



marey®

BY
**WAHL
BACH**

POWER PAK

ELECTRIC TANKLESS WATER HEATER

INSTRUCTION MANUAL

PP7

PP8

PP12

PP15

PP18

PP24



Keep this manual with you after your unit has been installed, you may need it for further technical information.

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0. Contents

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1. Safety Instructions

Congratulations and thank you for choosing our instant water heater. The instruction contains important information about commissioning, switching the device on and maintenance. To ensure your safety and that of others we recommend you read through this safety manual carefully. Please refer to the back of the manual for details about the warranty. Keep this manual for future reference.

If you lose the manual, contact your local distributor or manufacturer. When you call, please tell us the model number and the serial number of your unit written on the rating plate of the water heater.

Symbols used in this manual

The following symbols are used in these instructions/appear on the appliance:



Certified by CSA.



Failure to observe this instruction may expose you or others to danger.
Failure to observe this instruction may lead to damage to the device.



Indicates live parts.
Failure to observe this instruction may lead to damage to the device or danger to you or others.



Please read the manual.
















Hazardous materials and waste electrical and electronic equipment should be taken to a designated recycling point.











**IMPORTANT SAFETY INSTRUCTIONS**

When using this electrical equipment, basic safety precautions should always be followed, including the following.

**READ AND FOLLOW ALL INSTRUCTIONS**

All supply circuits must be disconnected before removing cover. Supply this appliance only from a grounded system. A wire connector marked “Ⓢ” is provided for wiring the appliance. Connect the connector to the grounding terminal of the electric service or supply panel with a continuous copper wire in accordance Canadian Electrical Code, Part I.

	This product shall be protected by a Class A ground fault circuit interrupter.
	This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
	Children should be supervised to ensure that they do not play with the appliance.
	The maximum inlet water pressure: 1.0 MPa (150 PSI).
	The minimum inlet water pressure: 0.1 MPa (15 PSI).
	WARNING Before obtaining access to terminals, all supply circuits must be disconnected. After service work is complete, proceed as during the first-time appliance start-up.
	The connection diagram or wiring diagram is marked. (Located on inside of Front Enclosure)
	CAUTION
	1. DO NOT INSTALL IN A BATH ENCLOSURE OR SHOWER STALL OR CONNECT TO A SALT- REGENERATED WATER SOFTENER OR A WATER SUPPLY OF SALT WATER 2. CONNECT ONLY TO A CIRCUIT PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER
	For use on an individual branch circuit only.
	USE COPPER CONDUCTORS ONLY USE BONDING CONDUCTOR IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE, PART I
	Each individual heating element is marked with the manufacturers's part number or its electrical rating in voltage and amperes/watts.
	The specific spacing between the appliance and adjacent surface.

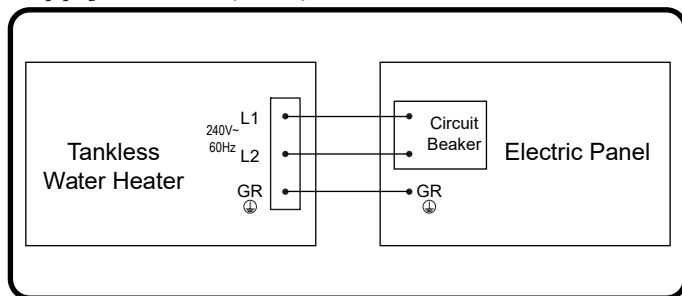
	SAVE THESE INSTRUCTIONS
	The appliance is not to be installed in locations where freezing can occur.
	The resistivity of the water supply must not be less than 3300 $\Omega \cdot \text{in}$.
	The appliance must be grounded properly!
	The appliance is close-outlet type, the water connection of this appliance must be connected to unvented water heating system.
	No changes may be made to the appliance.
	If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
	Declaration of conformity We hereby declares that the Thermoflow devices comply with the following standards:
	<ul style="list-style-type: none"> • CAN/CSA E60335-2-35 • CAN/CSA-C22.2 No. 60335-1 • UL 499
	Standards and regulations
	The installation (plumbing and electrical work), commissioning and maintenance of this appliance should only be undertaken by personnel with electrical engineering qualifications and in accordance with the relevant standards and regulations (BSI, etc.) and this manual. The following should also be observed:
	<ul style="list-style-type: none"> • The appliance name plate; • The technical specifications.
	Connection to the water supply Compatible cold water pipe materials: steel, copper and plastic.

2. Mounting Instructions

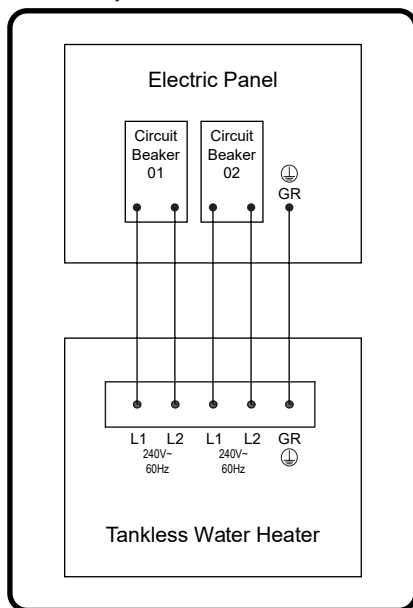
Electrical installation

The appliance must be permanently connected to fixed wiring.
 The device has been prepared for connection to the electrical supply. These units require a 240V, single-phase supply. Please take reference of the rating plate on device.

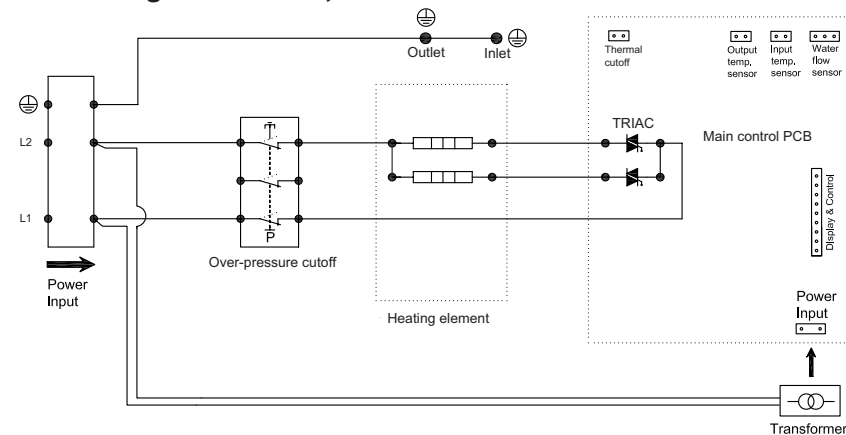
Please take reference of the following diagram to connect power supply with PP7, PP8, PP12 and PP15.



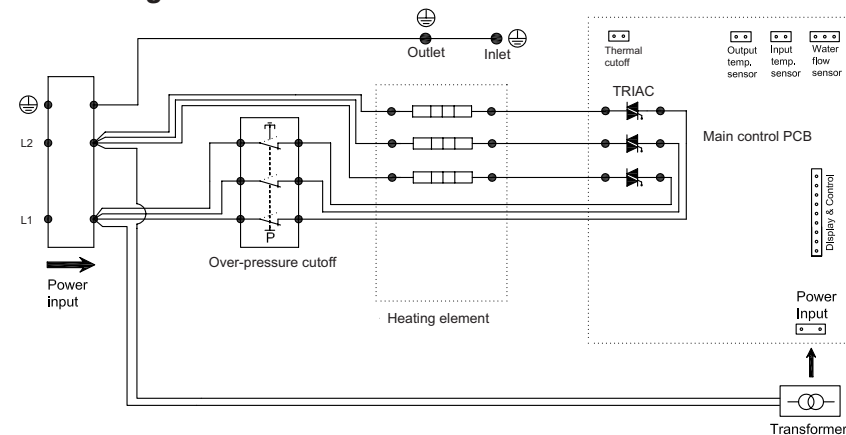
Please take reference of the following diagram to connect power supply with PP18, PP24.

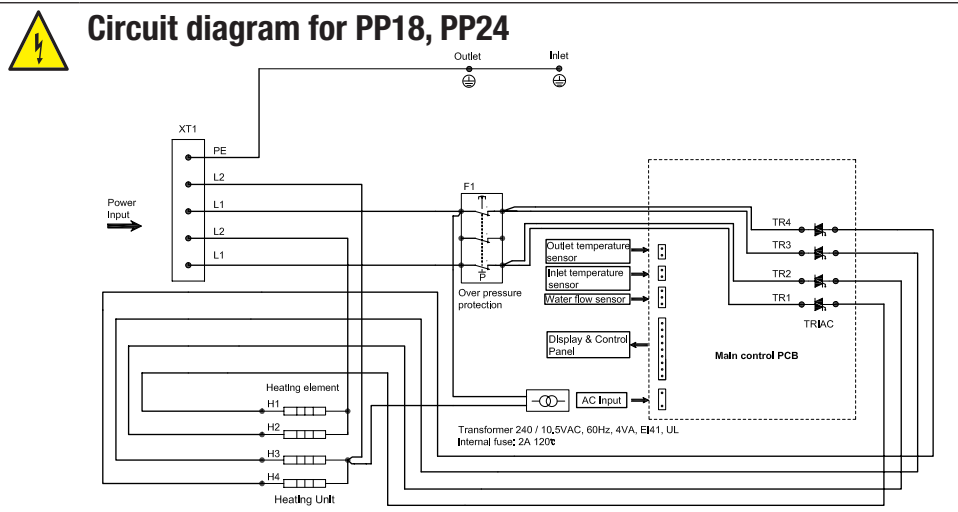
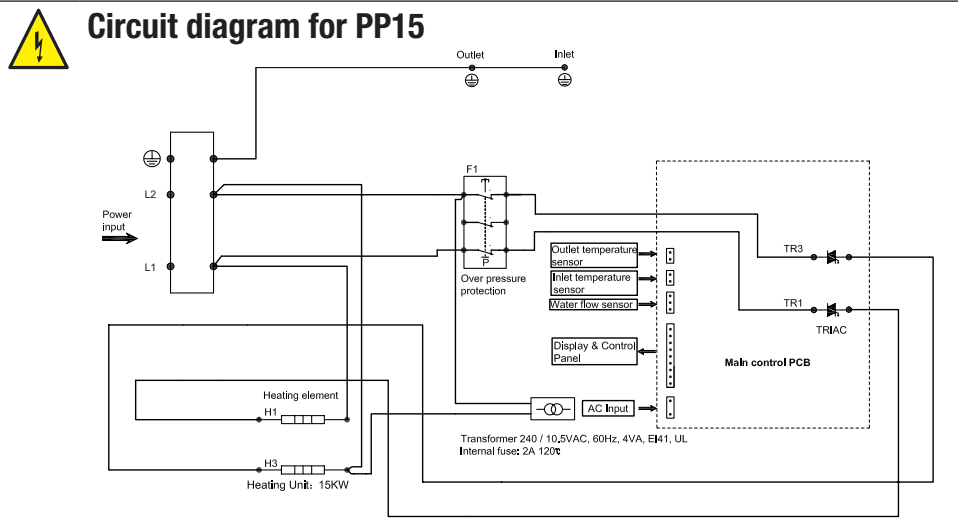


Circuit diagram for PP7, PP8



Circuit diagram for PP12



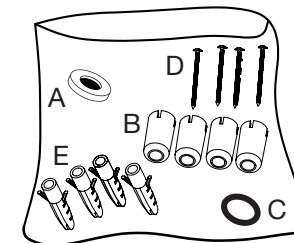


Unpacking

Check if the device has been damaged in any way.

Contents

- 1 device
- 1 mounting template
- 1 bag of installation materials, contents:
 - A 1 filter mat
 - B 4 spacers
 - C 1 gasket
 - D 4 screws
 - E 4 anchors



Tools

You will require the following tools for the installation:

- Phillips-head screwdriver
- Open-ended spanner 7/8"
- Teflon tape
- Drill
- 5/16" stone or concrete drilling bits
- Pencil
- Adhesive tape
- Wire stripper

Environment

To prevent damage during transport this unit is supplied in robust packaging. Please recycle the packaging where possible.



Disposal of the appliance

Old appliances must not be disposed of in your household waste! Every consumer is legally obliged to dispose of old appliances separately from their household waste and to take them, for example, to a collection point in their local community or local district. Old electrical appliances will be accepted there free of charge. This ensures that the old appliances are properly recycled and any negative impacts on the environment are avoided. This is why electrical appliances are marked with the symbol shown on the left.



Preparing for installation



The water and electricity supply need to be available at the place where the device is to be supplied. If the electricity cable is buried in the wall then use the supplied spacers. If the electricity cable is fixed to the wall then the device can also be fixed straight to the wall.

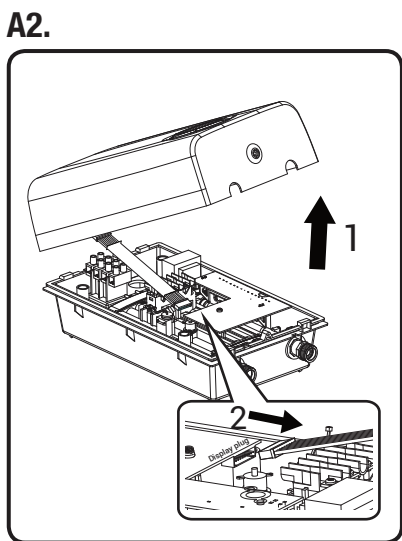
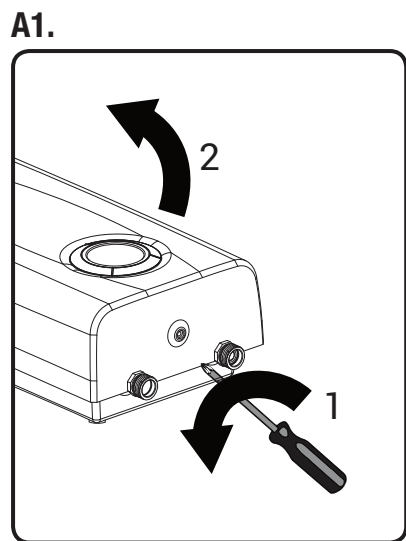
The installation location for the appliance should keep away from the shower.

This appliance must be grounded properly!
Make sure taps/flow control device be install on the outlet of the appliance!
The appliance must be connected to a ground fault circuit interrupter.

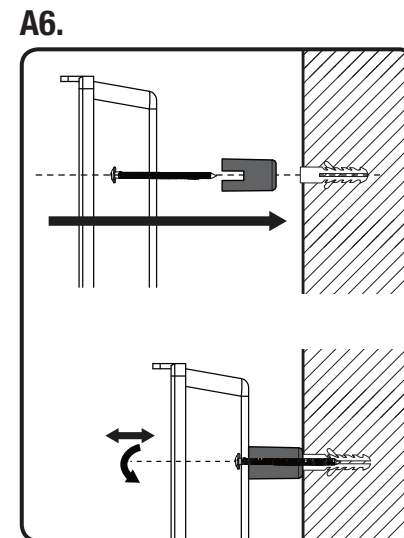
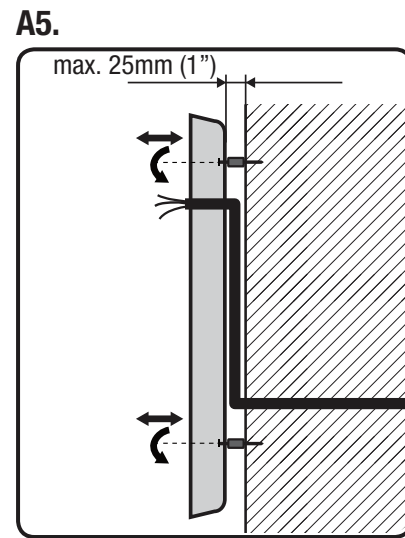
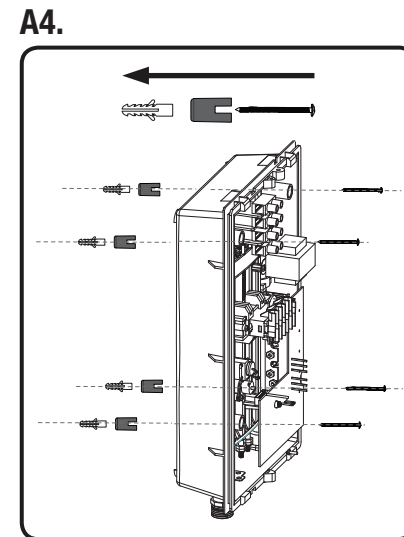
! Locate the installation location of the appliance
 Make sure the clearance meet the requirement of following diagram.

Top clearance 4"
 Front clearance 4"
 Back clearance 1"
 Left clearance 4"
 Right clearance 4"
 Bottom clearance 8"

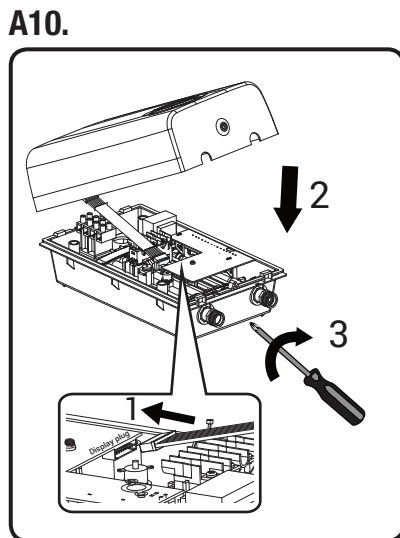
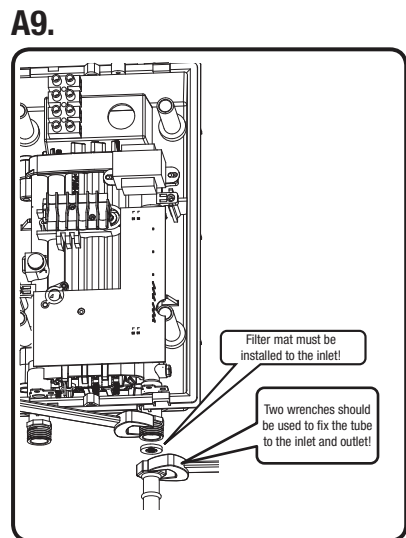
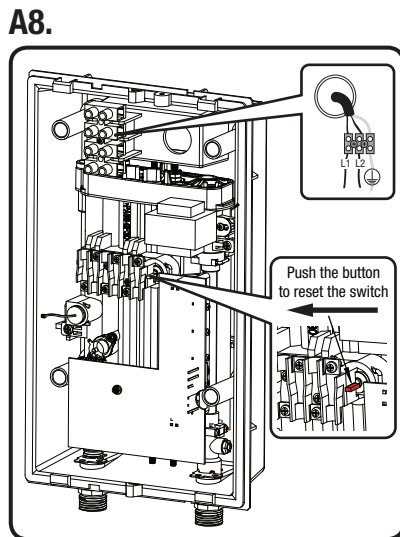
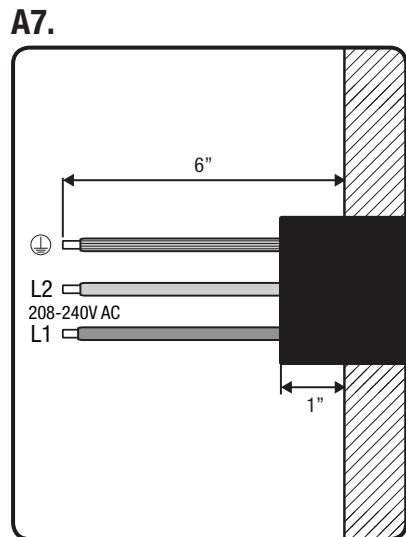
! PP7, PP8, PP12



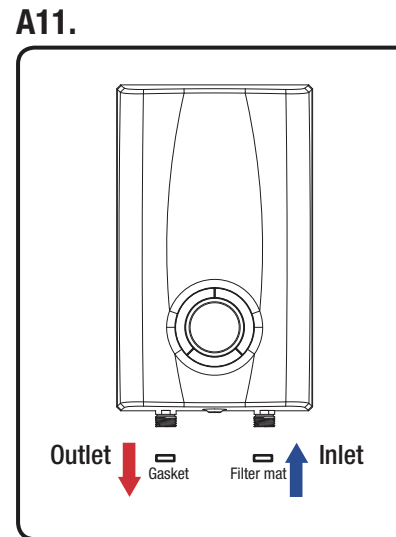
! PP7, PP8, PP12



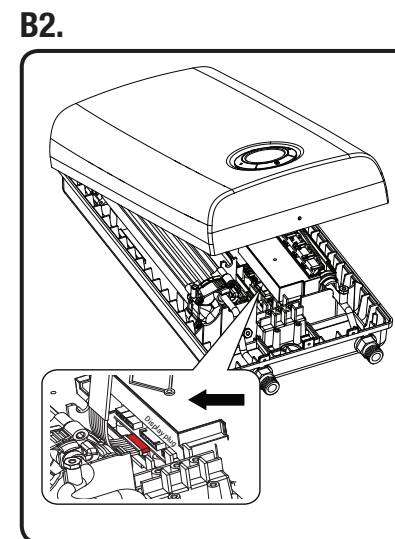
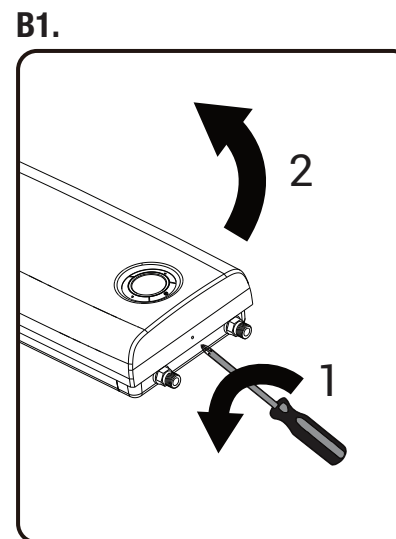
! PP7, PP8, PP12



! PP15, PP18, PP24



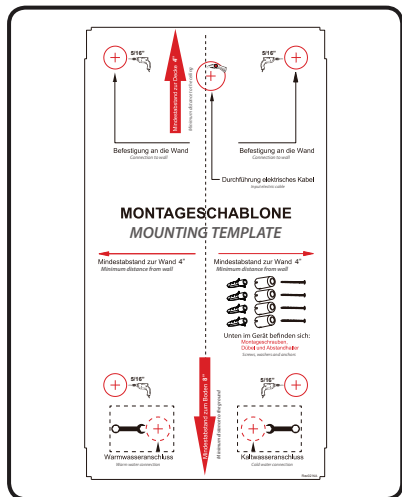
! PP15, PP18, PP24



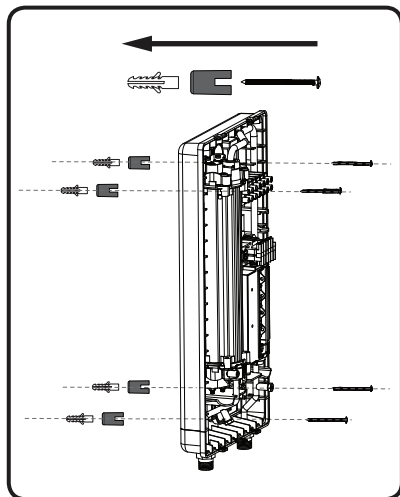


PP15, PP18, PP24

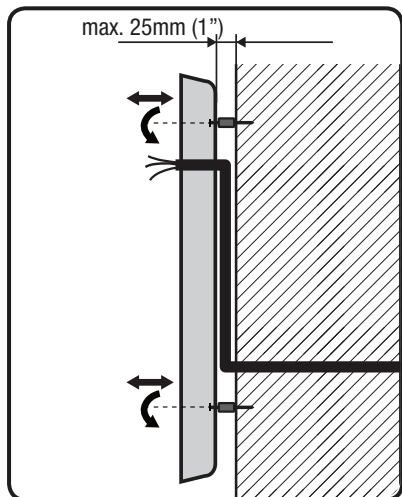
B3.



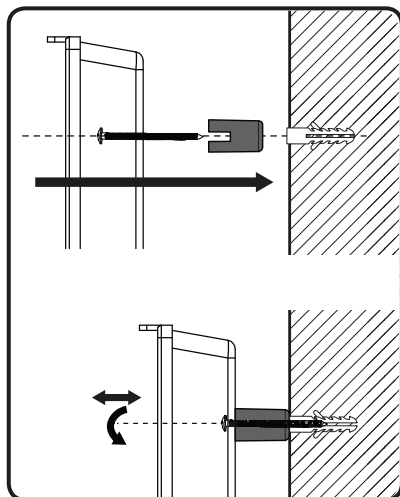
B4.



B5.

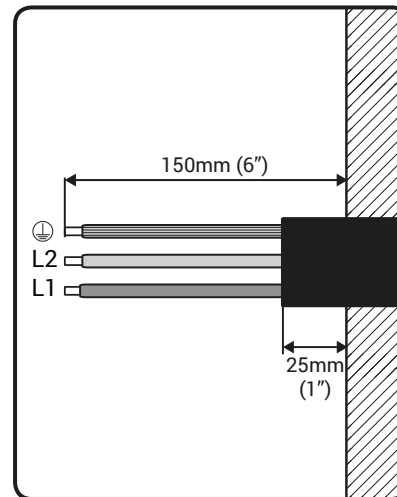


B6.

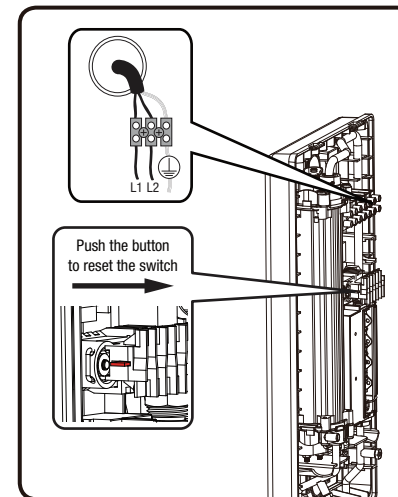


PP15, PP18, PP24

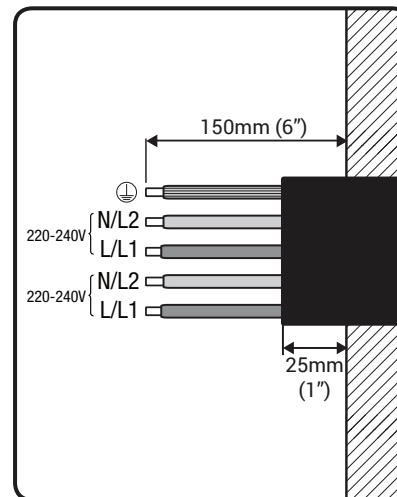
B7.a PP15



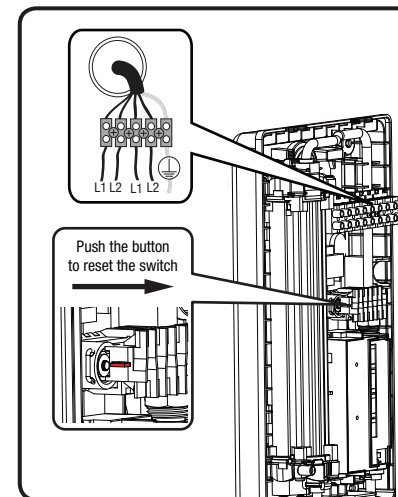
B8.a PP15



B7.b PP18, PP24



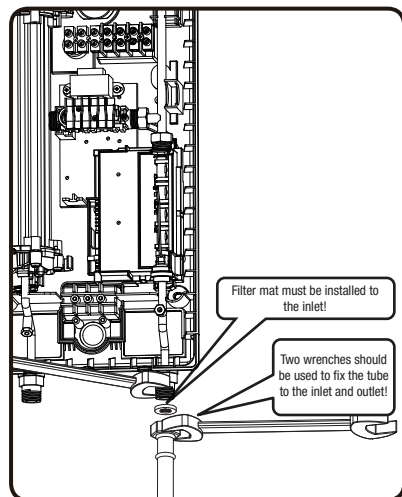
B8.b PP18, PP24



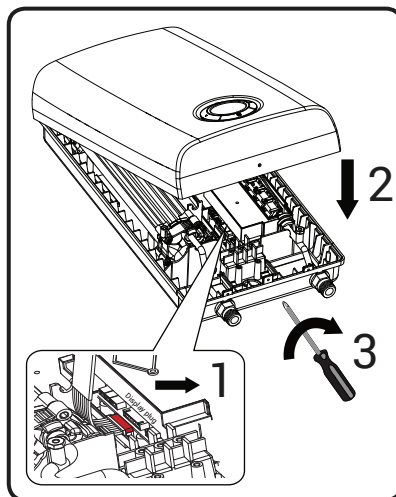


PP15, PP18, PP24

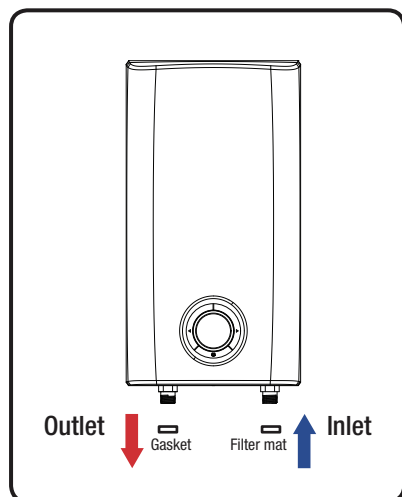
B9.



B10.



B11.



Outlet

Gasket

Filter mat

Inlet



The appliance must be grounded properly!
The filter mat contained in accessory bag must be installed when connecting with inlet(cold) water pipe or hose!
Ground fault circuit interrupter must be installed with the appliance, please take page 17 to 22 for the selection of interrupter.

**Frost**

The appliance is not to be installed in locations where freezing can occur.

The device should be installed in a vertical position in a room protected from frost and in the proximity of the water connections.

In case the room cannot be protected against frost, the device should not be installed in this room. Should the device be installed in such a room, the device should be emptied before the frost danger will occur.

Do not switch on if there is a possibility that the water in the device is frozen.

**For PP7, PP8, PP12****See image A1, A2**

Remove the screw with a Phillips-head screwdriver and open the top cover. Remove the display plug, remove the top cover and put aside.

See image A3

1. Use two pieces of tape to fix the template on the wall where the device is to be installed.
2. Drill four 5/16"/8mm holes through the template.

**See image A4, A5, A6, A7, A8**

3. Insert the anchors into the holes drilled at last step.
4. Install the appliance with the supplied screws and spacers.
5. Cut the cable to the required length and connect it to the terminal block, press the button to reset the switch, as indicated in **A7** and **A8**.

This appliance must be grounded properly!
The electrical connection should be made by a qualified electrician, in accordance with the relevant regulations (IEC, NEC, etc.)

**See image A9, A10, A11**

6. Install the hot water pipe to the left, and install the cold water supply to the right, using two spanners, as indicated in **A9**.
7. Insert the display plug, and install the top of the housing.
8. Install the screw at the bottom.

Make sure only fittings for close-outlet water heaters can be used!
Make sure taps/flow control device be install on the outlet of the appliance!
Make sure the filter mat in the inlet is installed, as indicated in A9 and A11.

**Commissioning**

- Fill the device and vent it by opening a hot water tap connected to it.
- Only switch on the electrical supply once the device is clear of any air.
- Switch on the earth leakage circuit breaker, turn on the appliance and open the hot water tap, wait for about 20 secs before the appliance start working.
- Check the operation of the device.

**For PP15, PP18, PP24****See image B1, B2**

Remove the screw with a Phillips-head screwdriver and open the top cover. Remove the display plug, remove the top cover and put aside.

See image B3

1. Use two pieces of tape to fix the template on the wall where the device is to be installed.
2. Drill four 5/16"/8mm holes through the template.

**See image B4, B5, B6, B7, B8**

3. Insert the anchors into the holes drilled at last step.
4. Install the appliance with the supplied screws and spacers.
5. Cut the cable to the required length and connect it to the terminal block, press the button to reset the switch, as indicated in **B7** and **B8**, please note that the wire connection is different between PP15, PP18 and PP24.

This appliance must be grounded properly!
The electrical connection should be made by a qualified electrician, in accordance with the relevant regulations (IEC, NEC, etc.)

**See image B9, B10, B11**

6. Install the hot water pipe to the left, and install the cold water supply to the right, using two spanners, as indicated in **B9**.
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Make sure only fittings for close-outlet water heaters can be used!
Make sure taps/flow control device be install on the outlet of the appliance!
Make sure the filter mat in the inlet is installed, as indicated in B9 and B11.

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- Check the operation of the device.

3. Technical Specifications**Technical specifications**

POWER PAK Series	PP7	PP8	PP12
Electric supply	2 0 8 - 2 4 0 V ~ 60Hz	2 0 8 - 2 4 0 V ~ 60Hz	2 0 8 - 2 4 0 V ~ 60Hz
Nominal power rating	5.4 kW @ 208V	6.4 kW @ 208V	9 kW @ 208V
	7.2 kW @ 240V	8.5 kW @ 240V	12 kW @ 240V
Nominal current	26 A @ 208V	31 A @ 208V	43 A @ 208V
	30 A @ 240V	36 A @ 240V	50 A @ 240V
Ground fault circuit interrupter	2-POLE 30A	2-POLE 40A	2-POLE 60A
Cable size	10 AWG	10 AWG	10 AWG
Resistivity of the water supply	≥ 3300 Ω•in	≥ 3300 Ω•in	≥ 3300 Ω•in
Flow rate (Δt=45°F) @ 240V	1.0 GPM	1.2 GPM	1.8 GPM
Flow rate (Δt=65°F) @ 240V	0.7 GPM	0.8 GPM	1.2 GPM
Heating system	Bare element	Bare element	Bare element
Temperature range	95 - 140 °F	95 - 140 °F	95 - 140 °F
Switch on flow rate	0.58 GPM	0.58 GPM	0.58 GPM
Non-usage consumption	< 1Wh/h	< 1Wh/h	< 1Wh/h
Protection class	IP25	IP25	IP25
Unit dimensions	13¾ x 7⅞ x 4¾"	13¾ x 7⅞ x 4¾"	13¾ x 7⅞ x 4¾"
Unit weight	5.4 lb	5.4 lb	5.4 lb
Water connections	1/2" NPT	1/2" NPT	1/2" NPT
Max. inlet water pressure	150 PSI	150 PSI	150 PSI
Min. inlet water pressure	15 PSI	15 PSI	15 PSI
Switch on flow pressure	15 PSI	15 PSI	15 PSI

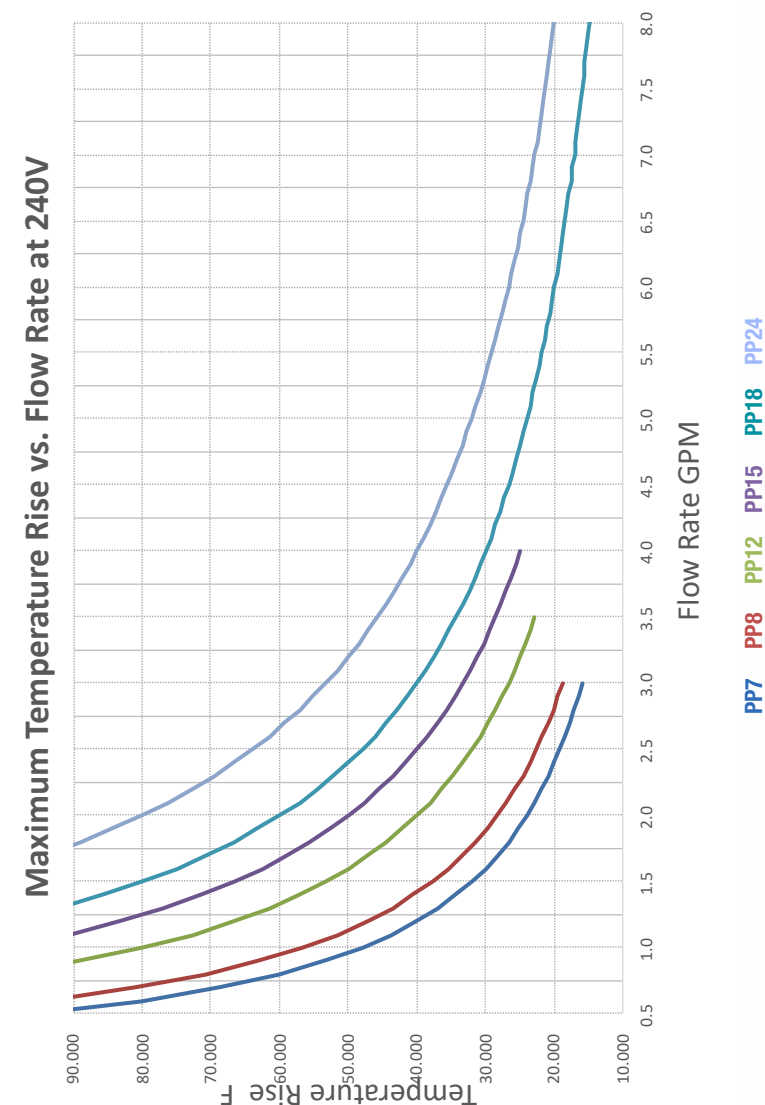


Technical specifications

POWER PAK Series	PP15	PP18	PP24
Electric supply	208-240V~ 60Hz	208-240V~ 60Hz	208-240V~ 60Hz
Nominal power rating	11.3 kW @ 208V	13.5 kW @ 208V	18 kW @ 208V
	15 kW @ 240V	18 kW @ 240V	24 kW @ 240V
Nominal current	54 A @ 208V	2 x 33 A @ 208V	2 x 43 A @ 208V
	63 A @ 240V	2 x 40 A @ 240V	2 x 50 A @ 240V
Ground fault circuit interrupter	(2) 2-POLE 70A	(2) 2-POLE 40A	(2) 2-POLE 60A
Cable size	8 AWG	(2) 10 AWG	(2) 10 AWG
Resistivity of the water supply	≥ 3300 Ω•in	≥ 3300 Ω•in	≥ 3300 Ω•in
Flow rate (Δt=45°F) @ 240V	2.3 GPM	2.7 GPM	3.6 GPM
Flow rate (Δt=65°F) @ 240V	1.6 GPM	1.9 GPM	2.5 GPM
Heating system	Bare element	Bare element	Bare element
Temperature range	95 - 140 °F	95 - 140 °F	95 - 140 °F
Switch on flow rate	0.66 GPM	0.66 GPM	0.66 GPM
Non-usage consumption	< 1Wh/h	< 1Wh/h	< 1Wh/h
Protection class	IP24	IP24	IP24
Unit dimensions	18¾ x 10⅞ x 4⅞"	18¾ x 10⅞ x 4⅞"	18¾ x 10⅞ x 4⅞"
Unit weight	7.8 lb	7.8 lb	7.8 lb
Water connections	1/2" NPT	1/2" NPT	1/2" NPT
Max. inlet water pressure	150 PSI	150 PSI	150 PSI
Min. inlet water pressure	15 PSI	15 PSI	15 PSI
Switch on flow pressure	15 PSI	15 PSI	15 PSI

Maximum Temperature Rise vs. Flow Rate at 240V

Note: Temperature rise = Hot Water Temp. - Cold Water Temp.



4. User Manual



Operation

The electronically regulated continuous-flow water heater with automatic temperature adjustment keeps the outflow temperature constant.

The device has touch key to switch it on and off, and ◀ / ▶ keys to adjust the heating.

◀ : Decrease the outlet setting temperature;

▶ : Increase the outlet setting temperature.

Adjust the temperature settings as desired.

If the selected outflow temperature is not reached when the tap is fully opened, then the water flow through the device exceeds the capacity of the device. In this case, the flow should be reduced with the hot water valve. There is a danger of scalding at outflow temperatures exceeding 108°F.



This unit is intended for use with shower heads with a low pressure loss. Mixer taps and thermostatic mixer taps should be of a design compatible with devices with flow control.



**Fittings for open-outlet water heaters should not be used!
Only fittings for close-outlet water heaters can be used!**

Suggestion: To ensure that the minimum flow (switch-on flow) of a water-pressure operated device is reached, the pressure loss (head loss) of the device, fittings, shower head, shower hose and piping should all be considered when installing the device.

Typical pressure losses at a water flow of approx. 2.6 GPM:

- Mixer tap: 5.8 - 11.6 PSI
- Thermostatic mixer tap: 4.4 - 7.3 PSI
- Shower head: 4.4 - 21.8 PSI



**Without a temperature limiter, high temperatures may be reached at draw-off points. Keep children away from the draw-off points.
Danger of scalding!**



The appliance should be disconnected from the electrical mains supply when working on the water supply. After service work is complete, proceed as during the first-time appliance start-up.



The main water valve should be closed before any work is done on the water pipe.



If the water supply is interrupted, e.g. due to maintenance on the mains water supply, then the following steps should be undertaken before returning the device to operation:

1. Remove the fuses or isolate the device in another way.
2. Open a hot water valve connected to the device until the air is vented from both the device and the cold-water supply pipe.
3. Replace the fuses or rPOWER PAKnnect the supply.

5. Maintenance



Maintenance

This device does not require any maintenance by the user. Professional maintenance may only be carried out by duly authorized technical staff. Maintenance, e.g. verifying electrical safety, should only be undertaken by a qualified electrician, observing the relevant regulations (IEEE, etc.).



If faulty, please take follow the trouble shooting in page 24 to 26 to make the diagnosis. If still have problem, never try to repair the hot water device yourself, please contact the nearest service specialist for help.

Care

The enclosure can simply be cleaned with a damp cloth. Do not use aggressive cleaners or cleaner's with a scouring effect!

De-scaling

The appliance is only to be descaled by a suitably qualified specialist.

Legislation prevention

Do not use heated water as drinking water.

After prolonged shutdown of the device for example due holiday, the device should be fully heated up to the maximum temperature (tap at minimum flow) before re-using. It is rPOWER PAKmended to flush the pipes for one minute.

6. Troubleshooting

First aid

- Check the leakage protection switch and the fuses.
- Check if any fittings or shower head are affected by the build-up of lime scale or dirt.
- See also “Troubleshooting by users“.

Troubleshooting by users

Problem	Cause	Solution
Water heater is not heating at all (water is flowing but the unit is not heating - the outgoing water temperature is the same as the cold water supply) - the digital display does NOT light up.	No power or incorrect wiring.	Make sure the breakers at main electrical panel are ON. You may have a faulty breaker or unit may be wired incorrectly.
Water heater is not heating at all (water is flowing but the unit is not heating - the outgoing water temperature is the same as the cold-water supply) The digital display DOES light up, but no temperature display.	Flow rate is too low / water pressure is too low.	Your water heater has an activation flow rate of approximately 0.58GPM/0.66GPM. If your water flow rate is less than this level, your unit will not activate. Increase the flow rate or check the filter mat inside the inlet connector.
	The air bubbles in the water heater have not been purged out.	Make sure the breakers at main electrical panel are ON, turn on the unit and open the hot water tap for about 20s.
Flow rate is too low	Something was blocked in the filter mat / Pipe was blocked	Check and clean the filter mat inside the inlet connector.
Water heater is not heating at all. The LCD display shows “E2”	Internal part failure	Please call for your local service.

Troubleshooting by users

Problem	Cause	Solution
Water heater is heating, but the water temperature is not hot enough.	User temperature setting too low.	Increase the temperature setting on the unit.
	Flow rate is too high.	Depending on your incoming water temperature and the kW of your heater, your water flow rate may exceed the physical heating capacity of your water heater. Reduce the flow rate by installing a Flow Regulator.
	Crossed wires.	If it's a new installation, have your electrician double check the wiring. Is possible that the wiring is incorrect.
	Voltage less than 240 volts.	The heating elements on your water heater are design for 240 volts. When used with a lower voltage, they produce less heating power. You may need to upgrade to a larger input heater.
	Mixing too much cold water.	You do not need to mix as much cold water with your tankless water heater compared to when you use a conventional water heater. You may also have an anti-scald feature on your faucet that is mixing cold water. These types of faucets can usually be adjusted to reduce the amount of cold water mixed.

Troubleshooting by users

Problem	Cause	Solution
The water temperature at the faucet is less or greater than the temperature setting of my water heater.	Anti-Scald pressure/balancing valve or tempering valve.	Your faucet may have an anti-scald feature or a tempering valve that automatically mixes cold water even when you turn your control lever or handle to full hot. These devices are usually adjustable so you can turn off the cold mix completely. You can compensate for this by increasing the setting on your water heater if you need/want hotter water.
	Thermal loss due to long pipe run	As the hot water from the heater runs through the hot water delivery system to your faucet, some heat will be lost especially if it has long distance to travel or the pipes are cold. This is normal. You can compensate for this by increasing the setting on your water heater if you need/want hotter water.
	Water temperature at the faucet is too hot	Check your flow for too little flow, set point temperature is too high.

If the appliance still fails to operate after you have executed this procedure, please inform customer service.

7. Warranty Conditions

Warranty	The rights under this manufacturer's warranty shall apply in addition to the buyer's statutory rights. This warranty shall in no way restrict the buyer's statutory rights in particularly towards the seller.
Entitlement	The claiming of rights under this warranty shall be subject to the submission of the respective proof of purchase.
Content	We shall guarantee as the manufacturer that this product is free of material and manufacturing errors. Material and manufacturing errors arising during the warranty period shall justify the rights under the warranty. This warranty shall not cover errors due to improper installation or incorrect usage, incorrect operating conditions or defective maintenance or repair work. Normal wear and tear such as lime scaling shall also be excluded under this warranty. The warranty will not be valid if the problem is caused by extreme values of drinking water (pH value not between 6.5 and 9.5 and/or Cl above 150 mg/l and/or Fe above 0.2mg/l).
Claims	The warranty shall be valid for 5 years. The warranty period shall commence on the day on which the product is purchased. Warranty services provided shall neither prolong the warranty period nor initiate a new warranty period.
Invalidity of warranty	Attempted repairs carried out by a customer or third party that are not authorized by us shall invalidate the warranty. The same shall apply if parts are installed in the product or connected to the product that are not original parts from us.
Restriction	This warranty shall be restricted to rectification and subsequent delivery. This warranty shall not include compensation, withdrawal from the agreement, reduction in price or any reimbursement for consequential loss due to defects. The statutory provisions and delivery conditions of the national company or importers must be observed.



THANK YOU!

FOR TRUSTING MAREY

Keep this manual with you after your unit has been installed, you may need it for further technical information.

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