

WATER EATER[®]

INSTALLATION & OPERATION MANUAL



85E	125E	120G	240G	375G
85E-SS	125E-SS	120G-SS	240G-SS	375G-SS

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.

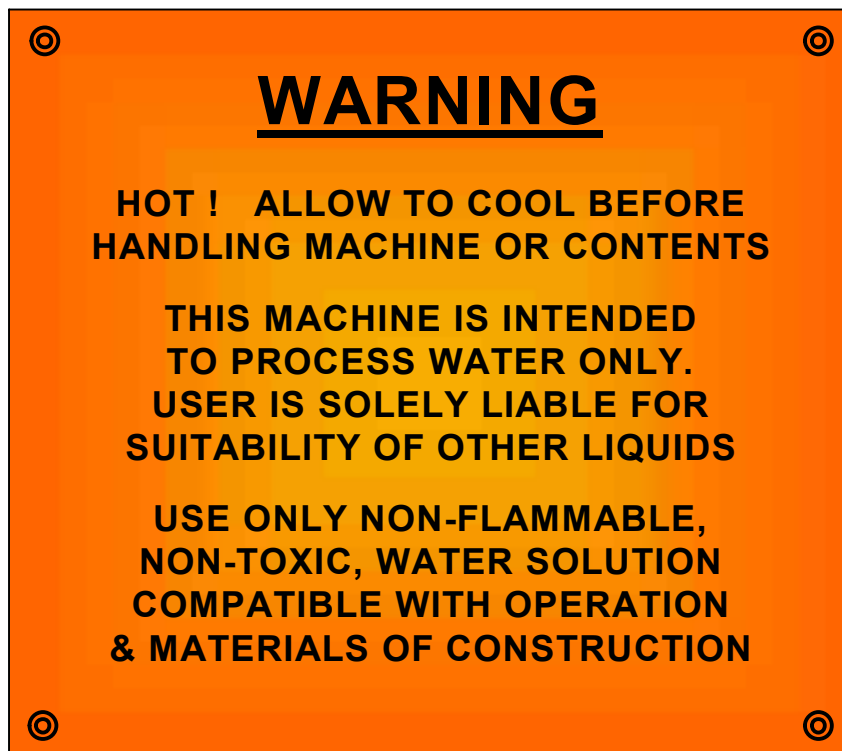
This is a fairly simple water heating tank. While not suitable for food or drink, it is similar to a pot of water being heated on a kitchen stove. These water heating tanks are sold through autonomous distribution. A reseller might provide them to other resellers. These water heating tanks might end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



DELIVERY

- ◆ **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 :

Model 85E	6" Diameter	Models 125E, 120G, 240G	10" Diameter	Model 375G	16" Diameter
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- ◆ 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 unrestrictive 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 3/4" NPT inlet for standard low gas pressure at 7-11 inches of water column (14" WC or 1/2 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!

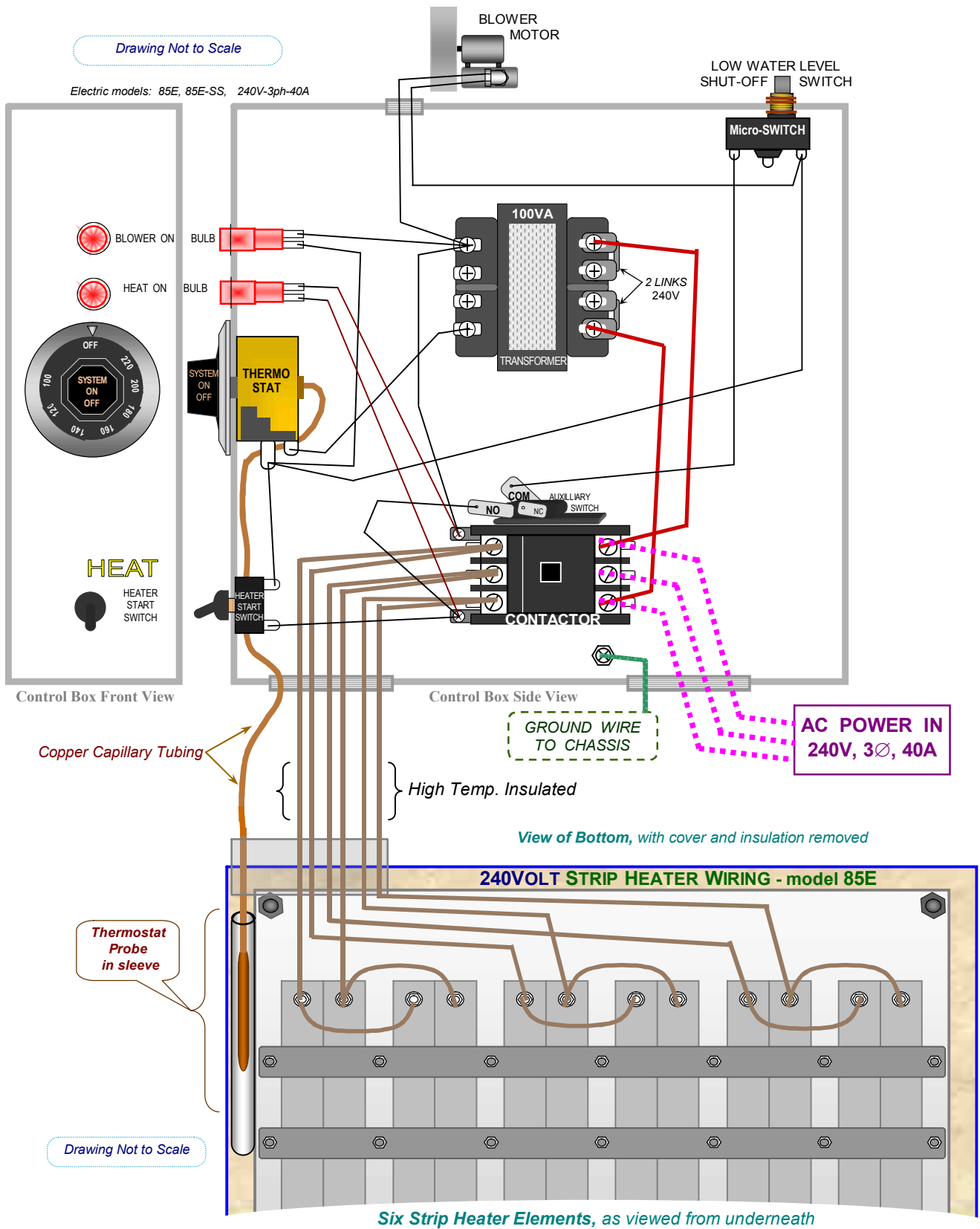
◆ STARTUP

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 exchange*). 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	models: 85E and 85E-SS
dwg: WE-85E-240V-3PH-40ANO-FP-NO-AFS BC-05-15-2002 / rev.09-29-2014		EVAPORATOR	manufactured 1999 through 2014
standard Electric Heated	with NO Fill Pump, NO AFS	240Volt / 3Ø (three phase) / 40Amps	



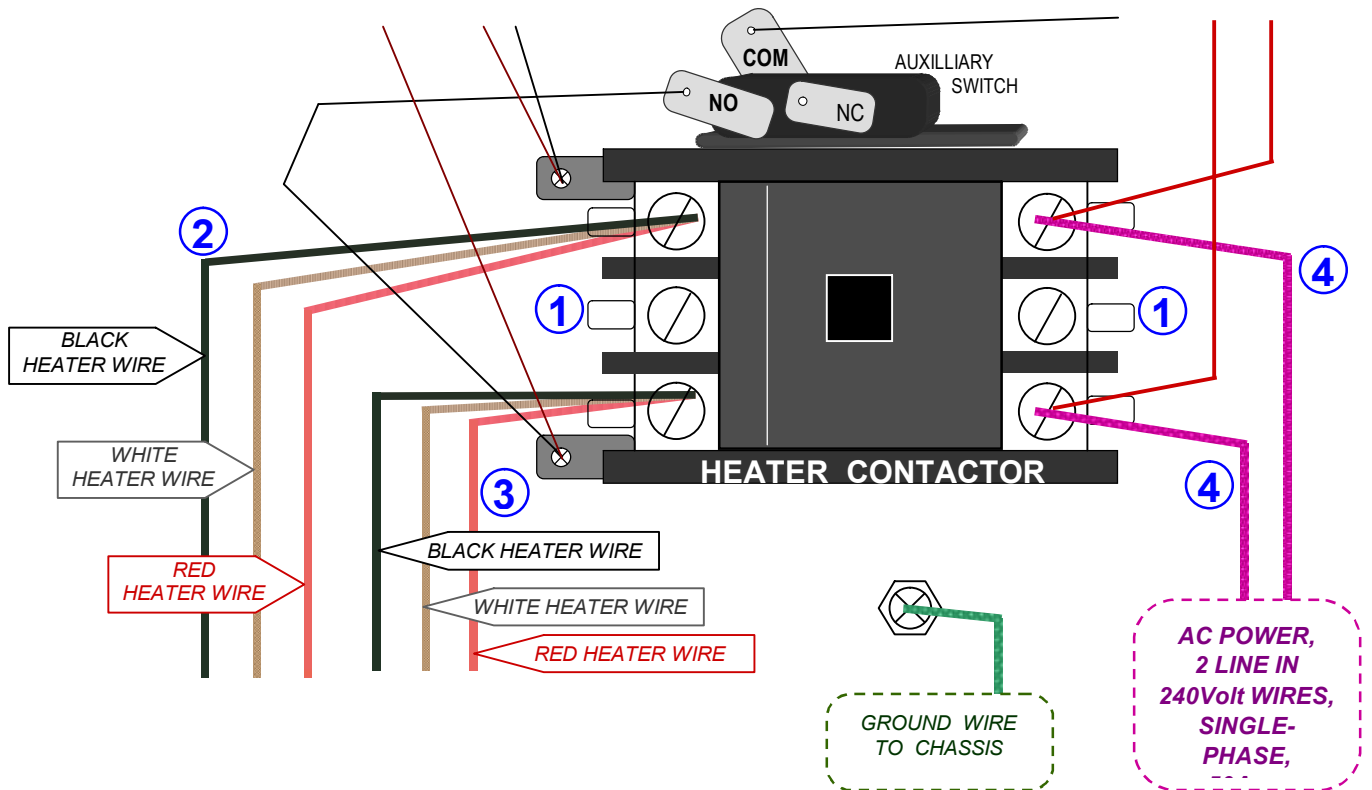
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Model 85E, 240v only, 3phase conversion to single phase

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

Single Phase Conversion:

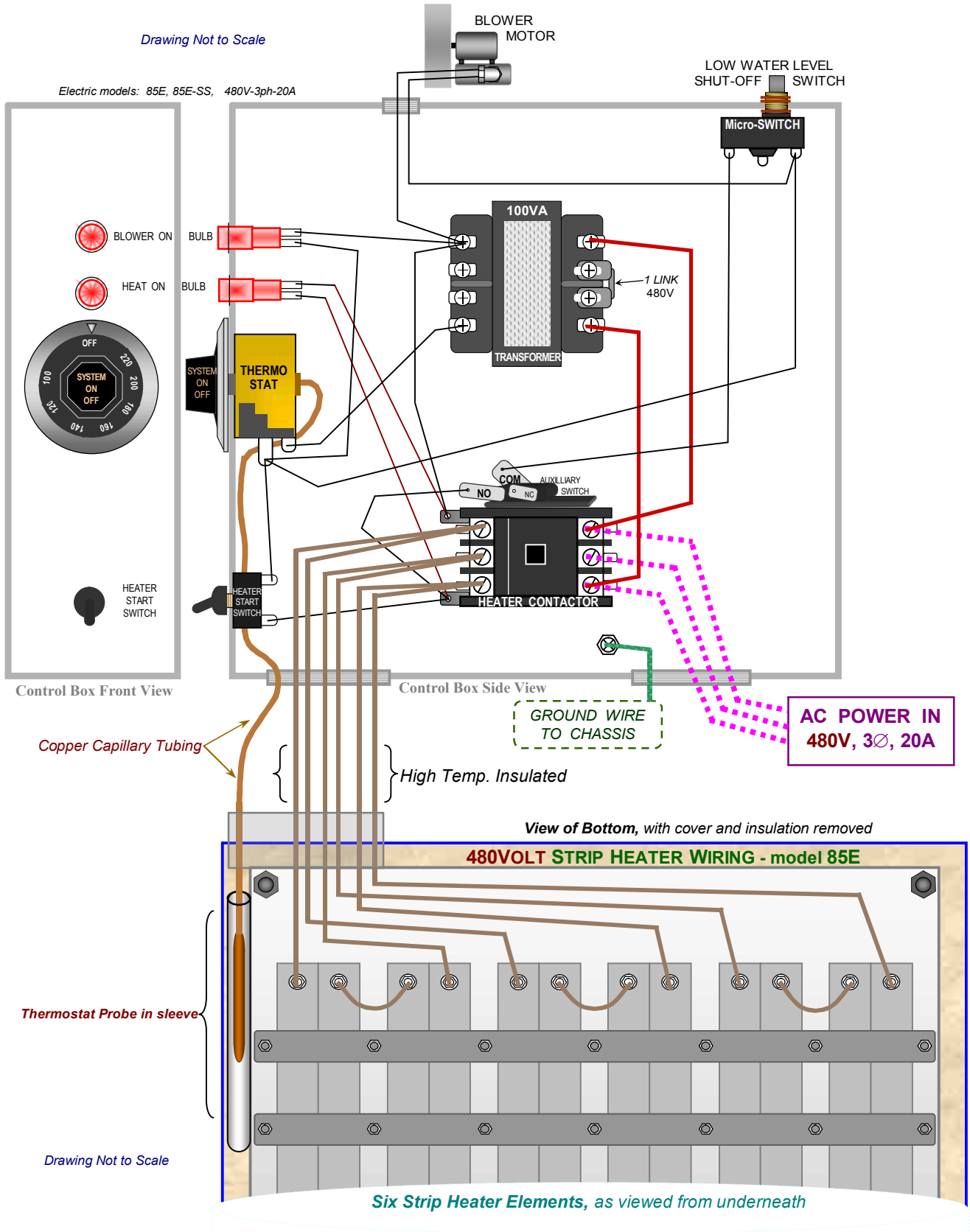
1. The center terminals on both the left and the right side of the heater contactor are not used.
2. Three heater wires, each of a different color (i.e. black, white, red), connect to the top left side of the heater contactor.
3. The remaining three heater wires, also each of a different color, connect 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



Wiring Diagram for :		WATER HEATER	models: 85E and 85E-SS
dwg: WE-85E-480V-3PH-20A-NO-FP-NO-AFS BC-05-15-2002 / rev.09-29-2014		EVAPORATOR	manufactured 1999 through 2014
480Volt Electric Heated	with NO Fill Pump, NO AFS	480Volt / 3Ø (three phase) / 20Amps	

Drawing Not to Scale

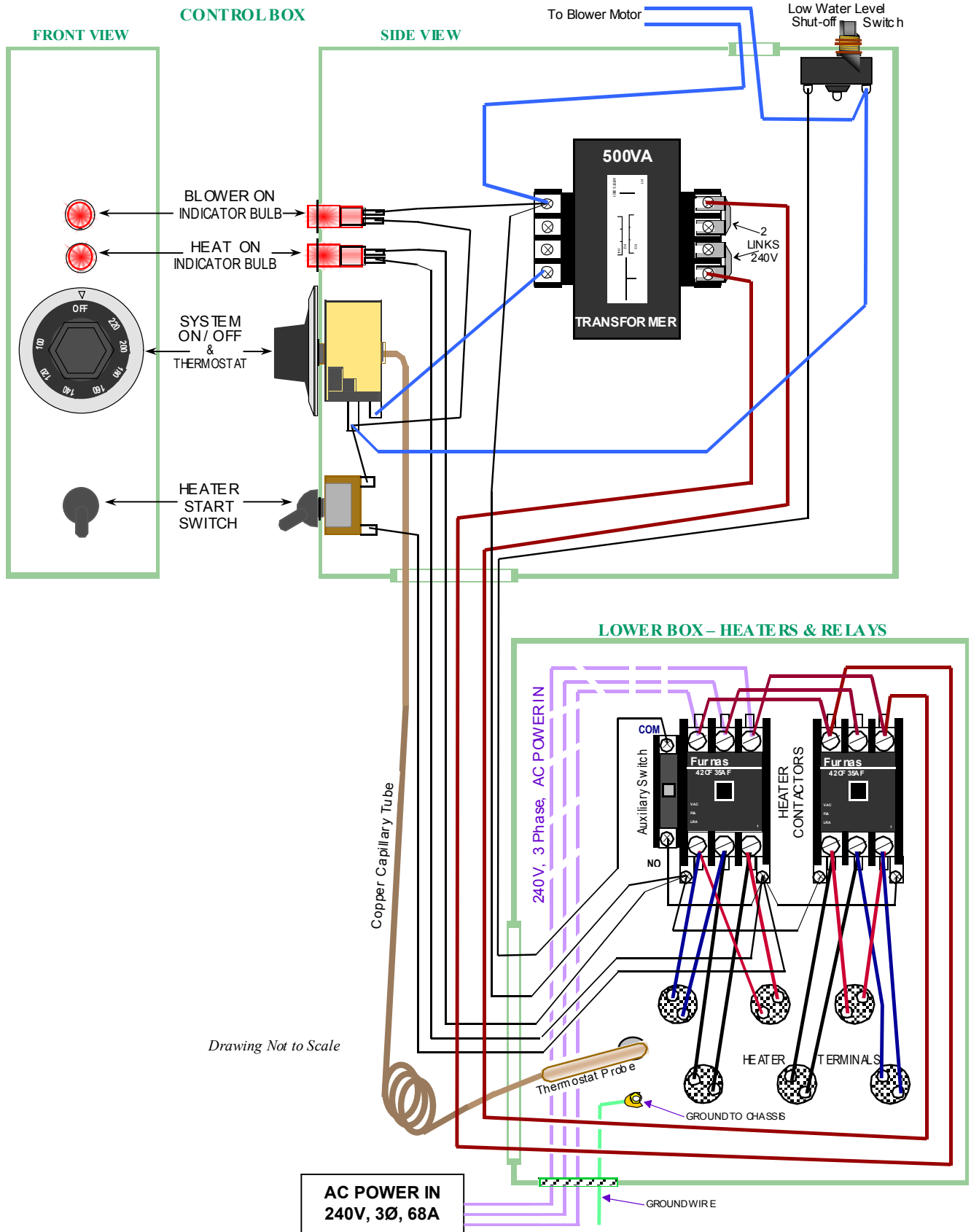
Electric models: 85E, 85E-SS, 480V-3ph-20A



Drawing Not to Scale

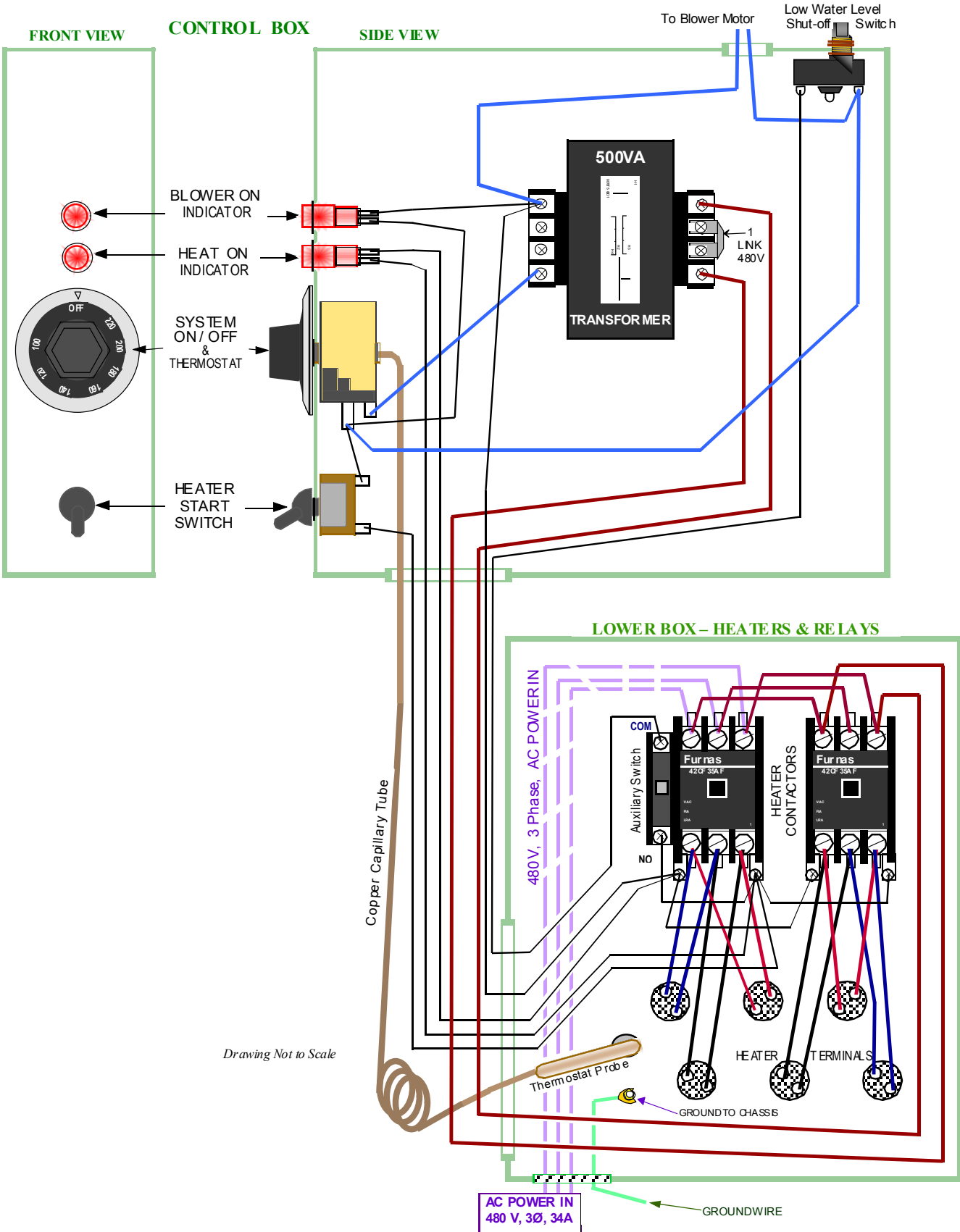
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Wiring Diagram for :		WATER HEATER	models: 125E and 125E-SS
dwg: WE-125E-240V-3PH-68AN0-FP-NO-AFS BC-08-08-2000		EVAPORATOR	manufactured 1999 through 2014
standard Electric Heated	with NO Fill Pump, NO AFS	240Volt / 3Ø (three phase) / 68Amps	



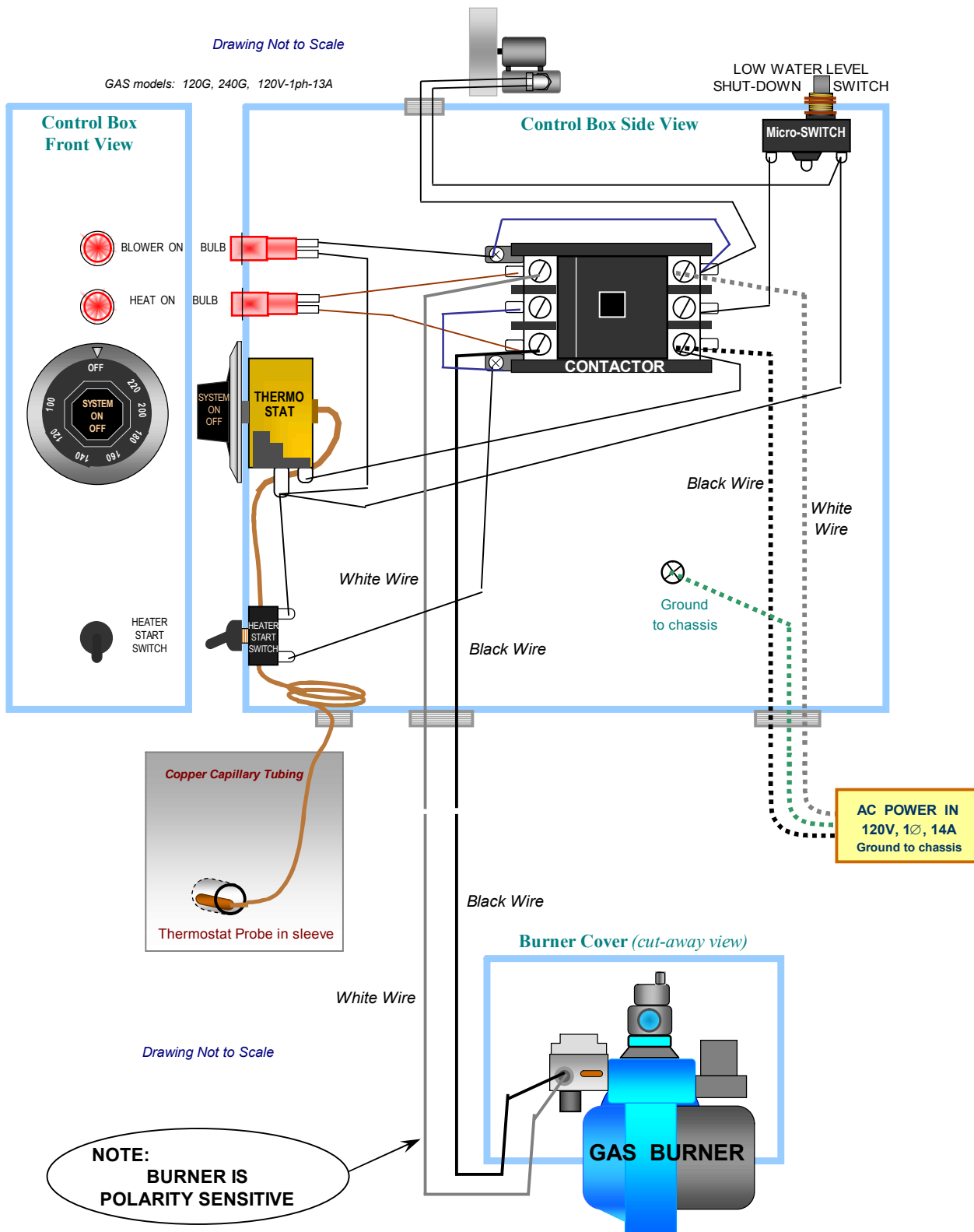
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Wiring Diagram for :		WATER HEATER	models: 125E-480 & 125E-SS-480
dwg: WE-125E-480V-3PH-34AN0-FP-NO-AFS BC-08-08-2000 / rev.09-29-2014		EVAPORATOR	manufactured 1999 through 2014
480Volt Electric Heated	with NO Fill Pump, NO AFS	480Volt / 3Ø (three phase) / 34Amps	

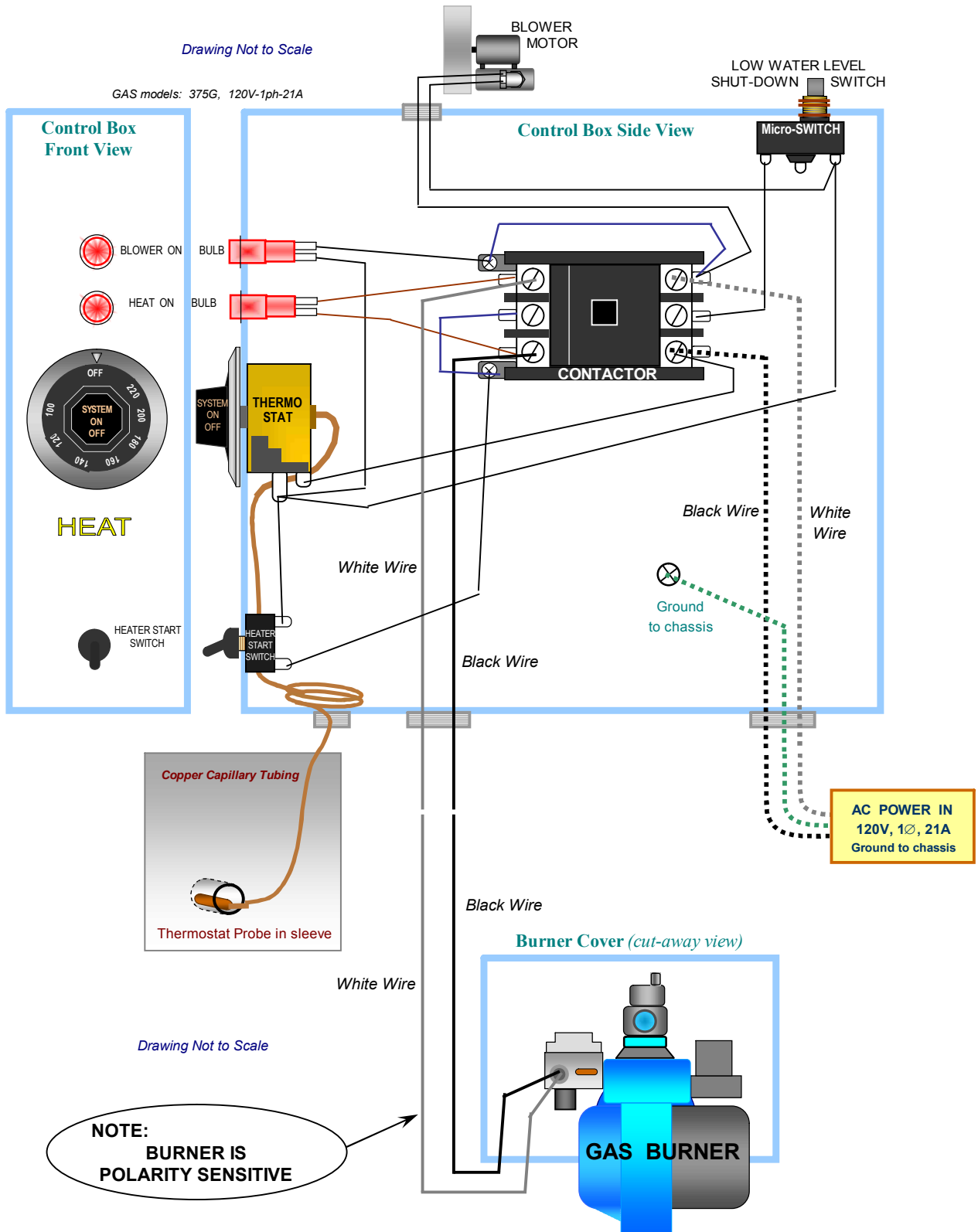


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Wiring Diagram for :		WATER HEATER	model: 120G, 240G, 120G-SS, 240G-SS
dwg: WE-120G240G-120V-1PH-13ANO-FP-NO-AFS BC-06-03-2002 / rev.09-29-2014		EVAPORATOR	manufactured 1999 through 2014
standard GAS Heated	with NO Fill Pump, NO AFS	120Volt / 1Ø (single phase) / 14Amps	



Wiring Diagram for :		WATER HEATER	models : 375G, 375G-SS
dwg: WE-375G-120V-1PH-21A-NO-FP-NO-AFS BC-06-03-2002 / rev.09-29-2014		EVAPORATOR	manufactured 1999 through 2014
standard GAS Heated	with NO Fill Pump, NO AFS	120Volt / 1Ø (single phase) / 21Amps	



ELECTRIC HEATED		SPECIFICATIONS	GAS HEATED UNITS		
85E	125E		120G	240G	375G
5 GPH 19 LPH	12 GPH 45 LPH	* EVAPORATION RATE (gallons / liters per hour)	15 GPH 57 LPH	22 GPH 83 LPH	40 GPH 151 LPH
11,400 Watts	27,000 Watts	HEAT SOURCE	225,000 BTU	285,000 BTU	400,000 BTU
---	---	BURNER TUBE HEAT EXCHANGER (Diameter x Length)	6½" x 81"	6½" x 141"	6½" x 381"
85	125	TANK SIZE (Gallons)	120	240	375
19" x 22½"	17" x 29"	CLEANOUT ACCESS	17" x 29"	29" x 40"	29" x 40"
2" NPT w/plug	2" NPT w/plug	LIQUIDS DRAIN	2" NPT w/plug	2" NPT w/plug	2" NPT w/plug
12 GA.	12 GA.	INNER TANK WALL GAUGE	12 GA.	12 GA.	12 GA.
1"	1"	TANK WALL INSULATION	1"	1"	1"
¾" flat	12 GA. Funnel to drain	TANK FLOOR GAUGE & SHAPE	12 GA. Funnel to drain	12 GA. Funnel to drain	12 GA. Funnel to drain
2" NPT	2" NPT	TANK FILL PORT	2" NPT	2" NPT	2" NPT
2" NPT ball valve	2" NPT ball valve	VARIABLE WEIR SKIMMER	2" NPT ball valve	2" NPT ball valve	2" NPT ball valve
6"	10"	VENT STACK DIAMETER	10"	10"	16"
68 cfm	850 cfm	VENT STACK FAN OUTPUT	850 cfm	850 cfm	2760 cfm
31"	36"	FLOOR TO TANK TOP HEIGHT	36"	36"	54"
45"	54"	OVERALL HEIGHT	54"	54"	76"
41" X 23" (31")	38" X 34" (41")	FLOOR SPACE, L x W (with pump)	43" X 35" (41")	73" X 35" (41")	73" X 35 (41")
240V / 3Ø / 40A (240V / 1Ø / 50A)	240V / 3Ø / 68A	ELECTRICAL UTILITY Volts / Ø phase / Amps	120V / 1Ø / 14A	120V / 1Ø / 14A	120V / 1Ø / 21A
480V / 3Ø / 20A	480V / 3Ø / 34A	ELECTRICAL OPTIONS	---	---	---
---	---	NATURAL GAS UTILITY (Propane Convertible)	¾" NPT, 7"-14" W.C.	¾" NPT, 7"-14" W.C.	¾" NPT, 7"-14" W.C.
450 LBS 204 kg	475 LBS 227 kg	APPROXIMATE SHIPPING WEIGHT (US pounds / Kilograms)	550 LBS 250 kg	775 LBS 352 kg	1175 LBS 533 kg

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

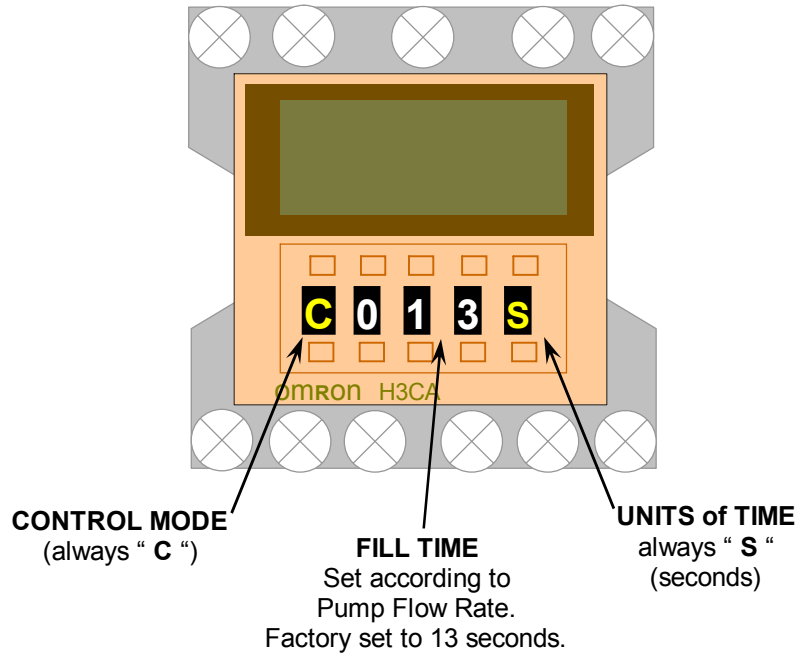
AUTO FILL SYSTEM

1. SETTING THE AUTO FILL TIMERS

SETTING THE PUMP TIMER

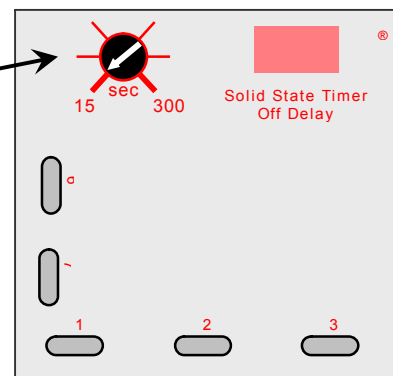
The **countdown pump timer** can be set to match the flow rate of the fill pump. (Refer to the *Auto-Fill electrical Wiring Diagram* for location of this component in the control box).

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



Set slightly LONGER than Countdown Pump Timer cycle.
(e.g.: if pump cycle is 13 seconds, set this relay for 15 seconds)

AUTO FILL SYSTEM

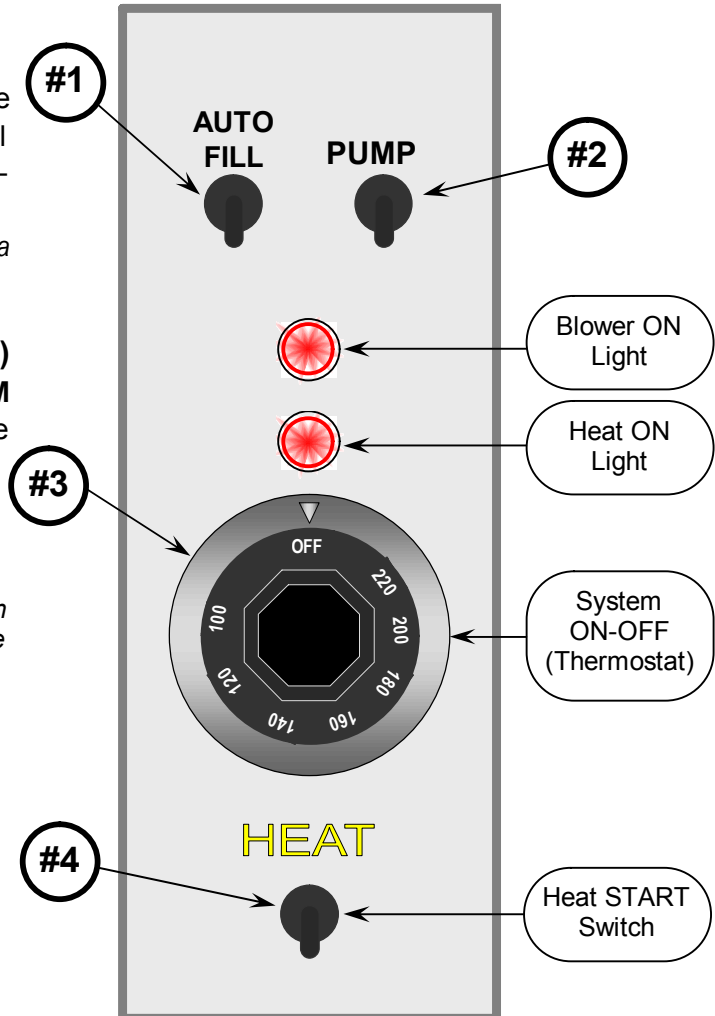
2. OPERATING THE AUTO FILL SYSTEM

CONTROL BOX FRONT PANEL

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.



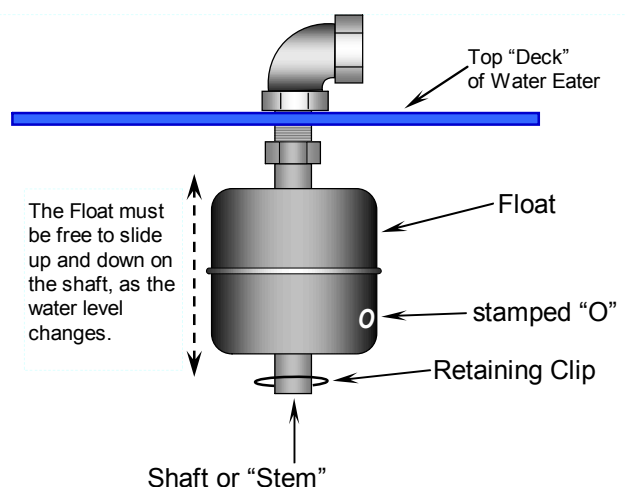
3. AUTO FILL SYSTEM - HIGH LEVEL FLOAT SWITCH

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.

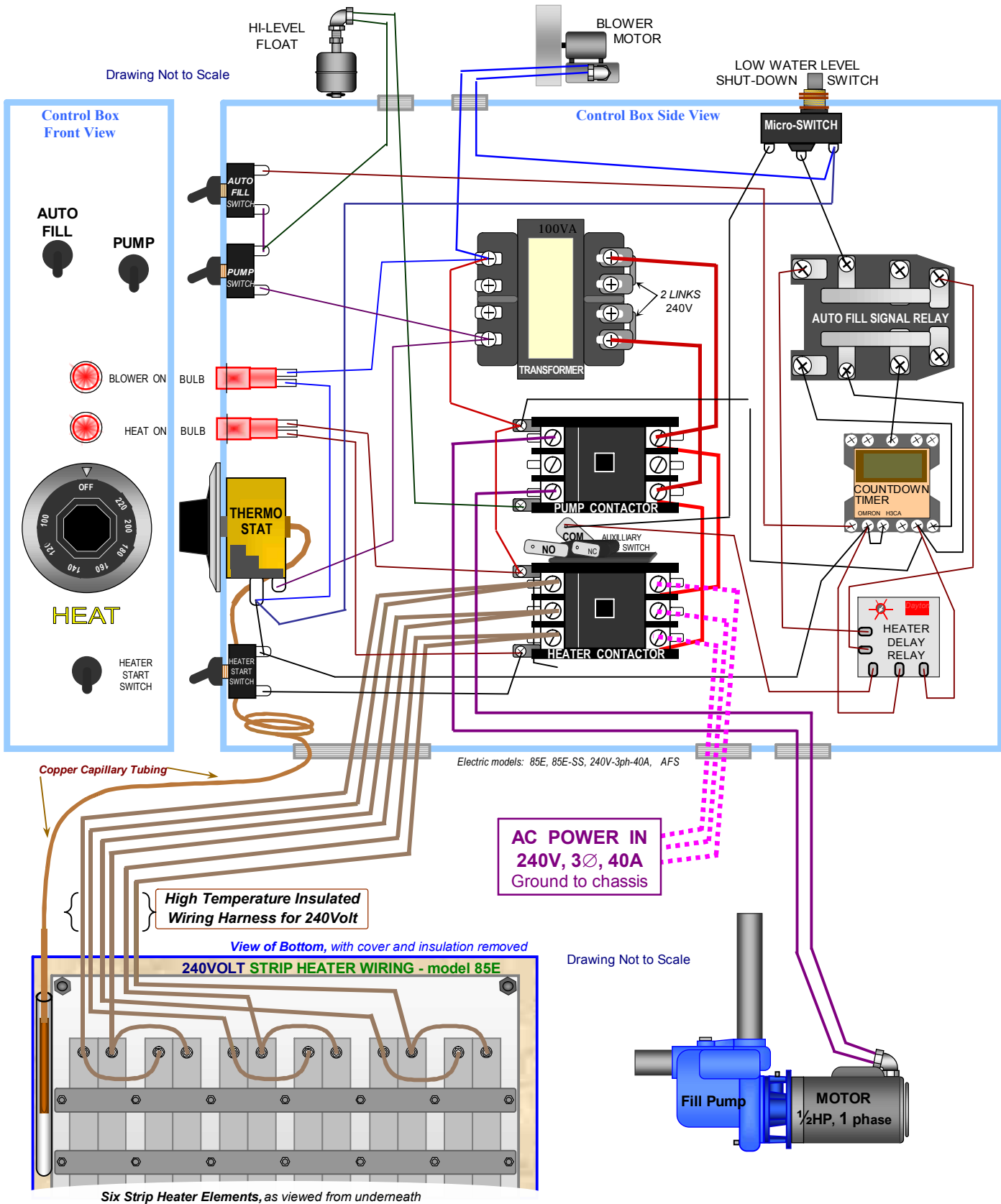
Periodically inspect and clean the Stainless Steel Float and stem assembly.

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.

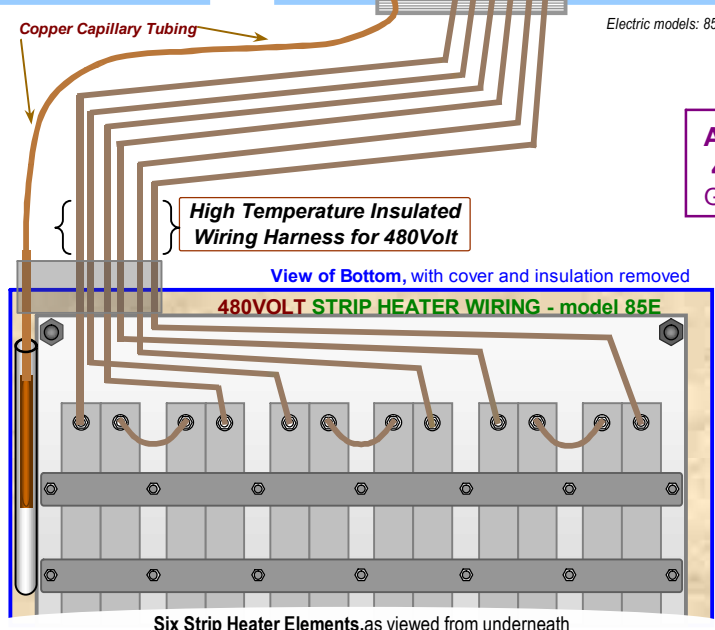
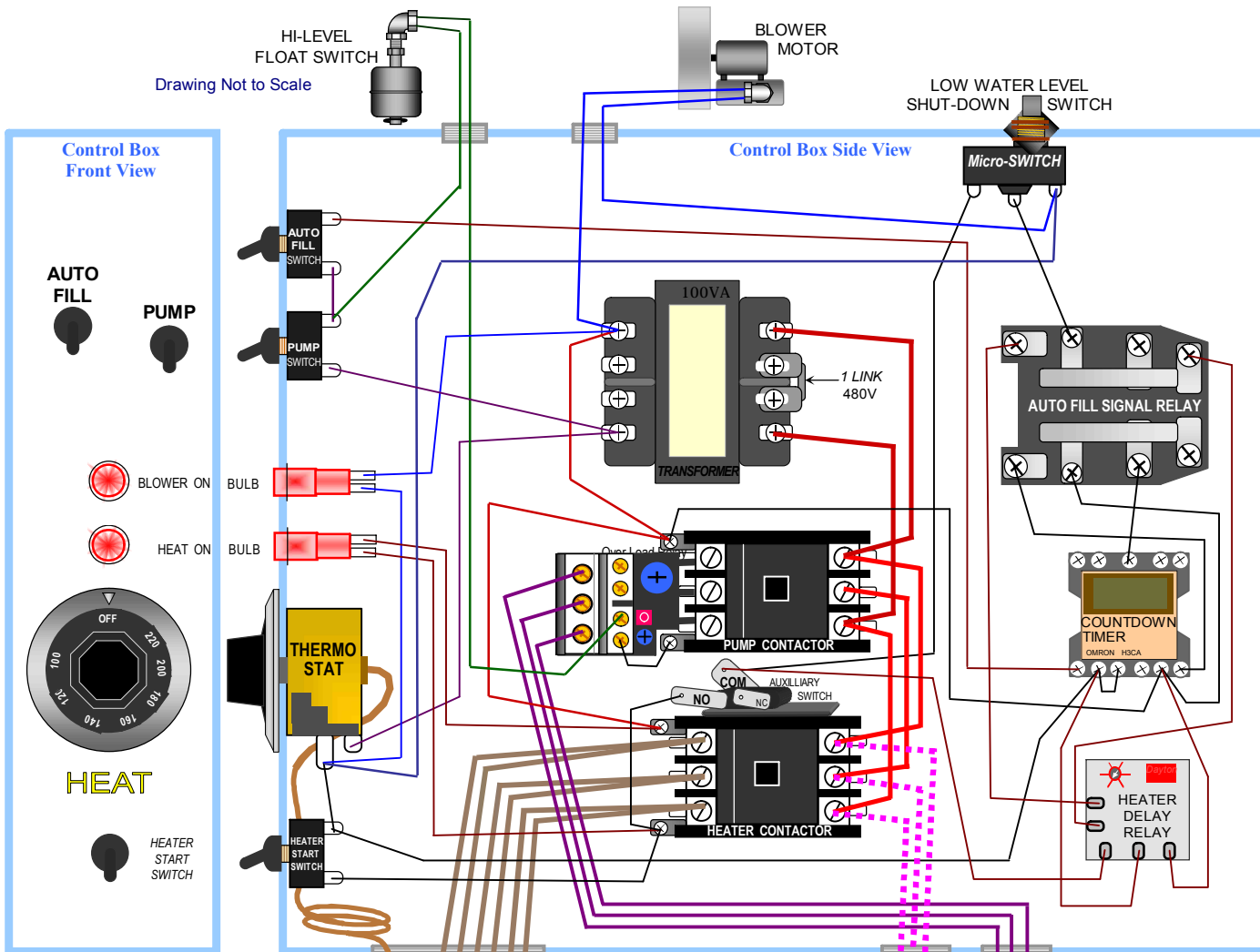


Wiring Diagram for : WATER HEATER EVAPORATOR		models: 85E and 85E-SS
with AUTO FILL SYSTEM		Manufactured 1999 through 2014
Electric Heated with Options	AFS with 70SFP (Self-priming Fill Pump)	240Volt / 3Ø (three phase) / 40Amps

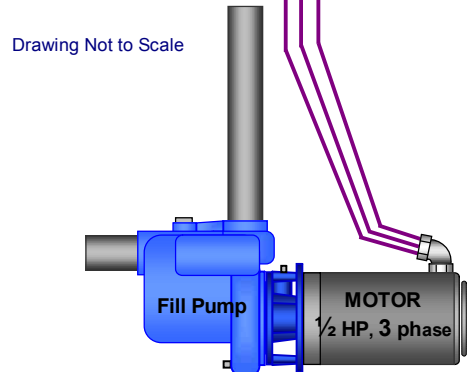


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Wiring Diagram for : WATER HEATER EVAPORATOR		models: 85E and 85E-SS
with AUTO FILL SYSTEM		Manufactured 1999 through 2014
dwg: WE-85E-480V-3PH-20AAFS BC-02-19-2003 / latest rev. 09-29-2014	AFS with 70SFP (Self-priming Fill Pump)	480Volt / 3Ø (three phase) / 20Amps
Electric Heated with Options		



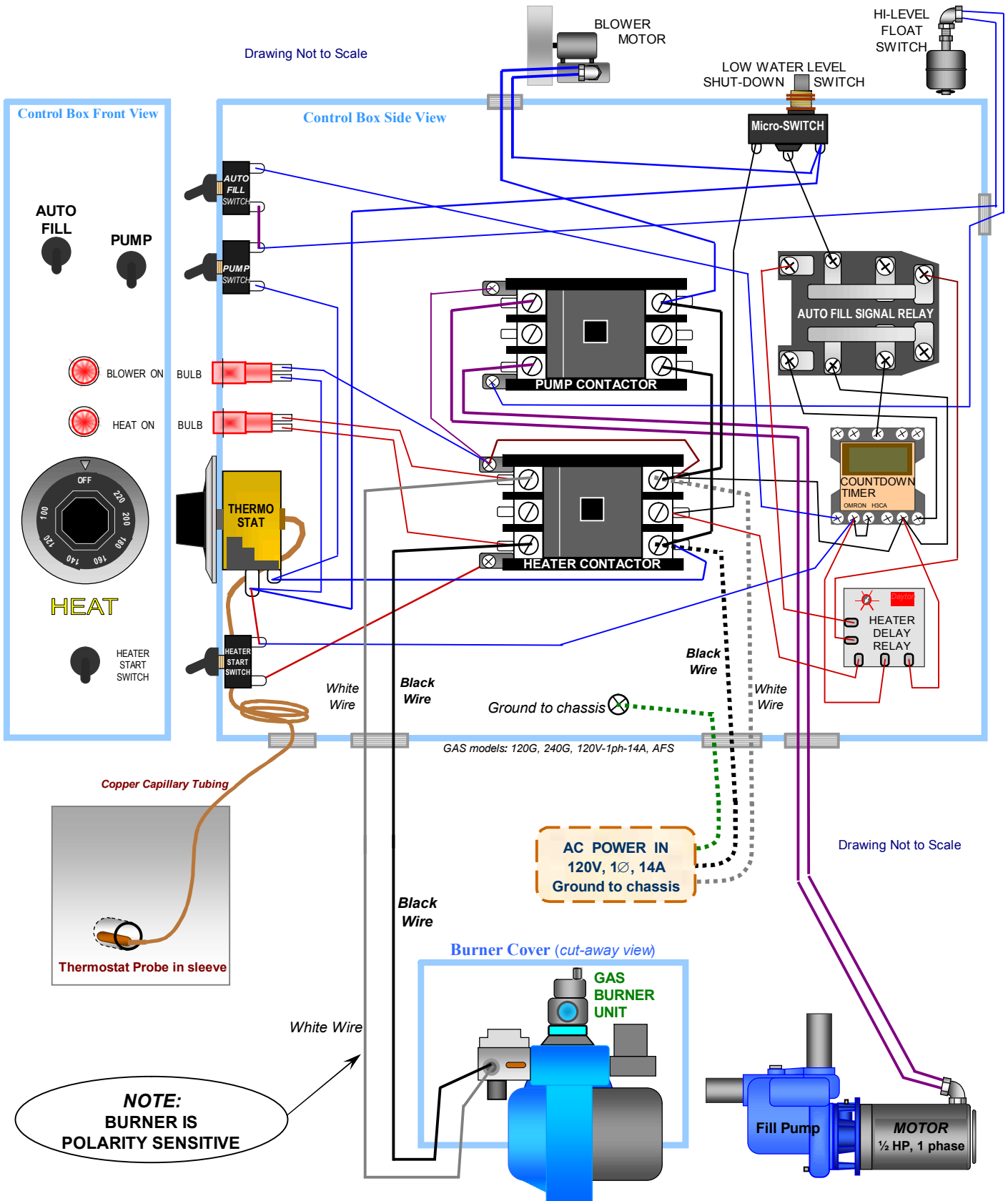
AC POWER IN
480V, 3Ø, 20A
Ground to chassis



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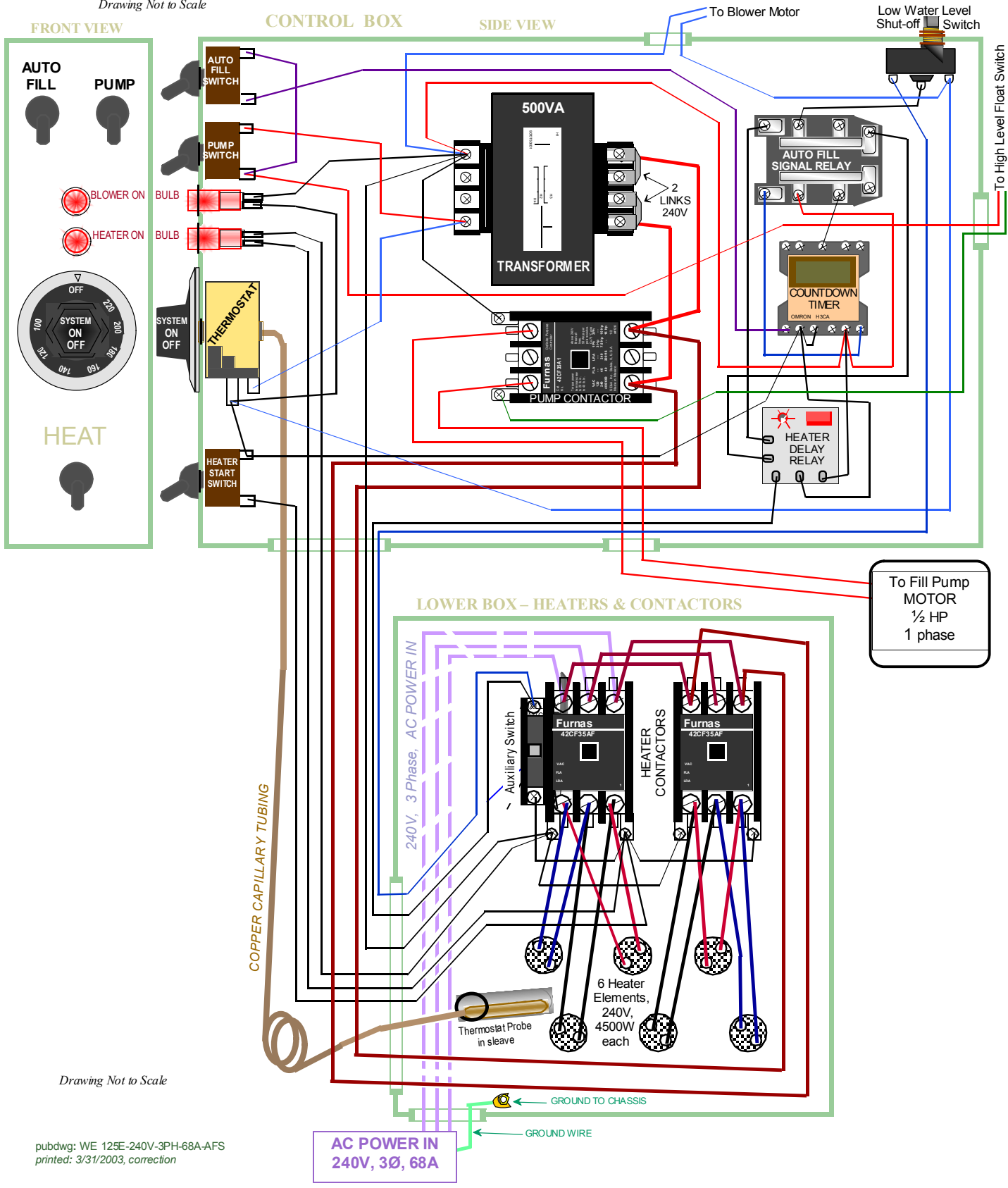
Wiring Diagram for : WATER HEATER EVAPORATOR		Models: 120G, 240G, 120G-SS, 240G-SS
dwg: WE-120G240G-120V-1PH-13A-AFS BC-10-28-2002 / latest rev. 09-29-2014		with AUTO FILL SYSTEM
GAS Heated with Options	AFS with 70SFP (Self-priming Fill Pump)	Manufactured 1999 through 2014 120Volt / 1Ø (single phase) / 14Amps



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Wiring Diagram for : WATER HEATER EVAPORATOR models: **125E and 125E-SS**
with AUTO FILL SYSTEM Manufactured **1999 through 2014**
ELECTRIC Heated with Options **AFS with 70SFP (Self-priming Fill Pump)** **240Volt / 3Ø (three phase) / 68Amps**

Drawing Not to Scale



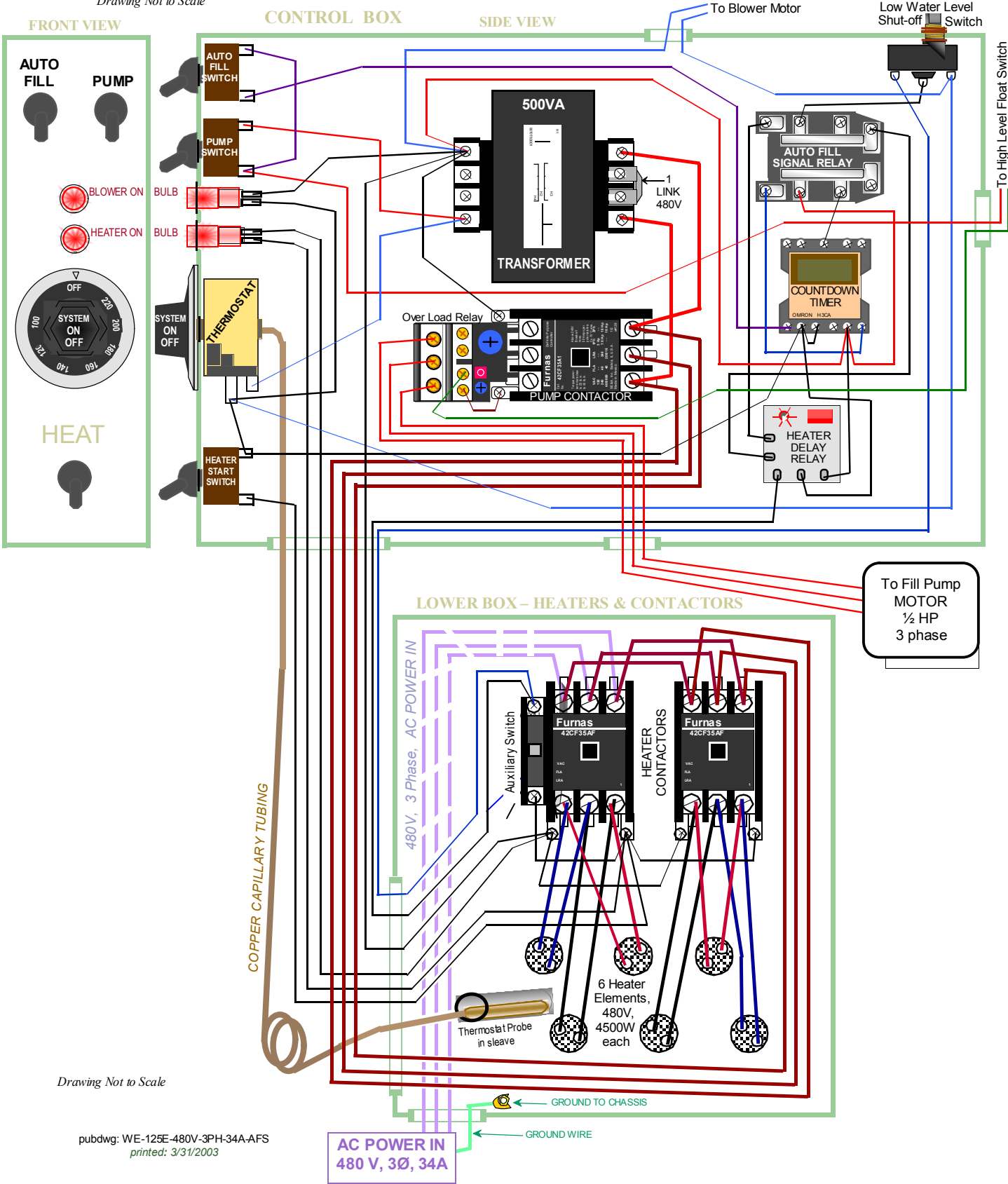
Drawing Not to Scale

pubdwtg: WE 125E-240V-3PH-68A-AFS
 printed: 3/31/2003, correction

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<p style="text-align: center;">Wiring Diagram for :</p> <p style="text-align: center;">WATER HEATER EVAPORATOR</p> <p style="font-size: small;">pubdwg: WE-125E-480V-3PH-34A-AFS BC-03-22-2002 / latest rev. 2014</p> <p style="text-align: center;">ELECTRIC Heated with Options</p>	<p>with AUTO FILL SYSTEM</p> <p>AFS with 70SFP (Self-priming Fill Pump)</p>	<p style="text-align: center;">models: 125E-480 and 125E-SS-480</p> <p style="text-align: center;">Manufactured 1999 through 2014</p> <p style="text-align: center;">480Volt / 3Ø (three phase) / 34Amps</p>
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Drawing Not to Scale



Drawing Not to Scale

pubdwg: WE-125E-480V-3PH-34A-AFS
printed: 3/31/2003

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Pump / Auto-Fill System / Hose Assembly

Parts List

Units produced year 2000 forward

WE-204	Fill Pump Contactor
WE-204-A42	Overload Relay (for 480 Volt machines only)
WE-SFP209	Fill Pump Momentary Toggle Switch
WE-SFP303	Fill Pump Motor Shaft Seal
WE-SFP304	Fill Pump Large O-Ring
WE-SFP306	Fill Pump To Motor Adapter
WE-SFP 331	Fill Pump Assembly (Pump Body, Impeller, Adapter, Seal, O-Ring) -Motor not Included.
WE-SFP332-1ph	Fill Pump Motor. 1/2 HP, 1 Phase. (For 120V and 240V Machines)
WE-SFP332-3ph	Fill Pump Motor. 1/2 HP, 3 Phase (For 480V Machines)
WE-SFP333	Fill Pump Impeller
WE-SFP334	Fill Pump Main Casting (Fill Pump Body, i.e. case & volute)
WE-SFP341-DV	3- Way Diverter Ball Valve (std 2" NPT)
WE-AFS 210	Auto Fill On/Off Toggle Switch
WE-AFS222	Pump Run Countdown Timer
WE-AFS223	Heater Shutdown Delay Cube Timer
WE-AFS224	Auto Fill DPDT Signal Relay
WE108	High Level Backup Float Switch
WE-SDH-20H	Vacuum Hose, 1 1/4" Diameter x 20'.(additional lengths available per quotation)
WE-SDH-QK	Pump To Hose Quick Disconnect Kit
WE-SDH-FV	Combination Foot Valve/Suction Strainer At Vacuum Hose Inlet

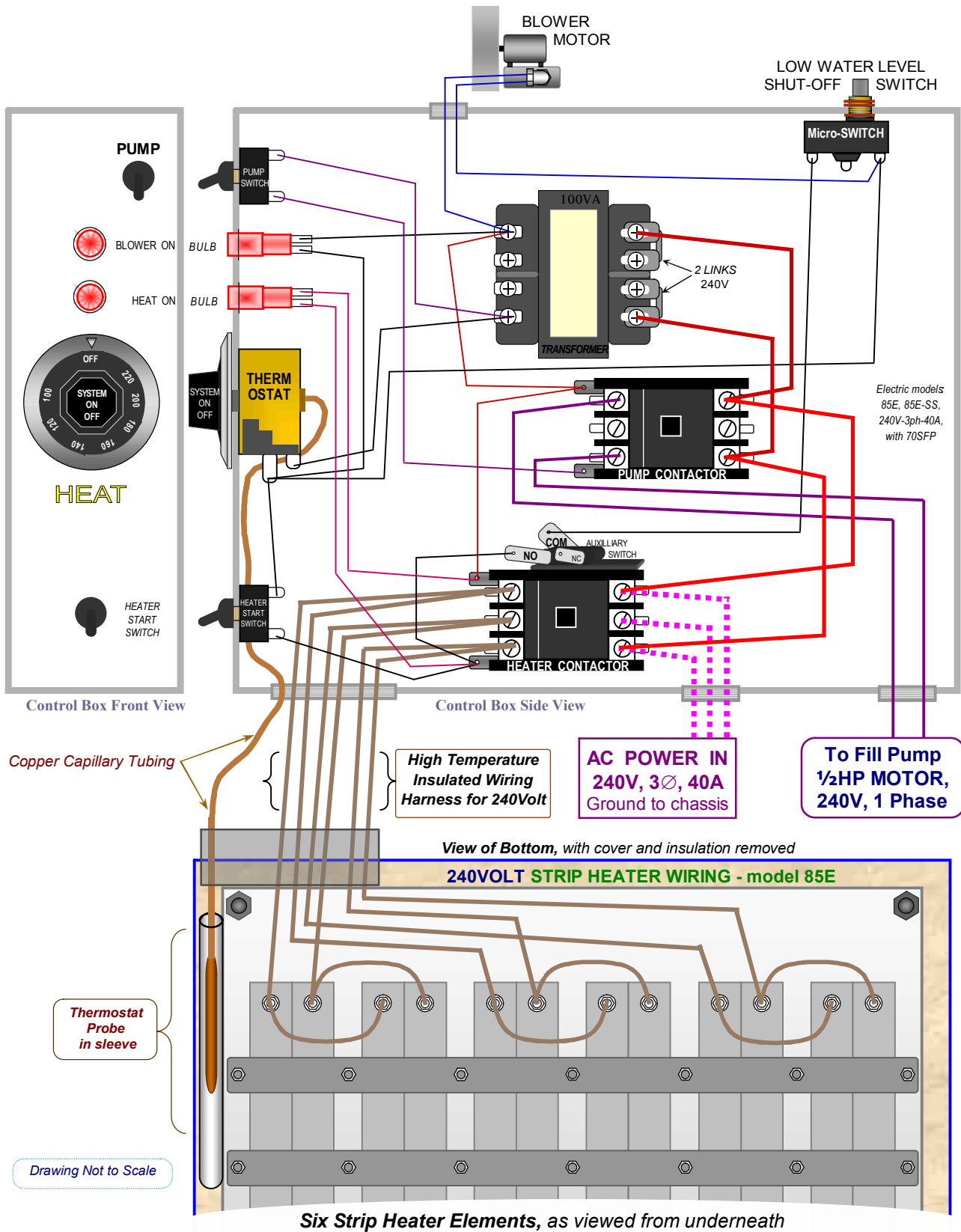
All Prices are subject to change without notice.

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

name: _____ phone: _____

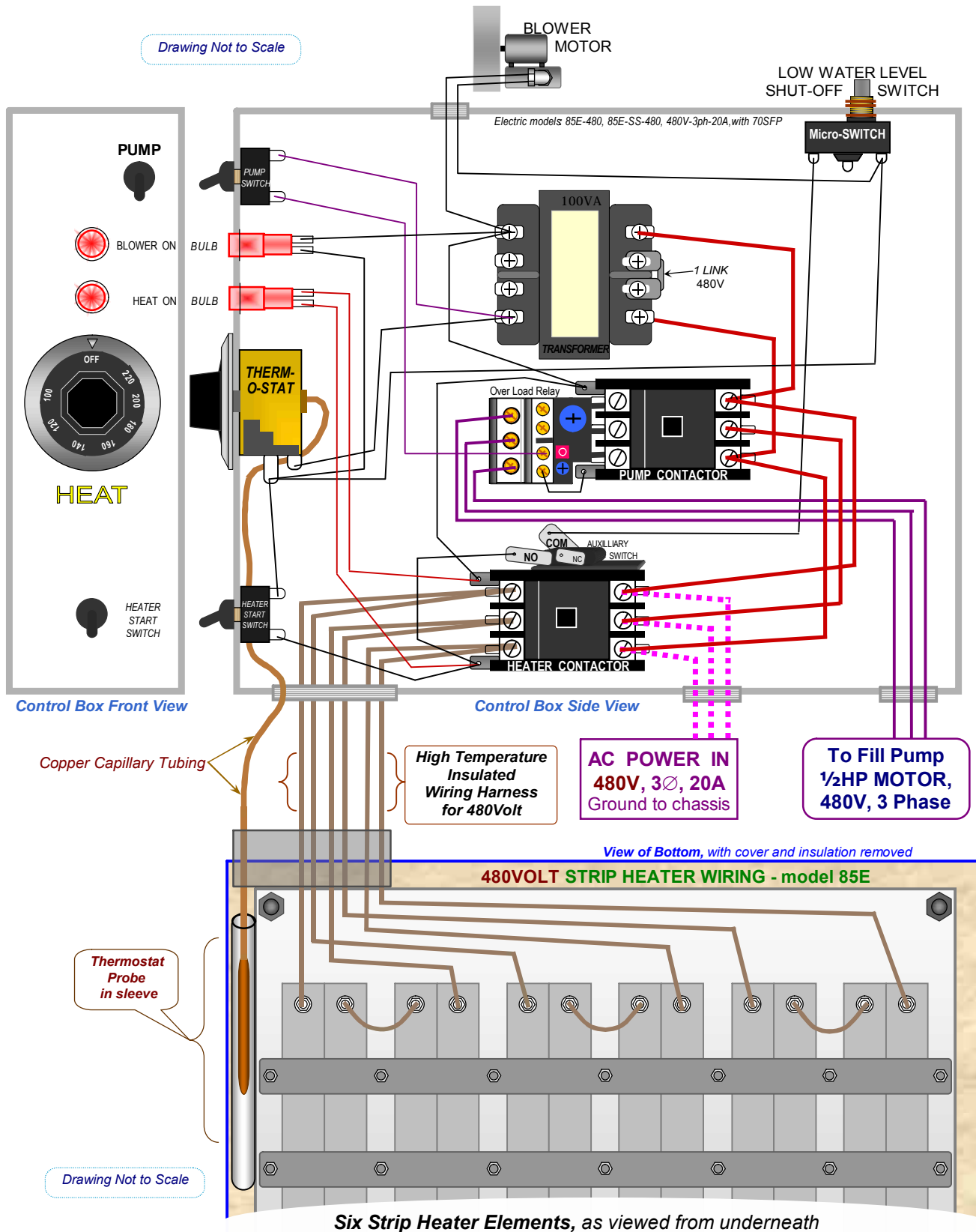
For best results, please provide the unit's Serial Number, and Model Number of the Evap, when inquiring about Parts.

Wiring Diagram for :		WATER HEATER EVAPORATOR	models: 85E, 85E-SS
dwg: we 85E-240V-3PH-40A-70SFP-no-afs M-L.001 BC-10-31-2002 / corr. 5-12-03 / rev. 12-03-2013 / latest rev. 09-29-2014		Manufactured 1999 through 2014	
Electric Heated with Option		With FILL PUMP Only, No AFS	
		240Volt / 3Ø (three phase) / 40Amps	



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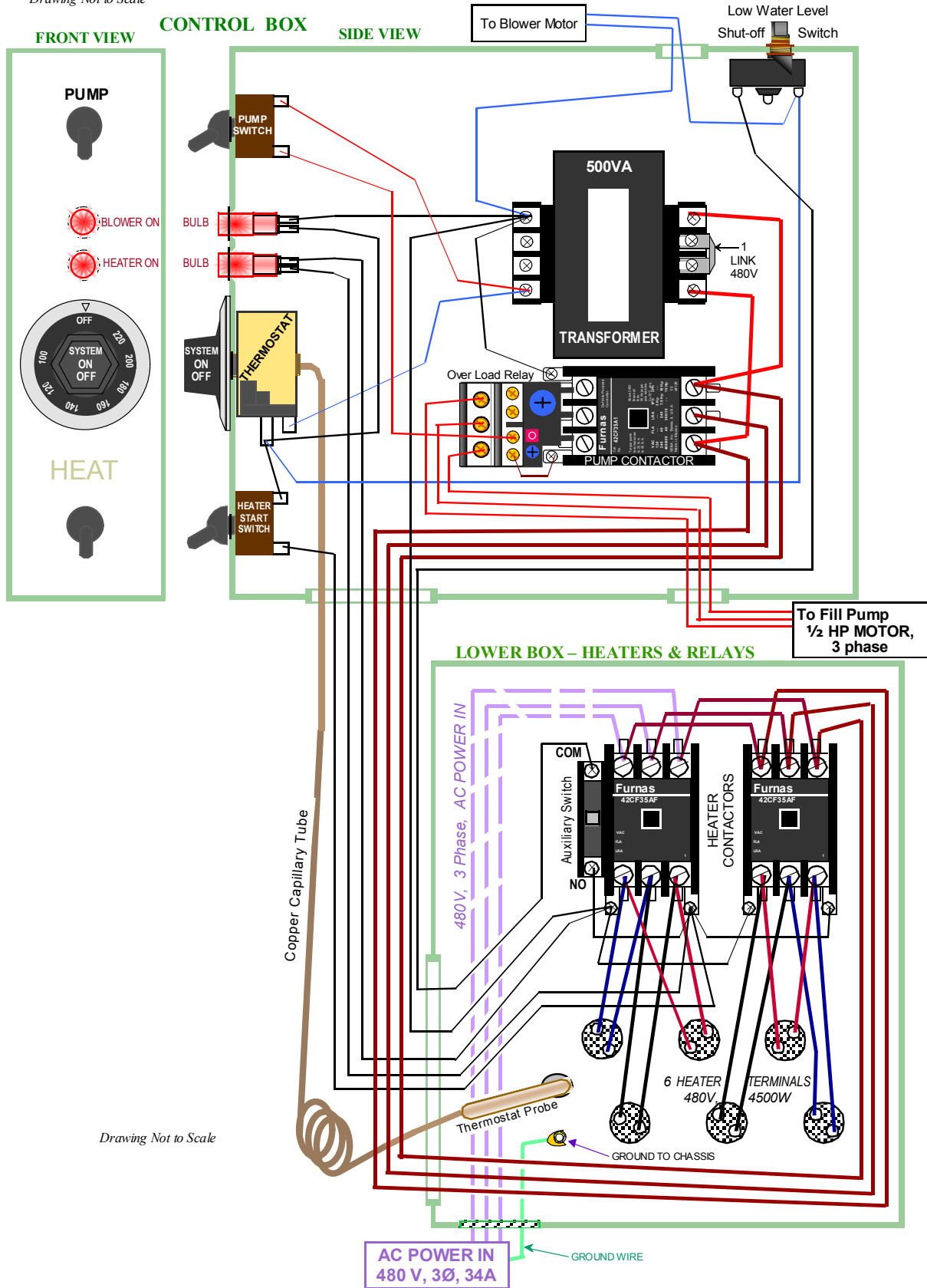
Wiring Diagram for :		models: 85E-480, 85E-SS-480
WATER HEATER		Manufactured 1999 through 2014
EVAPORATOR		480Volt / 3Ø (three phase) / 20Amps
dwg: we-85E-480V-3PH-20A70SFP-no-afs BC-10-31-2002 / rev.12-03-2013 / latest rev.09-29-2014	480V Electric Heated with Option	With FILL PUMP only, NO AFS



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Wiring Diagram for :		WATER HEATER	models: 125E-480 and 125E-480-SS
dwg: WE-125E-480V-3PH-68A-NO-FP-NO-AFS BC-08-08-2000 / latest rev. 09-29-2014		EVAPORATOR	manufactured 1999 through 2014
480V Electric Heated with Option	with FILL PUMP only, NO AFS	480Volt / 3Ø (three phase) / 34Amps	

Drawing Not to Scale



Drawing Not to Scale

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REMOVAL of IMPELLER for Replacement of PUMP SEAL (SFP303)

DISCONNECT POWER BEFORE PROCEEDING

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.

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 un-screw 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 !

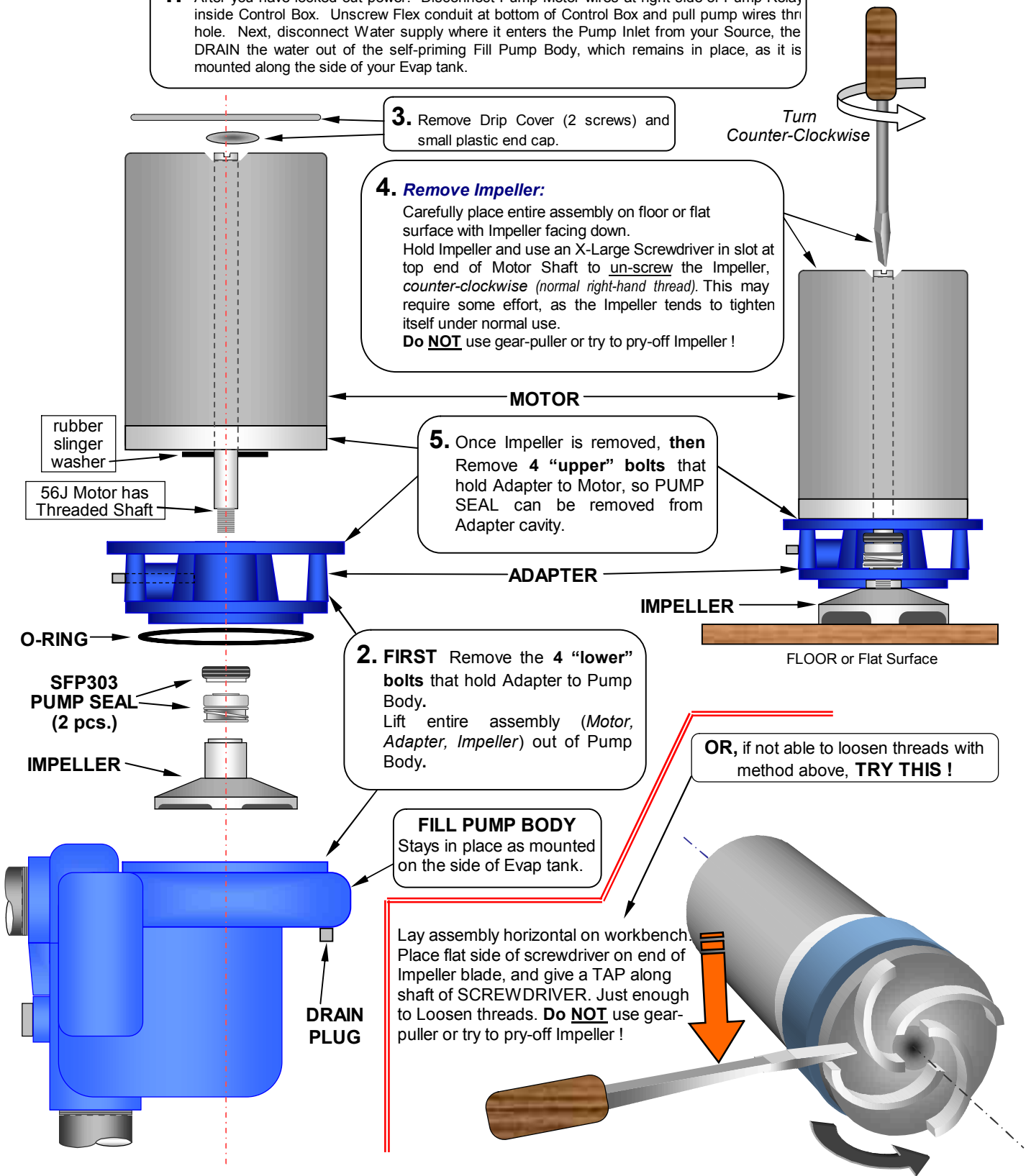
5. Once Impeller is removed, then Remove 4 "upper" bolts that hold Adapter to Motor, so PUMP SEAL can be removed from Adapter cavity.

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

FILL PUMP BODY
Stays in place as mounted on the side of Evap tank.

Lay assembly horizontal on workbench. Place flat side of screwdriver on end of Impeller blade, and give a TAP along shaft of SCREWDRIVER. Just enough to Loosen threads. **Do NOT** use gear-puller or try to pry-off Impeller !

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



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 seat.*

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:

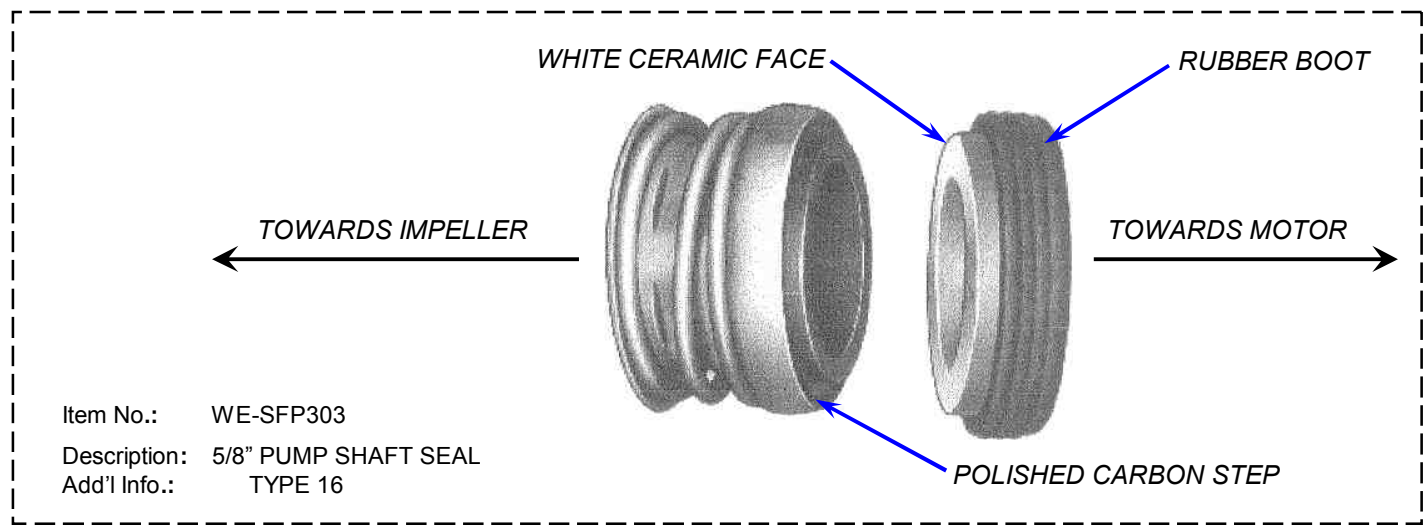
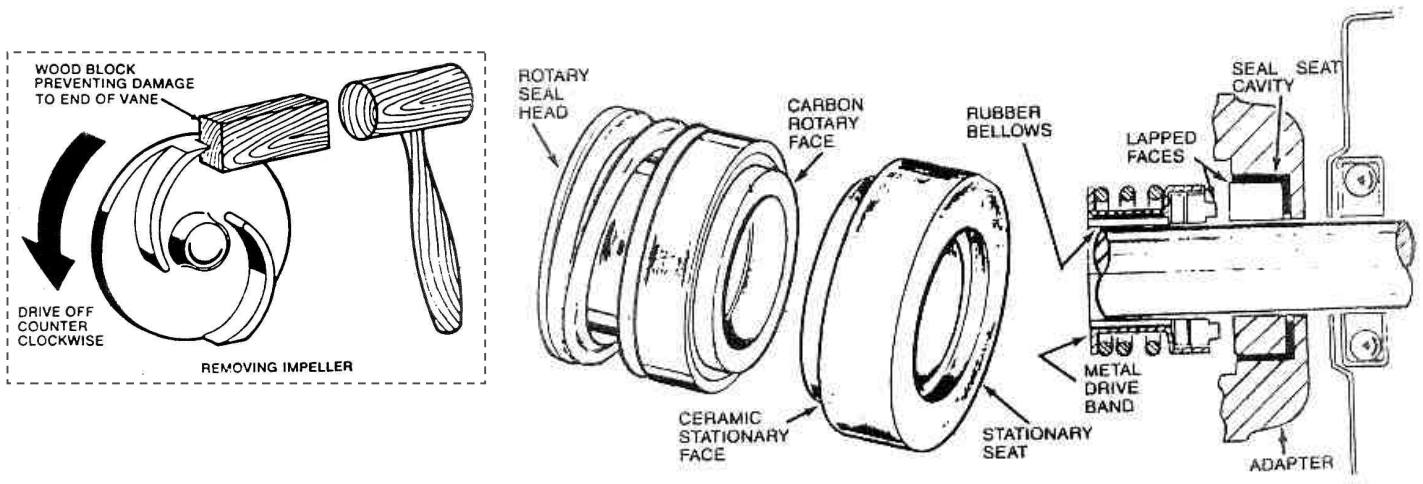
Clean seal cavity in pump adapter. Lubricate rubber "O" –Ring or rubber cup and press seat firmly and squarely into seal cavity with lapped face up. Must be pushed square and all the way into the cavity. Be careful not to scratch lapped face. Use a clean, soft cloth to protect seal face.

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.



SEALED FILL PUMP and MOTOR PARTS LIST

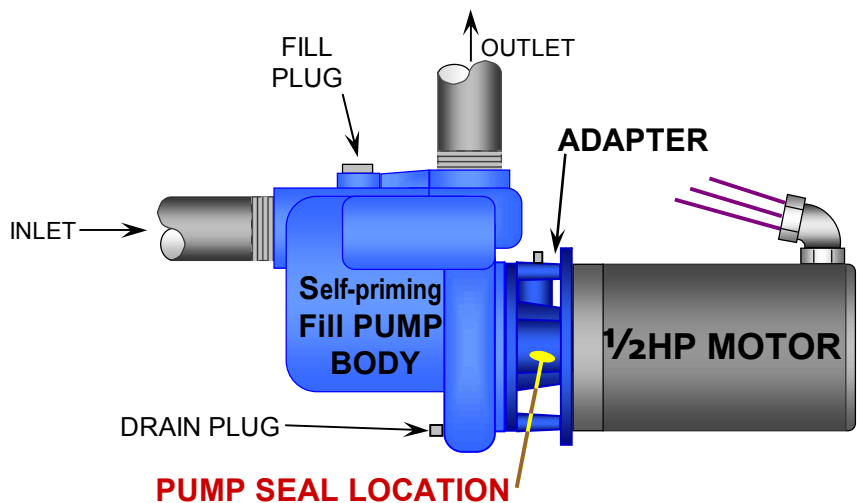
For Water Heater Evaporators with:

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

<i>For Models: 85E, 125E, 120G, 240G, 375G,</i>		<i>also, earlier models 85G, 90G, 255G</i>
PSK300	PUMP SEAL KIT - For all units !	Includes: 2 SEALS (2 complete 2pc assemblies) with 2 Lube Packets, and 1 O-Ring
Item No.	Item Name	Description
WE-SFP303	Fill Pump SEAL , One complete 2 piece assembly Only !	Each complete Seal consists of 2 pieces, See Diagrams.
WE-SFP304	Fill Pump O-RING	4½" diam. rubber O-ring, Dash#246
WE-SFP306	Fill Pump ADAPTER	connects motor to pump - cast iron
WE-SFP331	FILL PUMP ASSEMBLY ..No motor, ...No pipes, and No Diverter Valve	Includes: cast-iron Pump Body, Adapter, Impeller, Seal, and O-ring
WE-SFP332-1ph	Fill Pump MOTOR, ½HP, 1-phase	For 120Volt or 240Volt EVAP
WE-SFP332-3ph	Fill Pump MOTOR, ½HP, 3-phase	For 480Volt EVAP
WE-SFP333	Fill Pump IMPELLER . . . for ½HP Motor	4.0" diameter
WE-SFP334	Fill Pump BODY (Self-priming Pump case)	pump inlet & outlet - cast iron
<i>Note: IMPELLER and FILL PUMP may be Different than Above, IF Evap Unit was built before 1996 !</i>		
WE-SFP340-1ph	Pump End with 1-phase-Motor Assembly, Ready to Install on Your Existing Fill Pump Body .	Includes: ½HP-1phase-Motor , Adapter, Impeller, Seal, O-Ring, 8-bolts. (NO pipes or valve) (NO volute body)
WE-SFP340-3ph	Pump End with 3-phase-Motor Assembly, Ready to Install on Your Existing Fill Pump Body .	Includes: ½HP-3phase-Motor , Adapter, Impeller, Seal, O-Ring, 8-bolts. (NO pipes or valve) (NO volute body)

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.



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: _____