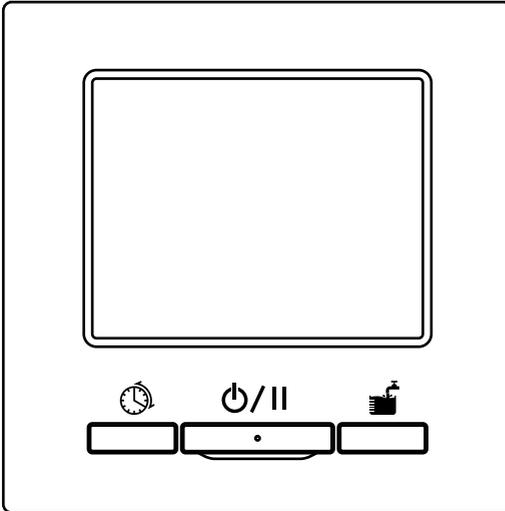


Air To Water Heat Pump Natural refrigerant CO₂ Water Heater ESA30EH2 series



Thank you very much for your purchasing the heat pump water heater for commercial use.

This user's manual describes cautions for safety. Please read this manual carefully before use in order to operate the unit properly.

Keep this manual, after reading, at a safe place where you can consult it whenever it is necessary.

When the ownership of the unit is changed, please be sure to transfer this manual and the "Installation Manual" to a new owner.

It is not recommended for a user to install or move the unit by the user's own discretion. (Safety or functions may not be assured.)

The emission sound pressure level from the heat pump unit is under 70dB (A).



This air to water heat pump complies with Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Pressure Equipment Directive 2014/68/EU, RoHS Directive 2011/65/EU, (EU) 2015/863, Ecodesign requirement Directive 2009/125/EC. CE marking is applicable to the area of 50 Hz power supply.

PJZ012A188B

202205

Contents

Note

- In order to protect the heat pump unit, be sure to turn the power on at least 6 hours before starting operation. (Supply the power to the crankcase heater and warm up the compressor) And do not turn the power off when stopping.
(During stopping of compressor, the crankcase heater is kept energized for the compressor to be kept warm in order to prevent compressor from breakdown due to the migration of liquid refrigerant in the compressor.)
- If the ambient air temperature becomes below 0° C, the water pipe may freeze.
It may cause break of the water pipe and the heat pump unit.
Please consult with the dealer and take proper measure for anti-freezing water.
If water may freeze, be sure to keep the power turning on during Pause as well.
This unit has a function to start anti-freeze operation during Pause, when water may freeze.
- If do not use hot water for one month or more, be sure to shut off the main power and drain off the water in the heat pump unit and the unvented cylinders.
When power failure happens and the water may freeze, be sure to drain off immediately.
Regarding the way to drain off, please consult with the installer or the dealer.
- **Warning:** This appliance may deliver water at high temperature refer to the plumbing code of Australia (PCA), local requirements and installation instructions to determine if additional delivery temperature control is required.

Before use	2
Safety Precautions	2
Component replacement guide for maintenance check and preventive maintenance	10
Water Quality Criteria	11
General description of CO ₂ heat pump water heater	12
Description of functions and contents of CO ₂ heat pump water heater	16
Names and functions of sections on the R/C	19
Screen flow	23
Operation method of basic operation	25
Hot water operation method	25
Space heating operation method	26
How to Run/Pause	27
How to go to TOP screen	28
Setting of HW temp for the operation to top up	29
How to start heating operation	30
How to set Heating temperature	31
Schedule setting	32
How to set weekly schedule	33
How to set annual schedule	37
How to set day off	39
How to set peak-cut	41
How to do the [Operation to fill up]	44
How to set to increase or decrease the hot water amount uniformly	45
How to set Silent mode	46
How to set Legionella mode	49
Display hot water amount	51
Display of operation mode	51
Operation method for menu manipulation ...	52
Limited items for Sub remote control	52
How to operate on the menu screen	53
Notabilia for each setting screen	54
Operation method for various settings ...	55
How to set [Initial settings]	55
How to set Administrator settings	59
How to check the remote control setting	71
For maintenance	72
Maintenance of remote control, heat pump unit and hot water storage unit, and components for space heating	72
Measure for anti-freezing water in winter	73
When stopping the unit for long period	73
When power failure occurs	73
When error happens	74
Contact company	78
Next service date	78
When [Periodical check] is displayed ...	79
After-sales service	79
Operation data	81
Specifications	82

Before use

Safety Precautions

- Please read the precautions written here carefully to operate the unit properly. You are required to observe these fully because every item of these instructions is important for safety.

 WARNING	Failure to follow these instructions may result in serious consequences such as death, severe injury, etc.
 CAUTION	Failure to follow these instructions may cause injury, property damage or, serious consequences depending on.

- The following pictograms are used in the text.

	Never do.		Always follow the instructions given.
	Be sure to ground the unit.		Absolutely keep wet hands away.
	Absolutely keep water away.		

- Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual and the “Installation Manual” should be given to a new owner.
- Electrical wiring work must be implemented only by qualified specialists.

Precautions for installation

WARNING

Consult your dealer or a professional contractor to install the unit.

Be sure to use the genuine optional parts specified by MHI.

Improper installation made on your own may cause electric shocks, fire or dropping of the unit.



⚠ WARNING

Consider measures not to exceed the critical concentration of refrigerant in the event of leakage especially when the unit is installed in a small room. Regarding the measure not to exceed the critical concentration, please consult with our dealer.

If the refrigerant leaks and exceeds the critical concentration, it may cause oxygen deficiency accident.



Take care to protect terminal connections from external forces or stress caused by wiring.

Improper connection or fixing could cause heat generation, smoke or fire.



The maximum voltage connectable to the remote control is DC 18 V. Do not connect to AC220~240V or 380/415V.

It could cause breakage, ignition or fire.



Do not operate HP unit or remote control whose panel or cover is kept opened.

Operation with the electric live part kept opened may cause electric shocks, fire.



The unit should not be used in inappropriate environment.

Using the unit at the following places could deteriorate its performance significantly or cause electric shocks, breakdown, smoke or fire as a result of corrosion.

- Where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid etc)
- Where acidic or alkaline solution, cosmetics, special spray, etc. are used frequently
- Where oil mist generates
- Where dense cigarette smoke exists
- Where dust floats in air
- Where water vapor generates or heavily humid area
- Where inflammable gas may generate, flow in. accumulate or leak
- Where cosmetics or special spray is used.



⚠ WARNING

Grounding work shall be done securely.

Do not connect the grounding wire to a gas pipe, a water pipe, a lightning rod or a earth wire of telephone
Improper grounding may cause, malfunction or electric shocks at electric leak.



The earth leakage breaker should be installed

If the earth leakage breaker is not installed, it may cause electric shocks.

Please ask the dealer where you purchased it or the qualified specialist who installed it.



The remote control should not be installed where it is exposed to direct sunlight or the ambient temperatures become higher than 40°C or lower than 0°C.

It could cause deformation, discoloration or break-down.



⚠ CAUTION

The drain pipe work shall be done in order for the drain water to drain off without fail.

Improper drain pipe work may cause getting the household goods wet in flooded water or failure of heat pump unit due to blockage of drain water.



Install the remote control on a place which can endure its weight sufficiently.

In sufficient strength or improper installation could cause the remote control to drop off.



■ Precautions for usage

 WARNING	
<p>Avoid using combustible substances (hair spray, insecticide, etc) near the unit.</p> <p>Do not use benzene or paint thinner to clean the unit. It could cause cracks, electric shocks or fire.</p> <p>Stop operation under abnormal situation. If continued, it could result in break-down, electric shocks, fire, etc. If any abnormal condition (burnt odor etc.) occurs, stop operation, turn off the power switch and consult your dealer.</p>	 
<p>Stop operation when any anomaly is detected. If operation is continued, it could cause fire or break-down. Consult you dealer.</p>	
<p>Do not use any liquid except clean water. It may cause fire or explosion.</p>	
<p>Do not touch the hot water pipe with bare hands in order to check the hot water temperature. It may cause a scald.</p>	
<p>Do not change setting or cancel the protection device. Change setting or cancelation of protection device may cause fire, electric shocks or injury.</p>	
<p>When using the unit together with combustion appliance, be sure to ventilate frequently. Insufficient ventilation may cause oxygen deficiency accident.</p>	
<p>Do not insert your fingers or any sticks into the air outlet port of the fan. Since the fan rotates at high speed inside, it may cause injuries. Even if the fan is stopping, it may suddenly start operation.</p>	

 CAUTION	
<p>Do not use or let use the unit or remote control as play equipment. Improper operations could cause ill health or health disorder.</p>	
<p>Never disassemble the remote control. If you touch internal parts accidentally, you could get electric shocks or cause trouble. Consult your dealer when it is necessary to inspect its interior.</p>	

⚠ CAUTION

Do not wash the remote control with water or liquid.

It could cause electric shocks, fire or break-down.



Do not touch electric parts or operate buttons or screens with wet hands.

It could cause electric shocks, fire or break-down.



Be sure to stop operation and shut down the circuit breaker before starting maintenance work.

It could cause electric shocks or injury.



The cleaning of the inside of cylinder shall not be done by yourself. Please consult with the dealer where you purchased it

Cleaning with improper selection of detergent or improper usage way may cause damage of the section coated with resin or leakage. And if the detergent splashes on the electric part or motor, it may cause failure, smoke or fire.



Do not use the base frame for installing unit which is corroded or damaged after long term use.

If leaving it corroded or damaged, it may cause a fall of the unit or injury.



Do not ride on the unit or put something on the unit.

It may cause falling or turnover.



Do not put anything which will be troubled by getting wet under or near the unit.

If dew condenses on the unit, refrigerant pipe or water pipe or drain water sticks depending on the operation state, it may be damaged by dropping water.



Do not put anything such as a vase filled with water on the unit.

It may cause electric shocks, ignition or malfunction of the unit.



Do not put anything or not pile up fallen leaves around the unit.

If there are fallen leaves, insects may intrude in the unit. And if they touch the electrical components inside of the unit, it may cause malfunction of the unit, ignition or smoke.



⚠ CAUTION

Do not touch the aluminum fin of the heat exchanger with bare hands If touching, it may cause injury.	
Do not use benzene, paint thinner, wipes etc. to clean the remote control. It could discolor or break-down the remote control. Wipe it with a piece of cloth which is squeezed tightly after wetting with diluted neutral detergent. Finish up the cleaning by wiping with a piece of dry cloth.	
Do not pull or twist the cable of the remote control. It could cause break-down.	
Do not use the unit for special use such as preservation of foods, animals, plants, precision apparatuses and art objects. It may cause deterioration in quality of stores.	
Be sure to use only the fuse with proper capacity. If steel wire or copper wire is used, it may cause malfunction of the unit or fire.	
Do not make the unit run or stopped with power switch. It may cause fire or water leak. And if the auto-restart function is set [Valid], it may cause injury by sudden rotation of the fan.	
Do not use the water for drinking It may affect the health.	
Do not leave the water piping filled with water, when stopping the unit for long period. It may cause deterioration of the water quality or malfunction of the unit due to freezing water. Please shut off the power of the unit and drain off.	
Do not shut off the power. It may cause malfunction of the unit due to freezing water. If shutting off the power of the unit, please drain off. If water could freeze due to power failure, shut off the power immediately and drain off.	

⚠ CAUTION

Use clean water conform to the water quality criteria. (Refer to the criteria in page 7)

Deterioration of water quality may cause malfunction of the unit and water leak.

If a solid body, discolored water, impurity or unusual order is found, please ask inspection.



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.



■ Precautions for relocation or maintenance

 WARNING	
<p>Consult your dealer when moving, disassembling or repairing the unit. Never modify the unit. Improper handling may result in injury, electric shocks, fire, etc.</p>	
<p>If the unit is submerged due to the natural disaster such as flooding or typhoon, please consult with the dealer where you purchased. If starting operation of the unit, it may cause malfunction, electric shocks and fire.</p>	
<p>Do not use any refrigerant other than the specified refrigerant (CO₂). The maximum high pressure is 14MPa. If using the refrigerant which is not specified, it may cause fire or explosion.</p>	
<p>When repairing or inspecting the unit, be sure to stop the unit and shut off the breaker If the power breaker is not shut off, it may cause electric shocks or injury by operating fan.</p>	
<p>When repairing the unit, no one other than the service man must not approach to the unit. It may cause an unexpected risk involving danger.</p>	

■ Precautions for waste disposal

	<p>Your air to water heat pump should be marked with this symbol. It means that waste electrical and electronic equipment (WEEE as in directive 2012/19/EU) should not be mixed with general household waste. Air to water heat pump should be treated at an authorized treatment facility for re-use, recycling and recovery and not be disposed of in the municipal waste stream. Please contact the installer or local authority for more information.</p>
---	---

Component replacement guide for maintenance check and preventive maintenance

In order to maintain the safety and the function of the product, we would like to ask all customers owing this product to have a periodical maintenance and to replace components by our authorized servicing company.

This list shows the contents and the interval of periodical maintenance under the general usage conditions and the rough indication of the time to replace components.

Especially, regarding the timing of component replacement, the actual time for replacement should be decided in consideration of the usage conditions such as water quality, air quality, setting of hot water operating hours and etc.

Concerning the concrete plan of maintenance check, please consult with our dealer.

Since we are preparing some plans of service contract, we would like to recommend you to conclude such service contract.

- The list is based on the condition to operate the unit for 10 hours per day with applying night tariff.

Component		Check point	Inspection cycle (Time/Year)	Estimated time for replacement
Components of refrigeration circuit	Compressor	High pressure, intermediate pressure, low pressure (Is there any big pressure deviation from standard operation data?) Vibration, sound, insulation resistance, loose connection of terminal	1	40,000 hours
	Heat exchanger (Evaporator)	High pressure, intermediate pressure, low pressure, cleanliness of fin	1	10 years
	Gas cooler (water heat exchanger)	High pressure, intermediate pressure, low pressure (Is there any big deviation from standard operation data?) Pressure loss of water (Is the pressure loss of heat pump unit excessive?) Discharge pipe temperature (Is the discharge pipe temp. protection control activated frequently?)	1 (*)	10 years (*)
	Solenoid valve	Behavior, leak, clogging (Is the defrost operation activated frequently?, Is the hot water supplying capacity reduced?)	1	10 years
	EEV (Electronic expansion valve)	Behavior, leak, clogging (Are LP and/or HP protection control activated frequently?, Is the hot water supplying capacity reduced?)	1	10 years
	Strainer	Temp. difference between inlet and outlet ports of strainer (Is there any temperature drop at outlet port of strainer?)	1	At heavy service
	Capillary tube	Contact wear, vibration	1	10 years
	Refrigerant pipe	Contact wear, vibration	1	10 years
Components of electrical circuit	Relay	Behavior, contact resistance at contact point, insulation resistance	1	10 years
	Coil, solenoid (Solenoid Valve & EEV)	Insulation resistance	1	10 years
	Crank case heater	Insulation resistance (Is any whitening or carbonizing found?)	1	20,000 hours
	Anti-freezing heater (Drain pan, Water piping)	Insulation resistance (Is any whitening or carbonizing found?)	1	20,000 hours
	Fuse	Apparent condition	1	5 years
	PCB (for Control, Inverter and Water pump)	Apparent condition	1	10 years
	High pressure switch (63H1) Pressure sensors	Contact resistance at contact point Is any rubbing on the capillary tube found?	1	10 years
	Terminal block	Loose connection of terminal	1	10 years
	Wiring and connector	Disconnection, looseness, deterioration, rubbing	1	10 years
	Capacitor	Leakage of electrolysis solution, deformation	1	25,000 hours
	Cooling fan	Insulation resistance, anomalous sound	1	10 years
	Magnet contactor (52C)	Contact resistance at contact point, behavior	1	25,000 hours
	Outdoor fan	Fan propeller	Balance, crack	1
Fan motor		Insulation resistance, anomalous sound, vibration	1	20,000 hours
Components of water circuit	Water pump (DC)	Behavior, vibration, anomalous sound, insulation resistance, water leakage	1(*)	5 years (*)
	Flow regulating valve (CWFV1)	Behavior, vibration, anomalous sound, insulation resistance, water leakage	1(*)	5 years (*)
	Motor valve (CWFV2 to CWFV5)	Behavior, vibration, anomalous sound, insulation resistance, water leakage	1(*)	5 years (*)
	Decompression valve	Behavior, anomalous sound, water pressure, water leakage	1(*)	5 years (*)
	Check valve	Behavior, anomalous sound, water pressure, water leakage	1(*)	5 years (*)
	Strainer	Clogging, water leakage	1(*)	Cleaning 2 times/year (*)

* The inspection interval and component replacement interval marked (*) are greatly influenced depending on the water quality to be used. Please consult with our dealer where you purchased for detail.

Water Quality Criteria

Makeup water and cyclic water shall be the water within the range of water quality criteria mentioned below.

If water quality is out of the range of criteria, it may cause a trouble such as scale adhesion and corrosion.

Item		Cyclic water (60°C < ≤90°C)	Makeup water
Standard items	pH (25°C)	–	7.0–8.0
	Electric conductivity (25°C)	mS/m	≤30
	Chloride ion	mgCl ⁻ /L	≤30
	Sulphate ion	mgSO ₄ ²⁻ /L	≤30
	Acid consumption (pH4.8)	mgCaCO ₃ /L	≤50
	Sulphate ion/Acid consumption	–	≤0.5
	Total hardness	mgCaCO ₃ /L	≤70
	Calcium hardness	mgCaCO ₃ /L	≤50
	Ionic silica	mgSiO ₂ /L	≤30
Reference items	Iron	mgFe/L	≤1.0
	Copper	mgCu/L	≤1.0
	Sulphide ion	mgS ²⁻ /L	Not detected
	Ammonium ion	mgNH ₄ ⁺ /L	≤0.1
	Residual chlorine	mgCl/L	≤0.1
	Free carbon	mgCO ₂ /L	≤0.4
	Stability index		–

General description of CO₂ heat pump water heater

1. Composition of CO₂ heat pump water heater

This heat pump water heater for commercial use is a heat pump water heater that is composed of a heat pump unit with natural refrigerant such as CO₂ which can produce hot sanitary water with heat pump technology and a hot water storage unit which can store hot water.

A touch panel type remote control is applied to this heat pump water heater for commercial use and various function settings can be done with simple operation.

It is available to operate up to 16 units of heat pump units simultaneously with one remote control.

2. Mechanism of CO₂ heat pump water heater

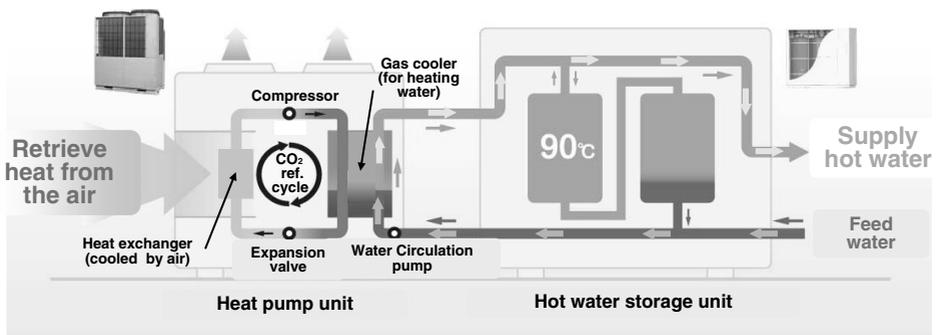
The way to produce hot water with this heat pump water heater is that the heat energy retrieved from the outdoor air heats up the refrigerant and such refrigerant circulated in the system increases the water temperature.

Therefore, the heating amount to be given to the hot water as heating energy is “[The power consumption of heat pump unit] + [the heat retrieved from the air]”.

Accordingly, the consumed energy efficiency becomes more than 1 (one). In other words so that this system allows very high efficiency operation.

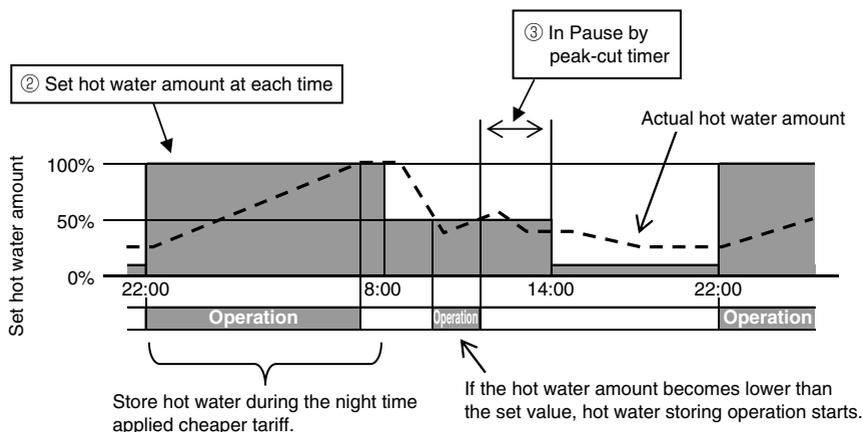
Merit of CO₂ refrigerant

- The global warming potential (GWP) is [1] and it is environment-friendly.
- Since high temperature water can be produced efficiently, it is possible to adjust the heat reserving volume by controlling the hot water temperature and to use the hot water for high-temperature cleaning.



3. Operation pattern of CO₂ heat pump water heater (for Hot Water)

This heat pump water heater is operated with the target hot water amount set at each set time. The typical operation pattern and setting items are explained with following figure.



Setting of hot water storage operation (Refer to the setting method in Page 20)

① Hot water temp

Store hot water in the hot water storage unit at the hot water temp set with remote control.

The heat reserving volume of the hot water storage unit can be increased or decreased by increasing or decreasing the hot water temp.

If multiple heat pump units are connected to one remote control, it is available to set the hot water temp individually.

② Hot water amount at each set time

Hot water amount can be set at each set time with remote control.

Set the hot water amount to meet the state of hot water usage.

③ Peak-cut timer

It is available to prohibit or save operation of the heat pump unit at the designated time.

The contract amount of power can be reduced by applying peak-cut operation of heat pump unit according to the power demand.

④ Hot water amount setting

The hot water amount at each set time can be increased or decreased uniformly on the day of a week basis.

In case that the usage amount of hot water may vary depending on the season or the day of a week, please use this function.

Ex. 1 In summer: More In winter: Less

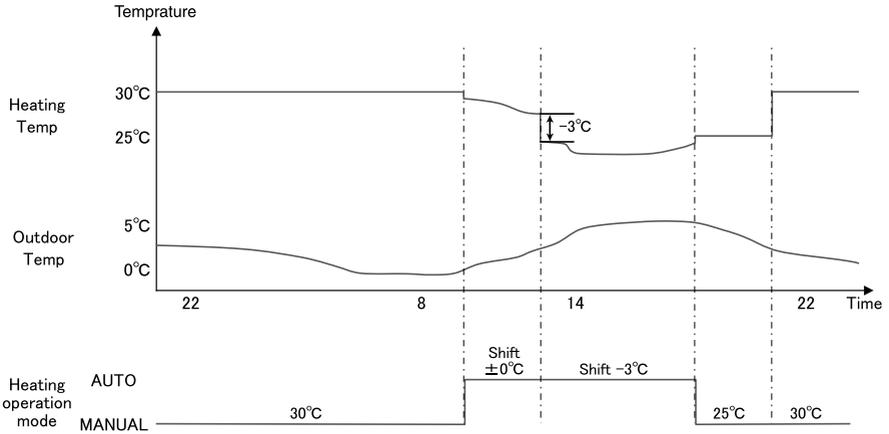
Ex. 2 From Monday to Thursday: Less Friday, Saturday: More Sunday: Normal

⑤ Setting [Pause]

If it is a day off and no hot water is required to store, it can make hot water storage operation prohibited.

4. Operation pattern of CO2 heat pump water heater (for heating)

This heat pump can be used as space heating system also. The typical operation pattern and setting items are explained with following figure.



Different heating mode is available.

① Mode AUTO

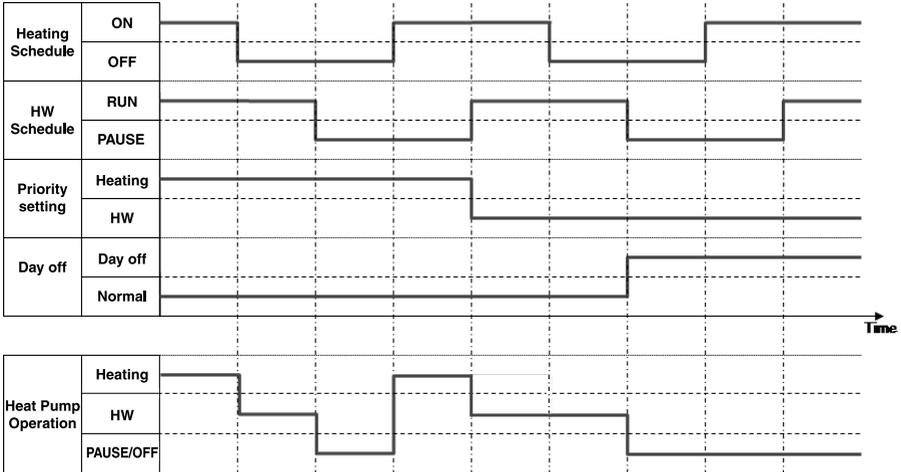
The heating set temperature changes automatically according to the outdoor temperature. When the mode AUTO is selected, the shift temperature can be set.

② Mode MANUAL

The heating set temperature is directly set by user. It does not change with outdoor temperature.

5. Operation pattern of CO2 heat pump water heater (for combination use)

This heat pump can be connected to the space heating system and hot water storage tank at the same time. The typical operation pattern and setting are explained with following figure.



Setting in case of HW & Heating application (Combination use)

① Priority setting (Go to Page 57)

There are 2 schedules, 1 for Hot Water mode and 1 for heating mode. When both Hot Water and Heating are required, the heat pump decides which operation mode is prioritized.

- HW priority

Every time, "HW operation" is prioritized over "Heating operation".

- Heating priority

Always the "Heating operation" is prioritized.

Notice:

Even if the Heating priority is set, if there is a risk of water shortage, the Heat pump unit could decide to move on the HW operation.

② Day off, Peak cut timer (Go to Page 32)

For these setting, they are common for both HW operation and Heating operation.

Description of functions and contents of CO₂ heat pump water heater

The following settings can be done with this remote control.

Regarding the detailed setting methods, please check each function mentioning in reference page.

Setting and display item		Contents	Reference page
Run		The heat pump unit can be started operation. The heat pump unit is operated according to the set operation pattern.	Page 27
Pause		The heat pump unit can be paused operation. The set operation pattern becomes invalid and the heat pump unit does not start hot water storage operation. * Protection operation of heat pump unit (Anti-freeze protection operation) may start.	Page 27
Schedule setting	Setting of weekly operation pattern (Hot water)	Set the operation pattern on the day of a week. ■ Maximum 8 patterns in a day can be set.	Page 34
	Setting of weekly operation pattern (Heating)	Set the operation pattern on the day of a week. ■ Maximum 8 patterns in a day can be set.	Page 35
	Setting of annual operation pattern	Set the operation pattern on a weekly basis	Page 37
	Setting of day off ① Every week ② Specific period of time ③ Specific day	On the day that the hot water storage operation is no necessary such as holiday and day off, it can be set [Day off]. ① Set the day in every week [Day off]. ② Set the [Start day] and the [End day], and set [Day off] through this period. ③ Set the specific day, and set it [Day off].	Page 39
	Peak-cut timer	Set the [Start time] and [End time] of the operation to limit the capacity and saving rate of capacity. ■ Maximum 4 patterns in a day can be set. ■ From 0% to 80% (at 20% intervals) of the saving rate of capacity can be selected. * The clock setting is required.	Page 41
Operation to fill up		The heat pump unit is operated until the hot water storage unit is filled with hot water up to 100%.	Page 44
Setting of hot water temp		Hot water temp can be set.	Page 25
Setting of hot water amount		Hot water storage amount can be increased or decreased uniformly.	Page 45
Setting of heating temp		Heating temperature can be set.	Page 31
Setting of heating mode		Heating mode can be set between AUTO and MANUAL	Page 31
Setting of silent mode		Set the [Start time] and [End time] of the operation to limit the noise level. ■ Maximum 4 patterns in a day can be set.	Page 46
Setting of Legionela mode		Set the [Starting date] and [Start time] and the frequency of the Legionela operation.	Page 49

Note

*When connecting to an external device such as Modbus to control the unit, do not operate from remote control.

Setting and display item		Contents	Reference page
Display of operation mode	Display contents on RC		Page 51
	· Now stopping	The heat pump unit is stopping The heat pump unit does not start operation	
	· It makes a Pause by switch Run/Pause, · Paused by "Day OFF" setting	The heat pump unit is stopping by operating [Run/Pause] switch or by the "Day off" setting. The heat pump unit does not start operation but it may start protection operation.	
	· It is in operation by standby	Since the current hot water amount exceeds the target amount, it makes the heat pump unit standby.	
	· It is in operation to top up	The heat pump unit is in operation to top up.	
	· It is in operation to fill up	The heat pump unit is in operation to fill up.	
	· It is in heating operation	The heat pump unit is in heating operation.	
	· Preparing for heating	The heat pump unit is in standby before heating operation.	
	· In operation for anti-freezing	In order to prevent water in the pipe from freezing, the water pump is operating.	
	· In operation for defrosting	The defrost operation is ongoing.	
	· In operation for peak-cut	Peak-cut rate is set.	
	· Standby	It makes the heat pump unit standby for starting operation.	
Initial settings	Clock setting	Current time and date can be set or corrected ■ In case of power failure within 80hours, the clock is kept going by built-in battery for backup. If the period of power failure exceeds 80hours, it is necessary to set clock time again.	Page 55
	Date and time display	On/Off, 12H/24H, display position of AM/PM can be set.	Page 56
	Contrast	The contrast of LCD can be adjusted.	Page 56
	Backlight	On/Off and lighting time of backlight can be set.	Page 57
	Controller sound	On/Off of beep sound at touch panel operation can be set.	Page 57
	Priority setting	The priority of operation pattern between HW and heating can be set.	Page 57
	Summer time	The adjustment of summer time can be set.	Page 58

Note

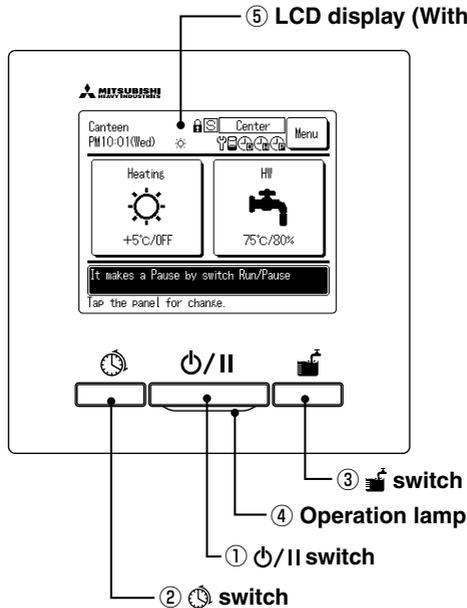
*When connecting to an external device such as Modbus to control the unit, do not operate from the remote control.

Setting and display item		Contents	Reference page
Administrator settings	Enable/Disable setting	Permission/Prohibition setting of each operation can be set	Page 60
	HP unit selection	The heat pump unit to be displayed on RC can be selected. * If not selected, RC select a heat pump unit automatically.	Page 60
	RC display setting	<ul style="list-style-type: none"> •RC name and HP unit name can be registered. •On/Off of [Defrost operation display] and [Display status of HW amount] can be set. •HW amount display can be changed the design by operating [HW amount display setting] switch. (Usual/set1/set2) 	Page 61
	Step size of HW temp	Step size of HW temp (at 5°C or 1°C intervals) can be set. * Factory default is 5°C.	Page 65
	Change administrator password	Administrator password can be change.	Page 65
	User environment	By selecting the operation pattern of typical business type, the detailed operation pattern can be set easily.	Page 66
	Operation lamp setting	[Usual] Turns ON when HP unit starts to operate. [Set1] Turns ON if [Run/Pause] button is pushed.	Page 68
	Upper limit setting of HW temp	This is used to set the upper limit value for the hot water storage temperature.	Page 68
	Open tank information	This allows checking the detection temperature of open tank temperature sensor.	Page 69
	Application setting	The use of the HP unit (HW, Heating, HW&Heating) can be set.	Page 70
Cancel weekly timer (HW)	This is used when the HP unit is controlled by external control system.	Page 70	
Check of RC setting	Current setting list of RC and HP unit can be checked	Page 71	
Contact company	Contact company and phone No. are displayed	Page 78	
Select the language		Page 80	

Note

*When connecting to an external device such as Modbus to control the unit, do not operate from the remote control.

Names and functions of sections on the R/C



Touch panel system, which is operated by tapping the LCD screen with a finger, is employed for any operations other than the ①Run/Pause, ②Schedule setting and ③Operation to fill up switches.

① switch (Run/Pause switch)

One push on the button starts operation and another push pauses operation. (☞ Page 27)

② switch (Schedule setting switch)

Pushing this button starts schedule setting. (☞ Page 32)

③ switch (Operation to fill up switch)

Pushing this button starts operation to fill up. (☞ Page 44)

④ Operation lamp

This lamp lights in green (yellow-green) during operation. It changes to red if any error occurs.

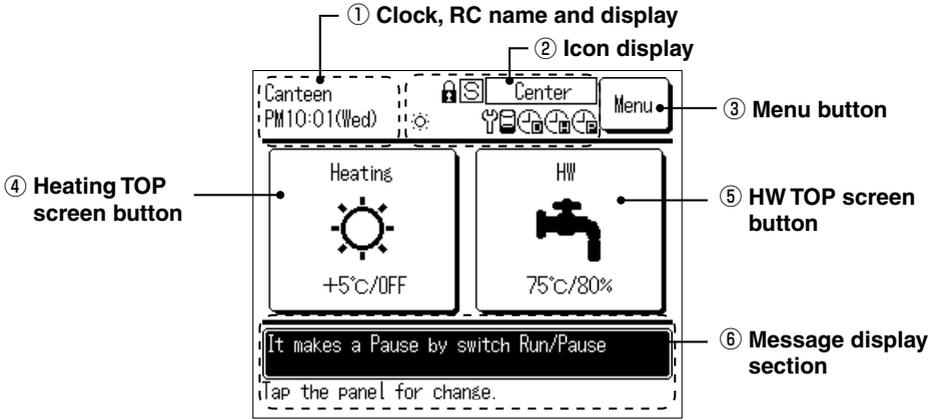
⑤ LCD (With backlight)

A tap on the LCD lights the backlight. The backlight turns off automatically if there is no operation for certain period of time. Lighting period of the backlight lighting can be changed. (☞ Page 57)

If the backlight is ON setting, when the screen is tapped while the backlight is turned off, the backlight only is turned on. (Operations with switches ①, ② and ③ are excluded.)

TOP screen

* All icons are shown for explanation.



① Clock, RC name and display

Display the current time (☞ Page 55) and the name of remote control (☞ Page 61)

② Icon display

Each icon is displayed when one of following setting is going on.



When the central control (optional part) is running



When setting is made from the Sub RC (☞ Page 52)



When the periodical check is required. (☞ Page 79)



When the Enable/Disable setting is made. (☞ Page 60)



When the peak-cut timer is set. (☞ Page 41)



When hot water cannot be stored up to the set HW amount. (☞ Page 63)



When the Heating timer is set. (☞ Page 35)



When the HW timer is set. (D for DHW) (☞ Page 34)



When the priority "Heating" is set. (☞ Page 57)



When the priority "HW" is set. (☞ Page 57)

③ Menu button

When setting other than the following items, tap the menu button. When menu items are displayed, select one and set it.

④ Heating TOP screen button (☞ Page 22)

When heating temperature setting is needed, tap the Heating TOP screen button.

⑤ HW TOP screen button (☞ Page 21)

When HW temp and amount setting is needed, tap the HW TOP screen button.

⑥ Message display section (☞ Page 51)

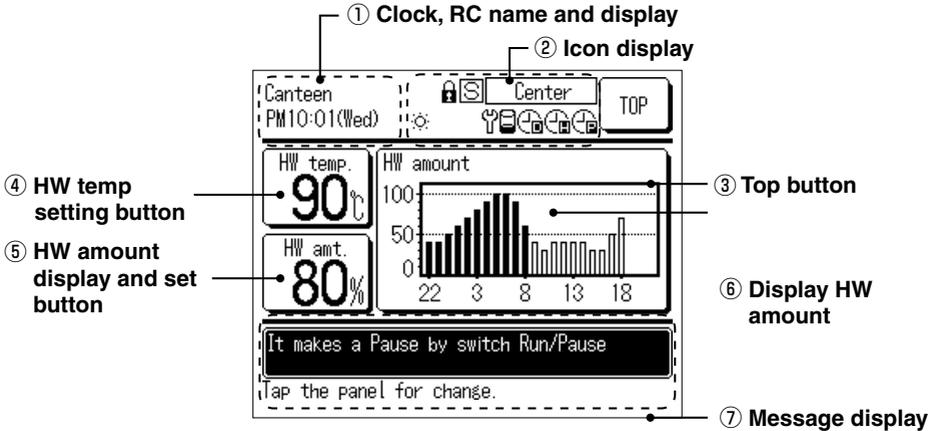
The operation state of HP unit and the message of RC operation are displayed.

Information

- When application "HW" is selected, ④ Heating TOP screen button is not displayed.
- When the application "Heating" is selected, ⑤ HW TOP button is not displayed on the TOP screen.

■ HW TOP screen

* All icons are shown for explanation.



① Clock, RC name and display

Display the current time (☞ Page 55) and the name of remote control (☞ Page 61)

② Icon display

Each icon is displayed when each setting is going on (☞ Page 20)

③ TOP button

To return to the TOP screen, tap TOP button (☞ Page 20)

④ HW temp setting button (☞ Page 25)

The hot water temp currently set is displayed. When changing HW storage temp, tap this button.

⑤ HW amount display and set button (☞ Page 45)

The current HW amount is displayed. If set HW amount [More] or [Less], tap this button.

* Despite no use of hot water, there is a case that the display of HW amount may decrease. Because the display of HW amount shows the HW temp in the HW storage unit whose temp is 50°C or higher. If leaving hot water for long period without use, HW is getting colder and HW amount if going to decrease.

This is not a malfunction.

⑥ Display usage of HW amount (☞ Page 51)

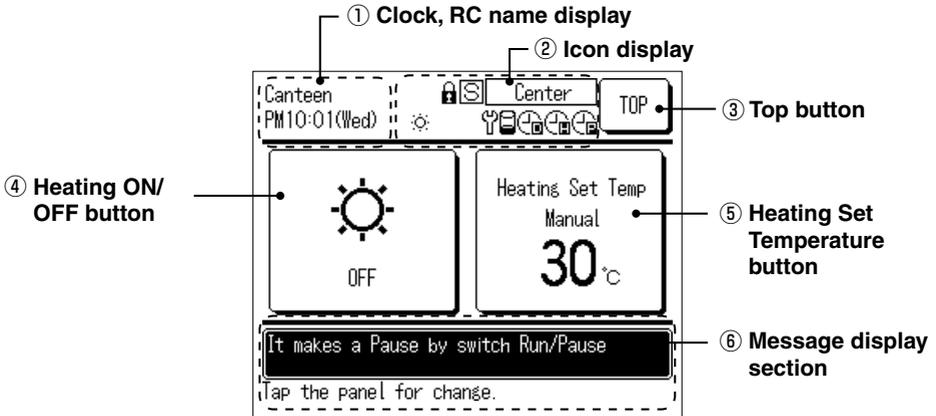
Today's usage of HW amount is displayed. If change the date to be displayed or the HP unit to be displayed, tap this button.

⑦ Message display section (☞ Page 51)

The operation state of HP unit and the message of RC operation is displayed.

■ Heating TOP screen

* All icons are shown for explanation.



① Clock, RC name and display

Display the current time (☞ Page 55) and the name of remote control (☞ Page 61)

② Icon display

Each icon is displayed when each setting is going on (☞ Page 20)

③ Top button

To return to the TOP screen, tap TOP button (☞ Page 20)

④ Heating ON/OFF button

The heating status of HP unit is displayed. To switch the heating between ON and OFF, tap this button (☞ Page 26)

⑤ Heating Set Temperature button

The current heating temperature setting is displayed. To change the heating temperature setting, tap this button (☞ Page 26)

⑥ Message display section (☞ Page 51)

The operation state of HP unit and the message of RC operation are displayed.

Screen flow

Top screen	
Run/Pause switch	Refer to Page 27
Schedule setting switch	Refer to Page 32
Setting of weekly schedule (HW)	Refer to Page 34
Setting of weekly schedule (heating) ...	Refer to Page 35
Setting of day off	Refer to Page 39
Setting of peak-cut	Refer to Page 41
Operation to fill up switch	Refer to Page 44
HW Top screen	
Hot water temp setting	Refer to Page 28
Hot water amount setting	Refer to Page 45
Display hot water amount	Refer to Page 51
Operation mode display	Refer to Page 51
Heating Top screen	
Heating mode setting	Refer to Page 31
Heating temperature setting	Refer to Page 32
Main menu	
Initial settings	Refer to Page 55
Clock setting	Refer to Page 55
Date and time display	Refer to Page 56
Contrast	Refer to Page 56
Backlight	Refer to Page 57
Controller sound	Refer to Page 57
Priority setting	Refer to Page 57
Summer time	Refer to Page 58

Main menu		
—	Administrator settings	Refer to Page 59
—	— Enable/Disable setting	Refer to Page 60
—	— HP unit selection	Refer to Page 60
—	— RC display setting	Refer to Page 61
—	— Step size of HW temp	Refer to Page 65
—	— Administrator password setting	Refer to Page 65
—	— User environment	Refer to Page 66
—	— Operation lamp setting	Refer to Page 68
—	— Upper limit setting of HW temp	Refer to Page 68
—	— Open tank information	Refer to Page 69
—	— Application setting	Refer to Page 70
—	— Cancel weekly timer (HW)	Refer to Page 70
—	Check of RC setting	Refer to Page 71
—	Contact company	Refer to Page 78
—	Select the language	Refer to Page 80

Main menu		
—	Installation setting	
—	— Installation date	As for setting method, please refer to the installation manual.
—	— Company information	
—	— Test run	
—	RC function settings	
—	— Main/Sub of RC	As for setting method, please refer to the installation manual.
—	— External input	
—	— Auto-restart	
—	Service & Maintenance	
—	— No. display of unit	As for setting method, please refer to the installation manual.
—	— Next service date	
—	— Error display	
—	— Save operation data	
—	— Special settings	
—	— System off	
—	— Operation data	Refer to Page 81

Operation method of basic operation

Hot water operation method

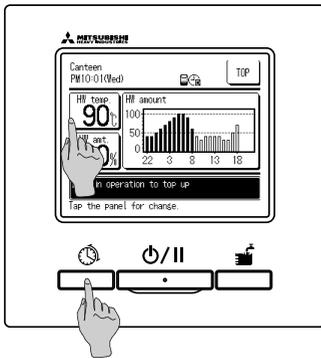
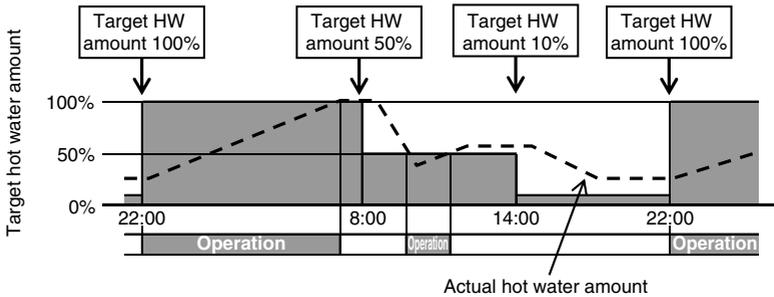
The heat pump unit is operated according to the setting of [Hot water temp], [Target hot water amount at each time zone] and [Hot water amount] set with remote control.

[Explanation of hot water operation method]

If the current HW amount is less than the target HW amount at current time zone, the heat pump unit is operated to top up.

The hot water temp at the operation to top up is the setting value of the hot water temp

(Ex.) In case of the settings shown on the right HW temp : 65°C
Target HW amount: 22:00-100%, 8:00-50%, 14:00-10%



1. HW temp

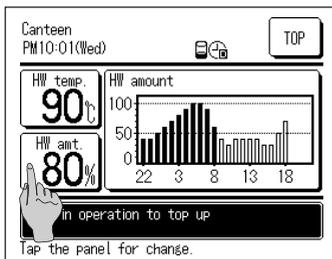
Tap the **HW temp** button on the HW TOP screen.

Set the HW temp from the menu of the HW temp setting (☞ Page 29)

2. Target HW amount at each time zone

Push the **Schedule setting** switch.

Set the target HW amount from the menu of the operation pattern setting (☞ Page 33)

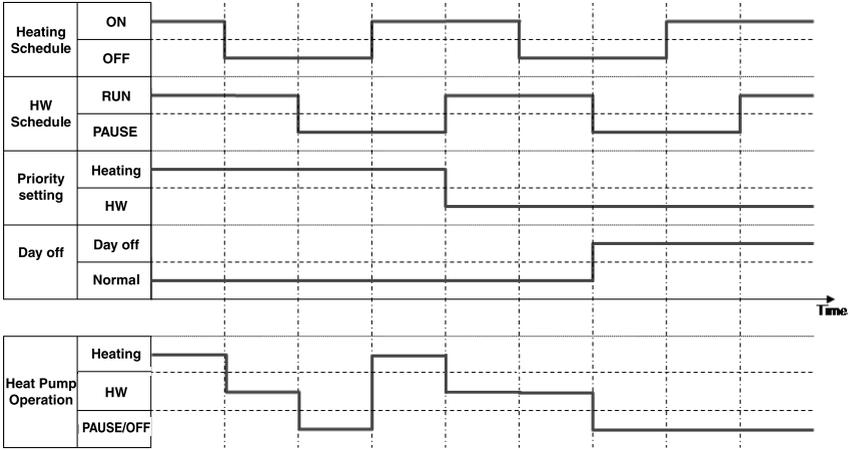


3. HW amount setting

The HW amount set at each time zone can be increased or decreased (from 0.8 times to 1.2 times of HW amount). For change setting, tap the **HW amount** button on the HW TOP screen and set the HW amount on the [HW amount setting] screen. (☞ Page 45)

Space heating operation method

The heat pump unit is operated according to the setting of [Heating temp]. Two heating mode can be selected.



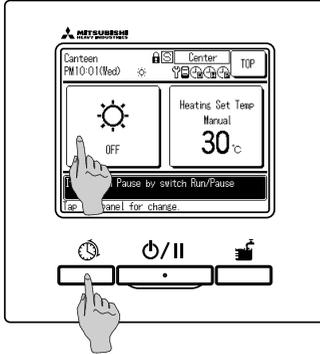
[AUTO]

The heating temperature is automatically adapted to the outdoor temperature. If the outdoor temperature increases, the heating temperature automatically decreases.

In heating operation AUTO, the heating temperature can be adjusted by setting the shift temperature.

[MANUAL]

The heating temperature is directly set by user. It does not depend on the outdoor temperature.

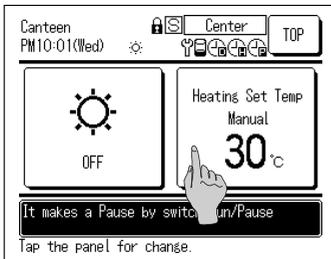


1. Heating ON/OFF

- Tap the **Heating** button on the heating TOP screen.
Set the heating ON/OFF from the menu of the heating ON/OFF setting (☞ Page 30)

2. Push the **Schedule setting** switch.

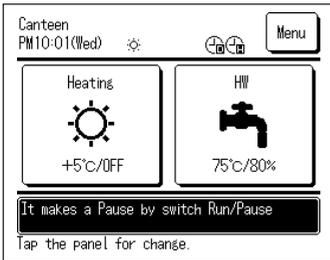
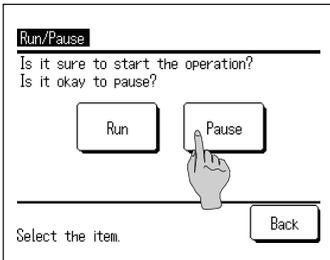
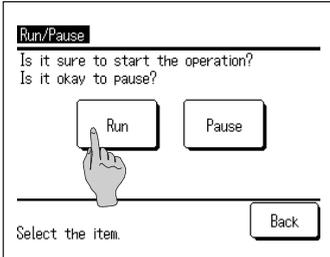
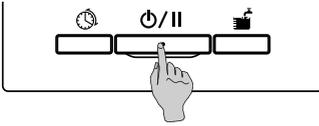
- Set the heating schedule from the menu of the weekly schedule setting (☞ Page 33)



3. Heating temperature setting

- The heating temp can be set "AUTO" or "MANUAL". To change setting, tap **Heating temp** button on the heating TOP screen. (☞ Page 31)

How to Run/Pause



1. Run

When push **Run/Pause** button during pausing, the [Operation acknowledge] screen is displayed.

When tapping **Run** , it starts operation.

- If the current HW amount is less than the target HW amount, the heat pump unit start operation to top up.

2. Pause

When push **Run/Pause** button during operating, the [Pause acknowledge] screen is displayed.

When tapping **Pause** , it pauses operation.

- In case of Pause, the heat pump unit does not operate to top up.
- The heat pump unit may operate in order to protect itself.

When pausing, each operation button on the screen is lit off. And after the set lighting time of the backlight (☞ Page 57) has been elapsed, the backlight turns off.

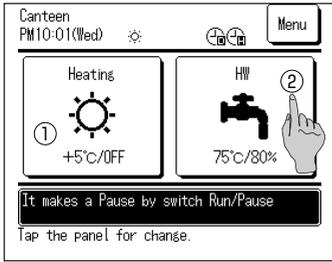
When tapping the screen, backlight turns on and each operation button is put the light on.

Information

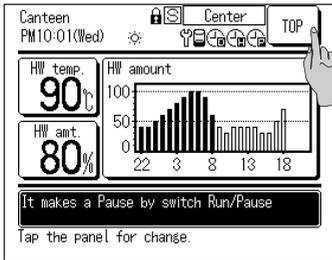
- There is a case that the message of [Invalid operation] may display, when tapping a button. However, it is not a malfunction. The operation button is set as [Invalid]. (☞ Page 59)
- The first operation after turning the power on, it starts operation according to the following operation conditions. Please change setting according to the hot water heating load requested by the customer.

HW temp	...	65°C
Target HW amount	22:00 to 8:00	... 100%
	8:00 to 22:00	... 30%
Heating temp:	...	+0°C / AUTO

How to go to TOP screen



- 1. To go to HW TOP screen**
Tap the HW TOP button on the TOP screen. HW TOP screen is displayed.
- 2. To go to heating TOP screen**
Tap the Heating TOP button on the TOP screen. Heating TOP screen is displayed.



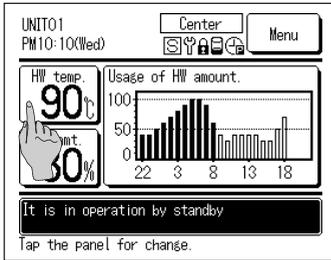
- 3. To go back to TOP screen**
Tap the TOP button on the HW or Heating TOP screen. TOP screen is displayed.

Information

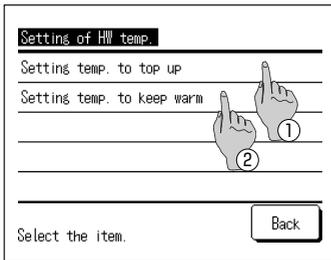
- When the application "Heating" is selected, HW TOP button is not displayed on the TOP screen. When application "HW" is selected, Heating TOP screen button is not displayed.

Setting of HW temp for the operation to top up

The HW temp for the operation to top up can be set as follows.

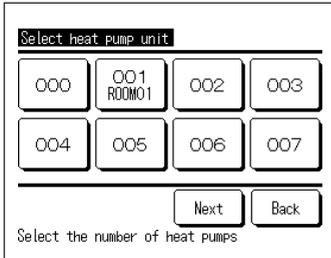


1. Tap the **HW temp** button on the HW TOP screen.



2. The menu screen of the [Setting of HW temp] is displayed. Tap the desired item.

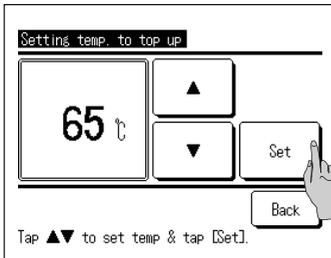
- ① Setting temp to top up
- ② Setting temp to warm up (Out of use)



3. If the multiple heat pump units is connected to the remote control, the list of heat pump units (Address No.) is displayed.

Tap the [HP unit No.] to be set.

Up to 8 units is displayed on the [Select heat pump unit] screen. If 9 or more units are connected, the 9th and the subsequent units are displayed by tapping **Next** button.



4. Set the HW temp by tapping **▲** **▼** buttons and tap **Set** button.

5. The TOP screen is displayed, when tapping **Set** button

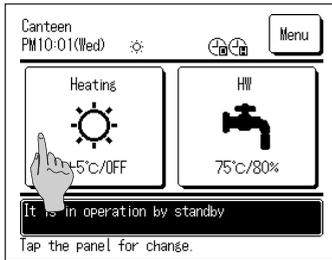
- The HW temp can be set at 5°C intervals.
HW temp setting range: From 60 to 90°C (Factory default: 65°C)
- If tapping **Back** button without tapping **Set** button, the setting becomes invalid and it returns to the HW TOP screen.
- The [Admin password input] screen may be displayed according to the setting of [Enable/Disable setting] (☞ Page 59)

Information

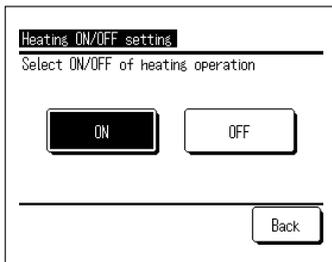
- If the “Unvented cylinder” is connected, the HW temp for the operation to warm up can not be set.
- Actual HW outlet temp may differ about $\pm 3^{\circ}\text{C}$ from the set HW temp by the operating conditions.

How to start heating operation

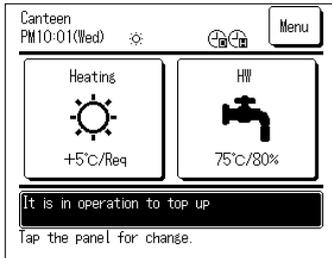
The heating operation can be set as follows



1. Tap the **Heating ON/OFF** button on the Heating TOP screen. Heating ON/OFF screen is displayed.



2. When tapping **ON**, the heating operation starts. When tapping **OFF**, heating operation stops.



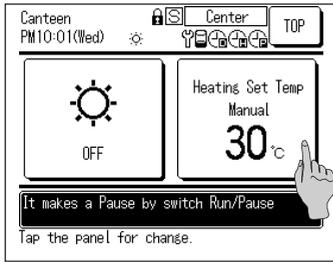
3. The TOP screen is displayed, when tapping **ON** / **OFF** button.

Information

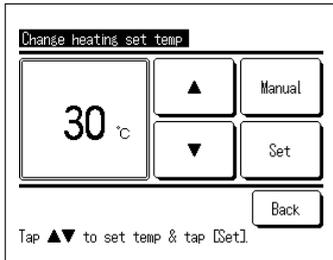
If the HP unit is in pause, it does not start operation even if the **ON** button is tapped. Please make sure that the R/C is set as "Run" before starting heating operation.

How to set Heating temperature

The heating temperature can be set as follows.



1. Tap the **Heating Set temp** button on the Heating TOP screen. Heating set temp screen is displayed.



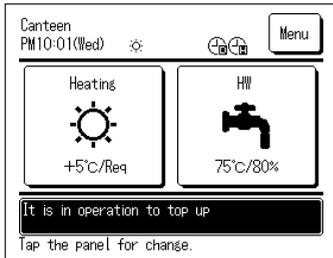
2. Tap AUTO or MANUAL to select the heating mode. In AUTO mode, the shift temperature can be set. Set the shift temperature with **▲ ▼** button and tap **Set** button. In MANUAL mode, the heating temperature can be directly set. Set the heating temperature with **▲ ▼** button and tap **Set** button.

■ The Heating set temp and shift temperature can be set at 1°C intervals.

- Heating set temp setting range: From 20 to 52°C (Factory default: 35°C)
- Shift temperature setting range: From -5 to +5°C (Factory default: ±0°C)

■ If tapping Back button without tapping Set button, the setting becomes invalid and it returns to the Heating TOP screen.

■ The [Admin password input] screen may be displayed according to the setting of [Enable/Disable setting] (☞ Page 59)

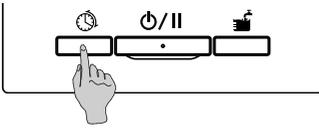


3. The TOP screen is displayed, when tapping **Set** button

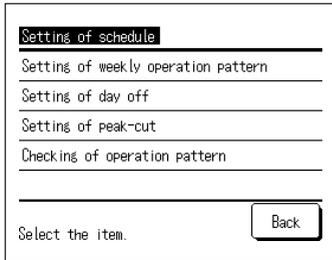
Schedule setting

The operation schedule of the heat pump unit can be set.

The setting of weekly schedule, the setting of day off and setting of peak-cut can be set.



1. Push the **Schedule setting** switch on the panel.



2. The menu screen of [Setting of schedule] is displayed.
The summary of each menu item is as follows

- ① Setting of weekly schedule (HW) (☞ To 3)
- ② Setting of weekly schedule (Heating) (☞ To 4)
- ③ Setting of day off (☞ To 5)
- ④ Setting of peak-cut (☞ To 6)

3. Setting of weekly schedule (HW) (See page 33 for detail)

The target HW amount at each time zone for each day can be set.

The operation pattern can easily be set from the setting of User environment (☞ Page 66)

4. Setting of weekly schedule (Heating) (See page 33 for detail)

The heating mode and operating time can be set. It is possible to set 8 schedules maximum for each day.

5. Setting of day off (See page 39 for detail)

By setting day off, the heat pump unit operation to top up can be invalid on the day set day off.

It is available to set day off ①Every week ②Specific period of time ③Specific day.

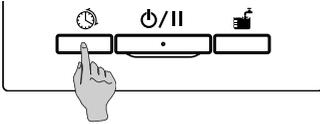
6. Setting of peak-cut (See page 41 for detail)

By limiting the maximum capacity of the heat pump unit, the power consumption can be reduced.

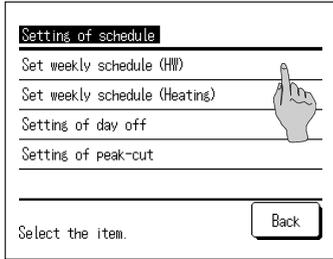
It is available to set on weekly basis.

How to set weekly schedule

The target HW amount at each time zone for each day, or heating mode and heating temperature can be set.



1. Push the **Schedule setting** switch on the panel.

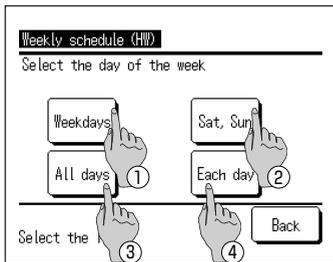


2. The menu screen of [Setting of schedule] is displayed. Tap the [Set weekly schedule]

Notice:

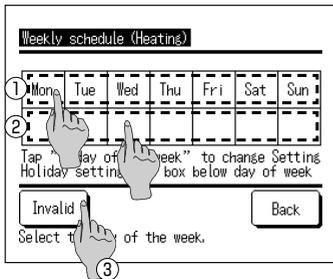
If the application “Heating” is selected, “Set weekly schedule (HW)” is not available.

If the application “HW” is selected, “Set weekly schedule (Heating)” is not available.



3. The selection screen of [Weekly timer] is displayed. Tap the item of setting day.

- ① Weekdays: From Monday to Friday } (Go to 6 for HW)
- ② Sat, Sun: Saturday and Sunday } (Go to 10 for Heating)
- ③ All days: From Monday to Sunday } (Go to 10 for Heating)
- ④ Each day: Go to the [Day selection] screen (Go to 4)



4. Tap the day to be set on the display ①.

The current setting contents of the day tapped are displayed.

(Go to 6 for HW)

(Go to 10 for Heating)

5. For the setting day off, tap the blank column on the display ② just below the day.

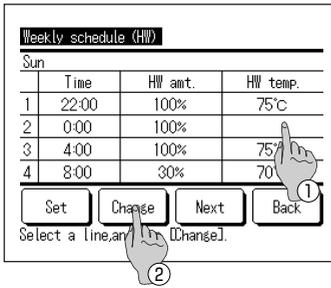
Switch it Day off: [(off)] ⇔ Release: [(blank)]

On the day set day off, the operation is not done. Multiple selections of day off settings are available.

In case of heating weekly schedule, when tapping

③ **Invalid** button, the timer does not operate on all days of the week. When the timer is used, be sure to set **Valid**.

■ weekly schedule (HW)



6. The [Checking of operation pattern] screen is displayed.
When changing the setting contents, ① select the column of the setting No. to be changed ② and tap **Change** button.

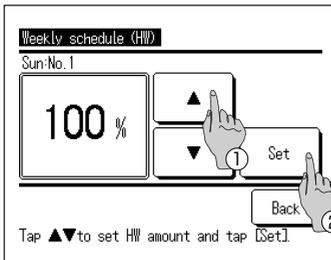
■ The setting contents displayed at first may differ depending on the set day selected (☞ Go to 3)

- ① Weekdays: Set operation pattern on Monday
- ② Sat, Sun: Set operation pattern on Saturday
- ③ All days: Set operation pattern on Monday
- ④ Each day: Set the operation pattern on the day selected

7. The [HW amount] setting screen is displayed.

- ① Set the HW temp by tapping **▲** **▼** buttons (at 10% intervals)

- ② When tapping **Set** button, the HW amount is set and it goes to the [Set time selection] screen. (☞ Go to 8)



8. The [Set time selection] screen is displayed.

- ① Select the time to be set

- ② When tapping **Set** button, the time is set and it goes to the [HW temp] screen. (☞ Go to 9)

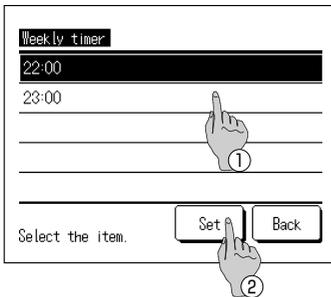
■ If changing the set time of weekdays, select the [Weekdays] (☞ Go to 3) and change the time.

■ Time setting range

The time can be changed within the range show in following table.

■ If the HW temp changes during the operation, current HW amount can be changed.

	Defaultsetting	Setting range
1	22:00	22:00, 23:00
2	0:00	from 0:00 to 3:00
3	4:00	from 4:00 to 7:00
4	8:00	8:00, 9:00
5	10:00	from 10:00 to 12:00
6	13:00	from 13:00 to 15:00
7	16:00	from 16:00 to 18:00
8	19:00	from 19:00 to 21:00

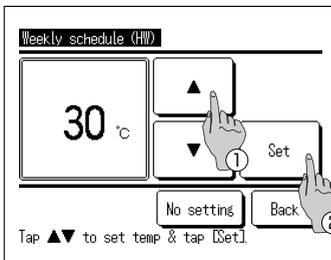


9. The [HW temp] setting screen is displayed.

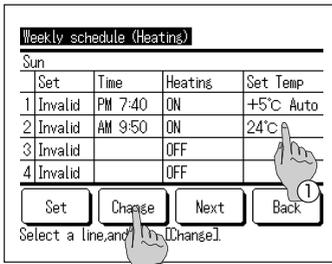
- ① Set the HW temp by tapping **▲** **▼** buttons.

- ② When **No setting** button is selected, "No setting" is displayed, and it shifts to the [checking of pattern operation]. HP unit operates with the same HW temp as the last action.

- ③ When tapping set button, the HW temp is set and it returns to the [checking of pattern operation] (☞ Go to 14)



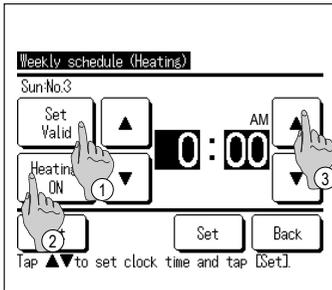
■ weekly schedule (heating)



- 10.** The [Checking of weekly schedule] screen is displayed. When changing the setting contents, ① select the column of the setting No. to be changed ② and tap **Change** button.

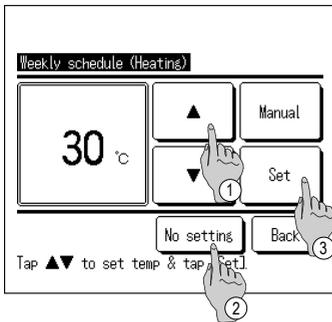
■ The setting contents displayed at first may differ depending on the set day selected (☞ Go to 3)

- ① Weekdays: Set operation pattern on Monday
- ② Sat, Sun: Set operation pattern on Saturday
- ③ All days: Set operation pattern on Monday
- ④ Each day: Set the operation pattern on the day selected



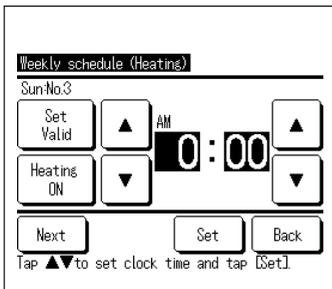
- 11.** Detail setting screen for the timer setting contents is displayed.

- ① Tap the **Set Valid** button to switch between “State Valid” and “State Invalid”.
- ② Tap the **Heating** button to switch between the “OFF timer” and the “ON timer”.
- ③ Select a desired time (at 5-min intervals) with the ▲▼ buttons.
- ④ In case of “ON timer” when the **Next** button is tapped, operating conditions at the start of operation can be set. (☞ 12)



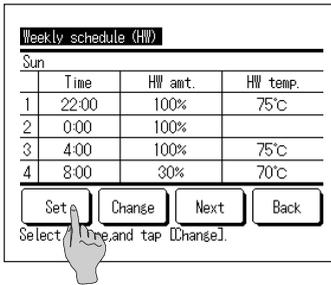
- 12.** Heating temperature setting screen is displayed.

- ① Select a desired temperature (at 1°C intervals) with the ▲▼ buttons. Or tap the Auto button to select the Auto temp setting.
- ② When **No setting** button is tapped, “No setting” is displayed, and it shifts to the [detail setting] screen. HP unit operates with the same heating operating mode as the last action.
- ③ Tap the **Set** button after the selection. The [detail setting] screen is displayed.



- 13.** After setting desired contents, tap the **Set** button.

■ Checking of weekly schedule



14 . [Checking of weekly schedule] screen is displayed

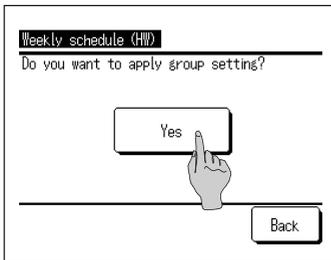
When saving the setting, tap **[Set]** button.

① In case of setting all

It shifts to the [Set all contents acknowledged] screen
(☞ Go to 15)

② In case of individual setting

Save the setting and shift to the [Day selection] screen (☞ Go to 4)



15 . [Set all contents acknowledged] screen is displayed

Tap **[Yes]** and save the setting

After saving, it returns to the [Day selection] screen

16 . If the setting is done by changing the day, please start setting from 4.

Notabilia

By applying 9 sensors on the cylinder at installation, it is available to control the HP unit for the operation to store hot water or for the operation to top up at 10% intervals of HW amount.

In case that 9 sensors can not be applied on the cylinder, the unit cannot detect HW amount at 10% intervals and it can detect only the present HW amount shown in following table depending on the applying number of sensors.

The position to apply temp sensor according to the hot water amount %

Sensor No.	Number of sensors to apply							Recommendable
	3pcs	4pcs	5pcs	6pcs	7pcs	8pcs	9pcs*1	
Tht-1	20%	20%	20%	10%	20%	10%	10%	
Tht-2	60%	50%	40%	30%	30%	20%	20%	
Tht-3	100%*2	75%	60%	40%	40%	30%	30%	
Tht-4		100%*2	80%	60%	50%	50%	40%	
Tht-5			100%*2	70%	65%	60%	50%	
Tht-6				100%*2	80%	70%	60%	
Tht-7					100%*2	80%	70%	
Tht-8						100%*2	80%	
Tht-9							100%*2	

*1 Recommendable number of sensors is 9pcs.

If the number of sensors is less than 9pcs, the hot water amount cannot be detected correctly.

*2 The sensor which detects 100% of HW amount shall be applied to the position within the range of sensitive volume with consideration of dead volume which is 10% of total volume of cylinder.

However, HW amount can be set at 10% intervals arbitrarily with RC despite of the number of sensors applied. Therefore, in such case, please take note that the unit may not be controlled for the operation to store hot water or for the operation to top up according to the set HW amount you intended.

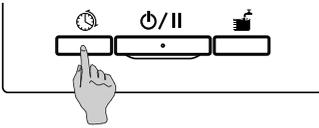
Ex) In case of applying 3 sensors on the cylinder.

Heat pump unit can detect only 20%, 60% and 100% of HW amount in the cylinder.

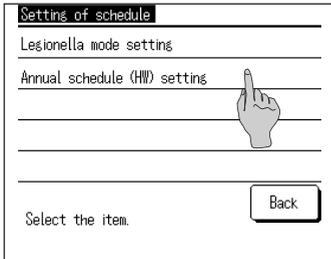
Therefore, even though 80% of HW amount is set with schedule setting, the HP unit cannot stop at storing 80% of HW amount and it still keeps on operating until storing 100% of HW amount.

And if 40% of HW amount is set for the operation to top up, HP unit cannot start operation to top up until HW amount decreases to 20%.

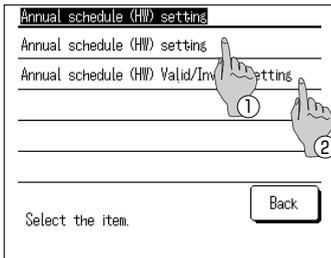
How to set annual schedule



1. Push the **Schedule setting** switch on the panel.

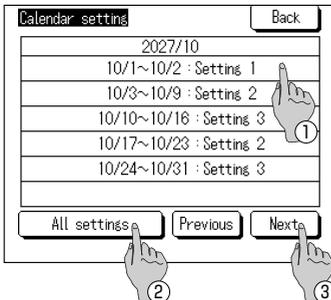


2. The menu screen of [Setting of schedule] is displayed. Tap the [Annual schedule (HW) setting]



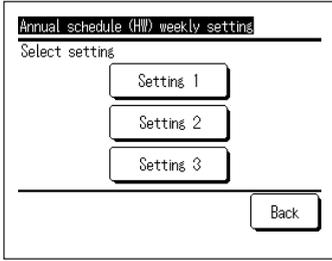
3. The menu screen of [Annual schedule (HW) setting] is displayed. Tap the desired items.

- ① Annual schedule (HW) setting (Go to 4)
- ② Annual schedule (HW) Valid/Invalid setting (Go to 6)

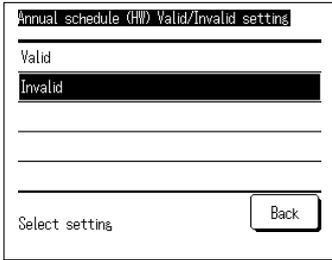


4. The detail screen of [Annual schedule (HW) setting] is displayed.

- ① When changing the weekly settings, select the desired week. (Go to 5)
- ② When changing the monthly settings, select the **All settings**. (Go to 5)
- ③ Tap the **Next** (**Previous**) to show next (previous) month.



5. When tapping [All settings] or the week on [Calendar setting], the [Annual schedule (HW) weekly (monthly) setting] menu screen is displayed. Please set the desired setting.

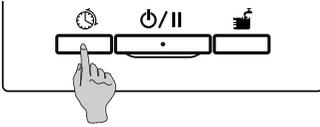


6. When tapping the [Annual schedule (HW) Valid/Invalid setting] on [Annual schedule (HW) setting], the [Annual schedule (HW) Valid/Invalid setting] menu is displayed. Valid...The annual setting is in active
Invalid...The annual setting is in inactive

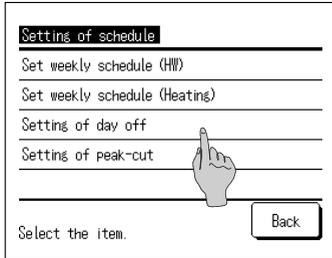
How to set day off

The day off for ①Every week ②Specific period of time ③Specific day can be set.

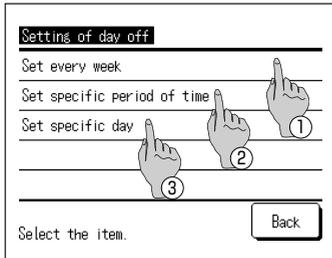
If the day set day off, the operation to top up on that day is not done.



1. Push the **Schedule setting** switch on the panel.

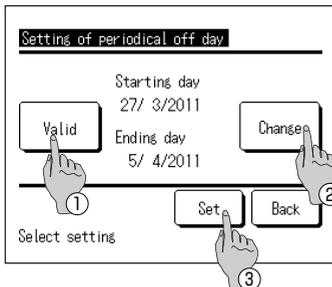


2. The menu screen of [Setting of schedule] is displayed.
Tap the [Setting of day off]



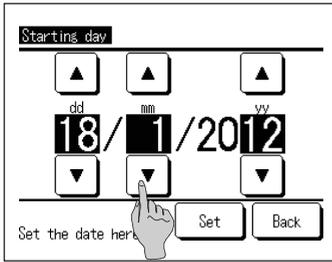
3. The menu screen of [Setting of day off] is displayed.
Tap the desired period.

- ① Set every week (☞ Go to item 5 on Page 40)
- ② Set specific period of time (☞ Go to 4)
- ③ Set specific day (☞ Go to 8)



4. The detail screen of [Setting of periodical off day] is displayed.

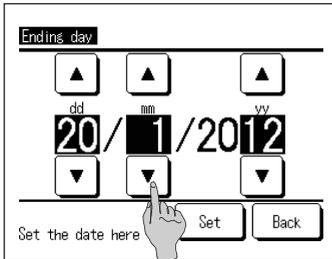
- ① Switch the setting [Valid] ⇔ [Invalid].
by tapping **Valid/Invalid** button
- ② If changing the set contents, tap **Change** button.
(☞ Go to 5)
- ③ When tapping **Set** button, the contents are saved
and return to the TOP screen.



5. Set the [Starting day].

Set the dd/mm/yy by tapping buttons.

After setting the date, tap button.



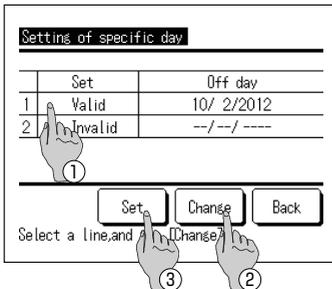
6. Set the [Ending day].

Set the dd/mm/yy by tapping buttons.

After setting the date, tap button.

7. The [Checking of set contents] screen is displayed

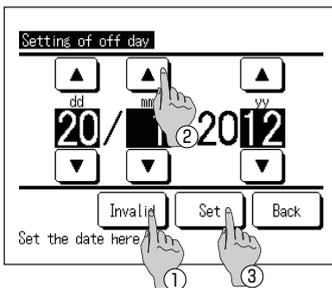
(☞ Go to 4)



8. The detail screen of [Setting of specific day] screen is displayed.

If changing the set contents, ① select the line of setting No. and ② tap button. (☞ Go to 10)

9. ③ When tapping button, the set contents are saved and it returns to the TOP screen.



10. Set the [Setting of day off].

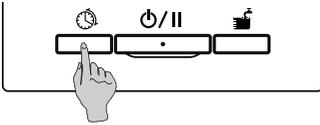
① Tap button and switch the setting [Valid] ⇔ [Invalid]

② Set the dd/mm/yy by tapping buttons.

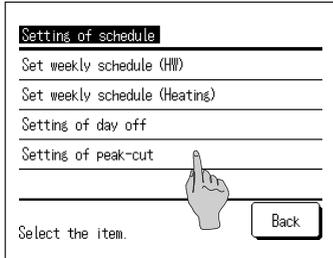
11. ③ When tapping button, the detail screen is displayed. (☞ Go to 8)

How to set peak-cut

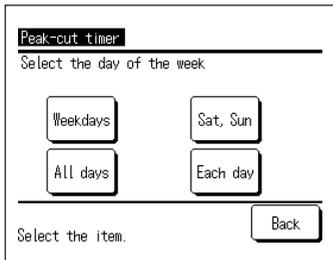
Peak-cut on weekly basis can be set



1. Push the **Schedule setting** switch on the panel.

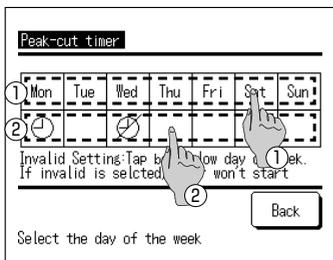


2. The menu screen of [Setting of schedule] is displayed.
Tap the [Setting of peak-cut]



3. The selection screen of [Peak-cut timer] is displayed.
Tap the item of setting day.

- ① Weekdays: From Monday to Friday
 - ② Sat, Sun: Saturday and Sunday
 - ③ All days: From Monday to Sunday
 - ④ Each day: Go to the [Day selection] screen
- } (Go to 6)
- (Go to 4)



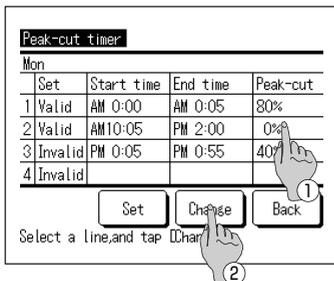
4. Tap the day to be set on the display ①.

The current setting contents of the day tapped are displayed (Go to 6)

5. For the setting Valid/Invalid, tap the blank column on the display ② just below the day.

Switch Valid : [⊖] ⇔ Invalid [⊗]

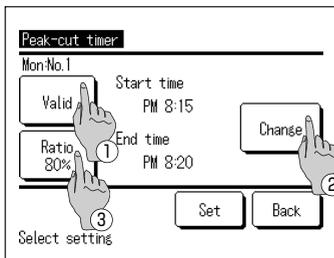
On the day set invalid, the peak-cut operation is not done.
Multiple selections of invalid settings are available.



6. The [Checking of current set contents] screen is displayed. When changing or adding the setting contents, ① select the column of the setting No. to be changed ② and tap **Change** button.

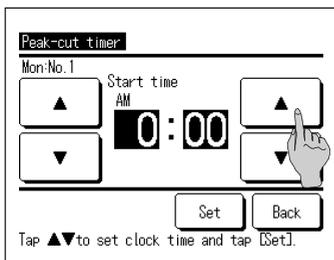
■ The setting contents displayed may differ depending on the set day selected (☞ Go to 3)

- ① Weekdays: Set peak-cut on Monday
- ② Sat, Sun: Set peak-cut on Saturday
- ③ All days in a week: Set peak-cut on Monday
- ④ Each day: Set peak-cut on the day selected



7. The detail screen of [Timer set contents] is displayed.

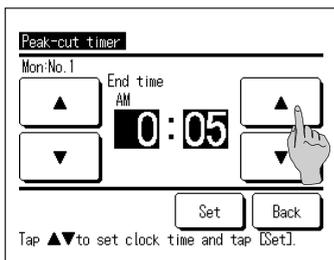
- ① Switch the setting [Valid] ↔ [Invalid] by tapping **Valid/Invalid** button
- ② Tap **Change** button, and set [Start time] and [End time]. (☞ Go to 8)
- ③ When tapping **Ratio %** button, the [Peak-cut %] can be set. (☞ Go to 10)



8. Set the [Start time].

Set the Hour/Minute by tapping **▲** **▼** buttons. The [Start time] can be set at 5-minute intervals

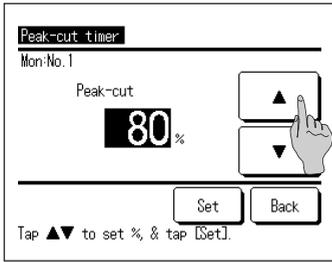
After setting the time, tap **Set** button. (☞ Go to 9)



9. Set the [End time].

Set the Hour/Minute by tapping **▲** **▼** buttons. The [End time] can be set at 5-minute intervals from 5 minutes after the [Start time] up to 24:00.

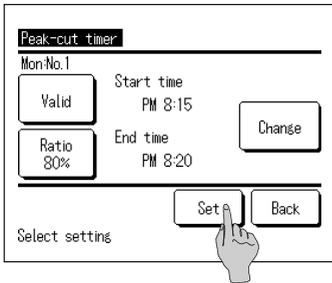
After setting the time, tap **Set** button. (☞ Go to 11)



10. Set the [Peak-cut %].

Set the [Peak-cut %] by tapping buttons. The [Peak-cut %] can be set at 10%, 40%, 60% and 80%.

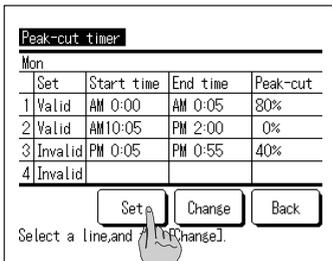
After setting the [Peak-cut %], tap button. (☞ Go to 11)



11. The [Checking of set contents] screen is displayed (☞ Go to 7)

When tapping button, the set contents are confirmed and [Checking of set contents on the day] screen is displayed. (☞ Go to 6)

12. If changing or adding the setting contents on the same day continuously, please start the work from 6.



13. The [Checking of setting contents] on the day is displayed. (☞ Go to 6)

When saving the setting, tap button.

① In case of setting all

It shifts to the [All set contents acknowledge] screen (☞ Go to 14)

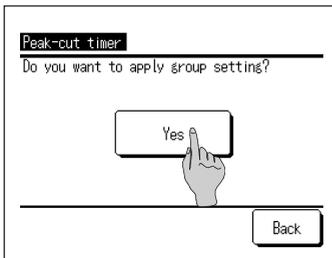
② In case of individual setting

Save the setting and shift to the [Day selection] screen (☞ Go to 4)

14. [All set contents acknowledge] screen is displayed

Tap and save the setting

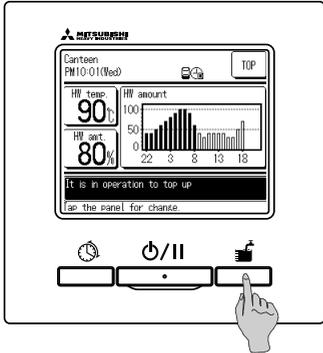
After saving, it returns to the [Day selection] screen



15. If the setting is done by changing the day, please start setting from 4.

How to do the [Operation to fill up]

Until the hot water amount becomes 100%, the heat pump units are operated.



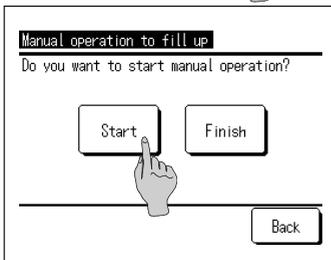
1. Start operation

When pushing [Operation to fill up] switch, the [Acknowledge for operation to fill up] screen is displayed.

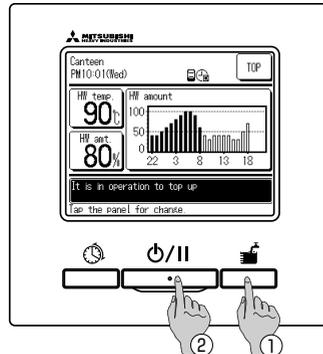
■ If it is pausing by pushing [Run/Pause] switch, the [Operation to fill up] cannot be started.

After starting operation by pushing [Run/Pause] switch, push [Operation to fill up] switch.

■ If heating application is set, the [operation to fill up] cannot be started. After setting the application [HW] or [Hybrid], push the [operation to fill up] switch.



2. When tapping [Start] button, the [Operation to fill up] starts and the HW TOP screen is displayed.



3. End operation

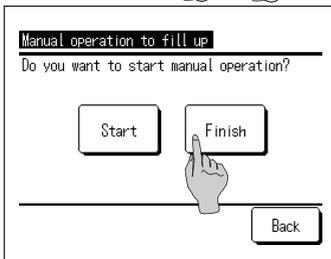
The heat pump unit keeps operation, until the [Operation to fill up] becomes end.

However the [Operation to fill up] can be interrupted with following. procedure.

① Push [Operation to fill up] switch and tap [Finish] button on the [Operation to fill up acknowledge] screen. (Go to 4)

② Make the operation in Pause by pushing [Run/Pause] switch.

■ Even if the setting becomes [Pause] during [Operation to fill up] due to [Setting of day off], the [Operation to fill up] is kept on.



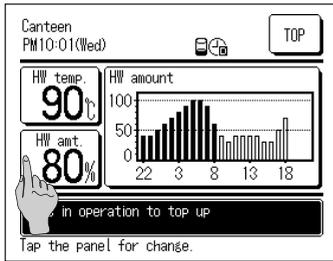
4. When tapping [Finish] button on the [Acknowledge] screen, the [Operation to fill up] finishes and it returns to the HW TOP screen.

Information

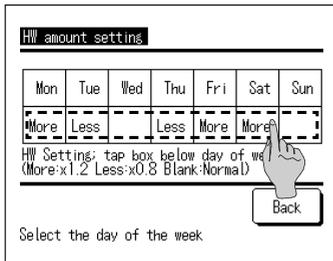
If the application "Heating" is set, this button is not available.

How to set to increase or decrease the hot water amount uniformly

In case that the usage amount of hot water may vary depending on the season or the day of a week, the hot water amount set by [Setting of weekly schedule] can be increased or decreased uniformly.



1. Tap **HW amount** button on the HW TOP screen.

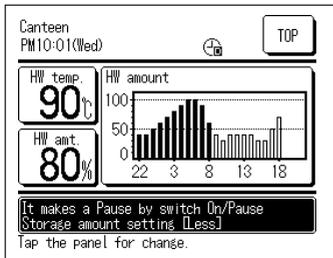


2. The current hot water set amount is displayed.

3. When changing the setting, tap the [-----] section just below the day to be changed and change the hot water amount. The display changes as follows by every tapping.

Blank (Usual) ⇒ More (1.2 time) ⇒ Less (0.8 time)

After setting, return to the TOP screen by tapping **Back** button.



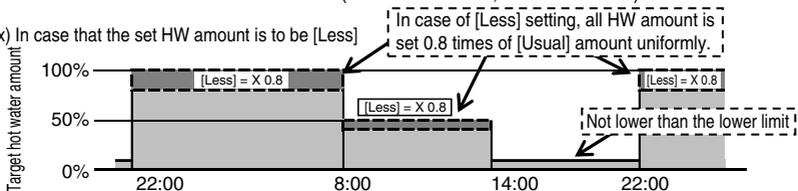
4. When setting [More] or [Less], the set result is displayed at the message display section.

■ In case of [Usual] (not set to increase or decrease), the message is not displayed.

Note

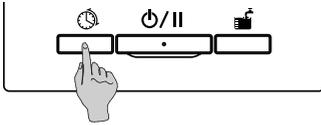
- If selecting [Usual], the HW amount set with [weekly schedule setting] is target amount. The default setting is [Normal] on all days.
- If selecting [More] or [Less] set with [weekly schedule setting], it makes the target amount [1.2 time] or [0.8 time] of the [Usual] amount uniformly.
- If target HW amount after increasing or decreasing may exceed the maximum or minimum limit, the set amount becomes the max. or min. value. (Max value: 100%, Min value: 10%)

(Ex) In case that the set HW amount is to be [Less]

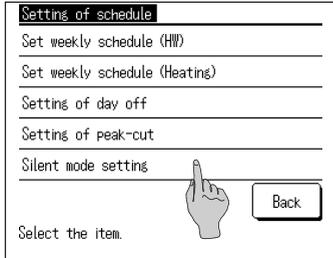


How to set Silent mode

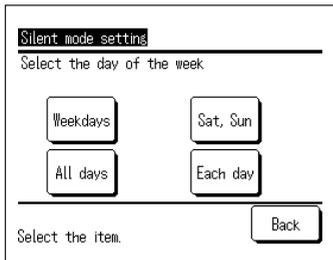
Silent mode on weekly basis can be set



1. Push the **Schedule setting** switch on the panel.

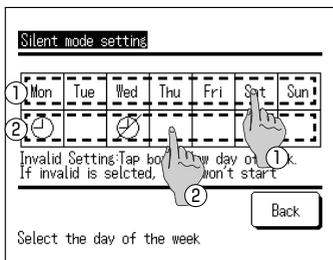


2. The menu screen of [Setting of schedule] is displayed. Tap the [Silent mode setting]



3. The selection screen of [Silent mode setting] is displayed. Tap the item of setting day.

- ① Weekdays: From Monday to Friday
 - ② Sat, Sun: Saturday and Sunday
 - ③ All days: From Monday to Sunday
 - ④ Each day: Go to the [Day selection] screen
- } (Go to 6)
- (Go to 4)



4. Tap the day to be set on the display ①.

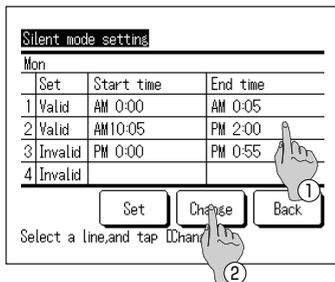
The current setting contents of the day tapped are displayed (Go to 6)

5. For the setting Valid/Invalid, tap the blank column on the display ② just below the day.

Switch Valid : [☺] ⇔ Invalid [☹]

On the day set invalid, the Silent mode operation is not done.

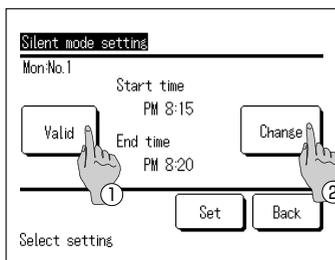
Multiple selections of invalid settings are available.



6. The [Checking of current set contents] screen is displayed.
When changing or adding the setting contents, ① select the column of the setting No. to be changed ② and tap [Change] button.

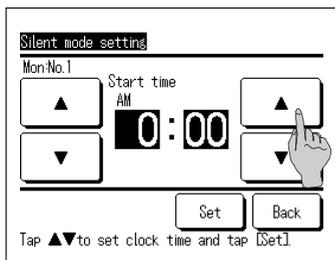
■ The setting contents displayed may differ depending on the set day selected (☞ Go to 3)

- ① Weekdays: Set Silent mode on Monday
- ② Sat, Sun: Set Silent mode on Saturday
- ③ All days in a week: Set Silent mode on Monday
- ④ Each day: Set Silent mode on the day selected



7. The detail screen of [Timer set contents] is displayed.

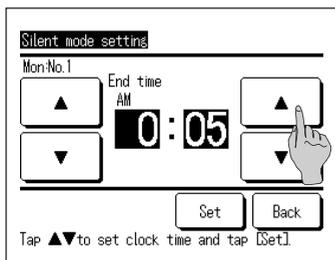
- ① Switch the setting [Valid] ↔ [Invalid] by tapping [Valid/Invalid] button
- ② Tap [Change] button, and set [Start time] and [End time]. (☞ Go to 8)



8. Set the [Start time].

Set the Hour/Minute by tapping ▲ ▼ buttons.
The [Start time] can be set at 5-minute intervals

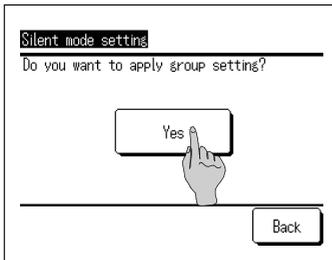
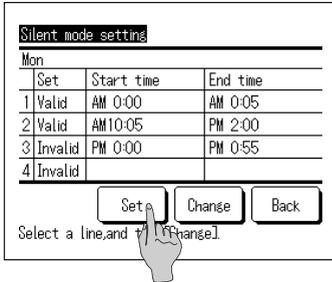
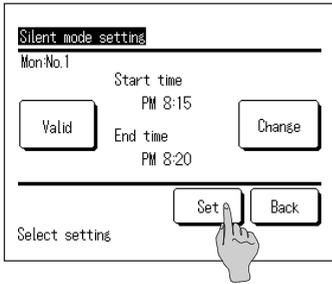
After setting the time, tap [Set] button. (☞ Go to 9)



9. Set the [End time].

Set the Hour/Minute by tapping ▲ ▼ buttons.
The [End time] can be set at 5-minute intervals from 5 minutes after the [Start time] up to 24:00.

After setting the time, tap [Set] button. (☞ Go to 10)



10. The [Checking of set contents] screen is displayed (☞ Go to 7)

When tapping **[Set]** button, the set contents are confirmed and [Checking of set contents on the day] screen is displayed. (☞ Go to 6)

11. If changing or adding the setting contents on the same day continuously, please start the work from 6.

12. The [Checking of setting contents] on the day is displayed. (☞ Go to 6)

When saving the setting, tap **[Set]** button.

① In case of setting all

It shifts to the [All set contents acknowledge] screen (☞ Go to 13)

② In case of individual setting

Save the setting and shift to the [Day selection] screen (☞ Go to 4)

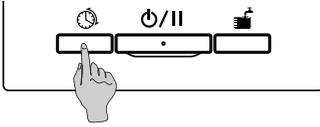
13. [All set contents acknowledge] screen is displayed

Tap **[Yes]** and save the setting

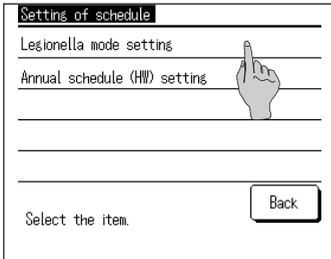
After saving, it returns to the [Day selection] screen

14. If the setting is done by changing the day, please start setting from 4.

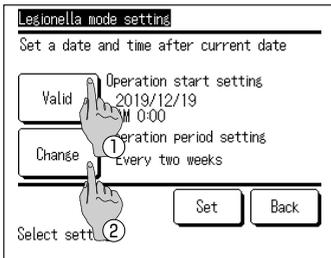
How to set Legionella mode



1. Push the **Schedule setting** switch on the panel.

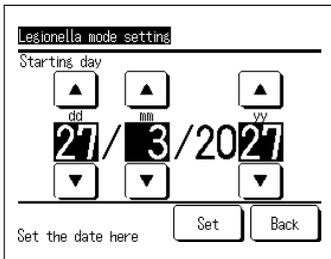


2. The menu screen of [Setting of schedule] is displayed. Tap the [Legionella mode setting]



3. The detail screen of [Legionella mode setting] is displayed.

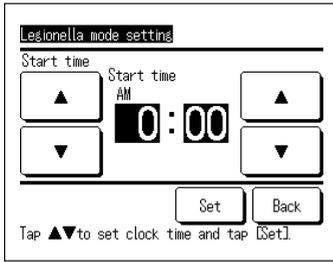
- ① Switch the setting [Valid] ⇔ [Invalid] by tapping **Valid/Invalid** button
- ② Tap **Change** button, and set [Start time] and [End time] (☞ Go to 4)



4. Set the [Starting day].

Set the dd/mm/yy by tapping **▲** **▼** buttons.

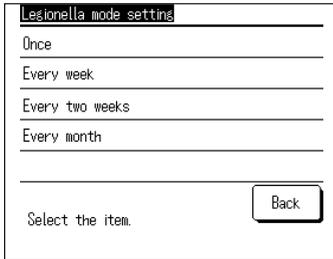
After setting the date, tap **Set** button.



5. Set the [Start time]

Set the Hour/Minute by tapping buttons. The [Start time] can be set at 5-minute intervals.

After setting the time, tap button.

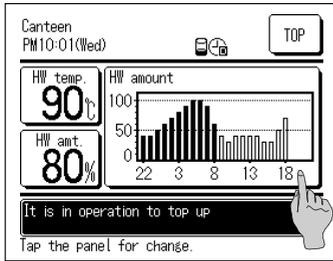


6. The detail screen of [Legionella mode setting] is displayed.

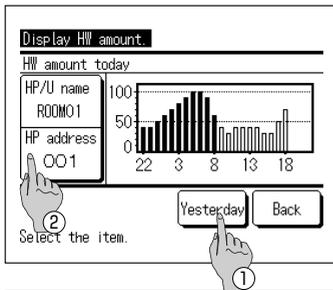
Tap the desired interval.

Display hot water amount

Today's hot water amount is displayed on the HW TOP screen. And the storage amount of hot water by connected each heat pump unit from yesterday up to now can be checked.

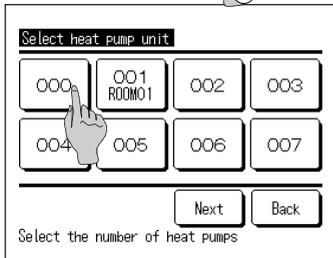


1. The hot water amount per hour is displayed at the [HW amount] display section on the HW TOP screen.
2. If displaying the [HW amount] on yesterday, or switching the heat pump unit to be display, tap the [HW amount] section.
3. The [Display HW amount] screen is displayed.
 - ① Tap **Yesterday** button and display the [HW amount] of yesterday. (➡ Go to 4)
 - ② Tap **HP address** button and select the HP unit to be displayed. (➡ Go to 5)



4. The [Display HW amount] screen of yesterday is displayed.

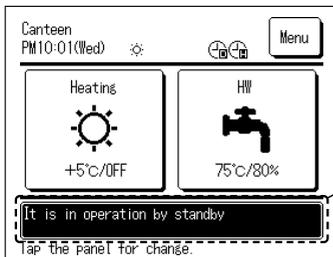
- ① Tap **Today** button and display the [Display HW amount] of today.



5. The selection screen of heat pump unit is displayed. Tap **HP unit No.** button to be displayed and the [HW amount] of selected HP unit is displayed.

Display of operation mode

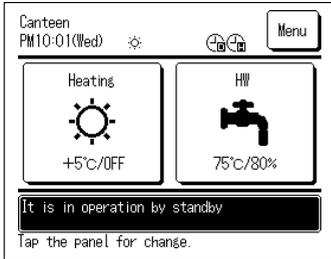
The operation mode of the heat pump unit is displayed at the message section on the TOP screen. Regarding the details of the operation mode, please refer to Page 17.



Message display section

Operation method for menu manipulation

Limited items for Sub remote control

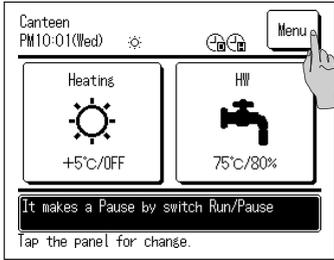


When controlling one heat pump unit with two remote controls, following settings cannot be done with Sub remote control. Please set them with Main remote control.

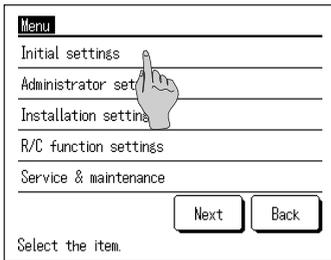
In case of setting with Sub remote control, the icon  is displayed on the TOP screen.

- Setting of HW temp
- Setting of HW amount
- Setting of heating temp
- Setting of heating mode
- Setting of schedule
- Administrator settings
- Test run
- R/C function settings

How to operate on the menu screen



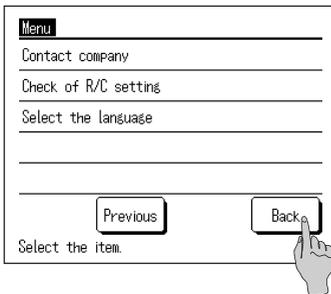
1. Tap **Menu** button on the TOP screen



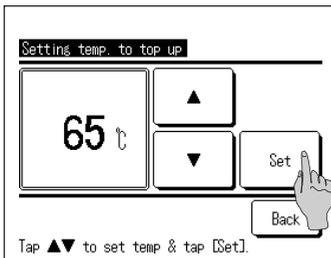
2. The [Main menu] screen is displayed.

When tapping the desired menu item, the setting screen for each item is displayed.

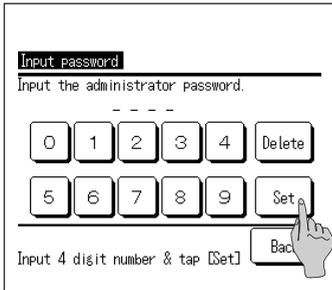
If there are multiple pages, the **Next** button on the first page and the **Previous** button on the last page are displayed.



3. When tapping **Back** button, it returns to the TOP screen.



4. On the setting screen of each item, if the **Set** button is placed, the setting content can be confirmed by tapping **Set** button.



5. Regarding the item mentioning Administrator password in the user's manual, when selecting such item, the [Input Administrator password] screen is displayed. Enter the administrator password (4 digits number) and tap Set button.

If the administrator password is unknown or wrong, the setting cannot be changed.

Note

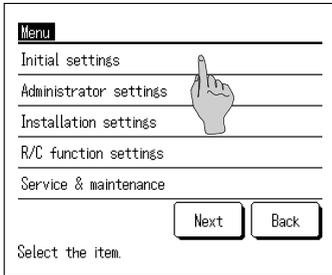
- For the administrator password which is set at the shipping from the factory, refer to the installation manual.
- When your administrator password is forgotten, initialize the password by referring to the installation manual.

Notabilia for each setting screen

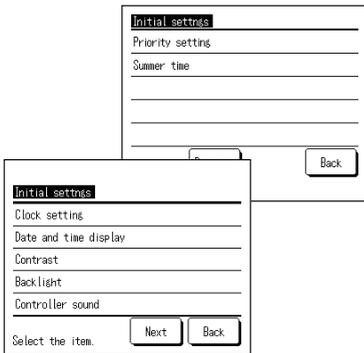
- When returning to each following screen from the setting screen, please operate following button or switch.
 - When returning to the previous screen Tap Back button
 - When returning to the TOP screen Tap Run/Pause button
- If tapping Back button without tapping Set button on the way of setting, the set contents becomes invalid and it returns to the last previous screen. And if pushing Run/Pause switch on the way of setting, the set content becomes invalid and it returns to the TOP screen after ending this setting mode.
- If no button operation is done for about 5 minutes on the way of setting each item, it returns to the TOP screen automatically and the content going to set becomes invalid.
- When tapping button, the message of [Operation invalid] may be displayed, but it is not a malfunction. Because the button operation is set [Invalid] by setting limited operation.

Operation method for various settings

How to set [Initial settings]



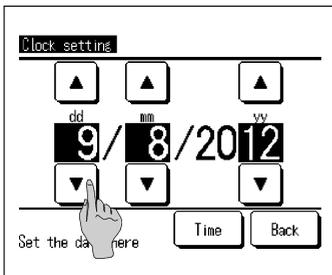
1. Tap the [Initial settings] on the main menu screen.



2. The menu screen of [Initial settings] is displayed, tap the desired item.

- ① Clock setting ... Go to Page 55
- ② Date and time display ... Go to Page 56
- ③ Contrast ... Go to Page 56
- ④ Backlight ... Go to Page 57
- ⑤ Controller sound ... Go to Page 57
- ⑥ Priority setting ... Go to Page 57
- ⑦ Summer Time ... Go to Page 58

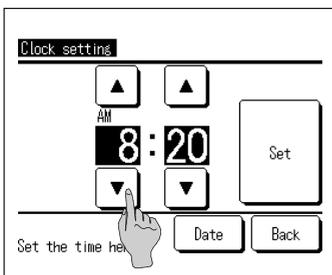
How to set clock time



1. Tap the [Clock setting] on the [Initial settings] menu screen, the [Clock setting] screen is displayed.

Set [dd/mm/yy] by tapping ▲ ▼ buttons. After setting, tap **Time** button.

■ Since the hot water storage operation by HP unit is done according to the operation pattern set with the time and date, if the time and date is not set correctly, the hot water storage operation cannot be done correctly.

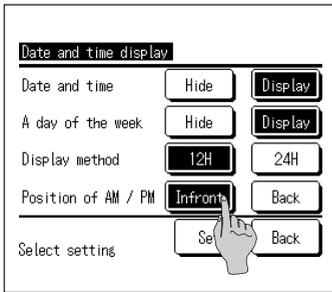


2. Set [Hour : Minute] by tapping ▲ ▼ buttons.

After setting, tap **Set** button.

When change [Date], tap **Date** button.

■ How to set date and time display



1. When tapping [Date and time display] on the [Initial settings] menu screen, the [Date and time display] screen is displayed.

Set date and time display [Hide] or [Display].

Set a day of the week [Hide] or [Display].

Set the display method

Set [12H] In case of 3:50 in the afternoon, it is displayed as [PM 3:50]

Set [24H] In case of 3:50 in the afternoon, it is displayed as [15:50]

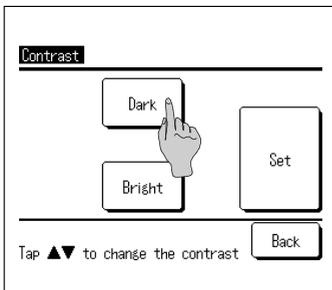
Position of AM/PM

Set [Infront] It is displayed as [PM 3:50]

Set [Back] It is displayed as [3:50 PM]

2. After setting each item, tap **Set** button.

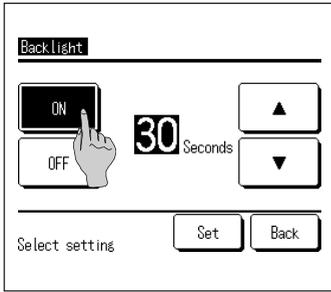
■ How to adjust contrast



1. When tapping [Contrast] on the [Initial settings] menu screen, the [Contrast] setting screen is displayed. When tapping **Dark** or **Bright** button, the contrast on the screen is changed. Please adjust the contrast as desired.

2. After setting, tap **Set** button.

■ How to set backlight



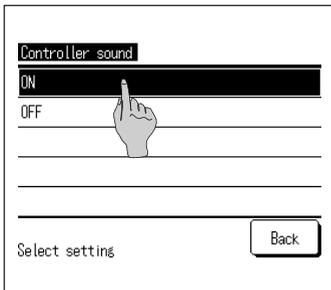
1. When tapping [Backlight] on the [Initial settings] menu screen, the [Backlight] setting screen is displayed. Please set ON/OFF of Backlight and its lighting time (From 5-sec to 90 sec at 5-sec intervals).

ON When tapping the LCD, Backlight is lit on.
If no operation is done during the set time period, Backlight is lit off automatically.

OFF Even if tapping the LCD, Backlight is not lit on.

2. After setting, tap **Set** button.

■ How to set controller sound

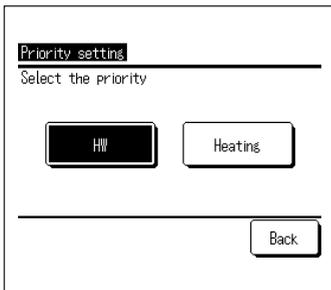


1. When tapping [controller sound] on the [Initial settings] menu screen, the [Controller sound] setting screen is displayed. Please set ON/OFF of controller sound.

ON When tapping the button on the screen, a “beep” sounds.

OFF No “beep” sounds.

■ How to set priority

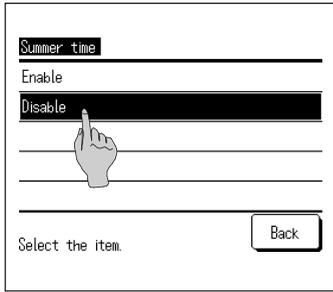


1. When tapping [Priority setting] on the [Initial setting] menu screen, [Priority setting] screen is displayed. Please set HW/Heating of priority setting.

HW HW operation is prioritized.

Heating Heating operation is prioritized.

■ How to set summer time



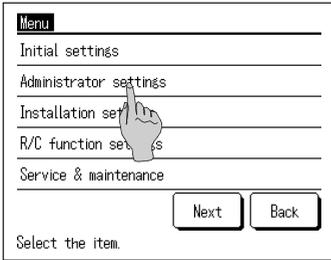
1. When tapping [Summer time] on the [Initial setting] menu screen, [summer setting] screen is displayed.

Please set Enable/Disable of summer time.

Enable If it is changed from Disable to Enable, 1H is added to current clock.

Disable If it is changed from Enable to Disable, 1H is subtracted from current clock.

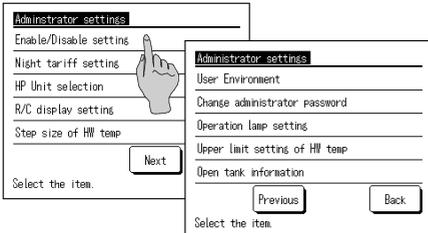
How to set Administrator settings



1. Tap the [Administrator settings] on the main menu screen.

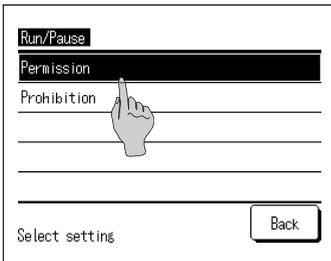
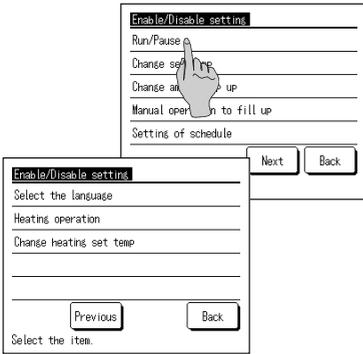
Since Administrator [Input password] screen is displayed enter the Administrator password

2. Since the [Administrator settings] menu screen is displayed, please tap your desired item.



- ① Enable/Disable setting ... Go to page 59
- ② HP unit selection ... Go to page 60
- ③ RC display setting ... Go to page 61
- ④ Step size of HW temp ... Go to page 65
- ⑤ Change administrator password ... Go to page 65
- ⑥ User Environment ... Go to page 66
- ⑦ Operation lamp setting ... Go to page 68
- ⑧ Upper limit setting of HW temp ... Go to page 68
- ⑨ Open tank information ... Go to page 69
- ⑩ Application setting ... Go to page 70
- ⑪ Cancel weekly timer (HW) ... Go to page 70

■ How to set limited operation



1. When tapping the [Enable/Disable setting] on the [Administrator settings] menu screen, the [Enable/Disable setting] menu is displayed.

Select the following operation items from this menu, and setting of [Operation permission] or [Operation prohibition] is available.

If setting [Permission], operation is available.

If setting [Prohibition], the message of [Operation is invalid] is displayed for 3sec, when operating.

Depending on the operation item, [Administrator password] is required.

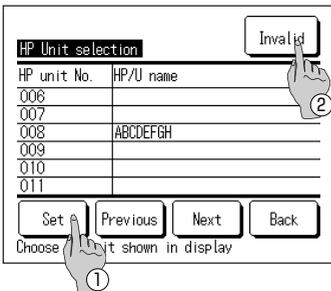
■ The behavior at prohibition setting

- ① Run/Pause ... Prohibit Run/Pause operation
- ② Change set temp ... Request to enter administrator password at setting change
- ③ Change amount to top up ... Request to enter administrator password at setting change
- ④ Manual operation to fill up ... Prohibit to start manual operation to fill up
- ⑤ Setting of schedule ... Request to enter administrator password at setting change
- ⑥ Select the language ... Request to enter administrator password at setting change
- ⑦ Heating operation ... Request to enter administrator password at setting change
- ⑧ Change heating set temp ... Request to enter administrator password at setting change

2. Tap [Permission] or [Prohibition] on each operation item.

■ How to select the HP unit displayed on RC

The heat pump unit to display its operation state on the TOP screen is selectable.



1. When tapping the [HP unit selection] on the [Administrator settings] menu screen, the [HP unit selection] screen is displayed.

If change the HP unit displayed on RC, select the HP unit to be displayed and tap ① **Set** button.

If not selecting the HP unit displayed on RC, tap ② **Valid** button and switch to **Invalid**. After that, tap ① **Set** button.

In case of **Invalid** setting, the HP unit to be displayed is selected automatically.

On the [HP unit selection] screen, up to 7 units can be displayed. If more than 8 units are connected to one remote control, when tapping **Next** button, the 8th and the subsequence HP units are displayed.

■ How to set remote control display

The display contents of remote control can be set

R/C display setting

Name of R/C _____

Name of HP Unit _____

Defrost operation display _____

Status of HW amount _____

HW amount display setting _____

Back

Select the item.

1. When tapping the [RC display setting] on the [Administrator settings] menu screen, the [RC display setting] menu screen is displayed.

- ① Name of RC ...Set the name of RC
(☞ Go to 2)
- ② Name of HP unit ...Set the name of HP unit
(☞ Go to 3)
- ③ Defrost operation display ...Set to display [In operation for defrosting] or not
(☞ Go to 4)
- ④ Status of HW amount ...Set to display [Status of HW amount] or not
(☞ Go to 5)
- ⑤ HW amount display setting ...Set the design of HW amount display
(☞ Go to 6)

Name of R/C _____ Set

「ABCDEFGHIJKLMNPOQR」

Alphabet Number

S	T	U	V	W	X	Y	Z	ã
á	â	ã	ä	Å	Ç	è	é	ê

Delete Prev Next Back

Input the name and [Set]

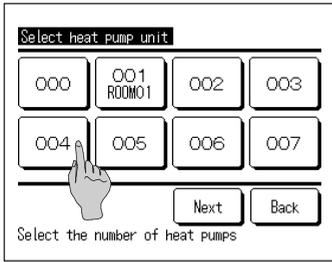
2. Set the [Name of RC] displayed on the TOP screen. Name of RC can be set with up to 9 2-byte letters (18 1-byte letters)

It can use alphabet or numeric letter. When each button is tapped, allowable letters to be entered are displayed.

Select letters to be input one by one on the screen. Tap **Back** **Next** button to display next candidate.

When the **Delete** button is tapped, selected letters are deleted one by one.

When the input is over, tap **Set** button. The name of RC is set and displayed on the TOP screen.



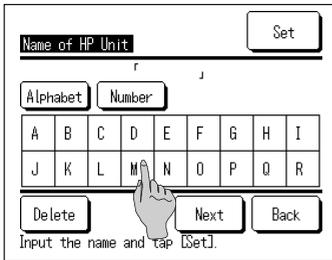
3. Set the name of HP unit to be added to the **HP unit No.** button.

Tap the **HP unit No.** button to which the name is set.

When the letter selection screen is displayed same as at the setting of the name of RC (Go to 2), enter letters.

The name of HP unit can be entered up to 4 2-byte (8 1-byte) letters.

When the input is over, tap **Set** button.

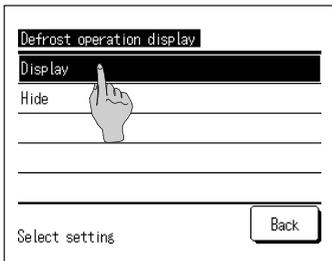


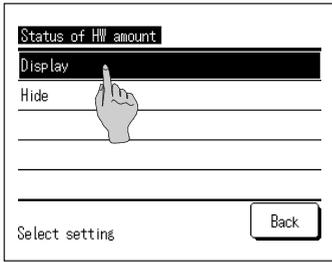
4. Set the message of [In operation for defrosting] to be displayed or not.

When the operating conditions is to start frosting on the HP unit during its operation, it is controlled to operate defrosting automatically.

Display...During defrosting operation, the message of [In operation for defrosting] is displayed.

Hide ...The message of [In operation for defrosting] is not displayed.





5. Set the icon for the [Status of HW amount] to be displayed or not.

If the hot water amount does not reach to the set amount, the icon for the [Status of HW amount] is displayed.

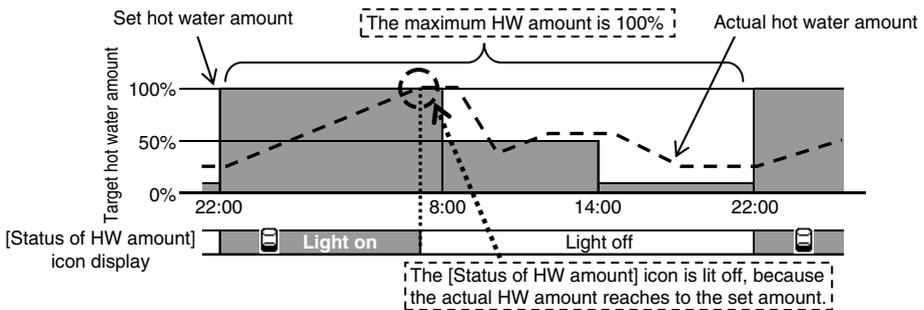
Display...If the hot water amount does not reach to the set amount, the icon [☺] is displayed on RC.
 Hide ...[☹] is not displayed on RC.

The conditions to display the icon for the [Status of HW amount]

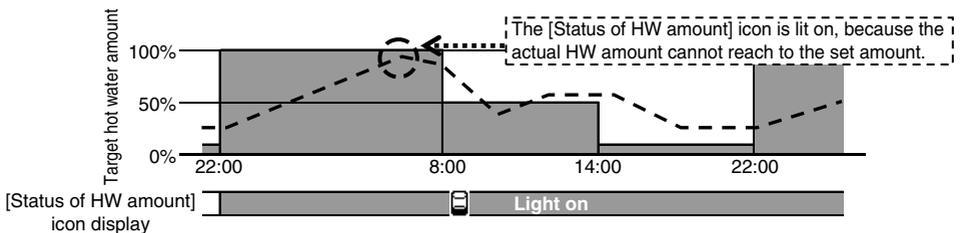
If the hot water is not stored up to the maximum of the set HW amount in one day operation pattern, it judges that there is some possibility not to store the hot water according to the schedule and display the icon for the [Status of HW amount].

If the icon is lit all the times, please check whether the relation between the HW storage operation pattern and HW usage pattern is OK or not.

(Ex.1) At normal *In case that the actual HW amount reaches to the set amount.



(Ex.2) When the icon is displayed *In case that the actual HW amount cannot reach to the set amount.



HW amount display settings

Usual

Set1

Set2

Select the item. Back

6. Change the design of graph showing the amount of stored hot water.

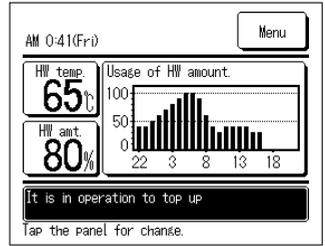
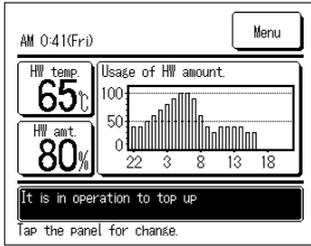
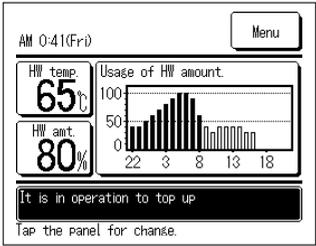
The design of graph can be selected from the following three types.

Usual ...Black background for 22 – 8 hours, white background for the rest

Set1 ...White background for all, regardless of time

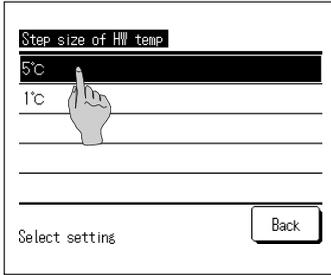
Set2 ...Black background for all, regardless of time

[Display example]



■ How to change the step sized of HW temp.

The step size of the hot water temp can be changed.



1. When tapping the [Step size of HW temp] on the [Administrator settings menu screen, the [Step size of HW temp] menu screen is displayed.

Please tap a desired step size.

5°C ...The step size of HW temp can be set at 5°C intervals

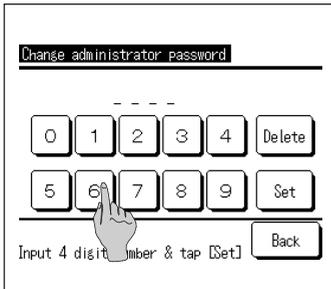
60°C⇔65°C⇔ ... ⇔85°C⇔90°C

1°C ...The step size of HW temp can be set at 1°C intervals

60°C⇔61°C⇔ ... ⇔89°C⇔90°C

■ How to change the Administrator password.

The Administrator password can be changed.



1. When tapping the [Change administrator password] on the [Administrator settings] menu screen, the [Change administrator password] screen is displayed.

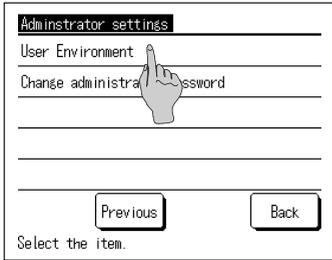
Enter the password (4-digit number) and tap **Set** button.



2. [Change administrator password] confirmation screen is displayed for 3sec and it returns to the [Administrator setting] menu screen.

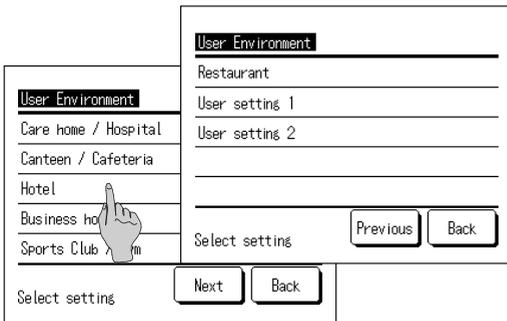
■ How to set the User environment (HW)

By selecting the typical operation pattern of business type, the detailed operation pattern can be set easily.



1. When tapping the [User environment] on the [Administrator settings] menu screen, the [User environment] menu screen is displayed.

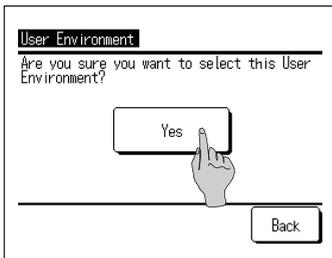
Please select the business type whose operation pattern is similar to the target hot water temp of each time zone to be set.



- ① Care home/hospital
 - ② Canteen/Cafeteria
 - ③ Hotel
 - ④ Business hotel
 - ⑤ Sports club/gym
 - ⑥ Restaurant
 - ⑦ User Setting 1
 - ⑧ User Setting 2
- } (☞ Go to 2)
- } (☞ Go to 3)

Target water level for the business model

Time	Default value	Care home/hospital	Canteen/Cafeteria	Restaurant	Hotel	Business hotel	Sports club/gym	HW temp
22:00	100%	60%	60%	60%	40%	40%	40%	65°C
0:00	100%	100%	100%	100%	100%	100%	100%	75°C
4:00	100%	100%	100%	100%	100%	100%	100%	65°C
8:00	30%	80%	80%	80%	80%	40%	100%	65°C
10:00	30%	50%	60%	80%	70%	40%	80%	65°C
13:00	30%	30%	40%	60%	60%	100%	60%	65°C
16:00	30%	30%	20%	40%	50%	100%	40%	65°C
19:00	30%	30%	20%	30%	40%	40%	30%	65°C

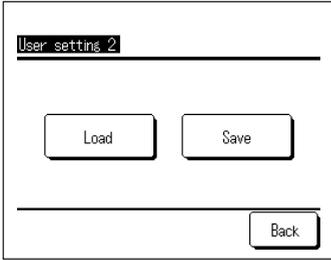


2. When tapping the business type on the [User environment] menu screen, the [User environment] acknowledge screen is displayed.

When tapping [Yes], the time zone and the hot water amount of selected business type is saved as the operation pattern to be set.

After saving, the [Setting of weekly operation pattern] selection screen is displayed.

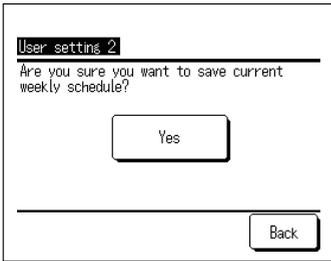
(☞ Go to 4 on Page 24)



3. When tapping [User setting] on the [User environment] menu screen, [User setting] screen is displayed.

SaveCurrent operation pattern (HW) will be saved as the selected user setting.

Load.....Current operation pattern (HW) will be overwritten by the selected user setting.



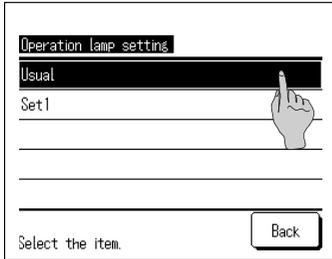
4. When tapping or on the [user setting] screen, [user setting] acknowledge screen is displayed.

When tapping , the selected action is executed and the [setting of weekly operation pattern (HW)] screen is displayed.

■ How to change the operation lamp setting

Timing to change the operation lamp color to green (yellow green) can be changed.

Note Timing to change the operation lamp color to red (orange) cannot be changed. (The red lamp lights only when any error occurs.)



1. When tapping the [Operation lamp setting] on the [administrator setting] menu screen, the [Operation lamp setting] menu screen is displayed.

Usual ... ON when HP unit is operating

Set1 ... ON when the operation is selected by pushing the **Run/Pause** button.

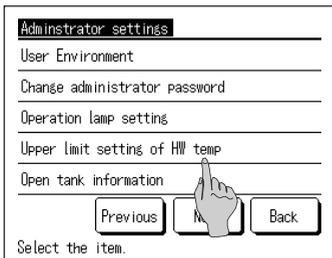
Note ON also during the standby and day off.

■ How to change the upper limit setting of HW temp

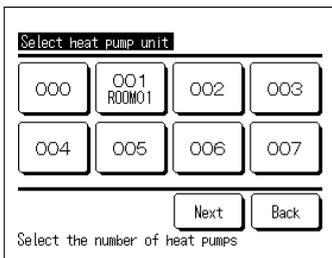
If the upper limit value of hot water storage temperature is changed, the setting range of hot water storage temperature can be changed.

Example If you change the upper limit value to 80°C, you can set in the range of 60 – 80°C.

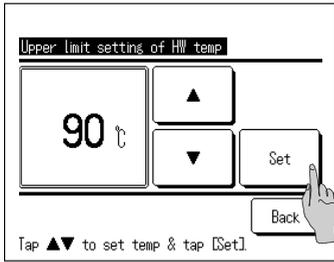
■ Initial setting range: 60 - 90°C



1. Tapping the [Hot water storage temperature upper limit] on the [administrator setting] menu screen.



2. If the multiple heat pump units is connected to the remote control, the list of heat pump units (Address No.) is displayed.
Tap the [HP unit No.] to be set.
Up to 8 units is displayed on the [Select heat pump unit] screen. If 9 or more units are connected, the 9th and the subsequent units are displayed by tapping **Next** button.



3. Set the upper limit setting of HW temp by tapping buttons and tap button.

4. The TOP screen is displayed, when tapping button

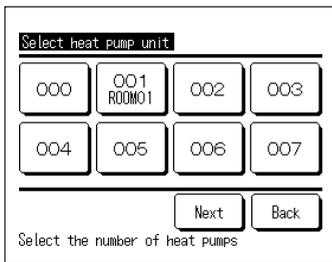
■ The HW temp can be set at 5°C intervals.

HW temp setting range: From 70 to 90°C (Factory default: 90°C)

■ If tapping button without tapping button, the setting becomes invalid and it returns to the TOP screen.

■ How to set the open tank information

You can check the detection temperature of open tank temperature sensor.

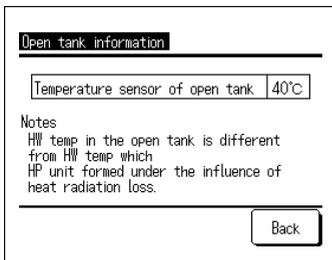


1. Tapping the [open tank information] on the [administrator setting] menu.

2. If the multiple heat pump units is connected to the remote control, the list of heat pump units (Address No.) is displayed.

Tap the [HP unit No.] to be set.

Up to 8 units is displayed on the [Select heat pump unit] screen. If 9 or more units are connected, the 9th and the subsequent units are displayed by tapping button.

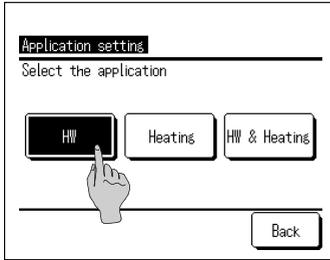


3. If it communicates with HP unit, the detection temperature of open tank temperature sensor is displayed.

Caution The detection temperature of open tank temperature sensor is different from the hot water discharge temperature of HP unit.

■ How to change application setting

If the use of the HP unit is changed, the application setting can be changed.



1. When tapping the [Application setting] on the [administrator setting] menu screen, the [Application setting] menu screen is displayed.

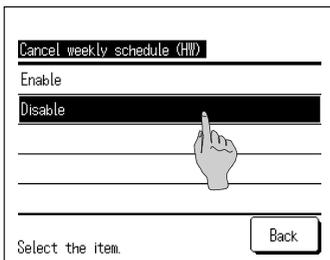
HW ...When HP unit is connected to hot water circuit.

Heating ...When HP unit is connected to space heating water circuit.

HW&Heating ...When HP unit is connected to both water circuits.

■ How to cancel weekly schedule (HW)

If the unit is not operated by the R/C (for example BEMS), the weekly schedule (HW) can be canceled.



1. When tapping the [Cancel weekly schedule (HW)] on the [administrator setting] menu screen, the [Cancel weekly schedule (HW)] menu screen is displayed.

Enable ...The weekly schedule (HW) is active.

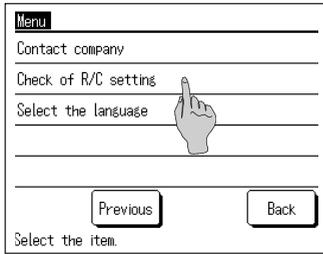
Disable ...The weekly schedule (HW) is inactive.

Notice:

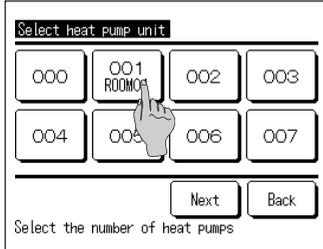
- If you use for example the Modbus interface (option), and if you control HP unit by external device (BEMS), settings conflict between external device and R/C may happen. In order to avoid this, the weekly schedule (HW) can be canceled.
- If the application “Heating” is selected, this menu is invalid and there is no need to set this item. (No need to set “Disable”).

How to check the remote control setting

A setting list for the current setting of remote control and heat pump unit can be checked.

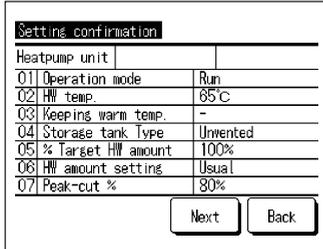


1. Tap the [Check of RC setting] on the menu screen.



2. If multiple heat pump units are connected to the remote control, a list of all heat pump unit connected. Tap the HP unit to be displayed.

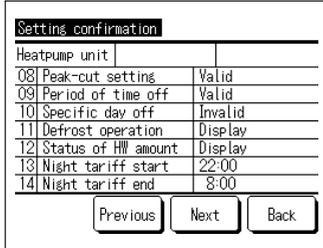
On the [Select heat pump unit] screen, up to 8 units are displayed. If 9 or more units are connected, when tapping **Next** button, the 9th and the subsequent units are displayed.



3. Since the current setting contents are displayed, the final check of settings can be done.

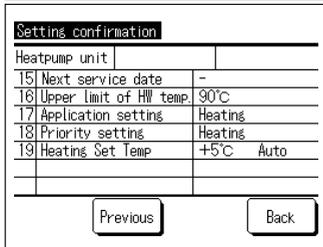
Displayed item

No.	Item	Set range
1	Operation mode	Run/Stop/Pause
2	Hot water temp	From 60°C to 90°C
3	—	Out of USE
4	Storage tank Type	Unvented/Open
5	% Target HW amount	From 10% to 100%
6	HW amount setting	Usual/More/Less
7	Peak-cut %	0, 40, 60, 80%
8	Peak-cut setting	Valid/Invalid
9	Period of time off	Valid/Invalid
10	Specific day off	Valid/Invalid
11	Defrosting operation	Display/Hide
12	Status of HW amount	Display/Hide
13	Night tariff start	From 00:00 up to 23:50
14	Night tariff end	From 00:00 up to 23:50
15	Next service date	Day/Month/Year
16	Upper limit of HW temp.	From 70°C to 90°C
17	Application setting	HW/Heating/Hybrid
18	Preference setting	HW/Heating
19	Heating set temp	AUTO/MANUAL If AUTO:-5~+5°C If MANUAL:20~52°C



Notice:

Independent of application, all settings appear in this table.



For maintenance

Maintenance of remote control, heat pump unit and hot water storage unit, and components for space heating

Remote Control

- Maintenance of LCD and main body of remote control.

When the surface of LCD or main body becomes dirty, wipe it with a dry soft cloth. 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. And then wipe the surface with a dry cloth.

Request

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

WARNING

Do not use flammable materials (e.g. hairspray or insecticide) near the remote control.
Do not clean the remote control with benzene or paint thinner.

It may cause crack damage to the remote control, electric shocks or fire.



Heat Pump Unit

- Secure the air circulation of heat pump unit

Since the heat pump unit retrieve heat from the air, much air is needed to suck. If blocking the air way to the inlet air port or from the outlet air port of heat pump unit or put something to block the air inlet way around the unit, it may cause decreasing capacity or malfunction.

- Washing the air to refrigerant heat exchanger

When using the unit for long period, the air to refrigerant heat exchange becomes dirty and it cannot operate properly.

Regarding the washing method, please consult with the dealer where you purchased.

- Cleaning the water circuit

Please clean the strainer in the water circuit periodically.

Hot Water Storage Unit

- Regarding the maintenance of hot water storage unit, please refer to the instruction manual attached to the hot water storage unit.

Components for Space Heating

- Regarding the maintenance of components for space heating, please refer to the instruction manual attached to each component.

Measure for anti-freezing water in winter

If the ambient temperature around the unit becomes below 0°C, the water pipe may freeze and it may cause damage of the heat pump unit.

Please consult with the dealer and be sure to take proper measure for anti-freezing. And if the water may freeze, please keep the power on supplying to the unit, even if the unit is pausing, because the heat pump unit may start operation for anti-freezing.

When stopping the unit for long period.

If you do not use the unit for more than on month, shut the main power off and drain off from the heat pump unit and the hot water storage unit as well.

The method for draining off, please consult with the installer or the dealer.

Request

When draining off, please shut off the power in advance according to the following procedure.

① Stop the heat pump unit

Select the [Service & Maintenance] on the menu screen and select the [System off] on the [Service & maintenance] menu screen.

* The service password is required.

② Shut off the power breaker of the heat pump unit and hot water storage unit.

When power failure occurs

If power failure occurs and water may freeze, shut off the main power and drain off from the heat pump unit and the hot water storage unit as well.

CAUTION

If shutting the power breaker off during operation of the heat pump unit, it may cause malfunction of the heat pump unit

■ When error happens

However, please note the following cases are not anomaly.

The cases that are not anomaly

Q The heat pump unit repeats Run and Stop

A During hot water storage operation, if the outdoor air temp is rather low, the HP unit repeats Run and Stop due to defrost operation.

During standby, if the outdoor air temp is below 5°C the water pump built in the HP unit might start and stop in order to prevent water in the HP unit and piping from freezing.

And during standby, the fans on the HP unit might start and stop depending on the SW setting in order to prevent snow from accumulating on the fan. (SW setting is required)

Q During hot water storage operation, the surface of the air heat exchanger becomes white with frost.

A If the outdoor air temp is rather low, the surface of the air heat exchanger may be covered with frost during operation.

Q During hot water storage operation, water comes out from the HP unit.

A When the HP unit retrieve heat from the air, dew condensation comes out. And if the outdoor air temp is rather low, much water comes out due to melted ice by defrost operation.

Q Hot water does not come out

A If no hot water or no water comes out, water in the pipe may be frozen. Please consult with the dealer where you purchased.

If only water (not hot water) comes out, it is the states that hot water is not stored in the cylinder.

Please start operation to top up or to fill up and store hot water in the cylinder.

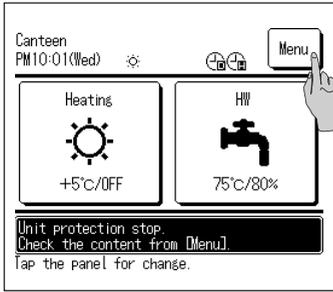
Q Hot water amount is decreasing despite no usage of hot water.

A The display of hot water amount shows the hot water amount in the cylinder whose temp is about 50°C or higher.

If hot water does not be used for a long period of time, hot water in the cylinder becomes colder due to natural heat dissipation and the display of hot water amount decreases.

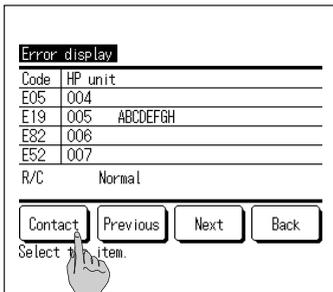
If error happens on the heat pump unit, [Under protection stopping] is displayed at the message display section.

Please do following procedures and stop operation. And inform to the dealer where you purchased.



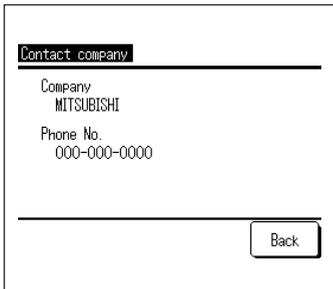
1. The message of [Under protection stopping] is displayed at the message display section.

Tap **Menu** button.



2. Error code is displayed on the [Error display] screen.

Check the error code and tap **Contact** button



3. [Contact company] screen is displayed (Company name and Phone No.)
If it was input in advance, it can be displayed.

■ A list of error code

Remote controller Error code	LED on heat pump unit		7-segment display	Contents of inspection		
	Green	Red				
No display	Keep flashing	Stay off	Normal	Power line anomaly No display		
E1	Keep flashing	Stay off	Normal	Communication error between remote controller and heat pump unit		
E10	Keep flashing	Stay off	Normal	Excessive connected number of heat pump units to the remote controller		
E31	Keep flashing	1-time flash	E31	Duplicated address No. of heat pump unit Address setting error of heat pump unit		
E32	Keep flashing	1-time flash	E32	Open phase on power source Reverse phase on power source		
E36	Keep flashing	1-time flash	E36-1	Discharge pipe temperature anomaly (Tho-D1)		
E37	Keep flashing	1-time flash	E37-1	Heat exchanger temp. sensor 1 fault (Tho-R1)		
		2-time flash	E37-2	Heat exchanger temp. sensor 2 fault (Tho-R2)		
		3-time flash	E37-3	Heat exchanger temp. sensor 3 fault (Tho-R3)		
		4-time flash	E37-4	Heat exchanger temp. sensor 4 fault (Tho-R4)		
		6-time flash	E37-5	Fault of inlet water temp. sensor 1 on gas cooler (Tho-W1)		
			E37-6	Fault of outlet water temp. sensor 2 on gas cooler (Tho-W2)		
			E37-7	Fault of inlet gas temp. sensor 1 on gas cooler (Tho-G1)		
E37-9	Fault of outlet gas temp. sensor 3 on gas cooler (Tho-G3)					
E38	Keep flashing	1-time flash	E38	Outdoor air temp. sensor fault (Tho-A)		
E39	Keep flashing	1-time flash	E39-1	Discharge pipe temp. sensor fault (Tho-D1)		
		3-time flash	E39-3	Fault of inlet temp. sensor 1 on intermediate receiver (Tho-M1)		
E40	Keep flashing	1-time flash	E40	High pressure anomaly (HP switch 63H1-1 activated)		
E41	Keep flashing	1-time flash	E41-1	Power transistor overheat (for CM1) (5 times within 60 minutes)		
E42	Keep flashing	1-time flash	E42-1	Current cut (for CM1)		
E45	Keep flashing	1-time flash	E45-1	Communication error between inverter PCB and control PCB (CM1) High pressure anomaly (HP switch 63H-1 activated)		
		1-time flash	E48-1	Outdoor fan motor 1 anomaly (FMo1)		
E48	Keep flashing	2-time flash	E48-2	Outdoor fan motor 2 anomaly (FMo2)		
E49	Keep flashing	1-time flash	E49	Low pressure anomaly (LP sensor PSL1 activated)		
E50	Keep flashing	1-time flash	E50-1	Heating operation flow rate anomaly		
		2-time flash	E50-2	Startup flow rate anomaly		
E52	Keep flashing	1-time flash	E51-1	Power transistor 1 overheat (for CM1) (15 minutes continuously)		
		1-time flash	E52-1	Fault of hot water temp. sensor 1 on unvented cylinder (ThT-1)		
		2-time flash	E52-2	Fault of hot water temp. sensor 2 on unvented cylinder (ThT-2)		
		3-time flash	E52-3	Fault of hot water temp. sensor 3 on unvented cylinder (ThT-3)		
		4-time flash	E52-4	Fault of hot water temp. sensor 4 on unvented cylinder (ThT-4)		
		5-time flash	E52-5	Fault of hot water temp. sensor 5 on unvented cylinder (ThT-5)		
		6-time flash	E52-6	Fault of hot water temp. sensor 6 on unvented cylinder (ThT-6)		
			E52-7	Fault of hot water temp. sensor 7 on unvented cylinder (ThT-7)		
			E52-8	Fault of hot water temp. sensor 8 on unvented cylinder (ThT-8)		
			E52-9	Fault of hot water temp. sensor 9 on unvented cylinder (ThT-9)		
			E52-14	Fault of return hot water temp. sensor on unvented cylinder		
			E53	Keep flashing	1-time flash	E53-1
		3-time flash	E53-3	Injection inlet temp sensor 1 fault (Tho-inj1)		
		E54	Keep flashing	1-time flash	E54-1	Disconnection of low pressure sensor 1(PSL) Anomalous output of low pressure sensor 1
2-time flash	E54-2			Disconnection of high pressure sensor 1(PSH) Anomalous output of high pressure sensor 1		
3-time flash	E54-3			Disconnection of intermediate pressure sensor 1(PSM) Anomalous output of intermediate pressure sensor 1		
E55	Keep flashing	1-time flash	E55-1	Under-dome temp. sensor 1 fault (Tho-C1)		
E56	Keep flashing	1-time flash	E56-1	Power transistor temp. sensor 1 fault (Tho-P1)		
E58	Keep flashing	1-time flash	E58-1	Compressor anomaly by loss of synchronism (CM1)		
E59	Keep flashing	1-time flash	E59-1	Compressor start-up failure (CM1)		

■ A list of error code (Continue)

Remote controller Error code	LED on heat source unit		7-segment display	Contents of inspection
	Green	Red		
E61	Keep flashing	1-time flash	E61-1	Communication error between master unit and slave unit 1
		2-time flash	E61-2	Communication error between master unit and slave unit 2
		3-time flash	E61-3	Communication error between master unit and slave unit 3
E63	Keep flashing	1-time flash	E63	Emergency stop , AF anomaly (set at adding active filter)
E64	Keep flashing	1-time flash	E64	Water pump anomaly (no operation)
				Water pump anomaly (excessive operation)
E89	Keep flashing	1-time flash	E89	Communication error between control PCB and CPU
No hot water comes out.(1)	Keeps flashing	Stays off	Normally	See troubleshooting
No hot water comes out.(2)	Keeps flashing	Stays off	Normally	See troubleshooting
No hot water comes out.(3)	Keeps flashing	Stays off	Normally	See troubleshooting
Anomalous sound and vibration (1)	Keeps flashing	Stays off	Normally	See troubleshooting
Anomalous sound and vibration (2)	Keeps flashing	Stays off	Normally	See troubleshooting

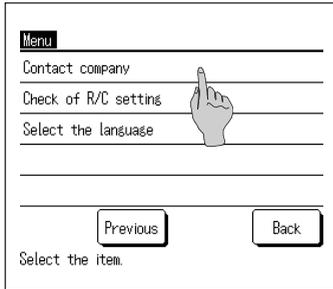
■ Maintenance code

Maintenance code is the signal for prompt service and maintenance, not to show anomaly.

7-segment display No.	RC display No.	Items	Remarks
Compressor operation hours			
oPE-1	M1	When the cumulative operation hours of compressor has elapsed 5,000hr since the last maintenance, and it is between 4,900hr and 5,100hr.	Synchronizing with the timing of alarming by the simple remote monitoring equipment
oPE-2	M2	When the cumulative operation hours of compressor has elapsed 10,000hr since the last maintenance.	
oPE-3	M3	When the cumulative operation hours of compressor has elapsed 30,000hr since the last maintenance.	
Water pump operation hours			
oPE-11	M11	When the cumulative operation hours of water pump has elapsed 5,000hr since the last maintenance, and it is between 4,900hr and 5,100hr.	Synchronizing with the timing of alarming by the simple remote monitoring equipment
oPE-12	M12	When the cumulative operation hours of water pump has elapsed 10,000hr since the last maintenance.	
oPE-13	M13	When the cumulative operation hours of water pump has elapsed 20,000hr since the last maintenance.	
Setting error			
oPE-20	M20	Setting error for type of cylinder	Check setting of SW3-3 is OFF for unvented cylinder
oPE-21	M21	Setting error of heat pump unit model	Kept SW4-1, -2, -3, -4 "OFF" (Factory default)
oPE-22	M22	Setting error of master/slave units	Check setting of SW4-7 and -8
Error information			
oPE-30	M30	Detection of AF error	But E63 is not displayed
oPE-32	M32	Detection of drying up water	It is always displayed at test run
oPE-33	M33	Detection of disconnection of cylinder water temp sensor	
oPE-34	M34	Detection of suspension of water supply	
oPE-35	M35	Detection of water pump error	
oPE-40	M40	An error has occurred to either unit at master and slave operation. Normal units are in automatic backup operation.	Please service the unit which an error has occurred according to error code.
		· Message of [disconnection of cylinder temperature sensor] Hot water temperature sensor on the cylinder (Th1-1 to Th1-9) may be disconnected.	· Check the connection and the characteristics of all hot water temperature sensors on the cylinder and if there is a problem, connect it securely or replace it. · If no problem on sensors, replace control PCB.

Contact company

From the menu screen, the service contact can be seen.



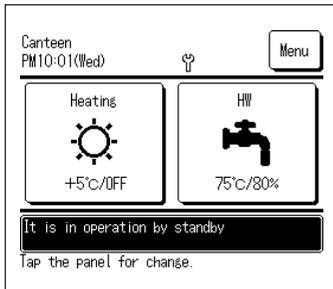
1. Please tap [Contact company] on the menu screen.

Next service date

If the setting of [Next service date] was done on the [Service & Maintenance] menu, the following screen is displayed for 5sec at starting operation and for 20sec at ending operation.

And when the [Next service date] has passed by, the icon [🔧] is displayed on the TOP screen.

If the [Next service date] is coming or the icon [🔧] is displayed, please contact to the contact company displayed on RC or the dealer where you purchased.



When the [Next service date] has passed by, the icon [🔧] is displayed on the TOP screen.

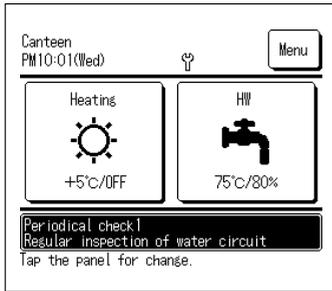


If the [Next service date] was set, the screen at left is displayed at starting operation or ending operation.

■ When [Periodical check] is displayed

■ When [Periodical check 1] or [Periodical check 2] is displayed

In order to inform the periodical inspection period of heat pump unit, [Periodical check 1] or [Periodical check 2] may be displayed at the message section of the TOP screen.



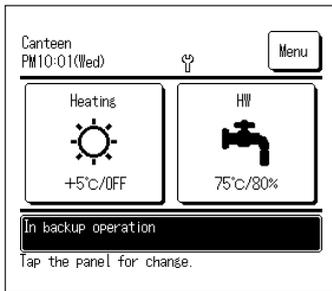
If the following display of periodical check is displayed, please ask periodical check to the contact company displayed on the [Contact company] screen or the dealer where you purchased.

- Periodical check 1 Please do periodical check of the parts for water circuit.
- Periodical check 2 Please do periodical check of the parts for refrigerant circuit.

■ If keeping on using without doing emergency check, it may cause damage of the heat pump unit.

■ When the [In backup operation] is displayed

[In backup operation] may be displayed in the message area when the equipment is operating temporarily after detecting an error on the heat pump unit.



This means that you need to practice the periodical inspection immediately. Consult one of contacts in the list of agents (Page 65) or your dealer, asking for the inspection.

■ Continuing to use the equipment without the periodical inspection could result in serious troubles.

■ After-sales service.

● Inform your dealer

- Model name
- Date of installation
- Failure conditions: As precise as possible.
- Your address, name, and telephone number

● Repairs after Warranty Period

Consult your dealer. Fare-paying services may be possible at the request of customer.

● Inquiry about After-sale Service

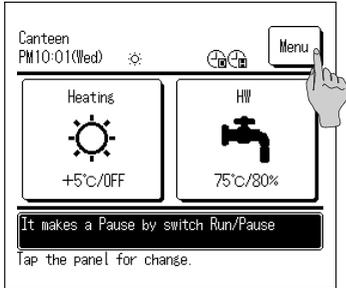
Contact your dealer or the service contact.

● Moving

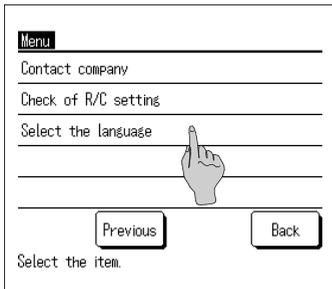
The Moving of the unit requires special technology. Consult your dealer. Necessary expenses for the moving of the unit will be charged.

■ Select the language

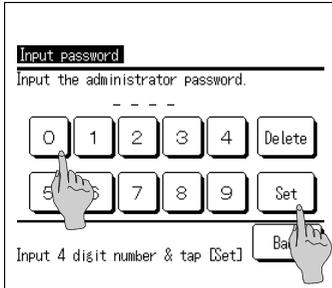
Select the language to be displayed on the R/C.



1. Tap the **Menu** button on the TOP screen.



2. Tap the "Select the language" on the main menu screen.

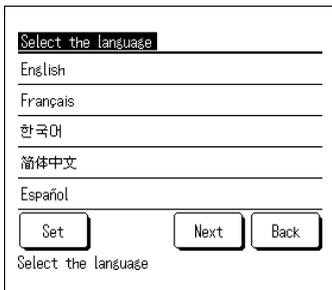


3. When the Input password screen is displayed, enter the administrator password.

■ There are cases that the Input password screen is displayed by the Permission/Prohibition setting (☞ page 59).

Tap the **Set** button after entering the administrator password (4-digit number).

If the password is unknown or wrong, the setting cannot be changed.



Note

- For the administrator password at factory setting, refer to the Installation Manua (consult your dealer).
- When your administrator password is forgotten, initialize the password by referring to the Installation Manual (consult your dealer).

4. Select the language to be displayed on the R/C.

English / Français / 한국어 / Español / Italiano / Deutsch /
Nederland / Русский

Operation data

State of units (max. 16 units) connected to the remote controller can be checked.

Status list of connected units and operation status of each unit can be checked.

2027/01/11 PM10:01(Wed)
Application: Heating

001 Run	002 Run	003 Run	004 Run
005 Run	006 Stop	007 E40 Run	008 E40 Run
009 Stop	010 Stop	011 Stop	012 Stop
013 Stop	014 Stop	015 Stop	016 Stop

Back

1. Touch the unit of which operation status is checked.

- Present time, operation mode, setting temperature and unit operation status (ON/OFF, error stop display) are displayed.
- These are displayed for connected units only. Figure at left shows the screen for connection of 16 units (max).

HP unit 001

Item	Data
Water inlet temp(THo-W1)	30.0°C
Water outlet temp(THo-W2)	30.0°C
Tank sensor(Tnt-1)	30°C
Tank sensor(Tnt-2)	30°C
Tank sensor(Tnt-3)	30°C
Tank sensor(Tnt-4)	-
Tank sensor(Tnt-5)	-
Tank sensor(Tnt-6)	-

Previous Next Back

2. Touching "001" displays the operation information of HP unit 001.

Pressing Next or Previous displays the following items:

- Heating status
- Defrost status
- Compressor rotational speed
- Water pump speed
- Outdoor temperature
- Refrigerant temperature
- Water temperature
- Tank sensor temperature

Specifications

Items		Model	ESA30EH2-25
Power source		—	3-phase 380V±5%,400V±5%, 415V±5%, 50/60Hz
Operation to top up <In intermediate season> ^{#2}	Heating capacity	kW	30
	Water amount	L/min	8.97
	Power consumption	kW	6.98
	COP	—	4.3
Operation to top up <In cold region> ^{#2}	Heating capacity	kW	30
	Water amount	L/min	5.06
	Power consumption	kW	10.73
	COP	—	2.8
Operating sound power <In intermediate season> ^{#1}		dB(A)	70
Outside dimension	Height	mm	1690
	Width	mm	1350
	Depth	mm	720+35 (Water pipe connection)
Current	Max	A	21
	Starting	A	5
Unit weight		kg	375 (During operation 385)
Retained water amount		L	10
Color			Stucco white (4.2Y7.5/1.1 approx.)
Compressor	Type x Pcs		Hermetic inverter compressor x 1
	Nominal output	kW	6.4
Refrigerant	Type		R744(CO ₂)
	Charged amount	kg	8.5
Refrigerant oil	Type		MA68
	Charged volume	cc	1200
Crankcase heater		W	20
Anti-freezing heater	for water pipe	W	21 x 3
	for drain pan	W	40 x 2
	for drain hose	W	16 x 3
Heat exchanger, Air side			Copper pipe straight fin type
Heat exchanger, Water side (Gas cooler)			Copper pipe coil, indirect heat exchanger
Fan	Type		Axial flow type (direct coupled motor) x 2
	Output x Pcs	W	386 x 2
	Air volume	m ³ /min	260
	External static pressure	Pa	50
Water pump	Type x Output		Non-self-suction spiral type inverter pump x95W
	Materials contacting to water		PPS
	Actual pump head	m (kPa)	5m (49kPa) @17L/min
Usage temp range	Outdoor air temp.	°C	-25 to +43
	Feed water inlet temp	°C	Top up 5-35, Warm up 35-63
	Hot water outlet temp	°C	60-90
Water pressure range		kPa	500 or lower (Keep water pressure more than 0kPa at the inlet of heat pump unit)
Defrost			Hot gas type
Vibration and sound proofing devices			Compressor :placed on anti-vibration rubber and wrapped with sound insulation
Protection devices			High pressure switch, over current protection, power transistor overheat protection and anomalous high pressure protection
Pipe connection	Feed water inlet		Rc3/4 (Copper20A)
	Hot water outlet		Rc3/4 (Copper20A)
	Drain water outlet		Rc3/4 (Copper20A)
Electric wiring	Earth leakage breaker		30A, 30mA, 0.1sec
	Power cable size		□8mm ² x 4 (Length70m)
	Molded-case circuit breaker		Rated current 30A, switch capacity 30A
	Grounding wire size		M6
	Remote controller wire size		0.3mm ² x 2cores shielding wire(MVVS)
Design pressure		MPa	High pressure; 14.0 Low pressure; 8.5
IP code			IP24

(Note)

- Performance of operation to top up in intermediate season shows the capacity measured under the conditions that outdoor air temp. is 16°CDB/12°CWB, water inlet temp. is 17°C and hot water outlet temp. is 65°C.
- Performance of operation to top up in cold region shows the capacity measured under the conditions that outdoor air temp. is -7°CDB/-8°CWB, water inlet temp. is 5°C and hot water outlet temp. is 90°C excluding heater for anti-freezing heater (191W).
- The actual hot water outlet temp. may vary ±3°C from target temp. according to the change of outdoor air temp. and water inlet temp.. And then if feed water inlet temp. is 30°C or higher and outdoor air temp. is 25°C or higher, hot water outlet temp. may be controlled not to increase too high.
- Please use the clean water. The water quality should follow the standard which MHI specifies.
If the water quality is out of the standard, it may cause troubles such as scale buildup and/or corrosion.
- These articles mentioned above may vary without any notice according to the development status.

Fixing heat pump unit

Anchor bolt	M10 x 4
According to the installation conditions, please take a measure to prevent from falling, cross wind and heavy snow.	

MEMO

EU DECLARATION OF CONFORMITY

We **MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.**
2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo, 100-8332, Japan

declare under our sole responsibility that the apparatus

Description of apparatus: Heat Pump Water Heater
Model name: ESA30EH2 Series

referred to in this declaration conforms with the following directives.

Relevant EU Directives :

Machinery Directive 2006/42/EC

Applied Standards :

EN 378-2

EN 60335-1

EN 60335-2-40

Authorized representative in EU :

MITSUBISHI HEAVY INDUSTRIES AIR-CONDITIONING EUROPE, LTD.
5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

MHIAE SERVICES B.V.

(Wholly-owned subsidiary of MITSUBISHI HEAVY INDUSTRIES AIR-CONDITIONING EUROPE, LTD.)
Herikerbergweg 238, Luna Arena, 1101 CM Amsterdam, Netherlands

Note : About the detail of Conformity model, see EU DECLARATION OF CONFORMITY sheet
included in a package





MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.

2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo, 100-8332, Japan
<http://www.mhi-mth.co.jp>

MITSUBISHI HEAVY INDUSTRIES AIR-CONDITIONING EUROPE, LTD.

5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom
Tel : +44-333-207-4072
Fax : +44-333-207-4089
<http://www.mhiae.com/>

MHIAE SERVICES B.V.

(Wholly-owned subsidiary of MITSUBISHI HEAVY INDUSTRIES AIR-CONDITIONING EUROPE, LTD.)

Herikerbergweg 238, Luna ArenA, 1101 CM Amsterdam, Netherlands
P.O.Box 23393 1100 DW Amsterdam, Netherlands
Tel : +31-20-406-4535
<http://www.mhiaeservices.com/>