MODELS:

REI-C330NP

REI-C380NP REI-C380DP REI-C530NP REI-C530DP



# **Electric Instant Water Heater**

Instructions for use, installation, and connection

# Rinnai

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Introduction 3

#### Congratulations!

Thank you for making excellent choice by purchasing the **Rinnai** Instantaneous Water Heater.

Please read these instructions carefully for optimum performance, necessary fitting and operating instructions.

Your **Rinnal Instantaneous Water Heater** has been manufactured in a ISO9001 registered company which provides you with assurances of its quality safety and environmental friendly.

#### Caution!

Read all of these instructions and retain this guide for later use.

Pass on this guide in the event of change of ownership of the installation site.

Follow all warnings, cautions and instruction contained in this guide, and on or inside appliance.

Anyone who may have difficulty understanding or operating the controls of any shower should be attended whilst showering. Particular consideration should be given to the young, the elderly, the infirm, or anyone inexperienced in the correct operation of the controls as well as children should be supervised to ensure that they do not play with the appliance.

When this appliance has reached the end of its serviceable life, it should be disposed of in a safe manner, in accordance with current local authority recycling. or waste disposal policy.

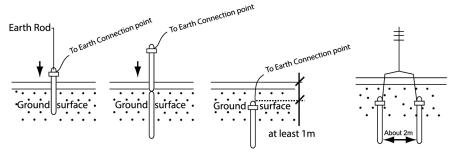
## 1. Warning!

- **1.1.** Products manufactured by us are safe and without risk provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.
- 1.2. THIS APPLIANCE MUST BE EARTHED, TO MAKE SURE EARTH WIRE AND HEATER UNIT HAVE PROPER GROUNDING IN HOUSEHOLD.

#### **Earthing Requirement:**

The Earthing installation should be carried out in accordance with the local Wiring Regulations. Where EARTHING of the premises is not evident, it is neccessary to run an EARTH CONDUCTOR and solidly connect an earth rod local to the installation. The following notes are for guidance only:

- 1.2.1 Select a damp place to bury the earth rod.
- 1.2.2 Connect earth conductor of minimum 2.5mm² (7/0.67mm) to the appliances Earth (😩) terminal. Connect other end of the earth conductor to the earth rod.
- 1.2.3 Check to ensure earthing resistance is less than  $100\Omega$ . It may be neccessary to drive two or more rods and connect them together to achieve a satisfactory results.
- 1.2.4 Installation of earth rod must be carried out by a registered and certified wiring contractor.



- 1.3. DO NOT allow the unit to be run dry.
- **1.4. DO NOT** fit any form of outlet flow control as the outlet acts as a vent for the tank body. Once recommended outlet fittings should be used.
- **1.5.** There are no user serviceable components beneath the cover of this appliance Only a competent tradesperson should remove the cover.
- **1.6.** If the cover is not correctly fitted and water has entered the case. Isolate the electrical and water supply before removing the cover.
- **1.7.** Mains connections are exposed when the cover is removed.
- **1.8.** Refer to the wiring diagram before making any electrical connections.
- **1.9.** Ensure all electrical connections are tight, to prevent overheating.

## **Part Contents Checklist**

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### Model: Shower Holder Bracket



1 x Rinnai Heater Unit



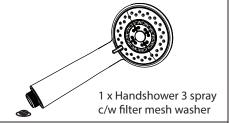
4 x Wall Plug & Screw Set

Shower Holder Bracket





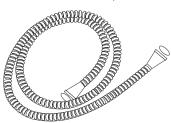
2 x Wall Plug & Screw Set





1 x Stop Valve c/w 1 pc washer

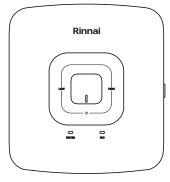
1 x Flexible Hose c/w 2 pcs washer



## **Part Contents Checklist**

6





1 x Rinnai Heater Unit

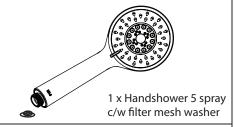


4 x Wall Plug & Screw Set





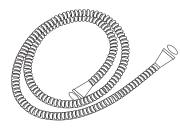
2 x Wall Plug & Screw Set



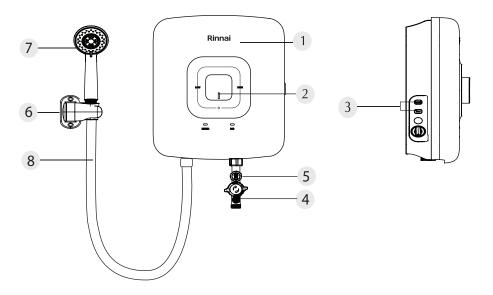


1 x Stop Valve c/w 1 pc washer

1 x Flexible Hose c/w 2 pcs washer

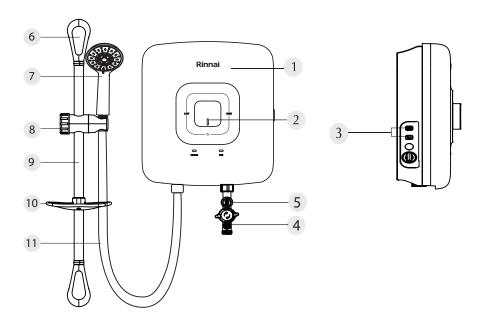


## Model: Shower Holder Bracket

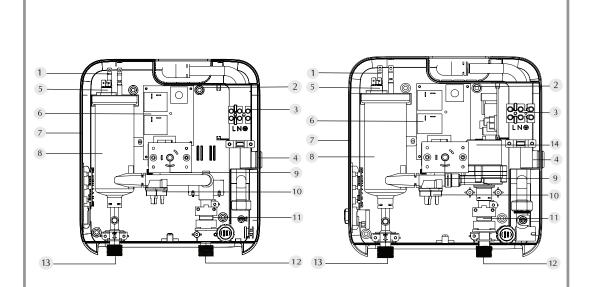


- 1. Heater Cover
- 2. Power Control Knob
- 3. RCD Test Reset button (for RCD model only)
- 4. Stop Valve
- 5. Regulator Valve
- 6. Shower Holder Bracket
- 7. Handshower
- 8. Flexible Hose

## Model: Sliding Rail Set



- 1. Heater Cover
- 2. Power Control Knob
- 3. RCD Test Reset button (for RCD model only)
- 4. Stop Valve
- 5. Regulator Valve
- 6. Rail Support (2 Nos)
- 7. Hand shower
- 8. Shower Holder
- 9. Sliding Rail
- 10. Soap Dish
- 11. Flexible Hose



## Model: Non-Pump Model

- 1. Heating Element
- 2. Mounting Holes (4 Nos)
- 3. Terminal Block
- 4. Cable Entry
- 5. Thermostat
- 6. RCD Assembly (for RCD model only)
- 7. Heater Base
- 8. Water Tank
- 9. Electronic Control
- 10. Triac
- 11. Flow Switch Assembly
- 12. Water Inlet
- 13. Water Outlet

### Model: DC Pump Model

- 1. Heating Element
- 2. Mounting Holes (4 Nos)
- 3. Terminal Block
- 4. Cable Entry
- 5. Thermostat
- 6. RCD Assembly (for RCD model only)
- 7. Heater Base
- 8. Water Tank
- 9. Electronic Control
- 10. Triac
- 11. Flow Switch Assembly
- 12. Water Inlet
- 13. Water Outlet
- 14. DC Pump

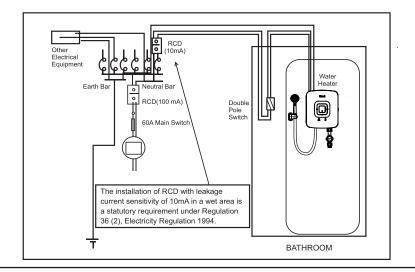
## **Electrical Requirement**



- 1) Important: Installation must be carried out by a qualified electrician.
- 2) The shower heater unit must be connected to its own independent electrical circuit.
- 3) Lead the power cable from the indoor fuse distributor board or Miniature Circuit Breaker (MCB) to a 10mA RCD and from RCD to 'ON/OFF' Double-Pole switch outside the bathroom. Please refer to Bathroom General Wiring layout below.
- 4) The water heater must be permanently connected to the electricity supply through a double-pole linked switch having a contact of separation of at least 3mm in all poles incorporated in fixed wiring.
- 5) This switch must be out of reach of a person using a shower.
- 6) The use of a plug and socket is not recommended.
- 7) Correct size of wire conductor corresponding to different electrical loading should be used. (Refer cable size table below)

#### Cable Sizes Table

Country	Voltage (V∼)	Power (kW)	Amperes (A)	Cable Size (mm²)	Fuse / MCB (A)	ON / OFF Switch (A)
Malaysia	240)/ 5011-	3.8	15.9	4.0	20	20
	240V ~ 50Hz	5.3	22.1	4.0	30 / 32	30 / 32
Singapore	230V ~ 50Hz	3.3	14.4	4.0	16	20
Cambodia / Myanmar		3.5	15.9	4.0	20	20
	220V ~ 50Hz	4.5	20.5	4.0	30 / 32	30 / 32
Thailand		5.5	25.0	4.0	30 / 32	30 / 32



## **Water Requirements**

### **Plumbing Schematic Diagram**

An electric water heater can be fitted in your home regardless of the type of plumbing system as in most cases they can operate directly off the main cold water supply.

Fig. shows a typical system layout. Do not use jointing compounds on any pipe fittings for the installation.

The Unit works at minimum water flow rate of 2 litre/min.

#### SITING OF THE SHOWER

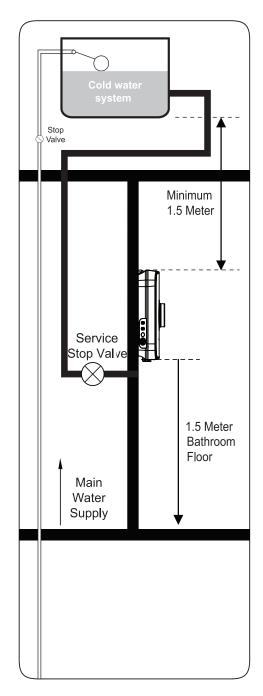
WARNING: The shower must not be positioned where it will be subjected to freezing conditions.

FOR EASE OF SERVICING, THE UNIT MUST ALWAYS BE MOUNTED ON THE SURFACE OF TILED WALLS. NEVER TILE UP TO THE UNIT.

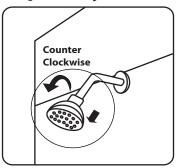
This product is splash-proof rated and is approved for use in shower cubicles and over baths.

However, do not install the unit in a position where the sprayhead will consistently direct water over it.

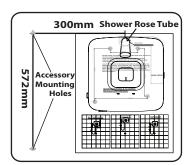
The shower unit MUST be positioned vertically.



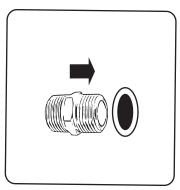
# **Top Entry (for multi entry model only)**



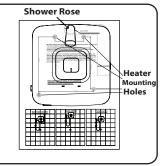
1) Remove the existing shower head (counter clockwise), left with the shower rose tube.



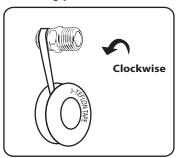
3) Draw the accessory mounting holes as per recommended dimension above.



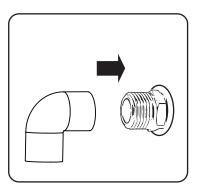
5) Fit the nipple thread to the plumbing thread.



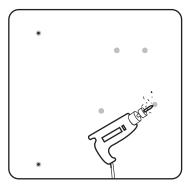
2) Place the installation template to the shower rose and mark the 4 heater mounting holes on the wall using pencil.



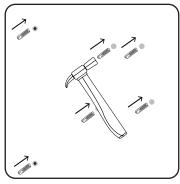
4) When wrapping teflon tape around the 15mm nipple's thread, it is important to wrap the tape in a clockwise direction (both end).



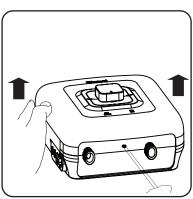
6) Follow by installing the elbow to the 15mm nipple.



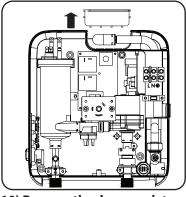
7) Drill with drilling machine the six marked mounting holes.



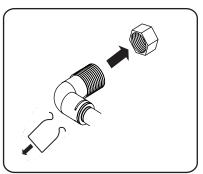
8) Fit the wall plug into the mounting holes.



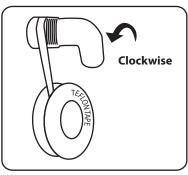
9) Remove the cover



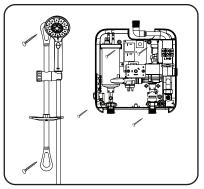
10) Remove the dummy plate.



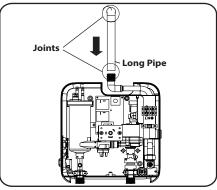
11) Remove the spring clip and hex nut stopper, follow by removing the hose from the inlet elbow.



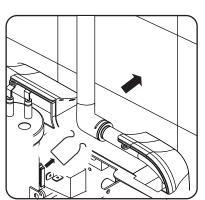
12) Wrap the teflon tape around the inlet elbow thread of the pipe in a clockwise direction (Provided by factory).



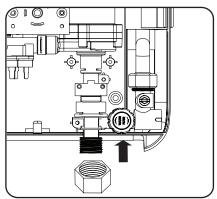
13) 6pcs screw to mount heater and accessory to the wall.



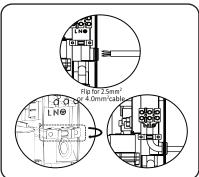
14) Install the long pipe between the inlet elbow at below and elbow at above. Glue all the neccessary joints using plumbing glue.



15) Install the spring clip follow by fitting the inlet elbow thread into the long pipe.

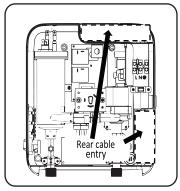


16) Make sure the hex nut stopper is fixed firmly at bottom inlet (clockwise).

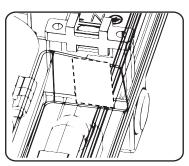


- 17a) Route the cable into the shower unit and connect to the terminal block.
  - b) Ensure cable clamp (flip) is fitted correctly according to 2.5mm sqr or 4.0mm sqr cable.
  - c) Earth cable to terminal marked 'ⓐ' Neutral cable to terminal marked 'N' Live cable to terminal marked 'L'

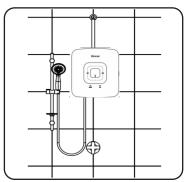
IMPORTANT: Fully tighten the terminal block screws and ensure that no cable insulation is trapped under the screws. Loose connections can result in cabling overheating. DO NOT switch on the electricity supply until the cover has been fitted.



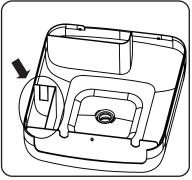
18) Besides side cable entry, this heater also can route it's cable via rear entry.



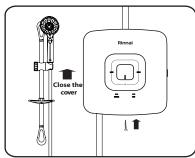
20) After the plastic is chipped off, lead the cable into the water heater cable clamp and terminal block.



22) Your shower should look like the picture above after installation.

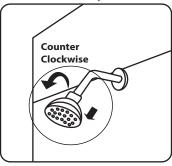


19) Flip to back of heater cover, this cover is design with breakable plastic for rear cable entry.

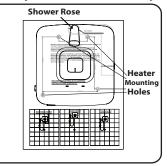


21) Close the cover correctly and secure the screw at the bottom of the cover.

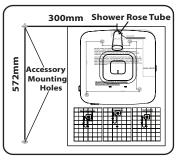
# Rear Entry (for multi entry model only)



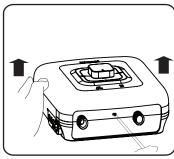
1) Remove the existing shower head (counter clockwise), left with the shower rose tube.



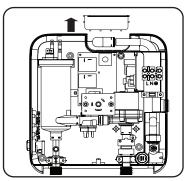
2) Place the installation template to the shower rose and mark the 4 heater mounting holes on the wall using pencil.



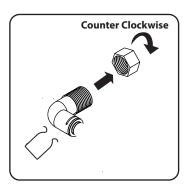
3) Draw the accessory mounting holes as per recommended dimension above.



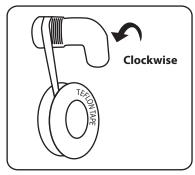
4) Remove the cover.



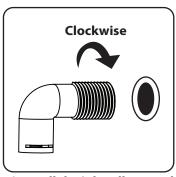
5) Remove the dummy plate.



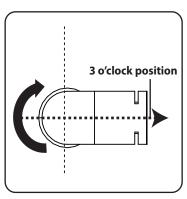
6) Remove the spring clip and hex nut stopper, follow by removing the hose from the inlet elbow.



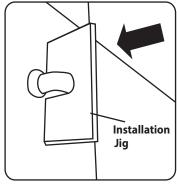
7) Wrap the teflon tape around the inlet elbow thread of the pipe in a clockwise direction (Provided by factory).



8) Install the inlet elbow to the water outlet.



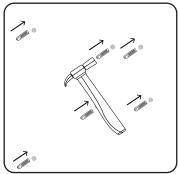
9) Leave the inlet elbow's tail to 3 o'clock position (or at the horizontal position) at the end of procedure.



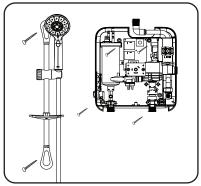
10) Fit the installation jig (tear out from box) to the inlet elbow, make sure the inlet elbow cannot be higher than the installation jig.



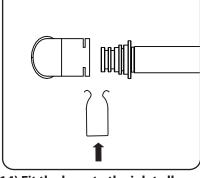
11) Drill with drilling machine the six marked mounting holes.



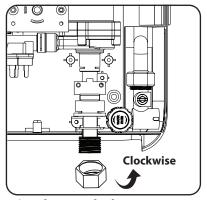
12) Fit the wall plugs into the mounting holes.



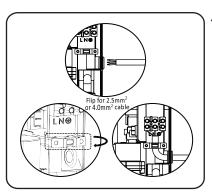
13) Mount heater unit and accessory to the mounting holes with 6 pcs of screw provided.



14) Fit the hose to the inlet elbow. Fasten the spring clip to the slot in between inlet elbow and the hose.



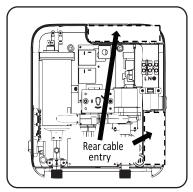
15) Make sure the hex nut stopper is fixed firmly at bottom inlet.



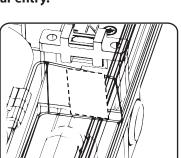
- 16a) Route the cable into the shower unit and connect to the terminal block.
  - b) Ensure cable clamp (flip) is fitted correctly according to 2.5mm sqr or 4.0mm sqr cable.
  - c) Earth cable to terminal marked ' ( )

    Neutral cable to terminal marked 'N'
    Live cable to terminal marked 'L'

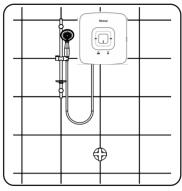
IMPORTANT: Fully tighten the terminal block screws and ensure that no cable insulation is trapped under the screws. Loose connections can result in cabling overheating. DO NOT switch on the electricity supply until the cover has been fitted.



17) Besides side cable entry, this heater also can route it's cable via rear entry.



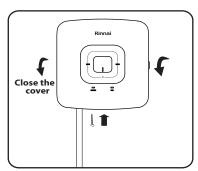
19) After the plastic is chipped off, lead the cable into the water heater cable clamp and terminal block.



21) Your shower should look like the picture above after installations.

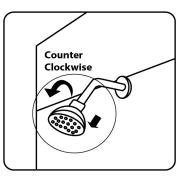


18) Flip to back of heater cover, this cover is design with breakable plastic for rear cable entry.

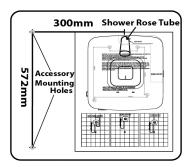


20) Close the cover correctly and secure the screw at the bottom of the cover.

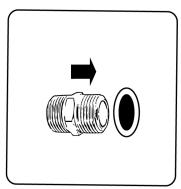
## **Bottom Entry**



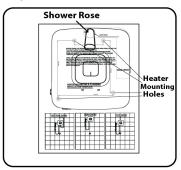
1) Remove the existing shower head (counter clockwise), left with the shower rose tube.



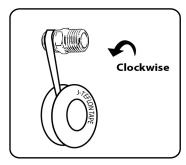
3) Draw the accessory mounting holes as per recommended dimension above.



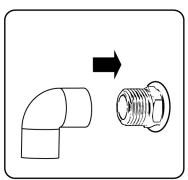
5) Fit the nipple thread to the plumbing thread.



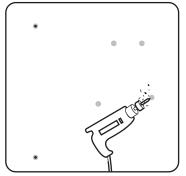
2) Place the installation template to the shower rose and mark the 4 heater mounting holes on the wall using pencil.



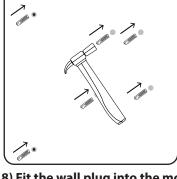
4) When wrapping teflon tape around the 15mm nipple's thread, it is important to wrap the tape in a clockwise direction (both end).



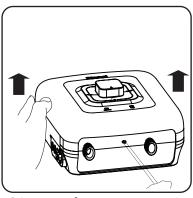
6) Follow by installing the elbow to the 15mm nipple.



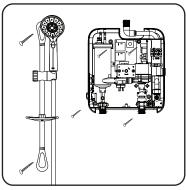
7) Drill with drilling machine the six marked mounting holes.



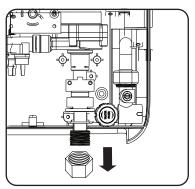
8) Fit the wall plug into the mounting holes.



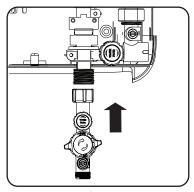
9) Remove the cover.



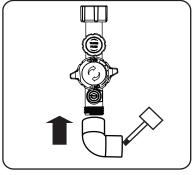
10) 6pcs screw to mount heater and accessory to the wall.



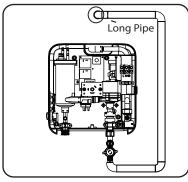
11) Make sure the hex nut stopper is removed at bottom inlet.



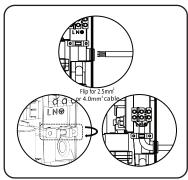
12) Follow by fixing the stop valve at the bottom inlet. Make sure it is fixed firmly with washers.



13) Insert elbow to the stop valve. Apply some PVC glue over the edge of the pipe.



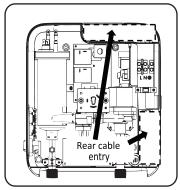
14) Install the long pipe between the inlet elbow at below and elbow at above. Glue all the neccessary joints using plumbing glue.



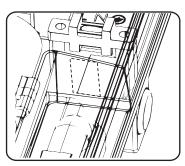
15a) Route the cable into the shower unit and connect to the terminal block.

- b) Ensure cable clamp (flip) is fitted correctly according to 2.5mm sqr or 4.0mm sqr cable.
- c) Earth cable to terminal marked '\equiv' Neutral cable to terminal marked 'N' Live cable to terminal marked 'L'

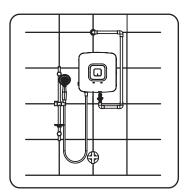
IMPORTANT: Fully tighten the terminal block screws and ensure that no cable insulation is trapped under the screws. Loose connections can result in cabling overheating. DO NOT switch on the electricity supply until the cover has been fitted.



16) Besides side cable entry, this heater also can route it's cable via rear entry.



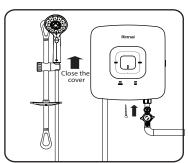
18) After the plastic is chipped off, lead the cable into the water heater cable clamp and terminal block.



20) Your shower should look like the picture above after installation.



17) Flip to back of heater cover, this cover is design with breakable plastic for rear cable entry.

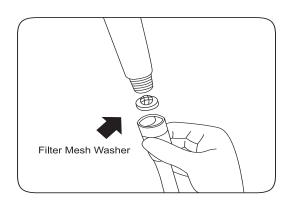


19) Close the cover correctly and secure the screw at the bottom of the cover.

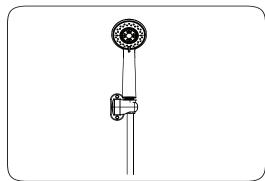
## **Fitting The Shower Set**

#### FITTING THE HOSE AND SPRAY HEAD

Fit the flexible hose (Warning: Metallic / Chromed Hose shall not be used) by connecting to the unit outlet (Left side) and handshower. Ensure the supplied washer is in place at the outlet and the filter mesh at the handshower.

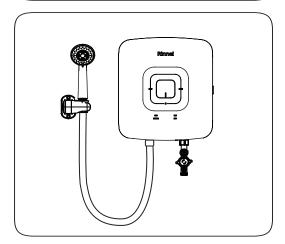


Place the handshower into the holder and check that it fits correctly.



### Important:

It is the conical end of the hose which grips into the holder. The handshower will not fit in the holder without the hose attached.



## Commissioning

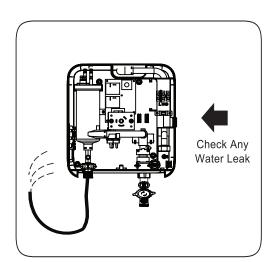
DO NOT switch on the electricity supply until the following procedure has been completed and the cover has been fitted.

The first operation of the shower is intended to flush out any remaining unit dirt particles, and to ensure the heater unit contains water before the elements are switched on.

This operation must be carried out with the flexible hose screwed to the outlet but without the sprayhead attached. Ensure the outlet of the flexible hose is directed to waste.

Turn ON the main water supply. Check if any water leaks from the pipe line.

Secure the cover in position with screws. DO NOT OVERTIGHTEN.



#### **TESTING TEMPERATURE SETTING**

Switch on the main electric supply to the shower at the isolating switch.

The 'RCD' or 'MAINS' light will light meaning the unit is on standby.

Turn the knob clockwise to LOW sign, the 'HEATER' light will light up.

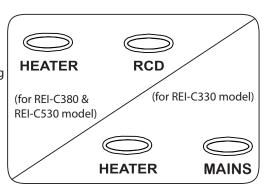
Turn the knob anti-clockwise to ∪sign, the 'HEATER' light will switch off again.

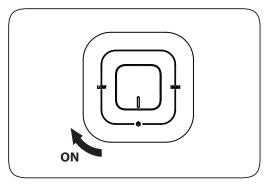
Continual turn of the knob clockwise, the temperature of the water should rise slightly.

Allow a few seconds for the warm water to reach the handshower, this shows that the power setting is operating correctly.

Set the shower temperature by rotating the knob as necessary.

Turn the knob clockwise for hotter water and anticlockwise for cooler water.





# TESTING RCD (For RCD Model Only)

Test the RCD by pressing the TEST Button. The Heater and RCD light will turn off.

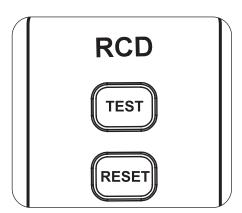
Press the RESET Button to switch ON the unit again. This shows the RCD should be in good condition.

#### Note!

If nothing happen when these button are pressed, do not use the heater, and contact your agent immediately.

Never attempt to repair the unit by yourself.

Fit the shower fittings. Once the riser rail is fitted, the shower is ready for normal use.



## **Operating The Shower**

**Important:** Ensure the commissioning procedure has been carried out.

To start the shower, turn the stop valve handle anti-clockwise to allow water to flow through the unit.

To stop the shower, turn the stop valve handle clockwise back to the position as shown in the figure.

CAUTION: Do Not Test the Stop Valve under dry condition.

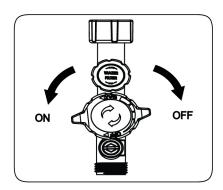
#### To adjust the shower temperature

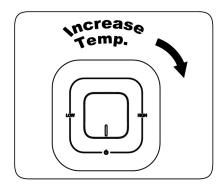
The shower temperature is altered by increasing or decreasing the Power Control via the Control knob.

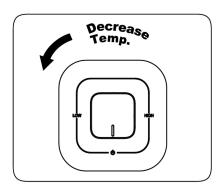
To increase the shower temperature Turn the Control Knob clockwise towards the HIGH sign; this will increase the water temperature.

To decrease the shower temperature Turn the Control Knob anti-clockwise towards the LOW sign; this will decrease the water temperature.

CAUTION: Be certain the showering temperature is satisfactory by testing with your hand before stepping under the sprayhead. There will be always a time delay of 10 to 15 seconds between selecting a flow rate and the water reaching the stable temperature for that flow rate. It is recommended that persons who may have difficulty understanding or operating the shower controls should not be left unattended whilst showering. Special consideration should be given to young children and the less able bodied.







### **User Maintenance**

#### **CLEANING**

# NOTE: Do Not Use Thinner, Alcohol or Petrol

Many household cleaners contain abrasives and chemical substances, and should not be used for cleaning plated or plastic fittings. These finishes should be cleaned with a mild washing up detergent or soap solution, and then wiped dry using a soft cloth.

#### **FILTER MAINTENANCE**

It is recommended that the filter is periodically cleaned in order to maintain the performance of the shower.

Remove the filter head from the stop valve. Remove the Filter Net and clean it using soft brush then wash it under running water. Ensure all dirt particles are removed.

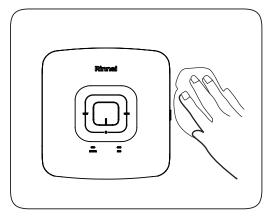
Fit it back after washing the filter.

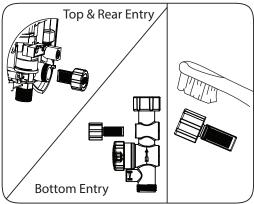
### TESTING RCD (For RCD Model Only)

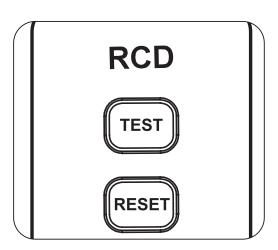
Test the RCD at least once a month.

Turn on the unit with electric power and water supply.

Test the RCD by gently pressing TEST button. The RCD should be automatically tripped to OFF position. Press RESET to turn the unit back on.







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Fault / Symptom	Cause	Remedy	
No shower coming out from the heater.	1.1 Interrupted Water Supply	Check whether the water supply is available.	
	Incoming water supply stop valves is turned off.	Turn on stop valve.	
	Dirt particles blocking inlet / outlet hole	Blocked sprayhead - clean or replace sprayhead. Blocked filter – see 'filter maintenance'.	
	2.1 Interrupted Power Supply	Check if a main power cut. Check other appliances and if necessary, contact the local Electricity Supply Company.	
2. Heater not functioning	2.2 Insufficient water supply to trigger flow switch	Heater requires minimum 2 litres/min water flow rate.	
	2.3 Thermal Cut-Out has operated		
	2.4 Malfunctioning on Flow Switch	Have the shower unit checked by a competent electrician or contact	
	2.5 Electrical malfunction	Customer Service.	
3. Water too hot	3.1 Not enough water flowing through the Unit.	Blocked sprayhead - clean or replace sprayhead. Blocked filter – see 'filter maintenance'.	
	Increase in ambient water temperature.	Switch to lower power setting and readjust flow rate to give the required temperature.	
4. Water is not hot enough	4.1 Too much water flow.	Reduce the flow rate by Pump Speed knob	
	4.2 Decrease in ambient water temperature	Switch to higher power setting and adjust the Pump speed knob to reduce speed in order to get on the desired temperature.	
	4.3 Electrical malfunction.	Have the shower unit checked by a competent electrician or contact Customer Service.	
5. Water supply turn off but the	5.1 Flow Switch malfunction	Have the shower unit checked by a competent electrician or contact Customer Service.	
indicator light is still ON	5.2 Faulty Triac		
G. Meter tone in	6.1 Interrupted Water Supply	See 1.1 and 3.1	
6. Motor tone increases	6.2 Faulty Pump Unit	Wait for internal pump to cool down. If still faulty contact Customer Service.	

**Model Electrical Rating** — Available 3.3kW 230V or 3.8/5.3kW 240V,50Hz

Minimum Water Flow Rate - 2 liters/min

Maximum Water Pressure -380 kPa (55 psi)

Minimum Water Pressure -20 kPa (2.9 psi)

Shower Temperature Control -Electronic Control

Water Connection -15mm dia. (1/2" BSP)

Dimension -284 mm x 250 mm x 95 mm

Gross Weight (Shower Holder B racket) - 2.0 kgs (1W), 2.40 kgs (3W)

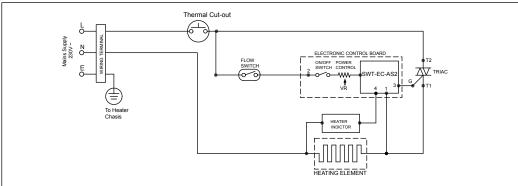
 Net Weight (Shower Holder B racket)
 − 1.30 kgs (1W), 1.70 kgs (3W)

 Gross Weight (Sliding Rail Set)
 − 2.30 kgs (1W), 2.70 kgs (3W)

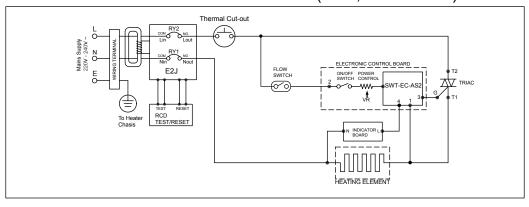
 Net Weight (Sliding Rail Set)
 − 1.30 kgs (1W), 1.70 kgs (3W)

## **Schematic Wiring Diagram**

## SCHEMATIC WIRING DIAGRAM (NON RCD, NON-PUMP)



### SCHEMATIC WIRING DIAGRAM (RCD, NON-PUMP)



## **Specification DC Pump Model**

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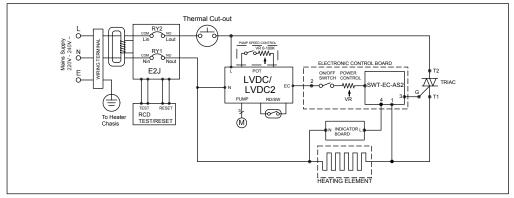
Model Electrical Rating - Available 3.8kW & 5.3kW 240V 50Hz

Minimum Water Flow Rate- 2 liters/minMaximum Water Pressure- 380 kPa (55 psi)Minimum Water Pressure- 20 kPa (2.9 psi)Shower Temperature Control- Electronic ControlWater Connection- 15mm dia. (1/2" BSP)Dimension- 284mm x 250mm x 95 mmGross Weight (Shower Holder Bracket)- 2.20 kgs (1W), 2.60 kgs (3W)Net Weight (Shower Holder Bracket)- 1.50 kgs (1W), 1.90 kgs (3W)

Net Weight (Shower Holder Bracket) -1.50 kgs (1W), 1.90 kgs (3W)
Gross Weight (Sliding Rail Set) -2.50 kgs (1W), 2.90 kgs (3W)
Net Weight (Sliding Rail Set) -1.50 kgs (1W), 1.90 kgs (3W)

## **Schematic Wiring Diagram**

## SCHEMATIC WIRING DIAGRAM (RCD, DC Pump)



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