

EEMAX PROADVANTAGE

ELECTRIC INSTANTANEOUS WATER HEATER INSTALLATION GUIDE AND OWNERS MANUAL

MODELS COVERED

**Triple Module Models PA018208T2T,
PA024208T2T, PA018277T2T, PA024277T2T,
PA032277T2T Single Phase Model PA028240T2T**

WARNING

BEFORE ATTEMPTING INSTALLATION OF THIS UNIT OR MAKING ANY ADJUSTMENTS TO THE UNIT ALWAYS BE SURE MAIN CIRCUIT BREAKER IS OFF TO PREVENT DANGER OF SERIOUS ELECTRIC SHOCK.

INSTALLER/ CONSUMER RESPONSIBILITIES

PLEASE TAKE THE TIME TO READ NOT ONLY THIS MANUAL BUT ALSO THE WARRANTY CARD ENCLOSED. WARRANTY OF THIS HEATER WILL DEPEND ON PROPER INSTALLATION AND OPERATION. THE WARRANTY SHALL BE VOID IF THE DESIGN OR STRUCTURE OF THE WATER HEATER HAS BEEN ALTERED IN ANY WAY WHATSOEVER. THE MANUFACTURER OF THIS WATER HEATER WILL NOT BE LIABLE FOR ANY DAMAGES BECAUSE OF FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OUTLINED ON THE FOLLOWING PAGES.

IF YOU REQUIRE ANY HELP OR HAVE ANY QUESTIONS RELATING TO THE INSTALLATION OR PERFORMANCE OF THIS HEATER, PLEASE CALL OUR TECHNICAL SERVICE DEPARTMENT TOLL-FREE:

1-800-543-6163

HAVE THE INFORMATION LISTED BELOW BEFORE CALLING

MODEL :	ELEMENT RESISTANCE:	OHMS
SERIAL NO :	SWITCH ON FLOW RATE:	GPM
INSTALLATION DATE :	OPERATING TEMPERATURE MIN	MAX

GENERAL SAFETY

The “Eemax ProAdvantage” heater is specifically designed to take in hot or cold water and heat it to temperatures suitable for normal domestic usage up to a maximum of 140 F(60 C). To obtain optimum performance and energy savings, the unit should be located as near as possible to the point of use. “Thermostatic” models indicated by the letters T2T after the model number, these models and only these, can be fed with pre-heated water and be used to boost temperature

When removing and re-installing the cover make sure to use the ground screw provided. There are a total of 5 screws that affix the cover to the unit. If you are missing any call technical support at 1-800-543-6163.

Also, ensure that the pipes are clear of installation debris before fitting the heater.

WARNING

FAILURE TO **GROUND** THE SYSTEM MAY RESULT IN DEATH OR SERIOUS INJURY.

ENSURE TO DISCONNECT ALL POWER SUPPLIES BEFORE SERVICING

THIS HEATER MUST HAVE **DEDICATED INDEPENDENT 208V 3 PHASE, 240V 3 PHASE , 480/277V 3 PHASE** CIRCUITS, USING CORRECTLY RATED WIRES AND CIRCUIT BREAKERS. PER UL 499, 18.4 THE RATING OF THE BRANCH-CIRCUIT OVERCURRENT PROTECTIVE DEVICE SHALL BE 150% OF THE RATING OF THE PRODUCT.

DO NOT USE SPACE SAVING BREAKERS.

WARNING

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE **DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE**. REFER TO THIS MANUAL FOR ASSISTANCE OR CONSULT THE LOCAL ELECTRIC UTILITY FOR FURTHER INFORMATION.

WARNING

HAZARD OF ELECTRICAL SHOCK! BEFORE REMOVING THE COVER OR SERVICING THE WATER HEATER, MAKE SURE THE ELECTRICAL SUPPLY TO THE WATER HEATER IS TURNED “OFF”. FAILURE TO DO THIS COULD RESULT IN **DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE**. **NOTE: UNIT HAS MULTIPLE ELECTRICAL CONNECTIONS.**

I. MOUNTING THE UNIT

1) The unit should be mounted as close to the point of use as possible.

Do not install the heater above a faucet or “point of use” because the siphoning effect may drain the heater which can cause premature element burn out. If the unit must be installed at a higher elevation, you must install spring loaded check valves on both the inlet and outlet of the water heater.

2) This unit must only be mounted in a vertical position with the **water fittings positioned at the bottom of the unit**. Mounting other than in the vertical position **will** cause element burn out and permanent damage to the water heater.

3) The cold water inlet is on the right hand side and the hot water outlet is on the left hand side as marked by the fittings of the unit. Under **NO** circumstances can these be reversed.

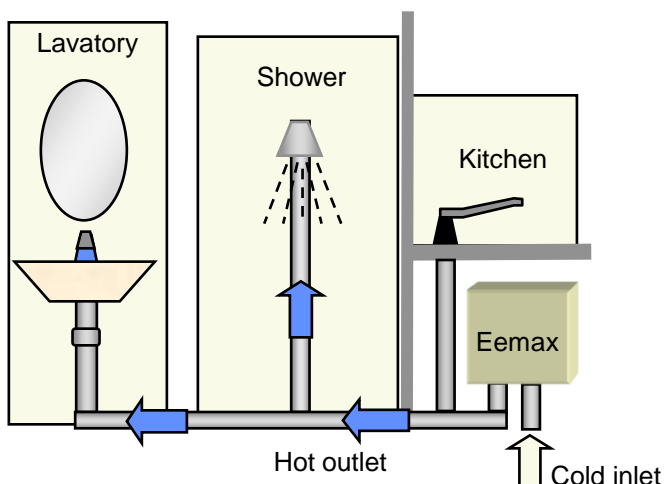
4) Leave a minimum of 8” above the unit for easy replacement of the element.

5) The heater should be fixed to the wall using **all** four mounting holes of the backplate. Use an appropriate fastener for the weight. For the unit to be mounted against hollow walls, we suggest using steel wall anchors with the correct grip range, and #10-32 screws at a minimum.

NOTE: The heater should be installed **below** the level of all hot water outlets serviced by this heater. Otherwise install spring loaded check valves on both the inlet and outlet.

NOTE: PRESSURE AND TEMPERATURE RELIEF VALVE

These units are not required by UL to have a Pressure and Temperature Relief Valve (PTRV). You should check with local codes to find out if one is required in your area. If local codes require the use of a temperature and pressure relief valve it should be installed on the outlet hot water pipe before the outlet ball valve.



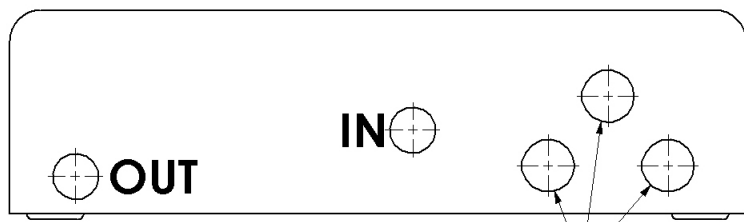
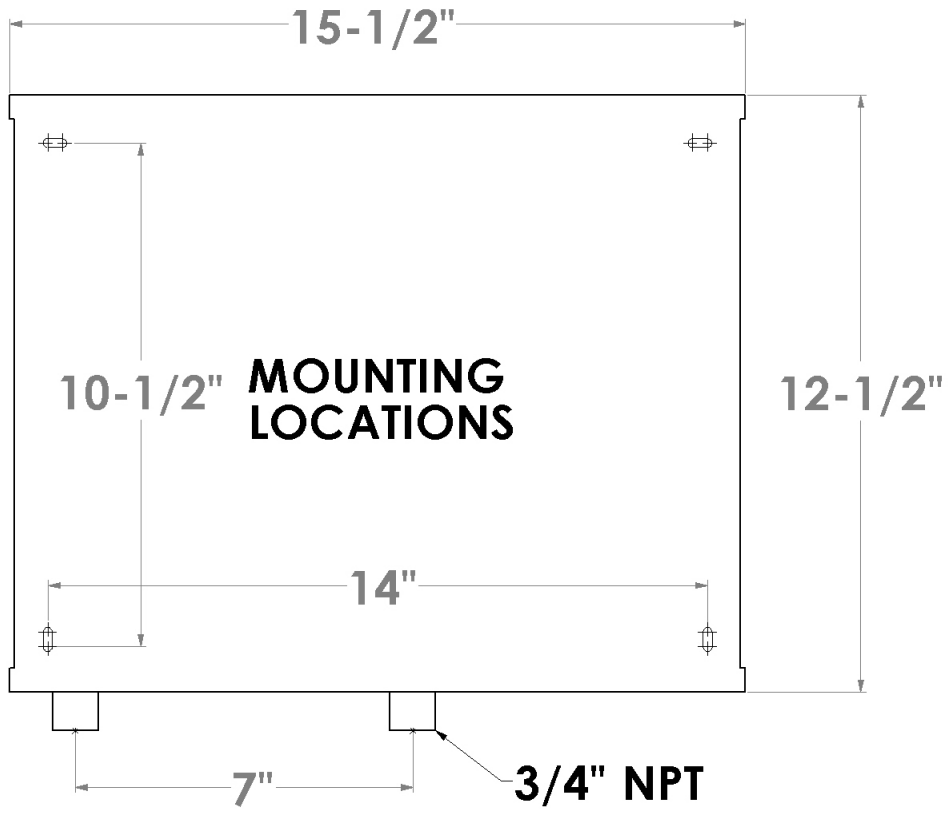
MODELS:

PA ___ 208 - * 3Φ 208V - Series 3
PA ___ 240 - * 1Φ 240V - Series 3
PA ___ 277 - * 3Φ 277/480V - Series 3

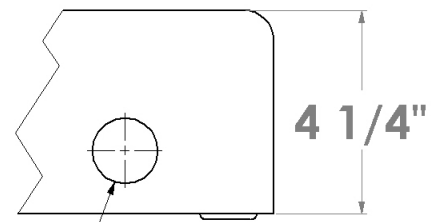
Requirements:

Max Output: 18.0 kW @ 208 volts
24.0 kW @ 208 volts
18.0 kW @ 277 volts
24.0 kW @ 277 volts
32.0 kW @ 277 volts
28.0 kW @ 240 volts

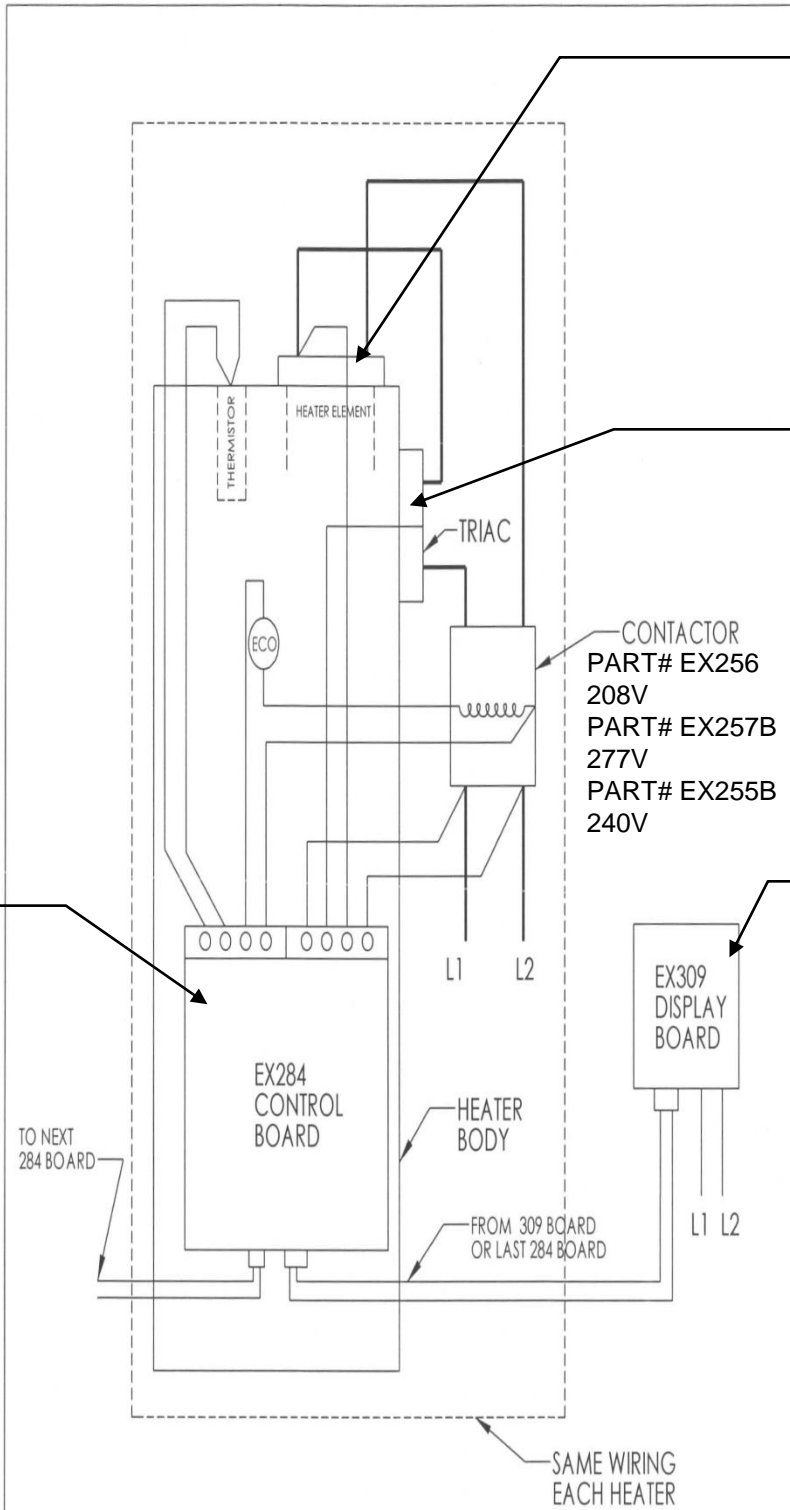
About 0.70-4.0 GPM at showering temperature.



SINGLE PHASE
ELECTRICAL
CONNECTIONS
(1-1/8" 3 PL)



3 PHASE
ELECTRICAL
CONNECTION
(1-3/8")



Replacement Elements

- PA018208T2T- EX720
- PA024208T2T- EX560
- PA018277T2T- EX1280
- PA024277T2T- EX960
- PA032277T2T- EX720
- PA028240T2T- EX630

TRIAC
PART# EX18

CONTACTOR
PART# EX256
208V
PART# EX257B
277V
PART# EX255B
240V

DISPLAY BOARD
PART# EX309-240V
208/240V
PART# EX309-277V
277V

CONTROL BOARD
PART# EX284E-309-240V
208/240V
PART# EX309-284-277V
277V

TO NEXT
284 BOARD

L1 L2

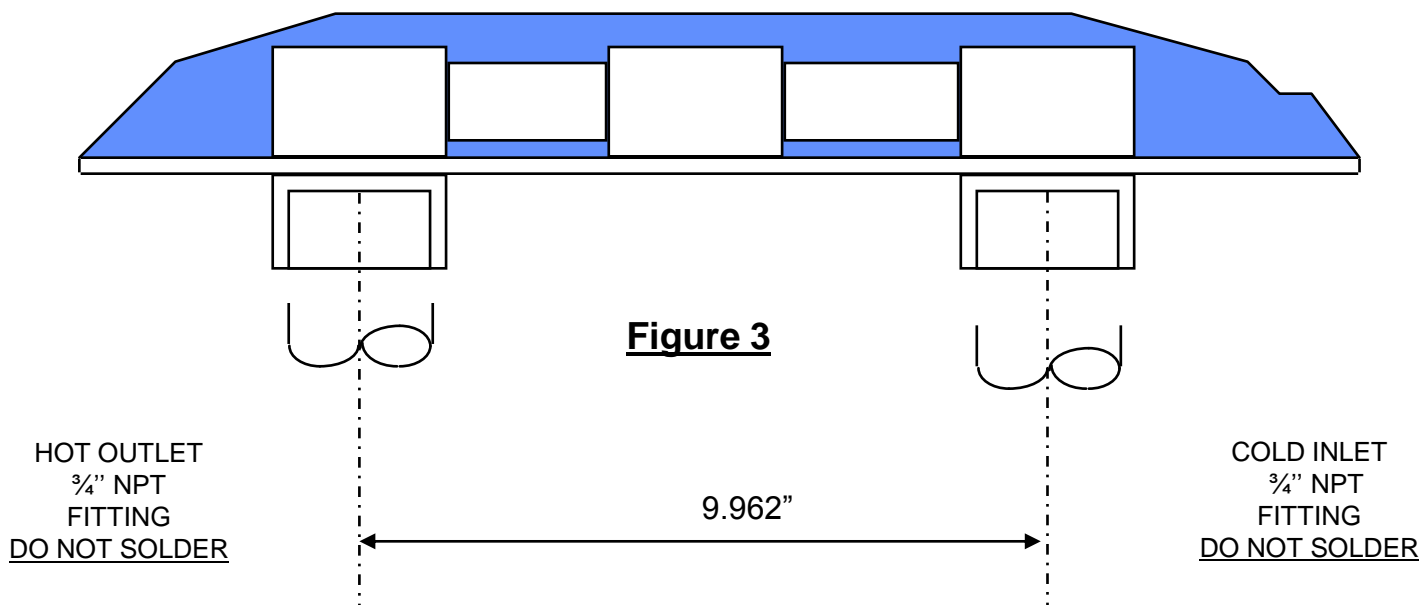
L1 L2

SAME WIRING
EACH HEATER

<p>PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <INSERT COMPANY NAME HERE>. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <INSERT COMPANY NAME HERE> IS PROHIBITED.</p>		DIMENSIONS ARE IN INCHES		NAME		DATE		
		TOLERANCES:		DRAWN	REV	7/10/09		<p>HEATER WIRING</p>
		FRACTIONAL ±		CHECKED			<p>SIZE DWG. NO. EX1031 REV.</p>	
		ANGULAR: MACH ± BEND ±		ENG APPR.				
TWO PLACE DECIMAL ±		MFG APPR.						
THREE PLACE DECIMAL ±		G.A.			SCALE: 1:1		SHEET 1 OF 1	
MATERIAL		COMMENTS:						
NEXT ASSY	USED ON	FINISH						
APPLICATION	DO NOT SCALE DRAWING							

II. PLUMBING HOOK-UP

- 1) The unit is supplied with $\frac{3}{4}$ " NPT fittings (Figure 3), USE THESE. DO NOT USE PIPE DOPE AND DO NOT SOLDER TO THE INLET OR OUTLET.
- 2) Take care to ensure that the pipes are correctly aligned with the inlet and outlet bosses in order to avoid excessive stress on the heater body molding.
NOTE: When soldering pipe joints remove heater from the wall. Serious damage can occur if any soldering is done while pipes are connected to the heater.
When tighten the fittings make sure to secure the fitting inside the heater to make a tight connection.
Run water through the supply pipe to remove all debris from the pipe before connecting the heater. Failure to do so could cause damage to the flow switch.
- 3) Install isolating valves (full flow ball valve type) on both inlet and outlet pipes. This allows unit to be isolated for maintenance purposes. (Fig. 1B)
- 4) When all plumbing is complete, fully check the system for water leaks at all the plumbing connections. If a leak is present take corrective action. Fully open both inlet and outlet BALL VALVES.
Run all the hot water outlets fed by this heater one at a time, for a minute or two, until the water flow is continuous, free from "gulping" and from all visible air pockets.



NOTE:
ALL MOUNTING AND PLUMBING MUST BE COMPLETE BEFORE YOU
PROCEED WITH ELECTRICAL HOOK-UP.

TEST THE INSTALLATION FOR LEAKS BEFORE CONNECTING THE
ELECTRICAL SUPPLY.

III. ELECTRICAL HOOK-UP

WARNING

THIS UNIT HAS MULTIPLE POWER SUPPLIES. ENSURE TO DISCONNECT ALL POWER SUPPLIES BEFORE SERVICING THE WATER HEATER.

“Eemax ProAdvantage” heaters are manufactured to the following specifications:

Figure 4

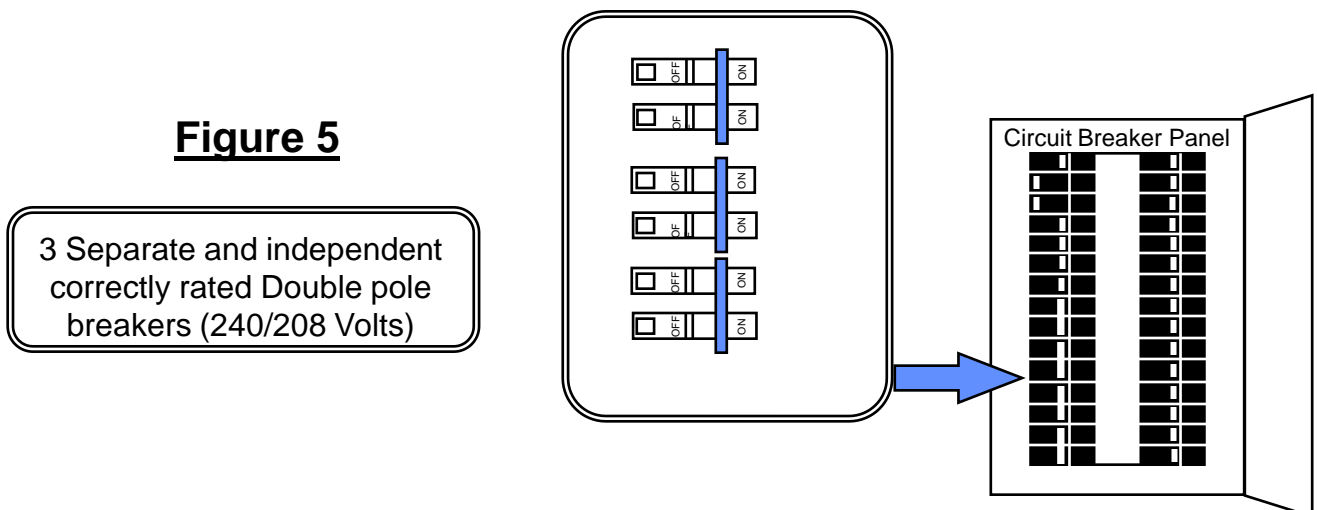
MODEL TYPE	Voltage	kW output	AMPERAGE
PA 018208T2T	208	18	50A /PHASE
PA 024208T2T	208	24	67A/PHASE
PA 018277T2T	277	18	22A/PHASE
PA 024277T2T	277	24	29A/PHASE
PA 032277T2T	277	32	39A/PHASE
PA 028240T2T	240	28	120(3x40)A

This unit must have its own independent circuits, using 3 SETS of UL listed 2 conductor and ground core copper wire cable of the appropriate size protected by 3 separate and independent correctly rated Double Pole Breakers. (240 V, see Figure 5). Three phase models shall utilize UL listed 3 conductor and ground core copper wire cable of the appropriate size protected by correctly rated Triple Pole Breaker. Wire entry into the unit must be made through the hole(s) provided in the flange on the backplate. **Ensure to check national and local building codes.**

The Rating of the branch-circuit over current protective device shall be 150% of the rating of the unit (see chart above) per UL 499 18.4.

The “live” wires should be connected to the slots in the terminal block marked L1, L2 and L3. The ground lead must be connected to the slot marked GND. GROUND MUST BE BROUGHT TO THE “GROUND” AT THE CIRCUIT BREAKER PANEL.

Figure 5



DANGER

FAILURE TO GROUND THE SYSTEM MAY RESULT IN DEATH OR SERIOUS INJURY.

IV COMMISSIONING YOUR HEATER

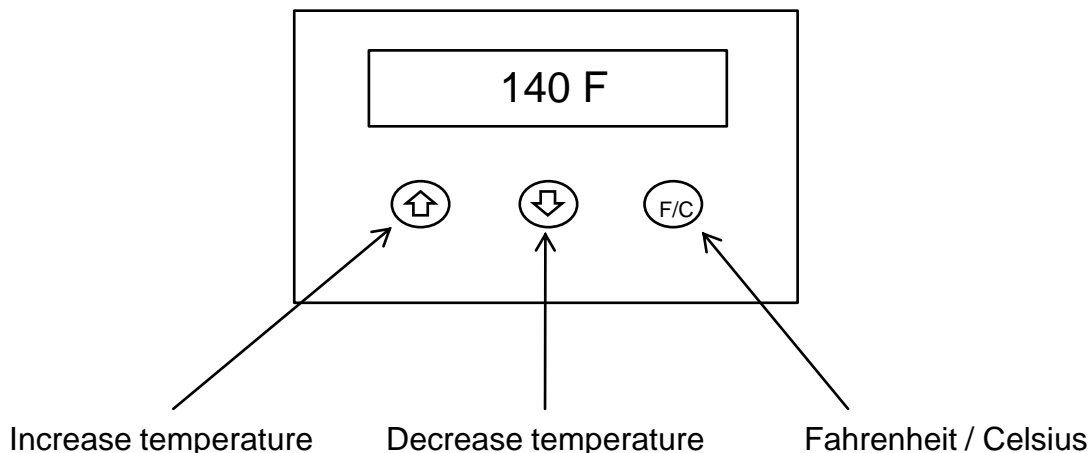
IMPORTANT

BEFORE SWITCHING “ON” THE POWER AT THE MAIN CIRCUIT BREAKER PANEL MAKE SURE THAT THE HOT WATER CIRCUIT IS FREE OF AIR POCKETS OR ELSE PREMATURE FAILURE OF THE ELEMENT WILL OCCUR. TO DO THIS OPEN ALL HOT WATER OUTLETS ONE AT A TIME FOR A MINUTE OR TWO UNTIL THE WATER FLOW IS CONTINUOUS AND FREE FROM “GULPING” AND FREE FROM VISIBLE AIR POCKETS.

- 1) Open fully both inlet and outlet valves at the heater.
- 2) Open any hot water outlet in the system. If the outlet is a “single lever” mixer type turn to the hottest position. Run for one minute to clear all the air from the system.
- 3) Slowly close OUTLET ball valve until the water flow from the faucet just starts to reduce.
NOTE: This process has two effects. One, any air in the system will be purged out. Two, the heater units will be pressurized at the supply pressure. This will prevent the elements free from air pockets while energized
- 4) At this point you may energize the hot water heater. (Note: Unit has 3 separate circuit breakers). Once energized the Thermostatic control touch pad display on the front cover will illuminate. This is where and when you will program your desired temperature. (figure 6 below)

NOTE

Unit will display the programmed temperature, not the actual outlet temperature



To trouble shoot the display board, shut off power to the unit. Press and hold all three buttons. While buttons are depressed, re-energize the unit. If display board is working properly, the word “Yes” will display. If the board has a fault it will display “No”. Call technical support for a replacement.

TROUBLESHOOTING

SYMPTOM "A": NO HEAT, INDICATOR LIGHT OFF

1) ELECTRIC SUPPLY IS OFF

Turn on the **Three** main circuit breakers. Ensure the breakers are properly connected to the relay. L1/L2 from one breaker must correspond with the same relay. You must be able to get 240V across each relay when powered up independently. Do not use space saving breakers.

2) NO OR LOW WATER FLOW

Ensure that the minimum flow rate to switch on your heater is met. "T2T" Models minimum flow rate = 0.7 gallons per minute. Also check that the inlet filter screen is clear from any debris. This is located in the brass inlet boss.

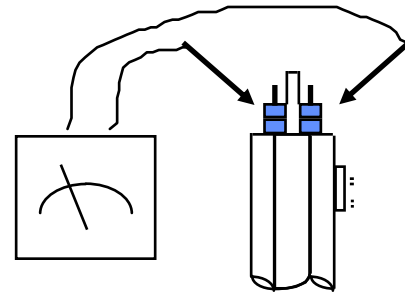
3) WATER CONNECTIONS ARE REVERSED

Cold water inlet = right side, hot water outlet = left side.

4) ELEMENT BURNED OUT

TURN OFF THE FOUR MAIN CIRCUIT BREAKERS!

Using an ohmmeter test the resistance of the heating element across the two threaded termination rods on top of the element. The resistance reading should be roughly 6.0 ohms. If the resistance is much greater than this value, call Eemax for a replacement element.



5) ECO TRIPPED (High Limit Thermostat)

TURN OFF THE FOUR MAIN CIRCUIT BREAKERS!

Reset by pushing in red button on each heater module. If the Eco was tripped it will re-engage.

SYMPTOM "B": NO HEAT OR LOW TEMPERATURE WITH INDICATOR LIGHT ON

1) WATER FLOW TOO HIGH

Reduce the water flow by using an outlet ball valve. See specification sheet for temperature rise.

2) INCORRECT POWER SUPPLY

Make sure that the unit is connected to the voltage supply specified on the rating label on the front cover of the unit and no other.

3) ELEMENT BURNED OUT

TURN OFF THE FOUR MAIN CIRCUIT BREAKERS!

Repeat the steps from paragraph 4 above.

4) ECO TRIPPED (High Limit Thermostat)

TURN OFF THE FOUR MAIN CIRCUIT BREAKERS!

Reset by pushing in red button on each heater module.