, GALVANIZE
	S1800 / S1850	74690	FRONT PANEL, WHITE
	S1900 / S1950	73407	FRONT PANEL, S.S.
13	S1800 / S1850	73398	TOP PANEL, GALVANIZE
	S1800 / S1850	74689	TOP PANEL, WHITE
	S1900 / S1950	73408	TOP PANEL, S.S.
14	S1800 / S1850	73141	ACCESS, COVER GALVANIZE
	S1800 / S1850	74669	ACCESS, COVER WHITE
	S1900 / S1950	73293	ACCESS, COVER S.S.
15	ALL MODELS	73404	INSULATION, BOTTOM
16	ALL MODELS	73409	INSULATION, WRAP
17	ALL MODELS	73404	INSULATION, TOP

**PARTS LIST MODELS
S1800E / S1850E / S1900E / S1950E**



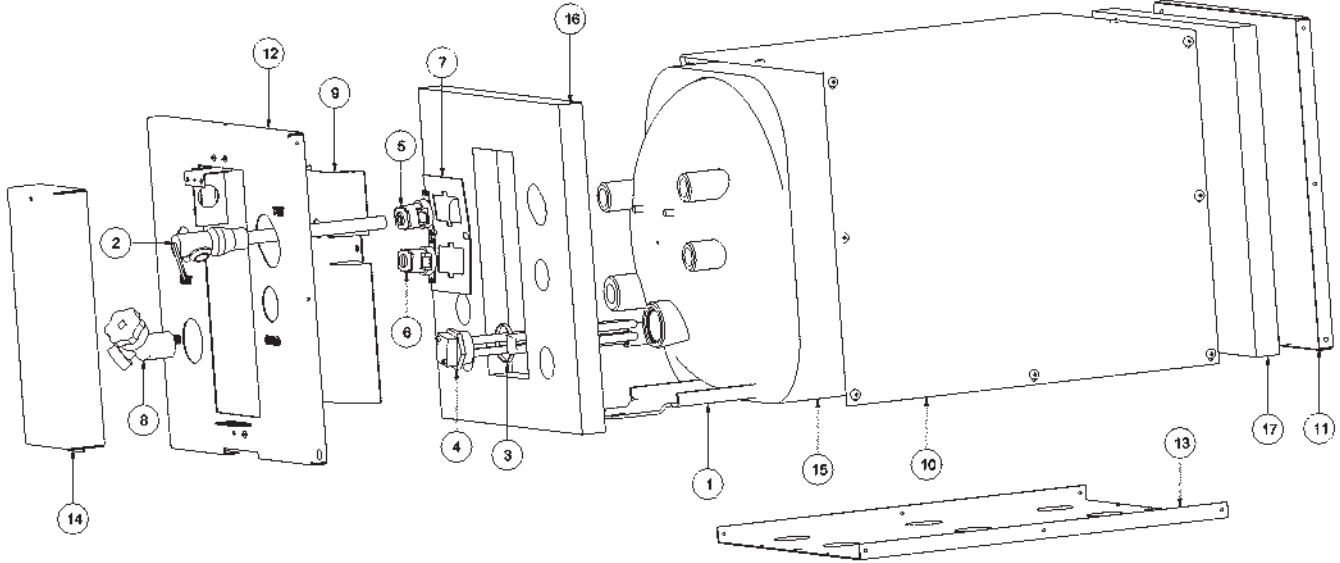
SEE PAGE 15 FOR PART LIST BREAKDOWN

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	ALL MODELS	80263E	TANK ASSEMBLY
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	S1800E / S1900E	74031	1500W HEATING ELEMENT 120V
	S1850E / S1950E	74032	1500W HEATING ELEMENT 240V
5	S1800E / S1900E	74563	HIGH LIMIT SWITCH 120V
	S1850E / S1950E	74607	HIGH LIMIT SWITCH 240V
6	ALL MODELS	73129	THERMOSTAT
7	S1800E / S1900E	73148	PLATE, THERMOSTAT MOUNTING
	S1850E / S1950E	73171	
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	S1800E / S1850E	73395	WRAP, GALVANIZE
	S1800E / S1850E	74687	WRAP, WHITE
	S1900E / S1950E	73405	WRAP, S.S.
11	S1800E / S1850E	73396	BOTTOM PANEL, GALVANIZE
	S1800E / S1850E	74688	BOTTOM PANEL, WHITE
	S1900E / S1950E	73406	BOTTOM PANEL, S.S
12	S1800E / S1850E	80661	FRONT PANEL, GALVANIZE
	S1800E / S1850E	80664	FRONT PANEL, WHITE
	S1900E / S1950E	80663	FRONT PANEL, S.S.
13	S1800E / S1850E	73398	TOP PANEL, GALVANIZE
	S1800E / S1850E	74689	TOP PANEL, WHITE
	S1900E / S1950E	73408	TOP PANEL, S.S.
14	S1800E / S1850E	73141	ACCESS, COVER GALVANIZE
	S1800E / S1850E	74669	ACCESS, COVER WHITE
	S1900E / S1950E	73293	ACCESS, COVER S.S.
15	ALL MODELS	73404	INSULATION, BOTTOM
16	ALL MODELS	73409	INSULATION, WRAP
17	ALL MODELS	73404	INSULATION, TOP

PARTS LIST MODELS

S600, S650, S700, S750, F600, F650, F700, F750

S1100, S1150, S1200, S1250, F1100, F1150, F1200, F1250



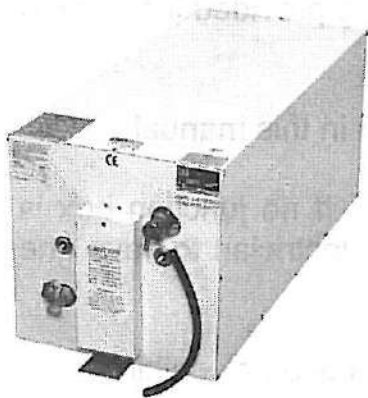
ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	S600 / S700	80253	TANK ASSEMBLY
	F600 / F700	80309	
	S1100 / S1200	80254	
	F1100 / F1200	80310	
2	ALL MODELS	73127	TEMPERATURE/PRESSURE VALVE
3	ALL MODELS	73124	GASKET, HEATING ELEMENT
4	ALL 120V MODELS	74031	1500W HEATING ELEMENT
	ALL 240V MODELS	74032	
5	ALL 120V MODELS	74563	HIGH LIMIT SWITCH
	ALL 240V MODELS	74607	
6	ALL MODELS	73129	THERMOSTAT
7	ALL 120V MODELS	73148	PLATE, THERMOSTAT MOUNTING
	ALL 240V MODELS	73171	
8	ALL MODELS	73123	DRAIN VALVE
9	ALL MODELS	73145	SHIELD, WIRES
10	S600 / S650 / F600 / F650	73137	WRAP, GALVANIZE
	S600 / S650 / F600 / F650	74661	WRAP, WHITE
	S700 / S750 / F700 / F750	73283	WRAP, S.S.
	S1100 / S1150 / F1100 / F1150	73166	WRAP, GALVANIZE
	S1100 / S1150 / F1100 / F1150	74665	WRAP, WHITE
	S1200 / S1250 / F1200 / F1250	73287	WRAP, S.S.
11	S600 / S650	73140	BOTTOM PANEL, GALVANIZE
	F600 / F650	73888	
	S600 / S650	74681	BOTTOM PANEL, WHITE
	F600 / F650	74663	
	S700 / S750	73286	BOTTOM PANEL, S.S.
	F700 / F750	73887	
	S1100 / S1150	73169	BACK PANEL, GALVANIZE
	F1100 / F1150	73941	
	S1100 / S1150	74691	BACK PANEL, WHITE
	F1100 / F1150	74667	
	S1200 / S1250	73290	BACK PANEL, S.S.
	F1200 / F1250	73942	

ITEM	MODEL NO.	PART NO.	DESCRIPTION
12	S600 / S650	80648	FRONT PANEL, GALVANIZE
	F600 / F650	80649	
	S600 / S650	80652	FRONT PANEL, WHITE
	F600 / F650	80653	
	S700 / S750	80650	FRONT PANEL, S.S.
	F700 / F750	80651	
	S1100 / S1150	80654	FRONT PANEL, GALVANIZE
	F1100 / F1150	80655	
	S1100 / S1150	80658	FRONT PANEL, WHITE
	F1100 / F1150	50659	
S1200 / S1250	80657	FRONT PANEL, S.S.	
F1200 / F1250	80656		
13	S600 / S650 / F600 / F650	73138	BASE, GALVANIZE
	S600 / S650 / F600 / F650	74664	BASE, WHITE
	S700 / S750 / F700 / F750	73284	BASE, S.S.
	S1100 / S1150 / F1100 / F1150	73170	BASE, GALVANIZE
	S1100 / S1150 / F1100 / F1150	74668	BASE, WHITE
	S1200 / S1250 / F1200 / F1250	73288	BASE, S.S.
14	ALL MODELS	73141	ACCESS, COVER GALVANIZE
		73291	ACCESS, COVER S.S.
		74669	ACCESS, COVER WHITE
15	S600 / F600 / S700 / F700	73146	INSULATION, WRAP
	S1100 / F1100 / S1200 / F1200	73175	
16	S600 / S700	73147	INSUALTION, FRONT
	F600 / F700	74225	
	S1100 / S1200	73176	
	F1100 / F1200	74227	
17	S600 / S700	73330	INSULATION, BACK
	F600 / F700	74226	
	S1100 / S1200	73331	
	F1100 / F1200	74228	

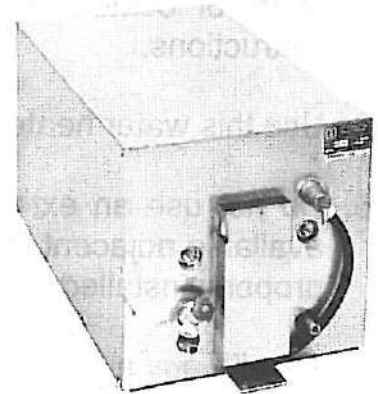
Seaward Products

WATER HEATERS

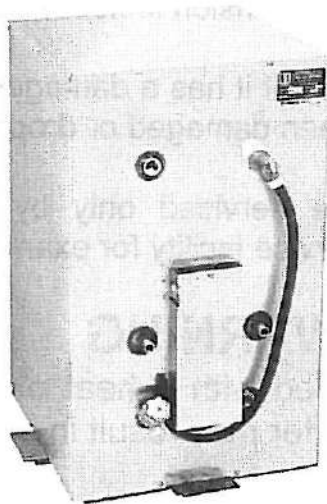
OWNER'S MANUAL



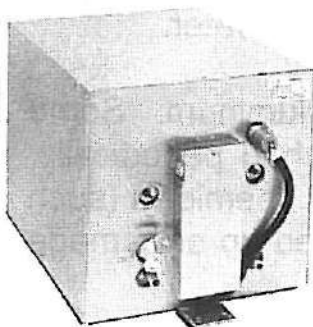
**H2850EW-3000, H2850ES-3000
H2850EW-4500, H2850ES-4500**



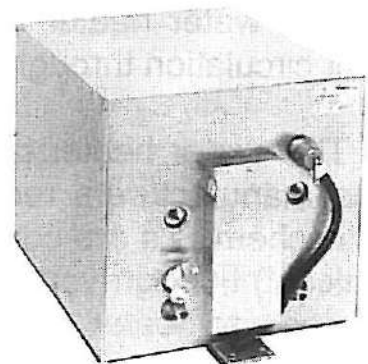
**H2000, H2050, H2200, H2250
HF2000, HF2050, HF2200, HF2250**



S1800, S1850, S1900, S1950



**S600, S700, F600, F700
S650, S750, F650, F750**



**S1100, S1200, F1100, F1200
S1150, S1250, F1150, F1250**

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.

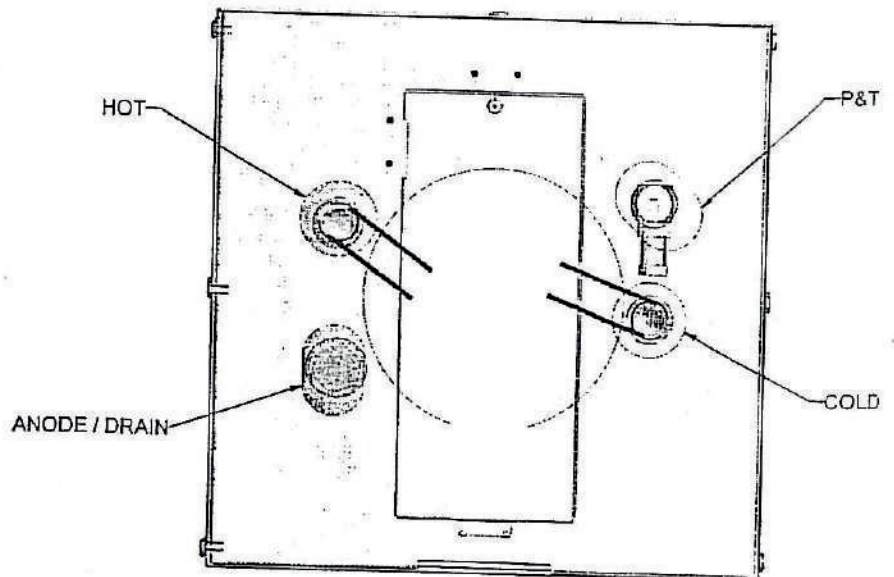
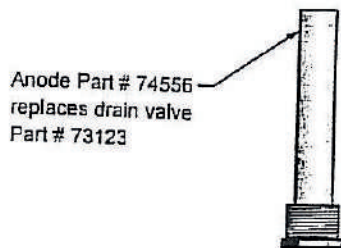
Small amounts of electric currents may move to your boat through your shore cord, causing galvanic damage to your water heater. To help prevent possible damage, a galvanic isolator is recommended. Galvanic corrosion **IS NOT** covered under warranty.

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

Part No. 74556, 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

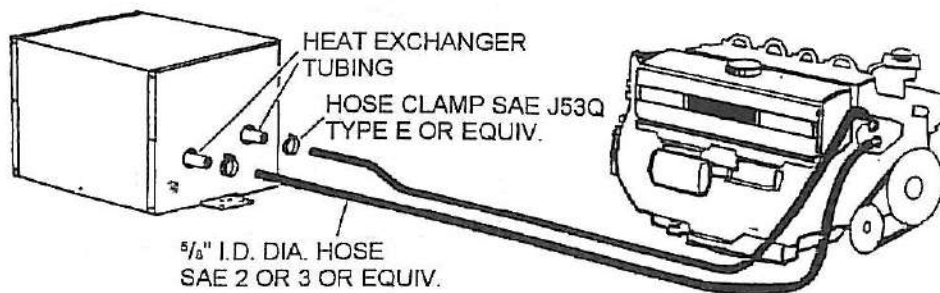
1. Check heat exchanger lines for leaks at regular intervals. A leak in the system will cause coolant loss and may damage engine.
2. Flush tank periodically to help prevent build-up of deposits.
3. Protect against damage from freezing temperatures (32° F or less)

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.



NOTE: Whether heat exchanger tubes are out the Front or Rear the same connection information applies.

Figure 1

INSTALLATION

NOTE: DO NOT INSTALL THE WATER HEATER ON IT'S 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.

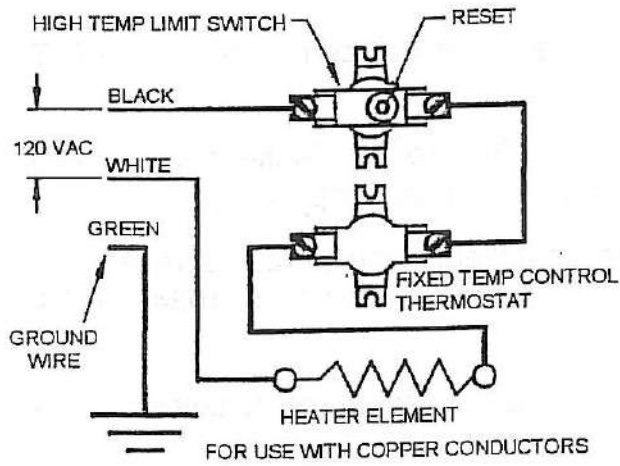
Install replacement temperature and pressure protective equipment required by local codes, but not less than a combination temperature and pressure relief valve certified as meeting the requirements for relief valves and automatic gas shutoff devices for hot water supply systems, ANSI Z21.22 by a nationally 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.

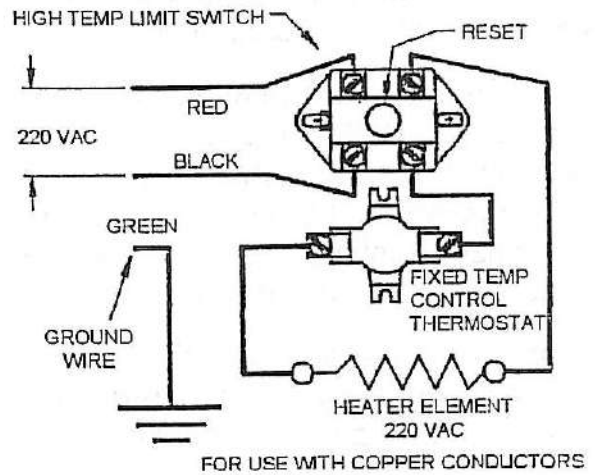
WIRING DIAGRAM FOR 120V



CAUTION: TO REDUCE RISK OF SHOCK OR FIRE, USE ONLY ON A UTILITY SYSTEM HAVING A MAXIMUM 120/250 VOLT, THREE WIRE SYSTEM.

120 VOLT AC

WIRING DIAGRAM FOR 240V



240 VOLT AC

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.

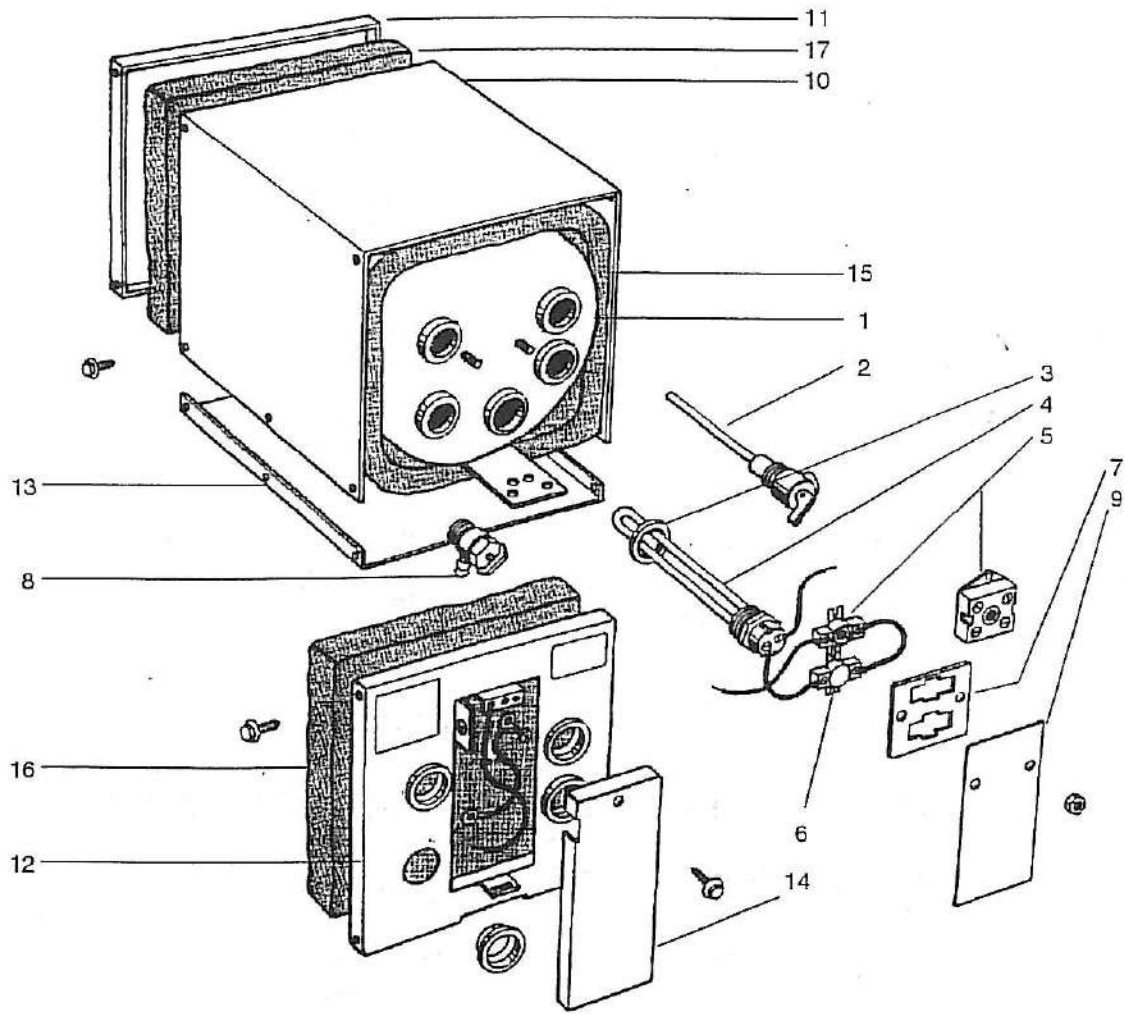
NOTICE

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.

EXPLODED VIEW



PARTS LIST MODELS
S600, S700, F600, F700
S650, S750, F650, F750

PARTS LIST MODELS
S1100, S1200, F1100, F1200
S1150, S1250, F1150, F1250

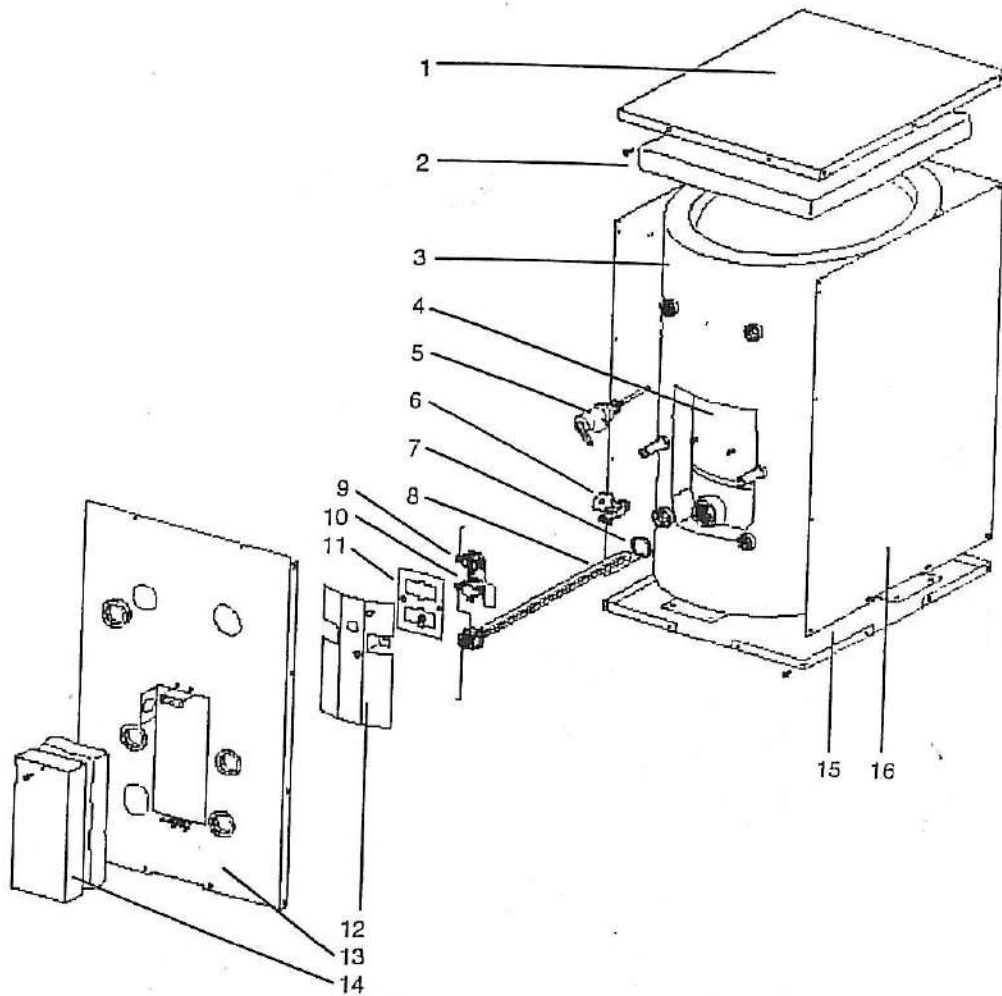
ITEM	MODEL NO.	PART. NO.	DESCRIPTION	ITEM	MODEL NO.	PART. NO.	DESCRIPTION
1.	S600/S700	80253	Tank Assembly	1.	S650/S750	80253	Tank Assembly
	F600/F700	80309	Tank Assembly		F650/F750	80309	Tank Assembly
	S1100/S1200	80254	Tank Assembly		S1150/S1250	80254	Tank Assembly
	F1100/F1200	80310	Tank Assembly		F1150/F1250	80310	Tank Assembly
2.	ALL MODELS	73127	T&P Valve	2.	ALL MODELS	73127	T&P Valve
3.	ALL MODELS	73124	Gasket, Element	3.	ALL MODELS	73124	Gasket, Element
4.	S600/S700/S1100/S1200	74031	Heating Element	4.	S650/S750/S1150/S1250	74032	Heating Element
	F600/F700/F1100/F1200		Heating Element		F650/F750/F1150/F1250		Heating Element
5.	ALL 120v. MODELS	74563	High Limit Switch	5.	ALL 240v. MODELS	74607	High Limit Switch
6.	ALL MODELS	73129	Thermostat	6.	ALL MODELS	73129	Thermostat
7.	ALL 120v. MODELS	73148	Mtg Plate, Switch	7.	ALL 240v. MODELS	73171	Mtg Plate, Switch
8.	ALL MODELS	73123	Drain Valve	8.	ALL MODELS	73123	Drain Valve
9.	ALL MODELS	73145	Wire Shield	9.	ALL MODELS	73145	Wire Shield
10.	S600/F600	73137	Jacket	10.	S650/F650	73137	Jacket
	S700/F700	73283	Jacket		S750/F750	73283	Jacket
	S1100/F1100	73166	Jacket		S1150/F1150	73166	Jacket
	S1200/F1200	73942	Jacket		S1250/F1250	73287	Jacket
11.	S600	73140	Back Panel	11.	S650	73140	Back Panel
	F600	73888	Back Panel		F650	73888	Back Panel
	S700	73286	Back Panel		S750	73286	Back Panel
	F700	73687	Back Panel		F750	73887	Back Panel
	S1100	73169	Back Panel		S1150	73169	Back Panel
	F1100	73941	Back Panel		F1150	73941	Back Panel
	S1200	73290	Back Panel		S1250	73290	Back Panel
	F1200	73942	Back Panel		F1250	73942	Back Panel
12.	S600	73139	Front Panel	12.	S650	73890	Front Panel
	F600	73890	Front Panel		F650	73890	Front Panel
	S700	73285	Front Panel		S750	73285	Front Panel
	F700	73889	Front Panel		F750	73889	Front Panel
	S1100	73168	Front Panel		S1150	73168	Front Panel
	F1100	73939	Front Panel		F1150	73939	Front Panel
	S1200	73289	Front Panel		S1250	73289	Front Panel
	F1200	73940	Front Panel		F1250	73940	Front Panel
13.	S600/F600	73138	Base	13.	S650/F650	73138	Base
	S700/F700	73284	Base		S750/F750	73284	Base
	S1100/F1100	73170	Base		S1150/F1150	73170	Base
	S1200/F1200	73288	Base		S1250/F1250	73288	Base
14.	S600/F600/S1100/F1100	73141	Access Cover	14.	S650/F650/S1150/F1150	73141	Access Cover
	S700/F700/S1200/F1200	73291	Access Cover		S750/F750/S1250/F1250	73291	Access Cover
15.	S600/F600/S700/F700	73146	Insulation, Wrap	15.	S650/F650/S750/F750	73146	Insulation, Wrap
	S1100/F1100/S1200/F1200	73175	Insulation, Wrap		S1150/F1150/S1250/F1250	73175	Insulation, Wrap
16.	S600/S700	73147	Insulation, Front	16.	S650/S750	73147	Insulation, Front
	F600/F700	74225	Insulation, Front		F650/F750	74225	Insulation, Front
	S1100/S1200	73176	Insulation, Front		S1150/S1250	73176	Insulation, Front
	F1100/F1200	74227	Insulation, Front		F1150/F1250	74227	Insulation, Front
17.	S600/S700	73330	Insulation, Back	17.	S650/S750	73331	Insulation, Back
	F600/F700	74226	Insulation, Back		F650/F750	74226	Insulation, Back
	S1100/S1200	73331	Insulation, Back		S1150/S1250	73331	Insulation, Back
	F1100/F1200	74228	Insulation, Back		F1150/F1250	74228	Insulation, Back

PARTS LIST MODELS
H2000, H2050, H2200, H2250, HF2000, HF2050, HF2200, HF2250

ITEM	MODEL NO.	PART. NO.	DESCRIPTION	ITEM	MODEL NO.	PART. NO.	DESCRIPTION
1.	H2000/H2050/H2200/H2250	80355	Tank Assembly	11.	HF2000/HF2050	73941	Back Panel, Galvanize
	HF2000/HF2050/HF2200/HF2250	80351	Tank Assembly		HF2200/HF2250	73942	Back Panel, S.S.
2.	ALL MODELS	73127	Temp/Pressure Valve	12.	H2000/H2050	73168	Front Panel, Galvanize
3.	ALL MODELS	73124	Gasket, Heat Element		H2200/H2250	73289	Front Panel, S.S.
4.	120 VOLT	73984	Heating Element		H2200/H2250	74666	Front Panel, White
	240 VOLT	74033	Heating Element		HF2000/HF2050	73939	Front Panel, Galvanize
5.	120 VOLT	74563	High Limit Switch		HF2200/HF2250	73940	Front Panel, S.S.
	240 VOLT	74607	High Limit Switch	13.	H2000/H2050/HF2000/HF2050	74002	Base, Galvanize
6.	ALL MODELS	73129	Thermostat		H2200/H2250/HF2200/HF2250	74003	Base, S.S.
7.	120 VOLT	73148	Plate, Thermostat Mtg		H2200/H2250	74668	Base, White
	240 VOLT	73171	Plate, Thermostat Mtg	14.	H2000/H2050/HF2000/HF2050	73141	Access Cover, Galvanize
8.	ALL MODELS	73123	Drain Valve		H2200/H2250/HF2200/HF2250	73291	Access Cover, S.S.
9.	ALL MODELS	73145	Shield, Wires		H2200/H2250/HF2200/HF2250	74669	Access Cover, White
10.	H2000/H2050/HF2000/HF2050	74000	Wrap, Galvanize	15.	H2000/H2050/H2200/H2250	74616	Insulation, Wrap
	H2200/H2250/HF2200/HF2250	74001	Wrap, S.S.		HF2000/HF2050/HF2200/HF2250	74616	Insulation, Wrap
	H2200/H2250/HF2200/HF2250	74675	Wrap, White	16.	H2000/H2050/H2200/H2250	73176	Insulation, Front
11.	H2000/H2050	73169	Back Panel, Galvanize	17.	HF2000/HF2050/HF2200/HF2250	74227	Insulation, Front
	H2200/H2250	73290	Back Panel, S.S.		H2000/H2050/H2200/H2250	73331	Insulation, Back
	H2200/H2250	74667	Back Panel, White		HF2000/HF2050/HF2200/HF2250	74228	Insulation, Back

NOTE: FOR ALL WHITE POLY COATED MODELS ALL PARTS ARE COMMON EXCEPT WRAP. SEE PARTS LIST ABOVE FOR WHITE PARTS.

EXPLODED VIEW

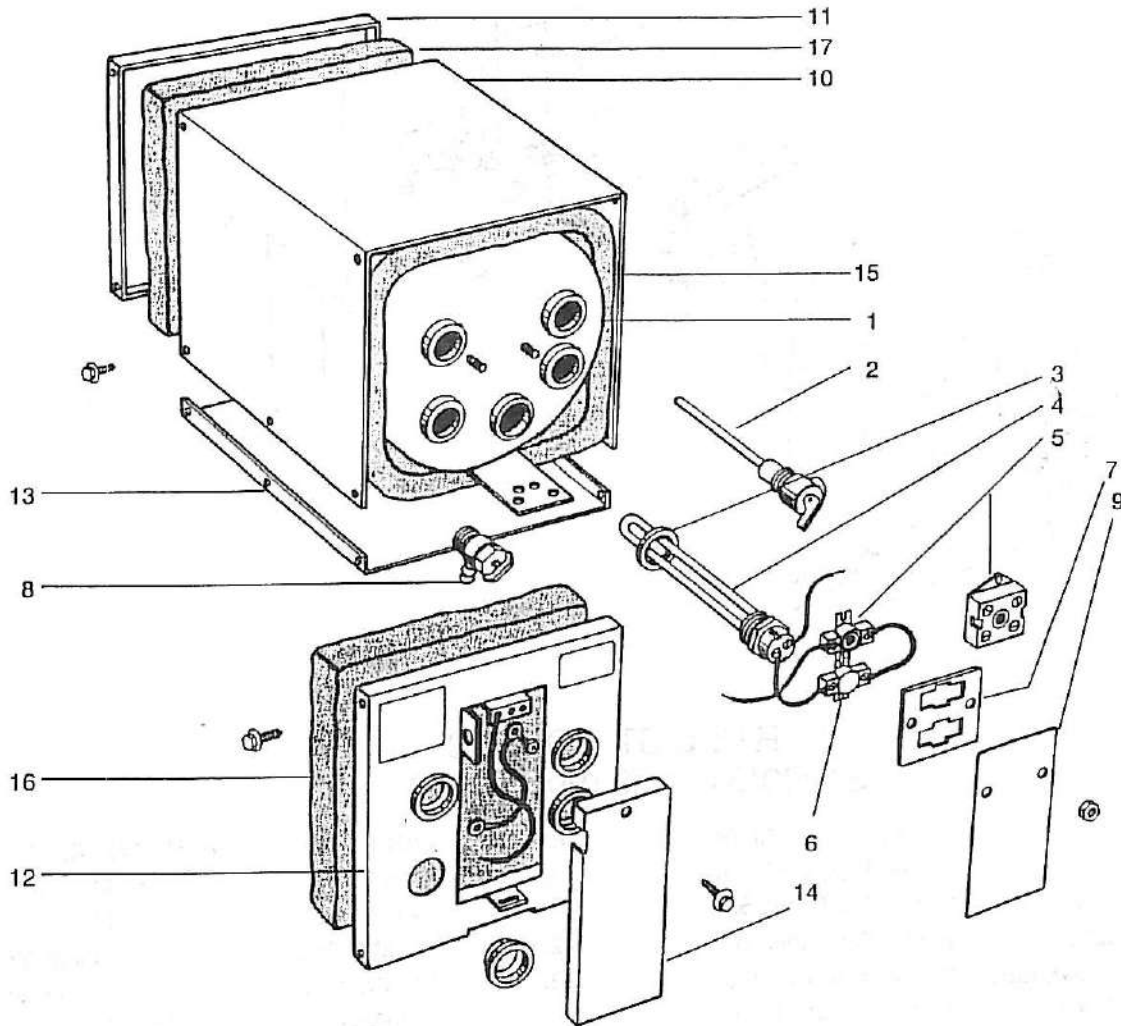


PARTS LIST MODELS S1800/S1850/S1900/S1950

ITEM	MODEL NO.	PART. NO.	DESCRIPTION	ITEM	MODEL NO.	PART. NO.	DESCRIPTION
1.	S1800/S1850	73398	Top Panel, Galvanize	11.	120 VOLT	73148	Mtg Plate, Switch
	S1900/S1950	73408	Top Panel, S.S.		240 VOLT	73171	Mtg Plate, Switch
	S1800/S1850	74689	Top Panel, White	12.	ALL MODELS	73145	Shield, Wires
2.	S1800/S1850/S1900/S1950	73404	Insulation, Top	13.	S1800/S1850	73397	Front Panel, Galv
Not Shown	S1800/S1850/S1900/S1950	73404	Insulation, Base		S1900/S1950	73407	Front Panel, S.S.
3.	S1800/S1850/S1900/S1950	73409	Insulation, Wrap		S1800/S1850	74690	Front Panel, Wte
4.	S1800/S1850/S1900/S1950	80263	Tank Assembly	14.	S1800/S1850	73141	Access Cover, Galv
5.	ALL MODELS	73127	Temp/Pressure Valve		S1900/S1950	73293	Access Cover, S.S.
6.	ALL MODELS	73123	Drain Valve		S1800/S1850	74669	Access Cover, Wte
7.	ALL MODELS	73124	Gasket, Heating Element	15.	S1800/S1850	73396	Base, Galvanize
8.	120 VOLT	74031	Heating Element		S1900/S1950	73406	Base, S.S.
	240 VOLT	74032	Heating Element		S1800/S1850	74688	Base, Wte
9.	120 VOLT	74563	High Limit Switch	16.	S1800/S1850	73395	Wrap, Galvanize
	240 VOLT	74607	High Limit Switch		S1900/S1950	73405	Wrap, S.S.
10.	ALL MODELS	73129	Thermostat		S1800/S1850	74687	Wrap, White

NOTE: FOR ALL WHITE POLY COATED MODELS ALL PARTS ARE COMMON EXCEPT WRAP. SEE PARTS LIST ABOVE FOR WHITE PARTS.

EXPLODED VIEW



**PARTS LIST
MODELS
H2850EW-3000, H2850EW-4500
H2850ES-3000, H2850ES-4500**

ITEM	MODEL NO.	PART NO.	DESCRIPTION
1	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	80491 80491	TANK ASSEMBLY TANK ASSEMBLY
2	ALL	73127	TEMPERATURE/PRESSURE VALVE
3	ALL	73124	GASKET, HEATING ELEMENT
4	H2850ES-3000, H2850EW-3000 H2850ES-4500, H2850EW-4500	74715 75086	3000W HEATING ELEMENT 4500W HEATING ELEMENT
5	240V	74607	HIGH LIMIT SWITCH
6	ALL	73129	THERMOSTAT
7	ALL	73171	PLATE, THERMOSTAT MOUNTING
8	ALL	73123	DRAIN VALVE
9	ALL	73145	SHIELD, WIRES
10	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	75234 75055	WRAP, S.S. WRAP, WHITE
11	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	73290 74667	BACK PANEL, S.S. BACK PANEL, WHITE
12	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	73289 74666	FRONT PANEL, S.S. FRONT PANEL, WHITE
13	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	75235 75056	BASE, S.S. BASE, WHITE
14	H2850ES-3000, H2850ES-4500 H2850EW-3000, H2850EW-4500	73291 74669	ACCESS, COVER S.S. ACCESS, COVER WHITE
15	ALL	74616	INSULATION, WRAP
16	ALL	73176	INSULATION, FRONT
17	ALL	73331	INSULATION, BACK

NOTE: FOR ALL WHITE POLY COATED MODELS ALL PARTS ARE COMMON EXCEPT WRAP. SEE PARTS LIST ABOVE FOR WHITE PARTS.