

# OPERATION & INSTALLATION INSTRUCTIONS

## FLOOR AND CEILING TYPE UNIT

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

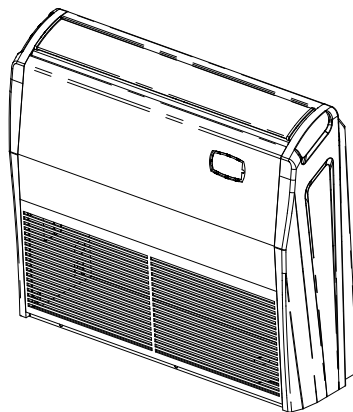
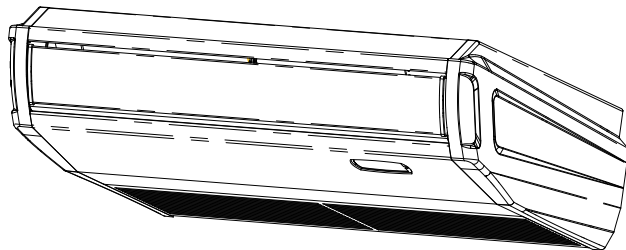
- Read this operating & installation instruction carefully and keep it for future reference ●

### MODEL

GTHD(09)AANK3A1AI

GTHD(12)AANK3A1AI

GTHD(18)AANK3A1AI



HEAT PUMP SYSTEM

# CONTENTS

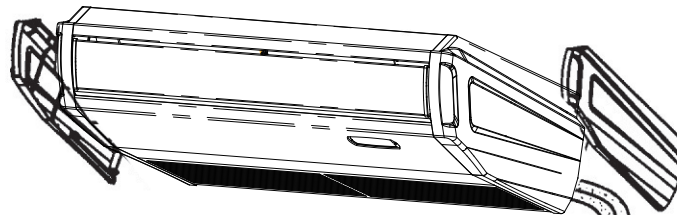
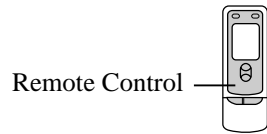
## OPERATION INSTRUCTIONS

1. Part names and their functions .....	1
2. How to use the remote control to operate the unit .....	2
3. Maintenance.....	11
4. Operating guide.....	12
5. Precautions .....	13
6. Checking before contact the service man.....	14

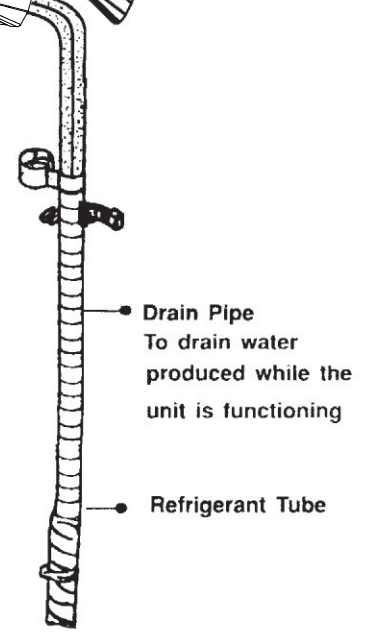
## INSTALLATION INSTRUCTIONS

7. Installation of Indoor unit .....	15
8. Refrigerant piping work .....	18
9. DRAIN PIPING WORK .....	19
10. Test running .....	20
11. ROUTINE CHECK AFTER INSTALLATION.....	21
12. FAULT INDICATION.....	22

## INDOOR UNIT

**Indicator light state**

- ① POWER indicator light:  
on/off with system running / stop and flash  
when system in protection state.
- ② COOL indicator light:  
on/off with the operation of cool ON/OFF
- ③ HEAT indicator light:  
on/off with the operation of heat ON/OFF.



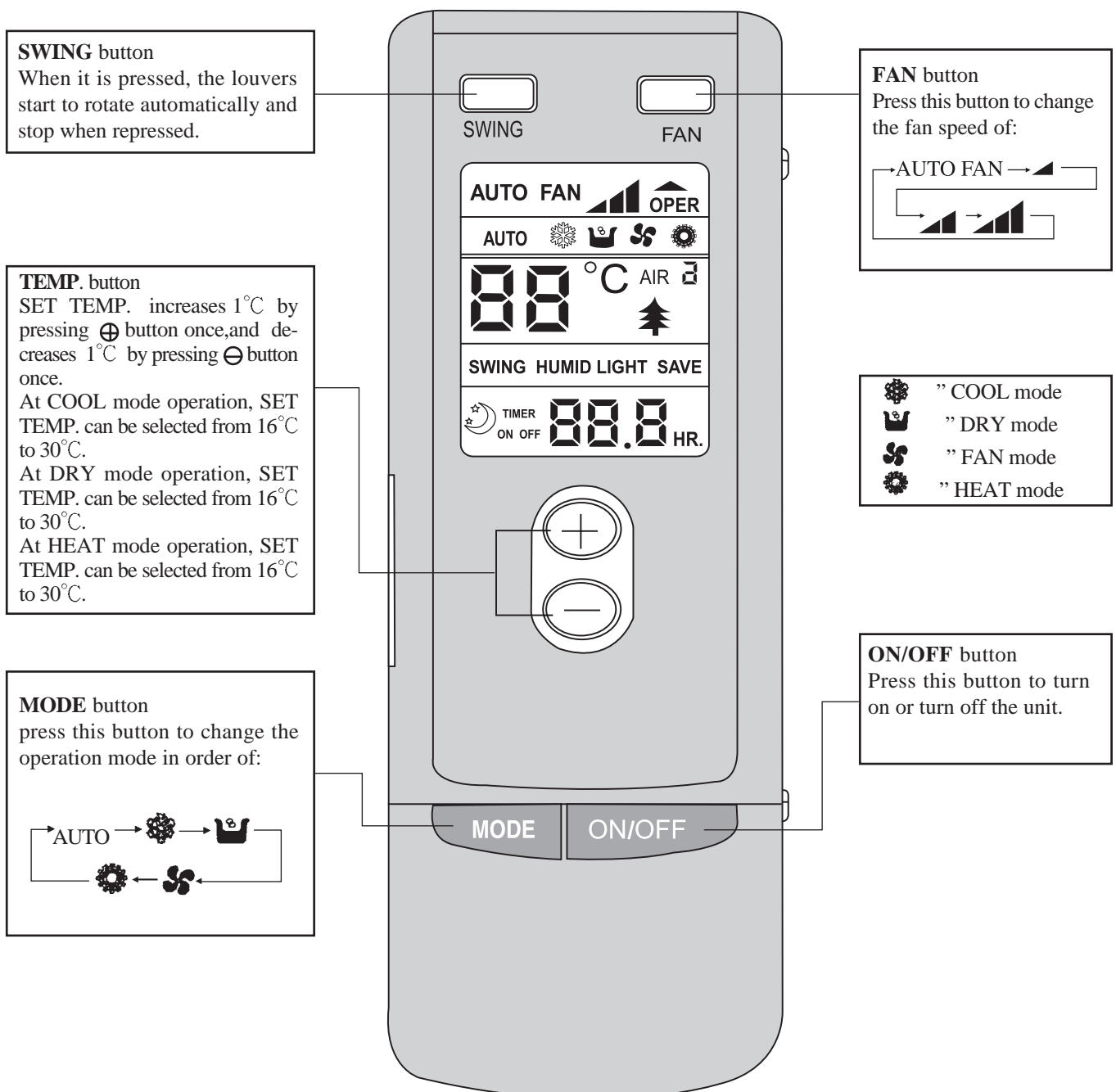
## 2 How to use the remote control to operate the unit

OPERATION INSTRUCTIONS

### ● Name and Function-Remote control

#### Note:

- Be sure that there are no obstructions between receiver and remote controller.
- Don't drop or throw the remote controller.
- Don't let any liquid in the remote controller and put the remote controller directly under the sunlight or any place where is very hot.

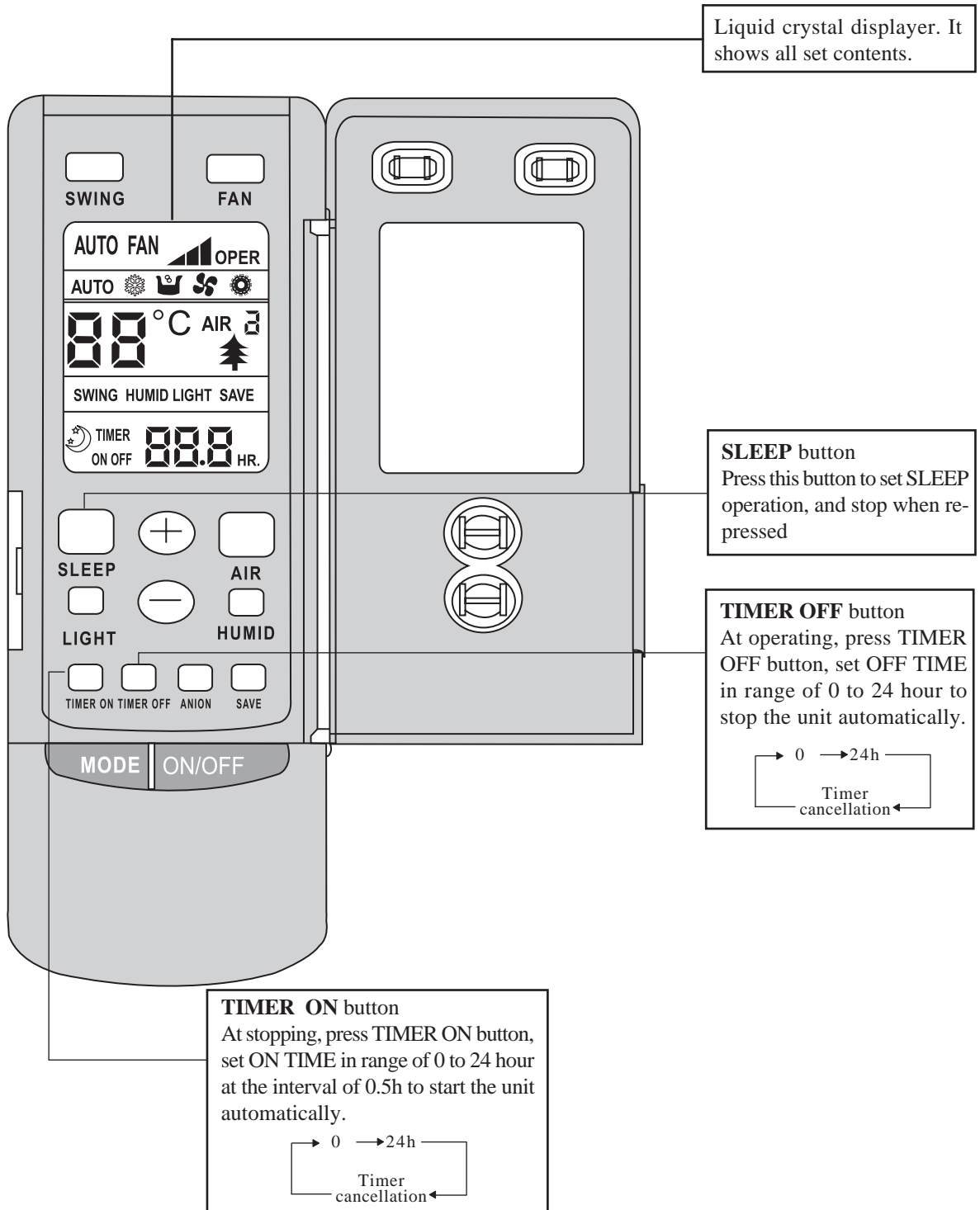


● Name and Function-Remote control. (Remove the cover)

**Note:** ● This type of remote controller is a kind of new current controller.

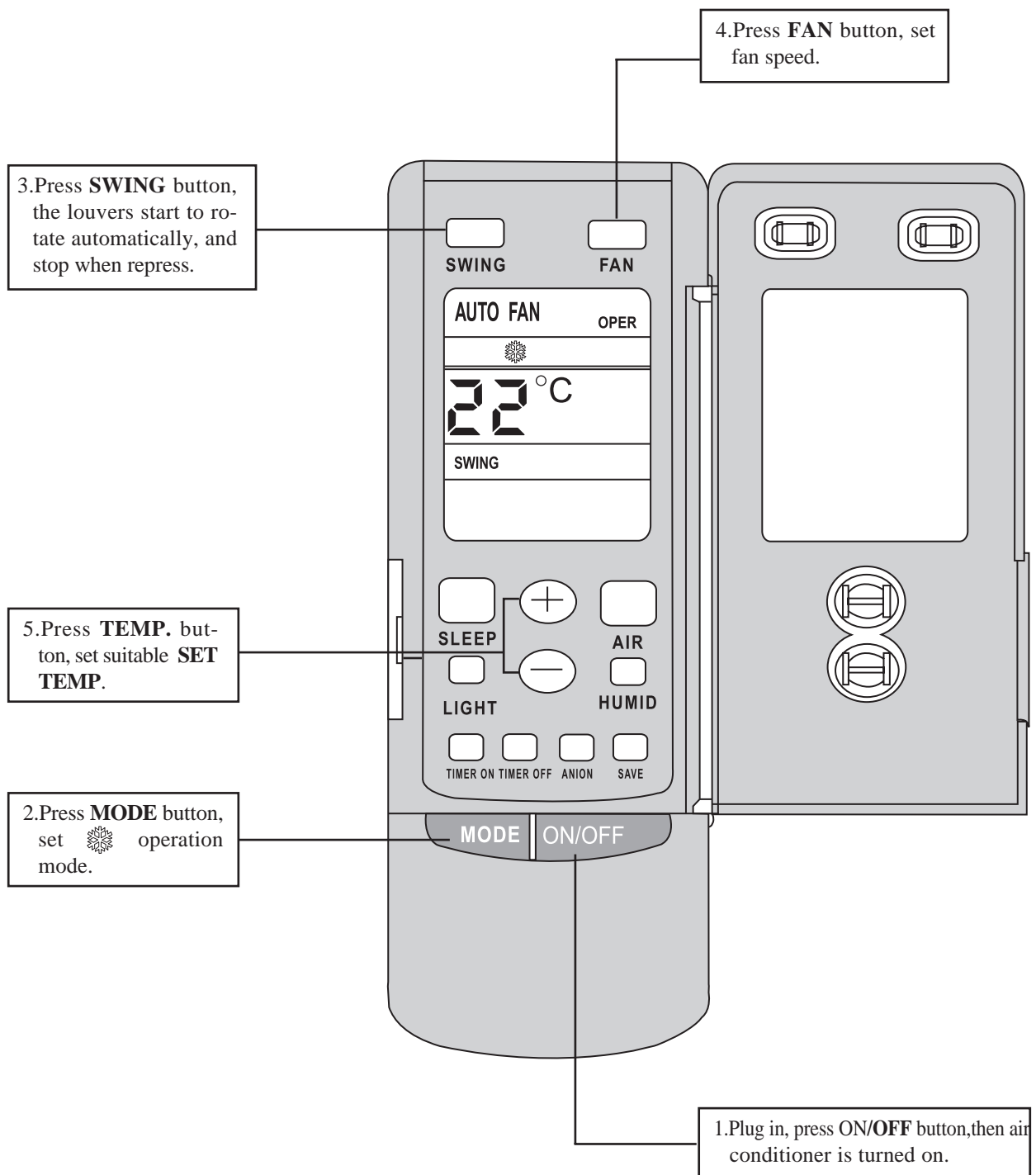
some buttons of the controller which are not available to this Air conditioner will not be described below.

● Operate on unmentioned buttons would not impact on the normal use.



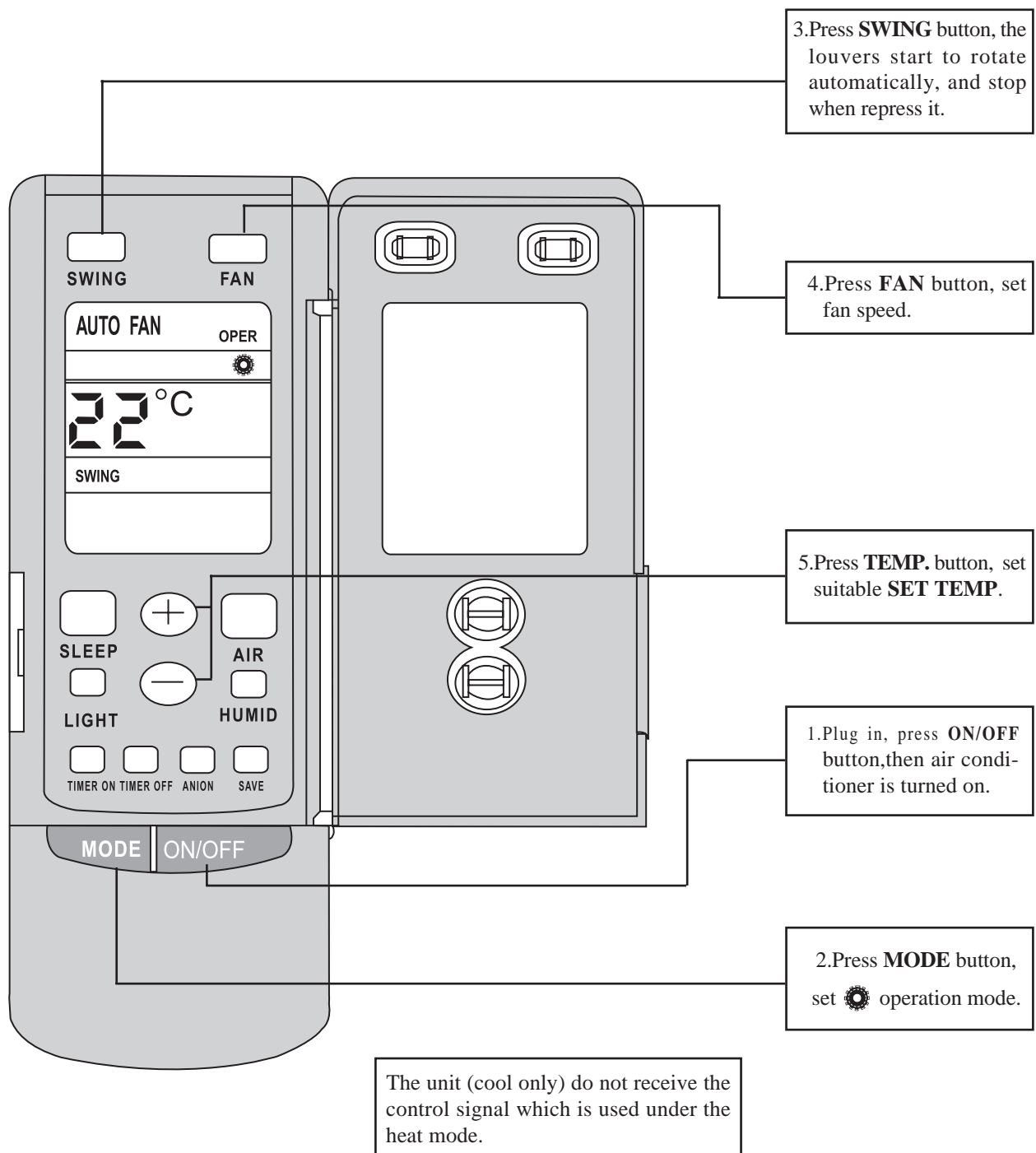
## ● COOL mode operation procedure

- According to difference between room temp. and set temp., microcomputer can control cooling on or not.
- If room temp. is higher than set temp., compressor runs at COOL mode.
- If room temp. is lower than set temp., compressor stops and only indoor fan motor runs.
- SET TEMP. should be in range of 16°C to 30°C .



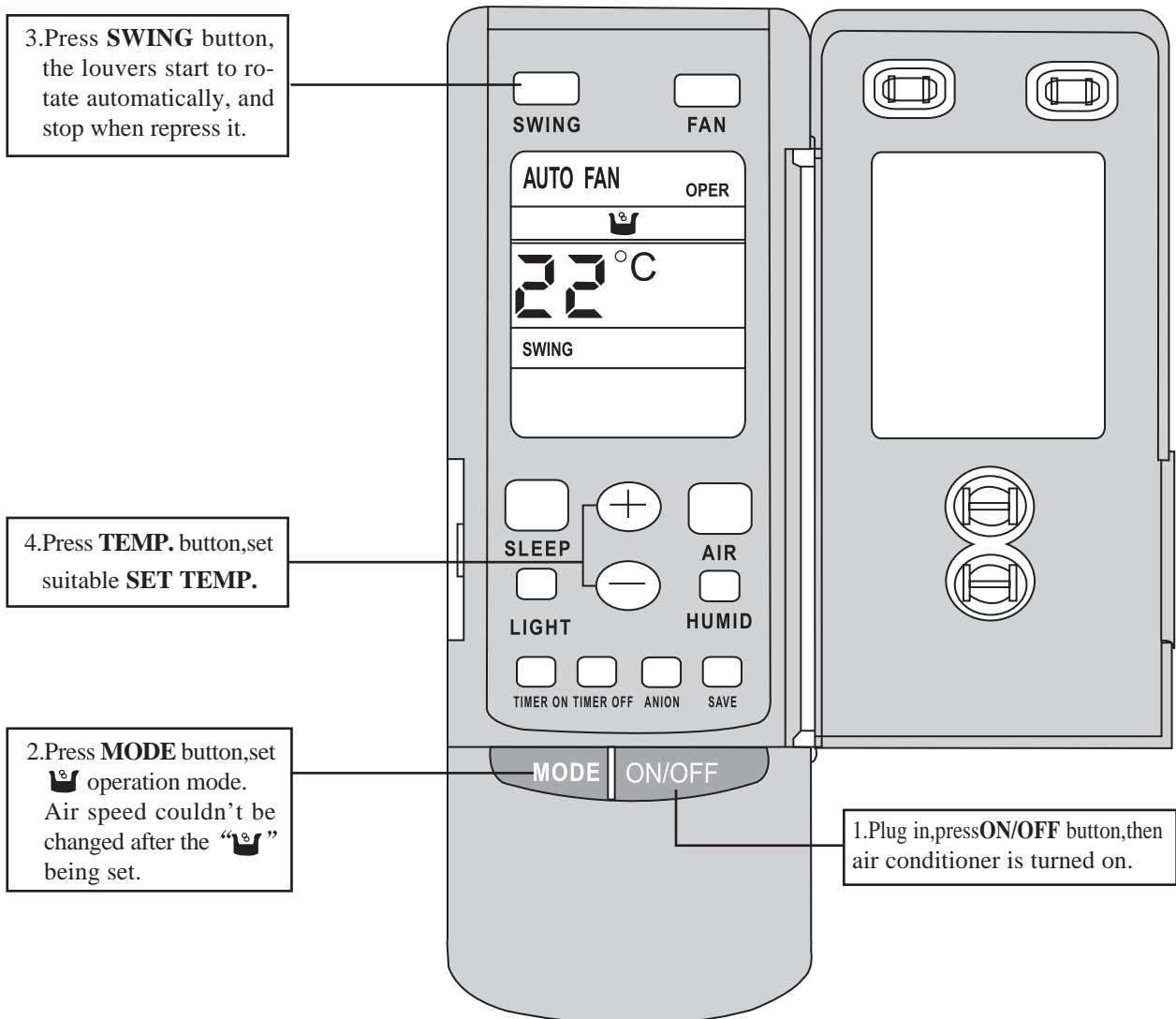
## ● HEAT mode operation procedure

- If room temp. is lower than set temp, compressor runs at HEAT mode;
- If room temp. is higher than set temp., compressor and outdoor fan motor stop.
- SET TEMP. should be in range of 16°C to 30°C .



## ● DRY mode operation procedure

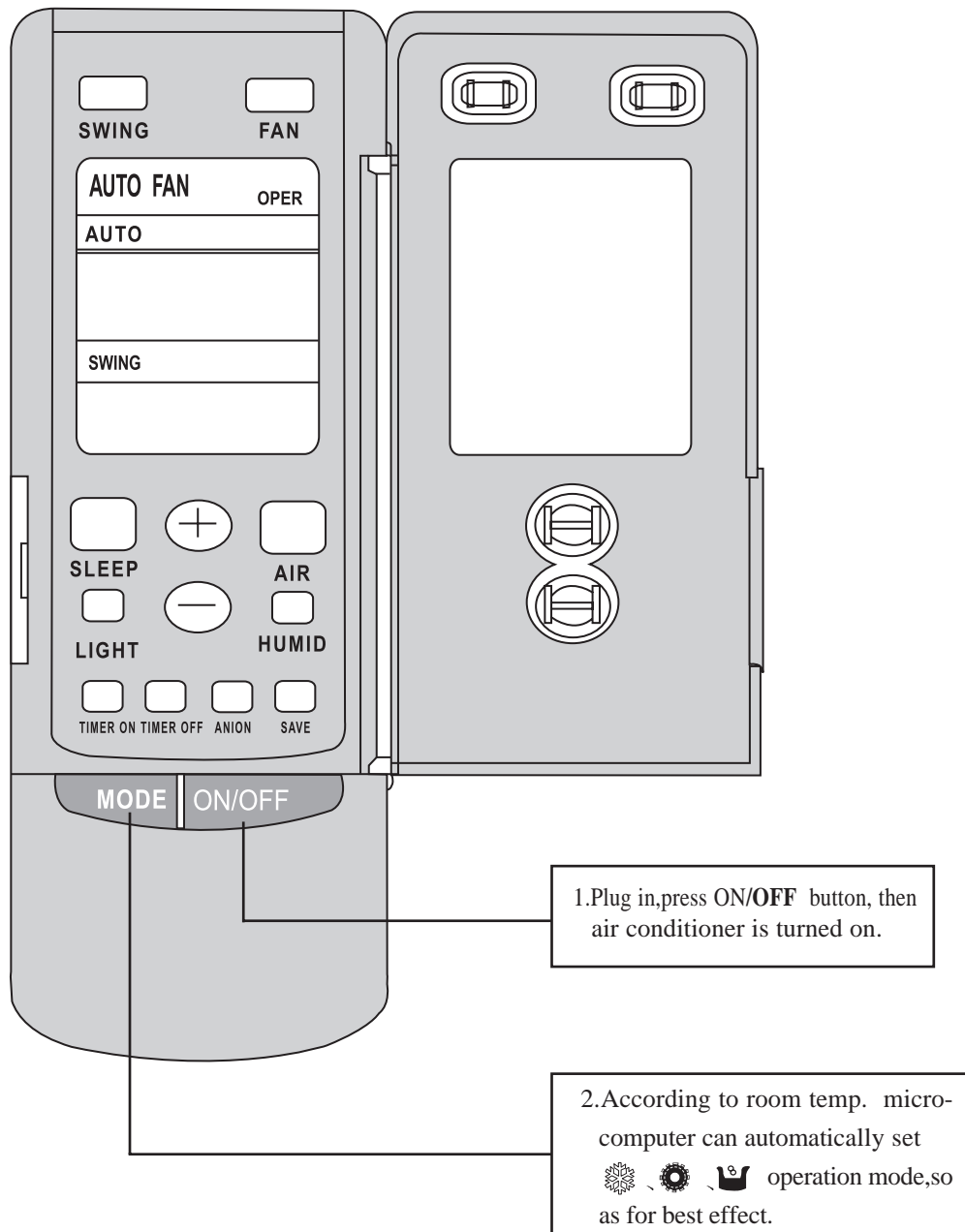
- If room temp. is lower than set temp., compressor ,outdoor fan motor stop. If room temp. is between  $\pm 2^{\circ}\text{C}$  of set temp., air conditioner is drying.If room temp. is higher than set temp, it's at COOL mode.
- SET TEMP. should be in range of  $16^{\circ}\text{C}$  to  $30^{\circ}\text{C}$ .



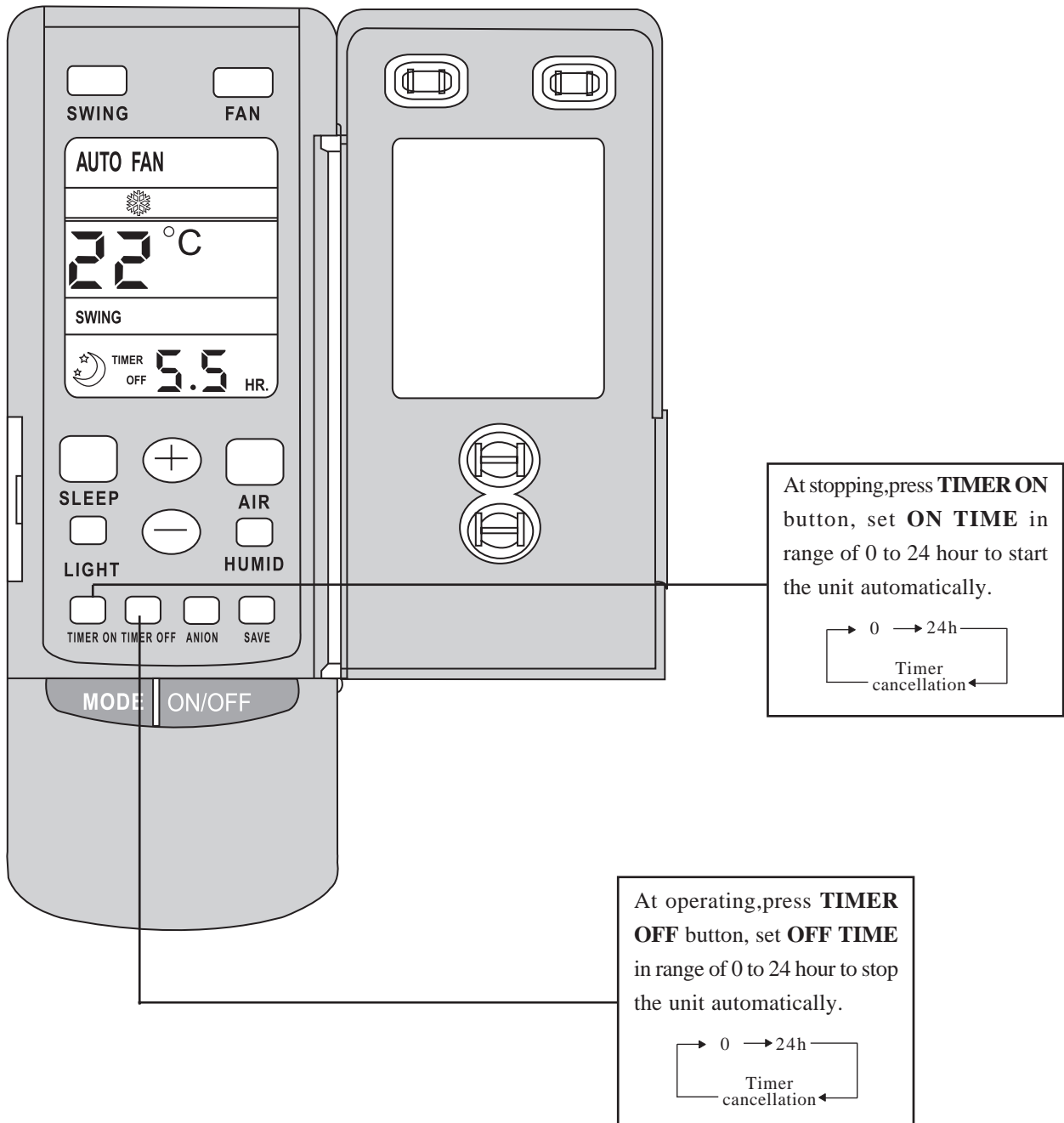


## ● AUTO mode operation procedure

- Under Auto mode operation, standard SET TEMP. is 25°C for COOL mode and 20°C for HEAT mode.

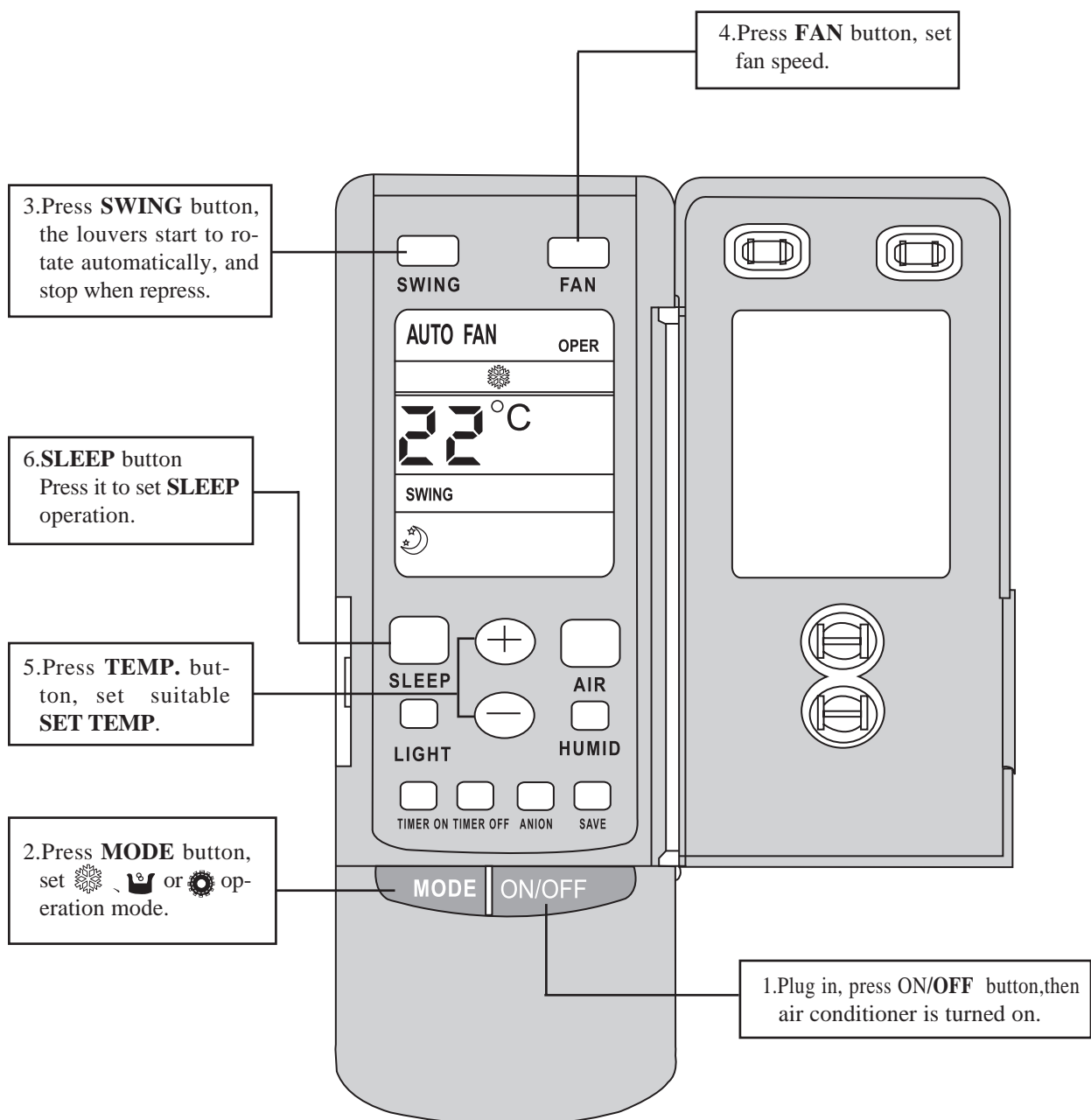


## ● TIMER mode operation procedure



## ● SLEEP mode operation procedure

- As the unit is cooling or drying, if **SLEEP** operation is set, **SET TEMP.** would increase 1°C in 1 hour and 2°C in 2 hours.
- As the unit is heating, if **SLEEP** operation is set, **SET TEMP.** would decrease 1°C in 1 hour and 2°C in 2 hours.

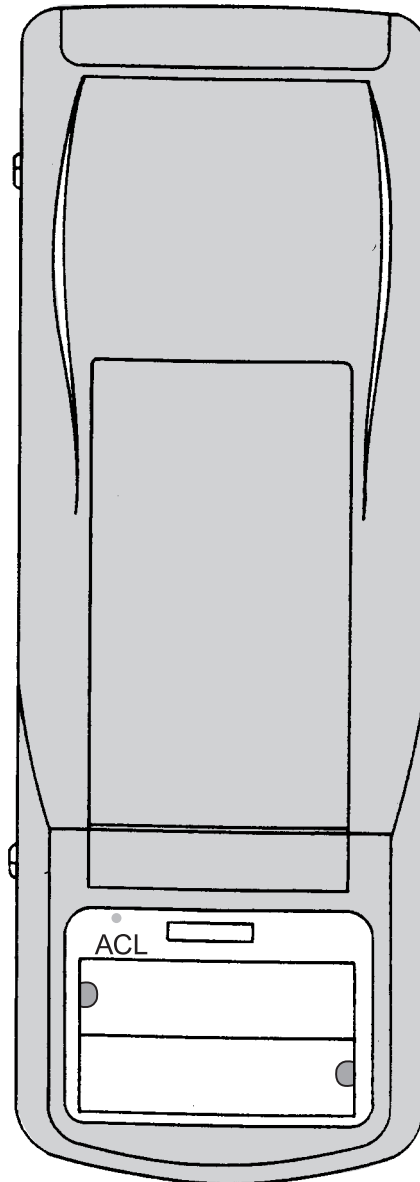


## ● How to insert batteries

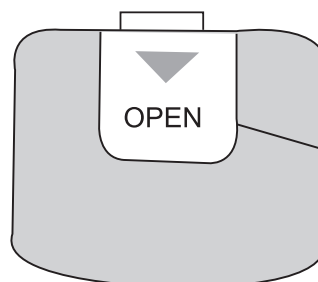
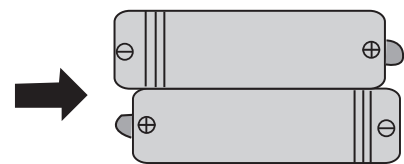
- 1.Remove the cover from the back of the remote control.
- 2.Insert the two batteries ( Two AAA dry - cell batteries ) and press button “ACL”.
- 3.Re - attach the cover.

### NOTE:

- **Don't confuse the new and worn or different types of batteries.**
- **Remove batteries when the remote controller is not in use for a longtime.**
- **The lifetime of the batteries is about one year.**
- **The remote controller should be placed about 1m or more away from the TV. or any other electric appliances.**
- **Bad batteries are forbidden**



2. Insert the TWO AAA batteries



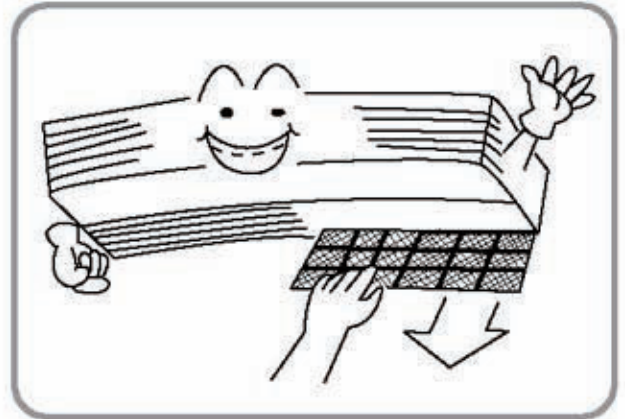
- 1.Remove the cover
- 3.Re - attach the cover.

**WARNING:** Before inspection and maintenance of the unit, always set the power switch to "OFF" to cut off the power supply.

### 3.1 CLEANING THE AIR FILTERS

#### WARNING

- The air filter must be cleaned by professional.

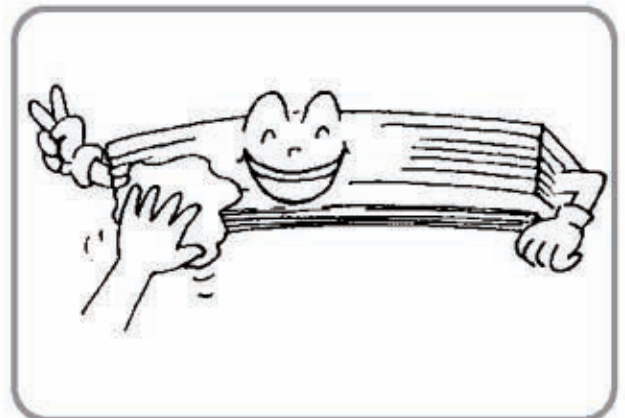


### 3.2 CLEANING THE UNIT THE ENCLOSURE

**Clean the enclosure of the air conditioner and the remote control with dry cloth or a vacuum cleaner. If damp cloth is used, remove moisture by using dry cloth afterward.**

#### CAUTION

- Do not use benzine gasoline, thinners or polishing products for cleaning.
- Do not wash with hot water (above 40°C), Some parts of the unit may be deformed.



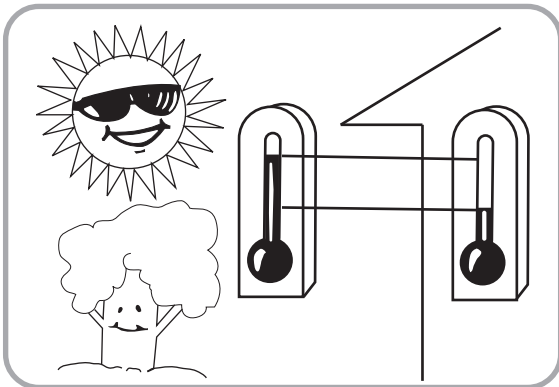
### 3.3 AT THE START OF THE SEASON

- Check that nothing blocks the air inlet and outlet of the indoor and outdoor units.
- Running the unit without air filters can cause malfunctions due to dirt or dust. Always install air filters at all times.
- Check that drainage hose is not bent or clogged.
- Check that the units are properly installed.

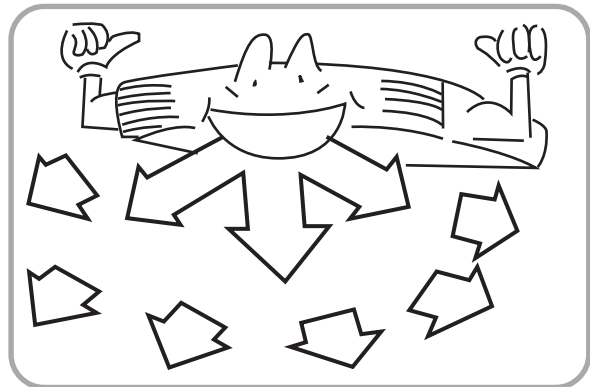
### 3.4 DURING THE OFF SEASON

- Cut off the power supply main switch.
- Clean the enclosure.
- Leave the fan running for 2-3 hours to dry out the inside of the unit.

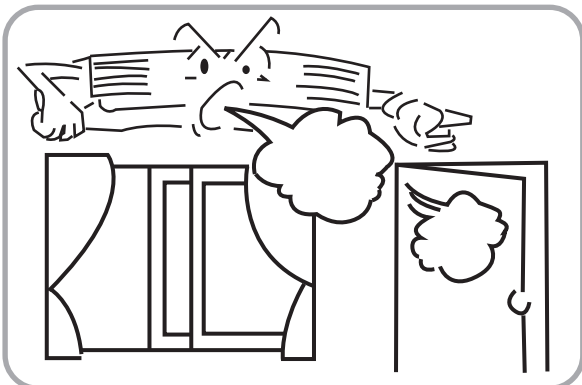
- The temperature should not be set lower than what you need. This would lead to increase energy cost.



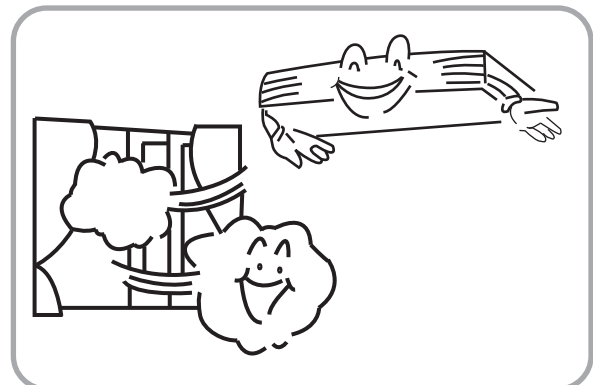
- To distribute cool air throughout the room, adjust air flow directions as shown by the arrows (see picture) to diffuse cool air.



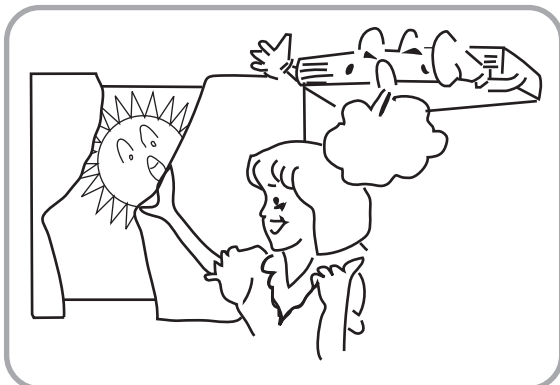
- Close window and door while operating the unit to prevent leakage of cooled air and save energy.



- In case of ineffective ventilation, open the window to ventilate the room air once in a while but not too long since cooled air will be uselessly drained out.



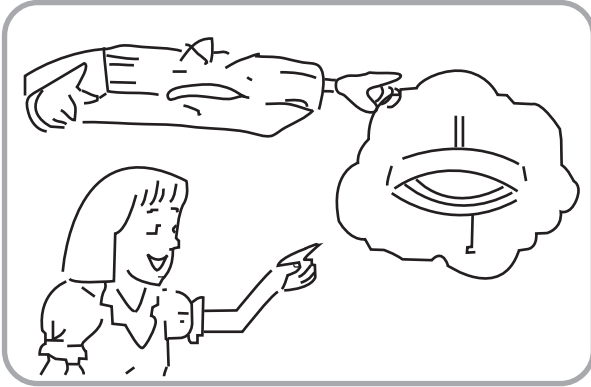
- Draw close curtains or close glass windows when cooling to prevent heat load from sun light which may cause more electricity cost.



# 5

## PRECAUTIONS

- Turn off the air conditioner if, while running, electricity interference occurs, if the unit is not to be used for a long time, cut off the power supply main switch.



- Do not locate any obstacle against the air flow direction of indoor and outdoor unit. Inefficient performance or malfunction may result.



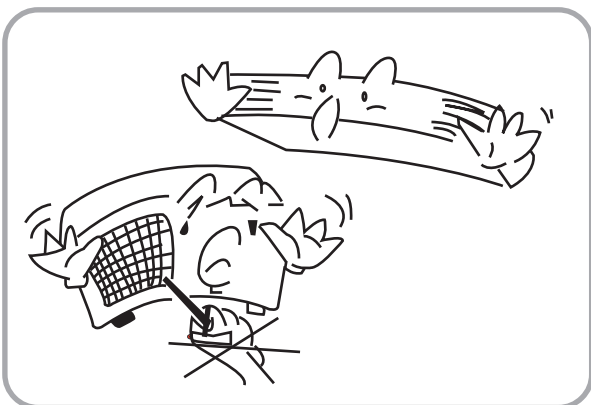
- Do not channel the air flow directly at people, especially infants, aged persons, or patients.



- Do not locate a heater or any other heat source close to the unit. The heat may deform plastic parts.



- Do not insert objects into the air inlet or outlet when the air conditioner is running as it may cause damage or personal injury. Also pay special attention when children are around.



- **WARNING: The appliance should not be used by children without supervisor.**

# 6

## CHECKING BEFORE CONTACT THE SERVICE MAN

· Check the following before contacting the service man. You may find the solution to your problems. After checking, if it still does not operate, please contact your local dealer.

PROBLEM	CAUSES
No operation	<ul style="list-style-type: none"> <li>● Check if breaker switch is still on.</li> <li>● Check if the timer switch is on or not.</li> </ul>
The air conditioner runs but does not cool enough.	<ul style="list-style-type: none"> <li>● Check if the preset temperature is too high.</li> <li>● Check if the sunlight shines directly into the room.</li> <li>● Check if the door and window are opened.</li> <li>● Check if there is anything obstructing the air discharge.</li> <li>● Check if exhaust fan still operates.</li> </ul>
Vapor or mist fume coming out of the unit while running.	<ul style="list-style-type: none"> <li>● Hot air in the room mixes with cool air. This causes smoke fume.</li> </ul>
Inoperative remote control.	<ul style="list-style-type: none"> <li>● Check if the batteries are inserted in correct directions</li> <li>● Check if the batteries are exhausted or not.</li> </ul>



# 7 INSTALLATION OF INDOOR UNIT

**WARNING:**The air condition must be installed and maintained by professional.

## SELECTION OF INSTALLATION LOCATION.

- Such a place where cool air can be distributed throughout the room.
- Such a place where condensation water is easily drained out.
- Such a place that can handle the weight of indoor unit.  
The appliance shall not be installed in the laundry.
- Such a place which has easy access for maintenance.

## THERE ARE 2 STYLES OF INSTALLATION.

### ● CEILING TYPE

### ● FLOOR TYPE

Each type is similar to the other as follows;

- 7.1 Determine the mounting position on ceiling or wall by using paper pattern to indicate indoor frame. Mark the pattern and pull out the paper pattern.

- 7.2 Remove the return grill, the side panel, and suspender from the indoor unit as per procedure below.

- press the fixing knob of the return grilles, the grilles will be opened wider and then pull it out from the indoor.
- Release the side panel by unscrewing as shown in the picture and pull the panel as shown by the arrows.

## CAUTIONS FOR INSTALLATION WHERE AIR CONDITIONER TROUBLE IS LIABLE TO OCCUR.

- Where there is too much of oil area.
- Where it is acid base area.
- Where there is irregular electrical supply.

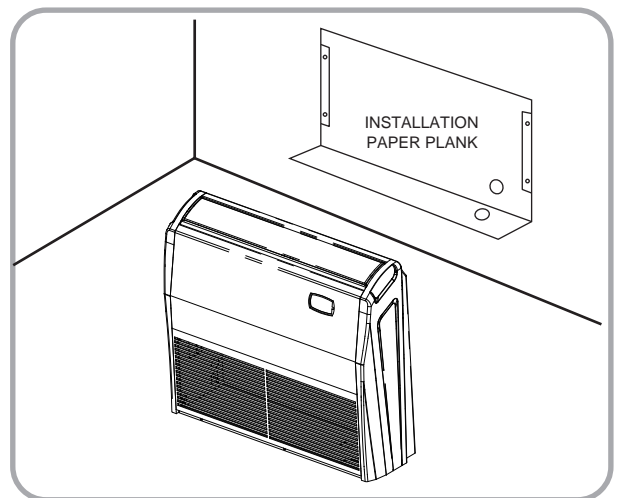


Fig. 1

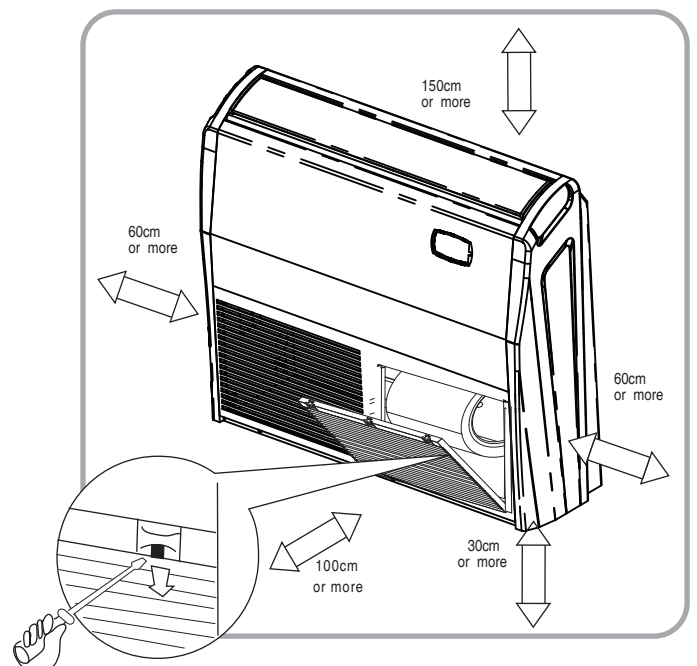


Fig. 2

Be sure to use only the specified accessories and parts for installation work.

7.3 Fix the hanger bracket to the suspension bolt. **⚠ WARNING**

- Make sure that extended suspension bolt from the ceiling stays inside the arrowed position. Readjust the hanger bracket when it is outside the arrowed position. (Refer to Fig. 3)
- Suspension bolt stays inside the cap of indoor unit. Never remove the cap.

7.4 Lift the unit and slide forward unit the dent. (Refer to Fig. 4)

7.5 Screw tightly both hanger bracket setting bolts (M8). (Refer to Fig. 5)

7.6 Screw tightly both hanger bracket fixing bolts (M6) to prevent the movement of the indoor unit.

(Refer to Fig. 5)

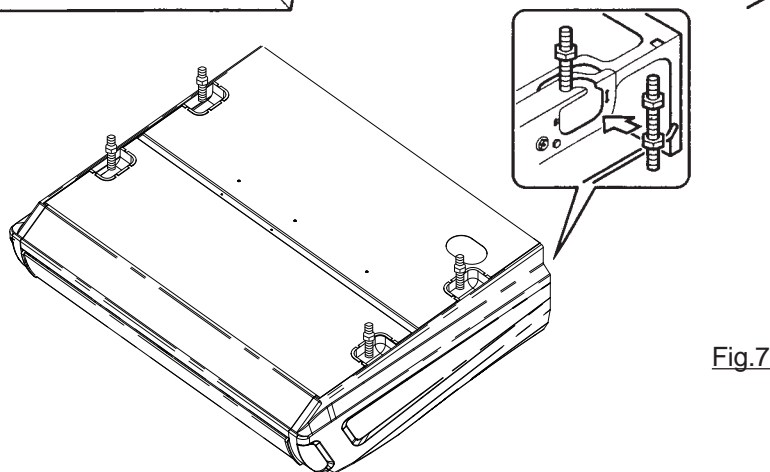
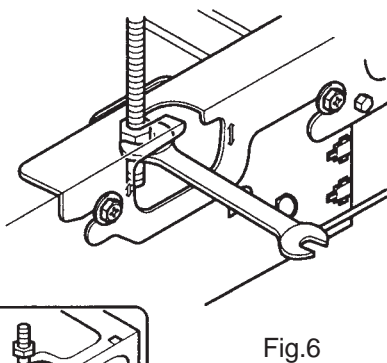
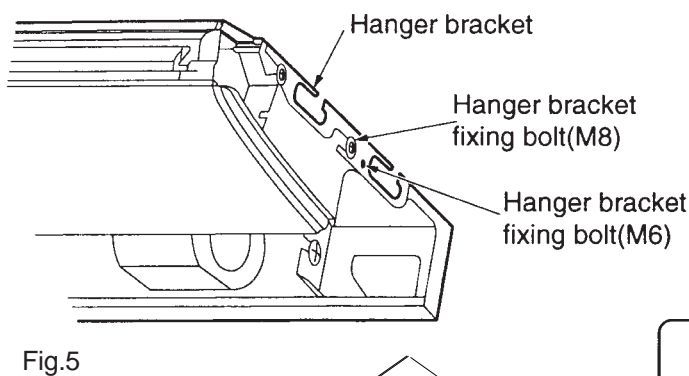
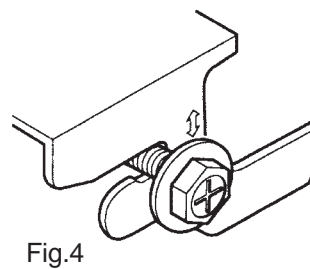
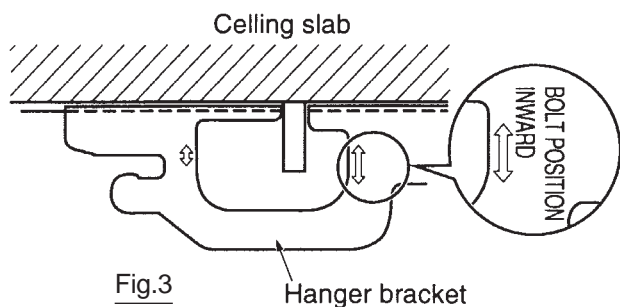
7.7 Adjust the unit height so that rear side of the drain pipe slightly inclines to improve drainage. **⚠ CAUTION**

- Adjust the height by turning the nut with a spanner.

Insert the spanner from the hanger bracket opening. (Refer to Fig. 6)

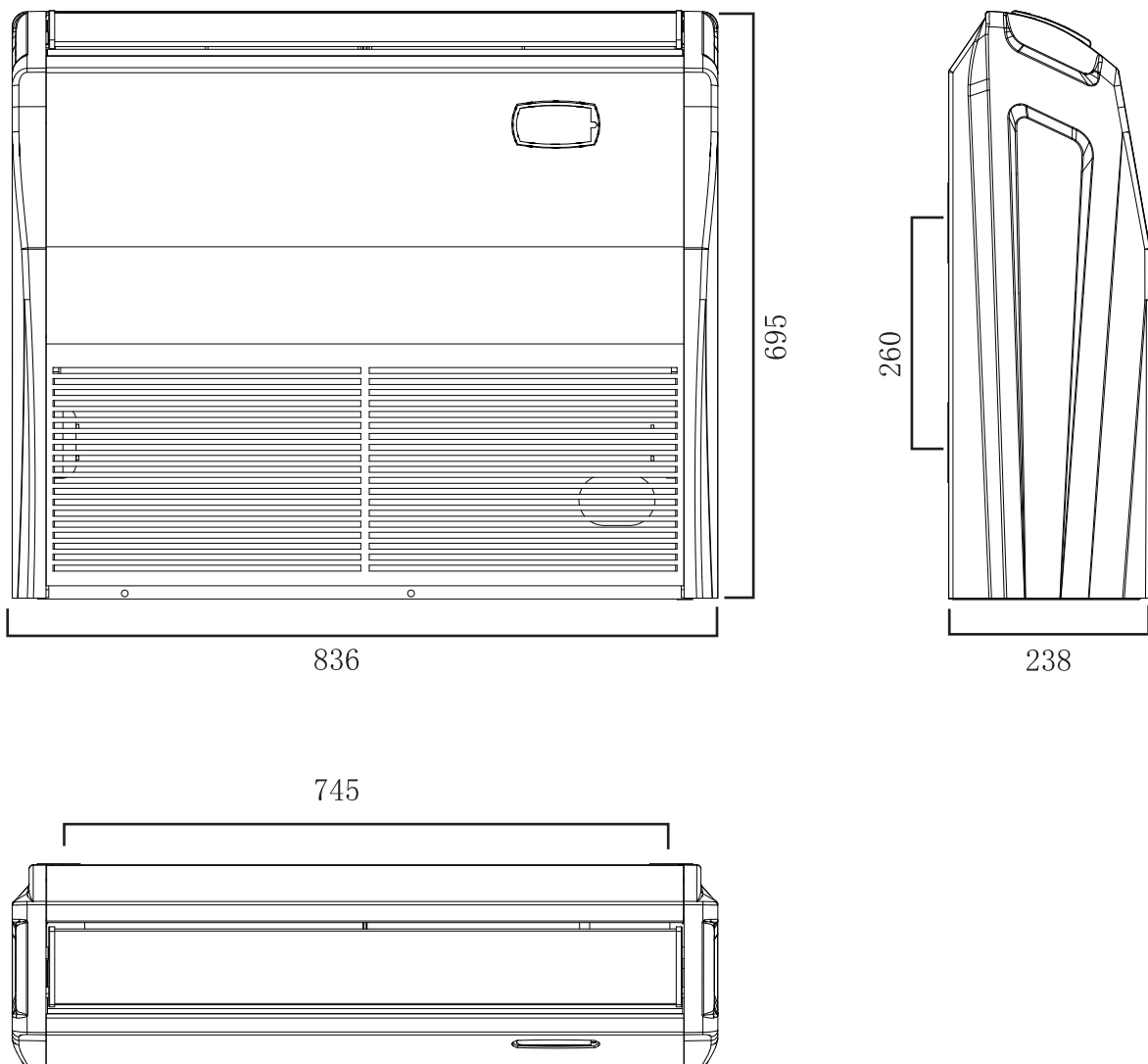
### In case of hanging

It is possible to install using inward facing hanger brackets by not removing the brackets from the indoor unit. (Refer to Fig. 7)



## INSTALLATION DIMENSIONS OF THE INDOOR UNIT

When installing the indoor unit, you can refer the paper pattern for installation, and make sure that the drainage side must be 10mm lower than the other side in order to drain the condensation water fluently.



- 8.1 Select copper pipes for gas and liquid as informed in specific table (see the pipe table below)
- 8.2 For dust and moisture protection, before assembly of the pipe and its insulation, both ends of the pipe must be covered.
- 8.3 Avoid pipe bending as much as possible. If it is necessary, the bending radius must be more than 3 cm. or 4 cm.

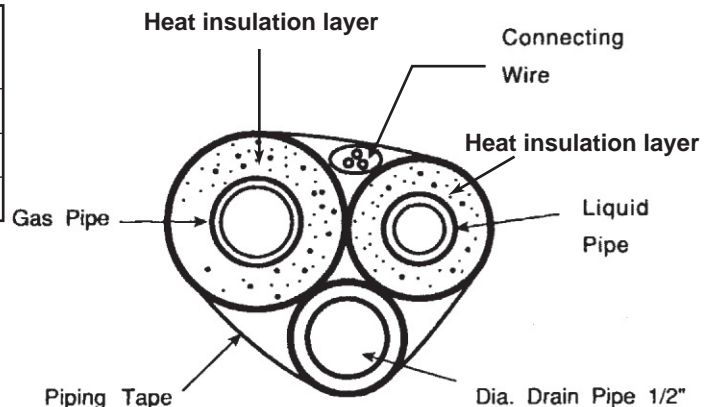
### LIQUID PIPE TABLE

MODEL	PIPE SIZE	THICKNESS (mm.)
GTHD(09)AANK3A1AI	1/4"	0.5
GTHD(12)AANK3A1AI	1/4"	0.5
GTHD(18)AANK3A1AI	1/4"	0.5

Gas pipe and liquid pipe insulation depends upon copper pipe size and the insulation thickness = 3/8"

### GAS PIPE TABLE

MODEL	PIPE SIZE	THICKNESS (mm.)
GTHD(09)AANK3A1AI	3/8"	0.71
GTHD(12)AANK3A1AI	Φ 12	0.8
GTHD(18)AANK3A1AI	Φ 12	0.8



- 8.4 The connection between an indoor unit and an outdoor unit.
  - Unscrew the flare nut for releasing pressure gas in the indoor unit. If there is no high pressure gas blowing out, it is the signal of a leaking indoor unit.
  - Fit the flare nut to the liquid pipe. Flare the pipe's end with flare tool.
  - Tighten both flare nuts into gas pipe and liquid pipe at the indoor unit with two holding spanners.

**WARNING:** The temperature of refrigerant circuit will be high. please keep the connecting wire away from the naked pipe without Heat insulation layer.

Make sure the drain flows out



CAUTION

(1) Drain piping

- The drain pipe outlet direction can be chosen from either the right rear or right.
- The diameter of the drain pipe should be equal to or greater than the diameter of the connecting pipe.

(Vinyl tube; pipe size:20 mm; outer dimension:26 mm)

- Keep the drain pipe short and incline downwards at a gradient of at least 1/100 to prevent air pockets. (Refer to Fig.1)
- Use the attached drain hose ④ and clamp ⑤  
Insert the drain hose completely into the drain socket. Tighten the clamp within the range of gray tape until the screw head is less than 4 mm from the hose. (Refer to Fig.2,3)
- Wrap the attached sealing pad ⑪ over the clamp and drain hose to insulate. (Refer to Fig.3)
- No folding of drain hose inside the indoor unit. (Refer to Fig.4)

(2) Confirm that smooth drainage is achieved after the piping work.

- Pour 600 cc of water into the drain pan from the air outlet for confirming drainage. (Refer to Fig.5)

(When drain hose is connected)

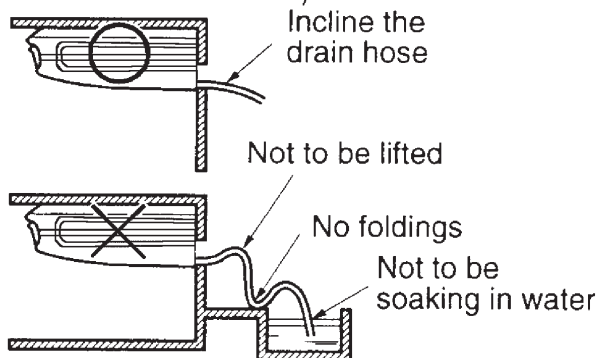


Fig.1

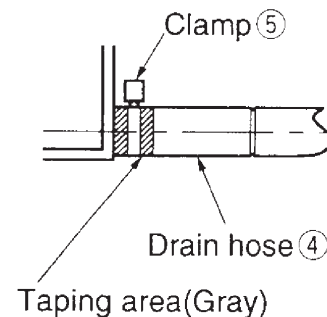


Fig.2

Cramp ⑤ (Accessory) Large sealing pad ⑪ (Accessory)

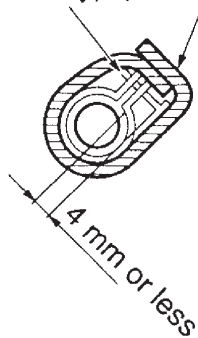


Fig.3

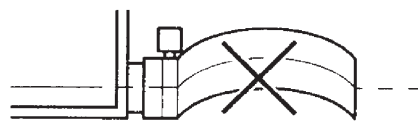


Fig.4

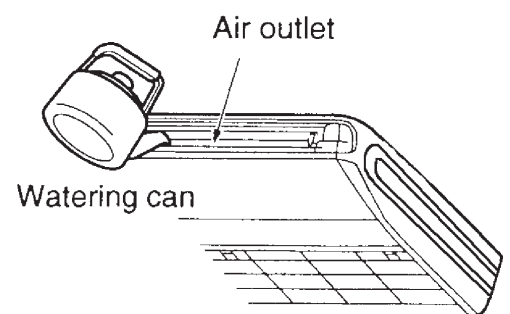


Fig.5

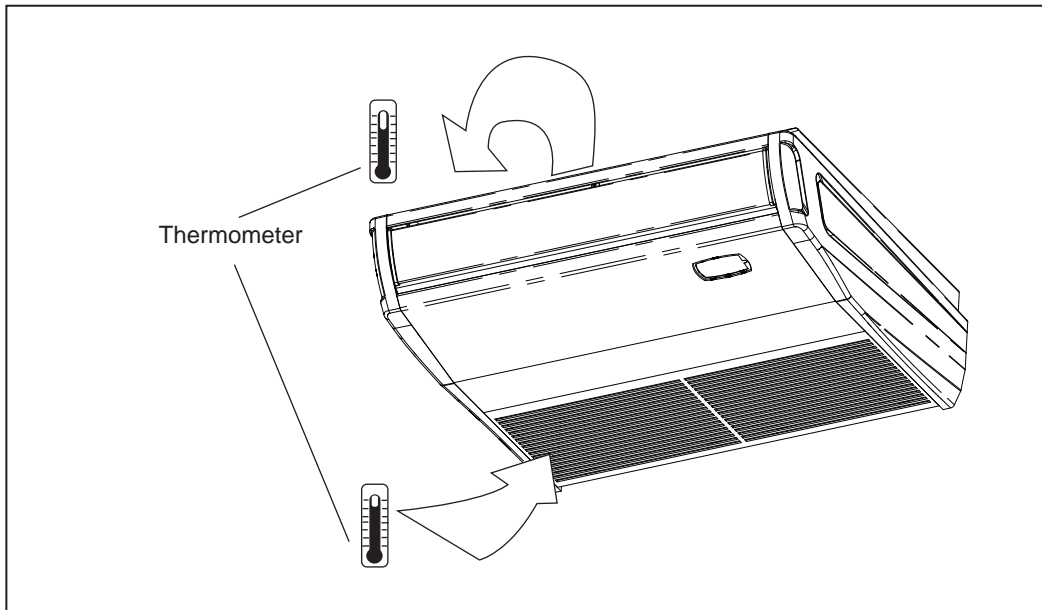
## EVALUATION OF THE PERFORMANCE

### CAUTION: Operating by professional.

Check electrical main wire's voltage.







Use a thermometer to measure cool air both in and out.

The difference between in-air and out-air temperature should not be less than 8 °.



The unit has Auto-restart function, it can remember the running model before power-broken.

### ● Accessories (Check that all accessory parts are present before installation)

No.	Name	Shape	Quantity	Specification	Notes
1	Outdoor drain elbow		1		
2	Outdoor drain stem		1		
3	Paper pattern for installaition		1		
4	Remote controller		1		
5	Battery		2	AAA 1.5V	
6	Power connection cord		1	H05RN-F 4G1.0	

\* Be sure to use the exclusive accessories list above in the installation. or it will lead to water leakage, electric shock, fire, etc.

# 1 1 ROUTINE CHECK AFTER INSTALLATION

## ● Check after installation

**CAUTION: Operating by professional.**

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient refrigerating capacity.
Is heat insulation sufficient?	It may cause condensation and dripping.
Does the unit drain well?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.
Is the electrical wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Has the inlet and outlet been covered?	It may cause insufficient refrigerating capacity.
Has the length of connection pipes and the refrigerant charge been record?	The refrigerating capacity is not accurate



This product must not be disposed together with the domestic waste.  
This product has to be disposed at an authorized place for recycling of electrical and electronic appliances.

serial number	Meaning	LED (red)	LED (yellow)	LED (green)	LED (E8)
1	Compressor high pressure protection unit stop	Blink once			E1
2	Indoor unit anti-freezing protection	Twice			E2
3	Low-pressure protection unit stop	Three times			E3
4	Air exhaust protection unit stop	Four times			E4
5	Over current protection unit stop	Five times			E5
6	Communication malfunction unit stop	Six times			E6
7	Unit modes conflict	Seven times			E7
8	Jumper malfunction	fifteen times			C5
9	Defrosting /Heating oil return		Blink once		H1
10	Compressor overload protection unit stop		Three times		H3
11	System Unit malfunction		Four times		H4
12	IPM modular protection unit stop		Five times		H5
13	PFC protection unit stop		Six times		HC
14	Compressor malfunction		Seven times		H7
15	Water spill protection		Eight times		H8
16	indoor ambient temp. sensor malfunction			Blink once	F1
17	indoor pipe temp. sensor malfunction			Twice	F2
18	Outdoor ambient temp. sensor malfunction			Three times	F3
19	Outdoor pipe temp. sensor malfunction			Four times	F4
20	Outdoor air exhaust temp. sensor malfunction			Five times	F5
21	E2 PROM Error			Eleven times	HA
22	Wire controller ambient temp. sensor malfunction			Blink once	



When the unit is running operated by wire controller

The Codes of Failure Definitions are as Follows:		
Fault code	Meaning	Wire controller
1	Compressor high pressure protection unit stop	E1
2	Indoor unit anti-freezing protection	E2
3	Low-pressure protection unit stop	E3
4	Air exhaust protection unit stop	E4
5	Over current protection unit stop	E5
6	Communication malfunction unit stop	E6
7	Unit modes conflict	E3
8	Jumper malfunction	E3
9	Defrosting /Heating oil return	defrost
10	Compressor overload protection unit stop	E5
11	System Unit malfunction	F2
12	IPM modular protection unit stop	E5
13	PFC protection unit stop	E5
14	Compressor malfunction	E9
15	Water spill protection	E9
16	Indoor ambient temp. sensor malfunction	F0
17	Indoor pipe temp. sensor malfunction	F1
18	Outdoor ambient temp. sensor malfunction	F3
19	Outdoor pipe temp. sensor malfunction	F2
20	Outdoor air exhaust temp. sensor malfunction	F4
21	E2 PROM Error	E3
22	Wire controller ambient temp. sensor malfunction	F5



**GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI**

Address : Jinji West Road, Qianshan, Zhuhai, Guangdong

Tel : (0756) 8617555 (Customer Inquiry Service Center)

Postcode : 519070

**GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI**