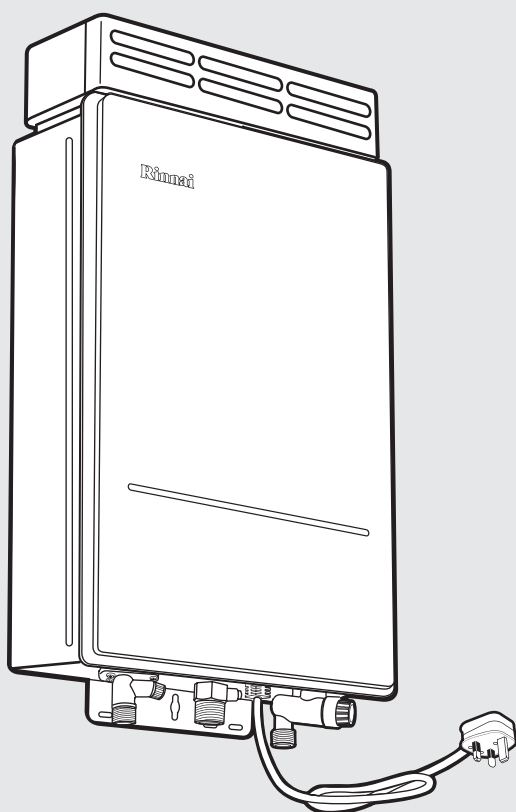




# DOMESTIC GAS WATER HEATER

# Instruction Manual



Model Name  
**REU-1215W-RS**  
**REU-2024W-RS**

## Contents Page

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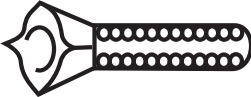


### Thank you for choosing Rinnai

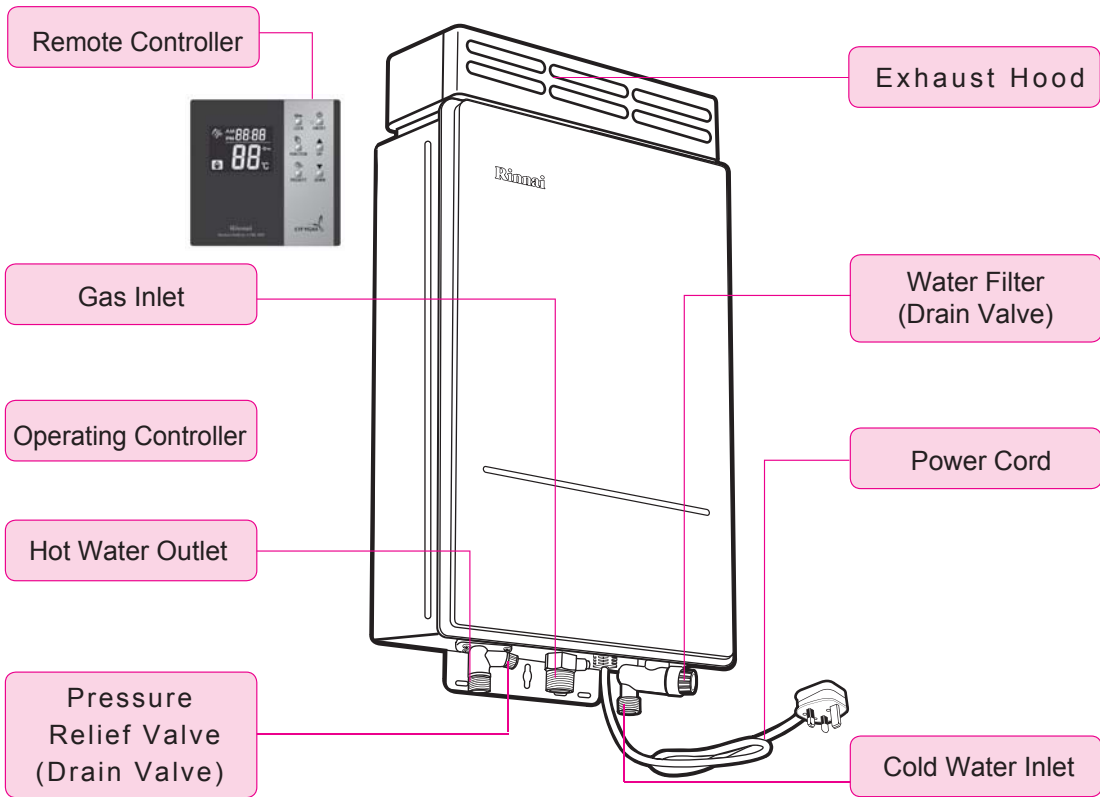
- Please read this manual carefully & install it as specified.
- Be sure to ask licenced professional to perform installation.

# COMPONENTS & PARTS

Function

- After unpacking the appliance check for damage, if the heater is damaged or appears to have any defects contact your supplier immediately.
- DO NOT install a damaged appliance before checking with your supplier.
- Remove the accessories pack and the heater from the carton and check that all the parts are included.

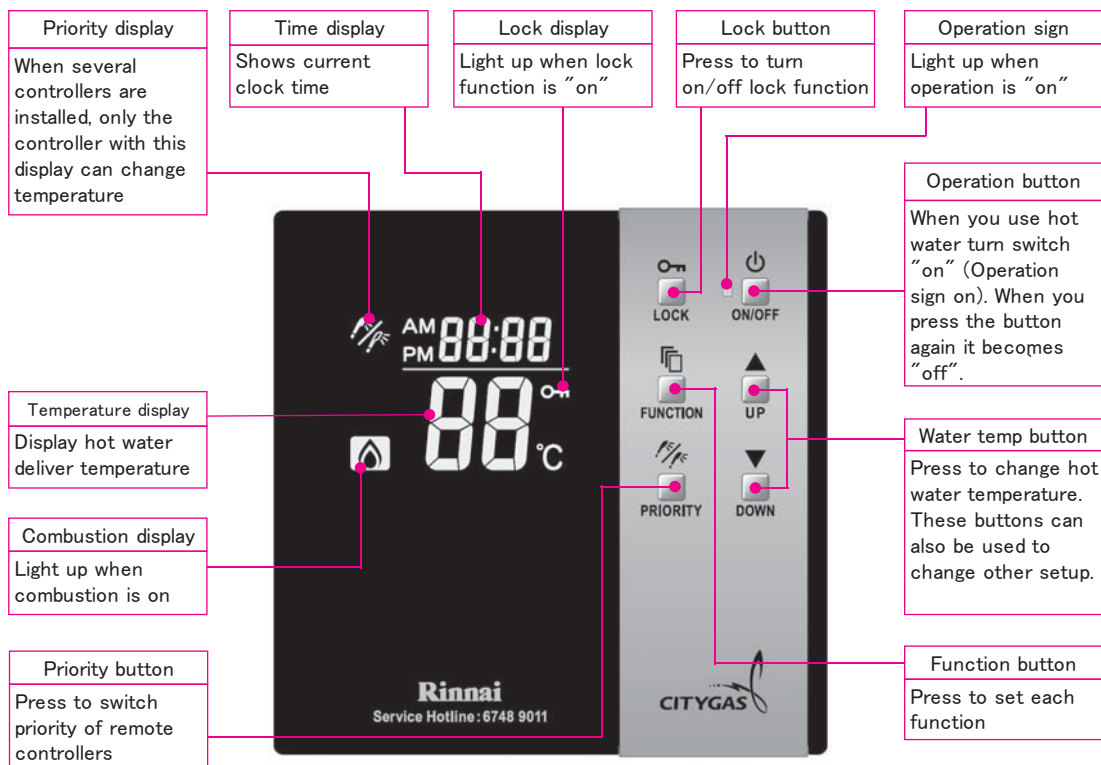
Diagram	Q.ty	Diagram	Q.ty
 Wall Plug	5	 Instruction Manual	1
 Screw	5		



# REMOTE CONTROLLER

- Remote controllers can be used in following combination. (3 controllers can be installed maximum)
  - 1x main remote controller
  - 1x main remote controller + 1x sub remote controller
  - 1x main remote controller + 2x sub remote controller

Main/Sub remote controller MC-195-RS (Sub remote controller is Accessory)



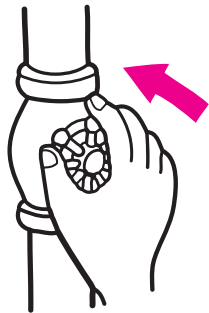
Function

# FIRST TIME USE

Follow below instructions before use

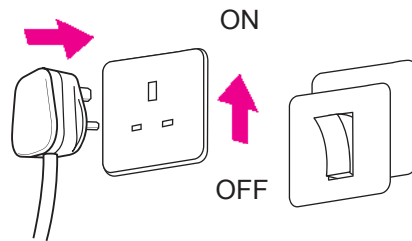
1

Open water inlet valve fully



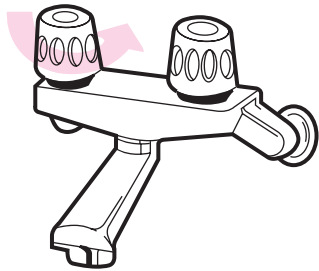
3

Plug in



2

Turn on hot water tap, make sure there is water flow, then turn off tap



4

Open gas valve fully



Caution

To avoid electric shock, don't use wet hands to touch the power plug or socket.

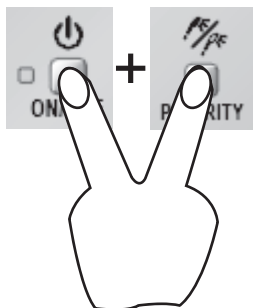
## Setting the remote controller

\* Remote controller setting can be conducted with “ON/OFF button” and “priority button” at both ON and OFF position.

\* Setting Operation:

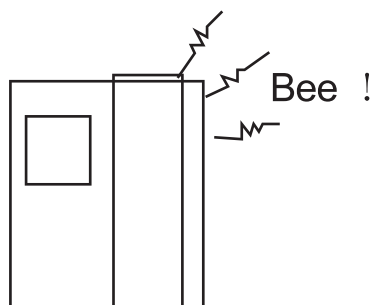
**1**

Press both “ON/OFF” button and “priority” button simultaneously and hold 5 seconds or longer.



**2**

The sound “Bee” can be heard from the remote control, indicating that the setting operation is complete.



- If the setting operation is done on the main remote controller, it becomes the standby remote controller.
- If the setting operation is done on the standby remote controller, it becomes the main remote controller.
- \* Remote controller will remember the temperature that was set last time. If this temperature is higher than “Memorized Max temperature”, next time the remote controller is opened, the temperature will drop to the “Memorized Max temperature”.
  - The temperature will drop to different “Memorized Max temperature” according to different remote controller.
  - Main remote controller’s “Memorized Max temperature” is 50℃.
  - Standby remote controller’s “Memorized Max temperature” is 42℃.

# HOW TO USE

## Set clock time

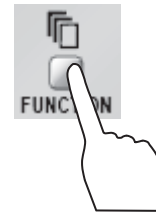
Display shows "AM/PM --:--" when you turn on the controller without setting clock time. Please set the clock following procedure below.

- ※ Display also shows "AM/PM --:--" after blackout or electric plug is disconnected. Please set the clock time.

1

Press "Function" button when operation is "Off".

- "AM12:00" shows on display.

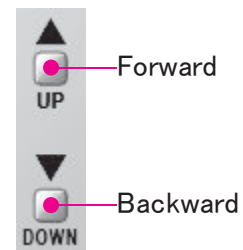
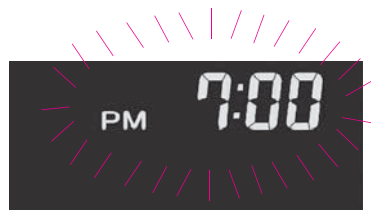


- ※ Clock setting operation can only be done on the main remote controller. The main remote controller and the standby remote controller can switch to each other. The setting way please see the "Setting the Remote controller" on P4.
- ※ When Function button is pressed, no clock indication appearing on the remote control means that the remote control is the standby remote controller. Please change over the remote control as per "Setting the Remote Controls".
- ※ When more than 1 remote controllers are installed, time of all remote controllers are modified if you adjust time by main remote controller and turn on controllers.

2

Press "Up" or "Down" button to adjust current time.

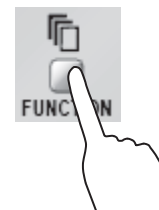
- Press "Up" once to move 1 minute forward, and Press "Down" once to move 1 minute backward.
- Keep pressing the button to change time by 10 minutes.
- Please don't mix up AM and PM.



3

Press "Function" button again.

- Display stops flashing to finish the setting. Clock starts from 0 sec when "Function" button is pressed. Using time signal will help you to set more accurate time.
- Regardless "Function" button is pressed, setting will be finished automatically after 1 min.



# HOW TO USE



Warning

- To prevent being scalded, check the water temperature by hand before shower.
- After using hot shower, some hot water will still remain in the water pipe. To prevent being scalded, check water temperature by hand before use.
- Please switch off power, close water and gas inlet valve if you do not use water heater for long term.

## Adjust hot water delivery temperature

1

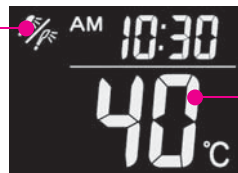
Press "Operation" button to turn it "On".

- Operation sign lights in Green and display is on.
- Please check "Priority" display is on. Only with controller with "Priority" display you can change the hot water temperature.

Operation sign



Priority display



Hot water temperature

2

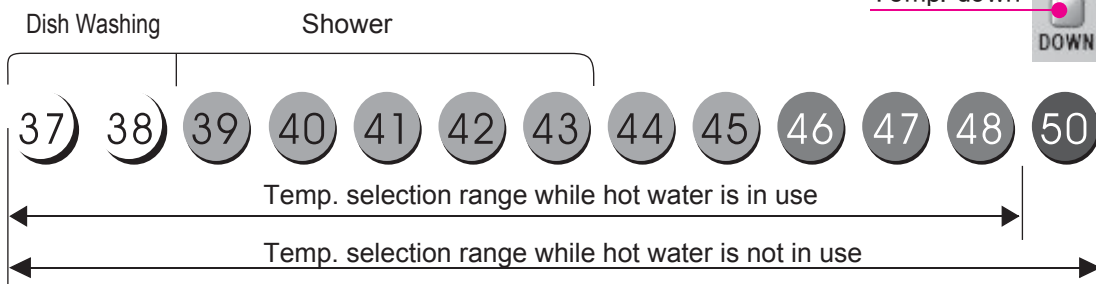
Press "Up" or "Down" button to change hot water temperature.

- Press "Up" button once to increase temperature by 1 deg. Press "Down" button to decrease temperature by 1 deg.
- You can set following 13 steps of temp.

Temp. up



Temp. down



- Temperature is set as 40 deg in factory line.
- While hot water is delivering you cannot increase temperature more than 48 deg.
- Set temperature is recorded in controller even when operation switch is "Off". However, sub controller cannot memorize temperature more than 42 deg.

Operation

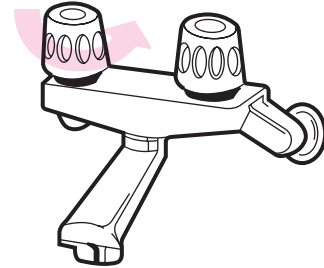
# HOW TO USE

3

Deliver hot water with opening hot water tap.

- During hot water delivery display shows "Combustion" display.

Combustion display



Notice

- The actual water temperature varies depending on season and length of piping. Please take displayed temperature as rough indication.
- With small amount of water delivery, "Combustion" display can disappear and water become cold.
- With low set hot water temperature and with high water inlet temperature the actual delivered hot water can be hotter than set temperature.

## How to use "Priority" button

When more than 1 remote controllers are installed, you can change the temperature by the controller only with "Priority" display. This is for avoiding injury such as burn.

1

Press "Priority" button when hot water is not in use.

- "Priority" display lights on display of the controller which allows you to change hot water temperature.

Priority display



- When more than 1 controllers are installed, each of controllers remembers set temperature when they were once "Priority". When priority is switched, the set temperature of prioritized controller becomes the hot water delivery temperature. However, sub remote controller doesn't remember temperature more than 42 deg.

- ✘ When you install only one controller "Priority" display remains on.
- ✘ When the controller is switched "On" from "Off" the controller is prioritized and shows "Priority" display.



Warning

- To prevent burn, do not change the priority setting when you use showering.



## How to use lock function

With lock function all buttons stop working to prevent small kids from doing mischief or wrong operation.

- Lock function can be used for both cases controller is "On" and "Off".
  - In lock mode all operation buttons are blocked except lock button.
  - Lock mode can be set by each controller.
- ✘ In order to lock all remote controllers when more than 1 controllers are installed, please "Lock" each controller.  
If all remote controllers are not locked, setting of temperature, "On" or "Off" can be controlled by other controllers.

1

Press "Lock" button for 3 seconds until it beeps to show "Lock" display on the display and lock mode is on.



Lock display

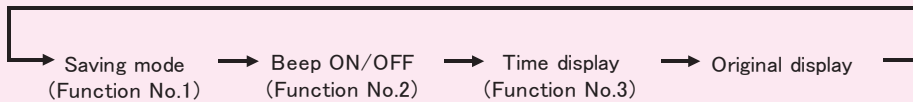


2

Press "Lock" button again for 3 seconds to beep and "Lock" display disappears and lock mode becomes off.



Press "Function" button when remote controller is "On", you can set various functions. Every time you press "Function" button to change display as follow.



## Save electricity of display (Saving mode)

This is a function of saving electricity of remote controller. Once set time passes, display goes off automatically and only operation sign (Green) lights.

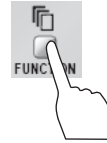
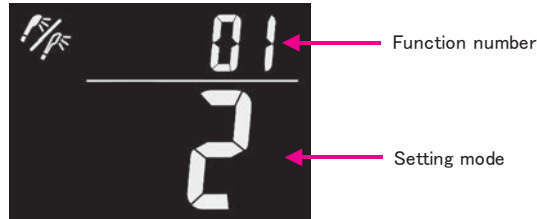
- Saving mode can be set for each remote controller.
  - Use hot water or press any button to light up display again.
- ✘ Display doesn't go off without using any hot water. Please use hot water at least once.

# HOW TO USE

1

Press "Function" button once when remote controller is "On".

- Display shows as below.



2

Press "Up" or "Down" button to change to preferable mode.

- Saving mode 2 is preset in the factory.

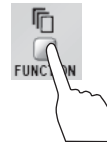
Mode	Brightness	Light off time
1	Dark	After 10 min
2	Bright	After 25 min
OFF	Bright	Keep brighting



3

Press "Function" button 3 times to go back to original display.

- Unless pressing "Function" button after 1 minutes it goes back to the original display automatically.



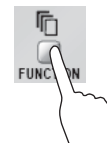
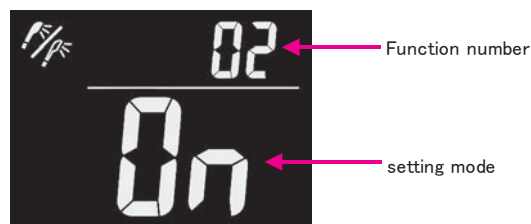
## Beep ON/OFF

Use when you want to turn off beep.

1

Press "Function" button twice when remote controller is "On".

- Display shows as below.



# HOW TO USE

2

Press "Up" or "Down" button to change mode.

- Beep ON is preset in the factory.

Mode	Beep
ON	Beep
OFF	Silence



3

Press "Function" button twice to go back to original display.

- Unless pressing "Function" button after 1 minutes it goes back to the original display automatically.



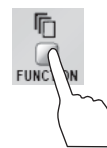
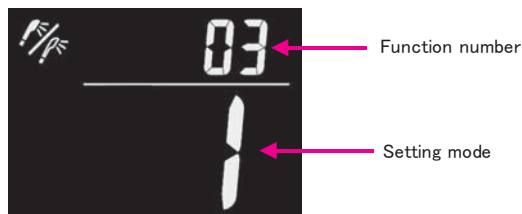
## Time display ON/OFF

You can choose if clock time is shown in operation "On" or "Off".

1

Press "Function" button 3 times when remote controller is "On".

- Display shows as below.



2

Press "Up" or "Down" button to choose mode.

- Mode 1 is preset at the factory.

Mode	Operation ON	Saving mode while operation ON	Operation OFF
1	Mention	No-mention	No-mention
2	Mention	Mention	Mention
OFF	No-mention	No-mention	No-mention



3

Press "Function" button once to go back to original display.

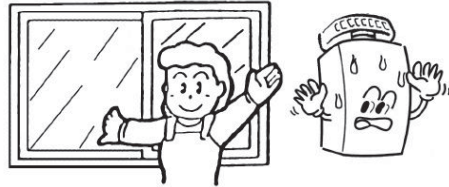
- Unless pressing "Function" button after 1 minutes it goes back to the original display automatically.



# SAFETY NOTES

**A**

Outdoor water heater must not be installed indoor. If the unit is installed indoor, poor ventilation will cause incomplete combustion which leads to oxygen deficiency and CO toxication.



Outdoor water heater must not be installed indoor.

**B**

Check and clean Exhaust outlet regularly to prevent from blocking.

Check and clean exhaust outlet



**C**

To prevent being scalded, do not touch the Exhaust hood or other parts after used.



**D**

Inflammable materials or chemicals must be removed from the surrounding of the unit.



# SAFETY NOTES

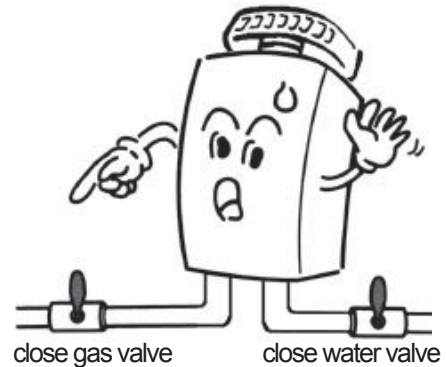
**E**

Stop using water heater during thunder storm.



**F**

If any problem happen, close the gas valve and water tap and refer to "Trouble Shooting". If product doesn't still operate properly, please contact Rinnai authorized service centre.



**G**

Please do not repair the appliance by yourself. High voltage inside of the heater may harm you. Unauthorized service work may cause some damages to the heater.



# INSTALLATION

## Installation locations for the water heater

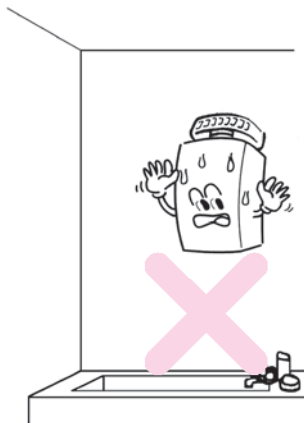
- Please install the unit well ventilated outdoor place (ex.balcony, rooftop)



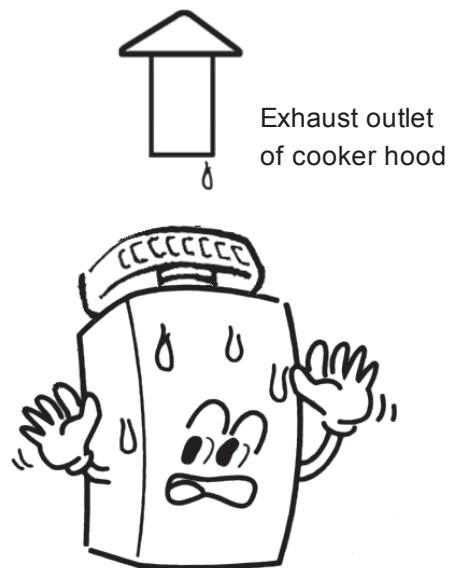
- Please do not install near other gas appliances. Please do not put flammable gas or liquid around the unit.



- It is prohibited to install the unit indoor or inside of bathroom.



- Please do not install the unit underneath of ventilation fan or cooker hood.

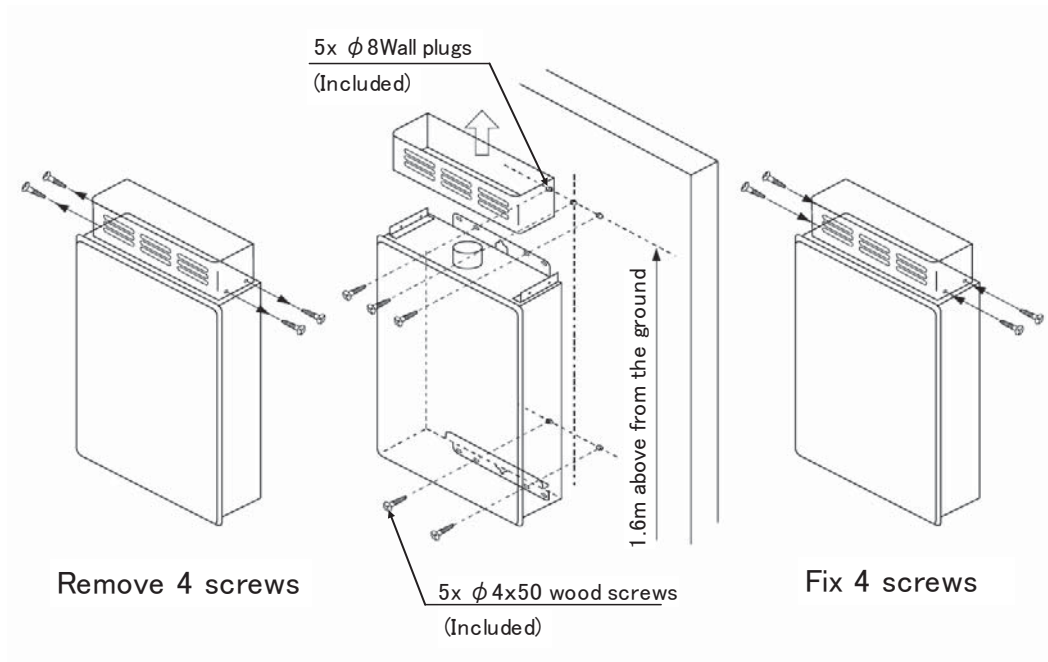


- Please install the unit where its noise or exhaust air do not bother neighbors.

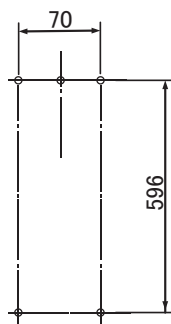
# INSTALLATION

## Water heater installation procedure

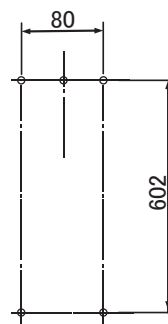
- Remove exhaust hood. (Remove 4 screws)
- Hole location: Hole on wall following water heaters dimension and instruction, and hammer in 5x  $\phi 8$  wall plugs.
- Screw a wood screw into the wall plug which is on the middle of the top, until the distance between screw head and wall becomes 5mm.
- Hang water heater on the screw at the notch of the upper hanging bracket and entwist the rest 4 screws on wall plugs to fix the main body.
- Fix exhaust hood using 4 screws.



REU-1215W-RS



REU-2024W-RS



Hole location (mm)

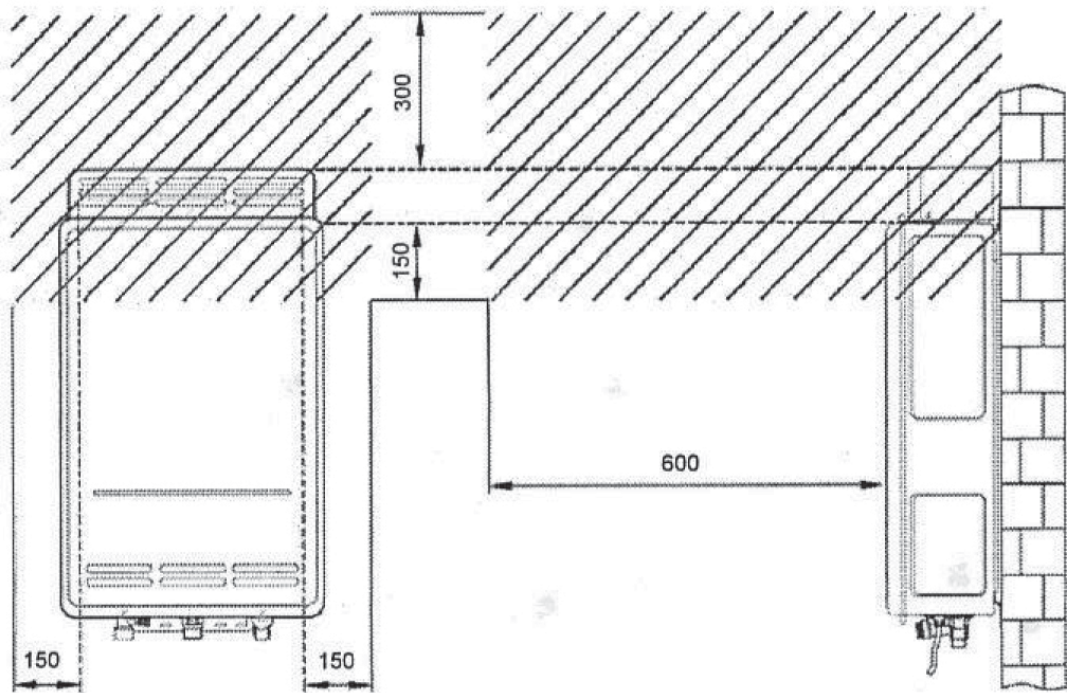
# INSTALLATION

## Water heater installation procedure



Notice

- Install the unit at places with enough space for exhaust and air intake.
- To avoid exhaust air coming inside of room, do not install the unit near the openings of buildings (shaded area at the the below.)



Hole location(mm)



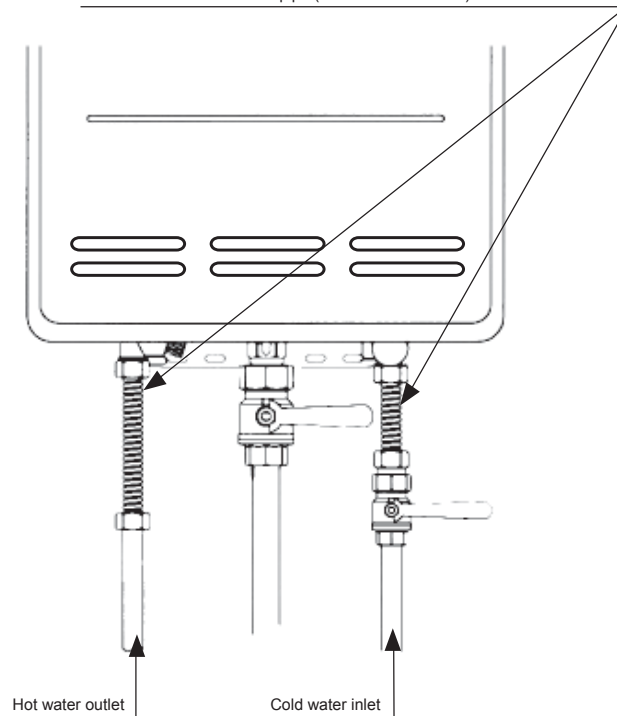
## Water inlet/outlet piping



### Notice

- To facilitate repair and maintenance, set a water inlet valve near the water inlet.
  - It is recommended that stainless steel corrugated pipes (inside diameter more than  $\phi 12\text{mm}$  for REU-1215W-RS and  $\phi 16\text{mm}$  for REU-2024W-RS) are used at the water inlet and outlet joints of the water heater so as to facilitate the disassembly of the equipment for repair.
  - Before connecting the water inlet pipe to the equipment, open the water inlet valve to flush out the dirt and debris in the water pipe. When the water inlet and outlet pipes are connected to the equipment, wake to carry out the flushing test. After this, remove the water inlet filter from the water inlet joint and clean it.
  - Do not use rusty metal pipes as water inlet and outlet pipes.
  - Reduce the quantity of joints and shorten the piping distance.
  - Users who use and install shower heads should select pipes with larger diameter and shower heads with larger hole diameter.
- The pipes must be installed by professional person. Please connect the pipes according to the figure.

1/2" Stainless steel flexible pipe (For REU-1215W-RS).  
3/4" Stainless steel flexible pipe (For REU-2024W-RS).



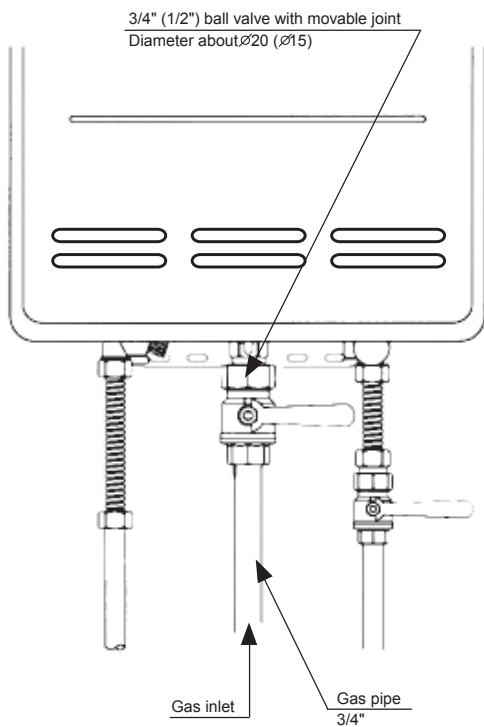
# INSTALLATION

## Gas piping

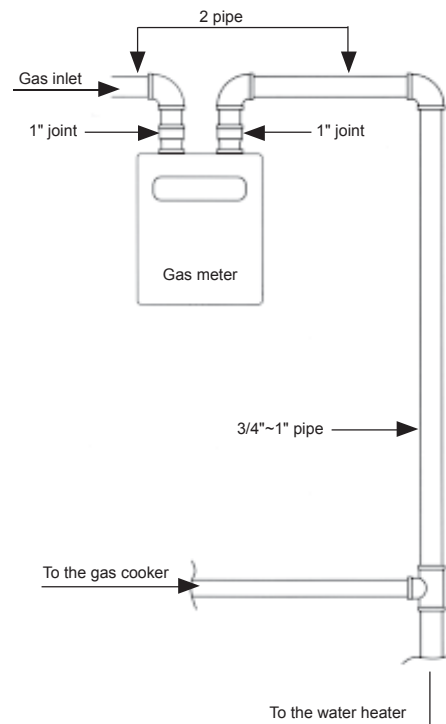


### Caution

- Gas dedicated ball valves must be installed between the water heater and the gas pipe .
- Town gas water heater must be connected with metal pipes, cannot use of rubber hoses.
- Since water heater combusts huge amount of gas in a short time, make sure of providing enough gas to the unit. Piping for town gas should have enough allowance because town gas flow rate is high and pressure loss inside of piping is high.
- Clean up the metal dust inside of piping before connect to the unit. If metal dust comes into the unit, it may cause explosion accident.
- Piping construction should be treated by professional plumbers.



Note: Dimensions in the parentheses are installation specifications for liquefied petroleum gas water heater



Method of installing gas pipe at the outlet of the gas meter (Excluding LPG)

# REMOTE CONTROLLER INSTALLATION

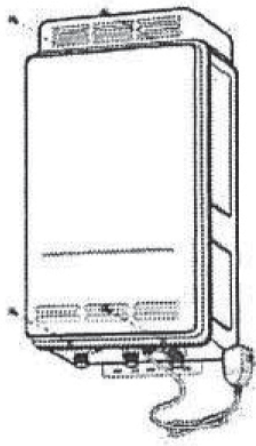


Notice

- Please do not install the unit at following places
  - In bathroom or places with spray or steam (Controller is not waterproof)
  - Places with high temperature or sunshine
  - Places where oil scatters
  - Ragged wall (Case can be distorted to cause failure)
  - Places where some medicines are used (Benzene, Alcohol, extra fatted soap)
- Please check the electric plug is unplugged before installation. (Turn off distribution switchboard)
- PCB can be damaged if cable construction is done with power on

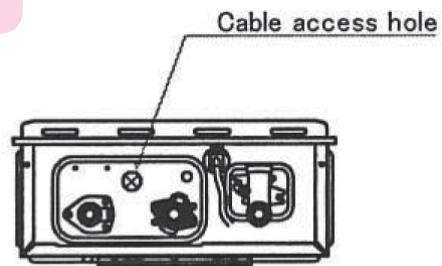
1

Remove front panel (remove 4 screws)



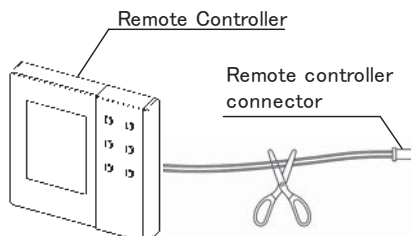
3

Insert duplex cable from cable access hole at the bottom of the unit



2

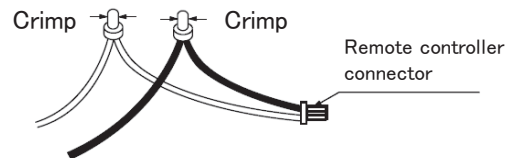
Cut remote controller cable around the middle



4

Use closed end connector to crimp duplex cable with cut remote controller cable

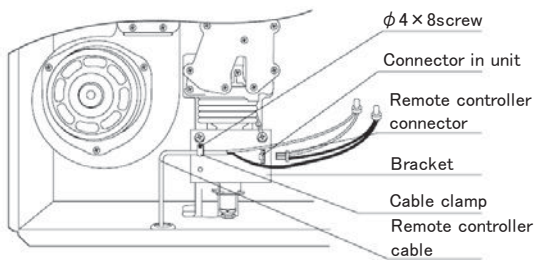
- Peel off the trunking of each cable by 10mm before you crimp them
- There is no polar character.



# REMOTE CONTROLLER INSTALLATION

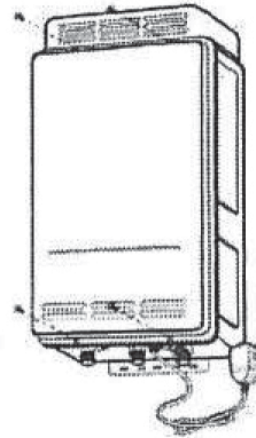
**5**

Insert remote controller connector into the connector of unit and fix remote controller cable with bracket, using screws and cable clamp.



**6**

Fix front panel using 4 screws



**7**

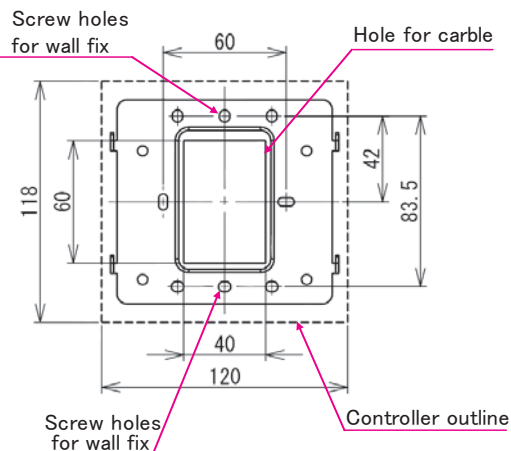
Fix remote controller in following way

## Installation onto wall

**a**

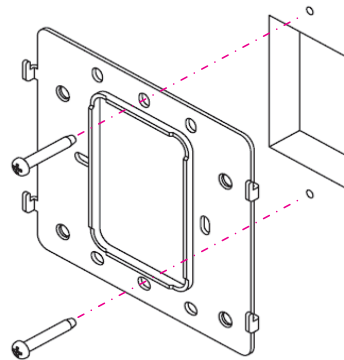
Make holes on the wall for bringing out cable and for screws

- Size of hole for cable should be less than 60 x 40mm
- In case the wall is made of concrete, make holes for wall plug (φ 6, more than 25mm depth) and place wall plug in it.



**b**

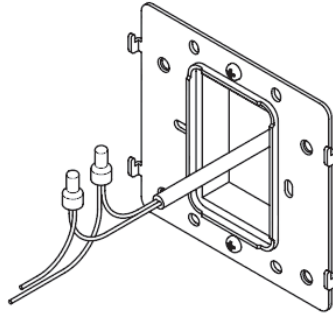
Put the fixing plate onto the wall using φ 4.1×25 screws included.



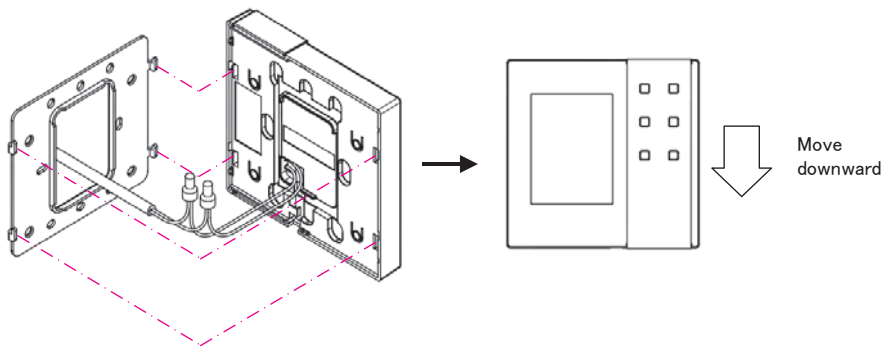
# REMOTE CONTROLLER INSTALLATION

**c** Bring out duplex cable through the hole to connect with remote controller cable with Closed end connector.

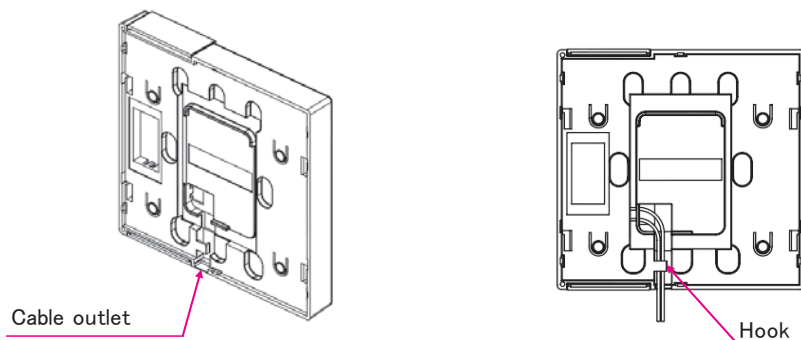
- Peel off the trunking of each cable by 10mm before you crimp them.
- There is no polar character.



**d** Insert hooks of fixing plate into remote controller and move controller down until it clicks.



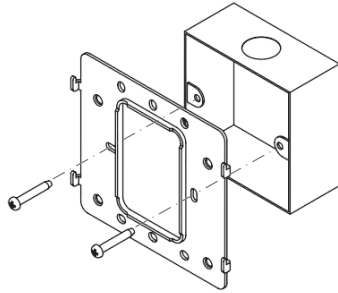
✘ In case of open wiring, remove cable outlet on remote controller case by nipper. Fix cables using hook on remote controller casing.



# REMOTE CONTROLLER INSTALLATION

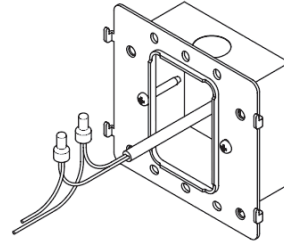
## Installation onto switch box

**a** Put fixing Plate onto switch box using screws. (M4×25)

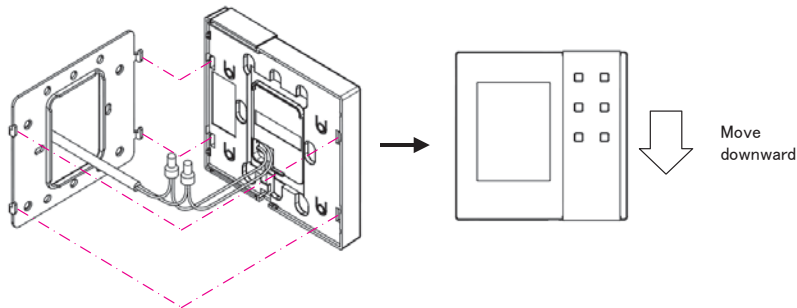


**b** Bring out duplex cable through the hole to connect with remote controller cable with closed end connector.

- Peel off the trunking of each cable by 10mm before you crimp them.
- There is no polar character.



**c** Insert hooks of fixing plate into remote controller and move controller down until it clicks.



Notice

- Duplex cable need to be wired keeping off from electric codes of other electric appliances. Unit might not operate properly. If wires are close to electric codes of TV or radio, it might cause noise to display and sound.
- Wire cables where there is no effect from heat.
- Protect cables by using conduit tube, in case of installing inside of cement .
- The maximum length of duplex cable is within 25m. Make sure the total length of cable is within 50m.
- When duplex cable is longer than required, do not insert into water heater and remote controller.
- Please do not use cables whose cross section surface is less than  $0.5 \text{ mm}^2$  to avoid breakdown.

# REMOTE CONTROLLER INSTALLATION

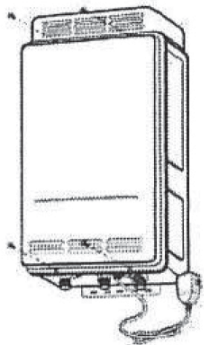
## How to install remote controllers more than one controller

- Remote controllers can be used in following combination. (3 controllers can be installed maximum)

- 1x main remote controller + 1x sub remote controller
- 1x main remote controller + 2x sub remote controller

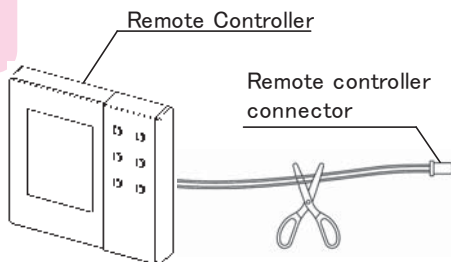
**1**

Remove front panel (remove 4 screws)



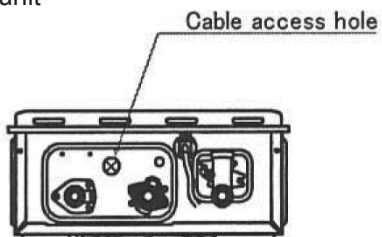
**2**

Cut remote controller cable around the middle



**3**

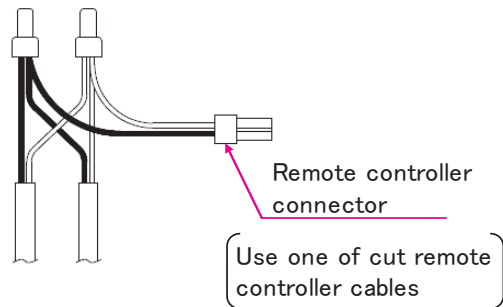
Insert duplex cable from cable access hole at the bottom of the unit



**4**

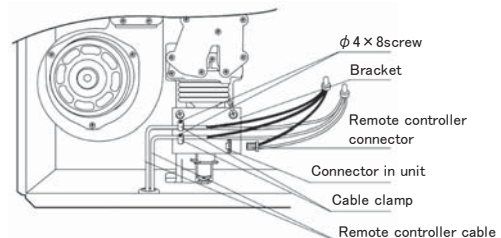
Use closed end connector to crimp duplex cable with cut remote controller cable

- Peel off the trunking of each cable by 10mm before you crimp them
- There is no polar character.



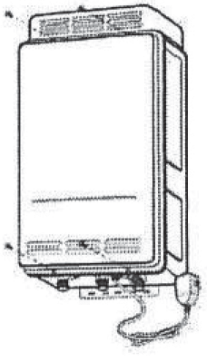
**5**

Insert remote controller connector into the connector of unit and fix remote controller cable with bracket, using screws and cable clamp.



# REMOTE CONTROLLER INSTALLATION

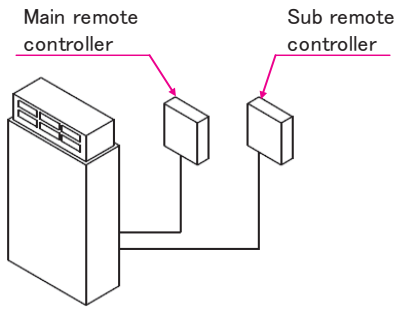
**6** Fix front panel using 4 screws



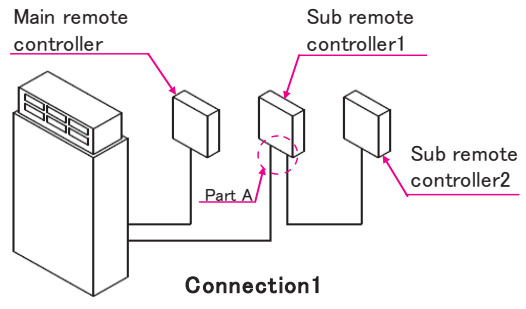
**7** Refer to p15 ~ p18 to install each controller

• Connect remote controller and duplex cable as below

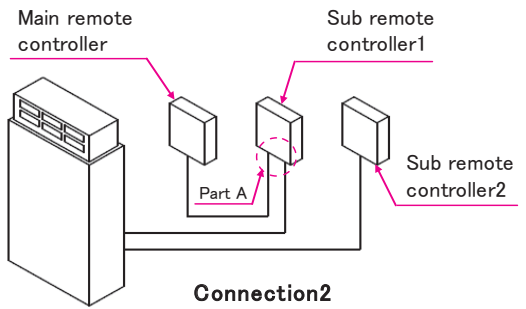
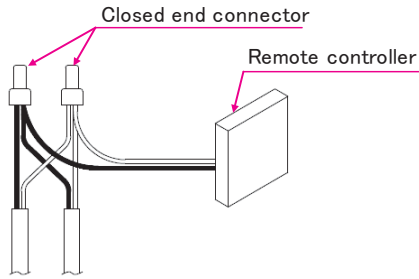
Connect 2 remote controllers



Connect 3 remote controllers



※ Connect Part A as below.



Installation & Maintenance

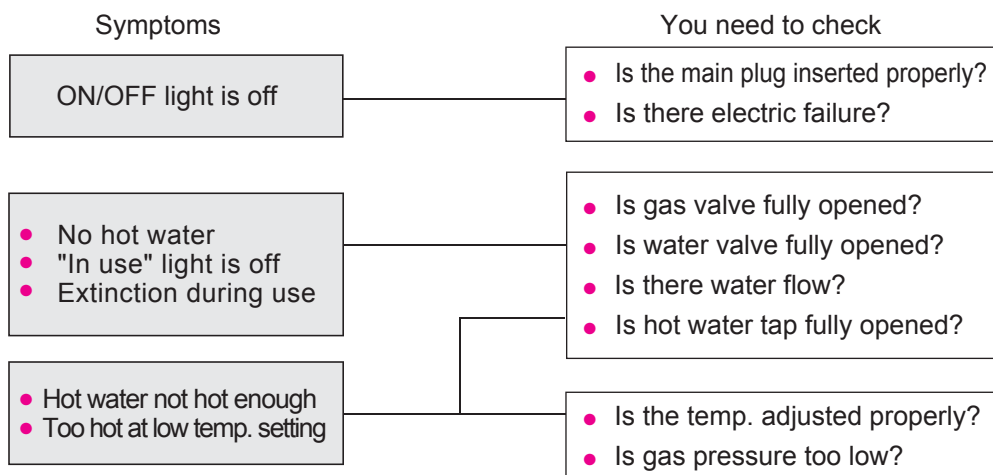


# TROUBLE SHOOTING

Following conditions are not troubles

Symptoms	Causes & Solutions
Too small volume of hot water becomes cold water	When hot water volume is set too low, burners shut down and water becomes cold, do not set hot water volume too low.
Hot water doesn't come out	When incoming water temp. is low and hot water tap is fully opened, it could exceed maximum heating capacity of the heater.
Higher hot water comes out in low setting	When incoming water temp. is high and hot water tap is only slightly opened, hot water temp. will get very high. Turn hot water tap to larger volume.
Fan rotation noise remains after stop using hot water	Fan rotates for a while after operation in order to make reignition faster.
Display shows "--: --" as time	Display shows "--: --" in energizing after blackout. Please reset the time. (refer to page 5)

Please check if you face following conditions



- If the product doesn't still operate properly after the above inspections, then disconnect the main plug, insert again to restart the operation. If this doesn't still solve the problem, please contact Rinnai service centre.

# ERROR MESSAGES

## Error Codes

In case of failures, heater will stop automatically and an error message will flash on the digital monitor of the operating controller. Turn the hot water tap OFF, then ON again or try switch OFF the power, then ON again.

Error Code	FAULTY
10	Combustion fan rotation failure
	Air supply/Exhaust blockage
11	Spark failure
12	Flame failure
14	Thermal fuse/Over-heating protect device operates
16	Over boiling
32	Outgoing water temp sensor failure
52	Modulation solenoid valve operating circuit failure
61	Combustion fan failure
71	Solenoid valve operating circuit failure
72	Flame rod circuit error

- If error message is still shown, make sure to close the gas valve. Disconnect plug and contact Rinnai service centre.
- When the screen of the digital monitor of the Operating controller is blank, disconnect the power plug and connect again, press power ON. If there is still no light, please call Rinnai service centre.

# INSPECTION & MAINTENANCE



Caution

- Regular inspection & maintenance is recommended for safe operation
- When maintenance is required, close the gas valve, disconnect the main plug & wait for it to cool down.
- Do not open the front panel.

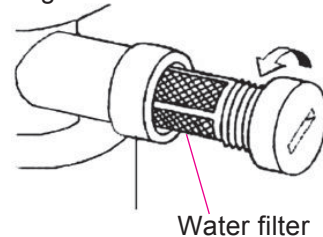
Please take note following items during inspection

- Is there any unusual noise during operation?
- Is there anything wrong with the product appearance?
- Is there any flammable materials close to the product or exhaust outlet?
- There are safety cautions on the front panel of the product. If these cautions are illegible because of oil stain, clean it with cloth. Do not clean it with detergent, thinner etc. Do not remove it.
- In order to ensure safe operation, please take safety inspection every year. Please contact Rinnai service centre about regular inspections.

## Maintenance

- If there is oil stain on the surface of the product, clean it with wet cloth. Do not use detergent, thinner, benzene etc.
- If there is dust on the water filter at the water inlet, the hot water amount will be reduced. Please close water inlet valve, remove water inlet water filter and clean it. Especially if there has been any water piping construction works recently near by your place.
- If the exhaust is blocked by dirty matter and the operation is continued, this will cause incomplete combustion. Be sure to keep the exhaust outlet clean.

Rotate water filter to the counterclockwise by hands or by inserting a coin into the grave.



Notice

- When carry out the maintenance, make sure to keep the inner parts dry. If not, it will cause product faulty.

# INSPECTION & MAINTENANCE

## In disuse for long term

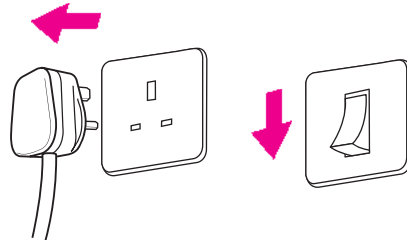
1

Close gas valve



3

Disconnect power plug and turn the switch to OFF position.



2

Close water valve



4

Drain out water inside of heater

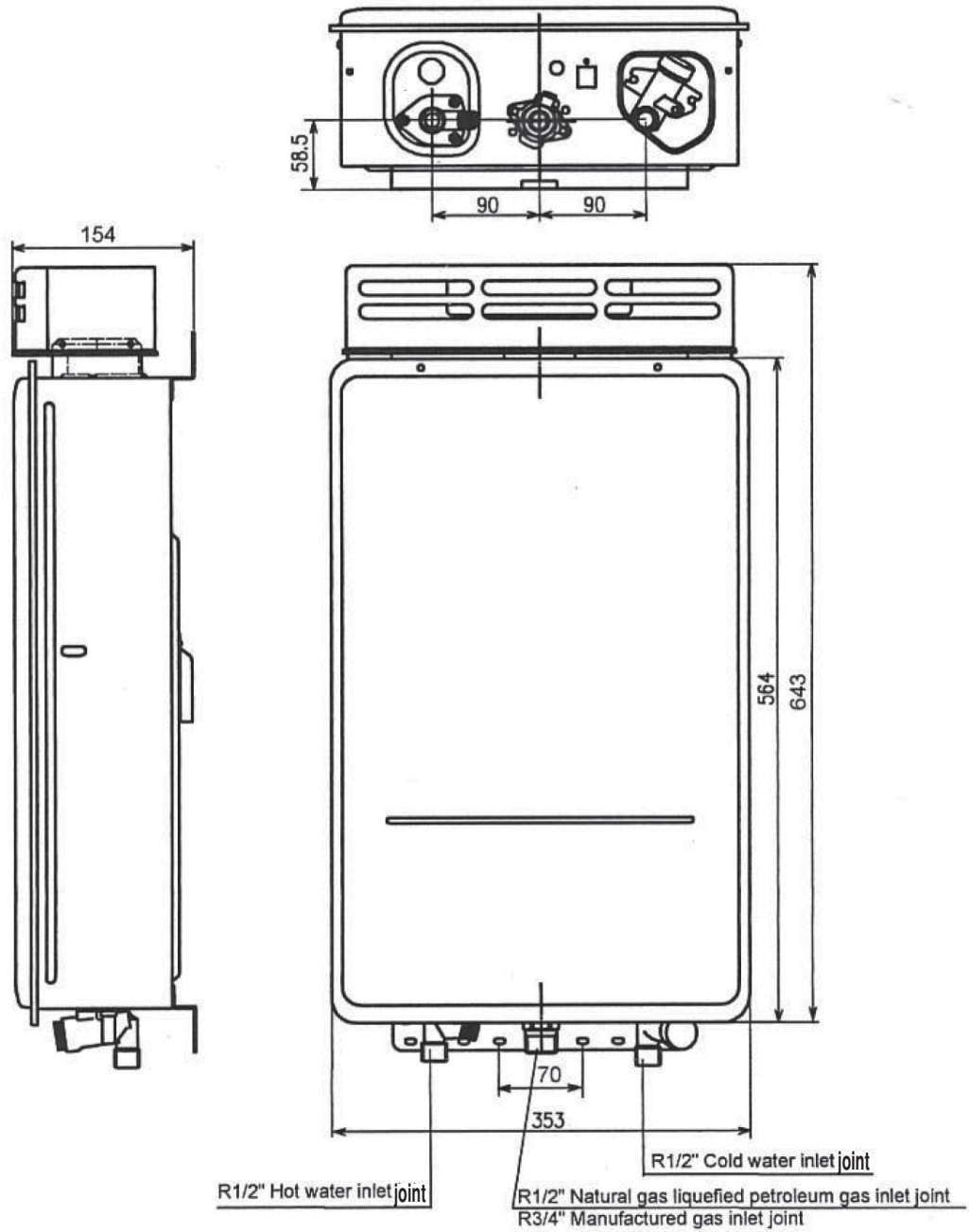


Caution

To avoid electric shock, don't use wet hands to touch the power plug or socket.

# DIMENSIONS

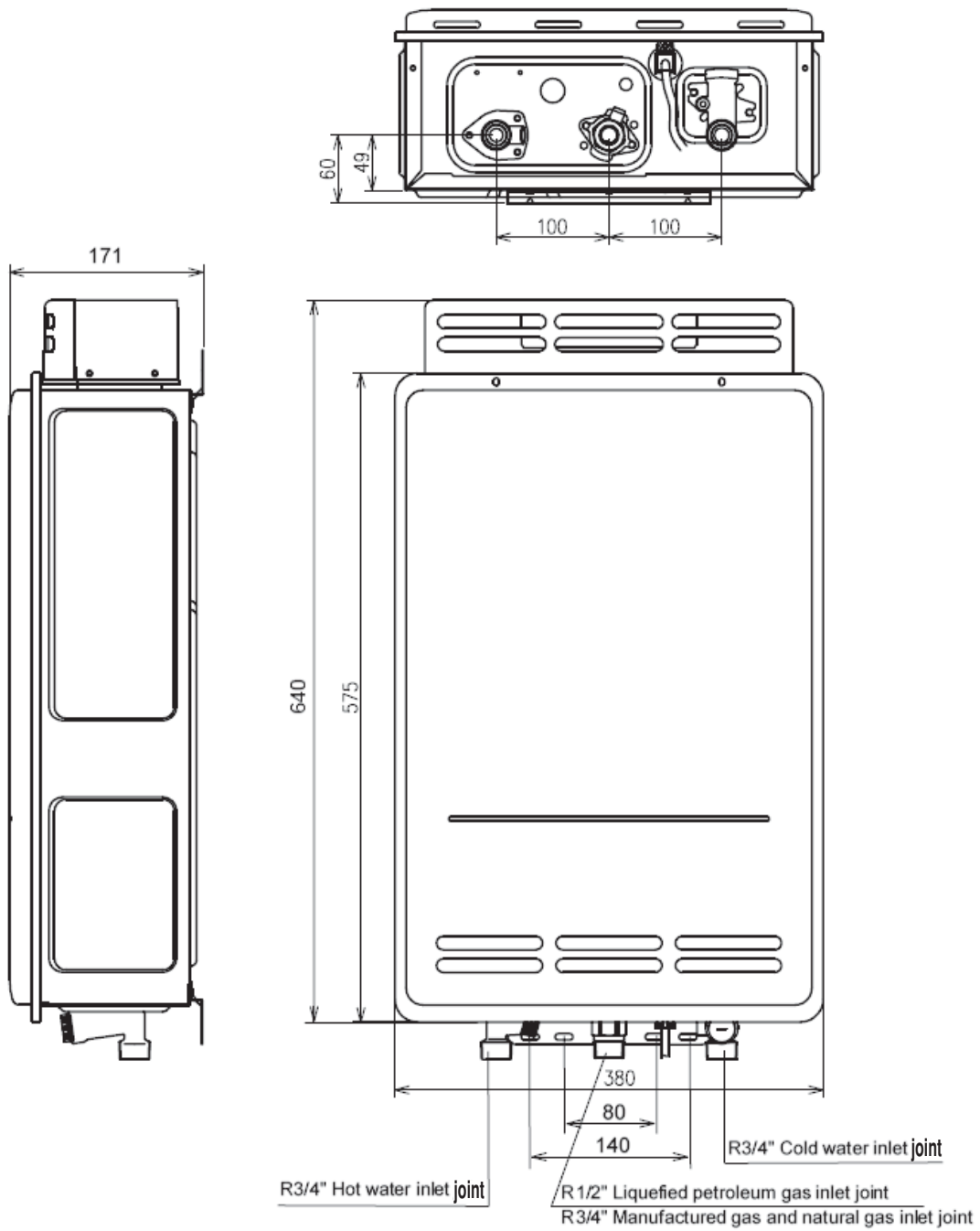
REU-1215W-RS



Installation & Maintenance

# DIMENSIONS

REU-2024W-RS



# PRODUCT SPECIFICATION

Appliance type		Forced exhaust domestic gas water heater Type B	
Model name		REU-1215W-RS	REU-2024W-RS
Type of gas		Town Gas (G 110)	
Gas supply pressure		8 ~ 20 mbar	
Heat input Q <sub>n</sub> / Q <sub>m</sub>		23.5/2.7 kW	38.9/2.9 kW
Useful output P <sub>n</sub> / P <sub>m</sub>		20.7/2.4kW(12/1.4L/min ∠25)	34.9/2.4kW(20/1.4L/min ∠25)
Temperature range		37 °C ~ 50 °C	
External dimension		(W)353x(H)643x(D)154(mm)	(W)380x(H)640x(D)171(mm)
Weight		14.8kg	19.2kg
Minimum water flow		2.2L/min (10kPa)	
Water pressure (P <sub>w</sub> )		10bar	
Connection diameter	Gas	R3/4"	
	Cold/Hot water	R1/2"	R3/4"
Power supply		AC230V/50Hz	
Electric consumption		60W	59W
Maximum water flow		15L/min	24L/min
Safety devices	Flame failure	Flame rod	
	No water heating	Water flow sensor	
	Over temperature	Thermistor (95°C gas valve shut down)	
	HEX. damage	Thermal fuse (150°C cut off)	
	Over water pressure	Pressure relief valve	
	Over heating	Bi-metal switch (90°C OFF)	
	Over current	Glass fuse (2A)	

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