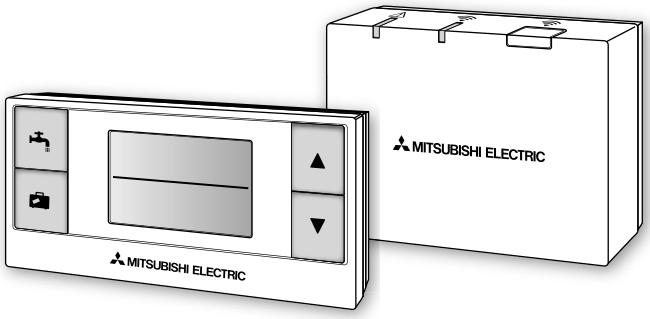
Contents

MITSUBISHI ELECTRIC

ATW WIRELESS SYSTEM

PAR-WT40R-E
PAR-WR41R-E



This manual explains installation of the PAR-WR41R-E wireless receiver and the PAR-WT40R-E wireless remote controller, and settings of these devices. Before installing the devices, read this manual thoroughly. After reading, be sure to hand this manual to the user.

1. Safety Precautions

- The precautions mentioned below are important to use the device safely. Be sure to understand and follow them.
- The following hazardous classification shows the likelihood and severity of hazards if a person does not follow the instructions contained on the following signs.

⚠ **Warning**	Indicates a hazardous situation which, if a person does not follow the instructions, could result in death or serious injury.
⚠ **Caution**	Indicates a potentially hazardous situation that, if a person does not follow the instructions, may result in bodily injury or property damage.

⚠ Warning	
►Installation	
Do not use the device in particular environments.	Do not use the device in particular environments where the following substances are present in large amounts: oil, vapour, organic solvent, corrosive gas (such as ammonia, sulphuric compounds, and acid or the like), or where acid or alkali solution, or particular sprays are used frequently. This could affect operating performance, or cause corrosion, which could result in electrical shock, breakdown, smoke generation, or fire.
Do not place the devices in an environment where flammable gas may occur, stay, flow in, or leak.	Build-up of flammable gas could result in fire or explosion.
The device must be installed by a dealer or an authorised technician according to the appropriate installation manual.	If the device is installed improperly, electric shock or fire could result.
Do not place the device in an environment that exposes it to large amounts of vapor or condensation.	Electric shock, fire, or breakdown could result.
►Wiring	
The wireless receiver's maximum voltage is 12V DC. Do not connect 230V AC power source to the wireless receiver.	Breakdown, ignition, or fire could result.
Connections must be made securely and without tension or external force on the terminals.	If connections are made improperly, breaking of wire, heat generation, or fire could result.
►Others	
Do not use sharp objects to press the buttons.	Electric shock or breakdown may result.
Do not touch or operate the device with wet hands.	Electric shock or breakdown may result.
Do not wash the device with water or solution or the like.	Electric shock or breakdown may result.
When installing or repairing the device, ask a dealer or a qualified technician.	If the device is not installed properly, electric shock, smoke generation, or fire could result from entry of dust or water.
Do not disassemble or modify.	

⚠ Caution	
Do not drop the device.	This could break the case or affect the device enough to make it inoperable.
Install the device in a place capable of bearing its own weight .	If the device is not installed securely or properly, the wireless receiver may fall.

■ Disposal

This symbol mark is for EU countries only.

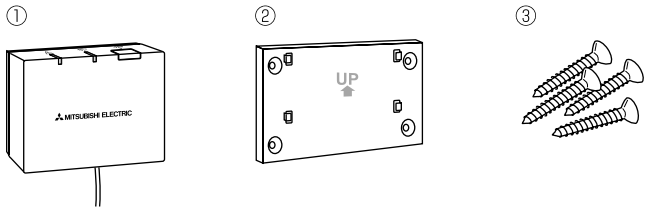
This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and/or reused. This symbol means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste. If a chemical symbol is printed beneath the symbol, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration.
This will be indicated as follows: Hg: mercury (0.0005%), Cd; cadmium (0.002 %), Pb: lead (0.004%)
In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.
Please, dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.
Please, help us to conserve the environment we live in!

2. Accessories and Installation Tool

The following items are included in the box.

Item	Nos.
① Wireless receiver <PAR-WR41R-E> (2 m long cable included)	1
② Bracket	1
③ Flat head screw (4.1 × 6)	4
④ Installation and setting manual	1



* Installing of the devices requires a Phillips-head screwdriver (No.2 6 mm).

3. Before using ATW Wireless System

Following is the summary of the procedure for installing and setting the wireless system.

1. Devices and manuals required to set and install the wireless system

① PAR-WR40R-E wireless remote controller
② PAR-WR41R-E wireless receiver
③ ATW wireless system installation and setting manual (this manual)
④ Wireless remote controller operation manual (hereinafter abbreviated as OM)
⑤ ATW system installation manual (hereinafter abbreviated as IM)

2. Installing and setting procedure

① Power off the ATW system.
② Install the wireless receiver on the ATW system.
(See "4. Installing the Wireless Receiver" in this manual.)

When installing the wireless receiver, be sure to set the SW1-8 on the control board to ON. (See "5.1 DIP Switch Functions" in IM.)

③ Power on the ATW system, and the LEDs will blink on the receiver for 3 seconds.
④ Place two size AA alkaline batteries in the wireless remote controller.
(See "·Battery" in "4. Before Operation" in OM.)
⑤ Perform pairing process between the wireless receiver and the remote controller.
(See "5.2. Pairing" in "5. Setting the Wireless Remote Controllers" in this manual.)

The wireless receiver goes through a pairing process only while the ATW system is off. When the system is ON, be sure to turn it off before beginning the pairing process.

⑥ Test wireless communication between the wireless remote controller and the wireless receiver.
(See "5.4 Communication Test" in "5. Setting the Wireless Remote Controllers" in this manual.)
⑦ Position the wireless remote controller in an appropriate place.
(See "4. Before Operation" in OM.)
⑧ To set the wireless remote controller as a room sensor that monitors room temperature, see "5.4 Main Controller Initial Settings" in IM.

⑨ Use the main controller to set the ATW system to the room temp. ( ) mode.
When the flow temp.( ) mode or the compensation curve ( ) mode is selected, the wireless remote controller will operate as a thermostat. (See "■ Initial Settings" of "5.4 Main Controller" in IM.)

When the remote controller set as a room sensor runs out of battery or gets a communication error during room temp. mode, the room temp. mode will automatically switch to the compensation curve mode.
The room temp. mode will be restored by battery replacement or solution of communication error.

Installation and setting of the wireless remote controller is complete. To set additional wireless remote controllers, repeat from Step ⑤ to ⑨.

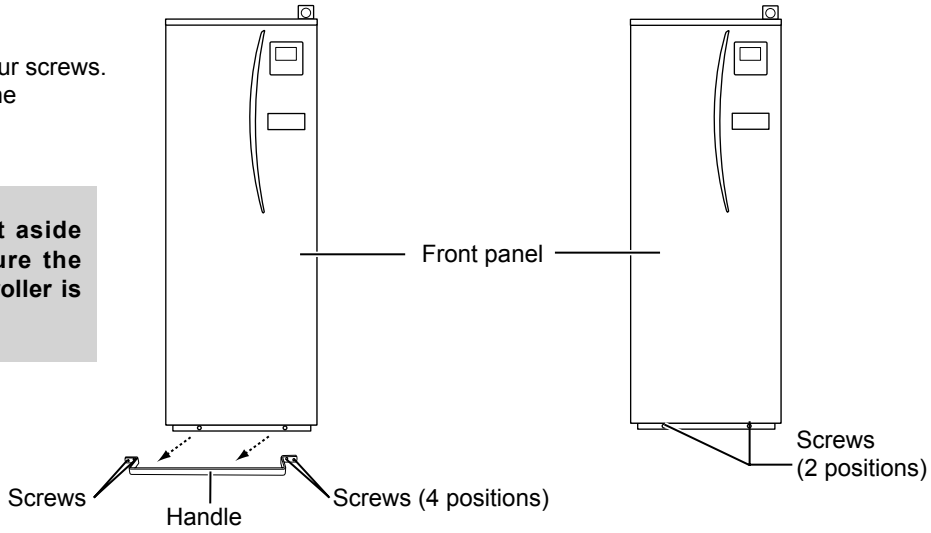
4. Installing the Wireless Receiver

4.1 Connecting to the Cylinder unit

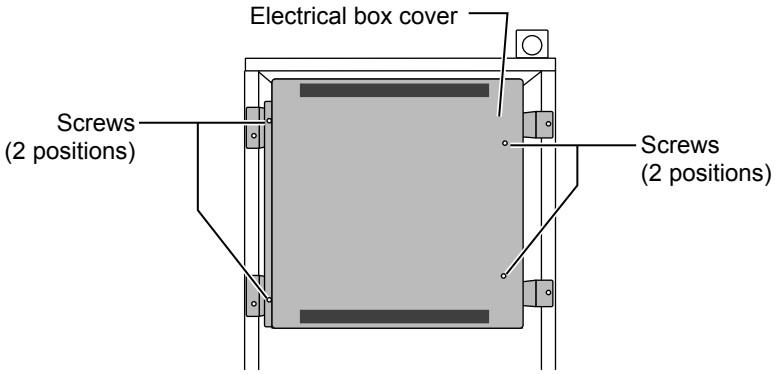
*** Before installation, be sure to turn off the main power supply.**

① Remove the handle by removing four screws. Remove the two screws that hold the front panel, and remove the panel.

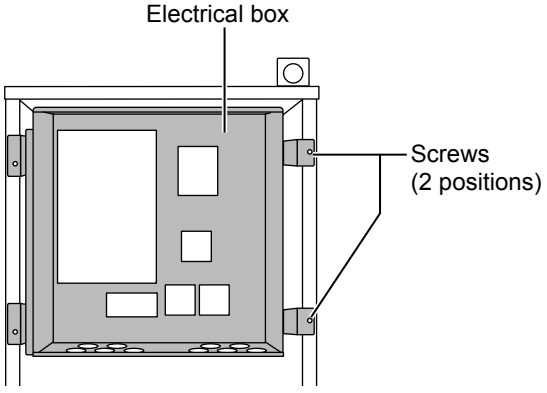
If the removed front panel is set aside away from the indoor unit, ensure the relay connector on the main controller is disconnected.

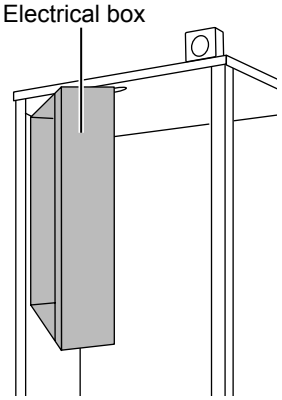


② Remove the four screws to remove the electrical box cover.



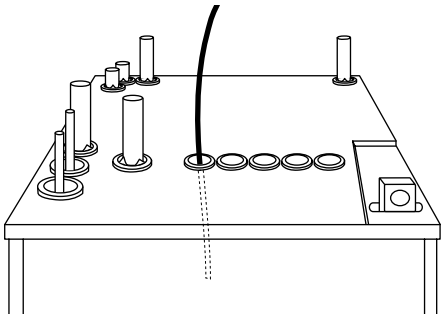
③ Remove the two screws to pull the electrical box so that the electrical box is swung toward you from right.



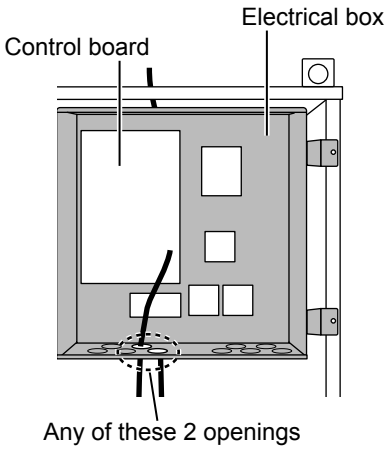


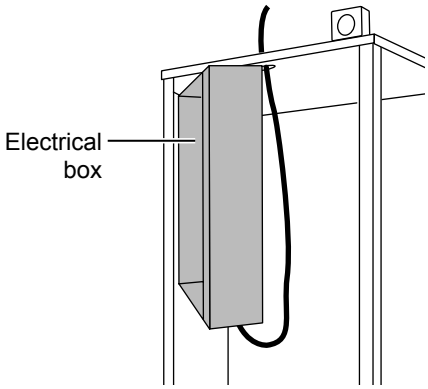
④ Run the receiver's cable into the cylinder unit through the left-most opening on top of the unit.

Do not run the receiver's cable through an opening that a power cable goes through and do not bundle the cable together with a power cable.

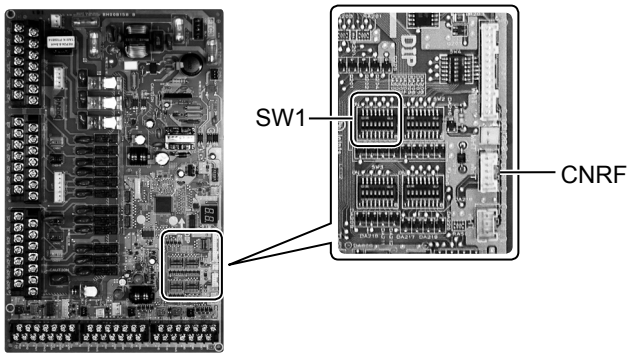


⑤ Route the cable out the back of the electrical box, and run the cable into the box through any of the shown openings on the underside of the box.

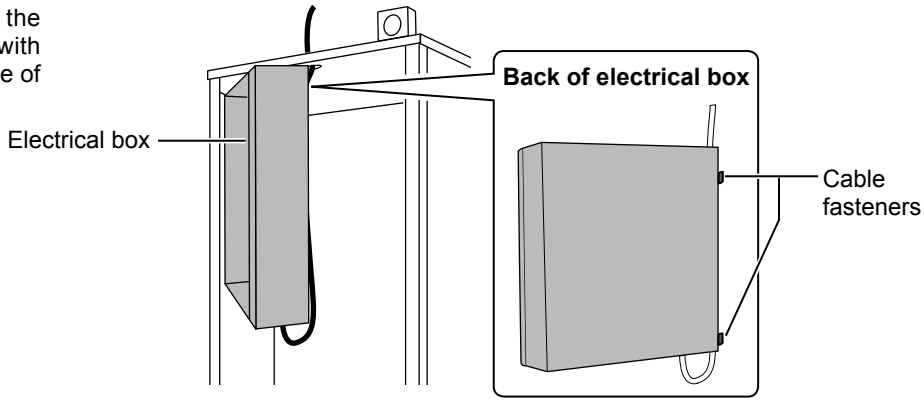




⑥ Connect the cable connector to the CNRF terminal on the control board. Switch ON SW1-8.



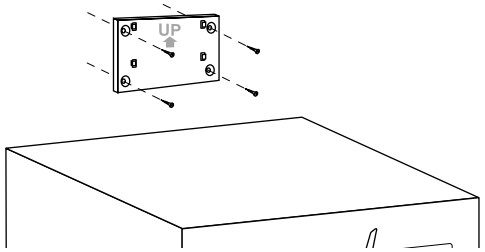
⑦ Remove excessive slack on the cable and secure the cable with two cable fasteners on the side of the electrical box.



⑧ Place the electrical box back in the original position and reinstall the two screws.

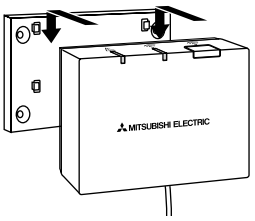
⑨ Check the maximum reach of the cable and install the bracket on the wall with screws.

Do not excessively pull the cable when checking the maximum reach.



<Notice>
- **Do not overtighten the screws.**
  ►The bracket may deform or break.
- **When installing the bracket, select an interference-free space.**
  ►Keep the installing area at least 10 cm away from metal or a wall box. If unable to do so, always place the room wireless remote controllers in locations where the communication test determines that the wireless remote controllers are fully capable of communication with the wireless receiver.
- **Do not install the bracket with screws on the exterior casing of the cylinder unit.**
  ►The internal parts may be damaged, which could result in breakdown of the indoor unit.

⑩ Place the wireless receiver on the fixed bracket.
Hook the holes on the back of the wireless receiver onto the projections on the bracket, and fix the wireless receiver in place.



<Notice>
- **Do not place the wireless receiver inside the cylinder unit.**
  ►Both the wireless receiver and the indoor unit may break down, produce heat, and the wires may break.
- **Do not let the wireless receiver stand on top of the cylinder unit. Always fix the wireless receiver onto the bracket.**
  ►Wireless communication performance may be affected.
- **Do not pull the cable excessively.**
  ►Breakdown, ignition, or fire may result.
- **Do not leave the wireless receiver suspended.**
  ►Breakdown, ignition, or fire may result.

⑪ Close the electrical box cover, and fix it with screws.

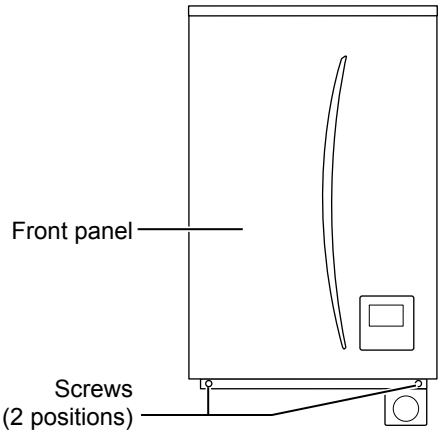
⑫ Fix the front panel and the handle with screws.

If the relay connector on the main controller has been removed, connect the relay connector again before reinstalling the front panel.

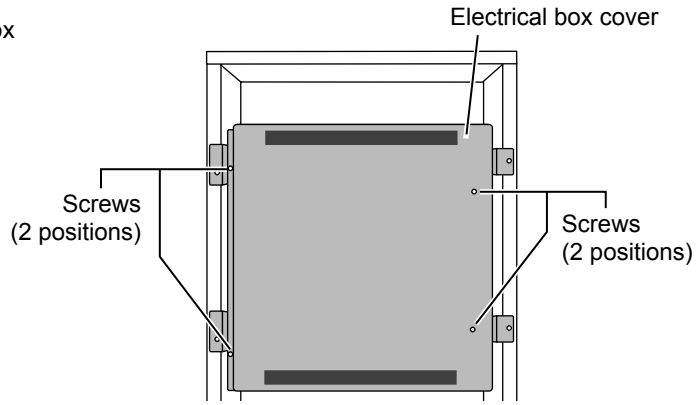
4.2 Connecting to the Hydrobox unit

*** Before installation, be sure to turn off the main power supply.**

① Remove the two screws that hold the front panel, and remove the panel.

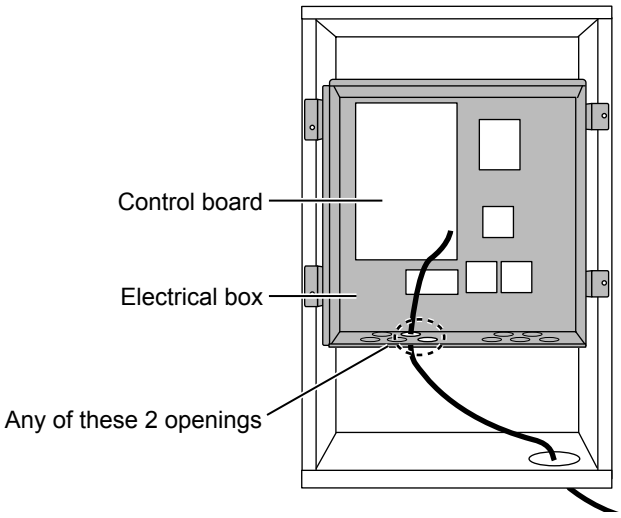


② Remove the four screws to remove the electrical box cover.

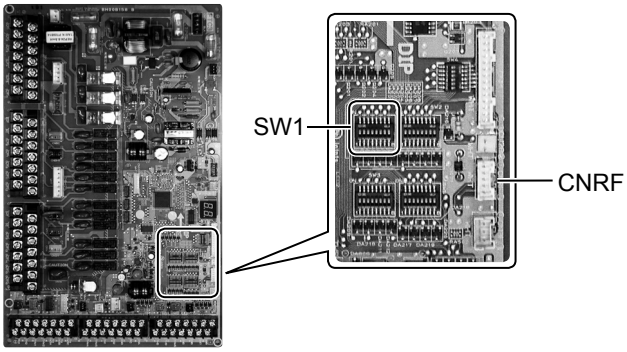


③ Route the receiver's cable into the hydrobox unit through the opening on the underside of the unit. Then route into the electrical box through any of the shown openings on the underside of the box.

Do not bundle the receiver's cable together with a power cable or run the cable through an opening that a power cable goes through.

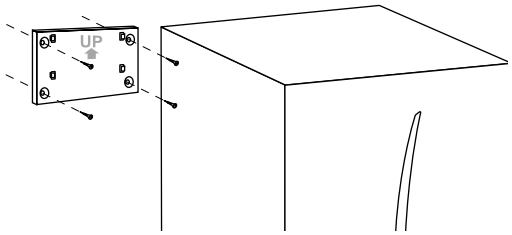


④ Connect the cable connector to the CNRF terminal on the control board. Switch ON SW1-8.



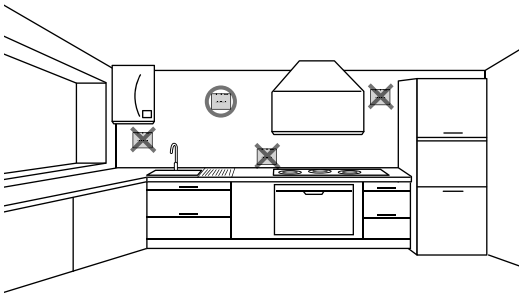
⑤ Check the maximum reach of the cable to install the bracket with screws.

Do not excessively pull the cable when measuring the maximum reach.

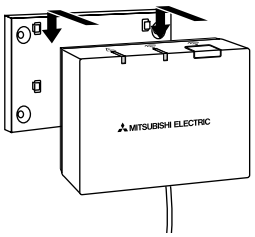


<Notice>
- **Do not overtighten the screws.**
  ►The bracket may deform or break.
- **When installing the bracket, select an interference-free space.**
  ►Keep the installing area at least 10 cm away from metal or a wall box. If unable to do so, always place the wireless remote controllers in locations where the communication test determines that the wireless remote controllers are fully capable of communication with the wireless receiver.
- **Do not install the bracket with screws on the exterior casing of the hydrobox unit.**
  ►The internal parts may become damaged, which could result in breakdown of the indoor unit.

When installing the wireless receiver, observe the following.
- Keep the other electric or electronic devices (e.g. radio, induction cooker, microwave, and refrigerator, mobile phone or the like) at least 50 cm away from the wireless receiver.
- As much as possible, place the wireless receiver in an interference-free area and keep the wireless receiver away from metal.



⑥ Place the wireless receiver on the fixed bracket.
Hook the holes on the back of the wireless receiver onto the projections on the bracket, and fix the wireless receiver.



<Notice>
- **Do not place the wireless receiver inside the hydrobox unit.**
  ►Both the wireless receiver and the hydrobox unit may break down, produce heat, and the wires may break.
- **Do not pull the cable excessively.**
  ►Breakdown, ignition, or fire may result.
- **Do not have the wireless receiver suspended.**
  ►Breakdown, ignition, or fire may result.

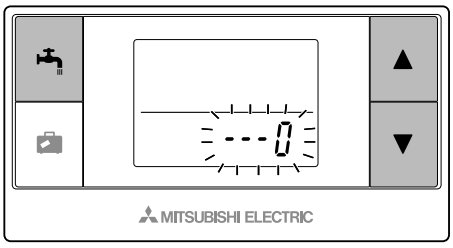
⑦ Close the electrical box cover, and fix it with the screws.

⑧ Hold the front panel with the screws.

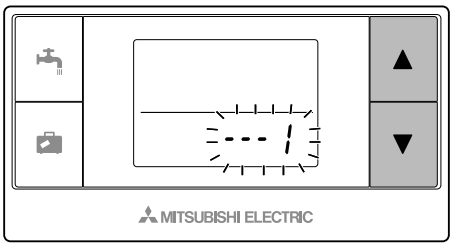
5. Setting the Wireless Remote Controllers

- **Pairing of the wireless remote controllers and the wireless receiver enables the wireless remote controllers to communicate with the wireless receiver. The indoor unit can then operate from the wireless remote controllers.**
- **Before using the wireless remote controllers, always ensure that the room wireless remote controllers go through a pairing process.**

① Holding down the ▲ , ▼ and 🚰 buttons simultaneously for at least 3 seconds goes to the setting mode, which blinks the mode number (room temp. display).

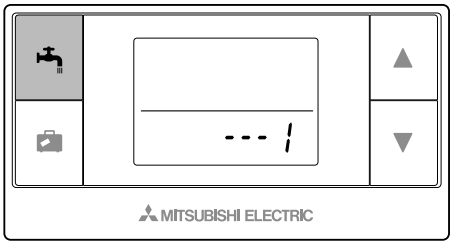


② Press the ▲ or ▼ button to choose the mode number.



③ Save setting by pressing the 🚰 button.
The display stops blinking.

Pressing of the 🧰 button in the middle of setting returns to the previous indication.



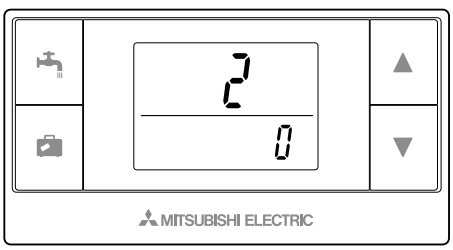
When the battery replacement indicator appears, do not operate the setting mode. The power may turn off in the middle of setting, which may lose the setting information.

Mode No.	Names	Functions	Initial settings
0	Pairing address display	Views the own pairing address of the wireless remote controller.	" — "
1	Pairing	Performs a pairing process with the wireless receiver.	No setting
2	Temperature unit switch	Switches temperature unit used to display temperatures.	°C
3	Communication test	Tests communication with the wireless receiver.	
4	Room temperature display switch	Displays or hides the room temperature.	OFF

5.1. Viewing the Address Number (Mode No. : 0)

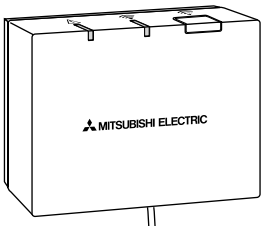
The set temp. display shows the address number that is set when paired with the wireless receiver.

*** The figure to the right shows the display when the address no. is set to 2.**



5.2. Pairing (Mode No. : 1)

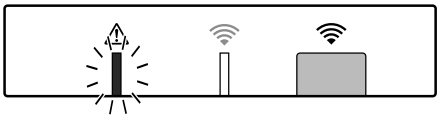
The mode is intended to pair the wireless remote controller with the wireless receiver to enable wireless communication. Pairing requires operation on the wireless receiver as well, so operate the wireless remote controller near the wireless receiver.



■ Pairing method

①Hold down the button on the wireless receiver for 3 seconds or more to enter the pairing mode.

The ⚠ LED will blink orange.
The wireless receiver, once into the pairing mode, keeps the mode active for 5 minutes unless the mode is cancelled by re-pressing the button.



The wireless receiver goes through a pairing process only while the ATW system is off. When the system is ON, be sure to turn it off before beginning the pairing process.

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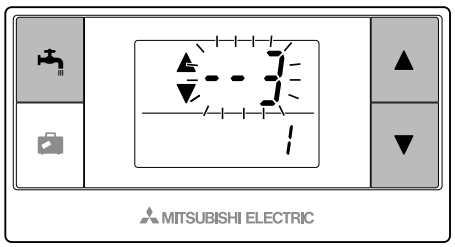
② Press the ▲ or ▼ button to select the pairing address, and press the button to save the setting .
The initial address is " - " (no setting), and the available address ranges from 1 to 8.

After saving the setting, the wireless remote controller starts communication with the wireless receiver.



When pairing multiple wireless remote controllers, be sure to set different address for each individual controller.

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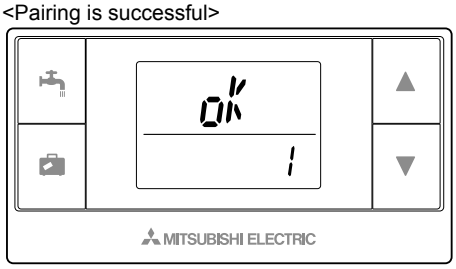
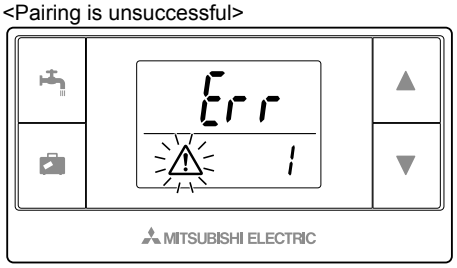
③ When the pairing process has been successfully performed, the set temp.display shows "ok" . If unsuccessfully, "Err" will appear, so correctly repeat the same process.

When the pairing process failed, the wireless receiver keeps the pairing mode active for 5 minutes unless cancelled.
This makes it possible to continuously pair multiple wireless remote controllers.

<Pairing is successful>



<Pairing is unsuccessful>

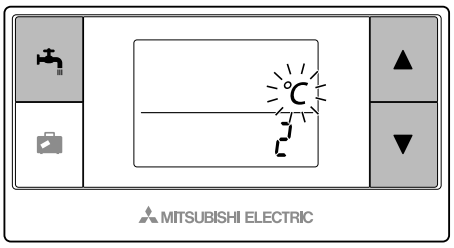


<<Main causes that prevent successful pairing>>

- **The wireless receiver does not enter the pairing mode.**
  ►Press the button for 3 seconds or more to enter the pairing mode.
  Note that the wireless receiver performs a pairing process only if the main system is off.
- **Pairing is attempted outside the transmission range of the wireless receiver.**
  ►Adjust the distance between the wireless receiver and remote controller, so try again.
  If the distance is excessively short, pairing may fail. Keep the distance of about 50 cm.
- **The wireless remote controller has been already paired with the wireless receiver.**
  ►The paired wireless remote controller is not allowed to be paired with the same wireless receiver again with another address.

The wireless remote controller does not clear the pairing information. Only the wireless receiver does. However, when pairing the paired wireless remote controller with a new wireless receiver, the pairing information does not need to be cleared.
Even when power fails or when the batteries run down, the pairing information will not be lost.

5.3. Switching the Temperature Unit (Mode No. : 2)



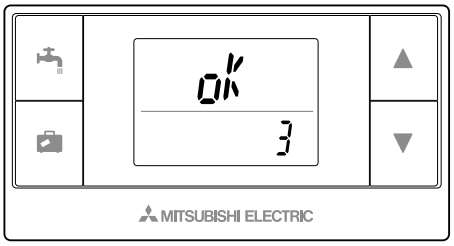
The unit used to display temperature can be switched between Celsius (°C) and Fahrenheit (°F).

Press the ▲ or ▼ button to select the unit that the set temp. display uses and press the button to confirm the selection.

The set temperature and room temperature are to use the same unit to show temperatures.

*** The figure to the right shows the display when Celsius (°C) is used.**

5.4. Communication Test (Mode No. : 3)



Communication test is performed between the wireless remote controller and the wireless receiver.

The set temp. display shows the communication status is OK or NG. When the display shows "ok", this indicates that the wireless remote controller is available for communication with the wireless receiver. If "Err" is shown, the wireless remote controller is outside the communication range of the wireless receiver.

Do not place the wireless remote controller in a location where the communication test results in "Err".

When the wireless remote controller is not paired, a communication error results even in the test mode. When testing communication in the test mode, ensure in advance that the wireless remote controller goes through a pairing process.

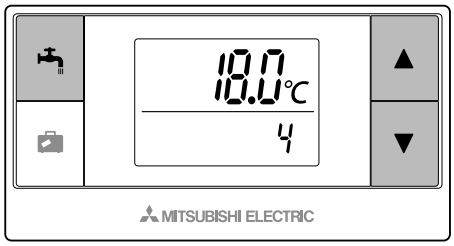
5.5. Displaying or Hiding the Room Temperature (Mode No. : 4)

Select either displaying or hiding the room temperature.

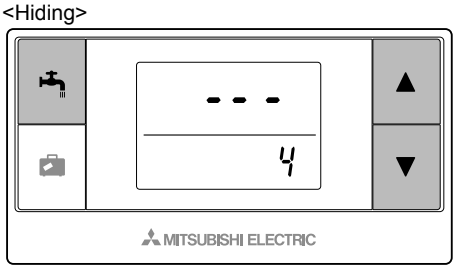
Press the ▲ or ▼ button to select displaying or hiding the room temperature, and press the button to save the setting.

Displaying : The set temp.display shows the actual space temperature. **Hiding:**The set temp.display shows" - - - ".

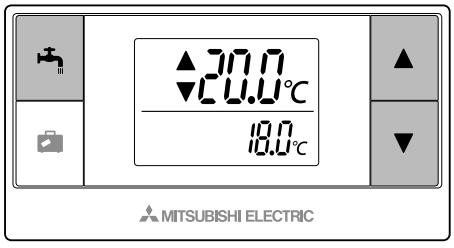
<Displaying>



<Hiding>



When the indoor unit is operating, the room temperature display shows the actual space temperature (18°C) and the set temperature (20°C) as shown in the figure to the right. The measurable temperature ranges from 0°C to 40°C.



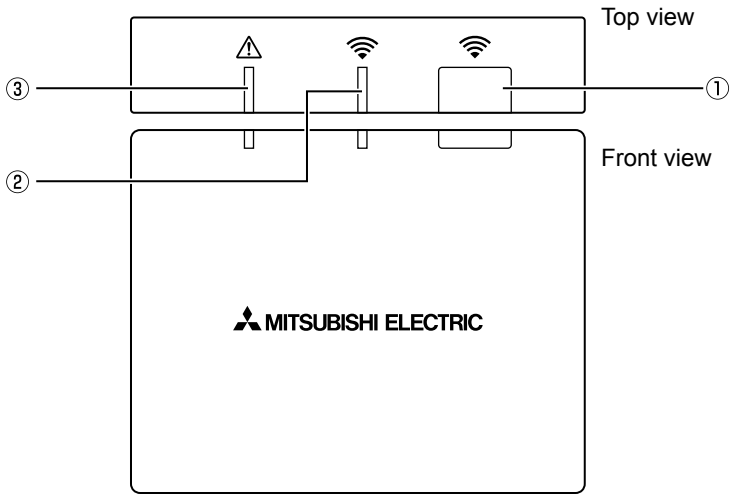
If the measured room temperature is out of 0°C to 40°C range, the room temperature display blinks.

The wireless remote controller that is installed with a bracket may not be able to correctly detect the room temperature due to being affected by the wall temperature.
Perform a test run and place the remote controller where the room temperature can be correctly detected.

6. Wireless Receiver Operation

The wireless receiver is powered by the indoor unit. It communicates wirelessly with the wireless remote controllers, and transmits to the indoor unit the operation status and commands received by the wireless remote controllers. The wireless receiver has two modes available: pairing mode and pairing reset mode.

6.1. Functions of Buttons and Displays



Number	Item	Description
①	Setting button	Switches the operating mode.
②	Communication LED (yellow green)	Shows that the wireless receiver is communicating.
③	Operation LED (orange)	Shows the operating status on the wireless receiver.

The following table shows the operating and illuminating status of the LEDs.

Operation LED (orange)	Communication LED (yellow green)	Description
◎	◎	Power is ON (for 3 seconds).
–	–	Normal mode: Not paired
–	○	Normal mode: Paired
–	◎	Normal mode: Communicating
◎	–	Performing a pairing process

OFF: –
ON: ○
Blink: ◎

6.2. Turning on Power

When the wireless receiver is powered by the indoor unit after installation, the indicator and the ⚠ indicator blink in yellow green and in orange for 3 seconds respectively.

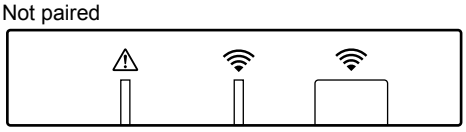
Power ON

6.3. Wireless Receiver Functions

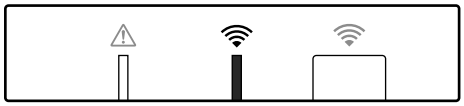
(1) Normal mode

The mode is intended to allow the paired wireless remote controllers and the connected indoor unit to communicate. When the wireless receiver is paired with a wireless remote controller, the LED comes on in yellow green. When the wireless receiver is communicating with a wireless remote controller, the LED blinks in yellow green.

Not paired



Paired



Transmitting

(2) Pairing mode

Hold down the button on the wireless receiver for 3 seconds or more to enter the pairing mode.
Pairing requires operation on the wireless remote controller as well, so operate the wireless remote controller near the wireless receiver.

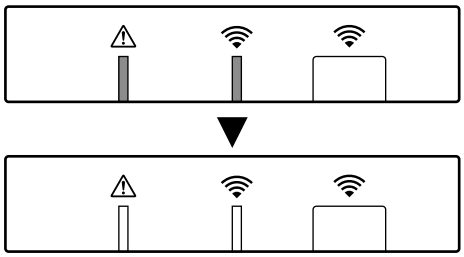
***For pairing details, refer to "5.2 Pairing" in this manual.**

When the wireless remote controllers are not paired, transmission is not available. Before using an un-paired wireless remote controller, be sure to have it go through a pairing process.

(3) Resetting pairing information

When pairing information has been cleared, ALL the wireless remote controllers need go through a pairing process again. Therefore, implement this operation with great care.

Holding down the button for 5 seconds while in the pairing mode clears all the pairing information.



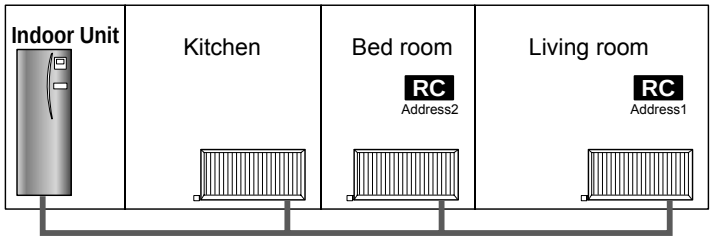
7. Q&A

Q.	A.
How many wireless remote controllers are allowed to be paired?	Up to 8 controllers allowed.
What are requirements for pairing?	When the wireless remote controller is not paired, it can be successfully paired. • The wireless remote controller that is already paired with a wireless receiver goes through a pairing process with the other wireless receivers. • The wireless receiver can not have the same address registered on multiple wireless remote controllers. When pairing multiple wireless remote controllers, assign different address on each wireless remote controller. When multiple remote controllers have the same address for the same receiver, only the last-paired remote controller can communicate with the receiver.
What causes a communication error between the wireless remote controller and wireless receiver?	Check the following possible causes. • The batteries on the wireless remote controller are running out. • The transmitted signal does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the set temp. 1 display indicates ⚠ all the time?	The indoor unit or outdoor unit has a failure. Referring to the indications on the main controller, take appropriate measures. Along with the indications, refer to the appropriate installation and service manuals for the indoor unit.
What measures should be taken when the set temp. 2 display indicates ⚠ all the time?	The thermistor inside the wireless remote controller has a failure.Check the resistance of the thermistor. (When the room temperature is between 0 and 40°C, the resistance must be between 5 and 28 KΩ.)
What measures should be taken when the set temp. 3 display indicates ⚠ all the time?	A communication error occurs between the wireless remote controller and the wireless receiver. Check the following possible causes. • The signal that is transmitted by the wireless remote controller does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the set temp. 4 display indicates ⚠ all the time?	A communication error occurs between the wireless receiver and the indoor unit. Check the following possible causes. • The cable connecting between the wireless receiver and the indoor unit has severed. • The connector on the wireless receiver is not correctly connected to the indoor unit.
What measures should be taken if error E occurrs?	Heater backup is running due to a failure of the indoor unit or the outdoor unit. Check the error code displayed on the main controller with the operation manual or the installation manual of the ATW system, and take appropriate measures accordingly. The holiday mode will be deactivated during heater backup.
Can the remote controller set a target room?	Use the main controller to set a target room. * For details about target room, see below.

<<What's target room?>>

- The indoor unit controls the temperatures, by reference to the temperature in a target room.
- The target room can be fixed or changed according to time, using a schedule function.
- The number of rooms that can be set to as a target room is always limited to one.

When setting a target room, use the main controller.



*** The above figure shows the examples when the living room is set as a target room RC 1 (wireless remote controller 1), and when the bed room is set as a target room RC 2 (wireless remote controller 2) .**

8. Specifications

Item	Description
Power source	12V DC (powered by the indoor unit)
Operating temperature and humidity requirements	Temperature: 0 to 40°C Humidity 30 to 90%RH (No condensation)
Weight	0.15 kg (excluding a cable)
Dimension (W×H×D)	100 mm × 80 mm × 30 mm

MITSUBISHI ELECTRIC

CYLINDER UNIT OPTIONAL PARTS
IMMERSION HEATER (1Ph 3kW)
PAC-IH03V-E

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the cylinder unit.
- Please read carefully and observe fully the following safety precautions.

⚠ WARNING	Precaution that must be observed to prevent injuries or death.

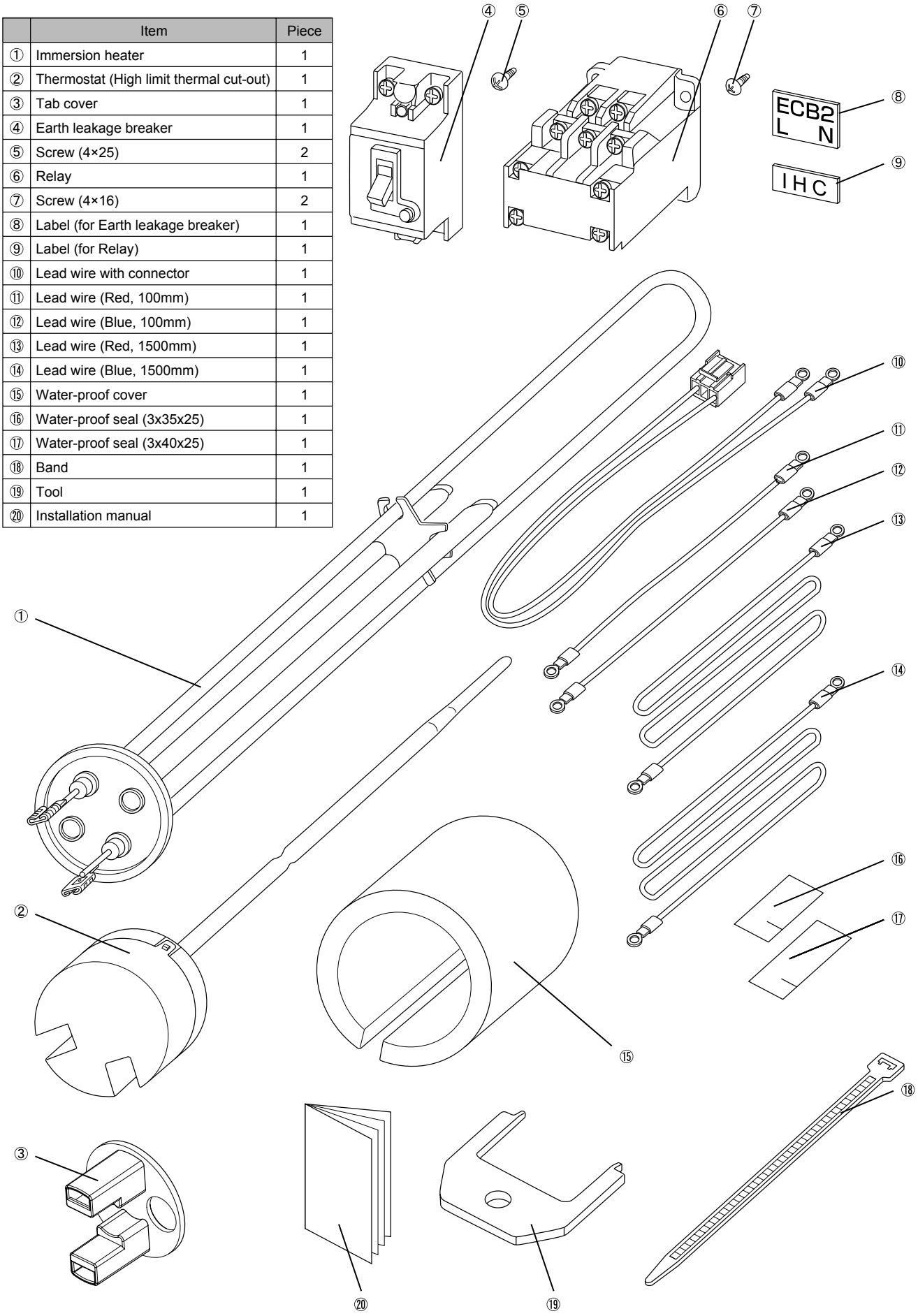
- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
  Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

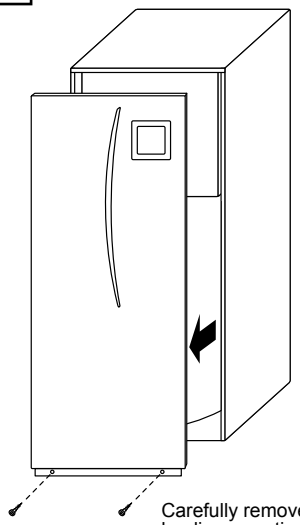
- If the cylinder has already been connected to the power supply ensure circuit breaker is off before carrying out electrical work.
- If the immersion heater is installed incorrectly or modified after installation by the user water leakage, electric shock or fire may result.
- All electrical work should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- The immersion heater must be powered by a dedicated power supply and the correct voltage and correctly sized circuit breakers must be used.
- Connections must be made securely and without tension on the terminals.
  The included component parts of the PAC-IH03V-E IMMERSION HEATER (1Ph 3kW) shall be used only for the purposes indicated in the installation manual.

Contents

	Item	Piece
①	Immersion heater	1
②	Thermostat (High limit thermal cut-out)	1
③	Tab cover	1
④	Earth leakage breaker	1
⑤	Screw (4×25)	2
⑥	Relay	1
⑦	Screw (4×16)	2
⑧	Label (for Earth leakage breaker)	1
⑨	Label (for Relay)	1
⑩	Lead wire with connector	1
⑪	Lead wire (Red, 100mm)	1
⑫	Lead wire (Blue, 100mm)	1
⑬	Lead wire (Red, 1500mm)	1
⑭	Lead wire (Blue, 1500mm)	1
⑮	Water-proof cover	1
⑯	Water-proof seal (3x35x25)	1
⑰	Water-proof seal (3x40x25)	1
⑱	Band	1
⑲	Tool	1
⑳	Installation manual	1

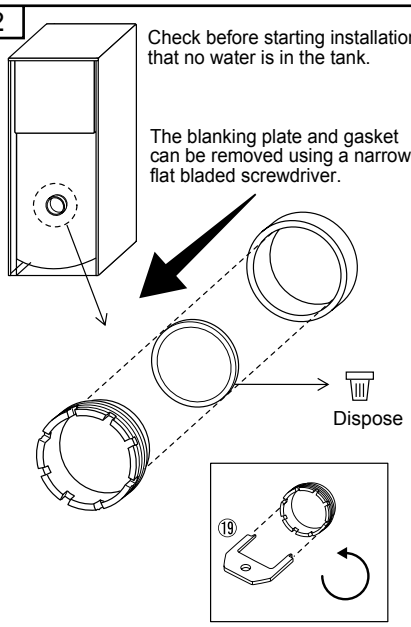


1



Carefully remove front panel by disconnecting the control cable from beneath the unit's main control box.

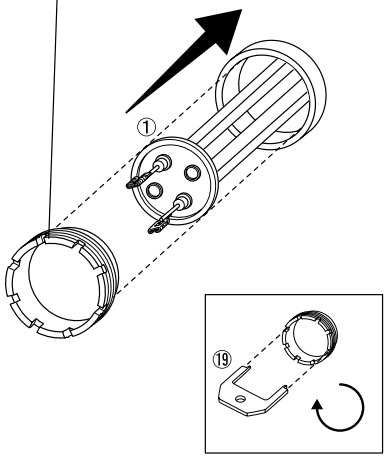
2



Check before starting installation that no water is in the tank.

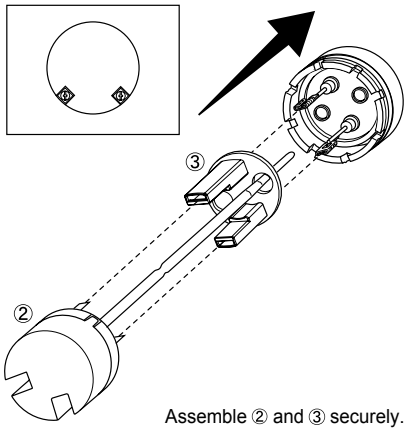
The blanking plate and gasket can be removed using a narrow flat bladed screwdriver.

3



Diagonally locate the thermostat pockets on upper right and bottom left with termini on the upper left and bottom right sides as shown.
Secure tightly with the nut to prevent water leakage.
(Recommended torque = 10 N•m)

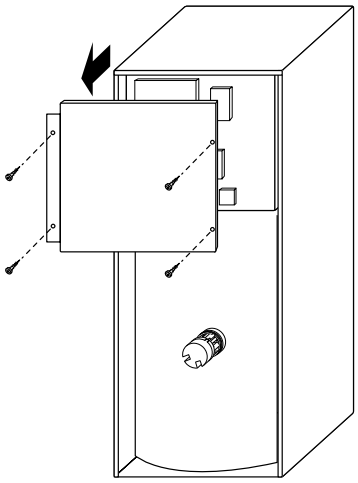
4



Reinstate plastic tab cover over the connectors then insert the thermostat rod into the upper right hand pocket.
The terminals on the white plastic head should be positioned at the bottom as shown.

Assemble ② and ③ securely.

5



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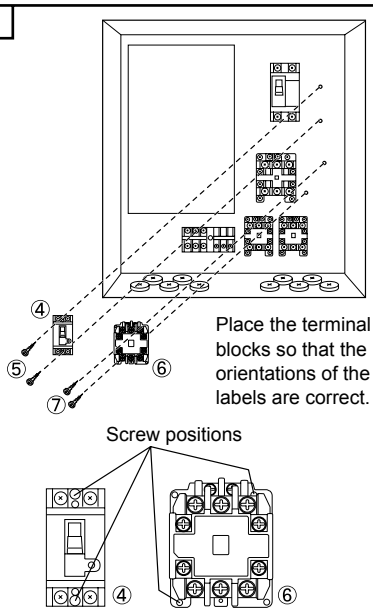
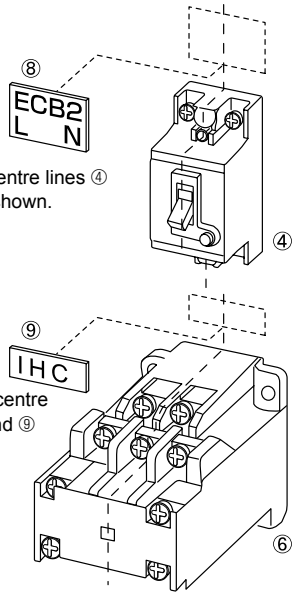


Place the terminal blocks so that the orientations of the labels are correct.

Screw positions

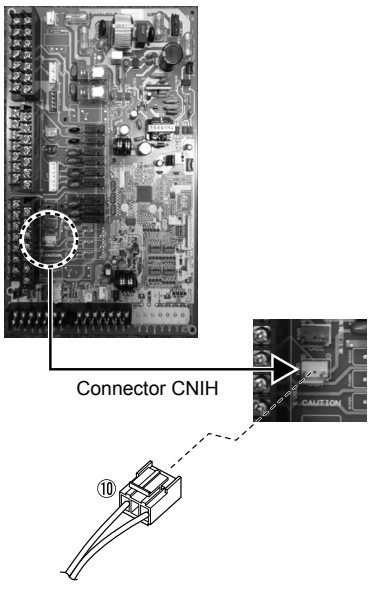
7



Align the centre lines ④ and ⑧ as shown.

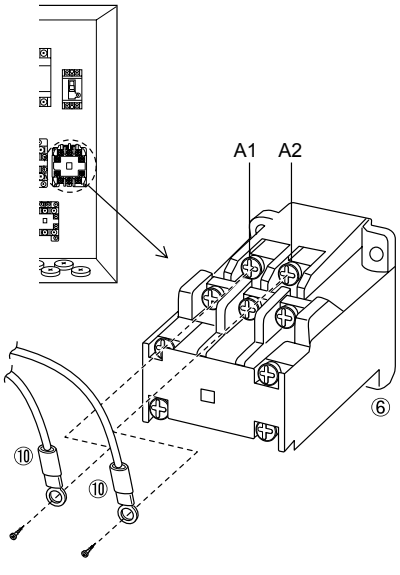
Align the centre lines ⑥ and ⑨ as shown.

8



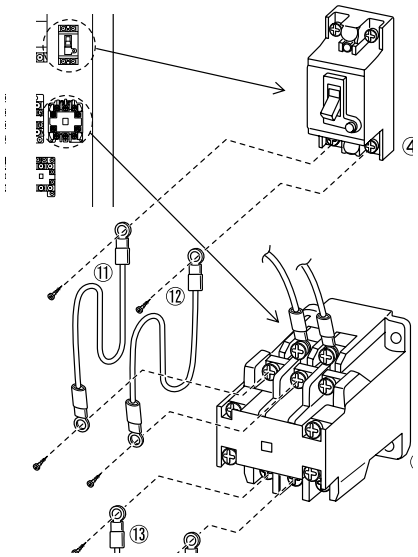
Connector CNIH

9



Optional parts

10



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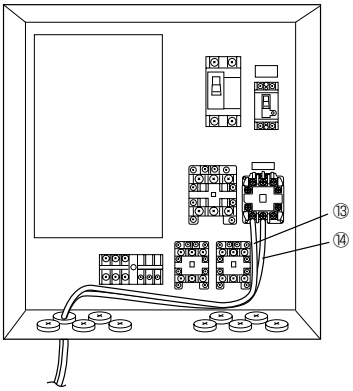
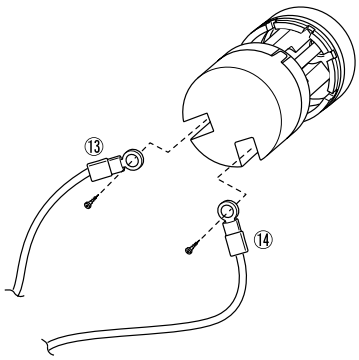
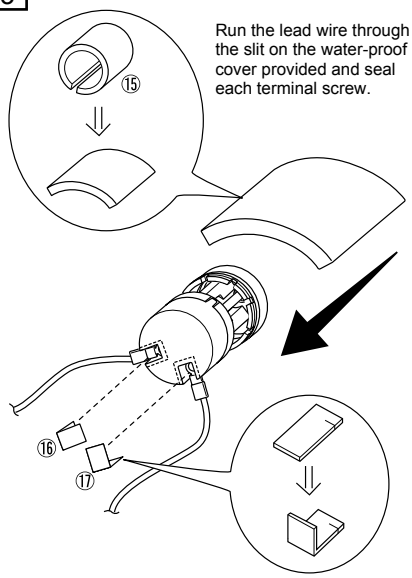


Do not insert the lead wires ⑬ and ⑭ into the opening that the main controller wires or the wireless receiver wires use.

12

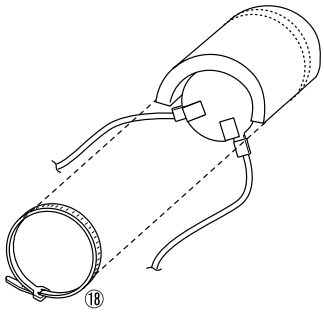


13



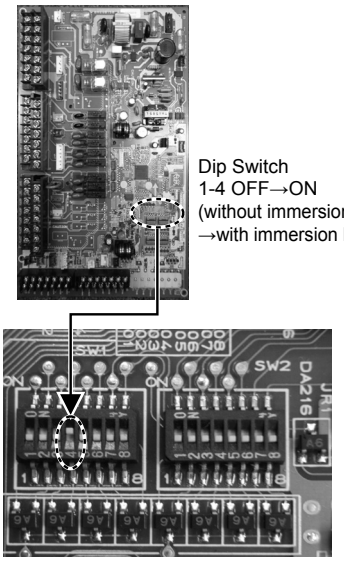
Run the lead wire through the slit on the water-proof cover provided and seal each terminal screw.

14



Place the band on the joint surface of the DHW tank.
Secure the water-proof cover around the cylinder boss using the band provided.

15

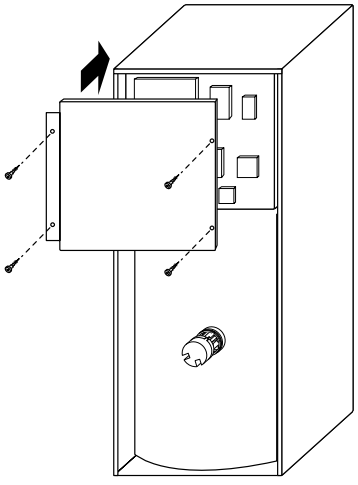


Dip Switch
1-4 OFF→ON
(without immersion heater
→with immersion heater)

16

For details about wiring to power supply and circuit breaker, refer to the installation manual for the cylinder unit.
Fill tank with water and ensure that no water leaks around the periphery of the immersion heater.

17



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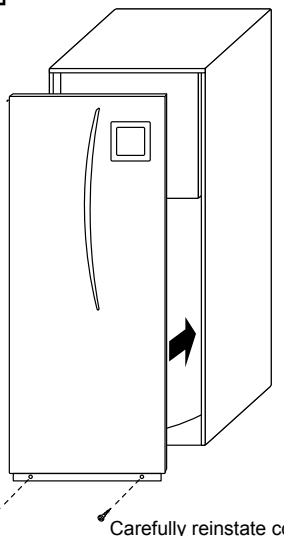


Carefully reinstate control cable connection before reinstating and securing the front panel.

MITSUBISHI ELECTRIC

CYLINDER UNIT OPTIONAL PARTS EHPT ACCESSORIES for UK PAC-WK01UK-E

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the cylinder unit.
- Please read carefully and observe fully the following safety precautions.

⚠ WARNING	Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
  Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

- Before installing any accessories on the cylinder unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.
  The included component parts of the PAC-WK01UK-E EHPT ACCESSORIES for UK shall be used only for the purposes indicated in the installation manual.

In addition to annual servicing it is necessary to replace or inspect the ICG after a certain period of system operation. Please see table below for detailed instructions. Replacement and inspection of the ICG should always be done by a competent person with relevant training and qualifications.

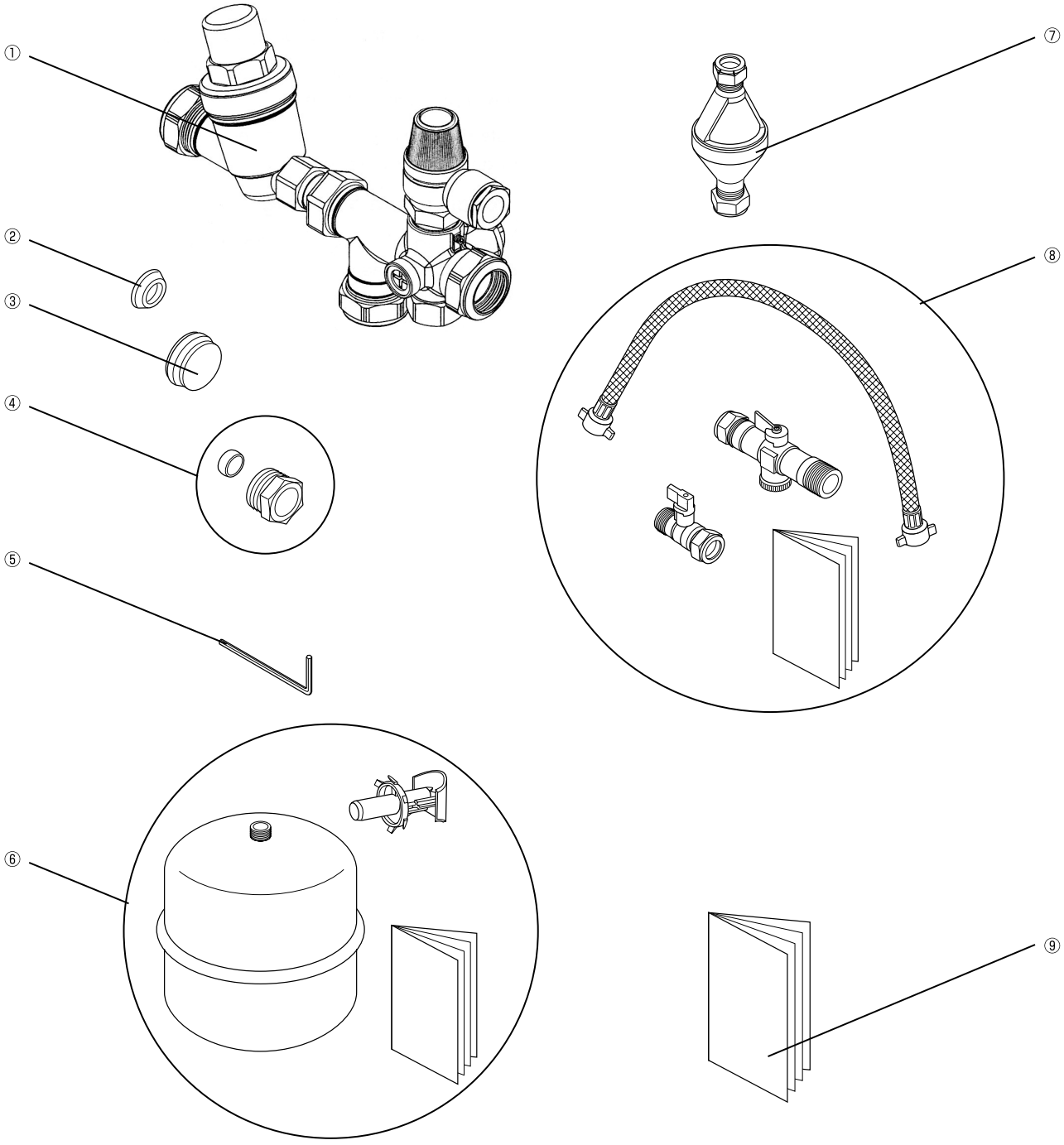
Part which requires regular replacement

Part	Replace every	Possible failures
Inlet control group (ICG)	6 years	Water leakage due to brass corrosion (Dezincification)

Contents

	Item	Piece(s)
①	Unvented inlet control group (Pressure reducing valve/strainer/check valves/ expansion relief valve).	1
②	Cap (15mm)	1
③	Cap (22mm)	1
④	Nipple & Olive (15mm)	1
⑤	Tool	1
⑥	Expansion vessel 18L (R3/4")	1
⑦	Tundish (15mm, 22mm)	2
⑧	Filling loop (15mm)	1
⑨	Installation manual	1

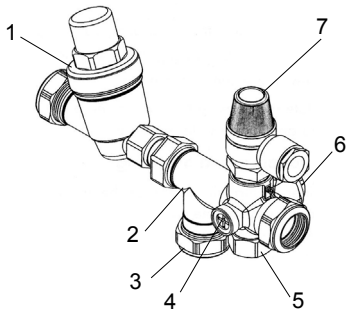
The parts ① to ⑦ are provided to meet the requirements for the UK Building Regulation G3.
The parts ② to ⑤ are accessory parts for the unvented inlet control group.
The pressure reducing valve is factory set at 3.5 bar and the expansion relief valve at 6.0 bar.
The gas charge pressure for the expansion vessel is 3.5 bar.



Installation

Carefully follow these instructions and ensure that the installation conforms to UK Building Regulation G3 and the Water Supply Regulations.

Unvented inlet control group



Item	Component
1	Pressure reducing valve
2	Manifold block (Including check valves)
3	22mm balanced cold water take-off
4	Pressure gauge port
5	15mm connection for exp. vessel
6	3/4" alternative connection for exp.vessel
7	Expansion relief valve

It is recommended that isolating valves are installed upstream and downstream to facilitate any future maintenance.
For safety reasons, it is essential that no isolation valve is fitted between the inlet control group and the cold water inlet connection of the cylinder.
Install the pressure reducing valve with its embossed arrow pointing in the direction of flow.
The black plug is a connection prepared for a pressure gauge, which is available when specified.
Ensure the expansion relief valve is seated correctly into the manifold and the Allen Key screw is fully tightened to secure its position.
Ensure that the expansion relief valve discharge pipework has a continuous fall and terminates via a tundish and in such a position as not to cause injury.
The first 22mm connection on the manifold block contains a check valve and may be used as a balanced cold water supply. If not used, use the blanking cap (22mm) supplied.
The 15mm connection on the manifold is used when an expansion vessel is required or may be used for a drain off. If not used, use the blanking cap (15mm) supplied.
On the opposite side of the manifold to the pressure gauge connection, there is an alternative 3/4" plugged connection that may also be used for direct mounting to the expansion vessel if required.

Expansion vessel

Install the expansion vessel between the pressure reducing valve and the cylinder unit. (Ensure the expansion vessel is connected to an active section of the potable pipework and is NOT directly connected to any redundant “Dead-leg” section of pipework.)

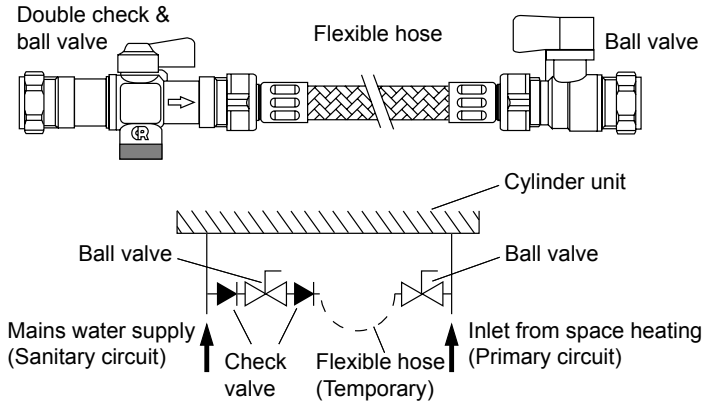
Note:
- When connecting the unvented inlet control group to the expansion vessel with a field-supplied flexible hose, provide sufficient bending radius to prevent abnormal noise.
- For more details about the following instructions, refer to the installation manual provided with the potable expansion vessel, as well as this manual.
  - If the expansion vessel is installed separately to the ICG (ie. direct in-line) then the supplied flow diverter can be used.
  - ICG should always be installed on cold water supply to cylinder to comply with WRAS / Building Regulation G3.
  - Expansion vessel should be installed hanging from connecting pipework.
  - Expansion vessel should be fastened to a suitable surface (wall etc.) to prevent strain on pipe connection.
  - Gas inlet screw type: 8V1

Tundish

Install the tundishes in accordance with the UK Building Regulation G3. For more details refer to the "Safety Device Discharge Arrangements" section in the installation manual for the cylinder unit .

Filling loop

Note: Refer to the installation manual provided with the filling loop as well.

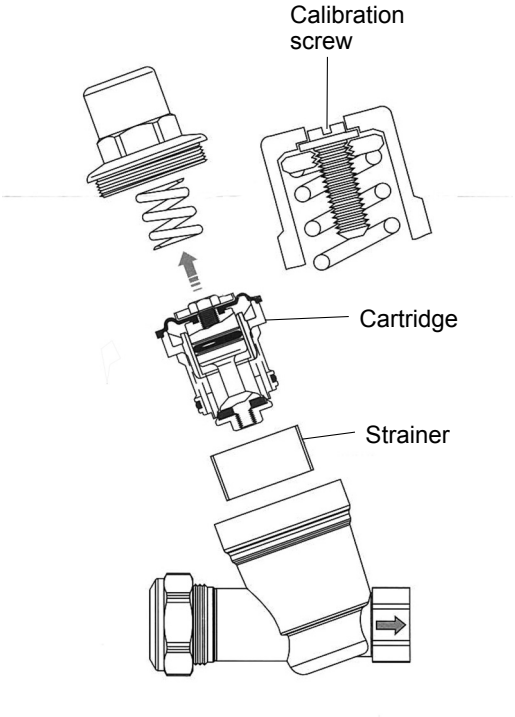


The procedure and recommendations specified in the cylinder unit installation manual for filling and pressurising the primary heating circuit of the cylinder unit must be followed.
The heating return pipe and the cold water supply pipe must be provided with tees with a short length of R250 (half hard) copper tube in the side port.
Fit the double check valve to the pipe from the mains supply pipe using the compression joint, which complies with BS EN 1252-2, ensuring that the flow through the valve is in the same direction as the arrow on the body.
Fit the ball valve to the pipe from the heating return using the compression joint.
Connect the flexible hose between the double check valve and ball valve and tighten the wing nuts to make water tight joints.
Open both ball valves and fill the system, when the pressure starts to increase on the cylinder unit pressure gauge partially close the ball valve on the double check valve to control the pressure to that specified by the cylinder unit installation manual.
Once filling and pressurisation have been completed, close both ball valves and remove the flexible hose.
If the flexible hose is removed it is recommended that caps(not supplied) are fitted to both valve connections to prevent any potential leakage.

Maintenance and service

Under normal circumstances the pressure reducing valve should not require any maintenance, but regular inspection and cleaning is recommended.
If the strainer or cartridge are damaged replace entire valve.

1. Isolate the water supply to the pressure reducing valve.
2. Unscrew anticlockwise the central calibration screw to decompress the spring.
3. Remove the plastic cover using a spanner on the hexagon faces.
4. Extract the cartridge with the aid of long nosed pliers to grip the head of the set screw.
5. Remove the strainer element.
   *If the strainer or cartridge are damaged replace item(s) accordingly.
6. Clean the strainer element and cartridge under clean running water.
7. Replace the strainer, cartridge and cover.
8. Turn on the water supply and check for leakage.
9. Re-calibrate the pressure reducing valve. (Rotate it clockwise to increase the outlet pressure and anticlockwise to reduce it.)



Manually operate (rotate head anti-clockwise) the expansion relief valve to ensure free water flow through discharge port and connecting pipe.

The pre-charge must be checked annually to make sure that the expansion vessel is in working order.
If water discharges through the expansion relief valve, it is possible that the expansion vessel's existing gas pre-charge pressure is too low.
Check this in the following manner:

1. Close the water supply.
2. Drain the sanitary circuit until the pressure is 0 bar.
3. Check the pre-charge.
4. Increase the gas pre-charge pressure with nitrogen/air as necessary.

Make sure that the pre-charge is not higher than the maximum working pressure.
If the expansion vessel cannot be pressurized, it is possible that the membrane has a leak.
You must then replace the expansion vessel.