GREE
Change for life

Service Manual

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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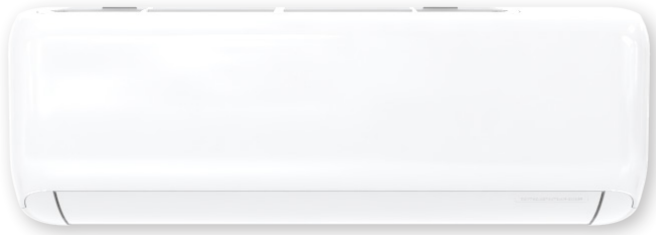
1. Summary

Indoor Unit:

A1 panel (Black)



Remote Controller:

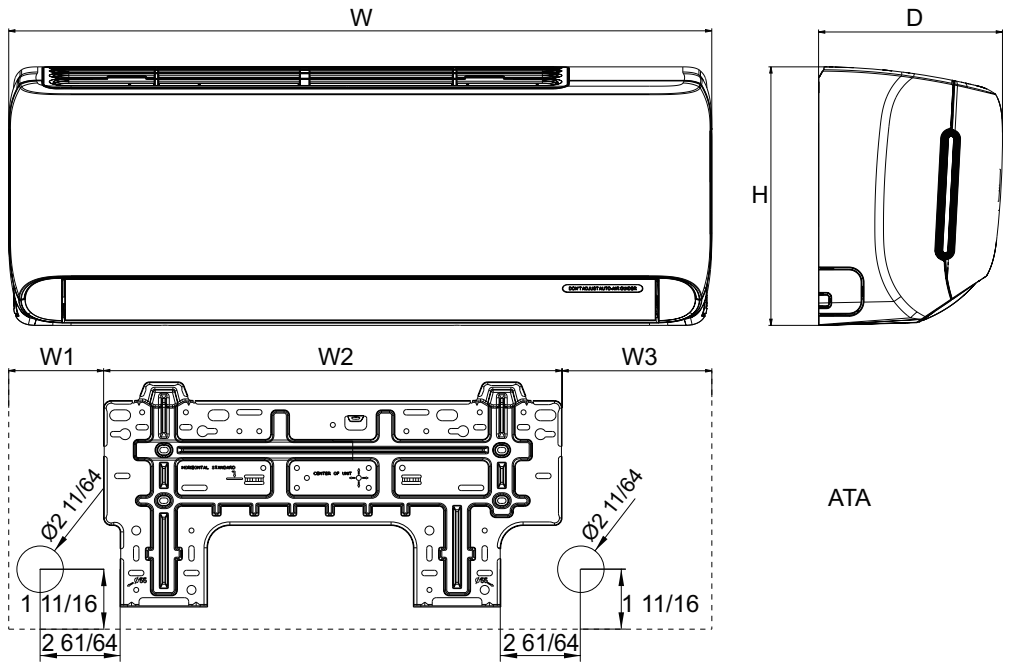
YAY1FF

2. Specifications

Model		GWH(05)ATA-D3DNA1A/I	GWH(07)ATA-D3DNA1A/I
Product Code		CB574N00100	CB574N00200
Rated Voltage	V~	208/230	208/230
Rated Frequency	Hz	60	60
Phases		1	1
Cooling Capacity	Btu/h	5000	7000
Heating Capacity	Btu/h	6000	8000
Air Flow Volume	CFM	247/194/182/171/158/147/123	258/235/224/206/182/159/135
Dehumidifying Volume	Pint/h	0.63	1.27
Fan Type		Cross-flow	Cross-flow
Fan Diameter-height	mm	Φ92×505	Φ92×505
Fan Motor Speed (SH/H/M/L) Cool	r/min	1200/1000/950/900/850/800/700	1250/1150/1100/1050/950/850/750
Fan Motor Speed (SH/H/M/L) Heat	r/min	1200/1000/950/900/850/800/750	1250/1150/1100/1050/950/900/800
Fan Motor Power Output	W	10	10
Fan Motor Running Current	A	/	/
Fan Motor Capacitor	μF	1	1
Evaporator Material		Copper tube-Aluminum fin	Copper tube-Aluminum fin
Evaporator Pipe Diameter	mm	Φ7	Φ7
Evaporator Number of Rows		1	1
Evaporator Fin Pitch	mm	1.2	1.2
Evaporator Length(L)XHeight(H) XWidth(W)	mm	508×12.7×267	508×12.7×267
Motor Model		FN10B-PG	FN10B-PG
Overload Protector		/	/
Motor Full Load Amp(FLA)	A	0.4	0.4
Sound Pressure Level (SH/H/M/L)	dB (A)	38/33/31/29/28/26/24	39/36/35/33/30/27/24
Sound Power Level (SH/H/M/L)	dB (A)	48/43/41/39/38/36/34	49/46/45/43/40/37/34
Outline Dimension (WXDXH)	inch	27 7/8 X 7 9/32 X 10 15/64	27 7/8 X 7 9/32 X 10 15/64
Package Carton Dimension (LXWXH)	inch	29 29/64 X 12 7/16 X 9 23/32	29 29/64 X 12 7/16 X 9 23/32
Package Dimension (LXWXH)	inch	29 41/64 X 13 5/64 X 10 5/32	29 41/64 X 13 5/64 X 10 5/32
Net Weight	lb	15.4	15.4
Gross Weight	lb	18.7	18.7
Liquid pipe	inch	Φ1/4	Φ1/4
Gas Pipe(to indoor unit)	inch	Φ3/8	Φ3/8
Note: The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

3. Outline Dimension Diagram

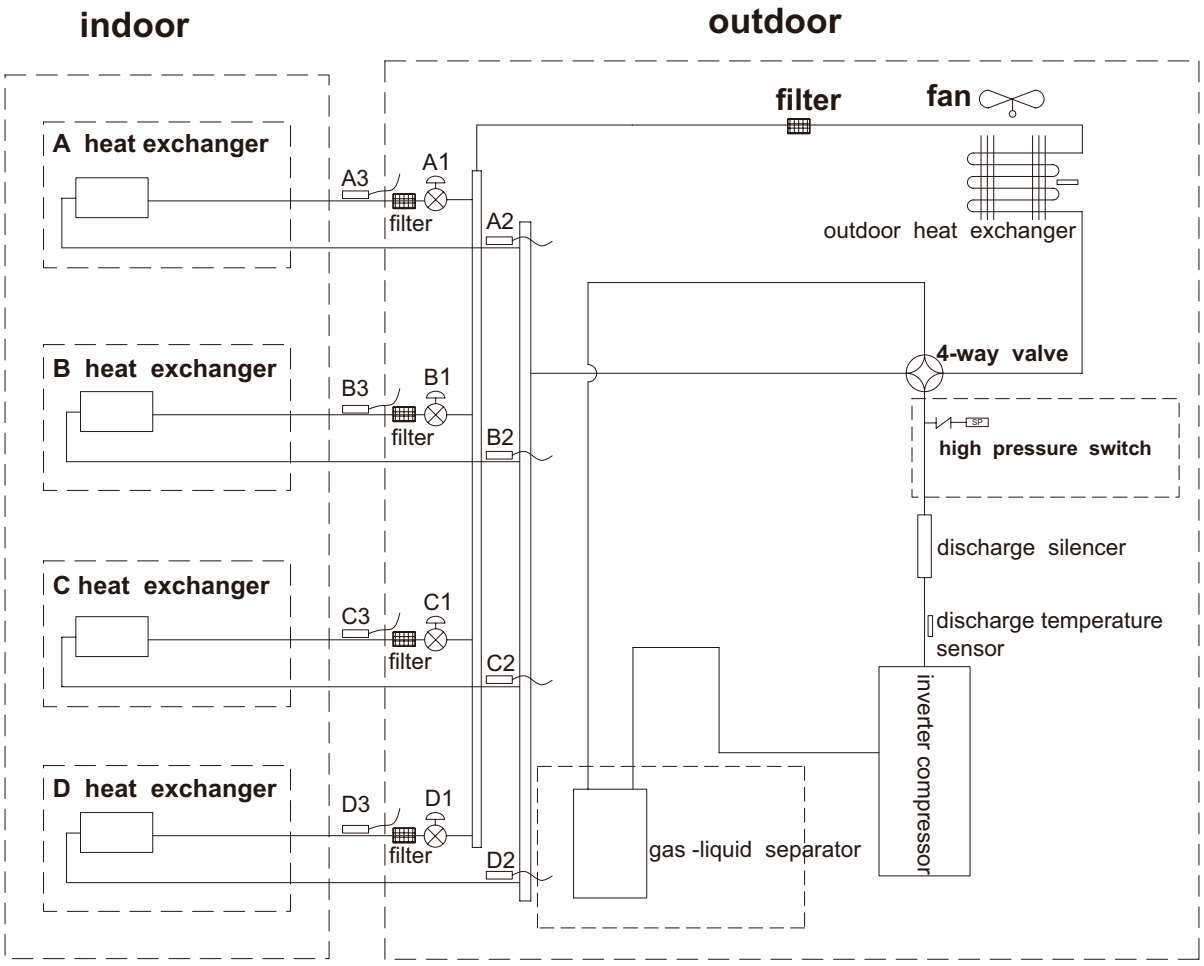


ATA

Unit: inch

Model	W	H	D	W1	W2	W3
ATA	27 7/8	10 15/64	7 9/32	3 25/32	18 5/32	5 15/16

4. Refrigerant System Diagram



A1:A unit electronic expansion valve B1:B-unit electronic expansion valve
C1:C-unit electronic expansion valve D1:D-unit electronic expansion valve
A2:A-unit gas pipe temperature sensor B2:B-unit gas pipe temperature sensor
C2:C-unit gas pipe temperature sensor D2:D-unit gas pipe temperature sensor
A3:A unit liquid pipe temperature sensor B3:B-unit liquid pipe temperature sensor
C3:C-unit liquid pipe temperature sensor D3:D-unit liquid pipe temperature sensor

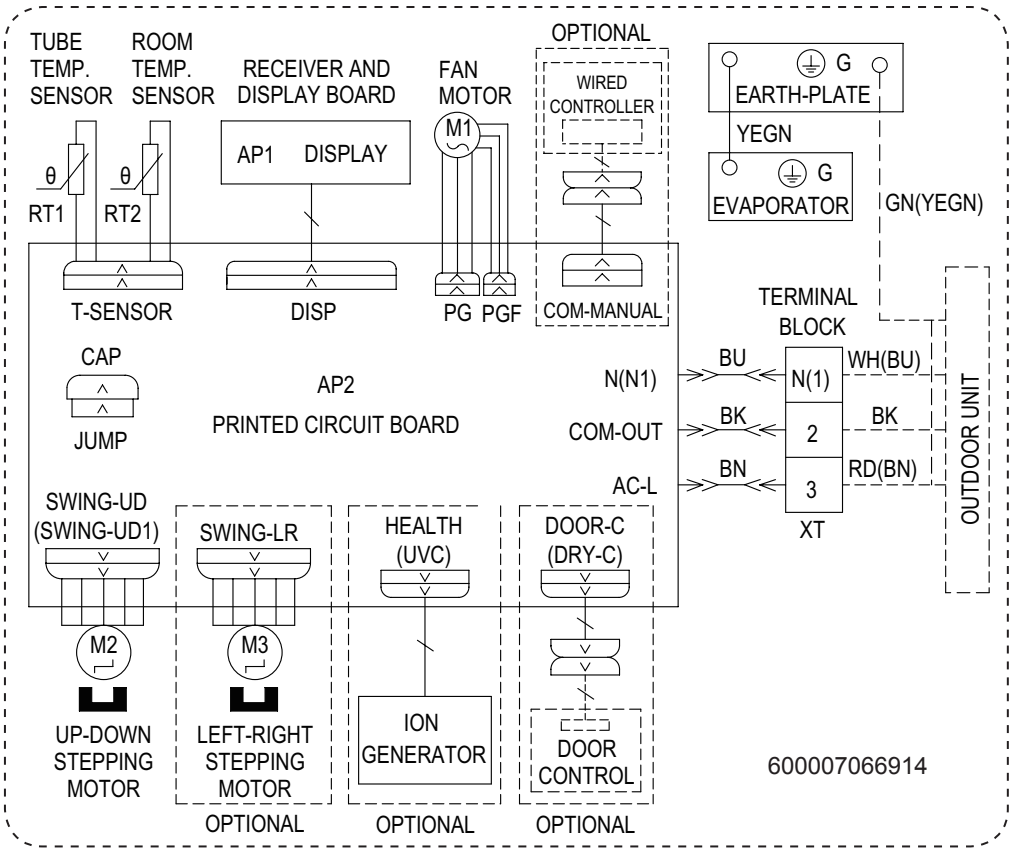
5. Electrical Part

5.1 Wiring Diagram

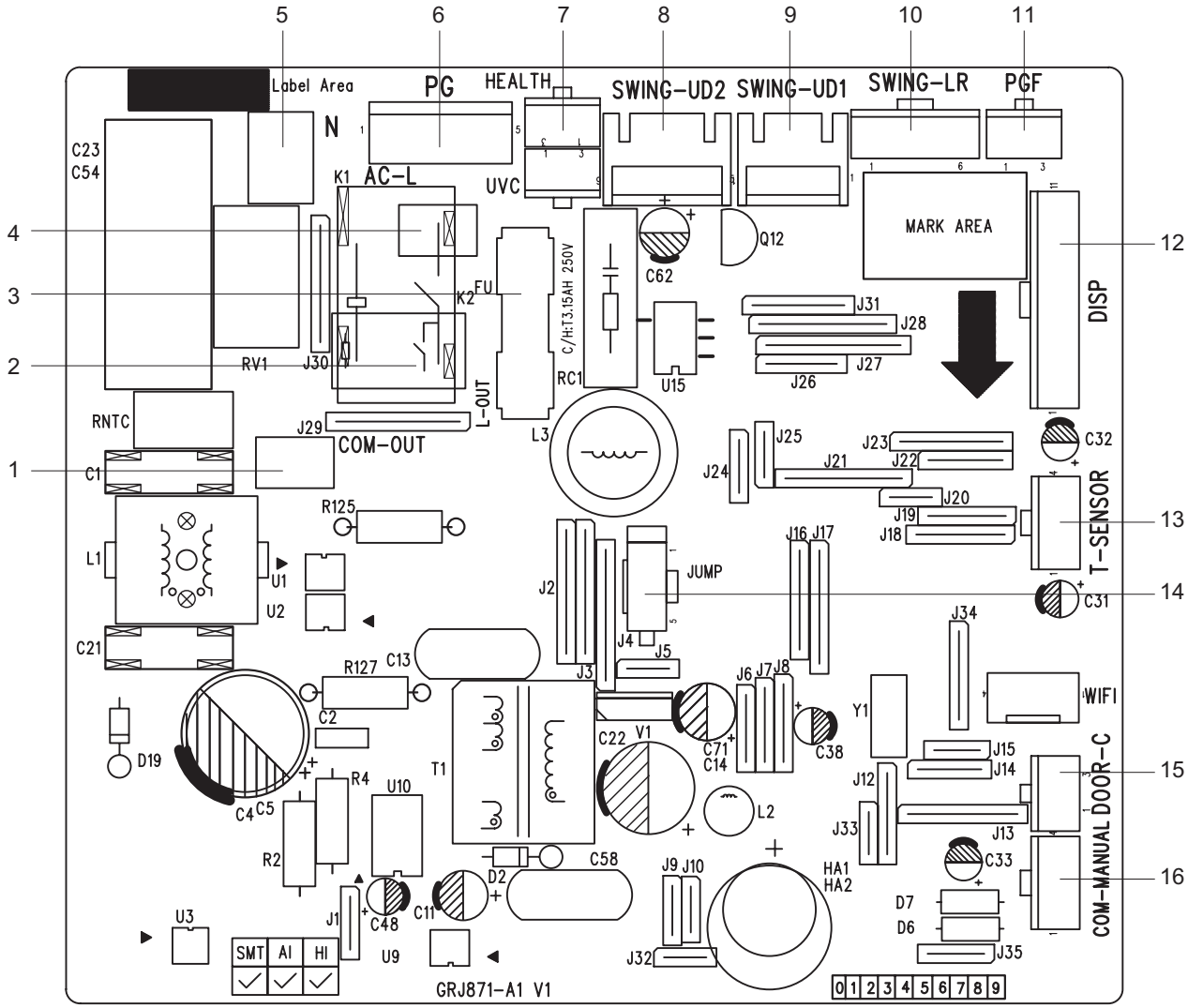
● Instruction

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue	⏚	Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.



5.2 PCB Printed Diagram

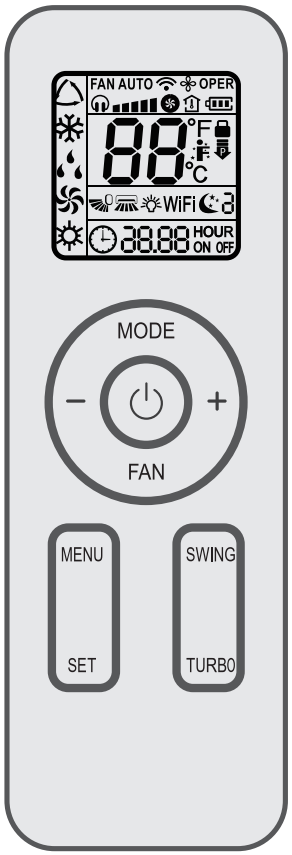


No.	Name	No.	Name
1	Communication interface	9	Up&down 1 swing interface
2	Terminal of live wire used for supplying power for outdoor unit	10	Left&right swing interface
3	Fuse	11	Interface of PG feedback
4	Live wire terminal	12	Display board
5	Neutral wire terminal	13	Needle stand for tube temperature sensor
6	Interface of PG motor	14	Jump
7	Interface of health function	15	Interface of gate-control
8	Up&down 2 swing interface	16	Wired controller

6. Function and Control

6.1 Remote Controller Introduction

Buttons on remote controller for YAY1FF



Introduction for icons on display screen

	I feel
FAN AUTO	Set fan speed
	Turbo mode
	Send signal
Operation mode	Auto mode
	Cool mode
	Dry mode
	Fan mode
	Heat mode
	Sleep mode
	Light
	Power limiting operation
	X-FAN function
	Indoor ambient temp.
	Clock
88	Set temperature
WiFi	WiFi function
88:88	Set time
ONOFF	TIMER ON / TIMER OFF
	Left & right swing
	Up & down swing
	Child lock
	Quiet

NOTE:

● This is a general use remote controller. It could be used for the air conditioner with multifunction. For the functions which the model doesn't have, if press the corresponding button on the remote controller, the unit will keep the original running status.

● After putting through the power, the air conditioner will give out a sound. Power indicator " ⏻ " is ON. After that, you can operate the air conditioner by using remote controller.

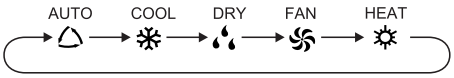
● Under on status, pressing the button on the remote controller, the signal icon " ((•)) " on the display of remote controller will blink once and the air conditioner will give out a "di" sound, which means the signal has been sent to the air conditioner.

⏻ button

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

MODE button

Press this button to select your required operation mode:



● When selecting auto mode, air conditioner will operate automatically according to ambient temperature.Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "SWING" button can adjust fan blowing angle.

● When selecting cool mode, air conditioner will operate under cool mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.

● When selecting dry mode, the air conditioner operates at low speed under dry mode. Under dry mode, fan speed can't be adjusted. Press "SWING" button to adjust fan blowing angle.

● When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.

● When selecting heat mode, the air conditioner operates under heat mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.

NOTE:

● For preventing cold air, after starting up heat mode,indoor unit will delay 1~5 minutes to blow air (Actual delay time depends on indoor ambient temperature).

● Set temperature range from remote controller:16~30℃(61-86℉).

● This mode indicator is not available for some models.

● Cooling only unit won't receive heat mode signal. If setting heat mode with remote cont roller, press " ⏻ " button can't start up the unit.

FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, 🎧 , ▂ , ▂▃ , ▃▅ , ▃▅▇ to ▃▅▇▉ then back to Auto.

NOTE:

● Under AUTO speed, air conditioner will select proper fan speed automatically according to factory default setting.

● It's low fan speed under dry mode.

● X-FAN function: Holding fan speed button for 2s in cool or dry mode, the icon " " is displayed and the indoor fan will continue operation for a few 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.

This function indicates that moisture on evaporator of indoor unit will be blowed after the unit i s stopped to avoid mould.

● Having set X-FAN function on: After turning off the unit by pressing " " button, indoor fan will continue running for a few minutes at low speed. In this period, hold fan speed button for 2s to stop indoor fan directly.

Having set X-FAN function off: After turning off the unit by pressing " " button, the complete unit will be off directly.

● If equipped with the product of 4 kinds of fan speed, when setting " " , " ", the unit will work in low speed; when setting " " , " ", the unit will work in medium speed; when setting " " , " ", the unit will work in high speed.

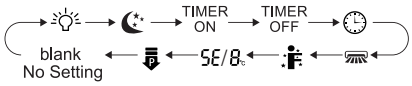
- / + button

Press "+" or "-" button once increase or decrease set temperature 1℃(℉). Holding "+" or "-" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can' t be adjusted under auto mode)

When setting TIMER ON, TIMER OFF or CLOCK,press "+" or "-" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF functions).

MENU button

Press this button to select submenu function and then press "SET" button to set the function status of submenu. The submenu can be selected circularly as follows:



NOTE:

● Some menu' s function may be unavailable under different models.

Light function

When selecting light function, light icon " " flashes for 5s; press "SET" button within 5s to turn off display light on indoor unit and " " icon on remote controller disappears. Press "SET" button again within 5s to turn on display light and " " icon is displayed.

Sleep function

When selecting sleeping function, sleeping icon" " flashes for 5s; press "SET" button within 5s can select Sleep 1 (1), Sleep 2 (2),Sleep 3 (3) and cancel Sleep circularly.

● Sleep 1 is Sleep mode 1, in Cool modes; sleep status after run for one hour, the main unit setting temperature will increase 1℃, two hours, setting temperature increased 2℃, then the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1℃, two hours, setting temperature will decrease 2℃, 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.

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

(1)Under Sleep 3 mode, press "Turbo" button for a long time, remote controller enters into user individuation sleep setting status, at this time, the time of remote controller 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 8 hours temperature setting finished, sleep,curve setting finished, at this time, the remote controller 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 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" " button, "MODE" button, the sleep curve setting or enquiry status will quit similarly.

NOTE:

● If equipped with the product with one kind of sleeping mode only, set Sleep 1 (1) or Sleep 3 (3) to activate sleeping function.

TIMER ON function

TIMER ON function can set the time for timer on.Under TIMER ON function status," " icon disappears and the word "ON" on remote controller blinks. Press "+" or "-" button to adjust TIMER ON setting. After each pressing "+" or "-" button TIMER ON setting will increase or decrease 1min.Hold "+" or "-" button, 2s later, the time will change quickly until reaching your required time.Press "SET" button to confirm it within 5S. The word "ON" will stop blinking.

Cancel TIMER ON: Press "MENU" button to TIMER ON function

and the characters "ON" flashes on the remote controller; press "SET" button until the characters "ON" disappears.

TIMER OFF function

TIMER OFF function can set the time for timer off.Under TIMER OFF function status," ◷ " icon disappears and the word "OFF" on remote controller blinks. Press "+" or "-" button to adjust TIMER OFF setting. After each pressing "+" or "-" button TIMER OFF setting will increase or decrease 1min.

Hold "+" or "-" button, 2s later, the time will change quickly until reaching your required time, press "SET" button to confirm it within 5S. The word "OFF" will stop blinking.

Cancel TIMER OFF: Press "MENU" button to TIMER OFF function and the characters "OFF" flashes on the remote controller; press "SET" button until the characters "OFF" disappears.

CLOCK function

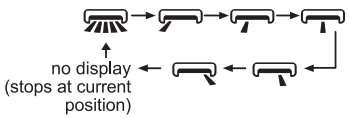
CLOCK function can set clock time. Under CLOCK function status, " ◷ " icon on remote controller will blink. Press "+" or "-" button within 5s to set clock time. Each pressing of "+" or "-" button,clock time will increas e or decrease 1 min. If hold "+" or "-" button , 2s later, time will change quickly.

Release this button when reaching your required time, press "SET" button to confirm it within 5S. The " ◷ " icon will stop blinking.

Left & right swing function

When selecting left & right swing function, left & right swing icon " " flashes for 5s; press "SET" button within 5s to select left & right swing angle.

Fan blow angle can be selected circularly as below:



NOTE:

● The function is only available for some models.

Energy-saving function

Under cooling mode, when selecting energy-saving function, energy-saving function icon " " flashes for 5s; press "SET" button within 5s to turn on or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "SET" button again to exit energy-saving function.

8℃-heating function

Under heating mode, when selecting 8°C-heating function, 8°C-heating icon " " flashes for 5s;press “SET” button within 5s to turn on or turn off 8°C-heating. When 8°C-heating is started up, " " will be shown on remote controller, and the air conditioner keep the heating status at 8°C. Press "SET" button again to exit 8°C-heating function.

NOTE:

Under °F temperature display, the remote controller will display 46°F heating.

Power limiting function

Power limiting function is for limiting the power of the whole unit. When selecting power limiting function,power limiting icon " " flashes for 5s; press "SET" button within 5s and the remote controller will circularly display as follows:

● Maximum power limited under the mode is lower than that of mode.

● If the current power is lower than the maximum power of mode, then the power will not be limited after entering into such mode.

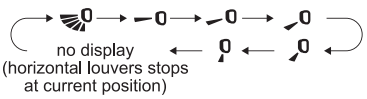
● For the model with one outdoor unit and two indoor units, if any one of indoor units enters into power limiting function, the outdoor unit will enter into the set limiting power mode of indoor unit; when two indoor units enter into power limiting mode, then the power of outdoor unit will be limited according to the lower power of the two indoor units.

NOTE:

● The function is only available for some models.

SWING button

Press this button can select up & down swing angle. Fan blow angle can be selected circularly as below:



● When selecting " ", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.

● When selecting " ", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.

● Hold " "button above 2s to set your required swing angle. When reaching your required angle, release the button.

NOTE:

● Press this button continuously for more than 2s, the main unit will swing back and forth from up to down, and then loosen the button, the unit present position of guide louver will be kept immediately.

● Under up and down swing 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.

TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. " " icon is displayed on remote controller. Press this button again to exit turbo function and " " icon will disappear. If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temperature approaches the preset temperature as soon as possible.

Function introduction for combination buttons

Child lock function

Press "+" and "-" simultaneously to turn on or turn off child lock function. When child lock function is on, " " icon is displayed on remote controller.If you operate the remote controller, the " " icon will blink three times without sending signal to the unit.

Temperature display switchover function

Under OFF status, press "-" and "MODE" buttons simultaneously to switch temperature display between **°C** and **°F**.

Auto clean function

Under unit off status, hold "MODE" and "FAN"buttons simultaneously for 5s to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL" . During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning process,please make sure the room is well ventilated to avoid affecting the comfort.

NOTE:

● The auto clean function can only work under normal ambient temperature. If the room is dusty, clean it once a month; if not, clean it once every three months. After the auto clean function is turned on,you can leave the room. When auto clean is finished,the air conditioner will enter standby status.

● This function is only available for some models.

WiFi function

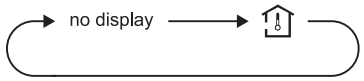
Press "MODE" and "TURBO" button simultaneously to turn on or turn off WiFi function. When WiFi function is turned on, the "WiFi" icon will be displayed on remote controller; Long press "MODE" and "TURBO" buttons simultaneously for 10s, remote controller will send WiFi reset code and then the WiFi function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

NOTE:

● This function is only available for some models.

Ambient temperature display function

UPress "SWING" and "SET" buttons simultaneously,you can see indoor ambient temperature on indoor unit's displayer and the " " icon will be displayed on remote controller. The setting on remote controller is selected circularly as below:



Adjustable temperature under auto mode

The remote controller defaulted that the set temperature can't be adjusted and it won't be displayed under AUTO mode; when pressing "+" and "SET" buttons simultaneously under off status for consecutive 5s, the set temperature can be adjusted under AUTO mode. After setting is succeeded, the set temperature on the remote controller flashes for 3 times.

Night mode

Under cooling or heating mode, when turning on sleep mode and turn to low speed or quiet notch, the outdoor unit would enter into night mode.

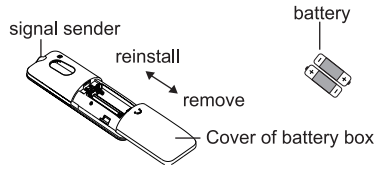
NOTE:

● When you feel that the cooling and heating effect is poor, please press "FAN" button to other fan speed or press "SLEEP" button to exit the night mode.

● The night mode can only work under normal ambient temperature.

● This function is only available for some models.

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.

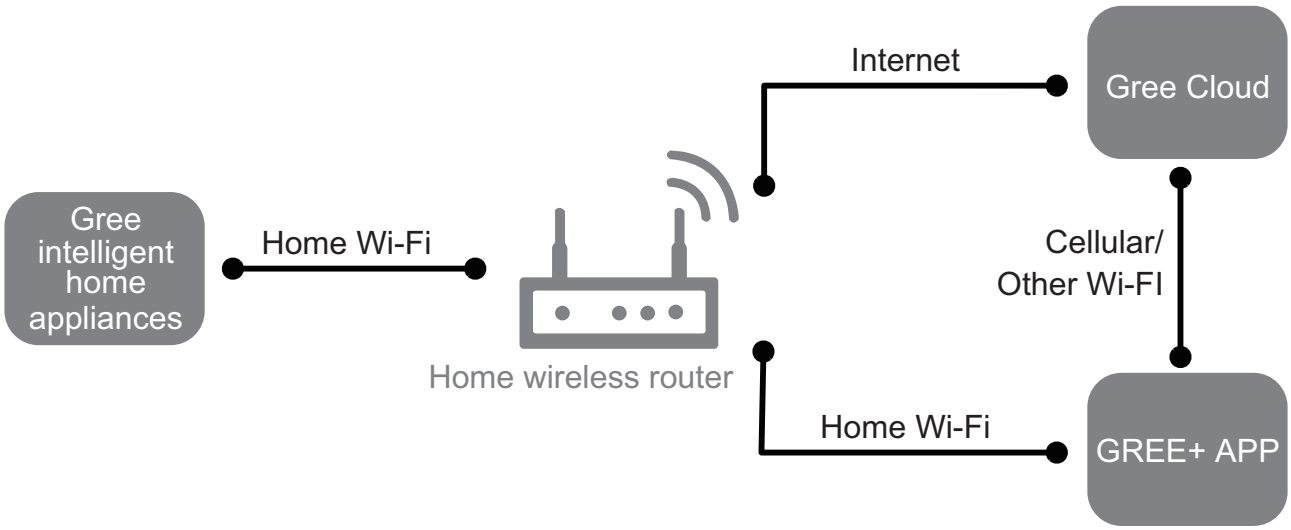
● Replace new batteries of the same model when replacement is required.

● 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.

6.2 GREE+ App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

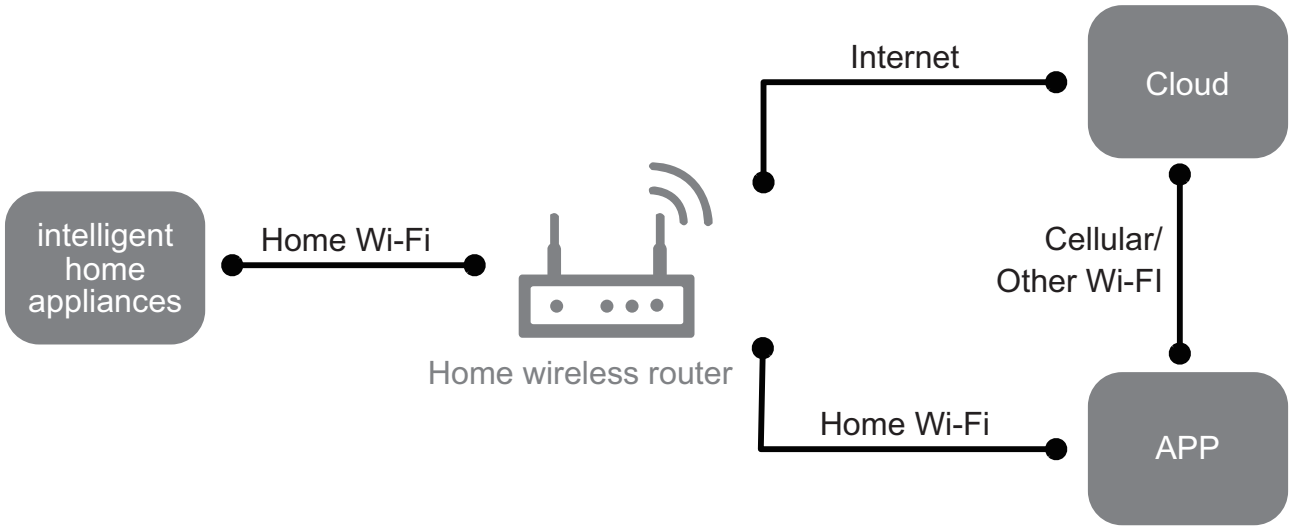
Download and installation

GREE+ App Download Linkage

Scan the QR code or search "GREE+" in the application market to download and install it. When "GREE+" App is installed, register the account and add the device to achieve long-distance control and LAN control of Gree smart home appliances.
For more information, please refer to "Help" in App.

6.3 Ewpe Smart App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

Download and installation

App Download Linkage

Scan the QR code or search "Ewpe Smart" in the application market to download and install it. When "Ewpe Smart" App is installed, register the account and add the device to achieve long-distance control and LAN control of smart home appliances.
For more information, please refer to "Help" in App.

6.4 Brief Description of Models and Functions

1.Basic function of system

(1) Cooling mode

(1) Under this mode, fan and swing operates at setting status. Temperature setting range is 16~30°C(61-86°F).

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(2) Drying mode

(1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 16~30°C(61-86°F).

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(3) Protection status is same as that under cooling mode.

(4) Sleep function is not available for drying mode.

(3) Heating mode

(1) Under this mode, Temperature setting range is 16~30°C(61-86°F).

(2) Working condition and process for heating mode:

When turn on the unit under heating mode, indoor unit enters into cold air prevention status. When the unit is stopped or at OFF status, and indoor unit has been started up just now, the unit enters into residual heat-blowing status.

(4) Working method for AUTO mode:

1.Working condition and process for AUTO mode:

a.Under AUTO mode, standard heating Tpreset=20°C(68°F) and standard cooling Tpreset=25°C(77°F) . The unit will switch mode automatically according to ambient temperature.

2.Protection function

a. During cooling operation, protection function is same as that under cooling mode.

b. During heating operation, protection function is same as that under heating mode.

3. Display: Set temperature is the set value under each condition. Ambient temperature is (Tamb.-Tcompensation) for heat pump unit and Tamb. for cooling only unit.

4. If theres I feel function, Tcompensation is 0. Others are same as above.

(5) Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30°C(60.8~86.0°F).

2. Other control

(1) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

(2) Auto button

If press this auto button when turning off the unit, the complete unit will operate at auto mode. Indoor fan operates at auto fan speed and swing function is turned on. Press this auto button at ON status to turn off the unit.

(3) Auto fan

Heating mode: During auto heating mode or normal heating ode, auto fan speed will adjust the fan speed automatically according to ambient temperature and set temperature.

(4) Sleep

After setting sleep function for a period of time, system will adjust set temperature automatically.

(5) Timer function:

General timer and clock timer functions are compatible by equipping remote controller with different functions.

(6) Memory function

memorize compensation temperature, off-peak energization value.

Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer can't be memorized).

After power recovery, the unit will be turned on automatically according to memory content.

(7) Health function

During operation of indoor fan, set health function by remote controller. Turn off the unit will also turn off health function.

Turn on the unit by pressing auto button, and the health is defaulted ON.

(8) I feel control mode

After controller received I feel control signal and ambient temperature sent by remote controller, controller will work according to the ambient temperature sent by remote controller.

(9) Entry condition for compulsory defrosting function

When turn on the unit under heating ode and set temperature is 16°C((60°F)) (or 16.5°C(61.7) by remote controller), press "△ , ▽ , △ , ▽ , △ , ▽ " button successively within 5s and then indoor unit will enter into compulsory defrosting setting status:

(1) If theres only indoor units controller, it enters into indoor normal defrosting mode.

(2) If theres indoor units controller and outdoor units controller, indoor unit will send compulsory defrosting mode signal to outdoor unit and then outdoor unit will operate under normal defrosting mode. After indoor unit received the signal that outdoor unit has entered into defrosting status, indoor unit will cancel to send compulsory mode to outdoor unit. If outdoor unit hasnt received feedback signal from outdoor unit after 3min, indoor unit will also cancel to send compulsory defrosting signal.

(10) Refrigerant recovery function:

Enter into Freon recovery mode actively: Within 5min after energization, turn on the unit at 16°C(60°F) under cooling mode, and press light button for 3 times within 3s to enter into Freon recovery mode. Fo is displayed and Freon recovery mode will be

sent to outdoor unit.

(11) Ambient temperature display control mode

1. When user set the remote controller to display set temperature (corresponding remote control code: 01), current set temperature will be displayed.

2. Only when remote control signal is switched to indoor ambient temperature display status (corresponding remote control code: 10) from other display status (corresponding remote control code: 00, 01,11),controller will display indoor ambient temperature for 3s and then turn back to display set temperature.

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30°C(61-86°F).

(12) Off-peak energization function:

Adjust compressors minimum stop time. The original minimum stop time is 180s and then we change to:

The time interval between two start-ups of compressor can't be less than 180+Ts(0≤T≤15). T is the variable of controller. Thats to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time. After power recovery, compressor can only be started up after 180+T s at least.

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

When X-fan function is turned on, after turn off the unit, indoor fan will still operate at low speed for 2min and then the complete unit will be turned off. When x-fan function is turned off, after turn off the unit, the complete unit will be turned off directly.

(15) 8°C heating function

Under heating mode, you can set 8°Cheating function by remote controller. The system will operate at 8°C set temperature.

(16)Turbo function

Turbo function can be set under cooling and heating modes. Press Fan Speed button to cancel turbo setting. Turbo function is not available under auto, drying and fan modes.

(17)Mode shock

When there's indoor unit under operation, if start up other indoor unit and the setting mode is inconsistent with that indoor unit, mode shock will occur. The indoor with mode shock displays "E7" and indoor fan stops operation. Corresponding relationship for mode shock and operation status after shock is as below:

Mode relationship table for mode shock:

Mode		Indoor unit with mode shock	Operation status after mode shock	
Indoor unit A	Indoor unit B		Indoor unit A	Indoor unit B
Cooling/drying	heating	Indoor unit B	Cooling/drying	Indoor fan stops operation
Heating	Cooling, drying, fan	Indoor unit B	Heating	Indoor fan stops operation
Fan	Heating	Indoor unit A	Indoor fan stops operation	Heating

Note: (1) Indoor unit A: The indoor unit under operation currently

(2) Indoor unit B: The indoor unit is tuned on latter

(3) If set auto mode with remote controller, the complete unit will judge according to actual operation mode under auto mode.

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; dont 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. When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.
2. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
3. 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.
4. Make sure no refrigerant gas is leaking out when installation is completed.
5. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
6. 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.

Safety Precautions for Installing and Relocating the Unit:

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.

Main Tools for Installation and Maintenance

Level meter

Measuring tape

Screw driver

Impact drill

Drill head

Electric drill

Electroprobe

Universal meter

Torque wrench

Open-end wrench

Inner hexagon spanner

Electronic leakage detector

Vacuum pump

Pressure meter

Pipe pliers

Pipe pliers

Pipe cutter

Pipe expander

Pipe bender

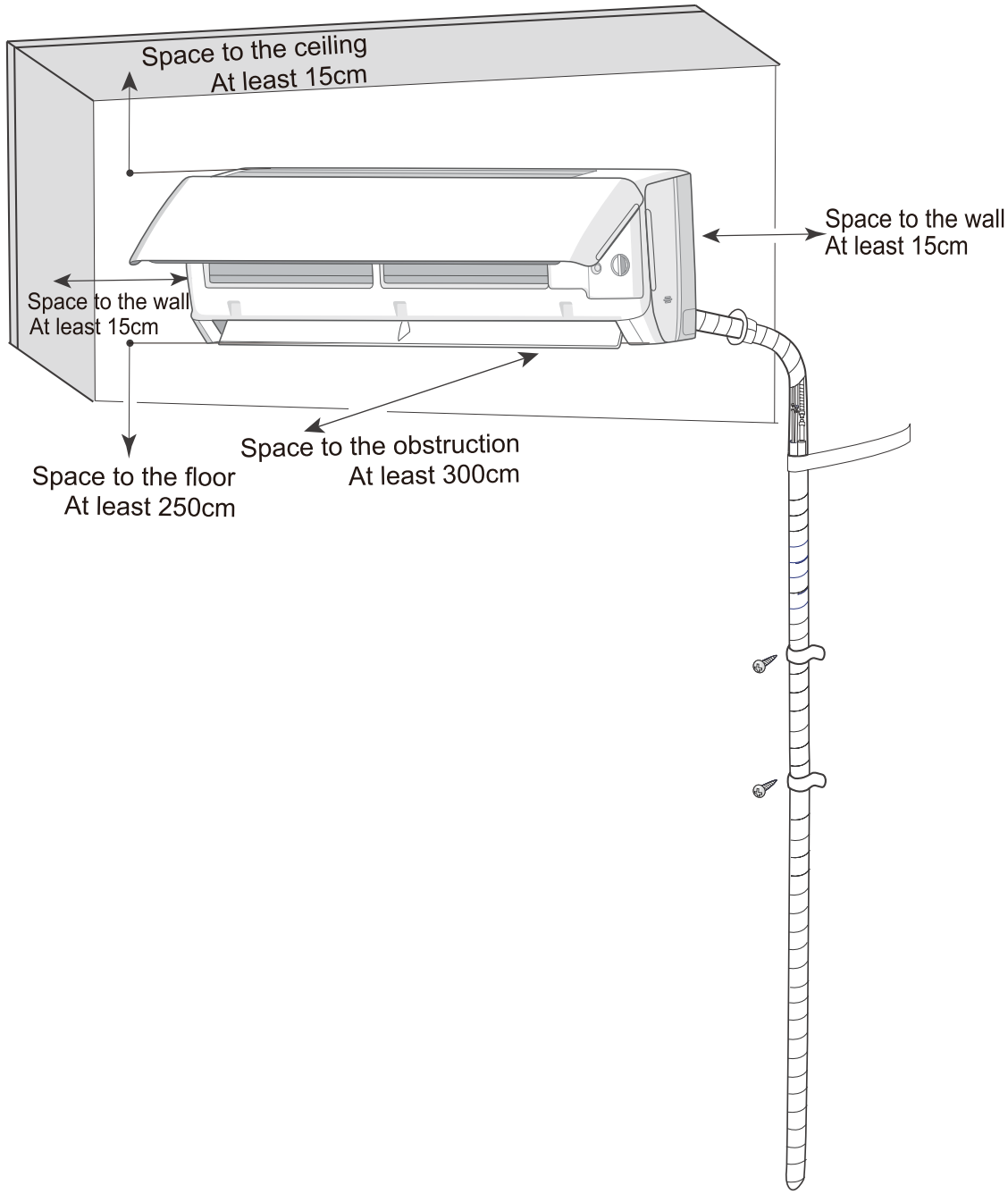
Soldering appliance

Refrigerant container

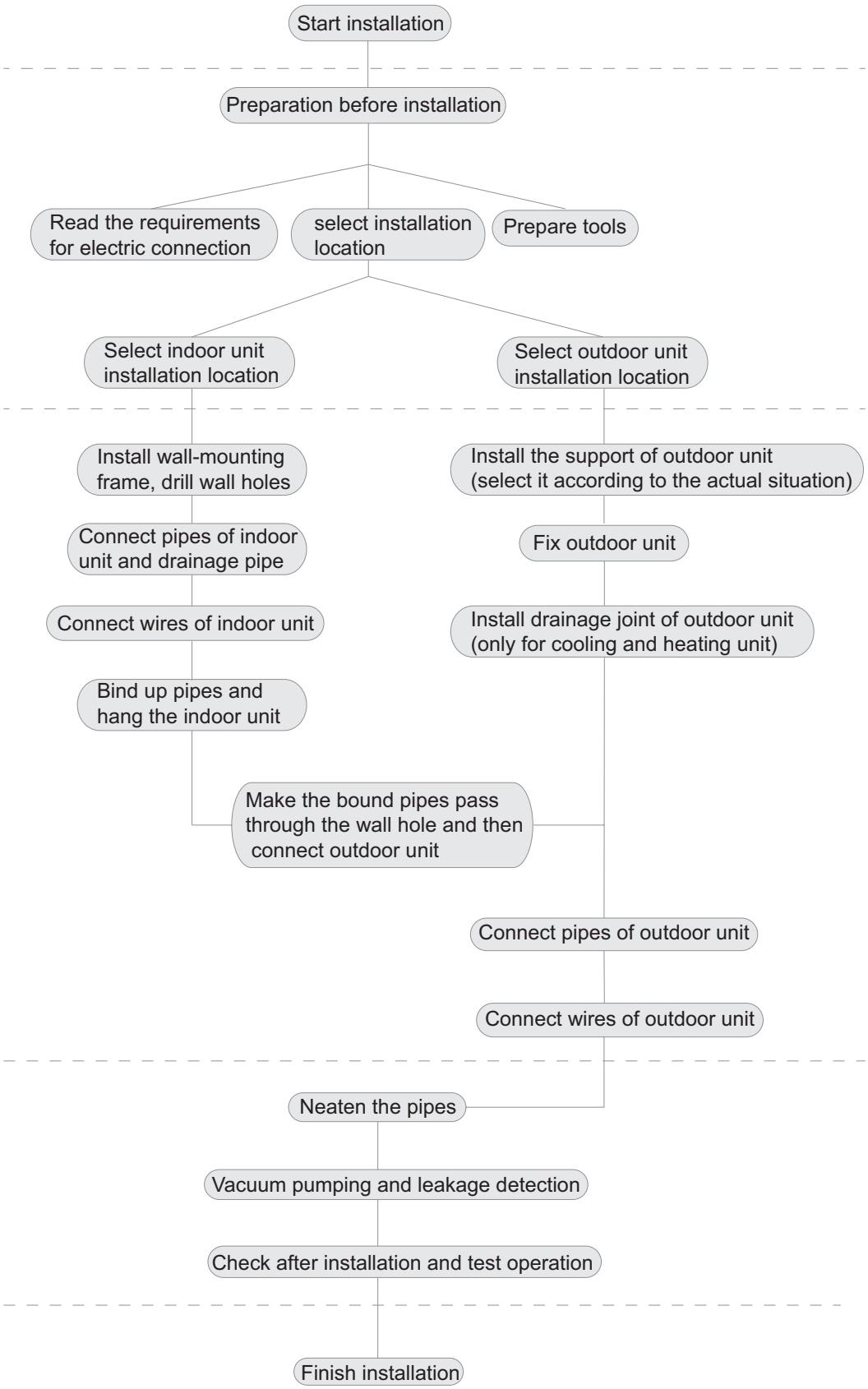
Electronic scale

8. Installation

8.1 Installation Dimension Diagram



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
1	Indoor unit
2	Outdoor unit
3	Connection pipe
4	Drainage pipe
5	Wall-mounting frame
6	Connecting cable(power cord)
7	Wall pipe
8	Sealing gum
9	Wrapping tape
10	Support of outdoor unit
11	Fixing screw
12	Drainage plug(cooling and heating unit)
13	Owners manual, remote controller

⚠ **Note:**
1.Please contact the local agent for installation.
2.Dont 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 sulfureted gas.
(6) Other places with special circumstances.
(7) The appliance shall nost be installed in the laundry.
(8) It's not allowed to be installed on the unstable or motive base structure(such as truck) or in the corrosive environment (such as chemical factory).

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 andwont 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 wont increase noise and vibration.
(6) The appliance must be installed 2.5m above floor.
(7) Dont install the indoor unit right above the electric appliance.
(8) Please try your best to keep way from fluorescent lamp.

3. 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 or malfunction. Please install proper power supply cables before using the air conditioner.
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. 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.

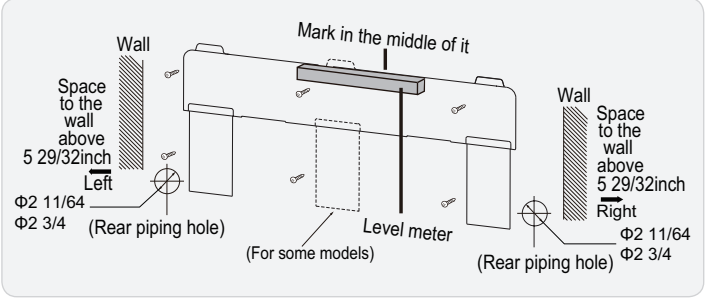
8.4 Electric Connection Requirement

1. The air conditioner is the 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 tha t 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.

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 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. Open piping hole

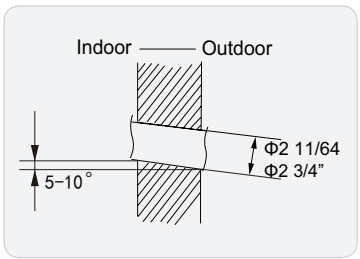
(1) Choose the position of piping hole according to the direction of outlet pipe. The position of piping hole should be a little lower than the wall-mounted frame,shown as below.

⚠ Note:

- The wall panel is for illustrative purposes only, please refer to the actual installation.
- Please refer to the actual circumstances for the number of screws and the position of screws.

(2) When installation is finished, pull the mounting plate with hand to confirm whether it is fixed tightly. The force distribution for all screws should be uniform.

(3) Open a piping hole with the diameter of Φ2 11/64 or Φ2 3/4 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 5-10°.

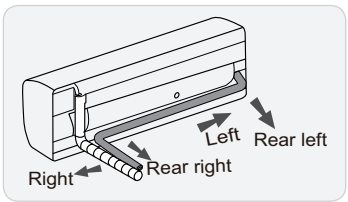


⚠ Note:

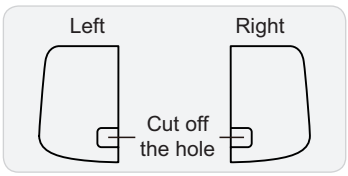
Pay attention to dust prevention and take relevant safety measures when opening the hole.

4. Outlet Pipe

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



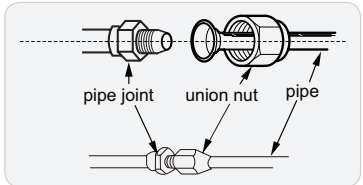
(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.



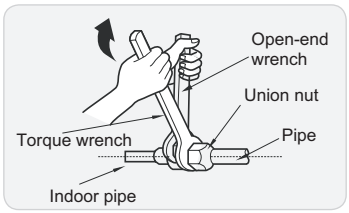
5. Connect the Pipe of Indoor Unit

(1) Aim the pipe joint at the corresponding bellmouth.

(2) Pretightening the union nut with hand.



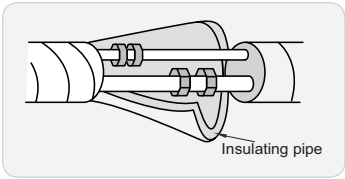
(3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench.



Refer to the following table for wrench moment of force:

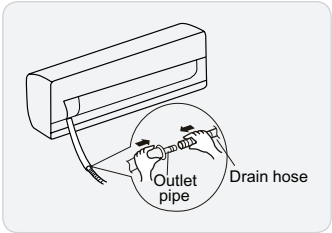
Piping size	Tightening torque(N·m)
1/4"	15~20
3/8"	30~40
1/2"	45~55
5/8"	60~65
3/4"	70~75

(4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape.

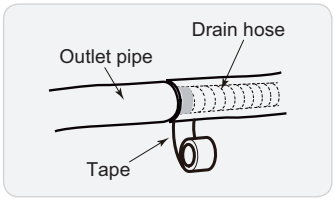


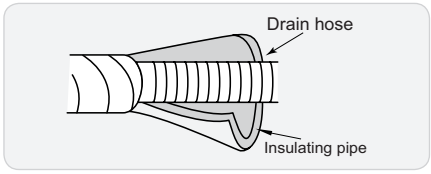
6. Install Drain Hose

(1) Connect the drain hose to the outlet pipe of indoor unit.



(2) Bind the joint with tape.





⚠ Note:

(1) Add insulating pipe in the indoor drain hose in order to prevent condensation.

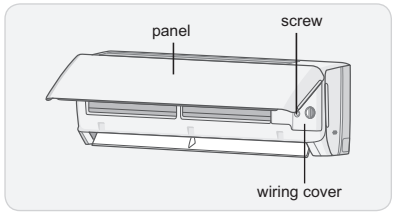
(2) The plastic expansion particles are not provided.

7. Connect Wire of Indoor Unit

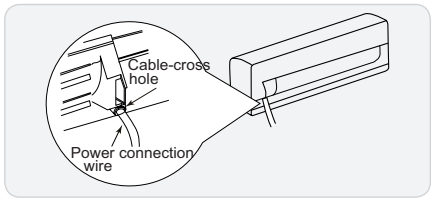
⚠ Notice:

(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.

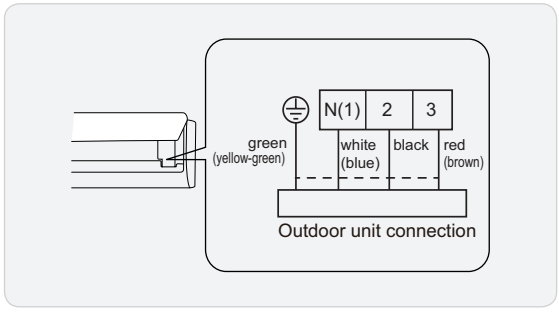
(1) Open the panel, remove the screw on the wiring cover and then take down the cover.



(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.



(3) Remove the wire clip; connect the power connection wiresignal control wire (only for cooling and heating unit) to the wiring terminal according to the color; tighten the screw and then fix the power connection wire with wire clip.



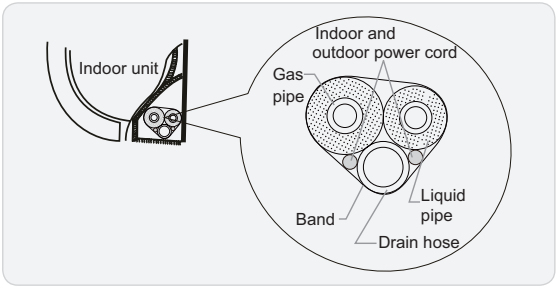
⚠ Note:

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

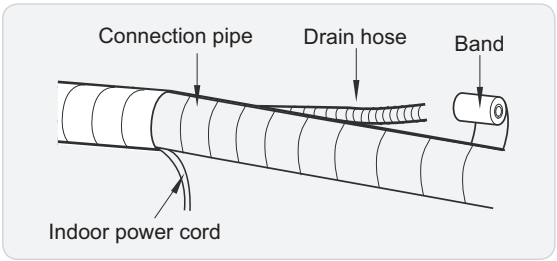
(4) Put wiring cover back and then tighten the screw.
(5) Close the panel.

8. Bind up Pipe

(1) Bind up the connection pipe, power cord and drain hose with the band.



(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.



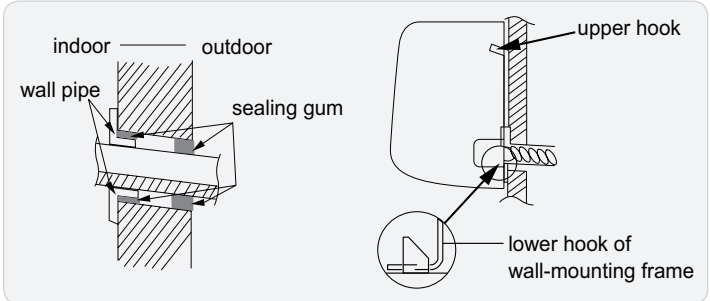
(3) Bind them evenly.
(4) The liquid pipe and gas pipe should be bound separately at the end.

⚠ Note:

- The power cord and control wire can't be crossed or winding.
- 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.
(5) Check if the indoor unit is installed firmly and closed to the wall.



⚠ Note:

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

8.6 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(61°F), the air conditioner can't start cooling.

9. Maintenance

9.1 Error Code List

No.	Malfunction Name	Display Method of Indoor Unit Dual-8 Code Display	A/C status	Possible Causes
1	Indoor ambient temperature sensor is open/short- circuited	F1	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads （such as compressor, outdoor fan, 4-way valve） stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to trip-over of the parts on controller; 3.Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
3	Blocked protection of IDU fan motor	H6	IDU fan, ODU fan, compressor and electric heat tube stop operation. Horizontal louver stops at the current position.	1. The feedback terminal of PG motor is not connected tightly. 2. The control terminal of PG motor is not connected tightly. 3. Fan blade rotates unsmoothly. 4. Malfunction of motor 5. Main board is broken.
4	Malfunction protection of jumper cap	C5	Operation of remote controller or control panel is available, but the unit won't act.	1. There's not jumper cap on the main board. 2. Jumper cap is not inserted properly and tightly. 3. Jumper cap is damaged. 4. Controller is damaged.
5	Zero-crossing inspection circuit malfunction of the IDU fan motor	U8	Operation of remote controller or control panel is available, but the unit won't act.	1. Quick de-energization and energization. Wrong judgement by the controller because the electric-discharging of capacitor is slow. 2. Zero-crossing inspection circuit of main board for controller is abnormal.
6	Outdoor ambient temperature sensor is open/short-circuited	F3	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Outdoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
7	Outdoor condenser temperature sensor is open/short-circuited	F4	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor condenser temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.

No.	Malfunction Name	Display Method of Indoor Unit Dual-8 Code Display	A/C status	Possible Causes
8	Outdoor discharge temperature sensor is open/ short-circuited	F5	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, the compressor stops operation while IDU fan motor operates; During heating operation, the heating fan motor operates according to the conditions of blowing residual heat.	1. The wiring terminal between outdoor condenser temperature sensor and maiboard is loosened or poorly contacted. 2. There's short circuit due to trip-over of the parts on maiboard. 3. Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor). 4. Mainboard is broken.
9	High pressure protection	E1	During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, if it is inverter unit, the complete unit stops; if it is floor standing unit, the complete unit stops and operation of remote controller or controller is unavailable.	1. The main board and the display panel are not connected well. 2. The OVC terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/ outdoor units are blocked. 10. The system pipeline is blocked. 11. The gas valve and liquid valve for outdoor unit are not completely opened. 12. The OVC input is at high level.
10	Low pressure protection of compressor	E3	The complete unit stops	1. The main board and display panel are not connected well. 2. The LPP terminal on the main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of the high pressure switch is loosened. High pressure switch is damaged or poorly contacted. 4. Insufficient or leaking out refrigerant. 5. The LPP input is at high level.
11	High discharge temperature protection of compressor	E4	During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation,all loads stop.	1. Abnormal system (e.g.: blockage, etc) 2. Abnormal rotation speed of outdoor motor (cooling) 3. Abnormal air intake (cooling) 4. System is normal, but the compressor discharge temperature sensor is abnormal or poorly contacted.

No.	Malfunction Name	Display Method of Indoor Unit Dual-8 Code Display	A/C status	Possible Causes
13	Communi-cation malfunction	E6	During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	1. The communication line is not connected tightly or poorly contacted. Poor contact of any line may cause communication malfunction. 2. The match between main board and display panel is incorrect. Indoor and outdoor unit boards are matched incorrectly. 3. Incorrect wire connection. 4. Controller is damaged.
14	Overload malfunction	E8	The entire unit stops.	1. Indoor and outdoor heat exchanger is too dirty? Or air inlet/outlet is blocked? 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor operates normally or not? Is there any abnormal noise or oil leak? Casing is too hot? 4. System is blocked inside? (Dirt blockage? Ice blockage? Oil blockage? Y-valve is not fully open?) 5. Main board temperature sensor detects wrongly.
15	Overload protection for compressor	H3	The entire unit stops.	1. Outdoor and indoor heat exchangers are too dirty or the air inlet/outlet is blocked. 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor doesn't work normally. Strange noise or leakage occurs. Temperature of the shell is too high. 4. System is blocked inside(dirt block, ice block, oil block, Y-valve not fully open). 5. High pressure switch is abnormal 6. The refrigerant is leaking and cause overheating protection to compressor
16	Defrosting	Heating indicator off for 0.5s and then blinks for 10s	Not the error code. It’s the status code for the operation.	

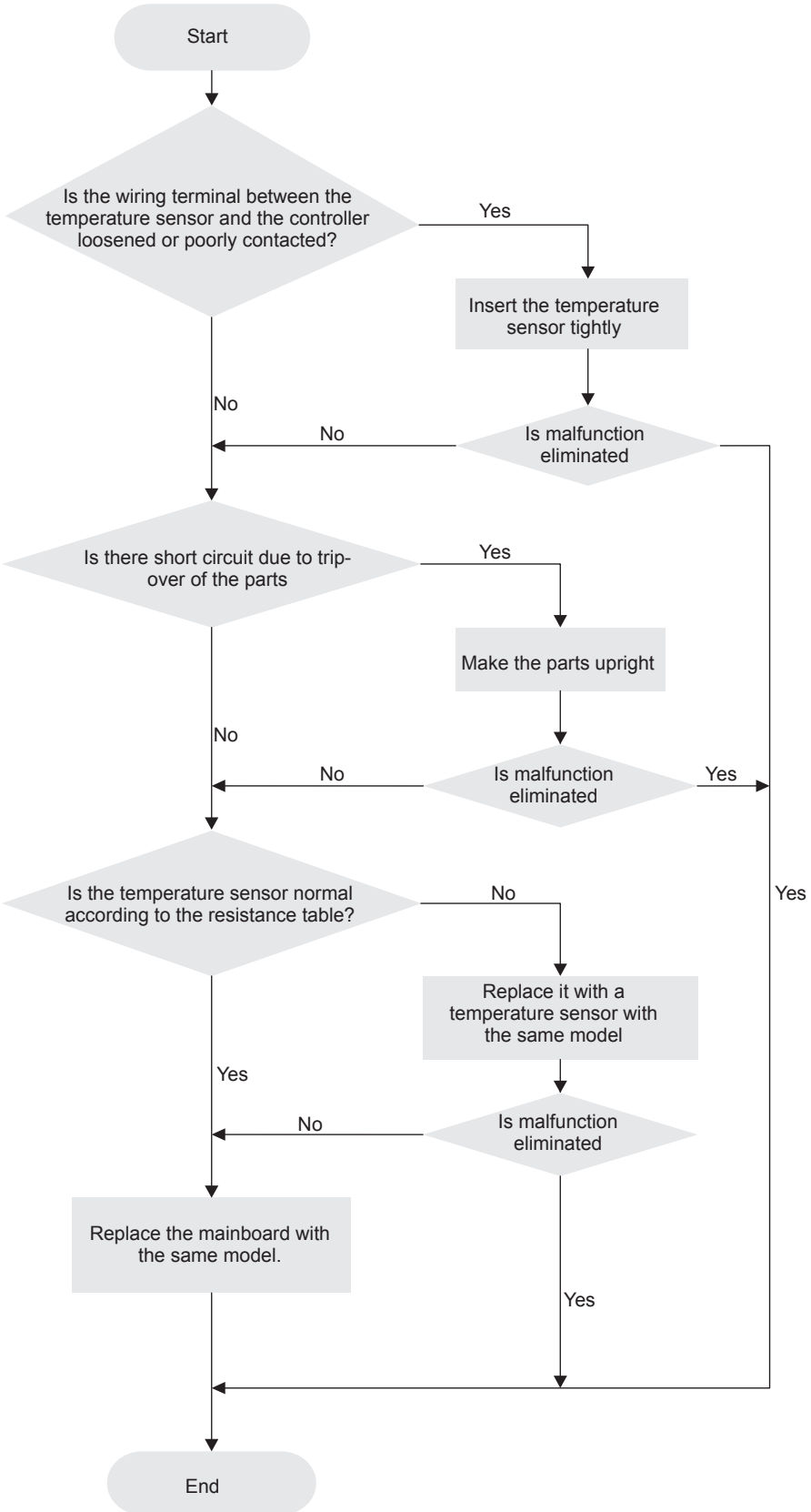
9.2 Procedure of Troubleshooting

1. Malfunction of Temperature Sensor F1, F2

Main detection points:

(1) connection terminal (2) temperature sensor (3) main board

Malfunction diagnosis process:

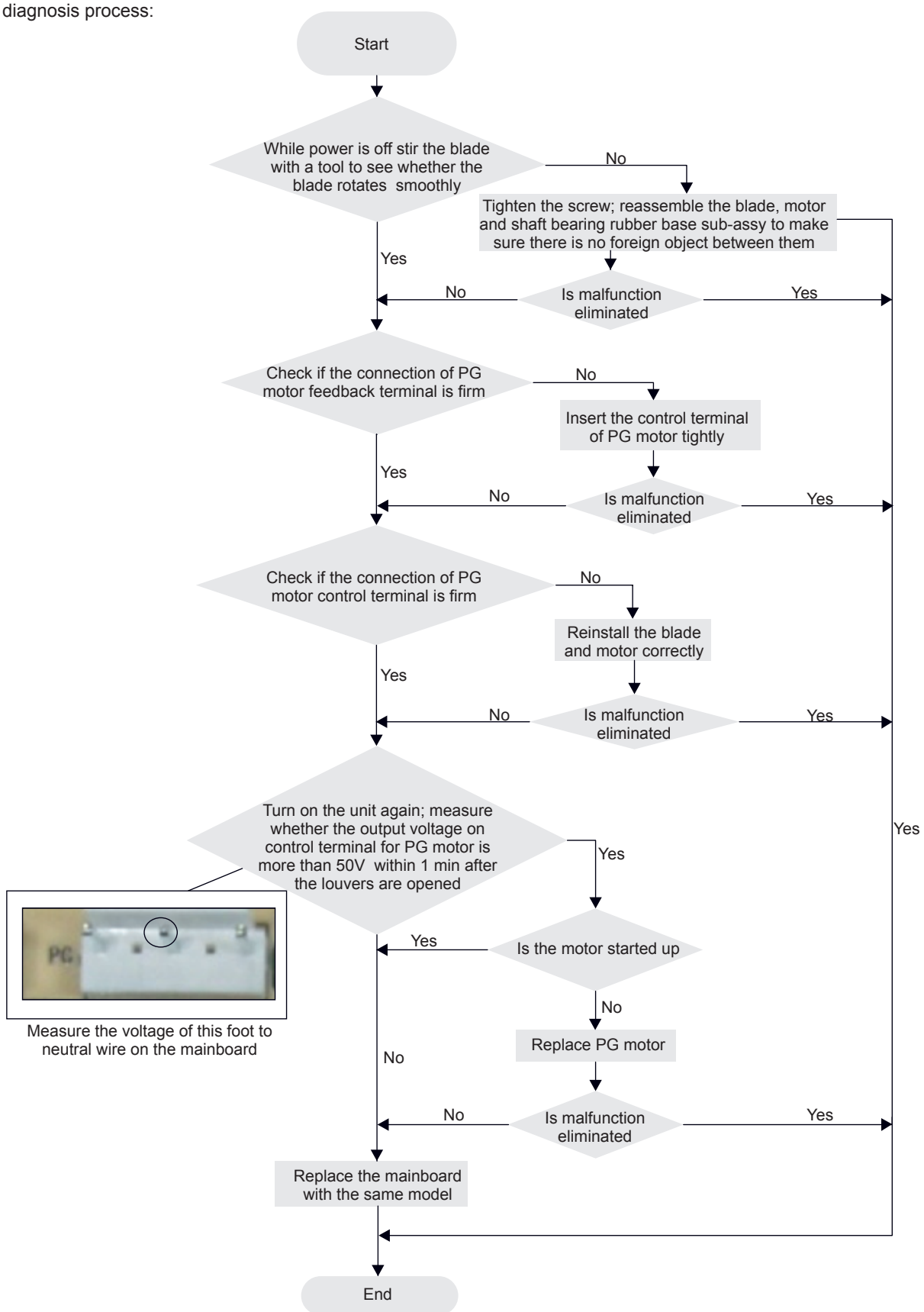


2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothlyls the control terminal of PG motor connected tightly?
- Smoothlyls the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detectioncircuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

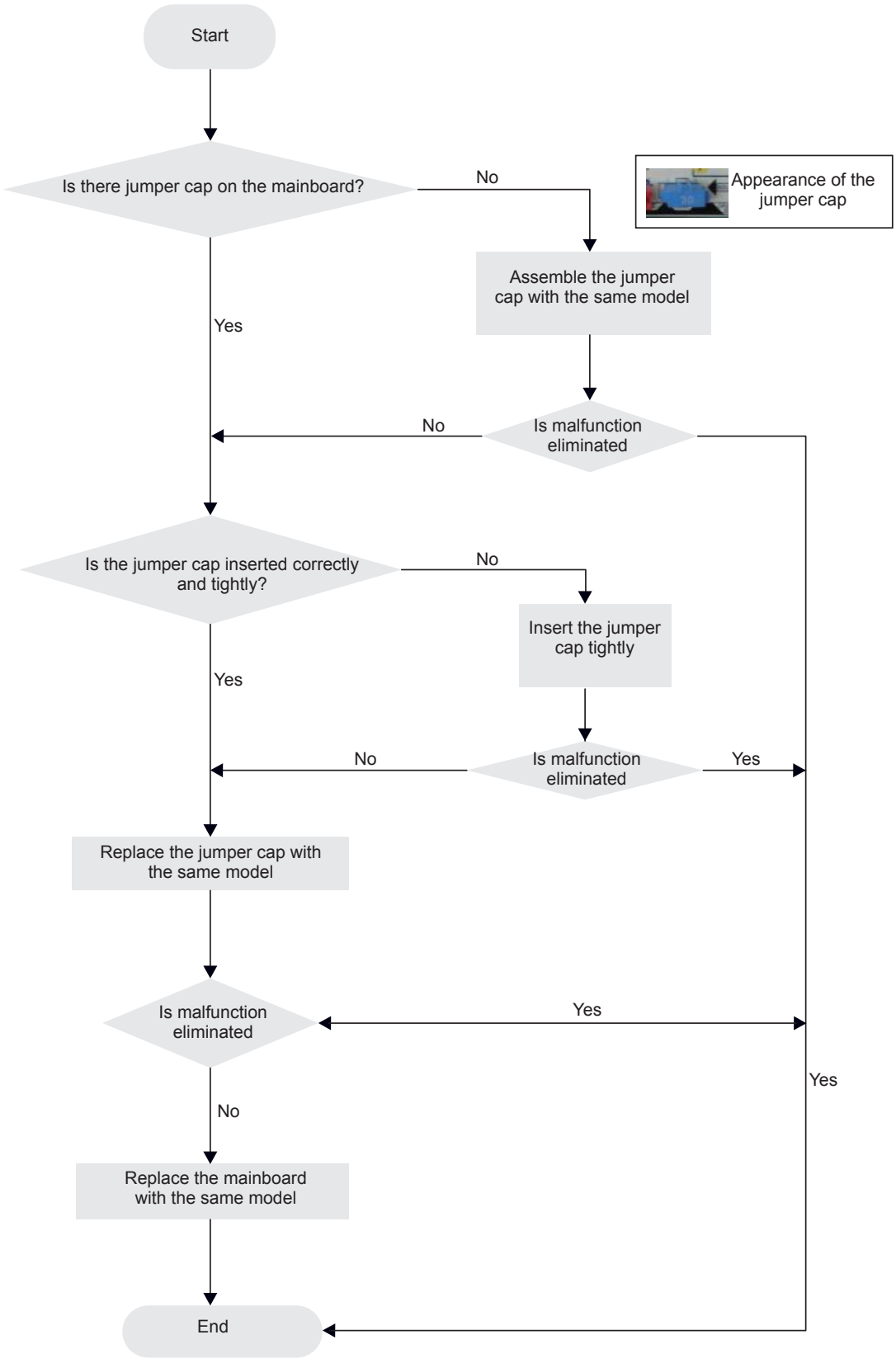


3. Malfunction of Protection of Jumper Cap C5

Main detection points:

- Is there jumper cap on the mainboard?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

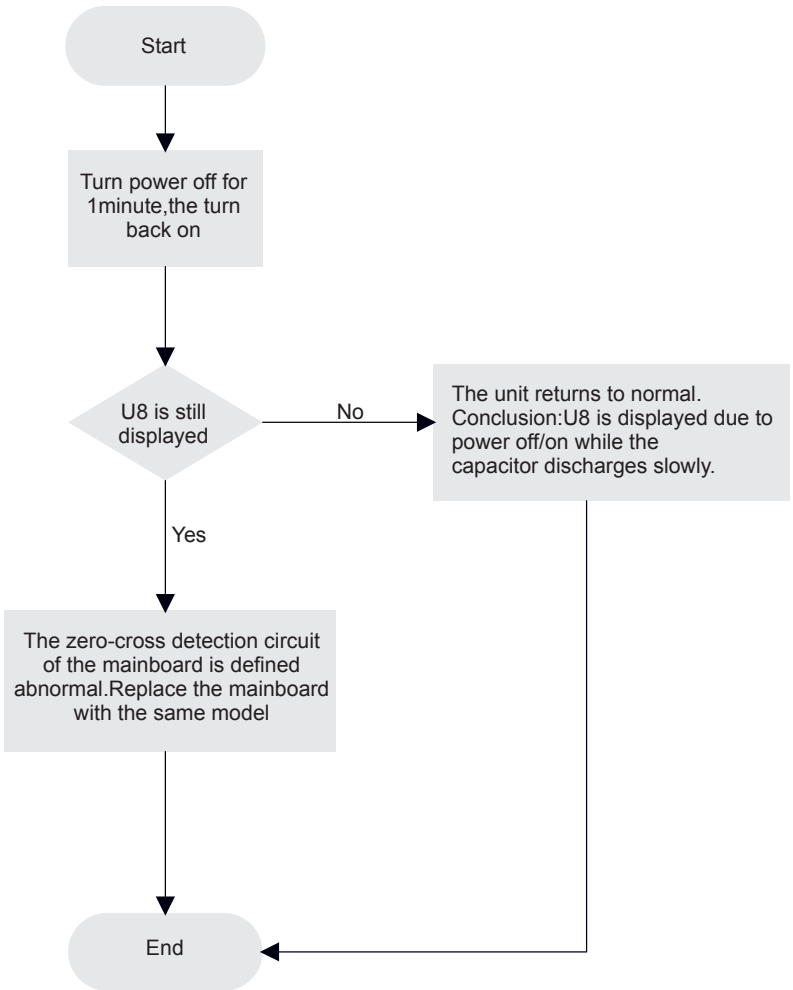


4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

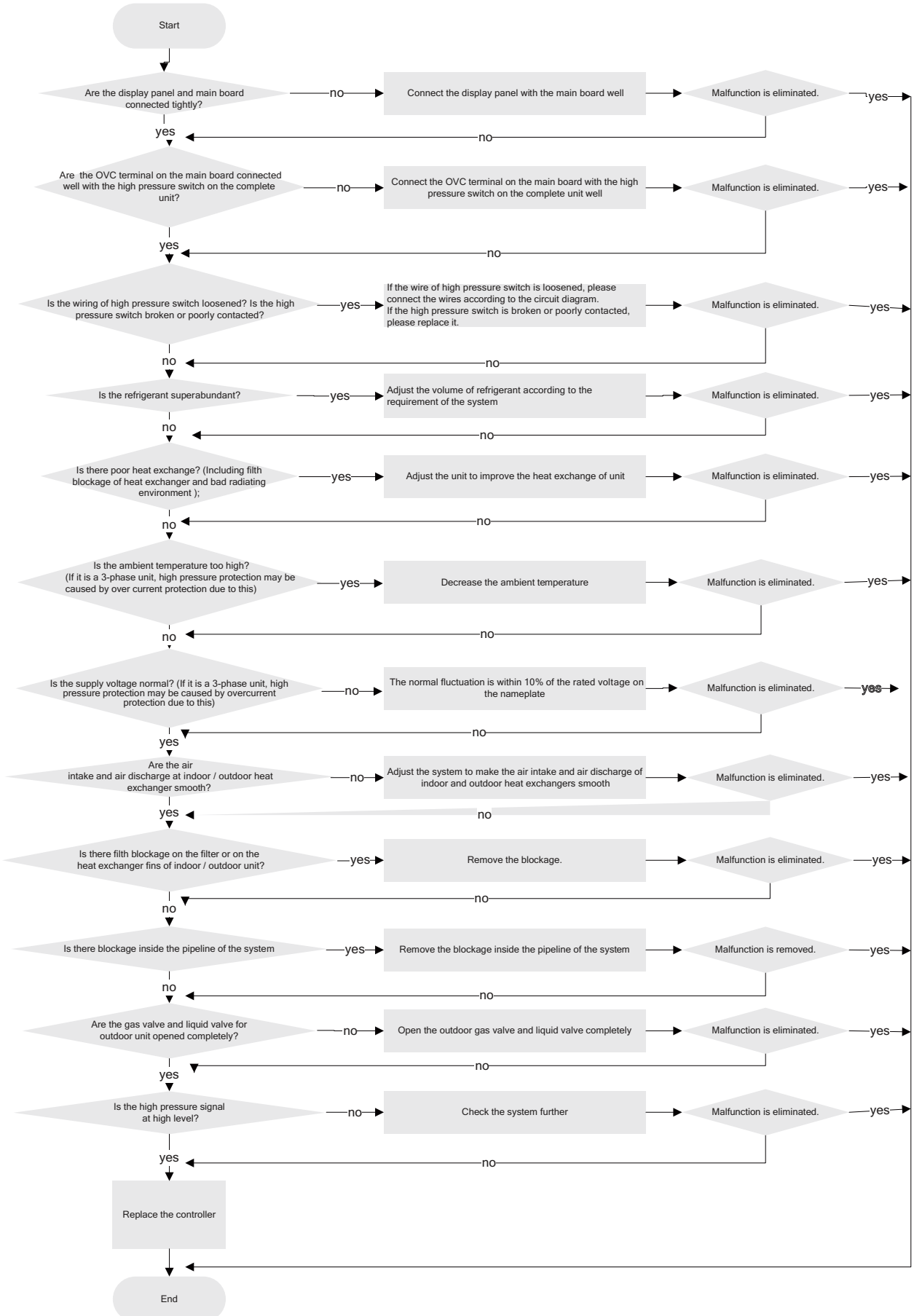
Main detection points:

- Instant energization afte de-energization while the capacitordischarges slowly?
- The zero-cross detectioncircuit of the mainboard is defined abnormal?

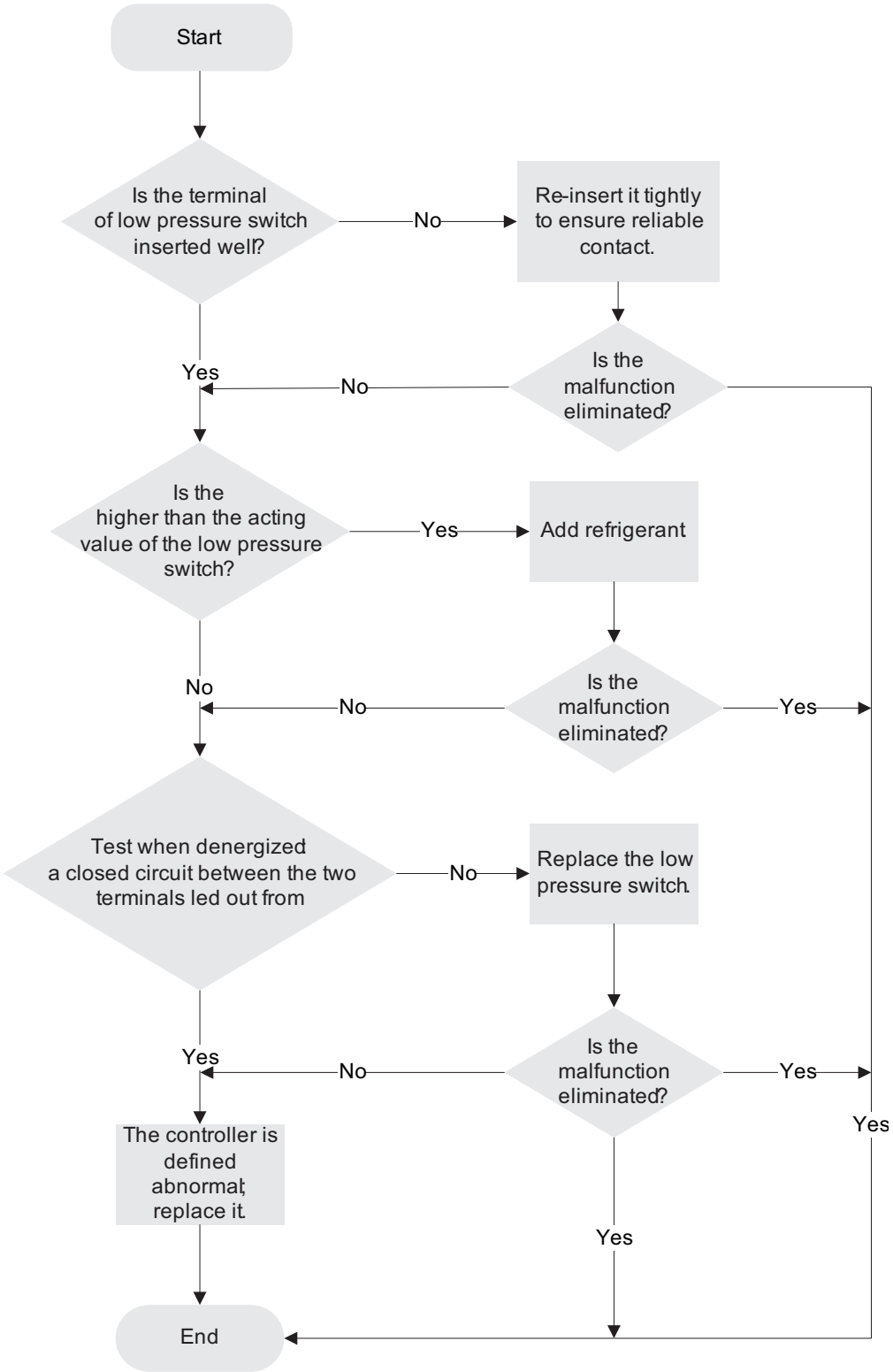
Malfunction diagnosis process:



5. High pressure protection (E1)



6. Low pressure protection of compressor (E3)

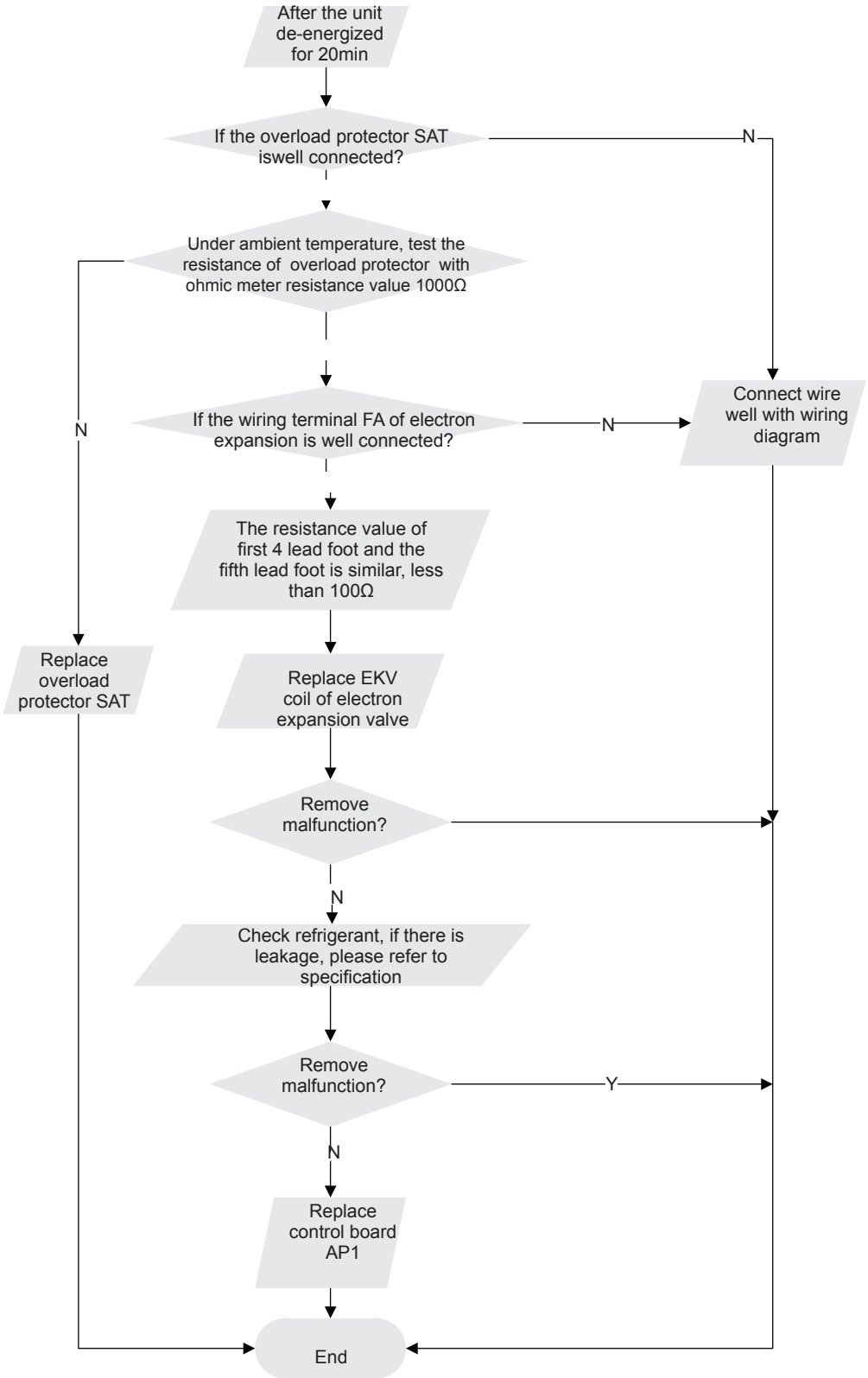


7. Overload protection of compressor H3, high discharge temperature protection of compressor E4 (AP1 hereinafter refers to the control board of the outdoor unit)

Main detection points:

(1) electronic expansion valve (2) expansion valve terminal (3) charging amount of refrigerant (4) overload protector

Malfunction diagnosis process:

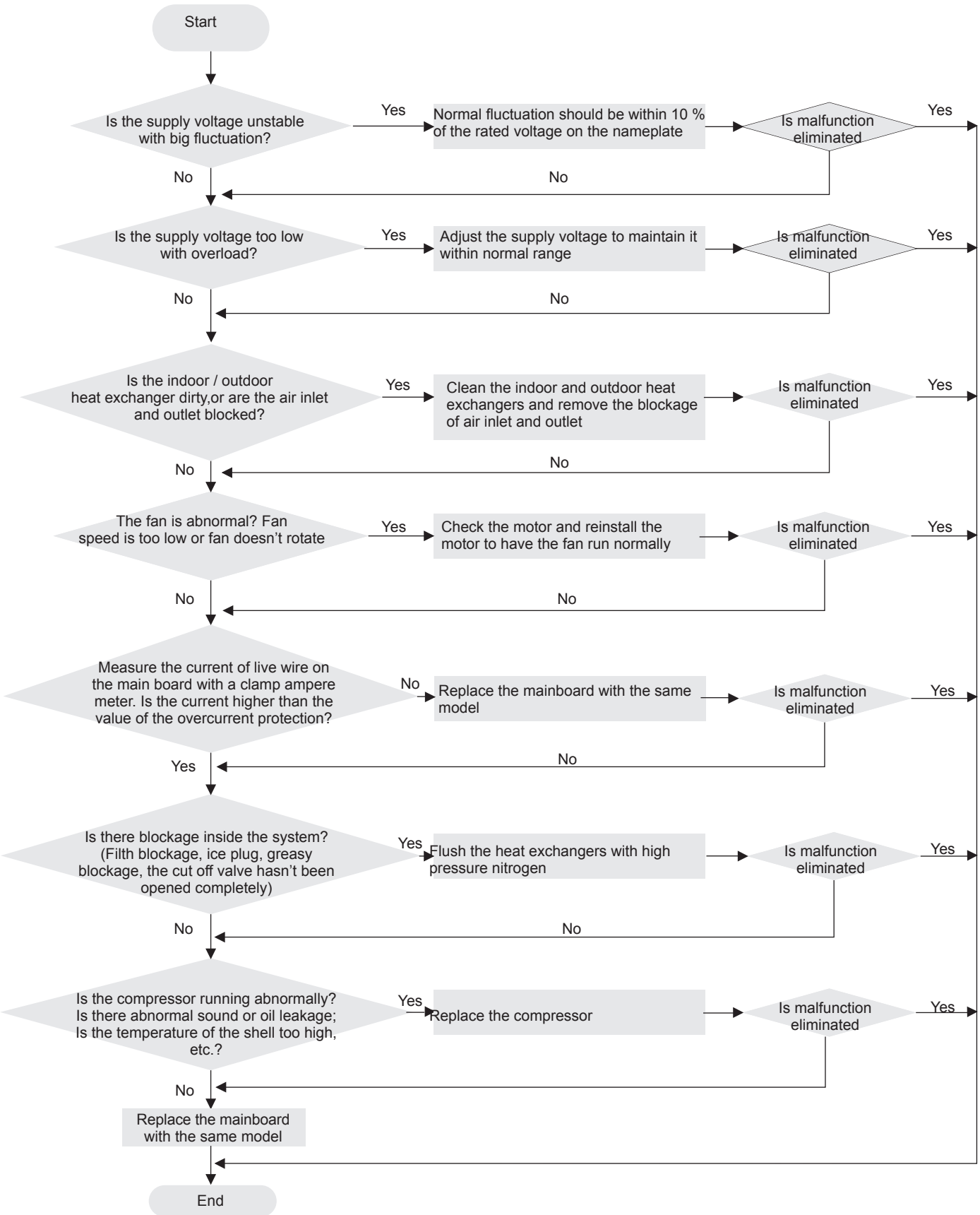


8. Malfunction of Overcurrent Protection E5

Main detection points:

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

Malfunction diagnosis process:



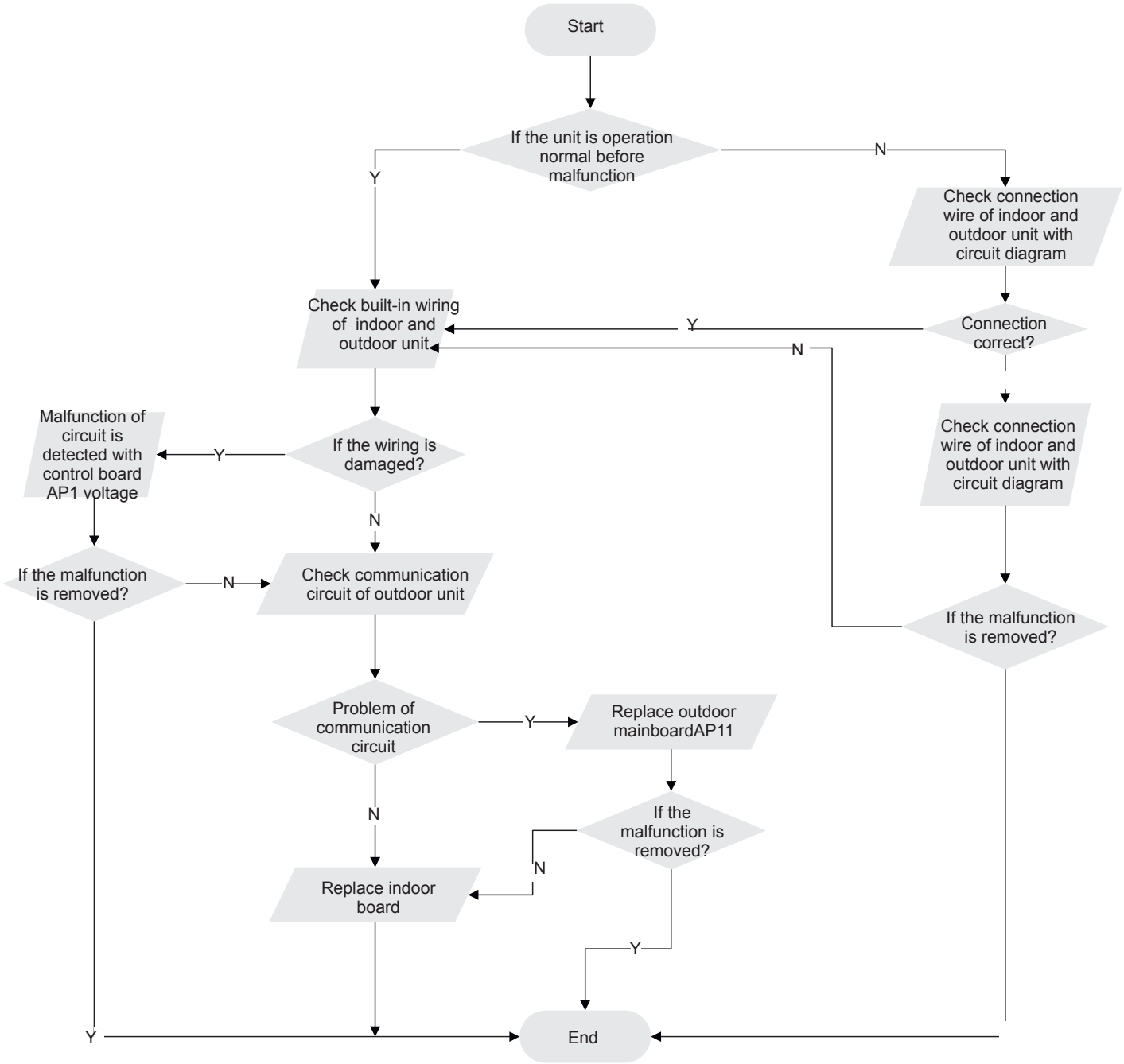
9. Communication malfunction E6

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:



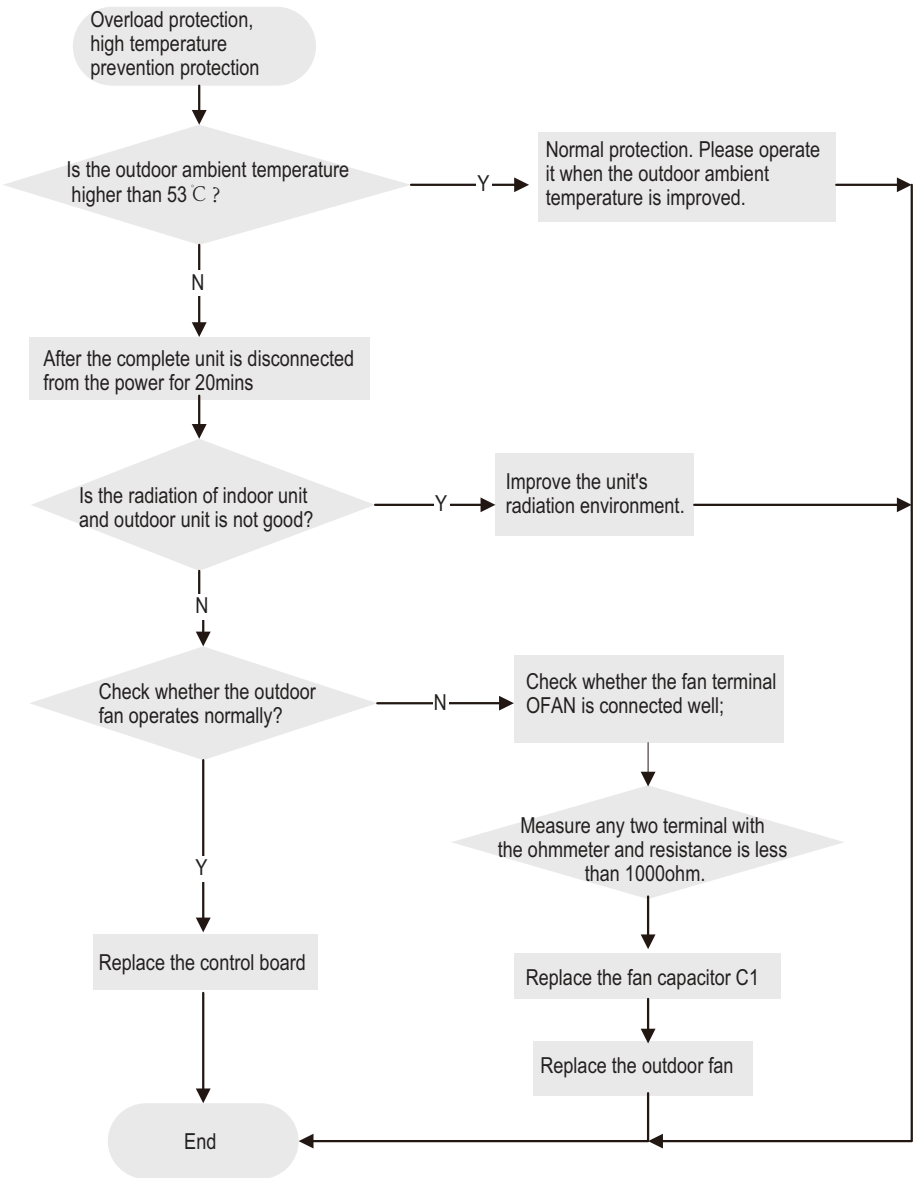
Note: method for checking the communication circuit of outdoor unit: cut off the communication wires of indoor/outdoor unit, and then measure the voltage between COM and N of the control board of outdoor unit (DC notch, about 56V)

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

Main detection points:

(1) outdoor temperature (2) fan (3)air inlet and air outlet of indoor/outdoor unit

Malfunction diagnosis process:



9.3 Troubleshooting 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 isnt bright and the buzzer can't give out sound	Confirm whether its 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 isnt 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 Make sure wires of air conditioner is connected correctly 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 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 its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation postion 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; Discharged air temperature during heating is lower than normal discharged wind temperature; Units pressure is much lower than regulated range	Find out the leakage causes and deal with it. 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; Discharged air temperature during heating is lower than normal discharged wind temperature; Unitt pressure is much lower than regulated range. If refrigerant isnt 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 its 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

6. Air Conditioner is Leaking

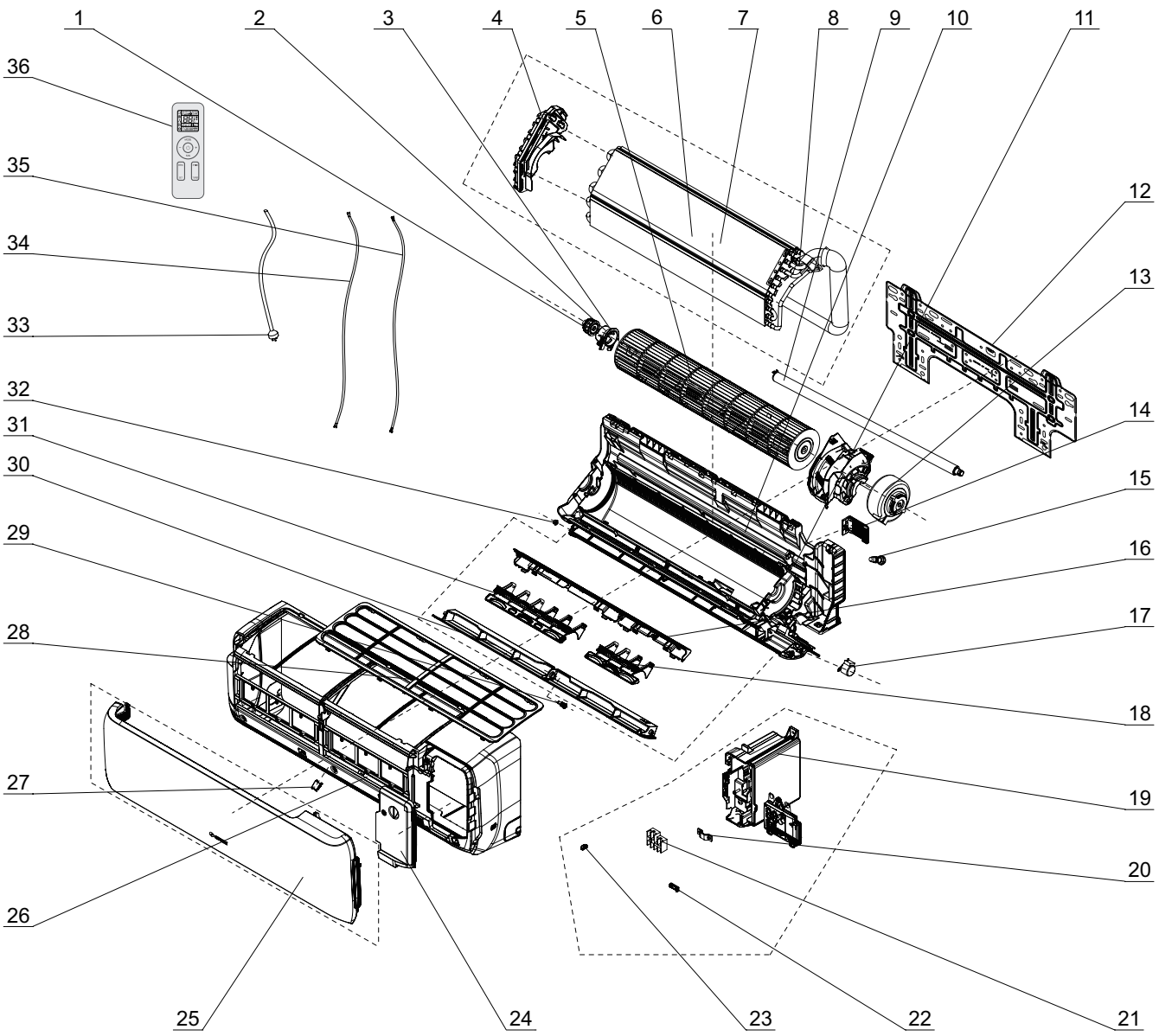
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe 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 theres abnormal sound	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, theres 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 therere parts touching together inside the indoor unit	Theres 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 therere parts touching together inside the outdoor unit	Theres 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.

10. Exploded View and Parts List

ATA



The component picture is only for reference; please refer to the actual product.

NO.	Description
1	O-Gasket sub-assy of Bearing
2	Ring of Bearing
3	Axile Bush Sub-assy
4	Evaporator Support
5	Cross Flow Fan
6	Evaporator Sub-Assy
7	Evaporator Assy
8	Temp Sensor Sleeving
9	Drainage Hose
10	Rear Case Sub-Assy
11	Rear Case assy
12	Wall Mounting Frame

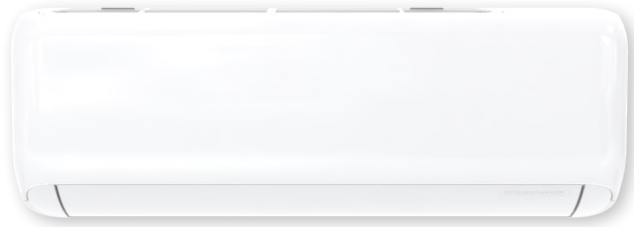
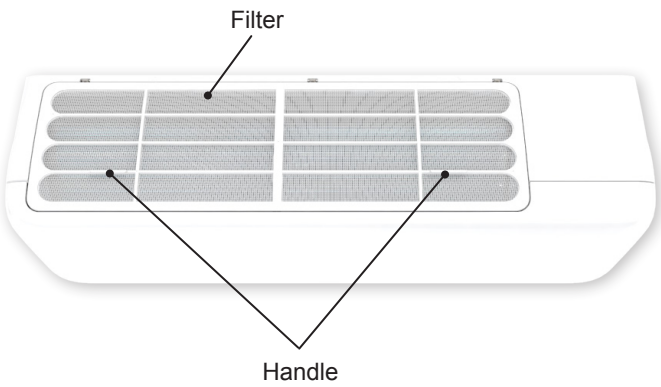
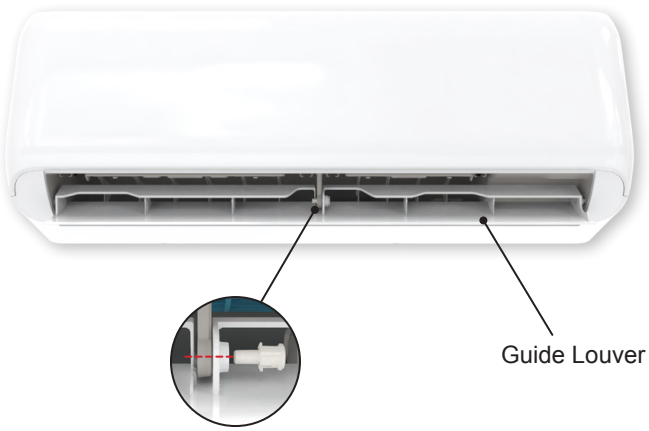
NO.	Description
13	Fan Motor
14	Connecting pipe clamp
15	Rubber Plug (Water Tray)
16	Helicoid Tongue
17	Stepping Motor
18	Air Louver 2
19	Electric Box Assy
20	Cable Clamp 2
21	Terminal Board
22	Wire Clamp
23	Jumper
24	Electric Box Cover

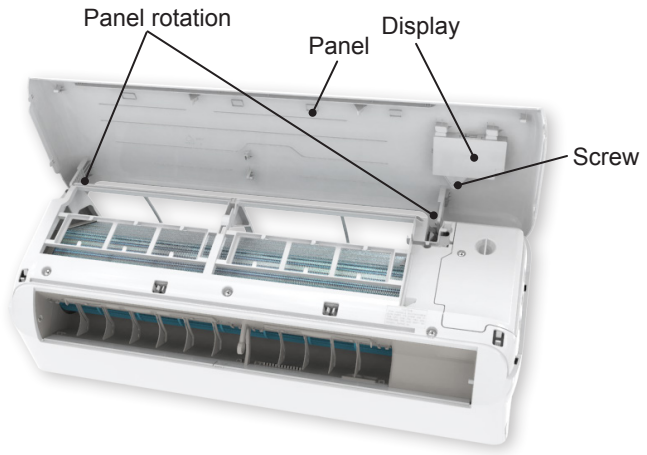
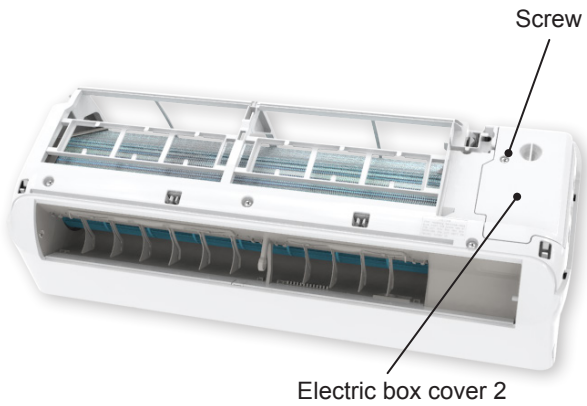
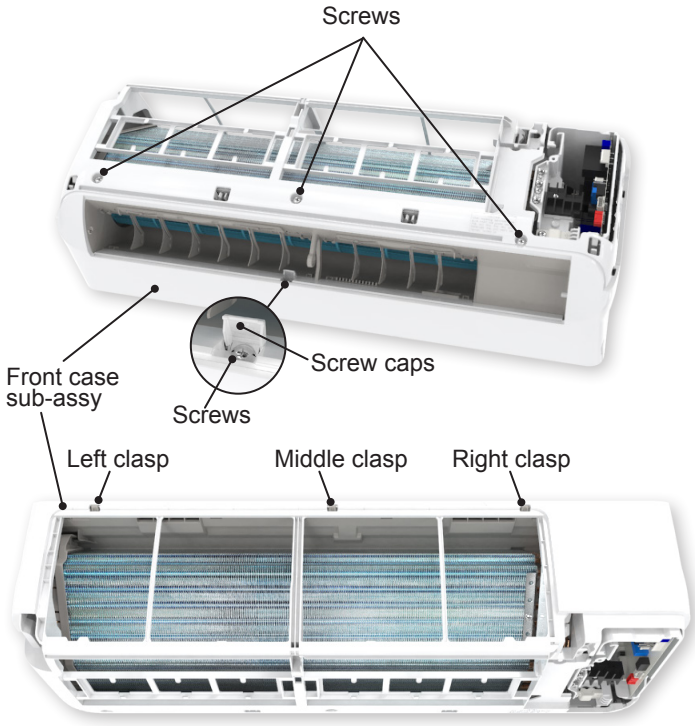
NO.	Description
25	Front Panel
26	Front Case Sub-assy
27	Screw Cover
28	Filter Sub-Assy
29	Axile Bush
30	Guide Louver
31	Air Louver 1
32	Left Axile Bush
33	Power Cord
34	Connecting Cable
35	Connecting Cable
36	Remote Controller

Some models may not contain some parts, please refer to the actual product.

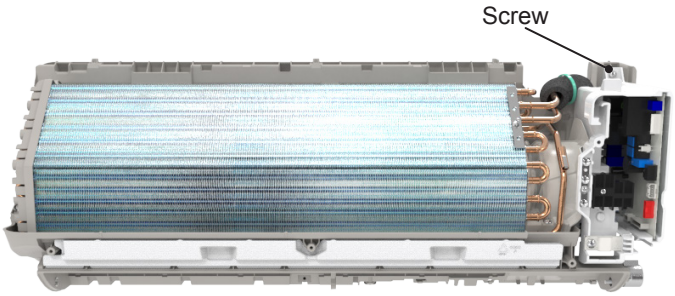
11. Removal Procedure

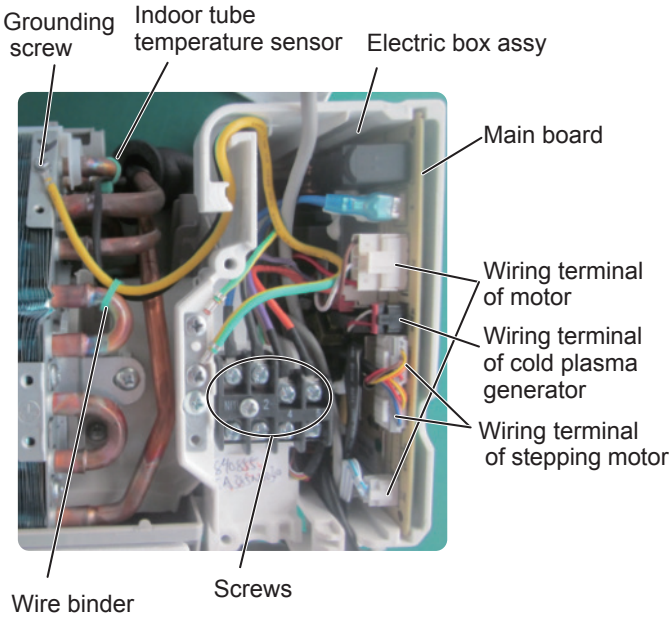
⚠ **Caution: discharge the refrigerant completely before removal.**

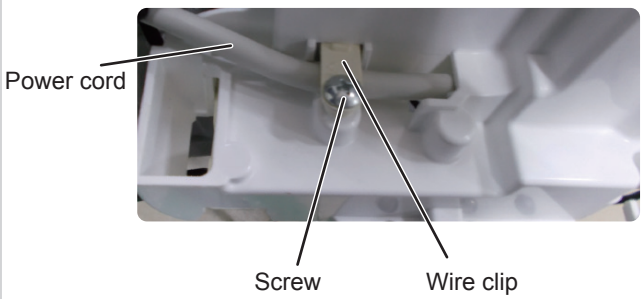
Step	Procedure
Before disassemble	
	Turn off the air conditioner and disconnect the power before disassemble the air conditioner.
	
1. Remove filter	
	Hold the handle on the filter, pull it upwards to let the clasp at the top part of the filter loose, pull it forwards and then the filter can be pulled out.
	
2. Remove guide louver	
	Push out the plug pin on guide louver, bend the guide louver with hand and then separate the guide louver from the crank shaft of step motor to remove it.
	

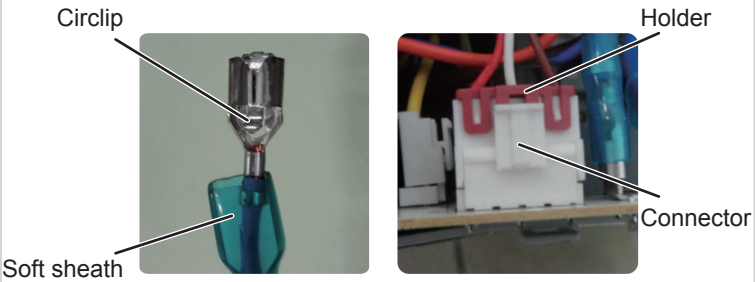
Step	Procedure
3. Remove panel	
	Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel. Note: The display of some models is fixed on the panel; unscrew the screws fixing the display on the panel before removing the panel.
4. Remove electric box cover 2	
	Remove the screws on the electric box cover 2 to remove the electric box cover 2.
5. Remove front case sub-assy	
a	Remove the screws fixing front case. Note: (1) Open the screw caps before removing the screws around the air outlet. (2) The quantity of screws fixing the front case sub-assy is different for different models.
b	Loosen the clasps at left, middle and right sides of front case. Life the front case sub-assy upwards to remove it.

Step	Procedure
6. Remove electric box assy	
a	Remove the screw fixing electric box assy.
b	① Cut off the wire binder and pull out the indoor tube temperature sensor. ② Screw off one grounding screw. ③ Remove the wiring terminals of motor, cold plasma generator and stepping motor. ④ Remove the electric box assy. ⑤ Screw off the screws that are locking each.
C	Rotate the electric box assy. Twist off the screws that are locking the wire clip and loosen the power cord. Remove the wiring terminal of power cord. Lift up the main board and take it off. Instruction:Some wiring terminal of this products is with lock catch and other devices.The pulling method is as below: 1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals, 2.Pull out the holder for some terminals at first(holder is not available for some wiring terminal).hold the connector and then pull the terminal.

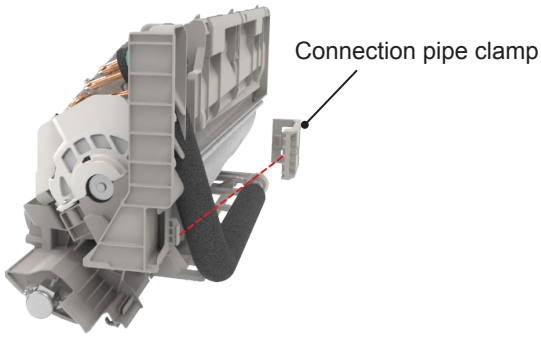


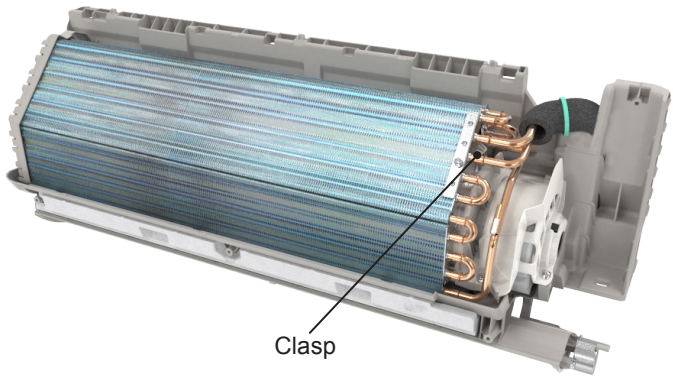


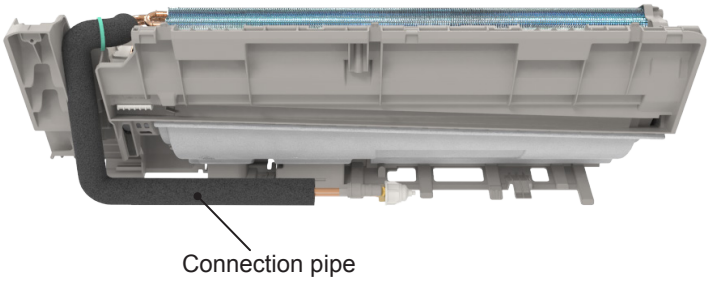




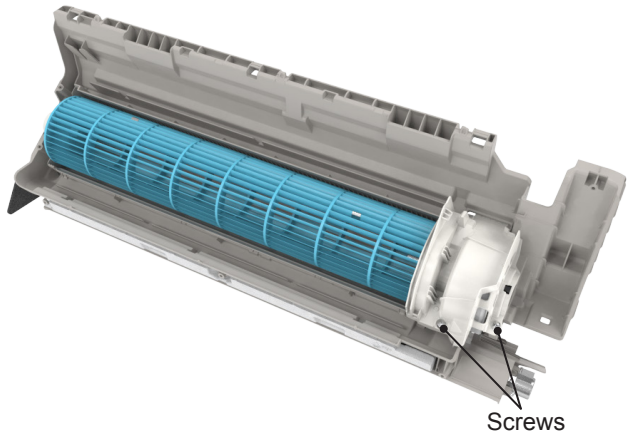
Step	Procedure
7. Remove evaporator assy	
a	Remove 2 screws fixing evaporator assy.
b	At the back of the unit, Loosen the clasp of the connection pipe clamp and then remove the connection pipe clamp.
c	First remove the left side of evaporator from the groove of bottom shell and then remove the right side from the clasp on the bottom shell.
d	Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.

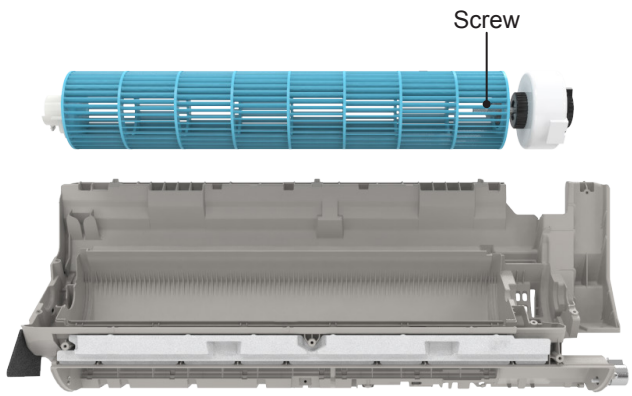


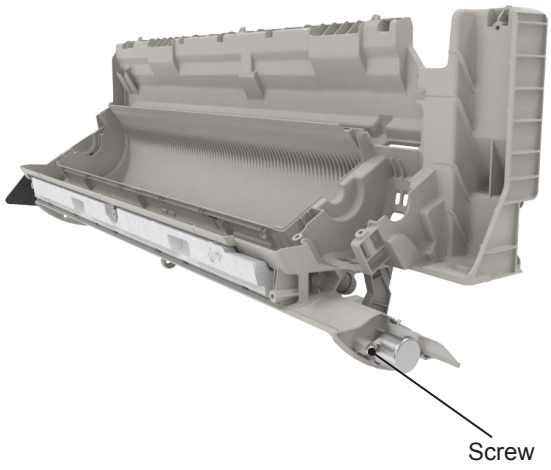




Step	Procedure
8. Remove motor and cross flow fan	
a	Remove 3 screws fixing motor clamp and then remove the motor clamp.
b	Loose the screws (2-3 circles) used for fixing the cross flow fan, pull right to pull out the motor.
9. Remove swing motor	
	Screw off the screws that are locking the swing motor and take the motor off.







Appendix

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: Tf=Tcx1.8+32

Set temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
61	60.8	16
62/63	62.6	17
64/65	64.4	18
66/67	66.2	19
68	68	20

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
69/70	69.8	21
71/72	71.6	22
73/74	73.4	23
75/76	75.2	24
77	77	25

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
78/79	78.8	26
80/81	80.6	27
82/83	82.4	28
84/85	84.2	29
86	86	30

Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
32/33	32	0
34/35	33.8	1
36	35.6	2
37/38	37.4	3
39/40	39.2	4
41/42	41	5
43/44	42.8	6
45	44.6	7
46/47	46.4	8
48/49	48.2	9
50/51	50	10
52/53	51.8	11
54	53.6	12

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
55/56	55.4	13
57/58	57.2	14
59/60	59	15
61/62	60.8	16
63	62.6	17
64/65	64.4	18
66/67	66.2	19
68/69	68	20
70/71	69.8	21
72	71.6	22
73/74	73.4	23
75/76	75.2	24
77/78	77	25

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
79/80	78.8	26
81	80.6	27
82/83	82.4	28
84/85	84.2	29
86/87	86	30
88/89	87.8	31
90	89.6	32
91/92	91.4	33
93/94	93.2	34
95/96	95	35
97/98	96.8	36
99	98.6	37

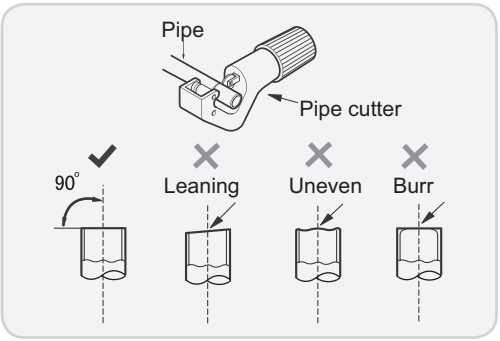
Appendix 2: Pipe Expanding Method

⚠ **Note:**

Improper pipe expanding is the main cause of refrigerant leakage.Please expand the pipe according to the following steps:

A:Cut the pip

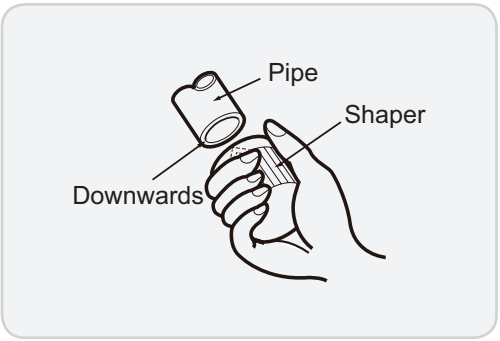
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



B:Remove the burrs

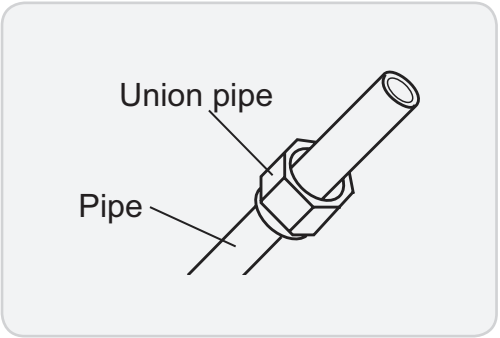
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.

C:Put on suitable insulating pipe.



D:Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



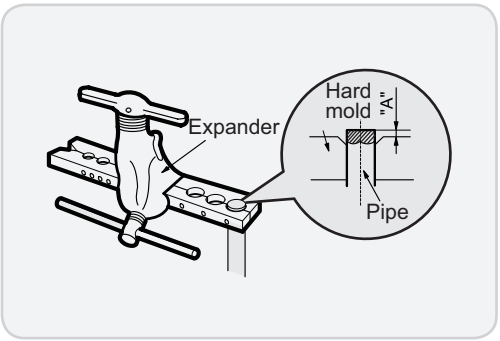
E:Expand the port

- Expand the port with expander.

⚠ **Note:**

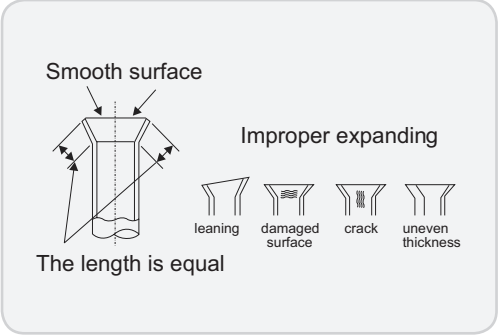
- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(mm)	A(mm)	
	Max	Min
Φ6 - 6.35 (1/4")	1.3	0.7
Φ9 - Φ9.52 (3/8")	1.6	1.0
Φ12 - 12.70 (1/2")	1.8	1.0
Φ16 - 15.88 (5/8")	2.4	2.2



F:Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



Appendix 3: List of Resistance for Temperature Sensor

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

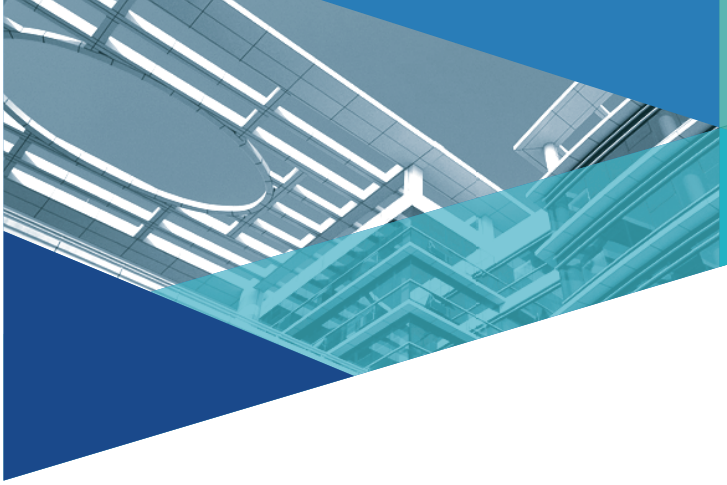
Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	138.10	0	49.02	20	18.75	40	7.97
-18	128.60	2	44.31	22	17.14	42	7.35
-16	115.00	4	40.09	24	15.68	44	6.79
-14	102.90	6	36.32	26	14.36	46	6.28
-12	92.22	8	32.94	28	13.16	48	5.81
-10	82.75	10	29.90	30	12.07	50	5.38
-8	74.35	12	27.18	32	11.09	52	4.99
-6	66.88	14	24.73	34	10.20	54	4.63
-4	60.23	16	22.53	36	9.38	56	4.29
-2	54.31	18	20.54	38	8.64	58	3.99

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	181.40	20	25.01	60	4.95	100	1.35
-15	145.00	25	20.00	65	4.14	105	1.16
-10	110.30	30	16.10	70	3.48	110	1.01
-5	84.61	35	13.04	75	2.94	115	0.88
0	65.37	40	10.62	80	2.50	120	0.77
5	50.87	45	8.71	85	2.13	125	0.67
10	39.87	50	7.17	90	1.82	130	0.59
15	31.47	55	5.94	95	1.56	135	0.52

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)
-30	911.400	10	98	50	17.65	90	4.469
-25	660.8	15	77.35	55	14.62	95	3.841
-20	486.5	20	61.48	60	12.17	100	3.315
-15	362.9	25	49.19	65	10.18	105	2.872
-10	274	30	39.61	70	8.555	110	2.498
-5	209	35	32.09	75	7.224	115	2.182
0	161	40	26.15	80	6.129	120	1.912
5	125.1	45	21.43	85	5.222	125	1.682



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