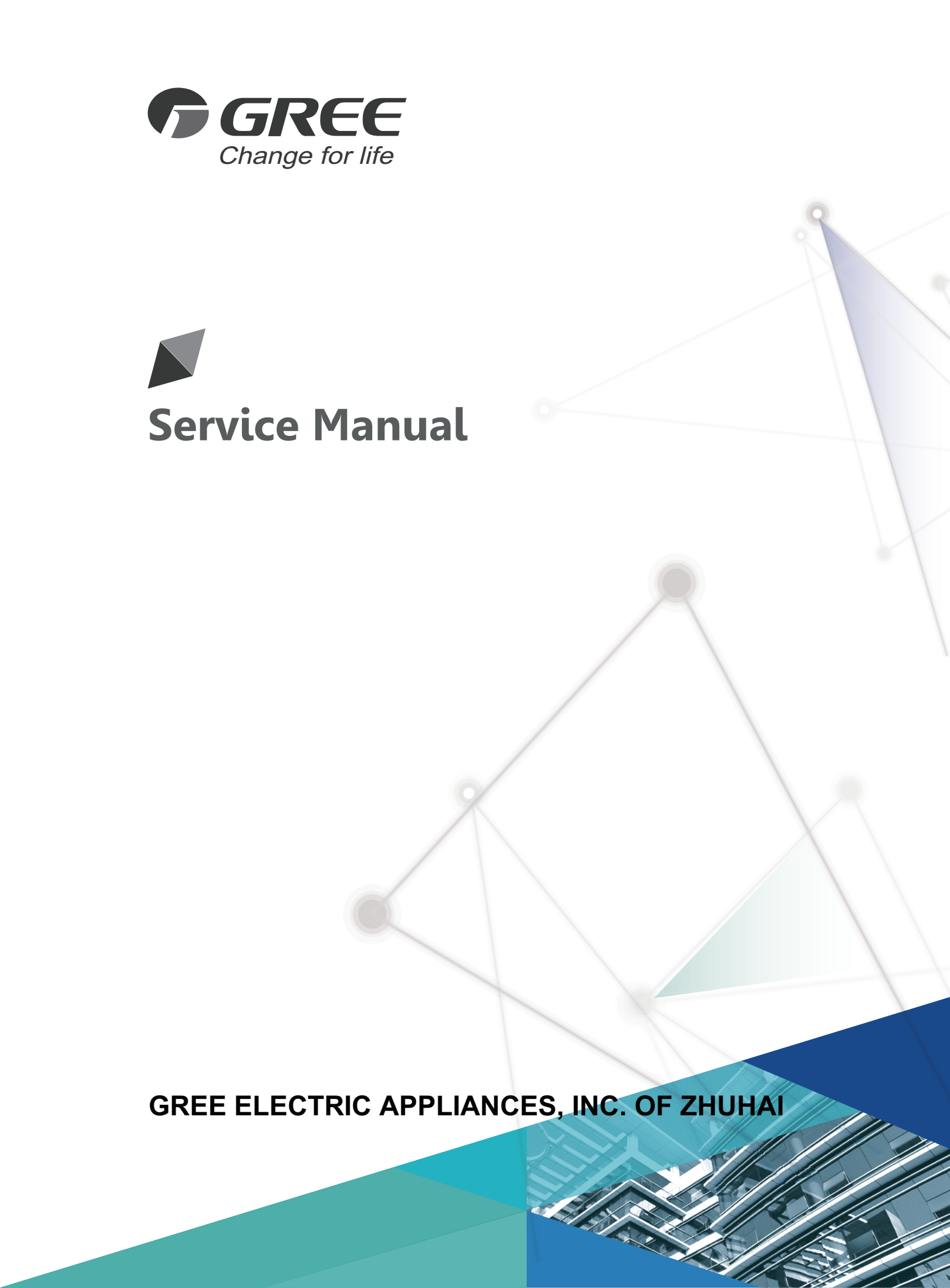
GREE
Change for life

Service Manual



GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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1. Summary

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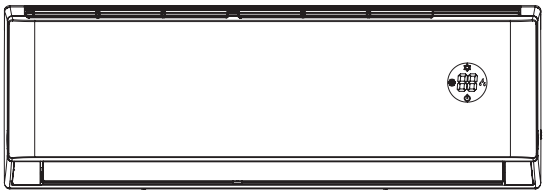

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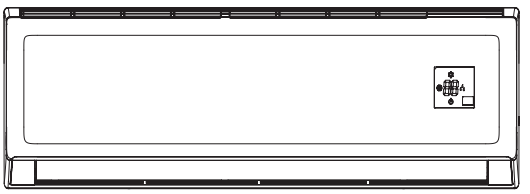

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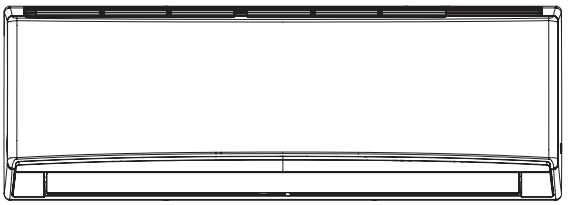

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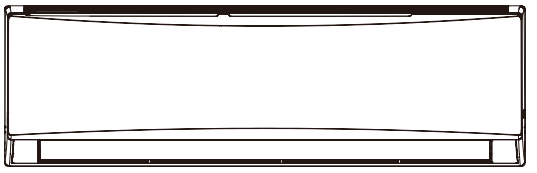

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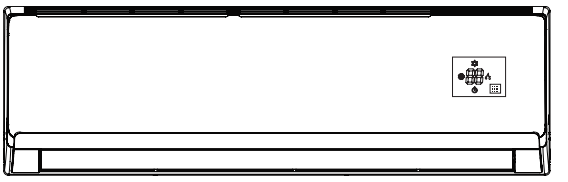

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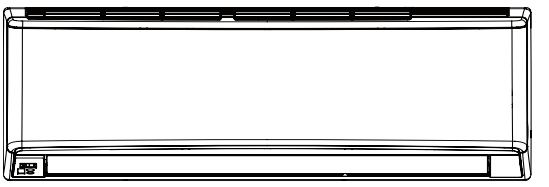

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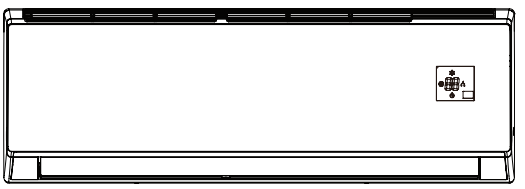

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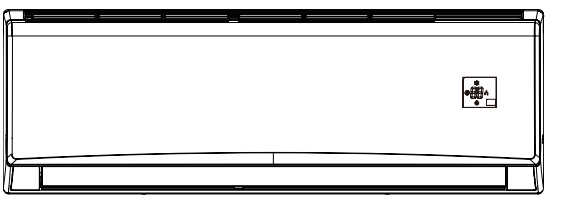

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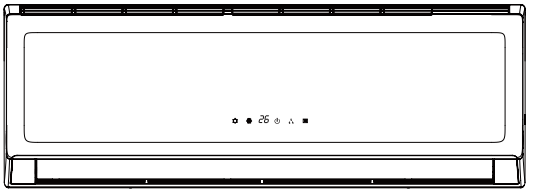

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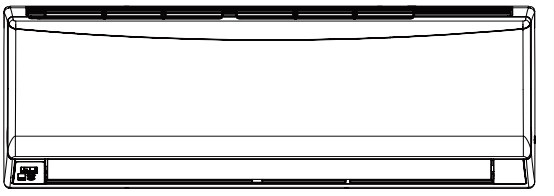

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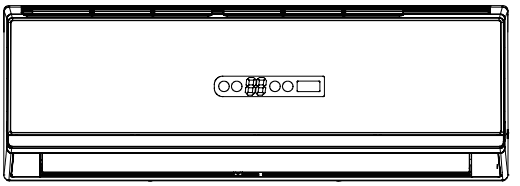

E4 Panel

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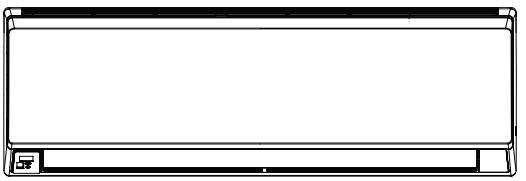
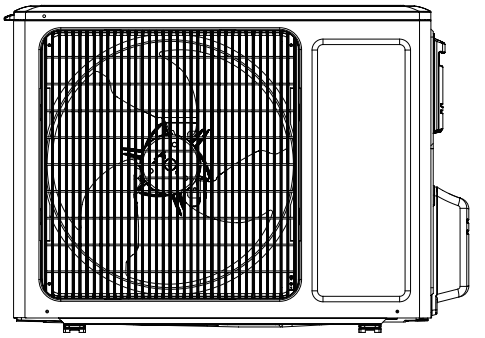


Outdoor Unit:

GWH12QB-K6DNB8I/O



Remote Controller:

YAN1F6(WiFi)

YAP1FB2(WiFi)

Model List:

No	Model	Product code	Remote Controller
1	GWH12QB-K6DNB8I	CB438006800	YAN1F6(WiFi)
2		CB438006801	
3	GWH12QB-K6DNB2I	CB432012300	
4	GWH12QB-K6DNB4I	CB434010600	
5		CB434010601	
6	GWH12QB-K6DNA1I	CB419015000	
7	GWH12QB-K6DND6I	CB460005100	
8		CB460005101	
9	GWH12QB-K6DNA5I	CB425011800	
10		CB425011801	
11	GWH12QB-K6DNA3I	CB424006500	
12		CB424006501	
13	GWH12QB-K6DNC8I	CB456006200	
14		CB456006201	
15	GWH12QB-K6DNC6I	CB443005400	
16		CB443005401	
17	GWH12QB-K6DNA2I	CB426006700	
18		CB426006701	
19	GWH12QB-K6DND8I	CB459005100	
20	GWH12QB-K6DNC4I	CB444007501	YAP1FB2(WiFi)
21		CB444007502	
22	GWH12QB-K6DNA5I	CB425011802	
23	GWH12QB-K6DNA6I	CB427010301	
24	GWH12QB-K6DNB8I	CB438006802	
25	GWH12QB-K6DNE4I	CB470002302	

2. Specifications

2.1 Specification Sheet

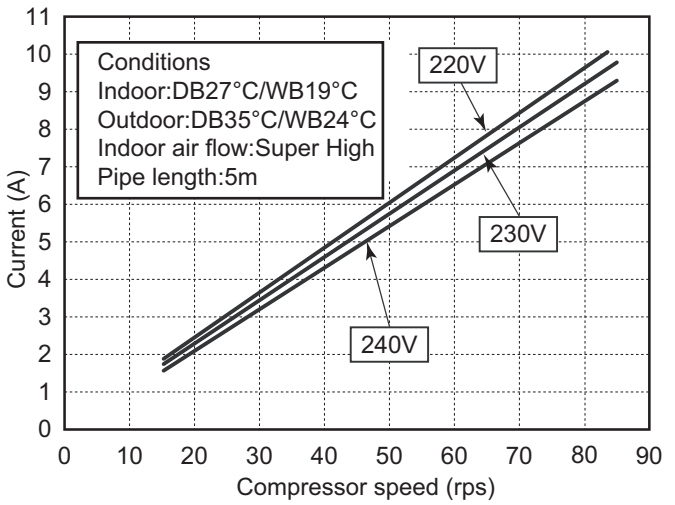
Model			1.GWH12QB-K6DNB8I 2.GWH12QB-K6DNB2I 3.GWH12QB-K6DNB4I 4.GWH12QB-K6DNA1I 5.GWH12QB-K6DND6I 6.GWH12QB-K6DNA5I 7.GWH12QB-K6DNA3I 8.GWH12QB-K6DNC6I 9.GWH12QB-K6DNC4I 10.GWH12QB-K6DNC8I 11.GWH12QB-K6DNB8I 12.GWH12QB-K6DNA2I 13.GWH12QB-K6DND8I 14.GWH12QB-K6DNA6I 15.GWH12QB-K6DNE4I
Product Code			1.CB438006800/CB438006801 2.CB432012300 3.CB434010600/CB434010601 4.CB419015000 5.CB460005100/CB460005101 6.CB425011800/CB425011801/ CB425011802 7.CB424006500/CB424006501 8.CB443005400/CB443005401 9.CB444007501/CB444007502 10.CB456006200/CB456006201 11.CB438006802 12.CB426006700/CB426006701 13.CB459005100 14.CB427010301 15.CB470002302
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity		W	3200
Heating Capacity		W	3500
Cooling Power Input		W	997
Heating Power Input		W	970
Cooling Current Input		A	4.42
Heating Current Input		A	4.30
Rated Input		W	1500
Rated Current		A	6.21
Air Flow Volume(SH/H/M/L/SL)		m^3/h	560/480/410/290/-
Dehumidifying Volume		L/h	1.4
EER		W/W	3.21
COP		W/W	3.61
SEER			6.10
SCOP(Average/Warmer/Colder)			4.00
HSPF			/
Application Area		m^2	15-22
Indoor Unit	Indoor Unit Model		1.GWH12QB-K6DNB8I/I 2.GWH12QB-K6DNB2I/I 3.GWH12QB-K6DNB4I/I 4.GWH12QB-K6DNA1I/I 5.GWH12QB-K6DND6I/I 6.GWH12QB-K6DNA5I/I 7.GWH12QB-K6DNA3I/I 8.GWH12QB-K6DNC6I/I 9.GWH12QB-K6DNC4I/I 10.GWH12QB-K6DNC8I 11.GWH12QB-K6DNB8I/I 12.GWH12QB-K6DNA2I/I 13.GWH12QB-K6DND8I/I 14.GWH12QB-K6DNA6I/I 15.GWH12QB-K6DNE4I/I
	Indoor Unit Product Code		1.CB438N06800/CB438N06801 2.CB432N12300 3.CB434N10600/CB434N10601 4.CB419N15000 5.CB460N05100/CB460N05101 6.CB425N11800/CB425N11801/ CB425N11802 7.CB424N06500/CB424N06501 8.CB443N05400/CB443N05401 9.CB444N07501/CB444N07502 10.CB456N06200/CB456N06201 11.CB438N06802 12.CB426N06700/CB426N06701 13.CB459N05100 14.CB427N10301 15.CB470N02302
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98X580
	Cooling Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/750/-
	Heating Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/850/-
	Fan Motor Power Output	W	20
	Fan Motor RLA	A	0.215
	Fan Motor Capacitor	μF	1
	Evaporator Form		Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5
	Evaporator Row-fin Gap	mm	2-1.4
	Evaporator Coil Length(LXDXW)	mm	584X22.8X266.7
	Swing Motor Model		MP24AA
	Swing Motor Power Output	W	1.5
	Fuse Current	A	3.15
	Sound Pressure Level(SH/H/M/L/SL)	dB (A)	41/37/33/25/-
	Sound Power Level(SH/H/M/L/SL)	dB (A)	55/47/43/35/-
	Dimension(WXHXD)	mm	790X275X200
	Dimension of Carton Box(LXWXH)	mm	863X268X352
	Dimension of Package(LXWXH)	mm	866X271X367
	Net Weight	kg	9
	Gross Weight	kg	11

Outdoor Unit	Model of Outdoor Unit		GWH12QB-K6DNB8I/O
	Product Code of Outdoor Unit		CB438W06800
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		QXF-B096zE190A
	Compressor Oil		FW68DA
	Compressor Type		Rotary
	L.R.A.	A	20.0
	Compressor RLA	A	4.21
	Compressor Power Input	W	943
	Overload Protector		1NT11L-6233
	Throttling Method		Capillary
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	-15~43
	Ambient temp (heating)	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94
	Rows-fin Gap	mm	1-1.4
	Coil Length (LXDXW)	mm	731X19.05X550
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.36
	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)	52/-/-
	Sound Power Level (H/M/L)	dB (A)	62/-/-
	Dimension (WXHXD)	mm	848X596X320
	Dimension of Carton Box (LXWXH)	mm	878X360X630
	Dimension of Package (LXWXH)	mm	881X363X645
	Net Weight	kg	31
	Gross Weight	kg	34
	Refrigerant		R32
	Refrigerant Charge	kg	0.59
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	16
	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.		

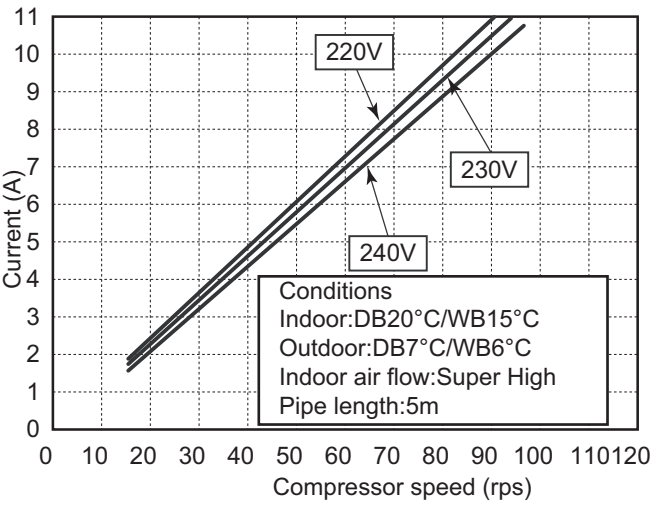
The above data is subject to change without notice; please refer to the nameplate of the unit.

2.2 Operation Characteristic Curve

Cooling

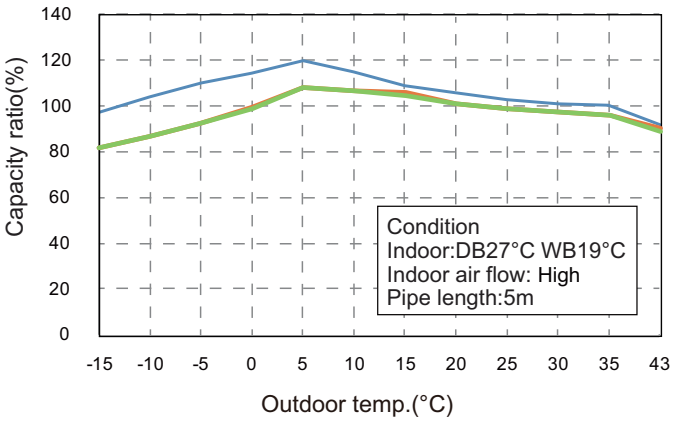


Heating

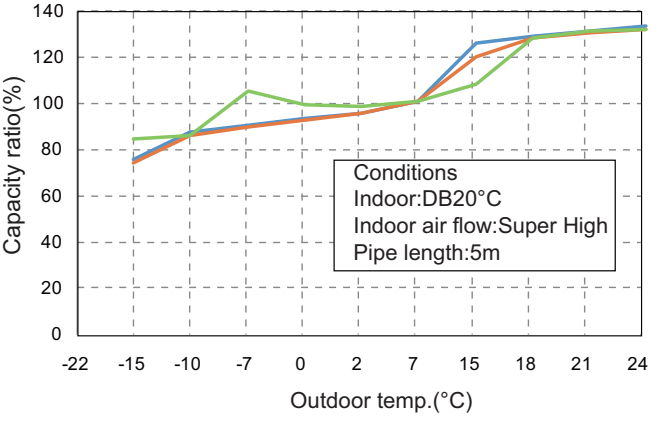


2.3 Capacity Variation Ratio According to Temperature

Cooling



Heating



2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

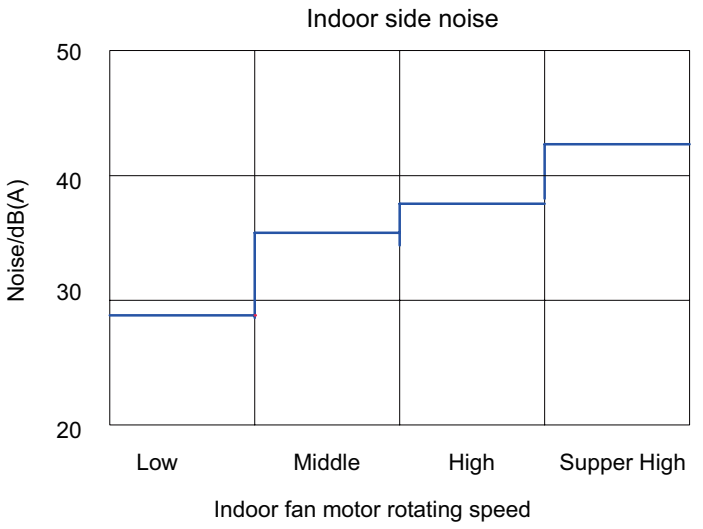
Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor frequency (Hz)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
27/19	35/24	12K	0.8 ~ 1.1	11 to 14	38 to 41	Super High	High	72

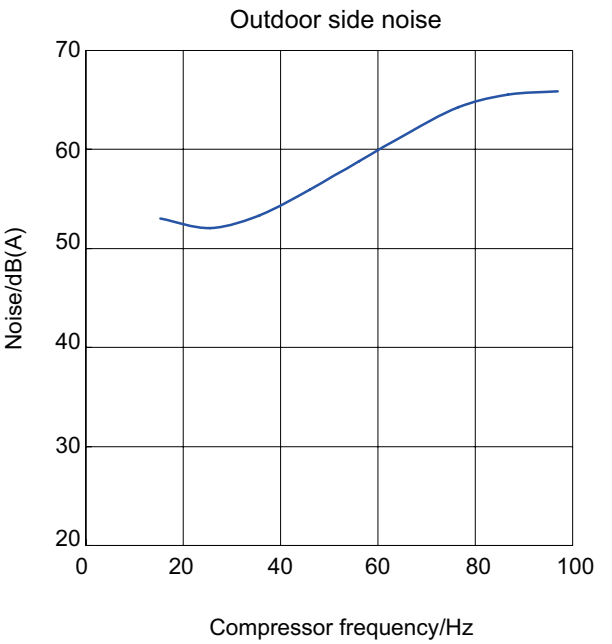
Heating:

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		P (MPa)	T1 (°C)	T2 (°C)			
20/15	7/6	12K	2.8 ~ 3.2	38 to 41	2 to 5	Super High	High	77

Instruction:
T1: Inlet and outlet pipe temperature of evaporator
T2: Inlet and outlet pipe temperature of condenser
P: Pressure at the side of big valve
Connection pipe length: 5m.

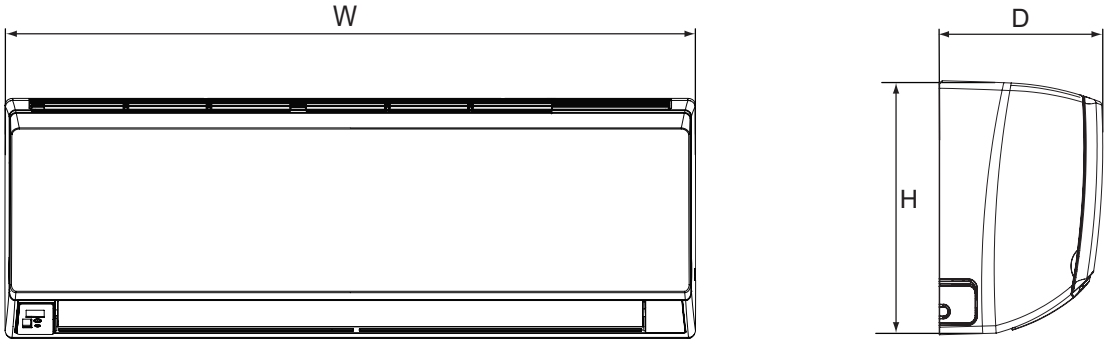
2.5 Noise Curve

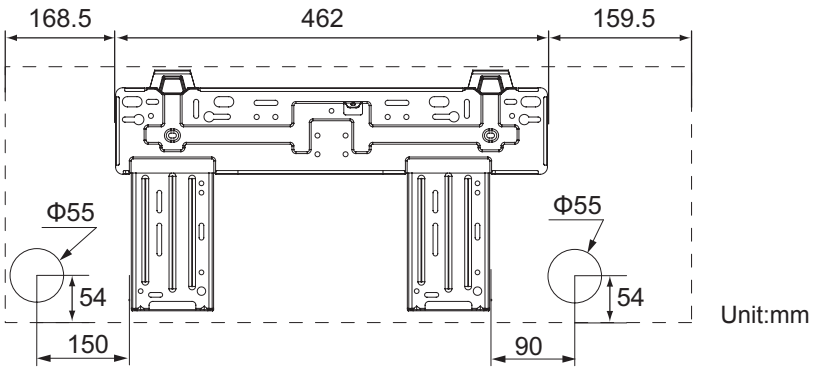




3. Outline Dimension Diagram

3.1 Indoor Unit



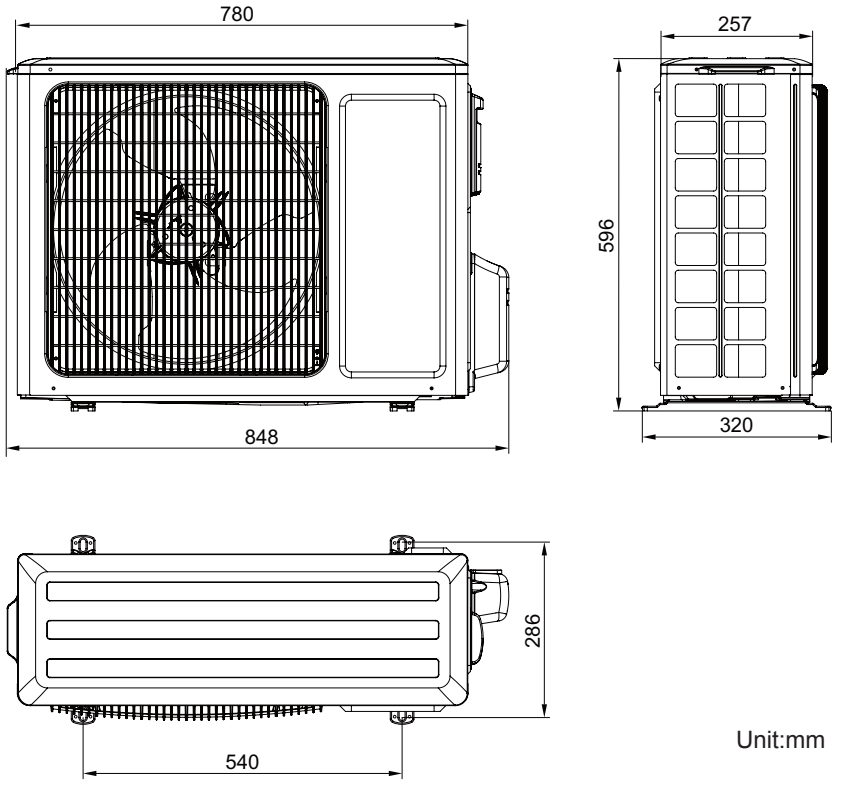


Unit:mm

Unit:mm

Models	W	H	D
12K	790	275	200

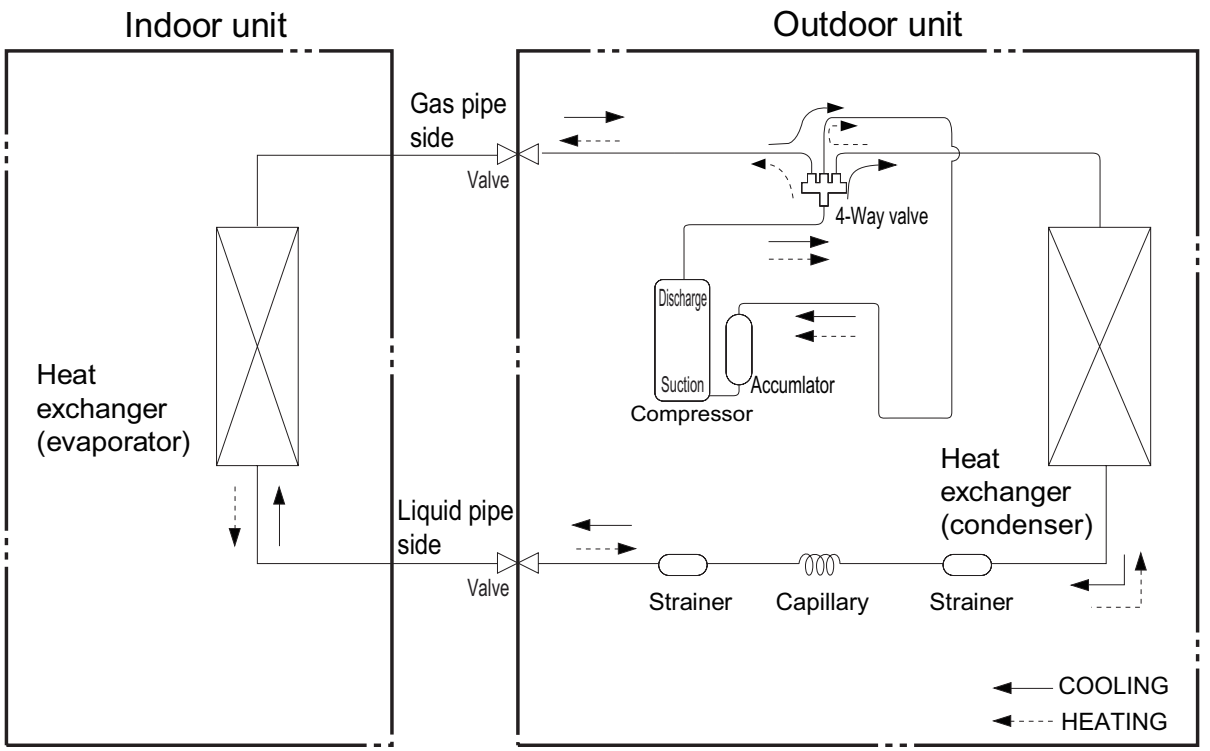
3.2 Outdoor Unit



Unit:mm

4. Refrigerant System Diagram

Cooling and heating model



Connection pipe specification:
Liquid pipe:1/4" (6mm)
Gas pipe:3/8" (9.52mm)

5. Electrical Part

5.1 Wiring Diagram

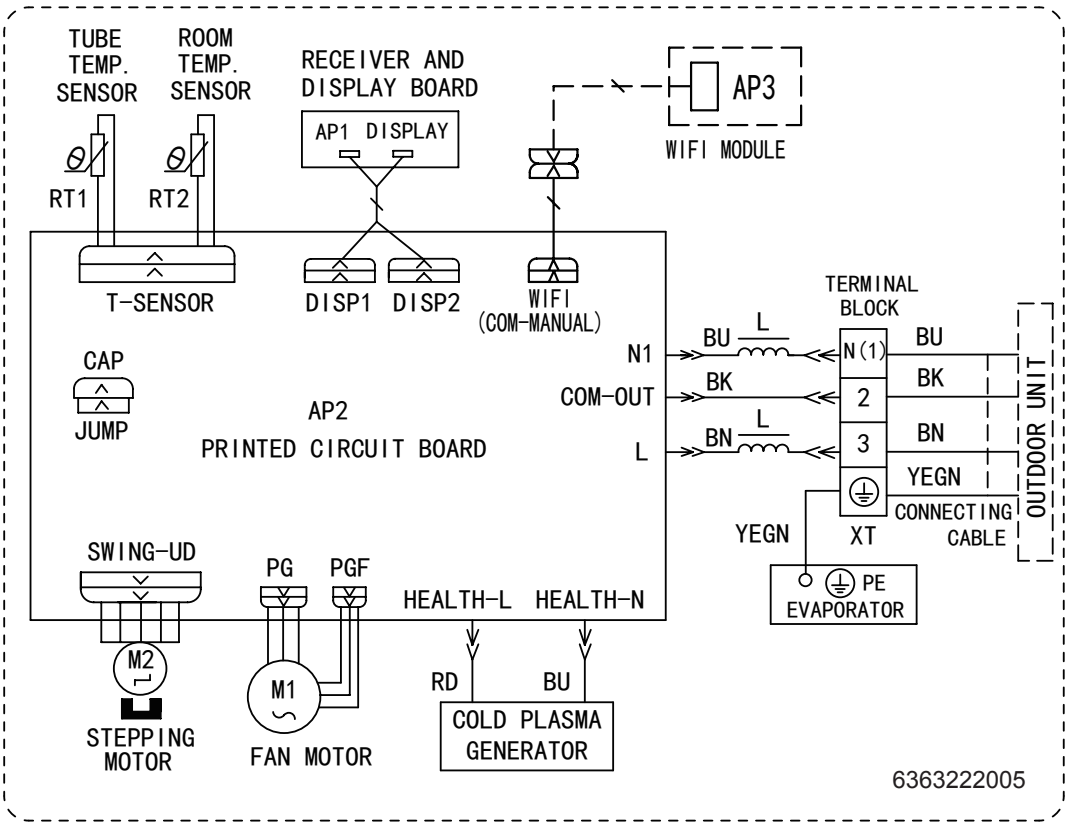
●Instruction

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	/	/

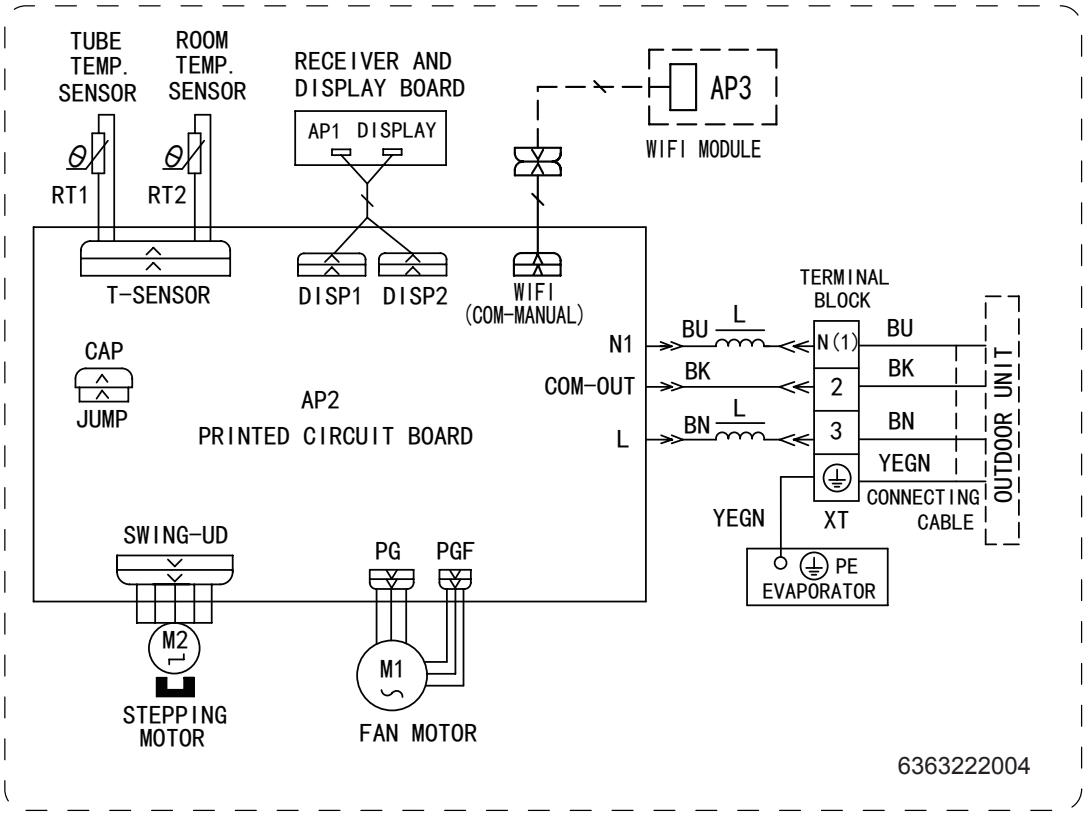
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● Indoor Unit

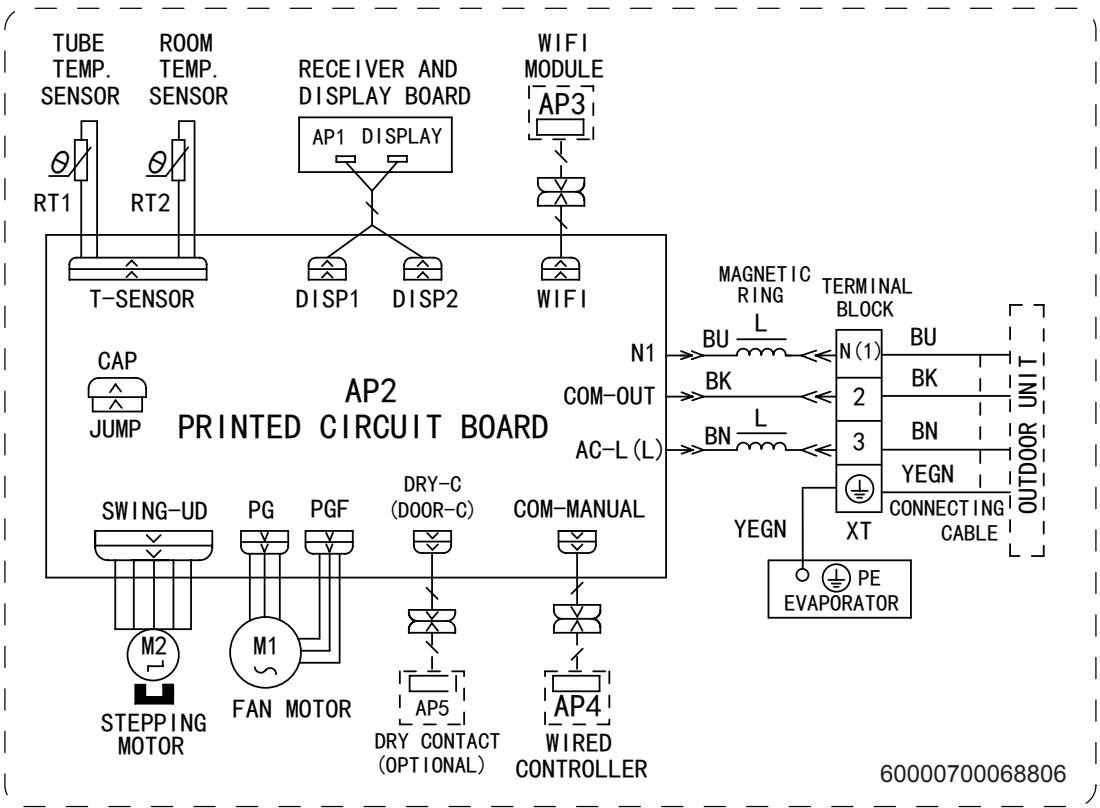
GWH12QB-K6DNB8I/I(CB438N06800) GWH12QB-K6DNB2I/I(CB432N12300) GWH12QB-K6DNB4I/I(CB434N10601)
GWH12QB-K6DNA1I/I(CB419N15000) GWH12QB-K6DNA5I/I(CB425N11800) GWH12QB-K6DND6I/I(CB460005101)
GWH12QB-K6DNA3I/I(CB424N06500/CB424N06501) GWH12QB-K6DND8I/I(CB459N05100)
GWH12QB-K6DNC6I/I(CB443N05400) GWH12QB-K6DNC8I/I(CB456N06200) GWH12QB-K6DNA2I/I(CB426N06700)



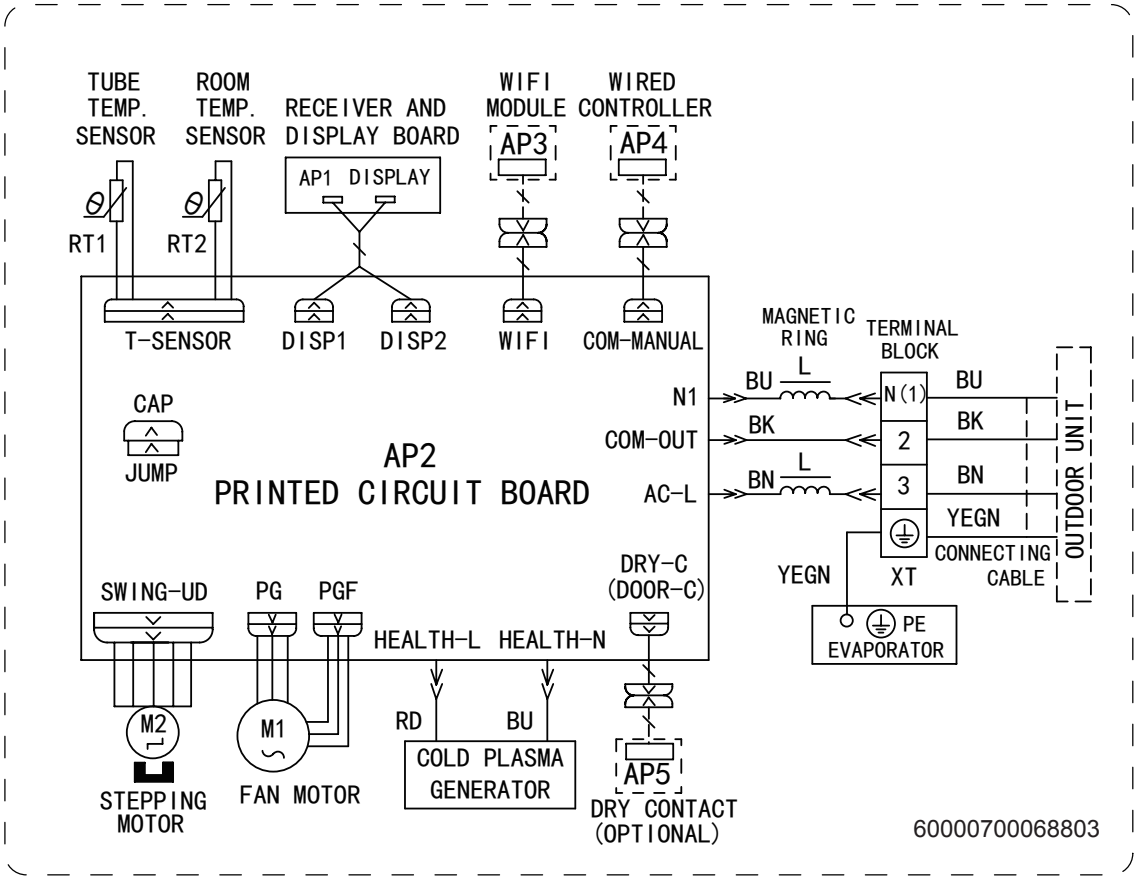
GWH12QB-K6DND6I/I(CB460005100) GWH12QB-K6DNB8I/I(CB438N06801) GWH12QB-K6DNC6I/I(CB443N05401)
GWH12QB-K6DNB4I/I(CB434N10600) GWH12QB-K6DNA2I/I(CB426N06701) GWH12QB-K6DNA5I/I(CB425N11801)
GWH12QB-K6DNC8I/I(CB456N06201)



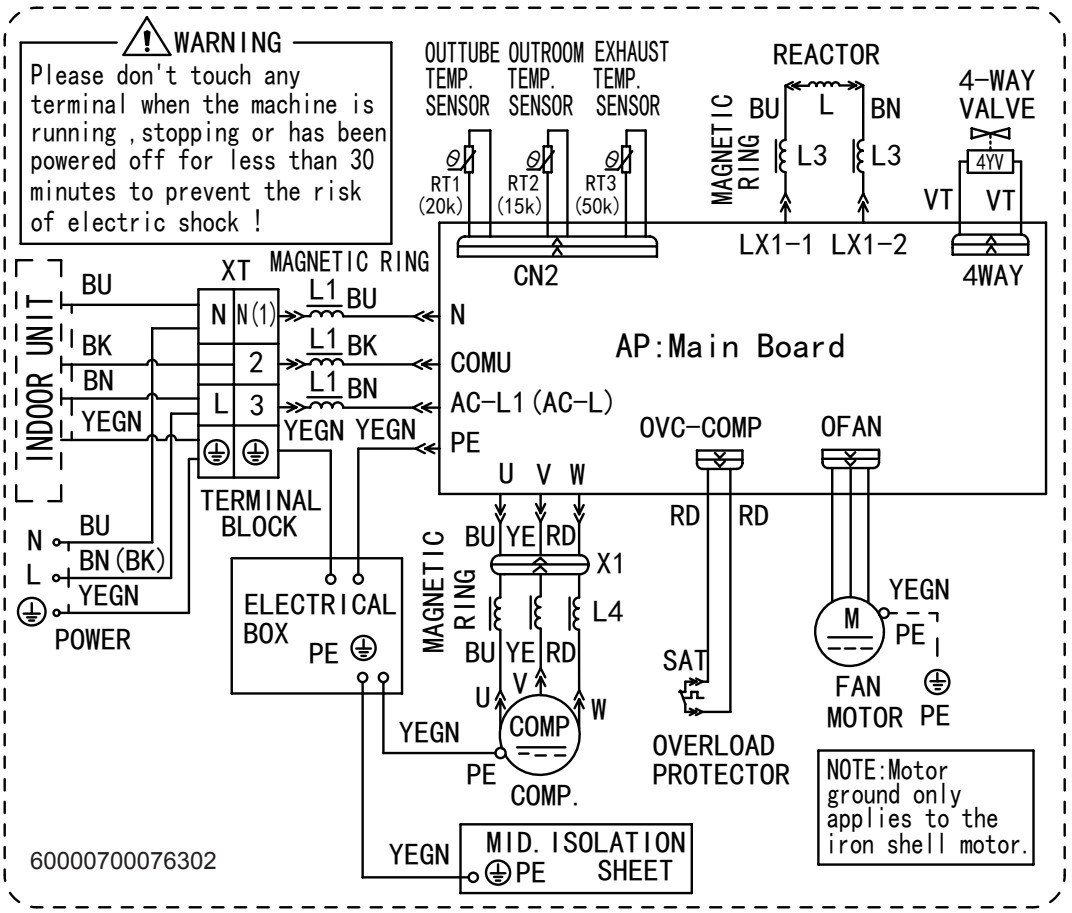
GWH12QB-K6DNC4I/I(CB444N07501) GWH12QB-K6DNA5I/I(CB425N11802) GWH12QB-K6DNA6I/I(CB427N10301)
GWH12QB-K6DNE4I/I(CB470N02302)



GWH12QB-K6DNB8I/I(CB438N06802) GWH12QB-K6DNC4I/I(CB444N07502)



● Outdoor Unit



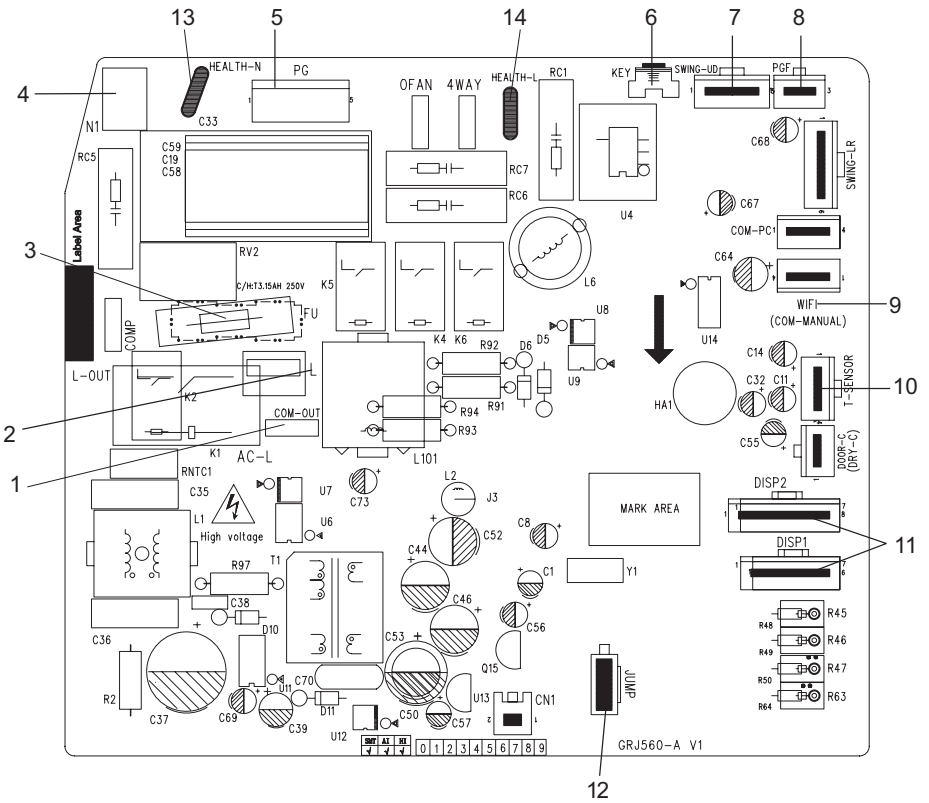
These wiring diagrams are subject to change without notice; please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

All models except :GWH12QB-K6DNA5I/I(CB425N11802) GWH12QB-K6DNA6I/I(CB427N10301)
GWH12QB-K6DNE4I/I(CB470N02302) GWH12QB-K6DNC4I/I(CB444N07501/CB444N07502)
GWH12QB-K6DNB8I/I(CB438N06802)

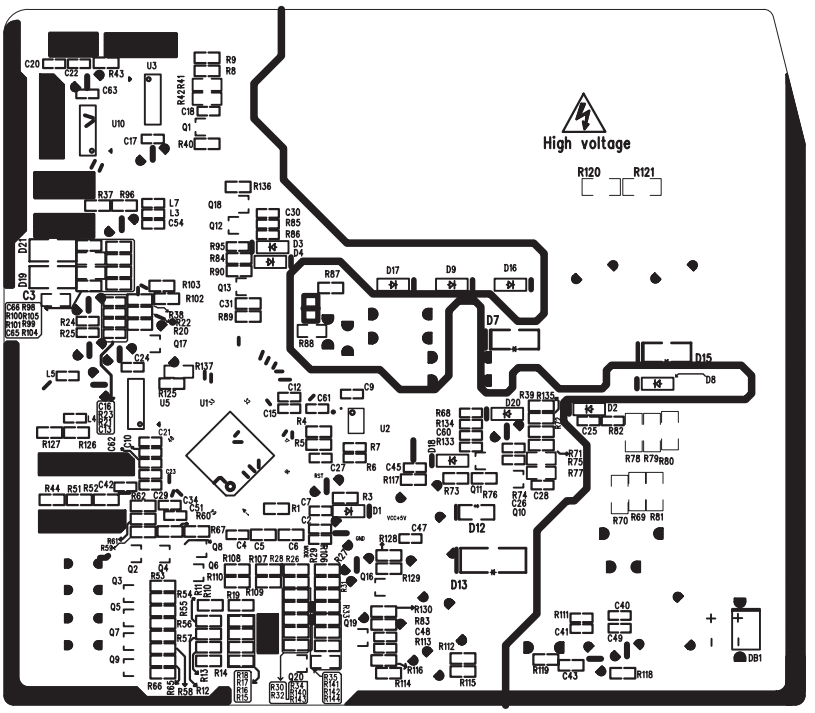
Indoor Unit

● Top view



NO.	Name
1	Communication wire
2	Live wire
3	Fuse
4	Neutral wire
5	PG fan interface
6	Auto button
7	up&down swing interface
8	Interface of PG feedback
9	Needle stand for WiFi
10	Interface of temperature sensor
11	Interface of display board
12	Jumper
13	Neutral wire for health function (Applicable for some models)
14	Live wire for health (Applicable for some models)

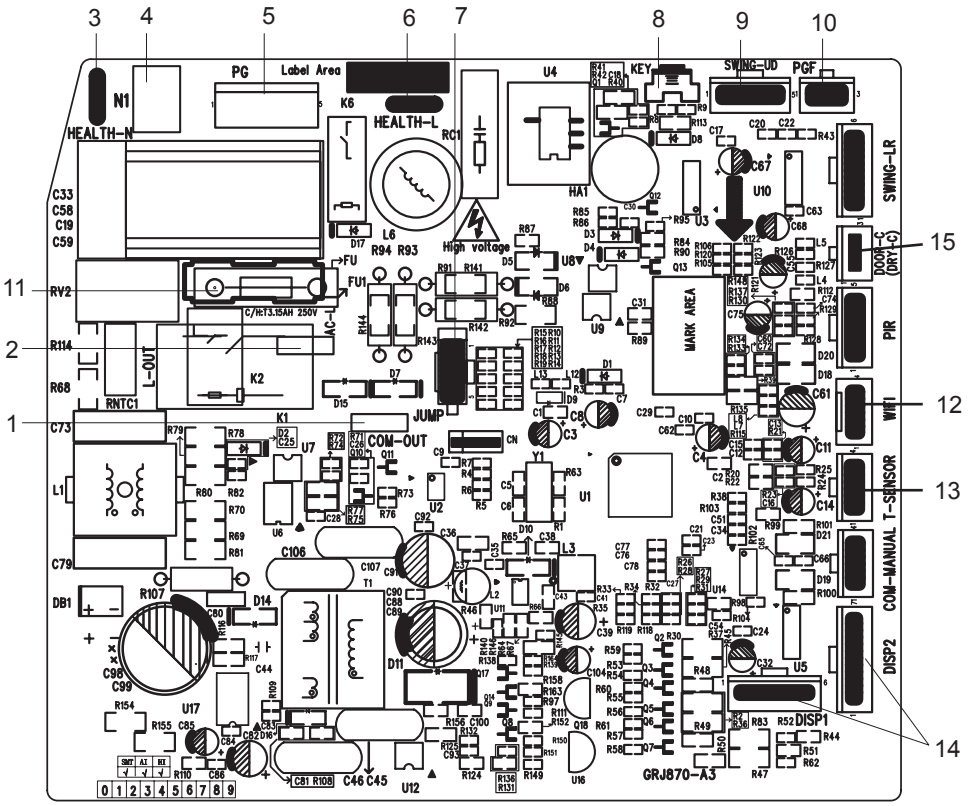
● Bottom view



Indoor Unit

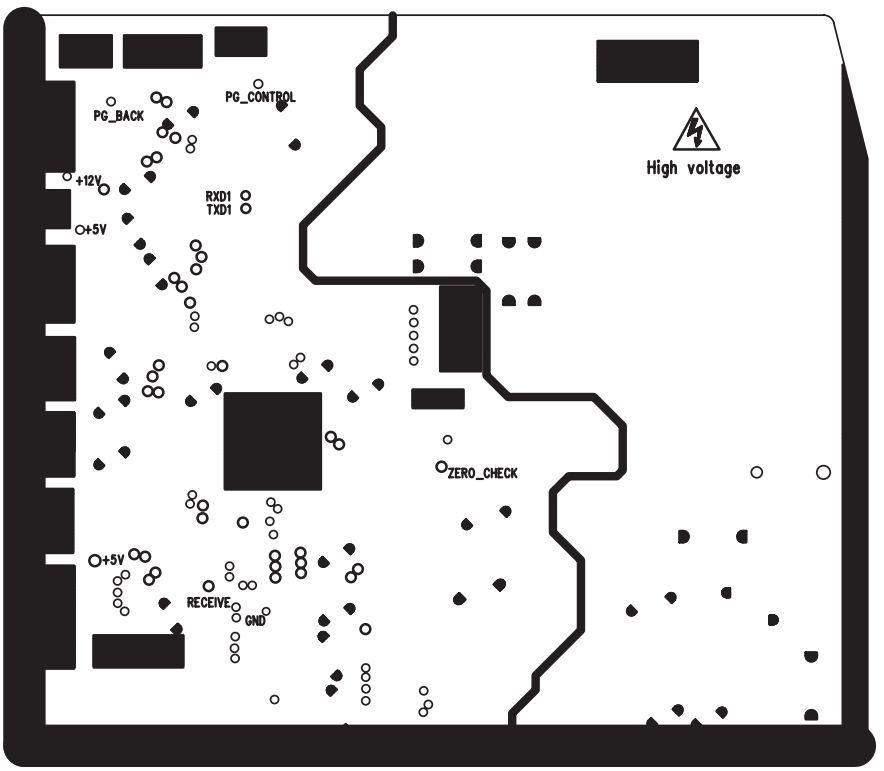
GWH12QB-K6DNA5I/I(CB425N11802) GWH12QB-K6DNA6I/I(CB427N10301) GWH12QB-K6DNE4I/I(CB470N02302)
GWH12QB-K6DNC4I/I(CB444N07501/CB444N07502) GWH12QB-K6DNB8I/I(CB438N06802)

● Top view



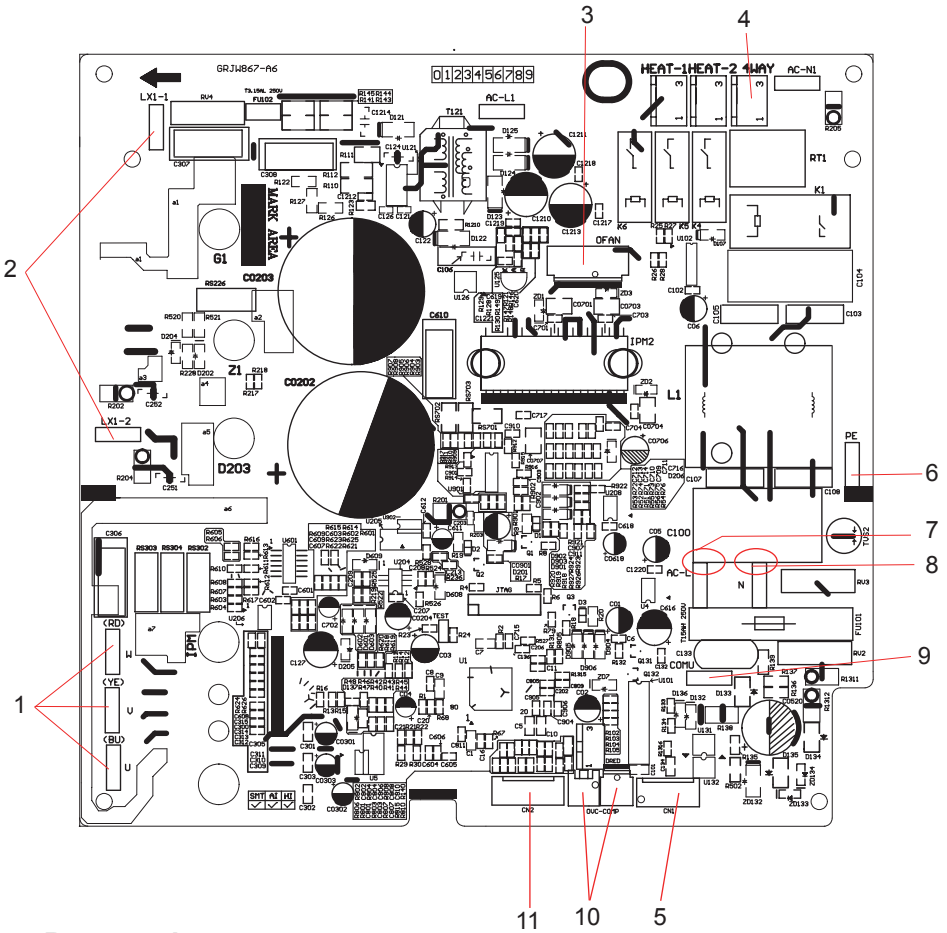
No	Name
1	Interface of communication wire for indoor unit and outdoor unit
2	Interface of live wire
3	Interface of health function neutral wire (Only for the mode with this function)
4	Interface of neutral wire
5	Interface of fan
6	Interface of health function live wire (Only for the mode with this function)
7	Jumper cap
8	Auto button
9	Up&down swing interface
10	Feedback interface of indoor unit
11	Fuse
12	Interface of wifi
13	Needle stand for tube temperature sensor
14	Display interface
15	Gateway interface(Only for the mode with this function)

● Bottom view



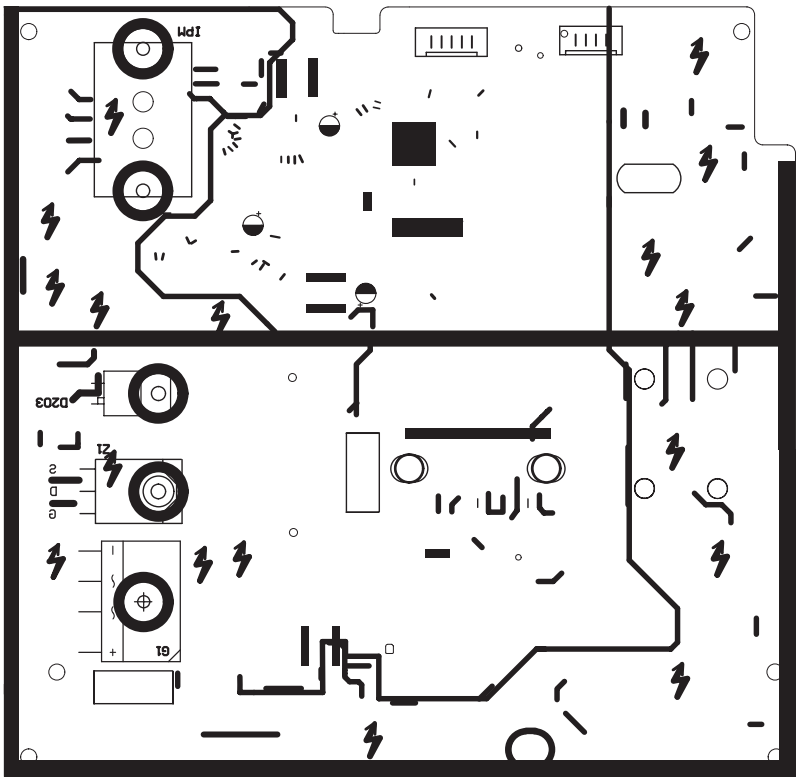
Outdoor Unit

• Top view



No.	Name
1	Interface of compressor wire
2	Interface of reactor
3	Fan terminal
4	Interface of 4-way valve
5	Terminal of electronic expansion valve
6	Grounding wire
7	Live wire
8	Neutral wire
9	Communication wire
10	Overload interface of compressor
11	Interface of temperature sensor

• Bottom view



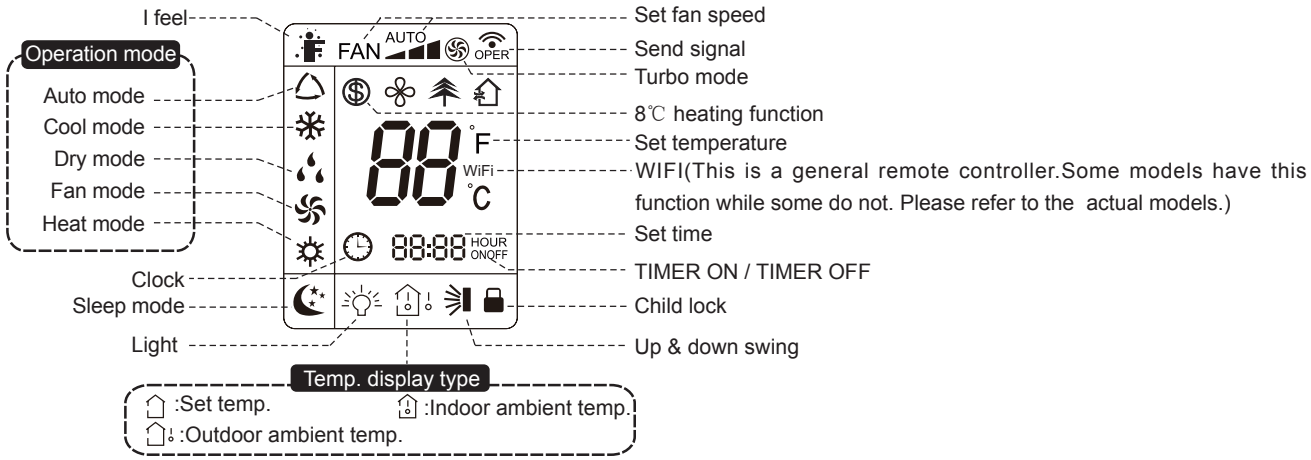
6. Function and Control

6.1 Remote Controller Introduction of YAN1F6(WiFi)

Buttons on Remote Controller

1. ON/OFF button
2. MODE button
3. FAN button
4. SWING button
5. TURBO button
6. ▲/ ▼button
7. SLEEP button
8. TEMP button
9. WiFi button
10. LIGHT button
11. CLOCK button
12. TIMER ON / TIMER OFF button

Introduction for icons on display screen



Introduction for buttons on remote controller

Note:

● This is a general use remote controller, it could be used for the air conditionerswith multifunction; For some function, which the model doesnt have, if pressthe corresponding button on the remote controller that the unit will keep theoriginal running status.

● After putting through the power, the air conditioner will give out a sound. Operation indicator is ON (red indicator, the colour is different for different models).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.

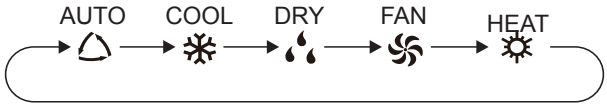
● Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corre- sponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding 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

Press this button to select your required operation mode.



- When selecting auto mode, air conditioner will operate automatically according to ex-factory setting. Set temperature cant be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "SWING" button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Cool indicator on indoor unit is ON(This indicator is not available for some models). 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(This indicator is not available for some models). Under dry mode, fan speed cant 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 indicators 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(This indicator is not available for some models). 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 wont receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button cant 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℃ ; Fan speed: auto, low speed, medium speed, high speed.

3. FAN button

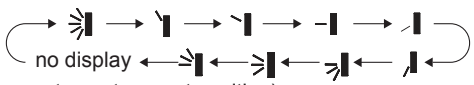
Pressing this button can set fan speed circularly as: auto (AUTO), low( ) ,medium( ), high( ).

Caution:

- 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. SWING button

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



(horizontal louvers stops at current position)

- 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.

5. TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. " " icon is displayed on remote controller. Press this button again to exit turbo function and " " icon will disappear.

6. ▲/▼ button

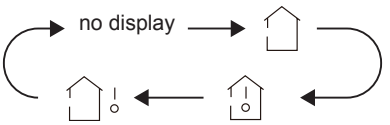
- Press "▲" or "▼" button once increase or decrease set temperature 1℃ . Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature cant be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▲" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons) When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▲" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

7. SLEEP button

Under COOL, HEAT 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.

8. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor units display. The setting on remote controlleris 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.
- Its 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.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

9. WiFi button

Press " WiFi " button to turn on or turn off WiFi function. When WiFi function is turned on, the " **WiFi** " icon will be displayed on remote controller; Under status of remote controller off, press "**MODE**" and " **WiFi** " buttons simultaneously for 1s,WiFi modulewill restore to factory default setting.

10. LIGHT button

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.

11. CLOCK button

Press this button to set clock time. " " icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼" button, clock time will increase or decrease 1 minute. If hold "▲" or "▼" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. " " icon stops blinking.

Note:

- Clock time adopts 24-hour mode.
- The interval between two operation cant exceeds 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

12. TIMER ON / TIMER OFF button

- TIMER ON button

  "TIMER ON" button can set the time for timer on. After pressing this button, " " icon disappears and the word "ON" on remote controller blinks. Press "▲" or "▼"button to adjust TIMER ON setting. After each pressing "▲" or "▼" button, TIMER ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. " " icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.
- TIMER OFF button

  "TIMER OFF" button can set the time for timer off. After pressing this button," " icon disappears and the word "OFF" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER OFF setting. After each pressing "▲" or "▼" button,
  TIMER OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER OFF" word "OFF" will stop blinking. " " icon resumes displaying. Cancel TIMER OFF. Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

Note:

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- After starting up TIMER ON or TIMER OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you dont need this function, please use remote controller to cancel it.

Health function

Health function will be set during operation of indoor fan.
Turn off the unit will also turn off health function.
This function is only available for some models.

Function introduction for combination buttons

1. Energy-saving function

Under cooling mode, press "TEMP" and " CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP" and "CLOCK"buttons simultaneously again to exit energy-saving function.

Note:

- Under energy-saving function, fan speed is defaulted at auto speed and it cant be adjusted.
- Under energy-saving function, set temperature cant be adjusted. Press "TURBO" button and the remote controller wont send signal.
- Sleep function and energy-saving function cant operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

2. 8 ℃ heating function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8℃ heating function. When this function is started up, " ⓢ " and "8℃ " will be shown on remote controller, and the air conditioner keep the heating status at 8℃ . Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8℃ heating function.

Note:

- Under 8℃ heating function, fan speed is defaulted at auto speed and it cant be adjusted.
- Under 8℃ heating function, set temperature cant be adjusted. Press "TURBO" button and the remote controller wont send signal.
- Sleep function and 8℃ heating function cant operate at the same time. If 8℃ heating function has been set under heating mode, press sleep button will cancel 8℃ heating function. If sleep function has been set under heating mode, start up the 8℃ heating function will cancel sleep function.
- Under ℉ temperature display, the remote controller will display 46 ℉ heating.

3. Child lock function

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

4. Temperature display switchover function

Under OFF status, press " ▼" and "MODE" buttons simultaneously to switch temperature display between ℃ and ℉ .

If “H1” is displayed on the remote controller while it’s not operated by the professional person/after-sales person, it belongs to the misoperation.
Please operate it as below to cancel it.Under the OFF status of remote controller, hold the Mode button for 5s to cancel “H1” display.
Note:

- If remote controller displays “H1”, it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. “H1” won’t be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;
- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

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.

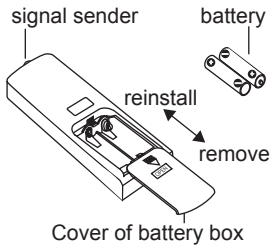
- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.
3. Press "▲" or " ▼" button to set your required temperature. (Temperature cant be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "SWING" button to select fan blowing angle.

Replacement of batteries in remote controller

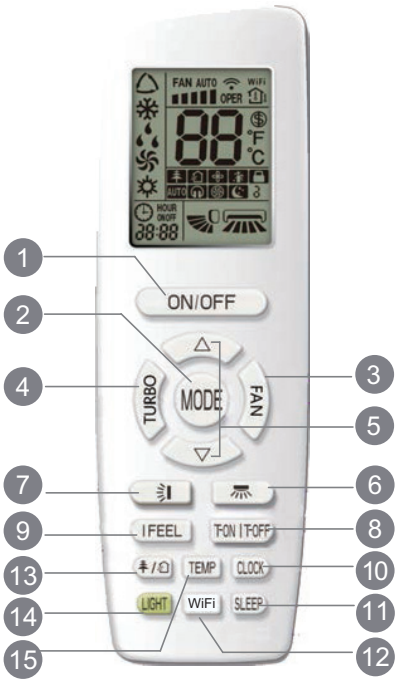
1. Press the back side of remote controller marked with " OPEN ", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery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



Note:

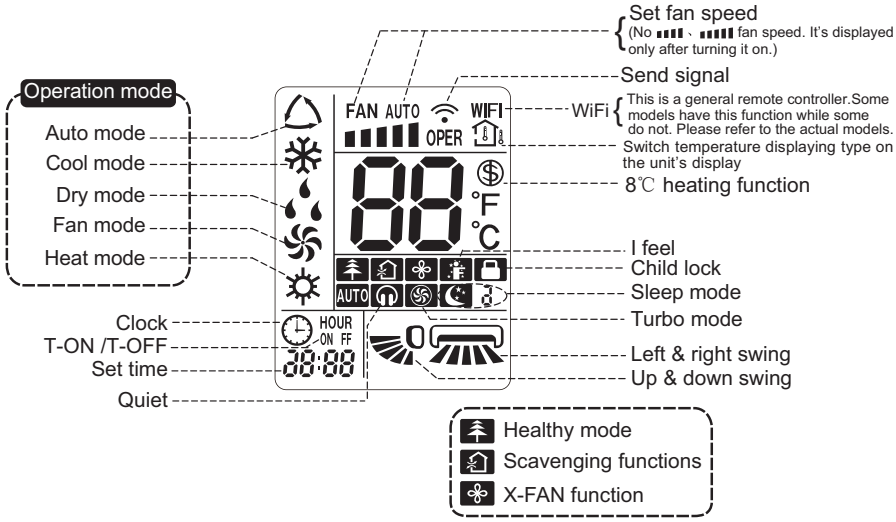
- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you dont use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or theres no display, please replace batteries.

6.2 Remote Controller Introduction of YAP1FB2(WiFi)



1. ON/OFF button
2. MODE button
3. FAN button
4. TURBO button
5. ▲/ ▼ button
6. button
7. button
8. T-ON / T-OFF button
9. I FEEL button
10. CLOCK button
11. SLEEP button
12. WiFi button
13. /⌂ button
14. LIGHT button
15. TEMP button

Icon Display on Remote Controller



Note:

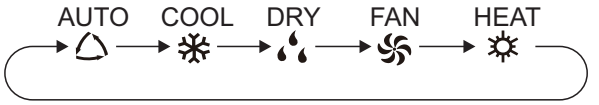
- This is a general use remote controller, it could be used for the air conditioner with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Operation indicator "⏻" is ON (red indicator, the colour is different for different models) 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.

1.ON/OFF button

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

2.MODE button

Press this button to select your required operation mode.



- When selecting auto mode, air conditioner will operate automatically accordin to the sensed temperature. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press " " / " " button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Cool indicator " " on indoor unit is ON. Press(This indicator is not available for some models.) "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " " / " " button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under mode. Dry indicator " " on indoor unit is ON. (This indicator is not available for some models.) Under dry mode, fan speed can't be adjusted. Press " " / " " button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling an no heating. All indicators are OFF,Operation indicator is ON. Press "FAN" button to adjust fan speed. Press" " / " " button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode Heat indicator " " on indoor unit is ON. (This indicator is not available for some models.) Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " " / " " button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller,setting heat mode with remote controller, press ON/OFF button can't start up the unit).

Note:

- For preventing cold a r, 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: 16~3 ℃ (61-86°F);
  Fan speed: auto, low speed, low-medium speed,medium speed, medium-high speed,high speed.

3.FAN button

Pressing this button can set fan speed circularly as: auto (AUTO), low( ), medium ( ), high( ).

Note:

- Unde AUTO speed, air conditioner will select proper fan speed automatically according to ex-factory setting.
- It's Low fan speed under Dry mode
- X-FAN function: Hold fan speed button for 2s in COOL or DRY mode, the icon " " is displayed and the indoor fan will continue operation for a few minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

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

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

4.TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. " " icon is displayed on remote controller. Press this button again to exit turbo function and " " icon will disappear.

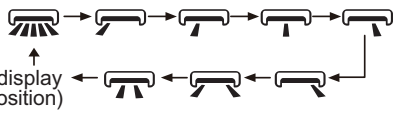
If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temp. approachs the preset temp. as soon as possible.

5.▲/ ▼ button

- Press "▲" or ▼" button once increase or decrease set temperature 1℃ (°F). Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indica- tor on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When settin T-ON, T-OFF or CLOCK, press "▲" or "▼ (Refer to CLOCK, T-ON, T-OFF buttons) When setting T-ON, press "▲" or "▼" button to adjust time. (Refer to CLOCK,T-ON, T-OFF buttons)

6. button

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

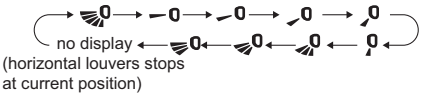


Note:

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

7. button

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



- When selecting " ", air conditioner is blowing fan automaticall . 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.
- Press this button continuously more than 2s, the main unit will swing back an forth from up to down, and then loosen the the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing up and down mode, w en the status is switched from off to , if press this button again 2s later, status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.

8.T-ON / T-OFF button

- T-ON button

"T-ON" button can set the time for timer on. After pressing this button, " " icon disappears and the word "ON" on remote controller blinks. Press "▲" or "▼" button to adjust T-ON setting. After each pressing "▲" or "▼" button, T-ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2slater, the time will change quickly until reaching your required time. Press "T-ON" to confirm it. The word "ON" will stop blinking. " " icon resumes displaying. Cancel T-ON: Under the condition that T-ON is started up, press "T-ON" button to cancel it.

- T-OFF button

"T-OFF" button can set the time for timer off. After pressing this button," " icon disappears and the word "OFF" on remote controller blinks. Press "▲" or "▼" button to adjust T-OFF setting. After each pressing "▲" or "▼" button, T-OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "T-OFF" word "OFF" will stop blinking. " " icon resumes displaying. Cancel T-OFF. Under the condition that T-OFF is started up, press "T-OFF" button to cancel it.

Note:

- Under on and ff status, you can set T-OFF or T-ON simultaneously.
- Before setting T-ON or T-OFF, please adjust the clock time.
- After starting up T-ON or T-OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you don't need this function, please use remote controller to cancel it.

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.

- Please put the remote controller near ser when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.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.CLOCK button

Press this button to set clock time. "🕒" icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼" button, clock time will increase or decrease 1 minute. If hold "▲" or "▼" button, 2s later time will change quickly. Release this button when reaching your required time.

Press "CLOCK" button to confirm the time. "🕒" icon stops blinking.

Note:

- Clock time adopts 24-hour mode
- The interval between two operation can't exceeds 5s. Otherwise, remote contro- ller will quit setting status. Operation for T-ON/T-OFF is the same.

11.SLEEP button

Under COOL, or HEAT 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. .After powered on, Sleep Off is defaulted. After the unit is turned off, the Sleep function is canceled.

In this mode, the time of time can be adjusted. Under Fan 、 DRY and Auto modes, this function is not available.

12.WiFi button

Press " WiFi " button to turn on or turn off WiFi function. When WiFi function is turned on, the " WiFi " icon will be displayed on, the " WiFi " icon will be displayed on remote controller; Under status of unit off, press "MODE" and " WiFi " buttons simultaneously for 1s, WiFi module will restore to factory default setting.

- This function is only available for some models.

13. 🌲/🏠 button

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

Press the button for the fourth t ime to start healthy function; LCD display "🌲".
Press this button again to repeat the operation above.

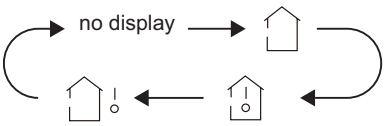
- This function is applicable to partial of models

14.LIGHT button

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.

15.TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temp- erature or outdoor ambient temperature on indoor unit's display. The setting on remote controlleris selected circularly as below:



- When selecting "🏠" or no display with remote controll r, temperature indicator on indoor unit displays set temperature.
- When selecting "🏠" with remote controll r, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting "🏠" with remote controll r, 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.
- I '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 disply.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

If “H1” is displayed on the remote controller while it’s not operated by the professional person/after-sales person, it belongs to the misoperation.

Please operate it as below to cancel it.Under the OFF status of remote controller, hold the Mode button for 5s to cancel “H1” display.

Note:

● If remote controller displays “H1”, it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. “H1” won’t be displayed on the panel of indoor unit;

● Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;

● Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

Function introduction for combination buttons

Energy-saving function

Under cooling mode, press "TEMP" and " CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP" and energy-saving effect. Press "TEMP" and "CLOCK" buttons simultaneously again to exit energy-saving function.

Note:

● Under energy-saving function, fan speed is defaulted at auto speed and it can’ be adjusted.

● Under energy-saving function, set temperature can’t be adjusted. Press "TURBO" button and the remote controller won’t send signal.

● Sleep function and energy-saving function can’t operate at the same time. I energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

8℃ heating function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8℃ heating function.

When this function is started up, "$" and "8℃ " will be shown on remote controller, and the air conditioner keep the heating status at 8℃ . Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8℃ heating function.

Note:

● Under ℃ heating function, fan speed is defaulted at auto speed and it can’t be adjusted.

● Under ℃ heating function, set temperature can’t be adjusted. Press "TURBO " button and the remote controller won’t send signal.

● Sleep function and ℃ heating function can’t operate at the same time. If 8 ℃ heating function has been set under cooling heating function has been set under cooling mode, press sleep button will cancel 8℃ heating function. If sleep function has been set under cooling mode, start up the 8℃ heating function will cancel sleep function.

● Under ℉ temperature display, the remote controller will display 46 ℉ heating.

Child lock function

Press "▲" and "▼ " simultaneously to turn on or turn o ff child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

Temperature display switchover function

Under OFF status, press "▼" and "MODE" buttons simultaneously to switch temp- erature display between ℃ and ℉

Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.
3. Press "▲" or "▼" button to set your required temperature. (Temperature can’t be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low speed, low-medium speed,medium speed, medium-high speed,high speed.
5. Press " " button to select fan blowing angle.

Replacement of batteries in remote controller

1. Lift the cover along the direction of arrow (as shown in Fig 1①).
2. Take out the original batteries (as shown in Fig 1 ②).
3. Place two 7# (AAA 1.5V) dry batteries, and make sure the position of “+” polar and “-” polar is correct (as shown in Fig 2③).
4. Reinstall the cover (as shown in Fig 2 ④).

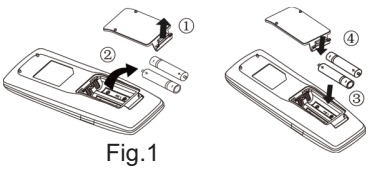


Fig.2

Fig.1

Note:

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

6.3 Brief Description of Modes and Functions

1. Temperature Parameters

◆ Indoor preset temperature (Tpreset)

◆ Indoor ambient temperature (Tamb.)

2. Basic Functions

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

(1) Cooling Mode

① **Working conditions and process of cooling**

Cooling conditions and process(09k)

a. When Tamb.≥Tpreset the unit starts cooling. In this case, the IDU fan motor, ODU fan motor and compressor run, and the IDU fan motor runs at set speed;

b. When Tamb.=Tpreset-3℃ , the compressor continuously operates below the frequency of 15Hz (not including 15Hz) for 15mins. If Tamb.=Tset-3℃ still keeps the same, the compressor stops operation;

c. When Tamb.≤Tpreset-4℃ , the compressor stops operation; ODU fan motor stops operation with a delay of 30s and IDU fan motor operates at set speed;

d. When Tpreset-2℃＜ Tamb. ＜ Tset, the unit will maintain its previous running status.

Cooling conditions and process(12k)

a.When Tamb.+Tindoor supplementary≥Tpreset, the unit starts cooling. In this case, the IDU fan motor, ODU fan motor and compressor run, and the IDU fan motor runs at set speed;

b. When Tamb.+Tindoor supplementary≤Tpreset-2℃ , the compressor stops operation; ODU fan motor stops operation with a delay of 30s and IDU fan motor operates at set speed;

c.When Tpreset-2℃＜ Tindoor amb.+Tindoor supplementary ＜ Tpreset, the unit will maintain its previous running status.

Under this mode, the four-way valve will be de-energized and temperature can be set within a range from 16 to 30°C.

If the compressor is shut down for some reason, the indoor fan and the swing device will operate at original state.

② **Protection**

◆ **Antifreeze protection**

Under cooling and dehumidifying mode, 6 minutes after the compressor is started:

If T evap≤2°C, the compressor will operate at reduced frequency.

If T evap≤-1°Cis detected for durative 3 minutes, the compressor will stop, and after 30 seconds, the outdoor fan will stop; and under cooling mode, the indoor fan and the swing motor will remain at the original state.

If T evap. ≥10°Cand the compressor has remained at OFF for at least 3 minutes, the compressor will resume its original operation state.

◆ **Total current up and frequency down protection**

If I_{total}≤6, frequency rise will be allowed; if I_{total}≥7, frequency rise will not be allowed; if I_{total}≥8, the compressor will run at reduced frequency; and if I_{total}≥9, the compressor will stop and the outdoor fan will stop with a time lag of 30s.

(2) Dehumidifying Mode

① **Working conditions and process of dehumidifying**

If Tamb>Tpreset, the unit will enter cooling and dehumidifying mode, in which case the compressor and the outdoor fan will operate and the indoor fan will run at low speed.

If Tpreset -2°C≤Tamb≤Tpreset, the compressor remains at its original operation state.

If Tamb.< Tpreset -2°C, the compressor will stop, the outdoor fan will stop with a time lag of 30s, and the indoor fan will operate at low speed.

② **Protection**

Protection is the same as that under the cooling mode.

(3) Heating Mode

① **Working conditions and process of heating**

If Tamb.≤Tpreset +2°C, the unit enters heating mode, in which case the four-way valve, the compressor and the outdoor fan will operate simultaneously, and the indoor fan will run at preset speed in the condition of preset cold air prevention.

If T amb.≥Tpreset +5°C, the compressor will stop, the outdoor fan will stop with a time lag of 30s, and the indoor fan will stop after 60-second blow at low speed

If Tpreset +2°C<T amb.< Tpreset +5°C, the unit will maintain its original operating status.

Under this mode, the four-way valve is energized and temperature can be set within a range of 16 - 30°C. The operating symbol, the heating symbol and preset temperature are revealed on the display.

② **Condition and process of defrost**

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

(1)T outdoor ambient ＞ 5°C, T outdoor tube≤-2°C;

(2) -2°C≤T outdoor ambient ＜ 5°C, T outdoor tube≤-6°C;

(3) -5°C≤T outdoor ambient ＜ -2°C, T outdoor tube≤-8°C;

(4)-10°C≤Toutdoor ambient ＜ -5°C, Toutdoortube-T compensatory≤(T outdoor ambient-3°C)

(5)T outdoor ambient ＜ -10°C, T outdoortube-T compensatory≤(T outdoor ambient-3°C)

(after energizing, T compensatory=0°C during the first defrosting; if it is not the first defrosting, T compensatory is confirmed by T outdoortube of quitting last defrosting:

a. whenT outdoor tube ＞ 2°C, T compensatory=0°C; b. whenT outdoor tube≤2°C, T compensatory=3°C)

At that time, the indoor fan stops and the compressor stops, and after 30 seconds the outer fan will stop, and then after 30 seconds, the four-way valve will stop. After 30 seconds, the compressor is initiated for raising the frequency to defrost frequency.

When the compressor has operated under defrost mode for 7.5 minutes, or T outdoor ambient ≥ 10°C, the compressor will be converted to 46Hz operation. After 30 seconds, the compressor will stop. And after another 30 seconds, the four-way valve will be opened, and after 60 seconds, the compressor and the outer fan will be started, the indoor fan will run under preset cold air prevention conditions, and H1 will be displayed at temperature display area on the display panel. Defrost frequency is 85Hz.

③ **Protection**

◆ **Cold air prevention**

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

① In the case of T indoor amb. <24°C: if T tube≤40°C and the indoor fan is at stop state, the indoor fan will begin to run at low speed with a time lag of 2 minutes. Within 2 minutes, if T tube>40°C, the indoor fan also will run at low speed; and after 1-minute operation at low speed, the indoor fan will be converted to operation at preset speed. Within 1-minute low speed operation or 2-minute non-operation, if T tube>42°C, the fan will run at present speed.

② In the case of T indoor amb. ≥24°C: if T tube≤42°C, the indoor fan will run at low speed, and after one minute, the indoor fan will be converted to preset speed. Within one-minute low speed operation, if T tube>42°C, the indoor fan will be converted to preset speed.

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

◆ **Total current up and frequency down protection**

If the total current I_{total}≤6, frequency rise will be allowed; if I_{total}≥7, frequency rise will not be allowed; if I_{total}≥8, the compressor will run at reduced frequency; and if I_{total}≥9, the compressor will stop and the outdoor fan will stop with a time lag of 30s.

(4) Fan Mode

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

Under the mode, temperature can be set within a range of 16 - 30°C .

(5) AUTO Mode

① **Working conditions and process of AUTO mode**

a. When T ambient ≥26°C, the unit will operate in Cool mode. The set temperature is 25°C.

b. When T ambient ≤22°C, the heat pump unit will operate in Heat mode., set temperature be 20°C; the cooling only unit will operate in Fan mode, set temperature be 25°C.

c. When 23°C≤T ambient ≤25°C, the unit will operate in the previous state. If it is energized for the first time, it will operate in Fan mode.

d. Under auto mode, if its cooling mode, operation frequency is same as that under cooling mode; if its heating mode, operation frequency is same as that under heating mode.

② **Protection**

a. In cooling operation, protection is the same as that under the cooling mode;

b. In heating operation, protection is the same as that under the heating mode;

c. When ambient temperature changes, operation mode will be converted preferentially. Once started, the compressor will remain unchanged for at least 6 minutes.

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

① **Overload protection**

T tube: measured temperature of outdoor heat exchanger under cooling mode; and measured temperature of indoor heat exchanger under heating mode.

1) Cooling overload

a.If T tube≤52°C, the unit will return to its original operation state.

b.If T tube≥55°C, frequency rise is not allowed.

c.If T tube≥58°C, the compressor will run at reduced frequency.

d.If T tube≥62°C, the compressor will stop and the indoor fan will run at preset speed.

2) Heating overload

a.If T tube≤50°C, the unit will return to its original operation state.

b.If T tube≥53°C, frequency rise is not allowed.

c.If T tube≥56°C, the compressor will run at reduced frequency.

d.If T tube≥60°C, the compressor will stop and the indoor fan will blow residue heat and then stop.

② **Exhaust temperature protection of compressor**

a.If exhaust temperature ≥98°C, frequency is not allowed to rise.

b.If exhaust temperature ≥103°C, the compressor will run at reduced frequency.

c.If exhaust temperature ≥110°C, the compressor will stop.

d.If exhaust temperature ≤90°Cand the compressor has stayed at stop for at least 3 minutes, the compressor will resume its operation.

③ **Communication fault**

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

④ **Module protection**

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

⑤ **Overload protection**

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

⑥ **DC bus voltage protection**

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

⑦ **Faults of temperature sensors**

Designation of sensors	Faults
Indoor ambient temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Indoor tube temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Outdoor ambient temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Outdoor tube temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds, and no detection is performed within 10 minutes after defrost begins.
Exhaust	After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.
Overload	After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.
Zero-crossing inspection circuit malfunction of the IDU fan motor	Zero-crossing signal is not detected for continuously 3s; Or the interval between the zero-crossing signals in 3s ＞ 25ms (power frequency: 50Hz)

Indoor Units

(1) ON/OFF

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

(2) Mode Selection

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

(3) Temperature Setting Option Button

Each time you press the remote button TEMP+ or TEMP-, the setting temperature will be up or down by 1°C. Regulating Range: 16~30°C, the button is useless under the AUTO mode.

(4) Time Switch

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

(5) SLEEP State Control

a. When the air conditioner is under the mode of COOL, DRY, and the SLEEP mode has been set well, after the SLEEP state keeps about 1 hour, the pre-setting T will raise 1°C, and it will raise 1°C again after 2 hours, so it raise 2°C in 2 hours, then it will run on at the setting temperature and wind speed.

b. When the air conditioner is under the mode of HEAT, and the Timer has been set well, after the SLEEP state keeps about 1 hour, the pre-setting T will reduce 1°C, and it will reduce 1°C again after 2 hours, so it reduce 2°C in 2 hours, then it will run on at the setting temperature and wind speed.

c. The setting temperature keeps the same under the FAN mode and AUTO mode.

(6) Buzzer Control

a. Cooling only model:The buzzer will send a “Di Di” sound when the air conditioner is powered up or received the information sent by the remote control or there is a button input, the single tube cooler doesnt receive the remote control ON signal under the mode of heating mode.

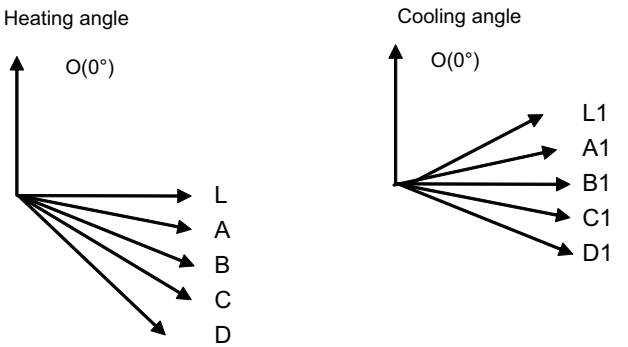
b. Cooling and heating model:The buzzer will send a “Di” sound when the air conditioner is powered up or received the information sent by the remote control or there is a button input, the single tube cooler doesnt receive the remote control ON signal under the mode of heating mode.

(7) Auto button

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

(8) Up-and-Down Swinging Control

When power on, the up-and-down motor will firstly move the air deflector to counter-clockwise, close the air outlet. After starting the machine, if you dont set the swinging function, heating mode and auto-heating mode, the up-and-down air deflector will move to D clockwise; under other modes, the up-and-down air deflector will move to L1. If you set the swinging function when you start the machine, then the wind blade will swing between L and D. The air deflector has 7 swinging states: Location L, Location A, Location B, Location C, Location D, Location L to Location D, stop at any location between L-D (the included angle between L~D is the same). The air deflector will be closed at 0 Location, and the swinging is effectual only on condition that setting the swinging order and the inner fan is running. The indoor fan and compressor may get the power when air deflector is on the default location.



(9) Display

① Operation pattern and mode pattern display

All the display patterns will display for a time when the power on, the operation indication pattern will display in red under standby status. When the machine is start by remote control, the indication pattern will light and display the current operation mode (the mode light includes:

Cooling, heating and dehumidify). If you close the light key, all the display patterns will close.

② Double-8 display

According to the different setting of remote control, the nixie light may display the current temperature (the temperature scope is from 16°C to 30°C) and indoor ambient temperature. The set temperature displayed in auto cooling and fan mode is 25℃ , The set temperature displayed in auto heating mode is 20℃ and the temperature will display H1 under the defrosting mode.(If you set the fahrenheit temperature display, the nixie light will display according to fahrenheit temperature)

(10) Protection function and failure display

E2: Freeze-proofing protection E4: Exhausting protection E5: Overcurrent protection

E6: Communication failure H4: Overload protection

F1: Indoor ambient sensor start and short circuit (continuously measured failure in 30S)

F2: Indoor evaporator sensor start and short circuit (continuously measured failure in 30S)

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

F4: Outdoor condenser sensor start and short circuit (continuously measured failure in 30S, and dont measure within 10 minutes after defrosted)

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

H3: Overload protection of compressor H5: Module protection

PH: High-voltage protection PL: Low-voltage protection

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

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

(11) Drying Function

You may start or stop the drying function under the modes of cooling and dehumidify at the starting status (The modes of automatism, heating and air supply do not have drying function). When you start the drying function, after stop the machine by pressing the switch button, you should keep running the inner fans for 10 minutes under low air damper (The swing will operate as the former status within 10 minutes, and other load is stopped), then stop the entire machine; When you stop the drying function, press the switch button will stop the machine directly. When you start the drying function, operating the drying button will stop the inner fans and close the guide louver.

(12) Memory function when interrupting the power supply

Memory content: mode, swing function, light, set temperature and wind speed. After interrupted the power supply, the machine will start when recovering the power according to the memory content automatically. If the last remote control command has not set the timed function, the system will remember the last remote control command and operate according it. If the last remote control command has set timed function and the power supply is interrupted before the timed time, the system will remember the timed function of the last remote control command, the timed time will recounted form power on. If the last remote control command has set timed function, the time is out and the system is start or stop according to the set time when the power supply is interrupted, the system will remember the operation status before the power supply was interrupted, and do not carry out timed action; The timed clock will not remembered.

(13) Sleep function

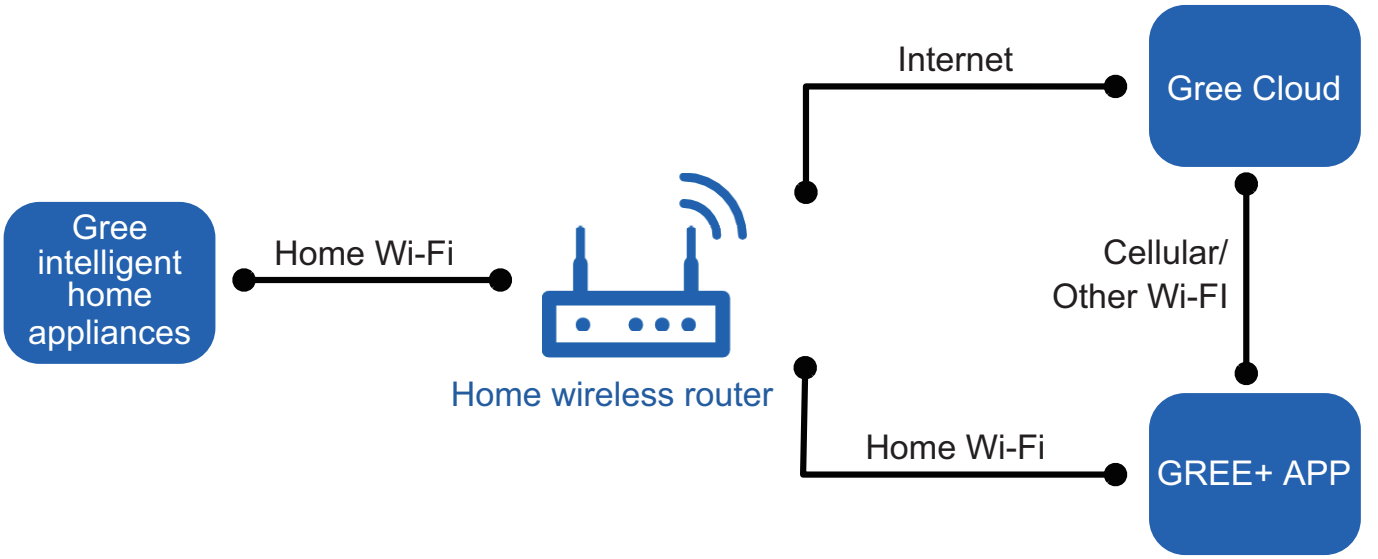
In this mode, the system will select proper sleep curve to operate according to different set temperature.

① If start up sleep function under cooling or drying mode, the system will increase set temperature automatically within a certain range to operate.

② If start up sleep function under heating mode, the system will decrease set temperature automatically within a certain range to operate.

6.4 GREE+ App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

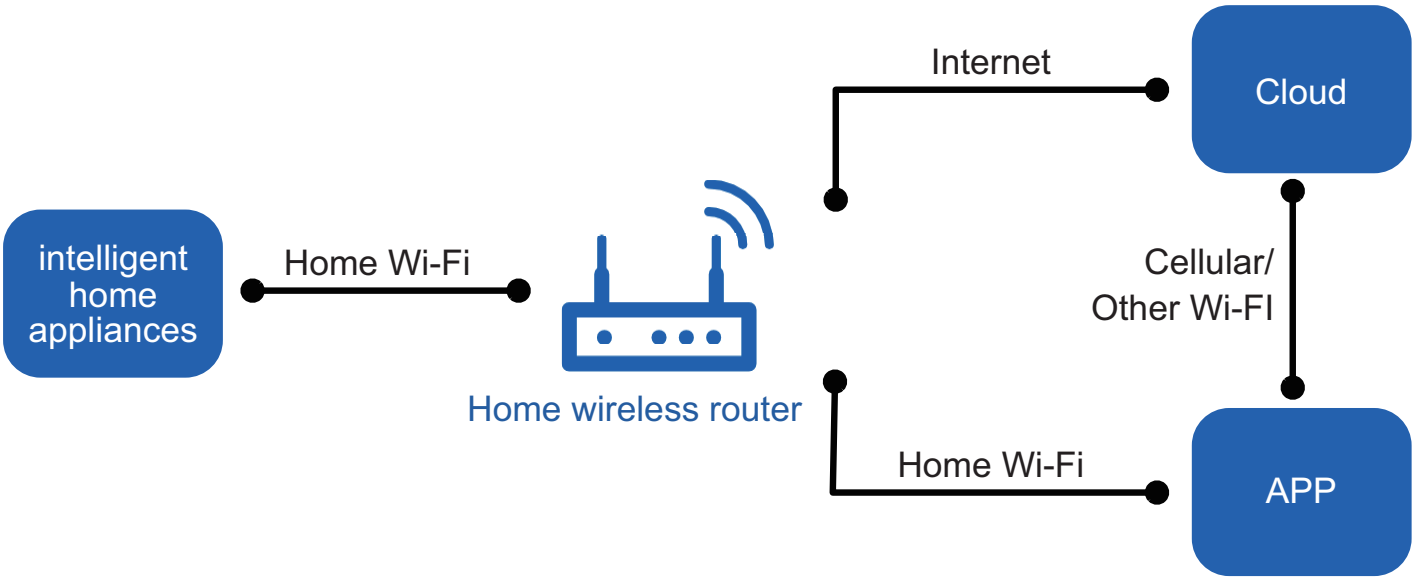
Download and installation

GREE+ App Download Linkage

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

6.5 Ewpe Smart App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.4 and above version

Download and installation

App Download Linkage

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

Part Ⅱ : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

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

Please follow the instructions below.

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

Warnings

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.
10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

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

Refrigerant Safety Precautions:

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

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

Safety Precautions for Installing and Relocating the Unit:

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

Warnings

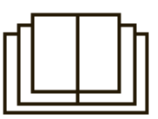
1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.
Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.
2.When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

Safety Precautions for Refrigerant

●To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32,which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can leads to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
●Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

●Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture.Should repair be necessary,contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example:open flames , an operating gas appliance or an operating electric heater.)
●Do not pierce or burn.
●Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m^2 (see table a).(only applies to appliances that are not fixed appliances).
●Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only.Be aware that refrigrants not contain odour.
●Read specialist's r

Safety Operation of Flammable Refrigerant

Qualification requirement for installation and maintenance man

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

Installation notes

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

table a - Minimum room area(m^2)

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

Maintenance notes

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

Welding

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

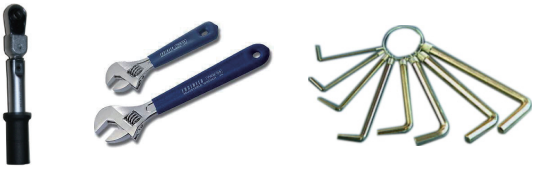
Filling the refrigerant

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

Safety instructions for transportation and storage

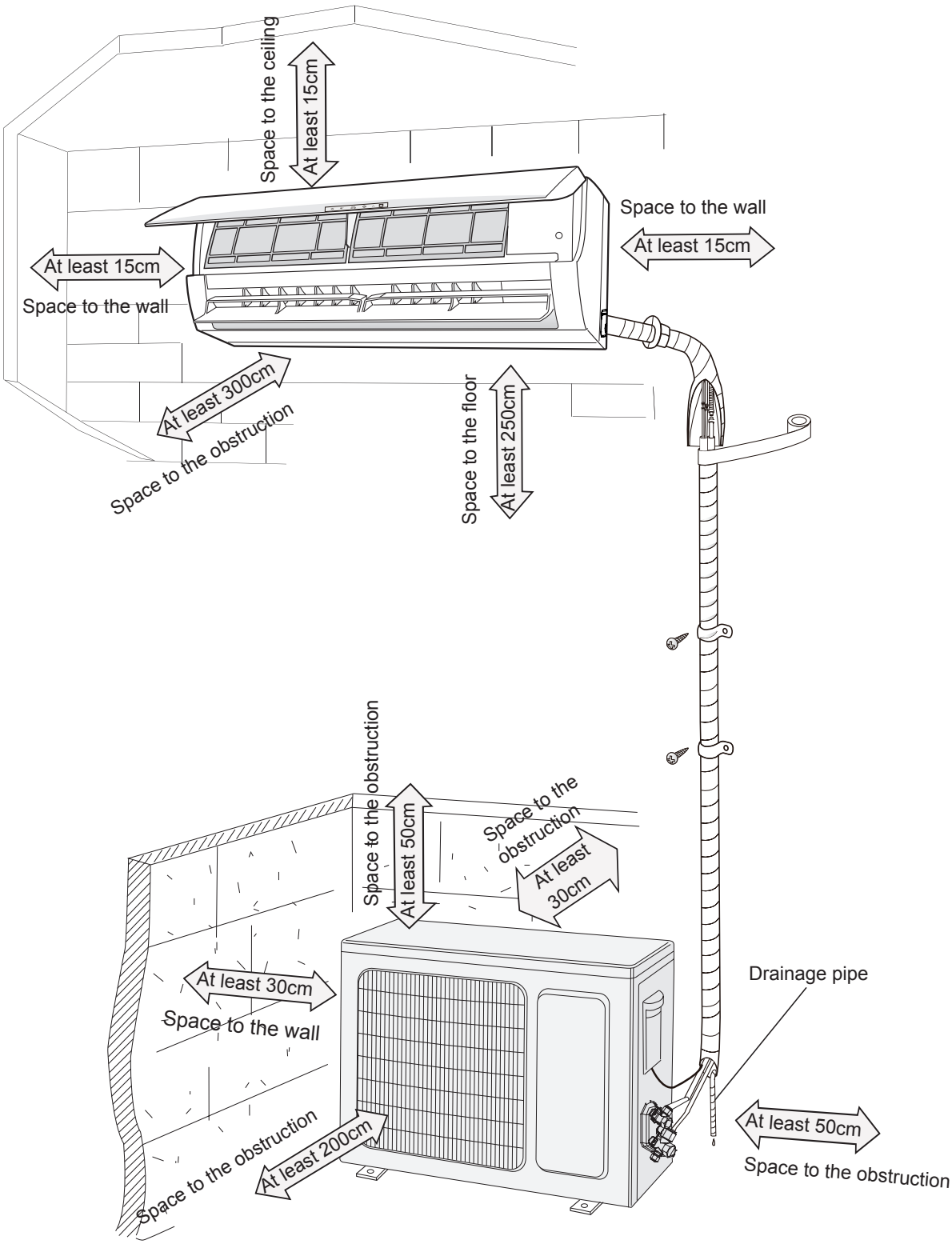
●Please use the flammable gas detector to check before unload and open the container.
●No fire source and smoking.
●According to the local rules and laws.

Main Tools for Installation and Maintenance

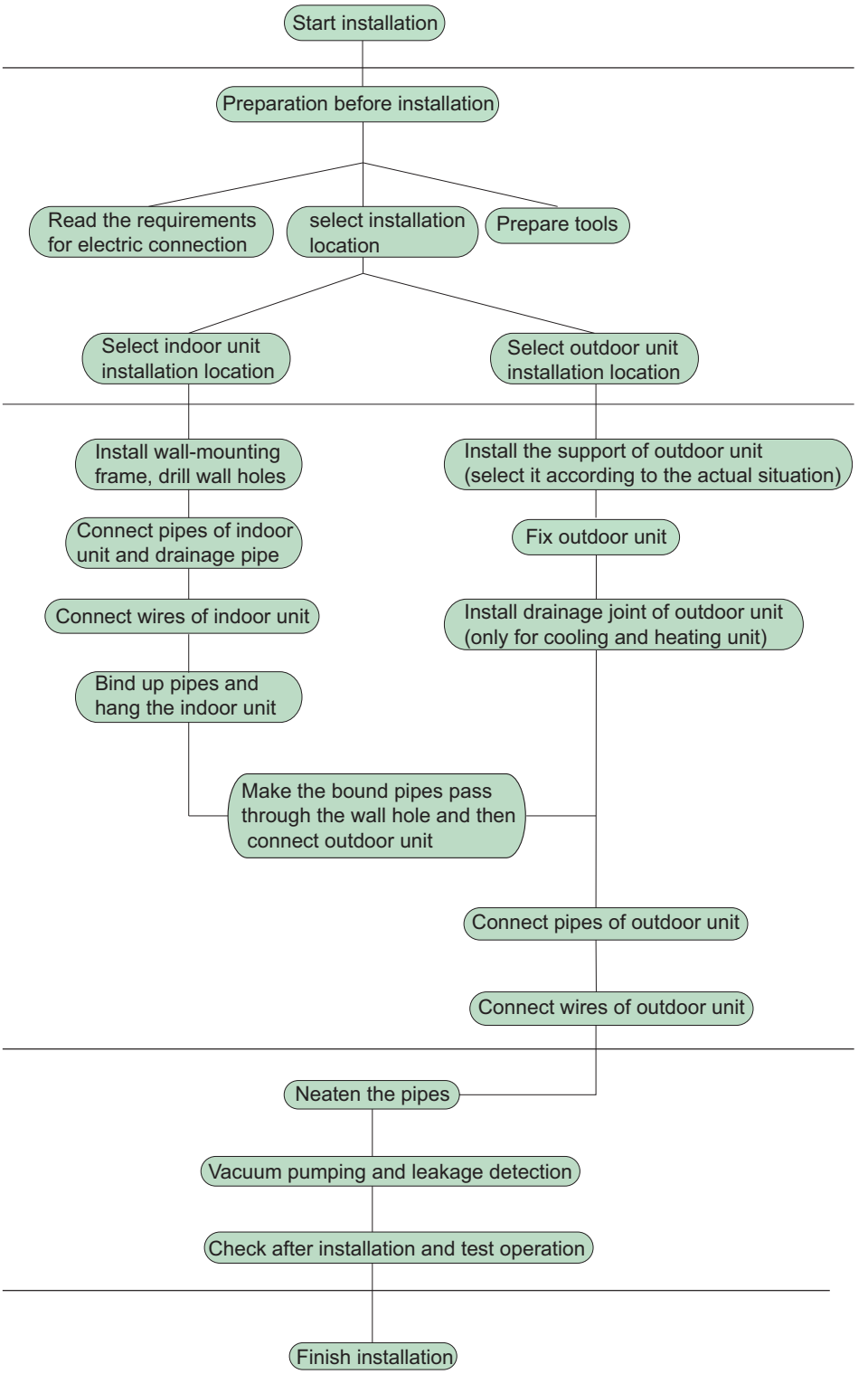
1. Level meter, measuring tape 	**2. Screw driver** 	**3. Impact drill, drill head, electric drill** 
4. Electroprobe 	**5. Universal meter** 	**6. Torque wrench, open-end wrench, inner hexagon spanner** 
7. Electronic leakage detector 	**8. Vacuum pump** 	**9. Pressure meter** 
10. Pipe pliers, pipe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

8. Installation

8.1 Installation Dimension Diagram



Installation procedures



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

8.2 Installation Parts-checking

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

⚠ **Note:**

1.Please contact the local agent for installation.

2.Don't use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

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

(1) The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.

(2) The place with high-frequency devices (such as welding machine, medical equipment).

(3) The place near coast area.

(4) The place with oil or fumes in the air.

(5) The place with sulfureted gas.

(6) Other places with special circumstances.

(7) The appliance shall not be installed in the laundry

(8) It's not allowed to be installed on the unstable or motive base structure (such as truck) or in the corrosive environment (such as chemical factory).

2. Indoor Unit:

(1) There should be no obstruction near air inlet and air outlet.

(2) Select a location where the condensation water can be dispersed easily andwon't affect other people.

(3) Select a location which is convenient to connect the outdoor unit and near the power socket.

(4) Select a location which is out of reach for children.

(5) The location should be able to withstand the weight of indoor unit and won't increase noise and vibration.

(6) The appliance must be installed 2.5m above floor.

(7) Don't install the indoor unit right above the electric appliance.

(8) Please try your best to keep 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.

(4) Properly connect the live wire, neutral wire and grounding wire of power socket.

(5) Be sure to cut off the power supply before proceeding any work related to electricity and safety.

(6) Do not put through the power before finishing installation.

(7) If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

(8) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

(9) The appliance shall be installed in accordance with national wiring regulations.

(10) Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m (see table a).

Please notice that the unit is filled with flammable gas R32. Inappropriate treatment of the unit involves the risk of severe damages of people and material. Details to this refrigerant are found in chapter "refrigerant".

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 can't be used for other purposes.

(3) The grounding resistance should comply with national electric safety regulations.

(4) The appliance must be positioned so that the plug is accessible.

(5) An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

(6) Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Air-conditioner	Air switch capacity
12K	10A

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)

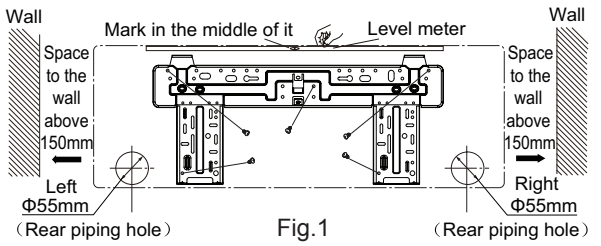


Fig.1

(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)

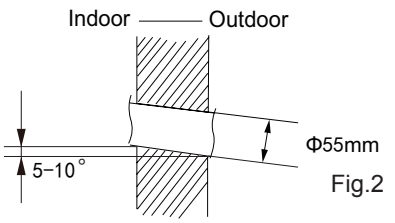


Fig.2

⚠ **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)

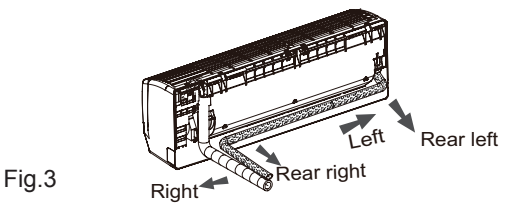


Fig.3

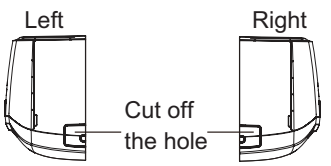


Fig.4

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)

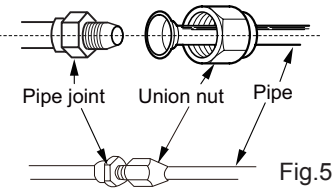


Fig.5

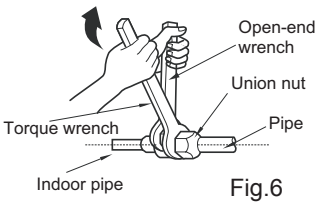


Fig.6

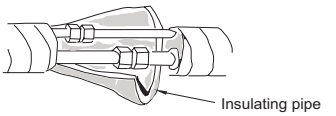


Fig.7

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)

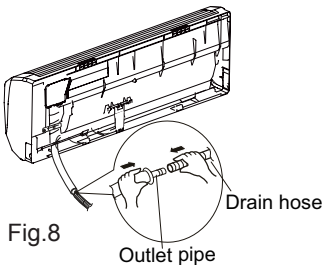


Fig.8

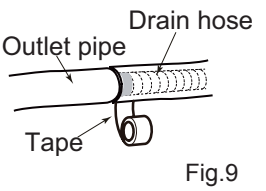


Fig.9

⚠ **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)

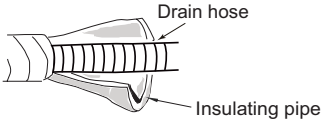


Fig.10

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)

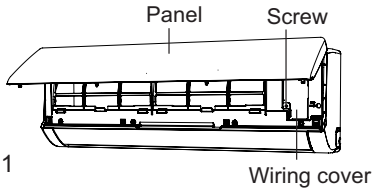
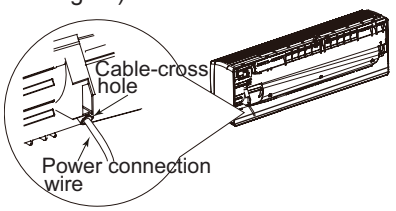


Fig.11

(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)



Note:This step only applicable for N.American models.

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)

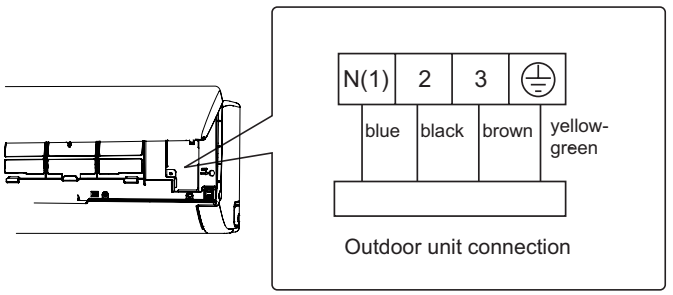


Fig.13

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

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

⚠ **Note:**

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

8. Bind up Pipe

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

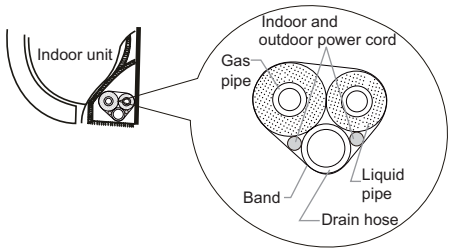


Fig.14

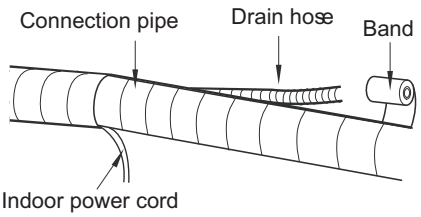


Fig.15

⚠ **Note:**

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

9. Hang the Indoor Unit

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

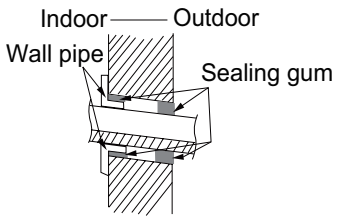
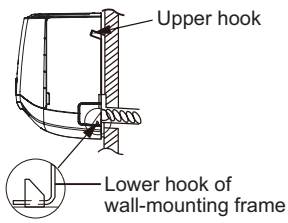


Fig.16

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.

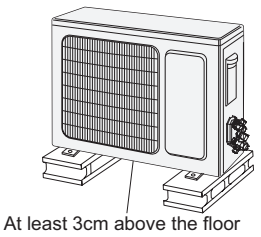


Fig.18

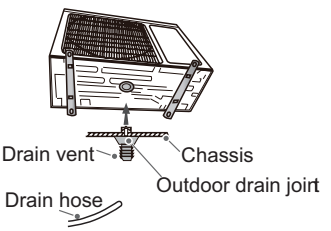


Fig.19

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)

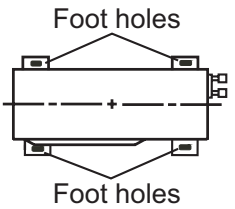


Fig.20

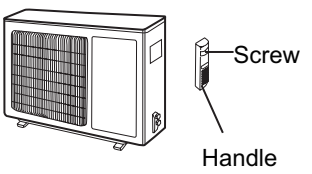


Fig.21

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)

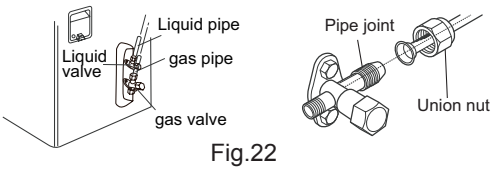


Fig.22

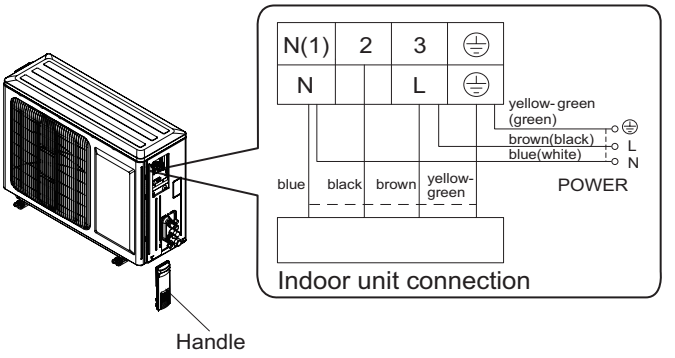
(3) Pretightening the union nut with hand.
(4) Tighten the union nut with torque wrench.

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 to the wiring terminal according to the color; fix the power connection wire with screws.(As show in Fig.23)



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

Fig.23

(2) Fix the power connection wire with wire clip.

⚠ **Note:**

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

6. Neaten the Pipes

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

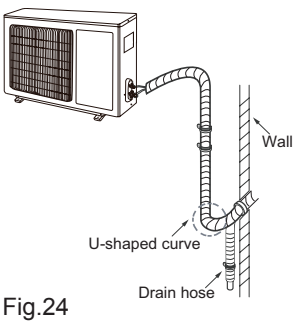


Fig.24

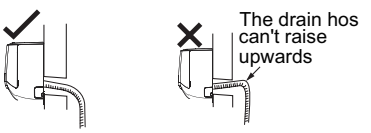


Fig.25

⚠ **Note:**

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

(3) The water outlet can't be placed in water in order to drain smoothly.(As show in Fig.27)

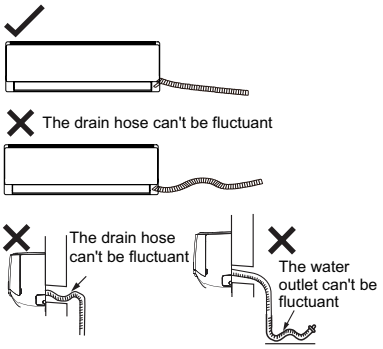


Fig.26

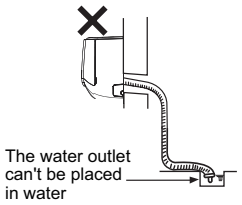


Fig.27

8.7 Vacuum Pumping and Leak Detection

1. Use Vacuum Pump

(1) Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.

(2) Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.

(3) Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.

(4) Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.

(5) Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.

(6) Tighten the screw caps of valves and refrigerant charging vent.(As show in Fig.28)

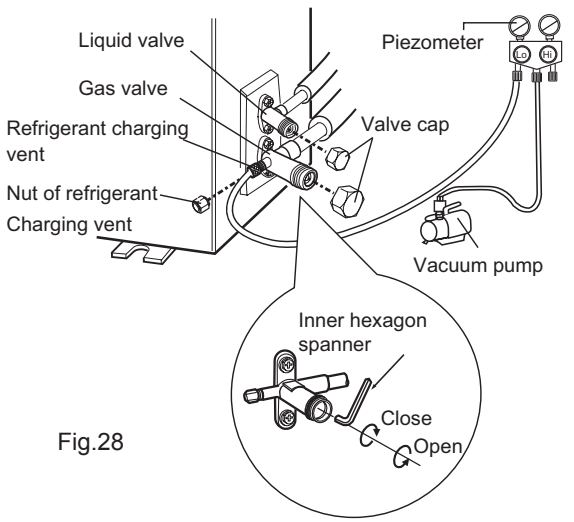


Fig.28

2. Leakage Detection

(1) With leakage detector:

Check if there is leakage with leakage detector.

(2) With soap water:

If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

8.8 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

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

2. Test Operation

(1) Preparation of test operation

● The client approves the air conditioner installation.

● Specify the important notes for air conditioner to the client.

(2) Method of test operation

● Put through the power, press ON/OFF button on the remote controller to start operation.

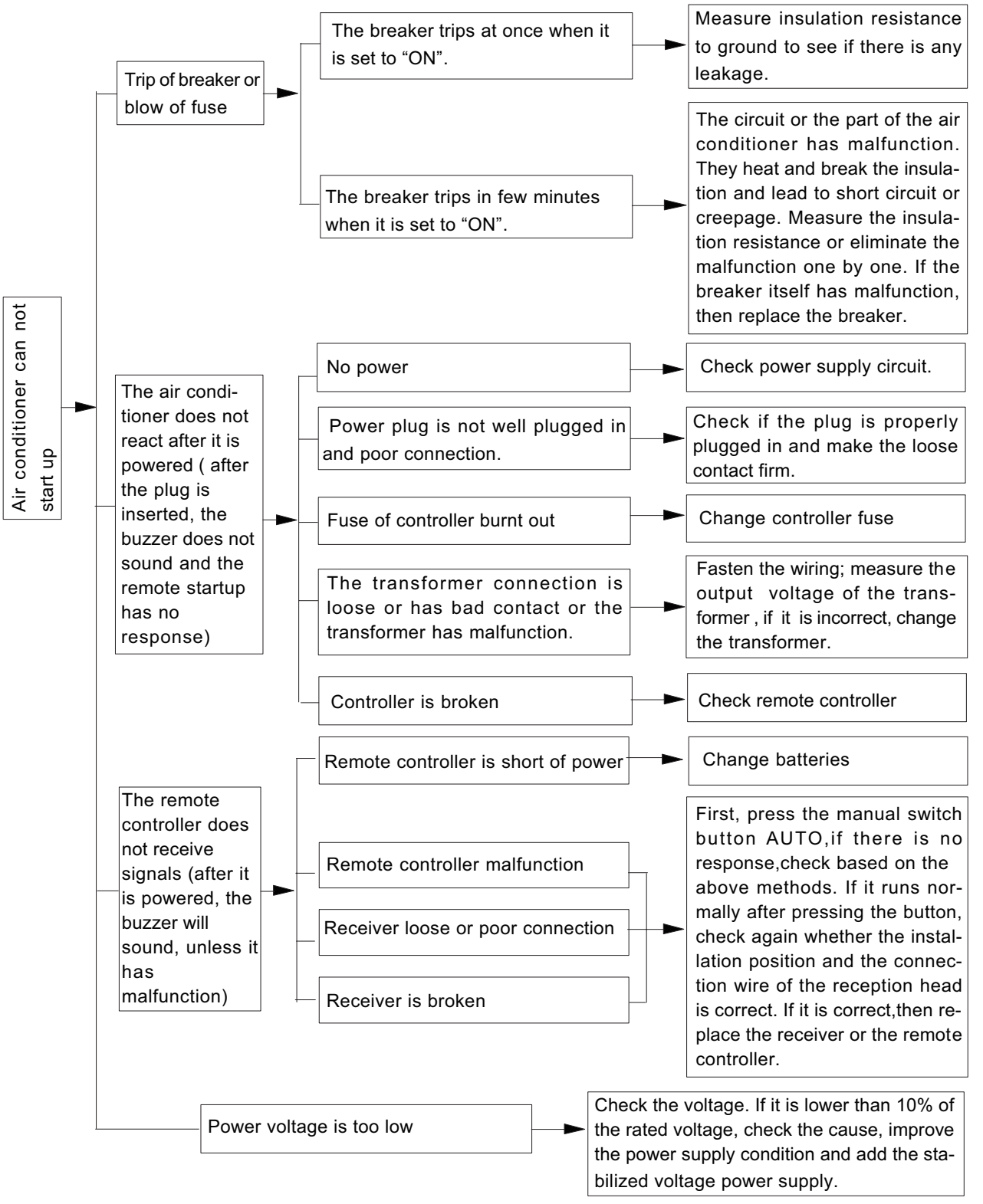
● Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.

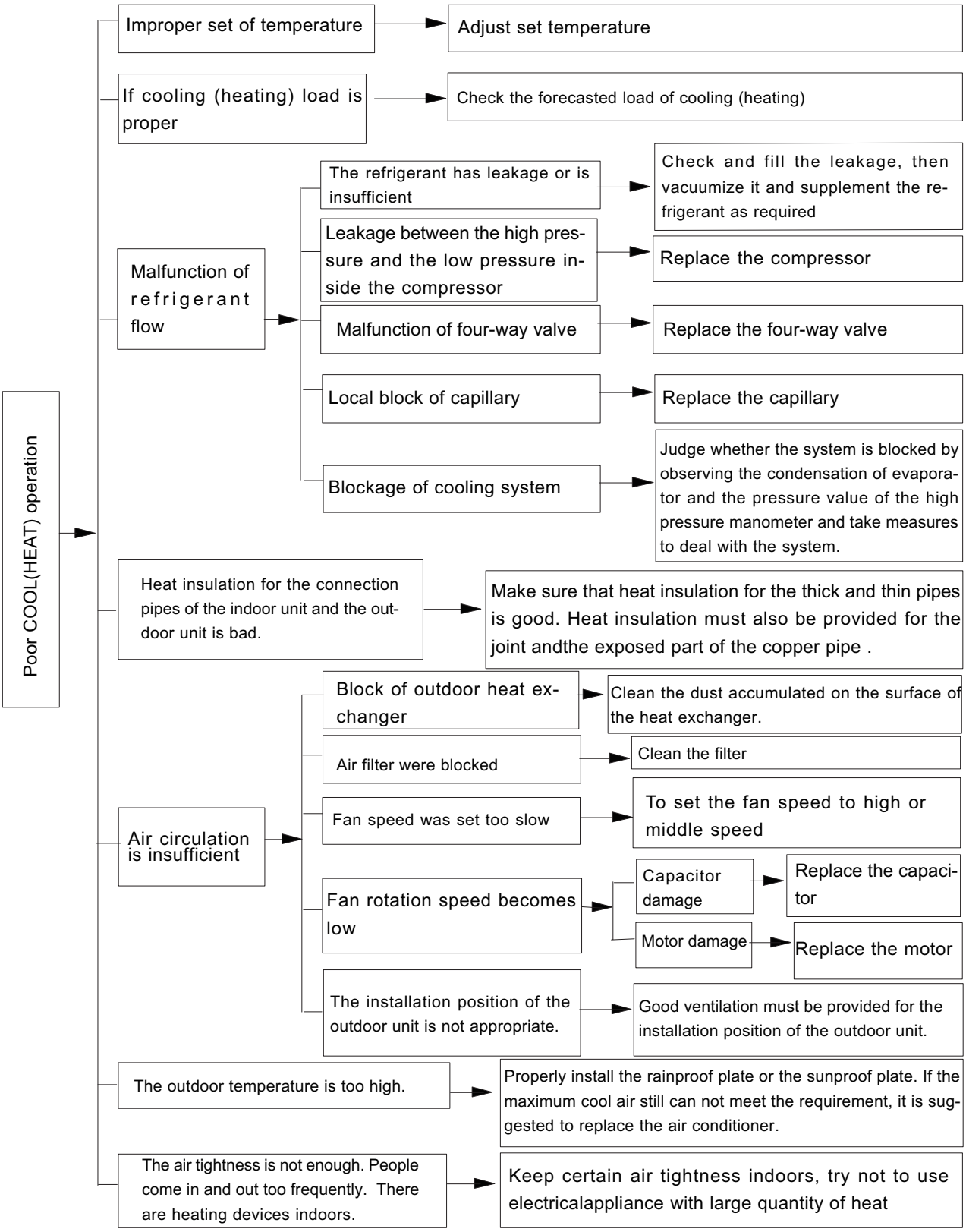
● If the ambient temperature is lower than 16℃ , the air conditioner can’t start cooling.

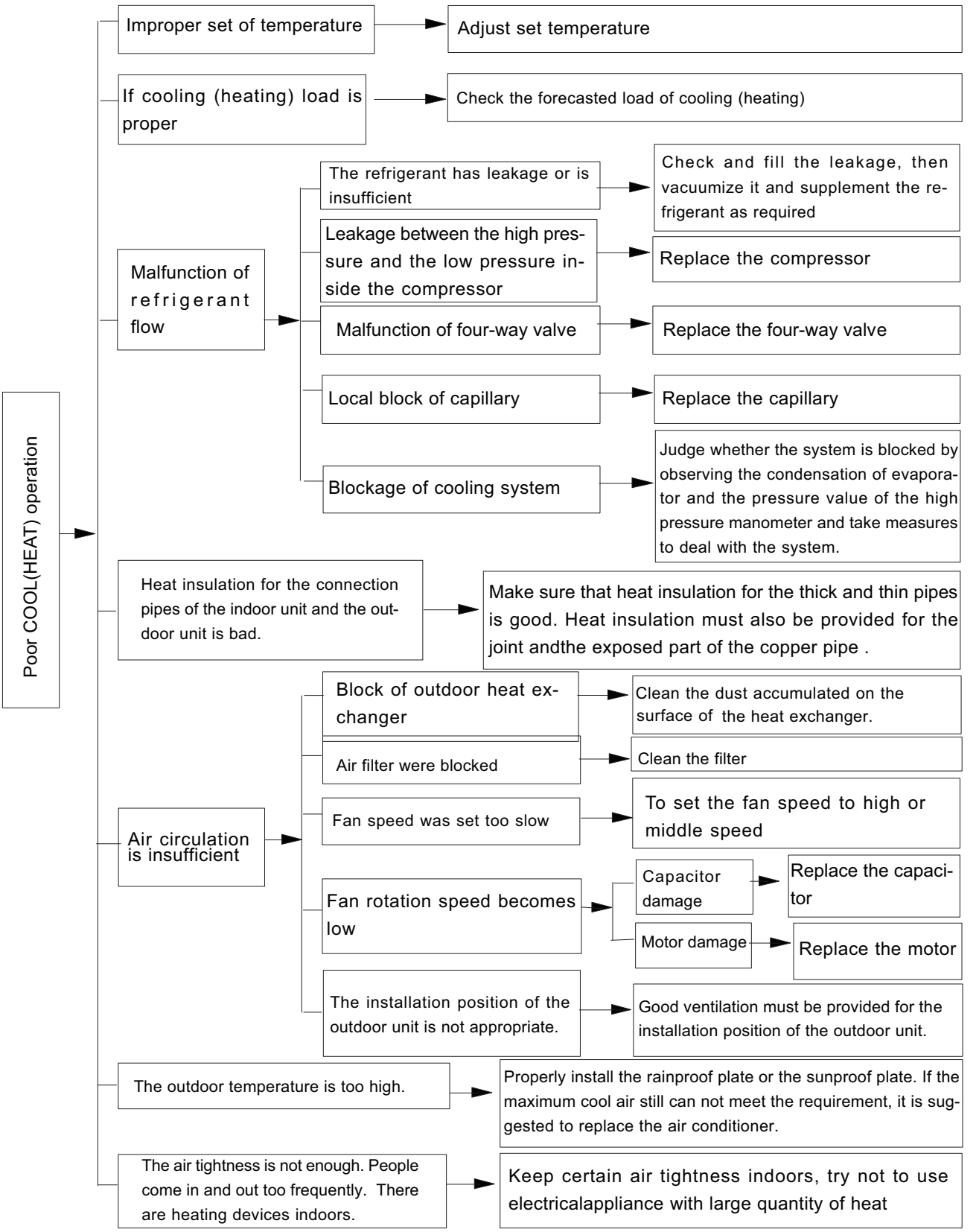
9. Maintenance

9.1 Malfunction Analysis

Note: When replacing the controller, be sure to insert the wire jumper into the new controller, otherwise the unit will display C5




Poor COOL(HEAT) operation
Improper set of temperature
Adjust set temperature
If cooling (heating) load is proper
Check the forecasted load of cooling (heating)
Malfunction of refrigerant flow
The refrigerant has leakage or is insufficient
Check and fill the leakage, then vacuumize it and supplement the refrigerant as required
Leakage between the high pressure and the low pressure inside the compressor
Replace the compressor
Malfunction of four-way valve
Replace the four-way valve
Local block of capillary
Replace the capillary
Blockage of cooling system
Judge whether the system is blocked by observing the condensation of evaporator and the pressure value of the high pressure manometer and take measures to deal with the system.
Heat insulation for the connection pipes of the indoor unit and the outdoor unit is bad.
Make sure that heat insulation for the thick and thin pipes is good. Heat insulation must also be provided for the joint andthe exposed part of the copper pipe .
Air circulation is insufficient
Block of outdoor heat exchanger
Clean the dust accumulated on the surface of the heat exchanger.
Air filter were blocked
Clean the filter
Fan speed was set too slow
To set the fan speed to high or middle speed
Fan rotation speed becomes low
Capacitor damage
Replace the capacitor
Motor damage
Replace the motor
The installation position of the outdoor unit is not appropriate.
Good ventilation must be provided for the installation position of the outdoor unit.
The outdoor temperature is too high.
Properly install the rainproof plate or the sunproof plate. If the maximum cool air still can not meet the requirement, it is suggested to replace the air conditioner.
The air tightness is not enough. People come in and out too frequently. There are heating devices indoors.
Keep certain air tightness indoors, try not to use electricalappliance with large quantity of heat


Poor COOL(HEAT) operation
Improper set of temperature
Adjust set temperature
If cooling (heating) load is proper
Check the forecasted load of cooling (heating)
Malfunction of refrigerant flow
The refrigerant has leakage or is insufficient
Check and fill the leakage, then vacuumize it and supplement the refrigerant as required
Leakage between the high pressure and the low pressure inside the compressor
Replace the compressor
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Judge whether the system is blocked by observing the condensation of evaporator and the pressure value of the high pressure manometer and take measures to deal with the system.
Heat insulation for the connection pipes of the indoor unit and the outdoor unit is bad.
Make sure that heat insulation for the thick and thin pipes is good. Heat insulation must also be provided for the joint andthe exposed part of the copper pipe .
Air circulation is insufficient
Block of outdoor heat exchanger
Clean the dust accumulated on the surface of the heat exchanger.
Air filter were blocked
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Fan speed was set too slow
To set the fan speed to high or middle speed
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The installation position of the outdoor unit is not appropriate.
Good ventilation must be provided for the installation position of the outdoor unit.
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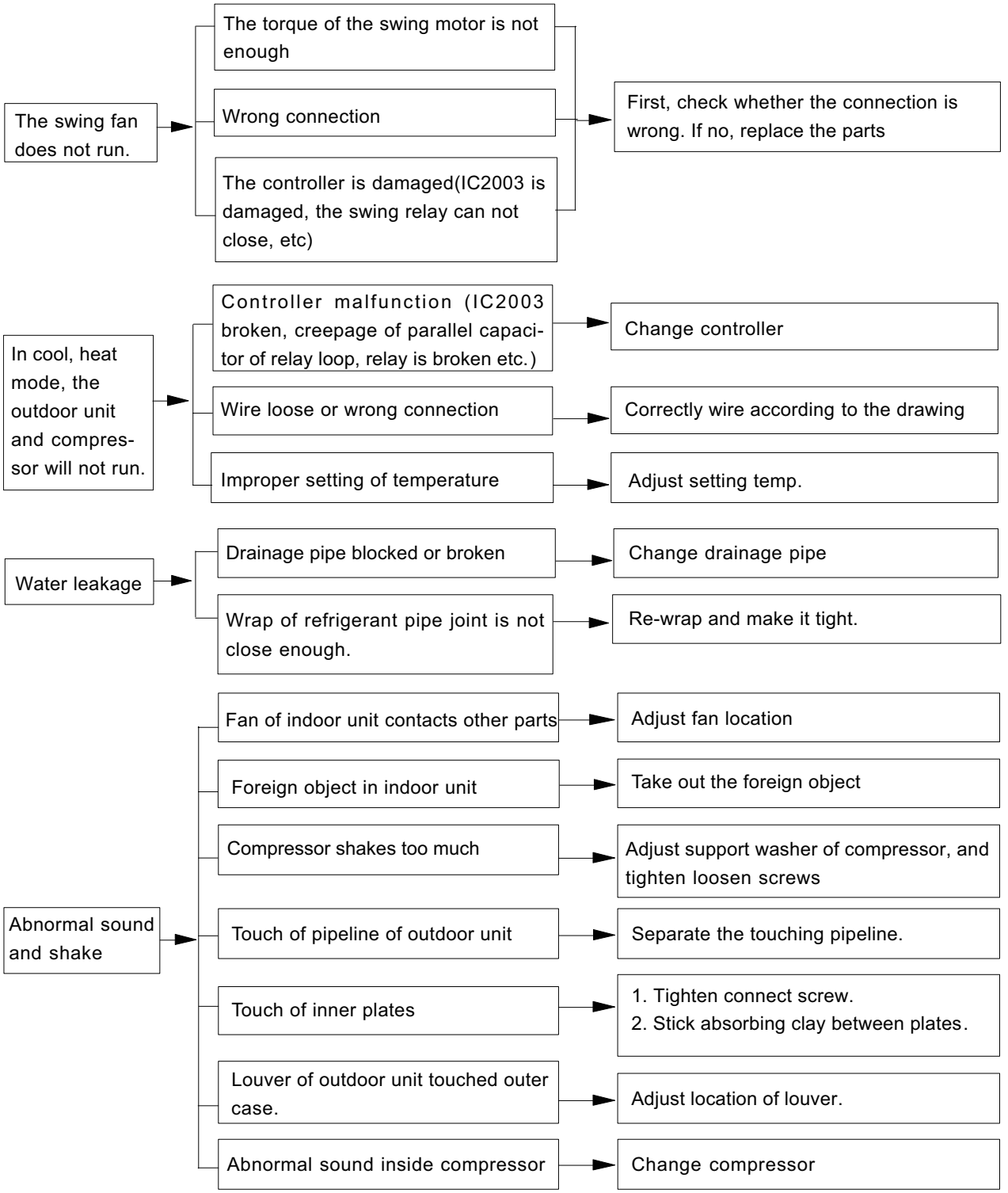
Properly install the rainproof plate or the sunproof plate. If the maximum cool air still can not meet the requirement, it is suggested to replace the air conditioner.
The air tightness is not enough. People come in and out too frequently. There are heating devices indoors.
Keep certain air tightness indoors, try not to use electricalappliance with large quantity of heat


The swing fan does not run.
The torque of the swing motor is not enough
Wrong connection
The controller is damaged(IC2003 is damaged, the swing relay can not close, etc)
First, check whether the connection is wrong. If no, replace the parts
In cool, heat mode, the outdoor unit and compressor will not run.
Controller malfunction (IC2003 broken, creepage of parallel capacitor of relay loop, relay is broken etc.)
Change controller
Wire loose or wrong connection
Correctly wire according to the drawing
Improper setting of temperature
Adjust setting temp.
Water leakage
Drainage pipe blocked or broken
Change drainage pipe
Wrap of refrigerant pipe joint is not close enough.
Re-wrap and make it tight.
Abnormal sound and shake
Fan of indoor unit contacts other parts
Adjust fan location
Foreign object in indoor unit
Take out the foreign object
Compressor shakes too much
Adjust support washer of compressor, and tighten loosen screws
Touch of pipeline of outdoor unit
Separate the touching pipeline.
Touch of inner plates
1. Tighten connect screw.
2. Stick absorbing clay between plates.
Louver of outdoor unit touched outer case.
Adjust location of louver.
Abnormal sound inside compressor
Change compressor

9.2 Flashing LED of Indoor Unit/Outdoor and Primary Judgement

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		
1	High pressure protection of system	E1	OFF 3s and blink once			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	OFF 3S and blink twice			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	OFF 3S and blink 3 times			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	OFF 3S and blink 4 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	Please refer to the malfunction analysis (discharge protection, overload).
5	Overcurrent protection	E5	OFF 3S and blink 5 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	1. Supply voltage is unstable; 2. Supply voltage is too low and load is too high; 3. Evaporator is dirty.
6	Communi-cation Malfunction	E6	OFF 3S and blink 6 times			During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	Refer to the corresponding malfunction analysis.
7	High temperature resistant protection	E8	OFF 3S and blink 8 times			During cooling operation: compressor will stop while indoor fan will operate. During heating operation, the complete unit stops.	Refer to the malfunction analysis (overload, high temperature resistant).
8	EEPROM malfunction	EE			OFF 3S and blink 15 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
9	Limit/ decrease frequency due to high temperature of module	EU		OFF 3S and blink 6 times	OFF 3S and blink 6 times	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	OFF 3S and blink 15 times			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	Fo	OFF 3S and blink 1 times	OFF 3S and blink 1 times		When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant	Nominal cooling mode
12	Indoor ambient temperature sensor is open/short circuited	F1		OFF 3S and blink once		During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation.	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		OFF 3S and blink twice		AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation	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		OFF 3S and blink 3 times		During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
15	Outdoor condenser temperature sensor is open/short circuited	F4		OFF 3S and blink 4 times		During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation.	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
16	Outdoor discharge temperature sensor is open/short circuited	F5		OFF 3S and blink 5 times		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.	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		OFF 3S and blink for 6 times		All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)
18	Decrease frequency due to overcurrent	F8		OFF 3S and blink 8 times		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		OFF 3S and blink 9 times		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		OFF 3S and blink 2 times	OFF 3S and blink 2 times	All loads operate normally, while operation frequency for compressor is decreased	Poor air-return in indoor unit or fan speed is too low
21	Voltage for DC bus-bar is too high	PH		OFF 3S and blink 11 times		During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop 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			OFF 3S and blink 21 times	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 frequence in test state	P0		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)		Showing during min. cooling or min. heating test
24	Compressor rated frequence in test state	P1		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)		Showing during nominal cooling or nominal heating test
25	Compressor maximum frequence in test state	P2		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)		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	Cool Indicator	Heating Indicator		
26	Compressor intermediate frequence in test state	P3		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)		Showing during middle cooling or middle heating test
27	Overcurrent protection of phase current for compressor	P5		OFF 3S and blink 15 times		During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
28	Charging malfunction of capacitor	PU			OFF 3S and blink 17 times	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			OFF 3S and blink 18 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
30	Module high temperature protection	P8			OFF 3S and blink 19 times	During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
31	Decrease frequency due to high temperature resistant during heating operation	H0			OFF 3S and blink 10 times	All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)
32	Static dedusting protection	H2			OFF 3S and blink twice		
33	Overload protection for compressor	H3			OFF 3S and blink 3 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm. 2.Refer to the malfunction analysis (discharge protection, 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		
34	System is abnormal	H4			OFF 3S and blink 4 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (overload, high temperature resistant)
35	IPM protection	H5			OFF 3S and blink 5 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
36	Malfunction of detecting plate(WIFI)	JF				Loads operate normally, while the unit can't be normally controlled by APP.	1. Main board of indoor unit is damaged; 2. Detection board is damaged; 3. The connection between indoor unit and detection board is not good;
37	Internal motor (fan motor) do not operate	H6	OFF 3S and blink 11 times			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.
38	Desynchro-nizing of compressor	H7			OFF 3S and blink 7 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
39	Outdoor DC fan motor malfunction	L3	OFF 3S and blink 23 times			Outdoor DC fan motor malfunction lead to compressor stop operation,	DC fan motor malfunction or system blocked or the connector loosed
40	power protection	L9	OFF 3S and blink 20 times			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
41	Indoor unit and outdoor unit doesn't match	LP	OFF 3S and blink 19 times			compressor and Outdoor fan motor can't work	Indoor unit and outdoor unit doesn't match
42	Failure start-up	LC			OFF 3S and blink 11 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis

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			OFF 3S and blink 13 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
44	Malfunction of voltage dropping for DC bus-bar	U3			OFF 3S and blink 20 times	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		OFF 3S and blink 13 times		During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation.	Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1.
46	The four-way valve is abnormal	U7		OFF 3S and blink 20 times		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	Zero-crossing malfunction of outdoor unit	U9	OFF 3S and blink 18 times			During cooling operation, compressor will stop while indoor fan will operate; during heating,the complete unit will stop operation.	Replace outdoor control panel AP1 or Reactor
48	Anti-freezing protection for evaporator	E2				Not the error code. It's the status code for the operation.	
49	Cold air prevention protection	E9				Not the error code. It's the status code for the operation.	
50	Refrigerant recovery mode	Fo				Refrigerant recovery. The Serviceman operates it for maintenance	
51	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	Replace outdoor control panel AP1 or Reactor

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		
52	Undefined outdoor unit error	oE				Cool: compressor and outdoor fan stops operation, while indoor fan operates; Heat: compressor, outdoor fan and indoor fan stop operation	1. Outdoor ambient temperature exceeds the operation range of unit (eg: less than-20oC or more than 60oC for cooling; more than 30oC for heating); 2. Failure startup of compressor? 3. Are wires of compressor not connected tightly? 4. Is compressor damaged? 5. Is main board damaged?
53	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
54	Zero-crossing inspection circuit malfun-ction of the IDU fan motor	U8	Flash 17 times every 3s			1. Discharging speed of capacitor is slow, which lead to wrong judgement of controller. Zero-crossing detection circuit of main board is abnormal	Refer to maintenance flowchart

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

Possi ble 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 corre sponding position on the controller and if damage of lead wire is found.

5. Compressor over load protection

Possible causes: insufficient or too much refrigrant; 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 compress or 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 temperatur e of indoor heat exchanger when heating) is too high, protectionwill beactivated.

Possi ble 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 selfcanceled, 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 sever times, if the malfunction still exists,replace the module.

9.3 How to Check Simply the Main Part

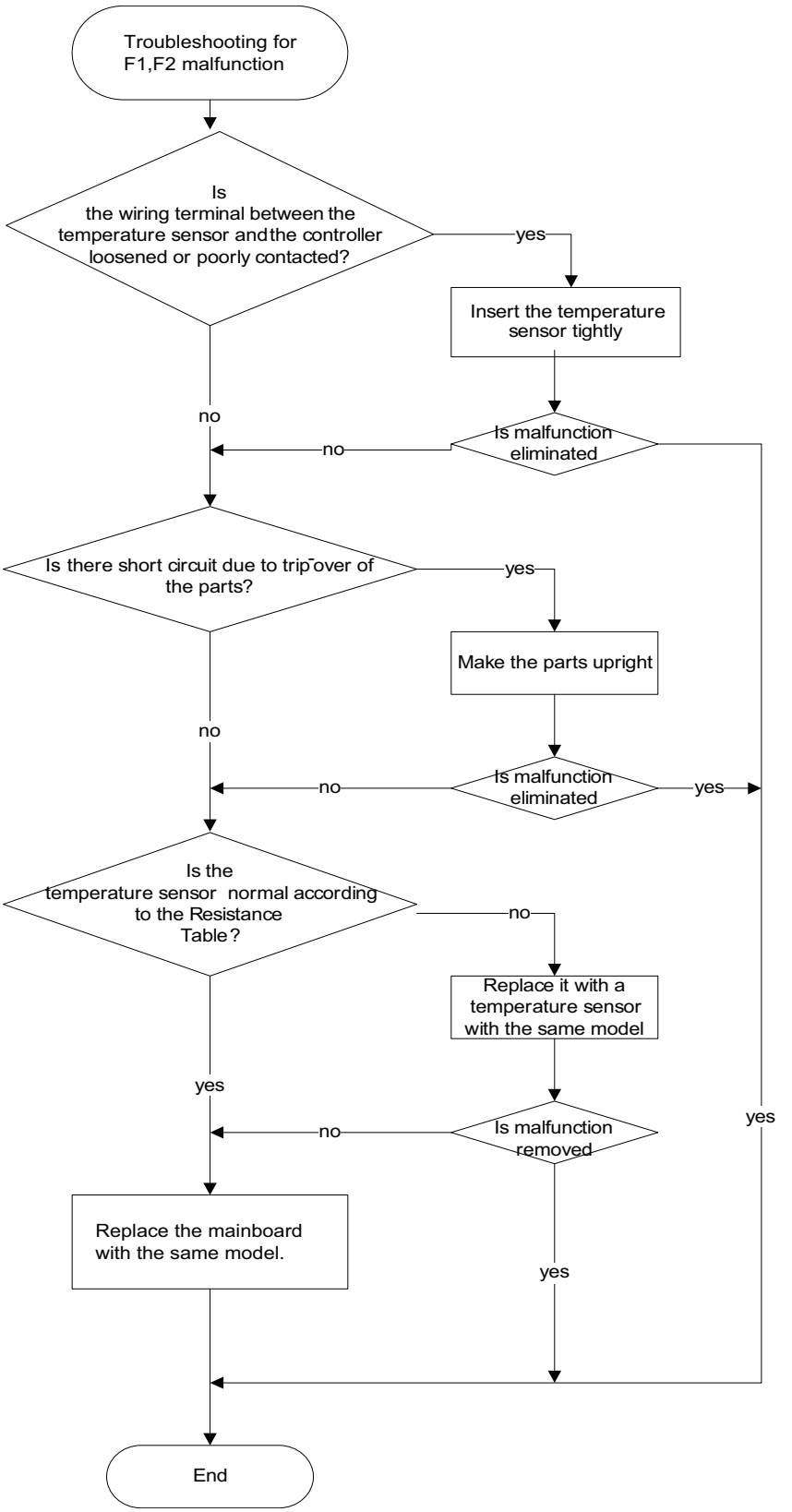
Indoor Unit

(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:

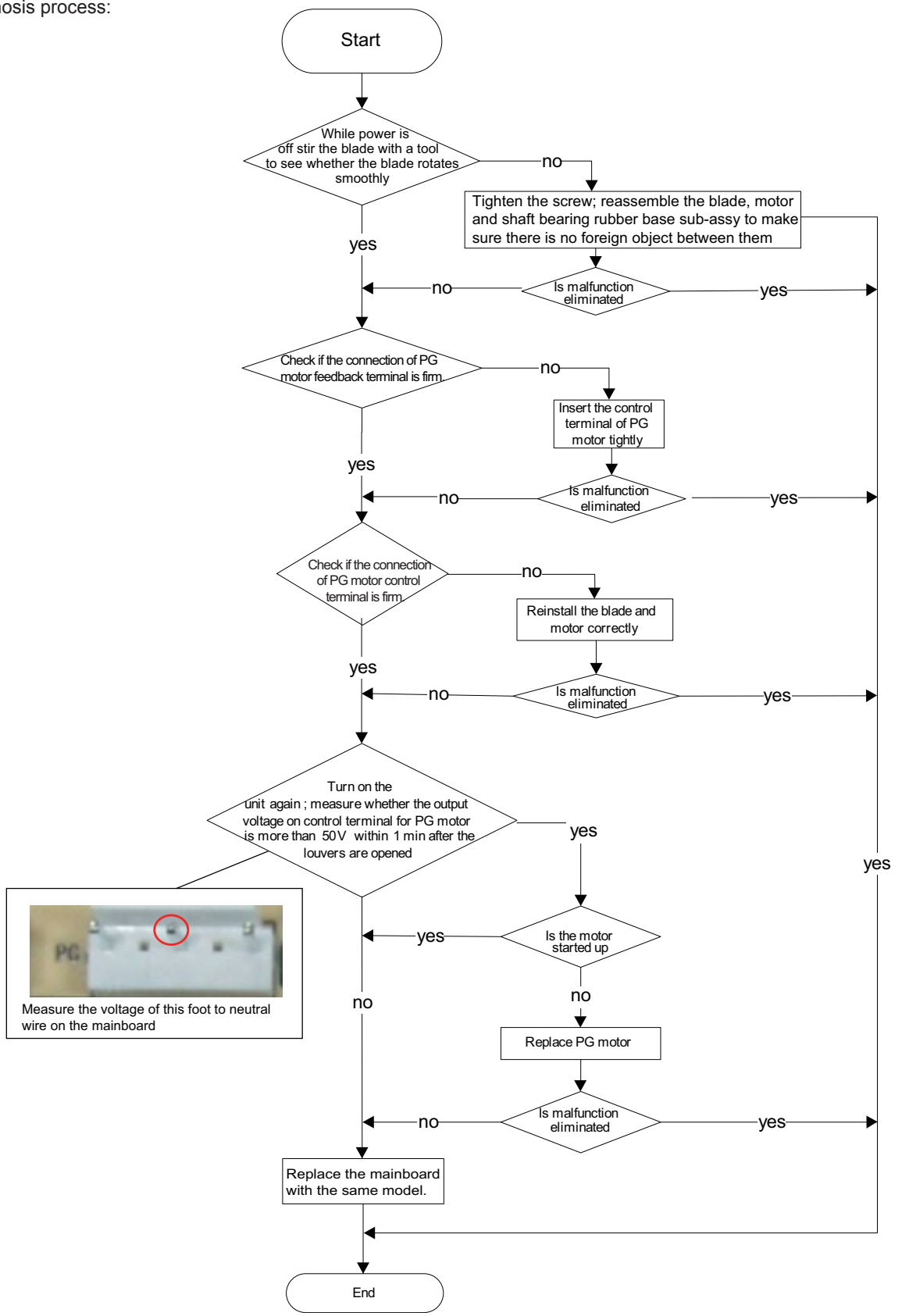


(2) Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

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

Malfunction diagnosis process:

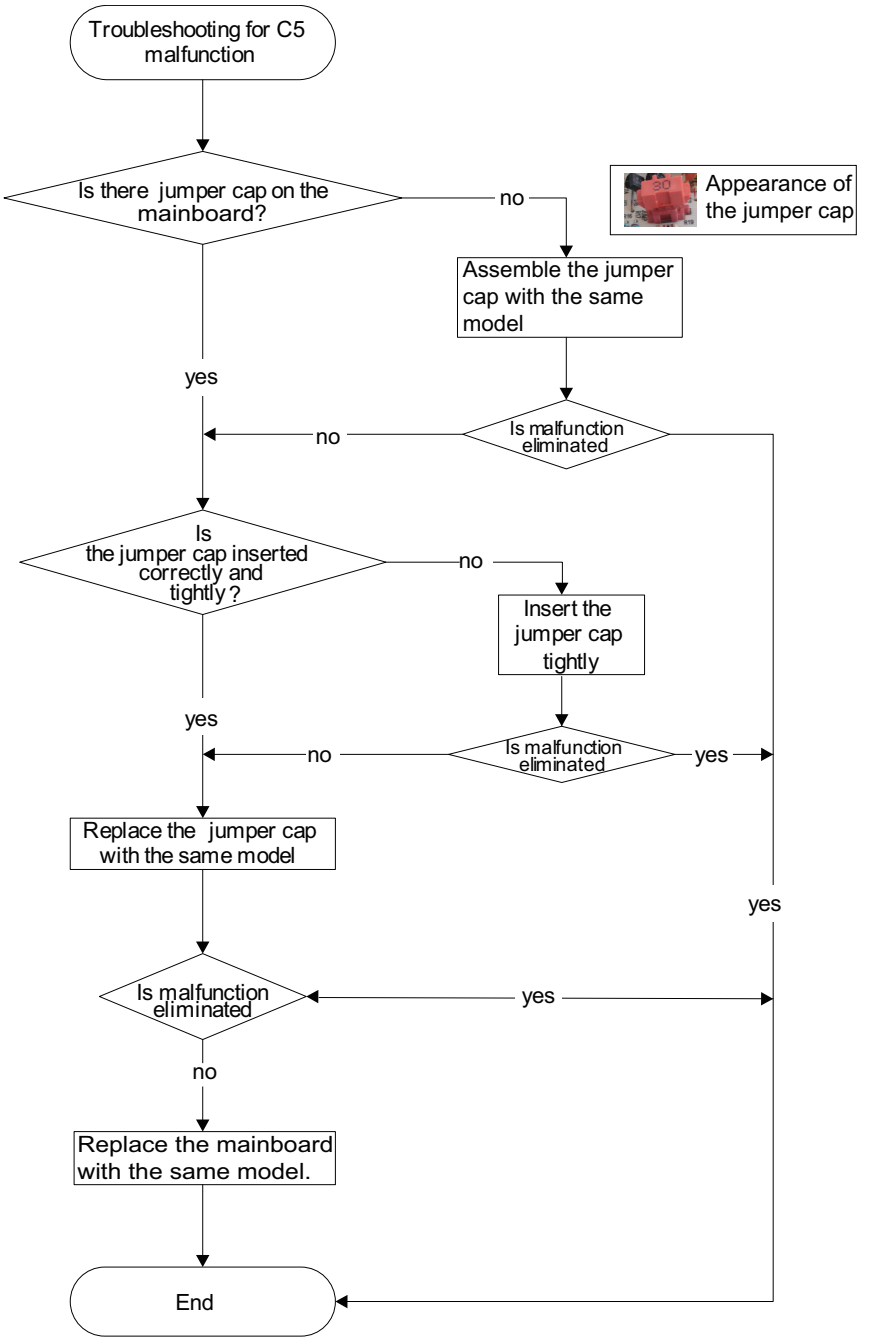


(3) Malfunction of Protection of Jumper Cap C5

Main detection points:

- Is there jumper cap on the mainboard?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- Detectioncircuit of the mainboard isdefined abnormal?

Malfunction diagnosis process:

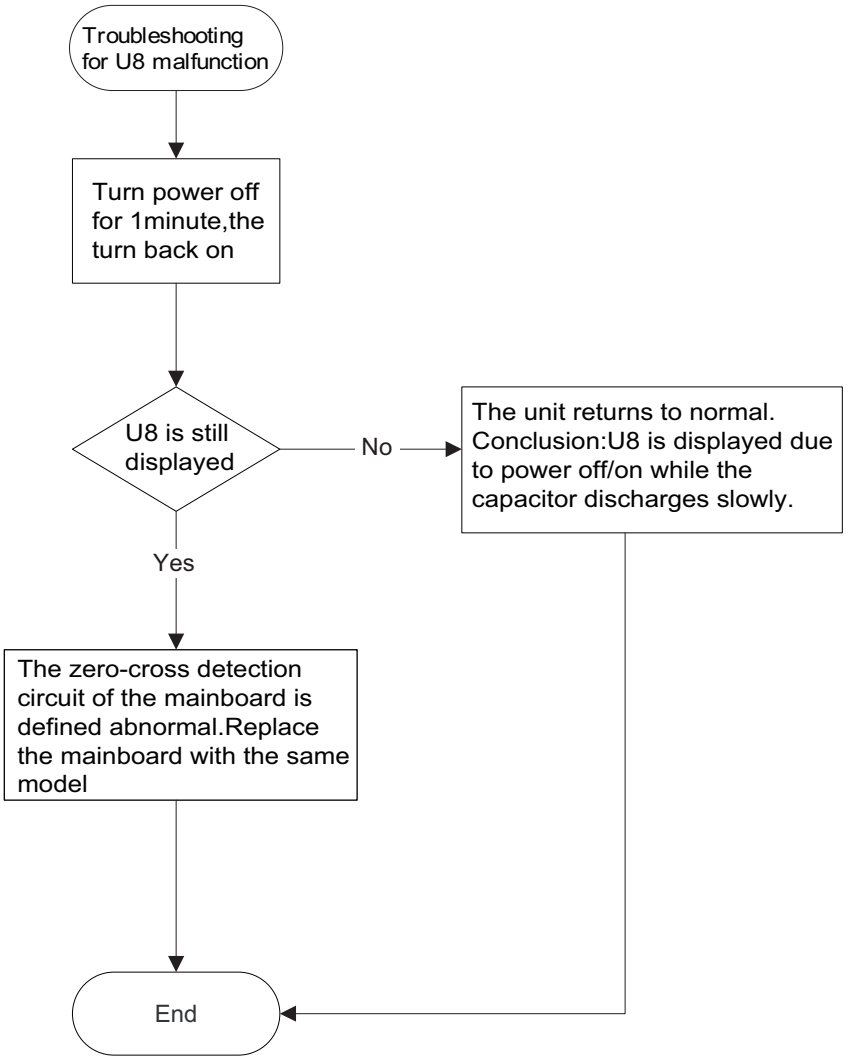


(4) Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

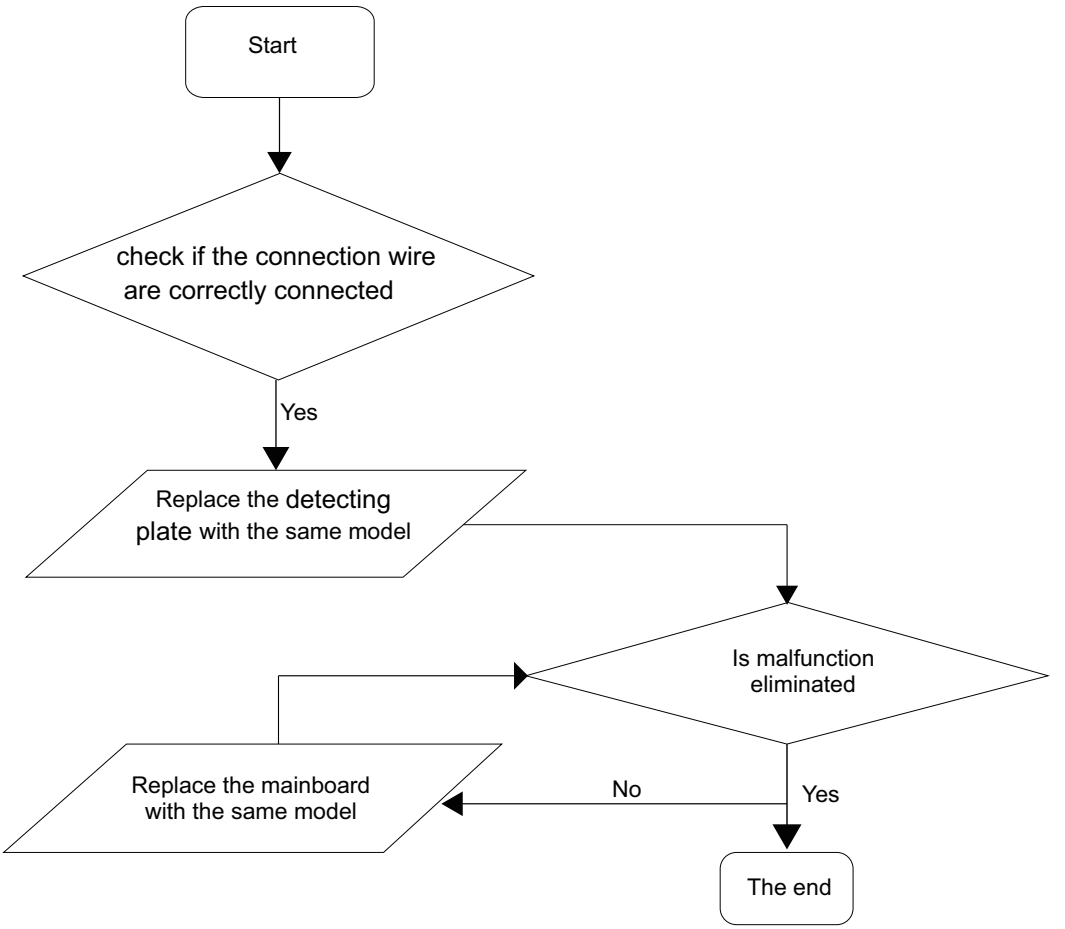
Main detection points:

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

Malfunction diagnosis process:



5. Malfunction of detecting plate(WIFI) JF



Outdoor Unit

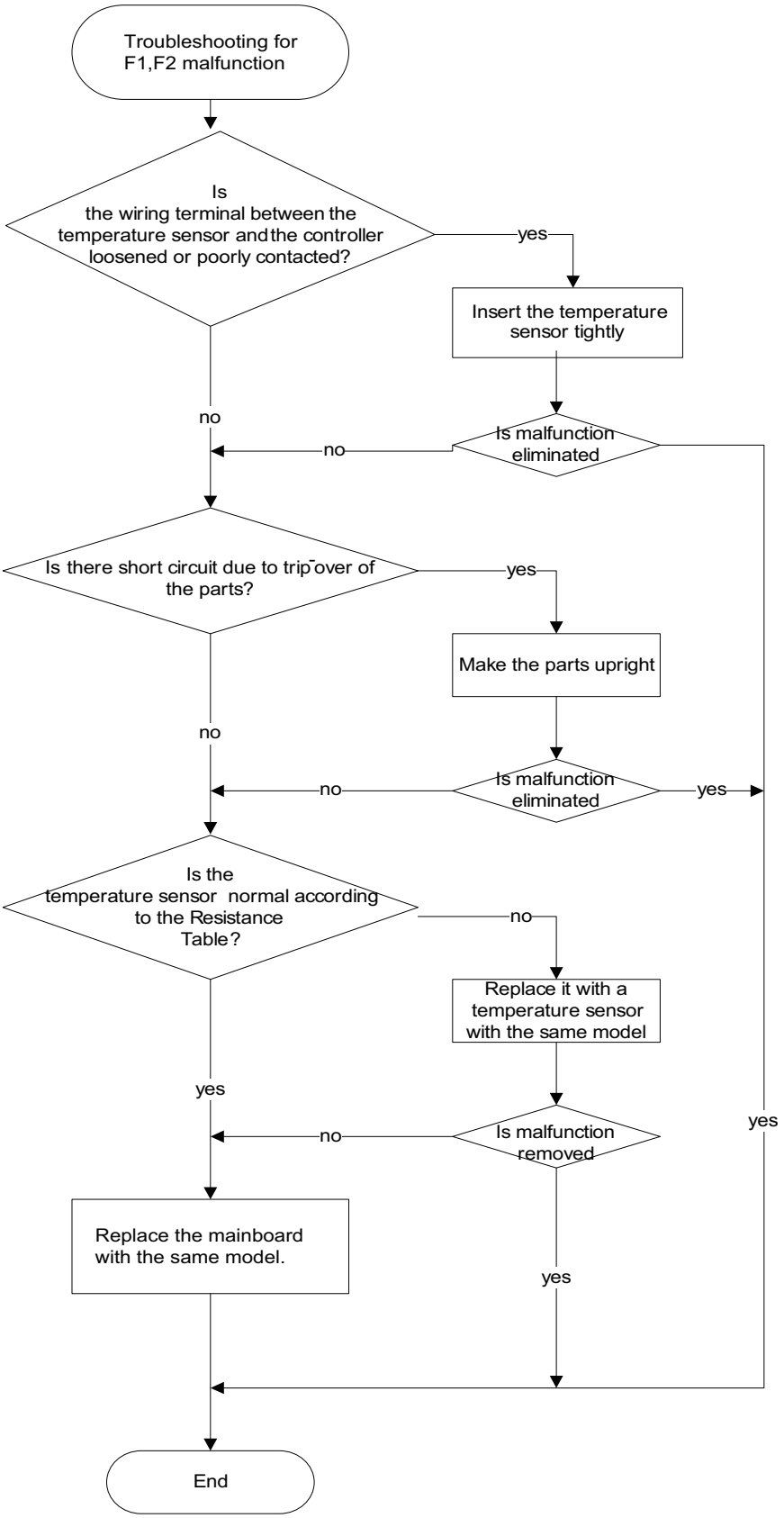
(1) Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)

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:

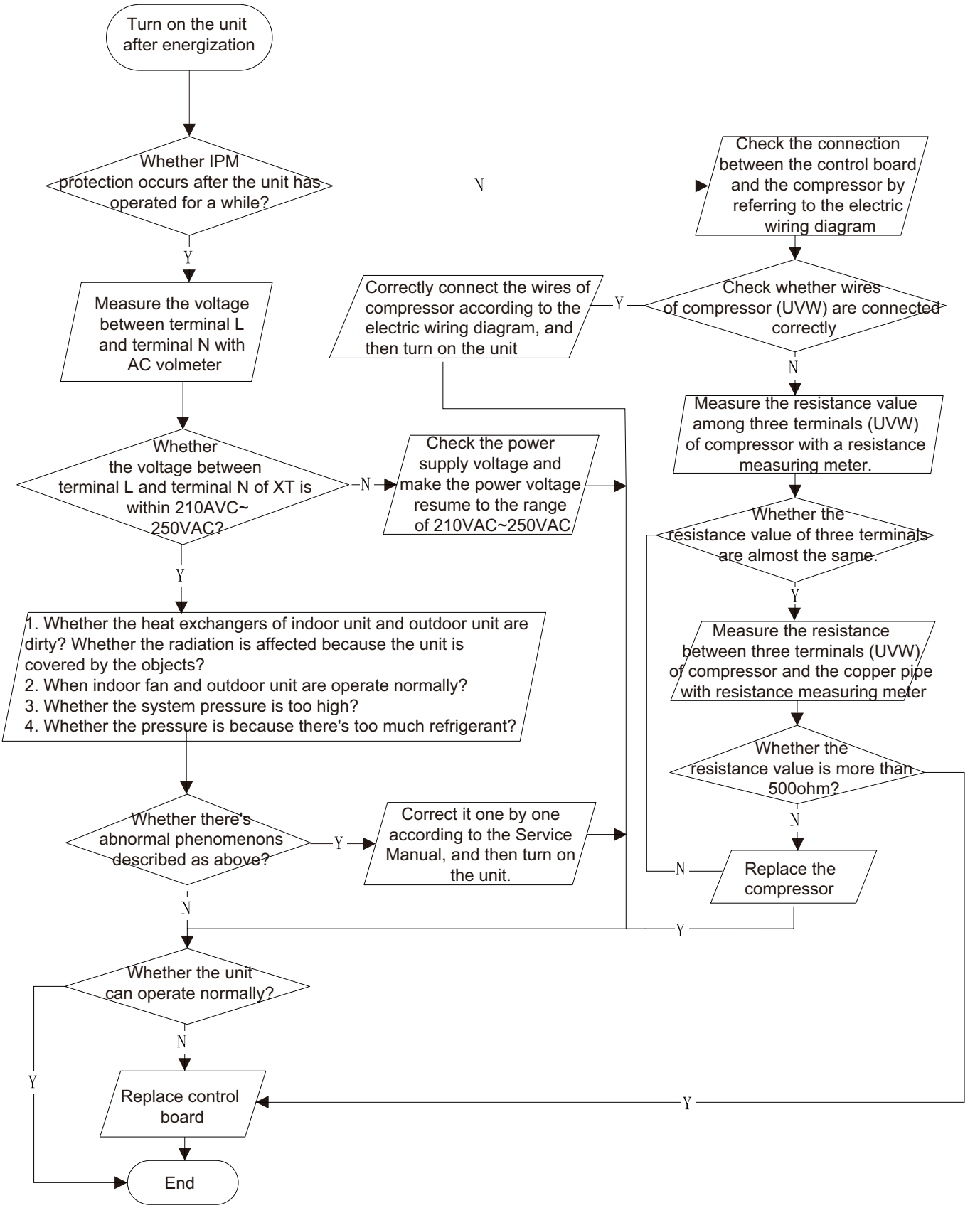


(2) IPM protection, phase current overcurrent (the control board as below indicates the control board of outdoor unit) H5/P5

Mainly detect:

(1) Compressor COMP terminal (2) voltage of power supply (3) compressor
(4) Refrigerant-charging volume (5) air outlet and air inlet of outdoor/indoor unit

Troubleshooting:



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

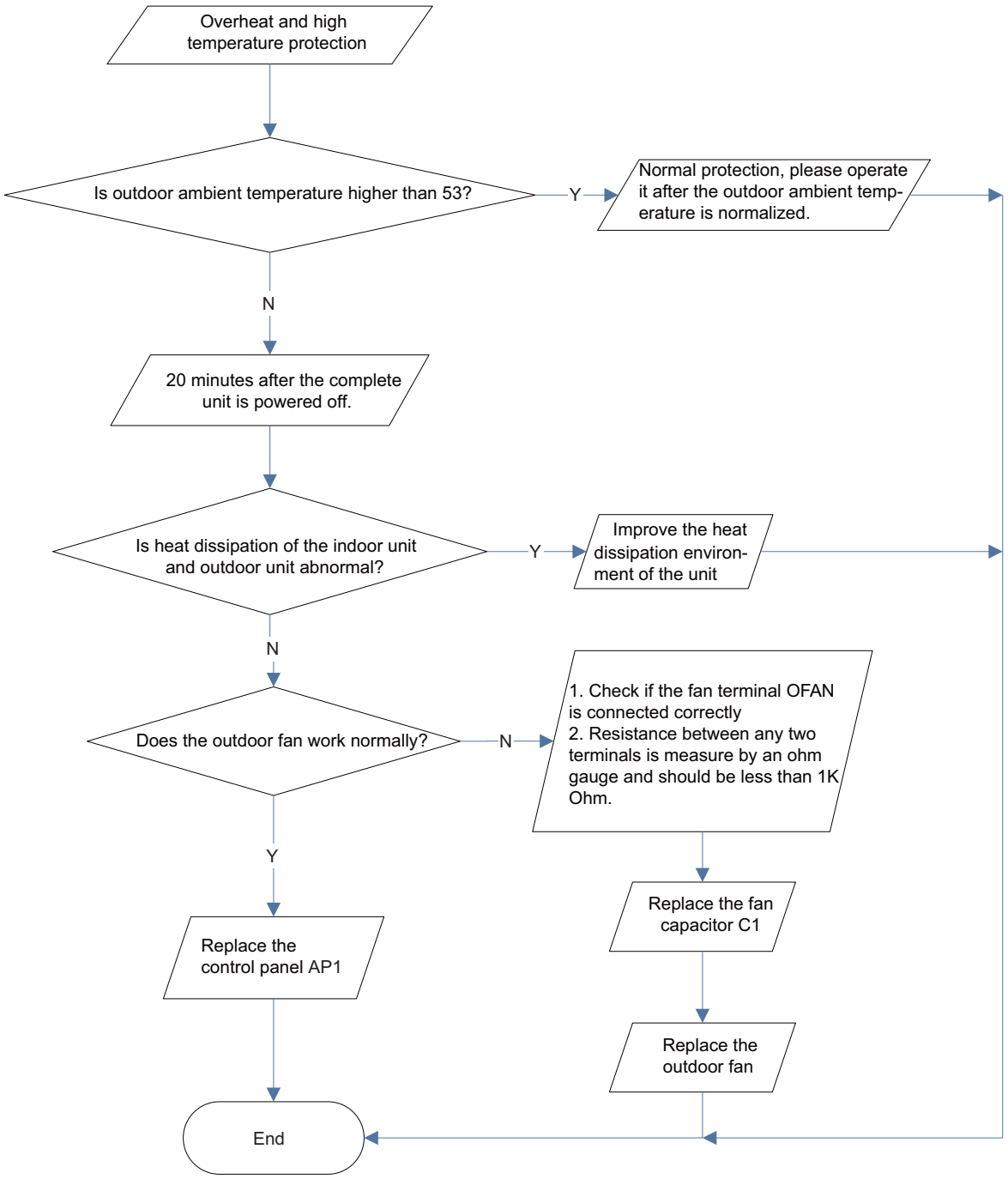
Mainly detect:

●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)

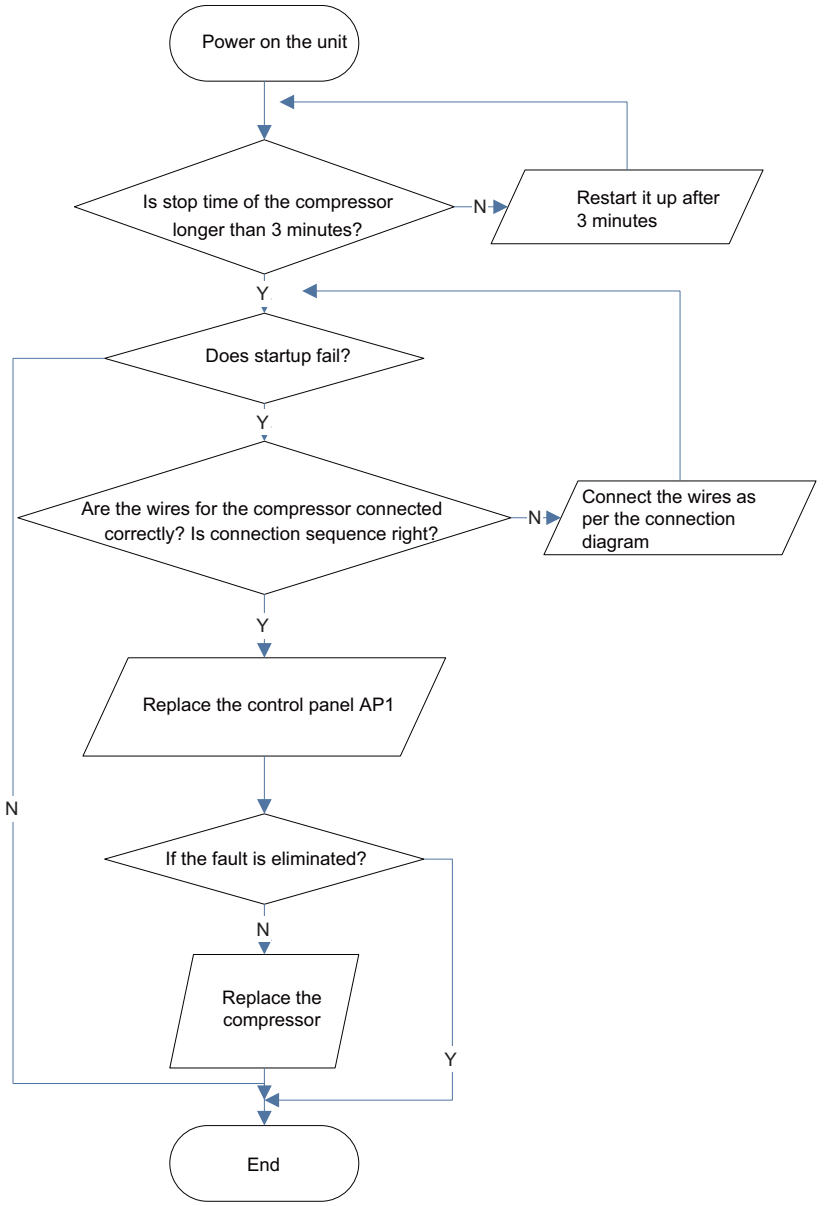
Mainly detect:

●Whether the compressor wiring is connected correct?

●Is compressor broken?

●Is time for compressor stopping enough?

Fault diagnosis process:



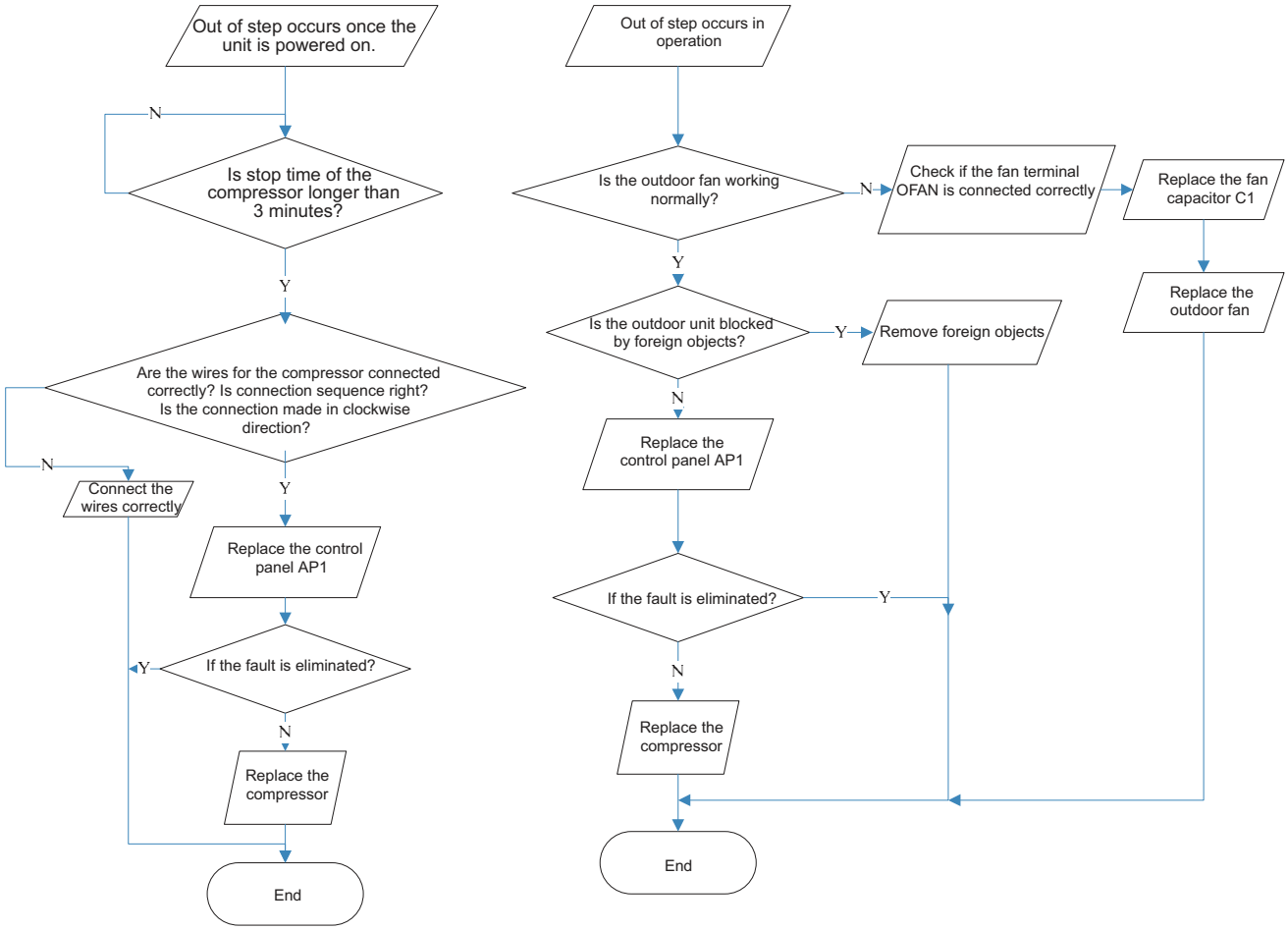
(5) Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

●Is the system pressure too high?

●Is the input voltage too low?

Fault diagnosis process:



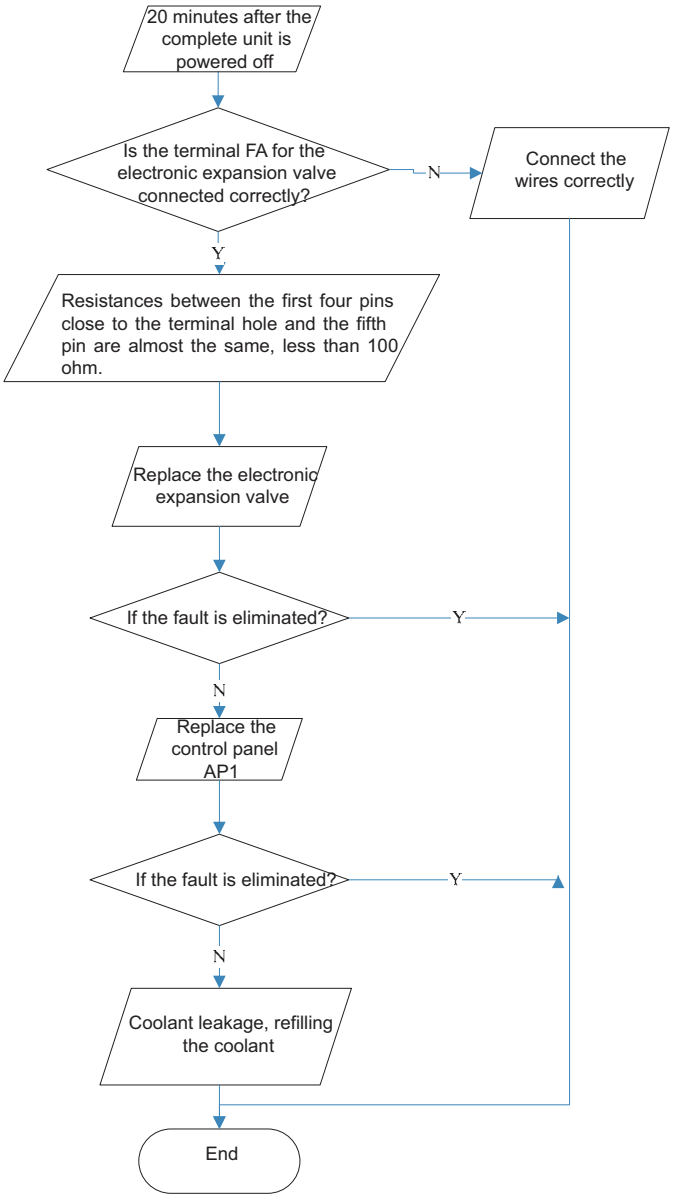
(6) Overload and air exhaust malfunction diagnosis (following AP1 for outdoor unit control board)

Mainly detect:

●Is the PMV connected well or not? Is PMV damaged?

●Is refrigerant leaked?

Fault diagnosis process:

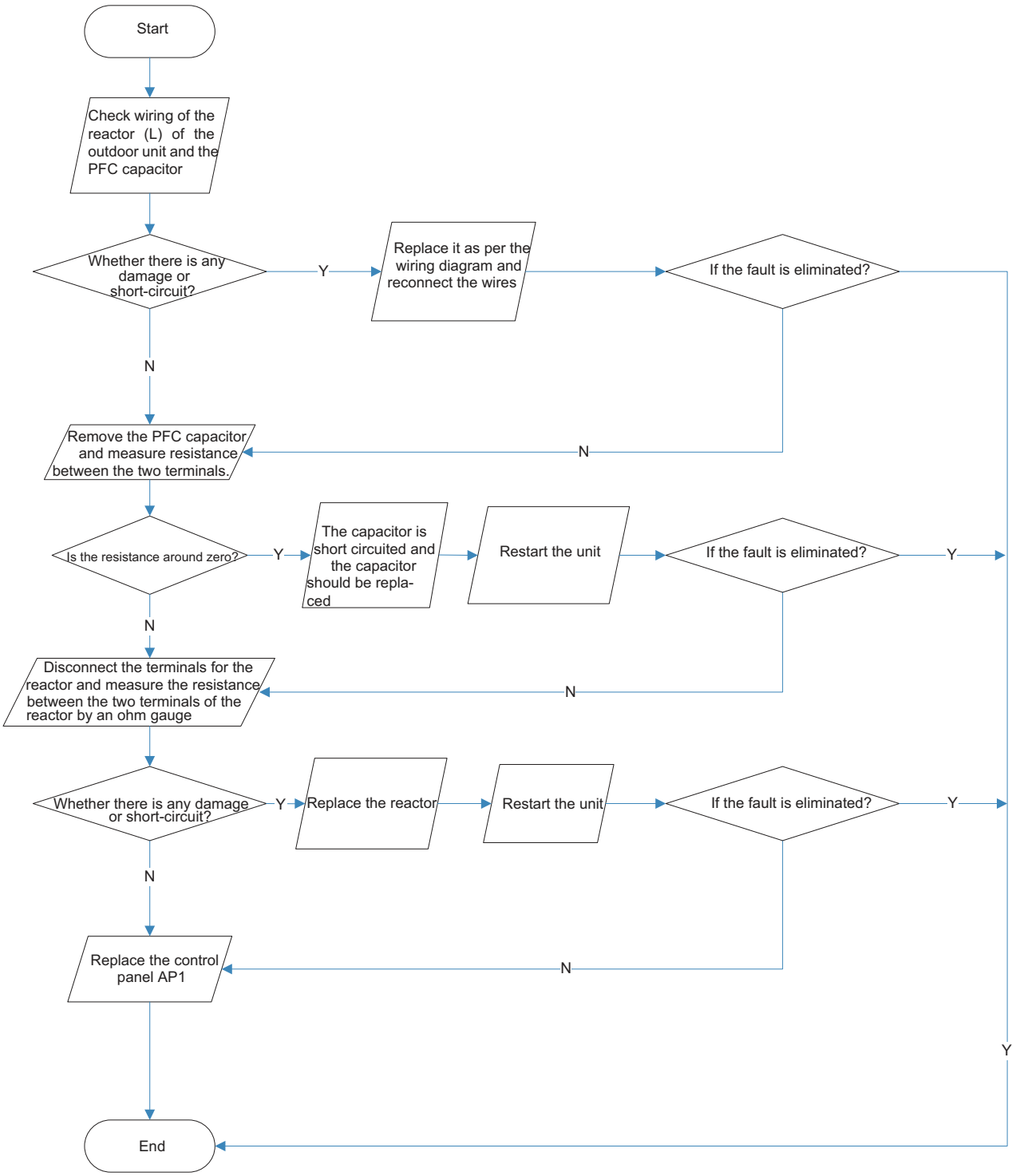


(7) Power factor correct or (PFC) fault (a fault of outdoor unit) (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

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

Fault diagnosis process:



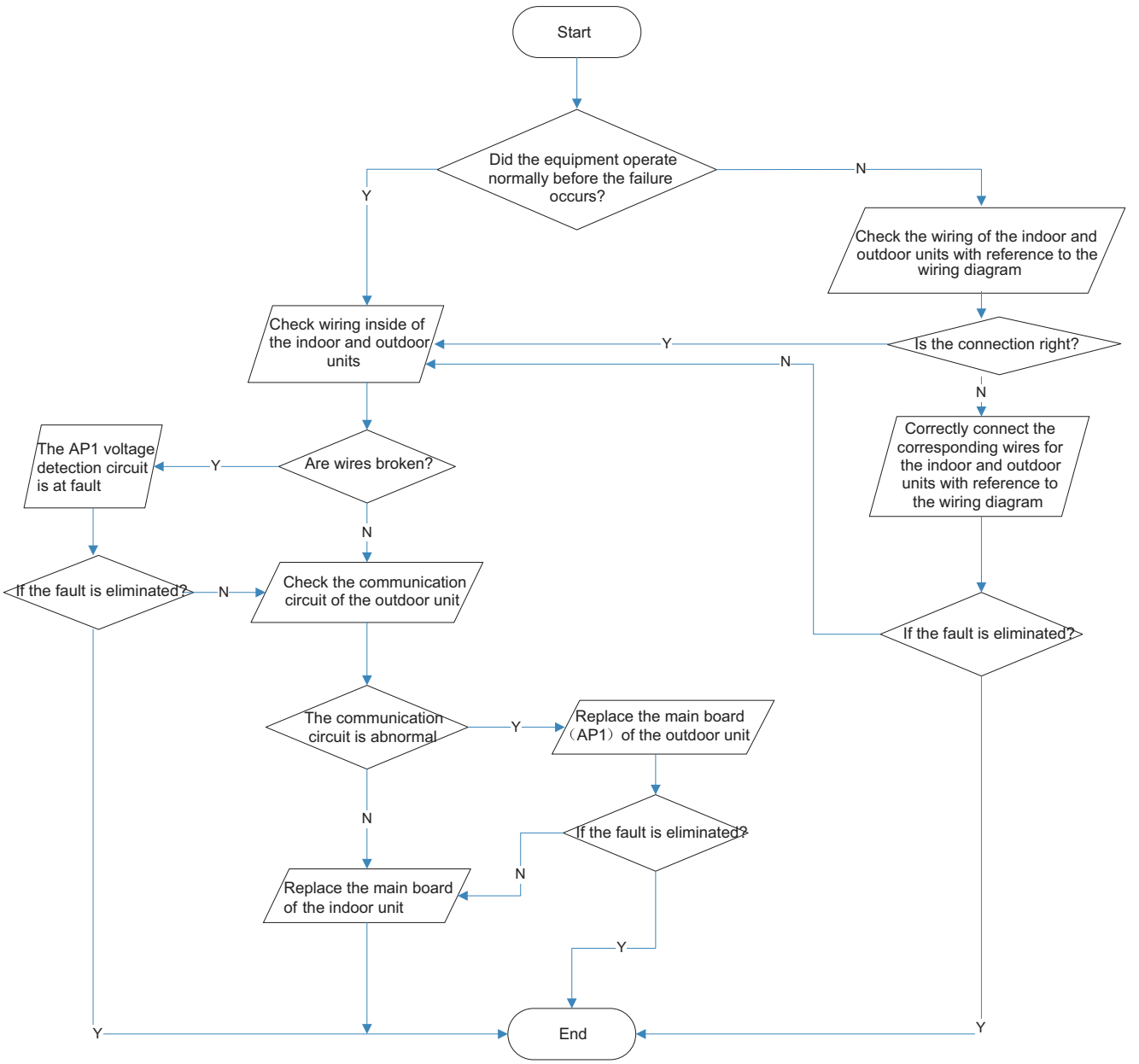
(8) Communication malfunction: (following AP1 for outdoor unit control board)

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 E5

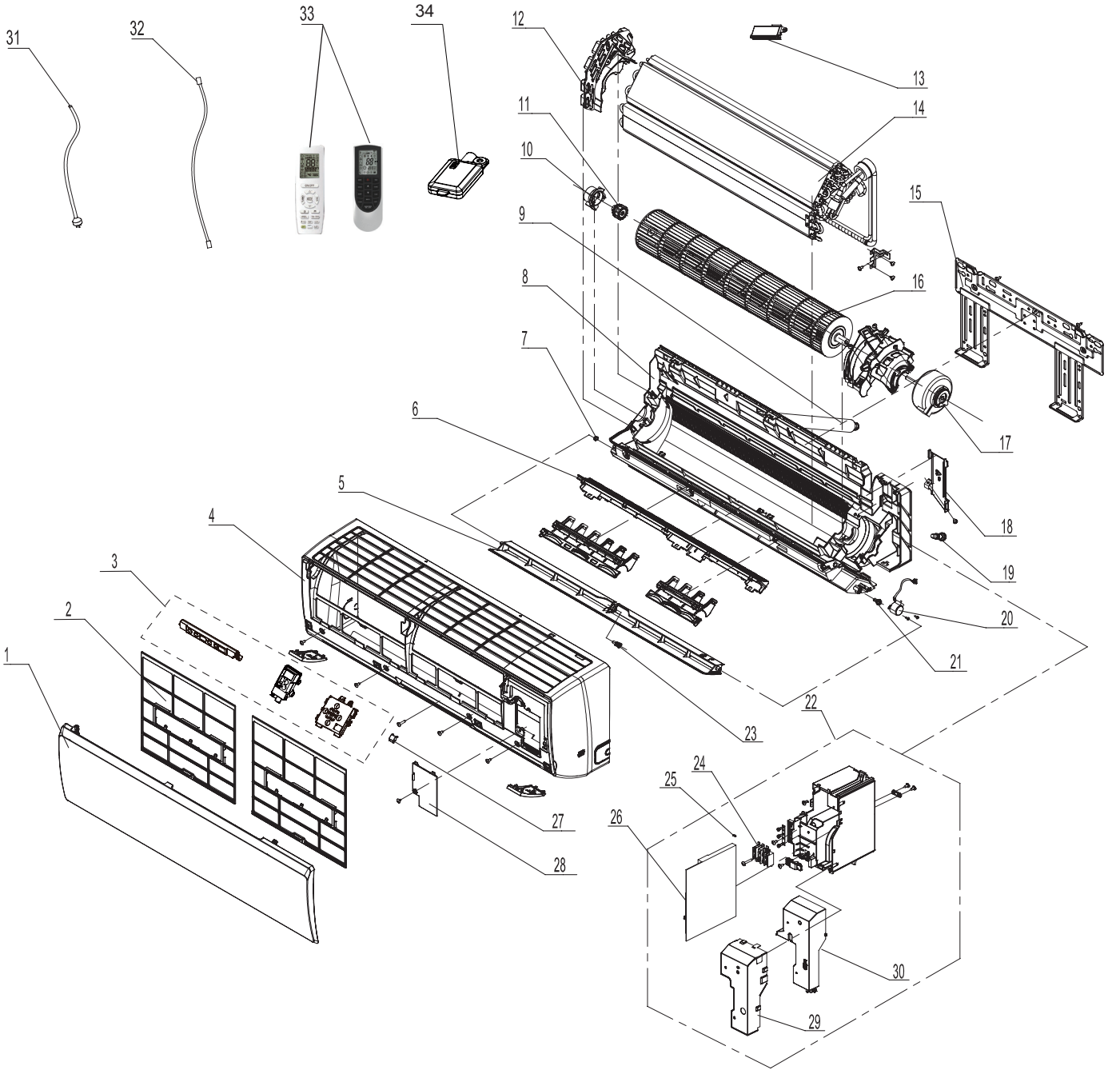
Main detection points:

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

Malfunction diagnosis process:

10. Exploded View and Parts List

10.1 Indoor Unit



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

No.	Description	Part Code			Qty
		GWH12QB-K6DNB8I/I	GWH12QB-K6DNB2I/I	GWH12QB-K6DNB4I/I	
	Product Code	CB438N06800	CB432N12300	CB434N10600	
1	Front Panel	20000300073T	20000300019S	20000300026T	1
2	Filter Sub-Assy	11122219	11122219	11122219	2
3	Display Board	30565260	30565260	30565260	1
4	Front Case Assy	00000200040	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	1114001603	1114001603	1114001603	1
14	Evaporator Assy	0110010009507	0110010009507	0110010009507	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002002895	100002002895	100002002895	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021911	4202021911	4202021911	1
26	Main Board	30145096	30145096	30145096	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNA1I/I	GWH12QB-K6DND6I/I	GWH12QB-K6DNA3I/I	
	Product Code	CB419N15000	CB460N05100	CB424N06500	
1	Front Panel	20022479S	200003000028S	2002269701S	1
2	Filter Sub-Assy	11122219	11122219	1112221905	2
3	Display Board	30565263	300001000041	300001060081	1
4	Front Case Assy	00000200128	00000200040	2002278101	1
5	Guide Louver	10512722	1051276301	1051272201	1
6	Helicoid Tongue	26112508	26112508	2611250801	1
7	Left Axile Bush	10512037	10512037	1051203702	1
8	Rear Case assy	20162010	20162010	2016201001	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	1114001603	1
14	Evaporator Assy	0110010009507	0110010009508	0110010009507	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216403	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	7301200502	1
22	Electric Box Assy	100002003953	100002002787	100002003953	1
23	Axile Bush	10542036	10542036	1054203601	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021903	4202021911	4202021903	1
26	Main Board	30145096	30145095	30145096	1
27	Screw Cover	24252030	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNA5I/I	GWH12QB-K6DND6I/I	GWH12QB-K6DNB8I/I	
	Product Code	CB425N11800	CB460N05101	CB438N06801	
1	Front Panel	2002267001	200003000028S	20000300073T	1
2	Filter Sub-Assy	1112221905	1112221905	11122219	2
3	Display Board	30565260	300001000041	30565260	1
4	Front Case Assy	2002249501	00000200040	00000200040	1
5	Guide Louver	1051272202	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	1114001603	1114001603	/	1
14	Evaporator Assy	0110010009507	0110010009507	0110010009508	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	10000205063	100002060713	10000204999	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021903	4202021911	4202021911	1
26	Main Board	30145096	30145096	30145095	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNC6I/I	GWH12QB-K6DNB4I/I	GWH12QB-K6DNC8I/I	
	Product Code	CB443N05400	CB434N10601	CB456N06200	
1	Front Panel	20000300101T	20000300026T	20000300155T	1
2	Filter Sub-Assy	1112221905	11122219	1112221905	2
3	Display Board	30565260	30565260	30565281	1
4	Front Case Assy	00000200040	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	1114001603	1
14	Evaporator Assy	0110010009507	0110010009508	0110010009507	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002002895	10000204999	100002001536	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021911	4202021911	4202021911	1
26	Main Board	30145096	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNC4I/I	GWH12QB-K6DNB8I/I	GWH12QB-K6DNA2I/I	
	Product Code	CB444N07501	CB438N06802	CB426N06700	
1	Front Panel	20000300105S	20000300073T	20022719	1
2	Filter Sub-Assy	1112221905	1112221905	1112221905	2
3	Display Board	30565260	30565260	300001060082	1
4	Front Case Assy	00000200040	00000200040	2002273001	1
5	Guide Louver	1051276301	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	76512051	76512051	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1114001603	1
14	Evaporator Assy	0110010009508	0110010009507	0110010009507	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002062098	100002062342	100002000251	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021911	4202021911	4202021911	1
26	Main Board	300002000286	300002000288	30145096	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000107	305001000107	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DND8I/I	GWH12QB-K6DNA2I/I	GWH12QB-K6DNC6I/I	
	Product Code	CB459N05100	CB426N06701	CB443N05401	
1	Front Panel	200003000010S	2002270901	20000300101T	1
2	Filter Sub-Assy	1112221905	1112221905	1112221905	2
3	Display Board	300001000035	300001060082	30565260	1
4	Front Case Assy	00000200040	2002273001	00000200040	1
5	Guide Louver	1051276301	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	76512051	76512051	76512051	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	/	1
14	Evaporator Assy	0110010009507	0110010009508	0110010009508	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002062844	100002000797	10000204999	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021911	4202021911	4202021911	1
26	Main Board	30145096	30145095	30145095	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000087	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNA5I/I	GWH12QB-K6DNA3I/I	GWH12QB-K6DNA5I/I	
	Product Code	CB425N11801	CB424N06501	CB425N11802	
1	Front Panel	2002267001	2002269701S	2002267001	1
2	Filter Sub-Assy	1112221905	1112221905	1112221905	2
3	Display Board	30565260	300001060081	30565260	1
4	Front Case Assy	2002249501	00000200119	2002249501	1
5	Guide Louver	1051272202	1051272202	1051272202	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	76512051	76512051	76512051	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	/	1114001605	/	1
14	Evaporator Assy	0110010009508	0110010009507	0110010009507	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002003888	100002003953	100002065975	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021903	4202021903	4202021903	1
26	Main Board	30145095	30145096	300002000286	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000087	305001000087	305001000107	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code			Qty
		GWH12QB-K6DNA6I/I	GWH12QB-K6DNC8I/I	GWH12QB-K6DNE4I/I	
	Product Code	CB427N10301	CB456N06201	CB470N02302	
1	Front Panel	2002269601S	20000300155	200003000065	1
2	Filter Sub-Assy	1112221905	1112221905	1112221905	2
3	Display Board	300001060082	30565281	300001000081	1
4	Front Case Assy	2002273001	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	10512037	1
8	Rear Case assy	20162010	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	76512051	76512051	76512051	1
12	Evaporator Supper 2	24212180	24212180	24212180	1
13	Cold Plasma Generator	/	/	/	/
14	Evaporator Assy	0110010009507	0110010009508	0110010009508	1
15	Wall Mounting Frame	01252043	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	10352059	1
17	Fan Motor	150120874	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1521212901	1
21	Crank	73012005	73012005	73012005	1
22	Electric Box Assy	100002065978	100002062912	100002065690	1
23	Axile Bush	10542036	10542036	10542036	1
24	Terminal Board	42011233	42011233	42011233	1
25	Jumper	4202021911	4202021911	4202021911	1
26	Main Board	300002000286	30145095	300002000286	1
27	Screw Cover	2425203001	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	20112207	1
31	Connecting Cable	/	/	/	/
32	Connecting Cable	4002052317	4002052317	4002052317	0
33	Remote Controller	305001000107	305001000087	305001000107	1
34	Detecting Plate	30110154	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code	Qty
		GWH12QB-K6DNC4I/I	
	Product Code	CB444N07502	
1	Front Panel	20000300105S	1
2	Filter Sub-Assy	1112221905	2
3	Display Board	30565260	1
4	Front Case Assy	00000200040	1
5	Guide Louver	1051276301	1
6	Helicoid Tongue	26112508	1
7	Left Axile Bush	10512037	1
8	Rear Case assy	20162010	1
9	Drainage Hose	0523001408	1
10	Ring of Bearing	26152022	1
11	O-Gasket sub-assy of Bearing	76512051	1
12	Evaporator Supper 2	24212180	1
13	Cold Plasma Generator	1114001605	1
14	Evaporator Assy	0110010009507	1
15	Wall Mounting Frame	01252043	1
16	Cross Flow Fan	10352059	1
17	Fan Motor	150120874	1
18	Connecting pipe clamp	2611216401	1
19	Rubber Plug (Water Tray)	76712012	1
20	Stepping Motor	1521212901	1
21	Crank	73012005	1
22	Electric Box Assy	100002062342	1
23	Axile Bush	10542036	1
24	Terminal Board	42011233	1
25	Jumper	4202021911	1
26	Main Board	300002000288	1
27	Screw Cover	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	1
30	Electric Box Cover	20112207	1
31	Connecting Cable	/	/
32	Connecting Cable	4002052317	0
33	Remote Controller	305001000107	1
34	Detecting Plate	30110154	1

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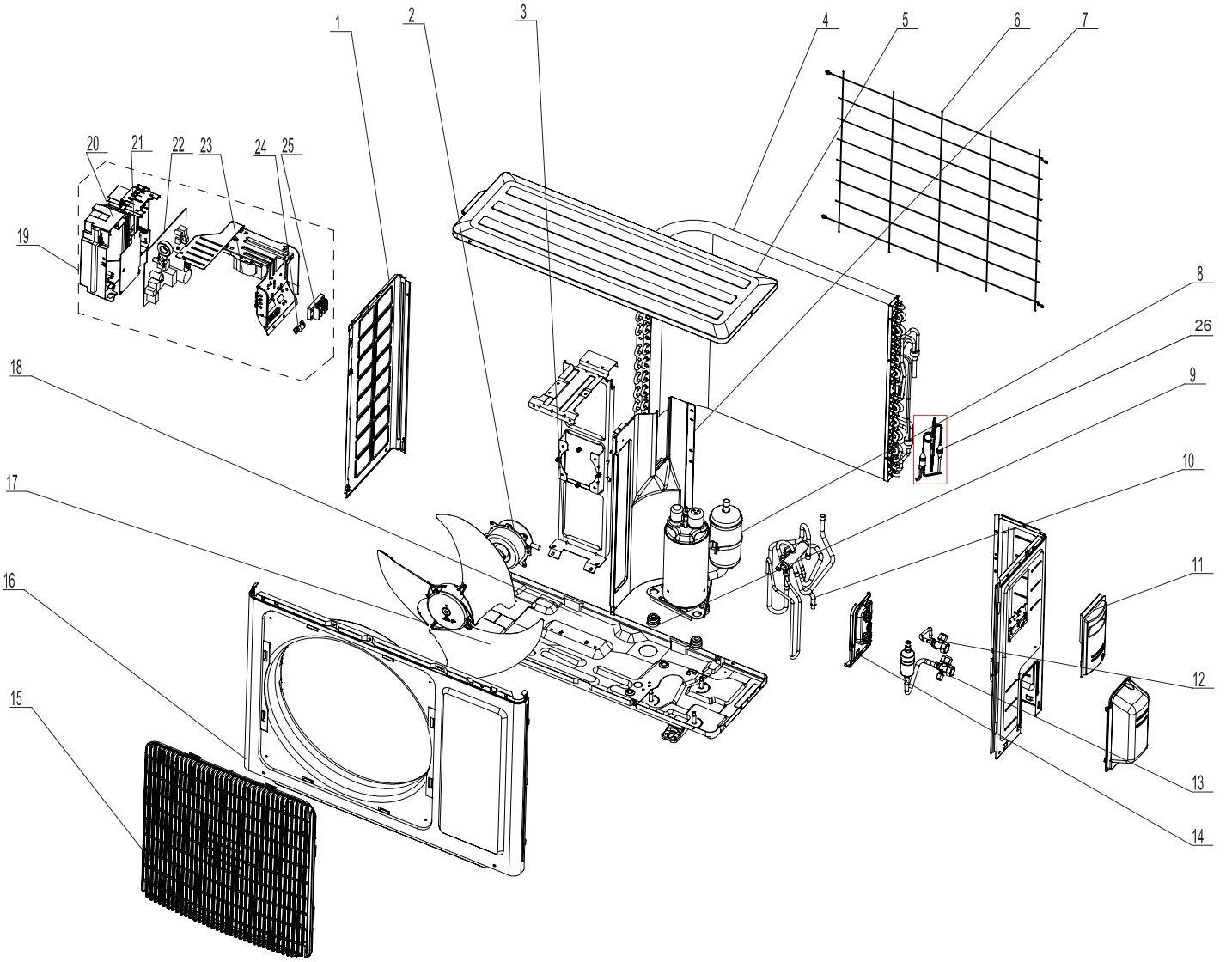
10.2 Outdoor Unit



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

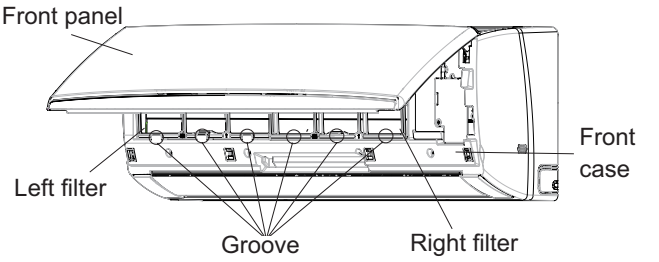
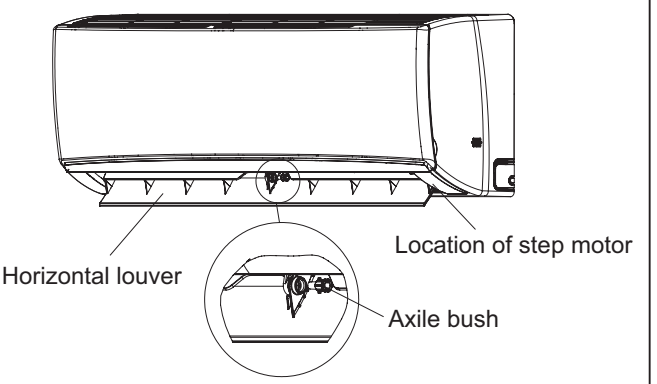
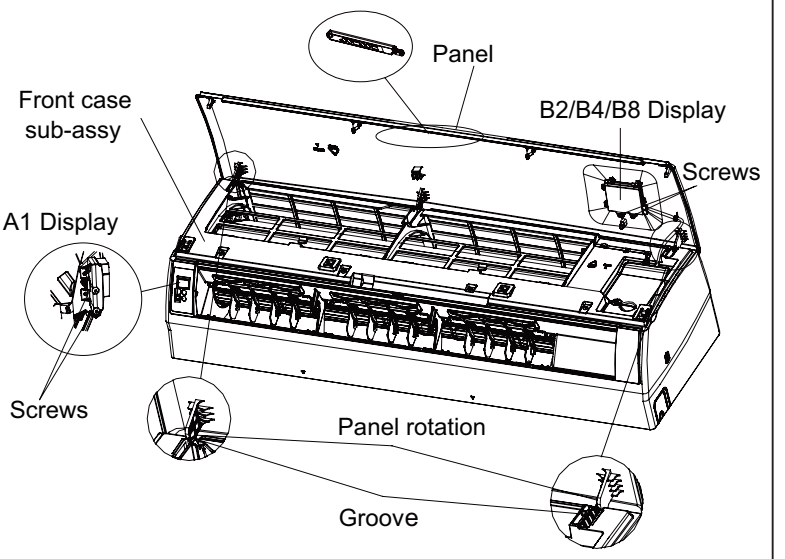
No.	Description	Part Code	Qty
		GWH12QB-K6DNB8I/O	
	Product Code	CB438W06800	
1	Left Side Plate	01303200P	1
2	Fan Motor	1501308507	1
3	Motor Support	01703136	1
4	Condenser Assy	011002000588	1
5	Top Cover Sub-Assy	01253081	1
6	Rear Grill	01475014	1
7	Clapboard Sub-Assy	01233180	1
8	Compressor and Fittings	00103925G	1
9	Compressor Gasket	76710287	3
10	4-Way Valve Assy	030152000016	1
11	Big Handle	2623343106	1
12	Cut off Valve 1/4	07130239	1
13	Cut off Valve 3/8	071302391	1
14	Valve Support	0171314201P	1
15	Front Grill	22413044	1
16	Cabinet	01433033P	1
17	Axial Flow Fan	10333011	1
18	Chassis Sub-assy	017000000091P	1
19	Electric Box Assy	100002002902	1
20	Electric Box	20113034	1
21	Filter Board	01363004A	1
22	Main Board	300027000482	1
23	Reactor	43130184	1
24	Wire Clamp	71010103	1
25	Terminal Board	42010313	1
26	Capillary Sub-assy	030006000515	1

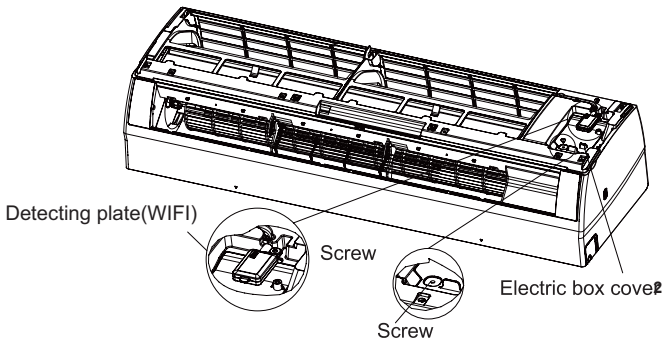
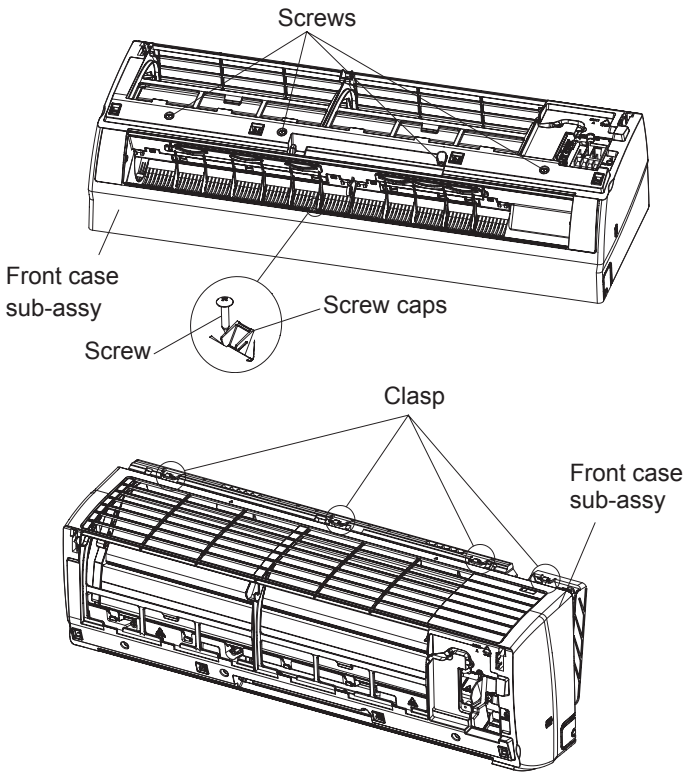
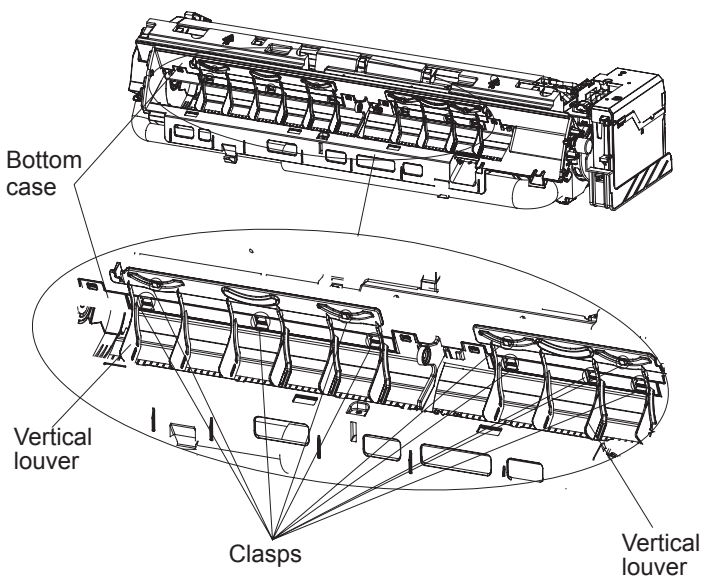
Above data is subject to change without notice.

11. Removal Procedure

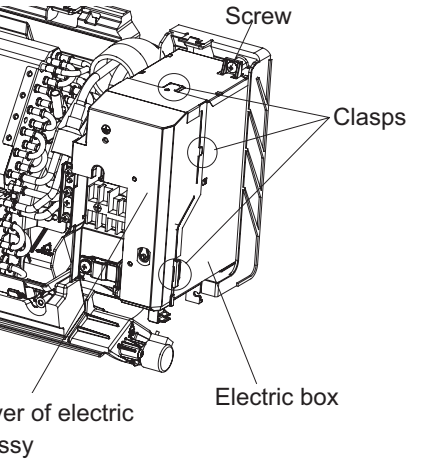
11.1 Removal Procedure of Indoor Unit

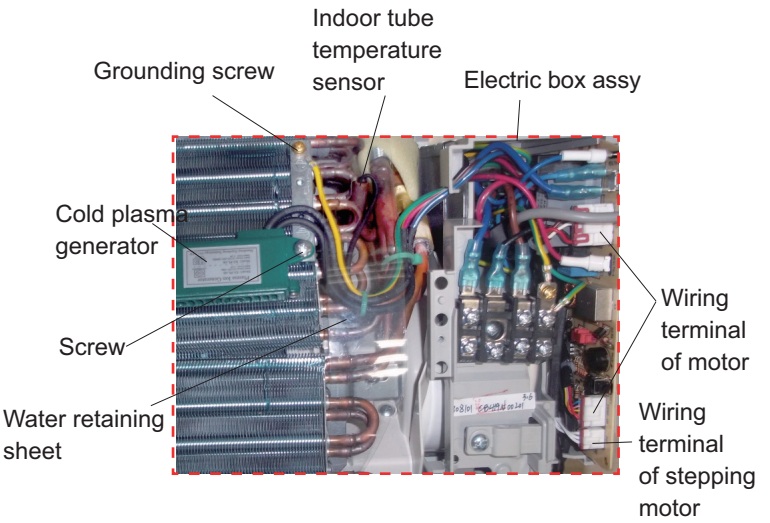
⚠ **Caution: discharge the refrigerant completely before removal.**

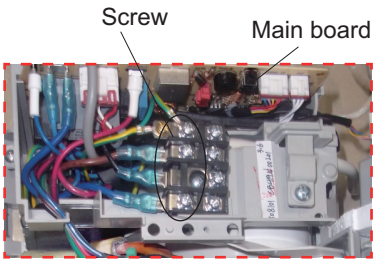
Step	Procedure	
1. Remove filter assembly		
	Open the front panel. Push the left filter and right filter until they are separate from the groove on the front panel. Remove the left filter and right filter respectively.	
2. Remove horizontal louver		
	Push out the axile bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.	
3. Remove panel and display		
a	Screw off the 2 screws that are locking the display board.	
b	Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.	

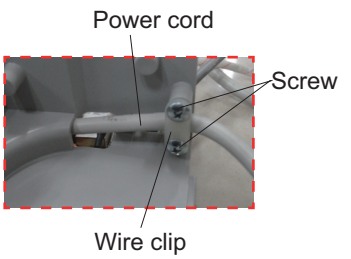
Step	Procedure
4. Remove detecting plate(wifi) and electric box cover2	
Remove the screws fixing detecting plate and remove detecting plate(wifi). Remove the screws fixing electric box cober2 and remove electric box2.	
5. Remove front case sub-assy	
a Remove the screws fixing front case. Note: 1.Open the screw caps before removing the screws around the air outlet. 2.The quantity of screws fixing the front case sub-assy is different for different models. b Loosen the connection clasps between front case sub-assy and bottom case. Lift up the front case sub-assy and take it out.	
6. Remove vertical louver	
Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.	

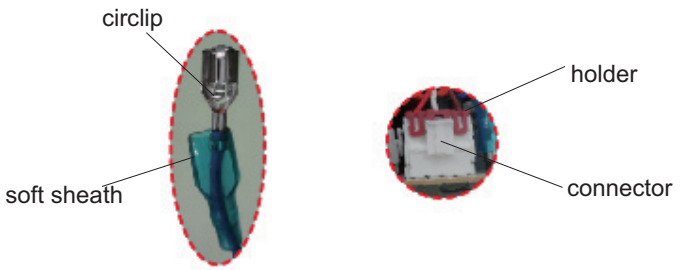
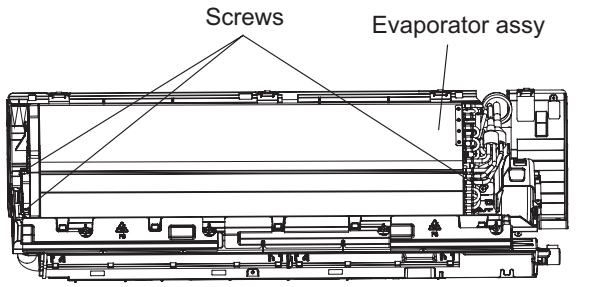
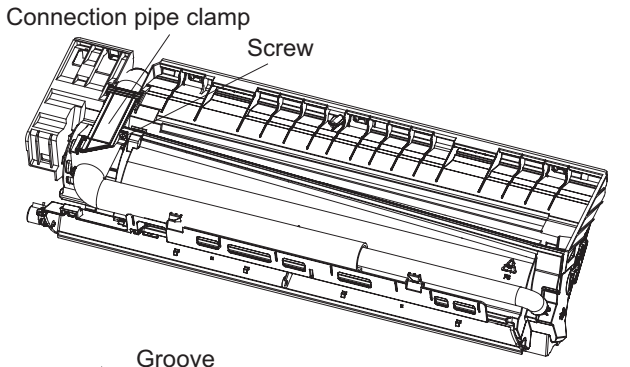
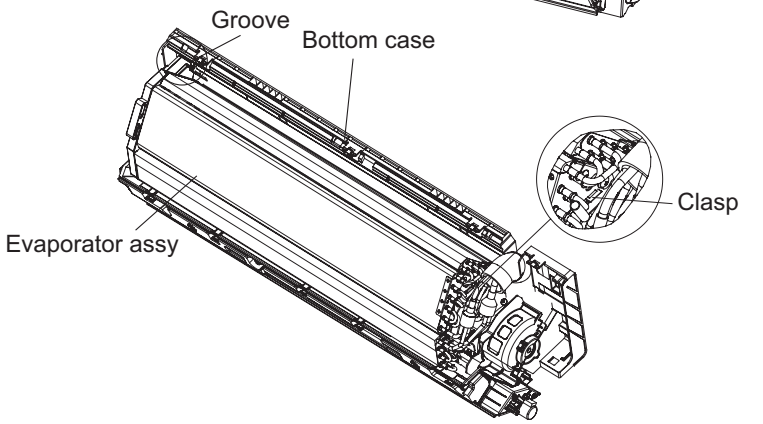
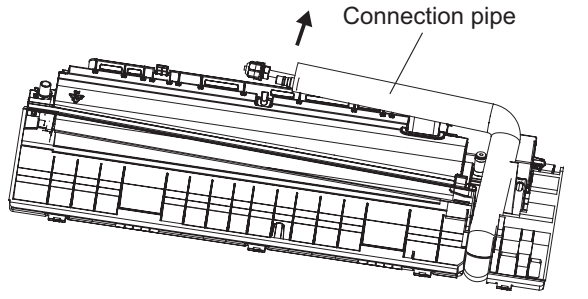
Step	Procedure
7. Remove electric box assy	
a	Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy .
b	① Take off the water retaining sheet. Remove the cold plasma generator by screwing off the locking screw on the generator. ② Take off the indoor tube temperature sensor. ③ Screw off 1 grounding screw. ④ Remove the wiring terminals of motor and stepping motor. ⑤ Remove the electric box assy.
c	Twist off the screws that are locking each lead wire and rotate the electric box assy. Twist off the screws that are locking the wire clip. Loosen the power cord and remove its wiring terminal. Lift up the main board and take it off.

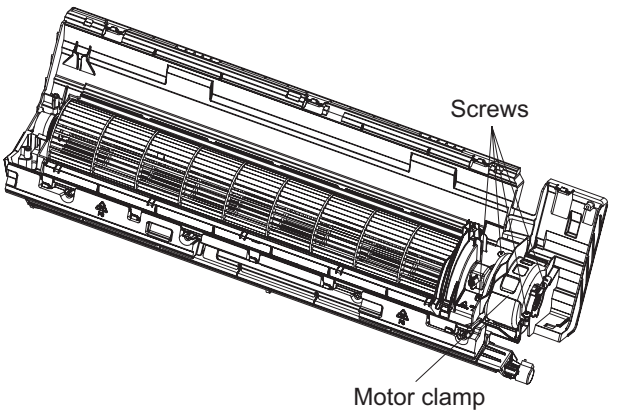
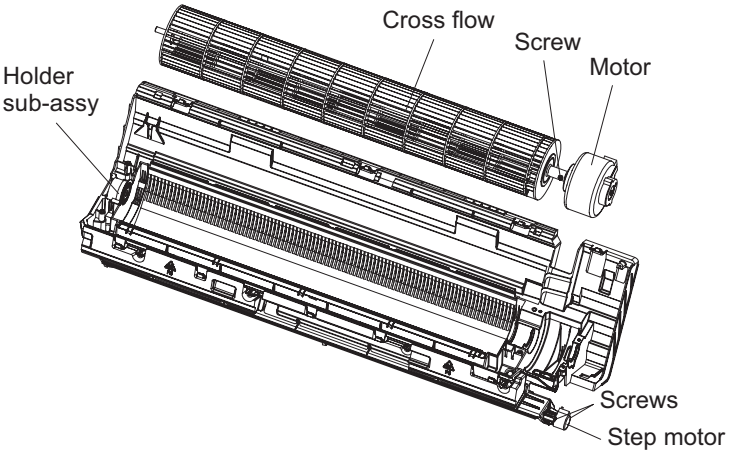






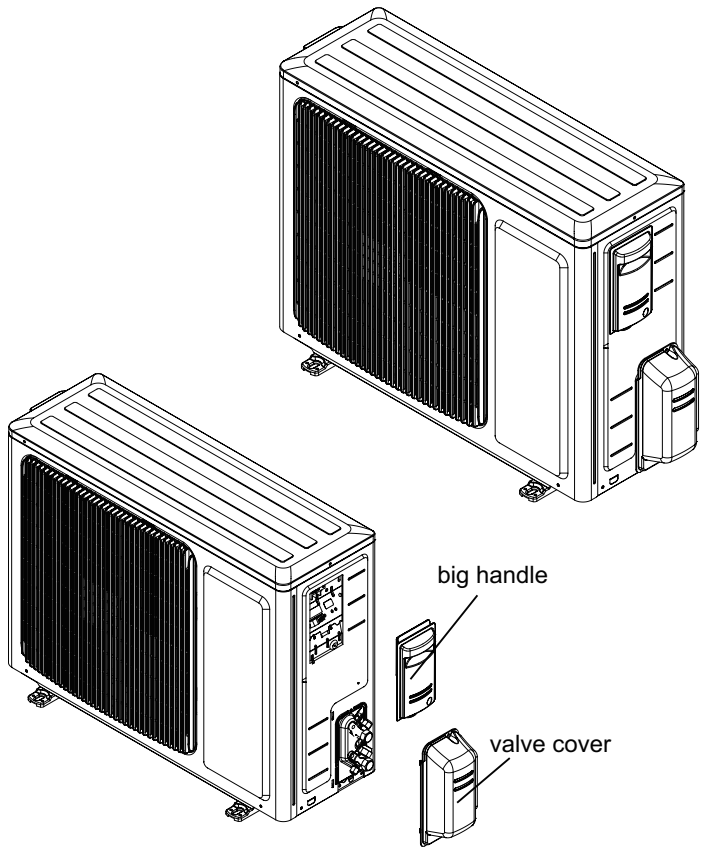
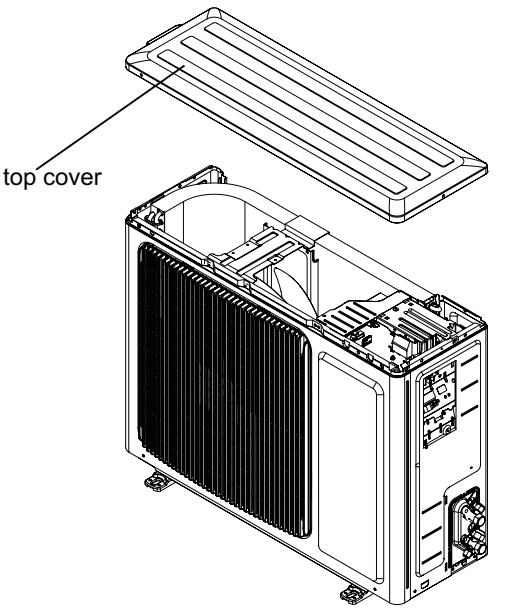


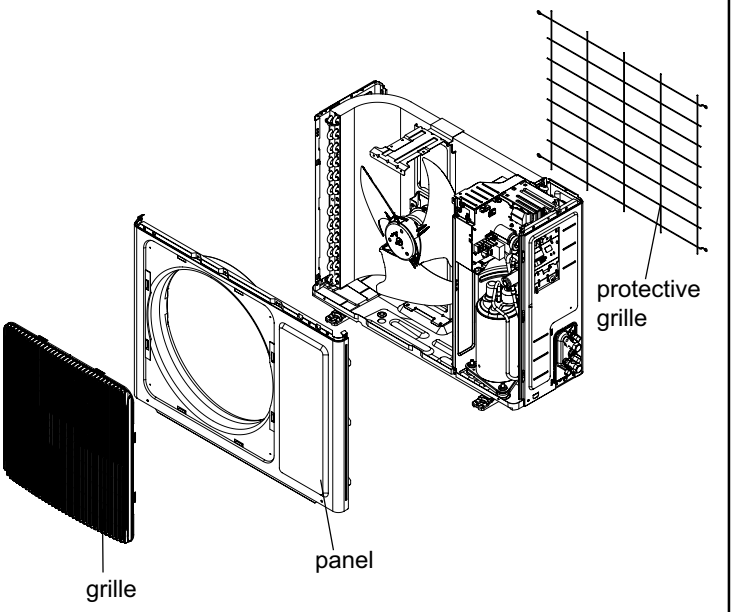
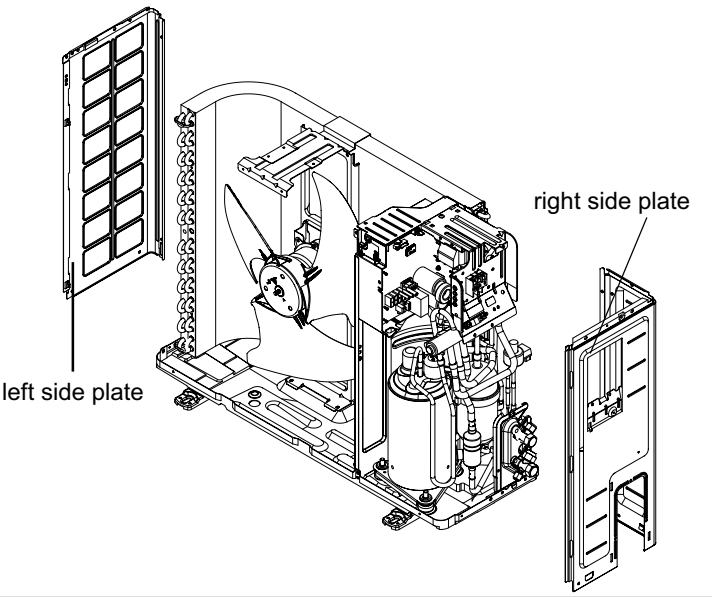
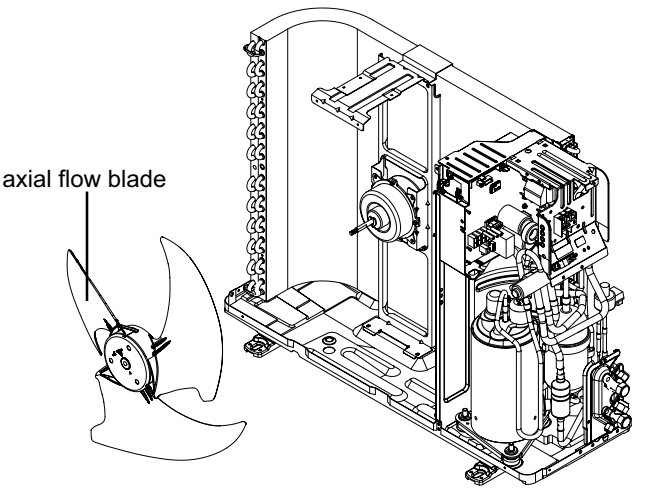
Step	Procedure	
	Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below: 1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals. 2.Pull out the holder for some terminals at first (holder is not available for some wiring terminal), hold the connector and then pull the terminal.	
8. Remove evaporator assy		
a	Remove 3 screws fixing evaporator assy.	
b	At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.	
c	First remove the left side of the evaporator from the groove of bottom case and then remove the right side from the clasp on the bottom case.	
d	Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.	

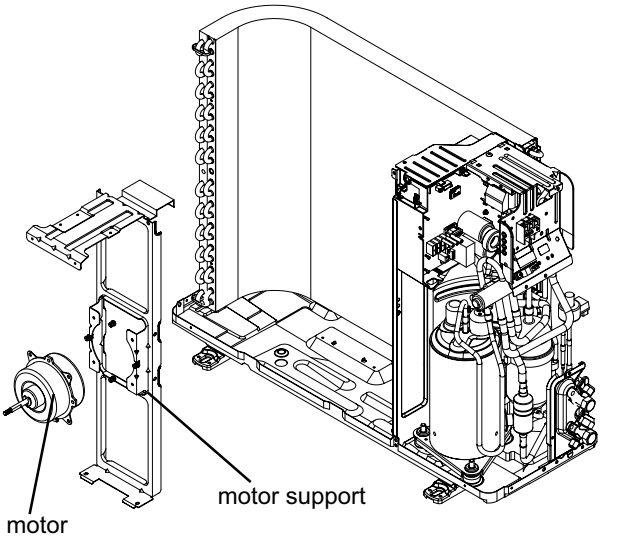
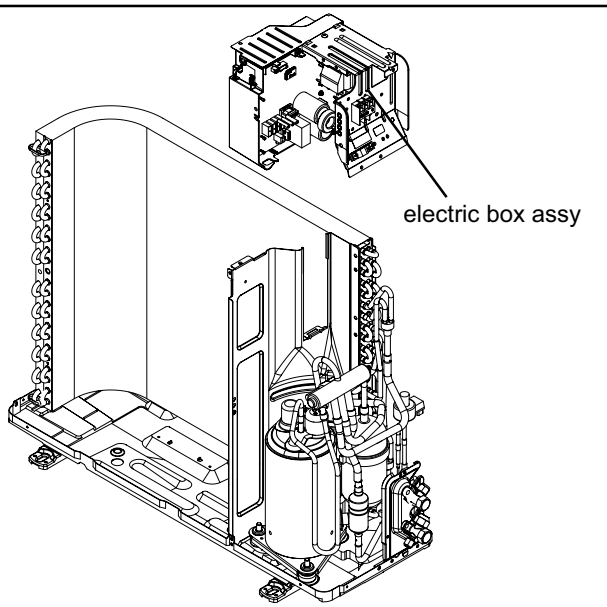
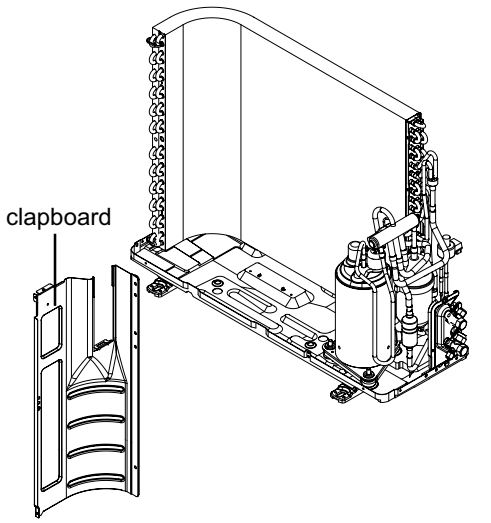
Step	Procedure	
9. Remove motor and cross flow blade		
a	Remove the screws fixing motor clamp and then remove the motor clamp.	
b	Remove the screws at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them. Remove the bearing holder sub-assy. Remove the screw fixing step motor and then remove the step motor.	

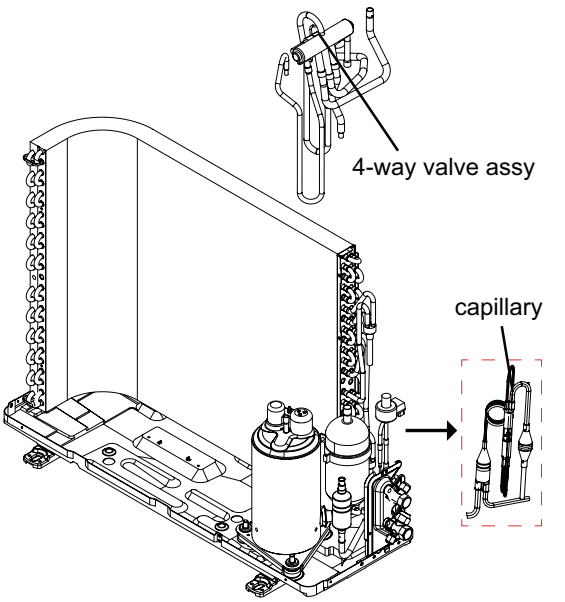
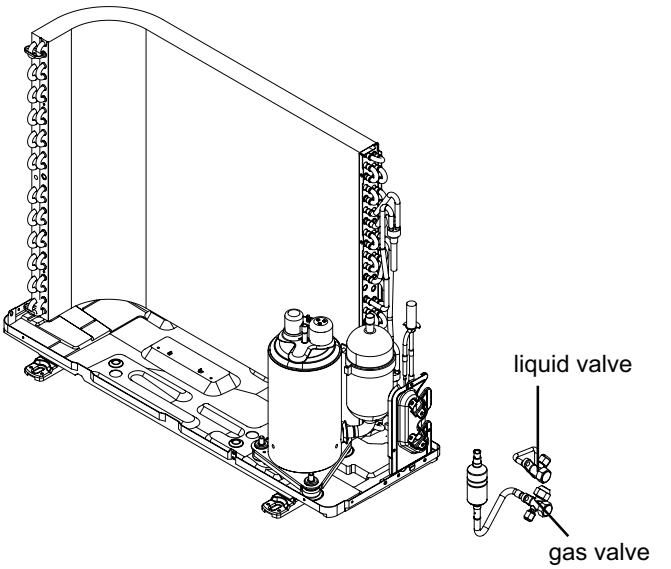
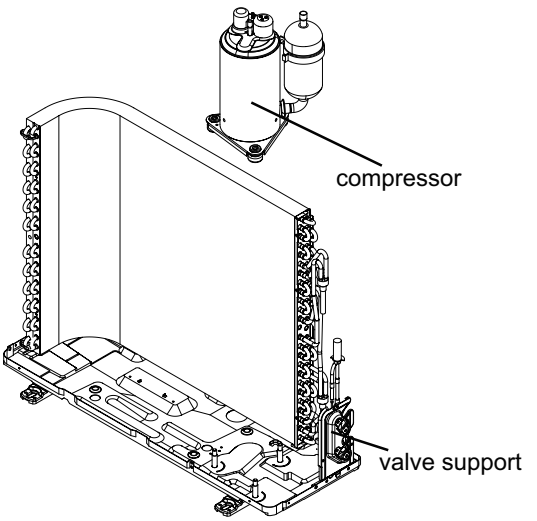
11.2 Removal Procedure of Outdoor Unit

⚠ **Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.**

Step	Procedure	
1.Remove big handle		
	Before disassamble. Remove the screws fixing big handle、valve cover and then remove them.	
2. Remove top cover		
	Remove the screws fixing top panel and then remove the top panel.	

Step	Procedure
3.Remove grille 、 protective grille and front panel	
Remove connection screws between the front grille and the front panel. Then remove the front grille. Remove connection screws connecting the front panel with the chassis and the motor support, and then remove the front panel. Remove the screws fixing protective grille and then remove the protective grille.	
4.Remove right side plate、left side plate	
Remove the screws fixing right side plate、left side plate and then remove them.	
5.Remove axial flow blade	
Remove the nut fixing the blade and then remove the axial flow blade.	

Step	Procedure
6.Remove motor and motor support	
Remove the screws fixing motor and then remove the motor. Remove the screws fixing motor support and then remove the motor support.	
7.Remove electric box assy	
Remove the screws fixing electric box assy; cut off the tieline; pull out each wiring terminal; lift the electric box assy upwards to remove it. Note: When pulling out the wiring terminal, pay attention to loose the clasp and don't pull it so hard.	
8.Remove clapboard	
Remove the screws fixing clapboard and then remove the clapboard.	

Step	Procedure
9.Remove 4-way valve assy	
Unsolder the welding joints connecting the 4-way valve assy with capillary sub-assy, compressor and condenser; remove the 4-way valve. Note: Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	
10.Remove liquid valve and gas valve	
Unsolder the welding joint connecting the valve with capillary and condenser; unsolder the welding joint connecting the gas valve and air-return pipe; remove the 2 screws fixing the gas valve to remove the gas valve. Unsolder the welding joint connecting the liquid valve and Y-shaped pipe; remove the 2 screws fixing the liquid valve to remove the liquid valve. Note: Before unsoldering the welding joint, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	
11.Remove compressor	
Remove the 3 footing screws of the compressor and remove the compressor. Remove the screws fixing valve support and then remove the valve support.	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

Set temperature

Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)
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 (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)		Fahrenheit display temperature (℉)	Fahrenheit (℉)	Celsius (℃)
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

For the unit with standard connection pipe of 5m, there is no limitation for the min length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the 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 calculation method of additional refrigerant oil and refrigerant charging amount 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):

(1) Additional refrigerant charging amount= prolonged length of liquid pipe × additional refrigerant charging amount per meter

(2)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 Sheet 2.

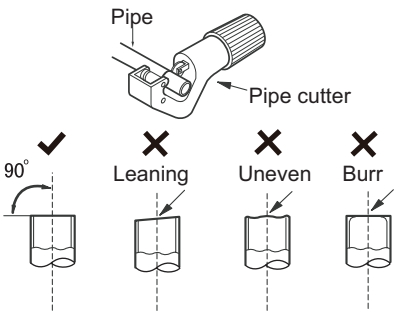
Additional refrigerant charging amount for R32				
Diameter of connection pipe		Indoor unit throttle	Outdoor unit throttle	
Liquid pipe(mm)	Gas pipe(mm)	Cooling only,cooling and heating (g / m)	Cooling only(g/m)	Cooling and heating(g/m)
Φ6	Φ9.5 or Φ12	16	12	16
Φ6 or Φ9.5	Φ16 or Φ19	40	12	40
Φ12	Φ19 or Φ22.2	80	48	96
Φ16	Φ25.4 or Φ31.8	136	24	96
Φ19	/	200	200	200
Φ22.2	/	280	280	280

Note: The additional refrigerant charging amount in Sheet 2 is recommended value, not compulsory.

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:

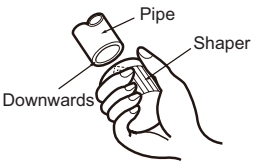


A:Cut the pip

- 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

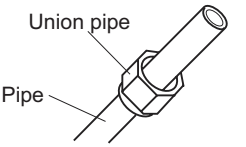
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



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.



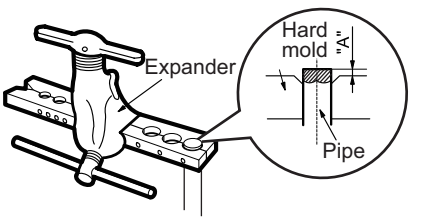
E:Expand the port

- Expand the port with expander.

⚠ **Note:**

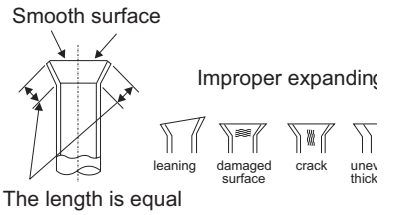
- "A" is different according to the diameter, please refer to the sheet below:

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 - 12.70 (1/2”)	1.8	1.0
Φ16 - 15.88 (5/8”)	2.4	2.2



F:Inspection

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



Appendix 4: List of Resistance for Temperature Sensor

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

Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)
-19	138.1		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 Outdoor and Indoor (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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