

sincloir
AIR CONDITIONING

OPERATIONAL MANUAL

ASH-09AF, ASH-12AF

FLAT SERIE

Before operation please carefully read this manual.



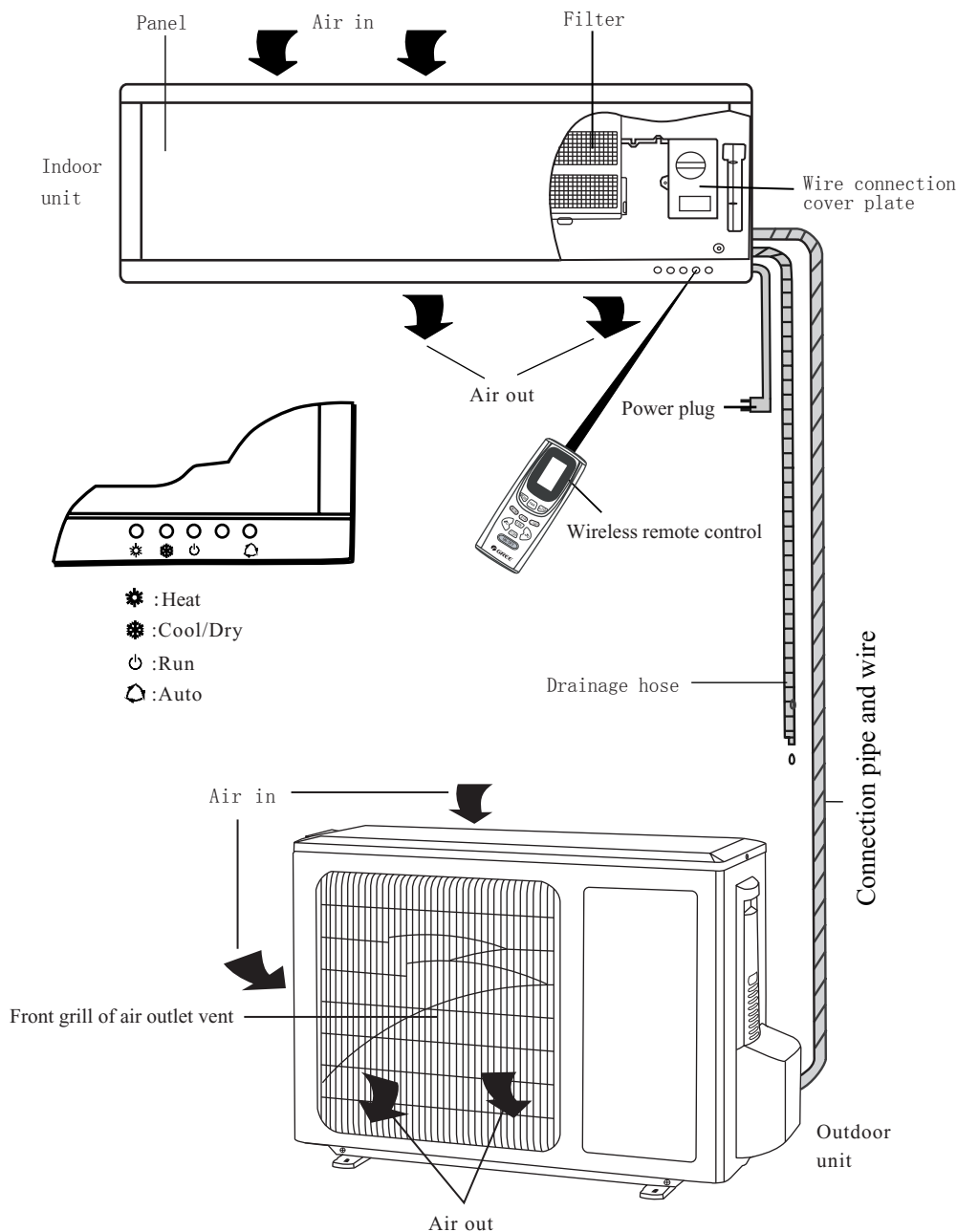
WALLMOUNTED SPLIT AIR CONDITIONER SINCLAIR

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Structure Principle and Usage

Structure and Function



Structure Principle and Usage

◆ Important Advance (Read the following items carefully before using the unit)

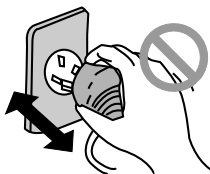
WARNING

★ Insert power plug firm enough
For loose insert may cause electric shock or fire.



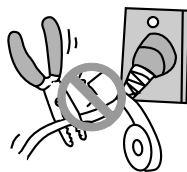
★ Don't plug out power plug when unit is operating.

Or electric shock or fire may occur.



★ Don't damage wire or use the wire that is not appointed.

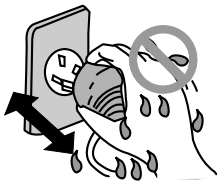
Or electric shock or fire may occur.



★ Don't share socket with other appliances or use prolonged hose.
Or electric shock or fire may occur.



★ Don't operate unit with wet hand for electric shock may occur.



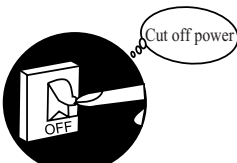
★ Don't insert finger or stick-like thing into air inlet and outlet vents, or damage may occur.



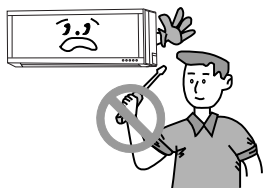
★ Don't let cooled air blows body directly for too long, and don't set indoor temp. too low for it is not good for health.



★ If abnormal phenomenon occurs (like burning odor etc.), cut off power supply first, then contact Gree Service Center. If abnormal continues, the unit may be damaged and cause electric shock or fire.



★ Don't repair the unit yourself for incorrect repair may cause electric shock or fire. So, contact Gree Service Center to have unit repaired.

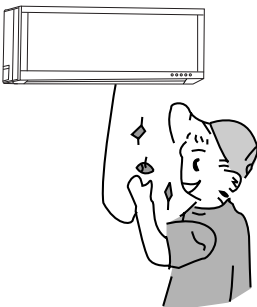


Structure Principle and Usage

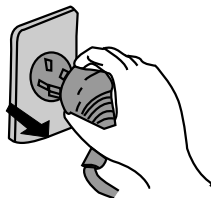


★ Earthing: Earth must be reliable! Earth wire should be connected on special earth settings. If there is no such settings, have it connected by professional personnel. Don't connect earth wire onto gas pipe, water pipe, blowing pipe or place where professional personnel considers it unreliable.

★ Plug out power plug when the unit will not be used for a long time.



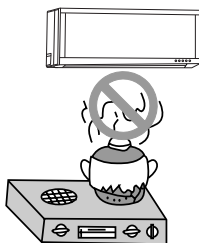
★ Cut off power when cleaning the unit. Otherwise, electric shock or damage may occur.



★ Don't plug out the plug by pulling the power hose. Otherwise, fire may be caused for over heat of wire.



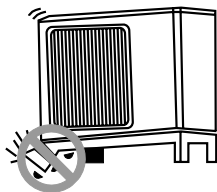
★ Don't let the unit blows to heater or cooker directly. Or carbon monoxide poisoning may occur for incomplete burn.



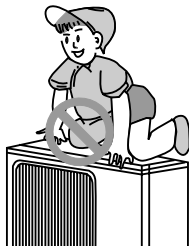
★ Chemical sprayer must be placed 1m away from both indoor and outdoor unit to prevent fire or explosion



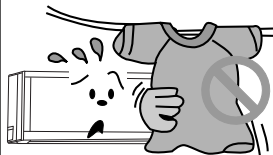
Note if install chassis is damaged. If the chassis is damaged without repair, unit may fall down and cause injury.



Don't stand or put things on the outdoor unit. For people or things may fall down and cause injury.



Don't block the air inlet or outlet vent of both indoor and outdoor unit. It would cause low performance or stop of unit.



Structure Principle and Usage

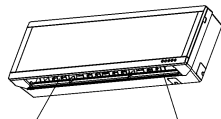
NOTICE

Indoor temperature should be set properly
Proper set temp. can save electricity.

Temp. dif of
indoor and outdoors
should be 5℃



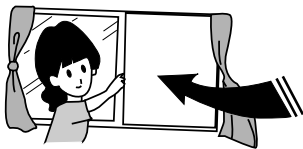
● Adjust airflow and direction properly
When the unit is running, adjust up and down adjusting plate by wireless remote control can adjust vertical direction of air, hold the adjust plate that control left and right direction can adjust horizontal flow direction of air.



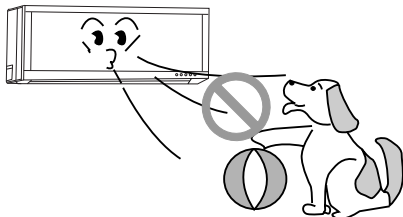
Left and right adjust plate

Up and down adjust plate

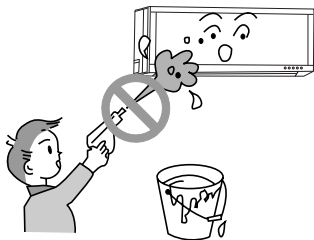
When the unit is running, don't open windows or doors of the room for long time.
It would lower performance of the unit.



● Don't blow pets or plants directly for it is not good for them.

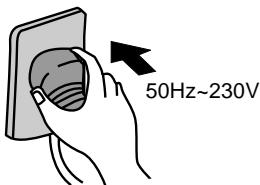


Don't pour water on the unit or wash it by water for malfunction or electric shock may occur.



Power hose of this unit adopts X type connection, don't cut off or damage it and signal control wire. If power hose or signal wire is damaged, please have them changed by trained maintainer.

The unit allow voltage fluctuation of $230 \pm 10\%$ V, too low of voltage may increase libration of compressor that cause damage on cool system.



This unit cannot be used to dry clothes or refrigerate and store foods etc..

◆ Specificate Model and Technical Data

Model	ASH-07AF	ASH-09AF	ASH-12AF
Function	Cooling and Heating	Cooling and Heating	Cooling and Heating
Cooling Capacity (W)	2000	2500	3500
Heating Capacity (W)	2300	2700	3700
Rated Voltage	230V ~		
Rated Frequency	50Hz		
Cooling/Heating Rated Power (W)	920/920	920/920	1440/1440
Cooling/Heating Rated Currency (A)	4/4	4/4	6.26/6.26
Air Flow (m³/h)	450	450	500
Name of Refrigerant and Charge Amount	R410A 1.2kg	R410A 1.35kg	R410A 1.4kg
Noise (Indoor/Outdoor) dB (A)	38/52	38/53	40/54
Climate Type	T1		
Water-proof Level	IP × 4		
Electric Shock Proof Protect Type	I		
Weight (Indoor/Outdoor) (kg)	11/32	11/32	11/36
Outline Diameter (Indoor/Outdoor) (W × H × D) (cm)	Indoor : 101.5 × 29.0 × 15 Outdoor : 84.8 × 54.0 × 32.0		

* All above are tested according to standard GB/T7725-1996, cooling capacity, heating capacity and noise etc. are tested before leaving factory
* If the data are changed, please refer the one offered on nameplate.

Remote control operation procedure

● Name and Function-Remote control

Note:

- Be sure that there are no obstructions between receiver and remote controller.
- The remote control signal can be received at the distance of up to about 10m.
- Don't drop or throw the remote control.
- 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.

SWING button

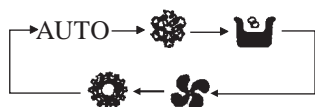
When it is pressed, the louvers start to rotate automatically and stop when repressed.

TEMP. button

SET TEMP. increases 1°C by pressing ⊕ button once, and decreases 1°C by pressing ⊖ button once.
At COOL mode operation, SET TEMP. can be selected from 16°C to 30°C.
At DRY mode operation, SET TEMP. can be selected from 16°C to 30°C.
At HEAT mode operation, SET TEMP. can be selected from 16°C to 30°C.

MODE button

press this button to change the operation mode in order of:



SWING

FAN

AUTO FAN OPER

AUTO

88°C AIR

SWING HUMID LIGHT SAVE

TIMER 88.8 HR.

FAN button

Press this button to change the fan speed of:



“ ” COOL mode

“ ” DRY mode

“ ” FAN mode

“ ” HEAT mode

ON/OFF button (1/0 is used in some models)

Press this button to turn on or turn off the unit.

MODE

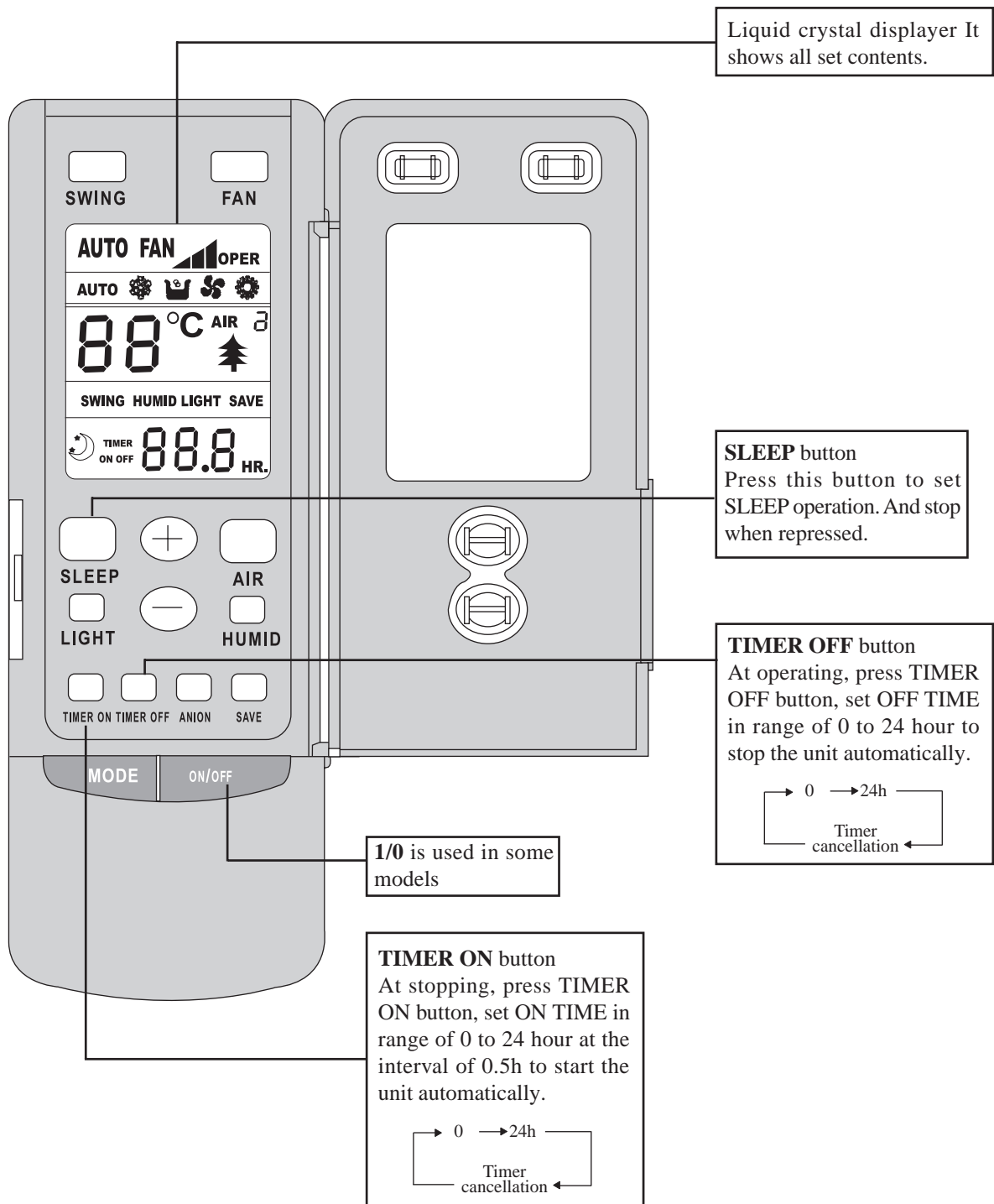
ON/OFF

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

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

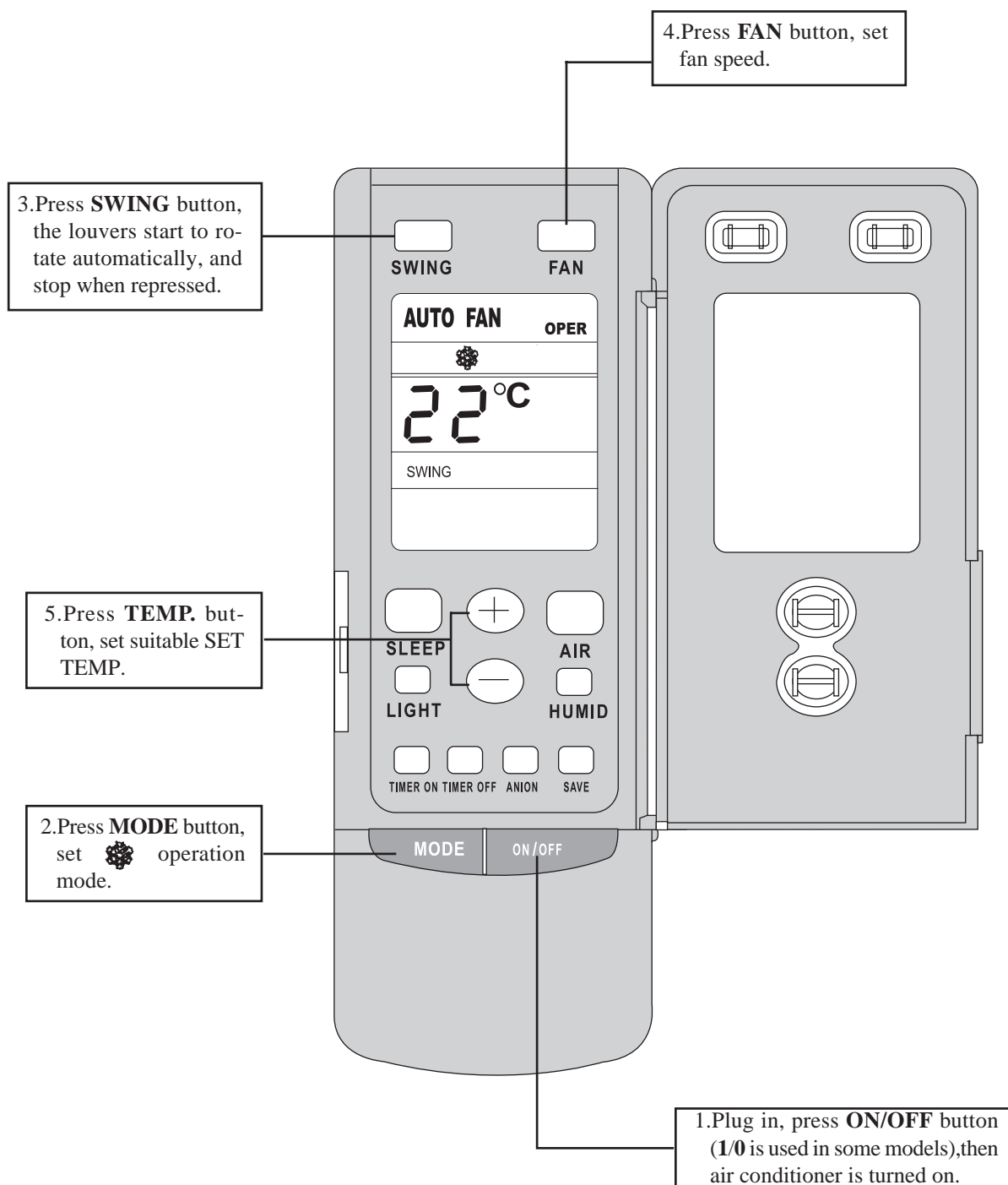
some buttons of the controller which are not available to this Air conditioner will not be described below.

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



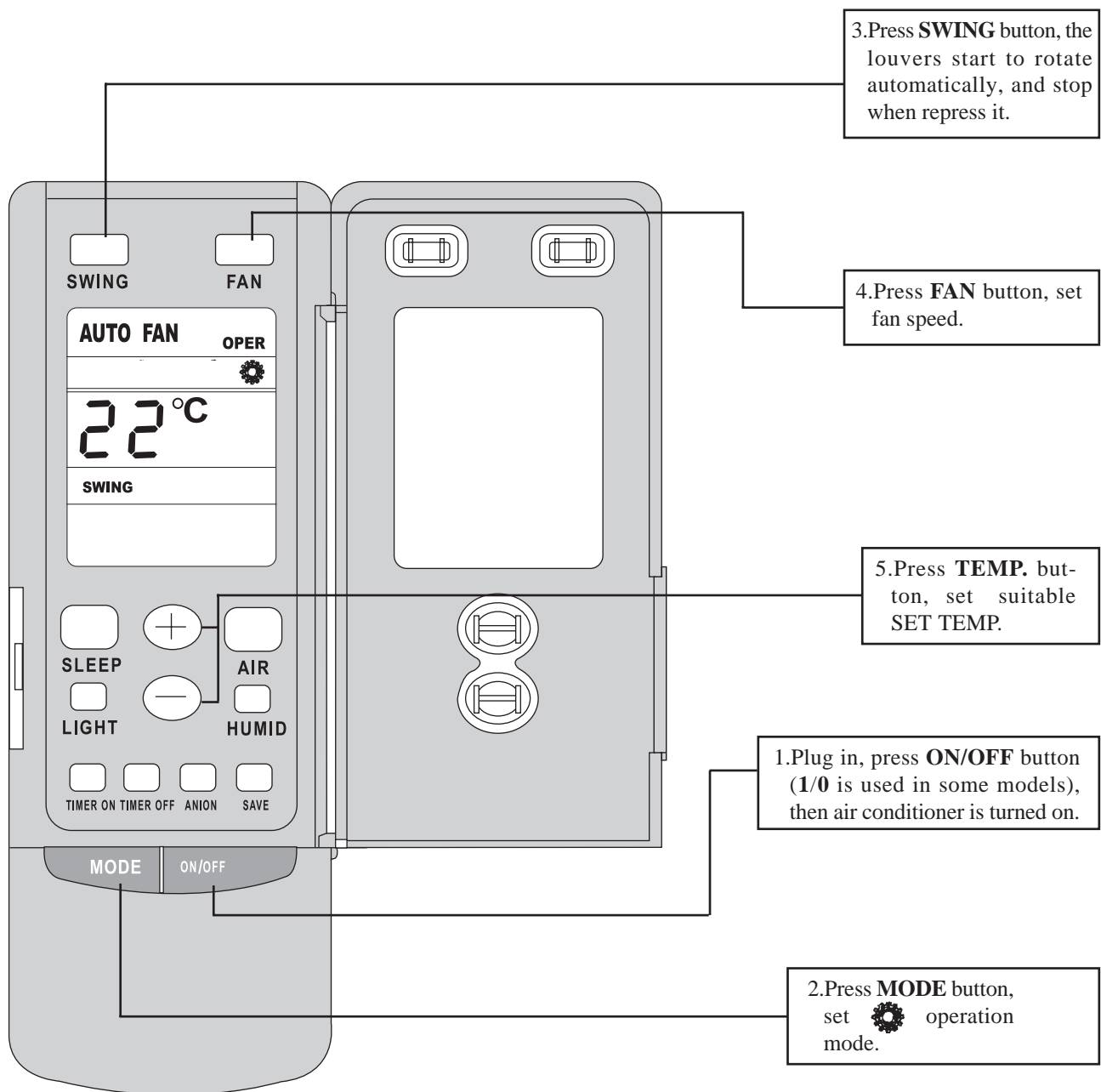
● COOL mode operation procedure

- 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 .



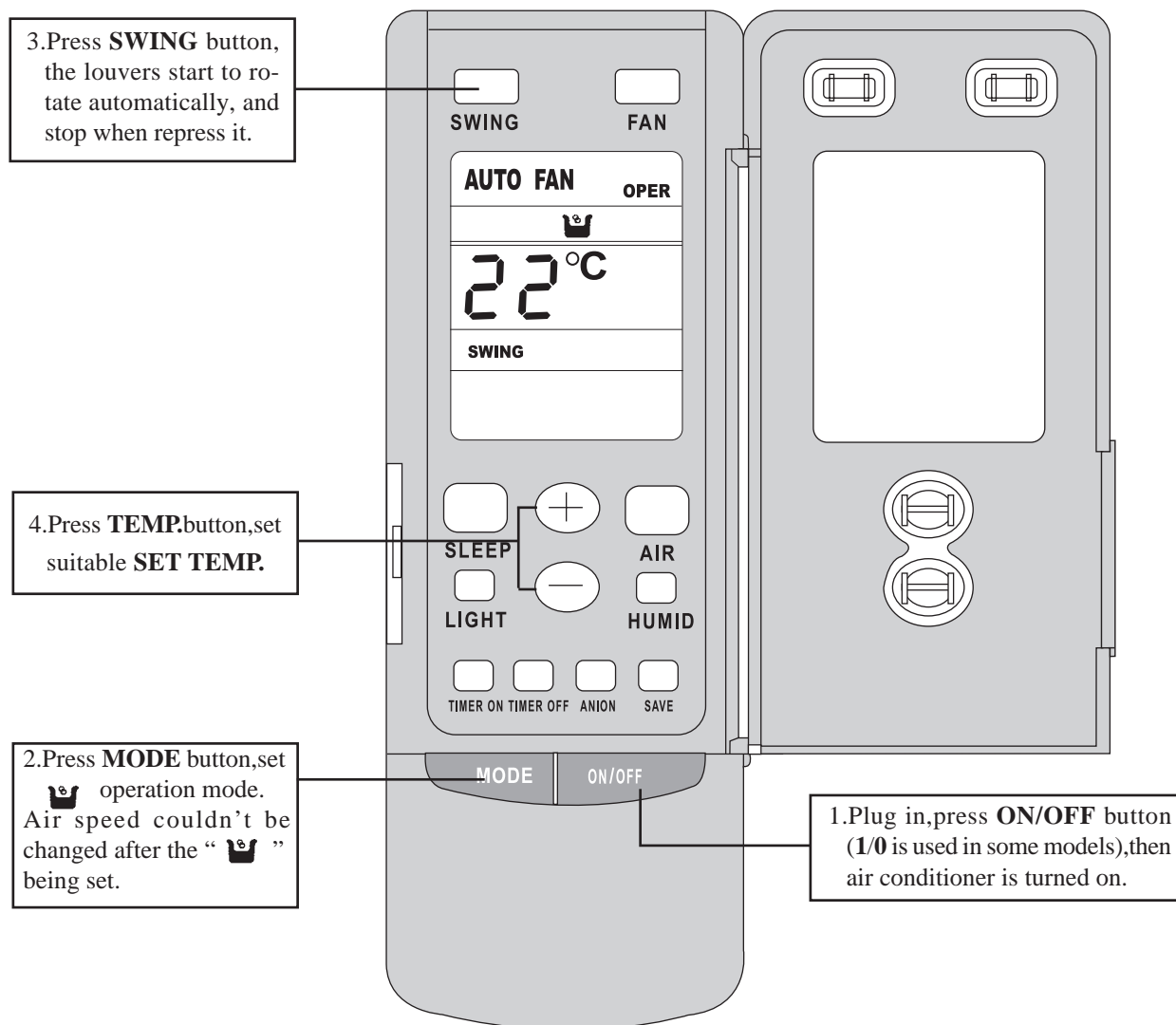
● HEAT mode operation procedure

- 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, only indoor fan motor runs, louver motor makes the louvers horizontal.
- **SET TEMP.** should be in range of 16°C to 30°C .



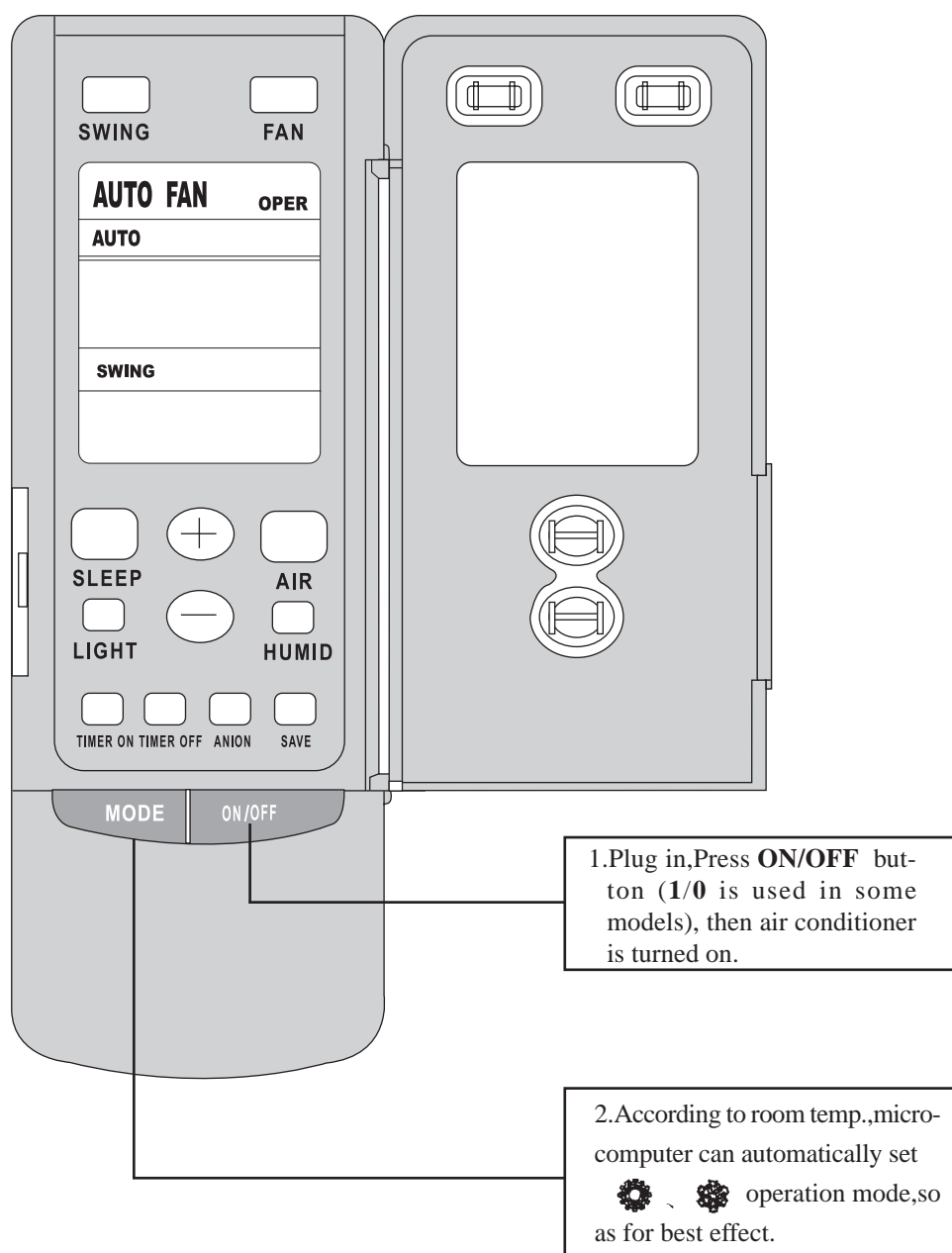
● DRY mode operation procedure

- If room temp. is lower than set temp., compressor ,outdoor and indoor 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°C to 30°C .

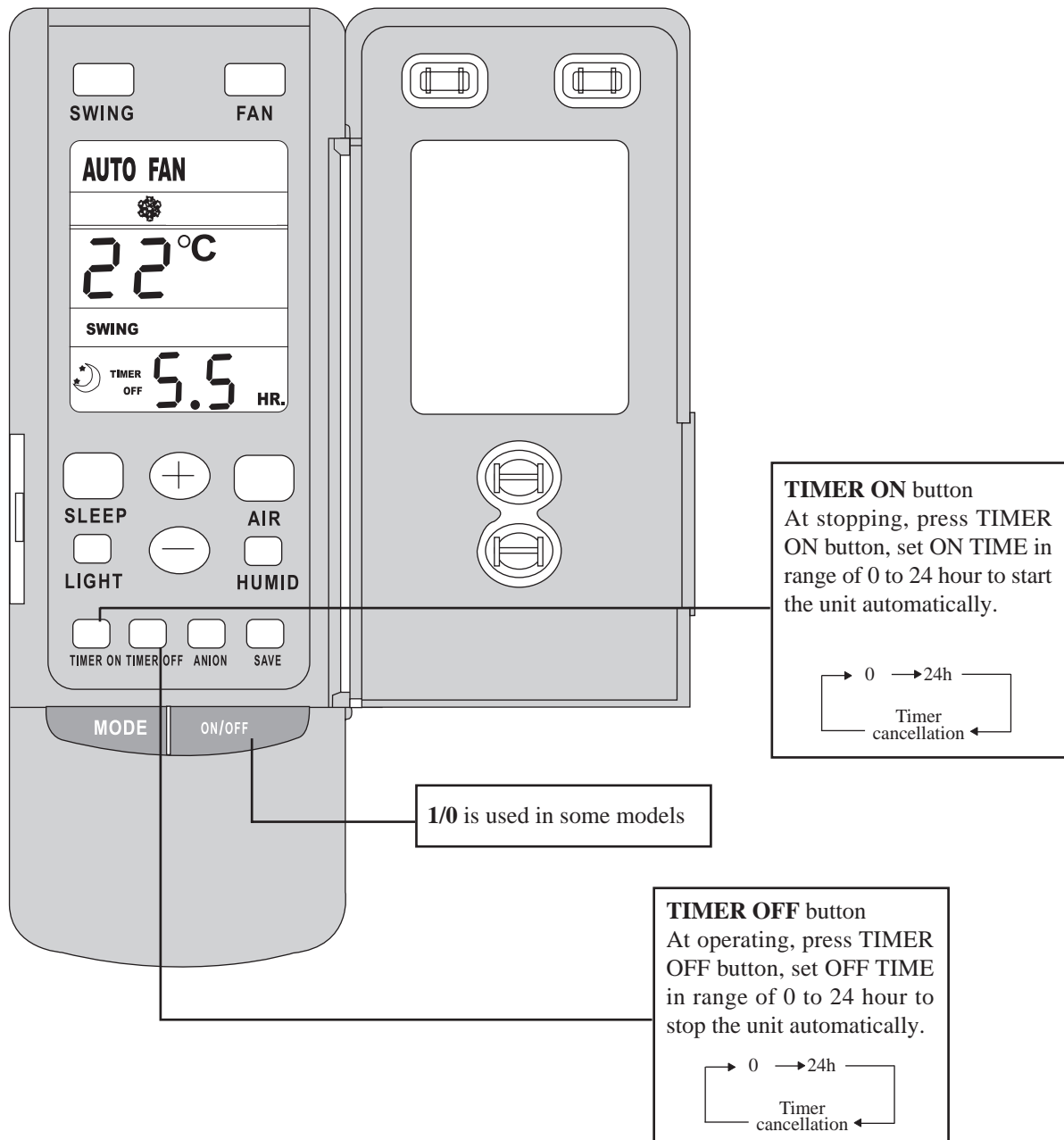


● AUTO mode operation procedure

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

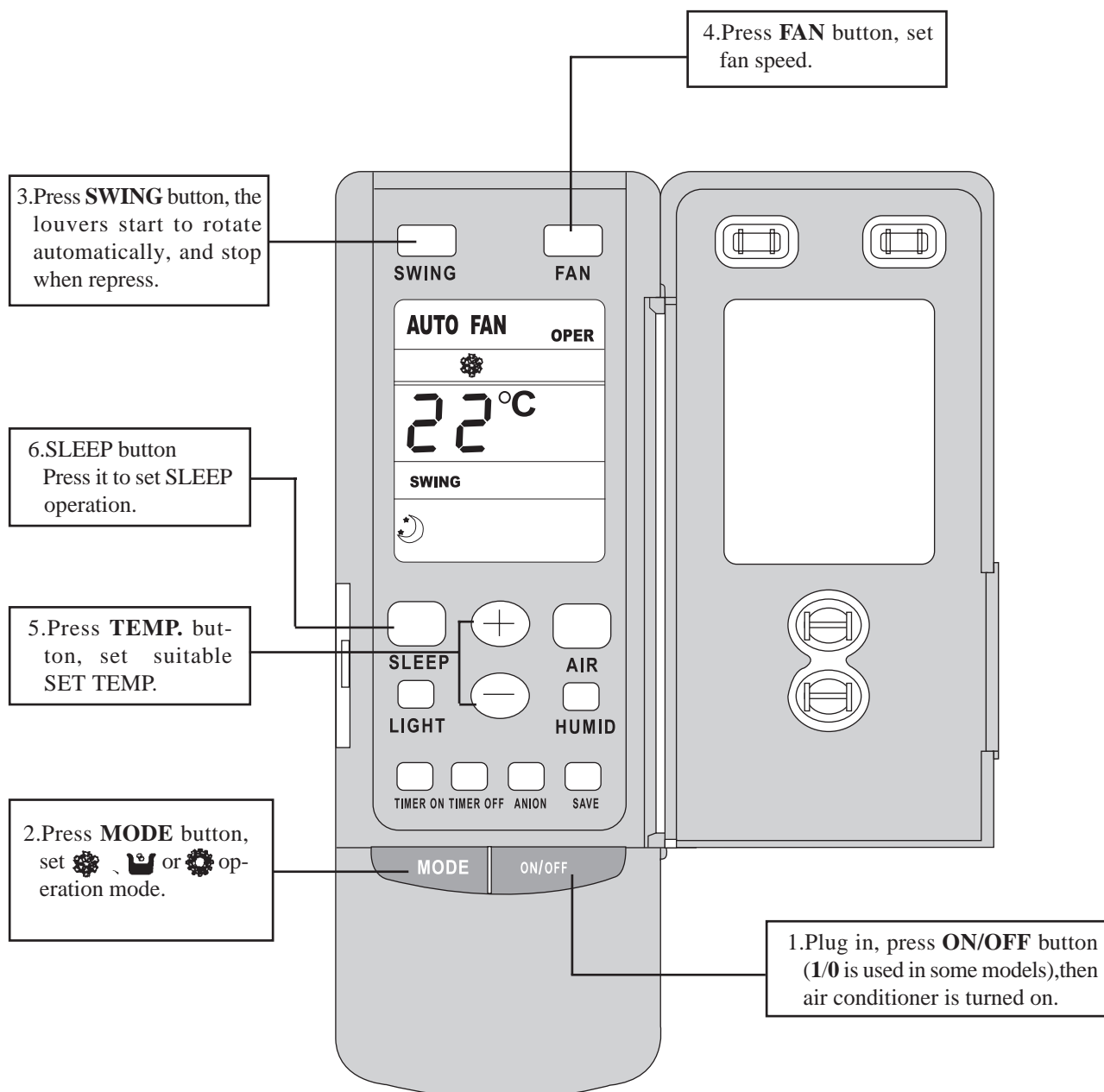


● TIMER mode operation procedure



● 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.

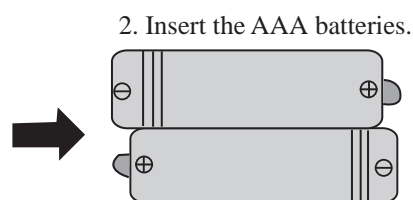
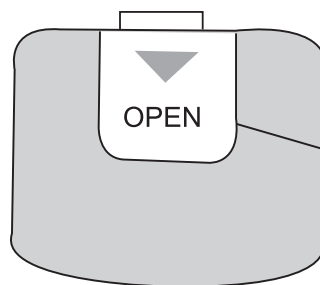
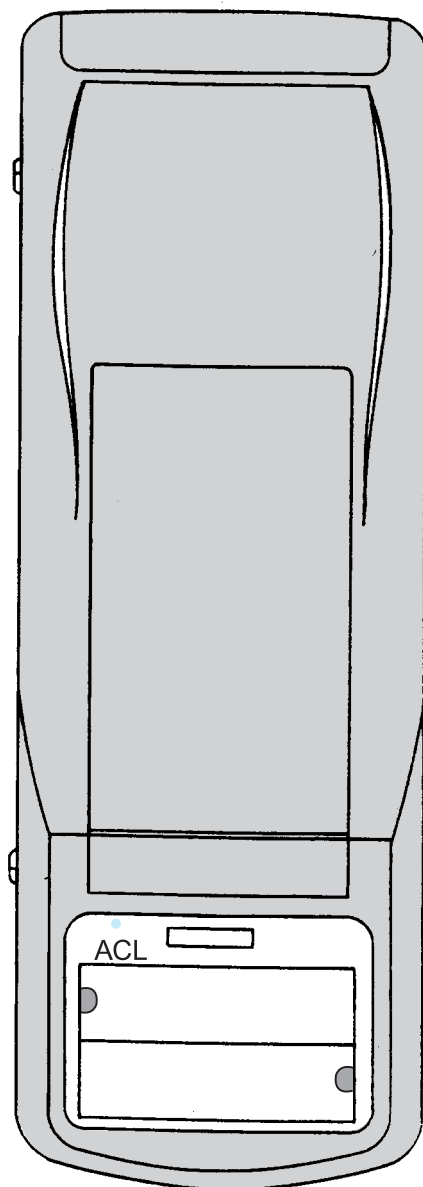


● How to insert batteries

- 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 long time.
- The remote control signal can be received at the distance of up to about 10m.
- 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.



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

Install Part

◆ Install Note Items

Select of install location

Indoor unit

1. The air inlet and outlet vent should be far away from obstruction to ensure the air is blown to the entire room.
2. Select where is easy to drain condensate or connect with outdoor unit.
3. Far away from heat resource, steam and flammable gas.
4. Select where can stand weight of indoor unit without increasing running noise and vibrations.
5. Ensure there is enough space for maintenance, and indoor unit should be at least 2m above floor.
6. Place the unit to where is at least 1m away from TV, Hi-fi and other appliances.
7. Select where air filter can be taken out easily.
8. Ensure the install of indoor unit meets requirements on Install Dimension Diagram.

Outdoor unit

1. Select place where noise and airflow produced when exhasting will not annoy neighbours.
2. Ensure well ventilation of outdoor unit.
3. There is no obstruction that may impact air in and out nears outdoor unit.
4. Install place should be able to stand weight and libration of outdoor unit and let the outdoor unit run safely.
5. Select place where there is no leakage of flammable or corrosible gas.
6. Ensure the install of outdoor unit meets requirements on Install Dimension Diagram.

Install Part

Wire collocation

1. Wire should be connected according to local wiring regulation.
2. Power supply must adopt rated voltage and special circuit for air conditioner, and size of the power wire should be big enough.
3. Please don't pull power wire forcibly.
4. Earthing should be reliable, and should be connected on special earthing settings on building, and have them connected by professional personnel. Creepage protect switch and air switch with enough capacitance must be set in rated circuitry (Refer to the following form). Air switch should maintain magnetic and heat drop-out functions to ensure protect when curcuit short or overload occurs.

Model	Capacitance of air switch	Earth wire min section	Power wire of unit min. section
ASH-07AF	10A	1. 0mm ²	1. 0mm ²
ASH-09AF	10A	1. 0mm ²	1. 0mm ²
ASH-12AF	15A	1. 5mm ²	1. 5mm ²

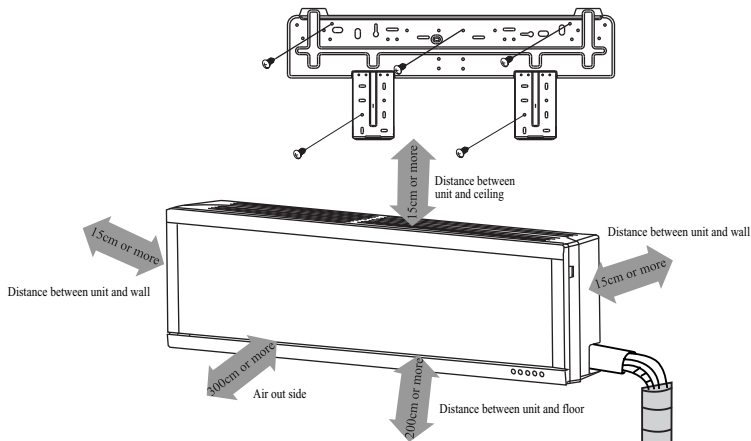
Earthing requirements

1. Air conditioner is type I appliance, please do conduct reliable earthing measure.
2. The yellow-green wire in the unit is earth wire, don't use it for other purpose or cut it.
Don't fix it by self tapping screw, or electric shock may occur.
3. User power supply should offer reliable earth terminal. Don't connect earth wire to following place:

①Water pipe ② Gas pipe ③Blowing pipe④Where professional personnel considers it unreliable

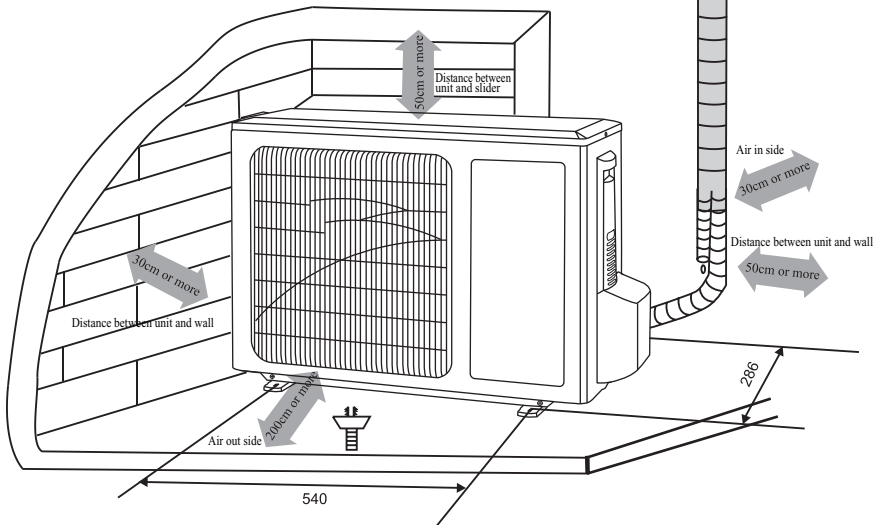
Install Part

Install Dimension Diagram



Important Advance

- ★ The installation must be done by professional personnel with reliability according to this manual.
- ★ Contact service center before installation to avoid the malfunction due to unprofessional installation.
- ★ When moving the units, you must be guided by professional personnel.



Install Part

◆ Install the indoor unit

Install the rear panel

1. Always mount the rear panel horizontally. As the water drainage pipe at the left, this side should not be too high when adjusting the rear panel. It had better to adjust this side a little lower.
2. Fix the rear panel on the selected location.
3. Be sure that the rear panel has been fixed firmly enough to withstand the weight of an adult of 60kg, furthermore, the weight should be evenly shared each screw.

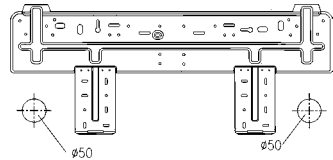


Fig.1

Install the piping hole

1. Make the piping hole (φ50) in the wall at a slight downward slant to the outdoor side.
2. Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.

Install the drain hose

1. For well draining, the drain hose should be placed at a downward slant.
2. Do not wrench or bend the drain hose or flood its end by water.
3. When the long drainage hose passing through indoor should wrap the insulation materials.

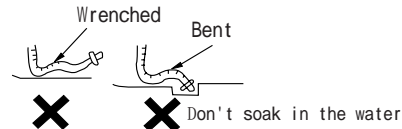


Fig.2

Install the connection pipes

Connect the connection pipes with the relevant union pipes of the indoor unit and tighten the flare nut of the connection pipes (Shown in P19 "Install the connection pipes")

Note:

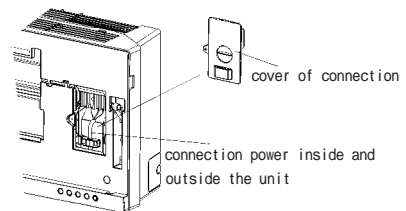
Connect the connection pipes with the indoor unit firstly and the outdoor unit secondly.

Be careful in bending the connection pipes or you will damage the pipe.

If the tightening torque is too great in tightening the flare nuts, leakage will happen.

Electric wiring

1. Open the panel upwards.
2. Disassembly the fixing bolts of connection cover, shown in the Fig. at right side.
3. power connecting wire cross through down to up from the bottom of case.



Install Part

4. Connect blue wire in power connect wire onto "N(1)" terminal, brown wire onto "2" terminal, yellow-green wire (i.e. earth wire) onto "⊕" terminal (as shown in fig.3); and press the power connect wire by wire groove that in front of line bank that installed in electric box.
5. To heat pump type unit, signal control wire connect with indoor unit through connector as (shown in fig.3), and tighten the control wire by wire clamp on bottom of case.
6. Install the cover plate on where it was and tighten screws.
7. Cover panel.

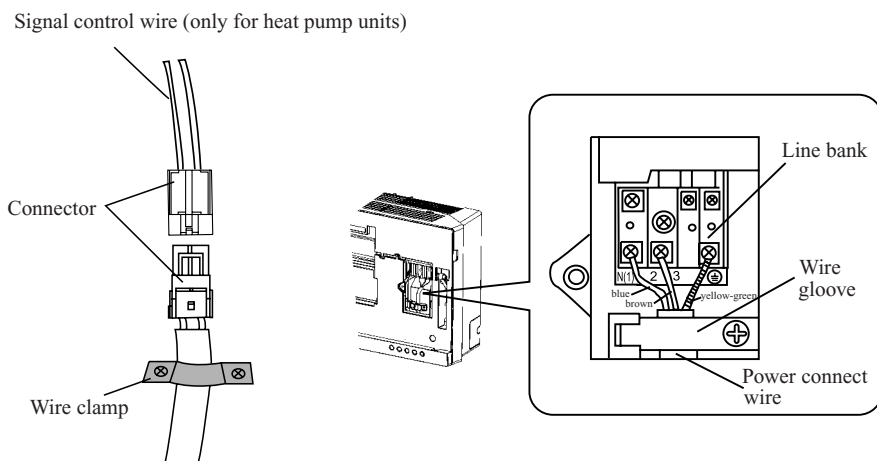


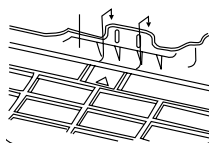
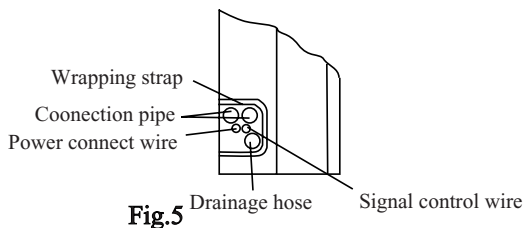
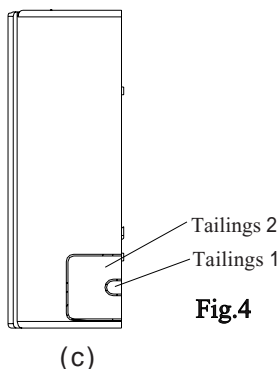
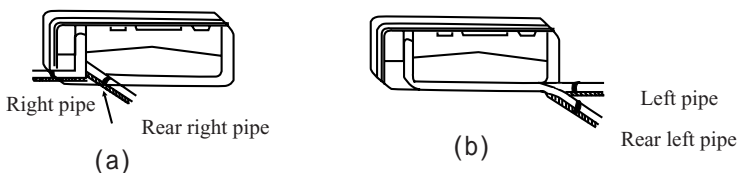
Fig.3

☆ Install Indoor Unit

1. Please refer to the fig. (a) and (b) for routing piping type of indoor unit. When routing the piping (wiring) from the left or right side, cut off the tailings of the pipe left from chassis of main unit (as shown in fig.4(c)):
 - (1) Cut off tailings 1 when only power cord is routed;
 - (2) Cut off tailings 1 and 2 when connection pipe and power cord are routed.

Install Part

- Methods 、 、 are recommended piping ways.
2. After wrapped pipe and wire, pull them though the pipe hole (as shown in fig.5).
 3. Hang the mounting slot behind indoor unit on the pothook of the rear panel and move it to check if it is firm enough (as shown in fig.6).
 4. Ensure the install height of indoor unit is 2m or higher.



◆ Install of Outdoor Unit

Install connection pipe

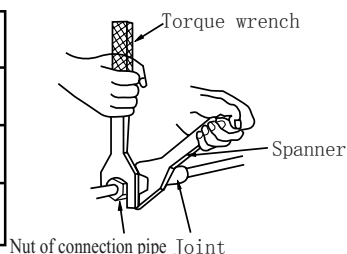
1. Align the flare of connection pipe to the joint flare of relative valve.
2. Tighten the nuts on connection pipe forcibly then tighten ti by spanner as shown in fig.7.

Note: Too great of torque would damage nuts.

Install Part

Tightening torque table

Hex nut	Tightening torque table(N・m)
6	15~20
Φ9.5	31~35
Φ12	50~55



☆ Electric wiring connection

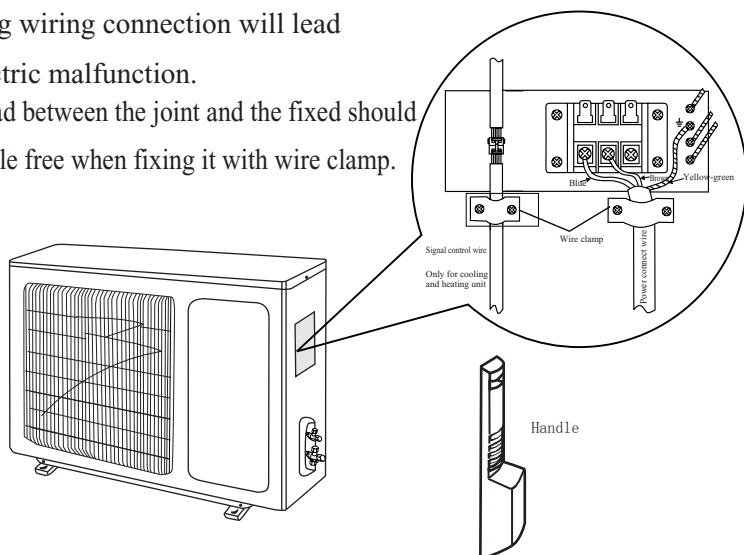
Fig. 7

1. Take off handle on right side plate of outdoor unit (1 bolt).
2. Take off clamp, then connect and fix the power connect wire to wiring terminal board. Wiring allocation should be in accordance with that of indoor unit.
3. Fix power connect wire by clamp, to cooling and heating unit, fix signal control wire too, then connect the corresponding connector well.
4. Ensure that the wiring is done well.
5. Install handle (tightened by 1 bolt).

NOTE:

Wrong wiring connection will lead to electric malfunction.

The lead between the joint and the fixed should be a little free when fixing it with wire clamp.



Air purging and leakage test

1. Remove the nuts cap from the cut-off valves of the outdoor unit.
2. Aim at the center of the tubing, screw the cone-shaped nuts by hand.
3. Tightening the cone-shaped nuts with wrench.
4. Remove the valve caps of the gas valve and liquid valve and the service port nut.
5. Loosen the valve stem of the liquid valve with a hex wrench. push the check valve core of the gas valve to discharge air .
6. After 15 seconds, stop pushing the valve core as soon as the refrigerant starts to be discharged, and reinstall the service port nut.
7. Open the liquid valve caps and gas valve entirely (shown in Fig.8)
8. Tighten the valve caps and test leakage at all joints of the piping(both indoor and outdoor)by liquid soap or leak detector.
9. If possible, discharge air from valve core with a vacuum pump.(shown in Fig.9)

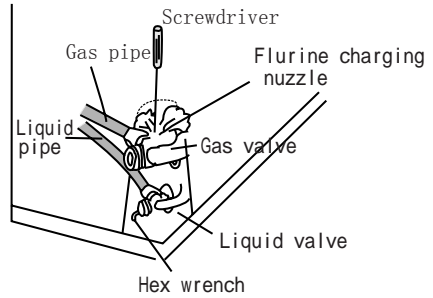


Fig.8

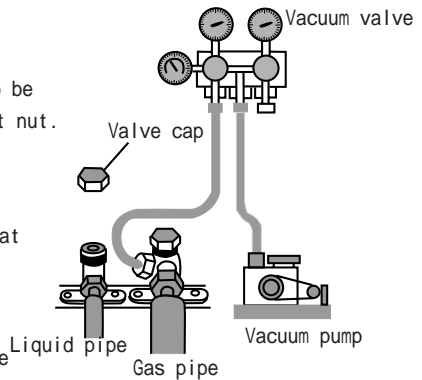


Fig.9

Outdoor condensation drainage (Heat pump type only)

When the unit is heating or defrosting, the condensing water and defrosting water formed in the outdoor unit can be drained out reliably through the drain hose.

Installation: install the outdoor drain tie-in in the $\varnothing 25$ hole on the base plate as shown in Fig.10, and joint the drain hose to the tie-in, so that the wastewater formed in the outdoor unit can be drained out to a proper place.

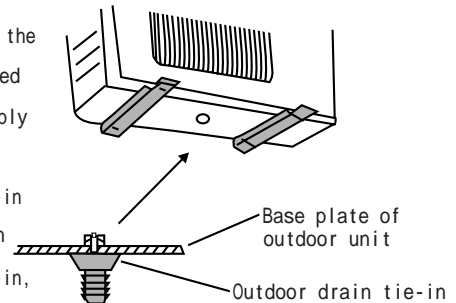


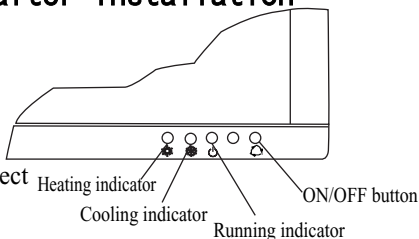
Fig.10

Trial run and check items after installation

Trial Run

1. Preparation for trial run

- (1) Don't turn on power supply if entire installations are not completed.
- (2) Connect of control circuit should be correct all wire connect should be firm.
- (3) Cut-off valves of both thick and thin pipes should be turned on.
- (4) All scattered components, especially metal scrap thrum etc., should be cleared from unit.



2. Trial running method

- (1) Press ON/OFF on wireless remote control after connecting to power supply, unit begins running.
- (2) Press MODE to select run mode of COOL, HEAT and SWING etc. to check if it can run normally.
- (3) When wireless remote control is losed, operation unit by following mode:
 - (a) When unit is halt, press the ON/OFF button, then unit begins running in AUTO micro-computer select COOL, DRY, HEAT or FAN automatically according to indoor temp. to make comfort effect. Repress ON/OFF to stop the unit from running.
 - (b) When unit is running, press ON/OFF to stop unit from running.

Check after installation

Items to be checked	Possible malfunction
Is the installation firm enough ?	Unit may drop, shake or emit noise
Is leakage test done ?	It may cause insufficient of cooling (heating) capacity
Is heat insulation sufficient ?	Condensation or water drop may occur
Is drainage smooth?	Condensation or water drop may occur
Is the power voltage the same with that in product nameplate?	Malfunction or burn out of parts may occur
Is the install of circuit and pipeline correct?	Malfunction or burn out of parts may occur
Is the unit earthed safely?	Creepage may occur
Is model of wire fits that of regulation?	Malfunction or burn out of parts may occur
Is both the air inlet or outlet vent of indoor and outdoor unit blocked?	Insufficient of cooling (heating) capacity may occur.
Is length of refrigerant pipe and charge amount recorded?	Charge amount of refrigerant is hard to handle.

Repair and Maintenance

Warning

Stop the unit and pull out the plug before cleaning the unit, or electric shock will be happened.

Don't get wet the unit, for it will cause the electric shock, make sure don't wash the unit by water.

The volatile liquid, such as thinner or gas will damage the face of unit. (only using the soft cloth and wet cloth with neutral cleaning fluid to clean the body of unit)

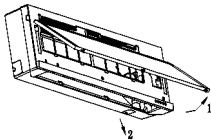
Unpick and wash the filter



1. Uplift the panel upwards by hand according to the direction of arrowhead.

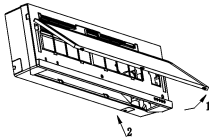


2. Put down the panel according to direction of arrowhead.

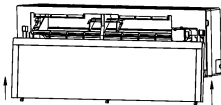


3. Uplift the panel a little bit according to the direction of arrow 1, then take out the filter according to arrow 2. Clean the filter by cleaner or water. When the filter is dirty (oil), it can be washed by warm water (below 45°C) dissolving with neutral cleaning fluid, then dry it on the shady and cool place.

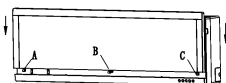
Installation of filter



1. Uplift the panel a little bit from the direction of arrowhead 1, then insert the filter below the panel according to arrowhead 2.

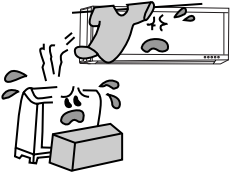


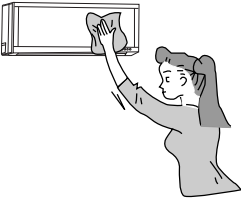
2. Uplift the panel according to the direction of arrowhead to the location shown as Fig.



3. Insert the clamp A, B, C back to three the rotating shaft. and cover the panel.

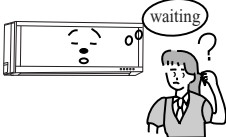
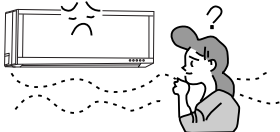
Repair and Maintenance

Check before use	
<ol style="list-style-type: none">1. Be sure that nothing obstructs the the air outlet and intake vents.2. Check that whether ground wire is properly connected or not.3. Check that whether the batteries of air connectioner are changed or not4. Check that whether the installation stand of the outdoor unit is damaged or not. if damaged, please contact the dealer.	

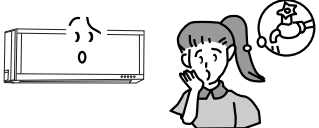

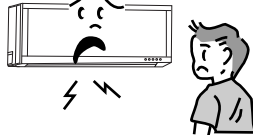
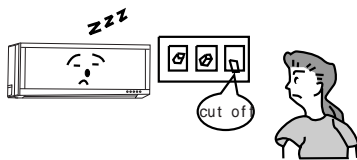
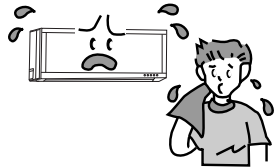

Maintenance after use	
<ol style="list-style-type: none">1. Clean filters and other parts.2. Turn main power off.3. Clear dust from the outdoor unit.4. Repaint the rubiginous place on the outdoor unit to prevent it from spreading.	

When the unit cannot run normally

Warning: Don't attempt to repair the air condotioner by yourself, it can cause an electric shock or fire. please check the following items before asking for repair, it can save your time and money.

Phenomenon	Trouble shooting
<p>Compressor do not operate when the air conditoner is restarted.</p> 	<p>Once the air conditioner is stopped, it will not operate in approximately to protect itself.</p>
<p>There's unusual smell blowing from the outlet after operation is started.</p> 	<p>This is caused by the odors which give off from furniture and cigarette during the AC adjust the air.</p>

Repair and Maintenance

Phenomenon	Trouble shooting
<p>Sound of water flow can be heard during operation.</p> 	<p>This is caused by the refrigerant flowing inside the unit.</p>
<p>Mist is emitted from the airout vent during cooling operation.</p> 	<p>Because the air of the room is cooled down rapidly by the cold wind and it looks like the fog.</p>
<p>A slight crepitation can be heard when start or stop the unit.</p> 	<p>This is caused by the grating noise which is made by the expanding of panel.</p>
<p>AC does not run.</p> 	<ul style="list-style-type: none"> · Has the power been shut down? · Is the power plug well plugged in? · Is the leakage protection switch tripping off? · Is voltage higher 253V or lower 195V? · Has the TIMER ON been well set?
<p>Cooling(Heating)efficiency is bad.</p> 	<ul style="list-style-type: none"> · Is SET TEMP.suitable? · Is air inlet or outlet obstructed? · Are air filters dirty? · Is indoor fan speed set at low speed? · Is there any other heat source in
<p>Remote control is not available</p> 	<ul style="list-style-type: none"> · Remote control can't be used occasionally when the air conditioner is disturbed or changing its functions frequent time,pull out the power plug and insert it again to recover the operation. · If it is in the received scope? or there is blockage inside. · Check if the batteries are sufficient or replace the batteries.

Repair and Maintenance

When the following circumstance occur, stop the unit from running immediately and plug out power plug, then contact Gree Service Center.

Harsh noise is heard when the unit is running ;
Air switch or creepage protect switch often trips;
Other things or water poured into unit or wireless remote control carelessly;
Indoor water leakage occurs;
Power hose and power plug are extremely hot.
Abnormal odor is produced when the unit is running.



Please contact Gree Service center if there is any problem

ENVIRONMENTAL INFORMATION

This unit contains fluorinated gases with greenhouse effect covered by the Kyoto Protocol.
Maintenance and disposal must be carried out by qualified persons only.
Refrigerant gas R410A, GWP = 1730

EXTRA REFRIGERANT CHARGE

Pursuant to Regulation EC 842/2006 on certain fluorinated greenhouse gases, in case of extra refrigerant charge, it is compulsory to:

- Fill in the label accompanying the unit inserting the factory quantity of refrigerant charge (see the technical label), the extra refrigerant charge and the total charge.
- Apply the label next to the technical label applied on the unit. For the split-type air conditioner apply on the outdoor unit.

1 = [] Kg

2 = [] Kg

1 + 2 = [] Kg

- 1 Factory charge
2 Extra charge
1+2 Total charge

