



# Supreme

*Air-to-Air Heat Pump*

## Service Manual

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Models:  
CH-S18FTXAM2S  
CH-S24FTXAM2S  
(Refrigerant: R32)

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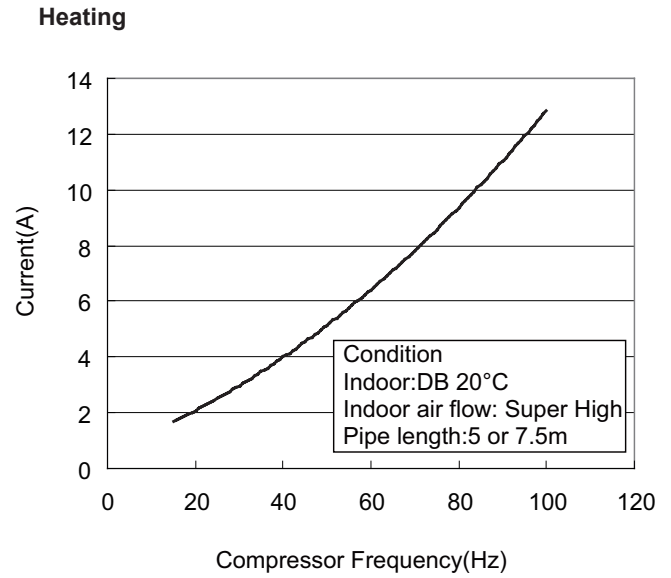
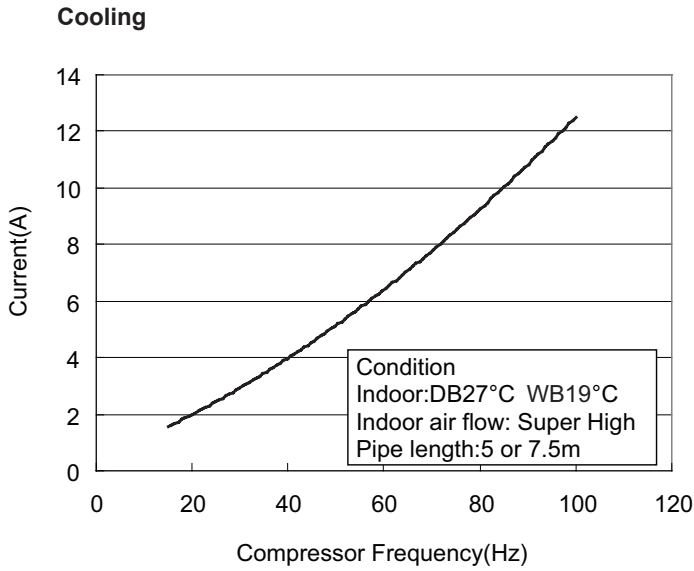
## 2. Specifications

### 2.1 Specification Sheet

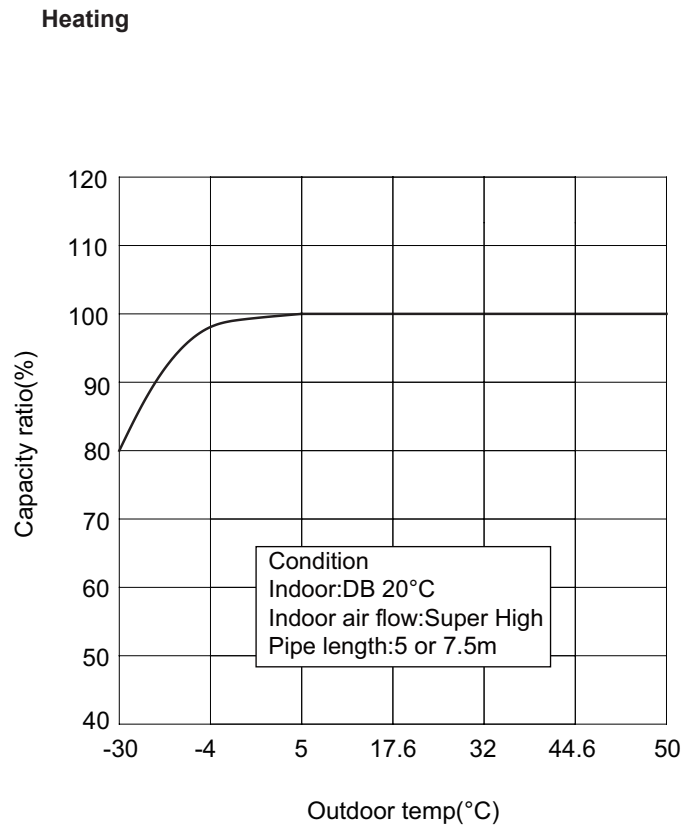
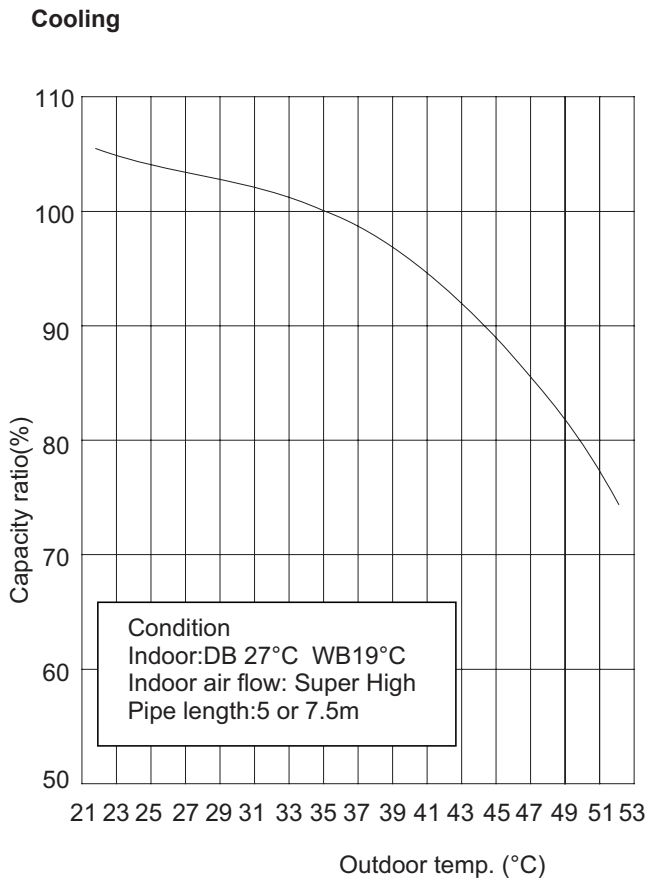
| Model                        |                                    |                   | CH-S18FTXAM2S       | CH-S24FTXAM2S                       |                                    |
|------------------------------|------------------------------------|-------------------|---------------------|-------------------------------------|------------------------------------|
| Power Supply                 | Rated Voltage                      | V~                | 220-240             | 220-240                             |                                    |
|                              | Rated Frequency                    | Hz                | 50/60               | 50/60                               |                                    |
|                              | Phases                             |                   | 1                   | 1                                   |                                    |
| Power Supply Mode            |                                    |                   | Outdoor             | Outdoor                             |                                    |
| Cooling Capacity             |                                    | W                 | 5300                | 7000                                |                                    |
| Heating Capacity             |                                    | W                 | 5570                | 7000                                |                                    |
| Cooling Power Input          |                                    | W                 | 1320                | 1840                                |                                    |
| Heating Power Input          |                                    | W                 | 1320                | 1750                                |                                    |
| Cooling Power Current        |                                    | A                 | 5.9                 | 11                                  |                                    |
| Heating Power Current        |                                    | A                 | 5.9                 | 10.76                               |                                    |
| Rated Input                  |                                    | W                 | 3300                | 3700                                |                                    |
| Rated Current                |                                    | A                 | /                   | /                                   |                                    |
| Air Flow Volume(SH/H/M/L/SL) |                                    | m <sup>3</sup> /h | 1200/1150/950/780/- | 1250/1100/950/850/-                 |                                    |
| Dehumidifying Volume         |                                    | L/h               | 1.8                 | 2                                   |                                    |
| EER                          |                                    | W/W               | 4.02                | 3.8                                 |                                    |
| COP                          |                                    | W/W               | 4.22                | 4                                   |                                    |
| SEER                         |                                    | W/W               | 6.6                 | 6.5                                 |                                    |
| HSPF                         |                                    | W/W               | /                   | /                                   |                                    |
| Application Area             |                                    | m <sup>2</sup>    | 23-34               | 32-50                               |                                    |
| Indoor Unit                  | Indoor Unit Product Code           |                   | CB466N00400         | CB466N00300                         |                                    |
|                              | Fan Type                           |                   | Cross-flow          | Cross-flow                          |                                    |
|                              | Diameter Length(DXL)               |                   | mm                  | Φ108X830                            | Φ106X890                           |
|                              | Fan Motor Cooling Speed            |                   | r/min               | 1200/1150/1100/1000/900/850/800/600 | 1250/1100/1000/950/900/850/800/600 |
|                              | Fan Motor Heating Speed            |                   | r/min               | 1250/1150/1100/1000/900/850/800/-   | 1400/1250/1100/1050/1000/900/850/- |
|                              | Output of Fan Motor                |                   | W                   | 60                                  | 70                                 |
|                              | Fan Motor RLA                      |                   | A                   | 0.24                                | 0.38                               |
|                              | Fan Motor Capacitor                |                   | μF                  | /                                   | /                                  |
|                              | Input of Heater                    |                   | W                   | /                                   | /                                  |
|                              | Evaporator Form                    |                   |                     | Aluminum Fin-copper Tube            | Aluminum Fin-copper Tube           |
|                              | Pipe Diameter                      |                   | mm                  | Φ7                                  | Φ7                                 |
|                              | Row-fin Gap                        |                   | mm                  | 2-1.4                               | 2-1.5                              |
|                              | Coil Length (LXDXW)                |                   | mm                  | 845X25.4X342.9                      | 845X25.4X381                       |
|                              | Swing Motor Model                  |                   |                     | MP35CP/MP24HF                       | MP35CJ                             |
|                              | Output of Swing Motor              |                   | W                   | 2.5/1.5                             | 2.5                                |
|                              | Fuse                               |                   | A                   | 3.15                                | 3.15                               |
|                              | Sound Pressure Level (SH/H/M/L/SL) |                   | dB (A)              | 48/45/43/40/37/35/33                | 50/46/43/41/39/37/35/27            |
|                              | Sound Power Level (SH/H/M/L/SL)    |                   | dB (A)              | 60/57/55/52/49/47/45                | 64/60/57/55/53/51/49/41            |
|                              | Dimension (WXHXD)                  |                   | mm                  | 1101X327X249                        | 1101X327X249                       |
|                              | Dimension of Carton Box (LXWXH)    |                   | mm                  | 1164X402X339                        | 1164X402X339                       |
| Dimension of Package (LXWXH) |                                    | mm                | 1167X405X354        | 1167X405X354                        |                                    |
| Net Weight                   |                                    | kg                | 16.5                | 16.5                                |                                    |
| Gross Weight                 |                                    | kg                | 20                  | 20                                  |                                    |



## 2.2 Operation Characteristic Curve



## 2.3 Capacity Variation Ratio According to Temperature



## 2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

| Rated cooling condition(°C)<br>(DB/WB) |         | Model | Pressure of gas pipe<br>connecting indoor and<br>outdoor unit | Inlet and outlet pipe<br>temperature of heat<br>exchanger |          | Fan speed of<br>indoor unit | Fan speed of<br>outdoor unit | Compressor<br>frequency<br>(Hz) |
|--|---------|-------|---|---|----------|-----------------------------|------------------------------|---------------------------------|
| Indoor                                 | Outdoor |       |   | T1 (°C)   | T2 (°C)  |                             |                              |                                 |
| 27/19                                  | 35/24   | 18K   | 0.9 to 1.1  | 12 to 14  | 75 to 37 | Super High                  | High                         | 52                              |
| 27/19                                  | 35/24   | 24K   | 0.9 to 1.1  | 12 to 14  | 75 to 37 | Super High                  | High                         | 72                              |

Heating:

| Rated heating condition(°C)<br>(DB/WB) |         | Model | Pressure of gas pipe<br>connecting indoor and<br>outdoor unit | Inlet and outlet pipe<br>temperature of heat<br>exchanger |         | Fan speed of<br>indoor unit | Fan speed of<br>outdoor unit | Compressor<br>frequency<br>(Hz) |
|--|---------|-------|---|---|---------|-----------------------------|------------------------------|---------------------------------|
| Indoor                                 | Outdoor |       |   | T1 (°C)   | T2 (°C) |                             |                              |                                 |
| 20/-                                   | 7/6     | 18K   | 2.8 to 3.0  | 70 to 35  | 2 to 4  | Super High                  | High                         | 65                              |
| 20/-                                   | 7/6     | 24K   | 2.8 to 3.0  | 70 to 35  | 2 to 4  | Super High                  | High                         | 77                              |

**Instruction:**

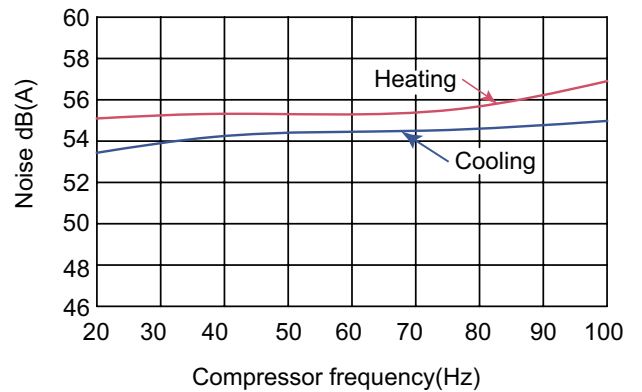
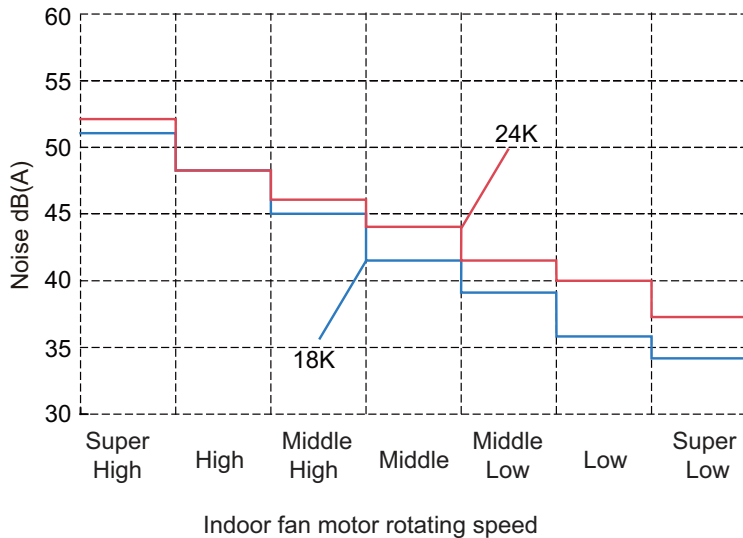
T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

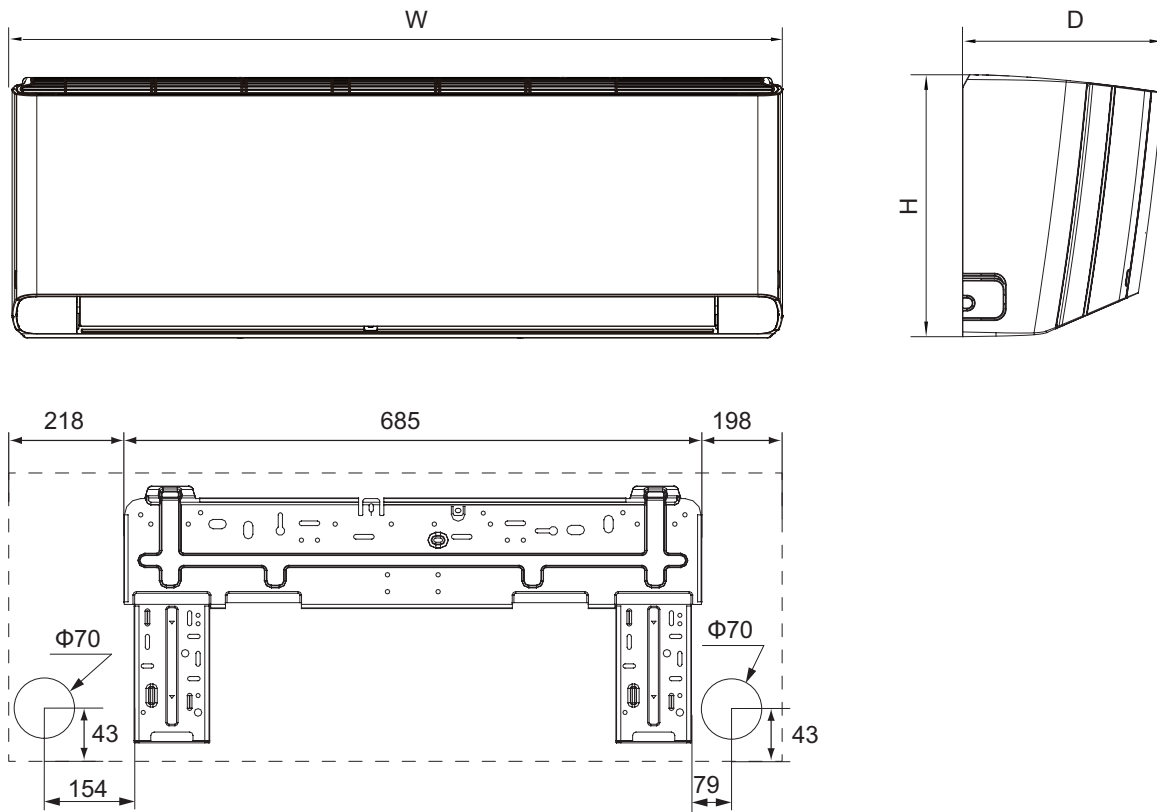
Connection pipe length: 5 or 7.5m.

## 2.5 Noise Curve



### 3. Outline Dimension Diagram

#### 3.1 Indoor Unit

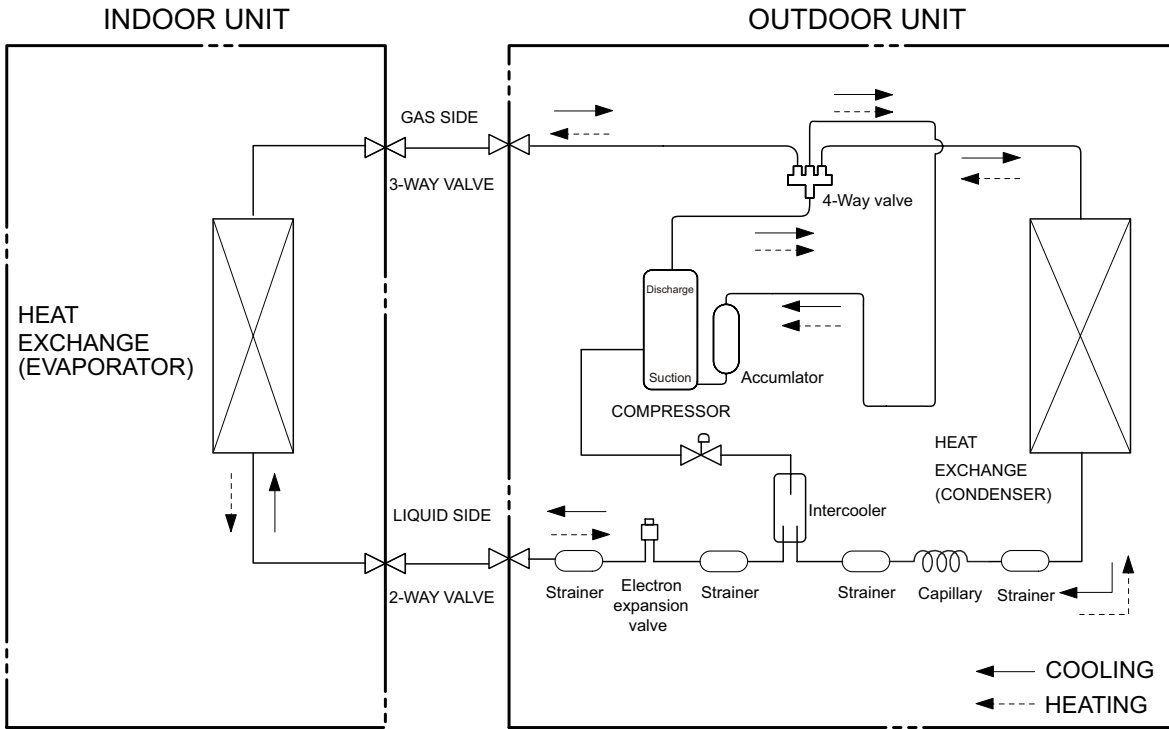


Unit:mm

| Model  | W    | H   | D   |
|--------|------|-----|-----|
| 18/24K | 1101 | 327 | 249 |



# 4. Refrigerant System Diagram



Connection pipe specification:  
 Liquid pipe: 1/4" (6mm)  
 Gas pipe: 5/8" (16mm)









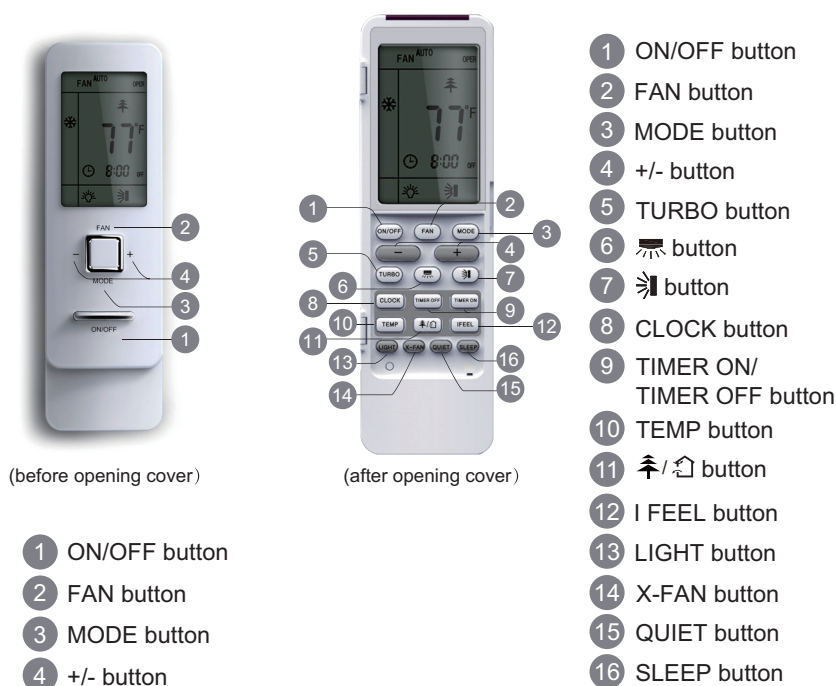




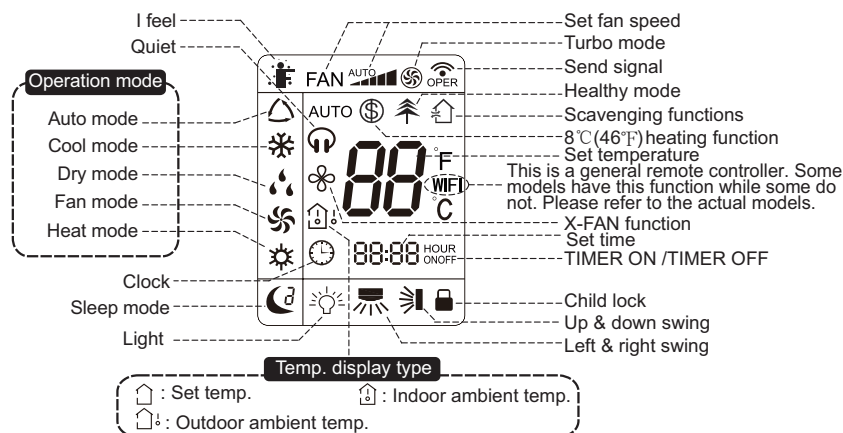
## 6. Function and Control

### 6.1 Remote Controller Introduction

#### Buttons on Remote Controller



#### Introduction for Icons on Display Screen



#### Introduction for Buttons on Remote Controller

##### Note:

- After putting through the power, the air conditioner will give out a sound. Operation indicator " " is ON (red indicator). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon " " on the display of remote controller will blink once and the air conditioner will give out a "de" sound, which means the signal has been sent to the air conditioner.
- Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corresponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding set function icons.

##### 1. ON/OFF button

Press this button, the unit will be turned on, press it once more, the unit will be turned off. Sleep function will be canceled, while unit off.





## 10. TEMP button

Press this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:



When selecting "🏠" with remote controller or no display, temperature indicator on indoor unit displays set temperature; When selecting "🏠<sup>d</sup>" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature; When selecting "🏠<sup>o</sup>" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature. 3s later it will return to the setting temperature or it depends on the other received signal within 3s.

Attention: When displaying the outdoor ambient, the displaying range is 32-99°F and 0-60°C. When it goes beyond the range, it keeps the threshold data (the smallest—0°C or 32°F and the largest 99°F or 60°C).

Warm tips: When operating buttons on the cover please make sure the cover is closed completely.

## 11. 🏠 / 🏠 button (This function is only available for some models)

Press this button to achieve the on and off of healthy and scavenging functions in operation status. Press this button for the first time to start scavenging function; LCD displays "🏠". Press the button for the second time to start healthy and scavenging functions simultaneously; LCD displays "🏠" and "🏠". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display "🏠". Press this button again to repeat the operation above.

## 12. I FEEL button

Press this button once, to turn on the I FEEL function, then the figure of "I FEEL" will be displayed, after every press of other function button, every 200ms to send I FEEL once, after this function started, the remote control will send temperature to the main unit in every 10 minutes. When repress this button, this function will be turned off.

## 13. LIGHT button

Press this button at unit On or Off status, Light On and Light Off can be set up. After powered on, Light On is defaulted.

## 14. X-FAN button

Pressing X-FAN button in COOL or DRY mode, the icon 🌀 is displayed and the indoor fan will continue operation for 2 minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

## 15. QUIET button

Press this button, the Quiet status is under the Auto Quiet mode (display "🔇" and "Auto" signal) and Quiet mode (display "🔇" signal) and Quiet OFF (there is no signal of "🔇" displayed), after powered on, the Quiet OFF is defaulted. Under the Quiet mode (Display "🔇" signal), the fan speed is not available.

## 16. SLEEP button

- Press this button, can select Sleep 1 (🌙<sup>1</sup>), Sleep 2 (🌙<sup>2</sup>), Sleep 3 (🌙<sup>3</sup>) and cancel the Sleep, circulate between these, after electrified, Sleep Cancel is defaulted.
- Sleep 1 is Sleep mode 1, in Cool, Dehumidify modes: sleep status after run for one hour, the main unit setting temperature will increase 1°C (1°F~2°F), 2 hours, setting temperature increased 2°C (3°F~4°F), the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1°C (1°F~2°F), 2 hours, setting temperature will decrease 2°C (3°F~4°F), then the unit will run at this setting temperature.
- Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.

In Cool mode:

- (1) When setting the initial temperature 16~23°C (61°F~74°F), after turned on Sleep function, the temperature will be increased 1°C (1°F~2°F) in every hour, after 3°C (5°F~6°F) the temperature will be maintained, after 7 hours, the temperature will be decreased 1°C (1°F~2°F), after that the unit will keep on running under this temperature;
- (2) When setting the initial temperature 24~27°C (75°F~81°F), after turned on Sleep function, the temperature will be increased 1°C (1°F~2°F) in every hour, after 2°C (3°F~4°F) the temperature will be maintained, after 7 hours, the temperature will be decreased 1°C (1°F~2°F), after that the unit will keep on running under this temperature;
- (3) When setting the initial temperature 28~29°C (82°F~85°F), after turned on Sleep function, the temperature will be increased 1°C (1°F~2°F) in every hour, after 1°C (1°F~2°F) the temperature will be maintained, after 7 hours, the temperature will be decreased 1°C (1°F~2°F), after that the unit will keep on running under this temperature;
- (4) When setting the initial temperature 30°C (86°F), under this temperature setting, after 7 hours, the temperature will be decreased 1°C (1°F~2°F), after that the unit will keep on running under this temperature;

In Heat mode:

- (1) Under the initial presetting temperature 16°C (61°F), it will run under this setting temperature all along.
- (2) Under the initial presetting temperature 17~20°C (62°F~68°F), after Sleep function started up, the temperature will decrease 1°C (1°F~2°F) in every hour, after 1°C (1°F~2°F) decreased, this temperature will be maintained.
- (3) Under the initial presetting temperature 21~27°C (69°F~81°F), after Sleep function started up, the temperature will decrease 1°C (1°F~2°F) in every hour, after 2°C (3°F~4°F) decreased, this temperature will be maintained.
- (4) Under the initial presetting temperature 28~30°C (82°F~86°F), after Sleep function started up, the temperature will decrease 1°C (1°F~2°F) in every hour, after 3°C (5°F~6°F) decreased, this temperature will be maintained.

●Sleep 3- the sleep curve setting under Sleep mode by DIY:

- (1) Under Sleep 3 mode, press "Turbo" button for a long time, remote control enters into user individuation sleep setting status, at this time, the time of remote control will display "1hour ", the setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink (The first entering will display according to the initial curve setting value of original factory);
- (2) Adjust "+" and "-" button, could change the corresponding setting temperature, after adjusted, press "Turbo "button for confirmation;
- (3) At this time, 1hour will be automatically increased at the timer position on the remote control, (that are "2hours" or "3hours" or "8hours "), the place of setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink;
- (4) Repeat the above step (2)~(3) operation, until 8hours temperature setting finished, sleep curve setting finished, at this time, the remote control will resume the original timer display;temperature display will resume to original setting temperature.

●Sleep3- the sleep curve setting under Sleep mode by DIY could be inquired:

The user could accord to sleep curve setting method to inquire the presetting sleep curve, enter into user individuation sleep setting status, but do not change the temperature, press "Turbo" button directly for confirmation.

Note: In the above presetting or enquiry procedure, if continuously within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "ON/OFF" button, "Mode" button, "Timer" button or "Sleep" button, the sleep curve setting or enquiry status will quit similarly.

### 17. About X-FAN function

This function indicates that moisture on evaporator of indoor unit will be blown after the unit is stopped to avoid mould.

- (1)Having set X-FAN function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for about 2 min. at low speed. In this period, press X-FAN button to stop indoor fan directly.
- (2)Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.


### 18. About AUTO RUN

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.



### 19. About turbo function

If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temp. approaches the preset temp. as soon as possible.



### 20. About lock

Press + and - buttons simultaneously to lock or unlock the keyboard. If the remote controller is locked, the icon  will be displayed on it, in which case, press any button, the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

### 21. About swing up and down

- (1)Press swing up and down button continuously more than 2s,the main unit will swing back and forth from up to down, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- (2)Under swing up and down mode, when the status is switched from off to , if press this button again 2s later,  status will switch to off status directly; if press this button again within 2s,the change of swing status will also depend on the circulation sequence stated above.

### 22. About swing left and right

- (1)Press swing left and right button continuously more than 2s,the main unit will swing back and forth from left to right, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- (2)Under swing left and right mode, when the status is switched from off to , if press this button again 2s later,  status will switch to off status directly; if press this button again within 2s,the change of swing status will also depend on the circulation sequence stated above.

### 23. About switch between Fahrenheit and Centigrade

Under status of unit off, press MODE and - buttons simultaneously to switch °C and °F.

### 24. Combination of "TEMP" and "CLOCK" buttons : About Energy-saving Function

Press "TEMP" and "CLOCK" simultaneously in COOL mode to start energy-saving function.Nixie tube on the remote controller displays "SE". Repeat the operation to quit the function.

### 25. Combination of "TEMP" and "CLOCK" buttons : About 8°C(46°F) Heating Function

Press "TEMP" and "CLOCK" simultaneously in HEAT mode to start 8°C(46°F) Heating Function.Nixie tube on the remote controller displays "8" and a selected temperature of "8°C" (46°F if Fahrenheit is adopted). Repeat the operation to quit the function.

### 26. About Auto Quiet function

When auto quiet function is selected:

- (1)Under cooling mode: indoor fan operates at notch 4 speed. 10 minutes later or when indoor ambient temperature ≤ 28°C(82°F), indoor fan will operate at notch 2 speed or quiet mode according to the comparison between indoor ambient temperature and set temperature.
- (2)Under heating mode: indoor fan operates at notch 3 speed or quiet mode according to the comparison between indoor ambient temperature and set temperature.
- (3)Under dry, fan mode: indoor fan operates at quiet mode.
- (4)Under auto mode: the indoor fan operates at the auto quiet mode according to actual cooling, heating or fan mode.

### 27. About Sleep function

Under the Fan and Auto mode, the Sleep function cannot be set up, under Dehumidify mode, only Sleep 1 can be selected.Select and enter into any kind of Sleep mode, the Quiet function will be attached and started, different Quiet status could be optional and turned off.



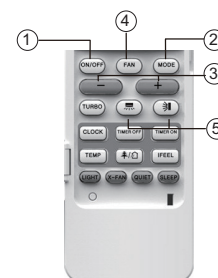
## 28.WIFI Function

Press "MODE" and "TURBO" button simultaneously to turn on or turn off WIFI function. When WIFI function is turned on, the "WiFi" icon will be displayed on remote controller; Long press "MODE" and "TURBO" buttons simultaneously for 10s, remote controller will send WIFI reset code and then the WIFI function will be turned on. WIFI function is defaulted ON after energization of the remote controller.(This function only applicable for some models. )

### Operation Guide

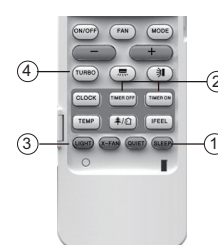
#### 1. General operation

- (1)After powered on, press ON/OFF button, the unit will start to run. (Note: When it is powered on, the guide louver of main unit will close automatically.)
- (2)Press MODE button, select desired running mode.
- (3)Pressing + or - button, to set the desired temperature (It is unnecessary to set the temp. at AUTO mode.)
- (4)Pressing FAN button, set fan speed, can select AUTO FAN,LOW, MEDIUM-LOW, MEDIUM, MEDIUM-HIGH and HIGH.
- (5)Pressing and button, to select the swing.



#### 2. Optional operation

- (1)Press SLEEP button, to set sleep.
- (2)Press TIMER ON and TIMER OFF button, can set the scheduled timer on or timer off.
- (3)Press LIGHT button, to control the on and off of the displaying part of the unit (This function may be not available for some units).
- (4)Press TURBO button, can realize the ON and OFF of TURBO function.

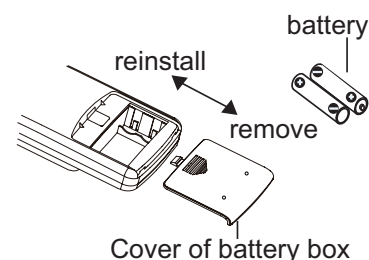


### Replacement of Batteries in Remote Controller

1. Press the back side of remote controller marked with "🔌", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

Note:

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.



## 6.3 Operation of Smart Control (Smart Phone, Tablet PC)

### Operation Instructions

#### Download and install APP

Scan the following QR code with your smart phone and download Wifi Smart.



Install the APP according to its guidance. When successfully installed, your smart phone homepage will show this icon 

User of IOS system can search for the Wifi Smart in Apple store to download the Apple version APP. Android user can search "WiFi Smart" on Google Play to download it.

#### Configuration

NOTE: Select either the original configuration or AP configuration according to the APP functions.

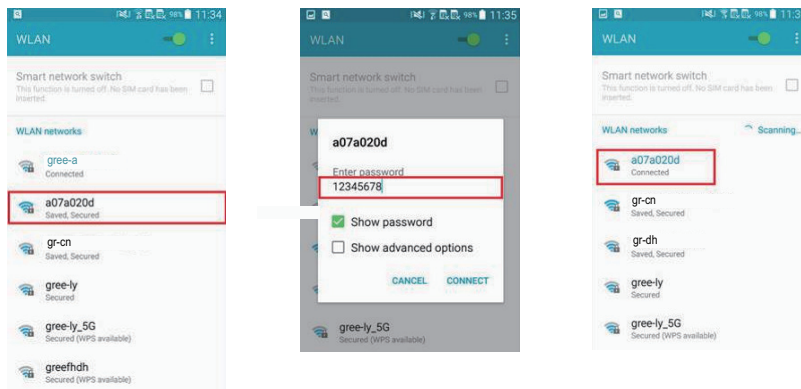
##### 1.Original configuration

Before operation, please finish the following configuration in order to realize Wifi control and the connection between air conditioner and intelligent device.

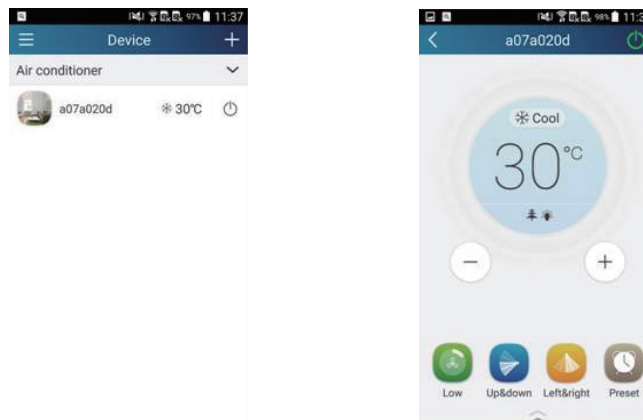
##### (1).Short-distance control setting for air conditioner using wifi hotspot

Step 1: Air conditioner wifi is set in APP mode in factory.

You can search the air conditioner wifi hotspot through your smart phone.The name of wifi hotspot is the last 8 numbers of the air conditioner mac address. Password is 12345678.



Step 2: Open APP and the screen will show the air conditioner that you just connected. Tap the name of this air conditioner on your phone to enter and realize short-distance control, as shown below. Please refer to "Functions introduction" for specific control methods.



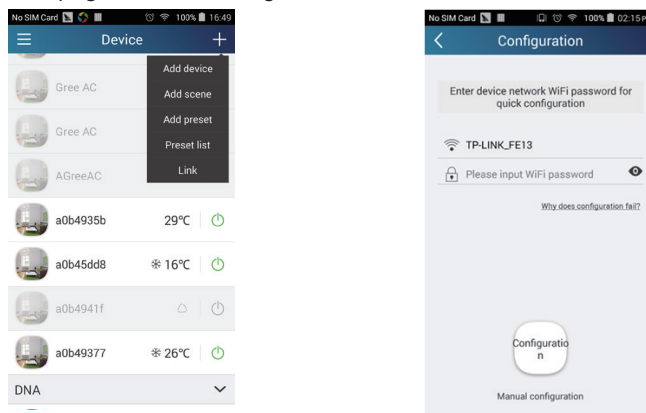
## 2. Configuration method for Android phones

4 steps of configuration

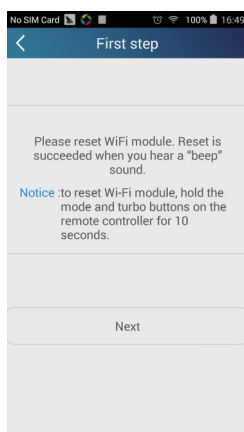
Step 1: Enter homepage "Device", and then tap  at the top right corner.

Select "Add device" and enter the page "Add device".

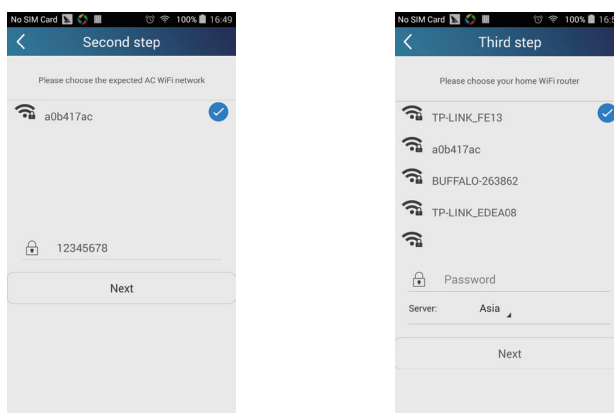
Tap "Manual configuration" and enter the page "Manual configuration".



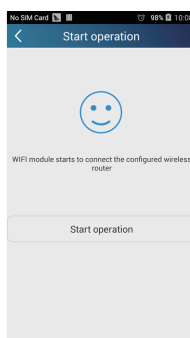
Step 2: Tap "Next" in the First Step.



Step 3: Select the wireless network of air conditioner. APP will show the password 12345678 (default password of the network of air conditioner). Then tap "Next"; select the name of home WiFi router, then enter the correct password and select a server.



Step 4: If configuration is successful, a window will pop up and read "WIFI module starts to connect the configured wireless router".Then configuration is completed.





- If the name of router or the password is wrong, Wifi Smart can't connect to the wireless router. 2 mins later, please conduct the configuration operation again. Reset Wi-Fi adaptor by pointing you remote at the indoor unit and holding the mode and Turbo buttons on your remote control for 10 seconds and until you hear the beep.
- Wrong server selection will cause long-distance control invalid. Therefore, please make sure that the server selection when registering the account is the same as this one.
- If the password is blank, no password is defaulted for the wireless router, which is the OPEN mode.
- Configuration should be conducted at one time. As for other phones, they can automatically search for the device after connecting to the wireless router (such as Tenda\_XXX) and turning on the APP.

### Functions introduction

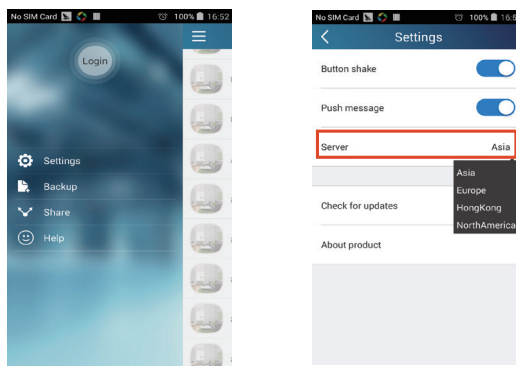
#### 1. User registration

Purpose: To realize long-distance control.

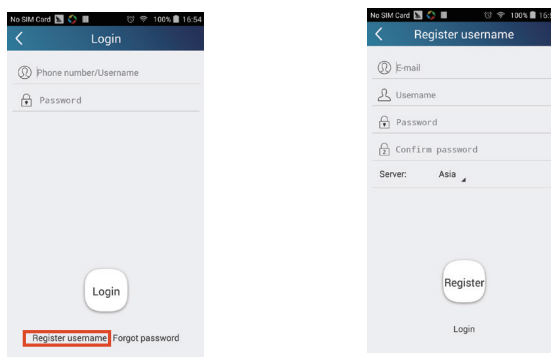
Operation instruction: For the first time login, you have to register a new username. If you already have a username, skip the registration step and enter email address and password on the "Login Page" to log in. If password is forgotten, you can reset the password.

Operation steps:

(1) Select the sever address.

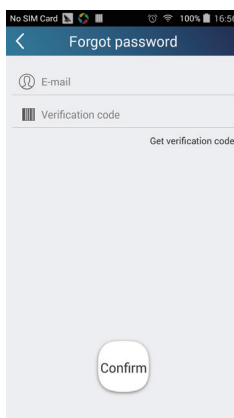


(2) Account login: Slide the page "Device", and enter the menu page on the left. Tap "Login" to enter the page "Register username". New user must first register a username. Tap "Register".

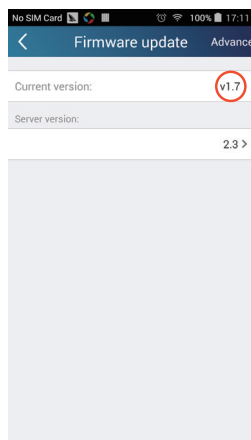


(3) If password is forgotten, you can reset the password with your email address.

Tap "Forgot password" and enter the page "Forgot password". Enter your registered email account the first. Tap "Get verification code" to get an email verification code. Enter a new password and tap "OK" to log in.

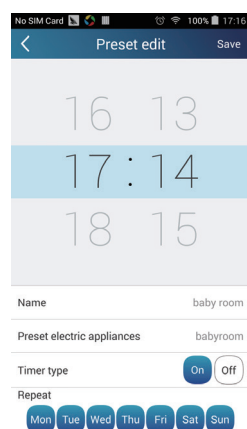




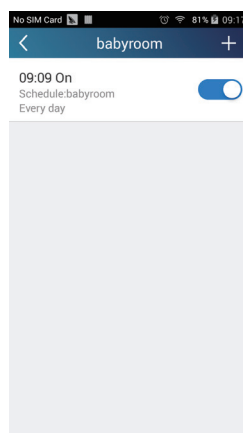


## (2) Set preset name

Step 1: Tap  at the top right corner of the homepage "Device". Select "Add preset" and enter the page "Preset edit".



Step 2: Choose the time. Tap "Name". As shown in the picture, its name is "baby room". For timer type, select "On". Then select the repeating days. Save the setting of preset name.



## (3) Set device image

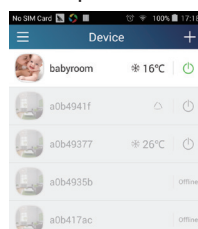
Please refer to step 1 in 2(1)

## 3.Control functions

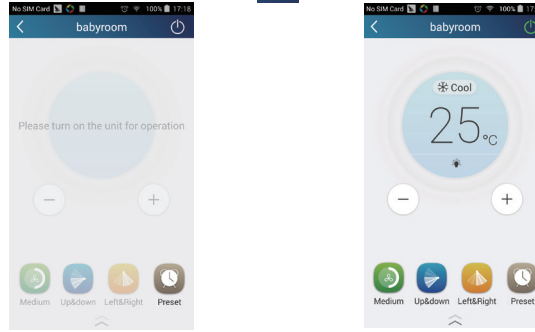
(1) Common control functions: General control on the operation of smart devices (On/Off, temperature, fan speed, mode, etc.) and the setting of advanced functions (air exchange, dry, health, light, sleep, energy saving upper limit).





## Step 1: General control

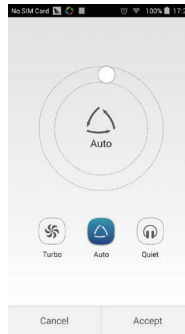
Enter the homepage "Device" first. Take "babyroom" as an example.




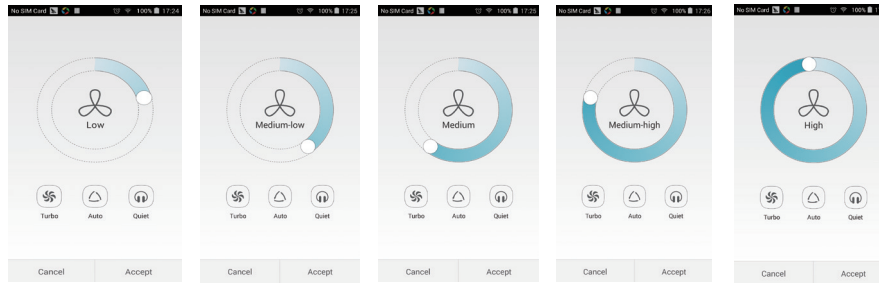
Tap "babyroom" and enter the page of air conditioner control. Tap  to turn on the control switch.




Tap  or  to increase or decrease temperature. Tap to  change working mode. Tap  to enter the page of fan speed adjustment.

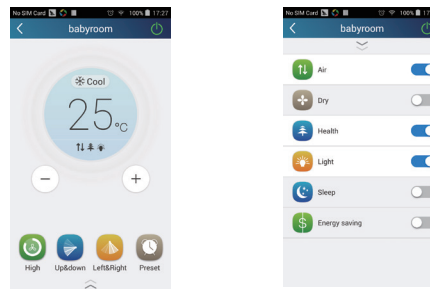


Tap  and go around the circle to adjust fan speed.

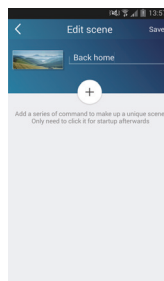



Step 2: Advanced settings

Tap  to enter advanced settings. You may select "Air", "Dry", "Health", "Light", "Sleep" or "Energy saving".

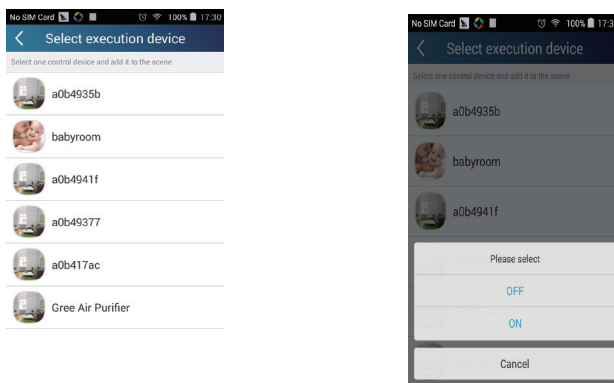



(2) Advanced control functions; Set scene; Preset; Link: Infrared control(only applicable to smart phones with infrared emitter)  
 Set scene: Preset the operation of several smart devices by one tap. On the page "Device", tap the image of "Device" to enter the page "Edit scene".

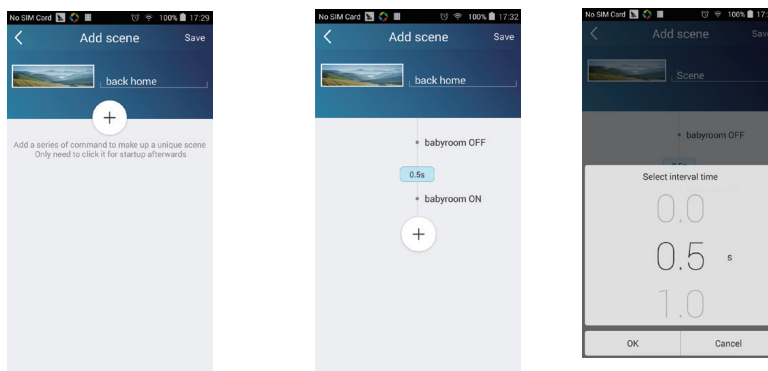


Tap "Add scene" and edit the scene name, for example, "Back home". Add execution devices.  
 Tap  to add commands. On the page "Select execution device", select the air conditioner named "babyroom". Then select "ON" or "OFF".

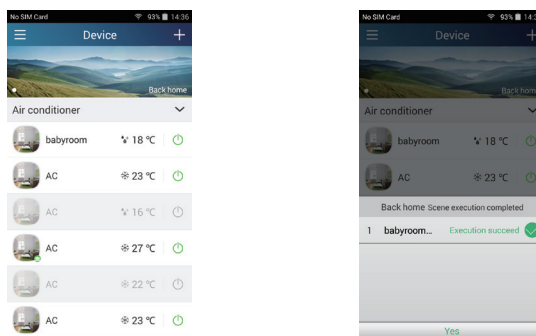




Continue to select the next execution device as instructed above. Tap  to set the interval.




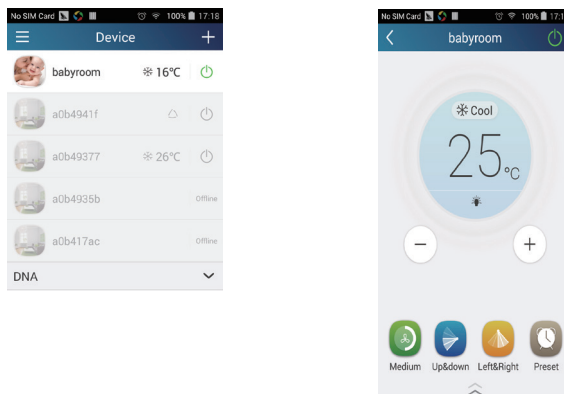
Tap "Save". Tap the scene picture displayed on homepage "Device" to send the command. Then the scene "Back home" will be in execution. You may view the execution condition of the scene.



(3) Preset includes single-device preset and multi-device preset

Single-device preset: This can preset a certain device to be On/Off at a specific time.

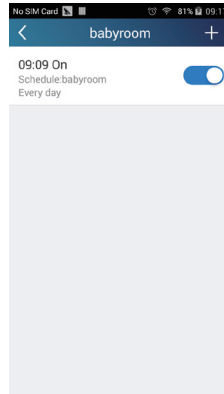
On the homepage "Device", take air conditioner "babyroom" as an example. Tap  at the bottom of the page "babyroom". Then you will enter the page "Preset edit".



Slide up and down to set the time. If you need to synchronize the time, tap "synchronize". If such "Hint" interface doesn't show up, please skip this operation step.

Tap "Name" to customize the preset name.

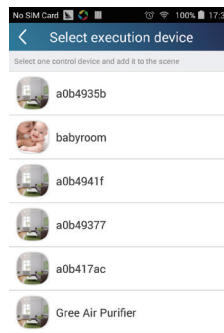
Preset device can't be selected and it will default to "babyroom". Select "On" for the timer type. Select repeating days to complete the preset.



Multi-device preset: This can preset multiple devices to execute a command at a specific time.

Please refer to the instructions as how to set preset time, name, timer type and repeating days for a single device.

Tap "Preset device" to select one or more devices. Then return to the page "Device".

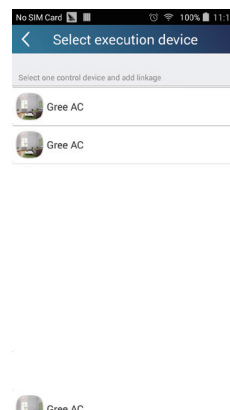
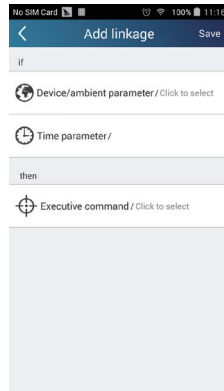


(4) Link(This function is applicable to some models)

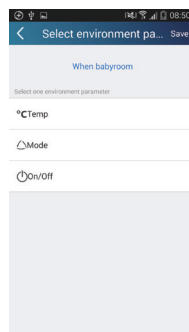
Select a master device. When the environment satisfies the parameters as set in the master device, slave devices will execute commands to realize devices linkage.

Step 1: Set the parameters of master device (Select master device, select environment parameters, select master device status).

Tap **+** at the top right corner of the homepage "Device". Select "Link" and enter the page "Add linkage". Tap "Device/Param" to enter the page "Select device". Take "baby room" as an example. Tap "babyroom".

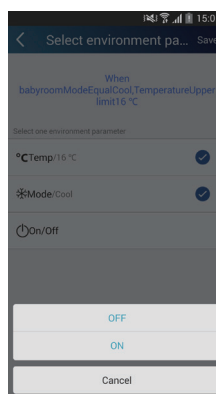
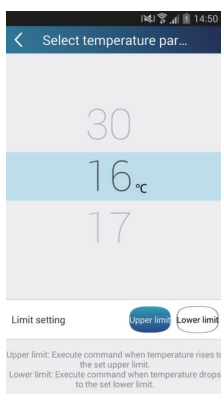


Enter the page "Select environment parameters".

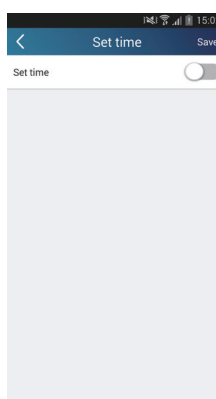
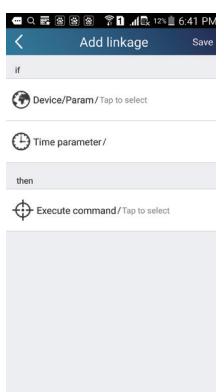


Tap "Temperature" to enter the page "Select temperature parameter". Slide up or down to adjust temperature. Tap "Upper limit" or "Lower limit".

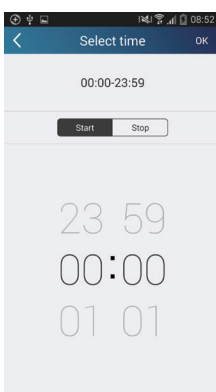
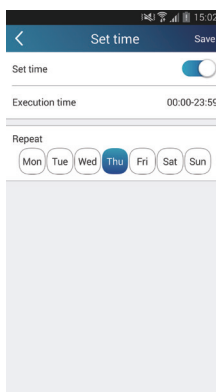
Tap "Mode" and "On/Off" to select the status of master device. Then tap "Save".



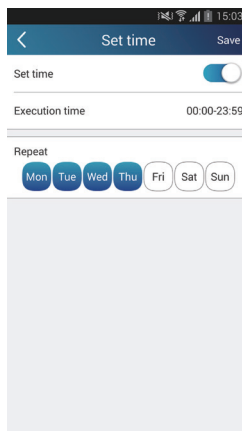
Step 2: Set time parameter for linkage. Tap "Time parameter" to enter the page "Set time". Slide  rightwards to turn on the setting time.



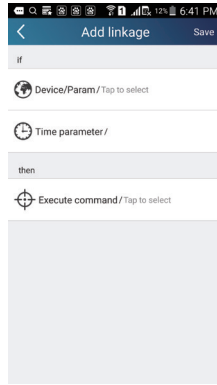
Tap "Execution time"; then tap "Start" and "Stop" to set start time and stop time respectively. Tap "OK" at the top right corner to save the setting.



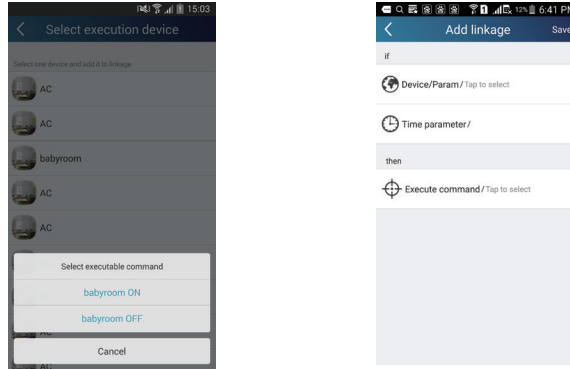
Tap the days below "Repeat" to select the repeating days. Then tap "Save".



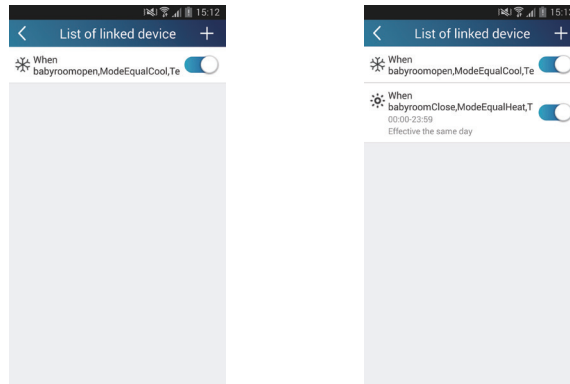
Step 3: Select "Execute command" Tap "Execute command" and enter the page "Select device".



Tap the name of device that you want to control. Tap "ON" or "OFF" and then tap "Save" to complete the linkage.



Tap "Save" and then repeat the above steps to set linkage of several scenes.



#### 4. Menu functions

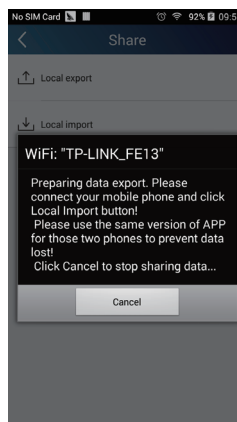
Menu functions (Share, Set, History, Feedback)

(1) Share: To share quick configuration information and unit's information, including local export and local import. For local import, you just need to tap "Local import" and wait for the data download.

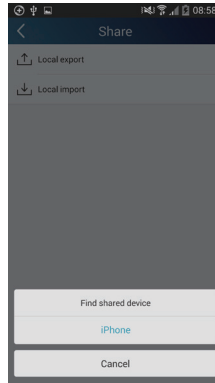
Local export

Step 1: Export local data to another smart phone.

Enter menu page on the left side and tap "Share" to enter the page "Share". Then tap "Local export".



Step 2: Another smart phone to be imported.  
Tap the model name and wait for the download.



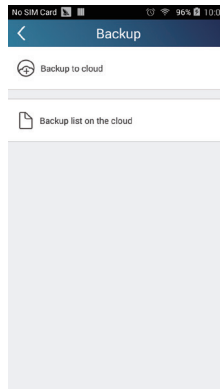
Notice:

This function requires that the two phones are of the same operating system. They are either Android phones or Apple phones, and are connecting to the same wireless router.

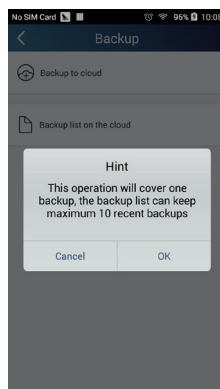
(2) Backup: To keep backup of the quick configuration information and unit's information, including backup to cloud and backup list on the cloud.

Backup to cloud

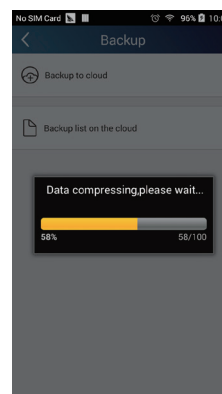
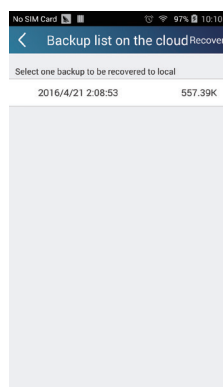
Enter the menu page on the left and tap "Backup".



Tap "Backup to cloud" and then tap "Yes". Then wait for the data download.



Select "Backup list on the cloud". Then backup records will appear. Tap "Record" to download data and recover data to local unit.





## 6.4 Brief Description of Modes and Functions

### 1. Temperature Parameters

- ◆ Indoor preset temperature ( $T_{\text{preset}}$ )
- ◆ Indoor ambient temperature ( $T_{\text{amb.}}$ )

### 2. Basic Functions

Once energized, in no case should the compressor be restarted within less than 3 minutes. In the situation that memory function is available, for the first energization, if the compressor is at stop before de-energization, the compressor will be started without a 3-minute lag; if the compressor is in operation before de-energization, the compressor will be started with a 3-minute lag; and once started, the compressor will not be stopped within 6 minutes regardless of changes in room temperature.

#### (1) Cooling Mode

##### ① The condition and process of cooling

If  $T_{\text{amb.}} \geq T_{\text{preset}}$  cooling mode will act, the compressor and outdoor fan will run, and the indoor fan will run at the set speed.

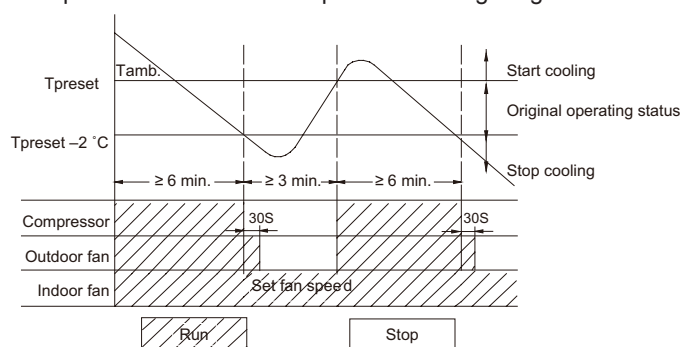
If  $T_{\text{amb.}} \leq T_{\text{preset}} - 2^{\circ}\text{C}$  (3.6°F), the compressor will stop, the outdoor fan will delay 30 seconds to stop, and the indoor fan will run at the set speed.

If  $T_{\text{preset}} - 2^{\circ}\text{C}$  (3.6°F)  $< T_{\text{amb.}} < T_{\text{preset}}$ , the unit will keep running in the previous mode.

When  $0 \leq T_{\text{preset}} - T_{\text{amb.}} < 2^{\circ}\text{C}$  (3.6°F), if indoor fan speed is high, it will turn to medium fan speed; if indoor fan speed is medium or low, it will keep the same; (this condition will be valid only when the compressor is operating); if indoor fan speed is super high, it will keep the same;

When  $T_{\text{amb.}} - T_{\text{preset}} \geq 1^{\circ}\text{C}$  (1.8°F), the fan speed will return to set fan speed;

In this mode, the reversal valve will not be powered on and the temperature setting range is 16~30°C (68~86°F).



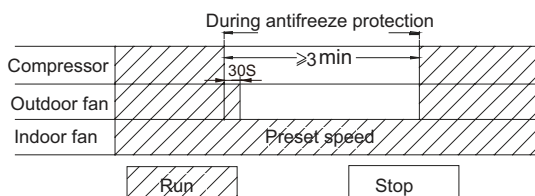
##### ② Protection function

###### ◆ Overcurrent protection

If total current is high, the compressor will run in limited frequency. If total current is too high, the compressor will stop, the outdoor fan will delay 30 seconds to stop, indoor unit will display E5 and out door yellow light will blink 5 times.

###### ◆ Antifreezing protection

When the antifreezing protection is detected, the compressor will stop, the outdoor fan will stop after 30 seconds, and the indoor fan and swing motor will keep running in the original mode. When antifreezing protection is eliminated and the compressor has stopped for 3 minutes, the compressor will resume running in the original mode.



#### (2) Dehumidifying Mode

##### ① Working conditions and process of dehumidifying

If  $T_{\text{amb.}} > T_{\text{preset}}$ , the unit will enter cooling and dehumidifying mode, in which case the compressor and the outdoor fan will operate and the indoor fan will run at low speed.

If  $T_{\text{preset}} - 2^{\circ}\text{C}$  (3.6°F)  $\leq T_{\text{amb.}} \leq T_{\text{preset}}$ , the compressor remains at its original operation state.

If  $T_{\text{amb.}} < T_{\text{preset}} - 2^{\circ}\text{C}$  (3.6°F), the compressor will stop, the outdoor fan will stop with a time lag of 30s, and the indoor fan will operate at low speed.

##### ② Protection function

Protection is the same as that under the cooling mode.

#### (3) Heating Mode

##### ① The condition and process of heating

If  $T_{\text{amb.}} \leq T_{\text{preset}} + 2^{\circ}\text{C}$  (3.6°F), heating mode will act, the compressor, outdoor fan and reversal valve will run, the indoor fan will delay 3min to stop at the latest

If  $T_{\text{preset}} + 2^{\circ}\text{C}$  (3.6°F)  $< T_{\text{amb.}} < T_{\text{preset}} + 5^{\circ}\text{C}$  (9°F), the unit will keep running in the original mode.

If  $T_{\text{amb.}} \geq T_{\text{preset}} + 5^{\circ}\text{C}$  (9°F), the compressor will stop, the outdoor fan will delay 30s to stop and indoor fan will blow 60s at low speed, the fan speed cannot be shifted within blow residual heat.

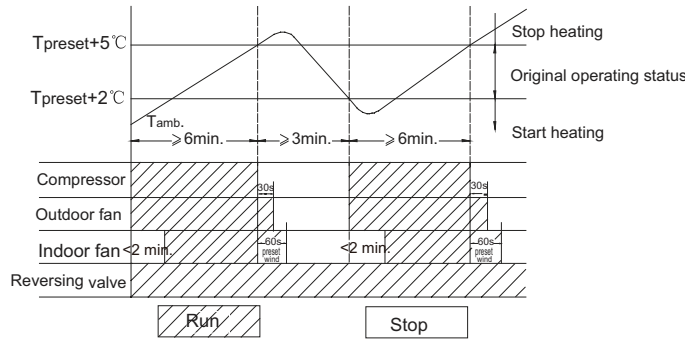
◆ In this mode, the temperature setting range is 16 ~30°C (68~86°F).

◆ The air conditioner will adjust the running frequency of the compressor automatically according to the change of ambient temperature.

◆ When the unit is turned off in heating mode, or switched to other mode from heating mode, the four-way valve will be powered off after the compressor stops.

◆ When compressor is running (not including each malfunction and protection):

- a. When outdoor ambient temperature  $\geq 20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ) and indoor fan speed is low or medium, the fan speed will turn to high; if indoor fan speed is high or super high, it will keep the same.
- b. When outdoor ambient temperature  $\leq 18^{\circ}\text{C}$  ( $64.4^{\circ}\text{F}$ ), the fan speed will resume set fan speed.
- c. When  $18^{\circ}\text{C} < \text{outdoor ambient temperature} < 20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ), it will run at present fan speed (set fan speed or high fan speed); but when first exiting cold air prevention after entering heating mode, it will run in set fan speed.



② Condition and process of defrost

When duration of successive heating operation is more than 45 minutes, or accumulated heating time more than 90 minutes, and one of the following conditions is reached, the unit will enter the defrost mode after 3 minutes.

- (1).  $T_{\text{outdoor ambient}} > 5^{\circ}\text{C}$  ( $41^{\circ}\text{F}$ ),  $T_{\text{outdoor tube}} \leq -2^{\circ}\text{C}$  ( $28.4^{\circ}\text{F}$ );
  - (2).  $-2^{\circ}\text{C} \leq T_{\text{outdoor ambient}} < 5^{\circ}\text{C}$  ( $41^{\circ}\text{F}$ ),  $T_{\text{outdoor tube}} \leq -6^{\circ}\text{C}$  ( $21.2^{\circ}\text{F}$ );
  - (3).  $-5^{\circ}\text{C} \leq T_{\text{outdoor ambient}} < -2^{\circ}\text{C}$  ( $28.4^{\circ}\text{F}$ ),  $T_{\text{outdoor tube}} \leq -8^{\circ}\text{C}$  ( $17.6^{\circ}\text{F}$ );
  - (4).  $-10^{\circ}\text{C} \leq T_{\text{outdoor ambient}} < -5^{\circ}\text{C}$  ( $23^{\circ}\text{F}$ ),  $T_{\text{outdoor tube}} - T_{\text{compensatory}} \leq (T_{\text{outdoor ambient}} - 3^{\circ}\text{C})$  ( $5.4^{\circ}\text{F}$ )
  - (5).  $T_{\text{outdoor ambient}} < -10^{\circ}\text{C}$  ( $14^{\circ}\text{F}$ ),  $T_{\text{outdoor tube}} - T_{\text{compensatory}} \leq (T_{\text{outdoor ambient}} - 3^{\circ}\text{C})$  ( $5.4^{\circ}\text{F}$ )
- (after energizing,  $T_{\text{compensatory}} = 0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) during the first defrosting; if it is not the first defrosting,  $T_{\text{compensatory}}$  is confirmed by  $T_{\text{outdoor tube}}$  of quitting last defrosting: a. when  $T_{\text{outdoor tube}} > 2^{\circ}\text{C}$  ( $35.6^{\circ}\text{F}$ ),  $T_{\text{compensatory}} = 0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ); b. when  $T_{\text{outdoor tube}} \leq 2^{\circ}\text{C}$  ( $35.6^{\circ}\text{F}$ ),  $T_{\text{compensatory}} = 3^{\circ}\text{C}$  ( $37.4^{\circ}\text{F}$ ))

At that time, the indoor fan stops and the compressor stops, and after 30 seconds the outer fan will stop, and then after 30 seconds, the four-way valve will stop. After 30 seconds, the compressor is initiated for raising the frequency to defrost frequency. When the compressor has operated under defrost mode for 7.5 minutes, or  $T_{\text{outdoor ambient}} \geq 10^{\circ}\text{C}$ , the compressor will be converted to 46Hz operation. After 30 seconds, the compressor will stop. And after another 30 seconds, the four-way valve will be opened, and after 60 seconds, the compressor and the outer fan will be started, the indoor fan will run under preset cold air prevention conditions, and H1 will be displayed at temperature display area on the display panel. Defrost frequency is 85Hz.

③ Protection

◆ Cold air prevention

The unit is started under heating mode (the compressor is ON):

- ① In the case of  $T_{\text{indoor amb.}} < 24^{\circ}\text{C}$  ( $75.2^{\circ}\text{F}$ ): if  $T_{\text{tube}} \leq 40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ) and the indoor fan is at stop state, the indoor fan will begin to run at low speed with a time lag of 2 minutes. Within 2 minutes, if  $T_{\text{tube}} > 40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ), the indoor fan also will run at low speed; and after 1-minute operation at low speed, the indoor fan will be converted to operation at preset speed. Within 1-minute low speed operation or 2-minute nonoperation, if  $T_{\text{tube}} > 42^{\circ}\text{C}$  ( $107.6^{\circ}\text{F}$ ), the fan will run at present speed.
- ② In the case of  $T_{\text{indoor amb.}} \geq 24^{\circ}\text{C}$  ( $75.2^{\circ}\text{F}$ ): if  $T_{\text{tube}} \leq 42^{\circ}\text{C}$  ( $107.6^{\circ}\text{F}$ ), the indoor fan will run at low speed, and after one minute, the indoor fan will be converted to preset speed. Within one-minute low speed operation, if  $T_{\text{tube}} > 42^{\circ}\text{C}$  ( $107.6^{\circ}\text{F}$ ), the indoor fan will be converted to preset speed.

Note:  $T_{\text{indoor amb.}}$  indicated in ① and ② refers to, under initially heating mode, the indoor ambient temperature before the command to start the compressor is performed according to the program, or after the unit is withdrawn from defrost, the indoor ambient temperature before the defrost symbol is cleared.

(5) Fan Mode

Under the mode, the indoor fan will run at preset speed and the compressor, the outdoor fan, the four-way valve and the electric heater will stop.

Under the mode, temperature can be set within a range of  $16 \sim 30^{\circ}\text{C}$  ( $60.8 \sim 86^{\circ}\text{F}$ ).

(6) AUTO Mode

① Operation way of AUTO mode

- a. When  $T_{\text{ambient}} \geq 26^{\circ}\text{C}$  ( $78.8^{\circ}\text{F}$ ), it will run in cooling mode. The implied set temperature is  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ) (note: the set temperature sending to outdoor unit is  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ )).
- b. For heating and cooling unit, when  $T_{\text{ambient}} \leq 22^{\circ}\text{C}$  ( $71.6^{\circ}\text{F}$ ), it will run in heating mode. The implied set temperature is  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ); for cooling only unit, when  $T_{\text{ambient}} \leq 22^{\circ}\text{C}$  ( $71.6^{\circ}\text{F}$ ), it will run in fan mode and the displayed set temperature is  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ).



c. For heating and cooling unit, when  $22^{\circ}\text{C}(71.6^{\circ}\text{F}) < T_{\text{indoor ambient}} < 26^{\circ}\text{C}(78.8^{\circ}\text{F})$  (for cooling only unit,  $22^{\circ}\text{C}(71.6^{\circ}\text{F}) < T_{\text{indoor ambient}} < 26^{\circ}\text{C}(78.8^{\circ}\text{F})$ ), it will keep the original running mode. If the unit is energized for the first time, it will run in fan mode.

## ② Protection

- In cooling operation, protection is the same as that under the cooling mode;
- In heating operation, protection is the same as that under the heating mode;
- When ambient temperature changes, operation mode will be converted preferentially. Once started, the compressor will remain unchanged for at least 6 minutes.

## (7) Common Protection Functions and Fault Display under COOL, HEAT, DRY and AUTO Modes

### ① Overload protection

$T_{\text{tube}}$ : measured temperature of outdoor heat exchanger under cooling mode; and measured temperature of indoor heat exchanger under heating mode.

#### 1) Cooling overload

- If  $T_{\text{tube}} \leq 52^{\circ}\text{C}(125.6^{\circ}\text{F})$ , the unit will return to its original operation state.
- If  $T_{\text{tube}} \geq 55^{\circ}\text{C}(131^{\circ}\text{F})$ , frequency rise is not allowed.
- If  $T_{\text{tube}} \geq 58^{\circ}\text{C}(136.4^{\circ}\text{F})$ , the compressor will run at reduced frequency.
- If  $T_{\text{tube}} \geq 62^{\circ}\text{C}(143.6^{\circ}\text{F})$ , the compressor will stop and the indoor fan will run at preset speed.

#### 2) Heating overload

- If  $T_{\text{tube}} \leq 50^{\circ}\text{C}(122^{\circ}\text{F})$ , the unit will return to its original operation state.
- If  $T_{\text{tube}} \geq 53^{\circ}\text{C}(127.4^{\circ}\text{F})$ , frequency rise is not allowed.
- If  $T_{\text{tube}} \geq 56^{\circ}\text{C}(132.8^{\circ}\text{F})$ , the compressor will run at reduced frequency.
- If  $T_{\text{tube}} \geq 60^{\circ}\text{C}(140^{\circ}\text{F})$ , the compressor will stop and the indoor fan will blow residue heat and then stop.

### ② Exhaust temperature protection of compressor

If exhaust temperature  $\geq 98^{\circ}\text{C}(208.4^{\circ}\text{F})$ , frequency is not allowed to rise.

If exhaust temperature  $\geq 103^{\circ}\text{C}(217.4^{\circ}\text{F})$ , the compressor will run at reduced frequency.

If exhaust temperature  $\geq 110^{\circ}\text{C}(230^{\circ}\text{F})$ , the compressor will stop.

If exhaust temperature  $\leq 90^{\circ}\text{C}(194^{\circ}\text{F})$ , and the compressor has stayed at stop for at least 3 minutes, the compressor will resume its operation.

### ③ Communication fault

If the unit fails to receive correct signals for durative 3 minutes, communication fault can be justified and the whole system will stop.

### ④ Module protection

Under module protection mode, the compressor will stop. When the compressor remains at stop for at least 3 minutes, the compressor will resume its operation. If module protection occurs six times in succession, the compressor will not be started again.

### ⑤ Overload protection

If temperature sensed by the overload sensor is over 115, the compressor will stop and the outdoor fan will stop with a time lag of 30 seconds. If temperature is below 95, the overload protection will be relieved.

### ⑥ DC bus voltage protection

If voltage on the DC bus is below 150V or over 420V, the compressor will stop and the outdoor fan will stop with a time lag of 30 seconds. When voltage on the DC bus returns to its normal value and the compressor has stayed at stop for at least 3 minutes, the compressor will resume its operation.

### ⑦ Faults of temperature sensors

| Designation of sensors      | Faults  |
|-----------------------------|---|
| Indoor ambient temperature  | The sensor is detected to be open-circuited or short-circuited for successive 5 seconds   |
| Indoor tube temperature     | The sensor is detected to be open-circuited or short-circuited for successive 5 seconds   |
| Outdoor ambient temperature | The sensor is detected to be open-circuited or short-circuited for successive 30 seconds  |
| Outdoor tube temperature    | The sensor is detected to be open-circuited or short-circuited for successive 30 seconds, and no detection is performed within 10 minutes after defrost begins. |
| Exhaust                     | After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.                      |
| Overload                    | After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.                      |

## 3. Other Controls

### (1) ON/OFF

Press the remote button ON/OFF: the on-off state will be changed once each time you press the button.

### (2) Mode Selection:

Press the remote button MODE, then select and show in the following ways: AUTO, COOL, DRY, FAN, HEAT, AUTO.

### (3) Temperature Setting Option Button

Each time you press the remote button TEMP+ or TEMP-, the setting temperature will be up or down by  $1^{\circ}\text{C}(1.8^{\circ}\text{F})$ . Regulating Range:  $16(60.8^{\circ}\text{F}) \sim 30^{\circ}\text{C}(86^{\circ}\text{F})$ , the button is useless under the AUTO mode.

### (4) Time Switch

You should start and stop the machine according to the setting time by remote control.

### (5) SLEEP State Control

1. In cooling mode:

- 1.1 When the initial set temperature is 16-23°C(60.8~73.4°F), the temperature will rise 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after rising 3°C(5.4°F) ;after running for 7hours, the temperature will decrease 1°C(1.8°F) and it will not change after that.
- 1.2 When the initial set temperature is 24-27°C(75.2~80.6°F), the temperature will rise 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after rising 2°C(3.6°F) ;after running for 7 hours, the temperature will decrease 1°C(1.8°F) and it will not change after that.
- 1.3 When the initial set temperature is 28-29°C(82.4~84.2°F), the temperature will rise 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after rising 1°C(1.8°F) ; after running for 7 hours, the temperature will decrease 1°C(1.8°F) and it will not change after that.
- 1.4 When the initial set temperature is 30°C(86°F) , the unit will keep on running at this temperature; after running for 7 hours, the temperature will decrease 1°C(1.8°F) and it will not change after that.

Relationship between set temperature and running time:

| Initial Temp. | Running time(T) |    |    |    |    |    |    |    |
|---------------|-----------------|----|----|----|----|----|----|----|
| 0(start)      | 1               | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 16            | 17              | 18 | 19 | 19 | 19 | 19 | 18 | 18 |
| 17            | 18              | 19 | 20 | 20 | 20 | 20 | 19 | 19 |
| 18            | 19              | 20 | 21 | 21 | 21 | 21 | 20 | 20 |
| 19            | 20              | 21 | 22 | 22 | 22 | 22 | 21 | 21 |
| 20            | 21              | 22 | 23 | 23 | 23 | 23 | 22 | 22 |
| 21            | 22              | 23 | 24 | 24 | 24 | 24 | 23 | 23 |
| 22            | 23              | 24 | 25 | 25 | 25 | 25 | 24 | 24 |
| 23            | 24              | 25 | 26 | 26 | 26 | 26 | 25 | 25 |
| 24            | 25              | 26 | 26 | 26 | 26 | 26 | 25 | 25 |
| 25            | 26              | 27 | 27 | 27 | 27 | 27 | 26 | 26 |
| 26            | 27              | 28 | 28 | 28 | 28 | 28 | 27 | 27 |
| 27            | 28              | 29 | 29 | 29 | 29 | 29 | 28 | 28 |
| 28            | 29              | 29 | 29 | 29 | 29 | 29 | 28 | 28 |
| 29            | 30              | 30 | 30 | 30 | 30 | 30 | 29 | 29 |
| 30            | 30              | 30 | 30 | 30 | 30 | 30 | 29 | 29 |

2. In heating mode:

- 2.1 When the initial set temperature is 16°C(60.8°F), the unit will keep on running at this temperature;
- 2.2 When the initial set temperature is 17-20°C(62.6~68°F), the temperature will decrease 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after decreasing 1°C(1.8°F);
- 2.3 When the initial set temperature is 21-27°C(69.8~80.6°F), the temperature will decrease 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after decreasing 2°C(3.6°F);
- 2.4 When the initial set temperature is 28-30°C(82.4~86°F), the temperature will decrease 1°C(1.8°F) by every hour after sleep function is set; the temperature will not change after decreasing 3°C(5.4°F);

Relationship between set temperature and running time:

| Initial Temp. | Running time(T) |    |    |    |    |    |    |    |
|---------------|-----------------|----|----|----|----|----|----|----|
| 0(start)      | 1               | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 16            | 16              | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 17            | 16              | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 18            | 17              | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| 19            | 18              | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| 20            | 19              | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| 21            | 20              | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| 22            | 21              | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 23            | 22              | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| 24            | 23              | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| 25            | 24              | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| 26            | 25              | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| 27            | 26              | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 28            | 27              | 26 | 25 | 25 | 25 | 25 | 25 | 25 |
| 29            | 28              | 27 | 26 | 26 | 26 | 26 | 26 | 26 |
| 30            | 29              | 28 | 27 | 27 | 27 | 27 | 27 | 27 |

(6) Indoor Fan Control

Indoor fan could be set at ultra-high, high, medium, low speed by wireless remote controller and operated as that speed. Auto fan speed could be set as well, indoor fan will operate under auto fan speed as following:



1. Under heating mode: auto speed under heating or auto heating mode:

- When  $T_{amb.} \leq T_{preset} + 1^{\circ}\text{C}$  (1.8°F), indoor fan will operate at high speed;
- When  $T_{preset} + 1^{\circ}\text{C}$  (1.8°F)  $< T_{amb.} < T_{preset} + 3^{\circ}\text{C}$  (5.4°F), indoor fan will operate at medium speed;
- When  $T_{amb.} \geq T_{preset} + 3^{\circ}\text{C}$  (5.4°F), indoor fan will operate at low speed;

There should be at least 180s operation time during switchover of each speed.

2. Under cooling mode: auto speed under cooling or auto cooling mode:

- When  $T_{amb.} \geq T_{preset} + 2^{\circ}\text{C}$  (3.6°F), indoor fan will operate at high speed;
- When  $T_{preset} < T_{amb.} < T_{preset} + 2^{\circ}\text{C}$  (3.6°F), indoor fan will operate at medium speed;
- When  $T_{amb.} \leq T_{preset}$ , indoor fan will operate at low speed

There should be at least 210s operation time during switchover of each speed.

#### (7) Buzzer Control

The buzzer will send a "Di" sound when the air conditioner is powered up or received the information sent by the remote control or there is a button input, the single tube cooler doesn't receive the remote control ON signal under the mode of heating mode.

#### (8) Auto button

If the controller is on, it will stop by pressing the button, and if the controller is off, it will be automatic running state by pressing the button, swing on and light on, and the main unit will run based on the remote control if there is remote control order.

#### (9) Up-and-Down Swinging Control

When power on, the up-and-down motor will firstly move the air deflector to 0 counter-clockwise, close the air outlet.

After starting the machine, if you don't set the swinging function on, heating mode and auto-heating mode, the up-and-down air deflector will move to D clockwise; under other modes, the up-and-down air deflector will move to L1. If you set the swinging function when you start the machine, then the wind blade will swing between L and D. The air deflector has 7 swinging states: Location L, Location A, Location B, Location C,

Location D, Location L to Location D, stop at any location between L~D (the included angle between L~D is the same).

The air deflector will be closed at 0 Location, and the swinging is effectual only on condition that setting the swinging order and the inner fan is running. The indoor fan and compressor may get the power when air deflector is on the default location.

#### (10) Display

##### ① Operation pattern and mode pattern display

All the display patterns will display for a time when the power on, the operation indication pattern will display in red under standby status. When the machine is start by remote control, the indication pattern will light and display the current operation mode (the mode light includes: Cooling, heating and dehumidify). If you close the light key, all the display patterns will close.

##### ② Double-8 display

According to the different setting of remote control, the nixie light may display the current temperature (the temperature scope is from 16°C (60.8°F) to 30°C (86°F)) and indoor ambient temperature. The set temperature displayed in auto cooling and fan mode is 25°C (77°F) and the set temperature displayed in auto heating mode is 20°C (68°F). Under heating mode, nixie tube displays H1 or heating indicator is off 0.5s and blinks 10s in defrosting. (If you set the fahrenheit temperature display, the nixie light will display according to fahrenheit temperature) (11)

##### Protection function and failure display

E2: Freeze-proofing protection    E4: Exhausting protection    E5: Overcurrent protection    E6: Communication failure

F1: Indoor ambient sensor start and short circuit (continuously measured failure in 5s)

F2: Indoor evaporator sensor start and short circuit (continuously measured failure in 5s)

F3: Outdoor ambient sensor start and short circuit (continuously measured failure in 30s)

F4: Outdoor condenser sensor start and short circuit (continuously measured failure in 30s, and don't measure within 10 minutes after defrosted)

F5: Outdoor exhausting sensor start and short circuit (continuously measured failure in 30s after the compressor operated 3 minutes)

H3: Overload protection of compressor    H5: Module protection    PH: High-voltage protection    PL: Low-voltage protection

P1: Nominal cooling and heating test    P2: Maximum cooling and heating test

P3: Medium cooling and heating test    P0: Minimum cooling and heating test

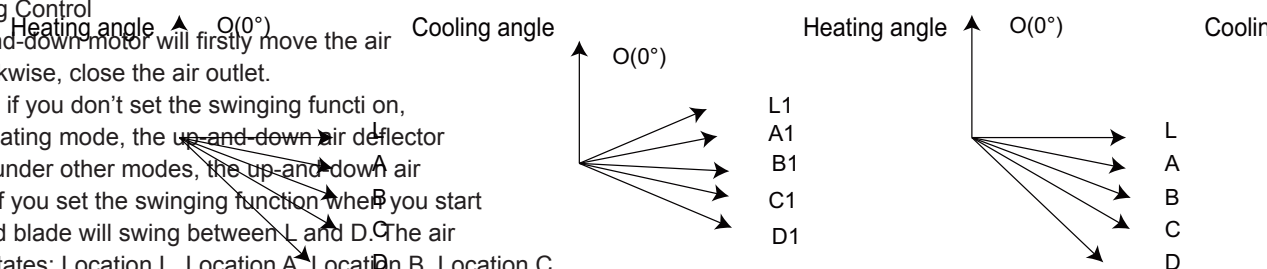
#### (12) Drying Function

You may start or stop the drying function under the modes of cooling and dehumidify at the starting status (The modes of automatism, heating and air supply do not have drying function). When you start the drying function, after stop the machine by pressing the switch button, you should keep running the inner fans for 2 minutes under low air damper (The swing will operate as the D1 status within 2 minutes, and other load is stopped), then stop the entire machine; When you stop the drying function, press the switch button will stop the machine directly. When you start the drying function, operating the drying button will stop the inner fans and close the guide louver.

#### (13) Memory Function

When interrupting the power supply memory content: mode, swing function, light, set temperature and wind speed.

After interrupted the power supply, the machine will start when recovering the power according to the memory content automatically.



# Part II : Installation and Maintenance

## 7. Notes for Installation and Maintenance

### Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.  
The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must accord with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All installation and maintenance shall be performed by distributor or qualified person.
- All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.



### Warnings

#### Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

#### Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the indoor unit and outdoor unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

#### Refrigerant Safety Precautions:

1. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
3. Make sure no refrigerant gas is leaking out when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

To ensure safety, please be mindful of the following precautions.



## Warnings

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.  
Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.
2. When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.  
Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.
3. When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute. If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.
4. During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe. If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
5. When installing the unit, make sure that connection pipe is securely connected before the compressor starts running. If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
6. Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.  
If there leaked gas around the unit, it may cause explosion and other accidents.
7. Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire. Poor connections may lead to electric shock or fire.
8. Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.  
Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

# Safety Operation of Flammable Refrigerant

## Qualification requirement for installation and maintenance man

- All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant.
- It can only be repaired by the method suggested by the equipment's manufacturer.

## Installation notes

- The air conditioner is not allowed to use in a room that has running fire (such as fire source, working coal gas ware, operating heater).
- It is not allowed to drill hole or burn the connection pipe.
- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the nameplate or following table a.
- Leak test is a must after installation.

table a - Minimum room area(m<sup>2</sup>)

| Minimum room area(m <sup>2</sup> ) | Charge amount(kg) | ≤1.2 | 1.3  | 1.4  | 1.5  | 1.6 | 1.7  | 1.8  | 1.9  | 2    | 2.1  | 2.2  | 2.3  | 2.4  | 2.5  |
|------------------------------------|-------------------|------|------|------|------|-----|------|------|------|------|------|------|------|------|------|
|                                    | floor location    | /    | 14.5 | 16.8 | 16.8 | 22  | 24.8 | 27.8 | 31   | 34.3 | 37.8 | 41.5 | 45.4 | 49.4 | 53.6 |
| wall mounted                       | /                 | 5.2  | 6.1  | 7    | 7.9  | 8.9 | 10   | 11.2 | 12.4 | 13.6 | 15   | 16.3 | 17.8 | 19.3 |      |
| window mounted                     | /                 | 1.6  | 1.9  | 2.1  | 2.4  | 2.8 | 3.1  | 3.4  | 3.8  | 4.2  | 4.6  | 5    | 5.5  | 6    |      |
| ceiling mounted                    | /                 | 1.1  | 1.3  | 1.4  | 1.6  | 1.8 | 2.1  | 2.3  | 2.6  | 2.8  | 3.1  | 3.4  | 3.7  | 4    |      |

## Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of the nameplate.
  - It's only allowed to be operated in the rooms that meet the requirement of the nameplate.
- Check whether the maintenance area is well-ventilated.
  - The continuous ventilation status should be kept during the operation process.
- Check whether there is fire source or potential fire source in the maintenance area.
  - The naked flame is prohibited in the maintenance area; and the "no smoking" warning board should be hanged.
- Check whether the appliance mark is in good condition.
  - Replace the vague or damaged warning mark.

## Welding

- If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:
  - Shut down the unit and cut power supply
  - Eliminate the refrigerant
  - Vacuuming
  - Clean it with N2 gas
  - Cutting or welding
  - Carry back to the service spot for welding
- Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.
- The refrigerant should be recycled into the specialized storage tank.

## Filling the refrigerant

- Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
- The refrigerant tank should be kept upright at the time of filling refrigerant.
- Stick the label on the system after filling is finished (or haven't finished).
- Don't overfilling.
- After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

## Safety instructions for transportation and storage

- Please use the flammable gas detector to check before unload and open the container.
- No fire source and smoking.
- According to the local rules and laws.



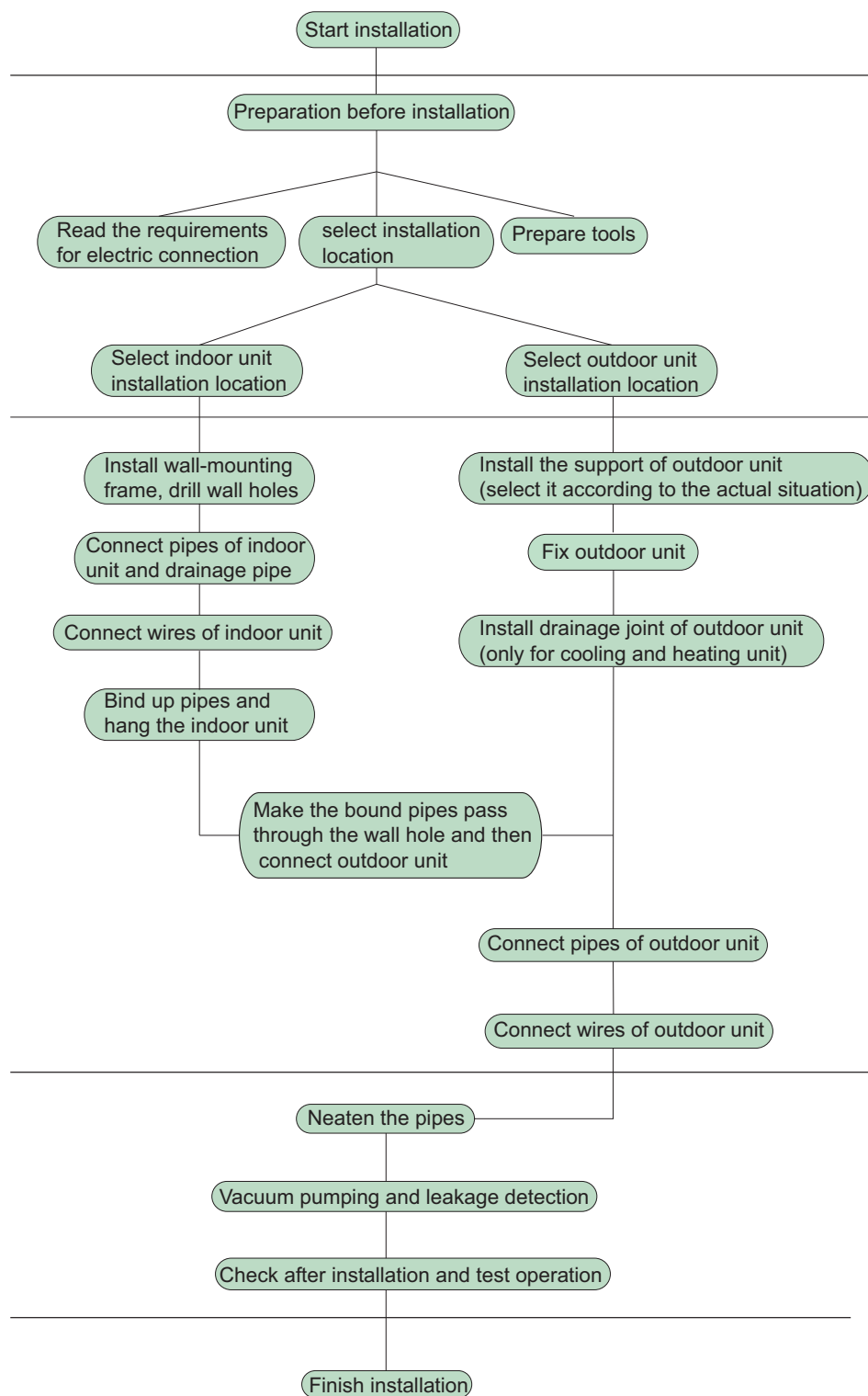
## Main Tools for Installation and Maintenance

|  |   |  |
|--|---|--|
| <p>1. Level meter, measuring tape</p>   | <p>2. Screw driver</p>                   | <p>3. Impact drill, drill head, electric drill</p>               |
| <p>4. Electroprobe</p>                  | <p>5. Universal meter</p>                | <p>6. Torque wrench, open-end wrench, inner hexagon spanner</p>  |
| <p>7. Electronic leakage detector</p>  | <p>8. Vacuum pump</p>                   | <p>9. Pressure meter</p>                                       |
| <p>10. Pipe pliers, pipe cutter</p>   | <p>11. Pipe expander, pipe bender</p>  | <p>12. Soldering appliance, refrigerant container</p>         |





## Installation procedures



Note: this flow is only for reference; please find the more detailed installation steps in this section.

## 8.2 Installation Parts-checking

| No. | Name                         | No. | Name                                    |
|-----|------------------------------|-----|---|
| 1   | Indoor unit                  | 8   | Sealing gum                             |
| 2   | Outdoor unit                 | 9   | Wrapping tape                           |
| 3   | Connection pipe              | 10  | Support of outdoor unit                 |
| 4   | Drainage pipe                | 11  | Fixing screw                            |
| 5   | Wall-mounting frame          | 12  | Drainage plug(cooling and heating unit) |
| 6   | Connecting cable(power cord) | 13  | Owner's manual, remote controller       |
| 7   | Wall pipe                    |     |   |

### ⚠ Note:

1. Please contact the local agent for installation.
2. Don't use unqualified power cord.

## 8.3 Selection of Installation Location

### 1. Basic Requirement:

Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the local dealer:

- (1) The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
- (2) The place with high-frequency devices (such as welding machine, medical equipment).
- (3) The place near coast area.
- (4) The place with oil or fumes in the air.
- (5) The place with sulfured gas.
- (6) Other places with special circumstances.
- (7) The appliance shall not be installed in the laundry.

### 2. Indoor Unit:

- (1) There should be no obstruction near air inlet and air outlet.
- (2) Select a location where the condensation water can be dispersed easily and won't affect other people.
- (3) Select a location which is convenient to connect the outdoor unit and near the power socket.
- (4) Select a location which is out of reach for children.
- (5) The location should be able to withstand the weight of indoor unit and won't increase noise and vibration.
- (6) The appliance must be installed 2.5m above floor.
- (7) Don't install the indoor unit right above the electric appliance.
- (8) Please try your best to keep away from fluorescent lamp.

### 3. Outdoor Unit:

- (1) Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.
- (2) The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind.
- (3) The location should be able to withstand the weight of outdoor unit.
- (4) Make sure that the installation follows the requirement of installation dimension diagram.
- (5) Select a location which is out of reach for children and far away from animals or plants. If it is unavoidable, please add fence for safety purpose.

## 8.4 Electric Connection Requirement

### 1. Safety Precaution

- (1) Must follow the electric safety regulations when installing the unit.
- (2) According to the local safety regulations, use qualified power supply circuit and air switch.
- (3) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.

| Air-conditioner | Air switch capacity |
|-----------------|---------------------|
| 18/24K          | 25A                 |

- (4) Properly connect the live wire, neutral wire and grounding wire of power socket.
- (5) Be sure to cut off the power supply before proceeding any work related to electricity and safety.
- (6) Do not put through the power before finishing installation.
- (7) For appliances with type Y attachment, the instructions shall contain the substance of the following. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- (8) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
- (9) The appliance shall be installed in accordance with national wiring regulations.

### 2. Grounding Requirement:

- (1) The air conditioner is first class electric appliance. It must be properly grounded with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- (2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- (3) The grounding resistance should comply with national electric safety regulations.
- (4) The appliance must be positioned so that the plug is accessible.
- (5) An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- (6) Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

## 8.5 Installation of Indoor Unit

### 1. Choosing Installation location

Recommend the installation location to the client and then confirm it with the client.

### 2. Install Wall-mounting Frame

- (1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.
- (2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic expansion particle) and then fill the plastic expansion particles

in the holes.

(3) Fix the wall-mounting frame on the wall with tapping screws (ST4.2X25TA) and then check if the frame is firmly installed by pulling the frame. If the plastic expansion particle is loose, please drill another fixing hole nearby.

### 3. Install Wall-mounting Frame

(1) Choose the position of piping hole according to the direction of outlet pipe. The position of piping hole should be a little lower than the wall-mounted frame. (As show in Fig.1)

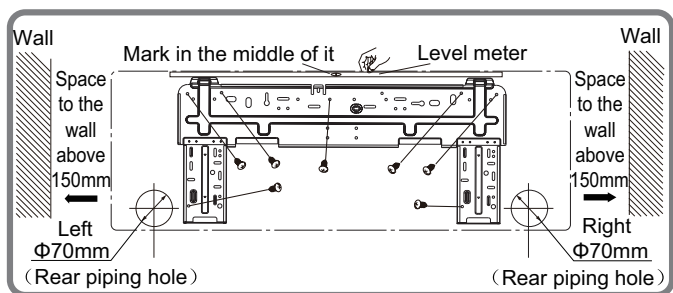


Fig.1

(2) Open a piping hole with the diameter of  $\Phi 70\text{mm}$  on the selected outlet pipe position. In order to drain smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of  $5\text{-}10^\circ$ . (As show in Fig.2)

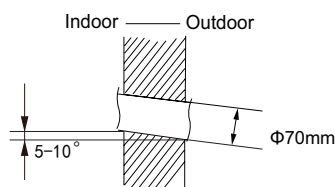


Fig.2

#### ⚠ Note:

- (1) Pay attention to dust prevention and take relevant safety measures when opening the hole.
- (2) The plastic expansion particles are not provided and should be bought locally.

### 4. Outlet Pipe

(1) The pipe can be led out in the direction of right, rear right, left or rear left. (As show in Fig.3)

(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case. (As show in Fig.4)

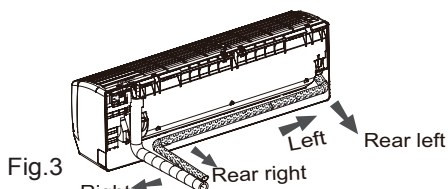


Fig.3

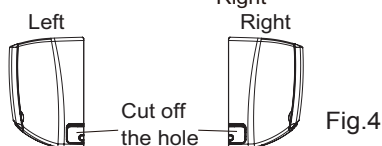
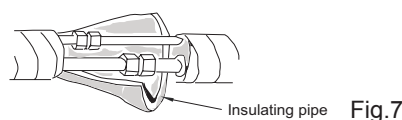
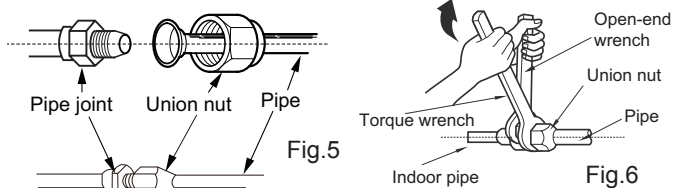


Fig.4

### 5. Connect the Pipe of Indoor Unit

- (1) Aim the pipe joint at the corresponding bellmouth. (As show in Fig.5)
- (2) Pretightening the union nut with hand.
- (3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench. (As show in Fig.6)
- (4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape. (As show in Fig.7)



Refer to the following table for wrench moment of force:

| Hex nut diameter(mm) | Tightening torque(N·m) |
|----------------------|------------------------|
| $\Phi 6$             | 15~20                  |
| $\Phi 9.52$          | 30~40                  |
| $\Phi 12$            | 45~55                  |
| $\Phi 16$            | 60~65                  |
| $\Phi 19$            | 70~75                  |

### 6. Install Drain Hose

- (1) Connect the drain hose to the outlet pipe of indoor unit. (As show in Fig.8)
- (2) Bind the joint with tape. (As show in Fig.9)

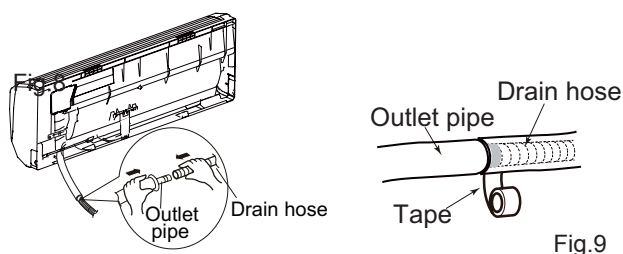


Fig.9

#### ⚠ Note:

- (1) Add insulating pipe in the indoor drain hose in order to prevent condensation.
- (2) The plastic expansion particles are not provided. (As show in Fig.10)

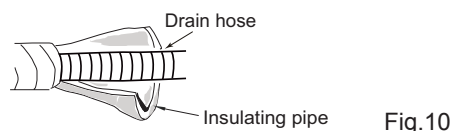


Fig.10

### 7. Connect Wire of Indoor Unit

(1) Open the panel, remove the screw on the wiring cover and then take down the cover.(As show in Fig.11)

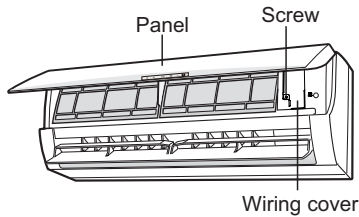


Fig.11

(2) Make the power connection wire go through the cable-cross hole at the back of indoor unit and then pull it out from the front side.(As show in Fig.12)

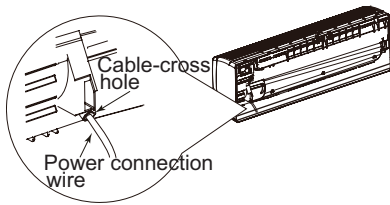


Fig.12

(3) Remove the wire clip; connect the power connection wire and signal control wire to the wiring terminal according to the color; tighten the screw and then fix them with wire clip.(As show in Fig.13)

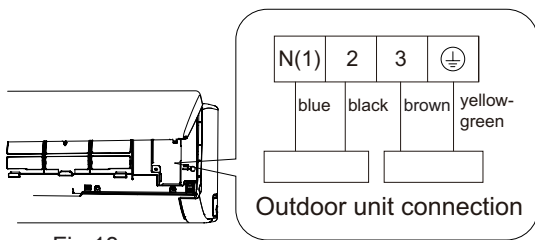


Fig.13

Note: the wiring connect is for reference only, please refer to the actual one.

(4) Put wiring cover back and then tighten the screw.  
(5) Close the panel.

#### ⚠ Note:

- (1) All wires of indoor unit and outdoor unit should be connected by a professional.
- (2) If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.
- (3) For the air conditioner with plug, the plug should be reachable after finishing installation.
- (4) For the air conditioner without plug, an air switch must be installed in the line. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

### 8. Bind up Pipe

- (1) Bind up the connection pipe, power cord and drain hose with the band.(As show in Fig.14)
- (2) Reserve a certain length of drain hose and power cord for installation when binding them. When binding to a certain degree, separate the indoor power and then separate the drain hose.(As show in Fig.15)
- (3) Bind them evenly.
- (4) The liquid pipe and gas pipe should be bound separately at the end.

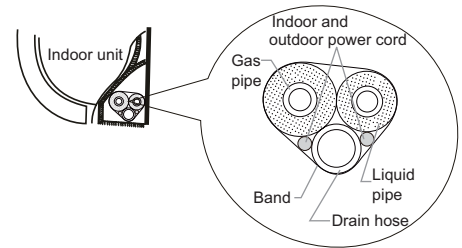


Fig.14

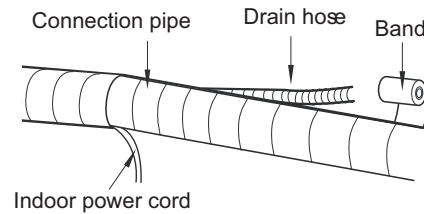


Fig.15

#### ⚠ Note:

- (1) The power cord and control wire can't be crossed or winding.
- (2) The drain hose should be bound at the bottom.

### 9. Hang the Indoor Unit

- (1) Put the bound pipes in the wall pipe and then make them pass through the wall hole.
- (2) Hang the indoor unit on the wall-mounting frame.
- (3) Stuff the gap between pipes and wall hole with sealing gum.
- (4) Fix the wall pipe.(As show in Fig.16)
- (5) Check if the indoor unit is installed firmly and closed to the wall.(As show in Fig.17)

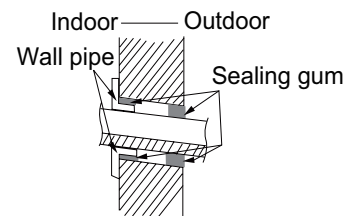
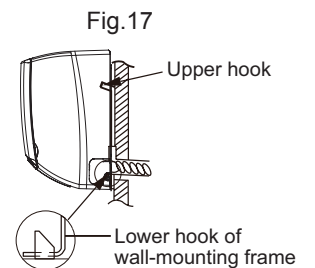


Fig.16



#### ⚠ Note:

Do not bend the drain hose too excessively in order to prevent blocking.

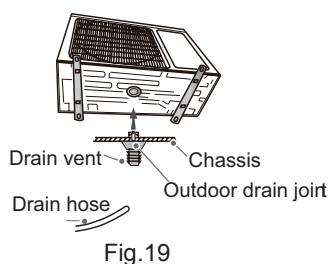
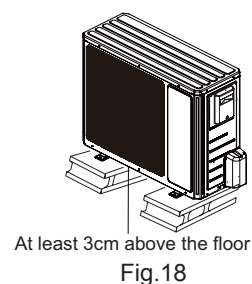
## 8.6 Installation of Outdoor Unit

### 1. Fix the Support of Outdoor Unit(Select it according to the actual installation situation)

- (1) Select installation location according to the house structure.
- (2) Fix the support of outdoor unit on the selected location with expansion screws.

**⚠ Note:**

- (1) Take sufficient protective measures when installing the outdoor unit.
- (2) Make sure the support can withstand at least four times the unit weight.
- (3) The outdoor unit should be installed at least 3cm above the floor in order to install drain joint.(As show in Fig.18)
- (4) For the unit with cooling capacity of 2300W~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W~16000W, 10 expansion screws are needed.

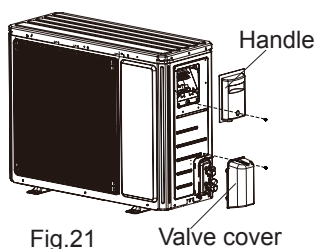
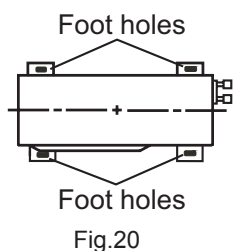


### 2. Install Drain Joint(Only for cooling and heating unit)

- (1) Connect the outdoor drain joint into the hole on the chassis.
  - (2) Connect the drain hose into the drain vent.
- (As show in Fig.19)

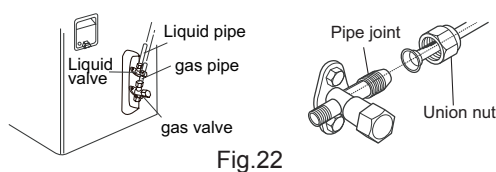
### 3. Fix Outdoor Unit

- (1) Place the outdoor unit on the support.
- (2) Fix the foot holes of outdoor unit with bolts. (As show in Fig.20)



### 4. Connect Indoor and Outdoor Pipes

- (1) Remove the screw on the handle and valve cover of outdoor unit and then remove the handle and valve cover.(As show in Fig.21)
- (2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.(As show in Fig.22)



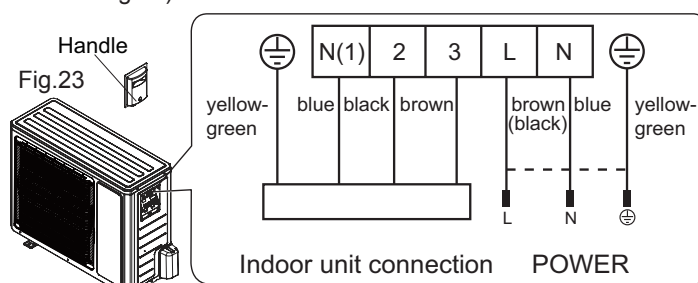
- (3) Pretightening the union nut with hand.
- (4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force:

| Hex nut diameter(mm) | Tightening torque(N·m) |
|----------------------|------------------------|
| Φ6                   | 15~20                  |
| Φ9.52                | 30~40                  |
| Φ12                  | 45~55                  |
| Φ16                  | 60~65                  |
| Φ19                  | 70~75                  |

### 5. Connect Outdoor Electric Wire

- (1) Remove the wire clip; connect the power connection wire and signal control wire (only for cooling and heating unit) to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)



Note: the wiring connect is for reference only, please refer to the actual one.

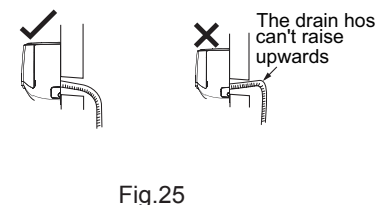
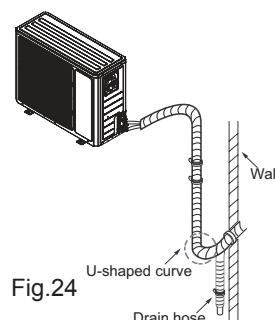
- (2) Fix the power connection wire and signal control wire with wire clip.

**⚠ Note:**

- (1) After tightening the screw, pull the power cord slightly to check if it is firm.
- (2) Never cut the power connection wire to prolong or shorten the distance.

### 6. Neaten the Pipes

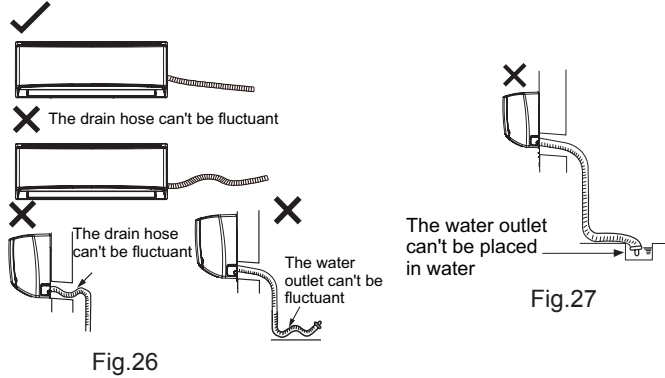
- (1) The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.
- (2) If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room.(As show in Fig.24)





**Note:**

- (1) The through-wall height of drain hose shouldn't be higher than the outlet pipe hole of indoor unit.(As show in Fig.25)
- (2) Slant the drain hose slightly downwards. The drain hose can't be curved, raised and fluctuant, etc.(As show in Fig.26)
- (3) The water outlet can't be placed in water in order to drain smoothly.(As show in Fig.27)



## 8.7 Vacuum Pumping and Leak Detection

### 1. Use Vacuum Pump

- (1) Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.
- (2) Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.
- (3) Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.
- (4) Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.
- (5) Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.
- (6) Tighten the screw caps of valves and refrigerant charging vent.(As show in Fig.28)

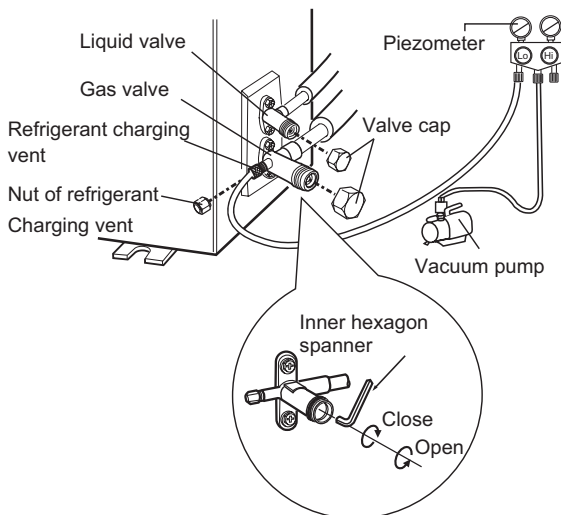


Fig.28

### 2. Leakage Detection

- (1) With leakage detector:  
Check if there is leakage with leakage detector.
- (2) With soap water:  
If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

## 8.8 Check after Installation and Test Operation

### 1. Check after Installation

Check according to the following requirement after finishing installation.

| NO. | Items to be checked  | Possible malfunction   |
|-----|--|--|
| 1   | Has the unit been installed firmly?  | The unit may drop, shake or emit noise.                                    |
| 2   | Have you done the refrigerant leakage test?                                      | It may cause insufficient cooling (heating) capacity.                      |
| 3   | Is heat insulation of pipeline sufficient?                                       | It may cause condensation and water dripping.                              |
| 4   | Is water drained well?   | It may cause condensation and water dripping.                              |
| 5   | Is the voltage of power supply according to the voltage marked on the nameplate? | It may cause malfunction or damage the parts.                              |
| 6   | Is electric wiring and pipeline installed correctly?                             | It may cause malfunction or damage the parts.                              |
| 7   | Is the unit grounded securely?   | It may cause electric leakage.   |
| 8   | Does the power cord follow the specification?                                    | It may cause malfunction or damage the parts.                              |
| 9   | Is there any obstruction in air inlet and air outlet?                            | It may cause insufficient cooling (heating) capacity.                      |
| 10  | The dust and sundries caused during installation are removed?                    | It may cause malfunction or damaging the parts.                            |
| 11  | The gas valve and liquid valve of connection pipe are open completely?           | It may cause insufficient cooling (heating) capacity.                      |
| 12  | Is the inlet and outlet of piping hole been covered?                             | It may cause insufficient cooling (heating) capacity or waster eletricity. |

### 2. Test Operation

- (1) Preparation of test operation
  - The client approves the air conditioner installation.
  - Specify the important notes for air conditioner to the client.
- (2) Method of test operation
  - Put through the power, press ON/OFF button on the remote controller to start operation.
  - Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
  - If the ambient temperature is lower than 16°C , the air conditioner can't start cooling.

## 9. Maintenance

### 9.1 Error Code List

| NO. | Malfunction Name  | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |                          | A/C status | Possible Causes  |  |
|-----|---|-------------------------------|---|----------------|--------------------------------|---|--------------------------|------------|--|--|
|     |   | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |                          |            |  |  |
|     |   |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator            |            |  | Green Indicator  |
| 1   | High pressure protection of system                          | E1                            |   |                |                                |   |                          |            | During cooling and drying operation, except indoor fan operates, all loads stop operation.<br>During heating operation, the complete unit stops. | Possible reasons:<br>1. Refrigerant was superabundant;<br>2. Poor heat exchange (including filth blockage of heat exchanger and bad radiating environment );<br>Ambient temperature is too high.   |
| 2   | Antifreezing protection                                     | E2                            |   |                |                                | OFF 1S and blink 3 times  |                          |            | During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates.  | 1. Poor air-return in indoor unit;<br>2. Fan speed is abnormal;<br>3. Evaporator is dirty.   |
| 3   | Refrigerant leakage protection                              | F0                            |   |                |                                |   | OFF 1S and blink 9 times |            | The Dual-8 Code Display will show F0 and the complete unit stops.  | 1.Refrigerant leakage;<br>2.Indoor evaporator temperature sensor works abnormally;<br>3.The unit has been plugged up somewhere.  |
| 4   | High discharge temperature protection of compressor         | E4                            |   |                |                                | OFF 1S and blink 7 times  |                          |            | During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.        | Please refer to the malfunction analysis (discharge protection, overload).   |
| 5   | Overcurrent protection                                      | E5                            |   |                |                                | OFF 1S and blink 5 times  |                          |            | During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.        | 1. Supply voltage is unstable;<br>2. Supply voltage is too low and load is too high;<br>3. Evaporator is dirty.  |
| 6   | Communication Malfunction                                   | E6                            |   |                |                                | Always  |                          |            | During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.                   | Refer to the corresponding malfunction analysis.   |
| 7   | High temperature resistant protection                       | E8                            |   |                |                                | OFF 1S and blink 6 times  |                          |            | During cooling operation: compressor will stop while indoor fan will operate. During heating operation, the complete unit stops.                 | Refer to the malfunction analysis (overload, high temperature resistant).  |
| 8   | EEPROM malfunction  | EE                            |   |                |                                | OFF 1S and blink 11 times   |                          |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop   | Replace outdoor control panel AP1  |
| 9   | Limit/ decrease frequency due to high temperature of module | EU                            |   |                |                                |   |                          |            | All loads operate normally, while operation frequency for compressor is decreased  | Discharging after the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1. |
| 10  | Malfunction protection of jumper cap                        | C5                            |   |                |                                |   |                          |            | Wireless remote receiver and button are effective, but can not dispose the related command   | 1. No jumper cap insert on mainboard.<br>2. Incorrect insert of jumper cap.<br>3. Jumper cap damaged.<br>4. Abnormal detecting circuit of mainboard.   |

| NO. | Malfunction Name   | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |                          | A/C status | Possible Causes  |   |
|-----|--|-------------------------------|---|----------------|--------------------------------|---|--------------------------|------------|--|---|
|     |  | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |                          |            |  |   |
|     |  |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator            |            |  | Green Indicator   |
| 11  | Gathering refrigerant  | Fo                            |   |                |                                | OFF 1S and blink 17 times   |                          |            | When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant   | Nominal cooling mode  |
| 12  | Indoor ambient temperature sensor is open/short circuited    | F1                            |   |                |                                |   |                          |            | During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation.  | <ol style="list-style-type: none"> <li>Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal.</li> <li>Components in mainboard fell down leads short circuit.</li> <li>Indoor ambient temp. sensor damaged.(check with sensor resistance value chart)</li> <li>Mainboard damaged.</li> </ol>             |
| 13  | Indoor evaporator temperature sensor is open/short circuited | F2                            |   |                |                                |   |                          |            | AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation  | <ol style="list-style-type: none"> <li>Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal.</li> <li>Components on the mainboard fall down leads short circuit.</li> <li>Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing)</li> <li>Mainboard damaged.</li> </ol> |
| 14  | Outdoor ambient temperature sensor is open/short circuited   | F3                            |   |                |                                |   | OFF 1S and blink 6 times |            | During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation   | Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)  |
| 15  | Outdoor condenser temperature sensor is open/short circuited | F4                            |   |                |                                |   | OFF 1S and blink 5 times |            | During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation.  | Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)  |
| 16  | Outdoor discharge temperature sensor is open/short circuited | F5                            |   |                |                                |   | OFF 1S and blink 7 times |            | During cooling and drying operation, compressor will stop after operating for about 3 mins, while indoor fan will operate; During heating operation, the complete unit will stop after operating for about 3 mins. | <ol style="list-style-type: none"> <li>Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)</li> <li>The head of temperature sensor hasnt been inserted into the copper tube</li> </ol>   |
| 17  | Limit/decrease frequency due to overload                     | F6                            |   |                |                                |   | OFF 1S and blink 3 times |            | All loads operate normally, while operation frequency for compressor is decreased  | Refer to the malfunction analysis (overload, high temperature resistant)  |
| 18  | Decrease frequency due to overcurrent                        | F8                            |   |                |                                |   | OFF 1S and blink once    |            | All loads operate normally, while operation frequency for compressor is decreased  | The input supply voltage is too low; System pressure is too high and overload   |



| NO. | Malfunction Name                             | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |                           | A/C status   | Possible Causes  |                 |
|-----|--|-------------------------------|---|----------------|--------------------------------|---|---------------------------|--|--|-----------------|
|     |  | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |                           |  |  |                 |
|     |  |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator             |  |  | Green Indicator |
| 19  | Decrease frequency due to high air discharge | F9                            |   |                |                                |   | OFF 1S and blink twice    | All loads operate normally, while operation frequency for compressor is decreased  | Overload or temperature is too high;<br>Refrigerant is insufficient;<br>Malfunction of electric expansion valve (EKV)  |                 |
| 20  | Limit/decrease frequency due to antifreezing | FH                            |   |                |                                |   | OFF 1S and blink 4 times  | All loads operate normally, while operation frequency for compressor is decreased  | Poor air-return in indoor unit or fan speed is too low   |                 |
| 21  | Voltage for DC bus-bar is too high           | PH                            |   |                |                                |   | OFF 1S and blink 13 times | During cooling and drying operation, compressor will stop while indoor fan will operate;<br>During heating operation, the complete unit will stop operation. | 1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 265VAC, turn on the unit after the supply voltage is increased to the normal range.<br>2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1) |                 |
| 22  | Voltage of DC bus-bar is too low             | PL                            |   |                |                                |   | OFF 1S and blink 12 times | During cooling and drying operation, compressor will stop while indoor fan will operate;<br>During heating operation, the complete unit will stop            | 1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 150VAC, turn on the unit after the supply voltage is increased to the normal range.<br>2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1) |                 |
| 23  | Compressor Min frequency in test state       | P0                            |   |                |                                |   |                           |  | Showing during min. cooling or min. heating test   |                 |
| 24  | Compressor rated frequency in test state     | P1                            |   |                |                                |   |                           |  | Showing during nominal cooling or nominal heating test   |                 |
| 25  | Compressor maximum frequency in test state   | P2                            |   |                |                                |   |                           |  | Showing during max. cooling or max. heating test   |                 |

| NO. | Malfunction Name  | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |               | A/C status  | Possible Causes  |                 |
|-----|---|-------------------------------|---|----------------|--------------------------------|---|---------------|---|--|-----------------|
|     |   | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |               |   |  |                 |
|     |   |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator |   |  | Green Indicator |
| 26  | Compressor intermediate frequency in test state                               | P3                            |   |                |                                |   |               |   | Showing during middle cooling or middle heating test   |                 |
| 27  | Overcurrent protection of phase current for compressor                        | P5                            |   |                |                                |   |               | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.  |                 |
| 28  | Charging malfunction of capacitor   | PU                            |   |                |                                |   |               | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop            | Refer to the part three—charging malfunction analysis of capacitor   |                 |
| 29  | Malfunction of module temperature sensor circuit                              | P7                            |   |                |                                |   |               | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop            | Replace outdoor control panel AP1  |                 |
| 30  | Module high temperature protection  | P8                            |   |                |                                |   |               | During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop                       | After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1. |                 |
| 31  | Decrease frequency due to high temperature resistant during heating operation | H0                            |   |                |                                |   |               | All loads operate normally, while operation frequency for compressor is decreased   | Refer to the malfunction analysis (overload, high temperature resistant)   |                 |
| 32  | Static dedusting protection   | H2                            |   |                |                                |   |               |   |  |                 |
| 33  | Overload protection for compressor  | H3                            |   |                |                                | OFF 1S and blink 8 times  |               | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | 1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm.<br>2.Refer to the malfunction analysis (discharge protection, overload)   |                 |

| NO. | Malfunction Name                           | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |                           | A/C status | Possible Causes   |  |
|-----|--|-------------------------------|---|----------------|--------------------------------|---|---------------------------|------------|---|--|
|     |  | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |                           |            |   |  |
|     |  |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator             |            |   | Green Indicator  |
| 34  | System is abnormal                         | H4                            |   |                |                                | OFF 1S and blink 6 times  |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (overload, high temperature resistant)   |
| 35  | IPM protection                             | H5                            |   |                |                                | OFF 1S and blink 4 times  |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.  |
| 36  | Internal motor (fan motor) do not operate  | H6                            |   |                |                                |   |                           |            | Internal fan motor, external fan motor, compressor and electric heater stop operation,guide louver stops at present location.                             | <ol style="list-style-type: none"> <li>1. Bad contact of DC motor feedback terminal.</li> <li>2. Bad contact of DC motor control end.</li> <li>3. Fan motor is stalling.</li> <li>4. Motor malfunction.</li> <li>5. Malfunction of mainboard rev detecting circuit.</li> </ol> |
| 37  | Desynchronizing of compressor              | H7                            |   |                |                                |   |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.  |
| 38  | PFC protection                             | HC                            |   |                |                                | OFF 1S and blink 14 times   |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis  |
| 39  | Outdoor DC fan motor malfunction           | L3                            |   |                |                                |   | OFF 1S and blink 14 times |            | Outdoor DC fan motor malfunction lead to compressor stop operation,   | DC fan motor malfunction or system blocked or the connector loosed   |
| 40  | power protection                           | L9                            |   |                |                                | OFF 1S and blink 9 times  |                           |            | compressor stop operation and Outdoor fan motor will stop 30s latter , 3 minutes latter fan motor and compressor will restart                             | To protect the electrical components when detect high power  |
| 41  | Indoor unit and outdoor unit doesn't match | LP                            |   |                |                                | OFF 1S and blink 16 times   |                           |            | compressor and Outdoor fan motor can't work   | Indoor unit and outdoor unit doesn't match   |
| 42  | Failure start-up                           | LC                            |   |                |                                |   |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis  |

| NO. | Malfunction Name  | Display Method of Indoor Unit |   |                | Display Method of Outdoor Unit |   |                           | A/C status | Possible Causes   |  |
|-----|---|-------------------------------|---|----------------|--------------------------------|---|---------------------------|------------|---|--|
|     |   | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s) |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |                           |            |   |  |
|     |   |                               | Operation Indicator                                       | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator             |            |   | Green Indicator  |
| 43  | Malfunction of phase current detection circuit for compressor | U1                            |   |                |                                |   |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop                | Replace outdoor control panel AP1  |
| 44  | Malfunction of voltage dropping for DC bus-bar                | U3                            |   |                |                                |   |                           |            | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop                | Supply voltage is unstable   |
| 45  | Malfunction of complete units current detection               | U5                            |   |                |                                |   |                           |            | During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation. | Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1.           |
| 46  | The four-way valve is abnormal                                | U7                            |   |                |                                |   |                           |            | If this malfunction occurs during heating operation, the complete unit will stop operation.   | 1.Supply voltage is lower than AC175V;<br>2.Wiring terminal 4V is loosened or broken;<br>3.4V is damaged, please replace 4V. |
| 47  | Zero-crossing malfunction of outdoor unit                     | U9                            |   |                |                                |   |                           |            | During cooling operation, compressor will stop while indoor fan will operate; during heating,the complete unit will stop operation.                           | Replace outdoor control panel AP1  |
| 48  | Frequency limiting (power)                                    |                               |   |                |                                |   | OFF 1S and blink 13 times |            |   |  |
| 49  | Compressor running  |                               |   |                |                                |   | OFF 1S and blink once     |            |   |  |
| 50  | The temperature for turning on the unit is reached            |                               |   |                |                                |   | OFF 1S and blink 8 times  |            |   |  |
| 51  | Frequency limiting (module temperature)                       |                               |   |                |                                |   | OFF 1S and blink 11 times |            |   |  |

| NO. | Malfunction Name                      | Display Method of Indoor Unit |  |                | Display Method of Outdoor Unit |   |               | A/C status              | Possible Causes  |   |
|-----|---------------------------------------|-------------------------------|--|----------------|--------------------------------|---|---------------|-------------------------|--|---|
|     |                                       | Dual-8 Code Display           | Indicator Display (during blinking, ON 0.5s and OFF 0.5s)    |                |                                | Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s |               |                         |  |   |
|     |                                       |                               | Operation Indicator  | Cool Indicator | Heating Indicator              | Yellow Indicator  | Red Indicator | Green Indicator         |  |   |
| 52  | Normal communication                  |                               |  |                |                                |   |               | OFF 0.5S and blink once |  |   |
| 53  | Defrosting                            |                               | OFF 3S and blink once (during blinking, ON 10s and OFF 0.5s) |                |                                | OFF 1S and blink twice  |               |                         | Defrosting will occur in heating mode. Compressor will operate while indoor fan will stop operation. | Its the normal state  |
| 54  | U8                                    |                               |  |                |                                |   |               |                         | The complete unit stops  | 1.Power supply is abnormal;<br>2.Detection circuit of indoor control mainboard is abnormal. |
| 55  | Malfunction of detecting plate(WIFI ) | JF                            |  |                |                                |   |               |                         |  |   |

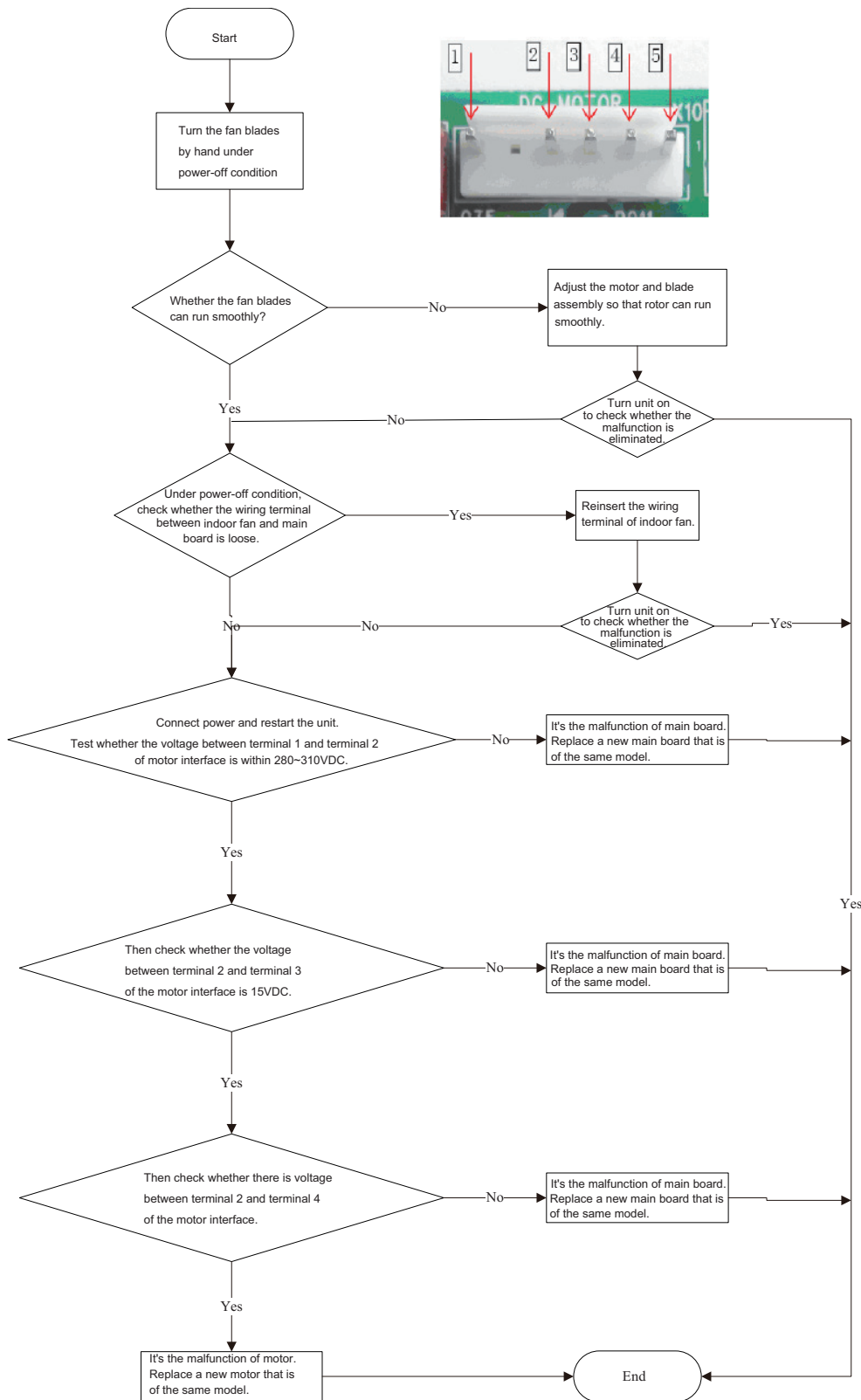


## 2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothly Is the control terminal of PG motor connected tightly?
- Smoothly Is the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:





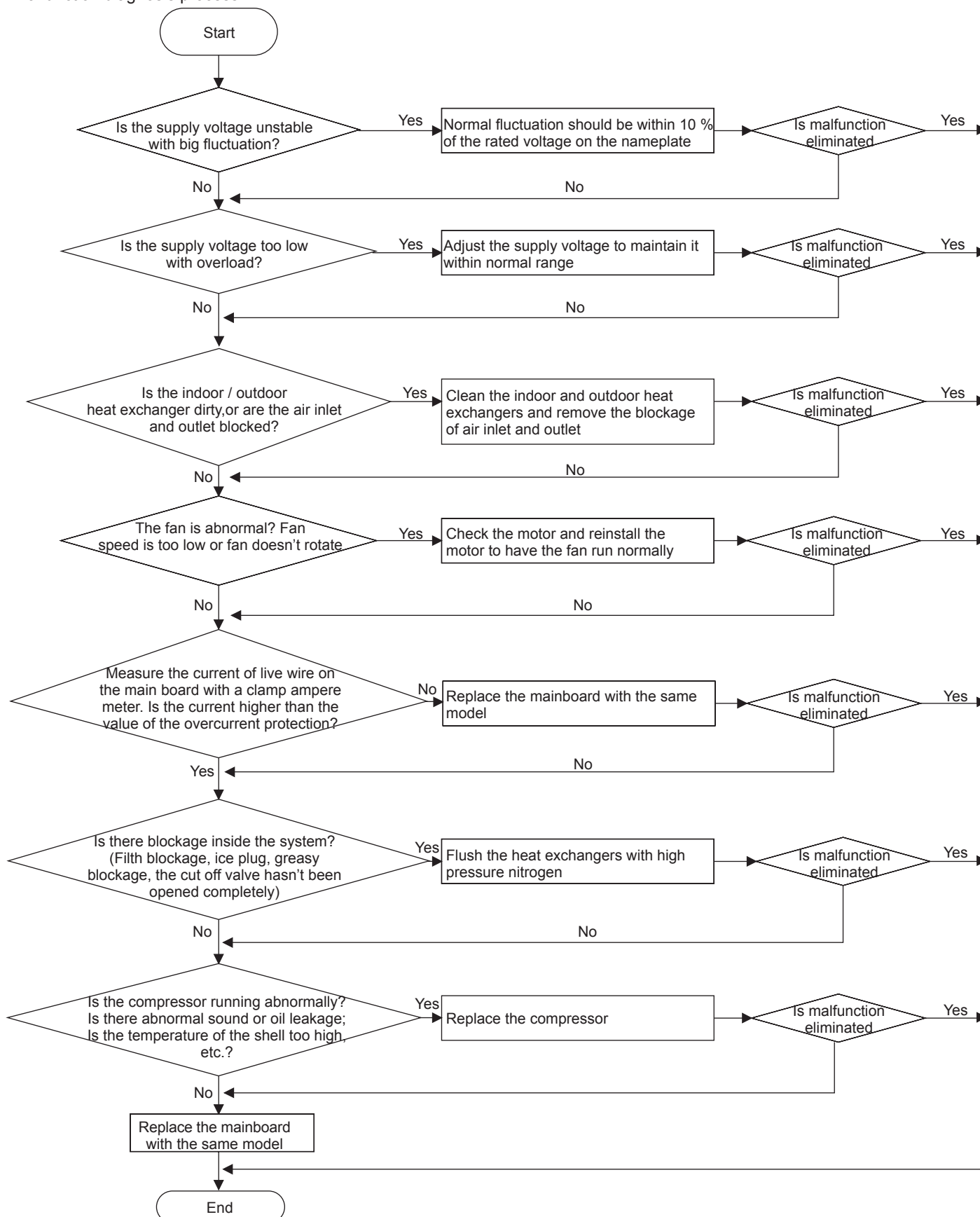


#### 4. Malfunction of Overcurrent Protection E5

Main detection points:

- Is the supply voltage unstable with big fluctuation?
- Is the supply voltage too low with overload?
- Hardware trouble?

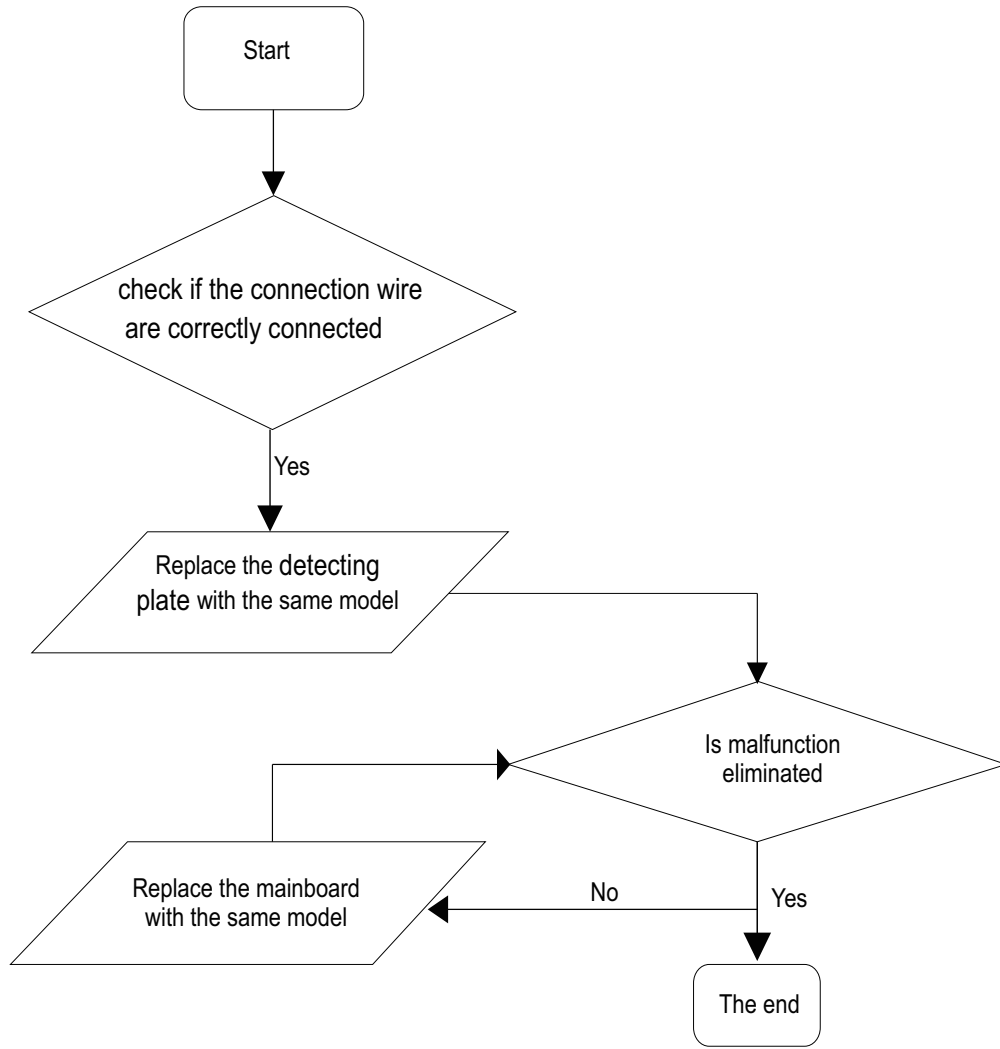
Malfunction diagnosis process:





6. Malfunction of detecting plate(WIFI) JF

5. Malfunction of detecting plate(WIFI) JF



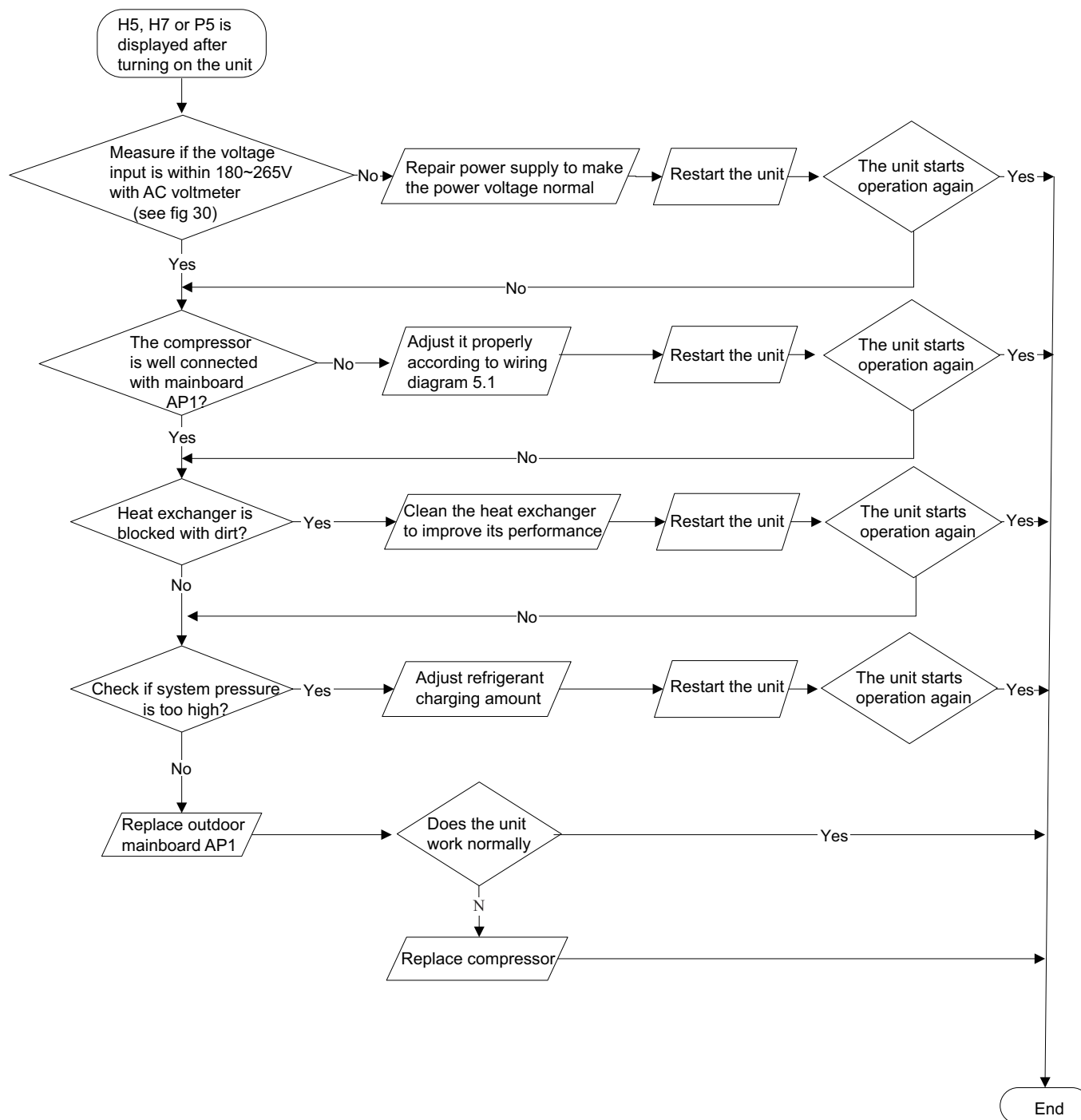


**2. IPM protection(H5), desynchronizing malfunction(H7), overcurrent of compressor phase current (P5) (AP1 below means control board of outdoor unit)**

Main detection points:

- Is voltage input within the normal range
- If the control board AP1 is well connected with compressor COMP? If they are loosened? If the connection sequence is correct?
- Heat exchange of unit is not good (heat exchanger is dirty and unit radiating environment is bad);
- If the system pressure is too high?
- If the refrigerant charging amount is appropriate?
- If coil resistance of compressor is normal? Is compressor coil insulating to copper pipe well?
- If the work load of unit is heavy? If radiating of unit is good?

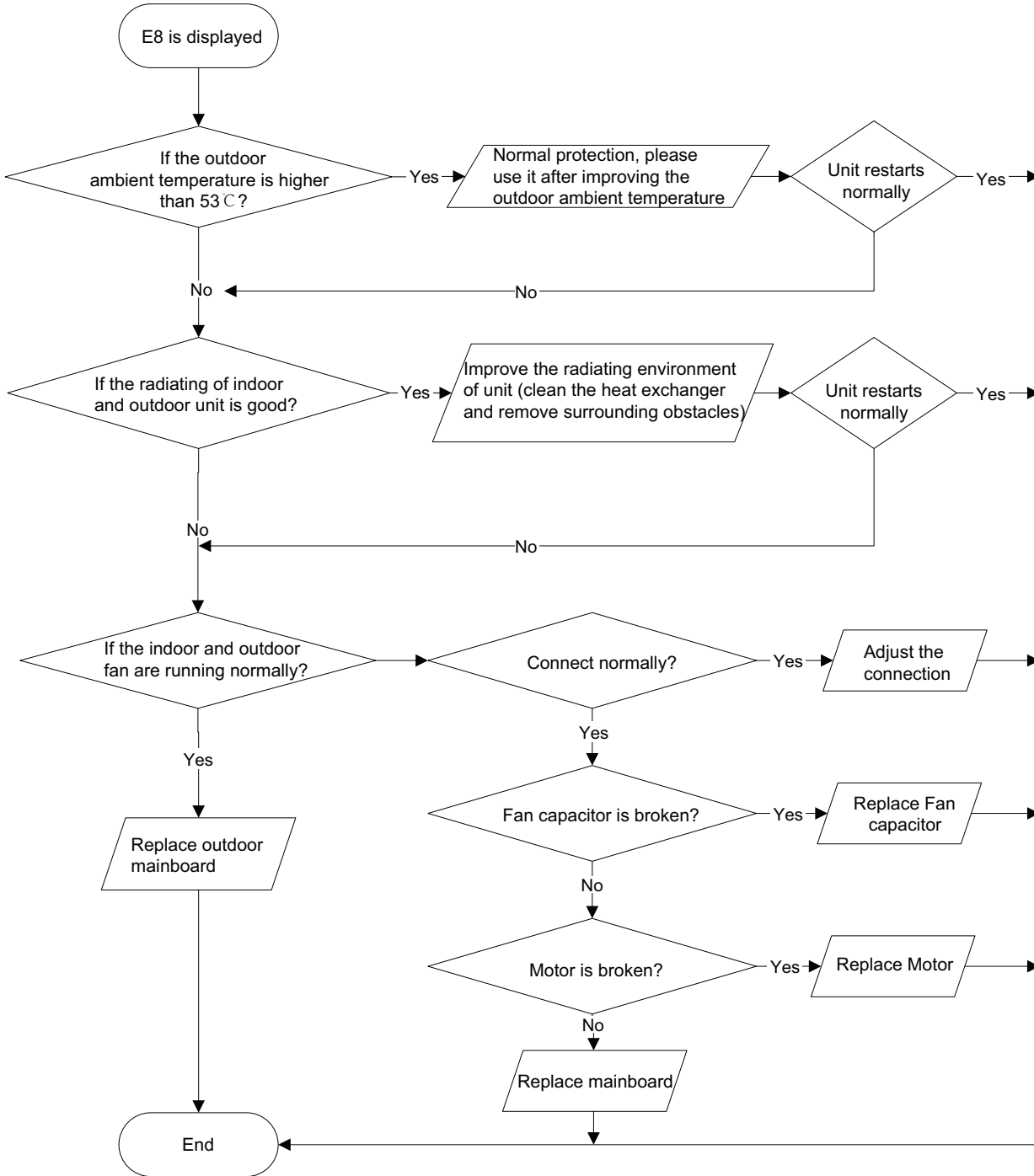
Malfunction diagnosis process:



**3. High temperature and overload protection (E8)(AP1 below means control board of outdoor unit)**

Main detection points:

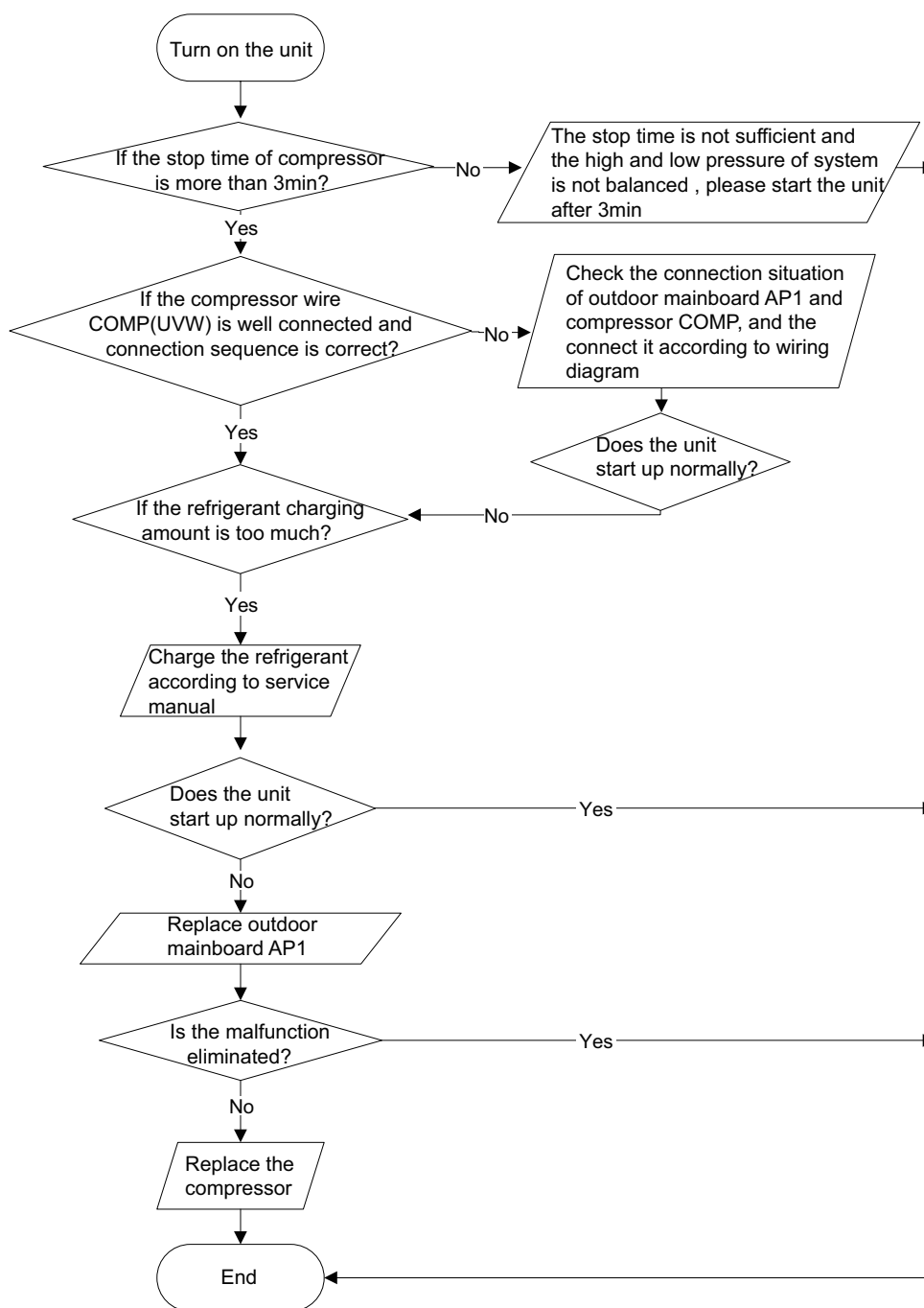
- If the outdoor ambient temperature is in normal range;
- If the indoor and outdoor fan are running normally;
- If the radiating environment of indoor and outdoor unit is good.



#### 4. Start-up failure (LC) (AP1 below means control board of outdoor unit)

Main detection points:

- If the compressor wiring is correct?
- If the stop time of compressor is sufficient?
- If the compressor is damaged?
- If the refrigerant charging amount is too much?

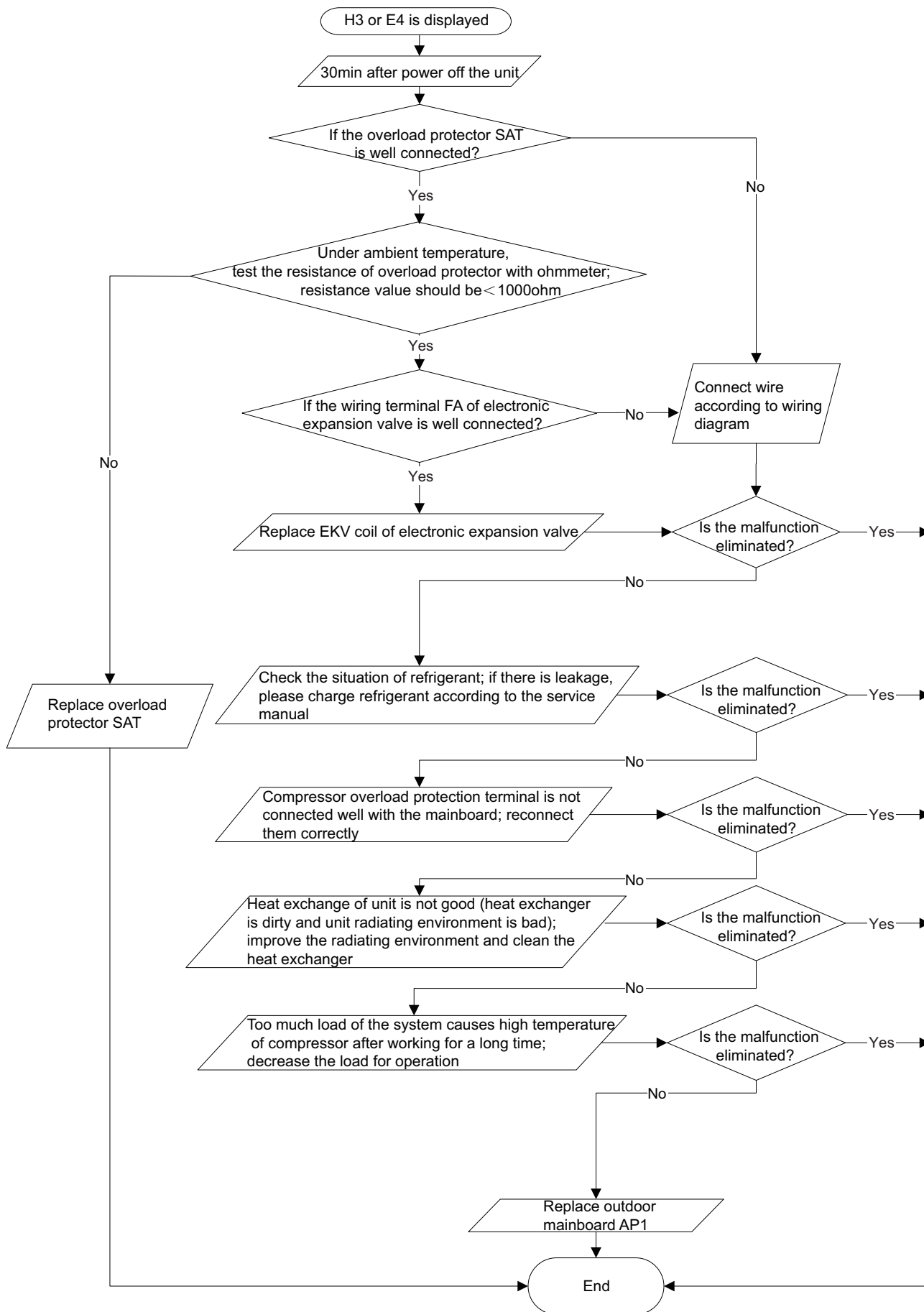


### 5. Overload and high discharge temperature malfunction

Main detection points:

- If the electronic expansion valve is connected well? Is the electronic expansion valve damaged?
- If the refrigerant is leaked?
- The compressor overload protection terminal is not connected well with the mainboard?
- If the overload protector is damaged?
- Heat exchange of unit is not good? (heat exchanger is dirty and unit radiating environment is bad)
- Too much load of the system causes high temperature of compressor after working for a long time?
- Malfunction of discharge temperature sensor?





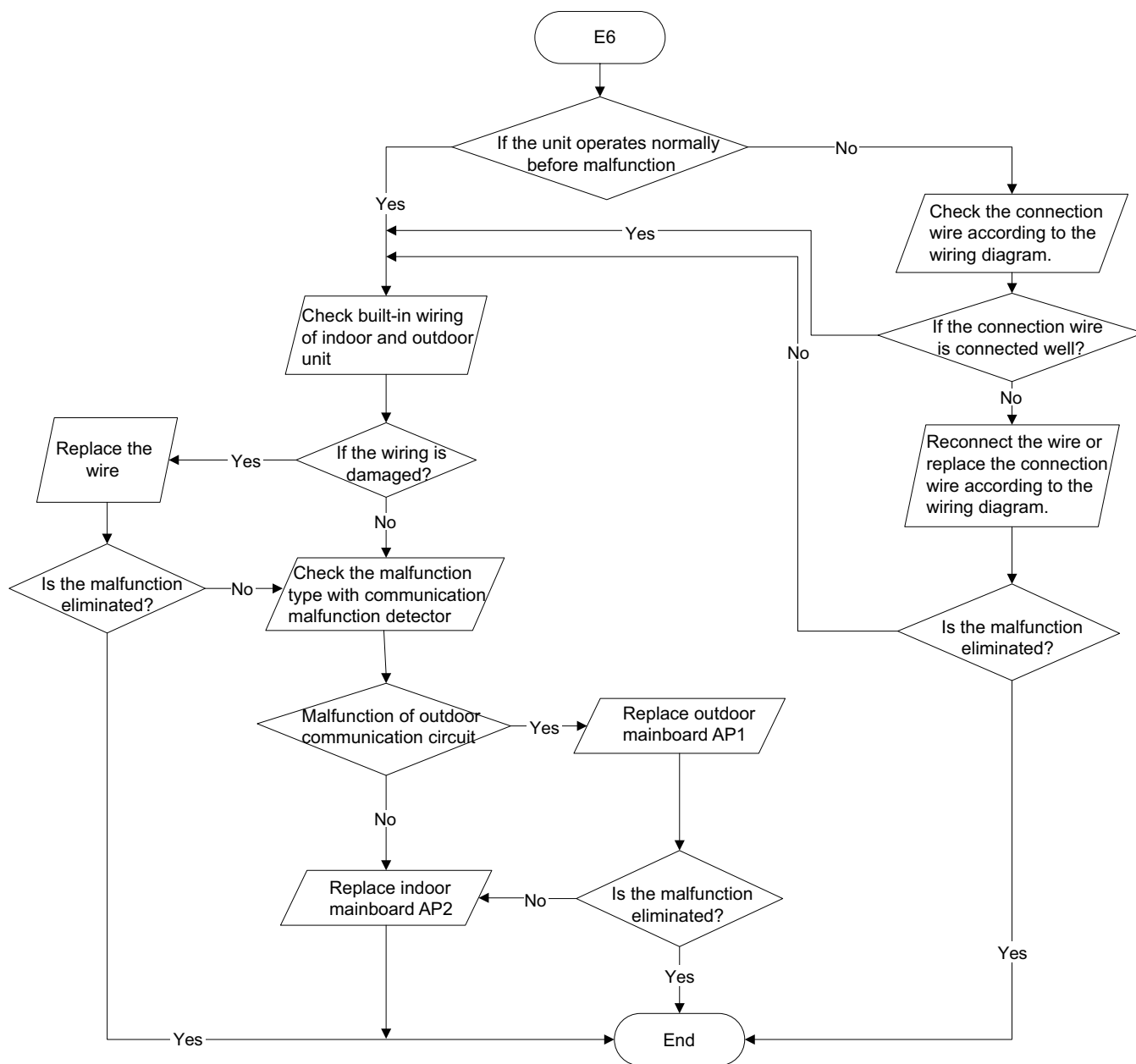


### 7. Communication malfunction (E6)

Main detection points:

- Check if the connection wire and the built-in wiring of indoor and outdoor unit are connected well and without damage;
- If the communication circuit of indoor mainboard is damaged? If the communication circuit of outdoor mainboard (AP1) is damaged?

Malfunction diagnosis process:



## 9.3 Maintenance Method for Normal Malfunction

### 1. Air Conditioner Can't be Started Up

| Possible Causes   | Discriminating Method (Air conditioner Status)  | Troubleshooting  |
|---|---|--|
| No power supply, or poor connection for power plug  | After energization, operation indicator isn't bright and the buzzer can't give out sound                            | Confirm whether it's due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.   |
| Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals | Under normal power supply circumstances, operation indicator isn't bright after energization                        | Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly  |
| Electric leakage for air conditioner  | After energization, room circuit breaker trips off at once  | Make sure the air conditioner is grounded reliably<br>Make sure wires of air conditioner is connected correctly<br>Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord. |
| Model selection for air switch is improper  | After energization, air switch trips off  | Select proper air switch   |
| Malfunction of remote controller  | After energization, operation indicator is bright, while no display on remote controller or buttons have no action. | Replace batteries for remote controller<br>Repair or replace remote controller   |

### 2. Poor Cooling (Heating) for Air Conditioner

| Possible Causes  | Discriminating Method (Air conditioner Status)  | Troubleshooting   |
|--|---|---|
| Set temperature is improper  | Observe the set temperature on remote controller  | Adjust the set temperature  |
| Rotation speed of the IDU fan motor is set too low                 | Small wind blow   | Set the fan speed at high or medium   |
| Filter of indoor unit is blocked                                   | Check the filter to see it's blocked  | Clean the filter  |
| Installation position for indoor unit and outdoor unit is improper | Check whether the installation position is proper according to installation requirement for air conditioner   | Adjust the installation position, and install the rainproof and sunproof for outdoor unit |
| Refrigerant is leaking   | Discharged air temperature during cooling is higher than normal discharged wind temperature;<br>Discharged air temperature during heating is lower than normal discharged wind temperature;<br>Unit's pressure is much lower than regulated range   | Find out the leakage causes and deal with it.<br>Add refrigerant.                         |
| Malfunction of 4-way valve   | Blow cold wind during heating   | Replace the 4-way valve   |
| Malfunction of capillary   | Discharged air temperature during cooling is higher than normal discharged wind temperature;<br>Discharged air temperature during heating is lower than normal discharged wind temperature;<br>Unit's pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked | Replace the capillary   |
| Flow volume of valve is insufficient                               | The pressure of valves is much lower than that stated in the specification  | Open the valve completely   |
| Malfunction of horizontal louver                                   | Horizontal louver can't swing   | Refer to point 3 of maintenance method for details  |
| Malfunction of the IDU fan motor                                   | The IDU fan motor can't operate   | Refer to troubleshooting for H6 for maintenance method in details                         |
| Malfunction of the ODU fan motor                                   | The ODU fan motor can't operate   | Refer to point 4 of maintenance method for details  |
| Malfunction of compressor  | Compressor can't operate  | Refer to point 5 of maintenance method for details  |

### 3. Horizontal Louver Can't Swing

| Possible Causes                           | Discriminating Method (Air conditioner Status)               | Troubleshooting  |
|---|--|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram         | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Stepping motor is damaged                 | Stepping motor can't operate                                 | Repair or replace stepping motor   |
| Main board is damaged                     | Others are all normal, while horizontal louver can't operate | Replace the main board with the same model   |

**4. ODU Fan Motor Can't Operate**

| Possible causes                           | Discriminating method (air conditioner status)  | Troubleshooting  |
|---|---|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram  | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Capacity of the ODU fan motor is damaged  | Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor. | Replace the capacity of fan  |
| Power voltage is a little low or high     | Use universal meter to measure the power supply voltage. The voltage is a little high or low  | Suggest to equip with voltage regulator  |
| Motor of outdoor unit is damaged          | When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.   | Change compressor oil and refrigerant. If no better, replace the compressor with a new one       |

**5. Compressor Can't Operate**

| Possible causes                           | Discriminating method (air conditioner status)  | Troubleshooting  |
|---|---|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram  | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Capacity of compressor is damaged         | Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor. | Replace the compressor capacitor   |
| Power voltage is a little low or high     | Use universal meter to measure the power supply voltage. The voltage is a little high or low  | Suggest to equip with voltage regulator  |
| Coil of compressor is burnt out           | Use universal meter to measure the resistance between compressor terminals and it's 0   | Repair or replace compressor   |
| Cylinder of compressor is blocked         | Compressor can't operate  | Repair or replace compressor   |

**6. Air Conditioner is Leaking**

| Possible causes       | Discriminating method (air conditioner status)              | Troubleshooting                                     |
|-----------------------|---|---|
| Drain pipe is blocked | Water leaking from indoor unit                              | Eliminate the foreign objects inside the drain pipe |
| Drain pipe is broken  | Water leaking from drain pipe                               | Replace drain pipe                                  |
| Wrapping is not tight | Water leaking from the pipe connection place of indoor unit | Wrap it again and bundle it tightly                 |

**7. Abnormal Sound and Vibration**

| Possible causes   | Discriminating method (air conditioner status)                   | Troubleshooting  |
|---|--|--|
| When turn on or turn off the unit, the panel and other parts will expand and there's abnormal sound         | There's the sound of "PAPA"                                      | Normal phenomenon. Abnormal sound will disappear after a few minutes.  |
| When turn on or turn off the unit, there's abnormal sound due to flow of refrigerant inside air conditioner | Water-running sound can be heard                                 | Normal phenomenon. Abnormal sound will disappear after a few minutes.  |
| Foreign objects inside the indoor unit or there're parts touching together inside the indoor unit           | There's abnormal sound fro indoor unit                           | Remove foreign objects. Adjust all parts' position of indoor unit, tighten screws and stick damping plaster between connected parts  |
| Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit         | There's abnormal sound fro outdoor unit                          | Remove foreign objects. Adjust all parts' position of outdoor unit, tighten screws and stick damping plaster between connected parts |
| Short circuit inside the magnetic coil  | During heating, the way valve has abnormal electromagnetic sound | Replace magnetic coil  |
| Abnormal shake of compressor  | Outdoor unit gives out abnormal sound                            | Adjust the support foot mat of compressor, tighten the bolts   |
| Abnormal sound inside the compressor  | Abnormal sound inside the compressor                             | If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.      |



| No. | Description                          | Part Code     |               | Qty |
|-----|--------------------------------------|---------------|---------------|-----|
|     |                                      | CH-S18FTXAM2S | CH-S24FTXAM2S |     |
| 1   | Front Panel(low display)             | 200003000063  | 200003000063  | 1   |
| 2   | Filter Sub-Assy                      | 11012007      | 11012007      | 2   |
| 3   | Front Case Sub-Assy                  | 0000020006401 | 0000020006401 | 1   |
| 4   | Axile Bush                           | 10542036      | 10542036      | 2   |
| 5   | Guide Louver                         | 10512503      | 10512503      | 1   |
| 6   | Ring of Bearing                      | 26152025      | 26152025      | 1   |
| 7   | O-Gasket of Cross Fan Bearing        | 76512203      | 76512203      | 1   |
| 8   | Cross Flow Fan                       | 10352057      | 10352057      | 1   |
| 9   | Air Louver(Manual)                   | 10512744      | 10512744      | 1   |
| 10  | Helicoid Tongue                      | 26112513      | 26112513      | 1   |
| 11  | Rear Case assy                       | 00000100170   | 00000100170   | 1   |
| 12  | Evaporator Support                   | 24212178      | 24212178      | 1   |
| 13  | Evaporator Assy                      | 011001000180  | 011001000095  | 1   |
| 14  | Wall Mounting Frame                  | 01252229      | 01252229      | 1   |
| 15  | Drainage Hose                        | 0523001405    | 0523001405    | 1   |
| 16  | Cold Plasma Generator                | 1114001602    | 1114001602    | 1   |
| 17  | Rubber Plug (Water Tray)             | 76712012      | 76712012      | 1   |
| 18  | Connecting pipe clamp                | 26112514      | 26112514      | 1   |
| 19  | Crank                                | 73012005      | 73012005      | 1   |
| 20  | Stepping Motor                       | 1521240210    | 1521240210    | 1   |
| 21  | Motor Press Plate                    | 26112515      | 26112515      | 1   |
| 22  | Fan Motor                            | 1501213601    | 1501213601    | 1   |
| 23  | Screw Cover                          | 22242191      | 22242191      | 3   |
| 24  | Electric Box Assy                    | 100002001817  | 100002000608  | 1   |
| 25  | Electric Box                         | 20112211      | 2011221102    | 1   |
| 26  | Lower Shield of Electric Box         | 01592139      | 01592139      | 1   |
| 27  | Shield Cover of Electric Box         | 01592176      | 01592176      | 1   |
| 28  | Display Board                        | 300001000095  | 300001000095  | 1   |
| 29  | Main Board                           | 300002000101  | 300002000101  | 1   |
| 30  | Terminal Board                       | 42011233      | 42011233      | 1   |
| 31  | Electric Box Cover                   | 20112209      | 2011220901    | 1   |
| 32  | Electric Box Cover2                  | 20112210      | 2011221001    | 1   |
| 33  | Shield Cover of Electric Box Cover 2 | 01202000099   | 01202000099   | 1   |
| 34  | Connecting Cable                     | 4002052317    | 4002052317    | 0   |
| 35  | Connecting Cable                     | /             | /             | /   |
| 36  | Temperature Sensor                   | 3900031302    | 3900031302    | 1   |
| 37  | Remote Controller                    | 30510137      | 30510137      | 1   |
| 38  | Jumper                               | 4202021916    | 4202021908    | 1   |

Above data is subject to change without notice.







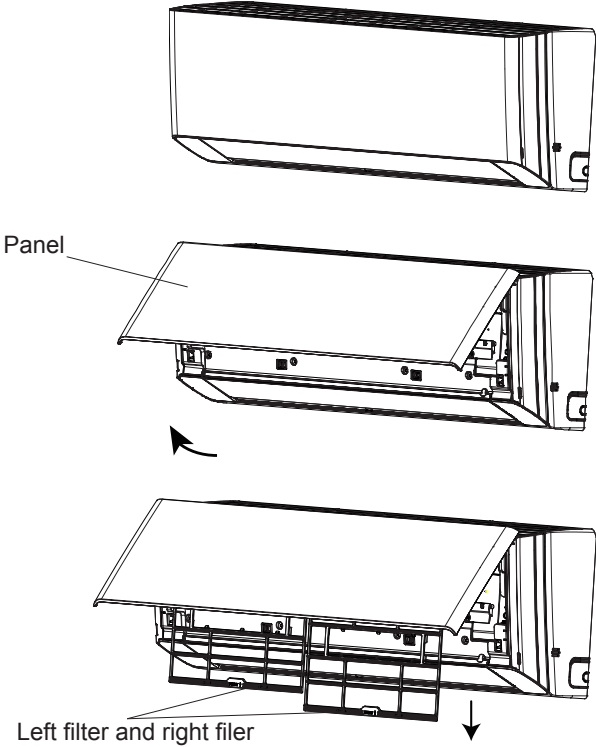
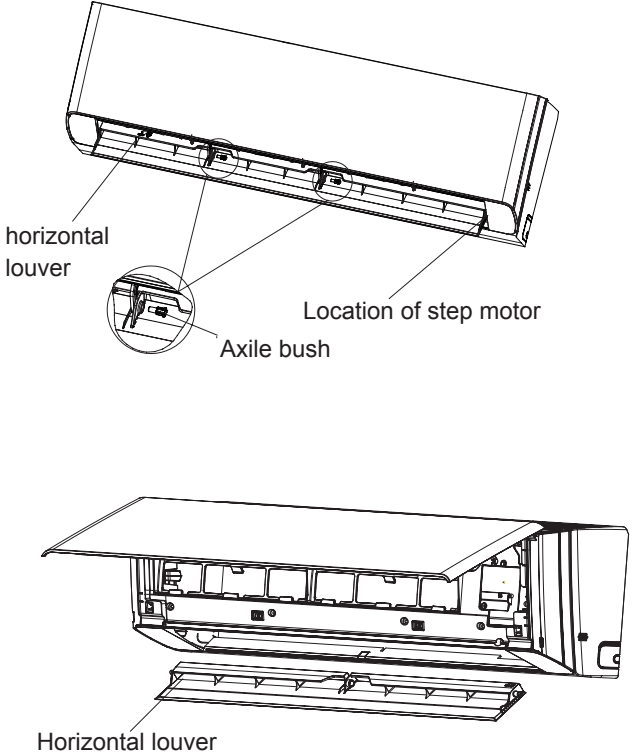
| No. | Description                 | Part Code      |                | Qty |
|-----|-----------------------------|----------------|----------------|-----|
|     |                             | CH-S18FTXAM2S  | CH-S18FTXAM2S  |     |
| 1   | Front Grill                 | 22415011       | 22415011       | 1   |
| 2   | Fan Motor                   | 15010400000102 | 15010400000102 | 1   |
| 3   | Electric Box (Fireproofing) | /              | /              | /   |
| 4   | Radiator                    | 49015215       | 4901521501     | 1   |
| 5   | Main Board                  | 300027000109   | 300027000308   | 1   |
| 6   | Electric Box Assy           | 100002001814   | 100002000609   | 1   |
| 7   | Electric Box Cover          | 20125002       | 20125002       | 1   |
| 8   | Terminal Board              | 420101943      | 420101943      | 1   |
| 9   | Handle                      | 26233053       | 26233053       | 2   |
| 10  | Left Side Plate             | 01305043P      | 01305043P      | 1   |
| 11  | Coping                      | 01255006P      | 01255006P      | 1   |
| 12  | Motor Support Sub-Assy      | 017012000017   | 017012000015   | 1   |
| 13  | Condenser Support Plate     | 01175092       | 01175092       | 1   |
| 14  | Clapboard Sub-Assy          | 01235091       | 017021000067   | 1   |
| 15  | Condenser Assy              | 011002000486   | 011002000285   | 1   |
| 16  | Rear Grill                  | 01475013       | 01475013       | 1   |
| 17  | Wiring Clamp                | 26115004       | 26115004       | 1   |
| 18  | Temp Sensor                 | 39000072       | 39000072       | 1   |
| 19  | Right Side Plate            | 0130504401P    | 0130504401P    | 1   |
| 20  | Big Handle                  | 26235001       | 26235001       | 1   |
| 21  | Cut off Valve               | 0713517901     | 0713517901     | 1   |
| 22  | Valve Support Sub-Assy      | 0170506101P    | 0170506101P    | 1   |
| 23  | Baffle(Valve Support)       | 26115007       | 26115007       | 1   |
| 24  | Electronic Expansion Valve  | 07133909       | 07133909       | 1   |
| 25  | 4-Way Valve Assy            | 030152000260   | 030152000260   | 1   |
| 26  | Compressor and Fittings     | 00105274       | 00105274       | 1   |
| 27  | Drainage Connector          | 06123401       | 06123401       | 1   |
| 28  | Chassis Sub-assy            | 02803315P      | 017000000166   | 1   |
| 29  | Drainage hole Cap           | 06813401       | 06813401       | 3   |
| 30  | Axial Flow Fan              | 10335013       | 10335013       | 1   |
| 31  | Cabinet                     | 01435004P      | 01435004P      | 1   |
| 32  | Valve Cover                 | 22245003       | 22245003       | 1   |

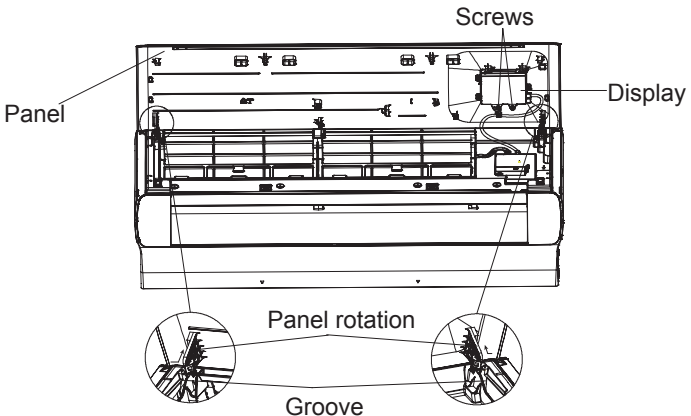
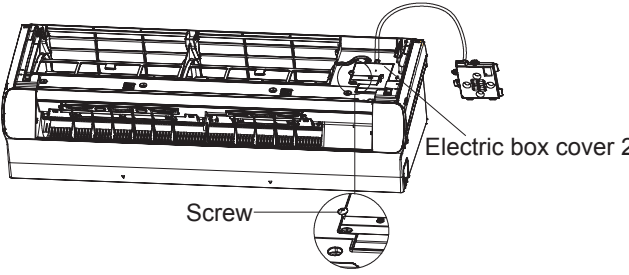
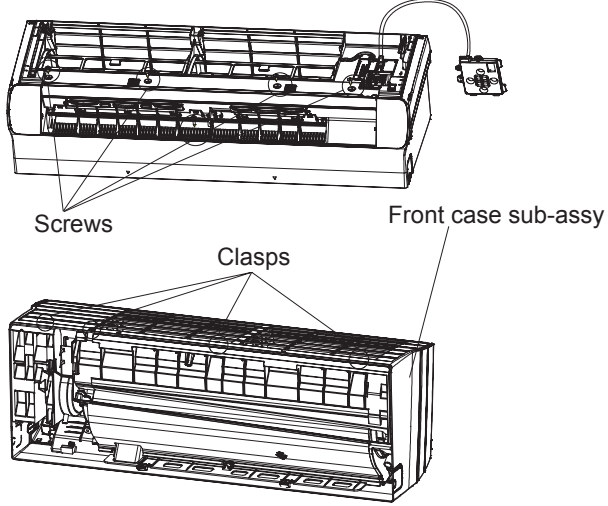
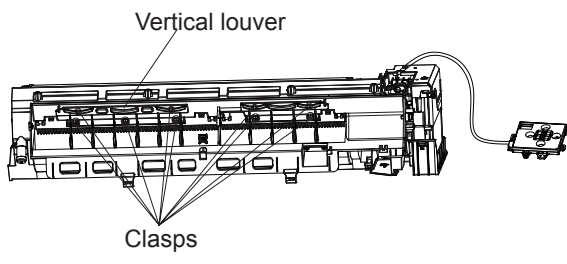
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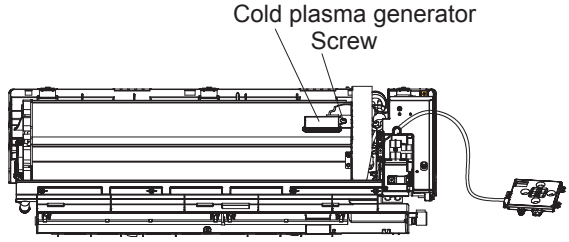
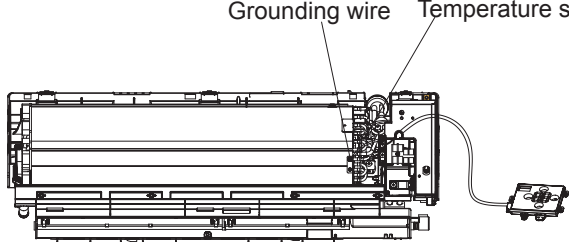
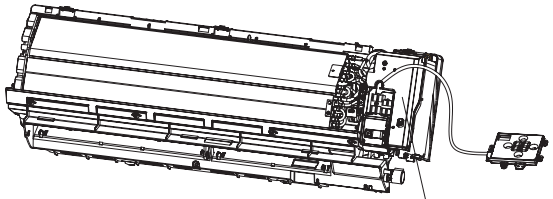
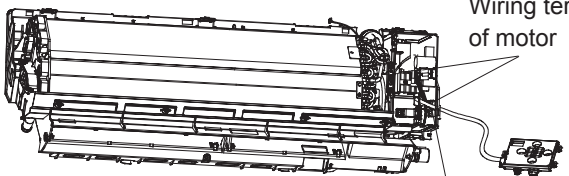
# 11. Removal Procedure

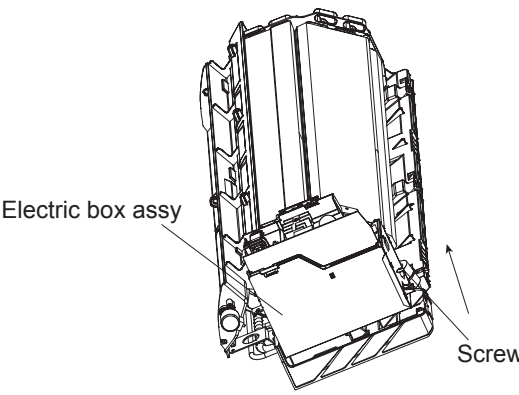
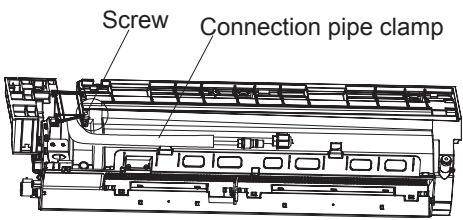
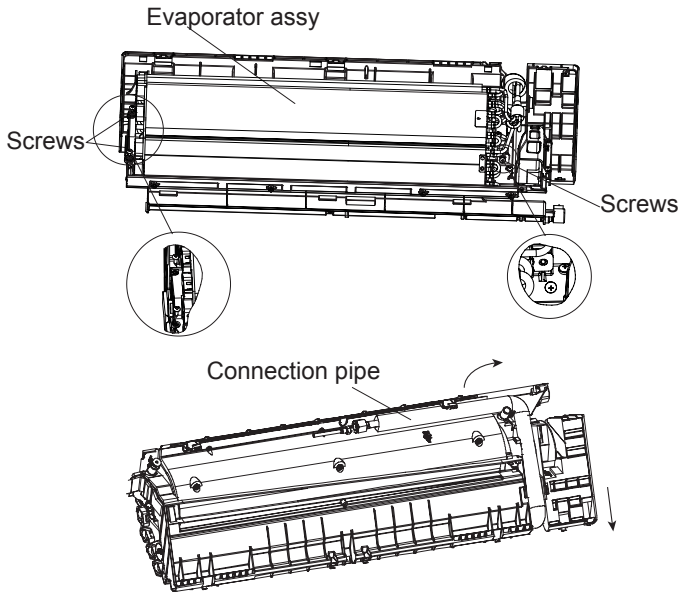
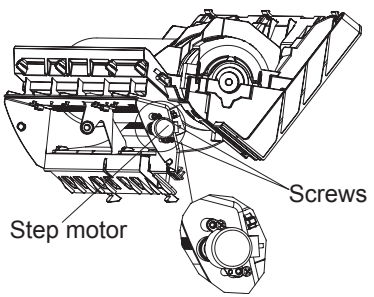
**!** Caution: discharge the refrigerant completely before removal.

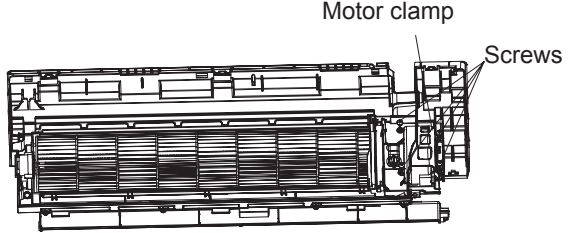
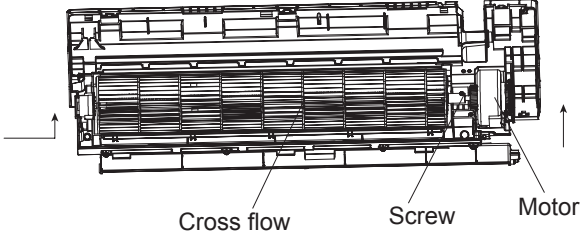
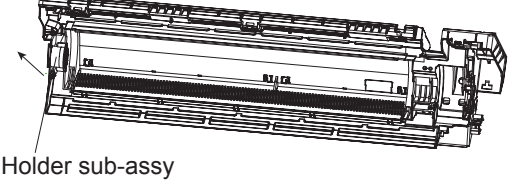
## 11.1 Removal Procedure of Indoor Unit

| Step   | Procedure  |
|--|--|
| <p>1.Remove filter</p> <p>a. Open the panel.</p> <p>b. Loosen the clasp shown and then pull the left filter and right filter outwards to remove them.</p>  |  <p>Panel</p> <p>Left filter and right filter</p>   |
| <p>2.Remove horizontal louver</p> <p>Push out the axle bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.</p> |  <p>horizontal louver</p> <p>Location of step motor</p> <p>Axile bush</p> <p>Horizontal louver</p> |

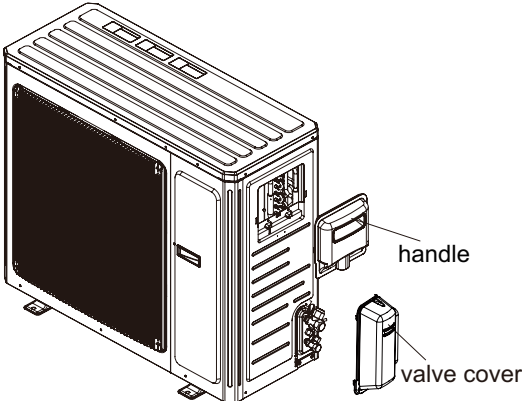
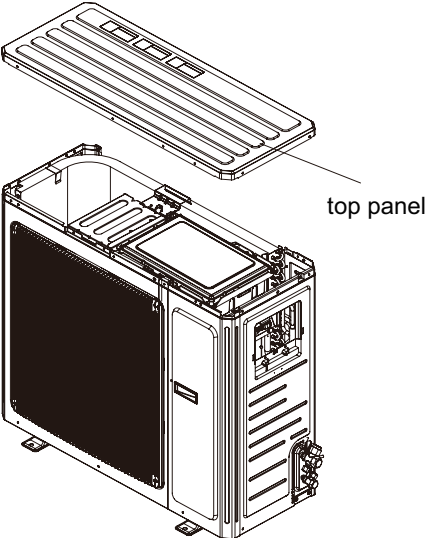
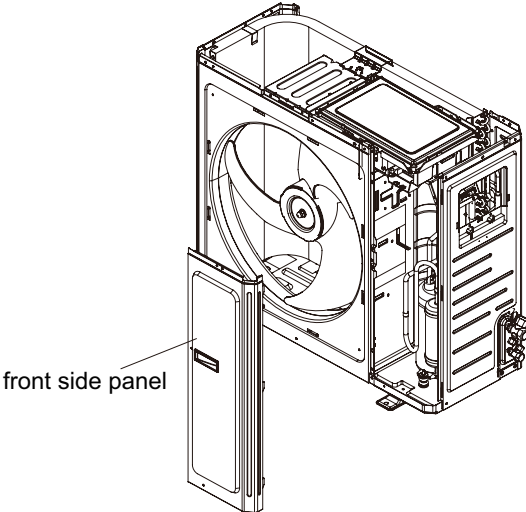
| Step                          |  | Procedure  |
|-------------------------------|--|--|
| 3.Remove display and panel    | <p>a. Screws that are locking the display board. Separate the display board from the front panel.</p> <p>b. Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.</p> |    |
| 4.Remove electric box cover 2 | <p>Remove the screws on the electric box cover to remove the electric box cover 2.</p>   |   |
| 5.Remove front case sub-assy  | <p>Remove the screws fixing front case. Loosen the clasps of front case. Lift the front case sub-assy upwards to remove it.</p>  |  |
| 6. Remove vertical louver     | <p>Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.</p>   |  |

| Step  | Procedure  |
|---|--|
| <p>7.Remove cold plasma generator</p>                 | <p>Screws that are locking the cold plasma generator. Separate the display board from the evaporator assy.</p>  <p>Cold plasma generator<br/>Screw</p>   |
| <p>8.Remove temperature sensor and grounding wire</p> | <p>Cut off the tieline which binding the temperature sensor and grounding wire on the evaporator, and then pull out the indoor tube temperature sensor from the evaporator.<br/>Remove the screws at the connection place between grounding wire and evaporator.</p>  <p>Grounding wire<br/>Temperature sensor</p> |
| <p>9.Remove shield cover of electric box sub-assy</p> | <p>Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy.</p>  <p>Shield cover of electric box sub-assy</p>   |
| <p>10.Remove wiring terminal</p>                      | <p>Pull out the wiring terminal of motor and wiring terminal of step motor from the mainboard.<br/>Note:<br/>When pulling out the wiring terminal, pay attention to loose the clasp and don't pull it so hard.</p>  <p>Wiring terminal of motor<br/>Wiring terminal of step motor</p>                            |

| Step                             | Procedure  | Procedure  |
|----------------------------------|--|--|
| 11. Electric box assy            | Remove the screw fixing electric box assy and then remove the electric box assy.   |  <p>Electric box assy</p> <p>Screw</p>                                       |
| 12. Remove connection pipe clamp | At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.  |  <p>Screw</p> <p>Connection pipe clamp</p>                                   |
| 13. Remove evaporator assy       | Remove 3 screws fixing evaporator assy. Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it. |  <p>Evaporator assy</p> <p>Screws</p> <p>Screws</p> <p>Connection pipe</p> |
| 14. Remove stepping motor        | Remove the screw fixing step motor and then remove the step motor.   |  <p>Step motor</p> <p>Screws</p>   |

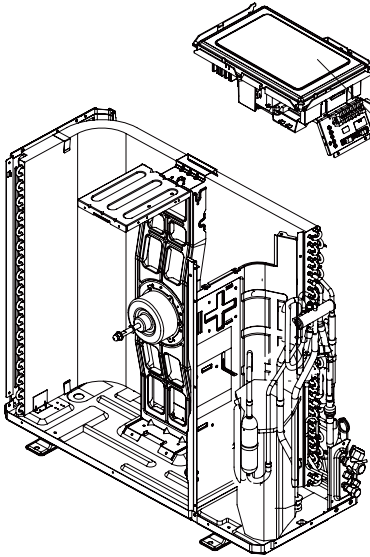
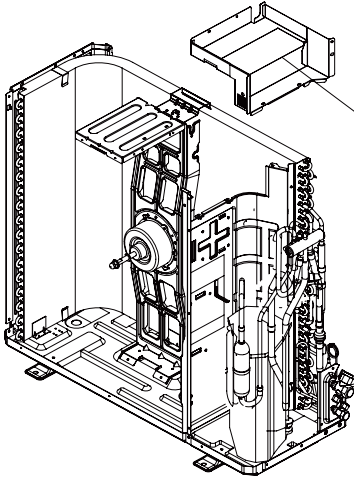
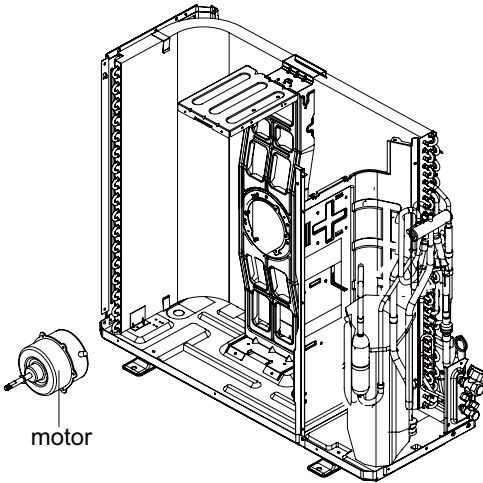
| Step                                 | Procedure  |
|--------------------------------------|--|
| 15.Remove motor and cross flow blade |  |
| a.                                   | <p>Remove the screws fixing motor clamp and then remove the motor clamp.</p>   |
| b.                                   | <p>Remove the screws at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them.</p>  |
| c.                                   | <p>Remove the bearing holder sub-assy.</p>   |

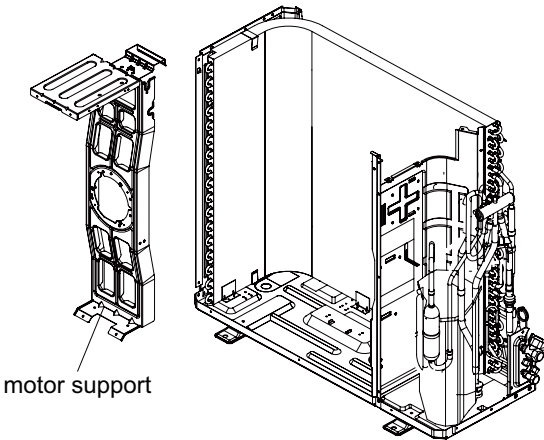
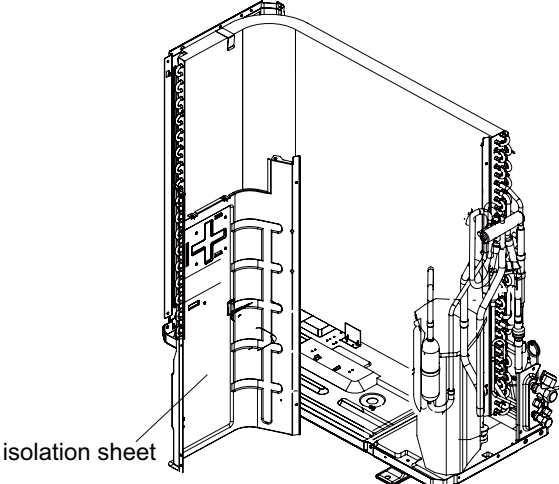
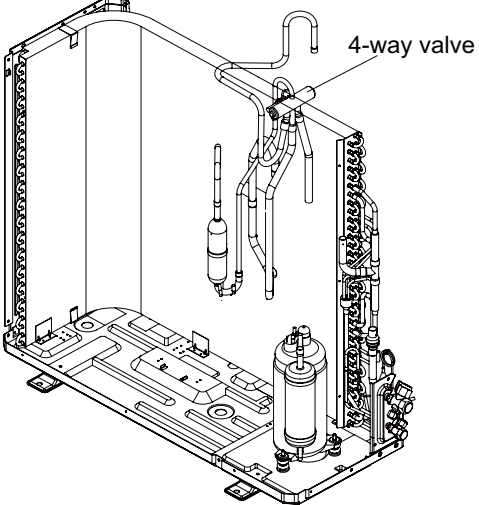
## 11.2 Removal Procedure of Outdoor Unit

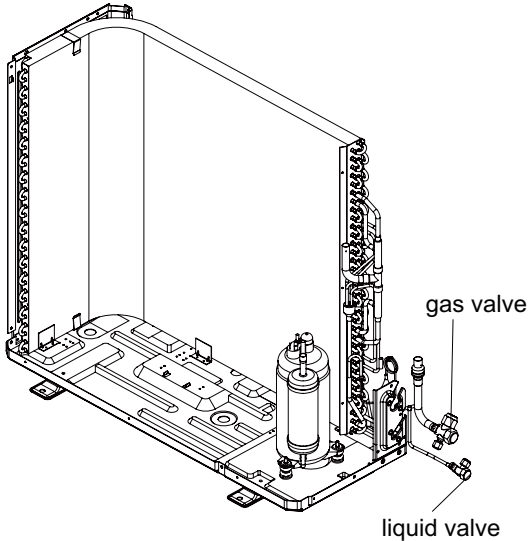
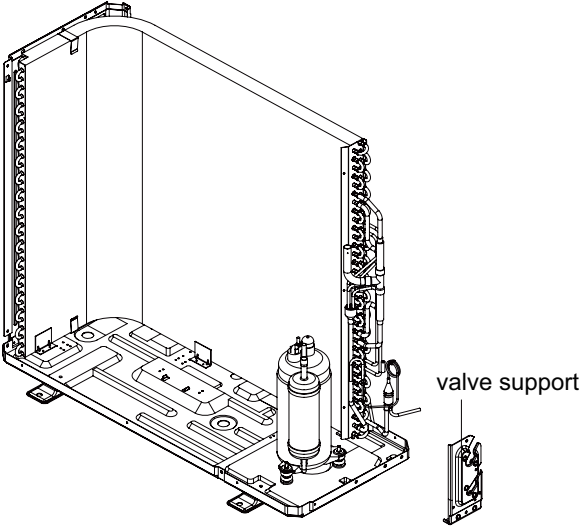
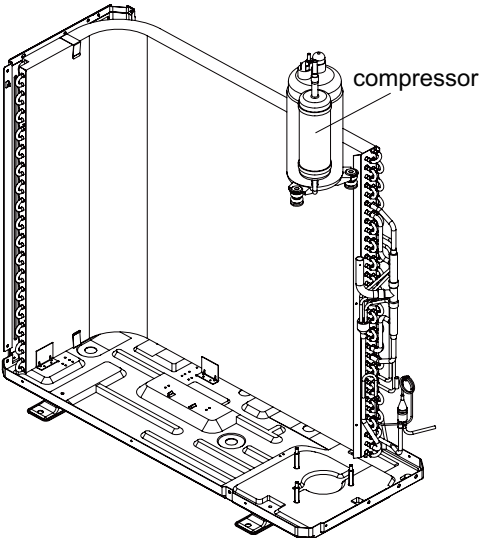
| Steps                     | Procedure  |
|---------------------------|--|
| 1.Remove handle           | <p data-bbox="188 390 716 478">Twist off the screws used for fixing the handle and valve cover, pull the handle and valve cover upward to remove it.</p>             |
| 2.Remove top panel        | <p data-bbox="224 1033 678 1120">Remove the screws connecting the top panel with the front panel and left&amp;right side plate, and then remove the top panel.</p>  |
| 3.Remove front side panel | <p data-bbox="224 1622 699 1710">Loosen the screws connecting the front side panel and chassis. Remove the front side panel.</p>                                   |

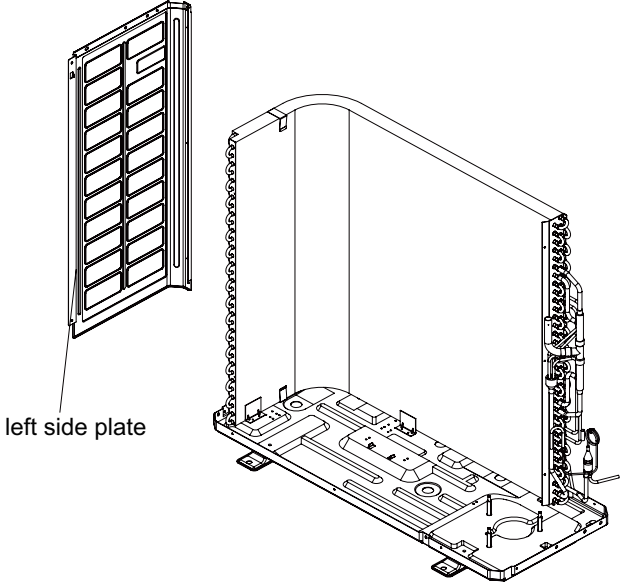
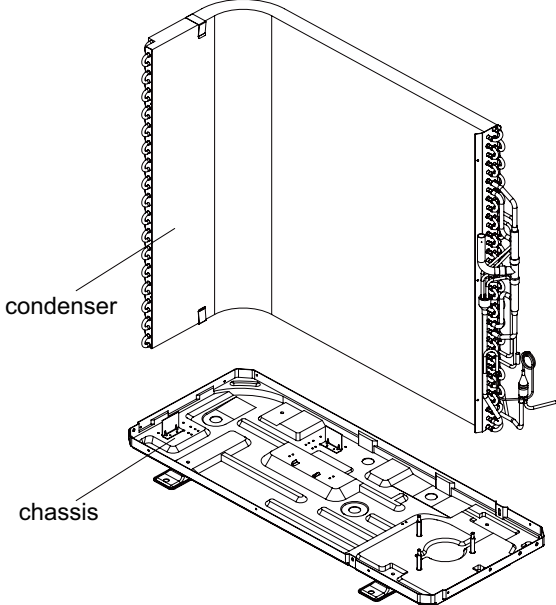




| Steps                        | Procedure   |
|------------------------------|---|
| <p>7.Remove electric box</p> | <div style="display: flex; justify-content: space-between;"> <div data-bbox="228 497 737 618" style="width: 45%;"> <p>Twist off the screws on electric box, cut off the tieline with scissors or pliers, pull out the wiring terminal, pull it upwards to remove the electric box.</p> </div> <div data-bbox="948 224 1455 777" style="width: 45%;">  <p style="text-align: right;">electric box</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div data-bbox="228 952 751 1043" style="width: 45%;"> <p>Twist off the screws on electric box (fireproofing) with screwdriver, and then remove the electric box (fireproofing).</p> </div> <div data-bbox="948 847 1442 1323" style="width: 45%;">  <p style="text-align: right;">electric box<br/>(fireproofing)</p> </div> </div> |
| <p>8.Remove motor</p>        | <div style="display: flex; justify-content: space-between;"> <div data-bbox="228 1568 753 1659" style="width: 45%;"> <p>Twist off the tapping screws fixing the motor, pull out the pin of leading wire for motor and then remove the motor.</p> </div> <div data-bbox="894 1415 1377 1895" style="width: 45%;">  <p style="text-align: right;">motor</p> </div> </div>   |

| Steps                            | Procedure   |
|----------------------------------|---|
| <p>9.Remove motor support</p>    | <p>Twist off the tapping screws fixing the motor support, pull it upwards and then remove the motor support.</p>    |
| <p>10.Remove isolation sheet</p> | <p>Twist off the screws connecting isolation sheet and end plate of condenser and chassis, and then remove the isolation sheet.</p>                                      |
| <p>11.Remove 4-way valve</p>     | <p>Unsolder the pipeline between compressor, condenser, gas and liquid valve, and then remove the 4-way valve. (note: release all refrigerant before unsoldering).</p>  |

| Steps                                | Procedure  |
|--------------------------------------|--|
| 12.Remove gas valve and liquid valve | <p data-bbox="191 380 716 694">Twist off the 2 bolts fixing the valve sub-assy. Unsolder the soldering joint between gas valve and air-return pipe and then remove the gas valve.(note: when unsoldering the soldering joint, wrap the gas valve with wet cloth completely to avoid the damage to valve, and release all refrigerant completely at first). Unsolder the soldering joint between liquid valve and connection pipe of liquid valve, and then remove the liquid valve.</p>  |
| 13.Remove valve support              | <p data-bbox="191 1028 716 1087">Twist off the screws connecting valve support and chassis, and then remove the valve support.</p>    |
| 14.Remove compressor                 | <p data-bbox="191 1563 716 1622">Twist off the 3 foot nuts on compressor and then remove the compressor.</p>   |

| Steps                                  | Procedure  |
|--|--|
| <p>15.Remove left side plate</p>       | <p>Twist off the screws connecting the left side plate and chassis with screwdriver, and then remove the left side plate.</p>  |
| <p>16.Remove chassis and condenser</p> | <p>Pull it upwards to separate the chassis and condenser.</p>   |

## Appendix:

### Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree:  $T_f = T_c \times 1.8 + 32$

#### Set temperature

| Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) |
|-------------------------------------|-----------------|-------------|-------------------------------------|-----------------|-------------|-------------------------------------|-----------------|-------------|
| 61                                  | 60.8            | 16          | 69/70                               | 69.8            | 21          | 78/79                               | 78.8            | 26          |
| 62/63                               | 62.6            | 17          | 71/72                               | 71.6            | 22          | 80/81                               | 80.6            | 27          |
| 64/65                               | 64.4            | 18          | 73/74                               | 73.4            | 23          | 82/83                               | 82.4            | 28          |
| 66/67                               | 66.2            | 19          | 75/76                               | 75.2            | 24          | 84/85                               | 84.2            | 29          |
| 68                                  | 68              | 20          | 77                                  | 77              | 25          | 86                                  | 86              | 30          |

#### Ambient temperature

| Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius(°C) |
|-------------------------------------|-----------------|-------------|-------------------------------------|-----------------|-------------|-------------------------------------|-----------------|-------------|
| 32/33                               | 32              | 0           | 55/56                               | 55.4            | 13          | 79/80                               | 78.8            | 26          |
| 34/35                               | 33.8            | 1           | 57/58                               | 57.2            | 14          | 81                                  | 80.6            | 27          |
| 36                                  | 35.6            | 2           | 59/60                               | 59              | 15          | 82/83                               | 82.4            | 28          |
| 37/38                               | 37.4            | 3           | 61/62                               | 60.8            | 16          | 84/85                               | 84.2            | 29          |
| 39/40                               | 39.2            | 4           | 63                                  | 62.6            | 17          | 86/87                               | 86              | 30          |
| 41/42                               | 41              | 5           | 64/65                               | 64.4            | 18          | 88/89                               | 87.8            | 31          |
| 43/44                               | 42.8            | 6           | 66/67                               | 66.2            | 19          | 90                                  | 89.6            | 32          |
| 45                                  | 44.6            | 7           | 68/69                               | 68              | 20          | 91/92                               | 91.4            | 33          |
| 46/47                               | 46.4            | 8           | 70/71                               | 69.8            | 21          | 93/94                               | 93.2            | 34          |
| 48/49                               | 48.2            | 9           | 72                                  | 71.6            | 22          | 95/96                               | 95              | 35          |
| 50/51                               | 50              | 10          | 73/74                               | 73.4            | 23          | 97/98                               | 96.8            | 36          |
| 52/53                               | 51.8            | 11          | 75/76                               | 75.2            | 24          | 99                                  | 98.6            | 37          |
| 54                                  | 53.6            | 12          | 77/78                               | 77              | 25          |                                     |                 |             |

### Appendix 2: Configuration of Connection Pipe

1. Standard length of connection pipe

- 5m, 7.5m, 8m.

2. Min. length of connection pipe is 3m.

3. Max. length of connection pipe and max. high difference. (More details please refer to the specifications.)

4. The additional refrigerant oil and refrigerant charging required after prolonging connection pipe

- After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.

- The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):

- Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table.

The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.

- Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

| Additional refrigerant charging amount for R22, R407C, R410A and R134a |                |                       |                          |
|--|----------------|-----------------------|--------------------------|
| Diameter of connection pipe  |                | Outdoor unit throttle |                          |
| Liquid pipe(mm)  | Gas pipe(mm)   | Cooling only(g/m)     | Cooling and heating(g/m) |
| Φ6   | Φ9.5 or Φ12    | 15                    | 20                       |
| Φ6 or Φ9.5   | Φ16 or Φ19     | 15                    | 50                       |
| Φ12  | Φ19 or Φ22.2   | 30                    | 120                      |
| Φ16  | Φ25.4 or Φ31.8 | 60                    | 120                      |
| Φ19  | /              | 250                   | 250                      |
| Φ22.2  | /              | 350                   | 350                      |



## Appendix 4: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor (15K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -19      | 138.1          | 20       | 18.75          | 59       | 3.848          | 98       | 1.071          |
| -18      | 128.6          | 21       | 17.93          | 60       | 3.711          | 99       | 1.039          |
| -17      | 121.6          | 22       | 17.14          | 61       | 3.579          | 100      | 1.009          |
| -16      | 115            | 23       | 16.39          | 62       | 3.454          | 101      | 0.98           |
| -15      | 108.7          | 24       | 15.68          | 63       | 3.333          | 102      | 0.952          |
| -14      | 102.9          | 25       | 15             | 64       | 3.217          | 103      | 0.925          |
| -13      | 97.4           | 26       | 14.36          | 65       | 3.105          | 104      | 0.898          |
| -12      | 92.22          | 27       | 13.74          | 66       | 2.998          | 105      | 0.873          |
| -11      | 87.35          | 28       | 13.16          | 67       | 2.896          | 106      | 0.848          |
| -10      | 82.75          | 29       | 12.6           | 68       | 2.797          | 107      | 0.825          |
| -9       | 78.43          | 30       | 12.07          | 69       | 2.702          | 108      | 0.802          |
| -8       | 74.35          | 31       | 11.57          | 70       | 2.611          | 109      | 0.779          |
| -7       | 70.5           | 32       | 11.09          | 71       | 2.523          | 110      | 0.758          |
| -6       | 66.88          | 33       | 10.63          | 72       | 2.439          | 111      | 0.737          |
| -5       | 63.46          | 34       | 10.2           | 73       | 2.358          | 112      | 0.717          |
| -4       | 60.23          | 35       | 9.779          | 74       | 2.28           | 113      | 0.697          |
| -3       | 57.18          | 36       | 9.382          | 75       | 2.206          | 114      | 0.678          |
| -2       | 54.31          | 37       | 9.003          | 76       | 2.133          | 115      | 0.66           |
| -1       | 51.59          | 38       | 8.642          | 77       | 2.064          | 116      | 0.642          |
| 0        | 49.02          | 39       | 8.297          | 78       | 1.997          | 117      | 0.625          |
| 1        | 46.6           | 40       | 7.967          | 79       | 1.933          | 118      | 0.608          |
| 2        | 44.31          | 41       | 7.653          | 80       | 1.871          | 119      | 0.592          |
| 3        | 42.14          | 42       | 7.352          | 81       | 1.811          | 120      | 0.577          |
| 4        | 40.09          | 43       | 7.065          | 82       | 1.754          | 121      | 0.561          |
| 5        | 38.15          | 44       | 6.791          | 83       | 1.699          | 122      | 0.547          |
| 6        | 36.32          | 45       | 6.529          | 84       | 1.645          | 123      | 0.532          |
| 7        | 34.58          | 46       | 6.278          | 85       | 1.594          | 124      | 0.519          |
| 8        | 32.94          | 47       | 6.038          | 86       | 1.544          | 125      | 0.505          |
| 9        | 31.38          | 48       | 5.809          | 87       | 1.497          | 126      | 0.492          |
| 10       | 29.9           | 49       | 5.589          | 88       | 1.451          | 127      | 0.48           |
| 11       | 28.51          | 50       | 5.379          | 89       | 1.408          | 128      | 0.467          |
| 12       | 27.18          | 51       | 5.197          | 90       | 1.363          | 129      | 0.456          |
| 13       | 25.92          | 52       | 4.986          | 91       | 1.322          | 130      | 0.444          |
| 14       | 24.73          | 53       | 4.802          | 92       | 1.282          | 131      | 0.433          |
| 15       | 23.6           | 54       | 4.625          | 93       | 1.244          | 132      | 0.422          |
| 16       | 22.53          | 55       | 4.456          | 94       | 1.207          | 133      | 0.412          |
| 17       | 21.51          | 56       | 4.294          | 95       | 1.171          | 134      | 0.401          |
| 18       | 20.54          | 57       | 4.139          | 96       | 1.136          | 135      | 0.391          |
| 19       | 19.63          | 58       | 3.99           | 97       | 1.103          | 136      | 0.382          |

Resistance Table of Tube Temperature Sensors for Indoor and Outdoor (20K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -19      | 181.4          | 20       | 25.01          | 59       | 5.13           | 98       | 1.427          |
| -18      | 171.4          | 21       | 23.9           | 60       | 4.948          | 99       | 1.386          |
| -17      | 162.1          | 22       | 22.85          | 61       | 4.773          | 100      | 1.346          |
| -16      | 153.3          | 23       | 21.85          | 62       | 4.605          | 101      | 1.307          |
| -15      | 145            | 24       | 20.9           | 63       | 4.443          | 102      | 1.269          |
| -14      | 137.2          | 25       | 20             | 64       | 4.289          | 103      | 1.233          |
| -13      | 129.9          | 26       | 19.14          | 65       | 4.14           | 104      | 1.198          |
| -12      | 123            | 27       | 18.13          | 66       | 3.998          | 105      | 1.164          |
| -11      | 116.5          | 28       | 17.55          | 67       | 3.861          | 106      | 1.131          |
| -10      | 110.3          | 29       | 16.8           | 68       | 3.729          | 107      | 1.099          |
| -9       | 104.6          | 30       | 16.1           | 69       | 3.603          | 108      | 1.069          |
| -8       | 99.13          | 31       | 15.43          | 70       | 3.481          | 109      | 1.039          |
| -7       | 94             | 32       | 14.79          | 71       | 3.364          | 110      | 1.01           |
| -6       | 89.17          | 33       | 14.18          | 72       | 3.252          | 111      | 0.983          |
| -5       | 84.61          | 34       | 13.59          | 73       | 3.144          | 112      | 0.956          |
| -4       | 80.31          | 35       | 13.04          | 74       | 3.04           | 113      | 0.93           |
| -3       | 76.24          | 36       | 12.51          | 75       | 2.94           | 114      | 0.904          |
| -2       | 72.41          | 37       | 12             | 76       | 2.844          | 115      | 0.88           |
| -1       | 68.79          | 38       | 11.52          | 77       | 2.752          | 116      | 0.856          |
| 0        | 65.37          | 39       | 11.06          | 78       | 2.663          | 117      | 0.833          |
| 1        | 62.13          | 40       | 10.62          | 79       | 2.577          | 118      | 0.811          |
| 2        | 59.08          | 41       | 10.2           | 80       | 2.495          | 119      | 0.77           |
| 3        | 56.19          | 42       | 9.803          | 81       | 2.415          | 120      | 0.769          |
| 4        | 53.46          | 43       | 9.42           | 82       | 2.339          | 121      | 0.746          |
| 5        | 50.87          | 44       | 9.054          | 83       | 2.265          | 122      | 0.729          |
| 6        | 48.42          | 45       | 8.705          | 84       | 2.194          | 123      | 0.71           |
| 7        | 46.11          | 46       | 8.37           | 85       | 2.125          | 124      | 0.692          |
| 8        | 43.92          | 47       | 8.051          | 86       | 2.059          | 125      | 0.674          |
| 9        | 41.84          | 48       | 7.745          | 87       | 1.996          | 126      | 0.658          |
| 10       | 39.87          | 49       | 7.453          | 88       | 1.934          | 127      | 0.64           |
| 11       | 38.01          | 50       | 7.173          | 89       | 1.875          | 128      | 0.623          |
| 12       | 36.24          | 51       | 6.905          | 90       | 1.818          | 129      | 0.607          |
| 13       | 34.57          | 52       | 6.648          | 91       | 1.736          | 130      | 0.592          |
| 14       | 32.98          | 53       | 6.403          | 92       | 1.71           | 131      | 0.577          |
| 15       | 31.47          | 54       | 6.167          | 93       | 1.658          | 132      | 0.563          |
| 16       | 30.04          | 55       | 5.942          | 94       | 1.609          | 133      | 0.549          |
| 17       | 28.68          | 56       | 5.726          | 95       | 1.561          | 134      | 0.535          |
| 18       | 27.39          | 57       | 5.519          | 96       | 1.515          | 135      | 0.521          |
| 19       | 26.17          | 58       | 5.32           | 97       | 1.47           | 136      | 0.509          |



Resistance Table of Discharge Temperature Sensor for Outdoor (50K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -29      | 853.5          | 10       | 98             | 49       | 18.34          | 88       | 4.75           |
| -28      | 799.8          | 11       | 93.42          | 50       | 17.65          | 89       | 4.61           |
| -27      | 750            | 12       | 89.07          | 51       | 16.99          | 90       | 4.47           |
| -26      | 703.8          | 13       | 84.95          | 52       | 16.36          | 91       | 4.33           |
| -25      | 660.8          | 14       | 81.05          | 53       | 15.75          | 92       | 4.20           |
| -24      | 620.8          | 15       | 77.35          | 54       | 15.17          | 93       | 4.08           |
| -23      | 580.6          | 16       | 73.83          | 55       | 14.62          | 94       | 3.96           |
| -22      | 548.9          | 17       | 70.5           | 56       | 14.09          | 95       | 3.84           |
| -21      | 516.6          | 18       | 67.34          | 57       | 13.58          | 96       | 3.73           |
| -20      | 486.5          | 19       | 64.33          | 58       | 13.09          | 97       | 3.62           |
| -19      | 458.3          | 20       | 61.48          | 59       | 12.62          | 98       | 3.51           |
| -18      | 432            | 21       | 58.77          | 60       | 12.17          | 99       | 3.41           |
| -17      | 407.4          | 22       | 56.19          | 61       | 11.74          | 100      | 3.32           |
| -16      | 384.5          | 23       | 53.74          | 62       | 11.32          | 101      | 3.22           |
| -15      | 362.9          | 24       | 51.41          | 63       | 10.93          | 102      | 3.13           |
| -14      | 342.8          | 25       | 49.19          | 64       | 10.54          | 103      | 3.04           |
| -13      | 323.9          | 26       | 47.08          | 65       | 10.18          | 104      | 2.96           |
| -12      | 306.2          | 27       | 45.07          | 66       | 9.83           | 105      | 2.87           |
| -11      | 289.6          | 28       | 43.16          | 67       | 9.49           | 106      | 2.79           |
| -10      | 274            | 29       | 41.34          | 68       | 9.17           | 107      | 2.72           |
| -9       | 259.3          | 30       | 39.61          | 69       | 8.85           | 108      | 2.64           |
| -8       | 245.6          | 31       | 37.96          | 70       | 8.56           | 109      | 2.57           |
| -7       | 232.6          | 32       | 36.38          | 71       | 8.27           | 110      | 2.50           |
| -6       | 220.5          | 33       | 34.88          | 72       | 7.99           | 111      | 2.43           |
| -5       | 209            | 34       | 33.45          | 73       | 7.73           | 112      | 2.37           |
| -4       | 198.3          | 35       | 32.09          | 74       | 7.47           | 113      | 2.30           |
| -3       | 199.1          | 36       | 30.79          | 75       | 7.22           | 114      | 2.24           |
| -2       | 178.5          | 37       | 29.54          | 76       | 7.00           | 115      | 2.18           |
| -1       | 169.5          | 38       | 28.36          | 77       | 6.76           | 116      | 2.12           |
| 0        | 161            | 39       | 27.23          | 78       | 6.54           | 117      | 2.07           |
| 1        | 153            | 40       | 26.15          | 79       | 6.33           | 118      | 2.02           |
| 2        | 145.4          | 41       | 25.11          | 80       | 6.13           | 119      | 1.96           |
| 3        | 138.3          | 42       | 24.13          | 81       | 5.93           | 120      | 1.91           |
| 4        | 131.5          | 43       | 23.19          | 82       | 5.75           | 121      | 1.86           |
| 5        | 125.1          | 44       | 22.29          | 83       | 5.57           | 122      | 1.82           |
| 6        | 119.1          | 45       | 21.43          | 84       | 5.39           | 123      | 1.77           |
| 7        | 113.4          | 46       | 20.6           | 85       | 5.22           | 124      | 1.73           |
| 8        | 108            | 47       | 19.81          | 86       | 5.06           | 125      | 1.68           |
| 9        | 102.8          | 48       | 19.06          | 87       | 4.90           | 126      | 1.64           |

