

# EEMAX

## ProAdvantage Series 1

### ELECTRIC INSTANTANEOUS WATER HEATER INSTALLATION GUIDE AND OWNER'S MANUAL

#### **MODELS COVERED:**

PA004120T 1Φ 120V	PA010240T 1Φ 240V
PA008208T 1Φ 208V	PA012240T 1Φ 240V
PA005240T 1Φ 240V	PA008277T 1Φ 277V
PA007240T 1Φ 240V	PA010277T 1Φ 277V

### WARNING

READ THE GENERAL SAFETY SECTION AND THE ENTIRE MANUAL BEFORE INSTALLING OR OPERATING THIS WATER HEATER. FAILURE TO FOLLOW THE SAFETY RULES MAY CAUSE THE UNIT TO OPERATE IMPROPERLY, WHICH COULD LEAD TO DEATH, SERIOUS BODILY INJURY AND/OR PROPERTY DAMAGE. READ THE ENCLOSED WARRANTY CARD. WARRANTY OF THIS WATER HEATER WILL DEPEND ON PROPER INSTALLATION AND OPERATION. THE WARRANTY SHALL BE VOID IF THE DESIGN HAS BEEN ALTERED. THE MANUFACTURER OF THIS HEATER WILL NOT BE LIABLE FOR ANY DAMAGES BECAUSE OF FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OUTLINED ON THE FOLLOWING PAGES.

#### **DISCONNECT THE POWER CIRCUIT BEFORE SERVICING.**

THE INSTALLATION MUST CONFORM TO THE INSTRUCTIONS IN THIS MANUAL; ELECTRIC COMPANY RULES; AND LOCAL CODES, OR IN THE ABSENCE OF LOCAL CODES, WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. THESE PUBLICATIONS ARE AVAILABLE FROM YOUR LOCAL GOVERNMENT, PUBLIC LIBRARY, OR ELECTRIC COMPANY.

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 WHEN CALLING :

S/N \_\_\_\_\_ MODEL # \_\_\_\_\_ INSTALL DATE \_\_\_\_\_

## GENERAL SAFETY

The “Eemax ProAdvantage” heater is specifically designed to take in cold or hot water and heat it up to a maximum of 140F (60C). To obtain optimum performance and energy savings, the unit should be located as near as possible to the point of use. The unit is supplied with 1/2” compression fittings.

### **DO NOT SOLDER PIPES WHILE THE UNIT IS INSTALLED**

(serious damage to the electronic flow switch will result).

### **WARNING**

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

### **DISCONNECT THE POWER CIRCUIT BEFORE SERVICING.**

THIS UNIT HAS ONE **DEDICATED INDEPENDENT 120V, 208V, 240V OR 277V** CIRCUIT. USE CORRECTLY RATED WIRES AND CIRCUIT BREAKERS.

U.L. 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, MAY CAUSE **DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE**. REFER TO THIS MANUAL FOR ASSISTANCE OR CONSULT THE LOCAL ELECTRIC UTILITY FOR FURTHER INFORMATION.

### **WARNING**

**WATER HEATERS ARE EQUIPPED FOR ONE VOLTAGE ONLY:** THIS WATER HEATER IS EQUIPPED FOR THE VOLTAGE DISPLAYED ON THE MODEL RATING PLATE. DO NOT USE THIS WATER HEATER WITH ANY OTHER VOLTAGE OTHER THAN THE ONE SHOWN ON THE MODEL RATING PLATE. FAILURE TO COMPLY WITH THIS MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR PROPERTY DAMAGE. IF YOU HAVE ANY QUESTIONS OR DOUBTS CONSULT EEMAX OR YOUR LOCAL ELECTRIC COMPANY.

### **WARNING**

**HAZARD OF ELECTRICAL SHOCK!** BEFORE REMOVING THE COVER OR SERVICING THE WATER HEATER, MAKE SURE ALL ELECTRICAL SOURCES TO THE WATER HEATER ARE TURNED “OFF”. FAILURE TO DO THIS MAY RESULT IN **DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE**.

**NOTE: THIS UNIT HAS ONE DEDICATED INDEPENDENT ELECTRICAL POWER CIRCUIT CONNECTION.**

## 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.

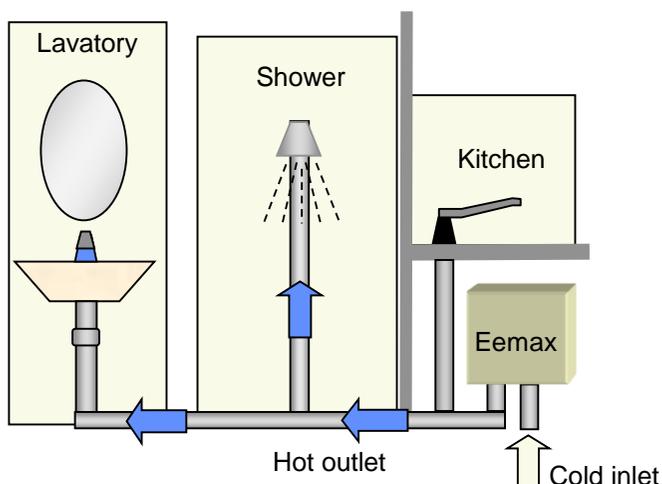
4) Leave a minimum of 8” above the unit for easy replacement of the element.

5) The heater should be fixed to the wall using **all** four mounting holes of the backplate. (Fig.1) 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:

1Φ 120V: PA004120T  
1Φ 208V: PA008208T  
1Φ 240V: PA005240T, PA007240T,  
PA010240T, PA012240T  
1Φ 277V: PA008277T, PA010277T

### Requirements:

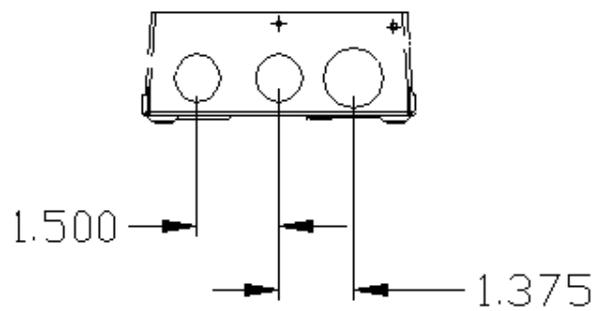
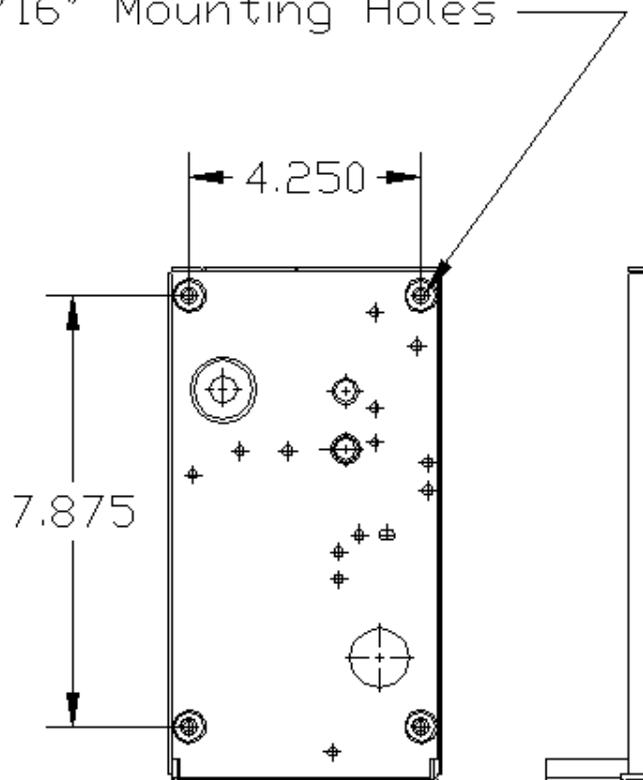
Max Output: 3.5 kW @ 120 volts  
8.3 kW @ 208 volts  
11.5 kW @ 240 volts  
10.0 kW @ 277 volts

About 0.7 - 2.5 GPM at showering temperature.

# Mounting Layout for Series 1 Systems

Fig 1

4 x 3/16" Mounting Holes



## II. PLUMBING HOOK-UP

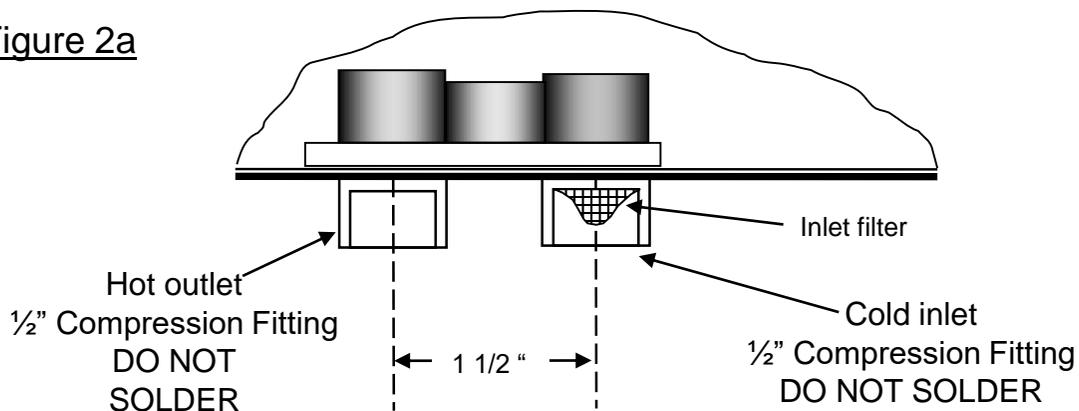
- 1) The unit is supplied with ½" compression fittings (Figure 2a ).
- 2) DO NOT USE PIPE DOPE AND DO NOT SOLDER TO THE INLET OR OUTLET.
- 3) Take care to ensure that the pipes are correctly aligned with the inlet and outlet bosses in order to avoid excessive stress on the heater body molding.

**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.

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.

- 4) Install isolating valves (full flow ball valve type) on both inlet and outlet pipes. This allows unit to be isolated for maintenance purposes. (Fig. 2b)
- 5) When all plumbing is complete, fully check the system for water leaks at all the plumbing connections. If any leaks are present take corrective action. Then fully open both inlet and outlet BALL VALVES, run the hot water outlet fed by this heater for a minute or two, until the water flow is continuous, free from "gulping" and from all visible air pockets.

Figure 2a

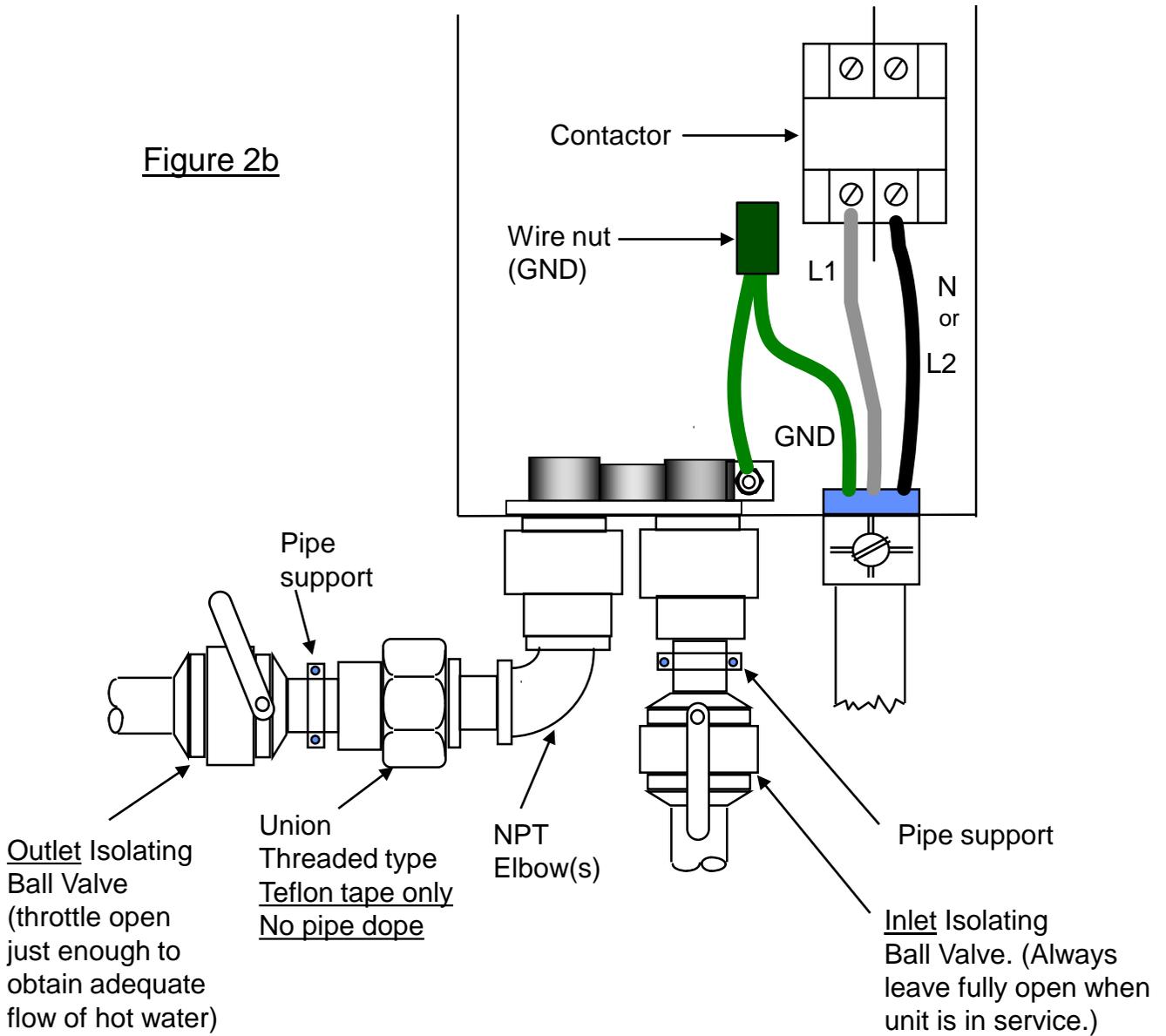


**NOTE:**  
ALL MOUNTING AND PLUMBING MUST BE COMPLETE BEFORE YOU  
PROCEED WITH ELECTRICAL HOOK-UP.

TEST THE INSTALLATION FOR LEAKS BEFORE CONNECTING THE  
ELECTRICAL SUPPLY.

MINIMUM - 8" CLEARANCE ABOVE UNIT

Figure 2b



**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.

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.

### III. ELECTRICAL HOOK-UP

**WARNING**  
**BEFORE DOING ANY WORK ON THE UNIT BE SURE THE BREAKER IS “OFF” TO AVOID ANY DANGER OF SHOCK.**

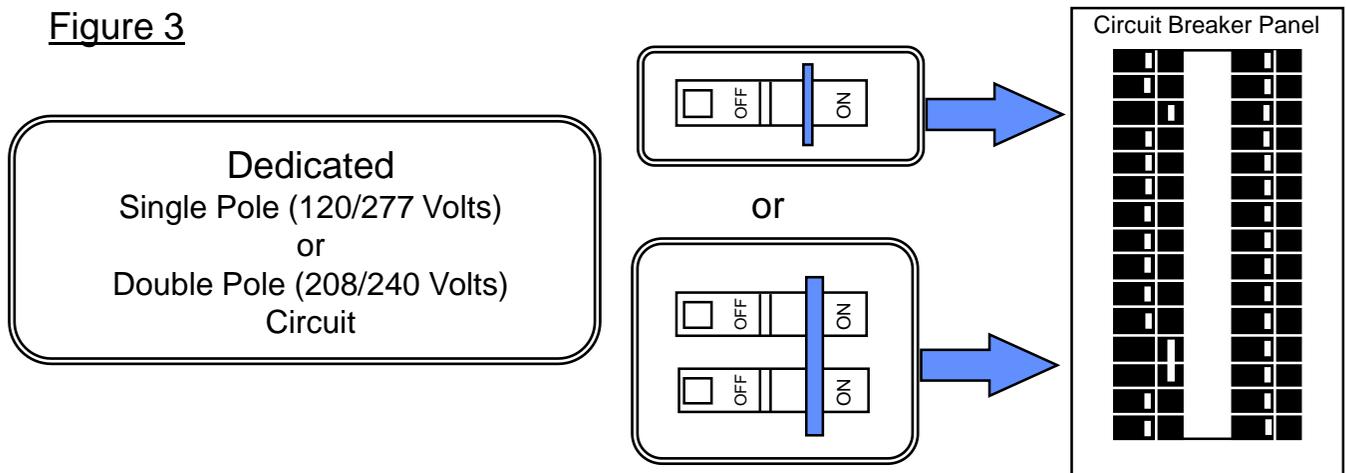
“Eemax ProAdvantage” heaters are manufactured to the following specifications:

Table 1

MODEL TYPE	Voltage	kW output	AMPERAGE
PA004120T	1 $\phi$ 120V	3.5	29
PA008208T	1 $\phi$ 208V	8.3	40
PA005240T	1 $\phi$ 240V	4.8	20
PA007240T	1 $\phi$ 240V	6.5	27
PA010240T	1 $\phi$ 240V	9.5	40
PA012240T	1 $\phi$ 240V	11.5	48
PA008277T	1 $\phi$ 277V	8.0	29
PA010277T	1 $\phi$ 277V	10.0	36

The L1, L2, or N should be connected to the slots in the contactor marked L1 and L2. (see Fig 2b). The ground lead must be connected to the stud marked GND. **GROUND MUST BE BROUGHT TO THE “GROUND” AT THE CIRCUIT BREAKER PANEL.** Use a dedicated circuit with appropriate wiring and circuit breaker configuration which is dictated by the power requirements of the unit. (see Table 1 and Fig 3)

Figure 3



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

## IV COMMISSIONING YOUR HEATER

### IMPORTANT

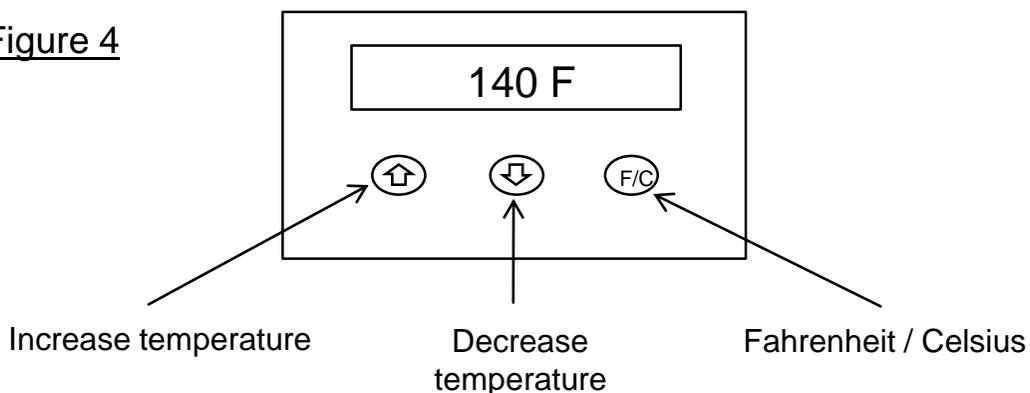
BEFORE SWITCHING “ON” THE POWER AT THE MAIN CIRCUIT BREAKER PANEL MAKE SURE THAT THE HOT WATER CIRCUIT IS FREE OF AIR POCKETS OR ELSE PREMATURE FAILURE OF THE ELEMENT WILL OCCUR. TO DO THIS OPEN ALL HOT WATER OUTLETS ONE AT A TIME FOR A MINUTE OR TWO UNTIL THE WATER FLOW IS CONTINUOUS AND FREE FROM “GULPING”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

- 1) Open fully both inlet and outlet valves at the heater. (see Fig 2b)
- 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 unit will be pressurized up to the supply pressure. This will prevent the elements from having air pockets when energized.
- 4) At this point you may energize the hot water heater. 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.(see Fig 4)

**NOTE: Unit will display the programmed temperature, not the actual outlet temperature**

### Touch Pad Display

Figure 4



To trouble shoot the display board, shut off power to the unit. Press and hold all three buttons, and 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” and you should call technical support for a replacement.

# TROUBLESHOOTING

## SYMPTOM “A”: NO HEAT, INDICATOR LIGHT – OFF

### 1) ELECTRIC SUPPLY IS OFF

Ensure the breaker is properly connected to the contactor. (see Fig 2b)  
Check the main circuit breaker and reset it to “on”. (see Fig 3)

### 2) NO OR LOW WATER FLOW

Ensure that the minimum flow rate to switch on your heater is met.  
Minimum flow rate = 0.70 gallons per minute. Check that the inlet filter screen is clear from any debris. This is located in the brass inlet boss. (see Fig 2a)

### 3) WATER CONNECTIONS ARE REVERSED

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

### 4) ELEMENT BURNED OUT

#### TURN OFF THE MAIN CIRCUIT BREAKER!

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 4-15 ohms. If the resistance is much greater than this value, call Eemax for a replacement element.

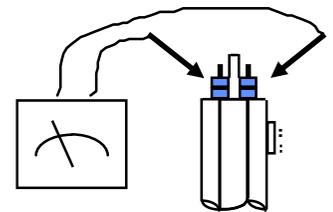


Figure 5

## SYMPTOM “B”: LOW OR NO HEAT, INDICATOR LIGHT - ON

### 1) WATER FLOW TOO HIGH

Reduce the water flow by adjusting the outlet ball valve.

### 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.

### 3) ELEMENT BURNED OUT

#### TURN OFF THE MAIN CIRCUIT BREAKER!

Repeat the steps from paragraph 4 above.

Figure 6

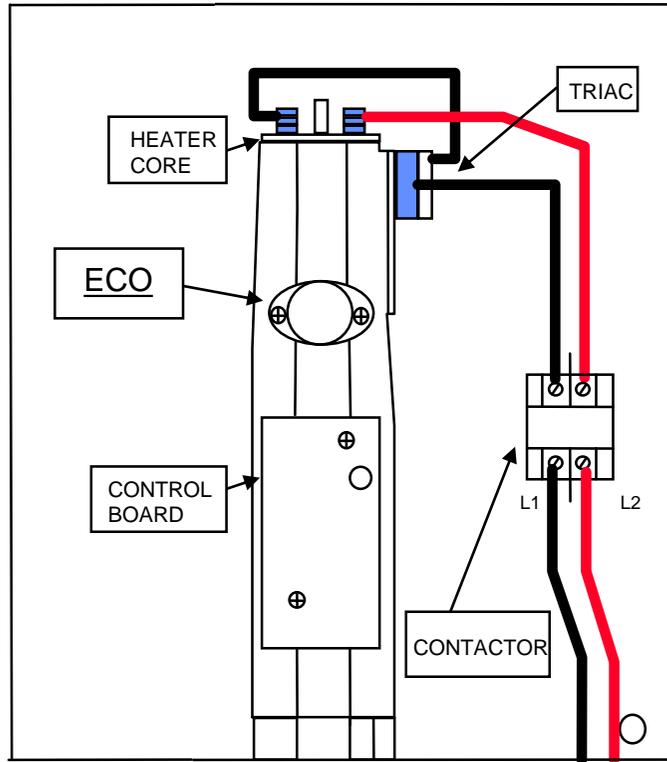


Figure 7

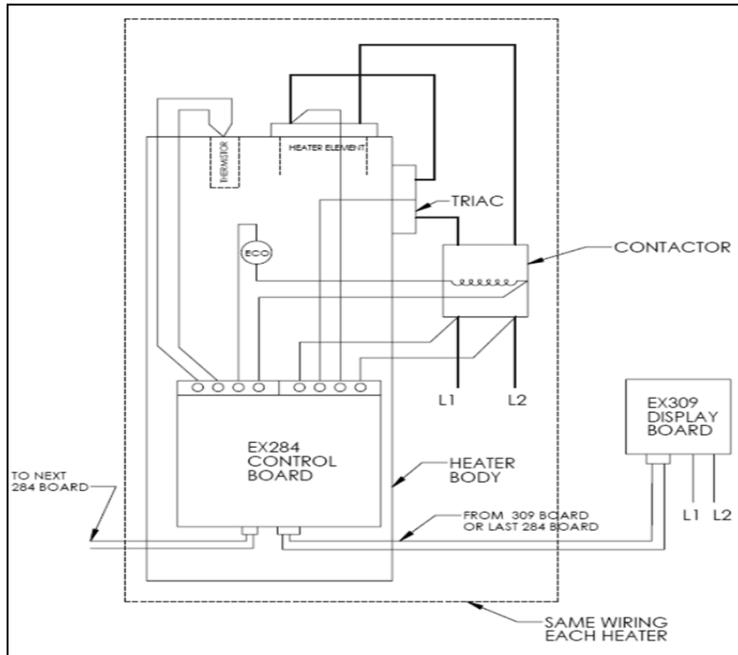


Figure 8

