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MODEL NUMBER: ____________________________  

SERIAL NUMBER: ____________________________

This Manual also contains instructions for the OPTIONAL Fill Pump and Auto-Fill Systems.

www.WaterEater.com
READ & UNDERSTAND THIS ENTIRE MANUAL BEFORE INSTALLATION, OPERATION AND SERVICE. PRESERVE AND DISTRIBUTE THIS MANUAL TO CURRENT & FUTURE USERS.

This is a fairly simple water heating tank. While not suitable for food or drink, it is similar to a pot of water being heated on a kitchen stove. These water heating tanks are sold through autonomous distribution. A reseller might provide them to other resellers. These water heating tanks might end up being specified for use in a variety of unknown water heating applications around the world.

Along the way, others may have adapted, modified, reconfigured or added to the original water heater both mechanically and electrically. They may have added sales support, literature, components, instructions, labeling and other materials. These additions, changes, applications and installations are not ours, nor are they authorized by us, the original manufacturer. These items are not a part of, nor are they addressed by, this manual.

Your specific uses are unknown to us. We are not in a position to determine the suitability of the water heater for your particular use. We do not hold ourselves out as chemists, metallurgists, electricians, application/process engineers nor any other form of expert to be relied on. This use is your application/process, therefore you and your advisers are responsible for identifying & managing your hazards as they relate to the water heater. We offer no coverage for the consequences of your use or the actions of others.

We do stand behind the materials of construction as being what we say they are, but we cannot say those materials are necessarily compatible with your particular application/process.

The warning label below is prominently mounted on the water heater. It highlights a few general parameters but obviously cannot and does not attempt to identify all issues relating to your installation, application & process.

WARNING
HOT ! ALLOW TO COOL BEFORE HANDLING MACHINE OR CONTENTS

THIS MACHINE IS INTENDED TO PROCESS WATER ONLY. USER IS SOLELY LIABLE FOR SUITABILITY OF OTHER LIQUIDS

USE ONLY NON-FLAMMABLE, NON-TOXIC, WATER SOLUTION COMPATIBLE WITH OPERATION & MATERIALS OF CONSTRUCTION
DEVELOPMENT

♦ Damaged Merchandise & Freight Claims. When the water heater was shipped from the original manufacturer, it was in new, undamaged and operable condition. Responsibility for safe delivery transfers to the freight carrier when the carrier signs the outgoing shipping papers. When the carrier delivers the water heater to the receiving party (consignee), it is the responsibility of the customer receiving the water heater to make a visual inspection of the items they are receiving. When the water heater arrives inspect for damage that may have occurred during shipment. If there is obvious physical damage the customer is responsible for noting the damage on the shipping papers. If there are no visible signs of damage, but when the shipment is opened, damage is found, the customer is responsible for immediately contacting the freight company and submitting a “Concealed Damage” claim. Normally the party who pays the freight, files the claim. The FOB point does not alter the freight claim responsibility.
♦ The original manufacturer will not accept any merchandise back from any customer without a Return Materials Authorization (RMA). All shipments must be sent freight prepaid by sender. Collect shipments will be refused.

INSTALLATION

♦ Installation by qualified professionals only.
♦ Installation shall comply with local and national codes.
♦ Remove all shipping materials including the pallet.

LOCATION

♦ Installation shall be on a non-combustible sturdy surface capable of supporting the filled weight of the water heater. The water heater can be slightly shimmed so any accidental spillage or overflow is directed away from any burner or control boxes. Spillage & overflow damage is not covered under the equipment warranty.
♦ Access shall be limited to qualified personnel.
♦ WARNING: ABSOLUTELY NO Flammable, combustible, burnable, explosive, reactive or toxic materials shall be heated in the water heater, nor shall they be in the general area around the water heater where they (or their fumes) might somehow flow or travel to the water heater. The water heater is NOT ignition protected and is NOT suitable for hazardous/classified areas.
♦ WARNING: The water heater is hot during operation. Allow to adequately cool before handling the water heater or its contents. The water being heated is ordinarily limited by evaporation to its boiling point. Heaters, heat exchangers and other items may be significantly hotter.
♦ The water heater shall not be exposed to rain or snow. The controls, burner and other components are not watertight.
♦ Provide access for cleaning the water heater out and for maintenance access to the control box, electrical junction box, burner assembly and, if so equipped, the fill pump.
♦ If your fill water source is higher in elevation than the fill port at the top of the water heater tank you may need to address siphoning issues.
EXHAUST CONNECTION

- Installation by qualified professionals only.
- Installation shall comply with all local and national codes.
- The water heater should be vented to the outdoors.
- **Caution:** There is an exposed fan blade within the exhaust outlet, therefore, a minimum 3ft. of additional exhaust stack is required.
- A smooth, corrosion resistant, high-temperature, non-combustible material is recommended. Consult local & national codes for specific requirements.
- Stack diameters should not be reduced from these standard vent outlets:

<table>
<thead>
<tr>
<th>Model 85E</th>
<th>6&quot; Diameter</th>
<th>Models 125E, 120G, 240G</th>
<th>10&quot; Diameter</th>
<th>Model 375G</th>
<th>16&quot; Diameter</th>
</tr>
</thead>
</table>

- Enclosed areas, such as heated or air conditioned facilities, may have limited makeup air. The negative air pressure (vacuum) may be too much for the standard fan to overcome, causing water to drip from the fan or steam to escape from around the lid. Additional make up air or an additional exhaust booster fan may be required. All stack connections should be sealed and water tight to eliminate condensate from running down the outside of ducting and onto the water heater and to keep exhaust fumes from escaping into work areas.
- The exhaust stack should be as vertical as possible. If turns in the stack are unavoidable, 45’s are better than 90’s.
- Termination in a relatively high pressure zone is not recommended. Exiting through the side wall of a building or through the roof next to an exterior wall may require additional stacking to reach a lower pressure zone above the roofline of the building.
- An unrestricted rain cap or no cap at all, is recommended at the end of the stack. This will optimize airflow, maximize moisture removal, and lessen the potential for evaporated water condensing and dripping from the exhaust fan.
- On gas heated units, the gas feed line should be plumbed as to allow burner cover removal. The burner cover should be in place when operating the water heater.

UTILITY CONNECTION

- Installation by qualified professionals only.
- Installation shall comply with all local and national codes.
- The water heater shall be permanently grounded in accordance with your National Electric Code.
- All controls should be in the off position before connecting.
- Locate the ID plate & connect to a properly fused and protected power supply accordingly.

MODEL 85E & 125E (ELECTRIC HEAT)

- These are available in 240Volt 3-phase or in 480Volt 3-phase. Refer to the appropriate wiring diagram in this manual.
- These models are not particularly low voltage sensitive. For example the 240v models will run on 208v, but with a 25% reduction in heat output.
- The model 85E (240V only) can be converted to Single-phase, 50Amp.
- Three-phase line connection is to the three terminals on one side of the heater contactor inside the control box. These terminals are marked by three short test leads or “pig tails” which were used at the factory for testing. These test leads must be removed & discarded before connecting your power.

MODEL 120G, 240G & 375G (GAS HEAT)

- These models are 120V single phase. Refer to the appropriate wiring diagram at the end of this manual.
- Line connection is to the upper & lower terminals on one side of the heater contactor inside the control box. These terminals are marked by two short test leads or “pig tails” which were used at the factory for testing. These test leads must be removed & discarded before connecting your power.
- Calibration of the burner by a qualified gas technician for your specific installation site is recommended. Improper setup can result in tube sooting, inefficient combustion, poor heating and other issues.
- The provided natural gas burners have a ¾” NPT inlet for standard low gas pressure at 7-11 inches of water column (14” WC or ½ psi maximum). The burner can be converted to propane by changing the main jet & recalibration.
- The burner is polarity sensitive. If polarity is incorrect, the burner may attempt to fire for a moment then quit.
- The gas line should be plumbed so it will not interfere with removal of the burner cover.
OPERATION

♦ WARNING: ABSOLUTELY NO flammable, combustible, burnable, explosive, reactive or toxic materials shall be heated in the water heater, nor shall they be in the general area around the water heater where they (or their fumes) might somehow flow or travel to the water heater. The water heater is NOT ignition protected and is NOT suitable for hazardous/classified areas.

♦ WARNING: The water heater is hot during operation. Allow to adequately cool before handling the water heater or its contents. The temperature of water being heated is ordinarily limited to its boiling point. Heaters, heat exchangers and other items may be significantly hotter.

♦ Do not operate without the lid, lid support bar, burner & electrical covers or customer supplied exhaust stack in place. Note that the lid is slightly shorter than the tank opening to provide a fresh air inlet. Position the lid so the opening is away from the exhaust stack.

♦ WARNING: Disconnect power/utilities before servicing!

♦ STARTUP

1. Add water to the tank. The liquid level must be at least enough to cover the low level displacement “float” (hanging at the end of a flexible cable inside the tank). Do not overfill. Initial fill should be no more than ½ of the tank’s “freeboard capacity” (i.e. the maximum volume of water above the heat exchanger). If foaming occurs adjust the fill level and/or use a defoamer. Foaming is often mischaracterized as “boiling over”.
2. Turn the thermostat dial knob clockwise to its MAXIMUM setting. This will activate the exhaust fan.
3. Next flip up the momentary toggle switch located just below the thermostat (labeled “heat”). This will engage the heat contactor sending power to the electric heating elements or the gas burner. Initial cold water heat up will typically take more than an hour.
   - Note that the gas burner goes through a 30-second purge cycle after which the electronic igniter sparks & gas valve opens. The burner should fire up & keep running. If for some reason a flame is not maintained, the burner will attempt to restart one time before locking out. To reset the burner turn the thermostat off and on, then toggle the heat switch again.
4. During normal operation the water heater will heat and evaporate your water until the “float” is unsupported by water (exposed). The exhaust fan and top indicator light remain on until the thermostat is manually turned off. Maximum water temperature is capped via evaporation at the boiling point of your water. Therefore the thermostat does not cycle on & off to control temperature but rather serves as a high limit trip indicating maintenance is required. A thermostat trip stops both the heat and exhaust system, however the exhaust system will come back on after a few minutes of cooling.
   - Likely thermostat trip causes:
     - The water heater is low on water indicating something may be wrong with the primary “float” system.
     - Thermostat not set to maximum.
     - Floating materials on your water’s surface are preventing evaporation.
     - Something in the water is coating the heat exchanger and is preventing heat from getting to the water.
     - Something in the water has raised its boiling point to the trip point on the thermostat.
5. Turning the thermostat knob to “OFF” shuts down the heat & exhaust system.

MAINTENANCE

♦ Buildup on the heat exchanger is unwanted, since it can prevent heat transfer to the water resulting in heat exchanger overheating & eventually failure. These failures are not covered by the warranty. It is critical to inspect and remove any buildup from the tank, floor, and heat exchanger (i.e. heated floor, immersion elements or burner tube). In extreme cases water containing significant solids could cause the heat exchanger to become hot enough to cause a rapid steam expansion thereby emptying contents of the tank. Concentrated liquids must be removed.

♦ Remove floating materials from the surface of the water.

♦ Inspect the low level “float” cable, arm and micro switch plunger under the arm for unrestrictive & free movement.

♦ Periodically, inspect for loose fittings, fasteners, and mounting bolts, then tighten appropriately.

♦ Check the gas line, electrical connections and plumbing fittings for tightness.
Wiring Diagram for:

**WATER HEATER EVAPORATOR**

**models: 85E and 85E-SS**

**standard Electric Heated**

with NO Fill Pump, NO AFS

**240 Volt / 3Ø (three phase) / 40Amps**

**manufactured 1999 through 2014**

---

**Control Box Front View**

- **Blower Motor**
- **Bulb**
- **Heat on**
- **Bulb**
- **Thermostat Start Switch**
- **Thermostat**
- **Probe in sleeve**
- **Copper Capillary Tubing**

**Control Box Side View**

- **Transformer**
- **Contactor**
- **Auxiliary Switch**
- **Micro-Switch**
- **2 Links 240V**

**View of Bottom, with cover and insulation removed**

- **240VOLT STRIP HEATER WIRING - model 85E**
- **Six Strip Heater Elements, as viewed from underneath**

---

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**Copyright © 2013-2014 All Rights Reserved**
Model 85E, 240v only, 3phase conversion to single phase

- Installation & conversion by qualified professionals only.
- **WARNING:** Disconnect power/utilities before servicing!

**Single Phase Conversion**:

1. The center terminals on both the left and the right side of the heater contactor are not used.
2. Three heater wires, each of a different color (i.e. black, white, red), connect to the top left side of the heater contactor.
3. The remaining three heater wires, also each of a different color, connect to the bottom left side.
4. Line in 240v, 50 amp, single phase connection is to the upper & lower right side terminals.
5. Document the conversion.
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Wiring Diagram for:

**WATER HEATER EVAPORATOR**

models: **125E-480 & 125E-SS-480**

manufactured 1999 through 2014

480Volt Electric Heated with NO Fill Pump, NO AFS

480Volt / 3Ø (three phase) / 34Amps

---

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EVAPORATOR MANUAL

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>ELECTRIC</th>
<th>HEATED</th>
<th>MODEL</th>
<th>GAS</th>
<th>HEATED</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>85E</td>
<td>125E</td>
<td>120G</td>
<td>240G</td>
<td>375G</td>
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<tr>
<td>3½” flat</td>
<td>Funnel to drain</td>
<td>TANK FLOOR GAUGE &amp; SHAPE</td>
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<td>Funnel to drain</td>
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<td>2” NPT ball valve</td>
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<tr>
<td>41” X 23” (31”)</td>
<td>38” X 34” (41”)</td>
<td>43” X 35” (41”)</td>
<td>73” X 35” (41”)</td>
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<tr>
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<td>240V / 3Ø / 480V / 3Ø / 34A</td>
<td>120V / 1Ø / 14A</td>
<td>120V / 1Ø / 14A</td>
<td>120V / 1Ø / 21A</td>
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<tr>
<td>480V / 3Ø / 20A</td>
<td>480V / 3Ø / 34A</td>
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<td>450 LBS</td>
<td>475 LBS</td>
<td>APPROXIMATE SHIPPING WEIGHT</td>
<td>550 LBS</td>
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</tbody>
</table>

* Evaporation rates can be affected by ambient temperature and humidity, local altitude, solids buildup on heat exchangers, floating materials, chemicals and minerals raising your boiling point, exhaust restrictions, make up air, pressure differential between the unit and outside exhaust point, low voltage, gas pressure, mis-calibrated burners and other conditions.

**MATERIALS OF CONSTRUCTION:** The standard tank is carbon steel. The type 316 Stainless Steel option upgrades the floor, the 4 inner side walls, the top tank frame, the rear deck, the exhaust stack tube, the 2” NPT drain & fill couplings, the 2” skimmer tube, the lid body and the burner tube on gas units. All material sizes, gauges and diameters remain the same. Both versions use a 316 stainless shutdown “float” cable.
### WATER HEATER PARTS LIST

**Models 85E, 125E, 120G, 240G, 375G** (manufactured 1999 through 2014)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-001</td>
<td>Heating Element for Model 85E (6/machine)</td>
</tr>
<tr>
<td>85-002</td>
<td>Heater Wiring Harness for Model 85E (specify 240v or 480v)</td>
</tr>
<tr>
<td>85-003</td>
<td>Floor Insulation for Model 85E</td>
</tr>
<tr>
<td>240LWD4500</td>
<td>Heating Element for Model 125E (240 Volt, 6/machine)</td>
</tr>
<tr>
<td>480LWD4500</td>
<td>Heating Element for Model 125E (480 Volt, 6/machine)</td>
</tr>
<tr>
<td>HSG400</td>
<td>Gas Burner Assembly, specify Model (Individual burner components are available. Contact factory)</td>
</tr>
<tr>
<td>85DJ3</td>
<td>Vent Fan for Model 85E</td>
</tr>
<tr>
<td>125DI</td>
<td>Vent Fan for Models 120G, 125E, 240G</td>
</tr>
<tr>
<td>375XL</td>
<td>Vent Fan for Model 375G</td>
</tr>
<tr>
<td>WE202</td>
<td>Transformer, 100VA, for Model 85E</td>
</tr>
<tr>
<td>WE203</td>
<td>Transformer, 500VA for Model 125E with 6” deep control box</td>
</tr>
<tr>
<td>WE204</td>
<td>Contactor, 3 pole, 40/50 amp, 120V coil</td>
</tr>
<tr>
<td>WE204-AS</td>
<td>Contactor w/Auxiliary Switch</td>
</tr>
<tr>
<td>WE205</td>
<td>Low Water Level Micro switch</td>
</tr>
<tr>
<td>WE206</td>
<td>Indicator Bulb</td>
</tr>
<tr>
<td>WE208</td>
<td>Thermostat Assembly</td>
</tr>
<tr>
<td>WE209</td>
<td>Heat Start Momentary Toggle Switch.</td>
</tr>
<tr>
<td>WE215-27</td>
<td>Low Water Level Actuator Assembly for Model 85E</td>
</tr>
<tr>
<td>WE215-20</td>
<td>Low Water Level Actuator Assembly for Models 120G, 125E, 240G, 375G</td>
</tr>
</tbody>
</table>

Gas Burner Tubes, Tank Covers, and Machine Chassis available per quotation. Specify Machine Model and Serial Number.

Safety Stickers and Operation & Installation Manuals available on request. Specify Machine Model and Serial Number.

Please provide the Evaporator Model Number, Serial Number, and Voltage.
WATER EATER OPTIONS

FILL PUMP ♦ FILL HOSE ♦ AUTO FILL SYSTEM

FILL PUMP OPTION

- The factory installed Self-priming Fill Pump (SFP) is mounted, plumbed and wired to the water heater evaporator with a momentary toggle switch for operator controlled pumping.
- 2" NPT inlet & outlet. Heavy iron construction with no check valves to maintain.
- Self priming to several feet below grade.
- Included is a 2" NPT 3-way Diverter Valve which allows pumping into the water heater tank, bypass pumping to outboard processing equipment and power cleanout via the optional Fill Hose. When not in use, the bypass outlet needs to be plugged to prevent accidental discharge.
- The pump must be primed before first use and after extended periods of non-use. Unscrew the 1" plug on top of the pump and pour in approximately 2 quarts of water then replace the plug.
- Confirm clockwise rotation on 3 phase motors by viewing the screwdriver slot at the end of motor shaft.
- **WARNING:** If your fill water source is higher in elevation than the top of the water heater tank you may need to address siphoning issues (often misdiagnosed as a pump which won't stop pumping).

FILL HOSE OPTION

- This is a reinforced hose assembly 1¼" ID x 20' long. It connects to the pump inlet via an included cam & groove quick disconnect. At the pickup end is a combination strainer & check valve which clears a typical drum opening and can be cleaned without tools.
- A more flexible way than hard plumbing to get your source water to the pump. It also doubles to power clean out the water heater by using the pump’s 3-way valve and bypass outlet to send concentrates to a collection drum.
- Allow hot liquids to adequately cool before use.

AUTO FILL SYSTEM OPTION

- This is a factory installed option which includes the above mentioned Self-priming Fill Pump.
- The Auto-Fill System (AFS) logic is based on the pump's ability to find water. This eliminates the need for level sensors in each and every source tank. Once started the AFS continues refilling until it can no longer find water whereupon the heating system is shutdown.
- After the AFS is initially started, if the water drops to the low level point the heating shutdown is delayed while the pump searches for water per the setting on the pump timer. If water is not found the heating system is then shutdown. If water is found & pumping commences, once the water level reaches the low level set point the pump timer discards the remaining time & resets to a second full cycle. The benefit here is refilling to the same predictable level each fill cycle despite priming delays and varying source tank water levels.
- The AFS includes a backup high level float. The pump timer should be adjusted to where the refill water level never reaches this float. This float interrupts the pump contactor but not the heating system.
- With the AFS switched off the fill pump can still be operated manually via the pump toggle switch.
1. SETTING THE AUTO FILL TIMERS

SETTING THE PUMP TIMER

The countdown pump timer can be set to match the flow rate of the fill pump. (Refer to the Auto-Fill electrical Wiring Diagram for location of this component in the control box).

To set the countdown pump timer, determine the flow rate of the fill pump. A fill cycle of the pump should always add several inches of water above the bottom of the low level shutoff point, but well below the high level float. Set the countdown pump timer numerical readout for the required fill time.

SETTING THE HEATER SHUTDOWN DELAY

The heater shutdown delay timer... (refer to the Auto-Fill electrical wiring diagram for location in control box) ...overrides the normal low level shutoff system; keeping the heating system operating while the pump searches for water. This timer must be set to a slightly LONGER cycle than the Countdown Pump Timer setting. The Heater Shutdown Delay has a screwdriver type adjustment located in the top left corner of the timer. This can be set anywhere between 15 to 300 seconds. Factory set to 15 seconds.
### AUTO FILL SYSTEM

2. OPERATING THE AUTO FILL SYSTEM

1. Turn ON the AUTO FILL SWITCH (#1)

2. Activate PUMP SWITCH (#2) and fill the unit to above the Low Level Displacement Switch Actuator "semi-buoyant weight" (a white plastic cylinder attached at the end of a length of stainless steel cable).

3. Rotate ON-OFF SWITCH (#3) (Thermostat) clockwise to MAXIMUM setting. The exhaust Blower will activate and the system will energize.

4. Activate START SWITCH (#4) (a momentary toggle switch). (on GAS fired units, the Burner will fire in approximately 30 seconds due to the Burner Tube purge cycle)

   Fill Pump will activate for an initial fill cycle and the system will begin operating in the Auto Fill mode.

   Turn ON-OFF SWITCH (#3) counterclockwise at any time to SHUTDOWN the entire system.

3. AUTO FILL SYSTEM - HIGH LEVEL FLOAT SWITCH

The Auto Fill System has a High Level Float Switch located inside the water heater tank, attached to the top deck, next to the vent stack.

Periodically inspect and clean the Stainless Steel Float and stem assembly.

ALWAYS REPLACE THE FLOAT WITH THE MARKED SIDE (stamped “O”) TOWARDS THE RETAINING CLIP.

The pump should run when the Float is down and not run when it is up.
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Wiring Diagram for:

**WATER HEATER EVAPORATOR**

with AUTO FILL SYSTEM

models: 85E and 85E-SS

Electric Heated with Options

AFS with 70SFP (Self-priming Fill Pump)

**480Volt / 3Ø (three phase) / 20Amps**

Manufactured 1999 through 2014

---

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Wiring Diagram for: WATER HEATER EVAPORATOR with AUTO FILL SYSTEM


Manufactured 1999 through 2014

GAS Heated with Options
AFS with 70SFP (Self-priming Fill Pump)

120Volt / 1Ø (single phase) / 14Amps

NOTE:
BURNER IS POLARITY SENSITIVE
Wiring Diagram for: WATER HEATER EVAPORATOR with AUTO FILL SYSTEM

models: 375G, 375G-SS

GAS Heated with Options
AFS with 70SFP (Self-priming Fill Pump)

120V/1Ø (single phase) / 21Amps

Manufactured 1999 through 2014

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EVAPORATOR MANUAL
Wiring Diagram for:

**WATER HEATER EVAPORATOR**

with **AUTO FILL SYSTEM**

models: 125E-480 and 125E-SS-480

**ELECTRIC Heated with Options**

AFS with 70SFP (Self-priming Fill Pump)

**Manufactured 1999 through 2014**

---

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---

**Drawing Not to Scale**

---

**FRONT VIEW**

**CONTROL BOX**

**SIDE VIEW**

---

**GROUND TO CHASSIS**

COPPER CAPILLARY TUBING

**6 Heater Elements, 480V, 4500W each**

**480V, 3 Phase, AC POWER IN**

AC POWER IN 480 V, 3Ø, 34A

---

**To Blower Motor**

**Auxiliary Switch**

**PUMP CONTROLLER**

**HEATER CONTROLLERS**

**SIDE VIEW**

**LOWER BOX – HEATERS & CONTACTORS**

---

**To Fill Pump MOTOR**

**½ HP 3 phase**

---

**GROUNDED WIRE**

---

**WIRING  DIAGRAM FOR:**

WATER HEATER EVAPORATOR

models: 125E-480 and 125E-SS-480

**ELECTRIC Heated with Options**

AFS with 70SFP (Self-priming Fill Pump)

**Manufactured 1999 through 2014**

---

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**FRONT VIEW**

**CONTROL BOX**

**SIDE VIEW**

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**GROUND TO CHASSIS**

COPPER CAPILLARY TUBING

**6 Heater Elements, 480V, 4500W each**

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**LOWER BOX – HEATERS & CONTACTORS**

---

**To Fill Pump MOTOR**

**½ HP 3 phase**

---

**GROUNDED WIRE**

---

**WIRING  DIAGRAM FOR:**

WATER HEATER EVAPORATOR

models: 125E-480 and 125E-SS-480

**ELECTRIC Heated with Options**

AFS with 70SFP (Self-priming Fill Pump)

**Manufactured 1999 through 2014**

---

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## Pump / Auto-Fill System / Hose Assembly

### Parts List

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-204</td>
<td>Fill Pump Contactor</td>
</tr>
<tr>
<td>WE-204-A42</td>
<td>Overload Relay (for 480 Volt machines only)</td>
</tr>
<tr>
<td>WE-SFP209</td>
<td>Fill Pump Momentary Toggle Switch</td>
</tr>
<tr>
<td>WE-SFP303</td>
<td>Fill Pump Motor Shaft Seal</td>
</tr>
<tr>
<td>WE-SFP304</td>
<td>Fill Pump Large O-Ring</td>
</tr>
<tr>
<td>WE-SFP306</td>
<td>Fill Pump To Motor Adapter</td>
</tr>
<tr>
<td>WE-SFP 331</td>
<td>Fill Pump Assembly (Pump Body, Impeller, Adapter, Seal, O-Ring) -Motor not Included.</td>
</tr>
<tr>
<td>WE-SFP332-1ph</td>
<td>Fill Pump Motor. ½ HP, 1 Phase. (For 120V and 240V Machines)</td>
</tr>
<tr>
<td>WE-SFP332-3ph</td>
<td>Fill Pump Motor. ½ HP, 3 Phase (For 480V Machines)</td>
</tr>
<tr>
<td>WE-SFP333</td>
<td>Fill Pump Impeller</td>
</tr>
<tr>
<td>WE-SFP334</td>
<td>Fill Pump Main Casting (Fill Pump Body, i.e. case &amp; volute)</td>
</tr>
<tr>
<td>WE-SFP341-DV</td>
<td>3-Way Diverter Ball Valve (std 2” NPT)</td>
</tr>
<tr>
<td>WE-AFS 210</td>
<td>Auto Fill On/Off Toggle Switch</td>
</tr>
<tr>
<td>WE-AFS222</td>
<td>Pump Run Countdown Timer</td>
</tr>
<tr>
<td>WE-AFS223</td>
<td>Heater Shutdown Delay Cube Timer</td>
</tr>
<tr>
<td>WE-AFS224</td>
<td>Auto Fill DPDT Signal Relay</td>
</tr>
<tr>
<td>WE108</td>
<td>High Level Backup Float Switch</td>
</tr>
<tr>
<td>WE-SDH-20H</td>
<td>Vacuum Hose, 1¼” Diameter x 20’.(additional lengths available per quotation)</td>
</tr>
<tr>
<td>WE-SDH-QK</td>
<td>Pump To Hose Quick Disconnect Kit</td>
</tr>
<tr>
<td>WE-SDH-FV</td>
<td>Combination Foot Valve/Suction Strainer At Vacuum Hose Inlet</td>
</tr>
</tbody>
</table>

---

For Parts and Information, you may contact the original Sales Rep where the unit was purchased:

name: ________________  phone: ________________

For best results, please provide the unit’s Serial Number, and Model Number of the Evap, when inquiring about Parts.
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EVAPORATOR MANUAL
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Wiring Diagram for:

**WATER HEATER EVAPORATOR**

Models: 85E-480, 85E-SS-480

Manufactured 1999 through 2014

480V Electric Heated with Option

With FILL PUMP only, NO AFS

480Volt / 3 (three phase) / 20Amps

---

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**View of Bottom, with cover and insulation removed**

480VOLT STRIP HEATER WIRING - model 85E

Six Strip Heater Elements, as viewed from underneath
REMoval of IMPELLER for Replacement of PUMP SEAL (SFP303)

1. After you have locked-out power: Disconnect Pump Motor wires at right side of Pump Relay inside Control Box. Unscrew Flex conduit at bottom of Control Box and pull pump wires thru hole. Next, disconnect Water supply where it enters the Pump Inlet from your Source, the DRAIN the water out of the self-priming Fill Pump Body, which remains in place, as it is mounted along the side of your Evap tank.

2. FIRST Remove the 4 “lower” bolts that hold Adapter to Pump Body. Lift entire assembly (Motor, Adapter, Impeller) out of Pump Body.

3. Remove Drip Cover (2 screws) and small plastic end cap.

4. Remove Impeller: Carefully place entire assembly on floor or flat surface with Impeller facing down. Hold Impeller and use an X-Large Screwdriver in slot at top end of Motor Shaft to unscrew the Impeller, counter-clockwise (normal right-hand thread). This may require some effort, as the Impeller tends to tighten itself under normal use. Do NOT use gear-puller or try to pry-off Impeller!

5. Once Impeller is removed, then Remove 4 “upper” bolts that hold Adapter to Motor, so PUMP SEAL can be removed from Adapter cavity.

OR, if not able to loosen threads with method above, TRY THIS!

DRAIN PLUG

Fill Pump Body
Stays in place as mounted on the side of Evap tank.

56J Motor has Threaded Shaft

O-RING

SFP303 PUMP SEAL (2 pcs.)

IMPELLER

FLOOR or Flat Surface

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INSTALLATION OF MECHANICAL PUMP SEAL (SFP303)

FOR LUBRICATION:
- USE WATER SOLUTION OF SOAP OR DETERGENT.
- DO NOT OVER LUBRICATE.
- NEVER USE PETROLEUM OILS. (e.g. Baby Oil, Mineral Oil, etc.) (Seal manufacturer’s recommendation)
- But, any Lubrication is better than none.

CAUTION: This seal is a precision product and should be handled accordingly. Be especially careful of the lapped sealing face of the rotary washer and stationary seal.

LAPPED RUNNING FACES:
The lapped running face of the rotary seal head and stationary seat must be treated with care. KEEP CLEAN, DO NOT SCRATCH.
Use a clean, soft cloth during installation. Protect the faces. Install both the seat and rotary square to the shaft.
Check stationary seat installation from behind seat cavity for squareness.

STATIONARY SEAT:
Clean seal cavity in pump adapter. Lubricate rubber “O” –Ring or rubber cup and press seat firmly and squarely into seal cavity with lapped face up. Must be pushed square and all the way into the cavity. Be careful not to scratch lapped face. Use a clean, soft cloth to protect seal face.

ROTARY SEAL HEAD
Clean, Polish and Lubricate shaft or shaft sleeve. Check lapped faces on stationary seat and rotary seal head. Be certain no dirt is on either face. Lubricate rubber bellows. Slide rotary seal head on shaft. Press on metal drive band until the two faces touch. Install impeller. This will compress the spring to proper height. This compression assures the proper pressure on the lapped running faces.

CAUTION
Never run the lapped faces dry. The liquid being pumped insures proper lubrication. In some cases a short running period is required to clear up slight leakage.

---

Item No.: WE-SFP303
Description: 5/8” PUMP SHAFT SEAL
Add’l Info.: TYPE 16

---

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## SEALED FILL PUMP and MOTOR PARTS LIST

For Water Heater Evaporators with:

- Optional Self-priming FILL-PUMP (SFP) (since Dec 1995)
- or AUTO-FILL SYSTEM (AFS) (since November 1996)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSK300</td>
<td>PUMP SEAL KIT - For all units!</td>
<td>Includes: 2 SEALS (2 complete 2pc assemblies) with 2 Lube Packets, and 1 O-Ring</td>
</tr>
<tr>
<td>WE-SFP303</td>
<td>Fill Pump SEAL, One complete 2 piece assembly Only!</td>
<td>Each complete Seal consists of 2 pieces, See Diagrams.</td>
</tr>
<tr>
<td>WE-SFP304</td>
<td>Fill Pump O-RING</td>
<td>4½” diam. rubber O-ring, Dash#246</td>
</tr>
<tr>
<td>WE-SFP306</td>
<td>Fill Pump ADAPTER</td>
<td>connects motor to pump - cast iron</td>
</tr>
<tr>
<td>WE-SFP331</td>
<td>FILL PUMP ASSEMBLY ... No motor, ... No pipes, and No Diverter Valve</td>
<td>Includes: cast-iron Pump Body, Adapter, Impeller, Seal, and O-ring</td>
</tr>
<tr>
<td>WE-SFP332-1ph</td>
<td>Fill Pump MOTOR, ½HP, 1-phase</td>
<td>For 120 Volt or 240 Volt EVAP</td>
</tr>
<tr>
<td>WE-SFP332-3ph</td>
<td>Fill Pump MOTOR, ½HP, 3-phase</td>
<td>For 480 Volt EVAP</td>
</tr>
<tr>
<td>WE-SFP333</td>
<td>Fill Pump IMPELLER . . . for ½HP Motor</td>
<td>4.0” diameter</td>
</tr>
<tr>
<td>WE-SFP334</td>
<td>Fill Pump BODY (Self-priming Pump case)</td>
<td>pump inlet &amp; outlet - cast iron</td>
</tr>
</tbody>
</table>

**Note:** IMPELLER and FILL PUMP may be Different than Above, IF Evap Unit was built before 1996!

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-SFP340-1ph</td>
<td>Pump End with 1-phase-Motor Assembly, Ready to Install on Your Existing Fill Pump Body</td>
</tr>
<tr>
<td>WE-SFP340-3ph</td>
<td>Pump End with 3-phase-Motor Assembly, Ready to Install on Your Existing Fill Pump Body</td>
</tr>
</tbody>
</table>

All Prices are subject to change without notice.

For best results, please provide the Serial Number and Model Number of the Evap, when inquiring about any Parts.

---

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WARRANTY & LIMITATION OF LIABILITY

THE ORIGINAL MANUFACTURER MAKES NO WARRANTY CONCERNING THE APPLICABILITY OF THE WATER HEATER TO PROCESS ANY PARTICULAR MATERIAL

FINAL DETERMINATION OF APPROPRIATENESS OF THIS EQUIPMENT FOR ANY USAGE IS THAT OF THE CUSTOMER

The manufacturer warrants each new product sold to an initial purchaser to be free of defects in material and workmanship for a period of ONE YEAR from the shipping date from the manufacturer. The manufacturer will provide a new part or repaired part, at its election, in place of any part which is found, upon inspection, to be defective in material or workmanship. FOB OEM origin. Proof of purchase required.

This warranty does not apply to failures occurring as a result of incompatibility of fluid type to materials of construction, abuse, misuse, negligent repairs, corrosion, normal wear and tear, alteration or modifications made to the product without express written consent of the manufacturer or failure to follow the recommended operating practices and maintenance procedures as provided in the product’s operating and maintenance publications.

The warranty provided herein does not apply to materials provided by or manufactured by others as they are warranted by their respective manufacturers directly to the user, as electric motors, engines, magnetic starters and burners.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND THERE ARE NO WARRANTIES, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF LIABILITY

The remedies of the user set forth under the provisions of warranty outlined above are exclusive and total liability of the original manufacturer with respect to this sale or the equipment and service furnished hereunder, in connection with the performance or breach thereof, or from the sale, delivery installation, or repair or technical direction covered by or furnished under this sale, whether based on contract, warranty, negligence, indemnity, strict liability or otherwise shall not exceed the initial purchase price of the unit of equipment upon which such liability is based.

The original manufacturer shall in no event be liable to the user, any successor in interest or any beneficiary or assignee relating to this sale for any consequential, incidental, indirect, special or punitive damages arising out of this sale or any breach thereof, or any defects in, or failure of, or malfunction of the equipment under this date whether based upon loss of use, lost profits or revenue, interest, lost goodwill, work stoppage, impairment of other goods, loss by reason of shutdown or non-operation, increased expenses of operation, cost of purchase of replacement power or claims of user or customers of the user for service interruption whether or not such loss or damage is based on contract, warranty, negligence, indemnity, strict liability or otherwise.

Please enter your evaporator Data here and Save for Future Reference:

MODEL NUMBER: __________________ SERIAL NUMBER: __________________

Purchase Date: __________________

Purchased From: __________________

Address: __________________

Phone: __________________