DAIKIN

PRE SALES OPERATION MANUAL

MEGA·Q

Commercial heat pump hot water system

Pre-sales Literature

Refrigerant
R410A
R134a

MODELS

Heat pump hot water system

Heat source unit: RXHWQ120MQTJ*

Cascade unit: BWLP120TJU

Controller kit: BRP26B2VJU

- This operation manual contains safety precautions.
  Carefully read this operation manual to ensure proper operation.
  Keep this manual in a handy place for future reference.
  Furthermore, make certain that this operation manual is handed to the new user when the user changes.
- The warranty has to be received from your dealer and stored carefully.

Safety Considerations

PROP 65 WARNING

FOR CALIFORNIA CONSUMERS

⚠ WARNING

Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

Read these ***Safety Considerations for Operations*** carefully before installing air conditioner or heat pump. Make sure that the unit operates properly during the startup operation. Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Operation Manual with the Installation Manual for future reference. Meanings of **DANGER**, **WARNING**, **CAUTION**, **NOTE** and **INFORMATION** symbols:

⚠ **DANGER**.....Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**.....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**.....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE**.....Indicates situations that may result in equipment or property damage accidents only.

ⓘ **INFORMATION**.....This symbol identifies useful tips or additional information.

⚠ DANGER

- **Do not install the unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Any abnormalities in the operation of the hot water supply unit such as smoke or fire will result in severe injury or death. Turn off the power and contact your dealer immediately.**
- **Refrigerant gas may produce toxic gas if it comes into contact with fire, such as from a fan, heater, stove, or cooking device. Exposure to this gas will result in severe injury or death.**
- **For refrigerant leakage, consult your dealer. Refrigerant gas is heavier than air and replaces oxygen. A massive leak will result in oxygen depletion, especially in basements, and an asphyxiation hazard will result leading to serious injury or death.**
- **If equipment utilizing a burner is used in the same room as the hot water supply unit, there is the danger of oxygen deficiency which could lead to an asphyxiation hazard resulting in serious injury or death. Be sure to ventilate the room sufficiently to avoid this hazard.**
- **Safely dispose of all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Contact your dealer for repair and maintenance. Improper repair and maintenance could result in water leakage, electric shock, and fire. Only use accessories made by Daikin that are specifically designed for use with the equipment and have them installed by a professional.**
- **Contact your dealer to move and reinstall the hot water supply unit. Incomplete installation could result in water leakage, electric shock, and fire.**
- **Never let the remote controller get wet. Water could result in an electric shock or a fire.**
- **Never use flammable spray such as hair spray, lacquer, or paint near the unit. Flammable spray could result in a fire.**
- **When a fuse blows out, never replace it with one of incorrect ampere ratings or different wires. Always replace any blown fuse with a fuse of the same specification.**
- **Never remove the fan guard of the unit. A fan rotating at high speed without the fan guard is very dangerous and could result in injury.**
- **Never inspect or service the unit by yourself. Contact a qualified service person to perform this work.**
- **Turn off all electrical power before doing any maintenance to avoid the risk of serious electric shock; never sprinkle or spill water or liquids on the unit.**
- **Do not touch the switch with wet fingers. Touching a switch with wet fingers could result in electric shock.**
- **Do not allow children to play on or around the unit to prevent injury.**
- **The heat exchanger fins are sharp enough to cut. To avoid injury wear gloves or cover the fins while working around them.**
- **Do not put a finger, rods or other objects into the air inlet or air outlet. The fan is rotating at high speed and could result in injury.**
- **Check the unit foundation for damage on a continuous basis, especially if it has been in use for a long time. If left in a damaged condition the unit may fall and could result in injury.**
- **Placing a flower vase or other containers with water or other liquids on the unit could result in a shock or fire if a spill occurs.**

- **Never touch the internal parts of the controller. Do not remove the front panel because some parts inside are dangerous to touch. To check and adjust internal parts, contact your dealer.**
- **Be sure to establish a ground.**
  Do not ground the unit to a utility pipe, arrester, or telephone ground. Incomplete grounding may cause electrical shock, or fire. A high surge current from lightning or other sources may cause damage to the hot water supply unit.
- **Although this is a recognized measure for additional protection, with the grounding system in North America, a dedicated GFCI may not be necessary.**
- **Do not use in places with airborne oil components such as cooking oil and machine oil.**
  Doing so could result in cracking/electric shock/ ignition of fire.
- **Do not use in places with lots of oil smoke, such as kitchens, or in places with flammable gas, corrosive gas, or metallic dust.**
  Fire and malfunction may result.
- **Do not start or stop operating the hot water supply unit with the power supply breaker turned ON or OFF.**
  Fire and water leakage may result.
- **Consult the dealer if the hot water supply unit submerges owing to a natural disaster, such as a flood or typhoon.**
  Do not operate in that case, or otherwise a malfunction, electric shock, or fire may result.
- **Follow the installation manual and fix on a solid foundation or base.**
  If the foundation or base is weak, toppling or falling can occur easily due to vibrations caused by earthquakes.
- **Always use a dedicated power supply for the hot water supply unit.**
  Use a dedicated power supply for the hot water supply unit, which is the combined heat source unit and cascade unit.
  Use of a non-dedicated power supply may cause overheating, fire, or malfunction.
- **Do not install at any place where there is adanger of flammable gas leakage.**
  In the event of a gas leakage, build-up of gas near the unit may result in fire hazards.

⚠ CAUTION

- **Do not use the hot water supply unit for any other purposes other than hot water supply. Do not use the unit for cooling precision instruments, food, plants, animals or works of art.**
- **Do not place items under the hot water supply unit it could result in damage by condensates that may form if the humidity is above 80% or if the drain outlet gets blocked.**
- **Before cleaning, stop the operation of the unit by turning the power off or by pulling the supply cord out from its receptacle. Otherwise, an electric shock and injury could result.**
- **Do not wash the hot water supply unit with excessive water. An electric shock or fire could result.**
- **Avoid placing the controller in a spot splashed with water. Water entering the controller could result in an electric shock or damage the internal electronic parts.**
- **Do not turn off the power immediately after stopping operation. Always wait for at least five minutes before turning off the power. Otherwise, water leakage could result.**
- **The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.**
  Children being supervised not to play with the appliance
- **The remote controller should be kept away from children so they cannot play with it.**
- **Consult with the installation contractor for cleaning.**
- **Incorrect cleaning of the inside of the hot water supply unit could result in the plastics parts break resulting in water leakage or electric shock.**
- **Do not touch the air inlet or aluminum fin of the hot water supply unit as they can cut and could result in injury.**
- **Do not place objects in direct proximity of the hot water supply unit. Do not let leaves and other debris accumulate around the unit. Leaves are a hotbed for small animals which can enter the unit. Once inside the unit, animals result in the unit malfunctioning, and could result in smoke or fire when they make contact with electrical parts.**
- **Do not climb on the hot water supply unit,or place objects on it.**
  May result in injury due to falling or toppling.
- **Do not blow wind directly onto animals and plants.**
  Bad effects to plants or animals may result.
- **Never disassemble the hot water system controller or remote controller.**
  Touching certain internal parts will cause electric shocks and malfunction of the unit.
  Please consult with your dealer about checking and adjustment of internal parts.
- **The water is non-potable, so do not use it for drinking.**
  Injury to health may result.
- **To prevent freezing, do not shut off the power supply circuit breaker when the outside air is below freezing.**
  If the power supply circuit breaker is shut off while water is still inside, the cascade unit and water piping may be damaged by freezing.
  Drain the water when the power supply circuit breaker is turned off.
- **When not using for a long time, do not leave the water piping filled with water.**
  As it may cause things like water leakage, as well as deterioration of water quality, drain the water.
- **Use water that meets water quality standards.**
  A decrease in water quality may result in water leakage.

Safety Considerations

- **When not using for a long time, shut off the power supply circuit breaker and drain the water from the cascade unit and water piping.**
  If the power supply is not cut off, it may get hot or catch on fire due to dust accumulation.
  Also, if you do not drain the water, it will freeze and the hot water supply unit and water piping will be damaged.

NOTE

- **Never press the button of the remote controller with a hard, pointed object. The remote controller result in damage.**
- **Never pull or twist the electric wire of the remote controller. It may result in the unit malfunctioning.**
- **Do not place appliances that produce open flames in places that are exposed to the air flow of the unit. It may result in incomplete combustion or deformation of the unit due to the heat.**
- **Do not expose the controller to direct sunlight. The LCD display can become discolored and may result in fail to display the data.**
- **Do not wipe the controller operation panel with benzene, thinner, chemical dust cloth, etc. The result may be that the panel becomes discolored or the coating can peel off. If it is heavily dirty, soak a cloth in water-diluted neutral detergent, squeeze it well and wipe the panel clean. Then wipe it with another dry cloth.**
- **Dismantling of the unit, disposal of the refrigerant, oil, and additional parts, should be done in accordance with the relevant local, state, and national regulations.**
- **Operate the hot water supply unit in a sufficiently ventilated area and not surrounded by obstacles. Do not use the hot water supply unit in the following places.**
  a. Places with a mist of mineral oil, such as cutting oil.
  b. Locations such as coastal areas where there is a lot of salt in the air.
  c. Locations such as hot springs where there is a lot of sulfur in the air.
  d. Locations such as factories where the power voltage varies a lot.
  e. In cars, boats, and other vehicles.
  f. Locations such as kitchens where oil may splatter or where there is steam in the air.
  g. Locations where equipment produces electromagnetic waves.
  h. Places with an acid or alkaline mist.
  i. Places where fallen leaves can accumulate or where weeds can grow.
- **Take snow protection measures. Contact your dealer for the details of snow protection measures, such as the use of a snow protection hood.**
- **Do not attempt to do electrical work or grounding work unless you are licensed to do so. Consult with your dealer for electrical work and grounding work.**
- **Pay Attention to Operating Sound. Be sure to use the following places:**
  a. Places that can sufficiently withstand the weight of the hot water supply unit yet can suppress the operating sound and vibration.
  b. Places where warm air from the air outlet of the hot water supply unit or the operating sound of the hot water supply unit does not annoy neighbors.
- **Make sure that there are no obstacles close to the hot water supply unit. Obstacles close to the hot water supply unit may drop the performance of the hot water supply unit or increase the operating sound of the hot water supply unit.**
- **Consult your dealer if the hot water supply unit in operation generates unusual noise.**
- **Install the hot water supply unit and remote controller, as well as the power supply wiring and communication lines thereof at least 10 ft. (3 m) away from home appliances.**
  The hot water supply unit contains a built-in inverter, and may cause noise in electrical appliances.

[Place of installation]

- **Is it installed in a wellventilated place with no surrounding obstacles?**
- **Do not use in places such as the following.**
  - Places where mineral oil such as cutting oil can accumulate
  - Places with lots of oil splashes and steam, such as a kitchen
  - Places with a lot of salt, such as coastal areas
  - Places containing sulfurous gas, such as hot spring areas
  - Places where acid and alkaline steam can accumulate
  - Places where voltage fluctuations are common, such as factories
  - Places such as vehicles and ships
  - Places where there is machinery that generates electromagnetic waves
  - Places where fallen leaves have accumulated or where weeds grow
- **Are measures against snow being taken?**
  For details about equipment such as snow protection hoods, etc., please visit your dealer.

[Electrical work]

- **Do not attempt to conduct electrical work or grounding work unless you are licensed to do so.**
  Consult with your local dealer for electrical work and grounding work.
- **Are you using a dedicated circuit for the hot water supply unit?**
  Use a dedicated power supply for the hot water supply unit, which is the combined heat source unit and cascade unit. Use of a non-dedicated circuit may cause overheating, fire, or malfunction.

[Pay Attention to Operating Sound]

- **Are you selecting a place such as the following?**
  - A place that can withstand the mass of the hot water supply unit and will not increase operating noise or vibration
  - A place where wind and operating noise from the hot water supply unit air outlet will not disturb the neighborhood
- **Are there any obstacles near the air inlet/air outlet of the heat source unit?**
  Reduced performance due to the reduced airflow rate and intensified operating sounds/malfunction of the equipment may result.
- **If you hear abnormal sounds during use, consult your dealer.**

Heat source unit: RXHWQ120MQTJ*
Cascade unit:BWLP120TJU
Controller kit: BRP26B2VJU

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Specifications

Application			Heat pump hot water system, Non-drinking		
Unit name			Heat source unit	Cascade unit	
Model name			RXHWQ120MQTJ	BWLP120TJU	
Power supply			3-Phase 208/230V 60Hz	3-Phase 208/230V 60Hz	
Dimension H x W x D		(inch)	66-11/16 x 48-7/8 x 30-3/16	60-1/16 x 35-3/16 x 30(762)	
		(mm)	(1694 x 1242 x 767)	(1525 x 893 x 762)	
Weight		(lbs.)	695	639	
		(kg)	(315)	(290)	
Refrigerant	Type		R410A	High refrigerant temperature source side circuit	Low refrigerant temperature source side circuit
				R134a	R410A
	Factory Charge	(lbs.)	18.1	13.2	NA
		(kg)	(8.2)	(6)	NA
Maximum allowable pressure		(psig) (MPa)	580 4.0	High refrigerant temperature source side circuit	Low refrigerant temperature source side circuit
				550 3.80	580 4.0
Intermediate-frequency heating capacity			35kW(119,400BTU/h) *1		
Sound pressure		(dBA)	55 *2		

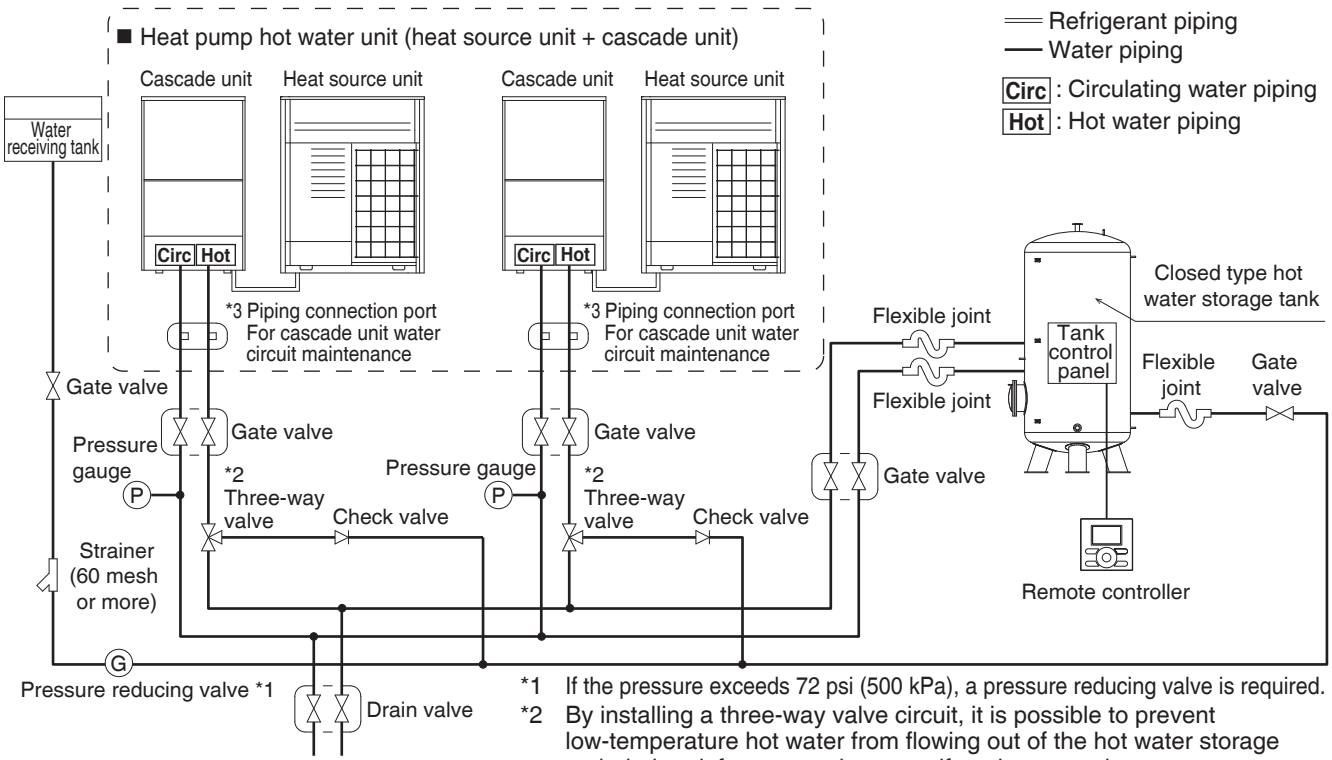
*1 Operating conditions: outdoor temperature 16°CDB (61°F), 12°CWB (54°F), water supply temperature 17°C (63°F), hot water supply temperature 65°C (149°F), water flow rate 10.5L/min (2.77gal lqd/min).
*2 The operating sound complies with the JRA4060: 2009 operating noise standard (Intermediate heating up rating condition).
*3 The value is subject to change without notice for product improvement.

Before Use

Read this section to understand the products

MEGA Q is a heat pump hot water system composed of a heat pump hot water unit that turns the water from the water receiving tank into hot water (*), a closed type hot water storage tank that stores hot water (*) and a remote controller.
(*) Water is non-potable and cannot be used for drinking. Water quality may change due to accumulation of scales in the tank due to long-term use or deterioration of piping materials.
Explanations about the following heat pump hot water units are noted in this operation manual.

Heat pump hot water system (closed tank system)



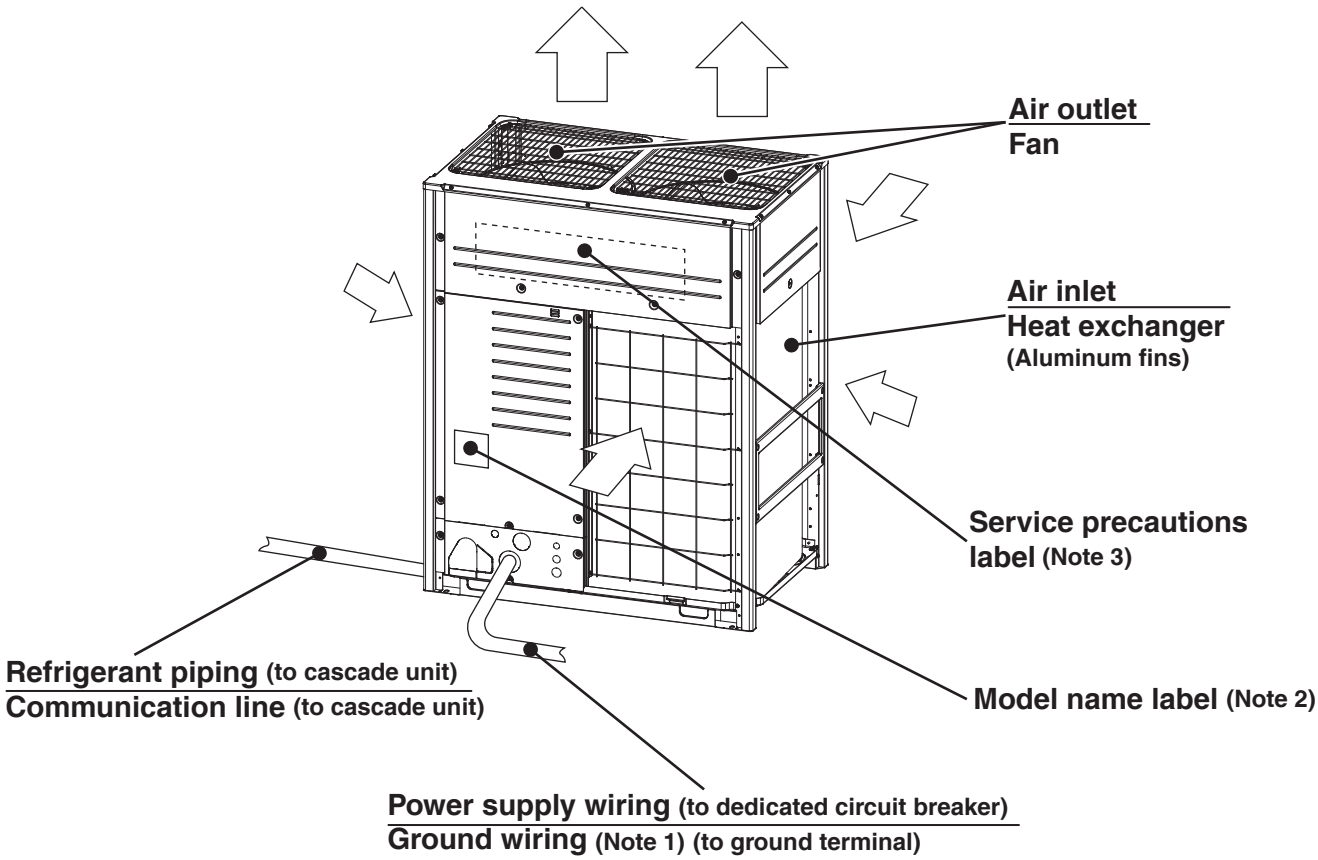
*1 If the pressure exceeds 72 psi (500 kPa), a pressure reducing valve is required.
*2 By installing a three-way valve circuit, it is possible to prevent low-temperature hot water from flowing out of the hot water storage tank during defrost operation or antifreezing operation.
*3 For cascade unit water circuit maintenance, refer to [6. Water piping work] in the installation manual.

⚠ CAUTION	**Hot water generated by Mega-Q is not potable (not for drinking or cuisine)**

Name and Function of Each Part of the Unit

Heat sourceunit

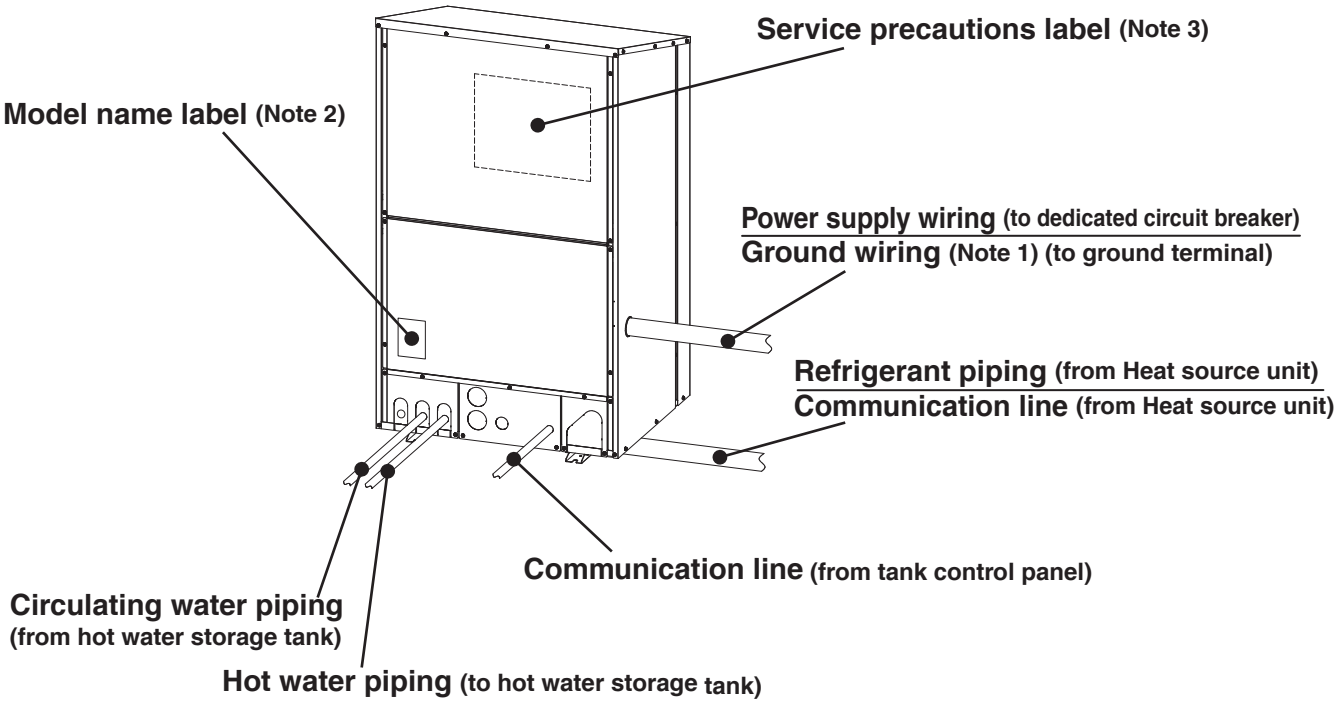
RXHWQ120MQTJ*



(Note 1) The ground wiring conducts electricity from the heat source unit into the ground to prevent electric shock/fire.
(Note 2) Information that is listed includes such things as the model name/main specifications/serial number/factory default refrigerant amount.
(Note 3) Describes precautions to be taken by service technicians, the amount of refrigerant in the entire system after additional or refilling.

Cascade unit

BWLP120TJU

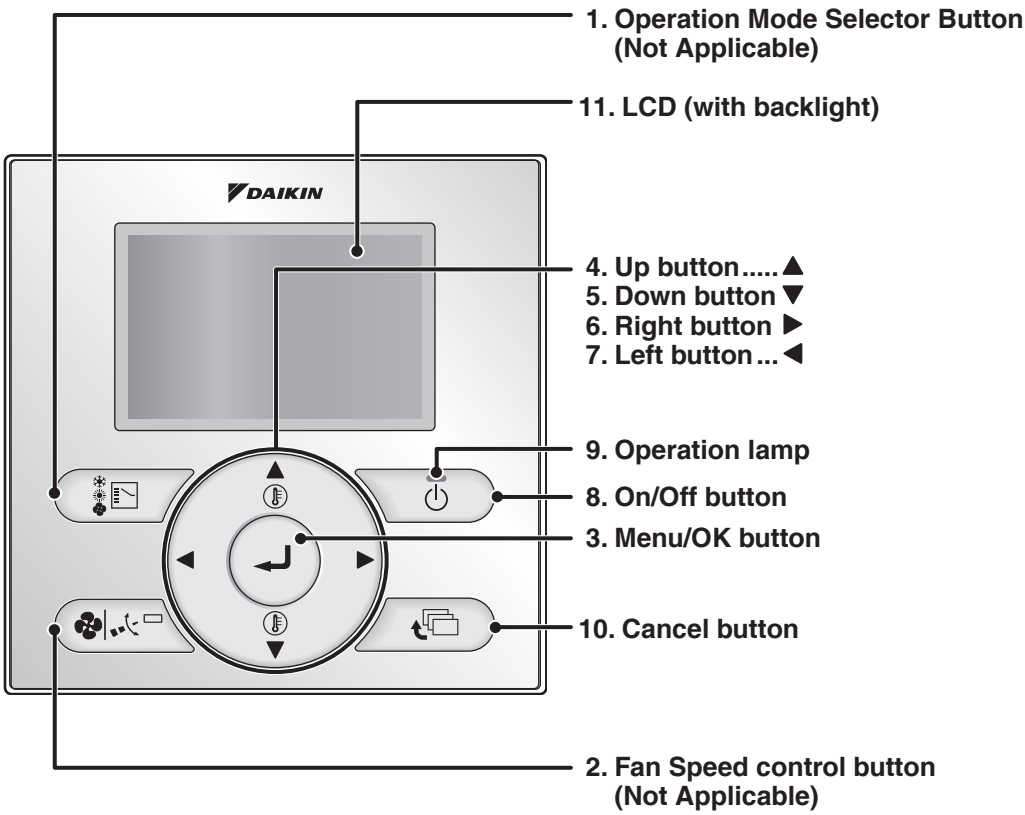


(Note 1) The ground wiring conducts electricity from the cascade unit into the ground to prevent electric shock/fire.
(Note 2) Information that is listed includes such things as the model name/main specifications/serial number/factory default refrigerant amount.
(Note 3) Describes precautions to be taken by service technicians, the amount of refrigerant in the entire system after additional or refilling.

Remote Controller:
Name and Function of Each Switch and Display

This hot water supply unit operates with the remote controller provided with the Controller kit (BRP26B2VJU).

Button Locations and Descriptions



Functions other than basic operation items (i.e., On/Off , and Hot water supply temperature settings) are set from the menu screen.

NOTE

- **Do not install the remote controller in places exposed to direct sunlight, or the LCD will be damaged.**
- **Do not pull or twist the remote controller cord, or the remote controller may be damaged.**
- **Do not use objects with sharp ends to press the buttons on the remote controller, or damage may result.**
- **Location of the remote controller is indoor only.**

1. Operation Mode Selector Button (This function is not available for This system)

•

2. Fan Speed control button (This function is not available for This system)

•

3. Menu/OK button

- Used to enter the main menu.
  (See page 12 for the menu items.)
- Used to enter the selected item.

4. Up button ▲

- Used to raise the set temperature of the hot water supply.
- The item above the current selection will be highlighted. (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

5. Down button ▼

- Used to lower the set temperature of the hot water supply.
- The item below the current selection will be highlighted. (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

6. Right button ▶

- Used to highlight the next items on the right-hand side.
- Each screen is scrolled in the right-hand direction.

7. Left button ◀

- Used to highlight the next items on the left-hand side.
- Each screen is scrolled in the left-hand direction.

8. On/Off button

- Press this button and system will start.
- Press this button again to stop the system.

9. Operation lamp (Green)

- This lamp illuminates solid green during normal operation.
- This lamp flashes if an error occurs.

10. Cancel button

- Used to return to the previous screen.
- Press and hold this button for 4 seconds or longer to display service settings menu.

11. LCD (with backlight)

- The backlight will be illuminated for approximately 30 seconds by pressing any button.

INFORMATION

Temperature display on the remote control
A temperature can be displayed in Celsius only.
Use the conversion table below to convert a temperature between Celsius and Fahrenheit.

Temperature Conversion Table

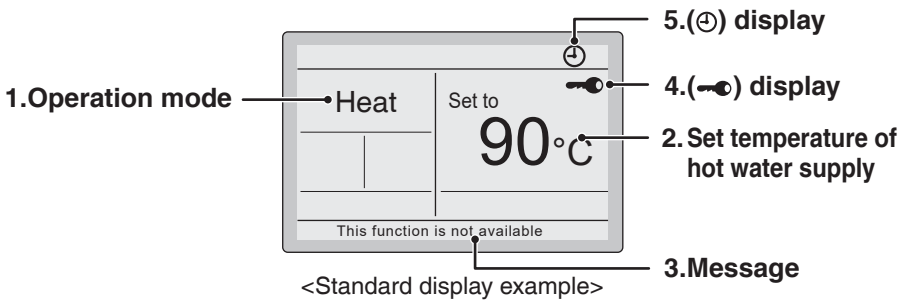
°C	°F	°C	°F	°C	°F
60	140.0	70	158.0	80	176.0
61	141.8	71	159.8	81	177.8
62	143.6	72	161.6	82	179.6
63	145.4	73	163.4	83	181.4
64	147.2	74	165.2	84	183.2
65	149.0	75	167.0	85	185.0
66	150.8	76	168.8	86	186.8
67	152.6	77	170.6	87	188.6
68	154.4	78	172.4	88	190.4
69	156.2	79	174.2	89	192.2
				90	194.0

Name and Functions

Liquid Crystal Display

- Three types of liquid crystal display (LCD) are available. The standard display is set by default.
- Detailed display can be selected in the main menu. (See page 12.)

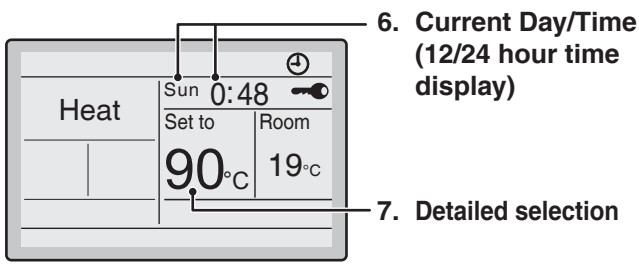
Standard display



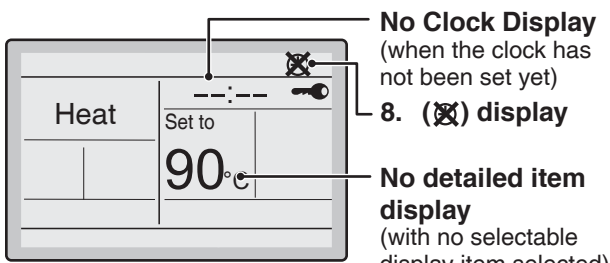
<Standard display example>

Detailed display

■ The clock and selectable item appear on Detailed display screen in addition to the items appearing on Standard display.



<Detailed display example 1>



<Detailed display example 2>

1. Operation Mode

- Used to display the current operation mode.

2. Set Temperature of the Hot Water Supply

- Used to display the setpoint for the hot water supply.

3. Message

The following messages may be displayed.

“This function is not available”

- Displayed for a few seconds when an operation button is pressed and the hot water supply unit does not provide the corresponding function.

“Error: Push Menu button”
“Warning: Push Menu button”

- Displayed if an error or warning is detected (see page 29).

4. display (See page 11.)

- Displayed when the key lock is set.

5. display (See page 13.)

- Displayed if the Schedule or Off timer is enabled.

6. Current Day/Time (12/24 hour time display)

- Displayed if the clock is set (see page 17).
- If the clock is not set, “ -- : -- ” will be displayed.
- Select 12/24 hour time display option in the main menu under “Clock & Calendar”.

7. Detailed selection

- Displayed if the detailed display item is selected (see page 16).

8. display

- Displayed when the clock needs to be set.

Operation Range

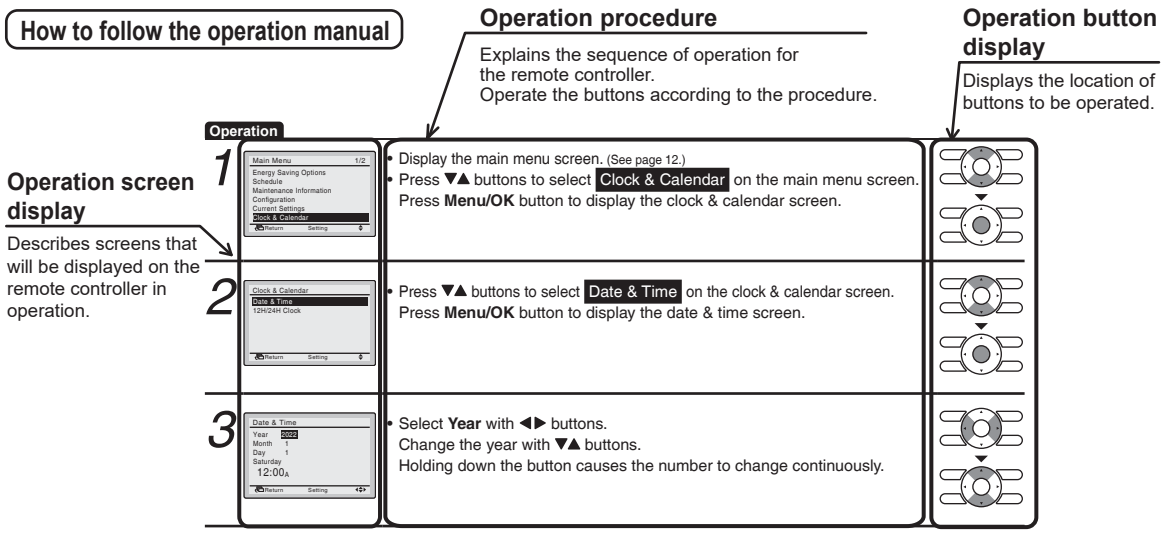
This unit is designed to operate in the ranges provided below.
If operating continuously, use within the operating conditions shown in Table 1.
Continuous operation under conditions other than those described below may cause freezing and the machine may stop in order to protect itself

Table 1

Application	Heat pump hot water system Non-drinking
Inlet water temperature	41 to 176°F (5 to 80°C)
Supply hot water temperature	140 to 194°F (60 to 90°C)
Ambient temperature around the units	-4 to 109°F (-20 to 43°C)
Water supply circuit pressure range	0 to 72 psi (0 to 500 kPa)
Used water quality	Tap water For detail, see page 31.

Basic Operation

Hot Water Supply Operation

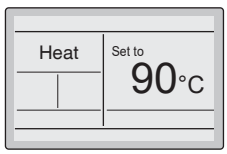


Preparation

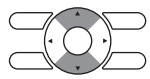
- For mechanical protection purposes, apply power to the outside units at least six hours before starting the operation of the system.

Operation

1



- The hot water supply temparature will increase by 1°C (or 1°F) when ▲ button is pressed and decrease by 1°C (or 1°F) when ▼ button is pressed.
- The settable range is 60 to 90°C (140 to 194°F).
- Be sure to set the temperature higher than the Water Reheating start temperature. Otherwise, the temperature of hot water stored in the tank cannot rise to the Water Reheating start temperature and the system will not operate as expected.



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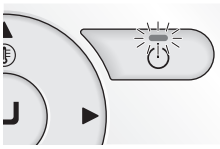
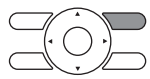
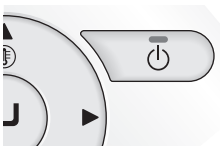


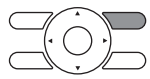
- Press **On/Off** button.
  The Operation lamp (green) will illuminate and the system will start operating.



3



- When **On/Off** button is pressed again, the system will stop operating and the Operation lamp will turn off.



Terms of use

Table 2

Heat source unit air inlet air temperature	Cascade unit inlet temperature
-20 to 43°C (-4 to 109°F)	5 to 80°C (41 to 176°F)

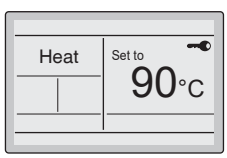
Note

- If operating continuously, use within the operating conditions shown in Table 2.
  Continuous operation under conditions other than those described above may cause freezing and the machine may stop in order to protect itself.
- To prevent water damage or system failure, do not immediately remove power from the unit following system operation.

Key Lock

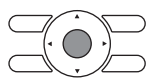
Operation Confirm and cancel Key Lock settings in the basic display screen.

1

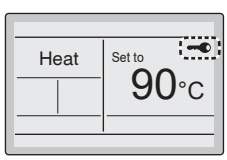


Basic screen

- Press **Menu/OK** button for at least four seconds while the backlight is illuminated.



2



- "🔑" is displayed.
  All buttons are disabled when the keys are locked.
- To cancel the key lock mode, continue pressing **Menu/OK** button for at least four seconds while the backlight is illuminated.

Quick Reference

■The main menu has the following items.

Menu item		Description	Reference page
Energy Saving Options	**Off timer**	**Used to set the run-time for the system unit using this controller.** • Possible to set in 10 minute increments from 30 to 180 minutes.	13
Maintenance Information		Used to display the maintenance information.	15
Configuration	**Contrast Adjustment**	Used to make LCD contrast adjustment.	15
	Display Standard or Detailed Display	Used to set standard or detailed display mode. • Display mode Standard or detailed display • Detailed display provides the choice to display between Room Temp, Outside Air Temp, System or None.	16
Current Settings		Used to display a list of current settings for available items.	17
Clock & Calendar	**Date & Time**	**Used to configure date and time settings and corrections.** • The default time display is 12H. • The clock will maintain accuracy to within ±30 seconds per month. • If there is a power failure for a period not exceeding 48 hours, the clock will continue working with the built-in backup power supply.	17
	12H/24H Clock	The time can be displayed in either a 12 hour or 24 hour time format.	19
Language		The display language can be selected between English, Français, Español, Nederlands, Português, Deutsch, Italiano.	19

Note
The menu item except for the above can be set from the remote controller, but it may not work in the system operation.

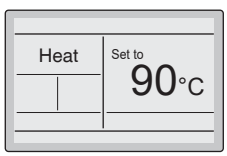
Menu Options

Control on the Main Menu

■Display Method for Main Menu

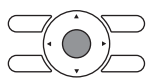
Operation

1

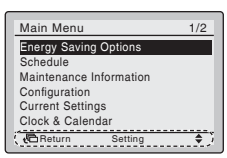


Basic screen

• Press **Menu/OK** button.



2



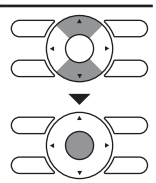
Main menu screen

• The main menu screen is displayed.

⇦ Instructions for navigating the main menu will appear.

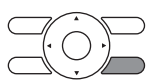
3

• Selecting items from the main menu.
1. Press ▼▲ buttons to select the desired item to be set.
2. Press **Menu/OK** button to display the details for the selected item.



4

• To go back to the basic screen from the main menu, press **Cancel** button.



Note
If a button is not pressed for 5 minutes during configuration, the controller will automatically revert to the basic screen.

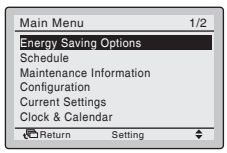
Menu Options

Off Timer

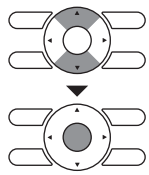
■Configuring and Confirming the Off Timer Settings

Operation

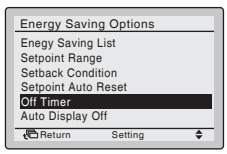
1



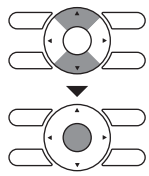
- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select the Energy Saving Options on the main menu screen.
  Press **Menu/OK** button to display the off timer screen.



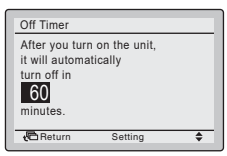
2



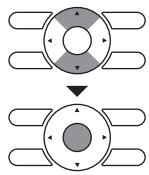
- Press ▼▲ buttons to select the Off Timer on the main menu screen.
  Press **Menu/OK** button to display the configuration screen.



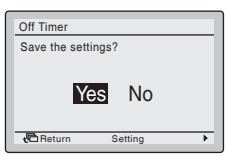
3



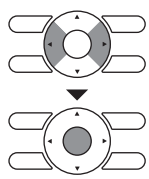
- Use ▼▲ buttons to set the time from operation start until the unit automatically stops.
  Selections can be made in increments of 10 minutes from 30 to 180 minutes.
  Holding down the button causes the number to change continuously.
- Select the desired time and press **Menu/OK** button.
  The confirmation screen will appear.



4



- Press ◀▶ button to select Yes on the confirmation screen.
  Pressing **Menu/OK** button confirms the off timer and takes you back to the basic screen.

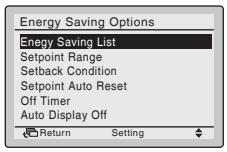


Menu Options

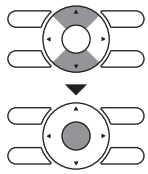
ON or OFF setting of the off timer

Operation

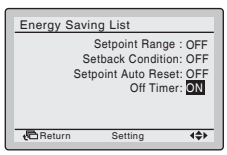
1

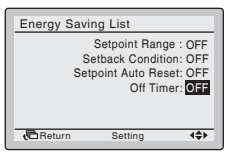


- Navigate to the Energy Saving Options screen. (See page 13.)
- Press ▼▲ buttons to select Energy Saving List on the off timer screen. Press **Menu/OK** button to display the Energy Saving List screen.

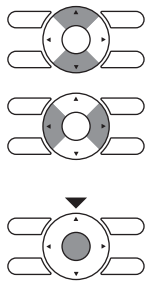


2

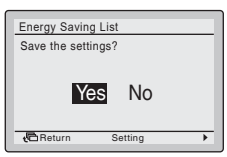




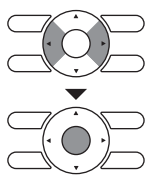
- Press ◀▶ buttons to move the highlighted item and press ▼▲ buttons to select ON or OFF on the Energy Saving List. Press **Menu/OK** button after selecting the item. Then the confirmation screen is displayed.



3



- Press ◀▶ button to select Yes on the confirmation screen. Pressing **Menu/OK** button confirms the enable/disable for the off timer and takes you back to the basic screen.

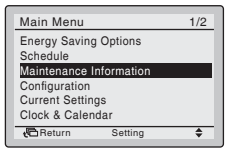


Maintenance Information

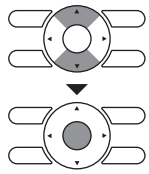
■Displaying the Service Contact and Model Information

Operation

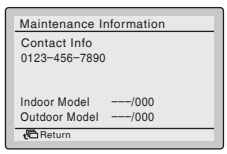
1



- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select Maintenance Information on the main menu screen and press **Menu/OK** button.

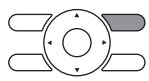


2



- The phone number for the contact is displayed at the top of the screen.
  (If it has not yet been entered, it will not be displayed.)
- The model information of the heat pump hot water unit (Heat source unit, Cascade unit) and Controller kit for your product will be displayed on the bottom of the screen.

* The error code history may also be displayed.
If the Operation lamp is not flashing, the unit is working properly.
The error code history is no longer displayed if you press **On/Off** button for more than 4 seconds.

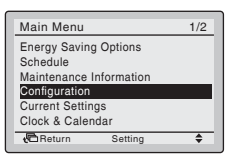


Configuration

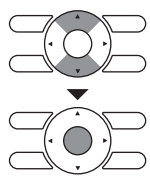
■Contrast Adjustment

Operation

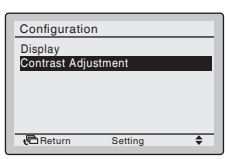
1



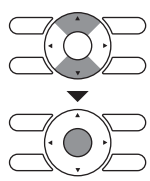
- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select Configuration on the main menu screen.
  Press **Menu/OK** button to display the configuration screen.



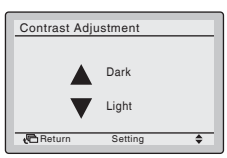
2



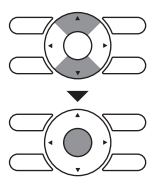
- Navigate to the configuration screen.
- Press ▼▲ buttons to select Contrast Adjustment on the configuration screen.
  Press **Menu/OK** button to display the contrast adjustment screen.



3



- On the contrast adjustment screen press ▼▲ buttons until you reach the desired contrast.
  After setting, press **Menu/OK** button and return to the basic screen.



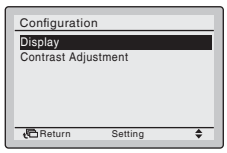
Menu Options

■Display

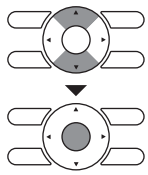
Display Mode

Operation

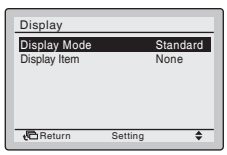
1



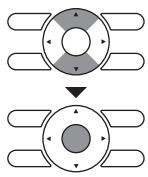
- Navigate to the configuration screen. (See page 15.)
- Press ▼▲ buttons to select Display on the configuration screen.
  Press **Menu/OK** button to display the display screen.



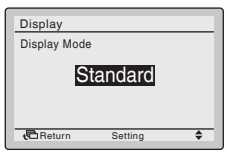
2



- Press ▼▲ buttons to select Display Mode on the display screen.
  Press **Menu/OK** button to display the display mode screen.

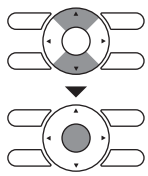


3



- Press ▼▲ buttons to select Standard or Detailed on the display screen.
- Press **Menu/OK** button to confirm the settings and return to the basic screen.

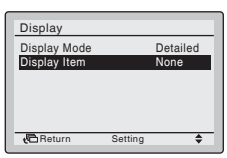
  * Refer to **Display Item** to change detailed display selection. (See below.)



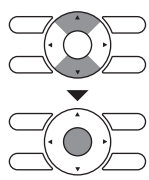
Display Item

Operation

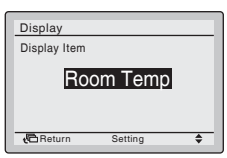
1



- Navigate to the display screen. (See above.)
- Press ▼▲ buttons to select Display Item on the display screen.
  Press **Menu/OK** button to display the display item screen.

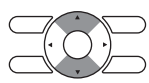


2



- Pressing ▼▲ buttons displays the following.

  → **Room Temp** ◂▸ ***System** ←
  →***Outside Air Temp** ◂▸ **None** ←

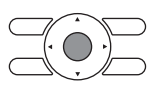


- Be sure to read the following notes regarding display of room temperature and outside air temperature.

  Room Temp
  ..... The temperature at the remote controller.
  The temperature that is detected may be affected by the location of the remote controller.

  Outside Air Temp, System
  ..... It is not displayed for this system.

- After setting, press **Menu/OK** button to confirm settings and return to the basic screen.

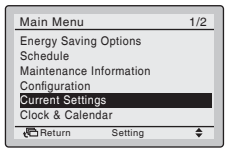


Current Settings

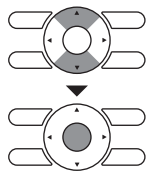
■Manipulating the Current Settings

Operation

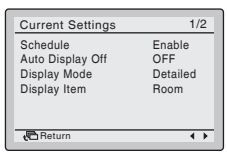
1



- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select Current Settings on the main menu screen and press **Menu/OK** button.



2

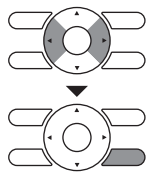


- A list showing the current setting status will appear.
  Press ◀▶ buttons to go to the next item.
- Pressing **Cancel** button takes you back to the main menu screen.

Display items

Schedule	Display Mode
Auto Display Off	Display Item

* Only the items that can be set are displayed.

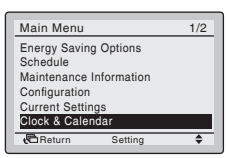


Clock & Calendar

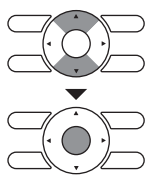
■Date & Time Settings

Operation

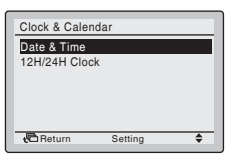
1



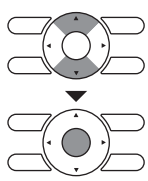
- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select Clock & Calendar on the main menu screen. Press **Menu/OK** button to display the clock & calendar screen.



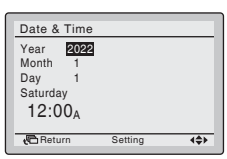
2



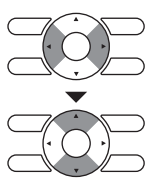
- Press ▼▲ buttons to select Date & Time on the clock & calendar screen. Press **Menu/OK** button to display the date & time screen.



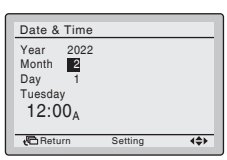
3



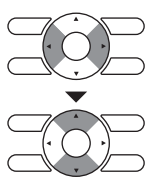
- Select **Year** with ◀▶ buttons.
  Change the year with ▼▲ buttons.
  Holding down the button causes the number to change continuously.



4

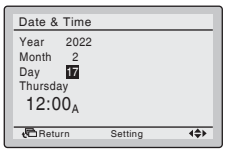


- Select **Month** with ◀▶ buttons.
  Change the month with ▼▲ buttons.
  Holding down the button causes the number to change continuously.

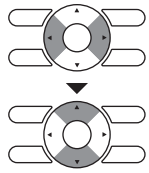


Menu Options

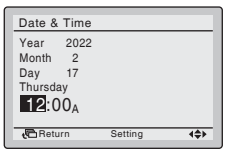
5



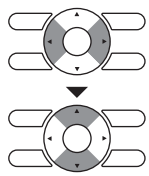
- Select **Day** with ◀▶ buttons.
  Change the day with ▼▲ buttons.
  Holding down the button causes the number to change continuously.
  Days of the week change automatically.



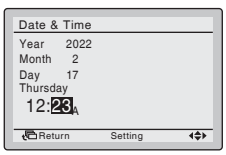
6



- Select **Hour** with ◀▶ buttons.
  Change the hour with ▼▲ buttons.
  Holding down the button causes the number to change continuously.



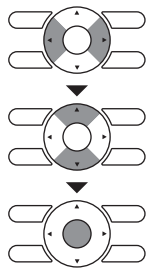
7



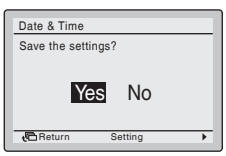
- Select **Minute** with ◀▶ buttons.
  Change the minute with ▼▲ buttons.
  Holding down the button causes the number to change continuously.
- Press **Menu/OK** button.
  The confirmation screen will appear.

Note:

The date can be set between
January 1, 2017 and December 31, 2099.

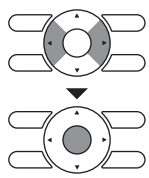


8



- Press ◀▶ button to select Yes on the confirmation screen.
  Press **Menu/OK** button to confirm the clock and return to the basic screen.

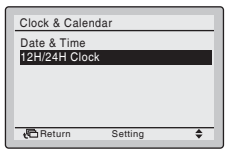
  * When setting the schedule, the display returns to the settings screen.



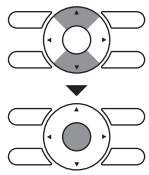
■12H/24H Clock

Operation

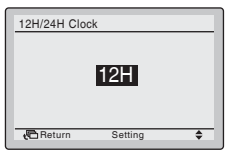
1



- Display the clock & calendar screen. (See page 17.)
- Press ▼▲ buttons to select 12H/24H Clock on the clock & calendar screen.
  The 12H/24H clock screen will appear when **Menu/OK** button is pressed.

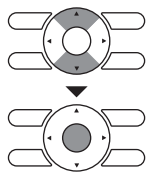


2

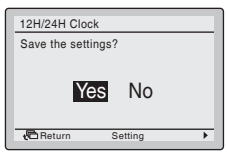


By default, the time display is set to the 12H format.

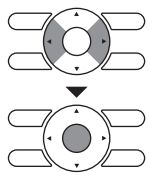
- Press ▼▲ buttons to select 12H 24H on the 12H/24H clock screen.
- The confirmation screen will appear when **Menu/OK** button is pressed.



3



- Press ◀▶ buttons to select Yes on the confirmation screen.
  Pressing **Menu/OK** button confirms the 12H or 24H and takes you back to the basic screen.

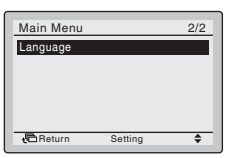


Language

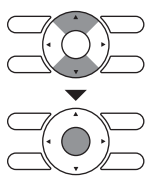
■Selectable Languages

Operation

1

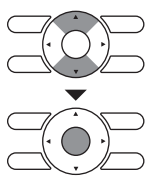


- Display the main menu screen. (See page 12.)
- Press ▼▲ buttons to select Language on the main menu screen and press **Menu/OK** button.



2

- Press ▼▲ buttons to select the preferred language on the language screen.
  English/Français/Español/Nederlands/Português/Deutsch/Italiano are available.
- Press **Menu/OK** button to confirm the settings and return to the basic screen.



Maintenance

Maintaining the Unit and LCD Display

- Wipe the LCD and surface of the remote controller with a dry cloth when they become dirty.
- If the dirt on the surface cannot be removed, soak the cloth in neutral detergent diluted with water, squeeze the cloth tightly, and clean the surface. Wipe the surface with a dry cloth.

Note

- Do not use any paint thinner, organic solvent, or strong acid.

How to Change Settings (operating in "Field setting mode")

Select the desired mode with the remote controller to set the temperatures at the start and end of Water Heating or Water Reheating.

CAUTION

To change the settings, consult your dealer.

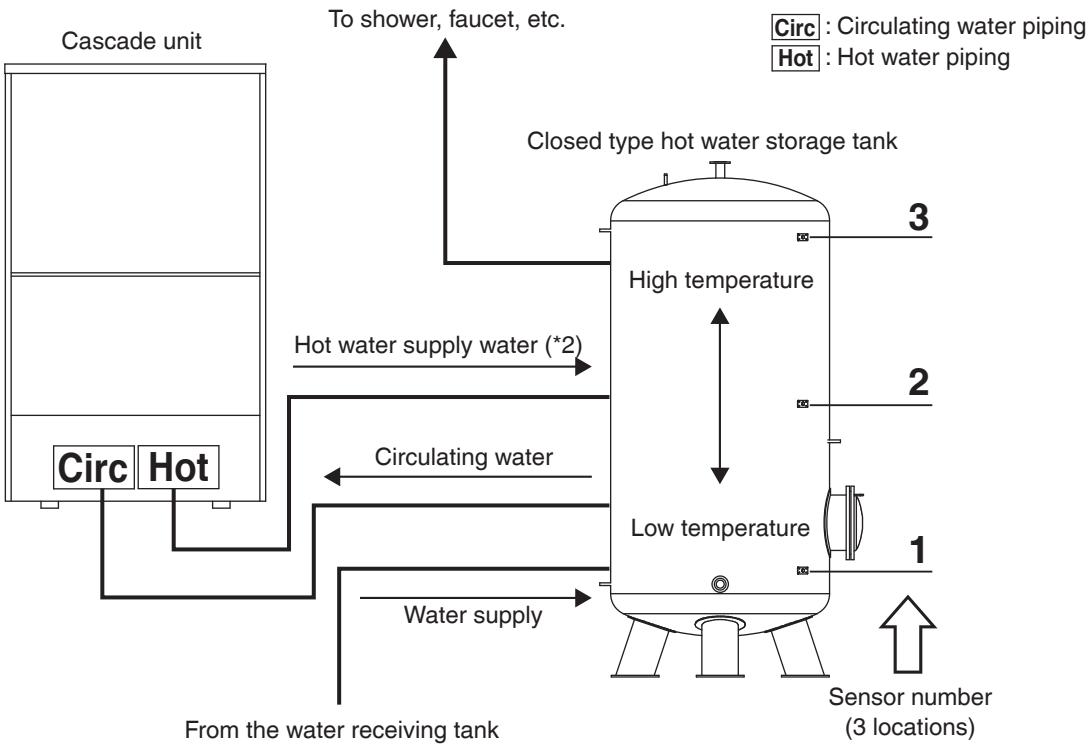


Figure 1

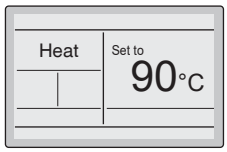
Setting Item	Function
Water Reheating start temperature	Water Reheating starts when the water temperature at the top of the closed type hot water storage tank (position 3 in Figure 1) falls below the set temperature. The set temperature can be set in the range of 50 to 80°C (86 to 176°F).
Water Reheating end and water heating end temperature differential	Water Reheating ends when high temperature water inside the closed type hot water storage tank has accumulated and the water temperature at the top of the closed type hot water storage tank (position 3 in Figure 1) exceeds the set temperature (Water Reheating start temperature settings + differential).
Water Heating start detection sensor	Water Heating starts when the high temperature water inside the closed type hot water storage tank is used and the Water Heating start detection sensor senses that the temperature of the hot water has fallen below the Water Heating start temperature. The Water Heating start detection sensor can be selected from 1 or 2 in Figure 1. Water Heating start temperature can be set in the range of 30 to 80°C (86 to 176°F)(*1).
Water Heating start temperature	
Water Heating end detection sensor	Water Heating ends when high temperature water inside the closed type hot water storage tank has accumulated and the Water Heating end detection sensor senses that the temperature of the hot water exceeds the Water Heating end temperature. The Water Heating end detection sensor can be selected from 1 or 2 in Figure 1. Water Heating end temperature can be set in the range of 30 to 80°C (86 to 176°F) (*1).
Water Heating end temperature	

*1 Set the Water Heating start temperature lower than the Water Heating end temperature.
*2 Refer to page 10 for setting the hot water supply temperature of the cascade unit.

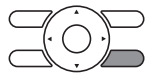
■How to set

Operation

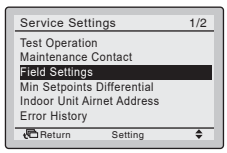
1



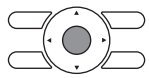
- Press and hold **Cancel** button for 4 seconds or longer during backlight lit.
- Service settings menu is displayed.



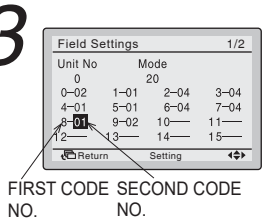
2



- Select Field Settings in the Service Settings menu, and press **Menu/OK** button.
  Field settings screen is displayed.



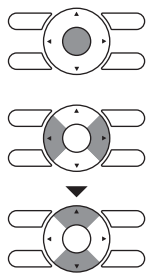
3



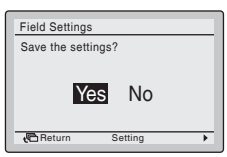
- Highlight the mode, and select desired “Mode No.” by using ▲▼ (Up/Down) button.
- Highlight the unit No. and select “Unit No.” to be set by using ▲▼ (Up/Down) button.

  [Current settings are displayed. And, SECOND CODE NO. “ - ” means no function.]

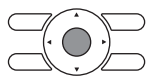
- Highlight SECOND CODE NO. of the FIRST CODE NO. to be changed, and select desired “SECOND CODE NO.” by using ▲▼ (Up/Down) button.
  Multiple identical mode number settings are available.



4



- Press **Menu/OK** button. Setting confirmation screen is displayed.
- Select Yes and press **Menu/OK** button. Setting details are determined and field settings screen returns.



In the case of multiple setting changes, repeat “3” to “4”.
After all setting changes are completed, press **Cancel** button twice.

Backlight goes out, and “Checking the connection. Please stand by.” is displayed for initialization. After the initialization, the basic screen returns.

How to Change Settings (operating in “Field setting mode”)

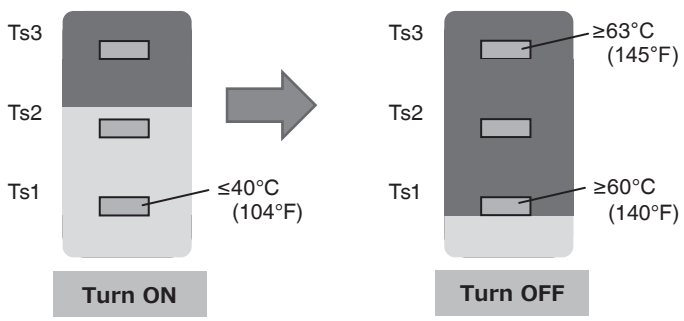
Table 2 List of “mode number”, “FIRST CODE NO.”, “SECOND CODE NO.”

Setting Item	Mode number	FIRST CODE NO.	SECOND CODE NO.										
			01	02	03	04	05	06	07	08	09	10	11
Water reheating start temperature "Ts3" (°C)	21	3	50	55	60	65	70	75	80				
Water reheating end and water heating end temperature differential (°C)		8	1	2	3	4	5	6	7	8	9	10	
Water heating start detection sensor selection "Ts1 or Ts2"	23	0	1	2									
Water heating start temperature (°C)		1	30	35	40	45	50	55	60	65	70	75	80
Water heating end detection sensor selection "Ts1 or Ts2"		2	1	2									
Water heating end temperature (°C)		3	30	35	40	45	50	55	60	65	70	75	80

*1 The thick frames are factory settings.
*2 Be sure to set the water reheating temperature (Water Reheating start temperature settings + differential) lower than the hot water supply temperature.
*3 The SECOND CODE NO. “01” and “02” correspond to the sensor numbers “1” and “2” (refer to Figure 1) of the closed type hot water storage tank.
*4 The set temperature can be switched to the value set in Mode 24 by inputting an external contact to the controller box.
Input = OFF; Mode 23-0~3
Input = ON; Mode 24-1~4
For how to connect the external output, refer to the “Electrical wiring diagram” for the controller kit.

■CASE STUDY: heating operation case for 60°C (140°F) supply temperature hot water setting.

Water Heating Operation



If you choose TS2 for start, the system operation ON / OFF differential will be larger.

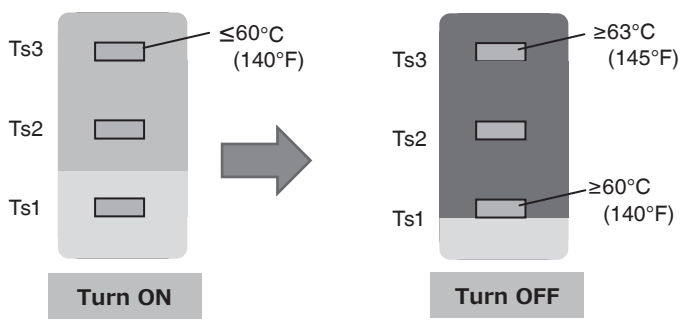
Conditions for Water Heating Operation On/Off

Ts1 is ≤ 40°C (104°F) ➡ Operation ON

Ts3 is ≥ 63°C (145°F) AND Ts1 is ≥ 60°C (140°F) ➡ Operation OFF

*1 ON/OFF condition settings are changeable
(ON/OFF: between 30 to 80°C (86 to 176°F), by 5°C (9°F) increments)
*2 Ts to determine ON/OFF can be chosen from Ts1 or Ts2

Water Reheating Operation



Conditions for Water Reheating Operation On/Off

Ts3 is ≤ 60°C (140°F) ➡ Operation ON

Ts3 is ≥ 63°C (145°F) AND Ts1 is ≥ 60°C (140°F) ➡ Operation OFF

*1 ON/OFF condition settings are changeable
(between 50 to 80°C (122 to 176°F) by 5°C (9°F) increments)
*2 Ts to determine ON/OFF can be chosen from Ts1 or Ts2

● Difference in the tank water temperature is shown by the darkness of a color.
A darker color indicates a higher tank water temperature.

Optimum Operation

Observe the following precautions to ensure the system operates property.

- Never place objects near the air inlet or the air outlet of the unit. It may cause deterioration in the performance or stop the operation.
- Keep the remote controller at least 3.5 ft. (1 m) away from televisions, radios, stereos, and other similar equipment. Failing to do so may cause static or distorted pictures.
- It takes time for the tank water temperature to reach the set temperature. Start the operation in advance using schedule operation.

How to Maintain

Daily maintenance

■Maintenance of water

NOTE

- Be sure to use tap water that complies with the water quality standards in accordance with federal/state/local laws or ordinances.
  Do not use water that contains a lot of foreign matter.
  For water quality management, refer to “Water Quality” (See page 31).
- Be sure to manage water quality.
  It may cause corrosion of the Condenser coil and piping, as well as generation of microorganisms.
- For the cleaning period and cleaning method of the water heat exchanger inside the cascade unit and the strainer built into the pressure reducing valve, consult your dealer.

■Initial maintenance/maintenance when not using for a long time

⚠ WARNING

- **Do not use flammable gas (hairspray, insect repellent, etc) near the unit**
  Do not wipe the unit with benzine/paint thinner
  May result in cracking/electric shock/ignition of fire.
- **Do not wash the inside of the hot water supply unit yourself, but rather ask your dealer**
  If cleaning is performed selecting or using the wrong cleaning agent, resin parts may be damaged or water may leak.
  Also, if the cleaning agent gets on electric parts or electric motors, it may cause malfunction, smoke or ignition.

⚠ CAUTION

- **Do not touch the air inlet/air outlet of the heat source unit or aluminum fins**
  Injury may result.
- **To prevent freezing, do not shut off the power supply circuit breaker when the outside air is below freezing**
  If the power supply circuit breaker is shut off while water is still inside, the cascade unit and water piping may be damaged by freezing.
  Drain the water when the power supply circuit breaker is turned off.
- **Do not place objects or allow fallen leaves to collect around the hot water supply unit**
  If small animals living within the fallen leaves enter the unit and come into contact with electrical components, it may sult in malfunction, smoke or ignition of fire.
- **When not using for a long time, do not leave the water piping filled with water**
  As it may cause water leakage as well as deterioration of water quality, drain the water.
- **Do not wash the hot water supply unit with water**
  This could result in electric shock or fire.
- **When performing maintenance, be sure to stop operation and turn off the power supply circuit breaker**
  Not cutting off the power supply could result in electric shock or injury.
  Drain the water when the power supply circuit breaker is turned off.
- **When not using for a long time, shut off the power supply circuit breaker and drain the water from the cascade unit and water piping**
  Not cutting off the power supply could result in heat generation and ignition of accumulated dust.
  Also, if you do not drain the water, it will freeze and the hot water supply unit and water piping will be damaged.
- **Watch your step at the time of maintenance.**
  If the scaffold is unstable, you may fall or topple down, thus causing injury.

Before operation

Ensure the followings before the operation .

- Is the air inlet/air outlet of the heat source unit blocked?
  Remove any obstructions that may be present.
  A decrease in air flow due to obstacles will lead to a decrease in performance and equipment malfunction.
- Is the water piping in the cascade unit full?
  If operation is performed without filling with water, the equipment may be damaged.
  Confirming whether the water piping is full requires specialized knowledge.
  Request that your dealer carry out the work.

  [Figure 4 shows the location of the vent valve inside the unit for maintenance workers.
  Do not perform work by yourself.]

- Turn the power on.
  When the power comes on, the characters in the remote controller display are displayed.

Power on the entire system at least 6 hours prior to operation.

- This is to protect the both cascade unit and heat source unit and ensure a smooth start.
- If the power is not turned on for the hot water supply unit (heat source unit and/or cascade unit), error code “UE” is displayed on the remote controller and operation cannot be performed.

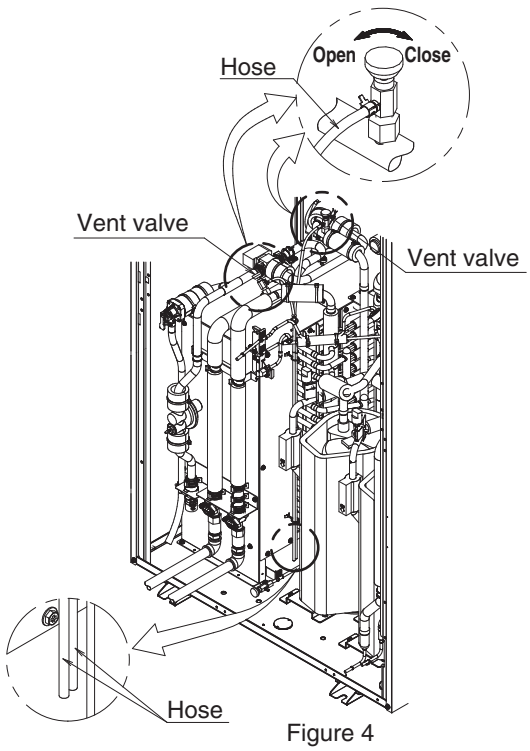


Figure 4

How to Maintain

When not using for a long time

Turn off the power supply.

- When the cascade unit is deenergized, the remote control will show no display.
- To save energy, please deenergize the unit if it is not used a long period of time.

Please drain the water.

- If the outside air temperature drops below freezing, the cascade unit and water piping will freeze and break.
- This may cause water leakage as well as deterioration of water quality.

CAUTION

Please handle water draining procedure by trained personnel.
Request that your dealer carry out the work.

Figure 5 shows the location of the vent valve and drain valve inside the unit for maintenance workers.
Do not perform work by yourself.

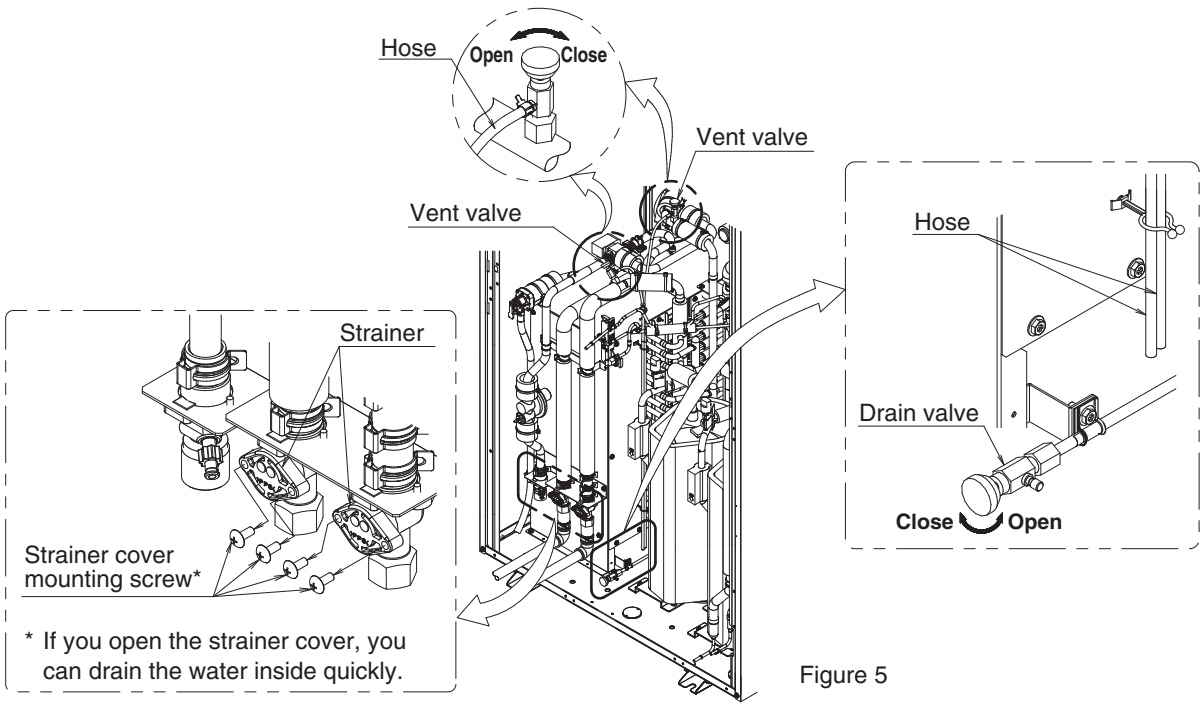
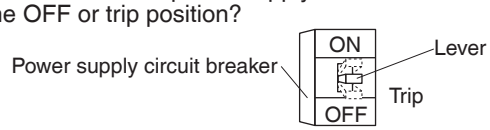


Figure 5

Troubleshooting

Check the following before requesting service

Symptoms	Causes	Measures
The unit does not operate at all	Is a power supply fuse blown?	Turn off the power supply.
	Is the lever in the power supply circuit breaker in the OFF or trip position? 	• If the power supply circuit breaker lever is in the OFF position, turn on the power supply. • If the power supply circuit breaker lever is in the trip position, do not turn on the power supply, and contact your dealer.
	Is there a power outage?	After power failure recovery, restart operation.
Operation starts, but it stops immediately	Are the heat source unit air inlet or air outlet obstructed?	Remove any obstructions.
	Are all valves in the water piping system open?	Open all valves in the water piping system.
	Is the strainer in the water piping system clogged?	Clean all strainers in the water piping system.
	Is the inlet water pressure being maintained?	Keep the inlet water pressure within the operating range, refer to page 2.

After investigating the points mentioned above, if the condition is still not good, do not repair the unit yourself, but rather contact your dealer. At this time, provide the symptoms, system name, and model name (written on the manual or model name label, refer to page 4).

Troubleshooting

The following symptoms do not mean system malfunction.

Symptoms		Causes
The system does not operate	When operation is started again immediately after stopping operation	This is because things are being controlled so that the machine is not overloaded. Operation will start automatically after about 5 minutes.
	Immediately after the power supply is turned on	This is for operation preparation. Wait about 10 minutes.
The cascade unit and/ or heat source unit stops operation from time to time	With “U4”/“U5”/“UE” displayed on the remote controller, the unit stops, but then resumes operation in a few minutes	This is because communication between units has been interrupted and stopped by electrical noise (noise) from equipment other than the hot water supply unit. If the electrical noise (noise) disappears, operation will begin again automatically.
White mist comes out	<Heat source unit> When switching to normal operation during defrost operation and after completion of defrosting	This is because steam emerges after the frost melts.
Noise is emitted	<Heat source/cascade unit> During defrost operation, a faint and continuous “shuuu” noise	This is the sound of gas (refrigerant) flowing through both the heat source unit and cascade unit.
	<Heat source/cascade unit> A “shuuu” sound immediately after starting/stopping operation or immediately after starting/stopping defrosting	This is the noise of the flow of gas (refrigerant) stopping or changing.
	<Heat source unit> The tone of the operating sound changes	This is because the frequency of the compressor changes.
The fan does not turn	<Heat source unit> During operation	This is because the fan speed is controlled so that the product will operate optimally.
The compressor/fan/pump does not stop	<Heat source/cascade unit> After operation is stopped	This is to prevent the retention of oil or refrigerant. Stops after about 5 to 10 minutes of operation. Do not turn off the power supply.
Pump runs while the unit is stopped	<Cascade unit> When the unit is stopped	This is to prevent the water piping from freezing. This is because it operates automatically when the outside air and water temperature are low.
The unit is not operating, but power is being consumed	<Heat source/cascade unit> When the unit is stopped	In order to secure smooth start of operation, the unit consumes a few tens of watts of power.
The inside of unit is warm even when the unit has stopped	<Heat source unit> When the unit is stopped	This is because the crankcase heater is warming the compressor so that the compressor can start smoothly.

If one of the following malfunctions occur, take the measures shown below and contact your local dealer.

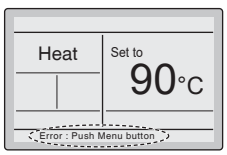
⚠ WARNING

- **Stop operation and shut off the power if anything unusual occurs (burning smells, etc.)**
  Leaving the unit running under such circumstances may cause breakage, electrical shock, or fire.
  Contact your local dealer.

- If a safety device such as a fuse or a breaker frequently actuates;
  Measure : Do not turn on the main power switch.
- If the ON/OFF switch does not properly work;
  Measure : Turn off the main power switch.
- If water leaks from unit;
  Measure : Stop the operation.
- If an error occurs, either one of the following items will flash in the basic screen of remote controller.

Operation

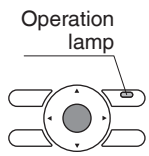
1



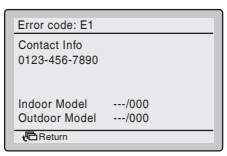
"Error: Push Menu button"
* The operation lamp will flash.

"Warning: Push Menu button"
* The operation lamp will not flash.

- Press Menu/OK button.



2



- The Error code will flash and the service contact and model name or code may appear.
- Notify your local dealer of the Error code and model name or code.

If the system does not properly operate except for the above mentioned cases and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.
If it is impossible to fix the problem after checking all the above items, contact your local dealer.
Let them know the symptoms, system name, and model name.

1. If the system does not operate at all;
   - Check for power failure.
     Wait until power is restored. If power failure occurs during operation, the system automatically restarts immediately after the power supply is recovered.
   - Check if fuse has blown;
     Turn off the power supply.
   - Check if the breaker is blown.
     Turn the power on with the breaker switch in the OFF position.
     Do not turn the power on with the breaker switch in the Trip position.
     (Contact your local dealer.)
2. If the system stops soon after starting the operation;
   - Check if air inlet or outlet of the unit is blocked by obstacles.
     Remove any obstacle and make it well-ventilated.
3. The system operates but water heating is insufficient;
   - Check if air inlet or outlet of the unit is blocked by obstacles.
     Remove any obstacle and make it well-ventilated.
   - Check the hot water supply temperature setting.
     Refer to "Operation Procedure".
   - Check if the entering water temperature of the unit is within the operation range.
     Do not exceed the operation range.
   - Check if the water supply and/or circulation pressure is within the operation range.
     Do not exceed the operation range.
   - Check if the ambient temperature of the unit is within the operation range.
     Do not exceed the operation range.

Error Code List

Error code	Description
E1	Heat source unit, Cascade unit: Main PCB abnormality, EEPROM abnormality
E2	Heat source unit, Cascade unit: Current leakage detection
E3	Heat source unit, Cascade unit: Activation of high pressure switch
E4	Heat source unit, Cascade unit: Activation of low pressure switch
E5	Heat source unit, Cascade unit: Compressor motor lock
E7	Heat source unit: Outdoor fan motor lock
E9	Heat source unit, Cascade unit: Electronic expansion valve coil abnormality
F3	Heat source unit, Cascade unit: Discharge pipe temperature abnormality
H7	Heat source unit: Fan PCB abnormality
H9	Heat source unit: Air thermistor abnormality
J3	Heat source unit, Cascade unit: Discharge pipe thermistor abnormality
J4	Heat source unit: Plate heat exchanger gas thermistor abnormality
J5	Heat source unit: Suction pipe thermistor abnormality
J6	Heat source unit: Plate heat exchanger liquid thermistor abnormality
J7	Heat source unit, Cascade unit: Liquid pipe thermistor abnormality, Subcooling heat exchanger liquid pipe thermistor abnormality
J8	Heat source unit: Heat exchanger liquid pipe thermistor abnormality
J9	Heat source unit: Subcooling heat exchanger gas pipe thermistor abnormality
JA	Heat source unit, Cascade unit: High pressure sensor abnormality
JC	Heat source unit, Cascade unit: Low pressure sensor abnormality
L1	Heat source unit, Cascade unit: Inverter PCB abnormality
L4	Heat source unit, Cascade unit: Inverter radiation fin temperature rise abnormality
L5	Heat source unit, Cascade unit: Compressor instantaneous overcurrent
L8	Heat source unit, Cascade unit: Compressor overcurrent
L9	Heat source unit, Cascade unit: Compressor startup abnormality

Error code	Description
LC	Heat source unit, Cascade unit: Communication error between inverter PCB and Heat source unit / Cascade unit main PCB
P1	Heat source unit, Cascade unit: Power supply voltage imbalance
P4	Heat source unit, Cascade unit: Inverter radiation fin temperature abnormality
PJ	Heat source unit, Cascade unit: Field setting abnormality after replacing outside unit main PCB or combination of PCB abnormality
U0	Heat source unit, Cascade unit: Refrigerant shortage alert
U1	Heat source unit, Cascade unit: Reverse phase, open phase
U2	Heat source unit, Cascade unit: Power supply insufficient or instantaneous failure
U4	Cascade unit: Communication error inside Cascade unit
U5	Communication error between remote controller and Controller kit
U5	Remote controller PCB abnormality or remote control setting failure
U7	Communication error between heat source unit and cascade unit
UA	Heat source unit, Cascade unit: • Communication error between remote controller and Controller kit • Excess of connected tanks (when Two tank system)
UC	Heat source unit, Cascade unit, Controller kit: Centralized address overlapped
UE	Heat source unit, Cascade unit, Controller kit: • Communication error between Cascade unit and Controller kit • Cascade unit address setting failure • Controller kit setting failure
A6	Cascade unit: Water cut-off error
80	Cascade unit: Inlet water tempatrature error
81	Cascade unit: Outlet water tempatrature error
81	Controller kit: Thermistor error
42	Cascade unit: Electric three-way valve error
HJ-07	Cascade unit: Piping system, Pressure reducing valve and air purge error
EC	Controller kit: Low tank water temperature • This does not affect test operation.

**	If the error code in white letters on the black background has occurred, check the displayed content and contact your dealer while the system can still work.

Water Quality

Use tap water.

In order to prevent water piping from corrosion and scale, use heat source water that meets the water quality standards below.

Water quality standards for cooling water, chilled water, hot water and makeup water (3)

Water quality standard for refrigerating and air-conditioning equipment JRA GL-02-1994 water quality standard (high medium temperature water system) must be met.

Item			Standard value (2)		Tendency (1)	
			Circulation water (60-90 °C) (140-190°F)	Make-up water (Tap water)	Corrosion	Scale
Standard items	pH (25°C/77°F)	—	7.0-8.0	7.0-8.0	√	√
	Conductivety (25°C/77°F)	mS/m	30 or less	30 or less	√	√
	Chloride Iron	$mgCl^-/L$	30 or less	30 or less	√	
	Sulfate Iron	$mgSO_4^{-2}/L$	30 or less	30 or less	√	
	Acid Consumption (ph4, 8)	$mgCaCO_3/L$	50 or less	50 or less		√
	Total hardness	$mgCaCO_3/L$	70 or less	70 or less		√
	Calcium hardness	$mgCaCO_3/L$	50 or less	50 or less		√
	Ironic state Silica	$mgSiO_2/L$	30 or less	30 or less		√
Ref. items	Iron	mgFe/L	1.0 or less	0.3 or less	√	√
	Copper	mgCu/L	1.0 or less	0.1 or less	√	
	Sulfide Iron	mgS^{-2}/L	Not detected	Not detected	√	
	Ammonium Iron	$mgNH_{4+}/L$	0.1 or less	0.1 or less	√	
	Residual chlorine	mgCl/L	0.1 or less	0.3 or less	√	
	Free carbon dioxide	$mgCO_2/L$	0.4 or less	4.0 or less	√	

(1) √ in the fields means that they are factors related to likelihood of corrosion or scale buildup.

(2) For source water to supply or replenish, use tap water (clean water). Do not use industrial water, groundwater, pure water, reclaimed water, or softened water.

(3) The 14 items above are typical factors that may result in defects due to corrosion or scale.

After-Sales Service and Warranty

After-sale Service

⚠ DANGER

- **Refrigerant gas may produce a toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could cause severe injury or death.**

⚠ WARNING

- **Do not disassemble, modify or repair the unit.**
  This may cause water leakage, electric shock or fire.
  Contact your local dealer.
- **Do not remove or reinstall the unit by yourself.**
  Incorrect installation may cause water leakage, electrical shock or fire.
  Contact your local dealer.

■ When asking your local dealer to repair, inform related staff of the details as follows:

- Model name and product No. of air conditioner
- Shipping date and installation date
- Malfunction:
  Inform the staff of the defective details. (Malfunction code being displayed on the hot water system controller.)
- Name, address, telephone number

■ Repair after the warranty term is expired

Contact your local dealer.

- We will repair for fee as requested if the unit can be repaired to recover its functionality.

■ Minimum storage period of important parts

Even after a unit is discontinued, we have the related important parts in stock for 9 years at least.
The important parts indicate parts essential to operate the unit.

■ Recommendations for maintenance and inspection

Since dust collects after using the unit for several years, the performance will be deteriorated to some extent.
Disassembling and cleaning inside require technical expertise, so we recommend entering a maintenance and inspection contract (at a cost) separate from regular maintenance.

- For installation and maintenance of the machine, contact your dealer.

■Recommended inspection and maintenance cycles
[Note: The maintenance cycle is not the same as the warranty period.]

Table 1 assumes the following usage conditions.

1. Normal use without frequent starting and stopping of the machine.
   (Although it varies with the model, we recommend not starting and stopping the machine more than 6 times/hour for normal use.)
2. Operation of the product is assumed to be 10 hours/day and 2,500 hours/year.

• Table 1 “Inspection Cycle” and “Maintenance Cycle” Lists

Name of Main Part	Inspection Cycle	Maintenance Cycle*1
Compressor	1 year	20,000 hours
Electric motor (fan, etc.)		20,000 hours
Printed circuit boards		25,000 hours
Heat exchanger		5 years
Electric expansion valve		20,000 hours
Valve (solenoid valve, reversing valve)		20,000 hours
Sensor (thermistor, pressure sensor etc.)		5 years

Name of Main Part	Inspection Cycle	Maintenance Cycle*1
Controller switches	1 year	25,000 hours
FAN (Heat source unit)		10 years
Water pump		6 years
Fuse		10 years
Crankcase heater		8 years
Freeze proof heater		8 years

Note

This table indicates main parts.

See the maintenance and inspection contract for details.

*1

This maintenance cycle indicates recommended lengths of time until the need arises for maintenance work, in order to ensure the product is operational as long as possible.

Use for appropriate maintenance design (budgeting maintenance and inspection fees, etc.).

Depending on the content of the maintenance and inspection contract, the inspection and maintenance cycles may in reality be shorter than those listed here.

Shortening of “maintenance cycle” and “replacement cycle” needs to be considered in the following cases.

1. When used in hot, humid locations or locations where temperature and humidity fluctuate greatly.
2. When used in locations where power fluctuation (voltage, frequency, wave distortion, etc.) is high.
   (Cannot be used if it is outside the allowable range.)
3. When installed and used in locations where bumps and vibrations are frequent.
4. When used in bad locations where dust, salt, harmful gas or oil mist such as sulfurous acid and hydrogen sulfide may be present in the air.
5. When used in locations where the machine is started and stopped frequently or operation time is long. (Example: 24 hour air-conditioning)
6. Contact your local dealer for detailed estimate and inspection/service planning.

After-Sales Service and Warranty

■Recommended replacement cycle of wear-out parts [The cycle is not the same as the warranty period.]

• Table 2 “Replacement Cycle” Lists

Name of Main Part	Inspection Cycle	Replacement Cycle*1
Flow sensor	1 year	2 years
Pressure reducing valve		3 year
Fuse		10 years
Crankcase heater		8 years

Note
This table indicates main parts.
See the maintenance and inspection contract for details.
*1
This maintenance cycle indicates recommended lengths of time until the need arises for maintenance work, in order to ensure the product is operational as long as possible.
Use for appropriate maintenance design (budgeting maintenance and inspection fees, etc.).
Contact your local Daikin Sales representative for details.

■Moving and discarding the unit

This unit uses chlorofluorocarbon.
Contact your local Daikin Sales representative for discarding this unit since it is required by law to collect, transport and discard the refrigerant in accordance with “chlorofluorocarbon collection and destruction” law.

■Where to call

For after-sales service, etc., consult with your local dealer.

Warranty

- A warranty card is included in this product.
  Check the information in the warranty card filled by your dealer. Then the personnel who is responsible for the hot water supply unit should keep it in a safe place.

  Warranty period ... One year from the installation date

  For details, see the warranty card.
- Contact your dealer if you request free repair during the warranty period and present the “warranty card” at the time of repair. If you fail to present it, you may be charged for the repair even in the free repair warranty period. Therefore, keep the warranty card carefully.

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