

Service Manual

Models: GWH24AAD-K3DNA3A
GWH24AAD-K3DNA4A
GWH24AAD-K3DNA5A
GWH18AAD-K3DNA4E
GWH18AAD-K3DNA5E
(Refrigerant R410A)

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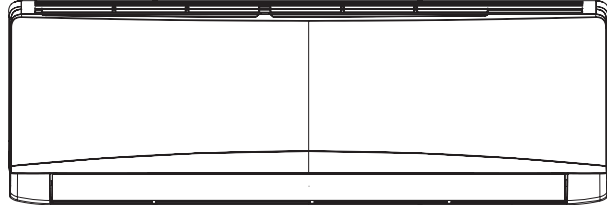
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Part I : Technical Information

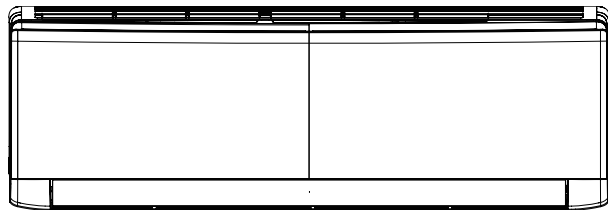
1. Summary

Indoor Unit

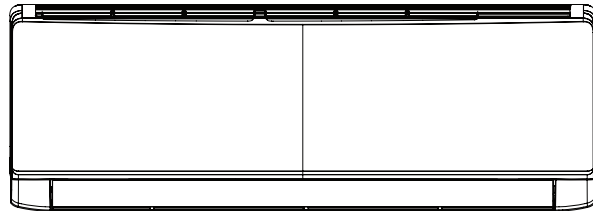
GWH24AAD-K3DNA3A/I



GWH24AAD-K3DNA4A/I
GWH18AAD-K3DNA4E/I

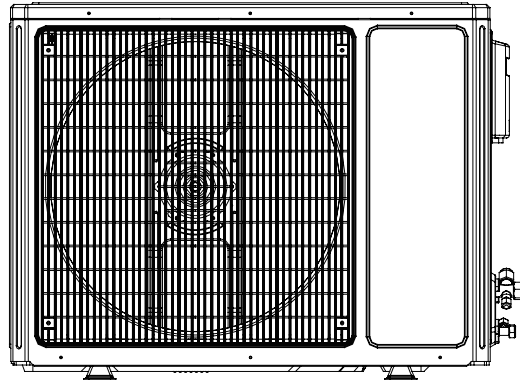


GWH24AAD-K3DNA5A/I
GWH18AAD-K3DNA5E/I

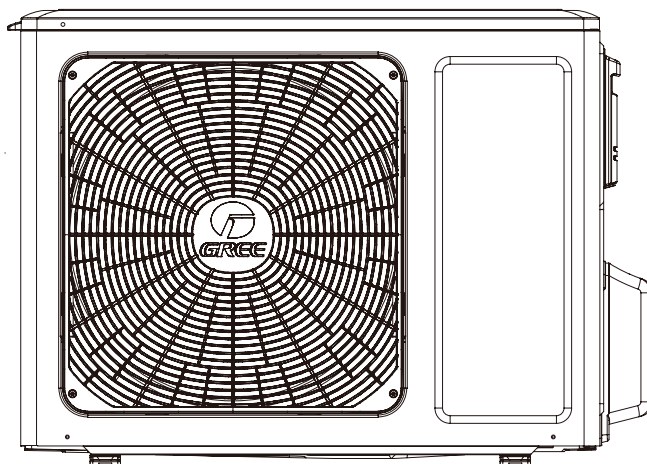


Outdoor Unit

GWH24QD-K3DNA1A/O



GWH18QD-K3DNA6E/O



Remote Controller

YAW1F



Model list:

No	Model	Product Code	Indoor Unit	Product Code	Outdoor Unit	Product Code	Remote
1	GWH24AAD-K3DNA4A	CB479000300	GWH24AAD-K3DNA4A/I	CB479N00300	GWH24QD-K3DNA1A/O	CB419W10800	YAW1F
2	GWH24AAD-K3DNA4A	CB479000301	GWH24AAD-K3DNA4A/I	CB479N00301			
3	GWH24AAD-K3DNA5A	CB488000100	GWH24AAD-K3DNA5A/I	CB488N00100			
4	GWH24AAD-K3DNA3A	CB478000700	GWH24AAD-K3DNA3A/I	CB478N00700			
5	GWH18AAD-K3DNA4E	CB479000400	GWH18AAD-K3DNA4E/I	CB488N00200	GWH18QD-K3DNA6E/O		
6	GWH18AAD-K3DNA5E	CB488000200	GWH18AAD-K3DNA5E/I	CB479N00400		CB427W06400	

2. Specifications

2.1 Specification Sheet

Parameter		Unit	Value
Model			GWH24AAD-K3DNA4A GWH24AAD-K3DNA5A GWH24AAD-K3DNA3A
Product Code			CB479000300/CB479000301 CB488000100 CB478000700
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity		W	6155
Heating Capacity		W	6200
Cooling Power Input		W	2000
Heating Power Input		W	1900
Cooling Current Input		A	9.35
Heating Current Input		A	10
Rated Input		W	2430
Rated Current		A	9.56
Rated Heating Current		A	10.56
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	850/720/610/520/-
Dehumidifying Volume		L/h	2
EER		W/W	3.08
COP		W/W	3.26
SEER		W/W	6.5
SCOP (Average/Warme/Colder)		W/W	4.0/4.6/3.2
Application Area		m ²	27-42
Indoor Unit	Indoor Unit Model		GWH24AAD-K3DNA4A/I GWH24AAD-K3DNA5A/I GWH24AAD-K3DNA3A/I
	Indoor Unit Product Code		CB479N00300 CB479N00301 CB488N00100 CB478N00700
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)		mm Φ106X706
	Cooling Speed(SH/H/M/L/SL)		r/min 1230/1130/1030/800/-
	Heating Speed(SH/H/M/L/SL)		r/min 1350/1200/1050/900/-
	Fan Motor Power Output		W 35
	Fan Motor RLA		A 0.35
	Fan Motor Capacitor		μF 2.5
	Evaporator Form		Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm Φ7
	Evaporator Row-fin Gap		mm 2-1.4
	Evaporator Coil Length (LXDXW)		mm 715X25.4X304.8
	Swing Motor Model		MP35CJ
	Swing Motor Power Output		W 2.5
	Fuse Current		A 3.15
	Sound Pressure Level(SH/H/M/L/SL)		dB (A) 47/43/39/34/-
	Sound Power Level(SH/H/M/L/SL)		dB (A) 59/55/51/46/-
	Dimension (WXHXD)		mm 970X300X225
	Dimension of Carton Box (LXWXH)		mm 1038X380X305
	Dimension of Package(LXWXH)		mm 1041X383X320
Net Weight		kg 13.5	
Gross Weight		kg 16.5	

Outdoor Unit	Outdoor Unit Model		GWH24QD-K3DNA1A/O	
	Outdoor Unit Product Code		CB419W10800	
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD	
	Compressor Model		QXA-B141zF030A	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	Compressor LRA.	A		25
	Compressor RLA	A		7.2
	Compressor Power Input	W		1440
	Compressor Overload Protector			/
	Throttling Method			Electron expansion valve
	Set Temperature Range	°C		16~30
	Cooling Operation Ambient Temperature Range	°C		-15~43
	Heating Operation Ambient Temperature Range	°C		-15~24
	Condenser Form			Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm		Φ7
	Condenser Rows-fin Gap	mm		2-1.4
	Condenser Coil Length (LXDXW)	mm		935X38.1X660
	Fan Motor Speed	rpm		800
	Fan Motor Power Output	W		60
	Fan Motor RLA	A		0.49
	Fan Motor Capacitor	μF		/
	Outdoor Unit Air Flow Volume	m ³ /h		3200
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ520
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa		2.5
	Sound Pressure Level (H/M/L)	dB (A)		57/-/-
Sound Power Level (H/M/L)	dB (A)		67/-/-	
Dimension(WXHXD)	mm		955X700X396	
Dimension of Carton Box (LXWXH)	mm		1026X455X735	
Dimension of Package(LXWXH)	mm		1029X458X750	
Net Weight	kg		46	
Gross Weight	kg		50.5	
Refrigerant			R410A	
Refrigerant Charge	kg		1.5	
Connection Pipe	Connection Pipe Length	m	5	
	Connection Pipe Gas Additional Charge	g/m	50	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ16	
	Max Distance Height	m	10	
	Max Distance Length	m	25	
Note: The connection pipe applies metric diameter.				

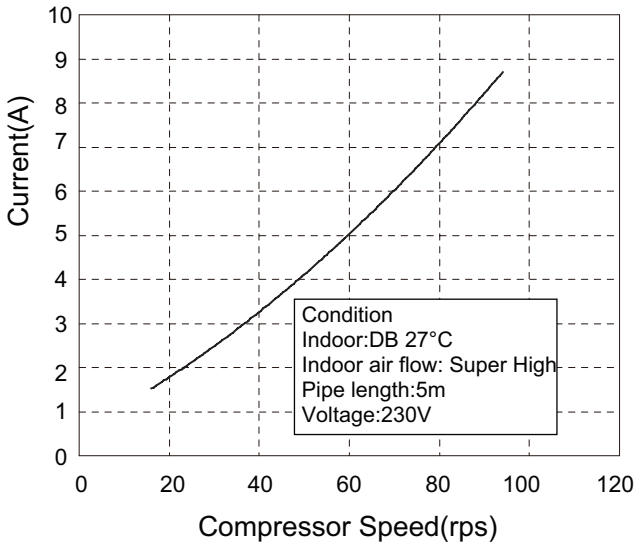
The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GWH18AAD-K3DNA4E GWH18AAD-K3DNA5E
Product Code			CB479000400 CB488000200
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity(Min~Max)		W	4600
Heating Capacity(Min~Max)		W	5000
Cooling Power Input(Min~Max)		W	1430
Heating Power Input(Min~Max)		W	1380
Cooling Current Input		A	6.34
Heating Current Input		A	6.12
Rated Input		W	1860
Rated Cooling Current		A	8.25
Rated Heating Current		A	7.45
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	850/720/610/520/-
Dehumidifying Volume		L/h	1.8
EER		W/W	3.22
COP		W/W	3.62
SEER			6.1
SCOP(Average)			4
SCOP(Warmer)			5.1
SCOP(Colder)			3.3
Application Area		m ²	21-31
Indoor Unit	Indoor Unit Model		GWH18AAD-K3DNA4E/I GWH18AAD-K3DNA5E/I
	Indoor Unit Product Code		CB479N00400 CB488N00200
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)		mm Φ106X706
	Cooling Speed(SH/H/M/L/SL)		r/min 1230/1130/1030/800/-
	Heating Speed(SH/H/M/L/SL)		r/min 1350/1200/1050/900/-
	Fan Motor Power Output		W /
	Fan Motor RLA		A 0.35
	Fan Motor Capacitor		μF 2.5
	Evaporator Form		Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm Φ7
	Evaporator Row-fin Gap		mm 2-1.4
	Evaporator Coil Length(LXDXW)		mm 715X25.4X304.8
	Swing Motor Model		MP35CJ
	Swing Motor Power Output		W 2.5
	Fuse Current		A 3.15
	Sound Pressure Level(SH/H/M/L/SL)		dB (A) 45/41/37/33/-
	Sound Power Level(SH/H/M/L/SL)		dB (A) 58/53/50/45/-
	Dimension(WXHXD)		mm 970X300X225
	Dimension of Carton Box(LXWXH)		mm 1038X380X305
	Dimension of Package(LXWXH)		mm 1041X383X320
	Net Weight		kg 13.5
	Gross Weight		kg 16.5

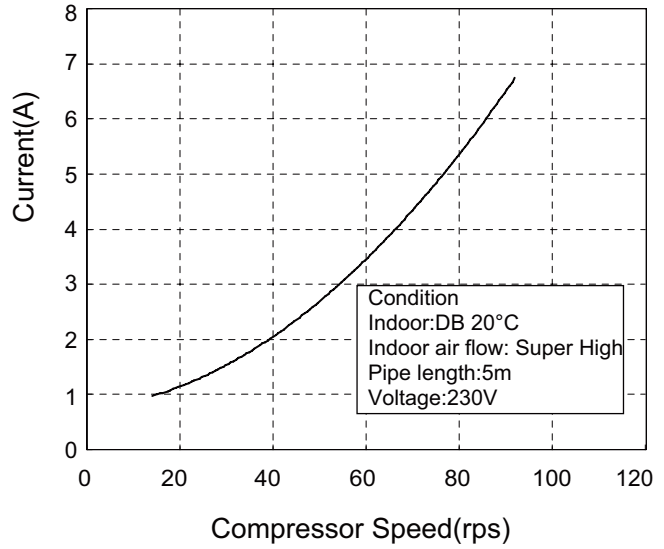
Outdoor Unit	Model of Outdoor Unit		GWH18QD-K3DNA6E/O	
	Product Code of Outdoor Unit		CB427W06400	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	
	Compressor Model		QXA-B102zE190A	
	Compressor Oil		FVC68D or RB68EP	
	Compressor Type		Rotary	
	L.R.A.	A		35.00
	Compressor RLA	A		4.80
	Compressor Power Input	W		1020
	Overload Protector			/
	Throttling Method			Capillary
	Operation temp	°C		16~30
	Ambient temp (cooling)	°C		-15~48
	Ambient temp (heating)	°C		-15~24
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	mm		Φ7
	Rows-fin Gap	mm		1-1.4
	Coil Length (LXD _X W)	mm		742X38.1X550
	Fan Motor Speed	rpm		900
	Output of Fan Motor	W		30
	Fan Motor RLA	A		0.4
	Fan Motor Capacitor	μF		/
	Air Flow Volume of Outdoor Unit	m ³ /h		2200
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ438
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa		2.5
	Sound Pressure Level (H/M/L)	dB (A)		54/-/-
	Sound Power Level (H/M/L)	dB (A)		63/-/-
Dimension (WXHXD)	mm		842X596X320	
Dimension of Carton Box (LXWXH)	mm		878X360X630	
Dimension of Package (LXWXH)	mm		881X363X645	
Net Weight	kg		33	
Gross Weight	kg		36	
Refrigerant			R410A	
Refrigerant Charge	kg		1.1	
Connection Pipe	Length	m	5	
	Gas Additional Charge	g/m	20	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ9.52	
	Max Distance Height	m	10	
	Max Distance Length	m	20	
Note: The connection pipe applies metric diameter.				

2.2 Operation Characteristic Curve

Cooling

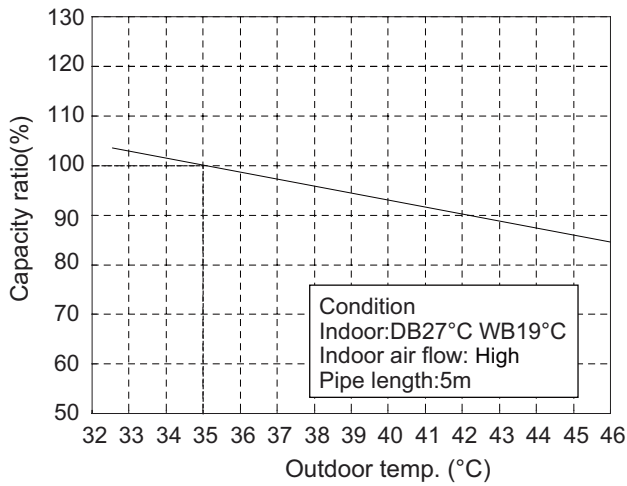


Heating

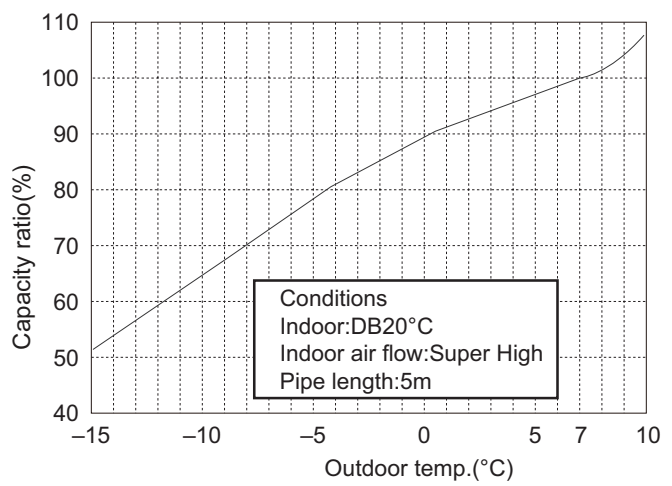


2.3 Capacity Variation Ratio According to Temperature

Cooling



Heating



2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor frequency (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
27/19	35/24	18K	0.8 to 1.0	12 to 14	80 to 40	Super High	High	52
20/19	35/24	24K	0.9 to 1.2	12 to 14	43 to 41			56

Heating:

Rated heating condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor frequency (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
20/15	7/6	18K	2.2 to 2.4	70 to 40	1 to 5	Super High	High	65
		24K	2.2 to 2.5	40 to 39	2 to 5			60

Instruction:

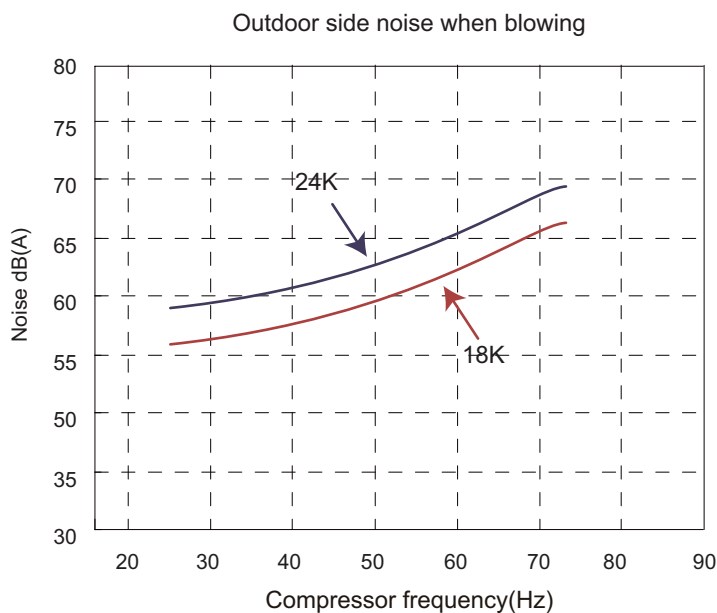
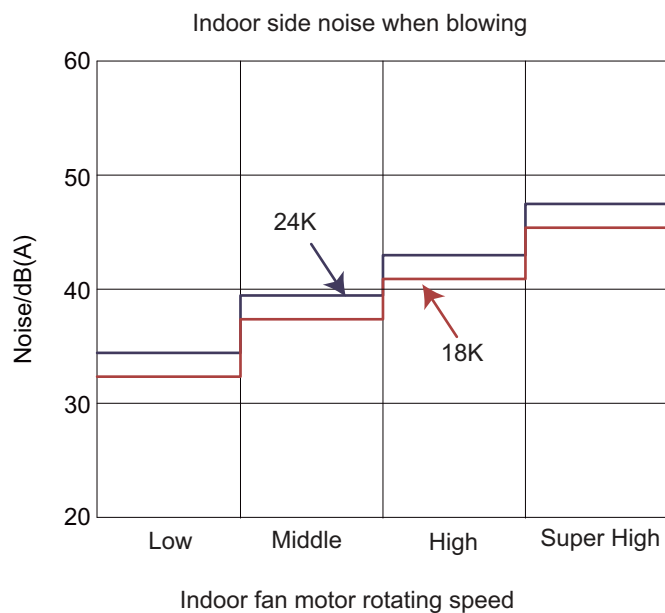
T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

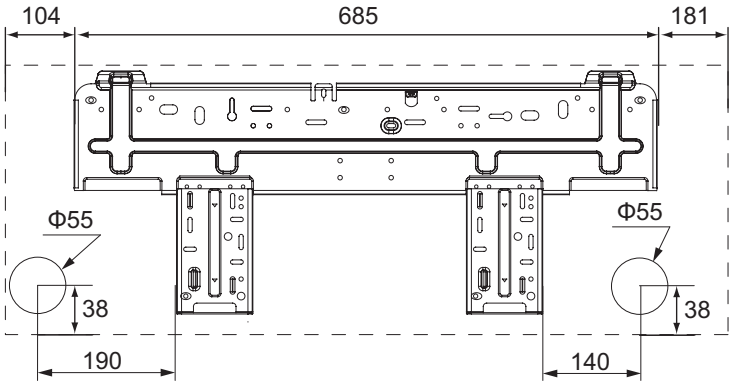
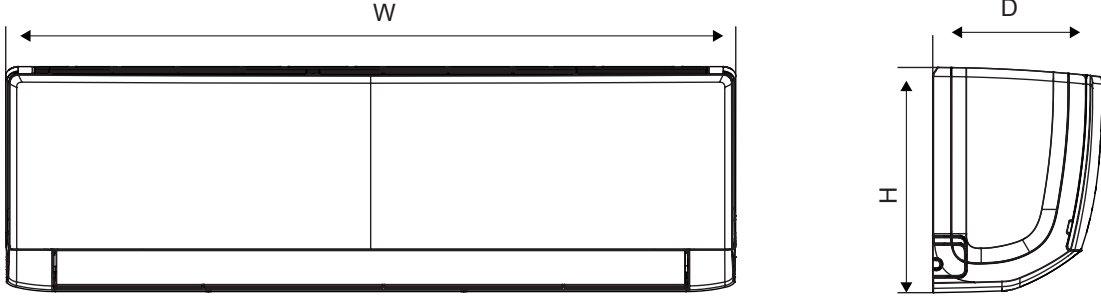
Connection pipe length: 5m.

2.5 Noise Curve



3. Outline Dimension Diagram

3.1 Indoor Unit

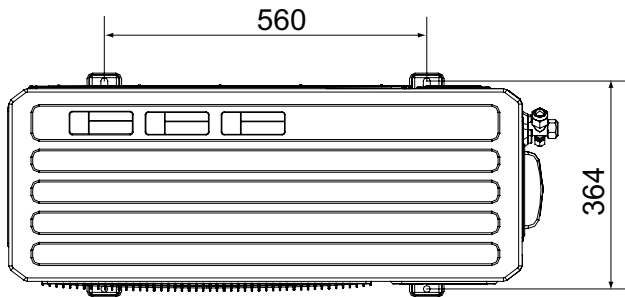
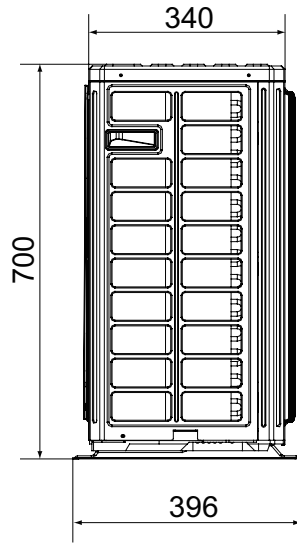
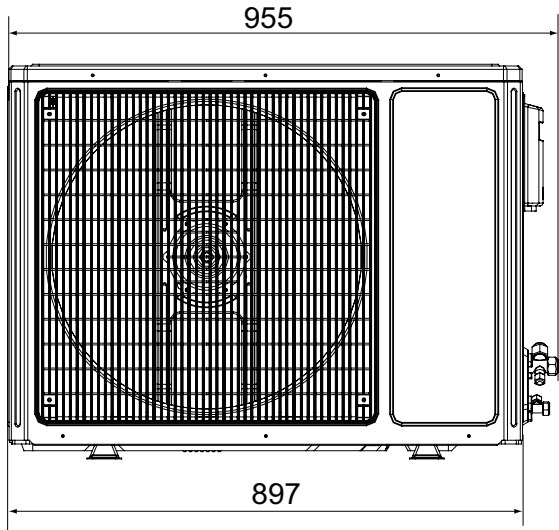


18K/21K

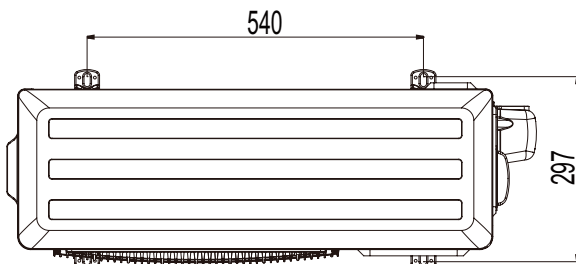
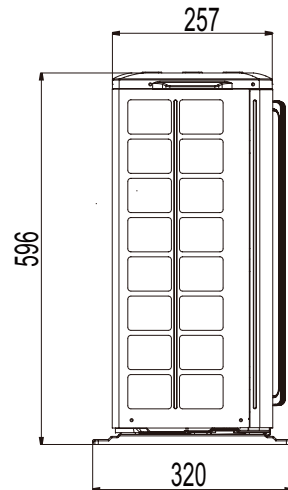
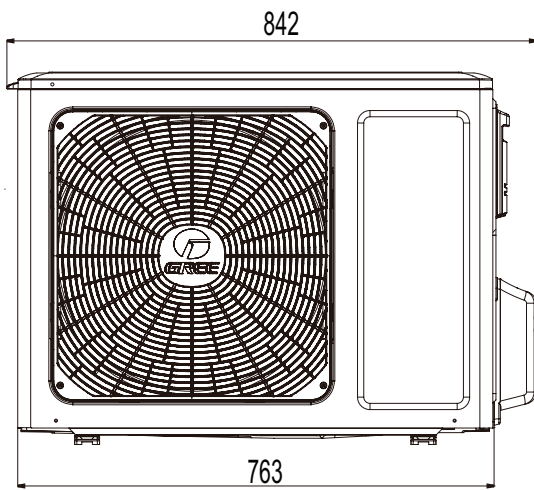
Unit:mm

Model	W	H	D
18K/24K	970	300	225

3.2 Outdoor Unit

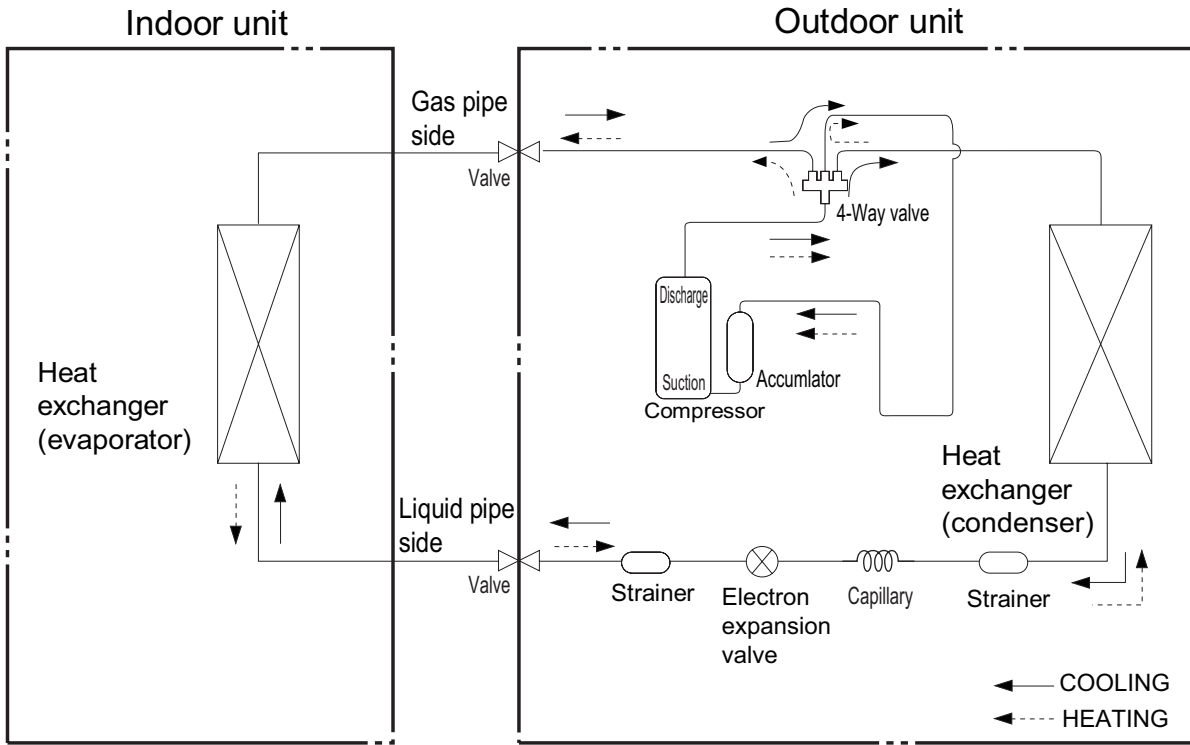


Unit:mm



Unit:mm

4. Refrigerant System Diagram



Connection pipe specification:

Liquid pipe: 1/4" (6mm)

Gas pipe: 5/8" (16mm)

5. Electrical Part

5.1 Wiring Diagram

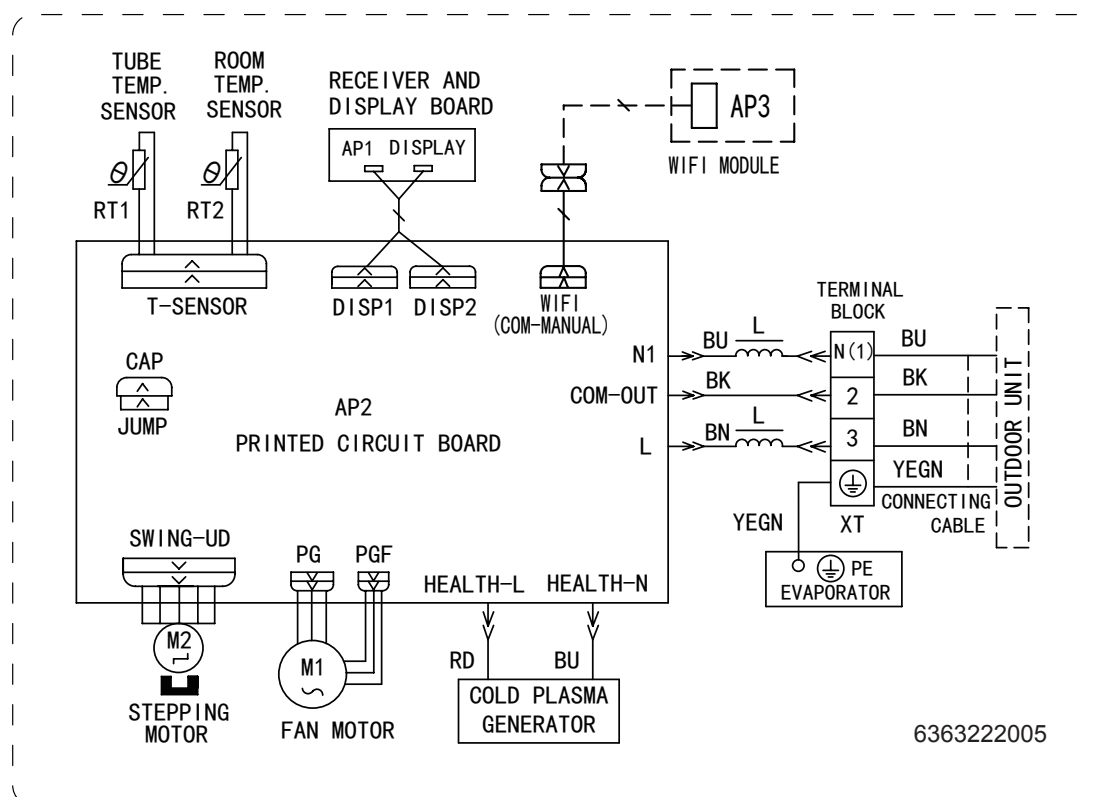
• Instruction

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	/	/

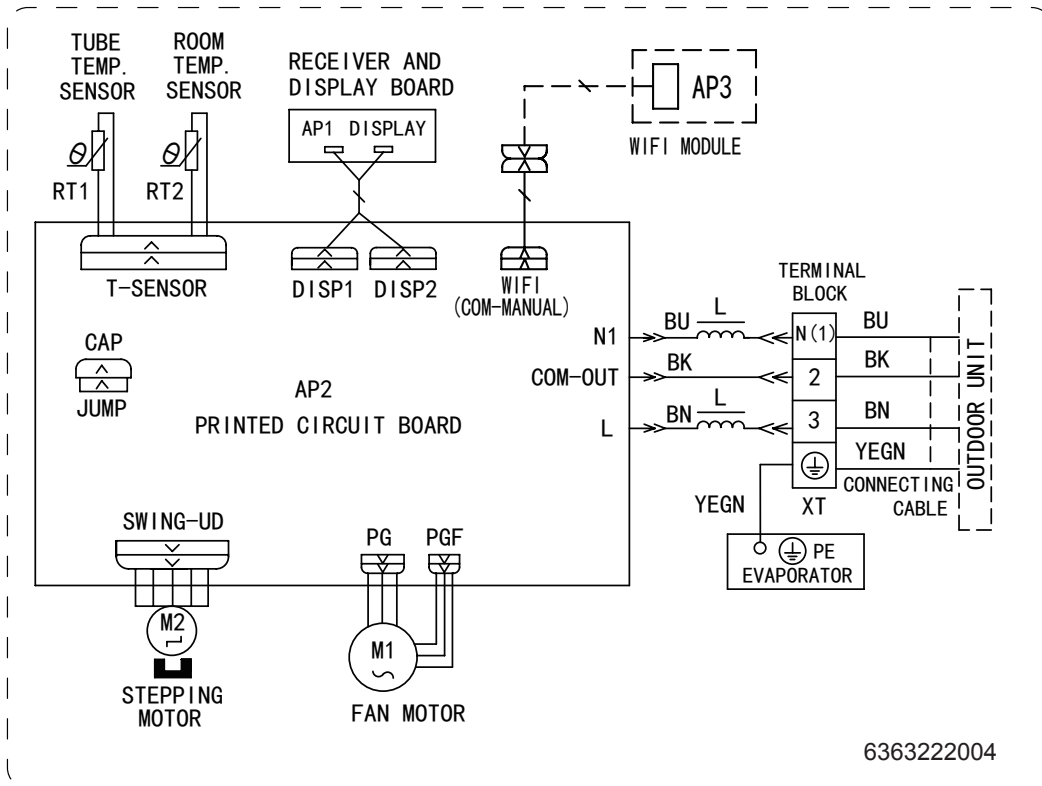
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

• Indoor Unit

GWH24AAD-K3DNA4A/I(CB479N00300) GWH18AAD-K3DNA4E/I(CB479N00400)

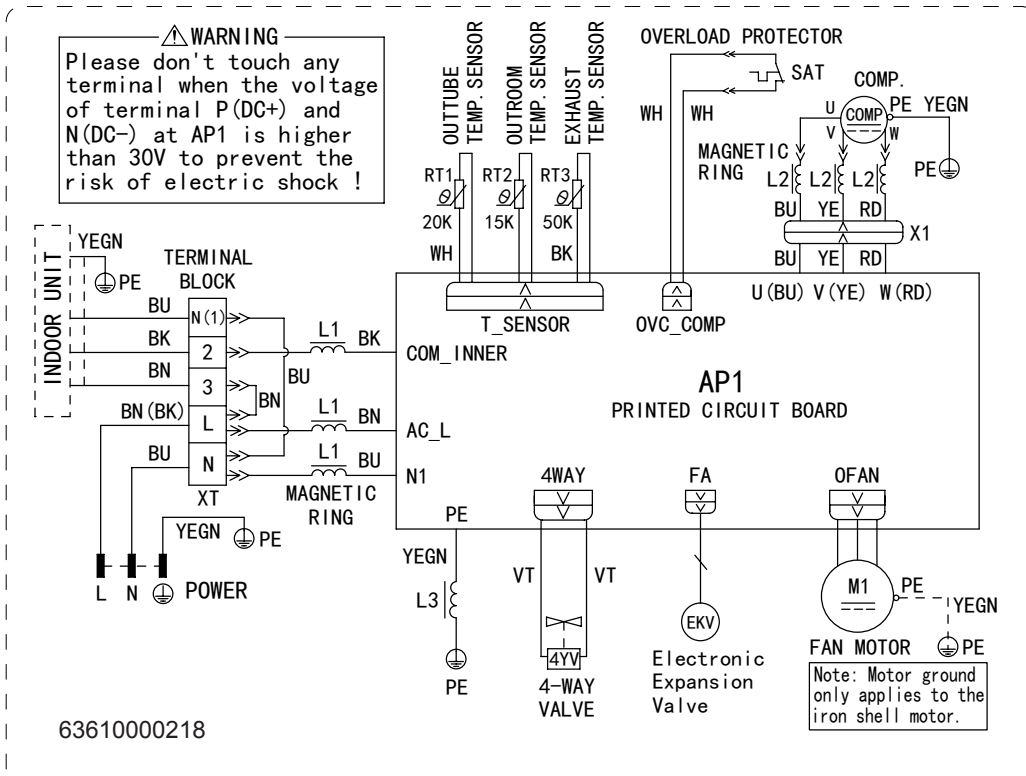


GWH24AAD-K3DNA5A/I(CB488N00100) GWH18AAD-K3DNA5E/I(CB488N00200)
 GWH24AAD-K3DNA4A/I(CB479N00301) GWH24AAD-K3DNA3A/I(CB478N00700)

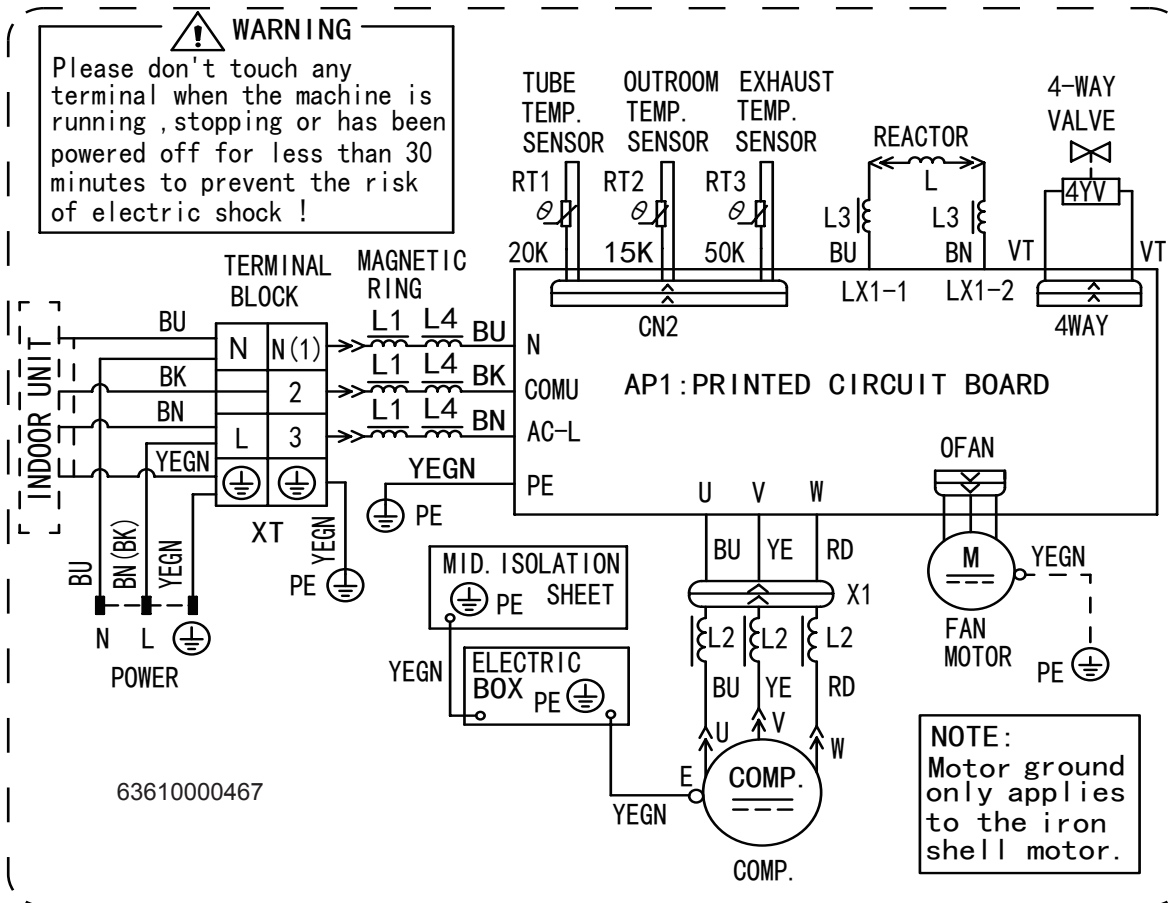


• Outdoor Unit

GWH24QD-K3DNA1A/O



GWH18QD-K3DNA6E/O

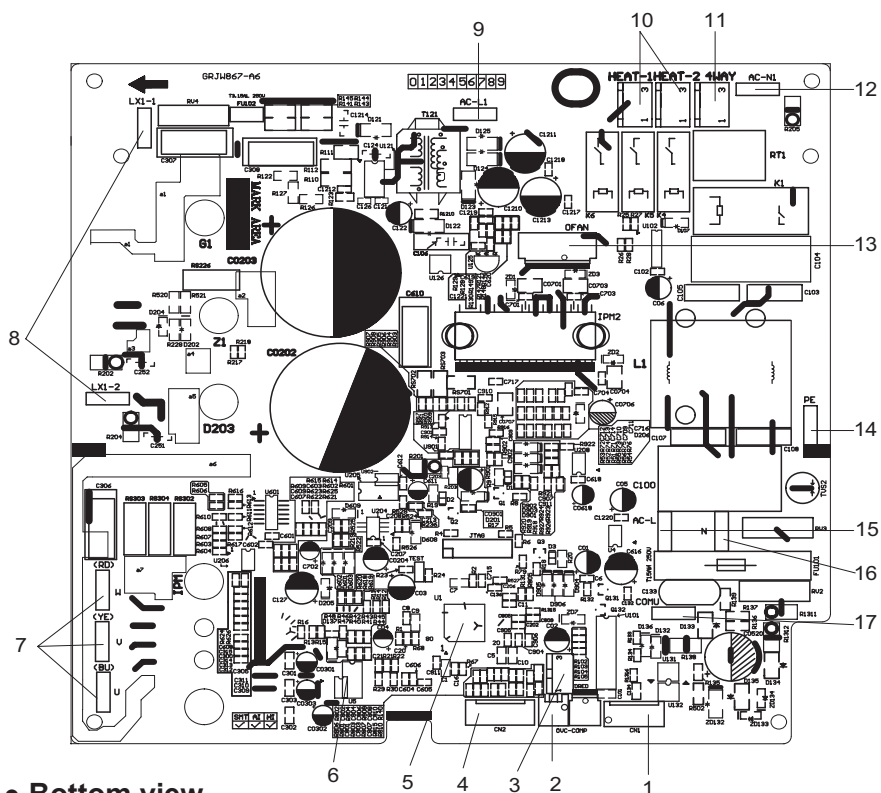


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

Outdoor Unit

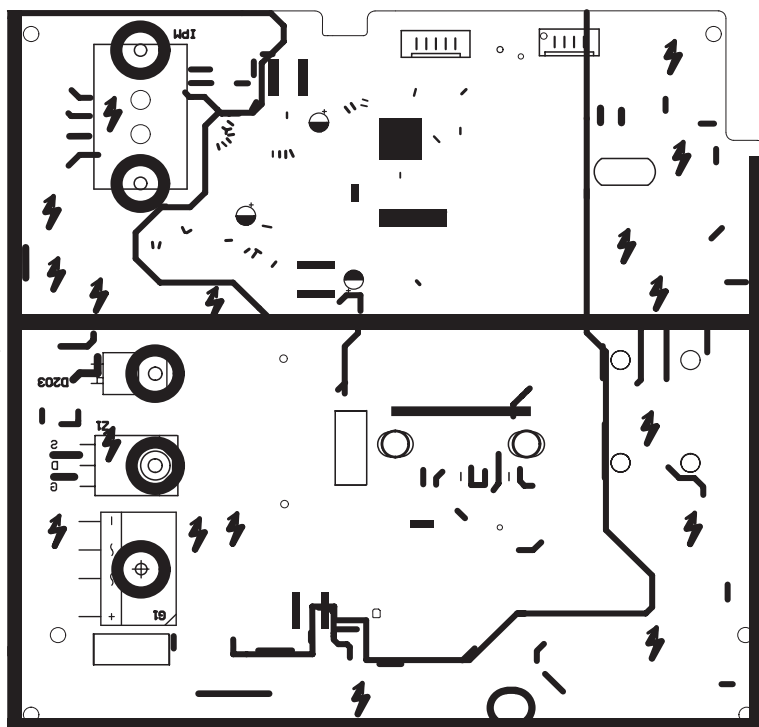
• Top view

18K



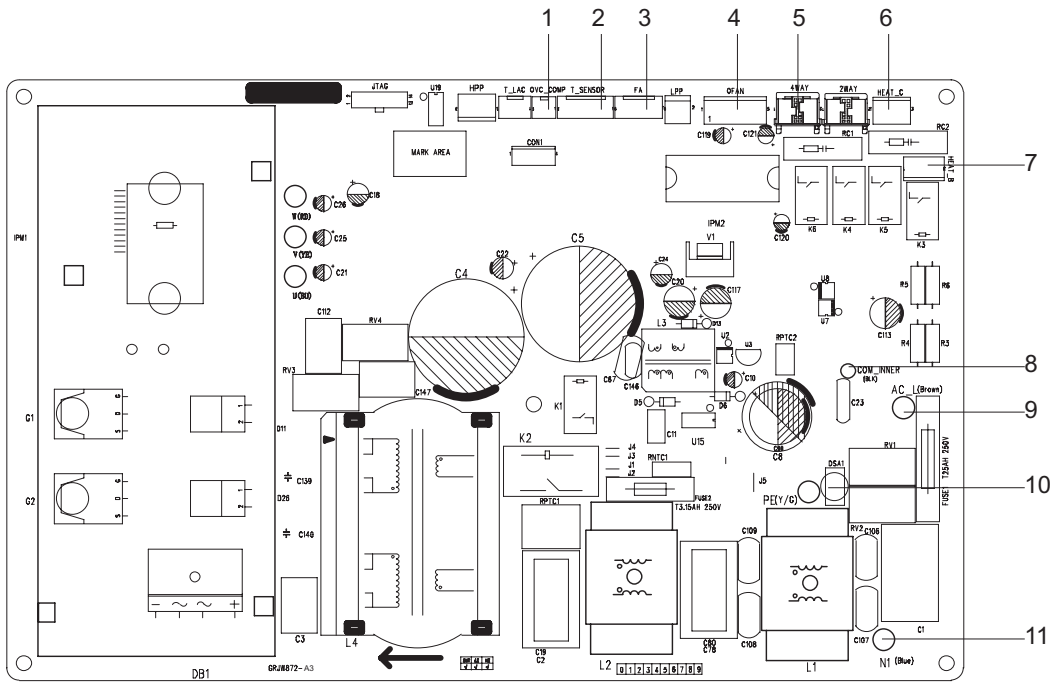
NO	NAME
1	Interface of electronic expansion valve
2	Overload interface of compressor
3	Terminal of DRED
4	Interface of temperature sensor
5	Main board of IC
6	Eeprom
7	Interface of compressor wire WVU
8	Reactor wiring terminal
9	DRED Live wire interface
10	Interface of electric heating
11	4-way valve terminal
12	DRED Interface of natural wire
13	Terminal of outdoor fan
14	Interface of earthing wire
15	Live wire interface
16	Neutral wire terminal
17	Communication wire

• Bottom view



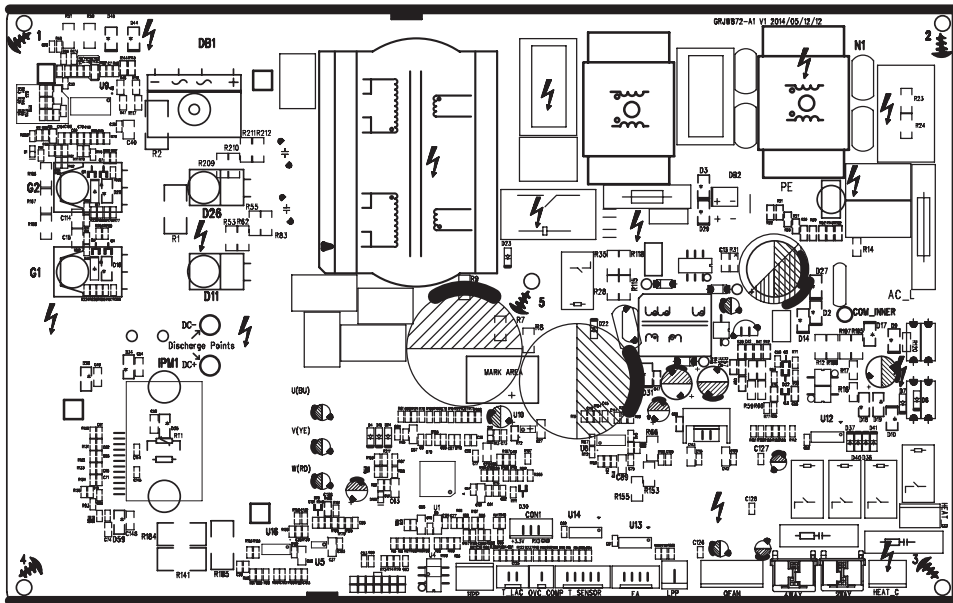
24K

• Top view



No.	Name
1	Terminal of compressor overload protection
2	Terminal of temperature sensor
3	Terminal of electronic expansion valve
4	Terminal of outdoor fan
5	Terminal of 4-way valve
6	Terminal of compressorelectric heating
7	Terminal of chassis electric heating
8	Terminal of indoor unit and outdoor unit communication
9	Power supply live wire
10	Earthing wire
11	Power supply neutral wire

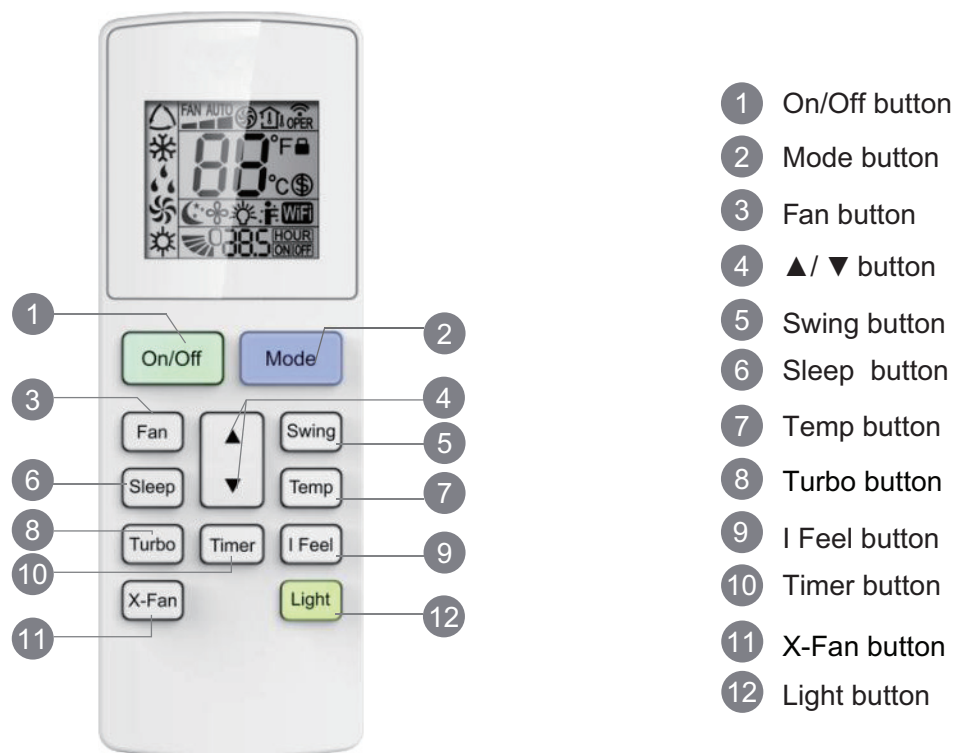
• Bottom view



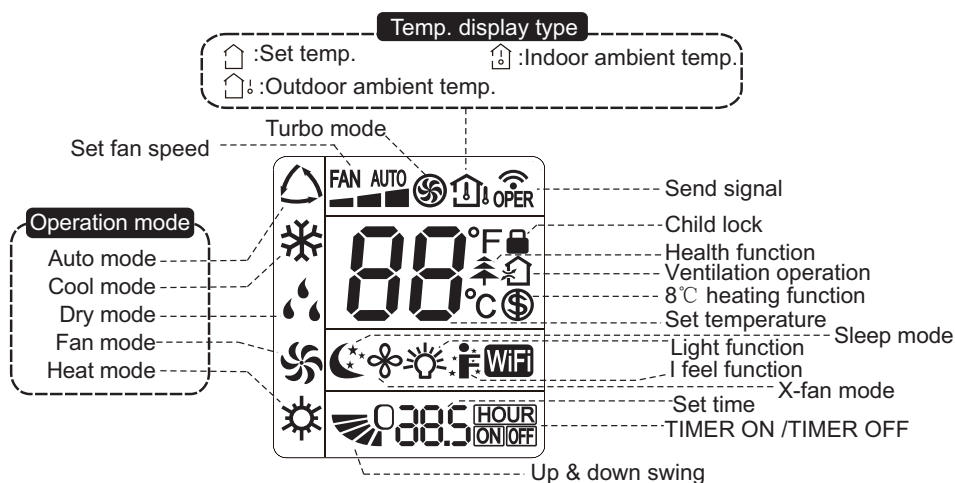
6. Function and Control

6.1 Remote Controller Introduction of YAW1F

Buttons on Remote Controller



Icon Display on Remote Controller



NOTICE: "WIFI" This is a general remote controller. Some models have this function while some do not. Please refer to the actual models.

Operation introduction of remote controller

This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.

- This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- 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 to turn on the unit. Press this button again to turn off the unit.

2. MODE BUTTON

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT *, as the following:

* Note: Only for models with heating function.



- When selecting auto mode, air conditioner will operate automatically according to exfactory setting. 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. Cool indicator "❄" on indoor unit is ON. 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. Dry indicator "💧" on indoor unit is ON. 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. All mode indicators on indoor display are off, Press "Fan" button to adjust fan speed. Press "Swing" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator "🔥" on indoor unit is ON. Press "▲" or "▼" button to adjust set temperature Press "Fan" button to adjust fan speed. Press "Swing" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).

Note:

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C ; Fan speed: auto, low speed, medium speed, high speed.

3. 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 ex-factory setting.
- Fan speed under dry mode is low speed.

4. ▲ / ▼ BUTTON

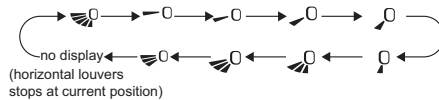
Press ▲ / ▼ button to increase/decrease set temperature. In AUTO mode, set temperature is not adjustable.

- Press "+" or "-" button once increase or decrease set temperature 1°C .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 or Timer Off, press ▲ or ▼ button to adjust the time. (See TIMER Button for setting details)

5. SWING BUTTON

Press this button to set up & down swing angle.

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.
- When selecting "◀○", "○", "▶○", air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold "🌀" button above 2s to set your required swing angle. When reaching your required angle, release the button.

Note:

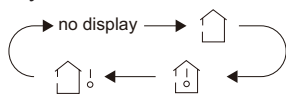
"◀○, ○, ▶○" may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically.

6. SLEEP BUTTON

Under COOL, HEAT or DRY mode, press this button to start up sleep function. "🌙" icon is displayed on remote controller. Press this button again to cancel sleep function and "🌙" icon will disappear.

7. TEMP BUTTON

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



When selecting "🏠" or no display with remote controller, temperature indicator on indoor unit displays set temperature;
 When selecting "🏠" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature;
 When selecting "🏠" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

Note:

- Outdoor temperature display is not available for some models. At that time, indoor unit receives "🏠" signal, while it displays indoor set temperature.
- It's defaulted to display set temperature when turning on the unit. There is no display in the remote controller.
- Only for the models whose indoor unit has dual-8 display

8. TURBO BUTTON

Press this button to activate / deactivate the Turbo function.

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.

9. I FEEL BUTTON

Press this button to start I FEEL function and "🌡️" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and "🌡️" will disappear.
 When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

10. TIMER BUTTON

- When unit is on, press this button to set Timer Off. OFF and HOUR icon will be blinking. Within 5s, press ▲ or ▼ button to adjust the time for Timer Off. Pressing ▲ or ▼ button once will increase or decrease the time by 0.5h. Hold ▲ or ▼ button for 2s, time will change quickly. Release the button after your required set time is reached. Then press TIMER button to confirm it. OFF and HOUR icon will stop blinking.
- When unit is off, press this button to set Timer On. ON and HOUR icon will be blinking. Within 5s, press ▲ or ▼ button to adjust the time for Timer On. Pressing ▲ or ▼ button once will increase or decrease the time by 0.5h. Hold ▲ or ▼ button for 2s, time will change quickly. Release the button after your required set time is reached. Then press TIMER button to confirm it. ON and HOUR icon will stop blinking.
- Cancel Timer On/Off: If Timer function is set up, press TIMER button once to cancel this function.

Note:

- Range of time setting is: 0.5~24h
- The interval between two motions can't exceed 5s, otherwise the remote controller will exit setting status.

11. X-FAN BUTTON (NOTE:X-FAN is the alternative expression of BLOW for the purpose of understanding.)

Press this button under cool and dry mode to start up x-fan function, and "🌀" icon on remote controller will be displayed. Press this button again to cancel x-fan function, and "🌀" icon will disappear.

Note:

- When x-fan function is started up, if the air conditioner is turned off, indoor fan will still operate at low speed for a while to blow the residual water inside the air duct.
- During x-fan operation, press X-FAN button to turn off x-fan function. Indoor fan will stop operation immediately.

12. LIGHT BUTTON

Turn on the display's light and press this button again to turn off the display's light.

Press this button to turn off display light on indoor unit. "💡" icon on remote controller disappears. Press this button again to turn on display light. "💡" icon is displayed.

NOTICE:

As for the detailed content of remote controller, please refer to QR code on the cover.

Function introduction for combination buttons

Combination of "▲" and "▼" buttons: About lock

Press "▲" and "▼" buttons simultaneously 3s to lock or unlock the keypad. If the remote controller is locked, 🔒 is displayed. In this case, pressing any button, 🔒 blinks three times.

Combination of "MODE" and "▼" buttons: About switch between Fahrenheit and centigrade

At unit OFF, press "MODE" and "▼" buttons simultaneously to switch between °C and °F.

Combination of "TEMP" and "TIMER" buttons: About Energy-saving Function

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

Combination of "TEMP" and "TIMER" buttons: About 8 °C Heating Function

Press "TEMP" and "TIMER" simultaneously in HEAT mode to start 8 °C 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.

WIFI Function

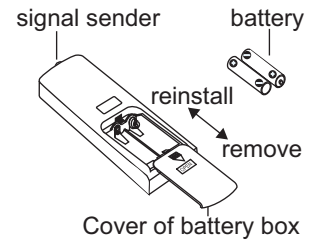
Press "MODE" and "TURBO" button simultaneously to turn on or turn off WIFI function. When WIFI function is turned on, the "WIFI" icon will be displayed on remote controller; Long press "MODE" and "TURBO" buttons simultaneously for 10s, remote controller will send WIFI reset code and then the WIFI function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

WIFI function is defaulted ON after energization of the remote controller.

- This function 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.



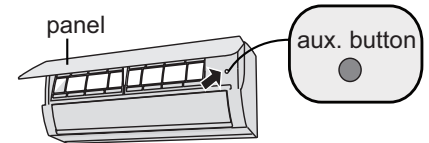
Emergency operation

If remote controller is lost or damaged, please use auxiliary button to turn on or turn off the air conditioner.

The operation in details are as below:

As shown in the fig. Open panel, press aux. button to turn on or turn off the air conditioner.

When the air conditioner is turned on, it will operate under auto mode.

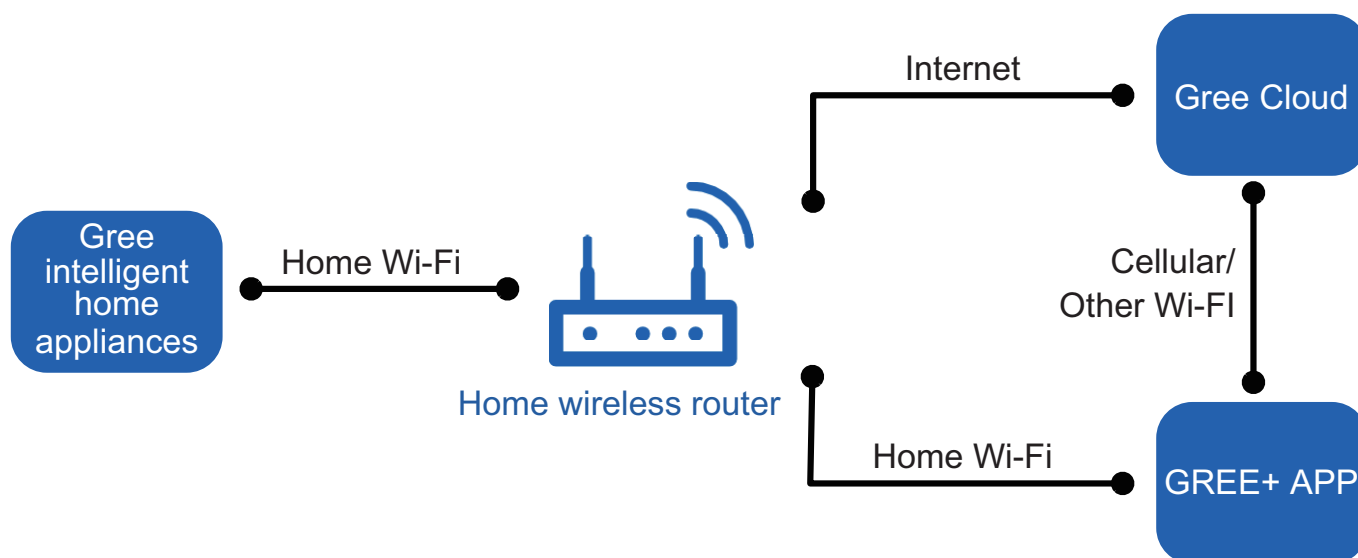


⚠ WARNING:

Use insulated object to press the auto button

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 4.0 and
above version

Download and installation



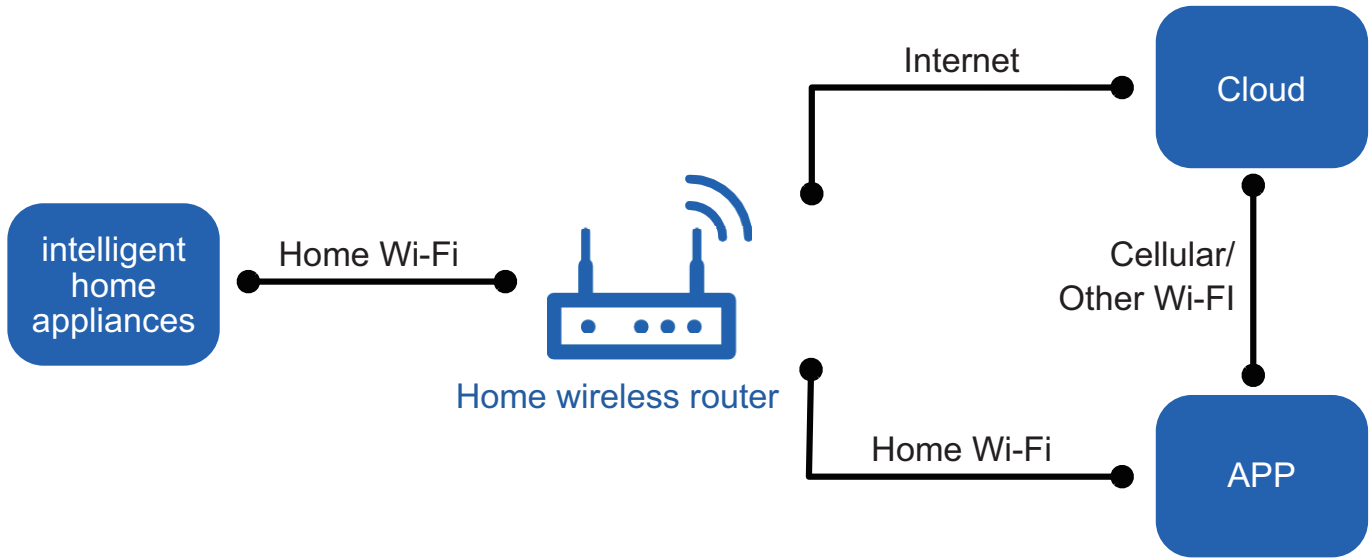
GREE+ App Download Linkage

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 4.0 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 "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.

6.4 Brief Description of Modes and Functions

● Indoor Unit

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.
- (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.
- (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.
- (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 $T_{\text{preset}}=20^{\circ}\text{C}$ and standard cooling $T_{\text{preset}}=25^{\circ}\text{C}$. 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 ($T_{\text{amb.}}-T_{\text{compensation}}$) for heat pump unit and $T_{\text{amb.}}$ for cooling only unit.
 4. If there's I feel function, $T_{\text{compensation}}$ 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.

2. Other control

(1) Buzzer

Upon energization or availablely 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 mode, 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 mode and set temperature is 16°C (or 16.5°C by remote controller), press “+, -, +, -, +, -” button successively within 5s and then indoor unit will enter into compulsory defrosting setting status:

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

(2) If there's 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 hasn't 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 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.

(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 $180+Ts(0\leq T\leq 15)$. T is the variable of controller. That's 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°C heating 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.

● Outdoor Unit

1. Cooling mode:

Working condition and process of cooling mode:

- ① When Tindoor ambient temperature $\geq T_{\text{preset}}$, unit enters into cooling mode. Indoor fan, outdoor fan and compressor start operation. Indoor fan operates according to set fan speed.
- ② When Tindoor ambient temperature $\leq T_{\text{preset}} - 2^{\circ}\text{C}$, compressor stops operation and outdoor fan will stop 30s later. Indoor fan operates according to set fan speed.
- ③ When $T_{\text{preset}} - 2^{\circ}\text{C} < \text{Tindoor ambient temperature} < T_{\text{preset}}$, unit operates according to the previous status.

Under cooling mode, 4-way valve is not energized. Temperature setting range is 16~30°C. If compressor stops because of malfunction in cooling mode, indoor fan and swing motor will work according to the original status.

2. Drying mode

(1) Working condition and process of drying mode

- ① When Tindoor ambient temperature $> T_{\text{preset}}$, unit will be in drying mode. Outdoor fan and compressor start operation while indoor fan will operate at low fan speed.
- ② When $T_{\text{preset}} - 2^{\circ}\text{C} \leq \text{Tindoor ambient temperature} \leq T_{\text{preset}}$, unit operates according to the previous status.
- ③ When Tindoor ambient temperature $< T_{\text{preset}} - 2^{\circ}\text{C}$, compressor stops operation and outdoor fan will stop 30s later.

(2) Under drying mode, 4-way valve is not energized. Temperature setting range is 16~30°C.

(3) Protection function: same as in cooling mode.

3. Fan mode

(1) Under this mode, indoor fan can select different fan speed (except Turbo) or auto fan speed. Compressor, outdoor fan and 4-way valve all stop operation.

(2) In fan mode, temperature setting range is 16~30°C.

4. Heating mode

Working condition and process of heating mode:

- ① When $T_{\text{preset}} - (\text{Tindoor ambient temperature} - T_{\text{compensation}}) \geq 1^{\circ}\text{C}$, unit enters into heating mode. Compressor, outdoor fan and 4-way valve start operation.
- ② When $-2^{\circ}\text{C} < T_{\text{preset}} - (\text{Tindoor ambient temperature} - T_{\text{compensation}}) < 1^{\circ}\text{C}$, unit operates according to the previous status.
- ③ When $T_{\text{preset}} - (\text{Tindoor ambient temperature} - T_{\text{compensation}}) \leq -2^{\circ}\text{C}$, compressor stops operation and outdoor fan will stop 30s later. Indoor fan will be in residual-heat blowing status.
- ④ When unit is turned off under heating mode or changed to other modes from heating mode, 4-way valve will be power-off 2min after compressor stops working (compressor is in operation status under heating mode).
- ⑤ When Tindoor ambient temperature $> 30^{\circ}\text{C}$, compressor stops operation immediately. Outdoor fan will stop 30s later.
- ⑥ Under the condition that compressor is turned on, when unit is changed to heating mode from cooling or drying mode, 4-way valve will be energized in 2~3mins delay.

Note: Tcompensation is determined by IDU and ODU. If IDU controls the compensation temperature, then Tcompensation is determined according to the value sent by IDU to ODU; If IDU does not control the compensation temperature, then Tcompensation will default to 3°C by the ODU.

5. Freon recovery mode

After the Freon recovery signal from IDU is received, cooling at rated frequency will be forcibly turned on to recover Freon.

Indoor unit will display Fo. If any signal from remote controller is received, unit will exit from Freon recovery mode and indoor unit stops displaying Fo.

6. Compulsory defrosting

If unit is turned on under heating mode and set temperature is 16°C (by remote controller), press "+, -, +, -, +, -" within 5s, unit will enter into compulsory defrosting mode and send the signal to ODU. When the compulsory defrosting signal from ODU is received, IDU will exit from the compulsory defrosting mode and stop sending the signal to ODU.

After ODU receives the compulsory defrosting code, it will start compulsory defrosting. Defrosting frequency and opening angle will be the same as in normal defrosting mode. When compulsory defrosting is finished, the complete unit resumes original status.

7. Auto mode

Auto mode is determined by controller of IDU. See IDU logic for details.

8. 8°C heating

Set temperature is 8°C. Display board of IDU displays 8°C. Under this mode, “Cold air prevention” function is shielded.

If compressor is operating under this mode, fan speed will adjust according to auto fan speed; if compressor stops operation under this mode, indoor fan will be in residual-heat blowing status.

When power on, communication light will be blinking in a normal way (after receiving a group of correct signals, blinking stops for 0.2s~0.3s). If there's no communication, communication light will be always on. If other ODU has malfunction, communication light will be on for 1s and off for 1s in a circular way.

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 cant 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 cant 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. 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.



Warning

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.

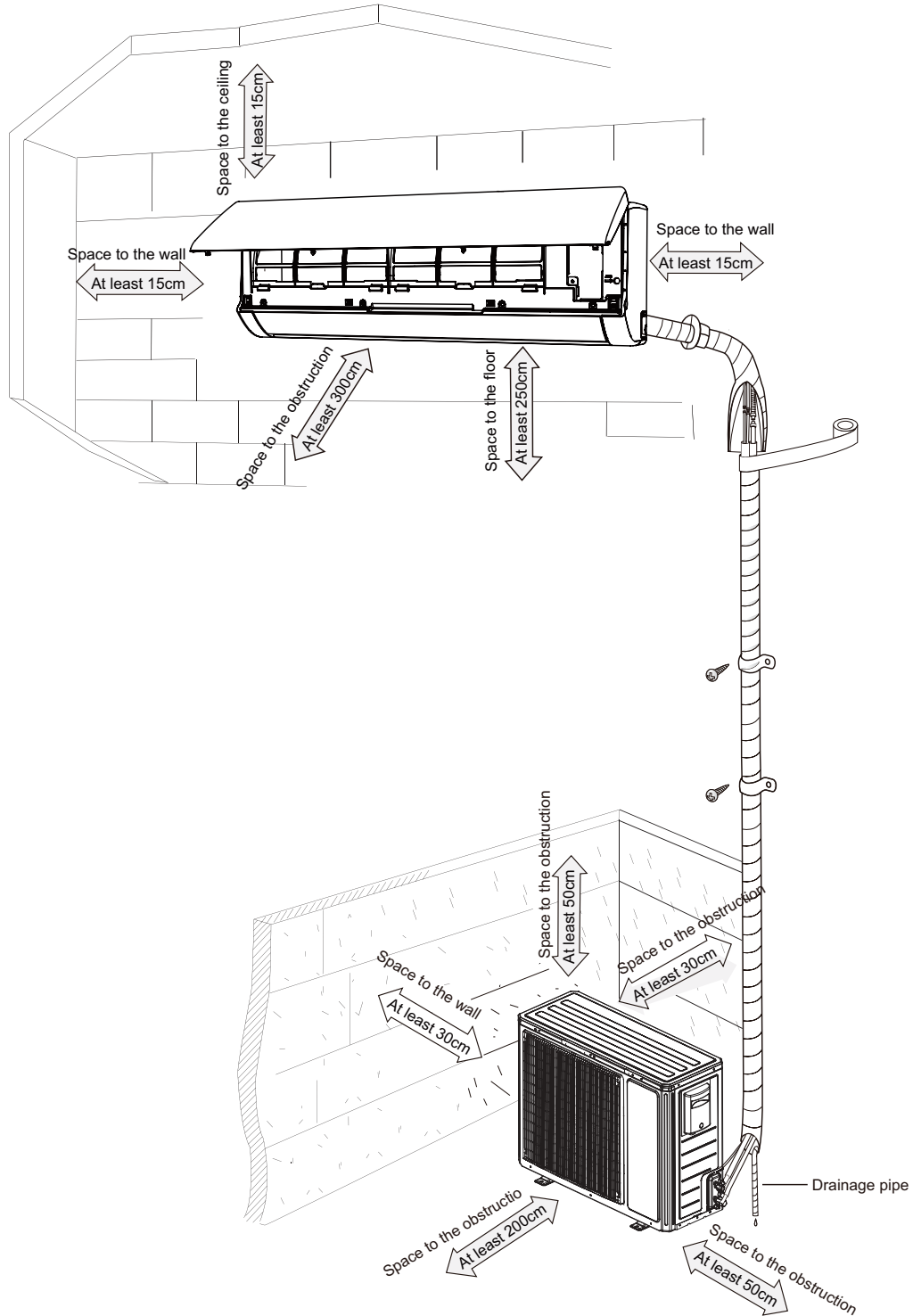
Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

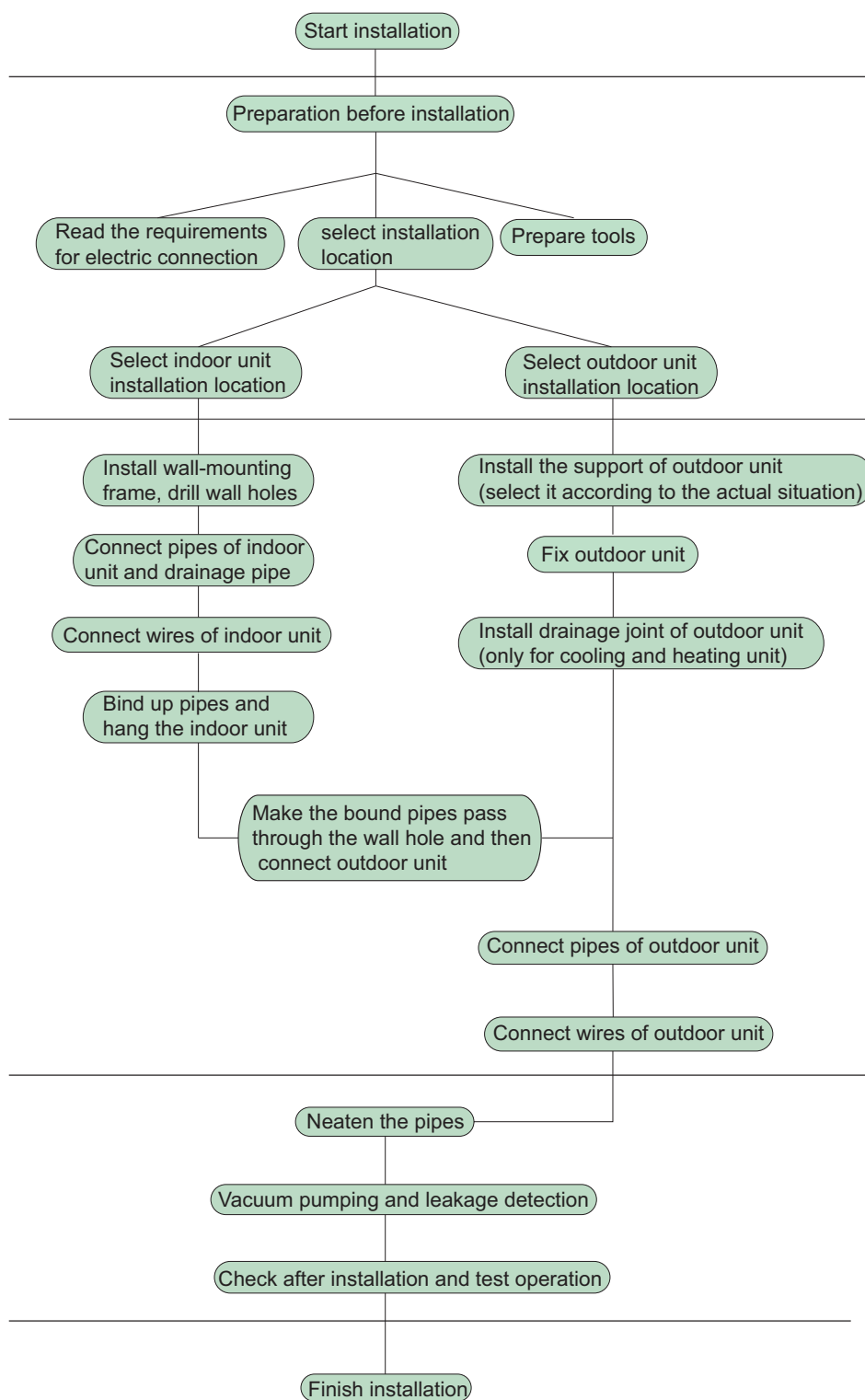
Main Tools for Installation and Maintenance

<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> 

8. Installation

8.1 Installation Dimension Diagram





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	Owners manual, remote controller
7	Wall pipe		

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 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 wont 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. 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 wont 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 Requirements for electric connection

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
18K	10A
24K	16A

- (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 thefollowing.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.
- (10) Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.

2. Grounding Requirement:

- (1) The air conditioner is first class electric appliance. It must be properly grounding 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 cant 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)

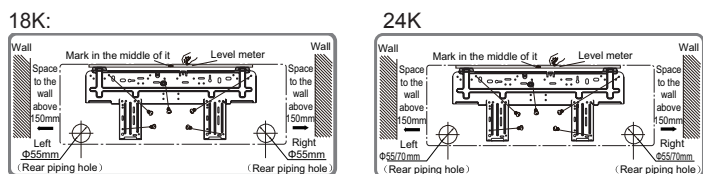


Fig.1

(2) Open a piping hole with the diameter of Φ55mm 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°.(As show in Fig.2)

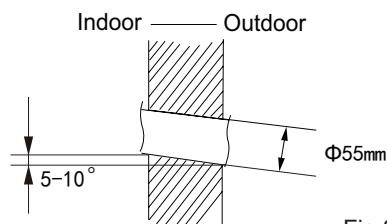


Fig.2

⚠ 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)

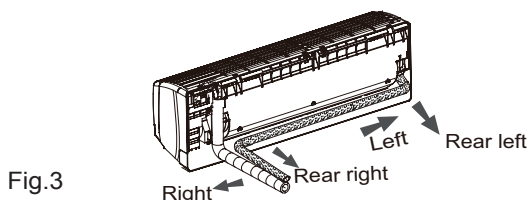


Fig.3

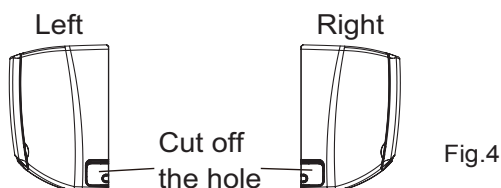


Fig.4

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)

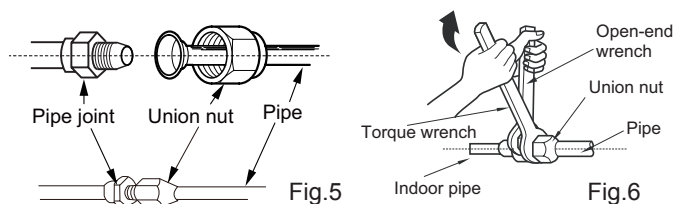


Fig.5

Fig.6

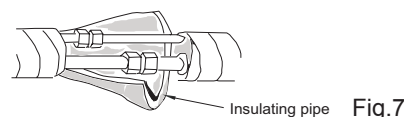


Fig.7

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

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)

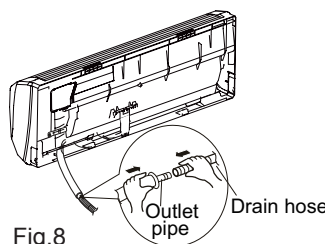


Fig.8

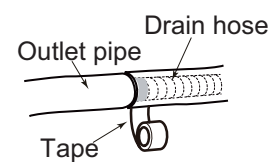


Fig.9

⚠ 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)

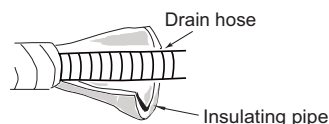


Fig.10

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)

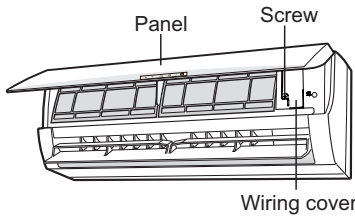


Fig.11

(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)

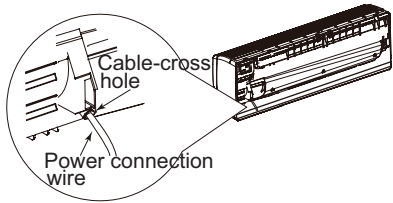
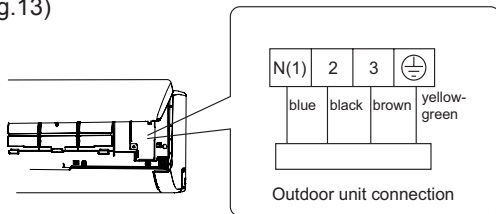


Fig.12

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



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

Fig.13

(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 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.

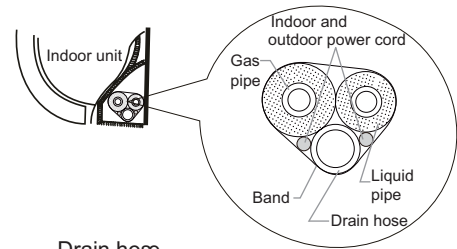


Fig.14

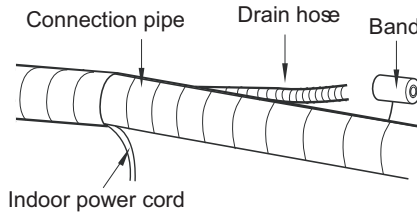


Fig.15

⚠ Note:

- (1) The power cord and control wire cant 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)

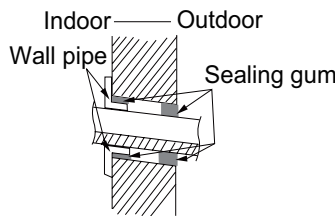


Fig.16

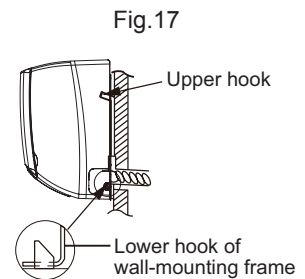


Fig.17

⚠ 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.

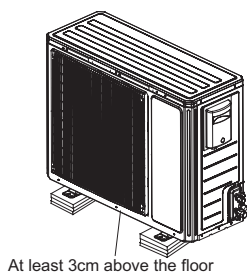


Fig.18

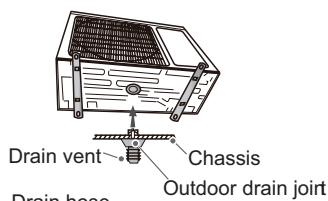


Fig.19

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)

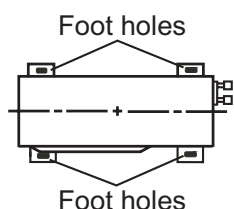


Fig.20

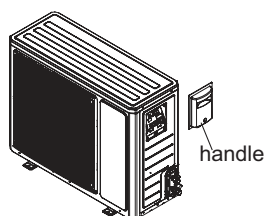


Fig.21

4. Connect Indoor and Outdoor Pipes

- (1) Remove the screw on the right handle of outdoor unit and then remove the handle.(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)

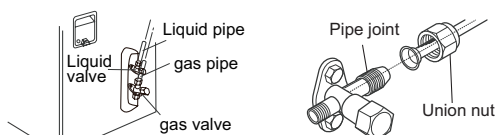


Fig.22

- (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 power cord to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)

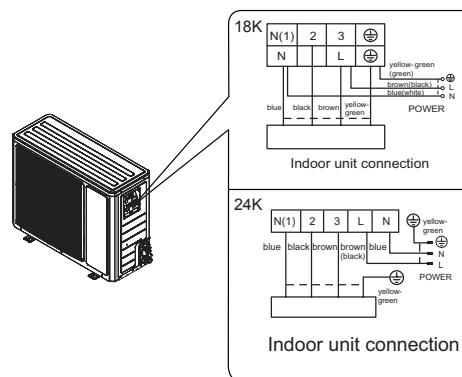


Fig.23

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

- (2) Fix the power connection wire and power cord 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)

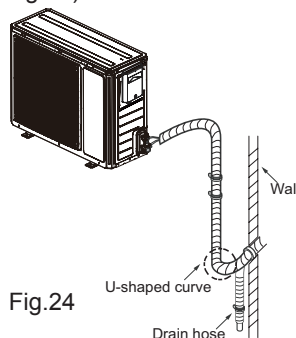


Fig.24

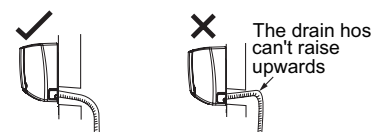
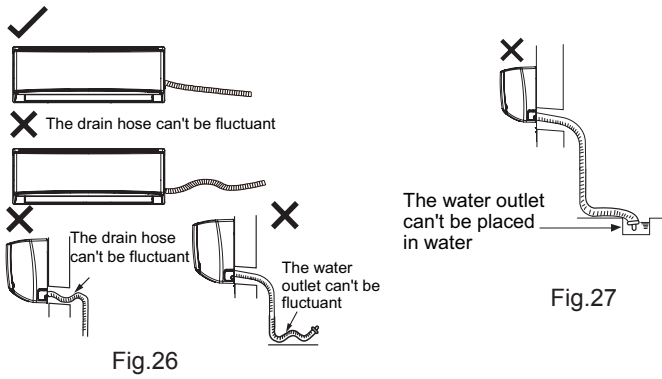


Fig.25

⚠ Note:

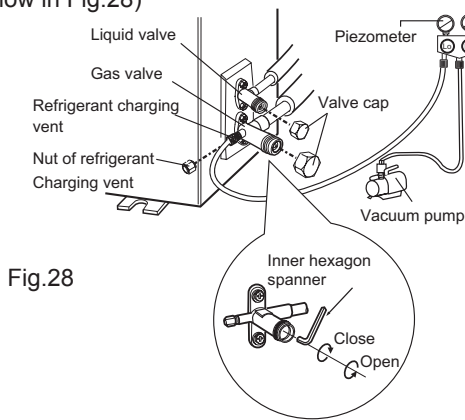
- (1) The through-wall height of drain hose shouldnt be higher than the outlet pipe hole of indoor unit.(As show in Fig.25)
- (2) Slant the drain hose slightly downwards. The drain hose cant be curved, raised and fluctuant, etc.(As show in Fig.26)
- (3) The water outlet cant be placed in water in order 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)



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, theres 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 cant start cooling.

9. Maintenance

9.1 Error Code List

NO.	Malfunction Name	Dual-8 Code Display	Display Method of Indoor Unit			A/C status	Possible Causes
			Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
1	High pressure protection of system	E1				During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, the complete unit stops.	Possible reasons: 1. Refrigerant was superabundant; 2. Poor heat exchange (including filth blockage of heat exchanger and bad radiating environment); Ambient temperature is too high.
2	Antifreezing protection	E2				During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates.	1. Poor air-return in indoor unit; 2. Fan speed is abnormal; 3. Evaporator is dirty.
3	System block or refrigerant leakage	E3				The Dual-8 Code Display will show E3 until the low pressure switch stop operation.	1.Low-pressure protection 2.Low-pressure protection of system 3.Low-pressure protection of compressor
4	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.	Please refer to the malfunction analysis (discharge protection, overload).
5	Overcurrent protection	E5				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; 2. Supply voltage is too low and load is too high; 3. Evaporator is dirty.
6	Communication Malfunction	E6				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				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				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. 2. Incorrect insert of jumper cap. 3. Jumper cap damaged. 4. Abnormal detecting circuit of mainboard.

NO.	Malfunction Name	Display Method of Indoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
11	Gathering refrigerant	F0				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"> 1. Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal. 2. Components in mainboard fell down leads short circuit. 3. Indoor ambient temp. sensor damaged.(check with sensor resistance value chart) 4. Mainboard damaged.
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"> 1. Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal. 2. Components on the mainboard fall down leads short circuit. 3. Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing) 4. Mainboard damaged.
14	Outdoor ambient temperature sensor is open/short circuited	F3				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				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				During cooling and drying operation, compressor will sop 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"> 1.Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) 2.The head of temperature sensor hasnt been inserted into the copper tube
17	Limit/ decrease frequency due to overload	F6				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				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

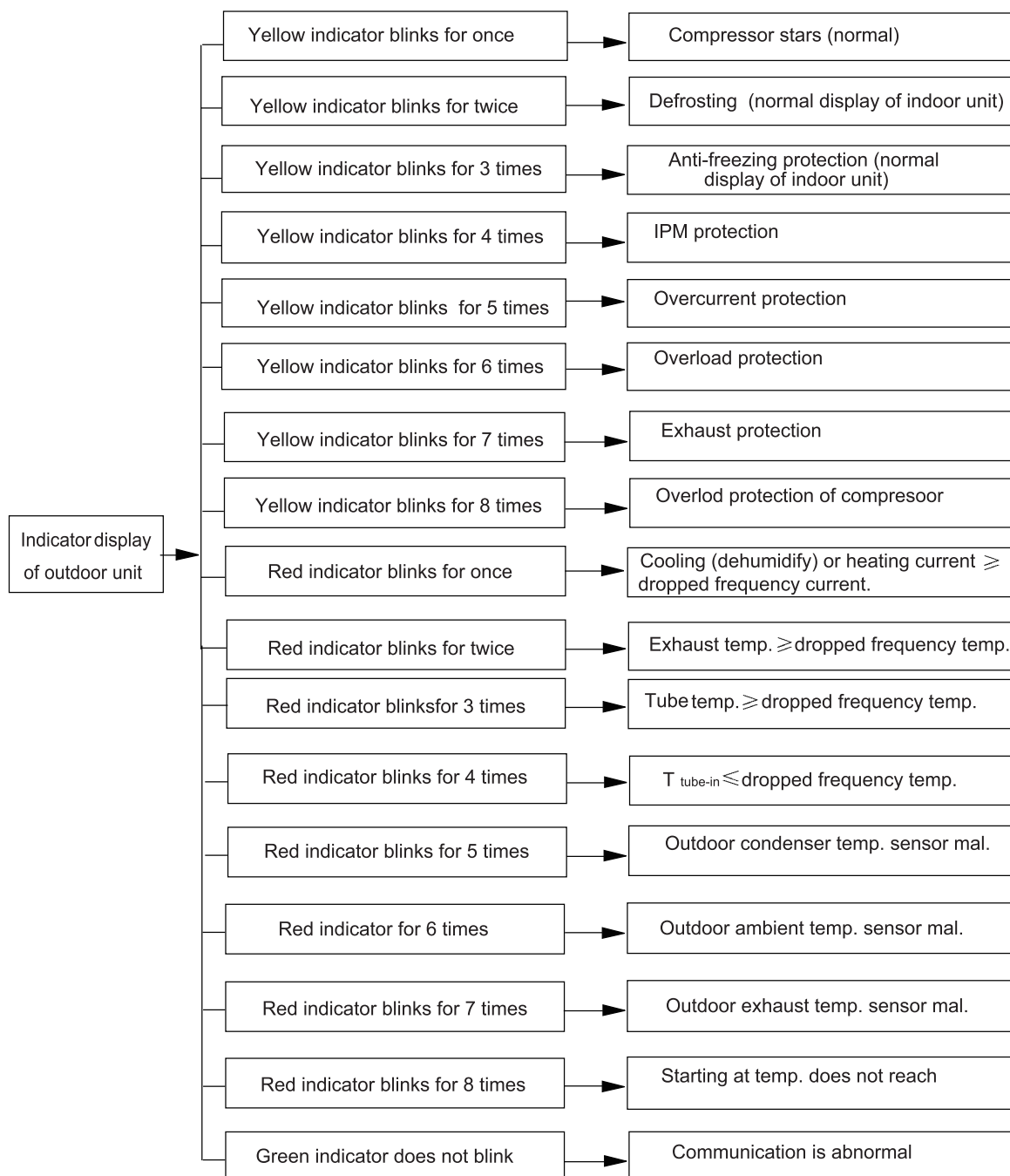
NO.	Malfunction Name	Display Method of Indoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
19	Decrease frequency due to high air discharge	F9				All loads operate normally, while operation frequency for compressor is decreased	Overload or temperature is too high; Refrigerant is insufficient; Malfunction of electric expansion valve (EKV)
20	Limit/decrease frequency due to antifreezing	FH				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				During cooling and drying operation, compressor will stop while indoor fan will operate; 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. 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				During cooling and drying operation, compressor will stop while indoor fan will operate; 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. 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			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)	Operation 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	Overload protection for compressor	H3			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. 2.Refer to the malfunction analysis (discharge protection, overload)
32	IPM protection	H5			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.
33	Module temperature is too high	H5				

NO.	Malfunction Name	Display Method of Indoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)	Operation Indicator			Cool Indicator
34	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.	1. Bad contact of DC motor feedback terminal. 2. Bad contact of DC motor control end. 3. Fan motor is stalling. 4. Motor malfunction. 5. Malfunction of mainboard rev detecting circuit.
35	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.
36	PFC protection	HC				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
37	Outdoor DC fan motor malfunction	L3				Outdoor DC fan motor malfunction lead to compressor stop operation,	DC fan motor malfunction or system blocked or the connector loosed
38	power protection	L9				compressor stop operation and Outdoor fan motor will stop 30s latter , 3 minutes latter fan motor and compressor will restart	To protect the electronical components when detect high power
39	Indoor unit and outdoor unit doesnt match	LP				compressor and Outdoor fan motor cant work	Indoor unit and outdoor unit doesnt match
40	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
41	Normal communication						
42	Defrosting				OFF 3S and blink once (during blinking, ON 10s and OFF 0.5s)	Defrosting will occur in heating mode. Compressor will operate while indoor fan will stop operation.	Its the normal state

NO.	Malfunction Name	Display Method of Indoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating 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 operation, the complete unit will stop operation.	There's 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; 2. Wiring terminal 4V is loosened or broken; 3. 4V is damaged, please replace 4V.
47	Frequency limiting (power)						
48	Compressor is open-circuited						
49	The temperature for turning on the unit is reached						
50	Frequency limiting (module temperature)						
51	Malfunction of zero-cross detection circuit	U8				The complete unit stops	1. Power supply is abnormal; 2. Detection circuit of indoor control mainboard is abnormal.
52	Malfunction of detecting plate(WIFI)	JF					

If malfunction occurs, corresponding code will display and the unit will resume normal until protection or malfunction disappears.



Analysis or processing of some of the malfunction display:

1. Compressor discharge protection

Possible causes: shortage of refrigerant; blockage of air filter; poor ventilation or air flow short pass for condenser; the system has noncondensing gas (such as air, water etc.); blockage of capillary assy (including filter); leakage inside four-way valve causes incorrect operation; malfunction of compressor; malfunction of protection relay; malfunction of discharge sensor; outdoor temperature too high.

Processing method: refer to the malfunction analysis in the above section.

2. Low voltage overcurrent protection

Possible cause: Sudden drop of supply voltage.

3. Communication malfunction

Processing method: Check if communication signal cable is connected reliably.

4. Sensor open or short circuit

Processing method: Check whether sensor is normal, connected with the corresponding position on the controller and if damage of lead wire is found.

5. Compressor over load protection

Possible causes: insufficient or too much refrigerant; blockage of capillary and increase of suction temp.; improper running of compressor, burning in or stuck of bearing, damage of discharge valve; malfunction of protector.

Processing method: adjust refrigerant amount; replace the capillary; replace the compressor; use universal meter to check if the contactor of compressor is fine when it is not overheated, if not replace the protector.

6. System malfunction

i.e. overload protection. When tube temperature (Check the temperature of outdoor heat exchanger when cooling and check the temperature of indoor heat exchanger when heating) is too high, protection will be activated.

Possible causes: Outdoor temperature is too high when cooling; insufficient outdoor air circulation; refrigerant flow malfunction.

please refer to the malfunction analysis in the previous section for handling method .

7. IPM module protection

Processing method: Once the module malfunction happens, if it persists for a long time and can not be self-canceled, cut off the power and turn off the unit, and then re-energize the unit again after about 10 min. After repeating the procedure for several times, if the malfunction still exists, replace the module.

9.2 Procedure of Troubleshooting

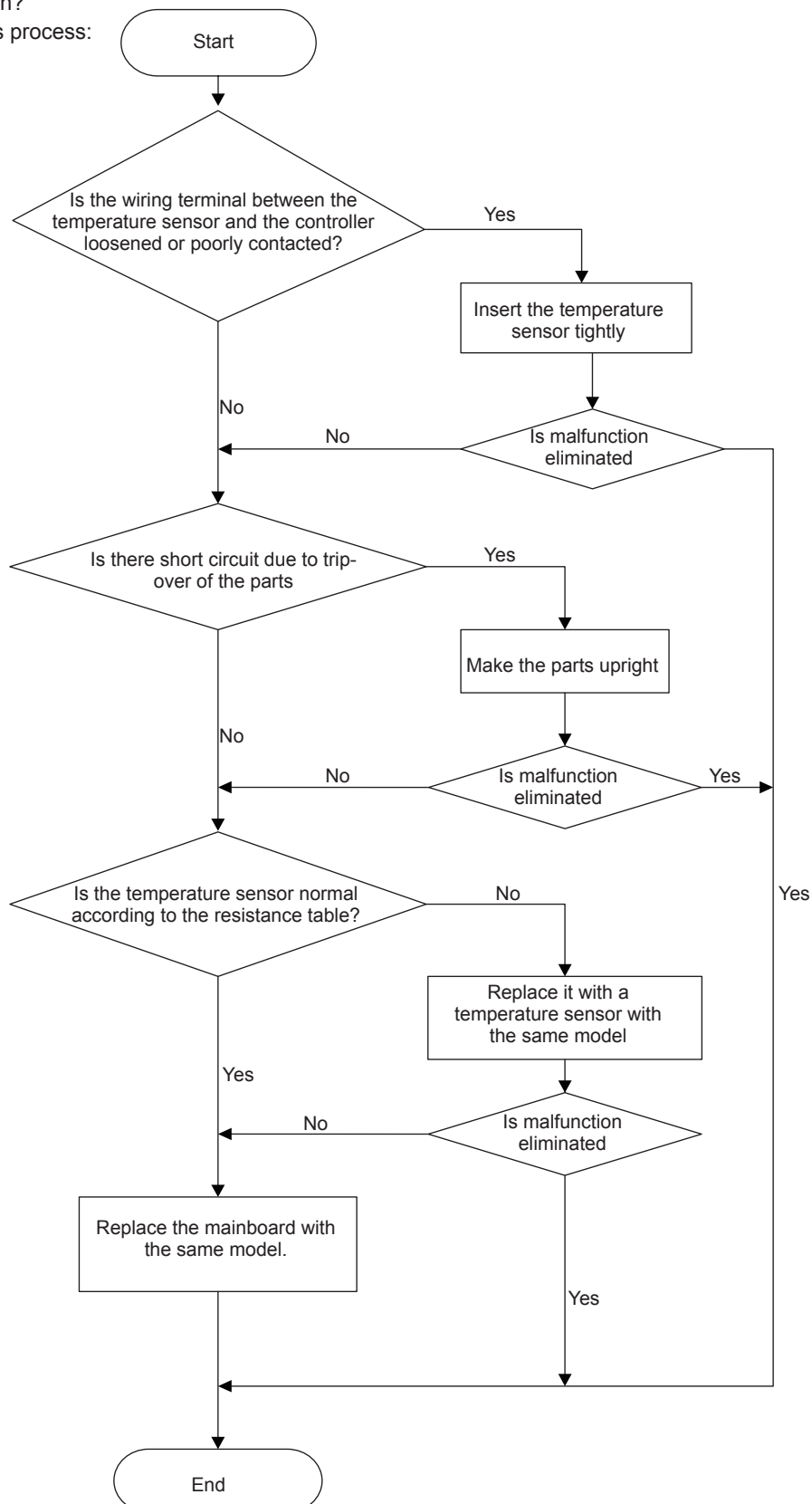
Indoor unit

(1) Malfunction of Temperature Sensor F1, F2

Main detection points:

- Is the wiring terminal between the temperature sensor and the controller loosened or poorly contacted?
- Is there short circuit due to trip-over of the parts?
- Is the temperature sensor broken?
- Is mainboard broken?

Malfunction diagnosis process:

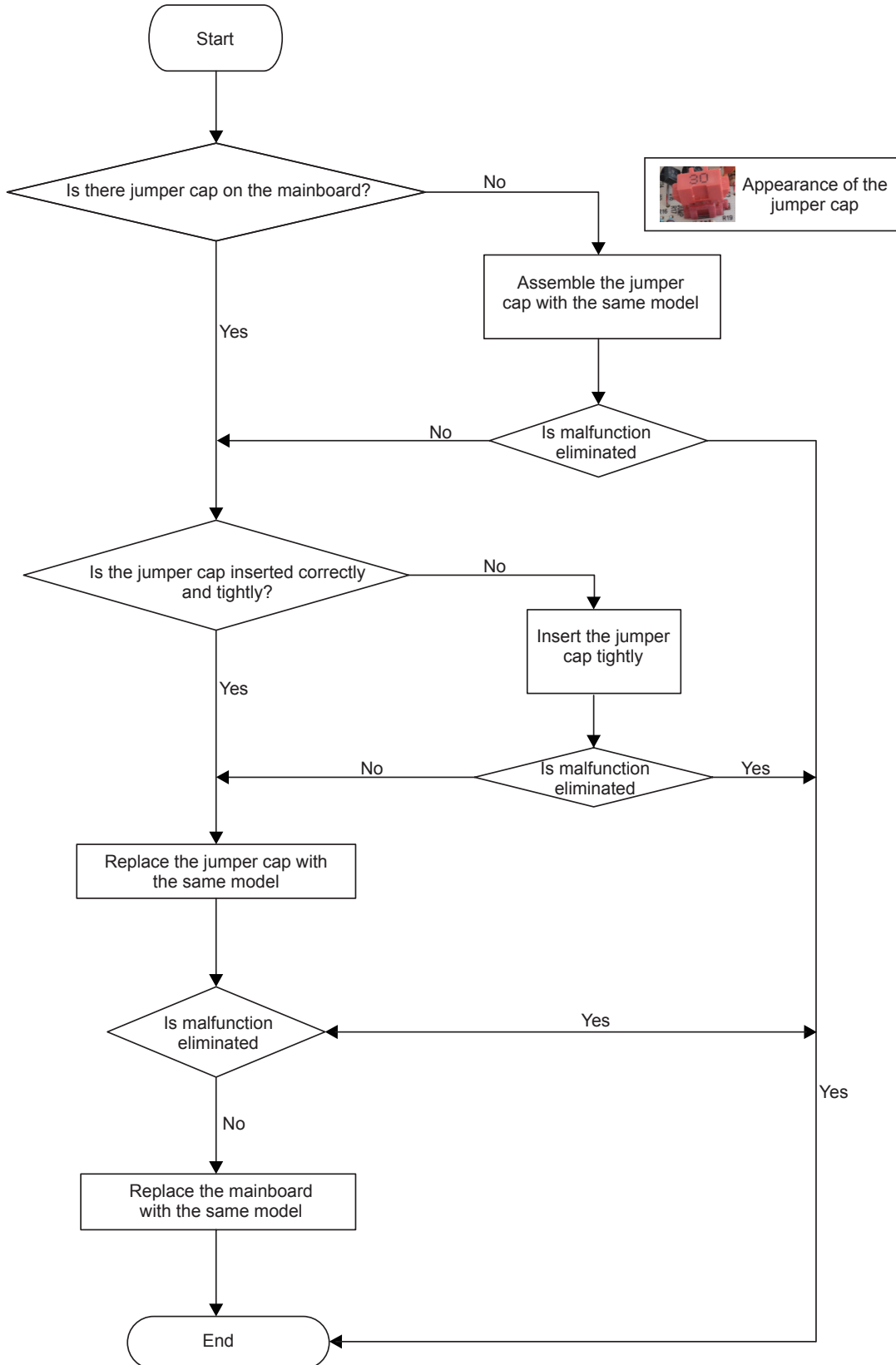


(3) Malfunction of Protection of Jumper Cap C5

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:

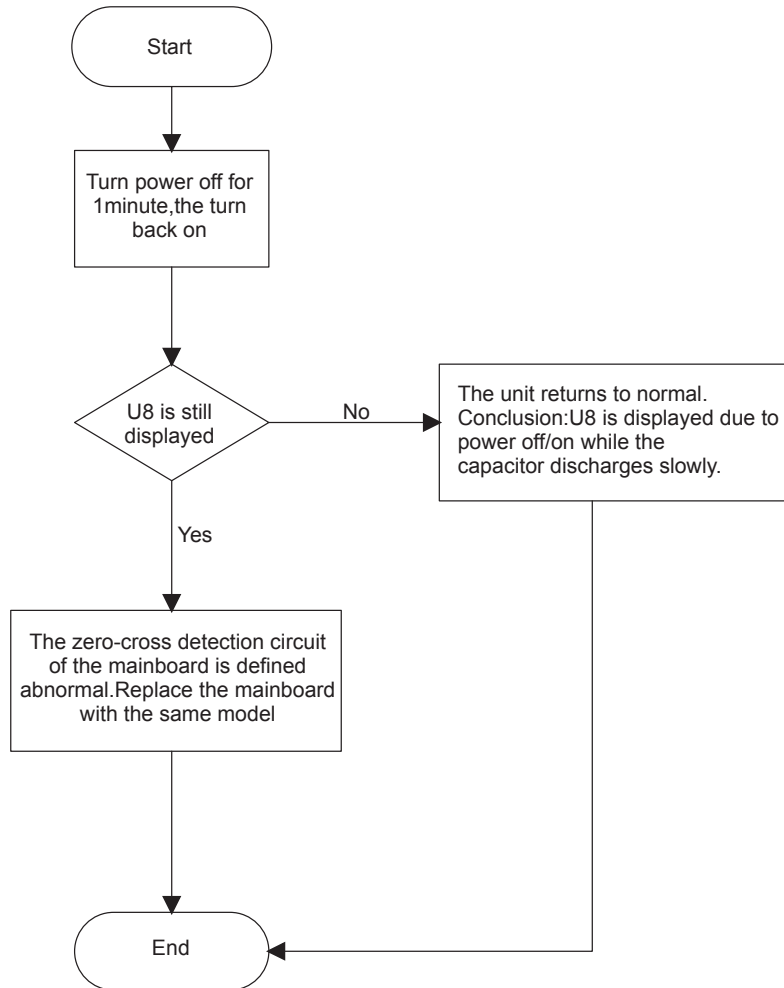


(4) Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

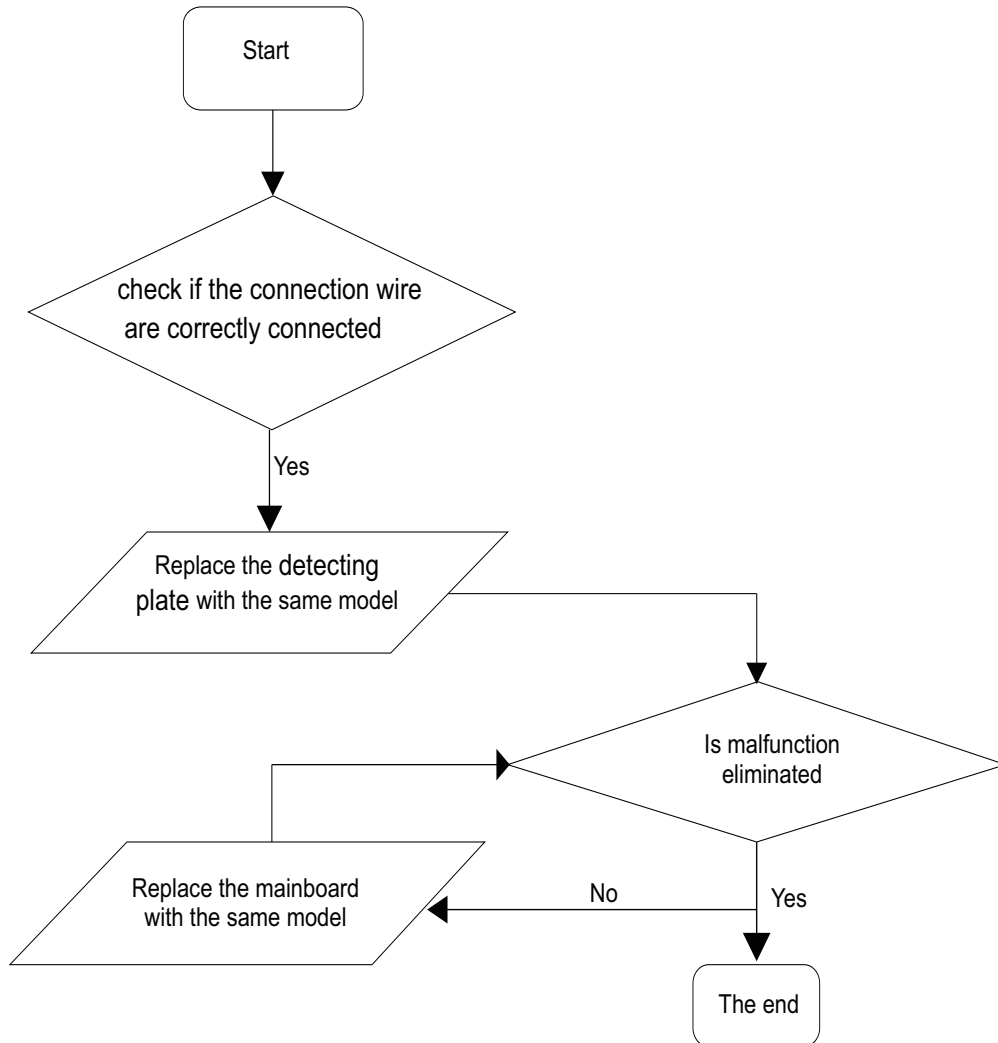
Main detection points:

- Instant energization after de-energization while the capacitor discharges slowly?
- The zero-cross detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:



(5) Malfunction of detecting plate(WIFI) JF



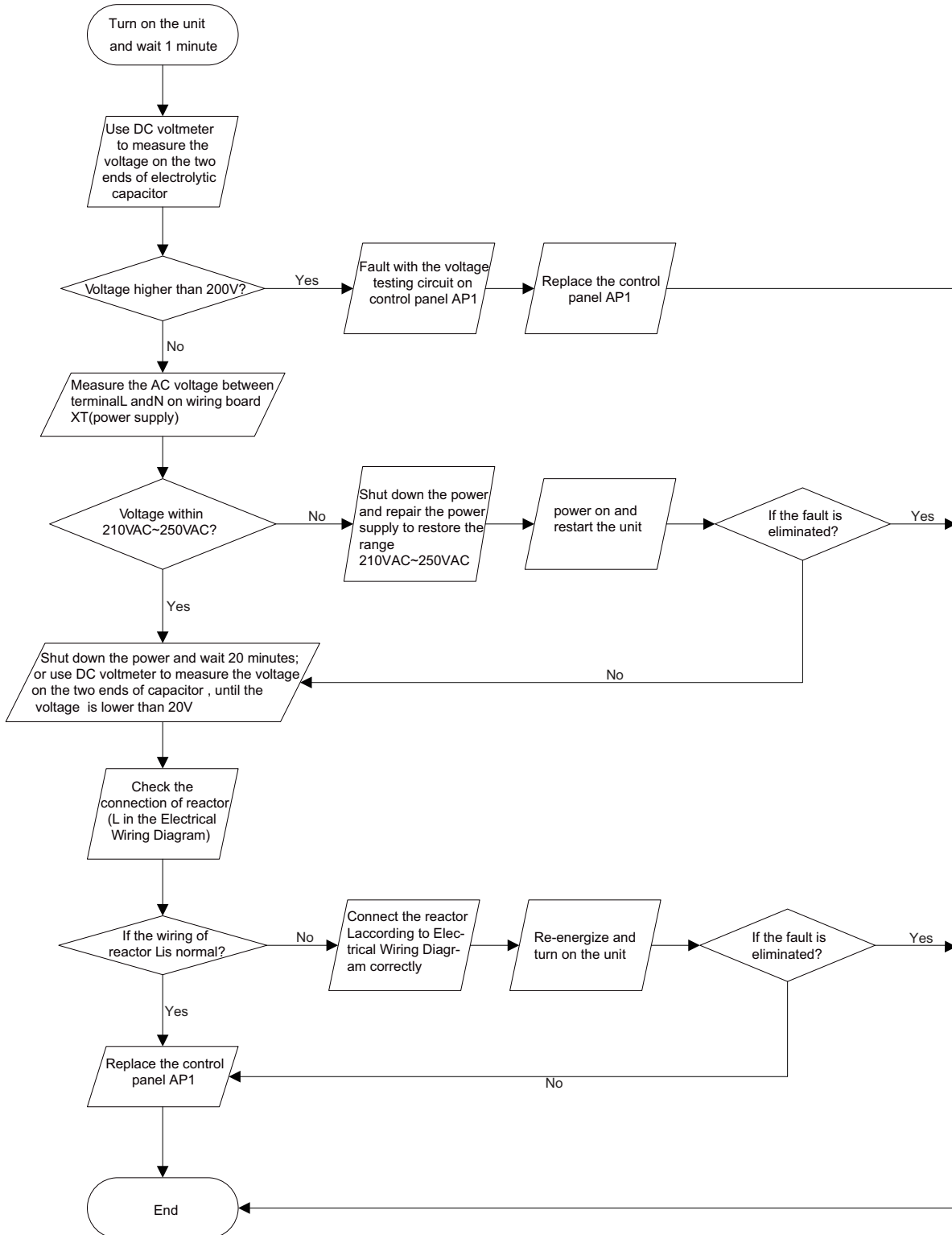
Outdoor unit:

(1) Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)

Main Check Points:

- Use AC voltmeter to check if the voltage between terminal L and N on the wiring board is within 210VAC~240VAC.
- Is the reactor (L) correctly connected? Is the connection loose or fallen? Is the reactor (L) damaged?

Fault diagnosis process:

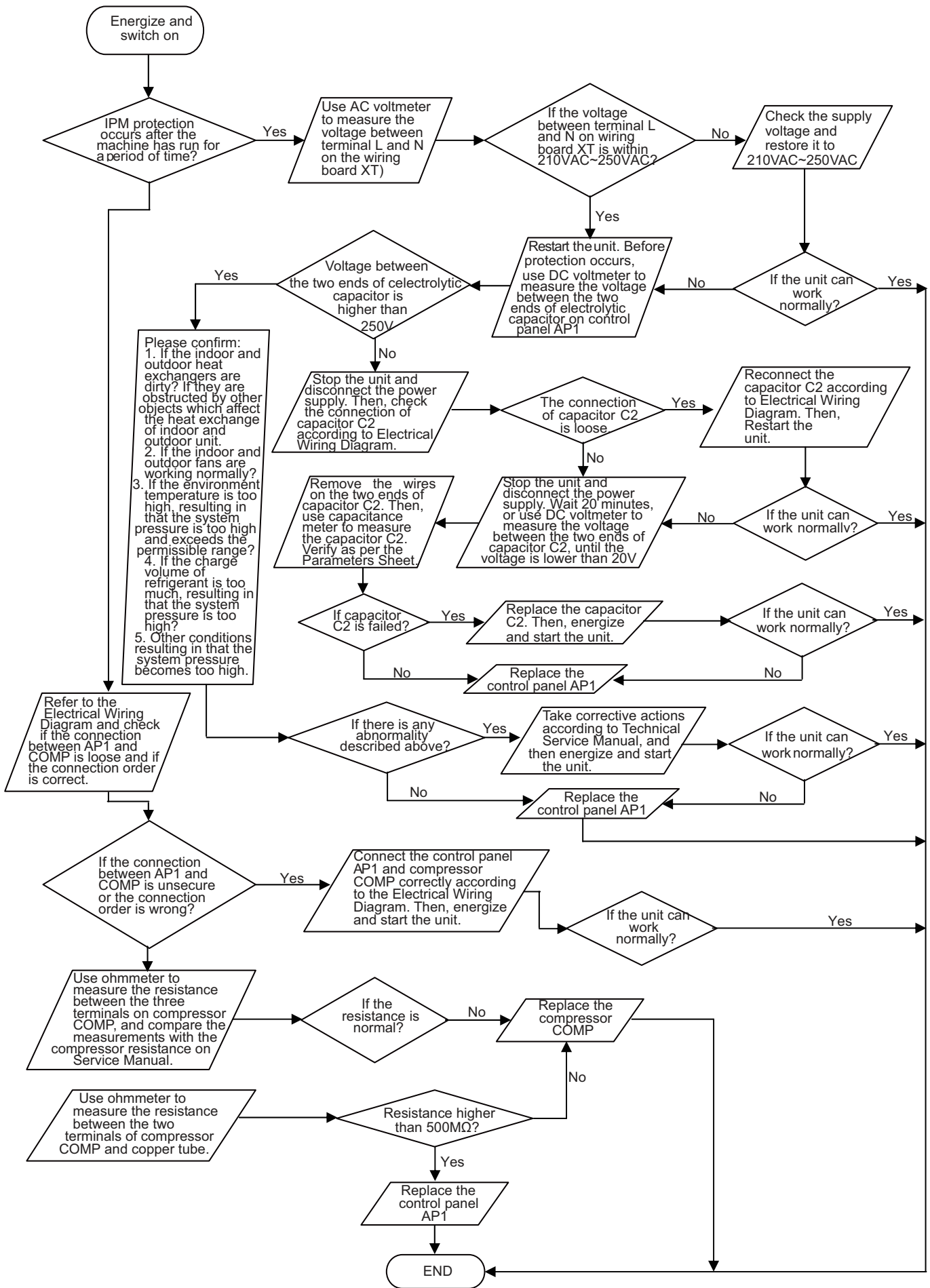


(2) IPM Protection, Out-of-step Fault, Compressor Phase Overcurrent (AP1 below refers to the outdoor control panel)

Main check points:

- Is the connection between control panel AP1 and compressor COMP secure? Loose? Is the connection in correct order?
- Is the voltage input of the machine within normal range? (Use AC voltmeter to measure the voltage between terminal L and N on the wiring board XT)
- Is the compressor coil resistance normal? Is the insulation of compressor coil against the copper tube in good condition?
- Is the working load of the machine too high? Is the radiation good?
- Is the charge volume of refrigerant correct?

Fault diagnosis process:

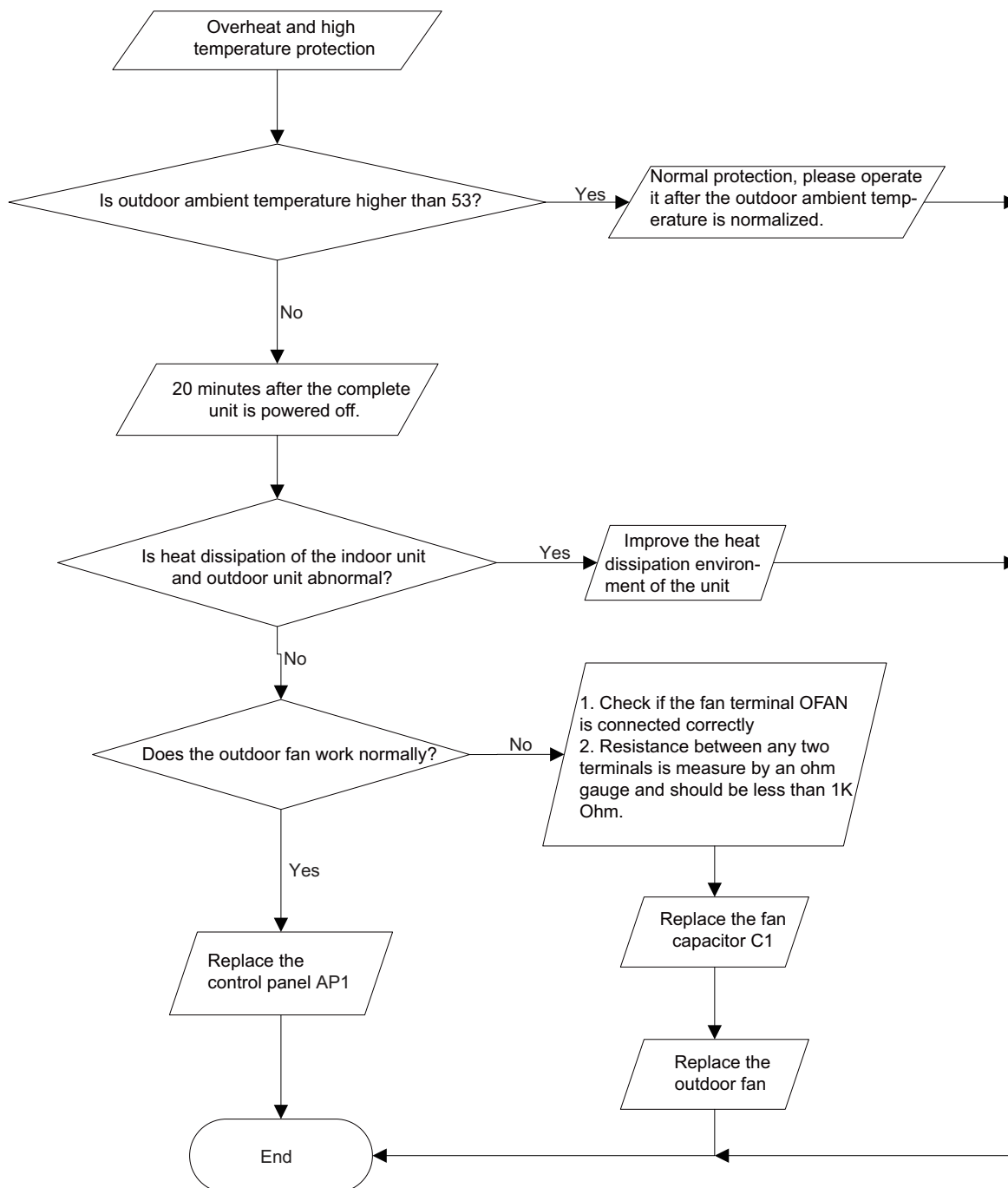


(3) High temperature and overload protection diagnosis (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

- Is outdoor ambient temperature in normal range?
- Are the outdoor and indoor fans operating normally?
- Is the heat dissipation environment inside and outside the unit good?

Fault diagnosis process:

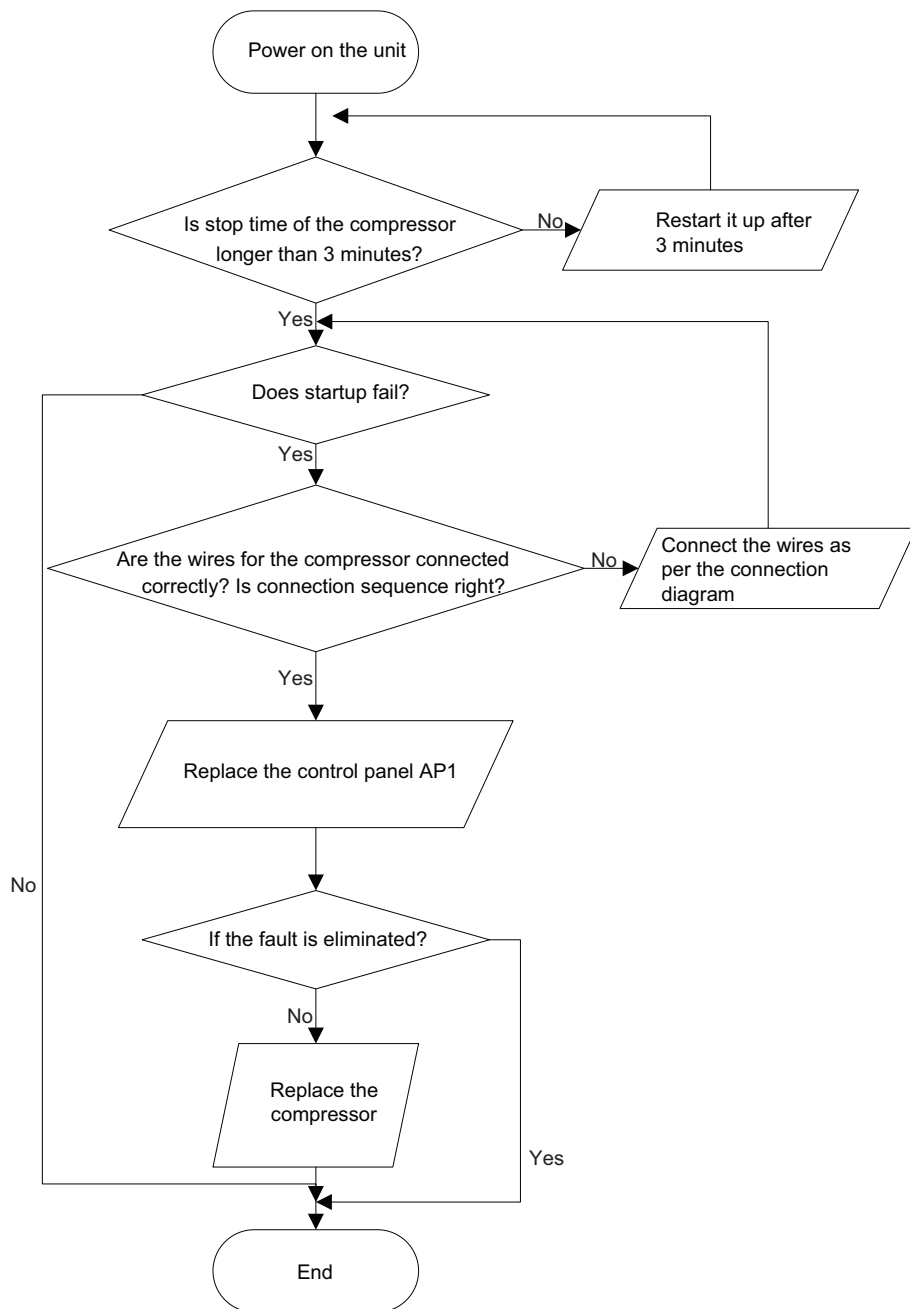


(4) Start-up failure (following AP1 for outdoor unit control board)

Mainly detect:

- Whether the compressor wiring is connected correct?
- Is compressor broken?
- Is time for compressor stopping enough?

Fault diagnosis process:

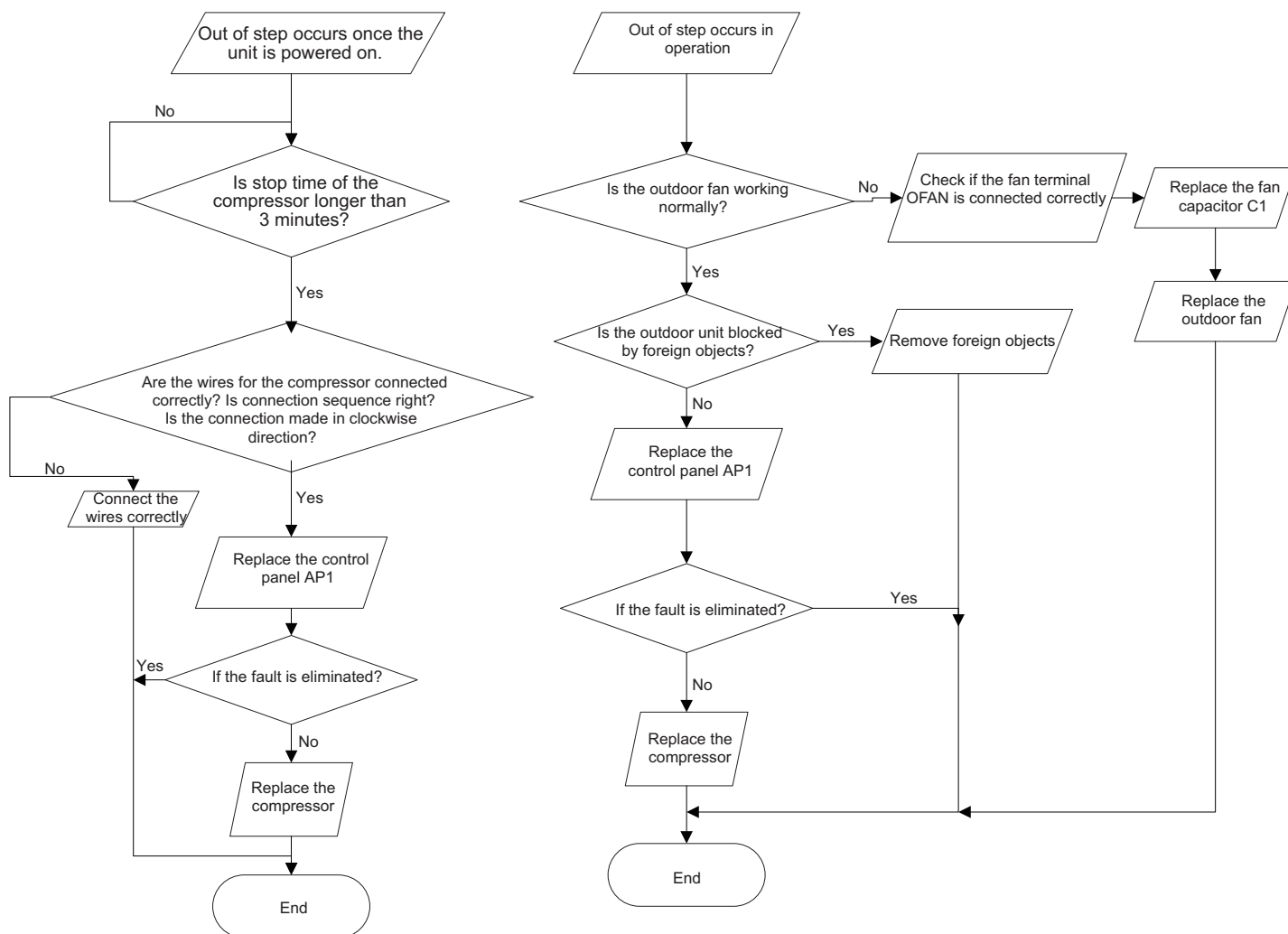


(5) Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

- Is the system pressure too high?
- Is the input voltage too low?

Fault diagnosis process:

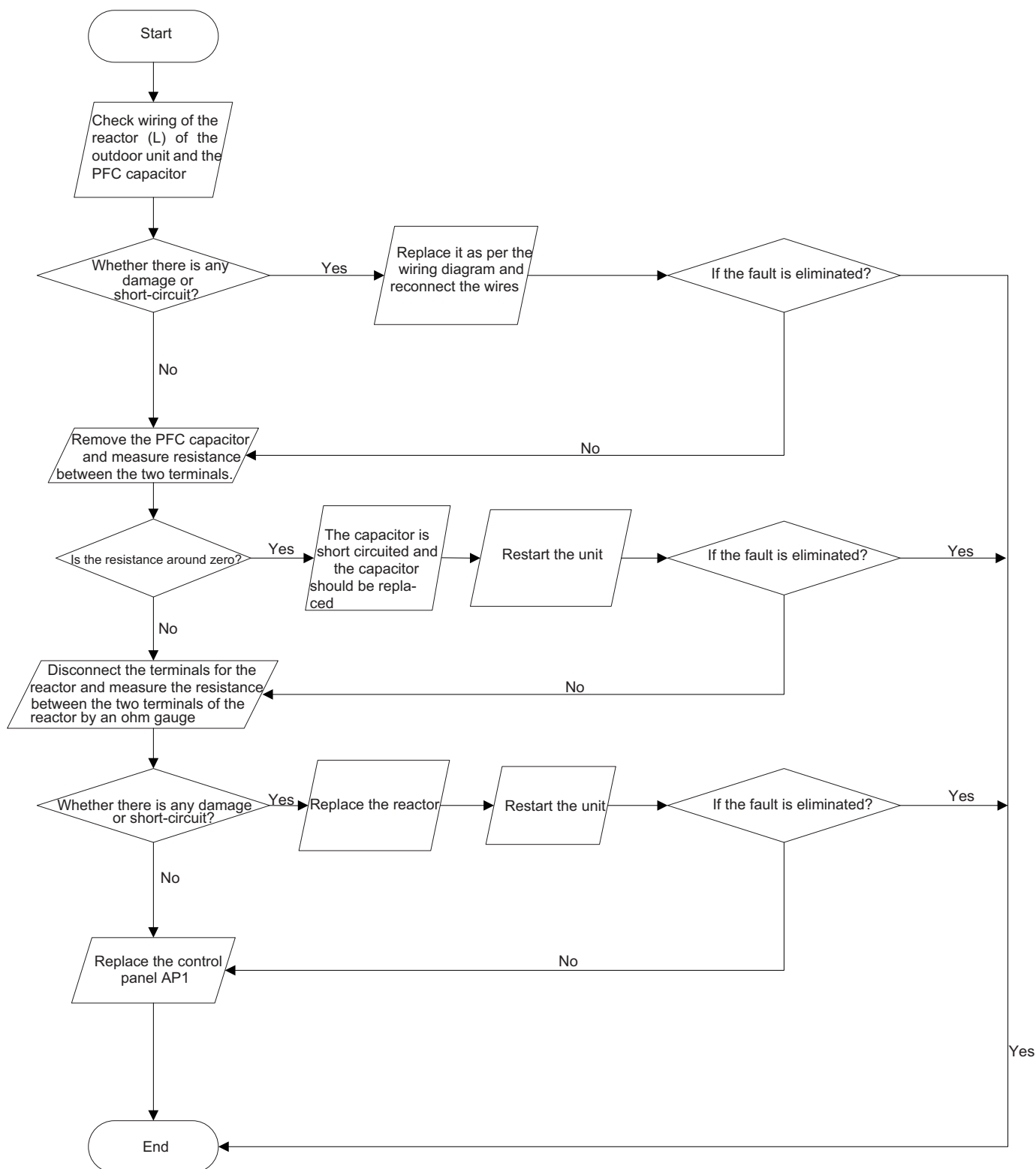


(7) Power factor correct or (PFC) fault (a fault of outdoor unit) (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

- Check if the reactor (L) of the outdoor unit and the PFC capacitor are broken

Fault diagnosis process:

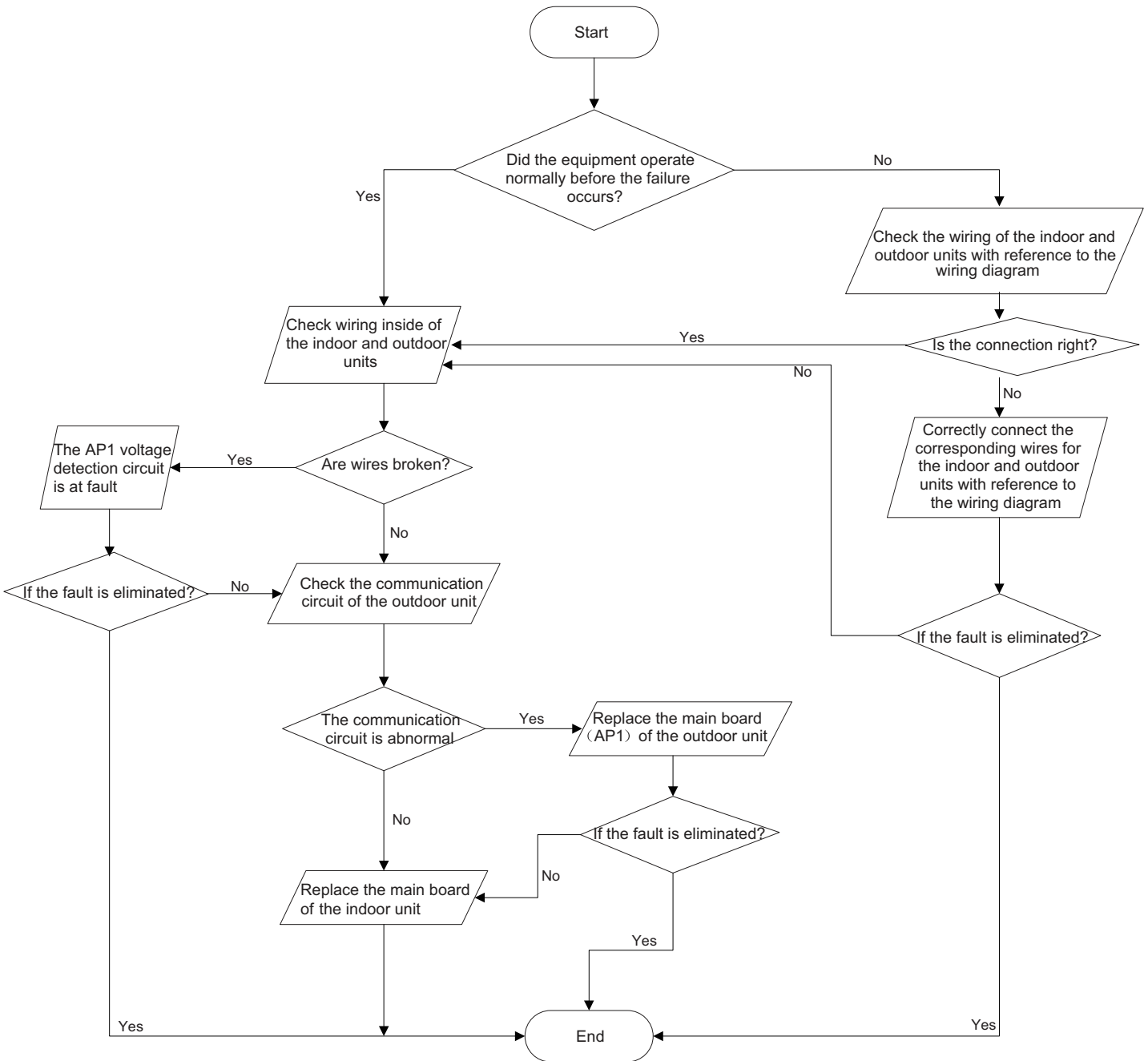


(8) Communication malfunction: (following AP1 for outdoor unit control board)

Mainly detect:

- Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?
- Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any damage?

Fault diagnosis process:

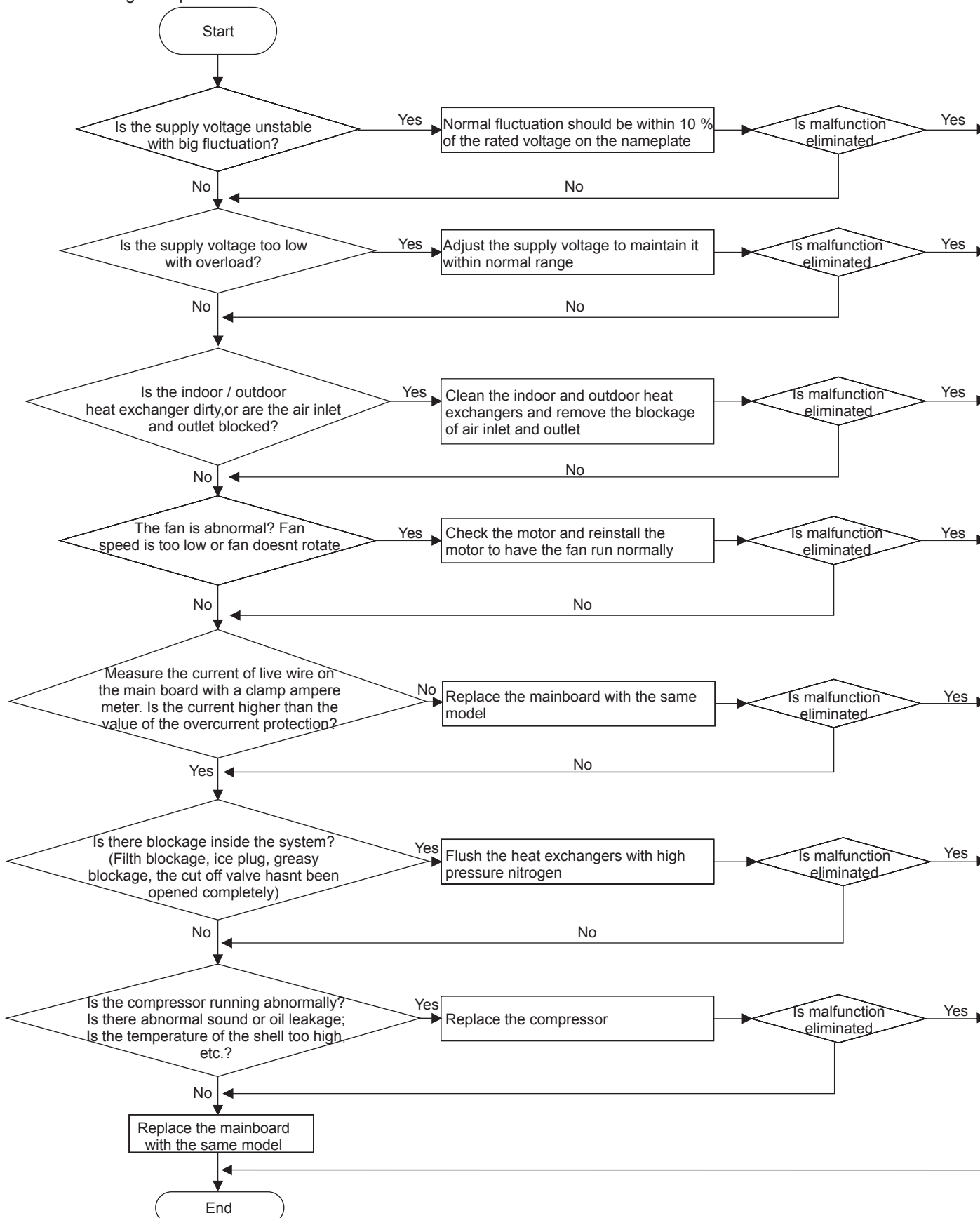


(9) Malfunction of Overcurrent Protection

Main detection points:

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

Malfunction diagnosis process:



9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner Cant 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 cant 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 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; 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; Unit 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 cant swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor cant operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor cant operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor cant operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Cant 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 cant operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver cant operate	Replace the main board with the same model

4. ODU Fan Motor Cant 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 Cant 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 cant 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

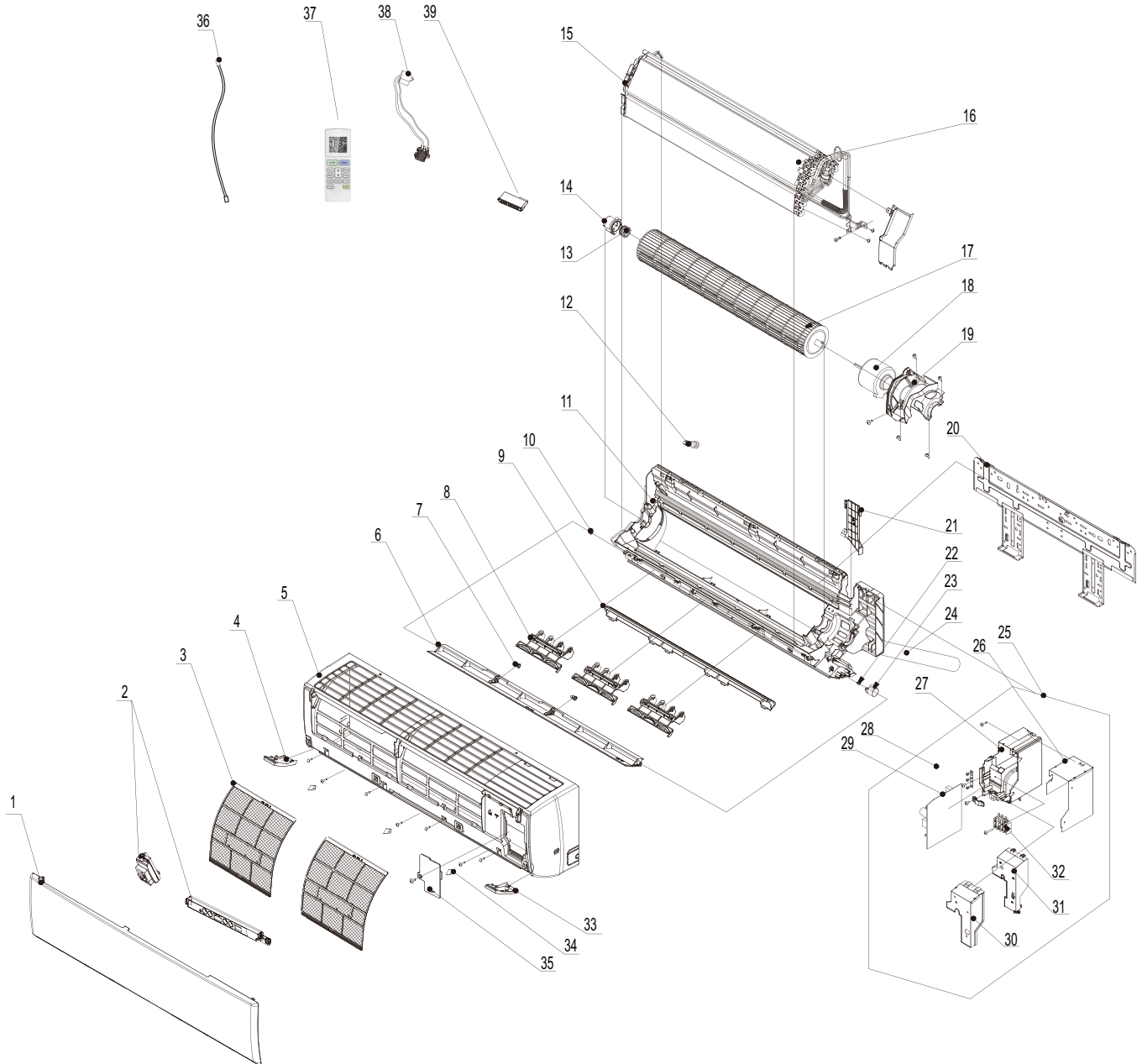
7. Abnormal Sound and Vibration

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

10.1 Indoor Unit

18K

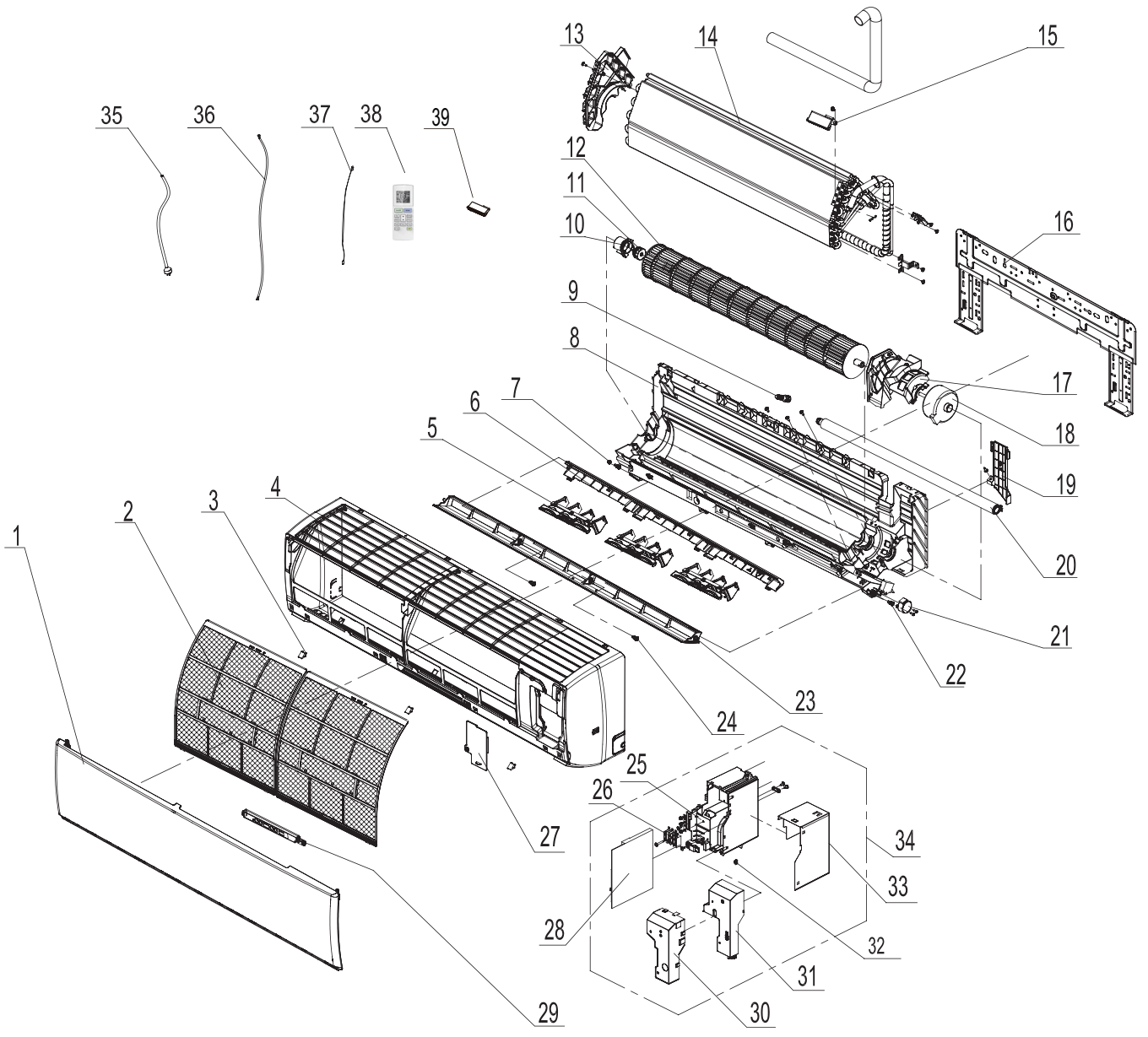


The component picture is only for reference; please refer to the actual product.

No.	Description	Part Code		Qty
		GWH18AAD-K3DNA4E/I	GWH18AAD-K3DNA5E/I	
	Product Code	CB479N00400	CB488N00200	
1	Front Panel	000003000155	200003000114	1
2	Display Board	300001000042	300001000042	1
3	Filter Sub-Assy	11122089	11122089	2
4	Decorative Board	/	/	/
5	Front Case	20000200000801	20000200000801	1
6	Guide Louver	20000400000401	20000400000401	1
7	Axile Bush	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	1
11	Rear Case assy	000001000009	000001000009	1
12	Rubber Plug (Water Tray)	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	1
15	Evaporator Support	24212177	24212177	1
16	Evaporator Assy	011001000020	011001000020	1
17	Cross Flow Fan	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	1
22	Crank	73012005	73012005	1
23	Stepping Motor	1521240210	1521240210	1
24	Drainage hose	05230014	05230014	1
25	Electric Box Assy	100002002896	100002002079	1
26	Lower Shield of Electric Box	01592139	01592139	1
27	Electric Box	20112211	20112211	1
28	Jumper	4202021912	4202021912	1
29	Main Board	30145099	30145098	1
30	Shield Cover of Electric Box	01592139	01592176	1
31	Electric Box Cover	20112209	20112209	1
32	Terminal Board	42011233	42011233	1
33	Decorative Board	/	/	/
34	Screw Cover	242520179	242520179	3
35	Electric Box Cover2	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	1
37	Remote Controller	305001000009	305001000009	1
38	Cold Plasma Generator	1114001602	/	1
39	Detecting plate(WIFI)	000409000001	30110144	1

Above data is subject to change without notice.

24K



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

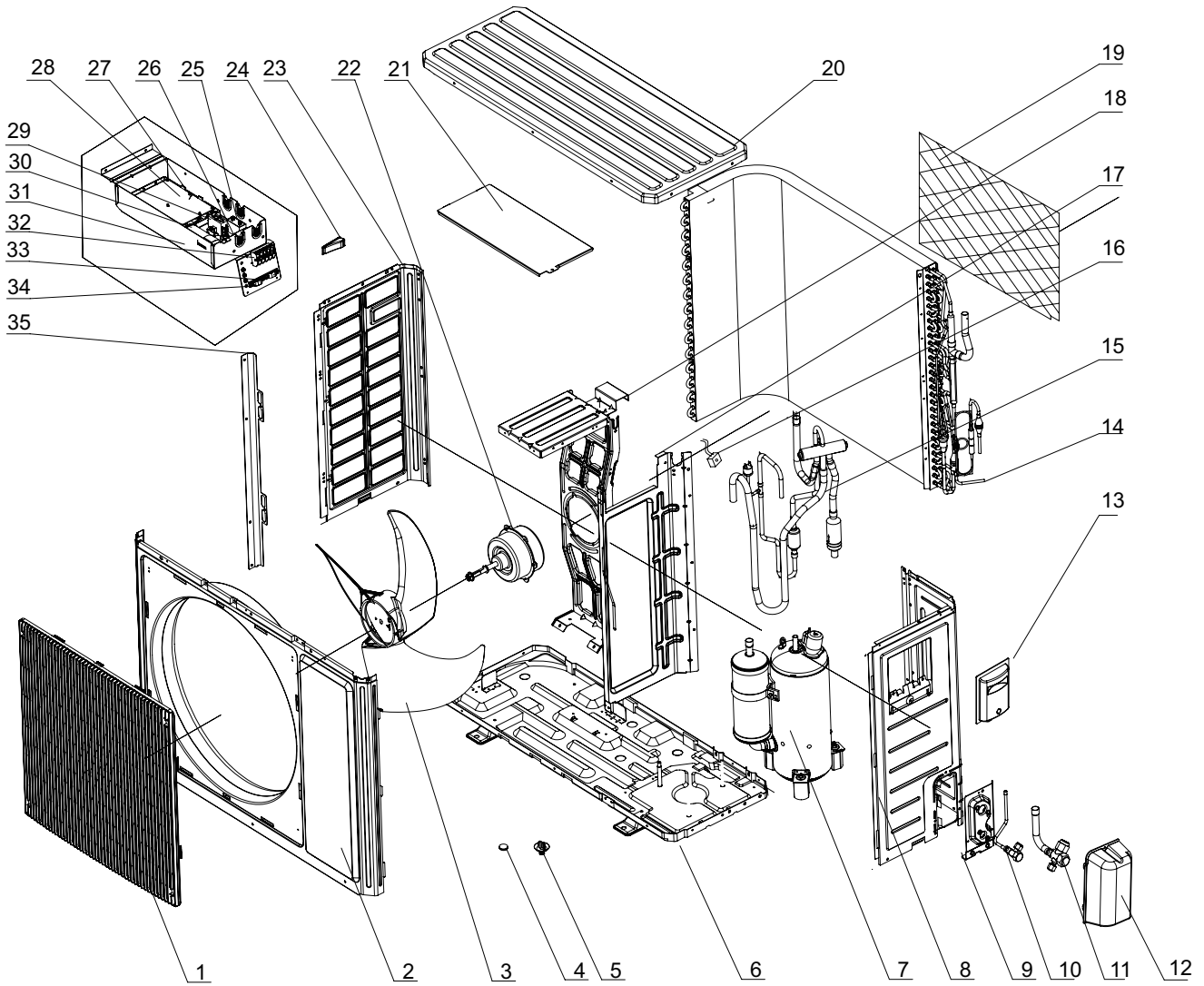
NO.	Description	Part Code		Qty
		GWH24AAD-K3DNA4A/I		
		Product Code		
		CB479N00300	CB479N00301	
1	Front Panel Assy	000003000155	000003000155	1
2	Filter Sub-Assy	11122089	11122089	2
3	Screw Cover	242520179	242520179	3
4	Front Case Assy	20000200000801	20000200000801	1
5	Air Louver(Manual)	10512732	10512732	3
6	Helicoid Tongue	26112512	26112512	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	000001000009	000001000009	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152025	26152025	1
11	O-Gasket of Cross Fan Bearing	76512203	76512203	1
12	Cross Flow Fan	10352060	10352060	1
13	Evaporator Support	24212177	24212177	1
14	Evaporator Assy	01100100289	01100100289	1
15	Cold Plasma Generator	1114001601	/	1
16	Wall Mounting Frame	01362026	01362026	1
17	Motor Press Plate	26112511	26112511	1
18	Fan Motor	1501214502	1501214502	1
19	Connecting pipe clamp	2611218801	2611218801	1
20	Drainage Hose	05230014	05230014	1
21	Stepping Motor	1521240210	1521240210	1
22	Crank	73012005	73012005	1
23	Guide Louver	20000400000401	20000400000401	1
24	Axile Bush	10542036	10542036	2
25	Electric Box	20112211	20112211	1
26	Terminal Board	42011233	42011233	1
27	Electric Box Cover2	20112210	20112210	1
28	Main Board	30145099	30145098	1
29	Display Board	300001000081	300001000042	1
30	Shield cover of Electric Box	01592176	01592176	1
31	Electric Box Cover	20112209	20112209	1
32	Jumper	4202021912	4202021912	1
33	Lower Shield of Electric Box	01592139	01592139	1
34	Electric Box Assy	100002002896	100002002079	1
35	Power Cord	/	/	/
36	Connecting Cable	4002052317	4002052317	0
37	Temperature Sensor	3900031302	3900031302	1
38	Remote Controller	305001000009	305001000009	1
39	Detecting Plate	30110144	30110144	1

Above data is subject to change without notice.

NO.	Description	Part Code		Qty
		GWH24AAD-K3DNA3A/I	GWH24AAD-K3DNA5A/I	
	Product Code	CB478N00700	CB488N00100	
1	Front Panel Assy	20000200000801	200003000114T01	1
2	Filter Sub-Assy	11122089	11122089	2
3	Screw Cover	242520179	242520179	3
4	Front Case Assy	20000200000801	20000200000801	1
5	Air Louver(Manual)	10512732	10512732	3
6	Helicoid Tongue	26112512	26112512	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	000001000009	000001000009	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152025	26152025	1
11	O-Gasket of Cross Fan Bearing	76512203	76512203	1
12	Cross Flow Fan	10352060	10352060	1
13	Evaporator Support	24212177	24212177	1
14	Evaporator Assy	01100100289	01100100289	1
15	Cold Plasma Generator	/	/	/
16	Wall Mounting Frame	01362026	01362026	1
17	Motor Press Plate	26112511	26112511	1
18	Fan Motor	1501214502	1501214502	1
19	Connecting pipe clamp	2611218801	2611218801	1
20	Drainage Hose	05230014	05230014	1
21	Stepping Motor	1521240210	1521240210	1
22	Crank	73012005	73012005	1
23	Guide Louver	20000400000401	20000400000401	1
24	Axile Bush	10542036	10542036	2
25	Electric Box	20112211	20112211	1
26	Terminal Board	42011233	42011233	1
27	Electric Box Cover2	20112210	20112210	1
28	Main Board	30145098	30145098	1
29	Display Board	300001000042	300001000042	1
30	Shield cover of Electric Box	01592176	01592139	1
31	Electric Box Cover	20112209	20112209	1
32	Jumper	4202021912	4202021912	1
33	Lower Shield of Electric Box	01592139	01592139	1
34	Electric Box Assy	100002002079	100002002079	1
35	Power Cord	/	/	/
36	Connecting Cable	4002052317	4002052317	0
37	Temperature Sensor	3900031302	3900031302	1
38	Remote Controller	305001000009	305001000009	1
39	Detecting Plate	30110144	30110144	1

Above data is subject to change without notice.

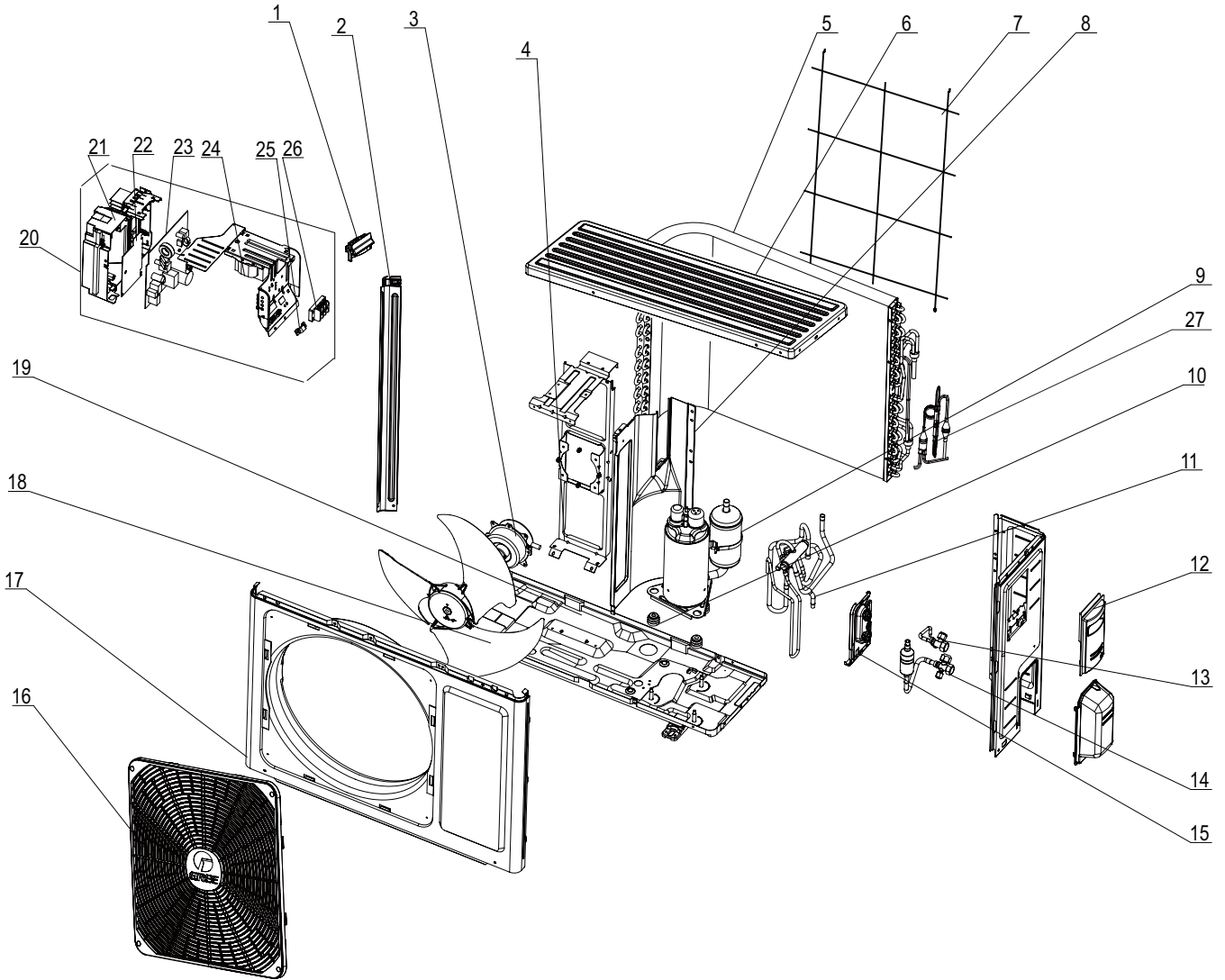
10.2 Outdoor Unit



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

No.	Description	Part Code	Qty
		GWH24QD-K3DNA1A/O	
		Product Code	
		CB419W10800	
1	Front Grill	22413045	1
2	Front Panel	01535013P	1
3	Axial Flow Fan	10335008	1
4	Drainage Connector	06123401	1
5	Drainage hole Cap	06813401	3
6	Chassis Sub-assy	01700000161P01	1
7	Compressor and Fittings	00105249G	1
8	Right Side Plate Assy	0130329206	1
9	Valve Support Sub-Assy	01705046P	1
10	Cut off Valve	07133844	1
11	Cut off Valve	07133844	1
12	Valve Cover	/	/
13	Handle	26233053	1
14	Condenser Assy	011002000177	1
15	4-Way Valve Assy	030152000073	1
16	Magnet Coil	/	/
17	Clapboard	01235082	1
18	Motor Support Sub-Assy	01705067	1
19	Rear Grill	01475020	1
20	Coping	012049000007P	1
21	Electric Box Cover	20123028	1
22	Fan Motor	1501506402	1
23	Left Side Plate	01305093P	1
24	Handle	26233053	1
25	Capacitor CBB61S	/	/
26	Transformer	/	/
27	Electric Box	20113027	1
28	Main Board	300027000055	1
29	AC Contactor	/	/
30	Capacitor CBB65	/	/
31	Electric Box Assy	100002000320	1
32	Terminal Board	420101943	1
33	Insulation GasketC	70410523	1
34	Wire Clamp	71010003	1
35	Supporting Board(Condenser)	01795031	1

Above data is subject to change without notice.



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

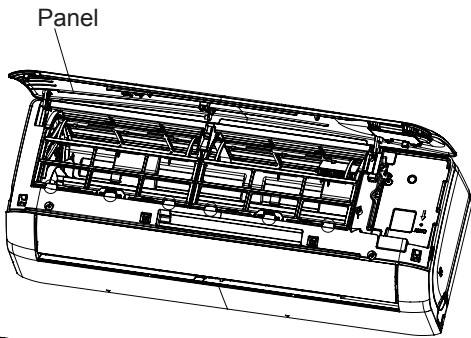
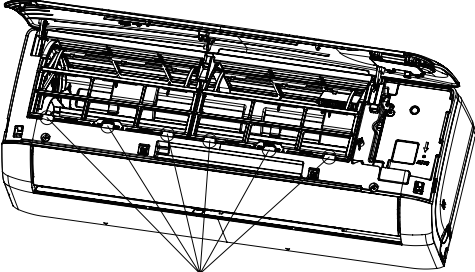
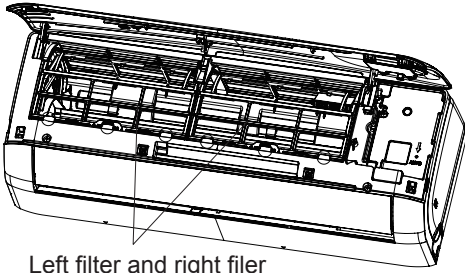
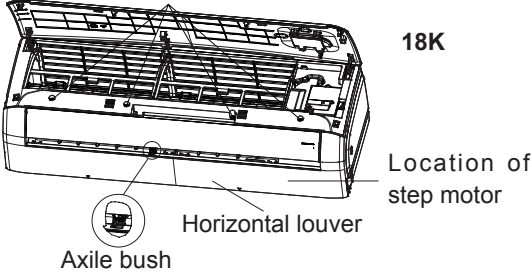
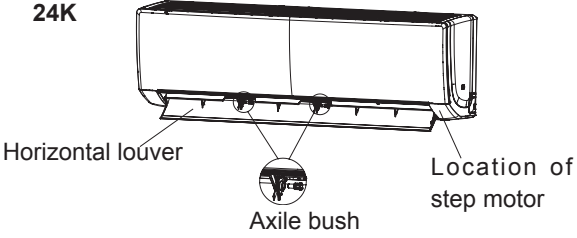
No.	Description	Part Code		Qty
		GWH18QD-K3DNA6E/O		
		CB427W06400		
1	Handle	/		/
2	Supporting Board	01173194		1
3	Fan Motor	011002000015		1
4	Motor Support	15013085		1
5	Condenser Assy	01703136		1
6	Coping	01253081		1
7	Rear Grill	01475014		1
8	Clapboard Sub-Assy	01233180		1
9	Compressor and Fittings	00103388		1
10	Compressor Gasket	00901200014		3
11	4-Way Valve Assy	030152000120		1
12	Big Handle	2623343106		1
13	Cut off Valve Sub-Assy	03005700067		1
14	Cut off Valve Assy	07133691		1
15	Valve Support	26113017		2
16	Front Grill	22413047		1
17	Cabinet	01433033		1
18	Axial Flow Fan	10333011		1
19	Chassis Sub-assy	017000000086		1
20	Electric Box Assy	10000500512		1
21	Electric Box	100002000019		1
22	Filter Board	/		/
23	Main Board	30138001137		1
24	Reactor	49013070		1
25	Wire Clamp	71010103		1
26	Terminal Board	42010313		1
27	Capillary Sub-assy	030006000018		1

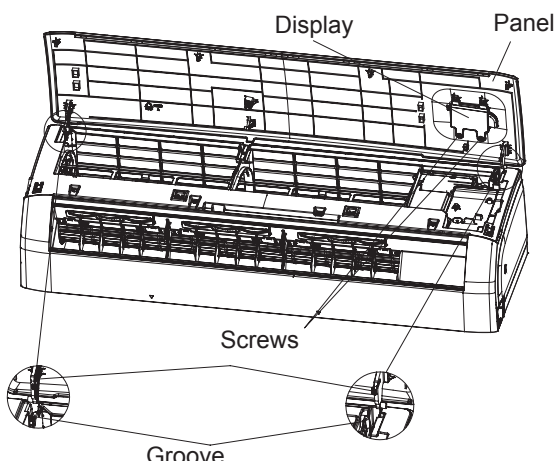
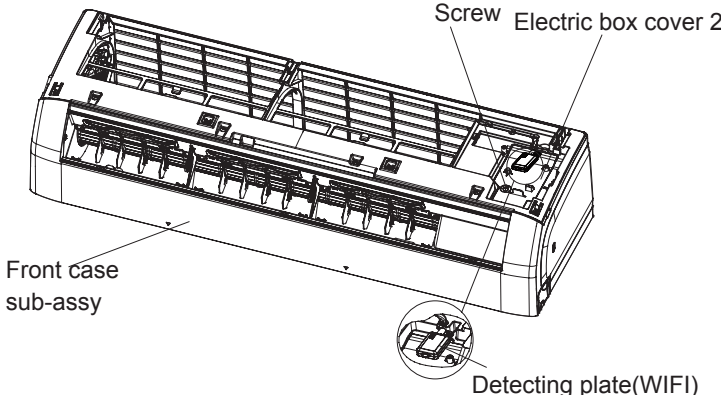
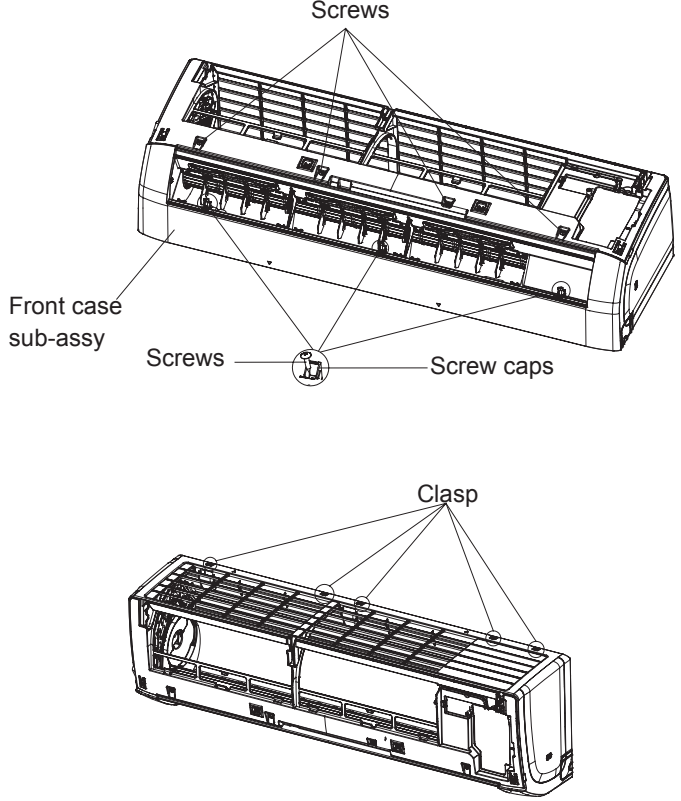
11. Removal Procedure

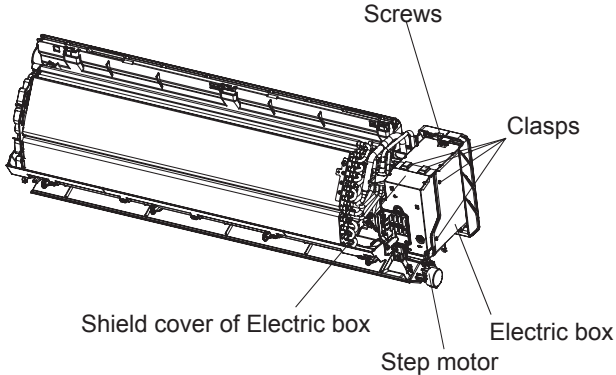
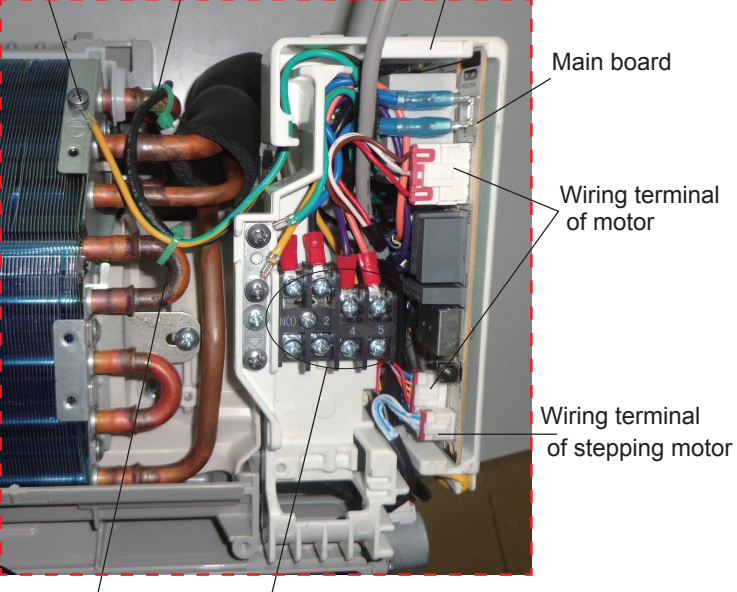
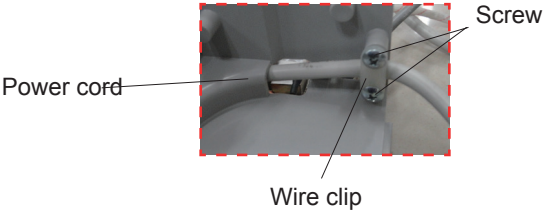



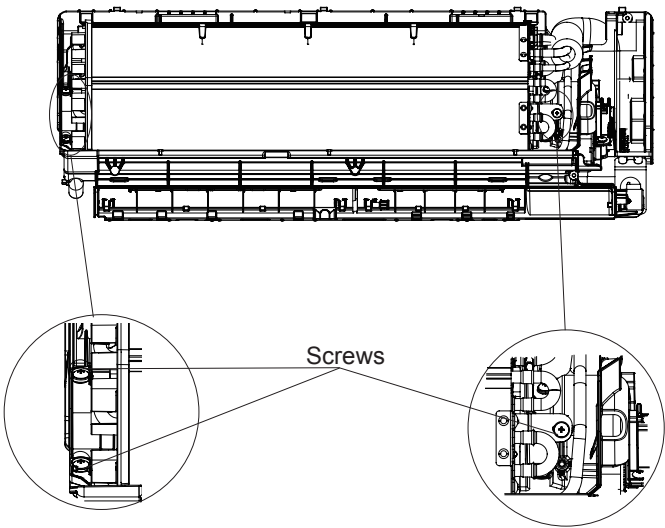
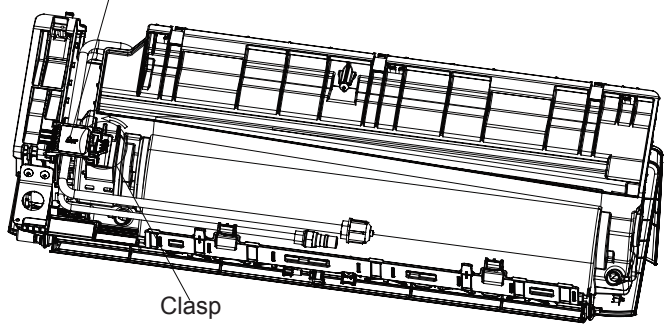
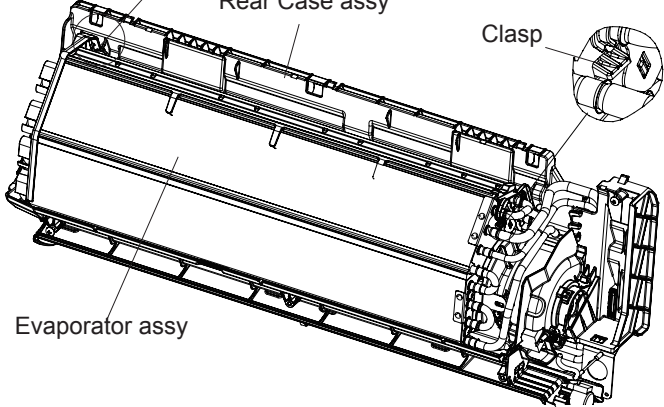
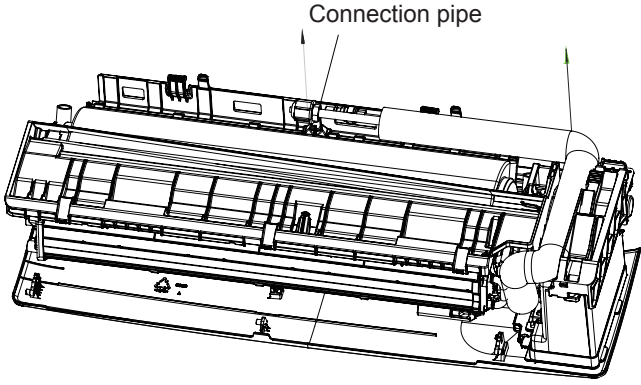
Caution: discharge the refrigerant completely before removal.

11.1 Removal Procedure of Indoor Unit

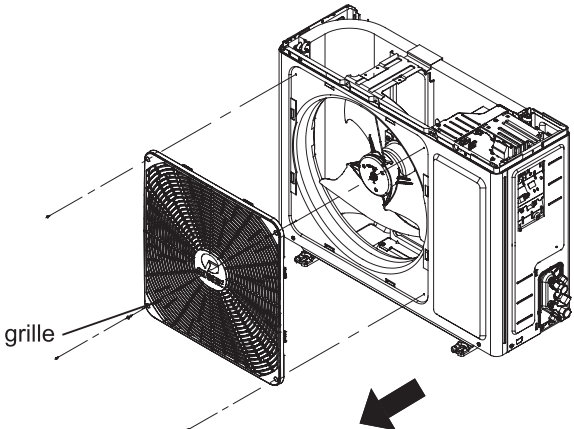
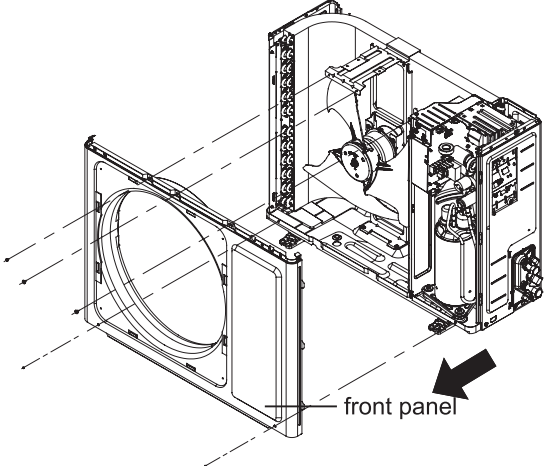
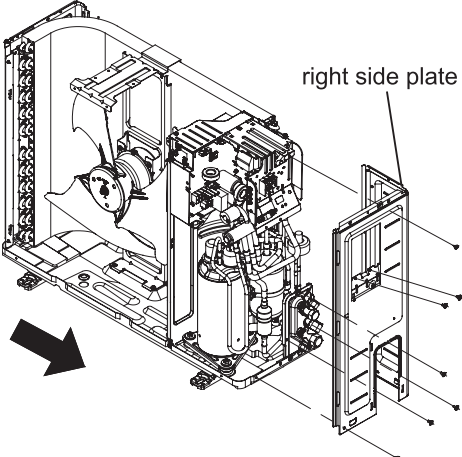
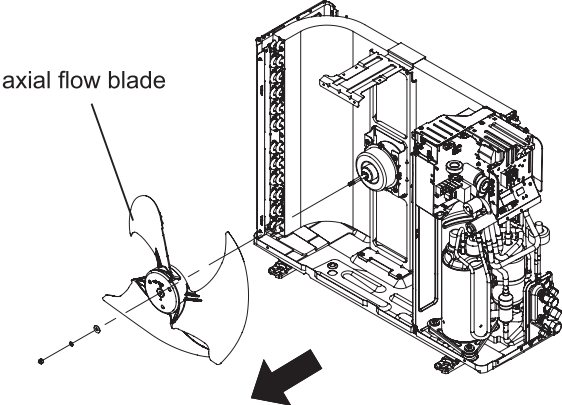
Step	Procedure
1. Remove filter	<div style="text-align: center;">  <p>Panel</p>  <p>Clasps</p>  <p>Left filter and right filter</p> </div>
<p>a Open the panel.</p> <p>b Loosen the clasp shown in the fig and then pull the left filter and right filter outwards to remove them.</p>	<div style="text-align: center;">  <p>18K</p> <p>Horizontal louver</p> <p>Axile bush</p> <p>Location of step motor</p> <hr/>  <p>24K</p> <p>Horizontal louver</p> <p>Axile bush</p> <p>Location of step motor</p> </div>
2. Remove horizontal louver	<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>

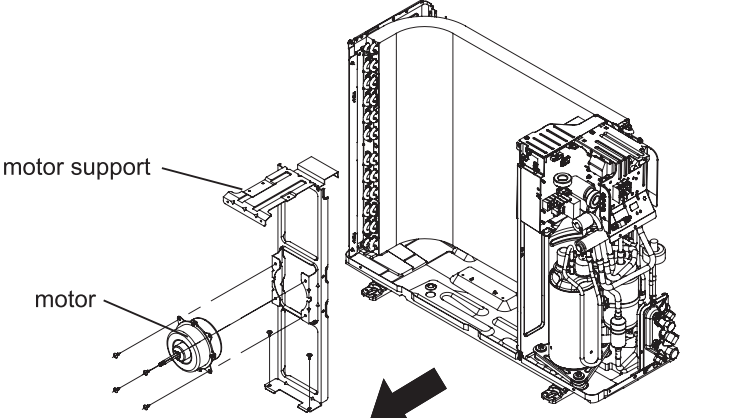
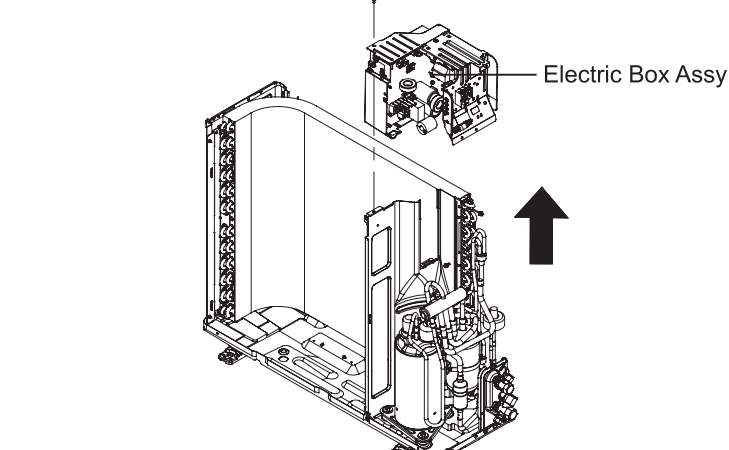
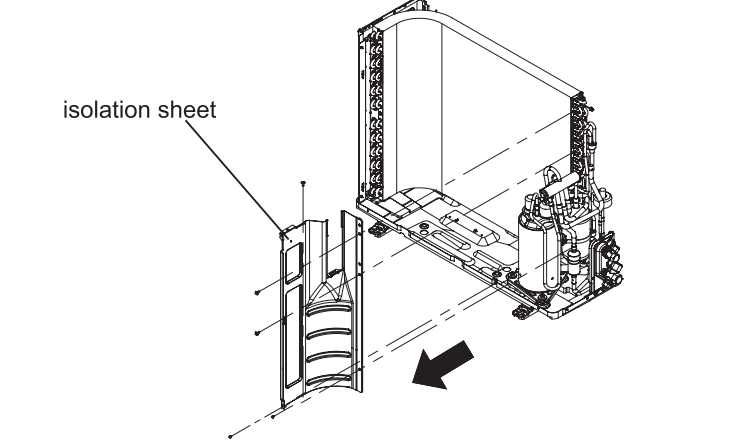
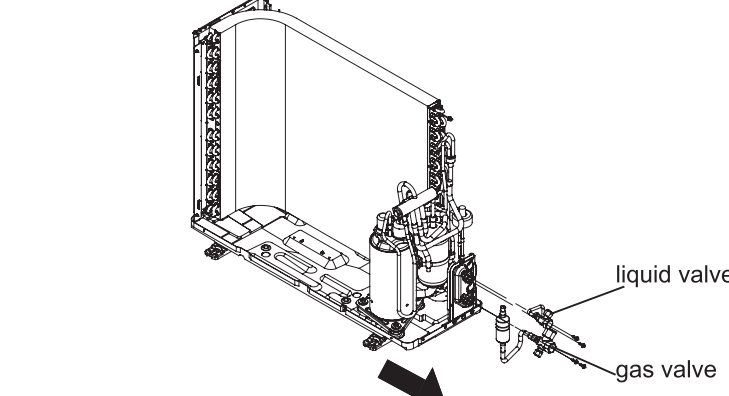
Step	Procedure
<p>3. Remove panel</p>	<p>Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.</p> <p>Note: The display of some models is fixed on the panel; unscrew the screws fixing the display on the panel before removing the panel.</p> 
<p>4. Remove electric box cover 2 and detecting plate</p>	<p>Remove the screws on the electric box cover 2 and detecting plate(WIFI), then remove the electric box cover 2 and detecting plate(WIFI).</p> <p>Note:The position of detection board(WIFI) may be different for different models.</p> 
<p>5. Remove front case sub-assy</p>	<p>a Remove the screws fixing front case.</p> <p>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.</p> <p>b Loosen the clasps at left, middle and right sides of front case. Lift the front case sub-assy upwards to remove it.</p> 

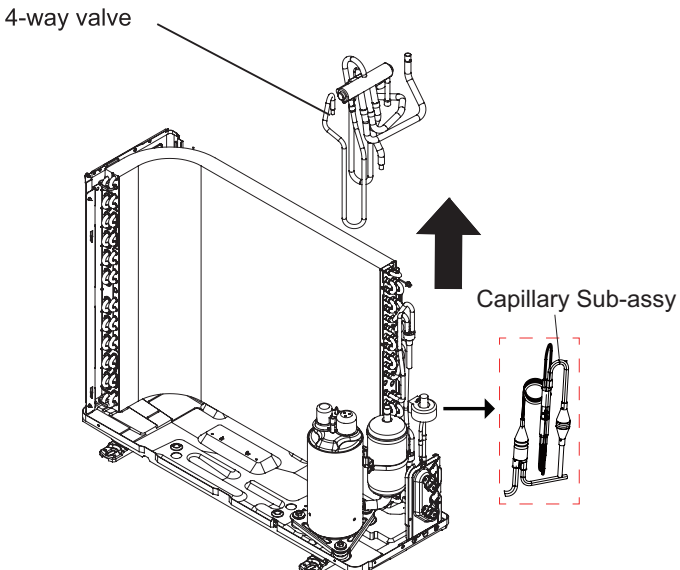
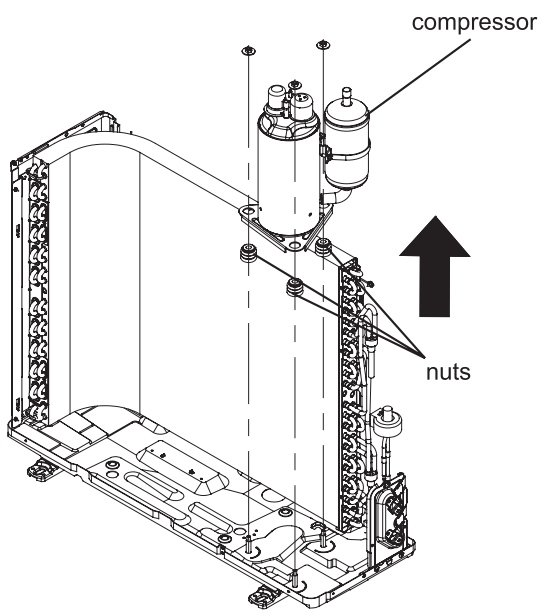
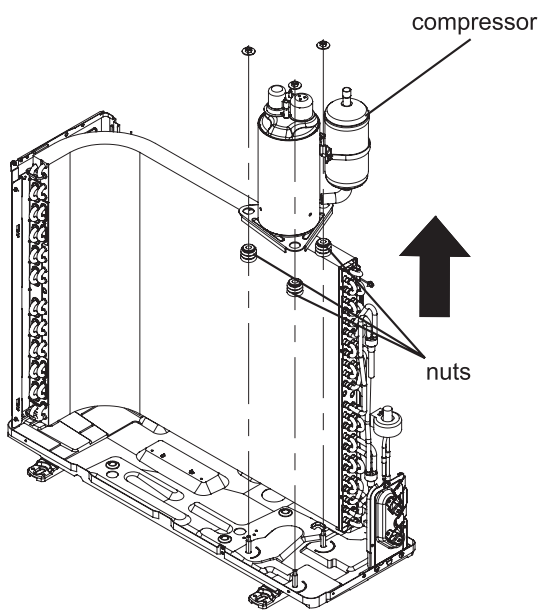
Step	Procedure
6. Remove electric box assy	
a	<p>Loosen the connection clasps between Cold plasma generator and electric box, and then remove the cold plasma generator.</p> 
b	<p>① Cut off the wire binder and pull out the indoor tube temperature sensor. ② Screw off one grounding screw. ③ Remove the wiring terminals of motor and stepping motor. ④ Remove the electric box assy. ⑤ Screw off the screws that are locking each.</p> 
c	<p>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.</p>  <p>Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below:</p> <ol style="list-style-type: none"> 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. 

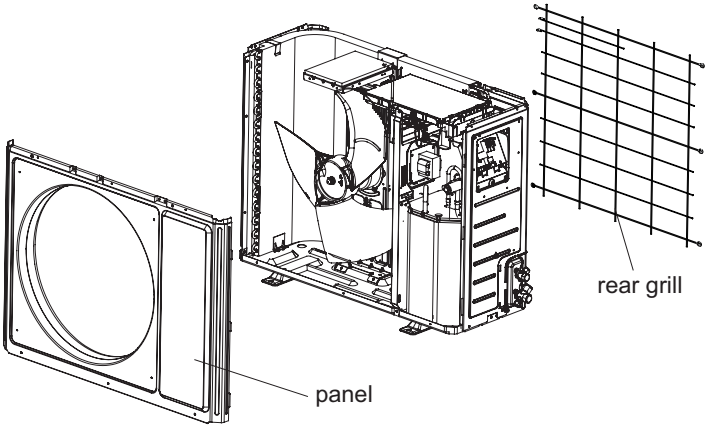
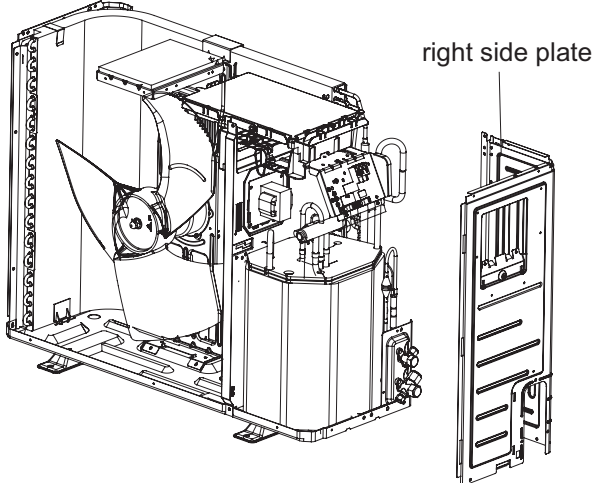
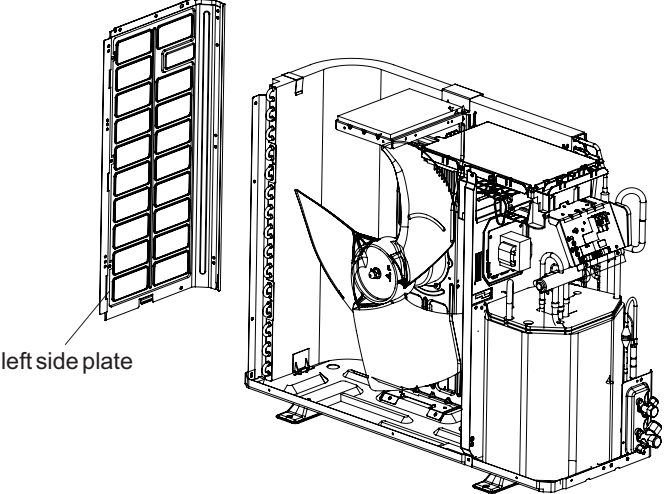
Step	Procedure
7. Remove evaporator assy	
a	<p>Remove 3 screws fixing evaporator assy.</p> 
b	<p>At the back of the unit, Loosen the clasp, connection pipe clamp and then remove the connection pipe clamp.</p> 
c	<p>First remove the left side of evaporator from the groove of bottom shell and then remove the right side from the clasp on the bottom shell.</p> 
d	<p>Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.</p> 

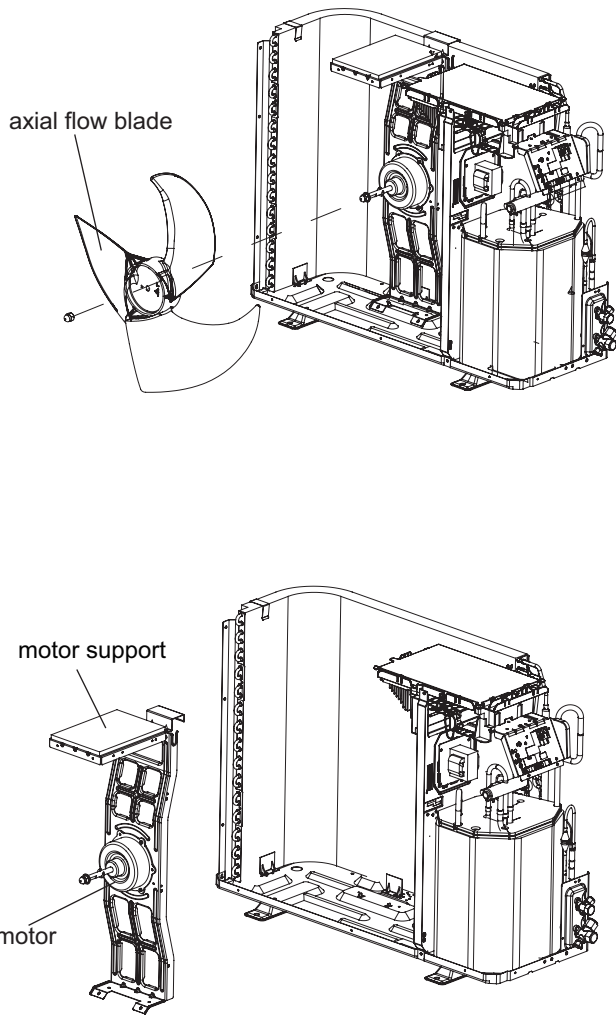
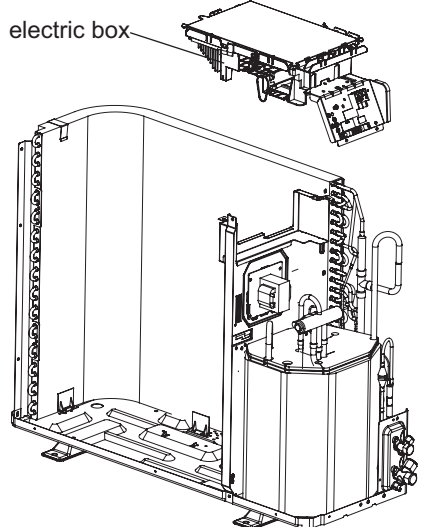
Step	Procedure
<p>8. Remove motor and cross flow blade</p> <p>a</p> <p>Remove 3 screws fixing motor clamp and then remove the motor clamp.</p> <p>b</p> <p>Remove the at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them.</p>	<p>The diagram for step 8 is divided into two parts, (a) and (b). Part (a) shows a perspective view of the unit's internal components. Three screws are indicated, which are used to secure the motor clamp. The motor clamp is shown being removed from the unit. Part (b) shows two sub-diagrams. The top one shows the cross flow blade and the motor being lifted out of the unit. The bottom one shows the unit with the cross flow blade and motor removed, leaving a gap in the internal structure.</p>
<p>9. Remove vertical louver</p> <p>Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.</p>	<p>The diagram for step 9 shows a perspective view of the unit's internal components. The bottom case is shown, and the vertical louver is being loosened from the clasps. The diagram is labeled with 'Bottom case', 'Vertical louver', and 'Clasps'.</p>

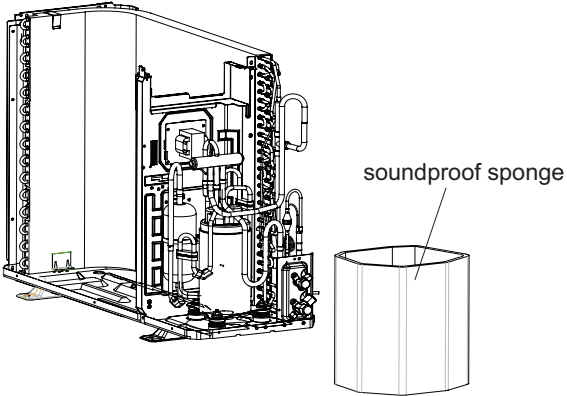
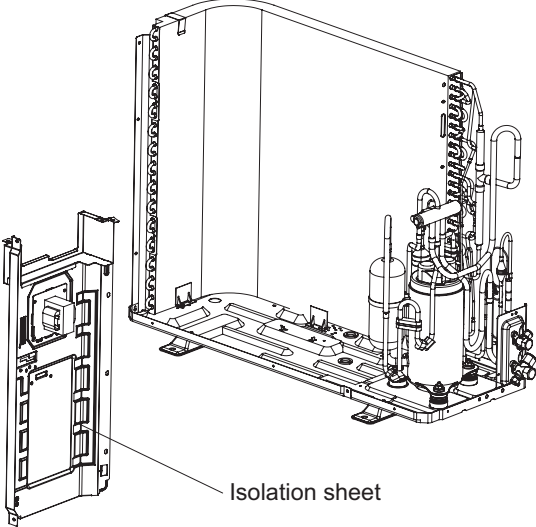
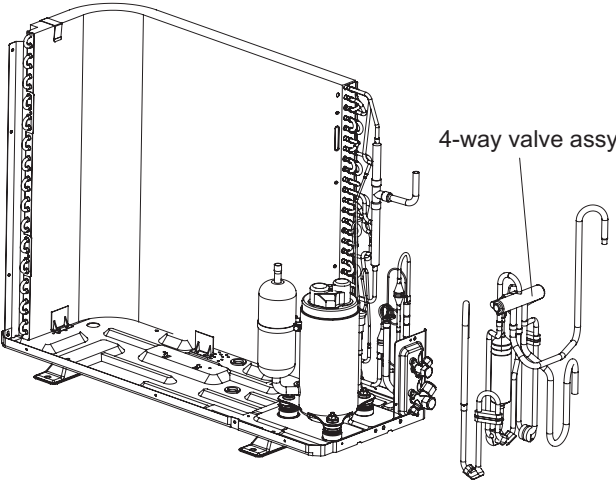
Steps	Procedure	Procedure
<p>4.Remove grille</p>	<p>Remove connection screws between the front grille and the front panel. Then remove the grille.</p>	 <p>grille</p>
<p>5. Remove front panel</p>	<p>Remove connection screws connecting the front panel with the chassis and the motor support and then remove the front panel.</p>	 <p>front panel</p>
<p>6. Remove right side plate</p>	<p>Remove connection screws connecting the right side plate with the valve support and the electric box. Then remove the right side plate.</p>	 <p>right side plate</p>
<p>7. Remove axial flow blade</p>	<p>Remove the nut on the blade and then remove the axial flow blade.</p>	 <p>axial flow blade</p>

Steps	Procedure
<p>8. Remove motor and motor support</p> <p>Remove the tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the tapping screws fixing the motor support and lift the motor support to remove it.</p>	 <p>motor support</p> <p>motor</p>
<p>9. Remove Electric Box Assy</p> <p>Remove screws fixing the electric box subassembly; loosen the wire bundle and unplug the wiring terminals. Then lift the electric box to remove it.</p>	 <p>Electric Box Assy</p>
<p>10. Remove isolation sheet</p> <p>Remove the screws fixing the isolation sheet and then remove the isolation sheet.</p>	 <p>isolation sheet</p>
<p>11. Remove compressor</p> <p>a Unsolder the welding joint connecting the capillary, valves and the outlet pipe of condenser to remove the capillary. Do not block the capillary with welding slag during unsoldering.</p>	 <p>liquid valve</p> <p>gas valve</p>

Steps	Procedure	
b	<p>Remove the 2 screws fixing the gas valve and unsolder the welding joint between the gas valve and the air-return pipe to remove the gas valve. (NOTE: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature).</p> <p>Remove the 2 screws fixing the liquid valve and unsolder the welding joint connecting the liquid valve to the Y-type pipe to remove the liquid valve.</p>	 <p>4-way valve</p> <p>Capillary Sub-assy</p>
c	<p>Unsolder pipes connecting with compressor.</p>	 <p>compressor</p> <p>nuts</p>
d	<p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p>	 <p>compressor</p> <p>nuts</p>

Steps	Procedure	
<p>b</p>	<p>Remove the 5 screws connecting the panel with the chassis and the motor support, and then remove the panel.</p> <p>Remove the 6 screws connecting the left side plate and right side plate and then remove rear grill</p>	 <p>Diagram illustrating the removal of the front panel and rear grill. The front panel is shown detached on the left, and the rear grill is shown detached on the right. The main unit is shown in the center with the panel and grill removed.</p>
<p>3. Remove left side plate and right side plate</p>		
<p>a</p>	<p>Remove the screws connecting the right side plate with the chassis, the valve support and the electric box, and then remove the right side plate assy.</p>	 <p>Diagram illustrating the removal of the right side plate. The right side plate is shown detached on the right, and the main unit is shown in the center with the right side plate removed.</p>
<p>b</p>	<p>Remove the screws connecting the left side plate and the chassis, and then remove the left side plate assy.</p>	 <p>Diagram illustrating the removal of the left side plate. The left side plate is shown detached on the left, and the main unit is shown in the center with the left side plate removed.</p>

Steps	Procedure	
<p>4. Remove fan motor</p> <p>a</p> <p>b</p>	<p>Remove the nuts fixing the blade and then remove the axial flow blade.</p> <p>Remove the 4 tapping screws fixing the motor; disconnect the leading wire insert of the motor and then remove the motor. Remove the 2 tapping screws fixing the motor support and then pull the motor support upwards to remove it.</p>	 <p>The diagram consists of two parts. The top part shows a close-up of an 'axial flow blade' being removed from the fan assembly. The bottom part shows the 'motor support' and the 'motor' being removed from the fan assembly. Labels 'axial flow blade', 'motor support', and 'motor' are used to identify the components.</p>
<p>5. Remove electric box</p>	<p>Remove the screws fixing the electric box sub-assy; loosen the wire bundle; pull out the wiring terminals and then pull the electric box upwards to remove it.</p>	 <p>The diagram shows the 'electric box' being removed from the fan assembly. A label 'electric box' points to the component being pulled out of the main unit.</p>

Steps	Procedure
<p>6.Remove soundproof sponge</p>	<p>Since the piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully</p>  <p style="text-align: right;">soundproof sponge</p>
<p>7. Remove Isolation sheet</p>	<p>Remove the 3 screws fixing the isolation sheet and then remove the Isolation sheet.</p>  <p style="text-align: right;">Isolation sheet</p>
<p>8. Remove 4-way valve assy</p>	<p>Discharge the refrigerant completely;unsolder the pipelines connecting the compressor and the condenser assy,and then remove the 4-way valve assy.</p>  <p style="text-align: right;">4-way valve assy</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

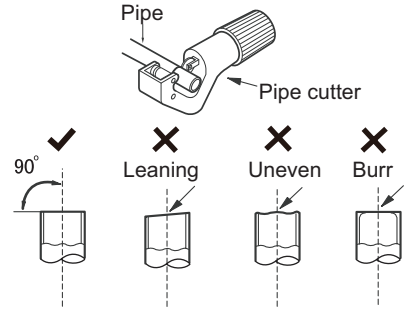
Appendix 3: Pipe Expanding Method

⚠ Note:

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

A: Cut the pip

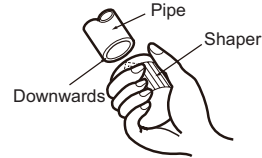
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



B: Remove the burrs

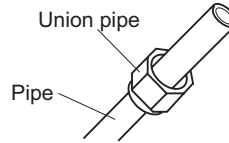
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.

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.



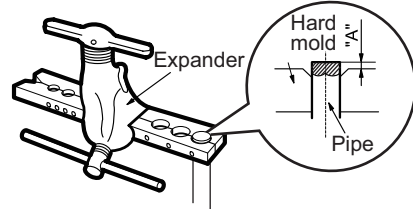
E: Expand the port

- Expand the port with expander.

⚠ Note:

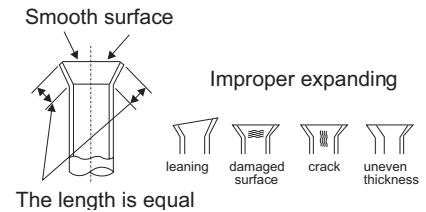
- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(mm)	A(mm)	
	Max	Min
Φ6 - 6.35 (1/4")	1.3	0.7
Φ9.52 (3/8")	1.6	1.0
Φ12 - 12.7 (1/2")	1.8	1.0
Φ15.8 - 16 (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 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

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