

EEMAX

ProAdvantage Series

ELECTRIC INSTANTANEOUS WATER HEATER

INSTALLATION GUIDE AND OWNER'S MANUAL

MODELS	PA	___	___	240 - *	1Φ 240V - Series 2
COVERED:	PA	___	___	277 - *	1Φ 277V - Series 2

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.

**THIS UNIT HAS TWO INDEPENDANT DEDICATED POWER CIRCUITS.
DISCONNECT BOTH POWER CIRCUITS 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 a ¾” NPT pipe connection. **Under no circumstances** use a blow torch on pipes which are connected to or near these heaters. Carefully use Teflon tape where necessary ensuring no debris will enter the unit. **Do not use a pipe dope.**

Ensure that all the pipes are clear of debris before fitting the heater.

WARNING

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

**THIS UNIT HAS TWO DEDICATED INDEPENDANT POWER CIRCUITS.
DISCONNECT BOTH POWER CIRCUITS BEFORE SERVICING.**

THIS UNIT HAS TWO **DEDICATED INDEPENDENT 240V OR 277V** CIRCUITS. 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 TWO INDEPENDENT DEDICATED ELECTRICAL POWER CIRCUIT 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.

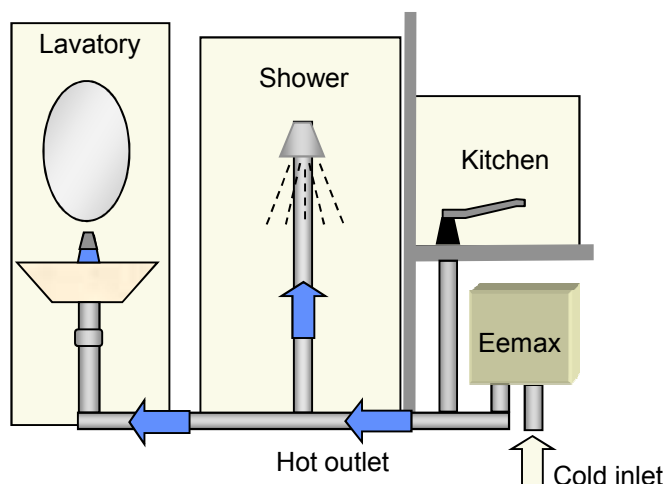
4) Leave a minimum of 8” above the unit for easy replacement of the element.

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 ___ 240 - * 1Φ 240V - Series 2

PA ___ 277 - * 1Φ 277V - Series 2

Mounting Layout for Series 2 Systems

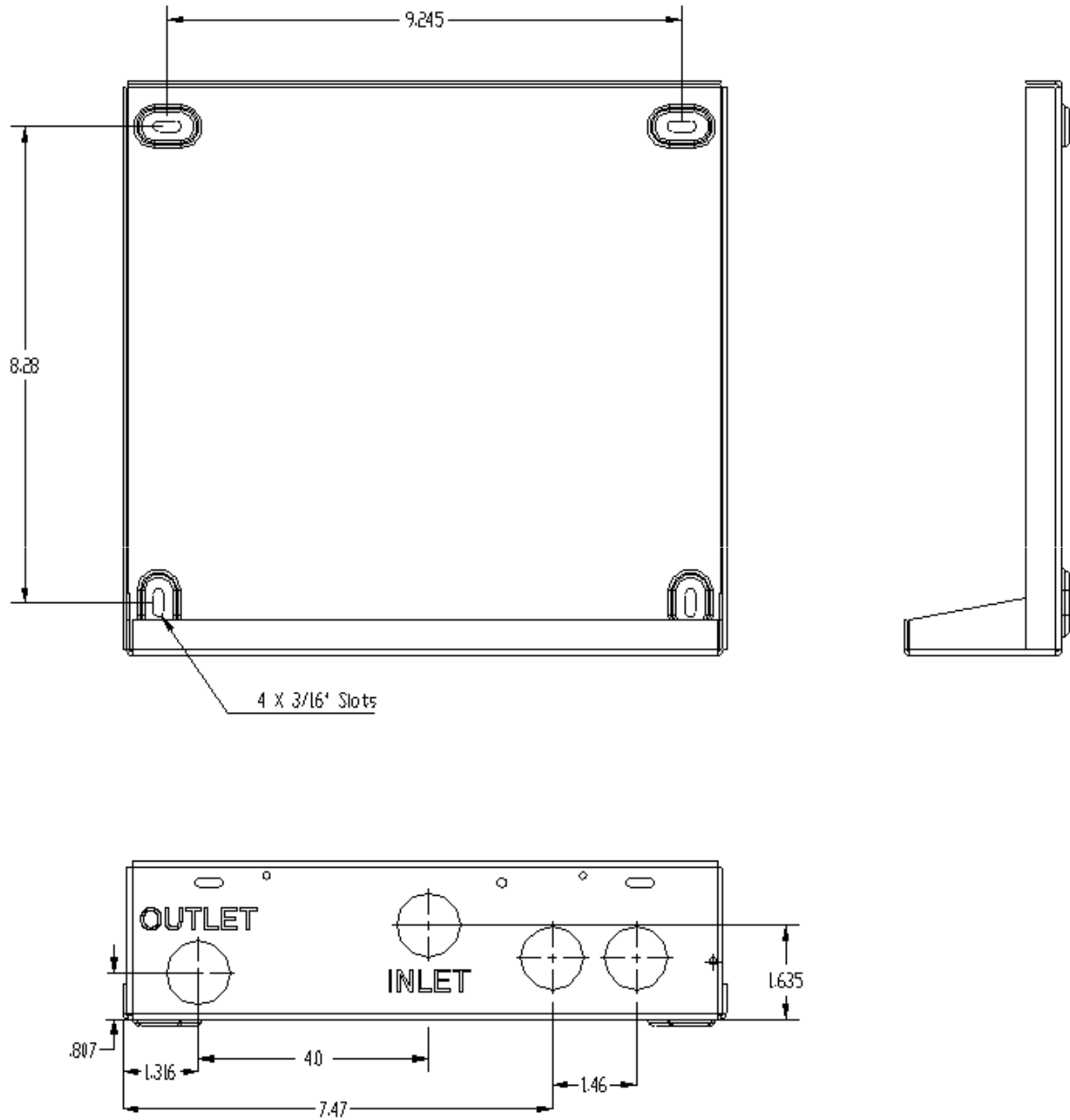


Figure 1

II. PLUMBING HOOK-UP

- 1) The unit is supplied with $\frac{3}{4}$ " NPT fittings (Fig. 2a), 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. 2b)
- 4) 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 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.

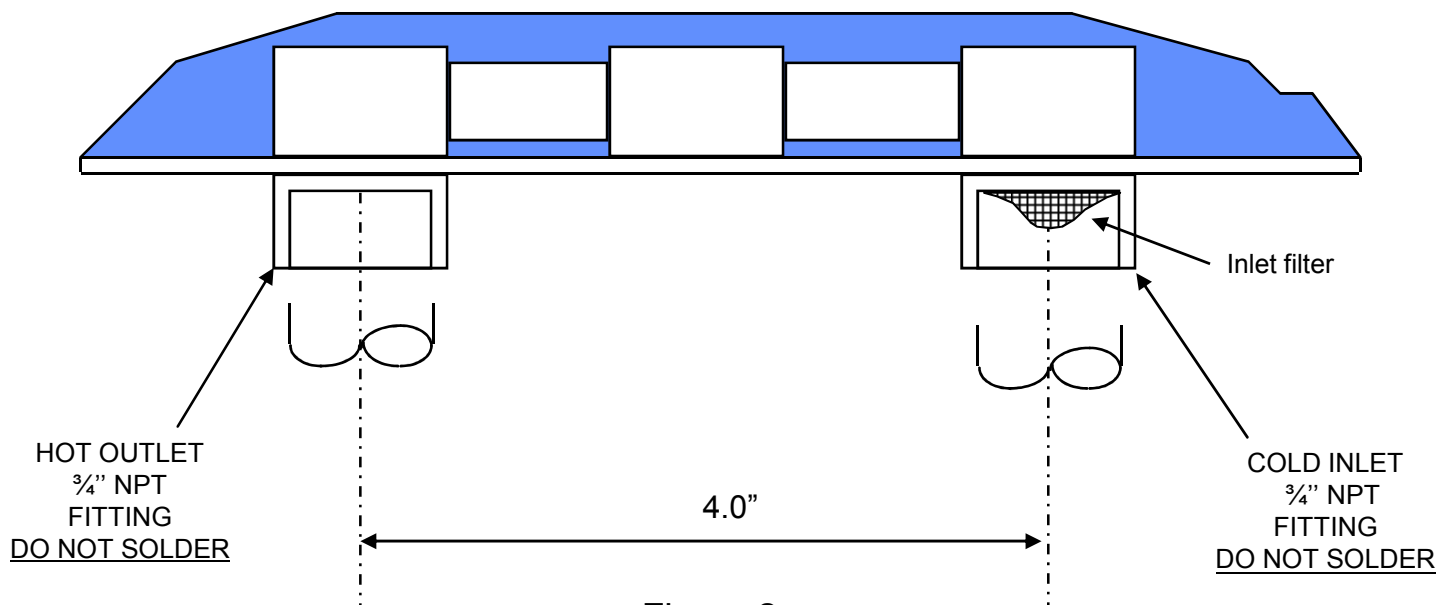


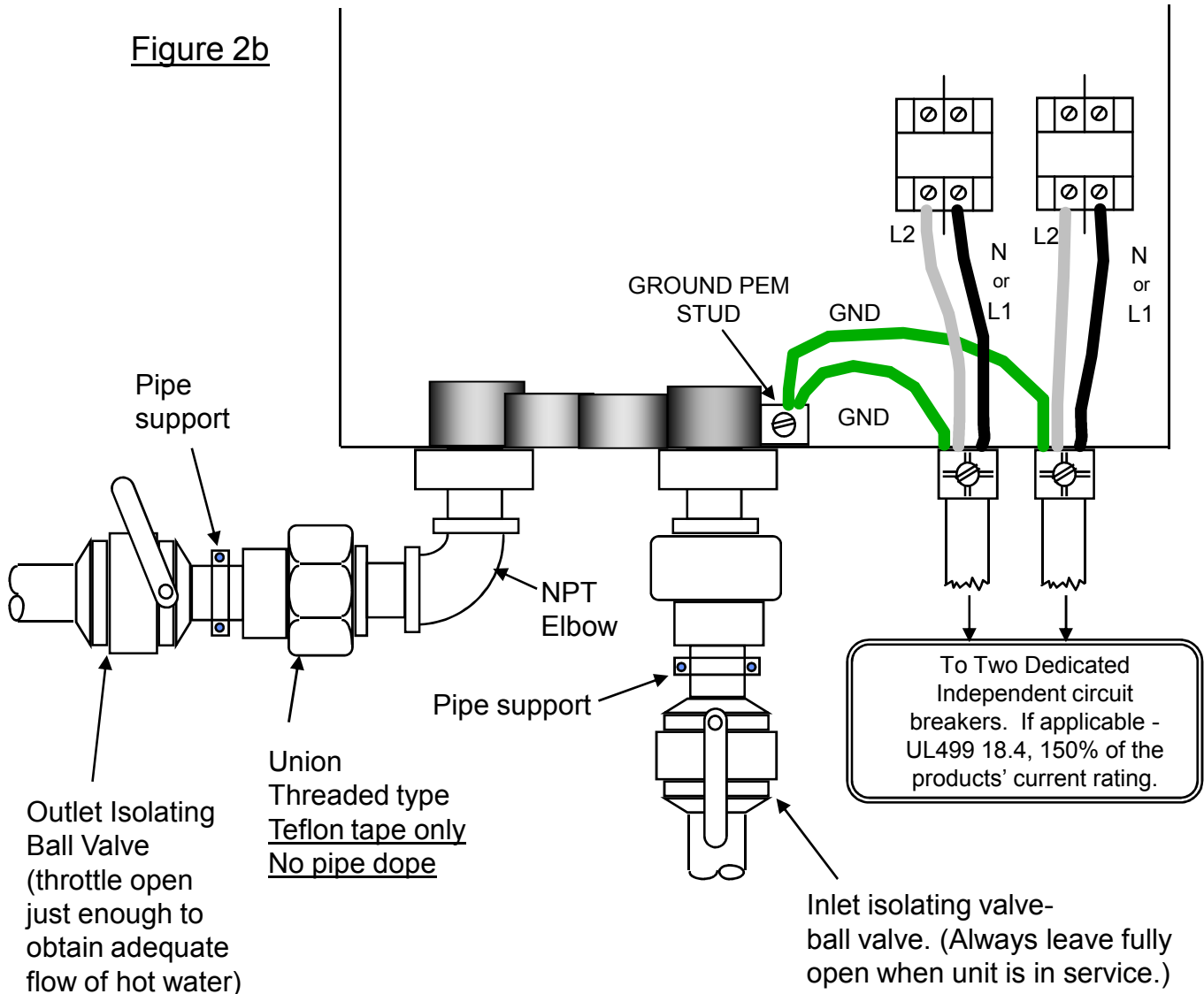
Figure 2a

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 BOTH BREAKERS ARE “OFF” TO AVOID ANY DANGER OF SHOCK.

“Eemax Home Advantage” heaters are manufactured to the following specifications:

Table 1

MODEL TYPE	Voltage	kW output	AMPERAGE
PA014240	1ϕ 240V	15.0	63 (2 x 31.5)
PA016277	1ϕ 277V	16.0	58 (2 x 29)
PA019240	1ϕ 240V	19.0	80 (2 x 40)
PA020277	1ϕ 277V	20.0	72 (2 x 36)
PA023240	1ϕ 240V	23.0	96 (2 x 48)

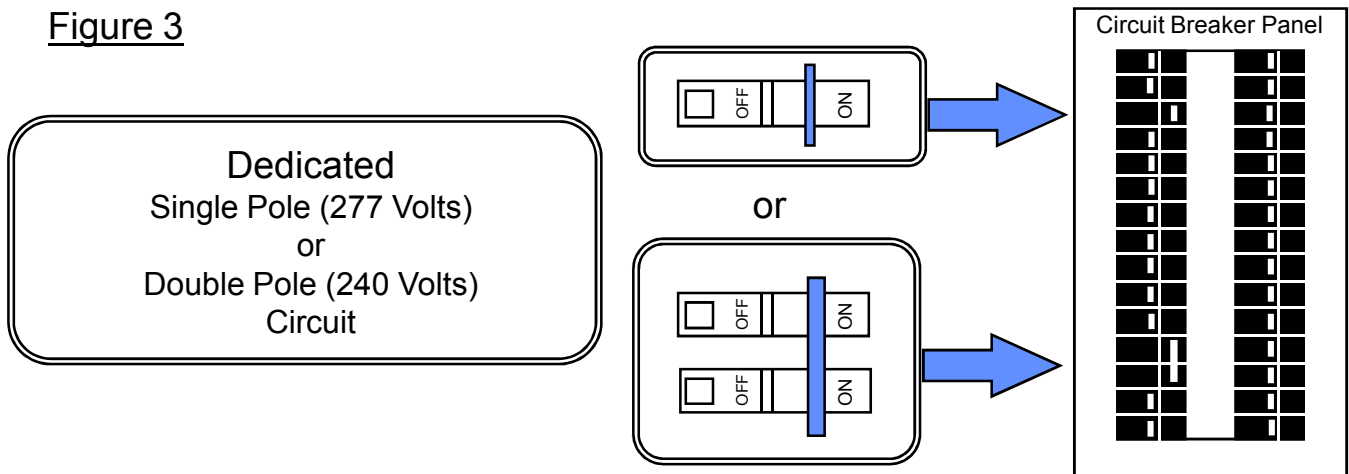
The L1, L2, or N should be connected to the slots in the contactor marked L1 and L2.

(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 dedicated independent circuits and appropriate wiring and circuit breaker configurations dictated by the power requirements of the unit. (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.
- 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 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. (Fig. 4)

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

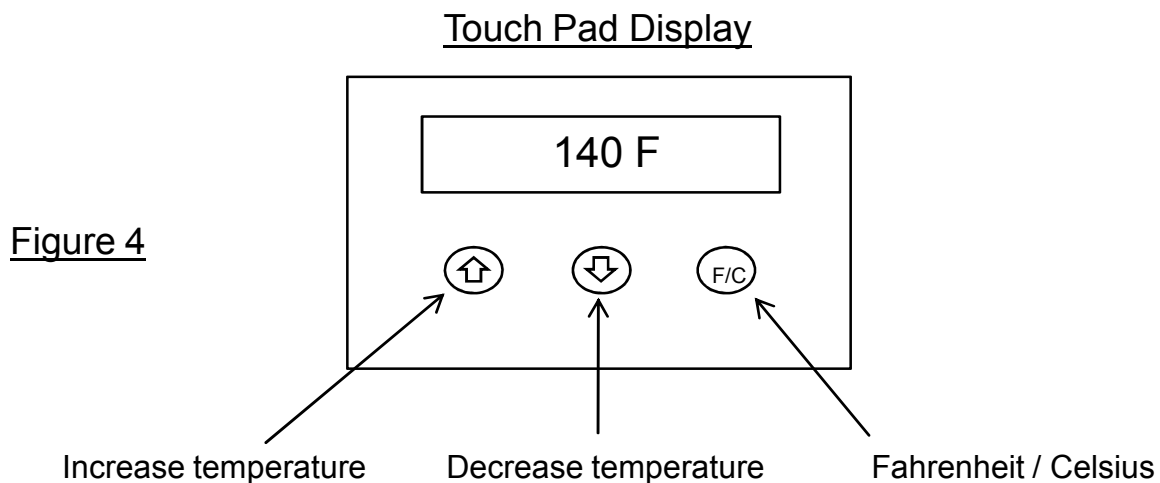


Figure 4

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

Turn on the **TWO** 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. "TC" Models minimum flow rate = 0.70 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

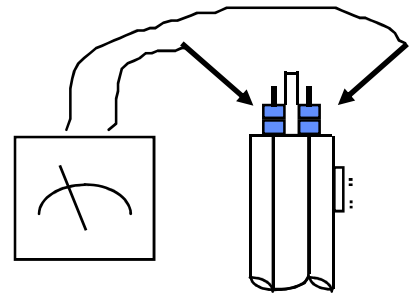
Correct configuration is:

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

4) ELEMENT BURNED OUT

TURN OFF THE TWO 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 5.0 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 TWO 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 page 9 for temperature rise at various flow rates.

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

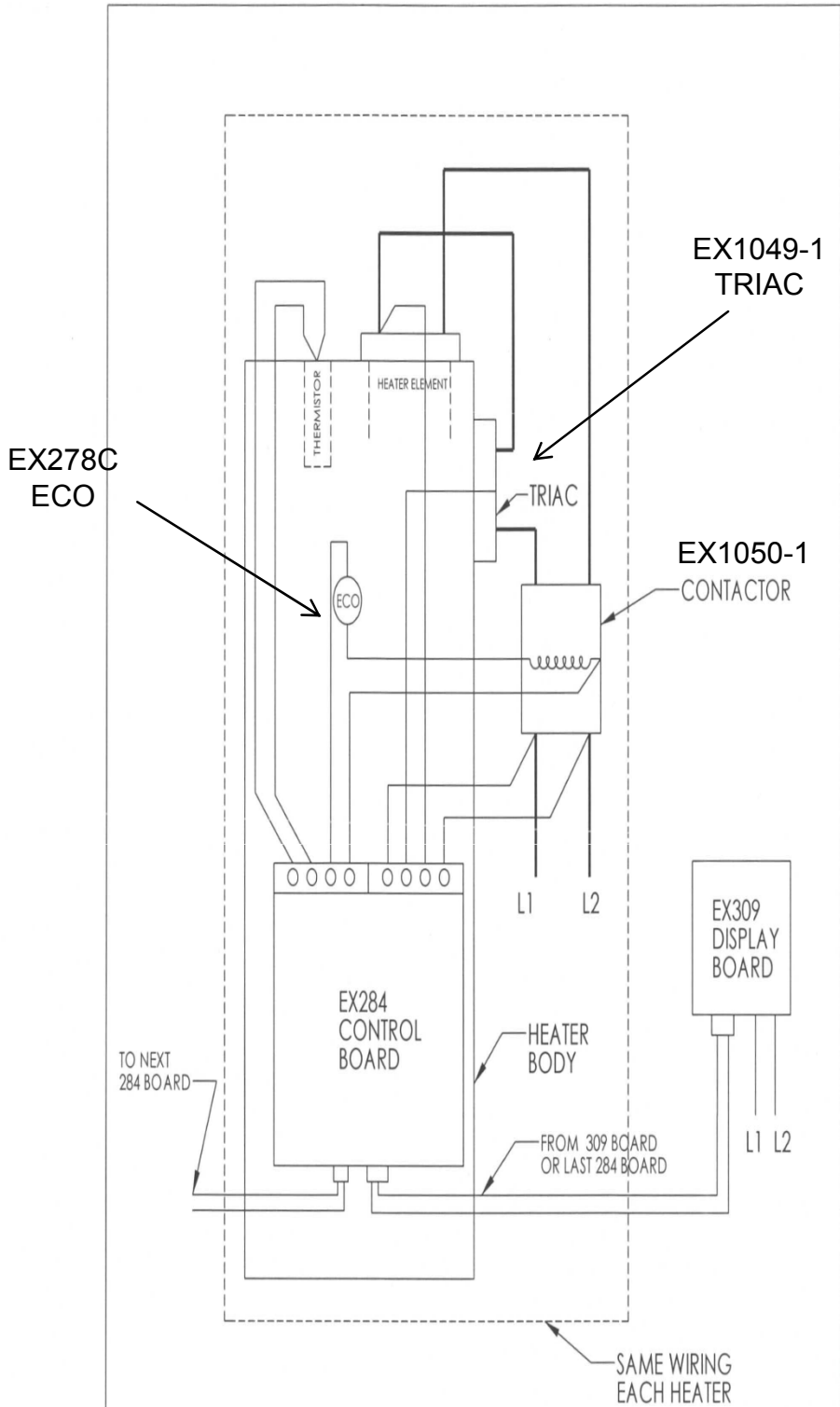
TURN OFF THE TWO MAIN CIRCUIT BREAKERS!

Repeat the steps from paragraph 4 above.

4) ECO TRIPPED (High Limit Thermostat)

TURN OFF THE TWO MAIN CIRCUIT BREAKERS!

Reset by pushing in red button on each heater module.



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		MATERIAL FINISH		CHECKED ENG APPR. MFG APPR. G.A. COMMENTS:		
NEXT ASSY USED ON	APPLICATION	DO NOT SCALE DRAWING		SIZE DWG. NO. EX1031 SCALE: 1:1 WEIGHT: SHEET 1 OF 1		
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