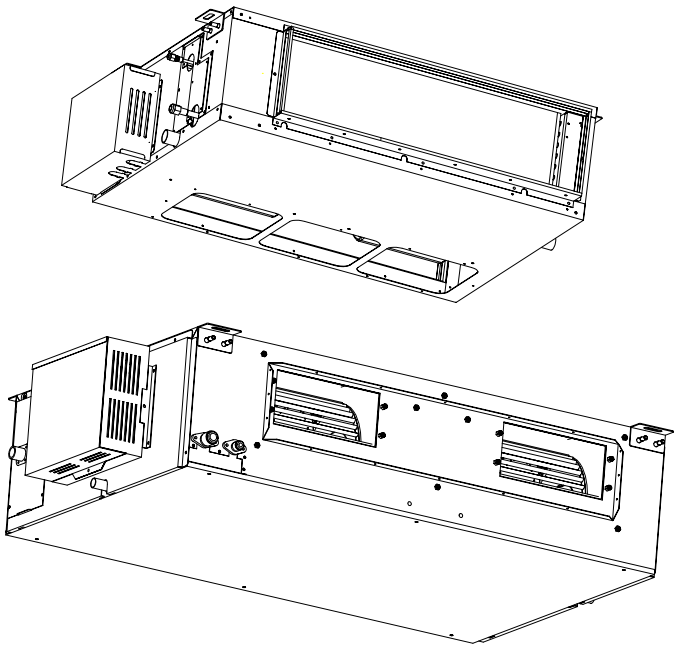
Operating and Installation Instructions Manual



Ducted Air-Conditioning Unit

(2.6-16kW)

Unit Model:

indoor unit	outdoor unit
GFH09K3BI	GUHN09NK3AO
GFH12K3BI	GUHN12NK3AO
GFH18K3BI	GUHN18NK3AO
GFH24K3BI	GUHN24NK3AO
GFH36K3BI	GUHN36NK3AO
GFH36K3BI	GUHN36NM3AO
GFH42K3BI	GUHN42NM3AO
GFH48K3BI	GUHN48NM3AO
GFH60K3BI	GUHN60NM3AO

Thanks for your selection of this Ducted Air-Conditioning Unit. Before use, please read this instruction manual carefully and keep it properly to ensure correct use of this machine.

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Safety Considerations

Please read this manual carefully before use and operate correctly as instructed in the manual.

1. You are specially warned to note the two symbols below.:

WARNING!: A symbol indicating that improper operation might cause human death or severe injury

WARNING!: A symbol indicating that improper operation might cause human property damage.

WARNING!

- This unit shall be used in offices, restaurants, residences or similar places.
- Please seek an authorized repair station for installation work. Improper installation might cause water leakage, electric shock or fire.
- Please install at a place strong enough to support the weight of air conditioner unit. If not, the air conditioner unit might fall down and cause human injury or death.
- To ensure proper drainage, the drainage pipe shall be correctly installed according to installation instructions. Take proper measures for heat preservation to prevent condensing. Improper installation of pipes might cause leakage and wet the articles in the room.
- Do not use or store flammable, explosive, poisonous or other dangerous substances beside the air conditioner.
- In case of trouble (e.g. burnt smell), please immediately cut off the main power of air conditioner unit.
- Keep air flow to avoid shortage of oxygen in the room.
- Never insert your finger or any objects into air outlet and inlet grill.
- Never plug or unplug the power cable directly to start or stop the air-conditioning unit.
- Please take constant care to check if the mounting rack is damaged after long use.
- Never modify the air conditioner. Please contact the dealer or professional installation workers for repair or relocation of the air conditioner.
- The appliance shall not be installed in the laundry.
- Before installation, please check the power supply for compliance with the ratings on nameplate. Check the power safety as well.(Operating by professinal)
- Before use, please check and confirm if the cables, drainage pipes and pipelines are correctly connected, hence to eliminate the risk of water leakage, refrigerant leakage, electric shock or fire.
- Main power must be securely earthed to ensure effective grounding of air conditioner unit and avoid the risk of electric shock. Please do not connect the earthing cable to coal gas pipe, water pipe, lightning rod or telephone line.
- Once started, the air conditioner shall not be stopped at least after 5 minutes or longer; otherwise the oil return to compressor may be affected.
- Do not let the child to operate the air conditioner unit.
- Do not operate the air conditioner unit with wet hands.
- Please disconnect the main power before cleaning the air conditioner or replacing the air filter.(Operating by professinal)
- Please disconnect the main power if to put the air conditioner unit out of use for a long period.
- Please do not expose the air conditioner unit directly under corrosive environment with water or moisture.
- Please do not foot on or place any goods on air conditioner unit.
- After electrical installation, the air conditioner unit shall be energized for electrical leakage test.(Operating by professinal)
- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard .
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- The appliance shall be installed in accordance with national wiring regulations.
- The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

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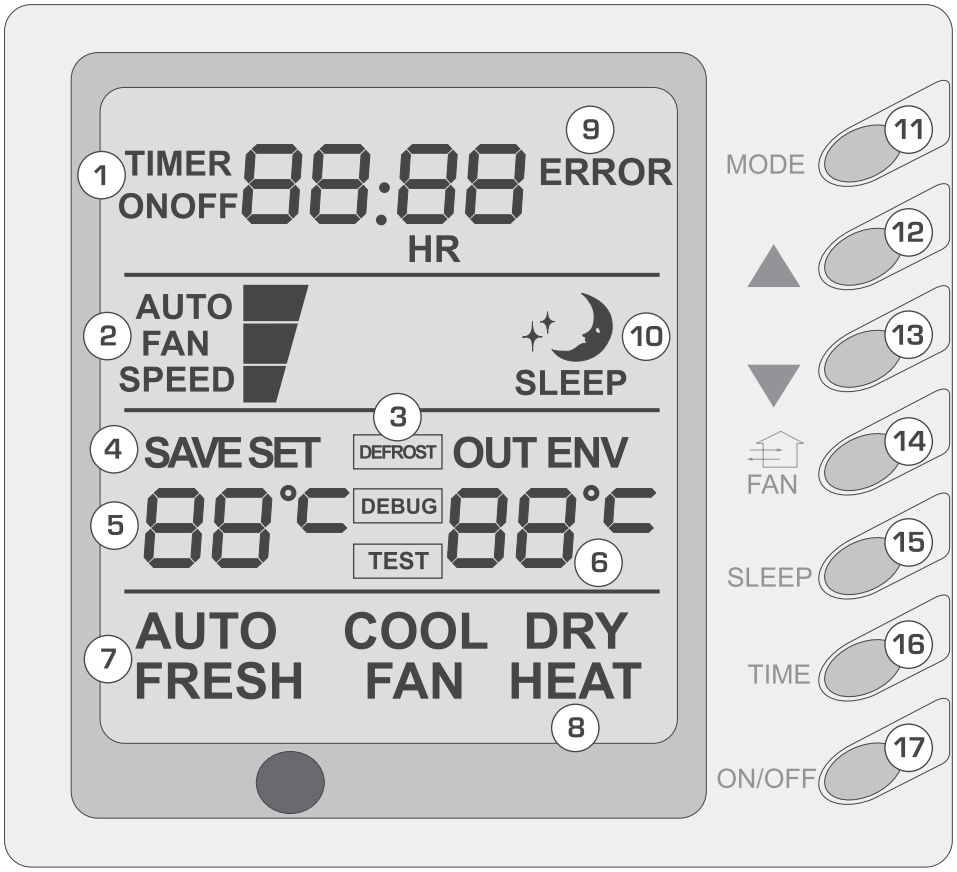
Wire controller (standard fitting)



Composition of wire controller

1	Timing display
2	Fan speed display (Auto, High speed, Medium speed, Low speed)
3	Defrosting status display
4	Energy saving status display
5	Set temperature display
6	Ambient temperature display
7	Fresh air status display (not supplied)
8	Mode (cooling, dehumidifying,fan, heating, auto)
9	Failure status display
10	Sleep status display
11	Mode key
12	Set temperature increase key
13	Set temperature decrease key
14	Fan speed key (fresh air setting)
15	Sleep key (outdoor environment temperature check)
16	Timing key
17	ON/OFF key

- Never install the wire controller in a place where is water leakage.
- Avoid bunping, throwing, tossing or frequently opening the wire controller.

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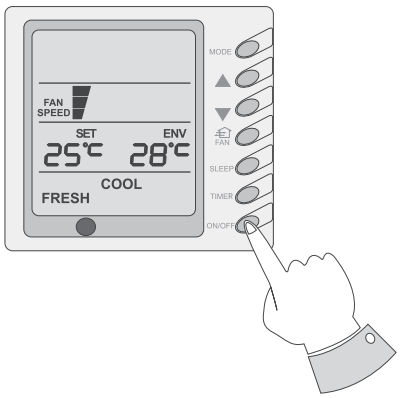
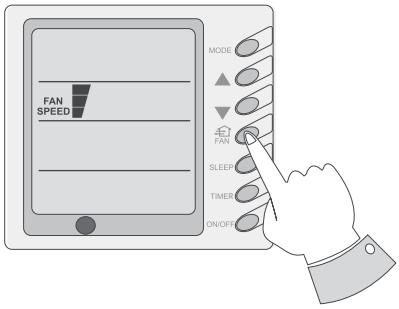
Operating istructions of wire controller

Turning ON/OFF unit



Press the ON/OFF key, then the unit shall start up. Press the ON/OFF key again, then the unit shall shut off.

Fan control (the figures show the relevant display areas)

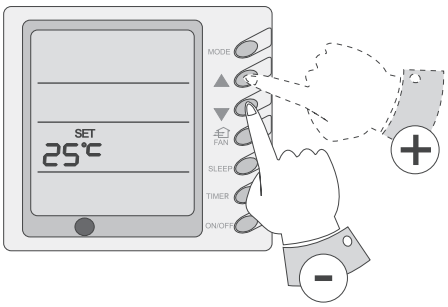


If the fan control key is prssed consecutively, the fan speed shall changes as per the following sequence:

→Low speed →Medium speed →Hight speed →Auto

In the dehumidifying mode: The fan speed shall be automatically set as low.

Temprature seting



Press the temperature seting key (▲) to increase the set temperature; press the temperature setting key (▼) to decrease the set temperature (when pressing the keys once, the temperature shall increase or decrease by 1 ℃). NOTE: key lock function: when the (▲) and (▼) key are pressed simultaneously for 5 second, the set temperature indicating area shall display "EE" and all keys response shall be shut off; press the two keys simultaneously for 5 second again, the key lock function shall be released. When the wire controller is locked by remote monitor centralized controller, the keys of the wire controller and the signal of the remote controller are all locked and invalidated, and then the set temperature indicating area shall display "CC". Range of temperature setting under various modes:

Heating: 16 ℃～30 ℃ • Cooling: 16 ℃～30 ℃

Dehumidifying :16℃～30 ℃ •

Fan: No temperature setting function

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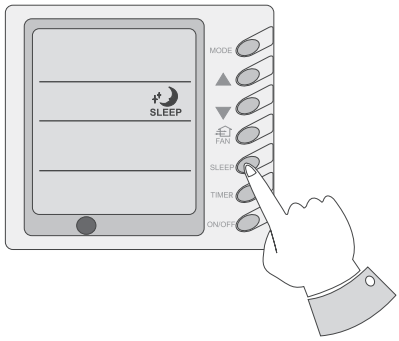
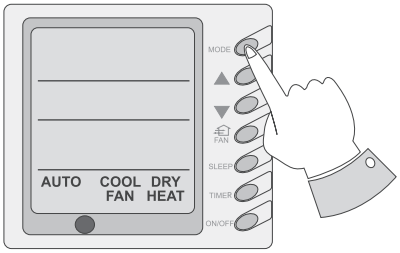
Sleep function setting



When the controller functions under cooling or dehumidifying mode and if the unit runs for one hour after the sleep key is pressed, the set temperature shall increase by 1, and the set temperature shall increase by another 1 after 2 hours and the unit shall run as per the increased set temperature. When the controller functions under heating mode and if the unit runs for one hour after the sleep key is pressed, the set temperature shall decrease by 1, and the set temperature shall decrease by another 1 after 2 hours and the unit shall run as per the decreased set temperature. Fan mode does not have sleep function.

Operating Mode Setting



this key is pressed consecutively, the operating mode shall change as per the following sequence:

→Cooling →Dehumidifying → Fan →Heating →Auto

When the unit operates under “Cooling” mode, “COOL” shall be displayed. Now the set temperature must be lower than the ambient temperature. Now if the set temperature is higher than the ambient temperature, the unit shall not produce cooling effect but shall only operate under Fan mode.

When the unit operates under “Dehumidifying” mode, “DRY” shall be displayed. Now the interior fan shall operate in the manner of low speed air supply within a certain range of temperatures. The dehumidifying effect of this mode is better than that of the Cooling mode and saves more energy.

When the unit operates under “Heating” mode, “HEAT” shall be displayed. Now the set temperature must be higher than the ambient temperature; Now if the set temperature is lower than the ambient temperature, the heating function shall not be started.

When the unit operates under “Fan” mode, “FAN” shall be displayed.

When the unit operates under “Auto” mode, “AUTO” shall be displayed and the unit shall adjust its operating mode automatically according to the ambient temperature.

When the unit operates under Heating mode and the outdoor temperature is low and the humidity is high, frost shall produce at the outdoor unit. Now the heating efficiency shall be decreased. When frosting happens, the controller shall automatically start to defrost, and “DEFROST” shall be displayed.

Note: Cooling only type unit does not have heating mode and when energy saving is set the Auto mode shall be invalidated.

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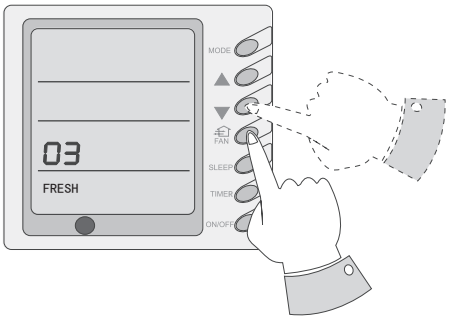
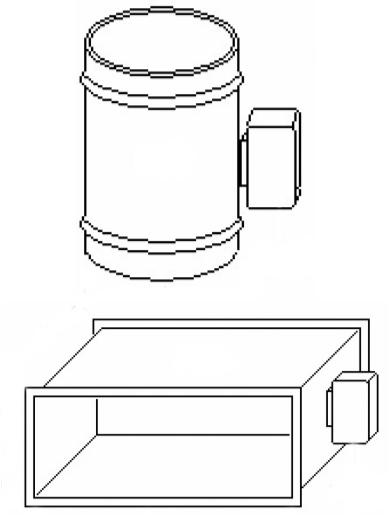
Fresh Air Valve Setting



Fresh Air Valve



When the unit is shut off, you can enter the fresh air setting by pressing and holding the “FAN” key for 5 consecutive seconds. Now the word “FRESH” flashes on the LCD and the set temperature area shall display the current fresh air setting. User can change the fresh air setting by pressing the “▲” key or the “▼” key.

Definitions of digits:

00——Always shut off.
01——The unit operates continually for 60 minutes and the fresh air valve opens for 6 minutes.
02——The unit operates continually for 60 minutes and the fresh air valve opens for 12 minutes.
03——The unit operates continually for 60 minutes and the fresh air valve opens for 18 minutes.
04——The unit operates continually for 60 minutes and the fresh air valve opens for 24 minutes.
05——The unit operates continually for 60 minutes and the fresh air valve opens for 30 minutes
06——The unit operates continually for 60 minutes and the fresh air valve opens for 36 minutes
07——The unit operates continually for 60 minutes and the fresh air valve opens for 42 minutes
08——The unit operates continually for 60 minutes and the fresh air valve opens for 48 minutes
09——The unit operates continually for 60 minutes and the fresh air valve opens for 54 minutes
10——Fully open

After fresh air setting is completed, press the “ON/OFF” key to confirm the setting. The unit shall store the set value and the unit shall operate according to the new fresh air setting. The default setting of the system is “0” when the unit is shipped out from manufacturer, so the fresh air value is shut off. Now if you start up the unit, the LCD does not display the work “FRESH”.

If user sets one type of fresh air operation, the LCD shall always display the word “FRESH” regardless of the operating mode after the unit is start up.

The fresh air setting shall not be cleared after the unit is energized again.

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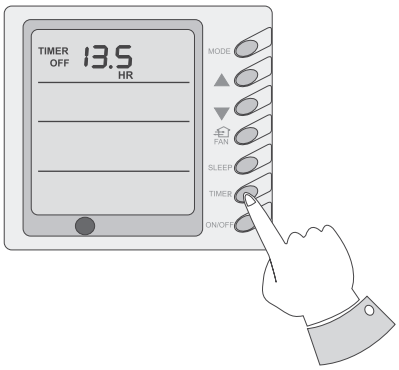
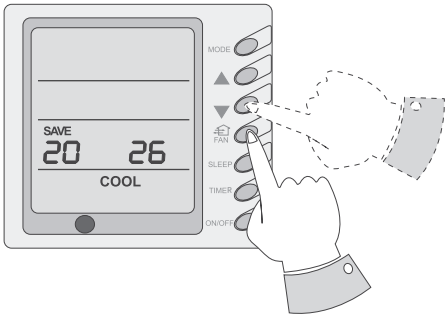
Timer Setting



When the unit is shut off, timing start can be set; After the unit is started up, timing shutoff can be set. After the "TIMER"key is pressed, the unit enters the timing set status and the word "TIMER" flashes on the display. Now user can press (▲) or (▼) key to increase or decrease the set time. Press the "TIMER" key again and then the timing shall go into effect. Now the unit starts to count the time passed. When the unit is under timing status, you can cannel timing set by pressing the "TIMER" key.The range of set time is between 0.5 to 24 hours.

Energy Saving Setting



When the unit is shut off, press the "FAN" key and the (▼) simultaneously for 5 consecutive seconds to activate the energy saving setting menu. Now "SAVE " and "COOL" are displayed (In case it is the first time to set energy saving, the initial value shall be displayed: 26 . The lower limit of temperature shall be displayed on the set temperature and the temperature value under setting shall flash. Set the lower limit of cooling temperature using the (▲) key or the (▼) key (the lower limit temperature can be selected from the range between 16-30). Press the "ON/OFF" key to confirm the setting; Also use the (▲) key or the (▼) key to set the upper limit of temperature and the temperature value shall flash on the ambient temperature area (OUT ENV area) (the upper limit temperature can be selected from the range between 16-30). Press the "ON/OFF" key to confirm the setting. Please pay attention that the upper limit temperature must be higher than the set lower limit temperature; Otherwise the system shall regard the higher temperature as the upper limit temperature and the lower one as the lower limit temperature. Press the "MODE" key to complete the energy saving setting for the modes of cooling and dehumidifying and turn to the energy saving setting for the heating mode (Cooling only unit does not have this function). Now the LCD displays "SAVE " and "HEAT". After setting is completed, press the "FAN" key and the (▼) key simultaneously for 5 consecutive seconds to exit the setting of energy saving. After the energy saving setting interface is activated, the system shall exit the interface if there is no any operation within 20 seconds after the last key input, and the normal shutoff status interface shall be displayed. After the above settings are completed, the system shall display "SAVE". Now the set temperature shall not exceed the temperature range of the energy saving setting before. For example, the lower cooling limit is set as 23 ℃ and the upper cooling limit is set as 27°C for the energy saving temperature setting in left.
so the cooling temperature can only be selected from the range of 23 ℃ to 27°C by using the remote controller or the wire controller later. If the upper limit temperature is the same as the lower limit temperature, the system can only operate at such temperature under relevant modes. Remove of energy saving setting: To remove the energy saving setting after it takes into effect, you can press the "FAN" and the (▼) key simultaneously for 5 consecutive seconds when the unit is shut off. But the value set before will not be cleared but as the initial set temperature for the next energy saving setting. After the unit is disconnected to power supply, the energy saving setting shall be stored. The setting still functions when the unit is connected to power supply again. If the energy saving mode is set, the sleep mode and the auto mode shall be invalidated

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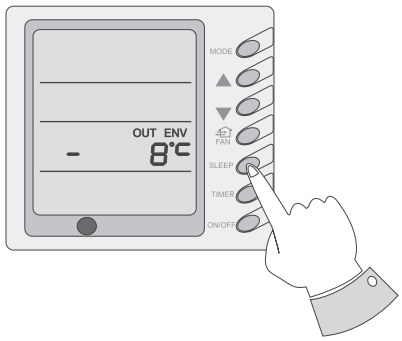
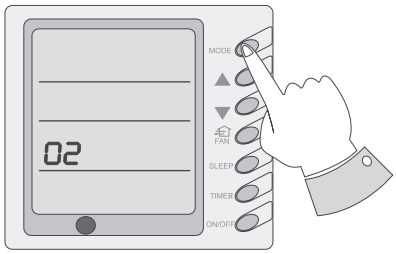
Display of Outdoor Ambient Temperature



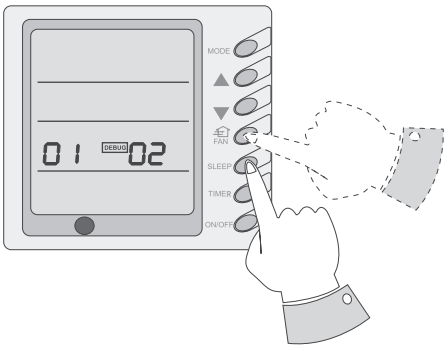
Under normal conditions, the “OUT ENV” column shall only display the indoor temperature. Press the “SLEEP” key for 5 consecutive seconds when the unit is shut off or start up, the LCD shall display “OUT ENV”. After the outdoor temperature is displayed for 10 seconds, the system shall return to the display interface of indoor temperature. Note: If not equipped with an outdoor ambient sensor, the unit shall not have this function.

Power-fail Memory Function Setting



Press and hold the “MODE” key for 10 seconds when the unit is shut off to switch set values so as to decide if the unit operating status or shutoff status shall be memorized after a power fail. If the set temperature area displays 01, it means the unit operating status or shutoff status shall be memorized after a power fail; 02 means the operating status or shutoff status shall not be memorized. Press the “ON/OFF” key to store the set value and exit the setting.

Debug Function



When the unit is shut off, press the “FAN” key and the “SLEEP” key simultaneously to activate the debug menu. Now the LCD displays “DEBUG”. Press the “MODE” key to select setting item and use the (▲) key or the (▼) key to set actual valve.

Setting of Ambient Temp. Sensor

Under the debug mode, press the “MODE” key so as to display “01” on the set temperature area (at the left of “DEBUG”). The OUT ENV area (at the right of “DEBUG”) displays setting status. Now use the (▲) key or the (▼) key to select from the following two settings:

The indoor room temperature is measured at the air intake (Now the OUT ENV area displays 01).

The indoor room temperature is measured at the wire controller (Now the OUT ENV area displays 02).

The indoor room temperature is measured at the wire controller when the mode is 'heating' or 'auto'. At other modes,it is measured at the air intake(Now the OUT ENV area displaus 03) ,The default is 03.

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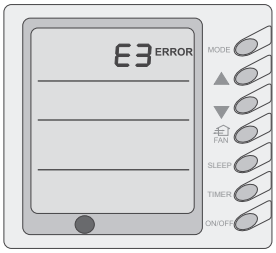
Failure Display	
	When there is failure in the unit operation, “ERROR” will flash on the LCD of the wire controller and the code of failure will also be displayed. When there are multiple failures at the same time, the codes of failures will be displayed one after one on the wire controller. The first digit of the code denotes the system number. When there is only one system, the system number is not displayed. The last two digits denote the detailed failure code. For example, the code in left means low pressure protection of compressor.

The Codes of Failure Definitions are as Follows:			
Fault code	Fault	Fault code	Fault
E0	Pump Failure	F0	Failure of Indoor Room Sensor at Air Intake
E1	Compressor High Pressure Protection	F1	Failure of Evaporator Temp. Sensor
E2	Indoor Frost-Proof Protection	F2	Failure of Condenser Temp. Sensor
E3	Compressor Low Pressure Protection	F3	Failure of Outdoor Ambient Sensor
E4	Compressor Exhaust High Temperature Protection	F4	Failure of Exhaust Temp. Sensor
E5	Compressor Overheat	F5	Failure of Indoor Room Sensor at Wire Controller
E6	Communications Failure	FF	All of the terminal air valve closed
E8	Indoor Fan Protection		
E9	Full Water Protection		

E5 Material Malfunction Will Be Showed By The Indicator Light On The Mother Board Of Outside Unit

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Operation of Remote Controller

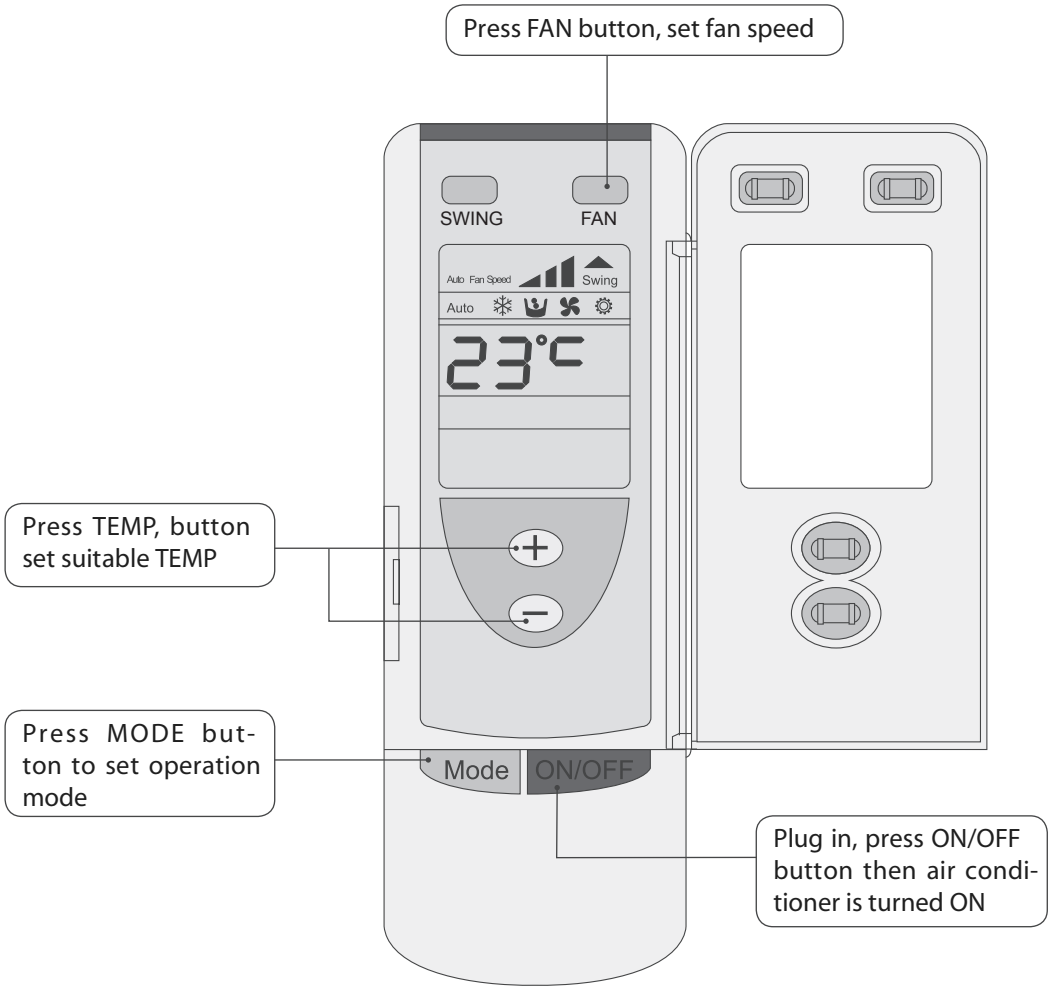
⚠ Precautions:

• Ensure there is no obstacle between the remote controller and the signal receiving window of the air conditioner.

• The distance able to receive the signal of the remote controller can be as far as 8 meters.

• Never drop or throw at will the remote controller.

• Never let any liquid enter the remote controller. Avoid direct sunshine over the remote controller. Do not place the remote controller in an extremely hot place.



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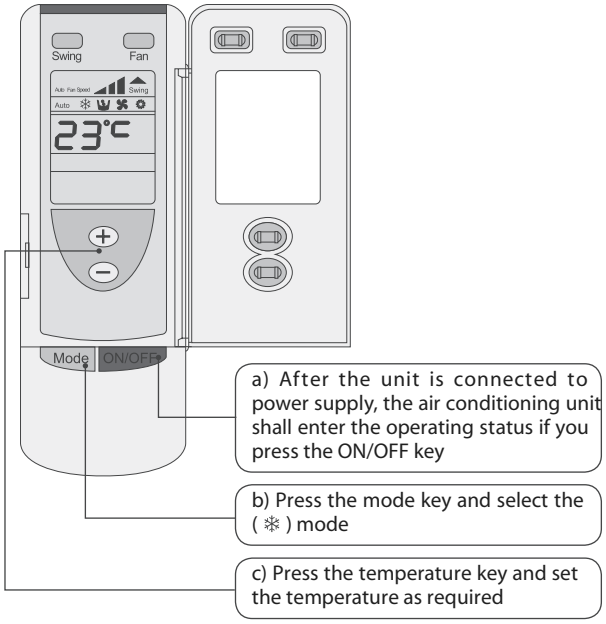
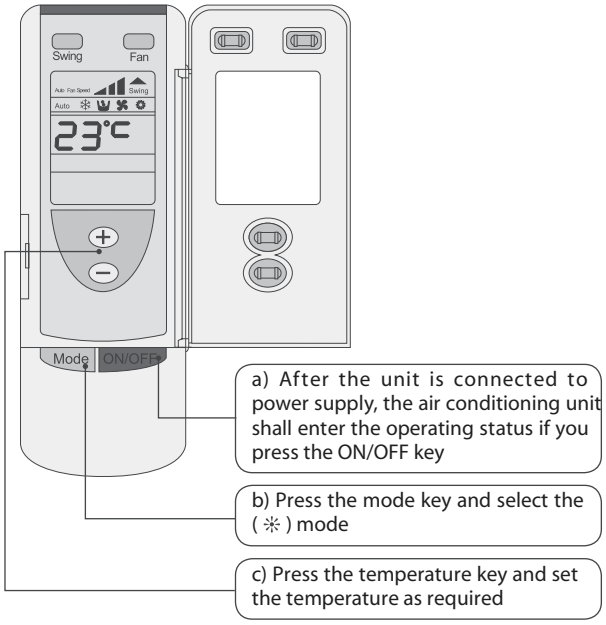
Cooling Mode Operation



Connect the unit to power supply. Press the “ON/OFF”key. Press the “MODE” key to select “Cooling” mode. Use the “Temperature” key to adjust the set temperature for the room.

Heating Mode Operation



Connect the unit to power supply. Press the “ON/OFF”key. Press the “MODE” key to select “Heating” mode. Use the “Temperature” key to adjust the set temperature for the room.. Under the heating mode, the unit has the functions of preventing cold air supply and supplying remaining heat. After the startup of the compressor, the indoor fan shall start operation when the evaporator temperature is larger or equals 35 or after the unit has be started for 45 seconds, so as to avoid supply of cold air shortly after the unit is started. After the stop of the compressor, the indoor fan shall stop operation after supplying air for 120 seconds.

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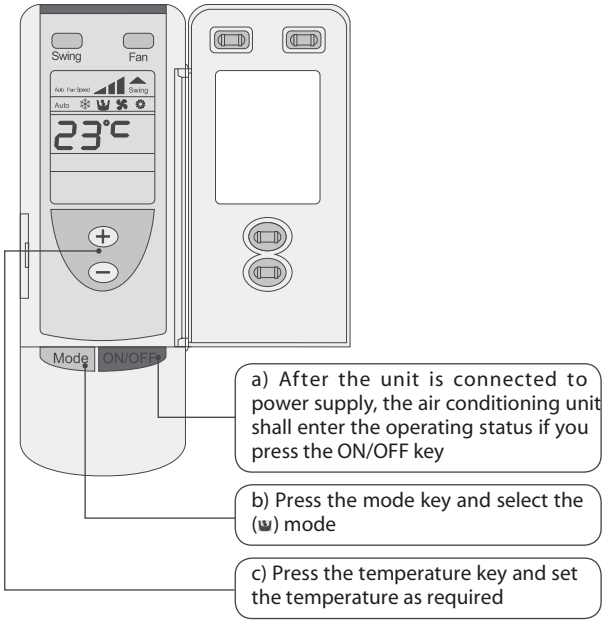
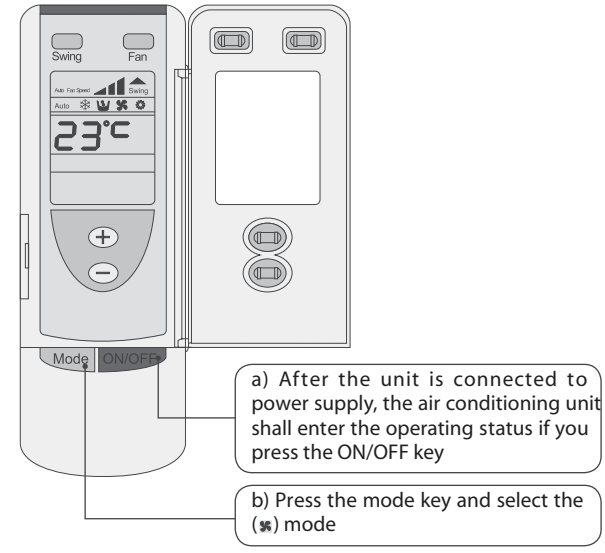
DRY (Dehumidifying) Mode Operations



Connect the unit to power supply. Press the “ON/OFF” key. Press the “MODE” key to select “DRY (Dehumidifying)” mode. Use the “Temperature” key to adjust the set temperature for the room.

Fan Mode Operation



Connect the unit to power supply. Press the “ON/OFF”key. Press the “MODE” key to select “FAN” mode. The unit shall operate under “FAN” mode. Press the “FAN” key to select from high, medium and low speed.

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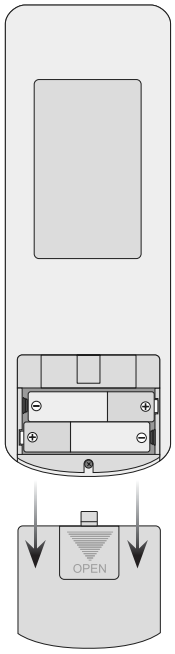
Loading Batteries Into Remote Controller



• After batteries are installed, the display shall display icons and letter codes of all functions.
• The life of batteries is about 1 year.
• Do not mix new and old batteries or mix different types of batteries in usage
• If the remote controller shall not be used for a long time, take out the batteries to avoid liquid leakage and any subsequent failure.
• Load two “AAA” batteries (Accessories)

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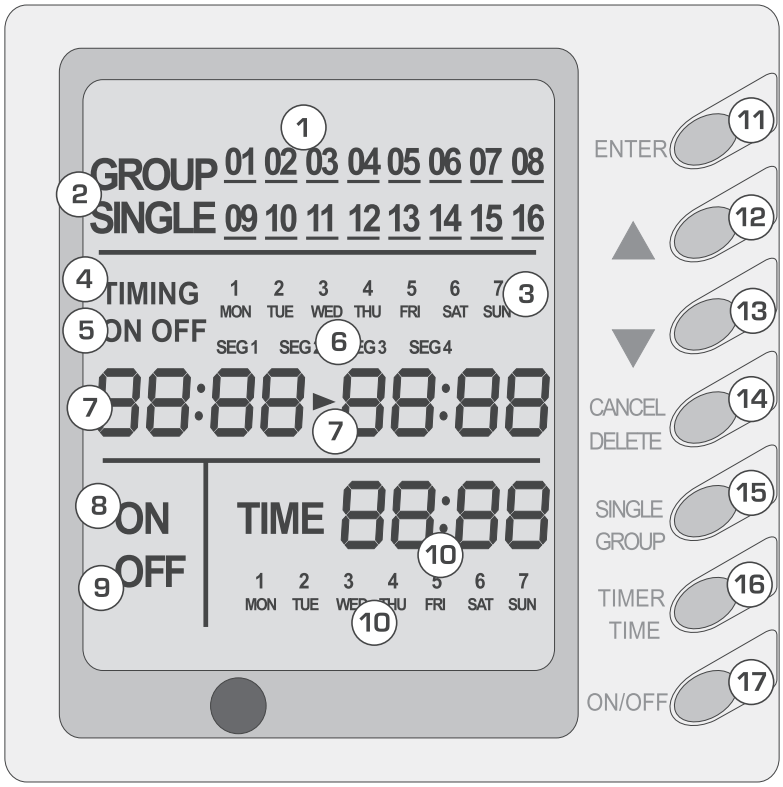
• 7DP - Seven days programmer (Accessory not supplied)

Centralized Control and Week Timer Functions: The centralized controller and the weekly timer are integrated in the same wire controller. The system has both the centralized control and the week timing functions. Up to 16 sets of units can be controlled simultaneously by the centralized controller (weekly timer). The weekly timer has the function of invalidating the lower unit. The weekly timing function is able to realized four timing ON/OFF periods for any unit every day, so as to achieve fully automatic operation.

This WEEKLY TIMER adopts 485 mode to communicate with manual control of every duct type unit, and it can control up to 16 units. Adopting 2-core twisted-pair wire, the longest communication distance of this TIMER is 1200m. After connected to power, the WEEKLY TIMER can display all connected units (sequence of unit is determined by code switch of manual control of every duct type unit). On and off of every duct type unit can be done through the Timer On / Off of this WEEKLY TIMER, and the button shield operation of manual control can be done through shield setting on WEEKLY TIMER. Mode selection and temperature adjustment and other operations are done through the manual control at every unit.



Composition of programmer wall week

1	Unit dispaly
2	Single/group display
3	Timer week display
4	Timer display
5	Timer state display
6	Timer time period display
7	Timer ON/OFF time display
8	Unit on display
9	Unit off display
10	Clock display
11	Confirm button
12	Increase button
13	Decrease button
14	Cacel/delete button
15	Single/group button
16	Timer/time button
17	ON/OFF button

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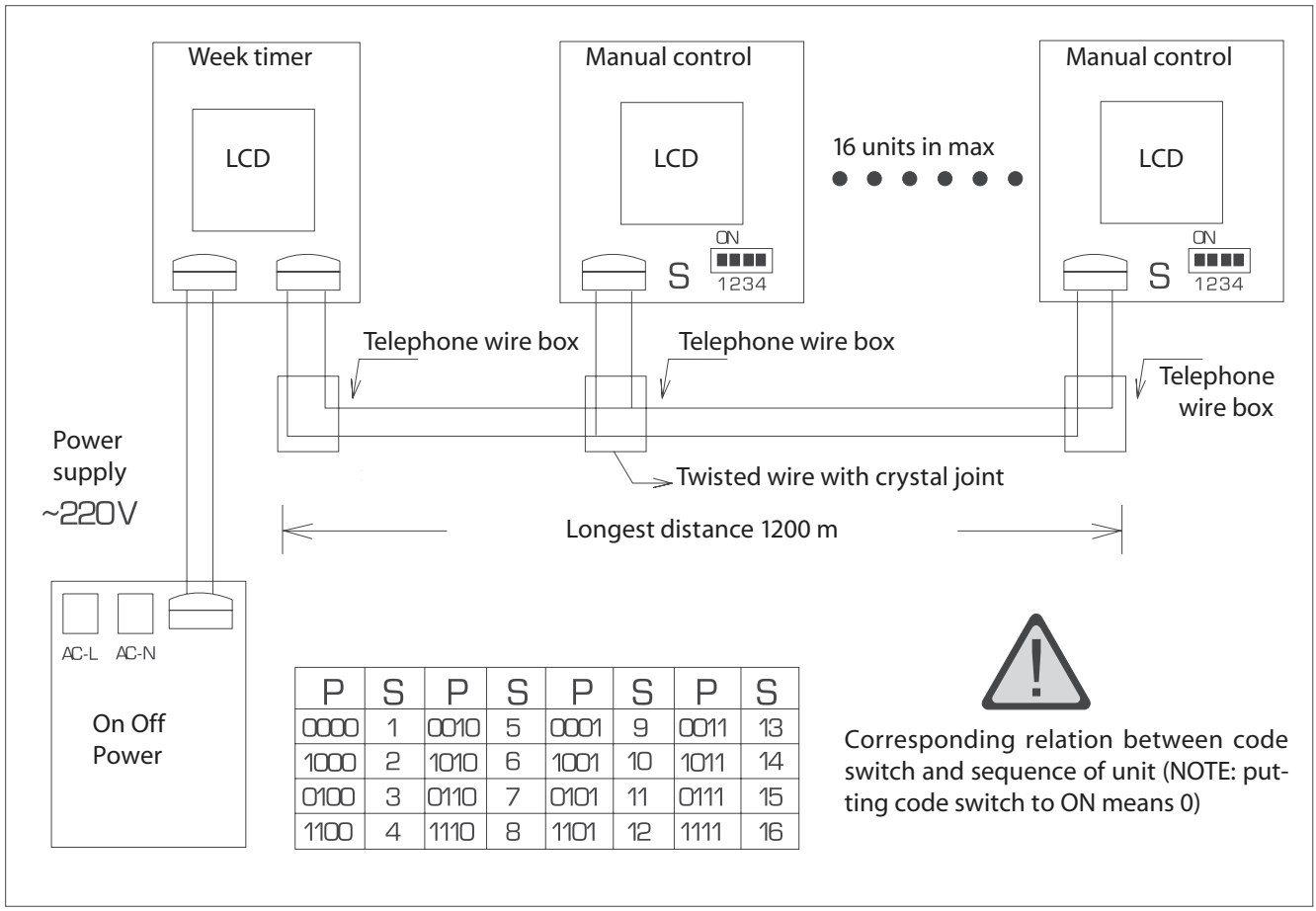
Note:

1. For upper unit checks 16 lower units consecutively, there will be no more than 16 seconds delay when setting works till unit responds.
2 Please let us know your requirement before your placing the order, for this WEEKLY TIMER will only be prepared when customer orders (communication joint with WEEKLY TIMER on manual control had been prepared).

1. Press ▲ or ▼ to select the unit that needed to be control. It is available to control several units by Group Control (1~16), or control single unit by Single Control.
2. When selected a certain or several units by Single Control or Group Control, Timer setting and On/off setting can be set. Timer setting can set 4 on/off times in a day in one week; and on/off setting can be done by pressing on/off button.
3. Connection between WEEKLY TIMER and manual control is shown as following:



P	S	P	S	P	S	P	S
0000	1	0010	5	0001	9	0011	13
1000	2	1010	6	1001	10	1011	14
0100	3	0110	7	0101	11	0111	15
1100	4	1110	8	1101	12	1111	16

Corresponding relation between code switch and sequence of unit (NOTE: putting code switch to ON means 0)

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Wire controller (with week timer functions)

WARNING!

- Never install the wired controller where there is water leakage.
- Never knock, throw or frequently open the wired controller.

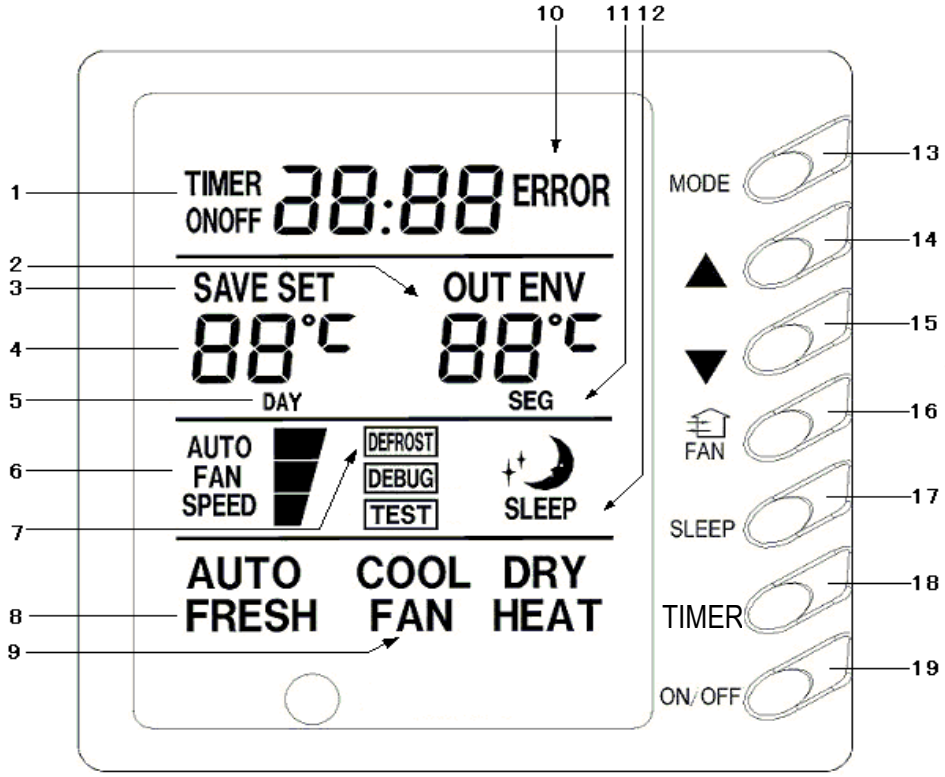

Fig.1

Each part of wired controller			
1	Timing Display	11	Timer interval Display
2	Ambient Temperature Display	12	Sleeping Status Display
3	Energy Saving Status Display	13	Mode Button
4	Set Temperature Display	14	Set Temperature Increase Button
5	Week Display	15	Set Temperature Decrease Button
6	Fan Speed Display (Auto, High Speed, Medium Speed, Low Speed)	16	Fan Speed Button
7	Defrosting Status Display	17	Sleep Button
8	Fresh Air Status Display	18	Timing Button
9	Mode (Cooling, Dehumidifying, Fan, Heating, Auto)	19	ON/OFF Button
10	Malfunction Display		

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1） ON/OFF（Fig.2）

- ❖ Press the "**ON/OFF**" button, the unit will start running.
- ❖ Press the "**ON/OFF**" button again, the unit will stop running.

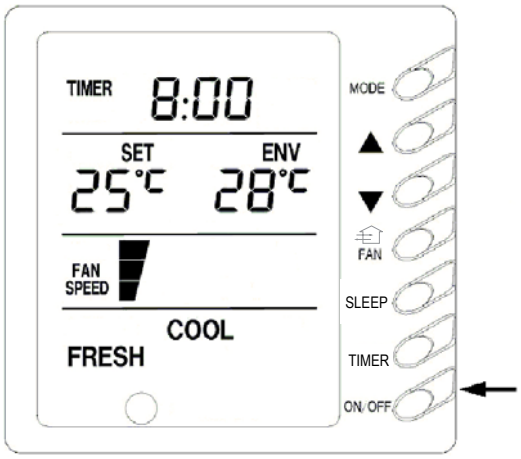

Fig.2

2）**Fan Control** (Fig.3 is about display region and the same as following figures.)

When press FAN button once, the fan speed will be changed as follow:

LOW → MID → HIGH → AUTO

- ❖ In DRY mode: the fan speed will be set at low automatically.

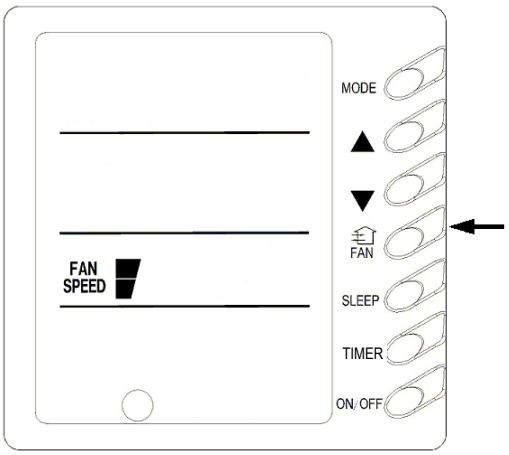

Fig.3

3）Setting Temperature (Fig.4)

- ❖ Press the setting temperature button:

▲：For temperature increase

▼：For temperature decrease

（Press this button once, the temperature will be increased or decreased by 1℃.）

Note: Press ▲+ ▼button for 5 seconds, "EE" will appear where SET TEMP is displayed and all buttons are shielded. Press ▲+▼button again for 5 seconds to cancel locked function.

If long-distance monitoring controller or central controller shield displayer, all buttons and signals from remote controller will be shielded too, and CC will be displayed where SET TEMP is displayed.

Setting temperature range under each mode:

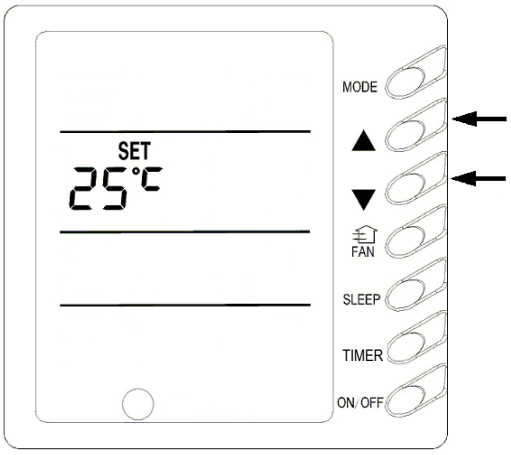

Fig.4

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HEAT --------- 16℃～30℃

COOL --------- 16℃～30℃

DRY --------- 16℃～30℃

FAN -------- can not be set

4）Sleep Function Setting(Fig.5)

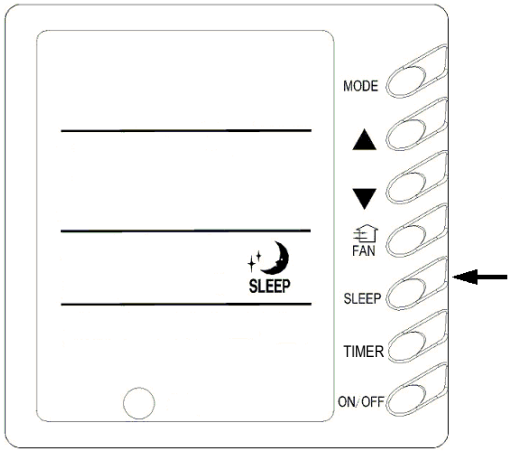

Fig.5

- If the unit has been running for 1 hour after pressing SLEEP button in cooling or dry mode, set temp will increase by 1℃, and then by 1℃ in another two hours, then the unit runs at this temp.
- If the unit has been running for 1 hour after pressing SLEEP button in heating mode, set temp will decrease by 1℃, and then by 1℃ in another two hours, then the unit runs at this temp.
- No this function in fan mode.

5）Running Mode Setting (Fig.6)

- Every press of mode button, the operation mode will change as follow:

→COOL→DRY→FAN→ HEAT → AUTO

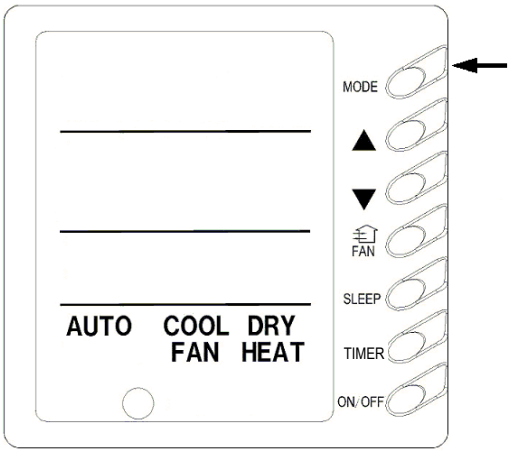

Fig.6

- In cool mode, COOL will light, in which case, setting temperature should be set to be lower than present ambient temperature; If not, the unit will not operate in cool mode and only the fan is active.
- In dry mode, DRY will light .Indoor fan will run at low speed in certain temp. range. Dry efficiency as well as energy saving efficiency in this mode is much better than that in cool mode
- In heat mode, HEAT will light. The setting temperature should be set to be higher than present ambient temperature; if not, the unit can not operate in heat mode.
- In fan mode, FAN will light.
- In auto mode, AUTO will light and the unit will run at the mode automatically adjusted according to ambient temp.
- In heating mode, if outdoor temp is low with high humidity, the outdoor unit will be frosted resulting in low

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efficiency of heating, in which case, the controller will automatically start to defrost with DEFROST displayed.

Note: No heating for cooling-only unit and auto mode will be shielded after setting energy saving.

6) **Setting Timer (Fig.7, 8, 9)**

Timer function in this wired controller conneted with weekly timer is invalid and wired controller will be controlled by weekly timer.

Either in ON status or OFF status of the unit press TIMER button into timing setting, and then press▲ or ▼ button to set timing(Fig.7),set time(Fig.8) and delete timing (Fig.9). At last, press TIMER to set it.

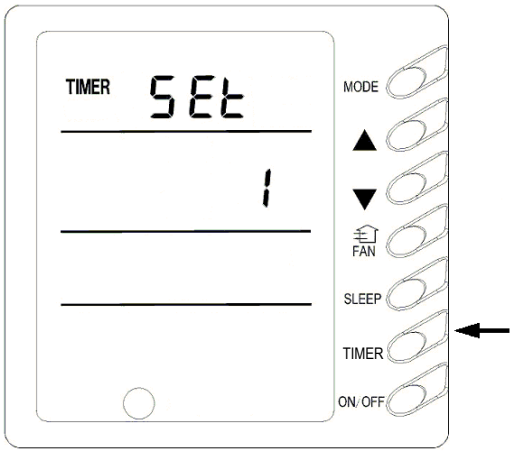

Fig.7

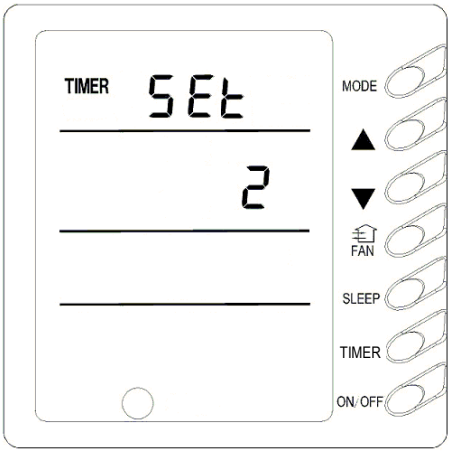

Fig.8

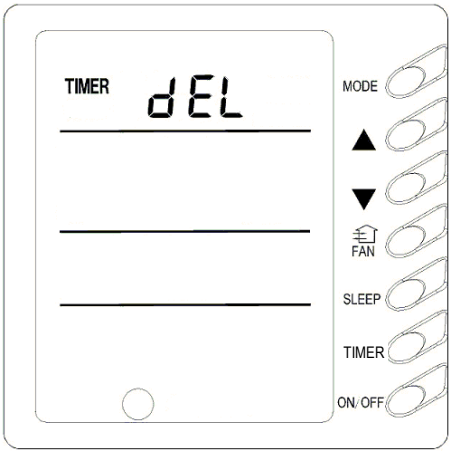

Fig.9

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❖ In timing setting mode, press MODE button to select any desired setting object: Week (1-7), timer interval (1-4), timing (Timer on or Timer off time), min. part or hour part of time, and then press▲ or ▼ button to adjust this object, which is fixed by pressing TIMER button or can be canceled by pressing Timer again. During fixing setting there must be blinking characters. During canceling setting, if there are also blinking characters, setting can be continuous till quit It by pressing ON/OFF button; meanwhile, timing data are memorized. (Fig.10, 11)

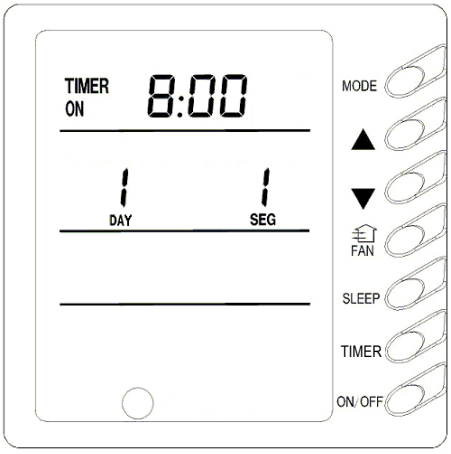

Fig.10

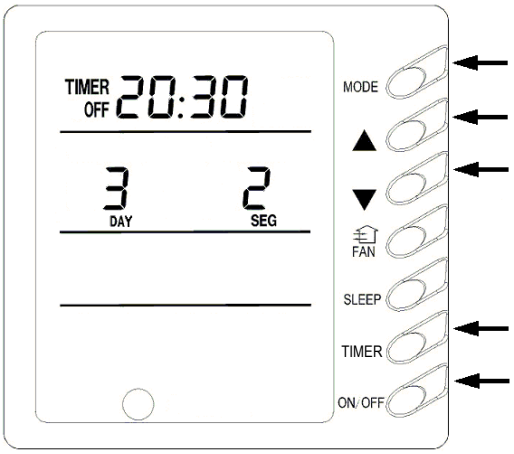

Fig.11

❖ In time setting mode press MODE button to select any desired setting object: Week (1-7), min. part (0-59) or hour part (0-23), and then press▲ or ▼ button to adjust this object, which is fixed by pressing TIMER button or can be canceled by pressing Timer again. During fixing setting there must be blinking characters. During canceling setting, if there are also blinking characters, setting can be continuous till quit It by pressing ON/OFF button.(Fig.12)

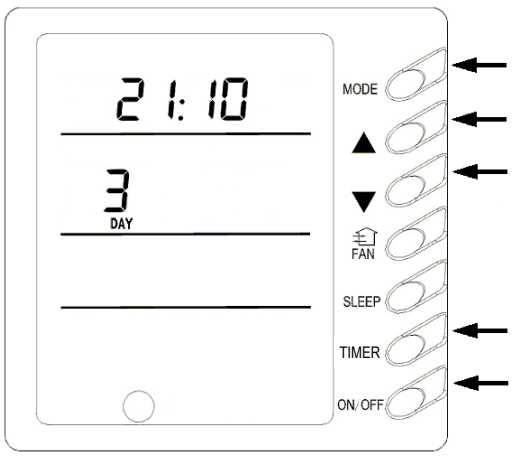

Fig.12

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❖ In deleting timing status, press ▲ or ▼ button to select one day of a week, and then press TIMER button to confirm ,in which case, ”dd” is displayed .The day also can be canceled by pressing TIMER button without “dd” displayed. At last, press ON/OFF button to quit the setting after finish.(Fig.13)

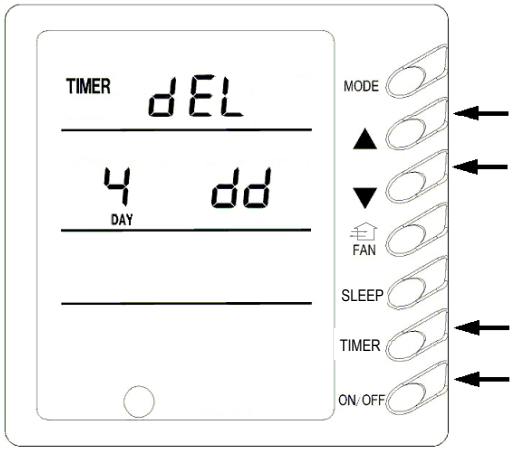

Fig.13

7）Fresh Air Valve Setting (Fig.14)

Press FAN for 5 seconds at unit off into fresh air setting, in which case FRESH will blink in LCD and fresh air mode will be displayed where set temp is displayed, which can be adjusted by pressing ▲ or ▼button. Meaning of each number:

00——Off status all the time.

01——Unit on for 60 min, fresh air valve on for 6 min

02——Unit on for 60 min, fresh air valve on for 12 min

03——Unit on for 60 min, fresh air valve on for 18 min

04——Unit on for 60 min, fresh air valve on for 24 min

05——Unit on for 60 min, fresh air valve on for 30 min

06——Unit on for 60 min, fresh air valve on for 36 min

07——Unit on for 60 min, fresh air valve on for 42 min

08——Unit on for 60 min, fresh air valve on for 48 min

09——Unit on for 60 min, fresh air valve on for 54 min

10——Full open

After adjusting press ON/OFF button to fix, then the system will memorize the number so that the unit will run

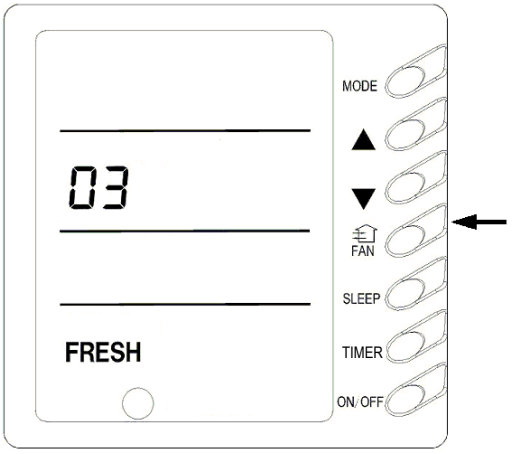

Fig.14

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in this mode. Factory defaulted value is “0” and the fresh air valve is in off status, in which case, FRESH won’t be displayed in LCD after starting the unit.

If fresh air mode (1-10) has been set, in spite of running mode of system FRESH will be displayed in LCD all the time at unit on.

Fresh air number can not be cleared if re-energize the unit after power failure.

8）Energy saving setting (Fig.15)

Press FAN+▼ for 5 seconds into energy saving menu, in which case, SAVE and COOL is displayed (If it’s the first time for setting, initial value 26℃ will be displayed.) ,lower- limit temp is displayed where set temp is displayed and set temp during setting is displayed and blinking. Press▲ and ▼ to set lower-limit cooling temp (setting range is16－30) and then press ON/OFF to fix .Press ▲ and ▼ to set upper-limit cooling temp, which will be displayed where ambient temp is displayed (setting range is 16-30), and then press ON/OFF to fix.

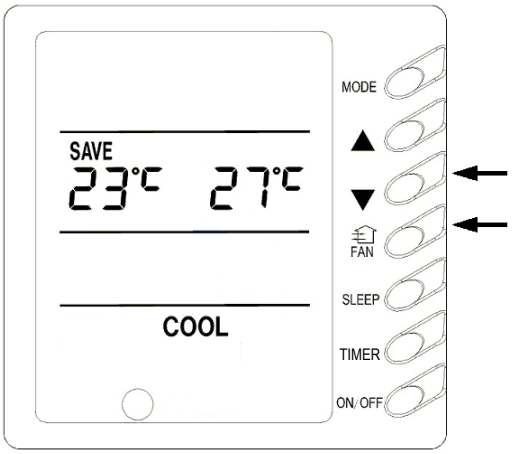

Fig.15

Note: Upper- limit temp can not be set to be lower than lower-limit temp, or else the higher temp will be defaulted to be upper limit and the lower one to be lower- limit. Press MODE button to set energy saving in cooling or dry mode and then switch to energy saving setting in heating mode, in which case, SAVE and HEAT will be displayed, which is quitted by pressing FAN and ▼ for 5 seconds. If there is no operation after the energy saving interface appears in 20s when the system responds the last press of one button, the system will trip off the menu and display normal interface of unit off.

SAVE will be displayed in LCD at next startup of the unit if above setting has been finished. Either by pressing buttons of the displayer or remote controller, the setting temp can never be set to be higher than temp range set under energy saving mode before. For example, lower-limit cooling temp under

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energy saving mode is 23℃ and upper limit is 28℃,so the user can only set cooling temperature in the range of 23-28℃.

If the same limit temperature is set, the unit will only run under corresponding mode at this setting temp.

Press Fan+▼ simultaneously for 5s to quit this function if it has been effective, but former setting value can not be cleared, which will be as the original value of next setting.

If the power is off, energy saving setting will be memorized, which continues effectively after the power is on next time.

If energy-saving mode and sleeping mode is setting, auto mode will be shielded.

9）Outdoor ambient temp display (Fig.16)

In normal condition, only indoor ambient temp is displayed where “ENVIROMENT” is displayed. Either at unit on or off press SWING button for 5 seconds, outdoor ambient temp (OUT ENV) will be displayed.

① If outdoor temp is tested to be above zero, there will be no display where setting temp is displayed and outdoor ambient temp tested by inner system will be displayed where ambient temp is displayed.

② If outdoor temp is tested to be below zero, “—” will be displayed where set temp is displayed and absolute value of outdoor ambient temp tested by inner system will be displayed where ambient temp is displayed.

After 10- second display, the system will return to display interface of indoor ambient temp.

Note: This unit function is invalid without connecting with outdoor ambient temp sensor.

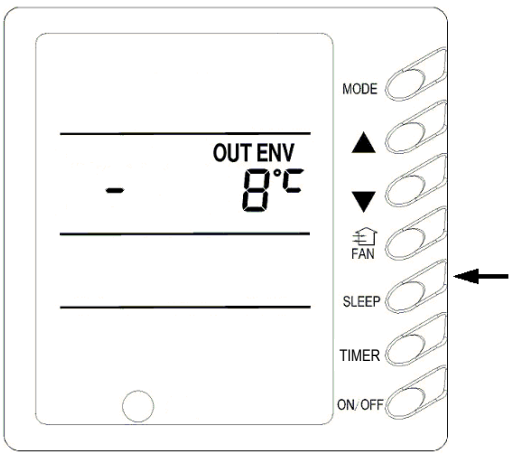

Fig.16

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10) Power –off Memory setting (Fig.17)

Press MODE button continuously for 10s and select if memorize start or stop status of the unit at unit off.01 where set temp is displayed indicates memorizing start and stop status of the unit after power off .02, which quit by pressing ON/OFF button ,indicates not memorizing. If after the interface of memorizing start and stop status of the unit appears, there is no operation in 20s when the system responds the last press of one button, the system will trip off the menu and display normal interface of unit off, but it also memorizes present information.

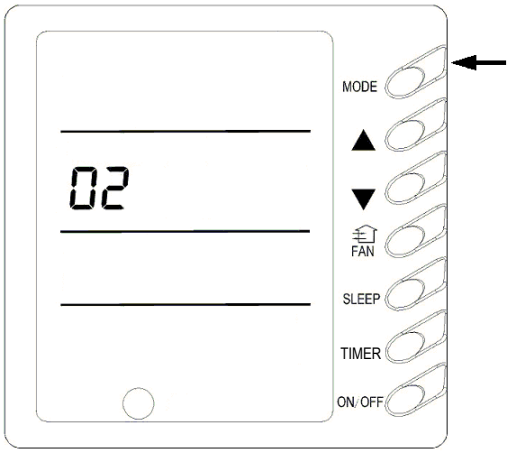

Fig.17

11）Debugging Function (Fig.18)

Press FAN+SLEEP button at unit off for 10 seconds into debugging menu, in which case, DEBUG will be displayed, and then press MODE to set object. Detailed number is set by pressing ▲ and ▼ button.

a）Ambient temp sensor setting

In debugging status, 01 where set temp is displayed is adjusted by pressing MODE, and setting status where ambient temp is displayed is adjusted by pressing ▲ and ▼ button. There are three types of status for selection.

①01） Ambient temp of air inlet (01)

②Ambient temp around the displayer (02 is displayed)

③Air inlet temp sensor in cooling, dry or fan mode; manual controller temp sensor in heating or auto mode (03)

Factory default status is the third type 03.

If there is no operation in 20s when system responds the last press of one button, the system will trip off the menu and display normal interface of unit off, but it also memorizes present information.

b) Fan Speed Setting

In debugging status, 02 where set temp is displayed is adjusted by pressing MODE, and setting status where

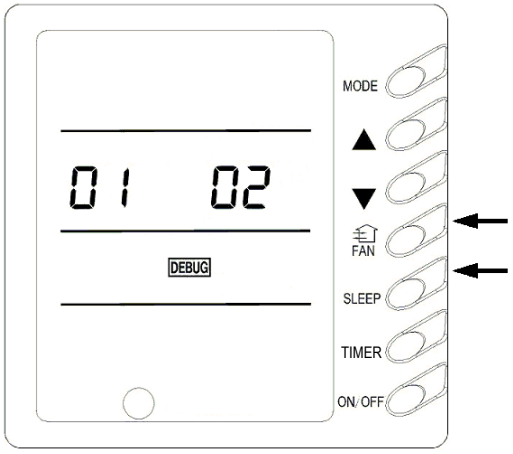

Fig.18

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ambient temp is displayed is adjusted by pressing ▲ and ▼ button. There are five types of status for selection.

1. 220V (01 displayed in LCD) (Fan speed adjustment is unavailable)
2. 200V (02 displayed in LCD)
3. 180V (03 displayed in LCD)
4. 160V (04displayed in LCD)
5. 140V (05 displayed in LCD)

Note: Factory default status is the third type 01.

After setting press ON/OFF to fix and quit .If there is no operation in 20s when system responds the last press of one button, the system will trip off the menu and display normal interface of unit off, but it also memorizes present information.

12）System Parameters Review (Fig.19,20)

Press FAN and SWING button simultaneously for 10s into system parameter review interface when the unit is on, in which case, DEBUG is displayed, and then press ▲or ▼button to adjust displayed object. Display meanings of four nixie tubes: the first number 1 or 2 on the top is system number and other 3 numbers is absolute value of exhaust temp. Indoor duct temp is displayed where set temp is displayed and defrost temp sensor is displayed where ambient temp is displayed. If the temp is below zero, it can be distinguished by ℃ at the back of the number.

Press ▲or ▼button to adjust displayed objects. When the first number is displayed in the upside like “d” (Fig.20), the second nixie tube will display on-off status of fresh air valve, the third nixie tube will display quantity of fresh air valves, and the fourth nixie tube will display quantity of fresh air valves turned on.

If don’t quit interface of checking parameters after 30 min, the system will trip off it and display normal status of unit on.

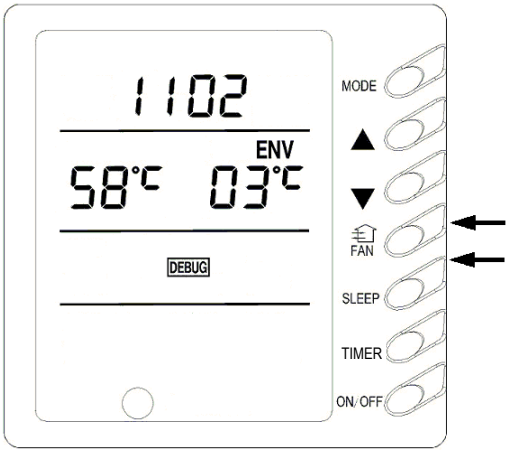

Fig.19

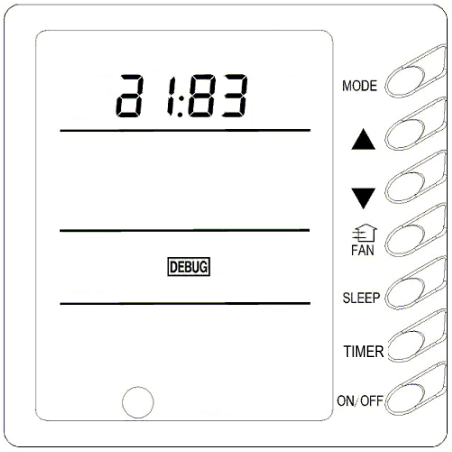

Fig.20

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13) Malfunction Display (Fig.21)

If malfunction happens during operating of the unit, ERROR will blink with error code displayed. If some malfunctions occur simultaneously, the codes will be displayed in cycle. The first number indicates system number, which won't appear if only one system. The last two numbers indicate detailed malfunction codes. For example, the right figure indicates compressor low-pressure protection of system 1.

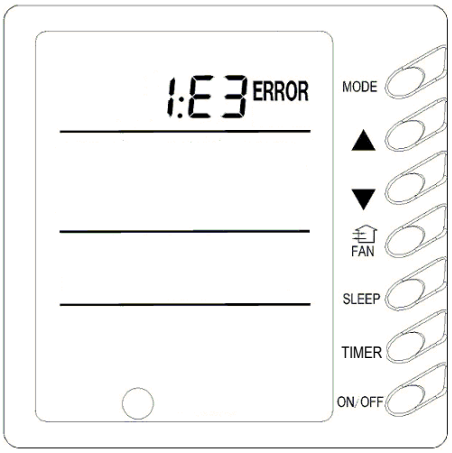

Fig.21

Codes	Malfunction
E0	Water pump malfunction
E1	Compressor high-pressure protection
E2	Indoor anti-freezing protection
E3	Compressor low-pressure protection
E4	Compressor high-temp. exhaust protection
E5	Compressor overload protection
E6	Communication malfunction
E8	Indoor fan protection
E9	Water-full protection
F0	Air inlet indoor ambient temp. sensor malfunction
F1	Evaporator temp. sensor malfunction
F2	Condenser temp. sensor malfunction
F3	Outdoor ambient temp. sensor malfunction
F4	Exhaust ambient temp. sensor malfunction
F5	Ambient temp. sensor malfunction in displayer
EH	Auxiliary electric heat malfunction

Note!

If EH malfunction happens, please power the unit off immediately and ask professionals for help.

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1. Setting of Double Indoor Room Sensors

This series of ducted air-conditioning unit has two indoor room sensors. One is located at the air intake of the indoor unit and the other one is located inside the wire controller.

User can select one from the two indoor room sensors on the basis of the engineering requirement. (Refer to the section of wire controller instructions for detailed operation.)

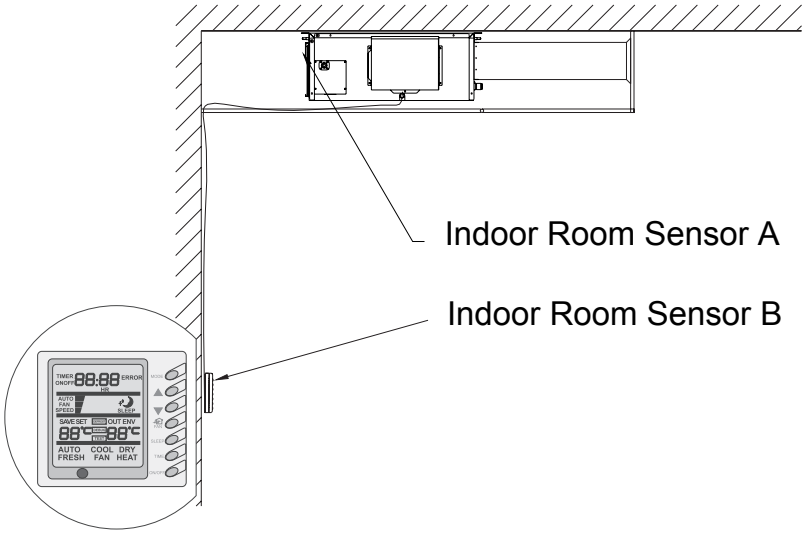

Fig.22

2.Checking of Outdoor Ambient Temperature

The outdoor ambient temperature can be checked on the wire controller for the convenience of users before going out. (Refer to the section of wire controller instructions for detailed operation.)

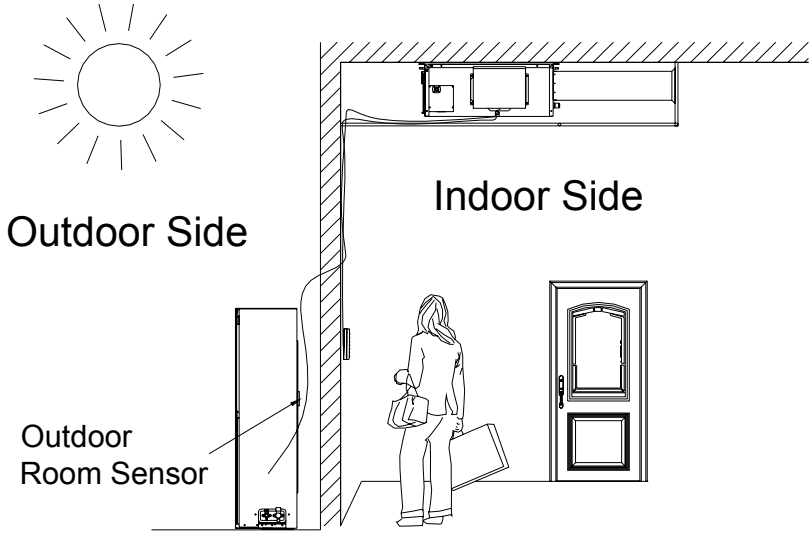

Fig 23

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3. Fresh Air Control

11-levels control can be realized for the amount of fresh air taken in. The function not only facilitates the health of users, but also controls the electricity consumption loss because of taking in fresh air. This kind of control can be carried out through the wire controller. The function can set at any time, goes into effect at any time, and features very simple operation. (Refer to the section of wire controller instructions for detailed operation.)

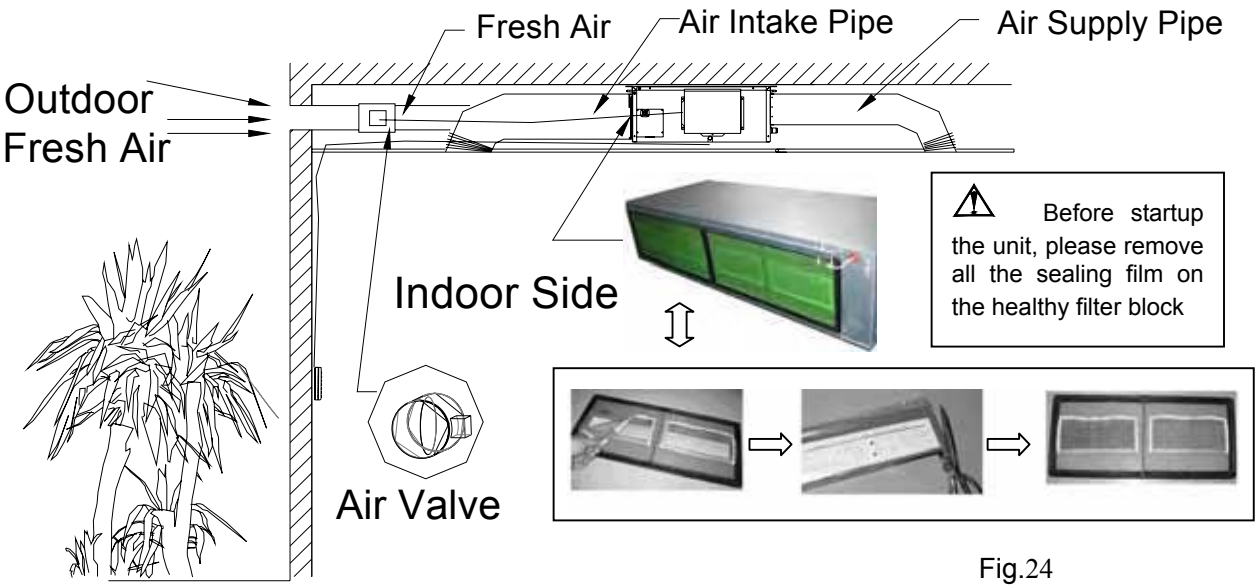

Fig.24

4. **The head of delivery of the condensate drainage pump can reach 1.1m, so that the engineering installation is very convenient and prompt.**

No Pump	GFH09K3BI
	GFH12K3BI
	GFH18K3BI
Pump (option)	GFH24K3BI
	GFH36K3BI
	GFH42K3BI
	GFH48K3BI
	GFH60K3BI

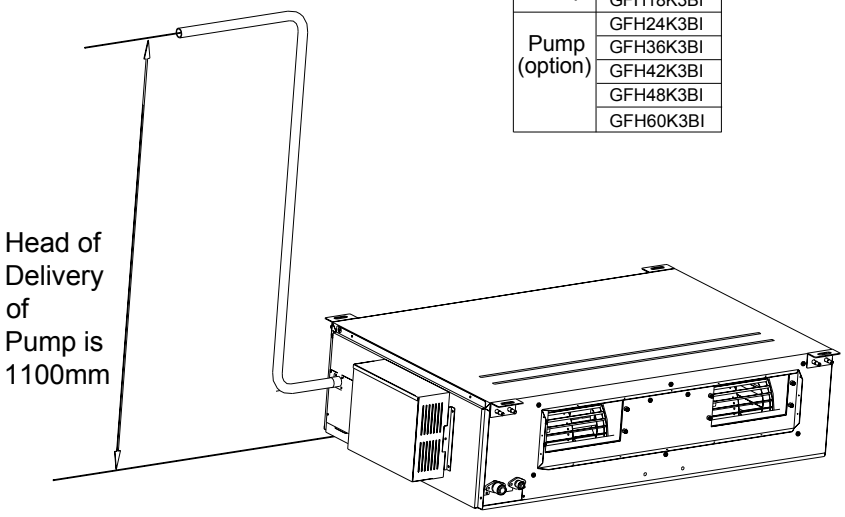

Fig.25

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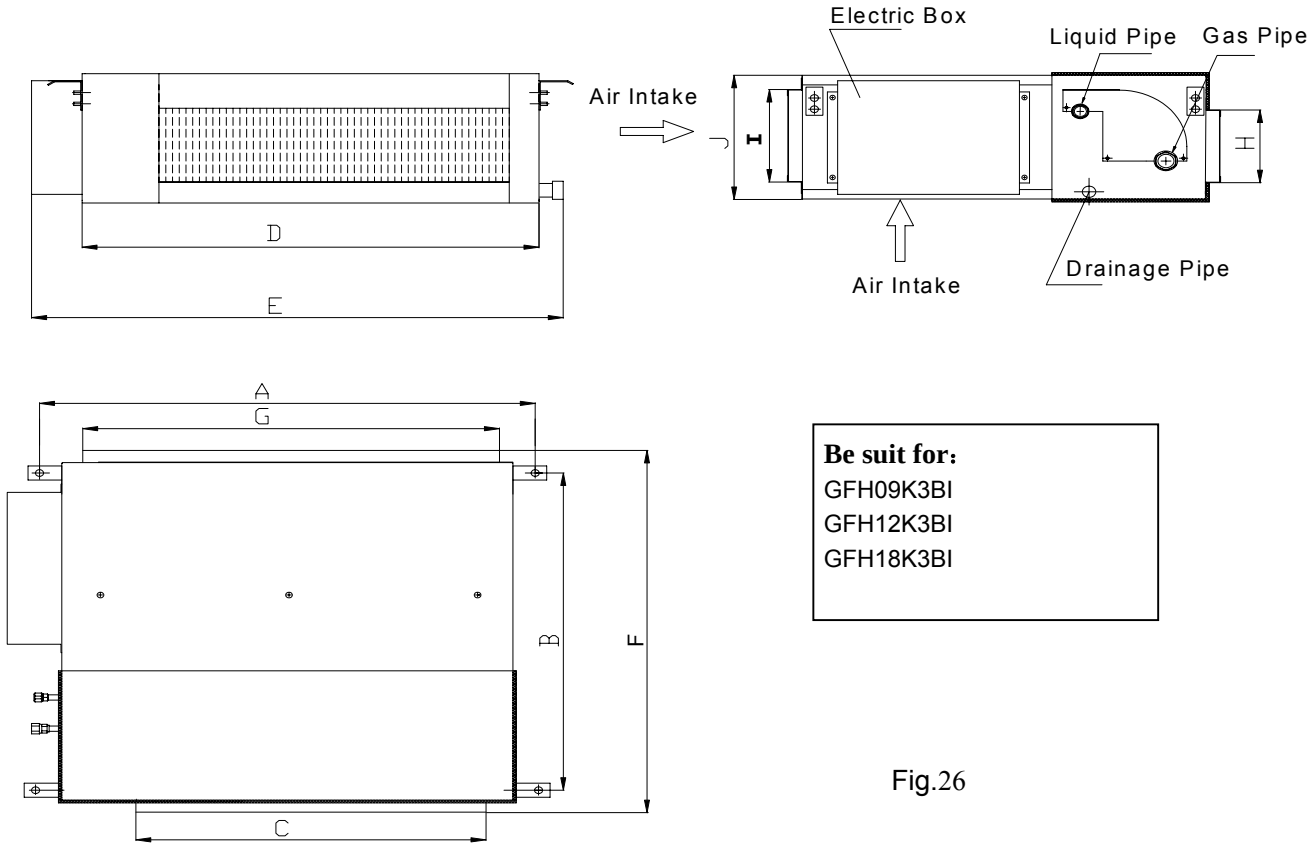
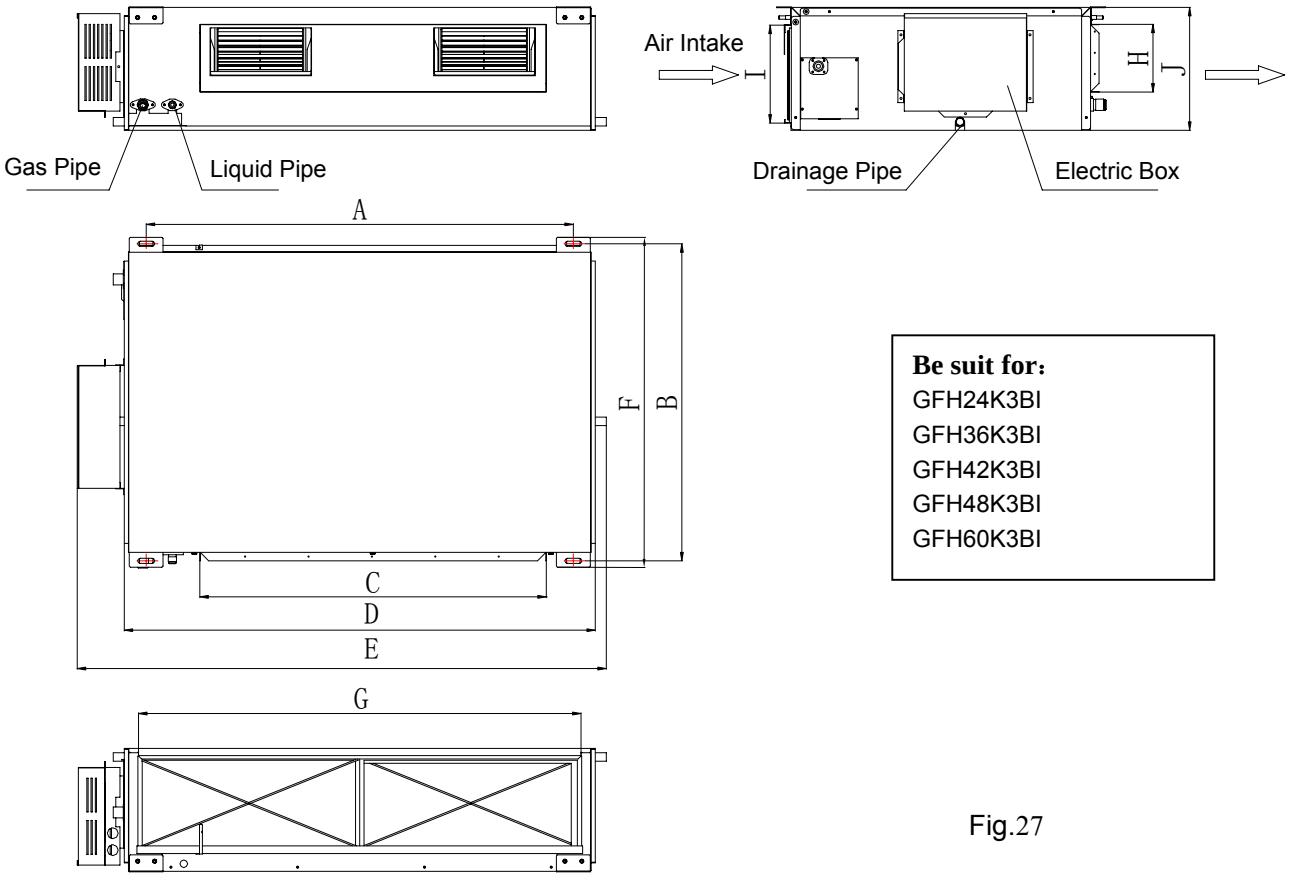
Profile Dimensions of Indoor Unit



Be suit for:
GFH09K3BI
GFH12K3BI
GFH18K3BI

Fig.26



Be suit for:
GFH24K3BI
GFH36K3BI
GFH42K3BI
GFH48K3BI
GFH60K3BI

Fig.27

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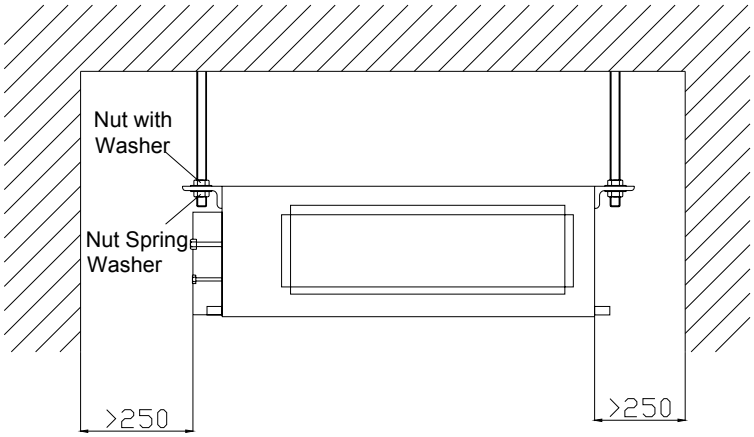
Profile Dimensions of Indoor Unit

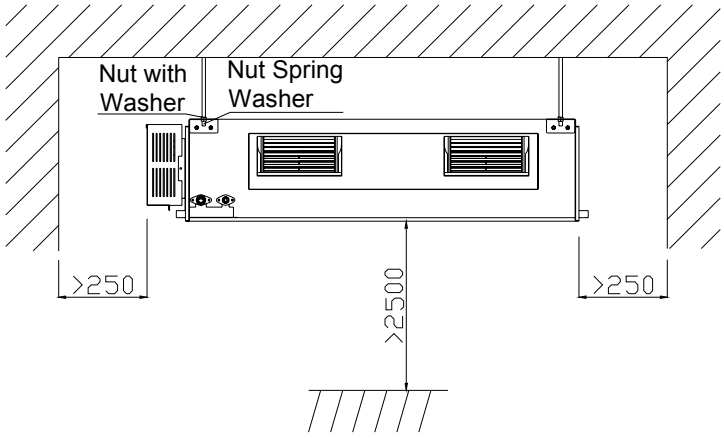
Item / Model	A	B	C	D	E	F	G	H	I	J	Connecting Pipe(Liquid Pipe)	Connecting Pipe(Gas Pipe)	Drainage Pipe(Outer Diameter × Wall Thickness)
GFH09K3BI	856	571	515	790	913	680	750	100	172	220	1/4″	3/8″	Φ20×1.5
GFH12K3BI												1/2″	
GFH18K3BI	932	627	738	894	1012	736	738	125	207	266	1/4″	1/2″	Φ30×1.5
GFH24K3BI	1101	395	820	1159	1270	504	1002	160	235	268	3/8″	5/8″	Φ20×1.5
GFH36K3BI	1011	635	820	1115	1251	744	980	160	231	290	1/2″	3/4″	Φ20×1.5
GFH42K3BI													
GFH48K3BI													
GFH60K3BI	1015	679	820	1115	1251	788	980	160	261	330	1/2″	7/8″	Φ32×1.5

Dimension Requirement of the Installation Space of Indoor Unit



Be suit for:
GFH09K3BI
GFH12K3BI
GFH18K3BI

Fig.28



Be suit for:
GFH24K3BI
GFH36K3BI
GFH42K3BI
GFH48K3BI
GFH60K3BI

Fig.29

⚠ **Warning:** The height of installation for the indoor unit should be 2.5m above.

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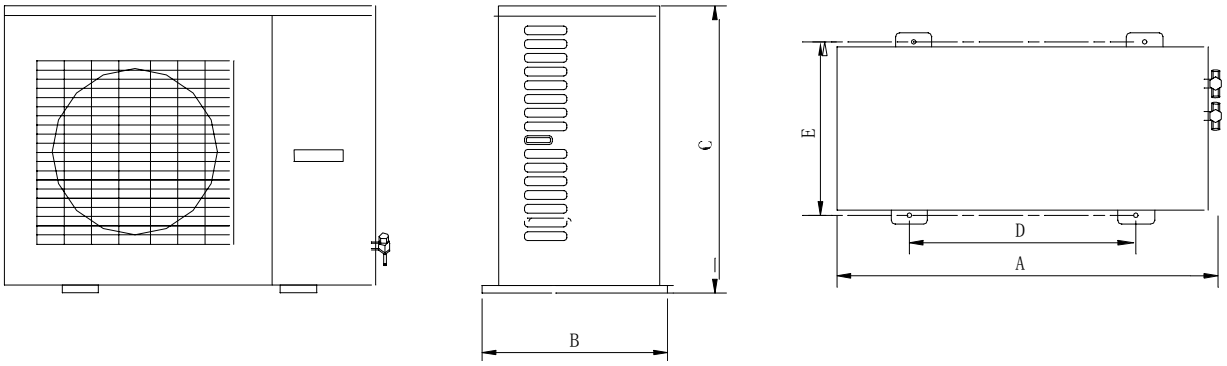
Profile Dimensions of Outdoor Unit



Unit: mm

Model / Item	GUHN09NK3AO GUHN12NK3AO GUHN18NK3AO	GUHN24NK3AO	GUHN36NK3AO GUHN36NM3AO	GUHN42NM3AO GUHN48NM3AO GUHN60NM3AO
A	848	1018	1018	950
B	320	412	412	412
C	540	700	840	1250
D	540	572	572	572
E	286	300	378	378

Dimension Requirement of the Installation Space of Oudoor Unit

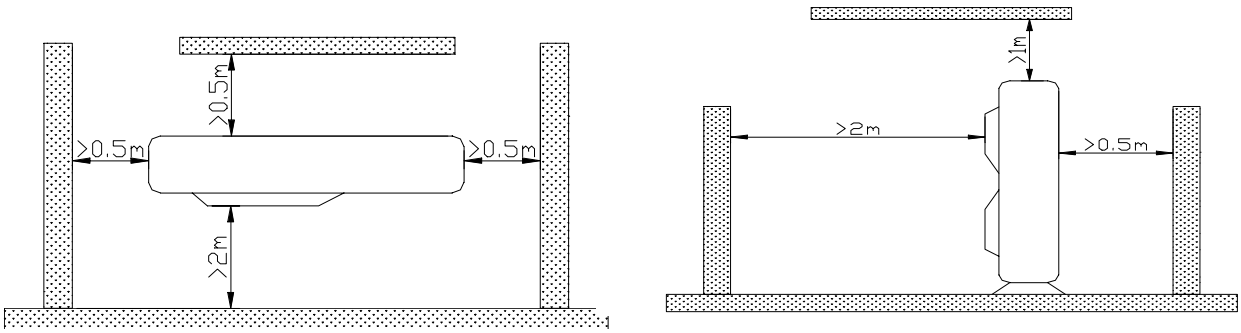


Fig.31

Unit Installation Instructions

Precautions on Installation of Outdoor Unit

To ensure the unit in proper function, selection of installation location must be in accordance with following principles:

(1) Outdoor unit shall be installed so that the air discharged by outdoor unit will not return and that

(2) The installation site must have good ventilation,so that the outdoor unit can take in and exhaust enoughair.Ensure that there is no obstacle for the airintake and exhaust of the outdoor unit.If there is any obstacle blocking the air intake or exhaust, remove it.

(3) Place of installation shall be strong enough to support the weight of outdoor unit, and it shall be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit will not affect your neighbors.

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(4) Avoid direct sunshine over the unit. It is better to set up a sun shield as the protection.

(5) Place of installation must be able to drain the rainwater and defrosting water.

(6) Place of installation must ensure the machine will not be buried under snow or subject to the influence of rubbish or oil fog.

(7) The installation site must be at a place where the air exhaust outlet does not face strong wind.

Installation of Indoor Unit

1. Selection of Installation Site

(1) Ensure the top hanging piece has strong strength to withstand the weight of the unit.

(2) The drainage pipe has convenient flow of water.

(3) There is no obstacle blocking the air intake and exhaust outlet, so as to ensure sound air circulation.

(4) The installation spaces required by the drawing must be ensured, so as to provide enough space for the service and maintenance.

(5) The installation site must be far away from heat source, leakage of inflammable gas or smoke.

(6) The indoor unit is of ceiling mount (indoor unit is hidden inside the ceiling).

(7) The indoor and outdoor units, the power cable and the connecting electrical lines must be at least 1 meter from any TV set or radio. This is to avoid image interference or noise of the TV set or radio. (Even if the distance is 1 meter, noise can also exist if there is strong electric wave.)

2. Installation of Indoor Unit

(1) Insert a M10 expansion bolt into the hole. Drive a nail into the bolt. Refer to the profile dimensions drawing of the indoor unit for the distance between the holes. Refer to Figure 32 for the installation of the expansion bolt.

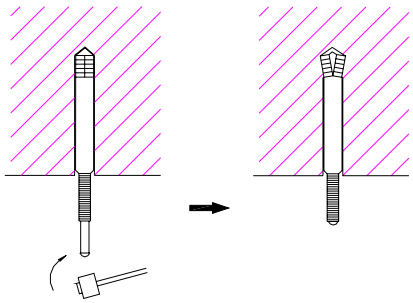

Fig. 32

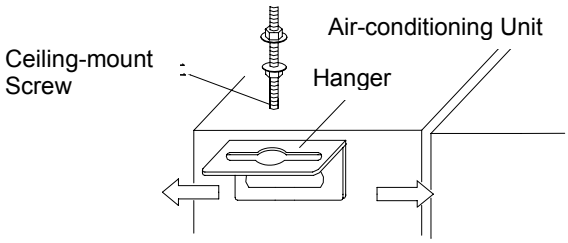

Fig. 33

(2) Install the hanger onto the indoor unit as Figure 33 shows.

(3) Install the indoor unit at the ceiling as Figure 34 shows.

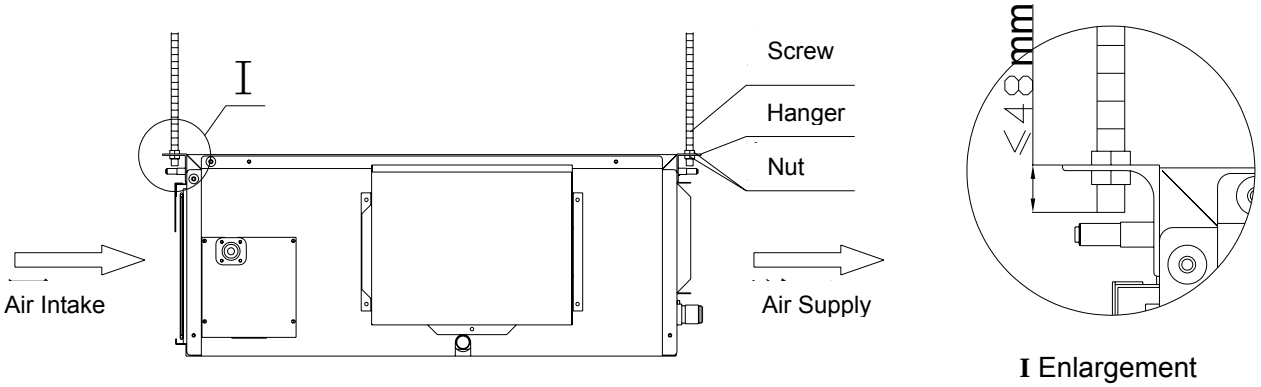

Fig. 34

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Precautions for unfavorable installation:

1. The preparation of all pipes (connecting pipes and drainage pipes) and cables (connecting lines of wire controller, indoor unit and outdoor unit) must be ready before the installation, so as to achieve smooth installation.
2. Drill an opening on the ceiling. Maybe it is required to support the ceiling to ensure the evenness of it and avoid the vibration of it. Consult with the user or a construction company for details.
3. In case the strength of ceiling is not enough, use angle iron sections to set up a beam support. Place the unit at the beam and fix it.

Level Check of the Indoor Unit

After the indoor unit is installed, it is required to check the level of the whole unit. The unit must be placed horizontally, but the condensate pipe shall be installed obliquely, so as to facilitate the drainage of condensate.

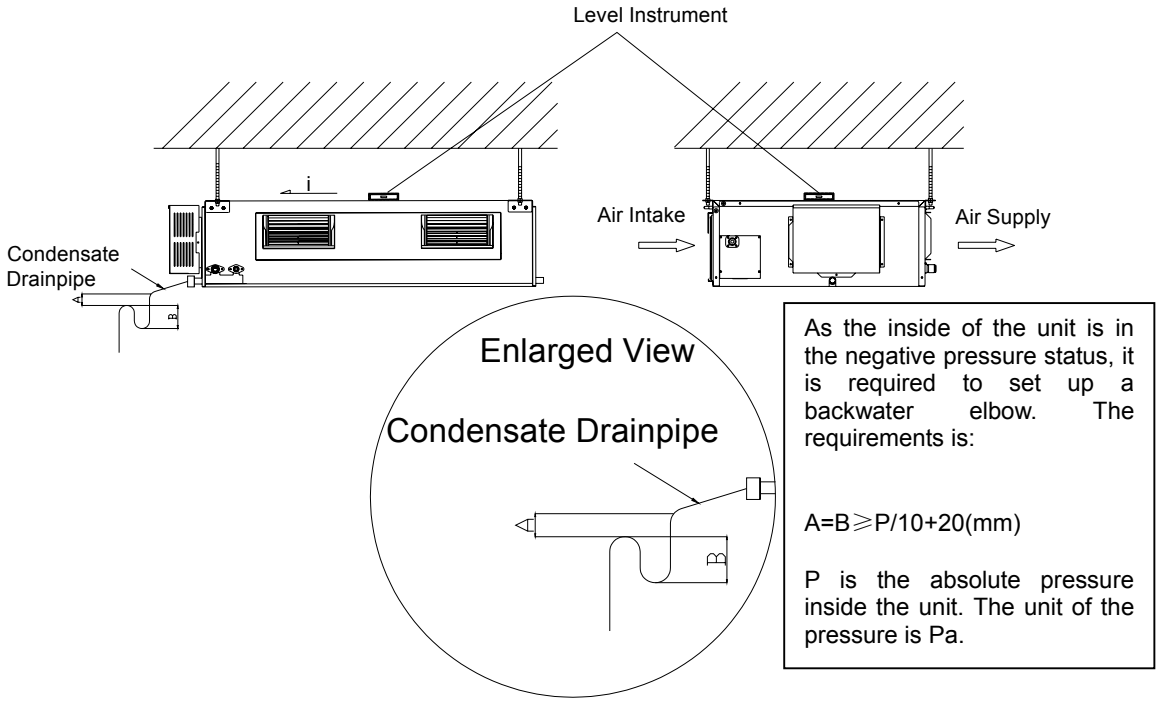
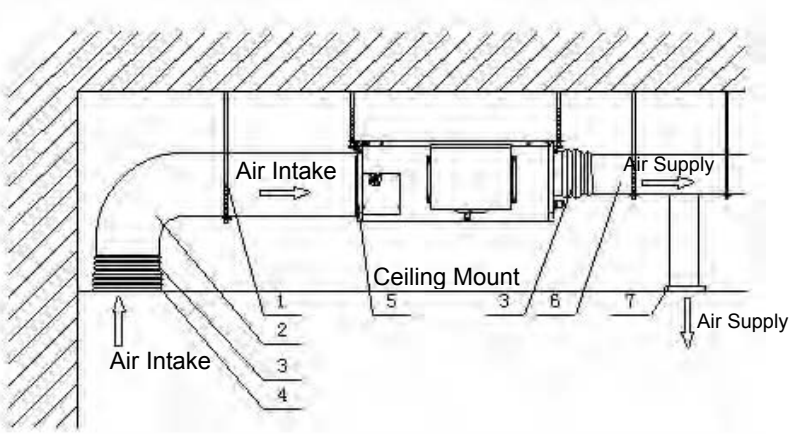


Fig. 35

Installation of Rectangular Air Pipe



No.	Name	No.	Name
1	Hanger	5	Filter
2	Air Intake Pipe	6	Main Air Supply Pipe
3	Canvas Air Pipe	7	Air Supply Outlet
4	Air Intake		

Fig. 36

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⚠ Cautions:

- The air supply pipe, the air intake pipe and the fresh air pipe must be covered with a layer of thermal insulation, so as to avoid thermal leakage and condensation. Firstly apply liquid nail on the pipes, then attach the thermal insulation cotton with a layer of tinfoil. Use the liquid nail cover to fix it. Lastly use tinfoil adhesive tape to carefully seal the joints; other good thermal insulation materials can also be used.
- The air supply pipes and the air intake pipes shall be fixed to the prefabricated boards of the ceiling by using iron supports. The joints of the pipes must be sealed by glue so as to avoid leakage.
- The design and installation of air pipes must be in conformity with the relevant state engineering criteria.
- The edge of the air intake pipe must be at least 150mm away from the wall. The air intake must be covered with filter.
- Silencing and shock absorption shall be considered in the design and installation of the air pipes. Additionally, the noise source must be far away from where people stay. The air intake shall not be located above the place where users stay (offices and rest places, etc.).

Installation of Drainage Pipeline

(1) The Drainage Pipeline shall be installed with an inclining angel of 5～10°, so as to facilitate the drainage of condensate. The joints of the Drainage Pipeline must be covered by thermal insulation materials to avoid generation of exterior condensate. (As shown in Figure 37)

(2) A Drainage outlet is located at both the left and right sides of the indoor unit. After selecting one Drainage outlet, the other outlet shall be blocked by rubber plug. Bundle the blocked outlet with string to avoid leakage, and also use thermal insulation materials to wrap the blocked outlet.

(3) When shipped out from factory, both the Drainage outlets are blocked by rubber plugs.

(4) When connecting the drainage pipe with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.

(5) Purchase general-purpose hard PVC pipe locally to be used as the drainage pipeline. When carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube.

(6) When the laid drainage pipe is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

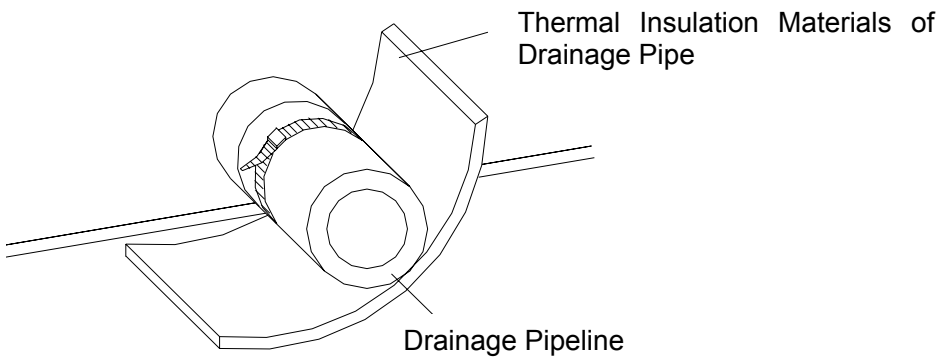

Fig. 37 Thermal Insulation of Drainage Pipeline

⚠ **Caution: The joint of Drainage Pipeline must not have leakage.**

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Testing of Drainage System

(1) After the electrical installation is completed, carry out the testing of the drainage system.

(2) During the test, check if the water correctly flows through the pipelines. Carefully observe the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

Selection of Connecting Pipe

Item / Model	Size of Fitting Pipe (Inch)		Max. Pipe Length (m)	Max. Height Difference between Indoor Unit and Outdoor Unit m	Amount of Additional Refrigerant to be Filled (For Extra Length of Pipe)
	Gas Pipe	Liquid Pipe			
GFH09K3BI GUHN09NK3AO	3/8	1/4	20	15	30g/m
GFH12K3BI GUHN12NK3AO GFH18K3BI GUHN18NK3AO	1/2				
GFH24K3BI GUHN24NK3AO	5/8	3/8	30	15	60g/m
GFH36K3BI GUHN36NK3AO GFH36K3BI GUHN36NM3AO GFH42K3BI GUHN42NM3AO GFH48K3BI GUHN48NM3AO	3/4	1/2	50	30	120g/m
GFH60K3BI GUHN60NM3AO	3/4	1/2	50	30	120g/m

Note：1 The standard pipe length is 5m. When the length (L) of the connecting pipe is less than or equals 5m, there is no need to add refrigerant. If the connecting pipe is longer than 5m, it is required to add refrigerant. In the above table, the amounts of refrigerant to be added for the models are listed for each additional meter of pipe length.

2. The pipe wall thickness shall be 0.5-1.0 mm and the pipe wall shall be able to withstand the pressure of 6.0 MPa.

3.The longer the connecting pipe, the lower the cooling effect and the heating effect.

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Connection of Pipeline

1. Align the flared end of the copper pipe with the center of the thread joint. Manually tighten the flared end nut.
2. Use torque spanner to tighten the flared end nut until the spanner clatters (Figure 38).

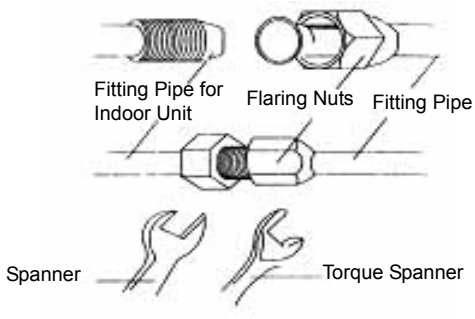

Fig.38

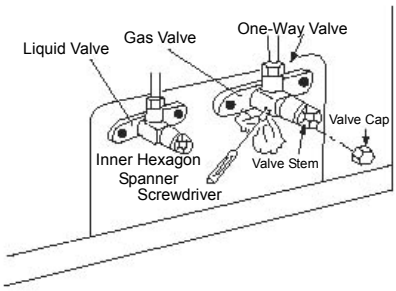

Fig.39

The following table describes the torques for tightening nuts of different pipe diameters.

Pipe Diameter	Tightening Torque
1/4″ （Inch）	15-30 (N • m)
3/8″ （Inch）	35-40 (N • m)
5/8″ （Inch）	60-65 (N • m)
1/2″ （Inch）	45-50 (N • m)
3/4″ （Inch）	70-75 (N • m)
7/8″ （Inch）	80-85 (N • m)

3.The bending angle of the fitting pipe shall not be too large, and otherwise the pipe may break. Please use a bender when bending the fitting pipes.

4. Use sponge to wrap the connecting pipe and joint , Then use plastic tape to bundle the sponge.

5. Remove the bonnets of the liquid valve and the gas valve.

6. Use an inner hexagon spanner to turn the spool of the liquid valve for 1/4 circle. At the same time, use a screwdriver to lift the spool. Then there is discharge of gas.

7. Refrigerant gas shall appear after the gas is discharged for 15 seconds. Now close the one way valve immediately and tighten the bonnet.

8. Fully open the spools of the liquid valve and the gas valve (refer to Figure 39).

9. Tighten the valve cover. Then use soap water or leakage detector to check if there is leakage at the position where the indoor unit or the outdoor unit is connected with pipelines.

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10. If conditions allow, use a vacuum pump to remove air out from the valve. Refer to Figure 40

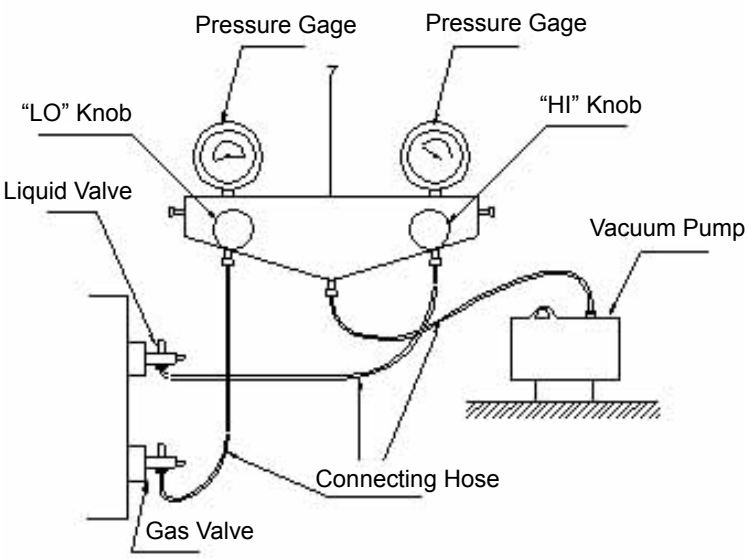

Fig.40

⚠ **Caution**：1. When connecting the indoor unit with the connecting pipe, do not pull the big and small joints of the indoor unit forcefully, so as to prevent the capillary of the indoor unit and other pipes from breaking and leaking.

2.The connecting pipe shall be supported by proper bracket. The weight of the pipe shall not be withstand by the unit.

Installation of Protective Layer of Connecting Pipe

1. To avoid generation of condensate on the connecting pipe and avoid leakage, the big pipe and the small pipe of the connecting pipe must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from air.
2. The joint connecting to the indoor unit must be wrapped by thermal insulation material. There shall be no gap between the connecting pipe joint and the wall of the indoor unit. Refer to Figure 41.

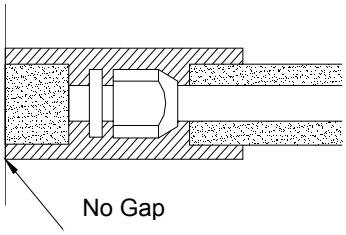

Fig.41

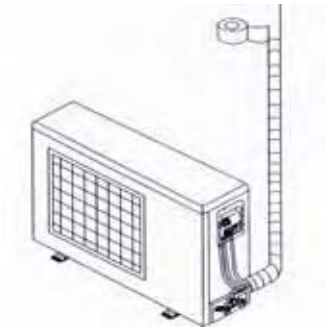

Fig.42

⚠ **Caution:** After the pipes are wrapped by protective materials, never bend the pipes to form very small angle, and otherwise the pipes may crack or break.

3. Use adhesive tape to wrap the pipes:

(1) Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from overflowing out from the drainage pipe, separate the drainage pipe firm the connecting pipe and the cables.

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(2) Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit until the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the front circle of tape (Refer to Figure 42).

(3) Wrapped pipe must be fixed to wall using pipe clamps.

⚠ Caution:

(1) Do not wrap the protective tape too tight, and otherwise the efficiency of thermal insulation may be decreased. Ensure that the condensate drainage flexible tube is separate from the bundled pipes.

(2) After the protective work is completed and the pipes are wrapped, use seal material to block the hole in the wall, so as to prevent rain and wind from entering the room.

Position and Method of Installing Wire Controller

1. One end of the control wire of the wire controller is connected with main board of electric box of indoor unit inside, it should be tightened by wire clamp, the other end should be connected with the wire controller (installation sketch map as shown in below). The control wire be used for the indoor unit and wire controller, which is special, the length is 8 meters,
   the material be adopted for the control wire should be metallic substance. The wire controller could not be disassembled and the control wire be used for the wire controller should not
   be changed by users optionally, the installation and maintenance should be carried out by the professional personnel.
2. First select an installation position. According to the size of the control wire of the wire controller, leave a recess or a embedded wire hole to bury the control wire.
3. If the control wire between the wire controller and the indoor unit is surface-mounted, use 1# metallic pipe and make matching recess in the wall (refer to Figure 43; If concealed installation is adopted, 1# metallic pipe can be used (Refer to Figure 44).
4. No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) which distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wire controller. Then insert a wood plug into each hole. Fix the bottom plate of the wire controller to the wall by using the two holes. Plug the control wire onto the control panel.
   Lastly install the panel of the wire controller.

Caution:

During the installation of the bottom plate of the wire controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, and otherwise the panel of the wire controller cannot be correctly installed.

Connection of Signal Line of Wire Controller

1. Open the cover of the electric box of the indoor unit.
2. Pull the signal cable of the wire controller through the rubber ring.
3. Plug the signal line of the wire controller onto the 4-bit pin socket at the circuit board of the indoor unit. (CN10 of the wire controller connect with CN3 of the indoor unit)
4. Use cable fastener to bundle and fix the signal cable of the wire controller.

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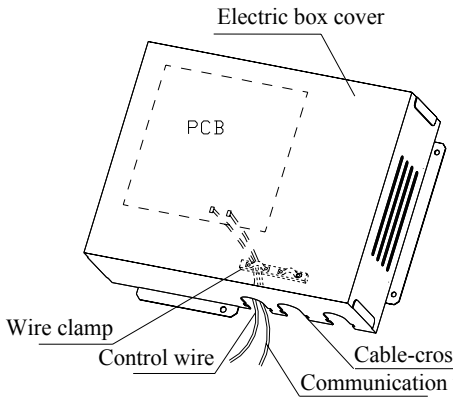

sketch map for indoor unit communication wire

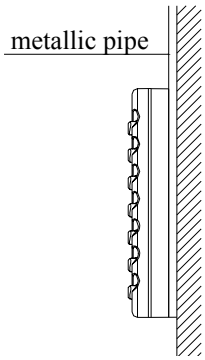

Figure 43 Surface Mounting of Cable

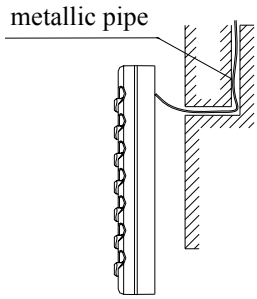

Figure 44 Concealed mounting of Cable

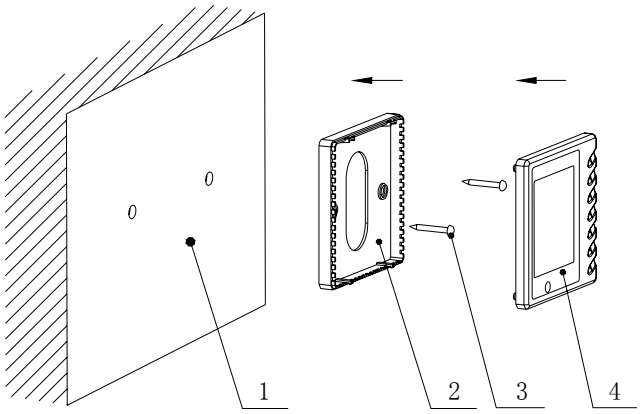

Figure 45 Schematic Diagram of Installation

No.	Name
1	Wall Surface
2	Bottom Plate of Wire Controller
3	Screw M4X10
4	Panel of Wire Controller

⚠ **Caution:**

1. The communication distance between the main board and the wire controller is 8 meters.
2. The wire controller shall not be installed in a place where there is water drop or large amount of water vapor.

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Instructions of Unit Installation

Electrical Installation

⚠ **Caution: Before installing the electrical equipment, please pay attention to the following matters which have been specially pointed out by our designers:**

（1） Check to see if the power supply used conforms to the rated power supply specified on the nameplate.

（2） The capacity of the power supply must be large enough.

（3） The lines must be installed by professional personnel.

An electricity leakage protection switch and an air switch with gap between electrode heads larger than 3mm shall be installed in the fixed line.

1. Connection of signal wire

（1） Use wire stripper to strip the insulation layer (25mm long) from the end of the signal wire.

（2） Remove the screw at the terminal board of the air-conditioning unit.

（3） Use pliers to bend the end of the signal wire so that a loop matching the screw size is formed.

（4） Put the screw through the loop of the signal wire and fix the loop at the terminal board.

2. Connection of multiple twisted wires

（1） Use wire stripper to strip the insulation layer (10mm long) from the end of the multiple twisted wires.

（2） Remove the screw at the terminal board of the air-conditioning unit.

（3） Use crimping pliers to connect a terminal (matching the size of the screw) at the end of the multiple twisted wires.

（4） Put the screw through the terminal of the multiple twisted wires and fix the terminal at the terminal board.

⚠ **Warning:**

If the power supply flexible line or the signal line of the equipment is damaged, only use special flexible line to replace it.

1. Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.
2. The air-conditioning unit shall have special power supply line which shall be equipped with electricity leakage switch and air switch, so as to deal with overload conditions.
3. The air-conditioning unit must have grounding to avoid hazard owing to insulation failure.
4. All fitting lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.
5. All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage of the air-conditioning unit.
6. Do not let any cable contact the refrigerant pipe, the compressor and moving parts such as fan.
7. Do not change the internal line connections inside the air-conditioning unit. The manufacturer shall not be liable for any loss or abnormal operation arising from wrong line connections.

Power Cable Connection:

1. Air-conditioning unit with single-phase power supply

（1） Remove the front-side panel of the outdoor unit.

（2） Pass the cable though rubber ring.

（3） Connect the power supply cable to the “L, N” terminals and the grounding screw on the metal electric box.

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(4) Use cable fastener to bundle and fix the cable.

2。 Air-conditioning unit with 3-phase power supply

1 Remove the front-side panel of the outdoor unit.

2 Attach rubber ring to the cable-cross hole of the outdoor unit.

3 Pass the cable though rubber ring.

4 Connect the power cable to the terminal marked “L1, L2, L3 & N”.Connect earthing wire to the earthed terminal screw on the electric box.

5 Use cable fastener to bundle and fix the cable.

Caution:

Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit because of electromagnetic interference.

(1) The signal line of the wire controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.

(2) In case the unit is installed in a place vulnerable by electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wire controller.

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Cable Connecting Diagram of Unit

The section area of cables selected by users must not be smaller than the specifications show diagram.The signal wire between indoor and outdoor unit shall be installed in the shielded bushing, and the unshielded twisted pair cable (UTP) shall be used,the cross sectional aera of the cables must be 0.75 mm^2.

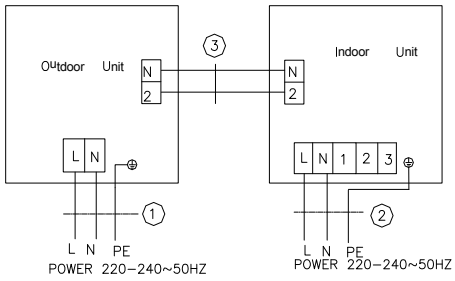
Schematic Diagram of Unit Line Connection:

GUHN09NK3AO GFH09K3BI

GUHN12NK3AO GFH12K3BI

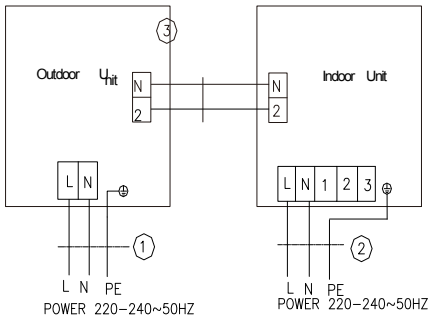
GUHN18NK3AO GFH18K3BI

GUHN24NK3AO GFH24K3BI



1. Power Cord 3G2.5 mm^2 (H07RN-F)
2. Power Cord 3G1.5 mm^2 (H05VV-F)
3. Communication Cords (UTP)

GUHN36NK3AO GFH36K3BI



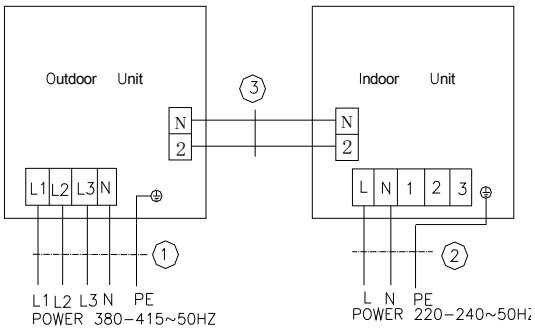
1. Power Cord 3G6mm^2 (H07RN-F)
2. Power Cord 3G1.5mm^2 (H05VV-F)
3. Communication Cords (UTP)

GUHN36NM3AO GFH36K3BI

GUHN42NM3AO GFH42K3BI

GUHN48NM3AO GFH48K3BI

GUHN60NM3AO GFH60K3BI



1. Power Cord 5G4mm^2 (H07RN-F)
2. Power Cord 3G1.5mm^2 (H05VV-F)
3. Communication Cords (UTP)

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Troubleshooting and Maintenance

If your air-conditioning unit suffers from abnormal operation or failure, please first check the following points before repair:

Failure	Possible Reasons
The unit cannot be started.	1. The power supply is not connected. 2. Electrical leakage of air-conditioning unit causes tripping of leakage switch. 3. The operating keys are locked. 4. The control loop has failure.
The unit operates for a while and then stops.	1. There is obstacle in front of the condenser. 2. The control loop is abnormal. 3. Cooling operation is selected when the outdoor ambient temperature is above 43℃.
Poor cooling effect.	1. The air filter is dirty or blocked. 2. There is heat source or too many people inside the room. 3. The door or window is open. 4. There is obstacle at the air intake or outlet. 5. The set temperature is too high thus cooling is hindered. 6. There is refrigerant leakage. 7. The performance of room temperature sensor becomes worse
Poor heating effect	1. The air filter is dirty or blocked. 2. The door or window is not firmly closed. 3. The set room temperature is too low thus heating is hindered. 4. There is refrigerant leakage. 5. The outdoor ambient temperature is lower than -5℃. 6. Control line is abnormal.

Note: After carrying out the check of the above items and taking relevant measures to solve the problems found but the air-conditioning unit still does not function well, please stop the operation of the unit immediately and contact the local service agency. Only ask professional serviceman to check and repair the unit.

Routine Maintenance

Cleaning the Air Filter(Operating by the professional)

（1） Do not disassemble the air filter when cleaning it. Otherwise failure may be caused

（2） If the air-conditioning unit is used in an environment with much dust, you should clean the air filter frequently (once every two weeks).

⚠ **Caution: You shall pay attention to the following matters when cleaning the air-conditioning unit.**

1） Cut off all power supply before contacting the line connecting equipment.

2） Only clean the air-conditioning unit after the unit is shut off and the power supply is disconnected. Otherwise electrical shock or injury may be caused.

3） Do not use water to clean the air-conditioning unit. Otherwise there may be electrical shock.

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4) Take care when cleaning the air-conditioning unit. Use a steady stepping stand.

2. Maintenance at the Beginning of Operating Season

Check the air inlet and outlet of the indoor and outdoor units to confirm there is no blockage.

Check to see if the grounding wire is in good condition;(Operating by the professional)

Check to see if the line connection is in good condition;(Operating by the professional)

Check if there is any word displaying on the LCD of the wire controller after connecting the unit to power supply.

Note: If there is any abnormal condition, ask aftersales personnel to offer guidance.

3. Maintenance at the End of the Operational Season

(1) When the weather is clear, operate the unit under fan mode for half a day, so as to dry the inside of the unit.

(2) If not to use the air-conditioning unit for a long time, please cut off the power supply. Now the words on the LCD of the wire controller shall disappear.

WARNING!

- Please seek an authorized repair station for installation work. Improper installation might cause water leakage, electric shock or fire.
- Please install at a place strong enough to support the weight of air conditioner unit. If not, the air conditioner unit might fall down and cause human injury or death.
- To ensure proper drainage, the drainage pipe shall be correctly installed according to installation instructions. Take proper measures for heat preservation to prevent condensing. Improper installation of pipes might cause leakage and wet the articles in the room.
- Do not use or store flammable, explosive, poisonous or other dangerous substances beside the air conditioner.
- In case of trouble (e.g. burnt smell), please immediately cut off the main power of air conditioner unit.
- Keep air flow to avoid shortage of oxygen in the room.
- Never insert your finger or any objects into air outlet and inlet grill.
- Never plug or unplug the power cable directly to start or stop the air-conditioning unit.
- Please take constant care to check if the mounting rack is damaged after long use.
- Never modify the air conditioner. Please contact the dealer or professional installation workers for repair or relocation of the air conditioner.
- The appliance shall not be installed in the laundry.

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Appendix:

Air conditioner nominal working condition and working range:

Test condition	Indoor side		Outdoor side	
	DB(℃)	WB(℃)	DB(℃)	WB(℃)
Nominal cooling	27	19	35	24
Nominal heating	20	－－	7	6
Rated cooling	32	23	43	26
Low temp. cooling	21	15	18(-7)	－－
Rated heating	27	－－	24	18
Low temp. heating	20	－－	－7	－8

Note:

1. The design of this unit conforms to the requirements of EN14511 standard.
2. The air volume is measured at the relevant standard external static pressure.
3. Cooling (heating) capacity stated above is measured under nominal working conditions corresponding to standard external static pressure. The parameters are subject to change with the improvement of products, in which case the values on nameplate shall prevail.
4. In this table, the outdoor side DB temperature of low temp. cooling include two values, the one in the bracket is the working condition of the appliance with function of low temp. cooling .

WARNING!

- This appliance is not intended for use by persons (including children) with reduced physical sensory or capabilities, or leak of experience and konwledge , unless they have been given supervision on instruction concerning use of appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

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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.

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