



Please read this manual carefully before operating your set and retain it for future reference.

Hydro Kit (For Medium Temperature)

Original instruction

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For more information, Refer to the CD or LG Web site (www.lg.com).



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# FOR YOUR RECORDS

Write the model and serial numbers here:

#### Model #

### Serial #

You can find them on a label on the side of each unit.

## Installer's Name

#### **Purchased Date**

■ Staple your receipt to this page in the event you need it to prove date of purchase or for warranty issues



# **READ THIS MANUAL**

Inside you will find many helpful hints on how to use and maintain your **Hydro Kit** properly. Just a little preventive care on your part can save you a great deal of time and money over the life of your product.

You'll find many answers to common problems in the chart of troubleshooting tips. If you review our chart of

Troubleshooting Tips first, you may not need to call for service at all.



# PRECAUTION

- Contact the authorized service technician for repair or maintenance of this unit.
- · Contact the installer for installation of this unit.
- Hydro Kit is not intended for use by young children or invalids without supervision.
- Young children should be supervised to ensure that they do not play with Hydro Kit.
- When the power cable is to be replaced, replacement work must be performed by authorized personnel only using only genuine replacement parts.
- Installation work must be performed in accordance with the National Electric Code by qualified and authorized personnel only



# **Safety Precautions**

To prevent injury to the user or other people and property damage, the following instructions must be followed.

■ Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

# **▲** WARNING

This symbol indicates the possibility of death or serious injury.



This symbol indicates the possibility of injury or damage.

## **▲** WARNING

## Always ground the product.

Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.

outlet. Always use this appliance on a dedicated circuit and breaker.

Do not use a multi

· There is a risk of electric shock.

 There is risk of fire or electric shock

 It can cause electric shock or fire.

For electrical work. contact the dealer, seller, a qualified electrician, or an Authorized Service Center. Do not disassemble or repair the product by yourself.

Always ground the product as per the wiring diagram. Do not connect the ground wire to gas or water pipes lightening rod or telephone ground wire.

Install the panel and the cover of control box securely.

 There is risk of fire or electric shock.

 There is risk of fire or electric shock.

 There is risk of fire or electric shock due to dust, water etc.

## Use the correctly rated breaker or fuse.

Do not modify or extend the power cable. If the power cable or cord has scratches or skin peeled off or deteriorated then it must be replaced.

For installation, removal or reinstallation, always contact the dealer or an **Authorized Service** Center.

 There is risk of fire or electric shock.

· There is risk of fire or electric shock.

 There is risk of fire. electric shock, explosion, or injury.

Do not install the product on a defective installation stand. Be sure that the installation area does not deteriorate with age.

 It may cause product to fall. Never install the outdoor unit on a moving base or a place from where it can fall down.

 The falling outdoor unit can cause damage or injury or even death of a person. When the product is soaked (flooded or submerged) in water, contact an Authorized Service Center for repair before using it again.

 There is risk of fire or electric shock.

Be sure to check the refrigerant to be used. Please read the label on the product.

 Incorrect refrigerant can prevent the normal operation of the unit.

Do not place a heater or other heating appliances near the power cable.

 There is risk of fire and electric shock.

Indoor/outdoor wiring connections must be secured tightly and the cable should be routed properly so that there is no force pulling the cable from the connection terminals.

 Improper or loose connections can cause heat generation or fire. Don't use a power cord, a plug or a loose socket which is damaged.

 Otherwise it may cause a fire or electrical shock.

Do not allow water to run into electric parts. Install the unit away from water sources.

 There is risk of fire, failure of the product, or electric shock.

Safely dispose off the packing materials. Like screws, nails, batteries, broken things etc after installation or service and then tear away and throw away the plastic packaging bags.

 Children may play with them and cause injury. Do not touch, operate, or repair the product with wet hands.

 There is risk of electric shock or fire.

Do not store or use or even allow flammable gas or combustibles near the product.

· There is risk of fire.

Make sure to check that the power device is not dirty, loose or broken and then Turn on the power.

 Dirty, loose or broken power device can cause electric shock or fire.

In outdoor unit the step-up capacitor supplies high voltage electricity to the electrical components. Be sure to discharge the capacitor completely before conducting the repair work. When installing the unit. use the installation kit provided with the product.

Be sure to use only those parts which are listed in the service parts list. Never attempt to modify the equipment.

- An charged capacitor can cause electrical shock.
- Otherwise the unit may fall and cause severe injury.
- The use of inappropriate parts can cause an electrical shock, excessive heat generation or fire.

Do not use the product in a tightly closed space for a long time. Perform ventilation regularly.

Do not open the front cover or grille of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.)

If strange sounds, smell or smoke comes from product, immediately turn the breaker off or disconnect the power supply cable.

- Oxygen deficiency could occur and hence harm your health.
- There is risk of physical injury, electric shock, or product failure.
- There is risk of electric shock or fire.

Ventilate the product room from time to time when operating it together with a stove, or heating element etc.

Turn the main power off when cleaning or repairing the product.

Take care to ensure that nobody especially kids could step on or fall onto the outdoor unit.

 Oxvgen deficiency can occur and hence harm your health.

 There is risk of electric shock.

 This could result in personal injury and product damage.

Take care to ensure that power cable could not be pulled out or damaged during operation.

Do not place ANY-THING on the power cable.

When flammable gas leaks, turn off the gas and open a window for ventilation before turning the product on.

 There is risk of fire or electric shock.

 There is risk of fire or electric shock.

 Do not use the telephone or turn switches on or off. There is risk of explosion or fire.

## **ACAUTION**

# Two or more people must lift and transport the product.

· Avoid personal injury.

Do not install the product where it will be exposed to sea wind (salt spray) directly.

 It may cause corrosion on the product. Keep level even when installing the product.

To avoid vibration or noise.

# Do not install the product where the noise or hot air from the outdoor unit could damage or disturb the neighborhoods.

 It may cause a problem for your neighbors and hence dispute. Always check for gas (refrigerant) leakage after installation or repair of product.

 Low refrigerant levels may cause failure of product. Do not use the product for special purposes, such as preserving foods, It is not a precision refrigeration system.

 There is risk of damage or loss of property.

# Do not block the inlet or outlet of air flow.

It may cause product failure

Use a soft cloth to clean. Do not use harsh detergents, solvents or splashing water etc.

 There is risk of fire, electric shock, or damage to the plastic parts of the product. Do not step on or put anyting on the product. (outdoor units)

 There is risk of personal injury and failure of product.

# Do not insert hands or other objects through the air inlet or outlet while the product is operating.

 There are sharp and moving parts that could cause personal injury. Be cautious when unpacking and installing the product.

 Sharp edges could cause injury. If the refrigerant gas leaks during the repair, do not touch the leakaing refrigerant gas.

 The refrigernat gas can cause frostbite (cold burn)

Do not tilt the unit
when removing or
uninstalling it.

If the refrigerant gas leaks during the installation, ventilate the area immediately.

Dismantling the unit, treatment of the refrigerant oil and eventual parts should be done in accordance with local and national standards.

- The condensed water inside can spill.
- · Otherwise it can be harmfull for your health.

Do not expose your skin or kids or plants to the cool or hot air draft.

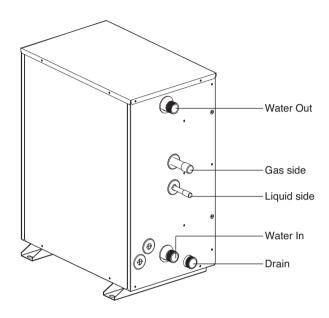
· This could harm to your health.

Use a firm stool or ladder when cleaning, maintaining or repairing the product at an height.

· Be careful and avoid personal injury.

# **Product Introduction**

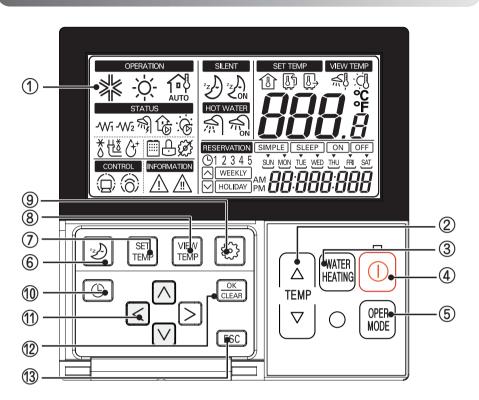
# Typical Installation Scene



## **ACAUTION**

Use of power supply separate power for the indoor unit. (Do not connect and use from the power terminal of the outdoor unit.)

# Remote Controller



No	Name
1	Display
2	Change Temperature Button
3	Water Heating Enable / Disable Button
4	Power Button
5	Operation Mode Selection Button
6	Silent Mode On / Off Button
7	Temperature Setting Mode Button
8	Temperature View Mode Button
9	Function Setting Button
10	Programming Button
11	Direction Button (Up, Down, Left, Right)
12	Set / Clear button
13	ESC Button

<sup>#</sup> Grey painted functions may not be operated and displayed.

# **Owner's Instruction**

## Monitoring Information



## **WATER PUMP**

This icon indicates that the water pump is active.



## **AUXILIARY SOLAR THERMAL PUMP**

This icon indicates that auxiliary solar thermal pump is active.

NOTE: As installation of auxiliary solar thermal pump is not compulsory but recommendatory according to field condition, this icon can be seen although no auxiliary solar thermal pump is installed.



## **DEFROSTING**

This icon indicates that the defrost mode is active.

In space heating operation or sanitary water tank heating operation, freezing of the outdoor heat exchanger may be occur due to low outdoor temperature and humidity. If this risk occurs, the product goes into defrost operation. It reverses the cycle and takes heat from the indoor system to prevent freezing of the outdoor system. This mode is automatically operating.



## MAINTAIN LOWEST TEMPERATURE

The purpose of this mode is maintaining the temperature to prevent damage by freezing of water pipe.



## **OUTDOOR**

This icon indicates that the outdoor unit is active.



**CHILD LOCK** 



**NO FUNCTION** 



## **CENTRAL CONTROLLER**

This icon indicates that the product is controlled by the central controller.



## **THERMOSTAT**

This icon indicates connection with thermostat.



## SLIGHT TROUBLE

This icon indicates that slight trouble occurs.

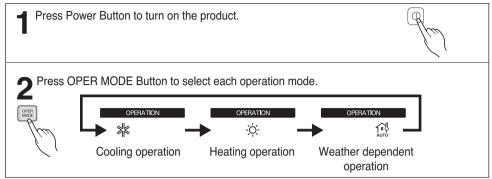


## **HEAVY TROUBLE**

This icon indicates that heavy trouble occurs.

# Mode Change

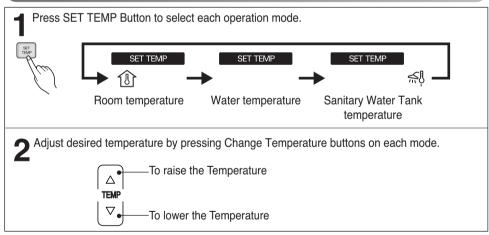
Turn on the product and select operation mode.



## **Operation Mode**

- · Cooling Operation The product yields cool water to use in under floor cooling or FCU cooling.
- Heating Operation The product yields hot water to use in under floor heating or FCU heating.
- Weather dependent Heating Operation In this mode, heating setpoint is automatically determined by pre-defined temperature profile.

# Selecting Target Temperature



#### ※ Note

: Increase 1°C or 2°F per one time pressing

: Decrease 1°C or 2°F per one time pressing

- We can change the temperature range of each mode on installation setting mode. Please refer to Function Code 11 to 15.
- Room Temperature setting is available when Remote Room Air Sensor (sold separately) is installed. Please refer to Function Code 03.
- Sanitary Water Tank temperature setting is available when Sanitary Water Tank is installed.

# Weather-dependent Operation

This mode is only applied to heating.

In order to save energy and to give highest comfort, setting temperature will follow outside temperature. If outdoor temperature decreases, heating capacity for the house will increase automatically in order to keep same room temperature. All parameters will be set by installer during start-up procedure and will be adapted to the site characteristic.

Press OPER MODE Button to select Weather-dependent operation mode.

: Weather Dependent operation icon



Adjust the desired temperature level by pressing Change Temperature buttons.





- Ex) Decreasing temperature profile by 3°C (based on room air temperature) <Temperature adjust step (unit : °C)> -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5
  - ← Cold Hot  $\rightarrow$

## View Temperature

Press repeatedly View Temperature Button to select each Temperature. (Whenever press View Temperature button, the room temperature will be displayed during 5 seconds.)



: View Room Temperature

: View Inlet Temperature

: View Outlet Temperature **∏** 

VIEW TEMP ≼ી

: View Sanitary Water Temperature (ONLY displayed when sanitary water heating mode)

: View Solar Thermal Temperature (ONLY displayed when sanitary :01 water heating mode)

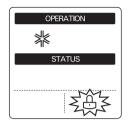
Temperature	Temperature Range	Displayed as
	below 11°C(51°F)	Lo
Air	11°C(51°F) ~ 39°C(102°F)	actual temperature
	above 39°C(102°F)	Hi
	below 0°C(32°F) [*below 40°C(104°F)]	Lo
Water	0°C(32°F) ~ 92°C(197°F) [*40°C(104°F) ~ 120°C(248°F) ]	actual temperature
	above 92°C(197°F) [*above 120°C(248°F)]	Hi

[\* : Solar Thermal Temperature]

# Child Lock

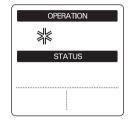
This function is to prevent children or other people from using controller.

Press Function Setting Button to enter user setting mode. (The segment will be flashed)





**2** Press set/clear button to finish the selection. The segment will disappear.





3 During Child Lock, ⊕ icon and 'CL' will be displayed during 3 seconds whenever entering any kind of buttons except for view temperature button and setting/clear button.



**4** To release this setting, press function Setting button until ⊕ icon flashes and then enter setting/clear button.



# Error code display

When the error is occurs on indoor unit, the error code will be displayed on remote controller.

## Slight trouble

A problem is found inside the indoor unit. In most case, this trouble is concerned with sensor problems. In this case, Hydro Kit can operate in an emergency mode (only Heating operation).



<Display>

## Heavy trouble

A problem is found inside the outdoor unit.

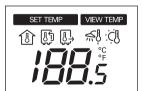


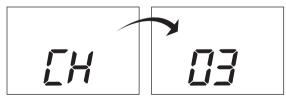
<Display>

## Critical error

On critical error, the product will stop unconditionally.

At this time, CH' and error code No. keep display by turns.





<Display>

# Setting Current Time

You can set current time.

Keep pressing programming button twice successively to enter setting current time mode. Press left, right button to adjust the current day. ZSUNZMON TUE WED THU FRI Press down button to move to AM/PM part and adjust it. (The AM/PM segment will be flashed) Press right button to move to "Hour" SUN MON TUE WED THU FRI SAT part. (the "Hour" segment will be flashed) Press up, down button to adjust the Hour. <| \( \) SUN MON TUE WED THU FRI SAT 6 Press right button to move to "Minute" part. (the "Minute" segment will be SUN MON TUE WED THU ER SAT flashed) Press up, down button to adjust the SUN MON TUE WED THU FRI SAT Minute 8 If you finish the setting, press set/clear button. SUN MON TUE WED THU FRI SAT M 10:20

Press exit button to exit or system will automatically release without any

input 25 seconds.

# Programming: Setting Simple Reservation

You can easily turn-on reservation.(ONLY enable when unit is stand-by.)

Press programming button to enter the Programming mode. (the segment will be flashed)





**2** Press up, down button to adjust the reservation time.





 $\boldsymbol{3}$  If you finish the setting, press setting/cancel button to complete programming



4 Press exit button to exit or system will automatically release without any input after 25 seconds.



# Programming: Setting Sleep Reservation

You can easily turn-off(sleep) reservation.(ONLY enable when unit is operating.)

Press programming button to enter the Programming mode. Press Programming button repeatedly to select [sleep reservation]. (the segment flashing)





**2** Press up, down button to adjust the reservation time.





 $\boldsymbol{3}$  If you finish the setting, press setting/cancel button to complete programming.

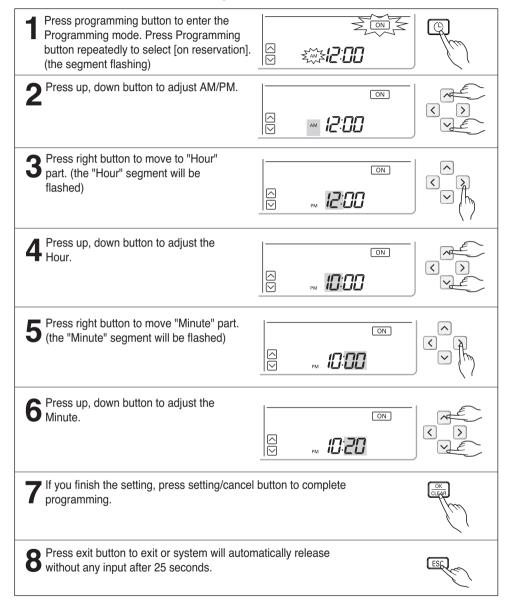


4 Press exit button to exit or system will automatically release without any input after 25 seconds.



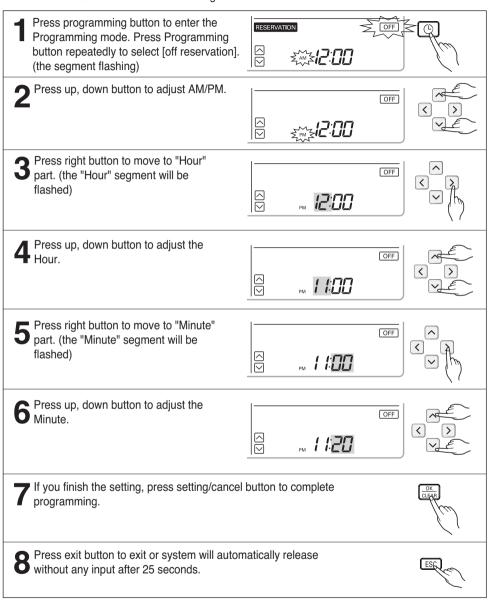
# Programming: Setting ON Reservation

This function is able to turn-on after a setting time.



# Programming: Setting OFF Reservation

This function is able to turn-off after a setting time.



# Programming: Weekly Reservation

The weekly reservation is active after setting current time.

Press programming button to enter the RESERVATION Programming mode. Press Programming Z ⊒MON TUE WED THU FRI SAT button repeatedly to select [Weekly reservation]. (the segment flashing) Press left, right button to adjust the cur-SUNZMON TUE WED THU rent day. SUN MON TUE WED THU FRI Press up, down button to adjust the RESERVATION action number. < WEEKLY Press right button to move to "Hour" RESERVATION part on ON Time section. (The "Hour" segment will be flashed) WEEKLY Start Time Section Press up, down button to adjust the RESERVATION Hour on Start Time section. WEEKLY 6 Press right button to move to "Minute" RESERVATION part on Start Time section. SUN MON TUE WED THU FRI < (The "Minute" segment will be flashed) WEEKLY Press up, down button to adjust the RESERVATION Minute on Start Time section. SUN MON TUE WED THU FRI SAT WEEKLY **8** Press right button to move to "Hour" part on OFF Time section. RESERVATION WEEKLY (The "Hour" segment will be flashed) Off Time Section

Please refer to the process from No.5 to No.7 for setting OFF Time. It is the same method



If you finish the setting, press setting/cancel button to complete programming. The under bar segment will be created, when finished.



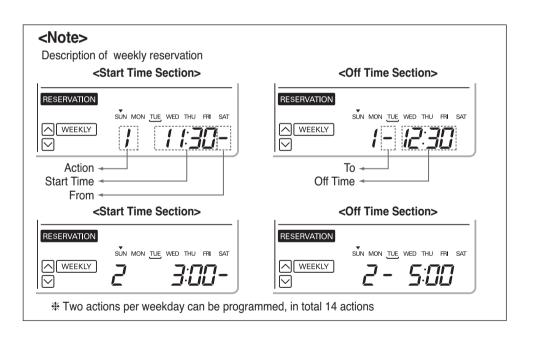


Please refer to the process from No.2 to No.10 for setting other day weekly program. It is the same method.



Press exit button to exit or system will automatically release without any input after 25 seconds.





# Programming : Holiday Reservation

This function is to automatically stop the machine working on some days.

Press programming button to enter the Programming mode. Press Programming button repeatedly to select [Holiday reservation]. (the segment flashing)





**2** Press left, right button to adjust the holiday.



**3** When you press set/clear button after finishing the selection, the day selected will disappear.





4 Press exit button to exit or system will automatically release without any input after 25 seconds.



# **Using Thermostat**

The term "thermostat", which is widely used in this chapter, is a kind of 3rd party accessory. LG Electronics does not supply thermostat. but it can be supplied by 3rd party manufacturers. Room thermostat can be used for easy and convenience control. To utilize thermostat more efficiently and correctly, this chapter presents information about using thermostat.

## **ACAUTION**

- 1. Some electro-mechanical type thermostat has internal delay time to protect compressor. In that case, mode change can takes time more than user's expectation. Please read thermostat manual carefully if the product does not response quickly.
- 2. Setting temperature range by thermostat can be different with that of the product. The heating or cooling set temperature should be chosen within the setting temperature range of the product.

## How to use Thermostat

To find how to turn on and off, how to set target temperature, how to change operating mode, etc. please refer to thermostat operating manual provided by thermostat manufacturer.

# Operating Thermostat with Remote Controller

- · Following features are permitted when thermostat is installed :
  - SET TEMP button
  - VIEW TEMP button
  - Temperature adjust button (\*) Δ TEMP  $\nabla$
  - Sanitary water heating Enable / Disable
  - (\*): The product does not turn on / off according to the setting temperature at the remote controller. It turns on / off according to the thermostat signal.
- · Following features are NOT permitted when thermostat is installed :
  - Operating mode (cooling/ heating/ weather-dependent) selection
  - Time scheduling
  - Operation On / Off

# Emergency Operation

#### · Definition of terms

- Trouble: a problem which can stop system operation, and can be resumed temporally under limited operation without certificated professional's assist.
- Error: problem which can stop system operation, and can be resumed ONLY after certificated professional's check.
- Emergency mode : temporary heating operation while system met Trouble.

## · Objective of introducing 'Trouble'

- Not like airconditioning product, hydro kit is generally operated in whole winter season without any system stopping.
- If system found some problem, which is not critical to system operating for yielding heating energy, the system can temporarily continue in emergency mode operation with end user's decision.

#### · Classified Trouble

- Trouble is classified into two levels according to the seriousness of the problem: Slight Trouble
  and Heavy trouble
- Slight Trouble: a problem is found inside the indoor unit. In most case, this trouble is concerned with sensor problems. The outdoor unit is operating under emergency mode operation condition which is configured by DIP switch No. 4 of the indoor unit PCB.
- Heavy trouble: a problem is found inside the outdoor unit.
- Option Trouble : a problem is found for option operation such as water tank heating. In this trouble, the troubled option is assumed as if It does not cause in the Product.

## · Emergency operation level

- When system met trouble, it stops operation and waits for user's decision: Calling service center or starting emergency operation.
- To start emergency operation, user simply pushes ON / OFF button once more.
- Two different levels are prepared for emergency operation: High temperature cycle and low temperature cycle.
- In emergency operation mode, user can not adjust target temperature.

	DIP Switch	Target Leaving Water Temperature	Target Room Air Temperature	Target Sanitary Water Temperature
High temperature cycle	OFF	50°C(122°F)	24°C(75°F)	50°C(122°F)
Low temperature cycle	ON	30°C(86°F)	19°C(66°F)	50°C(122°F)

## · Following features are permitted in emergency operation :

- Operation On/Off
- VIEW TEMP button(\*)
- Δ Temperature adjust button (\*) TEMP  $\nabla$
- Sanitary water heating Enable / Disable
- (\*): Temperature measured by failed sensor is displayed as '--'.

The product does not turn on / off according to the setting temperature at the remote controller. It turns on / off according to the thermostat signal.

## · Following features are NOT permitted in emergency operation:

- Operating mode (cooling/ heating/ weather-dependent) selection OPER MODE
- Time scheduling (9)
- SET TEMP button

## · Duplicated trouble : Option trouble with Slight or Heavy trouble

- If option trouble occurs with slight (or heavy) trouble at the same time, the system puts higher priority to slight (or heavy) trouble and operates as if slight (or heavy) trouble is occurred.
- Therefore, sometimes sanitary water heating can be impossible in emergency operation mode. When sanitary water is not warming up while emergency operation, please check if sanitary water sensor and related wiring are all Ok.

## Emergency operation is not automatically restarted after main electricity power is reset.

- In normal condition, the product operating information is restored and automatically restarted after main electricity power is reset.
- But in emergency operation, automatic re-start is prohibited to protect the product.
- Therefore, user must restart the product after power reset when emergency operation has been running.

# **Maintenance and Service**

## Maintenance activities

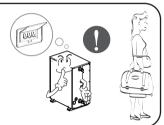
In order to ensure optimal availability of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals, preferably yearly. This maintenance should be carried out by your local agreed technician.

## When the unit is not going ....

## **ACAUTION**

- If the product is not used for long time, we strongly recommend NOT TO SWITCH OFF THE POWER SUPPLY to the product.
- If power is not supplied, some special product-protecting actions

(such as water pump anti-locking) will not performed.



# Call the service immediately in the following situations

- 1. Anything abnormal such as burning smell, loud noise etc. happen. Stop the unit and turn the breaker off. Never try to repair by yourself or restart the system in such cases.
- 2. Main power cord is too hot or damaged.
- 3. Error code is generated by self diagnosis.
- 4. Water leaks from indoor unit.
- 5. Any switch, breaker (safety, earth) or fuse fails to work properly

User must carry routine checkup & cleaning to avoid unit's poor performance. In case of special situation, the job must be carried out by the only service person.

# Operational instructions

■ Do not disconnect the power supply of Hydro Kit during the operation. Stop the Hydro Kit followed by outdoor unit and then only remove the power supply.

## **▲ WARNING**

If you remove the power supply of the Hydro Kit in the mid of operation, it will leads to damage of the product by freezing and bursting of Plate type Heat Exchanger.

■ Do not remove the power supply even at the occurrence of "CH14" Error.

As the error is due to the shortage of water flow, please eliminate any sludge and scales inside the water tubes to ensure free water pumping, remove foreign particles(dust, sand, trash, rusted pieces) from the water tubes along with cleaning the strainer.

After cleaning the strainer, to remove the error message (not displayed), turn off the outdoor unit followed by Hydro Kit and then disconnect power supply of Hydro Kit. And then connect power supply and restart the unit for the normal operation.

## **▲** WARNING

The service will be charged if the system failure is due to strainer blockage. Strainer cleaning period: Once in every 3 months and whenever CH14 error occurs.

- If the system stopped and displaying any error message(CH???) please follow below procedure. Do not remove the power supply of the Hydro Kit. Contact L.G service centre.
- Do not change the water pipes randomly. When changing the water pipes there is a possibility of foreign material entry and bubble formation as well. This leads to freezing of Plate type heat exchanger of Hydro Kit.

When it is essential to change the water pipes, proceed only after separating the pipes from Hydro Kit. The inner side of the new pipes must be washed thoroughly to remove the foreign materials and then connect the pipes with the Hydro Kit.

# Troubleshooting Tips! Save time and money!

Check the following points before requesting repairs or service.... If the malfunction persist, please contact your dealer.

Case	Explanation
Hydro Kit does not operate.	Have you made a mistake in timer operation?
nyuro kit does not operate.	Has the fuse blown or has the circuit breaker been tripped?
The room has a peculiar odor.	Check that this is not a damp smell exuded by the walls, carpet, furniture or cloth items in the room.
Hydro Kit does not operate for about 3 minutes when restart.	This is the protector of the mechanism.
	Wait about three minutes and operation will begin.
Does not cool or heat effectively.	The room may have been very hot when the Hydro Kit was first turned on. Allow time for it to cool down.
	Has the setting temperature been set incorrectly?
The unit operation is noisy.	Refrigerant flow sound     While the system is being started or stopping, sound from the refrigerant flow may be heard.
	Sound for the indoor unit heat exchanger     During the cooling operation, a sound may be heard from the indoor unit heat exchanger due to water freezing or melting.
	Water noise     During starting or stopping of the unit, noise can appear in water piping
	During defrost     Noise can appear in unit due to defrosting of water.
Steam is raised in outdoor unit.	Steam from outdoor heat exchanger     During defrosting operation, ice on the outdoor heat exchanger is melted, resulting in making steam.
Remote controller display is faint, or no display at all.	Has the circuit breaker been tripped?

