GREE
Change for Life

Service Manual

GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

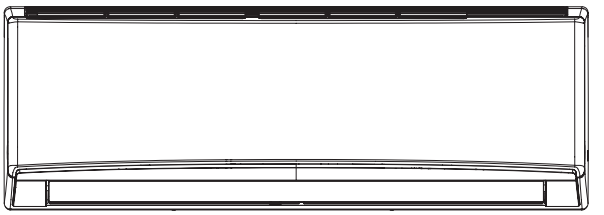
Table of Contents

Part Ⅰ : Technical Information

1. Summary

Indoor Unit

GWH18QD-K3DNA1G/I
GWH24QE-K3DNA1G/I



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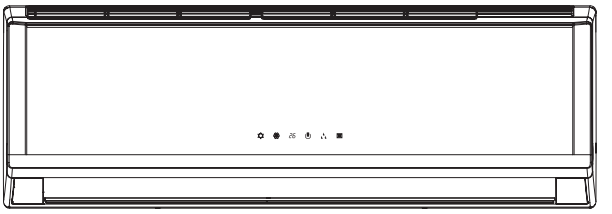

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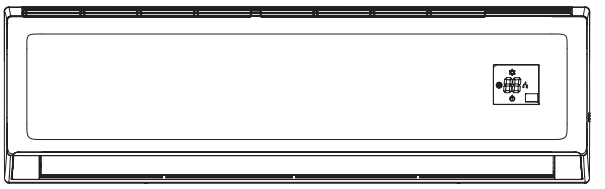

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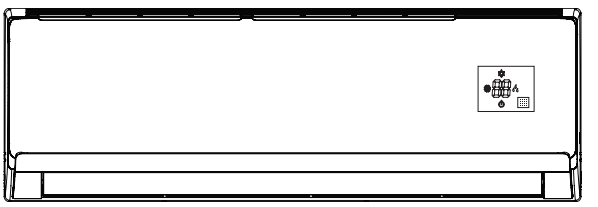

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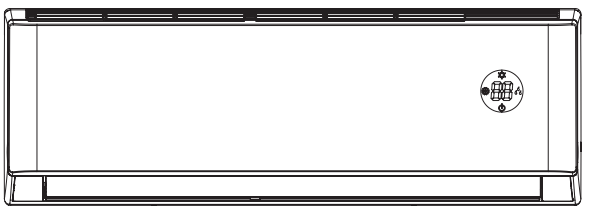

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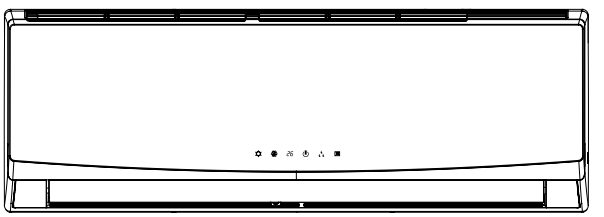

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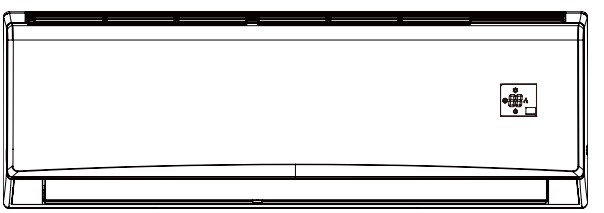
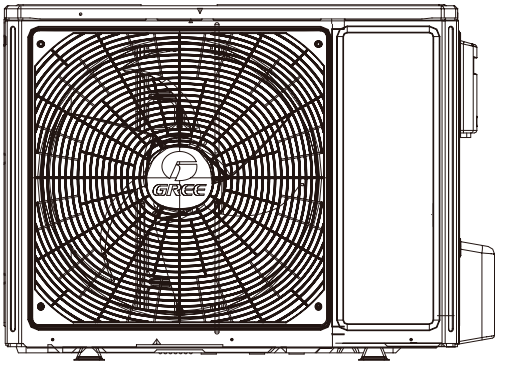


Outdoor Unit

GWH18QD-K3DNA1G/O
GWH24QE-K3DNA1G/O



Remote Controller

YV1F7

YAN1F1

Models List:

No.	Model	Product Code	Model	Product Code	Model	Product Code	Remote Controller
1	GWH18QD-K3DNA1G	CB419005603	GWH18QD-K3DNA1G/I	CB419N05603	GWH18QD-K3DNA1G/O	CB419W05601	YAN1F1
2	GWH18QD-K3DNA5G	CB425003405	GWH18QD-K3DNA5G/I	CB425N03405			
3	GWH18QD-K3DNB4G	CB434002004	GWH18QD-K3DNB4G/I	CB434N02004			
		CB434002005		CB434N02005			
4	GWH18QD-K3DNC4G	CB444001102	GWH18QD-K3DNC4G/I	CB444N01102			
5	GWH18QD-K3DNC2G	CB439000203	GWH18QD-K3DNC2G/I	CB439N00203			
6	GWH18QD-K3DNB2G	CB432002303	GWH18QD-K3DNB2G/I	CB432N02303			
7	GWH24QE-K3DNA1G	CB419005303	GWH24QE-K3DNA1G/I	CB419N05303	GWH24QE-K3DNA1G/O	CB419W05301	
8	GWH24QE-K3DNB2G	CB432002403	GWH24QE-K3DNB2G/I	CB432N02403			
9	GWH24QE-K3DNB4G	CB434002204	GWH24QE-K3DNB4G/I	CB434N02204			
10	GWH24QE-K3DNC2G	CB439000302	GWH24QE-K3DNC2G/I	CB439N00302			
11	GWH24QE-K3DNC4G	CB444001403	GWH24QE-K3DNC4G/I	CB444N01403			
12	GWH24QE-K3DNA5G	CB425003304	GWH24QE-K3DNA5G/I	CB425N03304	GWH24QE-K3DNA1G/O	CB419W05301	YV1F7
13	GWH24QE-K3DNB6G	CB435000304	GWH24QE-K3DNB6G/I	CB425N00304			
14	GWH18QD-K3DNB6G	CB435000203	GWH18QD-K3DNB6G/I	CB435N00203	GWH18QD-K3DNA1G/O	CB419W05601	

2. Specifications

2.1 Specification Sheet

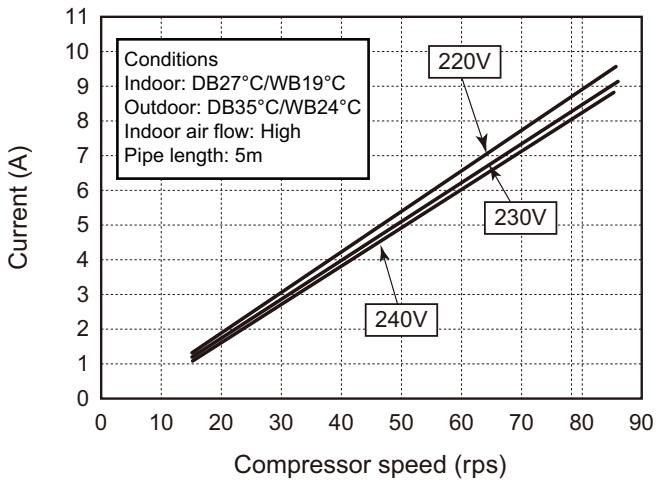
Parameter		Unit	Value	Value
Model			1.GWH18QD-K3DNA1G 2.GWH18QD-K3DNA5G 3.GWH18QD-K3DNB4G 4.GWH18QD-K3DNB6G 5.GWH18QD-K3DNC2G 6.GWH18QD-K3DNC4G 7.GWH18QD-K3DNB2G	1.GWH24QE-K3DNA1G 2.GWH24QE-K3DNA5G 3.GWH24QE-K3DNB6G 4.GWH24QE-K3DNB2G 5.GWH24QE-K3DNB4G 6.GWH24QE-K3DNC2G 7.GWH24QE-K3DNC4G
Product Code			1.CB419005603 2.CB425003405 3.CB43400200 CB434002005 4.CB435000203 5.CB439000203 6.CB444001102 7.CB432002303	1.CB419005303 2.CB425003304 3.CB435000304 4.CB432002403 5.CB434002204 6.CB439000302 7.CB444001403
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity(Min~Max)		W	5130(1260-6600)	6700(2000-8200)
Heating Capacity(Min~Max)		W	5275(1120-6800)	7250(2000-8500)
Cooling Power Input(Min~Max)		W	1580(380-2450)	1875(400-3700)
Heating Power Input(Min~Max)		W	1410(350-2600)	1945(450-3800)
Cooling Current Input		A	7.0	8.3
Heating Current Input		A	6.3	8.6
Rated Input		W	2600	3800
Rated Current		A	10.9	16.4
Air Flow Volume(SH/H/M//L/SL)		m^3/h	800/720/610/520/-	1150/1050/950/850/-
Dehumidifying Volume		L/h	1.8	2.5
EER		W/W	3.25	3.57
COP		W/W	2.92	2.8
SEER		W/W	6.1	6.3
SCOP		W/W	/	/
Application Area		m^2	23-34	27-42
Indoor Unit	Indoor Unit Model		1.GWH18QD-K3DNA1G/I 2.GWH18QD-K3DNA5G/I 3.GWH18QD-K3DNB4G/I 4.GWH18QD-K3DNB6G/I 5.GWH18QD-K3DNC2G/I 6.GWH18QD-K3DNC4G/I 7.GWH18QD-K3DNB2G/I	1.GWH24QE-K3DNA1G/I 2.GWH24QE-K3DNA5G/I 3.GWH24QE-K3DNB6G/I 4.GWH24QE-K3DNB2G/I 5.GWH24QE-K3DNB4G/I 6.GWH24QE-K3DNC2G/I 7.GWH24QE-K3DNC4G/I
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ106X706	Φ108X830
	Cooling Speed(SH/H/M//L/SL)	r/min	1230/1130/1030/800/-	1250/1000/900/800/-
	Heating Speed(SH/H/M//L/SL)	r/min	1350/1200/1050/900/-	1250/1000/900/850/-
	Fan Motor Power Output	W	35	35
	Fan Motor RLA	A	0.35	0.35
	Fan Motor Capacitor	μF	2.5	3
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	2-1.4	2-1.4
	Evaporator Coil Length (LXDXW)	mm	715X25.4X304.8	850X25.4X342.9
	Swing Motor Model		MP35CJ	MP35CJ
	Swing Motor Power Output	W	2.5	2.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level(SH/H/M//L/SL)	dB (A)	46/42/39/36/-	48/45/42/39/-
	Sound Power Level(SH/H/M//L/SL)	dB (A)	58/54/51/48/-	64/59/56/53/-
	Dimension (WXHXD)	mm	970X300X224	1078X325X246
	Dimension of Carton Box (LXWXH)	mm	1038X380X305	1145X410X335
	Dimension of Package(LXWXH)	mm	1041X383X320	1148X413X350
	Net Weight	kg	13.5	17
	Gross Weight	kg	16.5	20.5

Outdoor Unit	Outdoor Unit Model		GWH18QD-K3DNA1G/O	GWH24QE-K3DNA1G/O
	Outdoor Unit Product Code		CB419W05601	CB419W05301
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO,LTD.	ZHUHAI LANDA COMPRESSOR CO,LTD.
	Compressor Model		QXA-B141ZF030	QXAS-D23zX090A
	Compressor Oil		68EP	68EP
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	18	25
	Compressor RLA	A	7.5	11.5
	Compressor Power Input	W	1440	2550
	Compressor Overload Protector		1NT11L-6233	1NT11L-6233/HPC 115/95 / KSD115ºC
	Throttling Method		Capillary	Electron expansion valve
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~43	-15~43
	Heating Operation Ambient Temperature Range	ºC	-20~24	-20~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Condenser Rows-fin Gap	mm	2-1.4	2-1.4
	Condenser Coil Length (LXDXW)	mm	851X38.1X660	935X38.1X660
	Fan Motor Speed	rpm	800	800
	Fan Motor Power Output	W	60	60
	Fan Motor RLA	A	0.4	0.58
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m^3/h	3200	3200
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ520	Φ520
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level (H/M/L)	dB (A)	56/-/-	60/-/-
	Sound Power Level (H/M/L)	dB (A)	66/-/-	70/-/-
	Dimension(WXHXD)	mm	963X700X396	963X700X396
	Dimension of Carton Box (LXWXH)	mm	1026X455X735	1026X455X735
	Dimension of Package(LXWXH)	mm	1029X458X750	1029X458X750
	Net Weight	kg	45	53
	Gross Weight	kg	49.5	57.5
	Refrigerant		R410A	R410A
	Refrigerant Charge	kg	1.3	1.9
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	20	50
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ12	Φ16
	Max Distance Height	m	10	10
	Max Distance Length	m	25	25
	Note: The connection pipe applies metric diameter.			

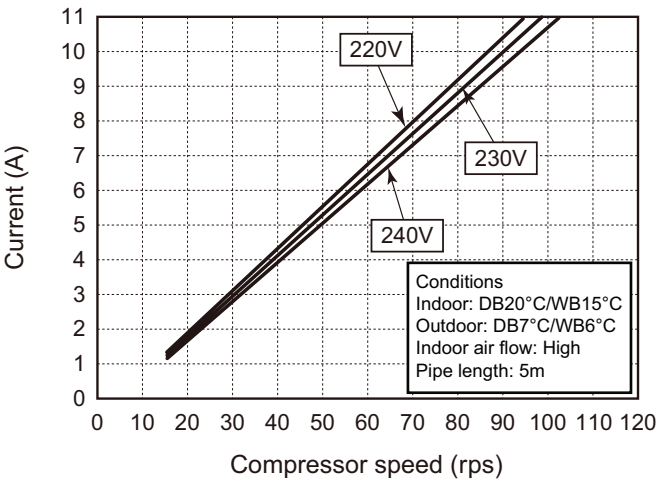
The above data is subject to change without notice. Please refer to the nameplate of the unit.

2.2 Operation Characteristic Curve

Cooling

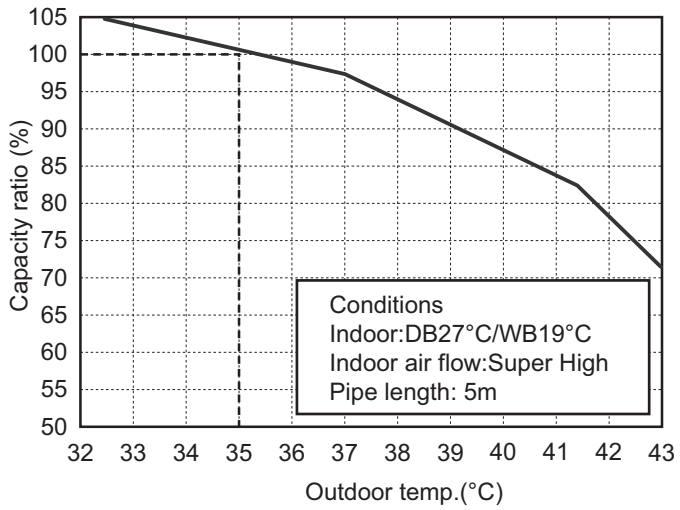


Heating

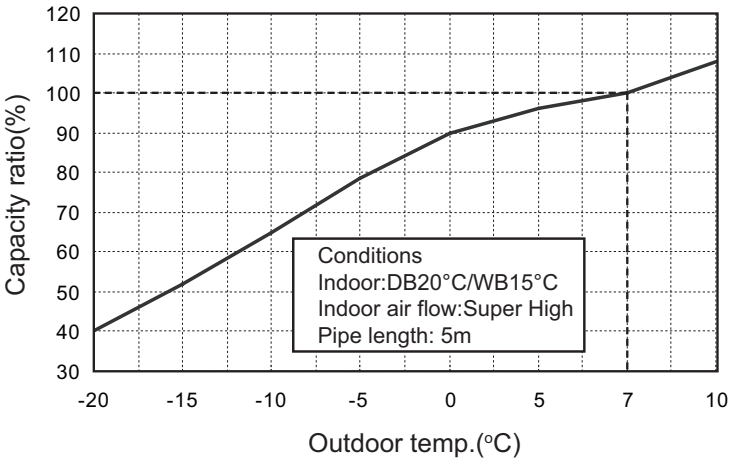


2.3 Capacity Variation Ratio According to Temperature

Cooling



Heating



2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

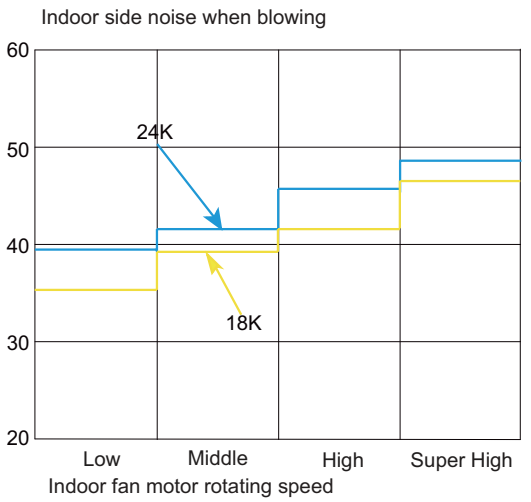
Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor frequency (Hz)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
27/19	35/24	18K	0.9 to 1.1	12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

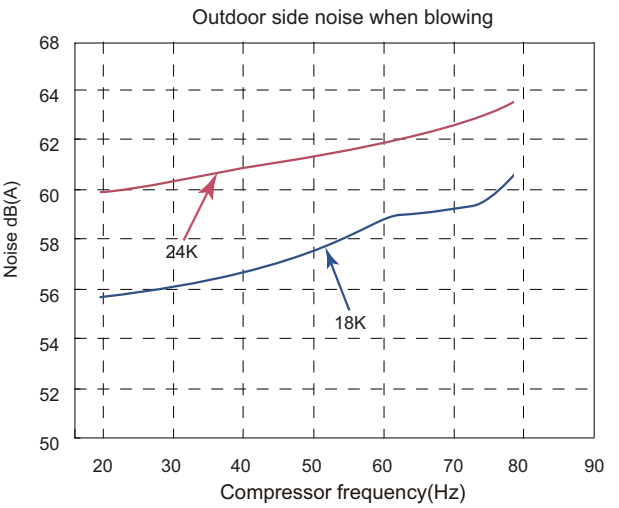
Heating:

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/-	7/6	18K	2.2 to 2.4	70 to 35	2 to 4	Super High	High	65
		24K						77

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

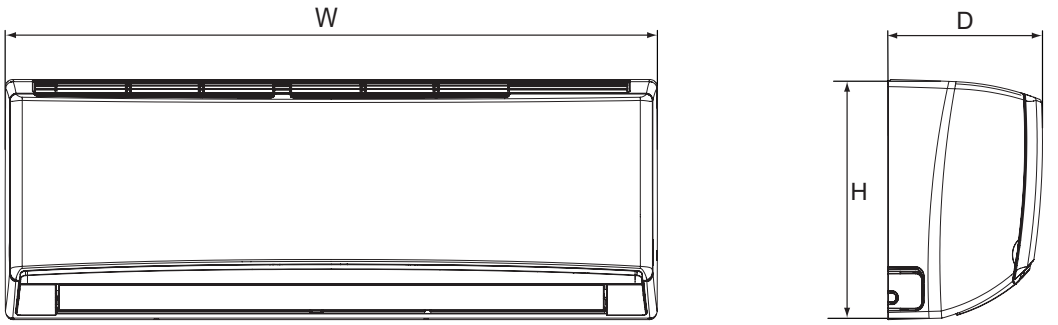
2.5 Noise Curve



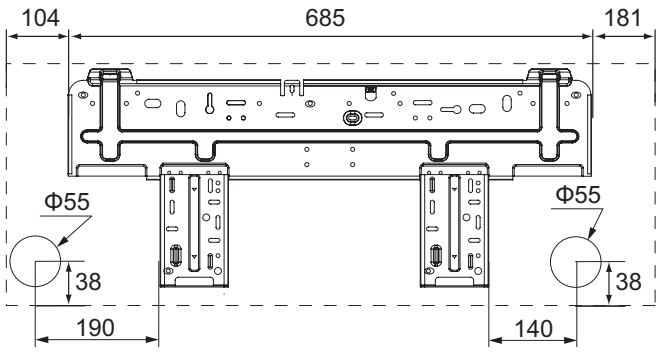


3. Outline Dimension Diagram

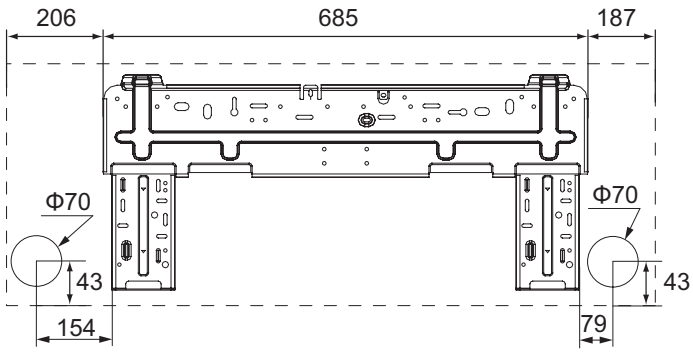
3.1 Indoor Unit



18K



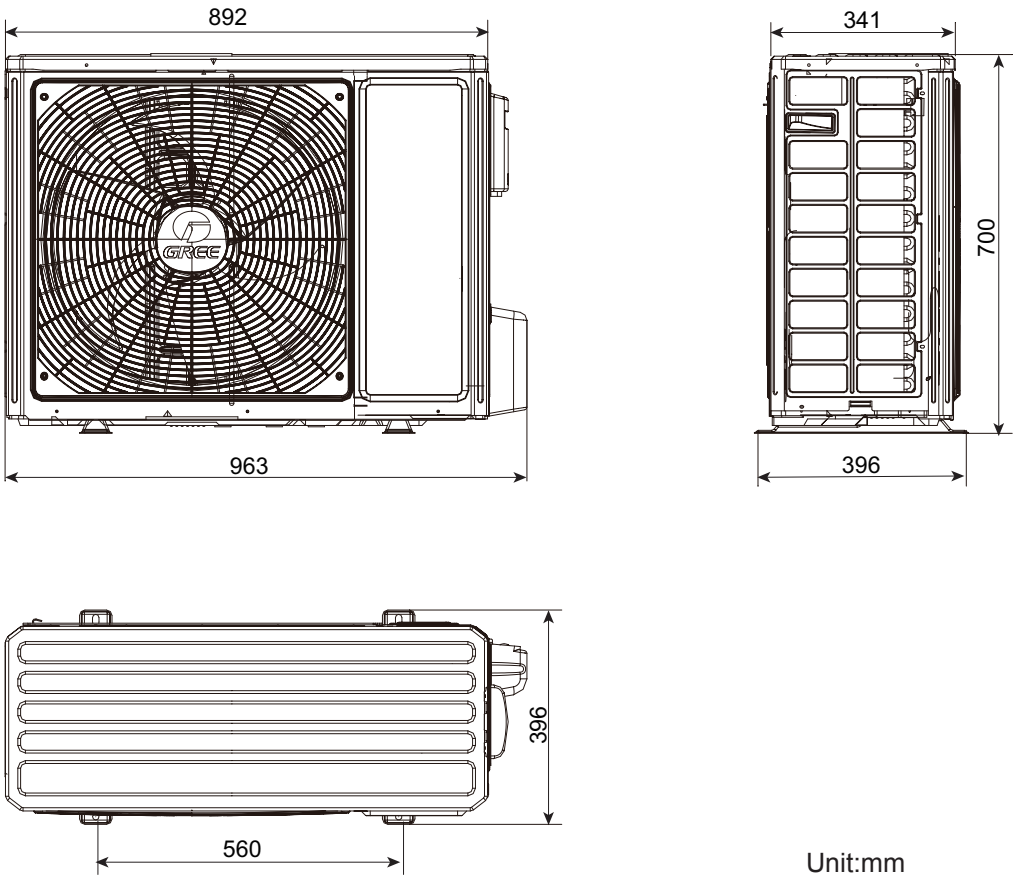
24K



Unit:mm

Model	W	H	D
18K	970	300	224
24K	1078	325	246

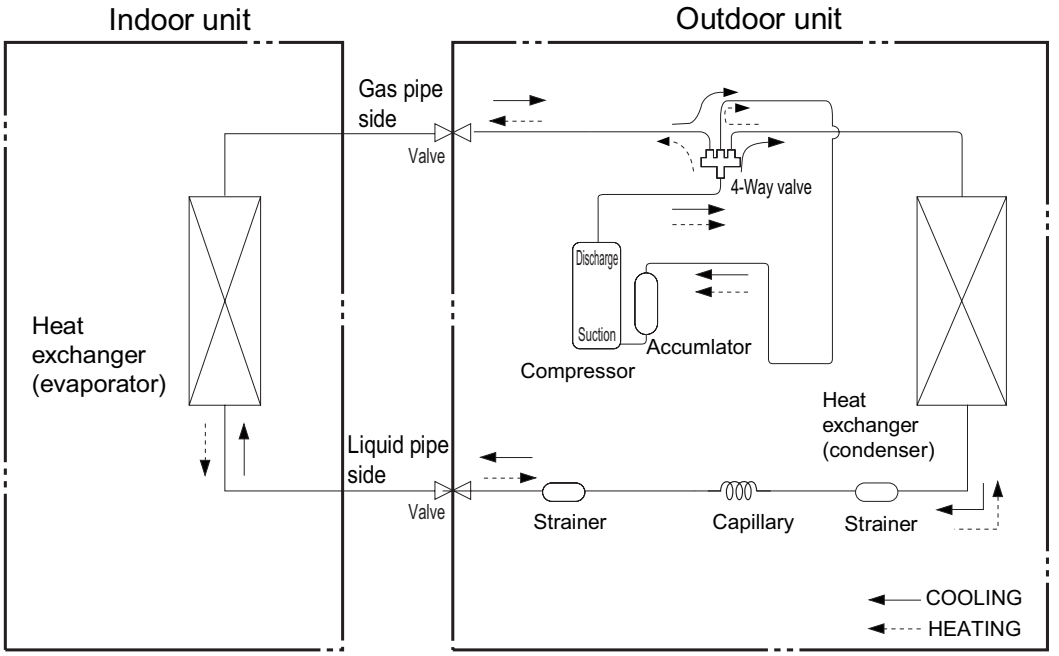
3.2 Outdoor Unit



Unit:mm

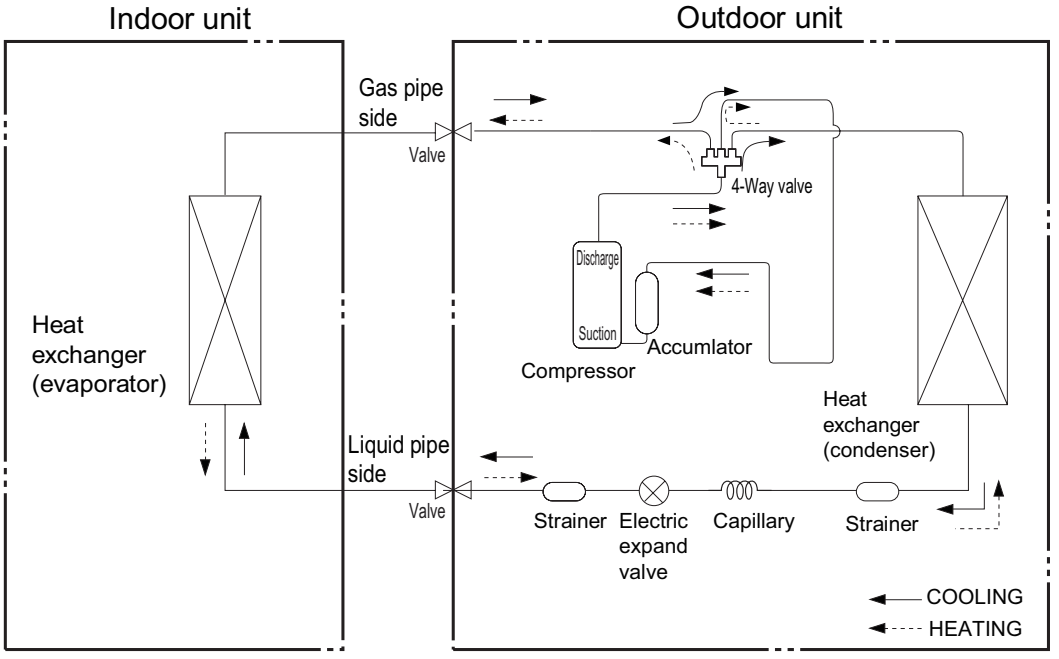
4. Refrigerant System Diagram

18K



Connection pipe specification:
Liquid pipe:1/4" (6mm)
Gas pipe:1/2" (12mm)

24K



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

5. Electrical Part

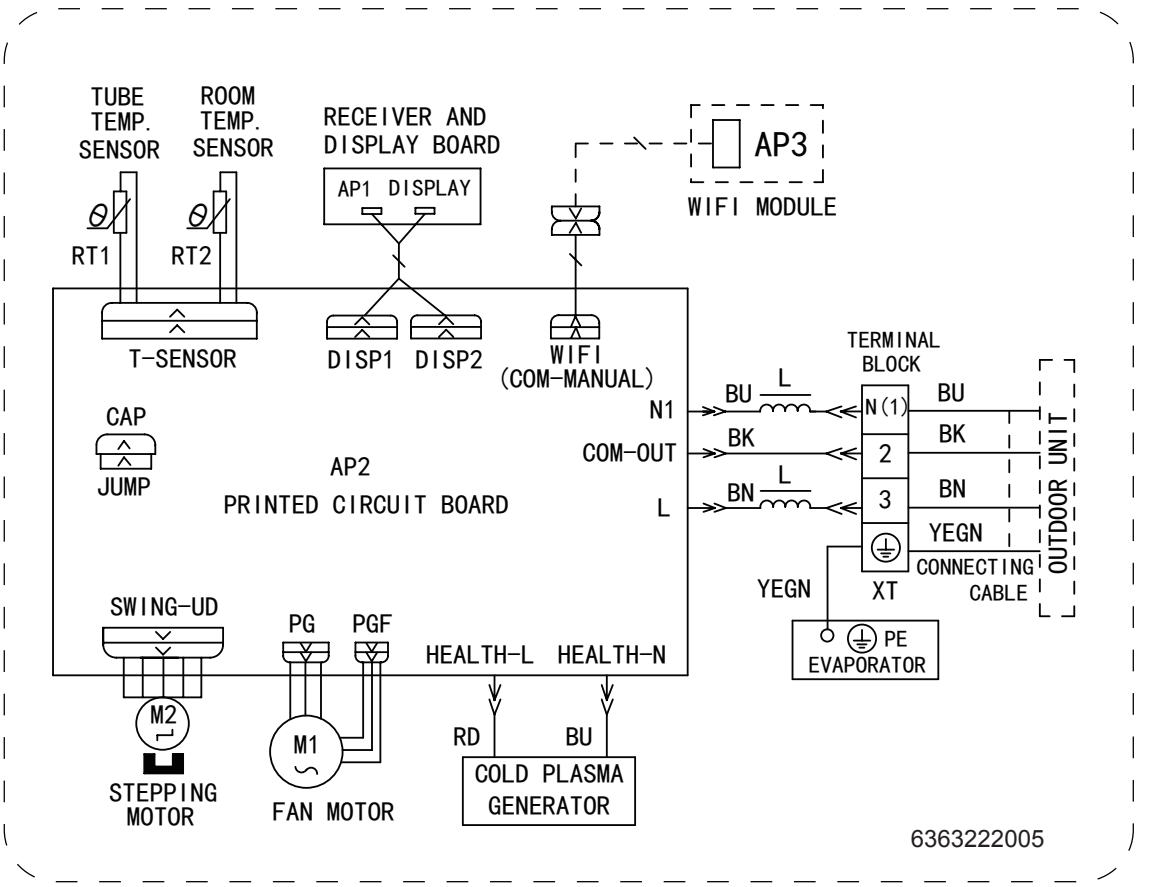
5.1 Wiring Diagram

● Instruction

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

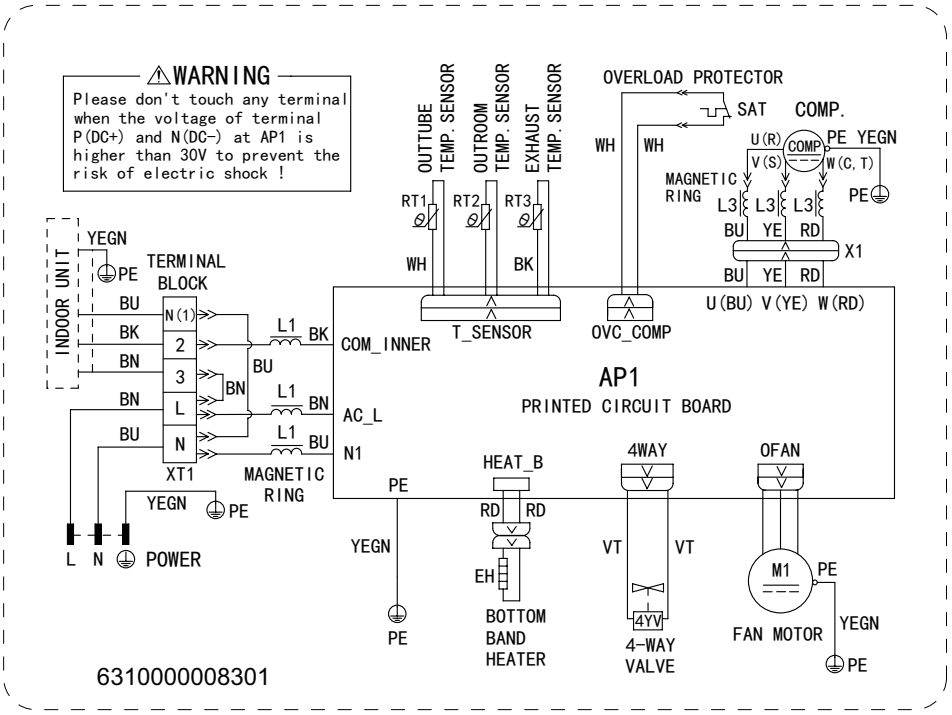
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● Indoor Unit

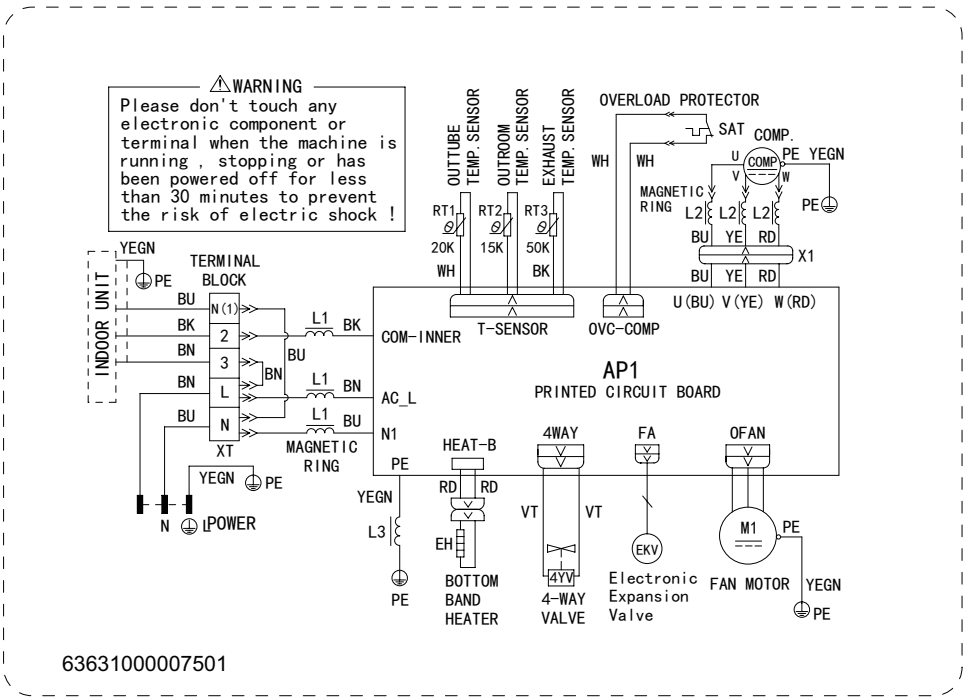


● Outdoor Unit

GWH18QD-K3DNA1G/O



GWH24QE-K3DNA1G/O

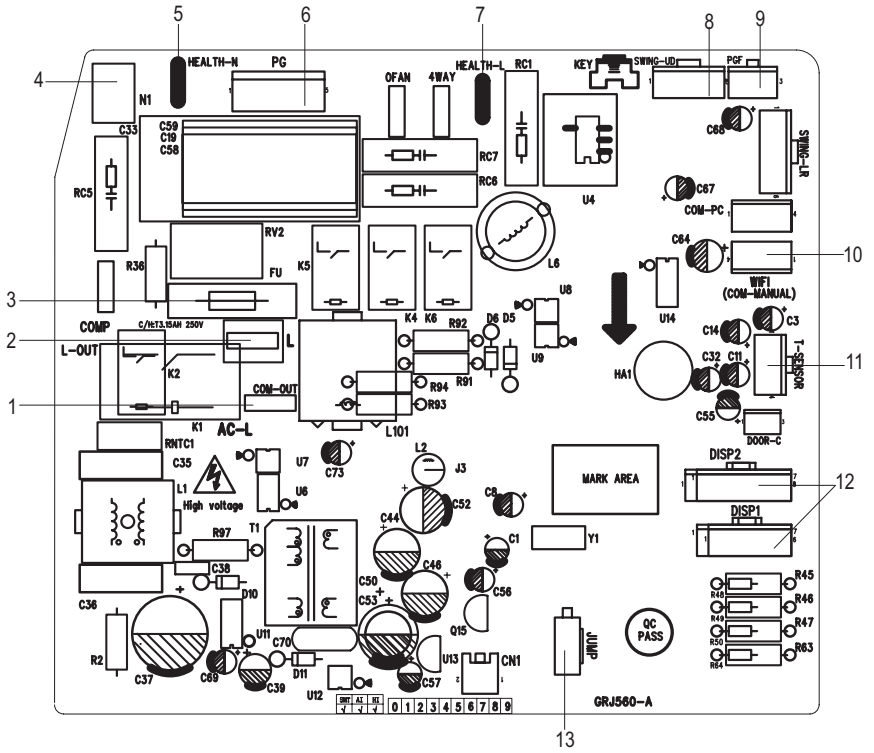


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

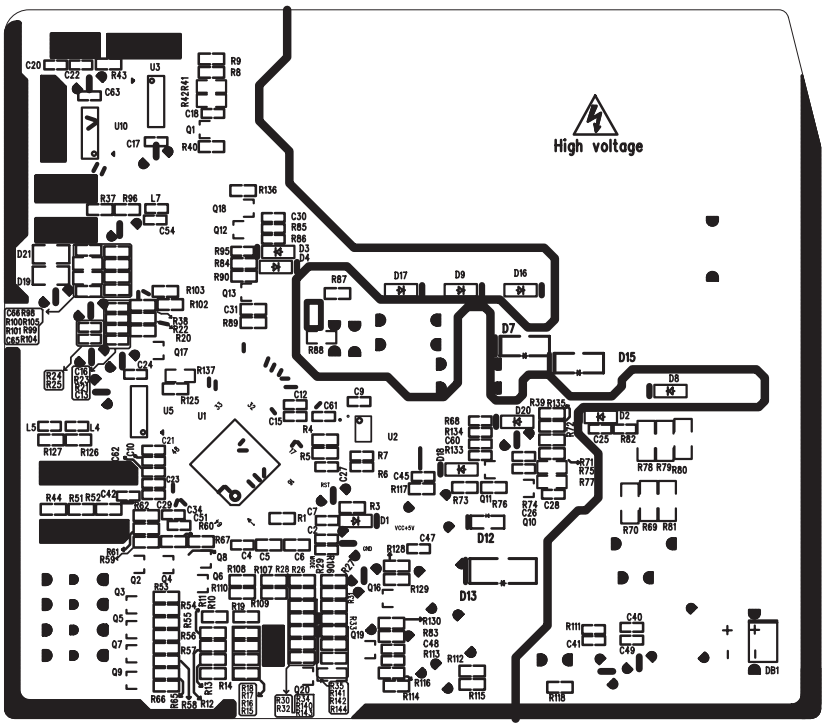
Indoor Unit

● Top view



No.	Name
1	Terminal with outdoor unit communication wire
2	Live wire
3	Fuse
4	Neutral wire
5	Interface of health function neutral wire
6	PG motor needle stand
7	Interface of health function live wire
8	up&down swing motor
9	Interface of PG feedback needle stand
10	WIFI needle stand
11	Interface of temperature needle stand
12	Display interface
13	Terminal of jumper cap

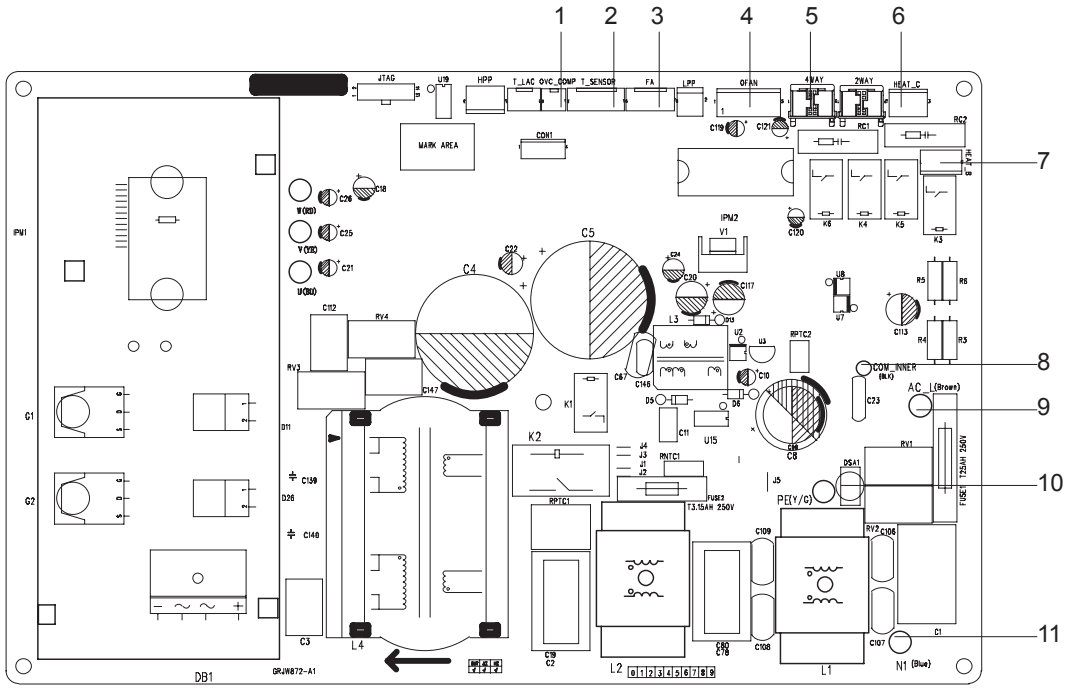
● Bottom view



Outdoor Unit

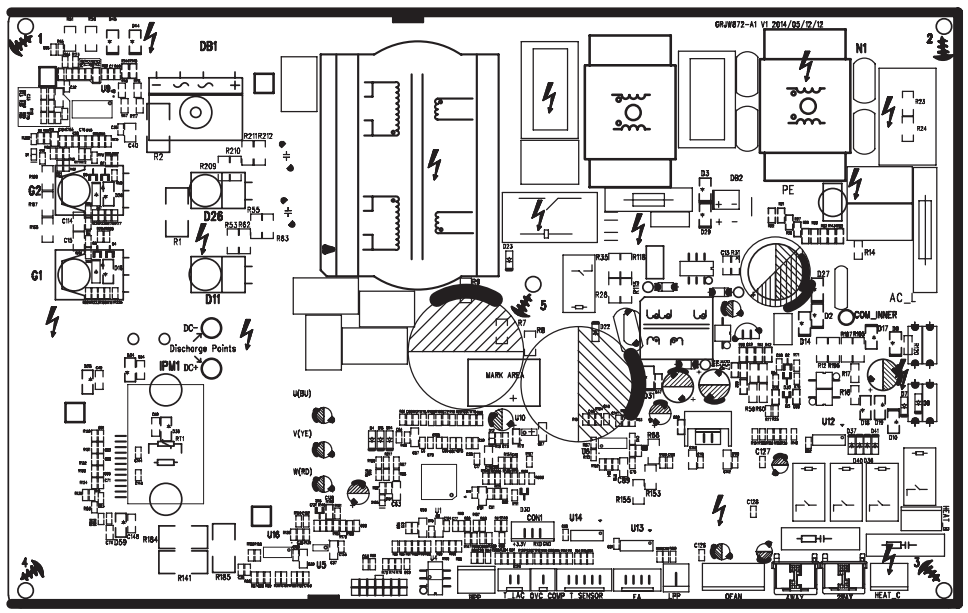
18K

● Top view



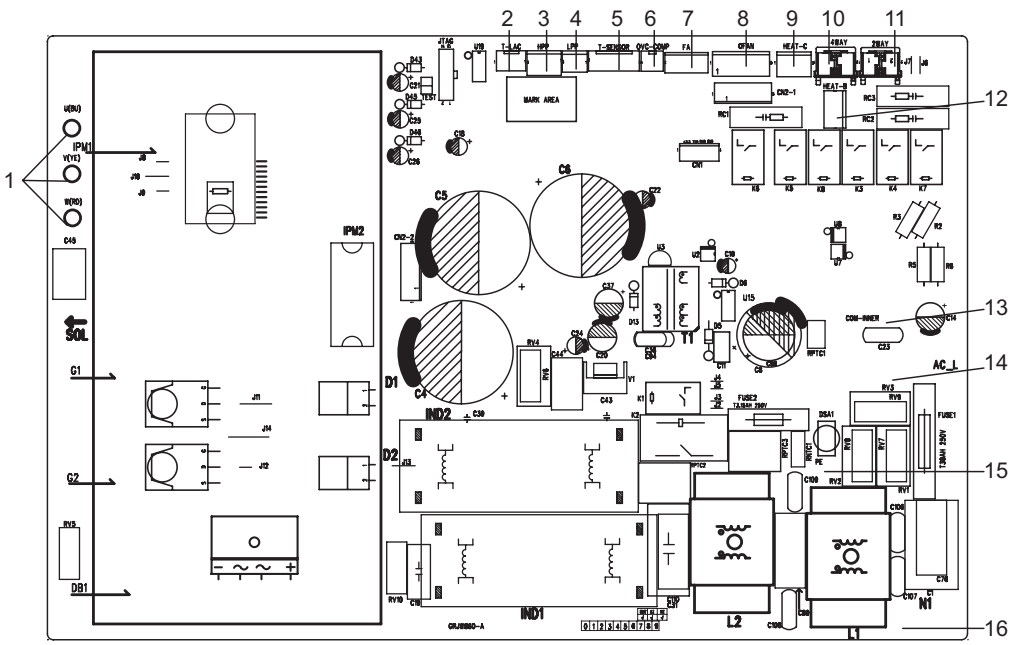
No.	Name
1	Terminal of compressor overload protection
2	Terminal of temperature sensor
3	Terminal of electronic expansion valve
4	Terminal of outdoor fan
5	Terminal of 4-way valve
6	Terminal of compressorelectric heating
7	Terminal of chassis electric heating
8	Terminal of indoor unit and outdoor unit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

● Bottom view



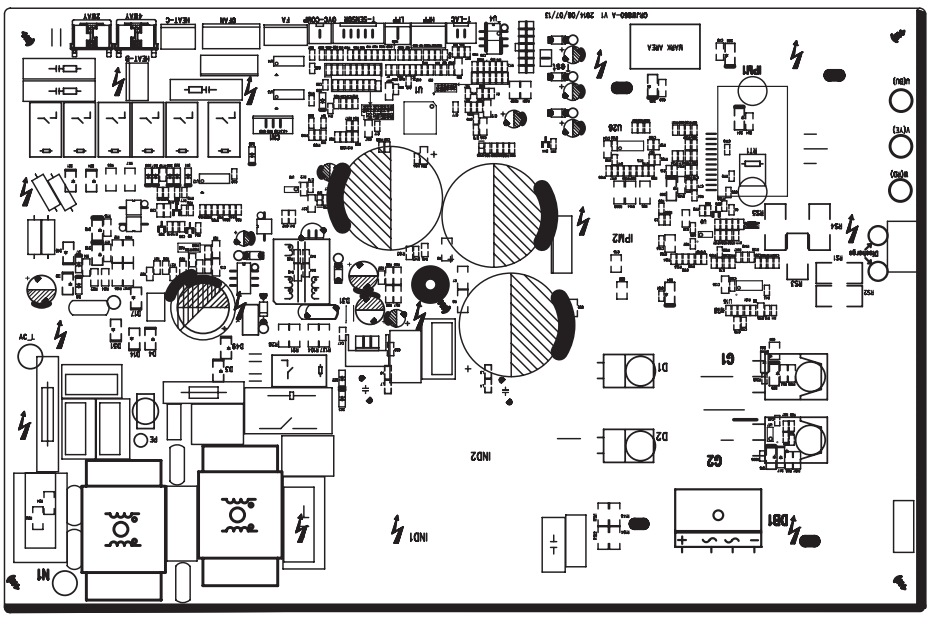
24K

- **Top view**



1	Compressorinter face
2	Interface of low-temperature cooling temperature sensor
3	High pressure protection
4	Low pressure protection
5	Interface of temperature sensor
6	Overload interface of compressor
7	Electronic expansion valve
8	Interface of DC fan
9	compressor electric heater interface
10	4-way valve interface
11	2-way valve interface
12	Chassis electric heater interface
13	Communication wire
14	Live wire
15	Grounding wire
16	Neutral wire

- **Bottom view**



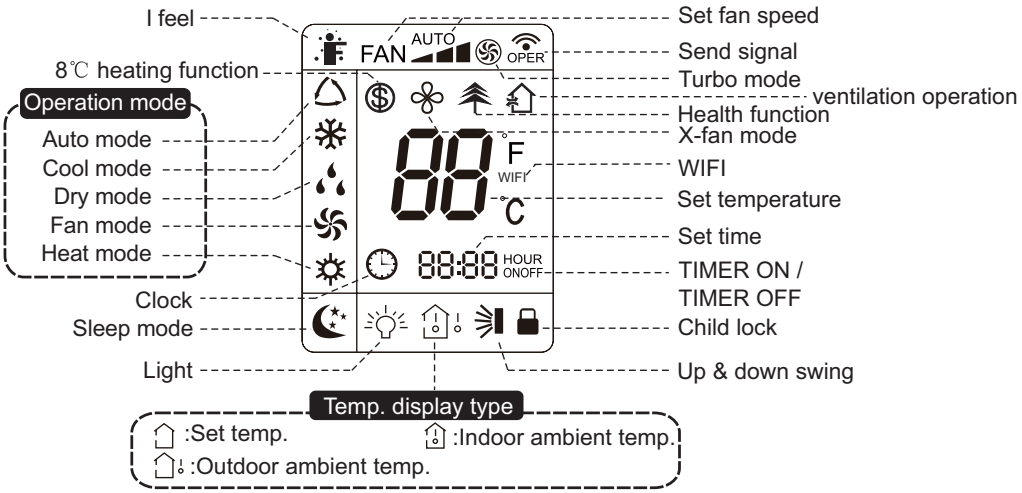
6. Function and Control

6.1 Remote Controller Introduction of YV1F7

Buttons on remote controller

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

Introduction for icons on display screen



Introduction for buttons on remote controller

Note:

- After putting through the power, the air conditioner will give out a sound. Operation indictor "⏻" is ON (red indicator). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "((•))" on the display of remote controller will blink once and the air conditioner will give out a “de” sound, which means the signal has been sent to the air conditione
- 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. ▲ button

Press this button to increase set temperature. Holding it down above 2 seconds rapidly increases set temperature. In AUTO mode, set temperature is not adjustable.

3. MODE button

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

AUTO ▶ COOL ▶ DRY ▶ FAN ▶HEAT*

* Note: Only for models with heating function.

After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.

4. SWING button

Press this button to set up & down swing angle, which circularly changes as below:

This remote controller is universal . If any command , or is sent out,the unit will carry out the command as indicates the guide louver swings as:

5. ▼button

Press this button to decrease set temperature. Holding it down above 2 seconds rapidly decreases set temperature. In AUTO mode, set temperature is not adjustable.

6. FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, ,,to , then back to Auto.

Low speed Medium speed High speed

7. TIMER OFF button

Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again.TIMER OFF setting is the same as TIMER ON.

8. CLOCK button

Press CLOCK button, blinking. Within 5 seconds, pressing ▲ or▼ button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then will be constantly displayed.

9. TIMER ON button

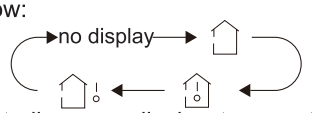
Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.After press of this button, disappears and "ON "blinks. 0 0:00 is displayed for ON timesetting. Within 5 seconds, press ▲ or ▼ button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 Seconds after setting, press TIMER ON button to confirm.

10. SLEEP button

Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL, HEAT (Only for models with heating function) to maintain the most comfortable temperature for you.

11. TEMP button

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



When selecting " " with remote controller or no display, temperature indicator on indoor unit displays set temperature; When selecting " " with remote controller, temperatureindicator on indoor unit displays indoor ambient temperature; 3s later or within 3s itreceives other remote controller signal that will return to display the setting temperature.

Caution:

• This model hasn't outdoor ambient temperature display function. While remote controllercan operate " " and indoor unit displays set temperature.

• It's defaulted to display set temperature when turning on the unit.

• Only for the models with temperature indicator on indoor unit.

12.TURBO button

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.

13. X-FAN / button

X-FAN function: In COOL or DRY mode, the icon is displayed and the indoor fan willcontinue operation for 2 minutes in order to dry the indoor unit even though you haveturned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

function: turn on the display's light and press this button again to turn off the display's light. If the light is turned on, is displayed. If the light is turned off, disappears.

14. I FEEL button

Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.

15. / button

Press this button to achieve the on and off of healthy and scavenging functions inoperation 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 scavengingfunctions simultaneously; LCD displays " " and " ". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display " ". Press this button again to repeat the operation above. (This function is applicable to partial of models)

Function introduction for combination buttons

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

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

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

At unit OFF, press "MODE" and "▼" buttons simultaneously to switch between ℃ and ℉ .

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

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

Combination of "TEMP" and "CLOCK" buttons:
About 8℃ Heating Function

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

About Back-lighting Function

The unit lights for 4s when energizing for the first time, and 3s for later press.

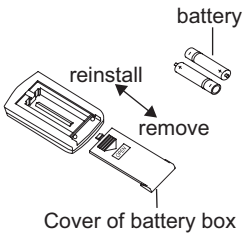
Combination “MODE” and “TURBO” buttons: **About WIFI fuction**

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

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, 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 show in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "▲" polar and "▼" polar are correct.
3. Reinstall the cover of battery box.

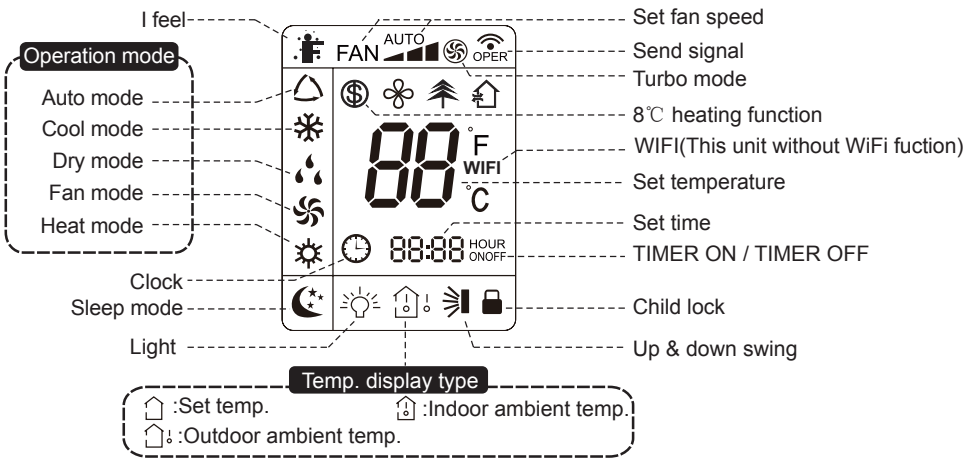
Note:

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

6.2 Remote Controller Introduction of YAN1F1

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. I FEEL 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 doesn't have, if pressthe 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 indictor " ⏻ " is ON (red indicator). After that, you can operate the air conditioner by using remote controller.

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

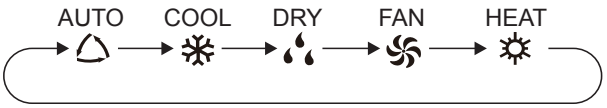
● Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corre- sponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding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

1. ON/OFF button

Press this button can turn on or turn off the air conditioner. After turning on the air conditioner, operation indicator " ⏻ "on indoor unit's display is ON (green indicator. The colour is different for different models), and indoor unit will give out a sound.

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

Note:

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

3. FAN button

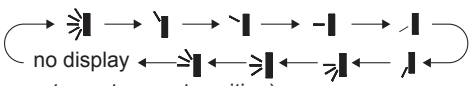
Pressing this button can set fan speed circularly as: auto (AUTO), low(◢) ,medium(◢◢), high(◢◢▌).

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

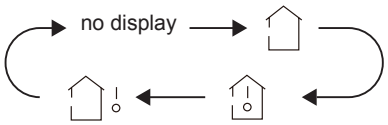
- Press "▲" or "▼" button once increase or decrease set temperature 1℃ . Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▲" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF 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 or DRY mode, press this button to start up sleep function. " " icon is displayed on remote controller. Press this button again to cancel sleep function and " " icon will disappear.

8. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature 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 controller, temperature indicator on indoor unit displays set temperature.
- When selecting " " with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting " " with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

Note:

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

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 can't 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 don't need this function, please use remote controller to cancel it.

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 can't 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. 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 can't be adjusted.
- Under 8℃ heating function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and 8℃ heating function can't operate at the same time. If 8℃ 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.

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 ℉ .

5. WIFI fuction (This unit is without WiFi fuction)

Under ON status, press "Mode" and "Turbo" button simultaneously,the "**WiFi**" icon will be displayed on remote controller .

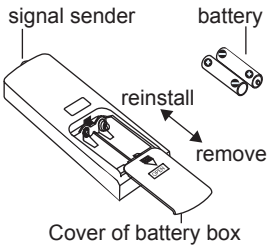
press "Mode"and"Turbo" button simultaneously,the "**WiFi**" icon will disppear.

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, 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 don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

6.3 Operation of Smart Control (Smart Phone, Tablet PC) For Gree

Operation Instructions

Download and install APP

Scan the following QR code (also indicated on the package) with your smart phone and download Wifi Smart.

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

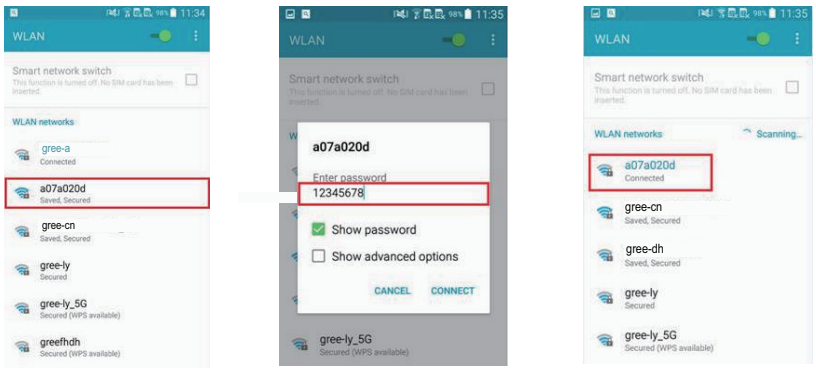
User of IOS system can search for the Gree Smart in apple store to download the apple version APP.

Configuration

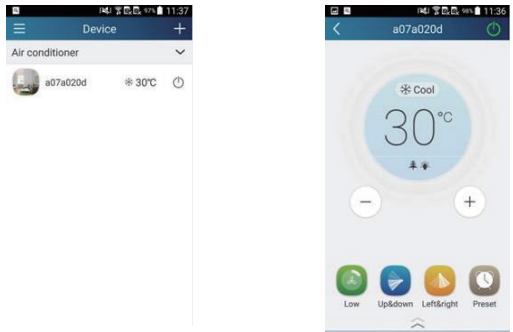
Before operation, please finish the following configuration in order to realize Wifi control and the connection between air conditioner and intelligent device.

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

Step 1: Air conditioner wifi is set to AP mode in factory. You can search the air conditioner wifi hotspot through your smart phone. The name of wifi hotspot is the last 8 numbers of the air conditioner mac address. Password is 12345678.



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

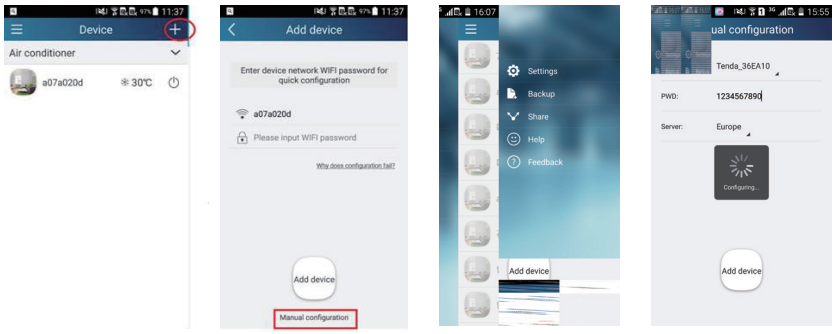


NOTE:One AC can be controlled by 4 cell phone in maximun at the same time.

2.Short-distance and long-distance control setting for air conditioner connecting router

Step 1: Under short-distance control, return to the homepage "Device". Tap + at the top right corner of the homepage "Device". Select "Add device" and enter the page of "Add device". Tap "Manual configuration" and enter the page "Manual configuration".

Step 2: Select the correct network name and enter the password,select the server (The server setting here must keep the same as the server setting in "Settings" mentioned below.Otherwise, remote control will be failed.),then tap the button "Add device" for configuration. At this time, “collocating” is displayed on the APP interface. The buzzer in the indoor unit will give out a sound when collocation is succeeded.



Functions introduction

1.User registration

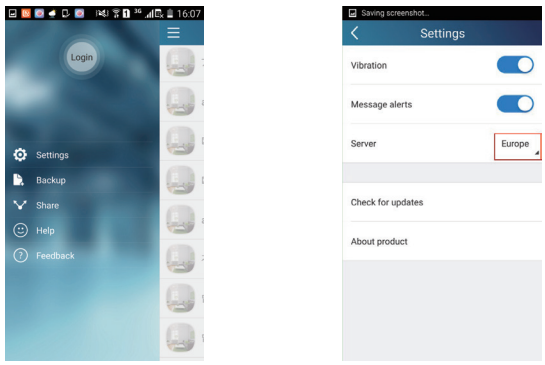
Purpose: To realize long-distance control

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

Operation steps:

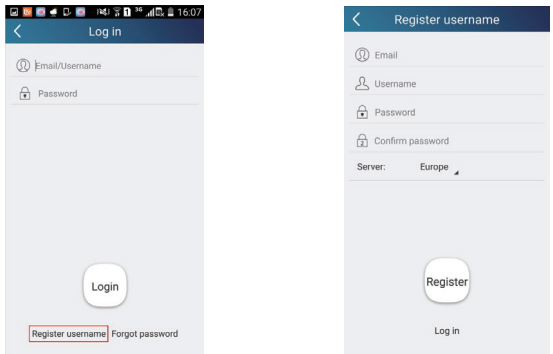
(1) Select the sever address

.

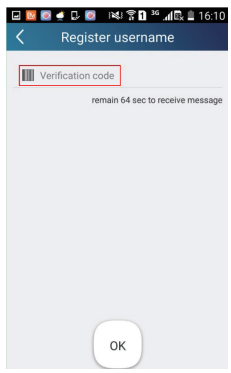


(2) Account login: Slide the page "Device". and enter the menu page on the left.

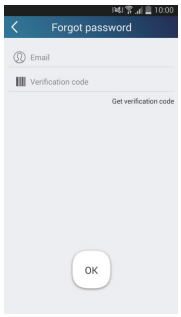
Tap "Login" to enter the page "Register username". New user must first register a username. Tap "Register".



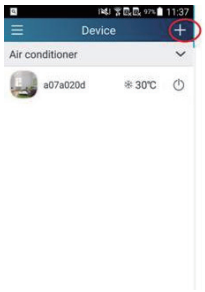
(3) Enter your email address. Wait until you receive the verification code. Enter the code and then tap "OK" to log in.



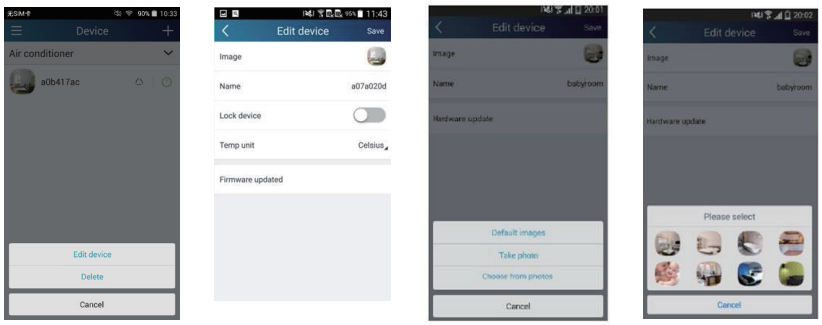
(4) If password is forgotten, you can reset the password with your email address.
Tap "Forgot password" and enter the page "Forgot password". Input your registered Email account at first. Tap "Get verification code" to get a email verification code. Enter a new password and tap "OK" to log in.



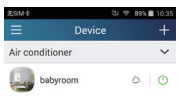
2.Personal settingsPurpose: Set name (device name, preset name, etc.) and images (device image) in order to identify a user easily.
(1) Set device nameAfter quick configuration, a list of controllable smart devices will be generated. Default name for air conditioner is the last 8 numbers of the air condtioner mac address.



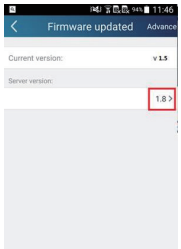
Step 1: Tap and hold "a0b417ac" to enter the page "Edit device". Tap "Image" to select the source of image. Select from "Default images" or "Take photo" or "Choose from photos" and save an image.



Step 2: Tap "Name" to change device name, Save it and the new device name will be shown. enable button Lock device to lock the deviceother smart phone cant search the device now. Tap "Temp unit" to change the temperature unit.

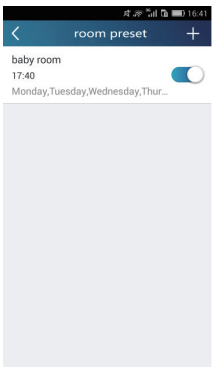


Step 3: Tap "Firmware updated" to upgrade the Firmware of the device, Tap"1.8" the device will upgraded auto.



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

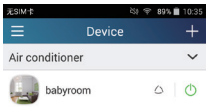
Step 2: Choose the time. Tap "Name". As shown in the picture, its name is "baby room". For timer type, select "On". Then select the repeating days. Save the setting of preset name.



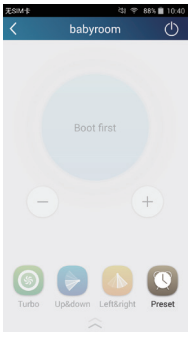
(3) Set device imagePlease refer to step 1 in 2(1)3.Control functions

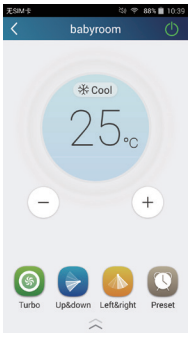
(1) Common control functions: General control on the operation of smart devices (On/Off, temperature, fan speed, mode, etc.) and the setting of advanced functions (air exchange, dry, health, light, sleep, energy saving upper limit).

Step 1: General control Enter the homepage "Device" first. Take "babyhome" as an example.

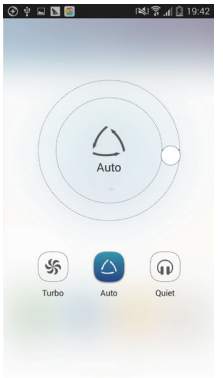


Tap "babyroom" and enter the page of air conditioner control. Tap  to turn on the control switch.

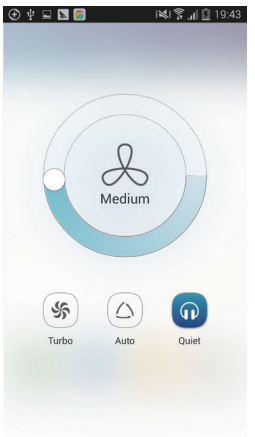


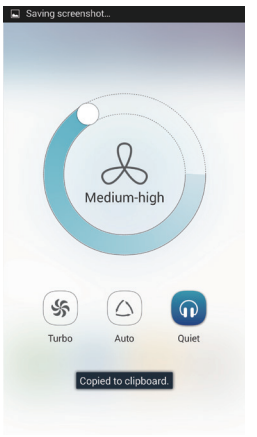


Tap or to increase or decrease temperature. Tap  to change working mode. Tap  to enter the page of fan speed adjustment.

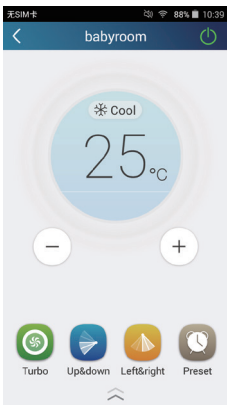


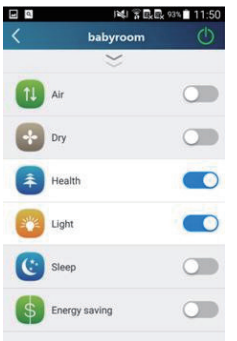
Tap  and go around the circle to adjust fan speed.



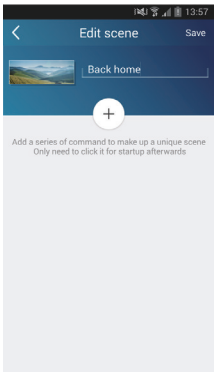


Step 2: Advanced settings Tap to enter advanced settings. You may select "Air", "Dry", "Health", "Light", "Sleep" or "Energy saving".

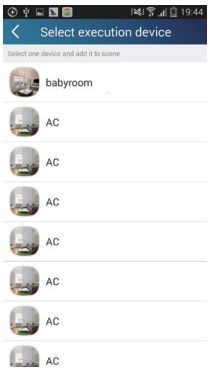


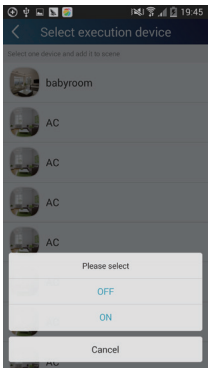


(2) Advanced control functions: Set scene; Preset; Link: Infrared control (only applicable to smart phone with infrared emitter)
Set scene: Preset the operation of several smart devices by one tap.
On the page "Device", tap the image of "Device" to enter the page "Edit scene".

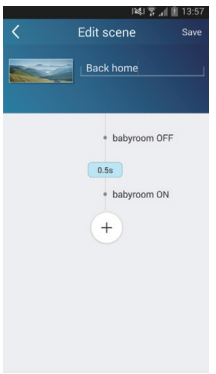


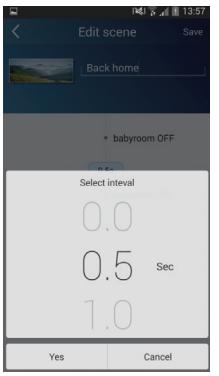
Tap "Add scene" and edit the scene name, for example, "Back home". Add execution devices.
Tap  to add commands. On the page "Select execution device", select the air conditioner named "babyroom". Then select "ON" or "OFF".



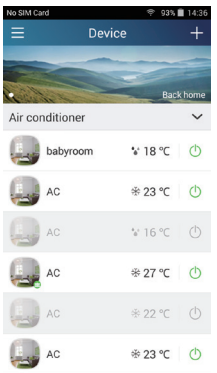


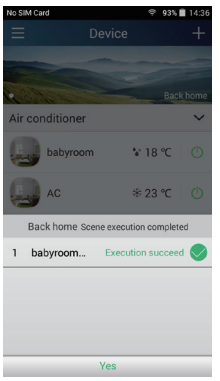
Continue to select the next execution device as instructed above. Tap 0.5s to set the interval.



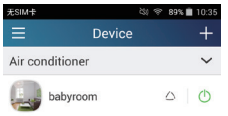


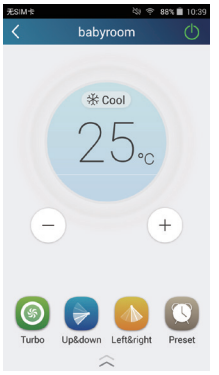
Tap "Save". Tap the scene picture displayed in "Device" home page to send the command. Then the scene "Back home" will be in execution. You may view the execution condition of the scene.



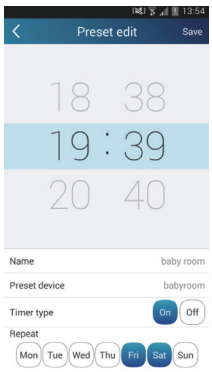


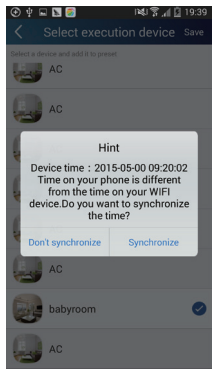
(3) Preset includes single-device preset and multi-device preset Single-device preset: This can preset a certain device to be On/Off at a specific time.
On the homepage "Device", take air conditioner "babyroom" as an example.
Tap Preset at the bottom of the page "babyroom". Then you will enter the page "Preset edit".



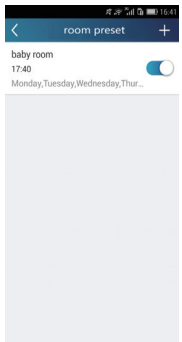


Slide up and down to set the time. If you need to synchronize the time, tap " synchronize". If such "Hint" interface hasnt appeared, please skip this operation procedure.

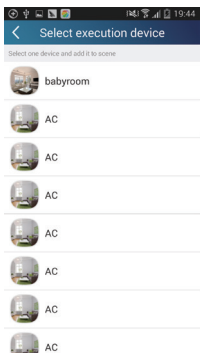




Tap "Name" to customize the preset name.Preset device cant be selected and it will default to "babyroom". Select "On" for the timer type. Select repeating days to complete the preset.



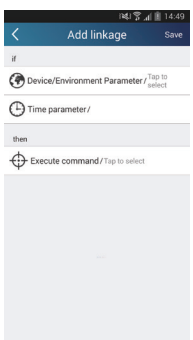
Multi-device preset: This can preset multiple devices to execute a command at a specific time.Please refer to the instructions as how to set preset time, name, timer type and repeating days for a single device.Tap "Preset device" to select one or more devices. Then return to the page "Device".

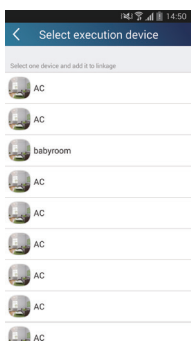


(4) Link(This function is applicable to partial of models)set in the master device, slave devices will execute commands to realize devices Select a master device. When the environment has satisfied the parameters as set in the master device, slave devices will execute commands to realize devices linkage.

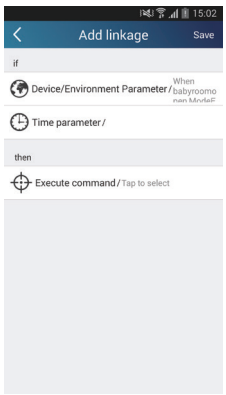
Step 1: Set the parameters of master device (Select master device, select environment parameters, select master device status).

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

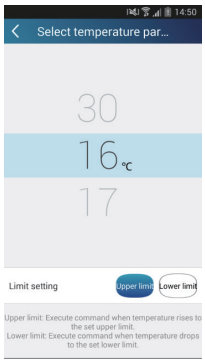


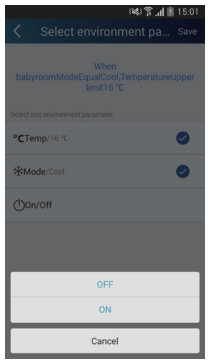


Enter the page "Select environment parameters".

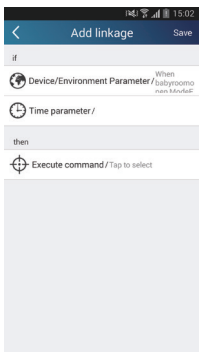


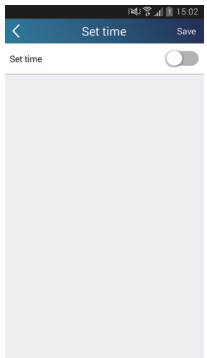
Tap "Temperature" to enter the page "Select temperature parameter". Slide up or down to adjust temperature. Tap "Upper limit" or "Lower limit".Tap "Mode" and "On/Off" to select the status of master device. Then tap "Save".



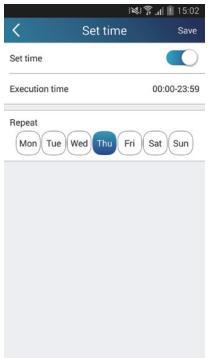


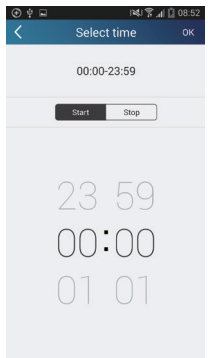
Step 2: Set time parameter for linkage. Tap "Time parameter" to enter the page "Set time". Slide rightwards to turn on the setting time.



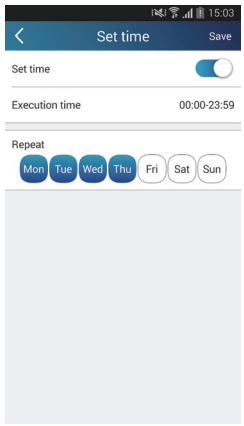


Tap "Execution time"; Then tap "Start" and "Stop" to set start time and stop time respectively. Tap "OK" at the top right corner to save the setting.

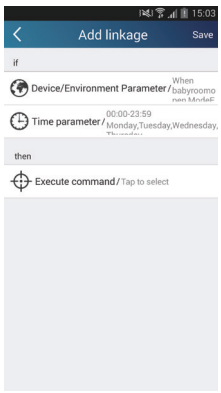




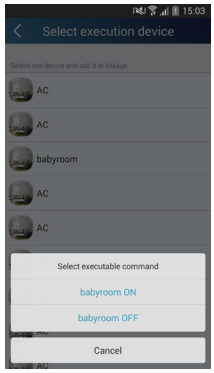
Tap the days below "Repeat" to select the repeating days. Then tap "Save".

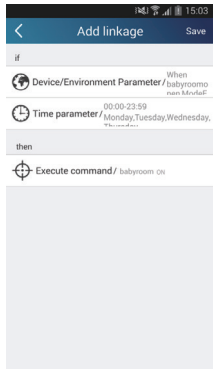


Step 3: Select "Execute command"
Tap "Execute command" and enter the page "Select device".

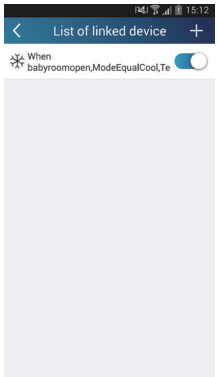


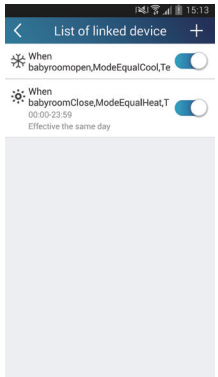
Tap the name of device that you want to control. Tap "ON" or "OFF" and then tap "Save" to complete the linkage.





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

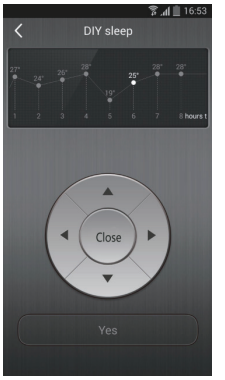




(5) Infrared control (only applicable to smart phone with infrared emitter).Function: Smart phone can be used as a remote controller
Tap + at the top right corner of the homepage "Device". Select "Infrared" and enter the page "Remote controller". Tap ^ and slide up to enter the page of advanced functions.

Tap  to turn on the device.Tap  to select mode.Tap  to adjust fan speed and swing angle. Tap "Health", "Energy saving", "Sleep" etc. to set advanced functions.

Tap "Sleep" to enter the page "DIY sleep". Tap the left and right arrows to set sleep time. Tap up and down arrows to adjust temperature at a specific sleep time.



4.Menu functions

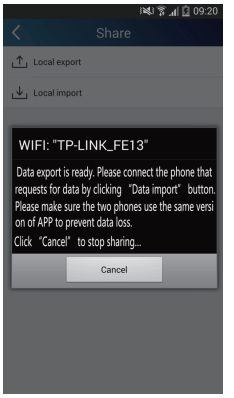
Menu functions (Share, Set, History, Feedback)

(1) Share: To share quick configuration information and units information, including local export and local import.

For local import, you just need to tap "Local import" and wait for the data download.Local export

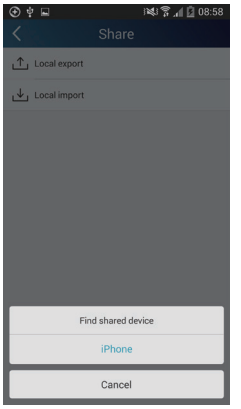
Step 1: Export local data to another smart phone.

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

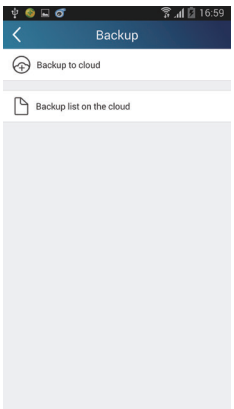


Step 2: Another smart phone to be imported.

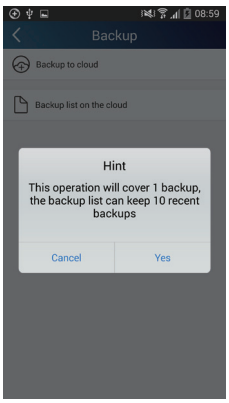
Tap the model name and wait for the download.



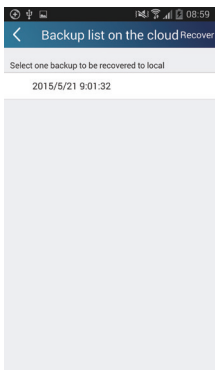
(2) Backup: To keep backup of the quick configuration information and units information, including backup to cloud and backup list on the cloud.
Backup to cloud
Enter the menu page on the left and tap "Backup".



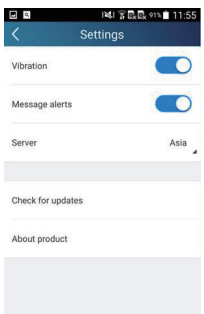
Tap "Backup to cloud" and then tap "Yes". Then wait for the data download.



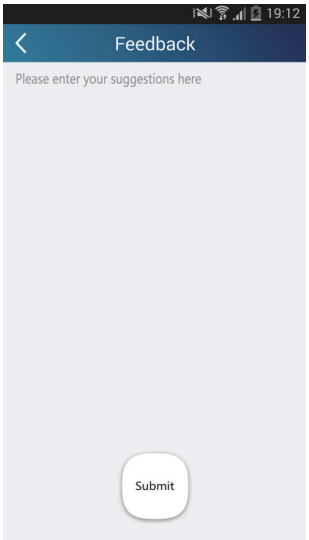
Select "Backup list on the cloud". Then backup records will appear. Tap "Record" to download data and recover data to local unit.



(3) Settings
User can set vibration, message alerts, server, updates, etc. The server setting here must keep the same as the server setting in "Configuration" mentioned before.
Otherwise, remote control will be invalid.



(4) Feedback
User can feedback suggestions to back-stage management for maintenance and development.
Tap "Feedback". Enter your suggestions and then submit it.



6.4 Operation of Smart Control (Smart Phone, Tablet PC)

Operation Instructions

Download and install APP

Scan the following QR code (also indicated on package box) with your smart phone and download Wifi Smart.

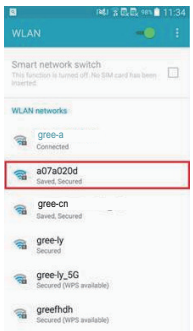
Install the APP according to its guidance. When successfully installed, your smart phone homepage will show this icon
User of IOS system can search for the wifismart in apple store to download the apple version APP.

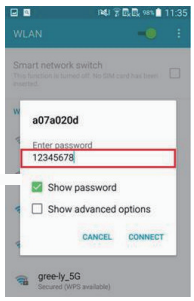
Configuration

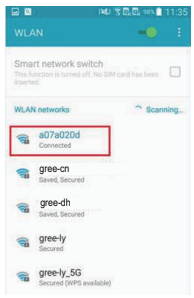
Before operation, please finish the following configuration in order to realize Wifi control and the connection between air conditioner and intelligent device.

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

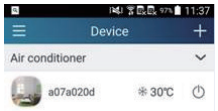
Step 1: Air conditioner wifi is set to AP mode in factory. You can search the air conditioner wifi hotspot through your smart phone. The name of wifi hotspot is the last 8 numbers of the air condtioner mac address. Password is 12345678.

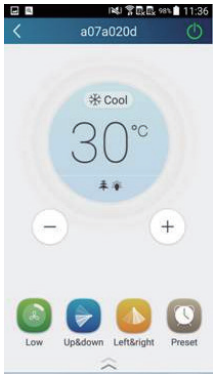






Step 2: Open App and the screen will show the air conditioner that you just connected. Click this air conditioner to enter and realize short-distance control, as shown below. Please refer to "Functions introduction" for specific control methods.



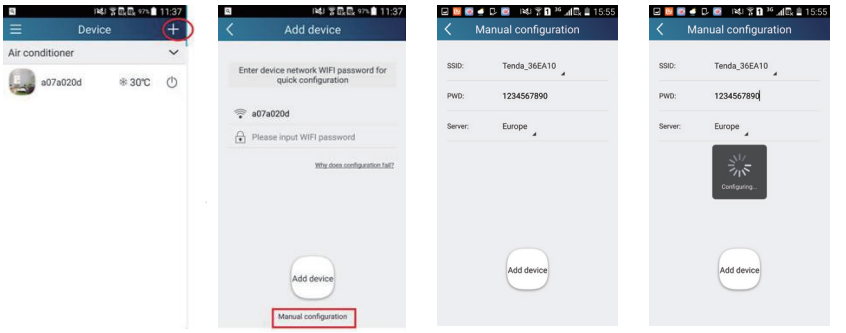


NOTE:One AC can be controlled by 4 cell phone in maximun at the same time.

2.Short-distance and long-distance control setting for air conditioner connecting router

Step 1: Under short-distance control, return to the homepage "Device". Tap + at the top right corner of the homepage "Device". Select "Add device" and enter the page of "Add device". Tap "Manual configuration" and enter the page "Manual configuration".

Step 2: Select the correct network name and enter the password,select the server (The server setting here must keep the same as the server setting in "Settings" mentioned below.Otherwise, remote control will be failed.),then tap the button "Add device" for configuration. At this time, “collocating” is displayed on the APP interface. The buzzer in the indoor unit will give out a sound when collocation is succeeded.



Functions introduction

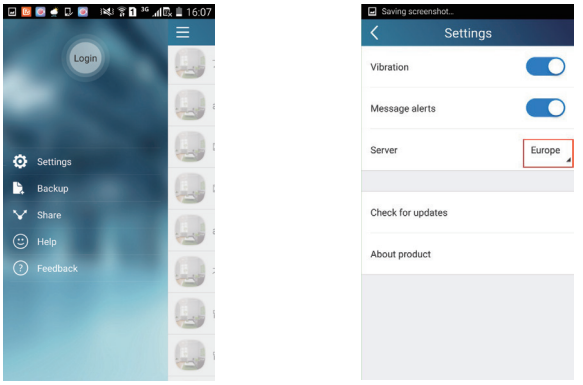
1.User registration

Purpose: To realize long-distance control

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

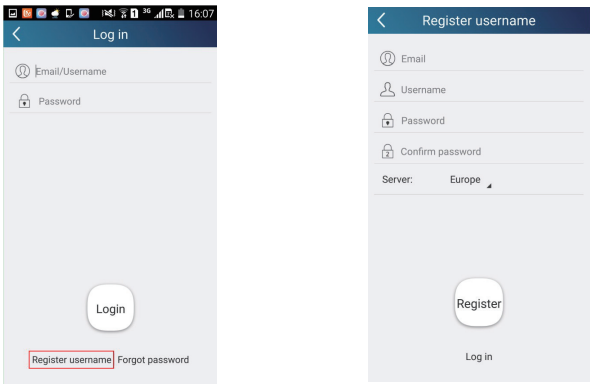
Operation steps:

(1) Select the sever address

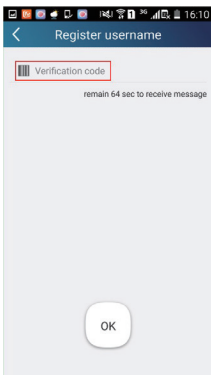


(2) Account login: Slide the page "Device". and enter the menu page on the left.

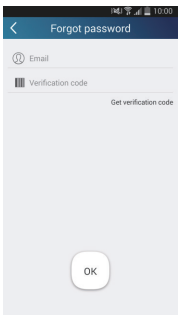
Tap "Login" to enter the page "Register username". New user must first register a username. Tap "Register".



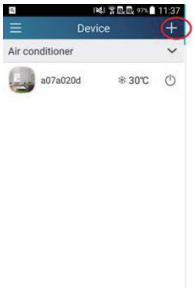
(3) Enter your email address. Wait until you receive the verification code. Enter the code and then tap "OK" to log in.



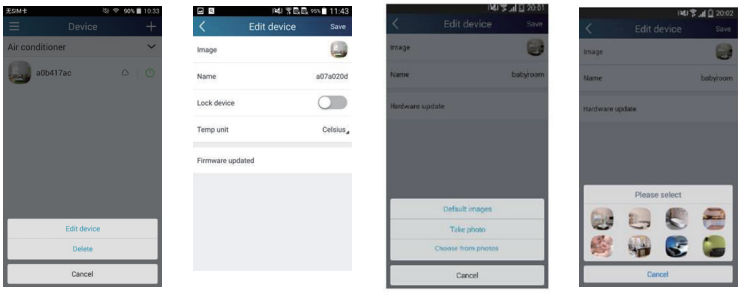
(4) If password is forgotten, you can reset the password with your email address.
Tap "Forgot password" and enter the page "Forgot password". Input your registered Email account at first. Tap "Get verification code" to get a email registered Email account at first. Tap "Get verification code" to get a email verification code. Enter a new password and tap "OK" to log in.



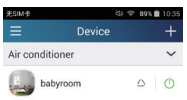
2.Personal settingsPurpose: Set name (device name, preset name, etc.) and images (device image) in order to identify a user easily.
(1) Set device nameAfter quick configuration, a list of controllable smart devices will be generated. Defaultname for air conditioner is the last 8 numbers of the air condtioner mac address.



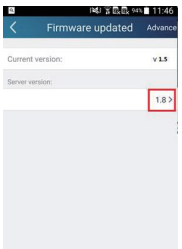
Step 1: Tap and hold "a0b417ac" to enter the page "Edit device". Tap "Image" to select the source of image. Select from "Default images" or "Take photo" or "Choose from photos" and save an image.



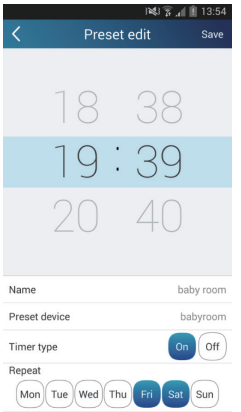
Step 2: Tap "Name" to change device name, Save it and the new device name will be shown. enable button Lock device to lock the deviceother smart phone cant search the device now. Tap "Temp unit" to change the temperature unit.



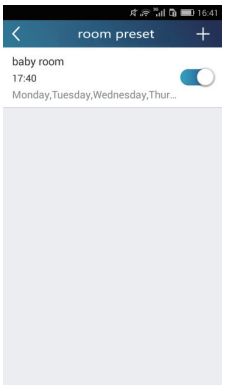
Step 3: Tap "Firmware updated" to upgrade the Firmware of the device, Tap"1.8" the device will upgraded auto.



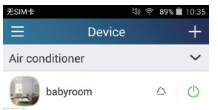
(2) Set preset nameStep 1: Tap  at the top right corner of the homepage "Device". Select "Add preset" and enter the page "Preset edit".



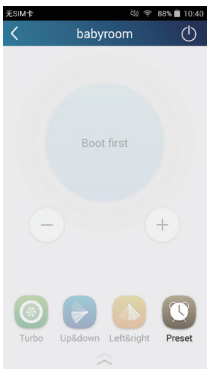
Step 2: Choose the time. Tap "Name". As shown in the picture, its name is "baby room". For timer type, select "On". Then select the repeating days. Save the setting of preset name.

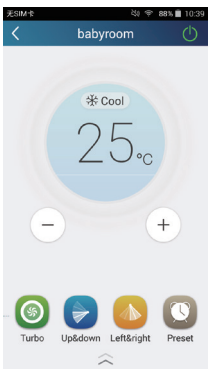


(3) Set device imagePlease refer to step 1 in 2(1)
3.Control functions
(1) Common control functions: General control on the operation of smart devices (On/Off, temperature, fan speed, mode, etc.) and the setting of advanced functions (air exchange, dry, health, light, sleep, energy saving upper limit).Step 1: General control Enter the homepage "Device" first. Take "babyhome" as an example.

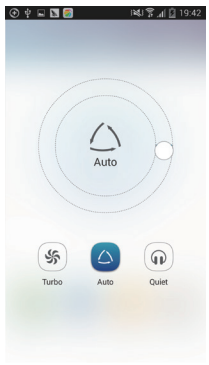


Tap "babyroom" and enter the page of air conditioner control. Tap  to turn on the control switch.

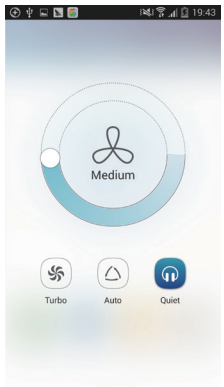


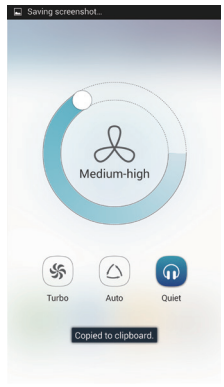


Tap or to increase or decrease temperature. Tap  to changeworking mode. Tap  to enter the page of fan speed adjustment.

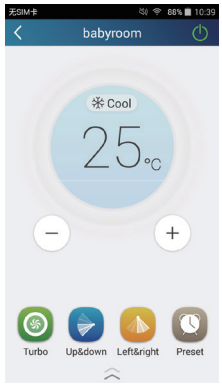


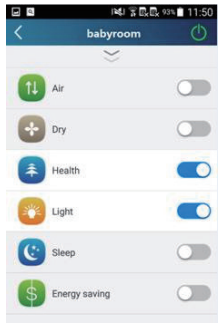
Tap  and go around the circle to adjust fan speed.



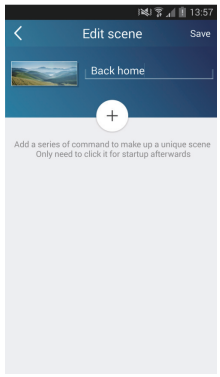


Step 2: Advanced settings Tap to enter advanced settings. You may select "Air", "Dry", "Health", "Light", "Sleep" or "Energy saving".

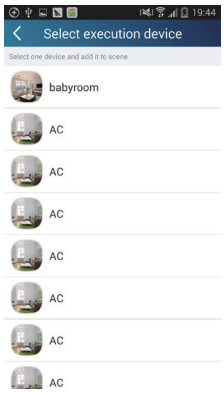


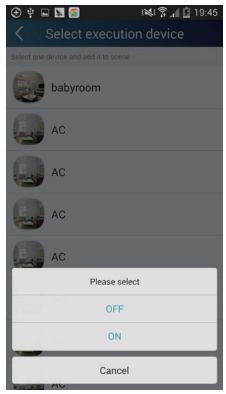


(2) Advanced control functions: Set scene; Preset; Link: Infrared control (only applicable to smart phone with infrared emitter)
Set scene: Preset the operation of several smart devices by one tap.
On the page "Device", tap the image of "Device" to enter the page "Edit scene".

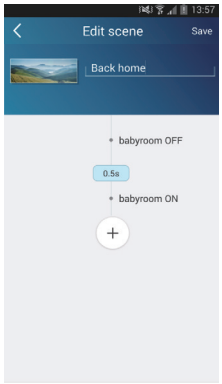


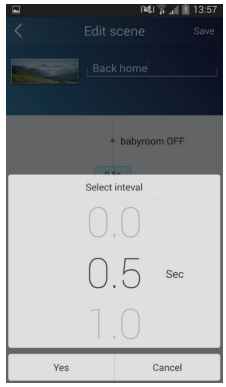
Tap "Add scene" and edit the scene name, for example, "Back home". Add execution devices.
Tap  to add commands. On the page "Select execution device", select the air conditioner named "babyroom". Then select "ON" or "OFF".



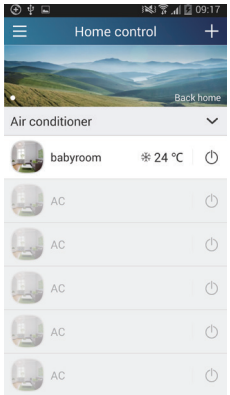


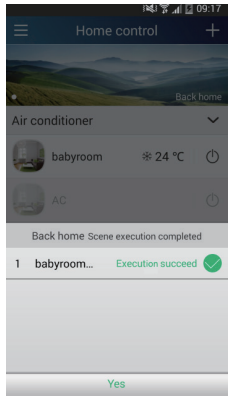
Continue to select the next execution device as instructed above. Tap to set the interval.



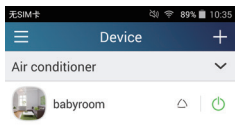


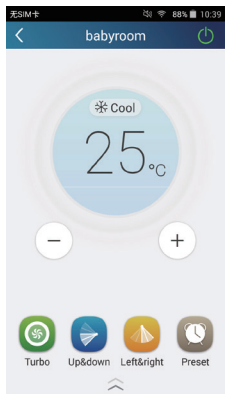
Tap "Save". Tap the scene picture displayed in "Device" home page to send the command. Then the scene "Back home" will be in execution. You may view the execution condition of the scene.



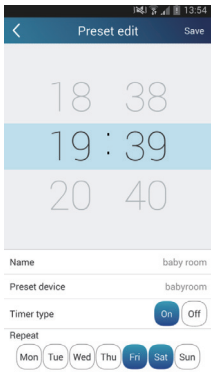


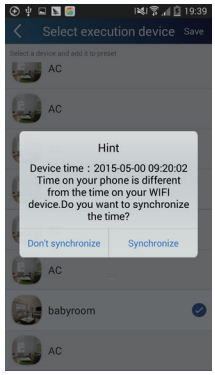
(3) Preset includes single-device preset and multi-device presetSingle-device preset: This can preset a certain device to be On/Off at a specific time.
On the homepage "Device", take air conditioner "babyroom" as an example. Tap  at the bottom of the page "babyroom". Then you will enter the page "Preset edit".

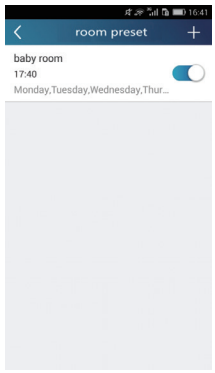




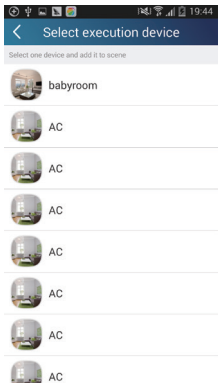
Slide up and down to set the time. If you need to synchronize the time, tap " synchronize". If such "Hint" interface hasnt appeared, please skip this operation procedure.



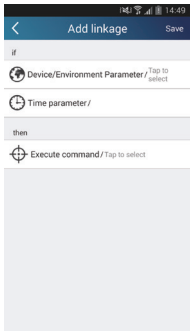


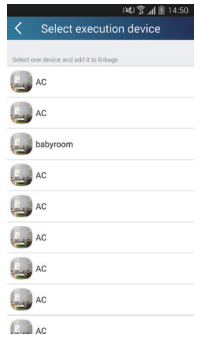


Tap "Name" to customize the preset name.
Preset device cant be selected and it will default to "babyroom". Select "On" for the timer type. Select repeating days to complete the preset.
Multi-device preset: This can preset multiple devices to execute a command at a specific time.Please refer to the instructions as how to set preset time, name, timer type and repeating days for a single device.Tap "Preset device" to select one or more devices. Then return to the page "Device".

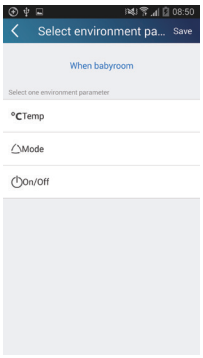


(4) Link(This function is applicable to partial of models)set in the master device, slave devices will execute commands to realize devices Select a master device. When the environment has satisfied the parameters as set in the master device, slave devices will execute commands to realize devices linkage.
Step 1: Set the parameters of master device (Select master device, select environment parameters, select master device status).Tap + at the top right corner of the homepage "Device". Select "Link" and enter the page "Add linkage". Tap "Device parameter" to enter the page "Select device". Take "baby room" as an example. Tap "babyroom".

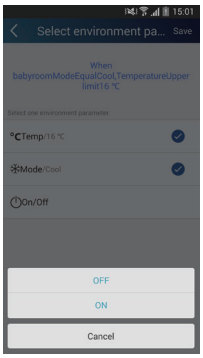




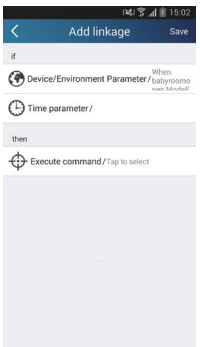
Enter the page "Select environment parameters".

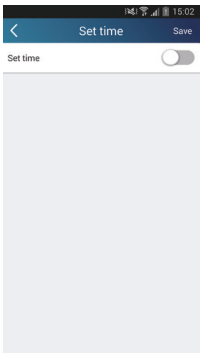


Tap "Temperature" to enter the page "Select temperature parameter". Slide up or down to adjust temperature. Tap "Upper limit" or "Lower limit".Tap "Mode" and "On/Off" to select the status of master device. Then tap "Save".

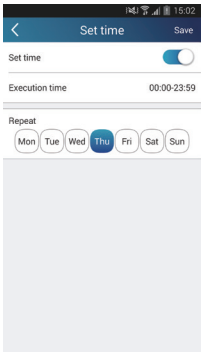


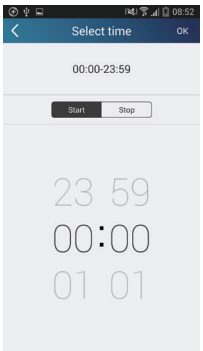
Step 2: Set time parameter for linkage. Tap "Time parameter" to enter the page "Set time". Slide rightwards to turn on the setting time.



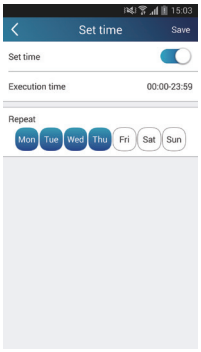


Tap "Execution time"; Then tap "Start" and "Stop" to set start time and stop time respectively. Tap "OK" at the top right corner to save the setting.

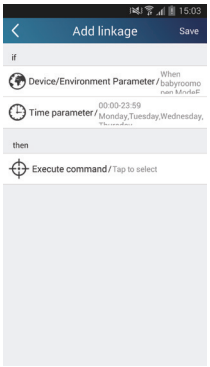




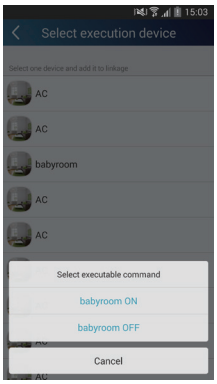
Tap the days below "Repeat" to select the repeating days. Then tap "Save".

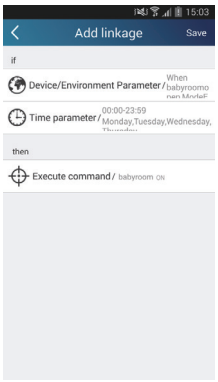


Step 3: Select "Execute command"
Tap "Execute command" and enter the page "Select device".

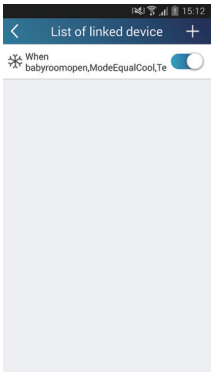


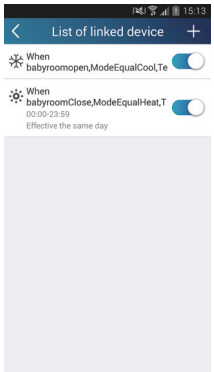
Tap the name of device that you want to control. Tap "ON" or "OFF" and then tap "Save" to complete the linkage.



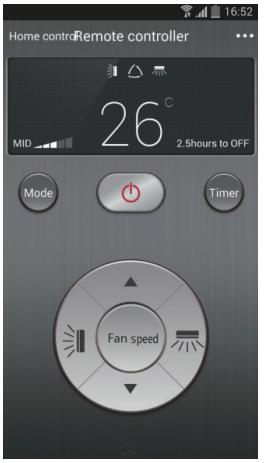


Tap "Save" and then repeat the above steps to set linkage of several scenes.





(5) Infrared control (only applicable to smart phone with infrared emitter).Function: Smart phone can be used as a remote controller. Tap  at the top right corner of the homepage "Device". Select "Infrared" and enter the page "Remote controller". Tap  and slide up to enter the page of advanced functions.



Tap  to turn on the device. Tap  to select mode. Tap  to adjust fan speed and swing angle. Tap "Health", "Energy saving", "Sleep" etc. to set advanced functions.

Tap "Sleep" to enter the page "DIY sleep". Tap the left and right arrows to set sleep time. Tap up and down arrows to adjust temperature at a specific sleep time.

Menu functions

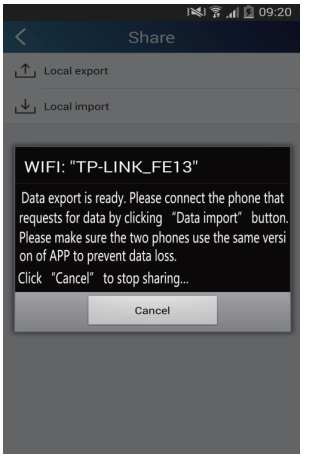
(1) Share: To share quick configuration information and units information, including local export and local import.

For local import, you just need to tap "Local import" and wait for the data download.

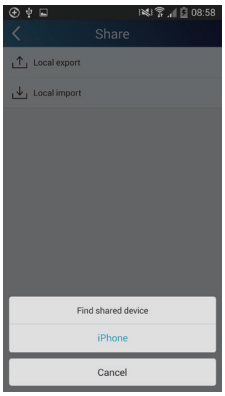
Local export

Step 1: Export local data to another smart phone.

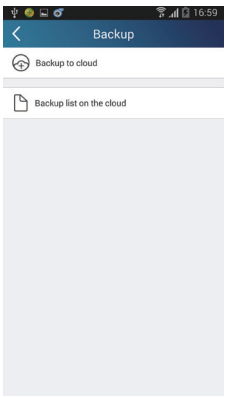
Enter menu page on the left side and tap "Share" to enter the page "Share". Then tap "Local export".



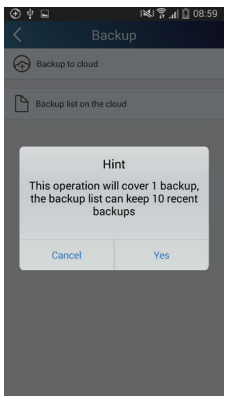
Step 2: Another smart phone to be imported.
Tap the model name and wait for the download.



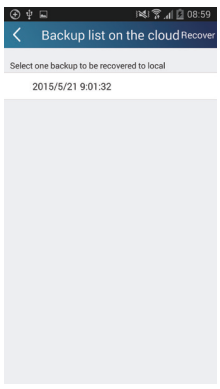
(2) Backup: To keep backup of the quick configuration information and units information, including backup to cloud and backup list on the cloud.
Backup to cloud
Enter the menu page on the left and tap "Backup".



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



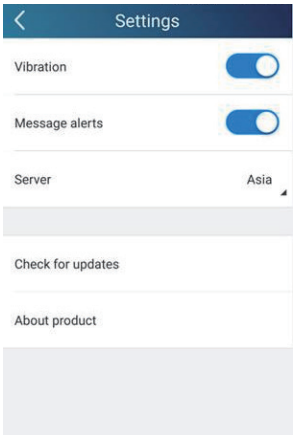
Select "Backup list on the cloud". Then backup records will appear. Tap "Record" to download data and recover data to local unit.



(3) Settings

User can set vibration, message alerts, server, updates, etc. The server setting here must keep the same as the server setting in "Configuration" mentioned before.

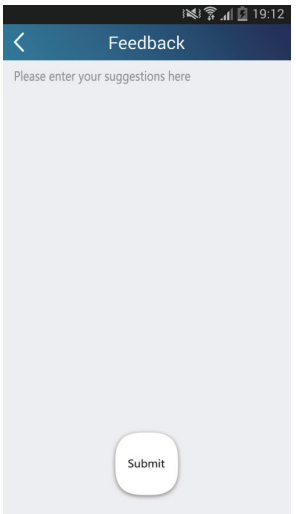
Otherwise, remote control will be invalid.



(4) Feedback

User can feedback suggestions to back-stage management for maintenance and development.

Tap "Feedback". Enter your suggestions and then submit it.



6.5 Brief Description of Modes and Functions

1.Basic function of system

(1)Cooling mode

(1) Under this mode, fan and swing operates at setting status. Temperature setting range is 16~30^{O}C.

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

(2)Drying mode

(1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 16~30^{O}C.

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

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

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

(3)Heating mode

(1) Under this mode, Temperature setting range is 16~30^{O}C.

(2) Working condition and process for heating mode:

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

(4)Working method for AUTO mode:

1.Working condition and process for AUTO mode:

a.Under AUTO mode, standard heating Tpreset=20^{O}C and standard cooling Tpreset=25^{O}C. The unit will switch mode automatically according to ambient temperature.

2.Protection function

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

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

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

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

(5)Fan mode

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

2. Other control

(1) Buzzer

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

(2) Auto button

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

(3) Auto fan

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

(4) Sleep

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

(5) Timer function:

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

(6) Memory function

memorize compensation temperature, off-peak energization value.

Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer cant be memorized).

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

(7) Health function

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

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

(8)I feel control mode

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

(9)Compulsory defrosting function

(1) Start up compulsory defrosting function

Under ON status, set heating mode with remote controller and adjust the temperature to 16^{O}C. Press "+, -, +, -, +,-" button successively within 5s and the complete unit will enter into compulsory defrosting status. Meanwhile, heating indicator on indoor unit will ON 10s and OFF 0.5s successively. (Note: If complete unit has malfunction or stops operation due to protection, compulsory defrosting function can be started up after malfunction or protection is resumed.

(2) Exit compulsory defrosting mode

After compulsory defrosting is started up, the complete unit will exit defrosting operation according to the actual defrosting result, and the complete unit will resume normal heating operation.

(10)Refrigerant recovery function:

(1) Enter refrigerant recycling function

Within 5min after energizing (unit ON or OFF status is ok), continuously press LIGHT button for 3 times within 3s to enter refrigerant recycling mode; Fo is displayed and refrigerant recycling function is started. At this moment, the maintenance people closes liquid valve. After 5min, stick the thimble of maintenance valve with a tool. If there is no refrigerant spraying out, close the gas valve immediately and then turn off the unit to remove the connection pipe.

(2) Exit refrigerant recycling function

After entering refrigerant recycling mode, when receive any remote control signal or enter refrigerant recycling mode for 25min, the unit will exit refrigerant recycling mode automatically If the unit is in standby mode before refrigerant recycling, it will be still in standby mode after finishing refrigerant recycling; if the unit is in ON status before refrigerant recycling, it will still run in original operation mode.

(11)Ambient temperature display control mode

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

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

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

(12)Off-peak energization function:

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

The time interval between two start-ups of compressor cant be less than 180+T s(0≤T≤15). T is the variable of controller. Thats to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time. After power recovery, compressor can only be started up after 180+T s at least.

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

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

(15) 8ºC heating function

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

(16) Turbo fan control function

Set turbo function under cooling or heating mode to enter into turbo fan speed. Press fan speed button to cancel turbo wind.

No turbo function under auto, dry or fan mode.

Outdoor Units

1. Input Parameter Compensation and Calibration

(1) Check the ambient temperature compensation function Indoor ambient temperature compensation function.

a. In cooling mode, the indoor ambient temperature participating in computing control = ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}}$)

b. In heating mode, the indoor ambient temperature participating in computing control= ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$)

(2) Check effective judgment controls of parameters

Effective judgment function of the outdoor exhaust temperature thermo-bulb When conditions a and b are satisfied, the outdoor exhaust temperature thermo-bulb is judged not to be connected into place, the mainboard of outer units will display failure of the outdoor exhaust temperature thermo-bulb (not connected into place), stop the machine for repairing, and resume the machine by remote controls of ON/OFF.

a. Judgment of exhaust detection temperature change:

After the compressor starts up and runs for 10 minutes, if the compressor frequency f ≥ 40Hz, and the rising value Texhaust ($T_{\text{exhaust (after start-up for 10 minutes)}} - T_{\text{exhaust (before start-up)}}$) < 2ºC , the outdoor exhaust temperature thermo-bulb can be judged not to be connected into place (judging once when the power is on the first time).

b. Comparative judgment of exhaust detection temperature and condenser detection temperature ($T_{\text{pipe temperature}} = T_{\text{outdoor pipe temperature in cooling mode}}$, $T_{\text{pipe temperature}} = T_{\text{indoor pipe temperature in heating mode}}$): After the compressor starts up and runs for 10 minutes, if the compressor frequency f ≥ 40Hz, and $T_{\text{pipe temperature}} \geq (T_{\text{exhaust}}+3$), the outdoor exhaust temperature thermobulb can be judged not to be connected into place (judging once when power is on the first time).

2. Basic Functions

(1) Cooling Mode

1. Conditions and processes of cooling operation:

(1) If the compressor is shut down, and [$T_{\text{set up}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})$] ≤ 0.5ºC, start up the machine for cooling, the cooling operation will start;

(2) During operations of cooling, if 0ºC ≤ [$T_{\text{set up}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})$] < 2ºC, the cooling operation will be still running;

(3) During operations of cooling, if 2ºC ≤ [$T_{\text{set up}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})$], the cooling operation will stop after reaching the temperature point.

2. Temperature setting range

(1) If $T_{\text{outdoor ambient temperature}} \geq [T_{\text{low-temperature cooling temperature}}]$, the temperature can be set at: 16~30ºC (Cooling at room temperature);

(2) If $T_{\text{outdoor ambient temperature}} < [T_{\text{low-temperature cooling temperature}}]$, the temperature can be set at: 25~30ºC (Cooling at low temperature), that is, the minimum setting temperature for outer units judgment is 25ºC .

(2) Dehumidifying Mode

1. Conditions and processes of dehumidifying operations: Same as the cooling mode;
2. The temperature setting range is: 16~30ºC ;

(3) Air-supplying Mode

1. The compressor, outdoor fans and four-way valves are switched off;
2. The temperature setting range is: 16~30ºC.

(4) Heating Mode

1. Conditions and processes of heating operations: (Tindoor ambient temperature is the actual detection temperature of indoor environment thermo-bulb, Theating indoor ambient temperature compensation is the indoor ambient temperature compensation during heating operations)

(1) If the compressor is shut down, and [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) $-T_{\text{set up}}$] ≤ 0.5ºC, start the machine to enter into heating operations for heating;

(2) During operations of heating, if 0ºC ≤ [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) $-T_{\text{set up}}$] < 2ºC, the heating operation will be still running;

(3) During operations of heating, if 2ºC ≤ [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) $-T_{\text{set up}}$], the heating operation will stop after reaching the temperature point.

2. The temperature setting range in this mode is: 16~30ºC .

3. Special Functions

Defrosting Control

① Conditions for starting defrosting

After the time for defrosting is judged to be satisfied, if the temperature for defrosting is satisfied after detections for continuous 3minutes, the defrosting operation will start.

② Conditions of finishing defrosting

The defrosting operation can exit when any of the conditions below is satisfied:

③ $T_{outdoor\ pipe\ temperature} \geq (T_{outdoor\ ambient\ temperature} - [T_{temperature\ 1\ of\ finishing\ defrosting}]$;

④ The continuous running time of defrosting reaches [tmax. defrosting time].

4. Control Logic

(1) Compressor Control

Start the compressor after starting cooling, heating, dehumidifying operations, and the outer fans start for 5s; When the machine is shutdown, in safety stops and when switching to air-supplying mode, the compressor will stop immediately. In all modes: once the compressor starts up, it will not be allowed to stop until having run for the [tmin. compressor running time] (Note: including cases of shutdown when the temperature point is reached; except the cases requiring stopping the compressor such as fault protection, remote shutdown, mode switching etc.); In all modes: once the compressor stops, it will be allowed be restart after 3-minute delay (Note: The indoor units have a function of power memory, the machine can be restarted after remote shutdown and powering up again without delay).

1. Cooling mode

Start the machine to enter into cooling operation for cooling, the compressor is switched on.

2. Dehumidifying mode

Same as the cooling mode.

3. Air-supplying mode

The compressor is switched off.

4. Heating mode

(1) Start the machine to enter into heating operation for heating, the compressor is switched on.

(2) Defrosting:

a. Defrosting starts: the compressor is shut down, and restarts it after 55-second delay.

b. Defrosting ends: the compressor stops, then starts it after 55-second delay.

(2) Outer Fans Control

Notes:

Only the outer fans run for at least 80s in each air flow speed can the air flow be switched;

After the outer fans run compulsively in high speed for 80s when the machine starts up, control the air flow according to the logic.

After remote shutdown, safety stops, and when the machine stops after reaching the temperature point, as well as after the compressor stops, extend 1 minute, the outer fans will stop (During the period in the 1 minute, the air flow of outer fans can be changed according to the outdoor ambient temperature changes); When running with force, the outdoor fans shall run in the highest air flow.

(3) 4-way valve control

1. The 4-way valve control under the modes of Cooling, dehumidification and supplying air: closing;

2. The status of 4-way valve control under the heating mode: getting power;

(1) 4-way valve power control under heating mode

Starts the machine under heating mode, the 4-way valve will get power immediately.

(2) 4-way valve power turn-off control under heating mode

a. When you should turn off the power or switch to other mode under heating mode, the power of 4-way valve will be cut after 2 minutes of the compressor stopped.

b. When all kinds of protection stops, the power of 4-way valve will be cut after delaying 4 minutes.

(3) Defrosting control under heating mode:

a. Defrosting begins: The power of 4-way valve will be cut after 50s of entering into the defrosting compressor.

b. Defrosting stops: The 4-way valve will get power after 50s of exiting the defrosting compressor.

(4) Evaporator frozen-preventing protection function

At the mode of Cooling, dehumidifying:

Evaporator frozen-preventing protection function is allowed to begin after 6 min of starting the compressor.

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{inner\ pipe}$>[$T_{frozen\text{-}preventing\ frequency\text{-}limited\ temperature}$ (the temperature of hysteresis is 2)], the machine is only allowed to start for operating, otherwise it should not be started, and should be stopped to treat according to the frozen-preventing protection: Clear the trouble under the mode of power turn-off / heating, and the protection times are not counted.

2. Frequency limited

[$T_{frozen\text{-}preventing\ normal\ speed\ frequency\text{-}reducing\ temperature}$]≤$T_{inner\ pipe}$[$T_{frozen\text{-}preventing\ frequency\text{-}limited\ temperature}$] , you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed:

If [$T_{frozen\text{-}preventing\ high\ speed\ frequency\text{-}reducing\ temperature}$]≤$T_{inner\ pipe}$ [$T_{frozen\text{-}preventing\ normal\ speed\ frequency\text{-}reducing\ temperature}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit;

4. Reducing frequency at high speed:

If [$T_{frozen\text{-}preventing\ power\ turn\text{-}off\ temperature}$]≤$T_{inner\ pipe}$ [$T_{frozen\text{-}preventing\ high\ speed\ frequency\text{-}reducing\ temperature}$] you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit;

5. Power turn-off:

If the $T_{inner\ pipe}$ <[$T_{frozen\text{-}preventing\ power\ turn\text{-}off\ temperature}$], then frozen-preventing protect to stop the machine; If T[$_{frozen\text{-}preventing\ frequency\text{-}limited\ temperature}$] <$T_{inner\ pipe}$, and the compressor has stopped working for 3 minutes, the whole machine should be allowed to operate.

6. If the frozen-preventing protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t evaporator frozen-preventing protection times zero clearing time , the times of frozen-preventing power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, mode transferring will not clear it).

(5) Overload protection function

Overload protection function at the mode of cooling and dehumidifying

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{outer\ pipe}$ <[$T_{Cooling\ overload\ frequency\text{-}limited\ temperature}$] (the temperature of hysteresis is 2ºC), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection: Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

2. Frequency limited

If [$T_{Cooling\ overload\ frequency\text{-}limited\ temperature}$] ≤$T_{outer\ pipe}$ [$T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$], you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and power turn-off:

If [$T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}$] ≤$T_{outer\ pipe}$< [$T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}$] , you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$]≤$T_{outer\ pipe}$, then Cooling overload protects machine stopping;

4. Reducing frequency at high speed and stop machine:

If [$T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}$]≤$T_{outer\ pipe}$ [$T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}$], you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$] ≤[$T_{outer\ pipe}$], then Cooling overload protects machine stopping;

5. Power turn-off:

If the [$T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}$]≤$T_{outer\ pipe}$, then Cooling overload protects machine stopping; If [$T_{outer\ pipe}$]<[$T_{Cooling\ overload\ frequency\text{-}limited\ temperature}$]and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.

6. If the Cooling overload protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t overload protection times zero clearing time , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, transferring mode will not clear it).

Overload protection function at the mode of heating

Starting estimation :

After the compressor stopped working for 180s, if T inner pipe T heating overload frequency-limited temperature (the temperature of hysteresis is 2), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection:

Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

1. Frequency limited

If [$T_{heating\ overload\ frequency\text{-}limited\ temperature}$]≤$T_{inner\ pipe}$ <[$T_{heating\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$] , you should limit the frequency raising of compressor.

2. Reducing frequency at normal speed and stopping machine:

If T[heating overload frequency reducing temperature at normal speed]≤$T_{inner\ pipe}$<[Theating overload frequency reducing temperature at high speed], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if $T_{heating\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$ ≤$T_{inner\ pipe}$, then overload protects machine stopping;

3. Reducing frequency at high speed and power turn-off:

If [Theating overload frequency reducing temperature at high speed]≤$T_{inner\ pipe}$<[Theating overload power turn-off temperature], you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if T heating overload frequency reducing temperature at normal speed ≤T outer pipe, then Cooling overload protects machine stopping;

4. Power turn-off:

If the [$T_{heating\ overload\ power\ turn\text{-}off\ temperature}$] ≤$T_{inner\ pipe}$, then overload protects machine stopping; If T inner pipe T heating overload frequency-limited temperature and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.

5. If the overload protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t overload protection times zero clearing time , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, transferring mode will not clear it). Protective function for discharge temperature of compressor

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{Discharge}$<$T_{Discharge\ limited\ temperature}$ (the temperature of hysteresis is 2ºC), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the discharge temperature:

The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.

2. Frequency limited

If [$T_{Limited\ frequency\ temperature\ during\ discharging}$] ≤$T_{Discharge}$<[$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] , you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and stopping machine:

If [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$<[$T_{frequency\ reducing\ temperature\ at\ high\ speed\ during\ discharging}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping;

4. Reducing frequency at high speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ high\ speed\ during\ discharging}$] ≤$T_{Discharge}$ <[$T_{Stop\ temperature\ during\ discharging}$], you should adjust

the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping;

5. Power turn-off:

If the [$T_{Power\ turn\text{-}off\ temperature\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping; If [$T_{Discharge}$]<[$T_{Limited\ frequency\ temperature\ during\ discharging}$] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

6. If the discharging temperature protection of compressor continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the t Protection times clearing of discharge , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble can not be resumed, mode transferring also will not clear it).

7. Frequency limited

If [$I_{Limited\ frequency\ when\ overcurrent}$] ≤$I_{AC\ Electric\ current}$ <[$I_{frequency\ reducing\ when\ overcurrent}$], you should limit the frequency raising of compressor.

8. Reducing frequency:

If [$I_{Frequency\ reducing\ when\ overcurrent}$] ≤[$I_{AC\ Electric\ current}$ I Power turn-off when overcurrent] , you should reduce the compressor frequency till the lower limit or exit the frequency reducing condition;

9. Power turn-off:

If [$I_{Power\ turn\text{-}off\ machine\ when\ overcurrent}$] ≤[$I_{AC\ Electric\ current}$] , you should carry out the overcurrent stopping protection; If I AC Electric current<[T Limited frequency when overcurrent] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

10. If the overcurrent protection continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ over\ current}$] , the discharge protection is cleared to recount.

(6)Voltage sag protection

After start the compressor, if the time of DC link Voltage sag [$U_{Sagging\ protection\ voltage}$] is measured to be less than t Voltage sag protection time , the machine should be stop at once, hand on the voltage sag trouble, reboot automatically after 30 minutes.

(7)Communication fault

When you have not received any correct signal from the inner machine in three minutes, the machine will stop for communication fault. When you have not received any correct signal from driver IC (aim to the controller for the separating of main control IC and driver IC), and the machine will stop for communication fault. If the communication is resumed, the machine will be allowed to operate.

(8)Module protection

Testing the module protective signal immediately after started, once the module protective signal is measured, stop the machine with module protection immediately. If the module protection is resumed, the machine will be allowed to operate. If the module protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. If the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ module}$] , the module protection is cleared to recount.

(9)Module overheating protection

1. Starting estimation:

After the compressor stopped working for 180s, if T_{Module}<[$T_{Module\ frequency\ limited\ temperature}$](the temperature of hysteresis is 2), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the module overheating protection: The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.

2. Frequency limited

If [$T_{Limited\ frequency\ temperature\ of\ module}$] ≤$T_{Module}$ <[$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] , you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$<[$T_{frequency\ reducing\ temperature\ at\ high\ speed\ of\ module}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection;

4. Reducing frequency at high speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ high\ speed\ of\ module}$]≤$T_{Module}$ <[$T_{Power\ turn\text{-}off\ temperature\ of\ module}$] you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection;

5. Power turn-off:

If the [$T_{Power\ turn\text{-}off\ temperature\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection; If T_{Module} <[$T_{Limited\ frequency\ temperature\ of\ module}$] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

6. If protection continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ module}$] , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble can not be resumed, mode transferring also will not clear it).

(10)Compressor overloads protection

If you measure the compressor overload switch action in 3s, the compressor should be stopped for overloading. The machine should be allowed to operate after overload protection was measured to resume. If the overloading protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. The protection times of compressor is allowed to clear after the compressor run [$t_{Protection\ times\ clearing\ of\ compressor\ overloading}$] 30 minutes.

(11)Phase current overcurrent protection of compressor

During the running process of compressor, you could measure the phase current of the compressor, and control it according to the following steps:

1. Frequency limited

If [$I_{Limited\ frequency\ phase\ current}$] ≤[$I_{Phase\ current\ T\ frequency\ reducing\ phase\ current}$] , you should limit the frequency raising of compressor.

2. Reducing Frequency

If [$I_{Frequency\ Reducing\ Phase\ Current}$]≤I Phase Current<[$I_{Power\ Turn\text{-}Off\ Phase\ Current}$], the compressor shall continue to reduce frequency till the lowest frequency limit or out of the condition of reducing frequency;

3. Power turn-off

If [$I_{Phase\ Current}$]≥[$I_{Power\ Turn\text{-}Off\ Phase\ Current}$], the compressor phase current shall stop working for overcurrent protection; if [$I_{Phase\ Current}$]≤[$I_{Frequency\ Reducing\ Phase\ Current}$], and the compressor have stopped working for 3 min, the machine shall be allowed to operate;

4. If the overcurrent protection of compressor phase current continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Clearing\ Time\ of\ Compressor\ Phase\ Current\ Times}$] , the overcurrent protection is cleared to recount.

(12) Starting-up Failure Protection for Compressor

Stop the compressor after its starting-up fails, restart it after 20s if the fault doesnt shows, and if they are all failing for the successive start 3 times, it shall be reported as Starting-up Failure, and then restart up it after 3 min. When it still not be able to operate through carry out the above process for 5 times, it is available if press ON/OFF. And the compressor should be cleared the times after it run 2 min.

(13) Out-of-Step Protection for Compressor

The out-of-step protection signal should be detected immediately after starting-up compressor, and once find the out-of-step protection signal, the out-of-step protection shall be stopped; if it can run for lasting power turn-off 3 min, the machine shall be allowed to operate. If it still cant run automatically when the out-of-step protection for compressor happens to stop working for 6 times in succession, it needs to press ON/OFF to operate. And if the running time is more than 10 min, the power turn-off times for out-of-step protection shall be cleared and recounted.

(14) Voltage Abnormity Protection for DC Bus

To detect voltage abnormity protection for dc bus after completing the pre-charge:

1.Over-High Voltage Protection for DC Bus:

If it found the DCbus voltage U_{DC}>[$U_{DC\ Jiekuangchun\ Protection}$], turn off PFC and stop the compressor at once, and it shall show the DC over-high voltage failure; it should clear out the failure when the voltage dropped to U_{DC}<[$U_{DC\ Jiekuangchun\ Recovery}$] and the compressor stopped for 3 min.

2.Over-Low Voltage Protection for DC Bus:

If it found the DC bus voltage U_{DC}<[$U_{DC\ Wantuochun\ Protection}$], turn off PFC and stop the compressor at once, and it shall show the DC over-low voltage; and it should clear out the failure when the voltage raised to U_{DC}>[$U_{DC\ Wantuochun\ Recovery}$] and the compressor stopped for 3 min.

3.To detect voltage abnormity protect for DC bus when getting electricity:

If it found the DC bus voltage U_{DC}>[$U_{DC—Over\text{-}High\ Voltage}$], turn off the relay at once, and shows voltage abnormity failure for DC Bus. And the failure cant recover except to break off and get the electricity.

(15)Abnormity Protection for Four-way Valve

Under the model of heating operation in good condition: the compressor is detected [$T_{Inner\ Tube}$<($T_{Inner\ Ring}$-$T_{Abnormity\ Temperature\ Difference\ For\ Four\text{-}Way\ Valve\ Reversion}$)], during the running, it should be regarded as four-way valve reversion abnormity. And then it can run if stop the reversion abnormity protection for four-way valve 3 min; and if it still cant run when the reversion abnormity protection for four-way valve happens to stop working for 3 times in succession, it is available if presses ON/OFF.

Attention: the protection shall be shielded during the testing mode and defrosting process, and it shall be cleared out the failure and its times immediately when turning off or delivering wind / cooling / dehumidifying mode conversed (the inverted mode dont clear out the failure when it cant recover to operate).

(16) PFC Protection

1. After start up the PFC, it should detect the protection signal of PFC immediately; under the condition of PFC protection, it should turn off the PFC and compressor at one time;
2. It shows the failure is cleared out if PFC Protection stopped working 3 min and recovers to run automatically;
3. If it still cant run when it occurs PFC protection for 3 times in succession, it is available if presses ON/OFF; and clear the PFC Protection times when start up PFC for 10min.

(17) Failure Detection for Sensor

1. Outdoor Ambient Sensor: detect the failure of sensor at all times.
2. Outdoor Tube Sensor: You should not detect the failure of outdoor tube sensor within 10 minutes heating operation compressor except the defrosting, and you could detect it at other time.
3. Outdoor Exhaust Sensor:

(a) The compressor only detect the sensor failure after it start up 3 min in normal mode;

(b) It should detect the exhaust sensor failure immediately in the testing mode.

4. Module Temperature Sensor:

(a) Short-Circuit Detection: the compressor should be detected immediately when the module temperature sensor occurs short-circuits;

(b) Open-Circuit Detection: the compressor should be detected on open-circuit when it runs 3min (it neednt 30s avoiding the module over-heated).

(c) Detect the sensor failure at all times in the testing mode.

5. Disposal for Sensor Protection

(1) When the short-circuit of sensor is detected within 30s, It is regarded as the temperature of sensor over-high (or infinitely high), and now according to the over-high sensor, the machine should carry out the corresponding protection to stop working, and show the corresponding temperature shutdown protection and sensor failure at the same time (for example: the compressor stops immediately when the outdoor tube sensor short-circuit, and the machine shall show the overload protection and outdoor tube sensor failure).

(2) When the open-circuit of sensor is detected within 30s, The protection shall be stopped and it shall show the corresponding sensor failure.

6. Electric Heating Function of Chassis

(1) When $T_{outdoor\ amb.} \leq 0^{\circ}C$, the electric heating of chassis will operate;

(2) When $T_{outdoor\ amb.} > 2^{\circ}C$, the electric heating of chassis will stop operation;

(3)When $0^{\circ}C < T_{outdoor\ amb.} \leq 2^{\circ}C$, the electric heating of chassis will keep original status.

7. Electric Heating Function of Compressor

(1) When $T_{outdoor\ amb.} \leq -5^{\circ}C$, compressor stops operation, while the electric heating of compressor starts operation;

(2) When $T_{outdoor\ amb.} > -2^{\circ}C$, the electric heating of compressor stops operation;

(3) When $-5^{\circ}C < T_{outdoor\ amb.} \leq -2^{\circ}C$, the electric heating of compressor will keep original status.

Part Ⅱ : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

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

Please follow the instructions below.

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

Warnings

Electrical Safety Precautions:

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

Installation Safety Precautions:

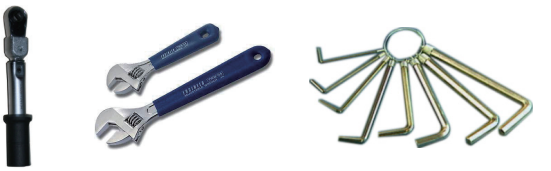
1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the indoor unit and outdoor unit, a sufficient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

Refrigerant Safety Precautions:

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

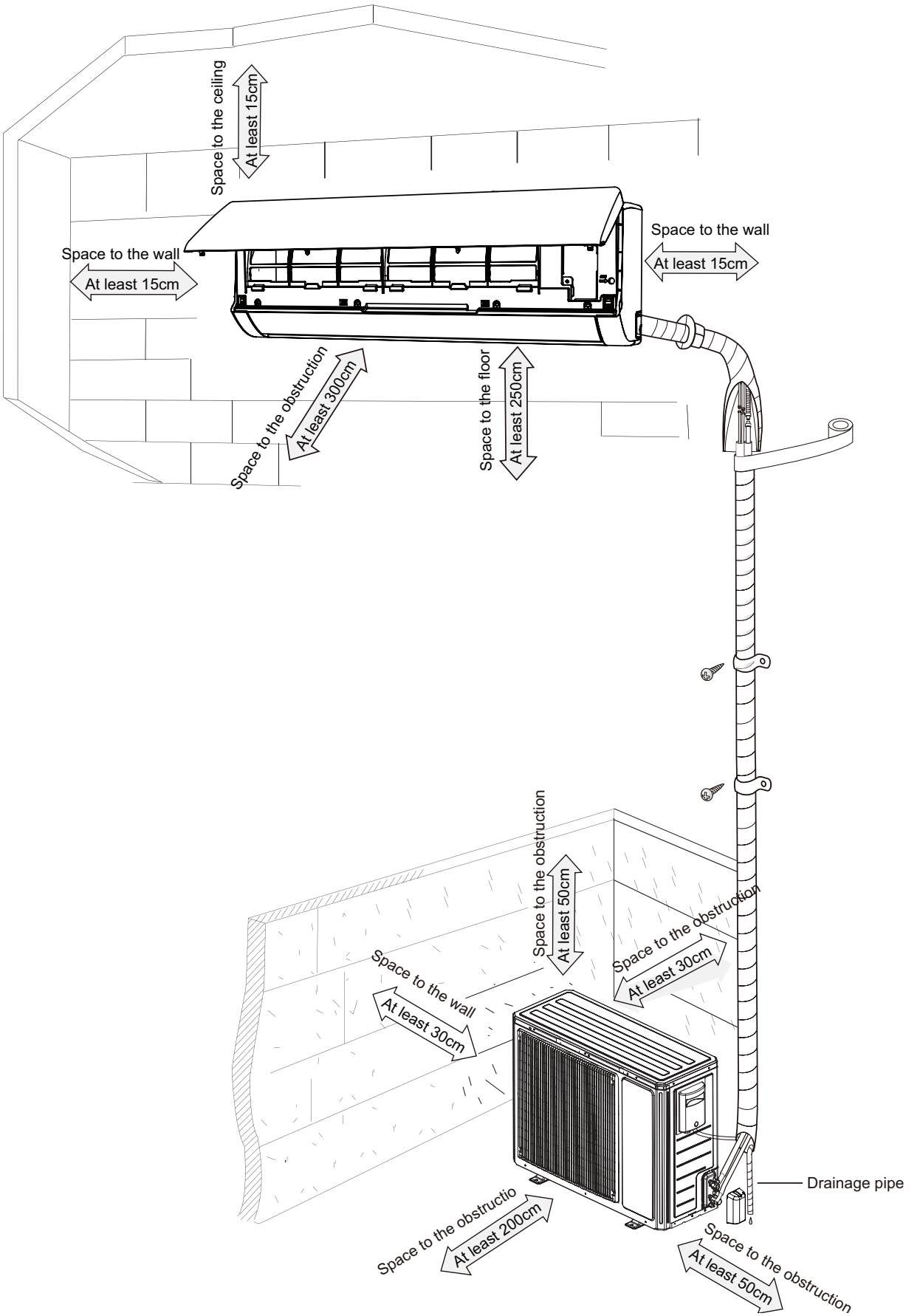
Improper installation may lead to fire hazard, explosion, electric shock or injury.

Main Tools for Installation and Maintenance

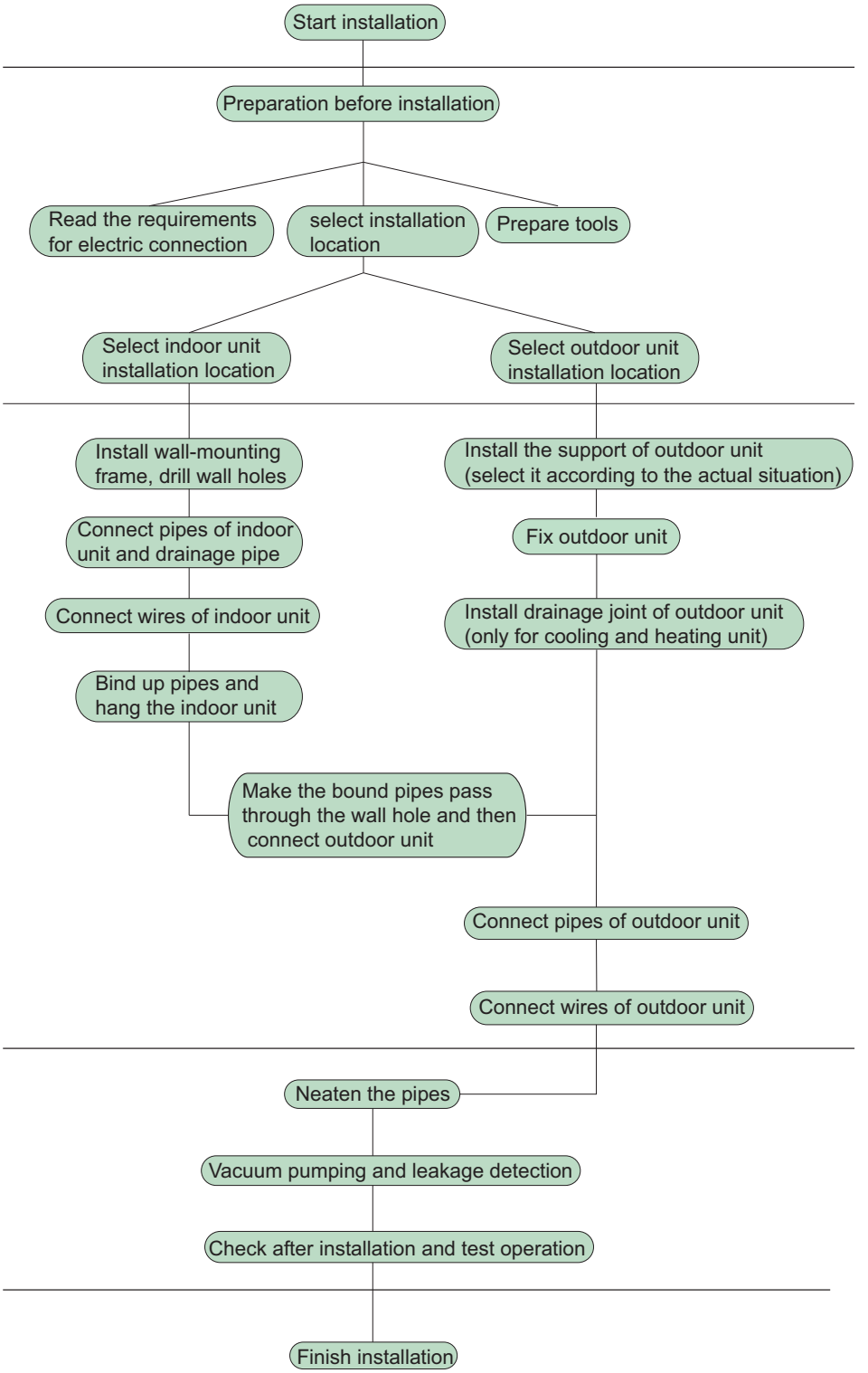
1. Level meter, measuring tape 	**2. Screw driver** 	**3. Impact drill, drill head, electric drill** 
4. Electroprobe 	**5. Universal meter** 	**6. Torque wrench, open-end wrench, inner hexagon spanner** 
7. Electronic leakage detector 	**8. Vacuum pump** 	**9. Pressure meter** 
10. Pipe pliers, pipe 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	Owners manual, remote controller
7	Wall pipe		

⚠ **Note:**

1.Please contact the local agent for installation.

2.Dont use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

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

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

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

(3) The place near coast area.

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

(5) The place with sulfureted gas.

(6) Other places with special circumstances.

(7) The appliance shall nost be installed in the laundry.

2. Indoor Unit:

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

(2) Select a location where the condensation water can be dispersed easily andwont affect other people.

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

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

(5) The location should be able to withstand the weight of indoor unit and wont increase noise and vibration.

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

(7) Dont install the indoor unit right above the electric appliance.

(8) Please try your best to keep way from fluorescent lamp.

3. 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 Electric Connection Requirement

1. Safety Precaution

(1) Must follow the electric safety regulations when installing the unit.

(2) According to the local safety regulations, use qualified power supply circuit and air switch.

(3) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock,fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.

Air-conditioner	Air switch capacity
18K	16A
24K	25A

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

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

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

(7) For appliances with type Y attachment,the instructions shall contain the substance of thefollowing.If the supply cord is damaged,it must be replaced by the manufacturer,its service agent or similarly qualified persons in order to avoid a hazard.

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

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

2. Grounding Requirement:

(1) The air conditioner is first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.

(2) The yellow-green wire in air conditioner is grounding wire, which cant be used for other purposes.

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

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

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

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

8.5 Installation of Indoor Unit

1. Choosing Installation location

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

2. Install Wall-mounting Frame

(1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.

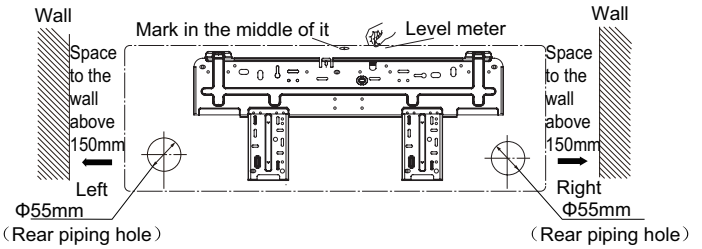
(2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic expansion particle) and then fill the plastic expansion particles

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

3. Install Wall-mounting Frame

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

18K:



24K:

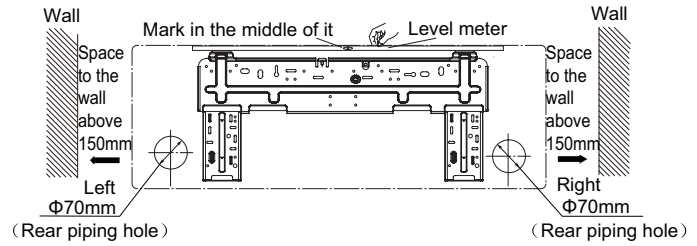


Fig.1

(2) Open a piping hole with the diameter of Φ55(70)mm on the selected outlet pipe position.In order to drain smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of 5-10°.(As show in Fig.2)

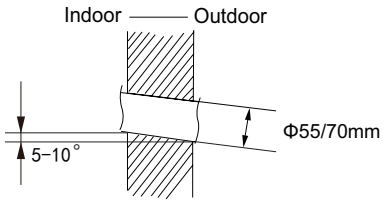


Fig.2

⚠ **Note:**

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

4. Outlet Pipe

(1) The pipe can be led out in the direction of right, rear right, left or rear left.(As show in Fig.3)
(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.(As show in Fig.4)

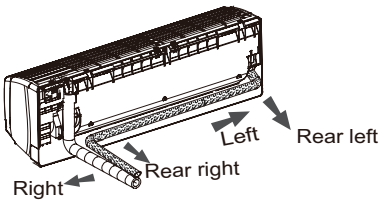


Fig.3

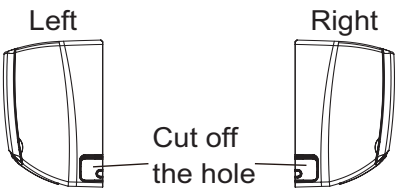


Fig.4

5. Connect the Pipe of Indoor Unit

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

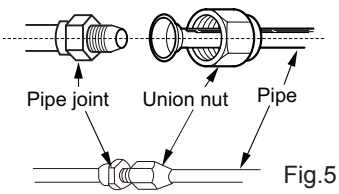


Fig.5

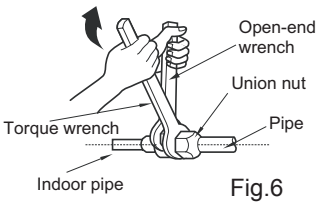


Fig.6

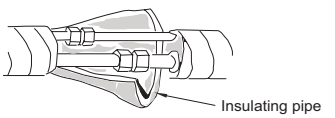


Fig.7

Refer to the following table for wrench moment of force:

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

6. Install Drain Hose

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

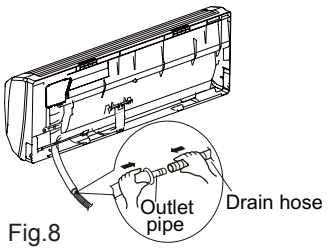


Fig.8

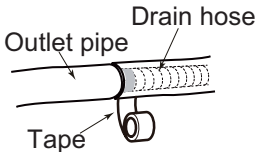


Fig.9

⚠ **Note:**

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

(2) The plastic expansion particles are not provided.

(As show in Fig.10)

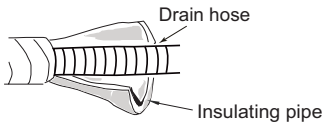


Fig.10

7. Connect Wire of Indoor Unit

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

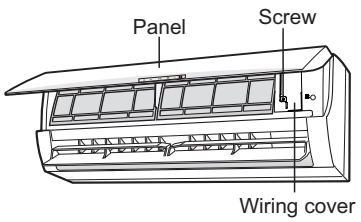


Fig.11

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

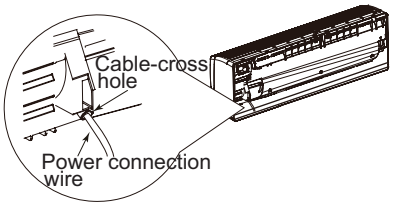
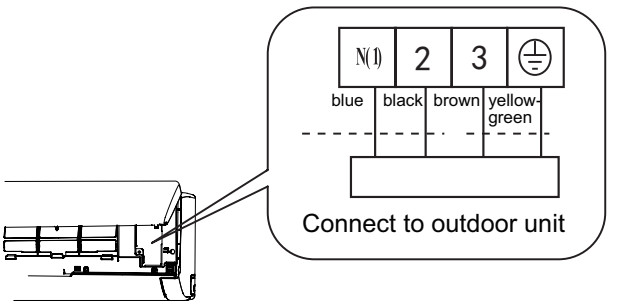


Fig.12

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



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

Fig.13

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

(5) Close the panel.

⚠ **Note:**

(1) All wires of indoor unit and outdoor unit should be connected by a professional.

(2) If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.

(3) For the air conditioner with plug, the plug should be reachable after finishing installation.

(4) For the air conditioner without plug, an air switch must be installed in the line. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

8. Bind up Pipe

(1) Bind up the connection pipe, power cord and drain hose with the band.(As show in Fig.14)

(2) Reserve a certain length of drain hose and power cord for installation when binding 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.

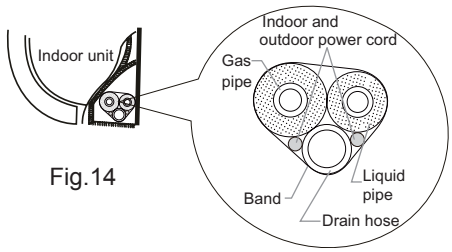


Fig.14

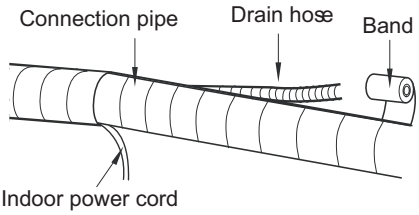


Fig.15

⚠ **Note:**

(1) The power cord and control wire cant be crossed or winding.

(2) The drain hose should be bound at the bottom.

9. Hang the Indoor Unit

(1) Put the bound pipes in the wall pipe and then make them pass through the wall hole.

(2) Hang the indoor unit on the wall-mounting frame.

(3) Stuff the gap between pipes and wall hole with sealing gum.

(4) Fix the wall pipe.(As show in Fig.16)

(5) Check if the indoor unit is installed firmly and closed to the wall.(As show in Fig.17)

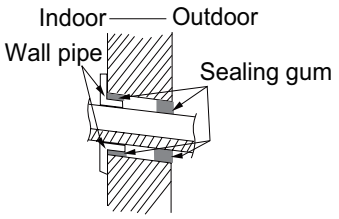


Fig.16

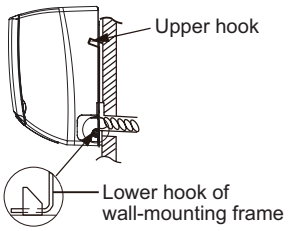


Fig.17

⚠ **Note:**

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

8.6 Installation of Outdoor Unit

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

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

⚠ **Note:**

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

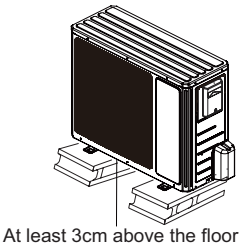


Fig.18

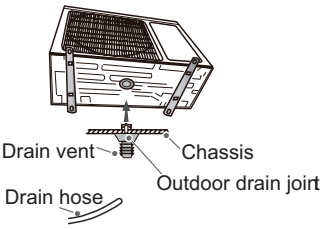


Fig.19

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

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

3. Fix Outdoor Unit

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

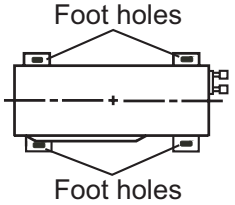


Fig.20

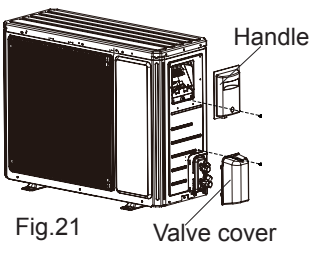


Fig.21

4. Connect Indoor and Outdoor Pipes

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

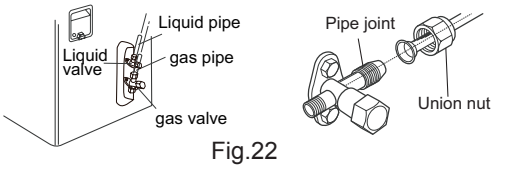


Fig.22

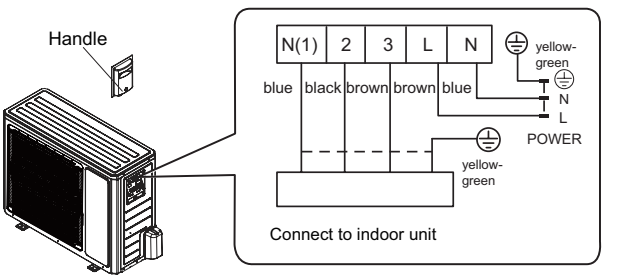
(3) Pretightening the union nut with hand.
(4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force:

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

5. Connect Outdoor Electric Wire

(1) Remove the wire clip; connect the power connection wire and power card to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)



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

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)

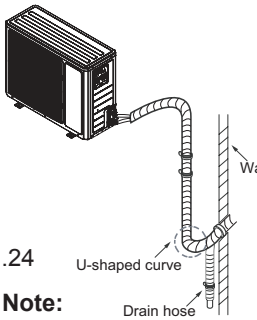


Fig.24

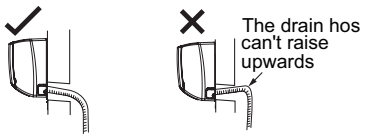


Fig.25

⚠ **Note:**

(1) The through-wall height of drain hose shouldnt be higher than the outlet pipe hole of indoor unit.(As show in Fig.25)

(2) Slant the drain hose slightly downwards. The drain hose cant be curved, raised and fluctuant, etc.(As show in Fig.26)

(3) The water outlet cant be placed in water in order to drain smoothly.(As show in Fig.27)

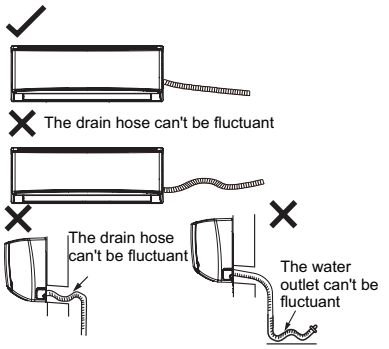


Fig.26

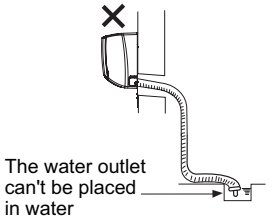


Fig.27

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)

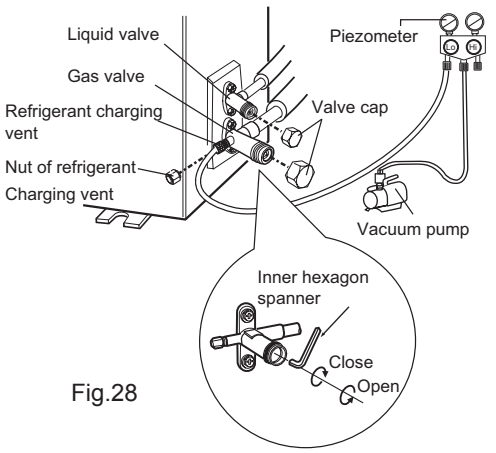


Fig.28

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, theres a leakage.

8.8 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

NO.	Items to be checked	Possible malfunction
1	Has the unit been installed firmly?	The unit may drop, shake or emit noise.
2	Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating) capacity.
3	Is heat insulation of pipeline sufficient?	It may cause condensation and water dripping.
4	Is water drained well?	It may cause condensation and water dripping.
5	Is the voltage of power supply according to the voltage marked on the nameplate?	It may cause malfunction or damage the parts.
6	Is electric wiring and pipeline installed correctly?	It may cause malfunction or damage the parts.
7	Is the unit grounded securely?	It may cause electric leakage.
8	Does the power cord follow the specification?	It may cause malfunction or damage the parts.
9	Is there any obstruction in air inlet and air outlet?	It may cause insufficient cooling (heating).
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.

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 cant start cooling.

9. Maintenance

9.1 Malfunction Display of Indoor Unit

1. Malfunction display requirement

When there are several malfunctions, they will be displayed circularly.

2. Malfunction display method

(1) Hardware malfunction: immediate display; refer to “malfunction display table”;

(2) Operation state: immediate display; refer to “malfunction display table”;

(3) Other malfunctions: it is displayed after the compressor stops for 200s; refer to “malfunction display table”.

Note: when the compressor is restarted, the malfunction display delay time (200s) is cleared.

(4) When the unit is under limit frequency or frequency drop state, the display can be controlled via remote controller.

3. Display control via remote controller

Enter display control: press light button successively for 6 times within 3s to display the corresponding malfunction code;

Exit display control: pressing light button successively for 6 times within 3s or after display is shown for 5min, the display will terminate.

Display under test state

Dual 8 nixie tube display: minimum cooling (heating)-P0; middle cooling (heating)-P3

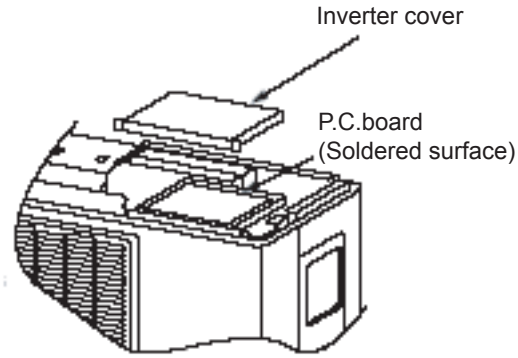
Nominal cooling (heating) –P1; maximum cooling (heating) –P2;

●Error Code List

Malfunction Name	Dual-8 Nixie Tube
Malfunction of jumper cap	C5
No feedback from indoor units motor	H6
Circuit malfunction of zero crossing detection	U8
Indoor ambient temperature sensor is open/short-circuited	F1
Indoor evaporator temperature sensor is open/short-circuited	F2
Module temperature sensor is open/short-circuited	P7
Outdoor ambient temperature sensor is open/short-circuited	F3
Outdoor condenser tube temperature sensor is open/short-circuited	F4
Outdoor discharge temperature sensor is open/short-circuited	F5
Communication malfunction between indoor and outdoor units	E6
Malfunction of phase current circuit detection for compressor	U1
Module temperature protection	P8
Charging malfunction of capacitor	PU
Overload protection of compressor	H3
Freon recovery mode	Fo
Failure start-up of compressor	LC
Discharge high-temperature protection of compressor	E4
Overload protection	E8
Overcurrent protection of the complete unit	E5
Overcurrent protection of phase current	P5
Desynchronizing of compressor	H7
Module current protection (IPM protection)	H5
Low voltage protection of DC bus bar	PL
High voltage protection of DC bus bar	PH
PFC protection	HC
Limit/decrease frequency due to current protection of the complete unit	F8
Limit/decrease frequency due to module current protection (phase current)	En
Limit/decrease frequency due to discharge	F9
Limit/decrease frequency due to freeze protection	FH
Limit/decrease frequency due to overload	F6
Limit/decrease frequency due to module temperature protection	EU
Cold air prevention protection	E9
Freeze protection	E2
Malfunction of ODU DC fan	L3
Malfunction of detecting plate (WIFI)	JF

Note: Please refer to service manual for the troubleshooting procedure for outdoor unit.

●Discharging method
(1) remove the inverter cover(Outdoor Unit)



(2)As shown below,connect the discharge resistance(approx.100Ω20W)or plug of the sold ering iron to voltage between + - terminals of the electrolytic capacitor on PC Board for 30s, and then peformedischarging.

NOTE:
A large-capacity electrolytic capacitor is used in the outdoor unit controller(inverter).Therefore,if the power supply is turned off,charge(charging voltage DC280V to 380V)remains and disc harging takes a lot of time.. After turning off the power source,if touching the charging section before discharging, an electrical shock may be caused. Discharge the electrol ytic capacitor completely by using soldering iron,etc.

9.2 Procedure of Troubleshooting

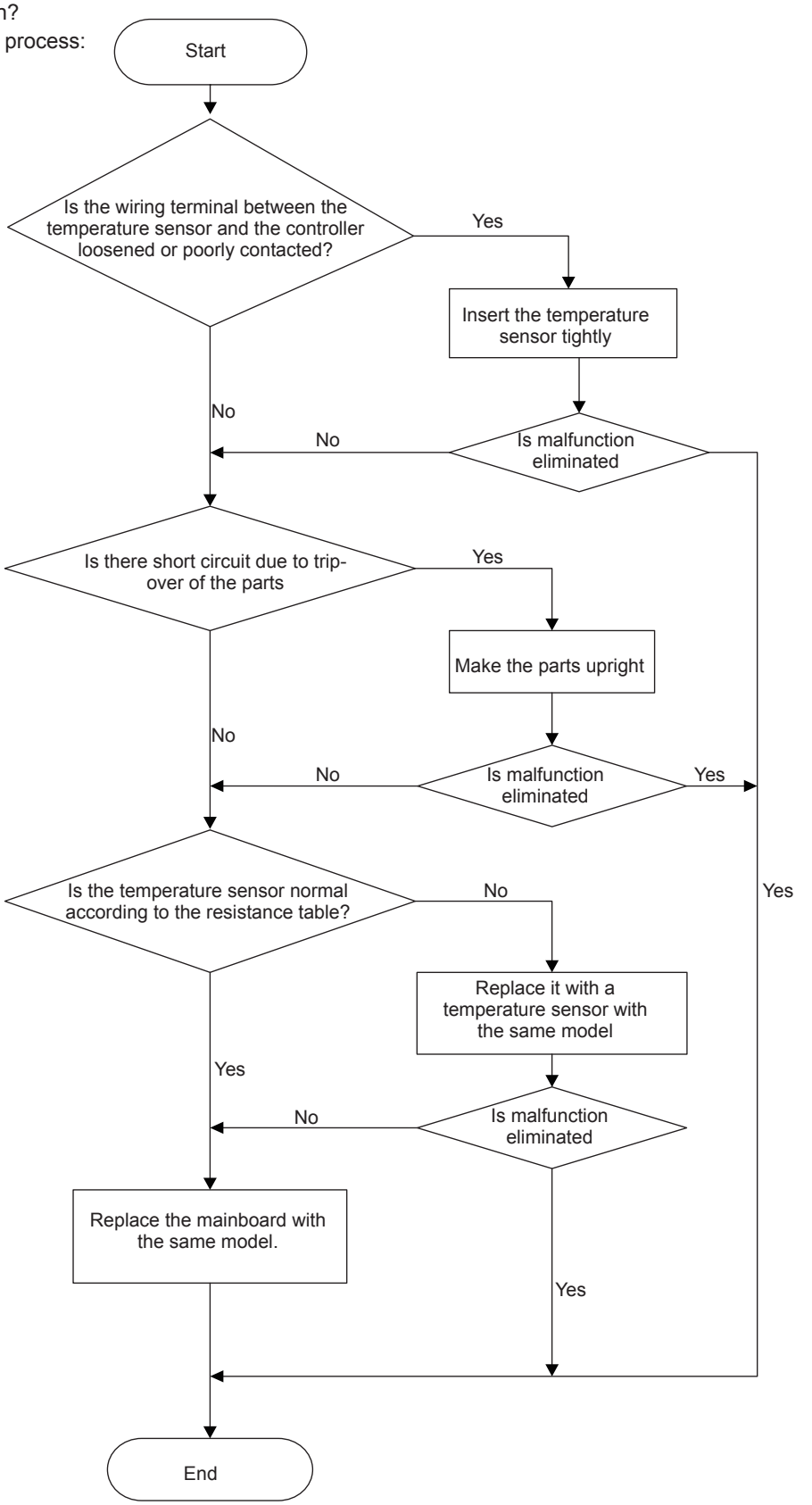
Indoor unit

(1) Malfunction of Temperature Sensor F1, F2

Main detection points:

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

Malfunction diagnosis process:

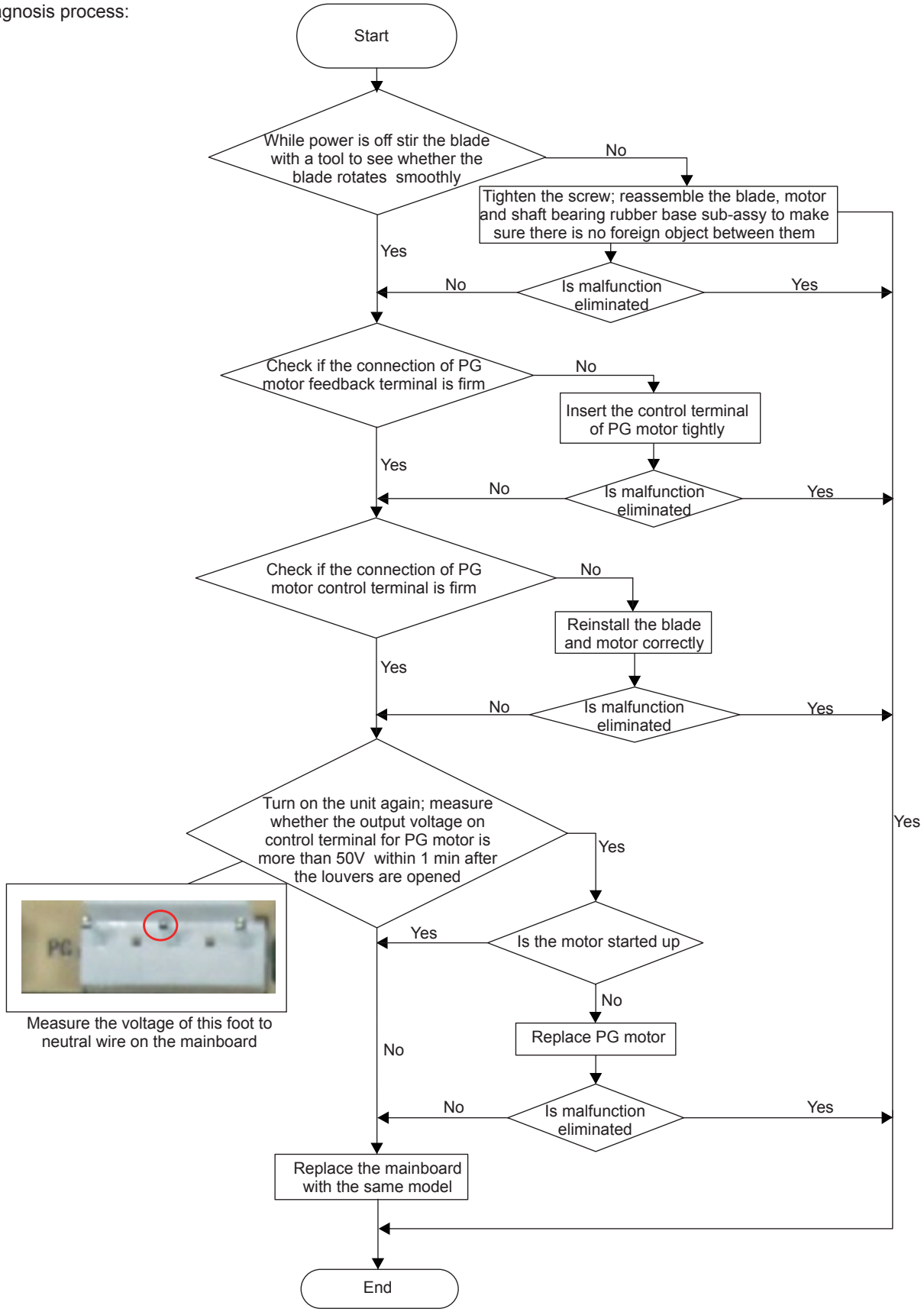


(2) Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothlyls the control terminal of PG motor connected tightly?
- Smoothlyls the feedback interface of PG motor connected tightly?
- The fan motor cant operate?
- The motor is broken?
- Detectioncircuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

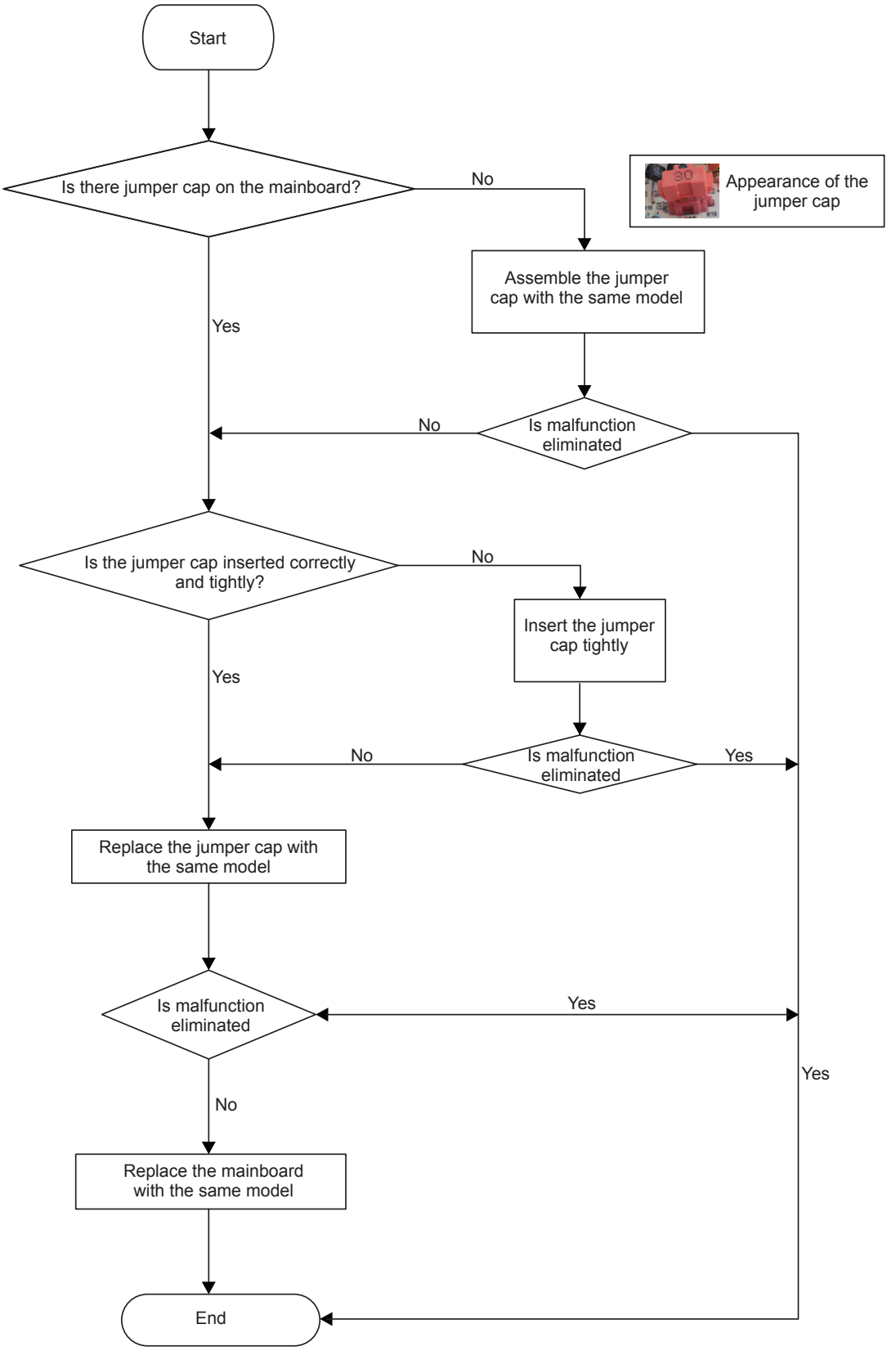


(3) Malfunction of Protection of Jumper Cap C5

Main detection points:

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

Malfunction diagnosis process:



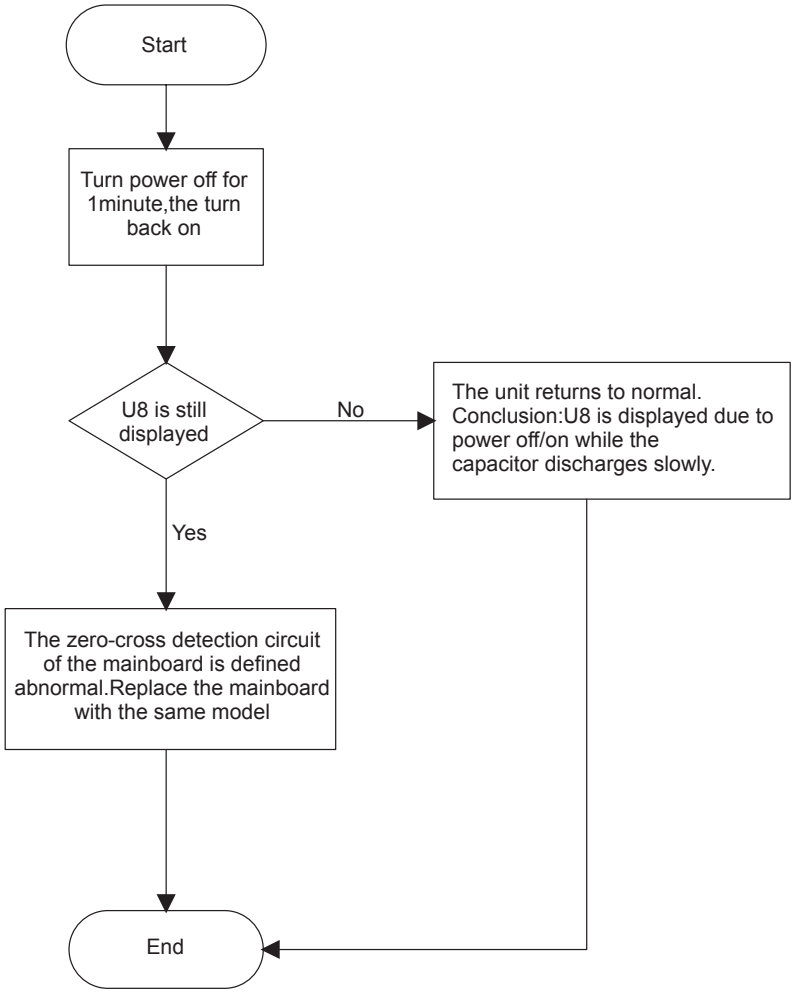
(4) Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

Main detection points:

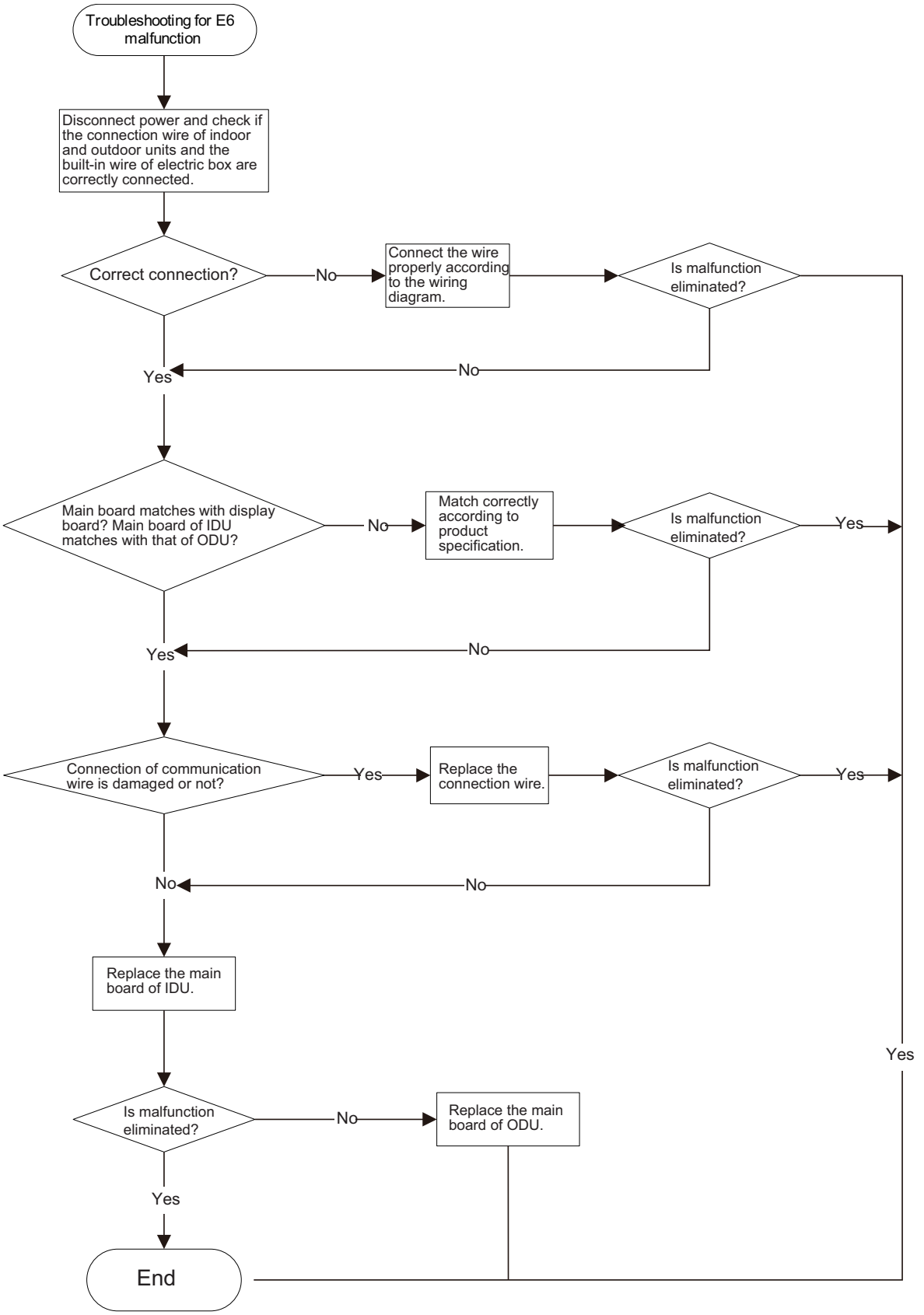
● Instant energization afte de-energization while the capacitordischarges slowly?

● The zero-cross detectioncircuit of the mainboard is defined abnormal?

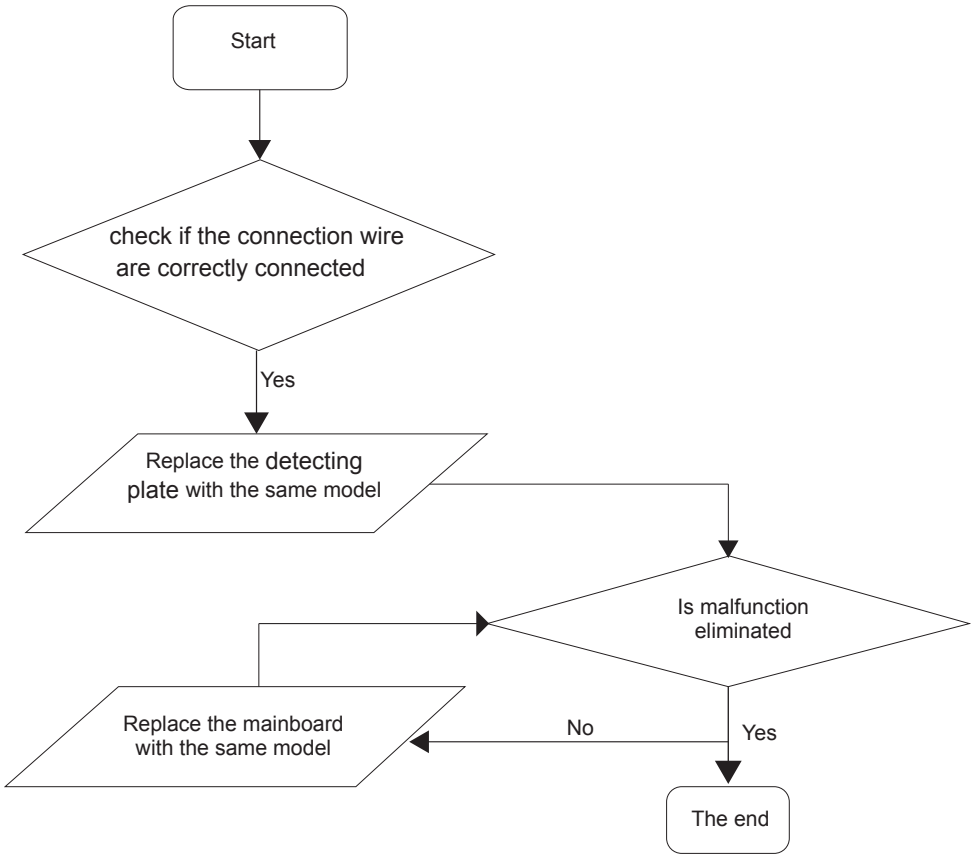
Malfunction diagnosis process:



(5) Communication malfunction (E6)



(6) Malfunction of detecting plate(WIFI)JF



Outdoot Unit

(1) Malfunction of Desynchronizing of Compressor (H7)

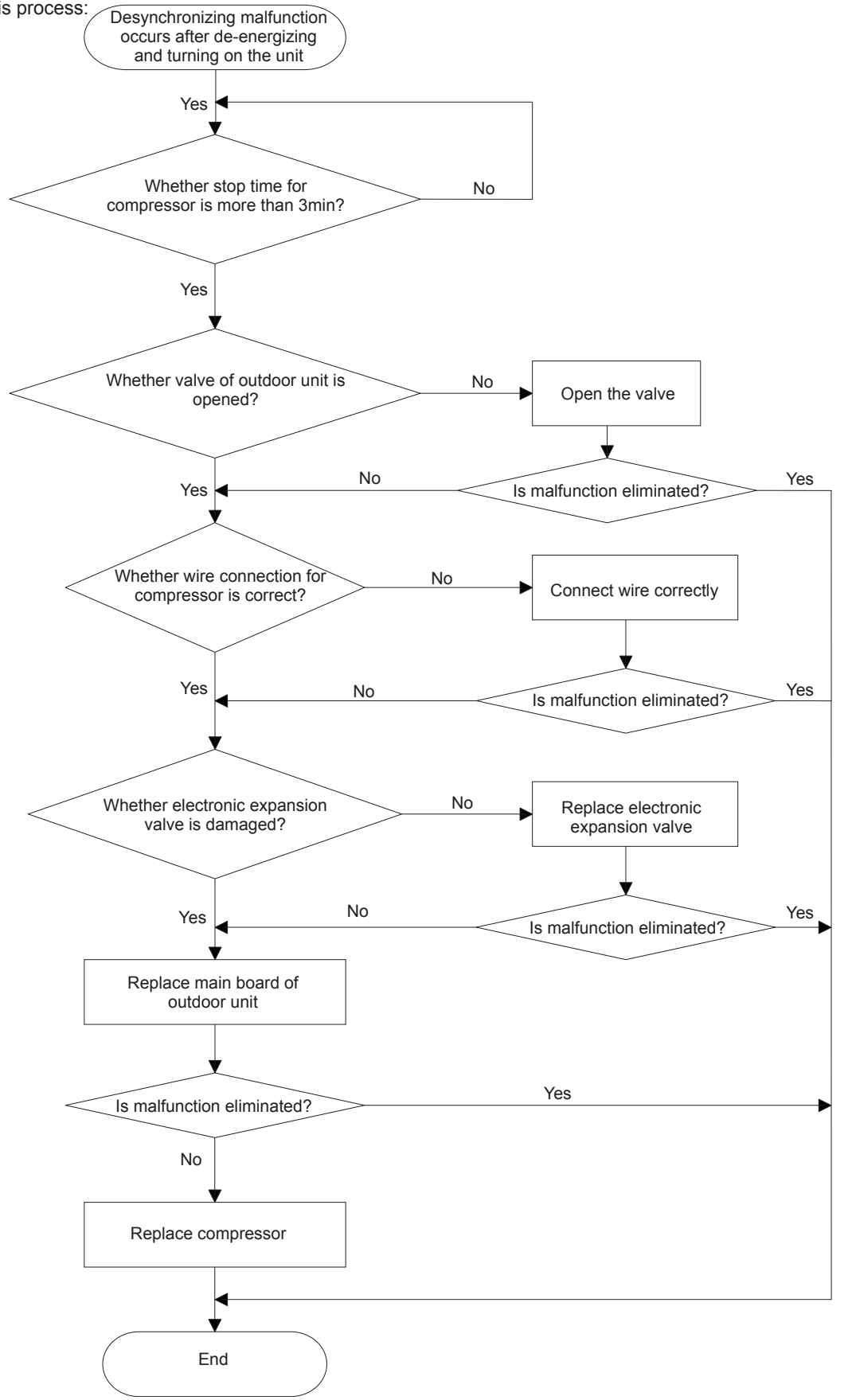
Main check point:

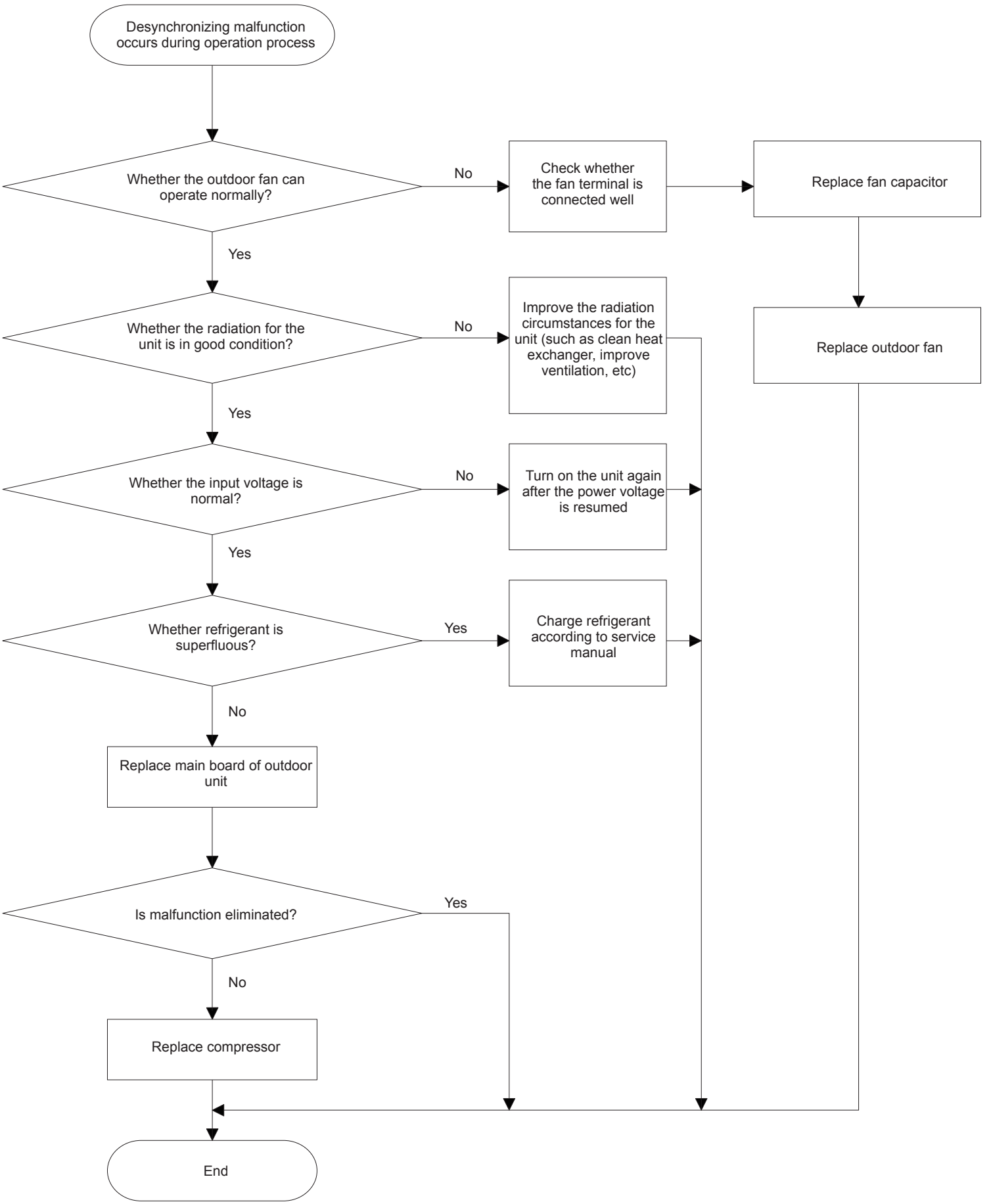
Whether the system pressure is too high?

Whether the electronic expansion valve can work normally?

Whether the radiation for the unit is in good condition?

Malfunction diagnosis process:




Desynchronizing malfunction occurs during operation process
Whether the outdoor fan can operate normally?
No
Check whether the fan terminal is connected well
Replace fan capacitor
Yes
Whether the radiation for the unit is in good condition?
No
Improve the radiation circumstances for the unit (such as clean heat exchanger, improve ventilation, etc)
Replace outdoor fan
Yes
Whether the input voltage is normal?
No
Turn on the unit again after the power voltage is resumed
Yes
Whether refrigerant is superfluous?
Yes
Charge refrigerant according to service manual
No
Replace main board of outdoor unit
Is malfunction eliminated?
Yes
No
Replace compressor
End

(2) Malfunction of Temperature Sensor (F3/F4/F5)

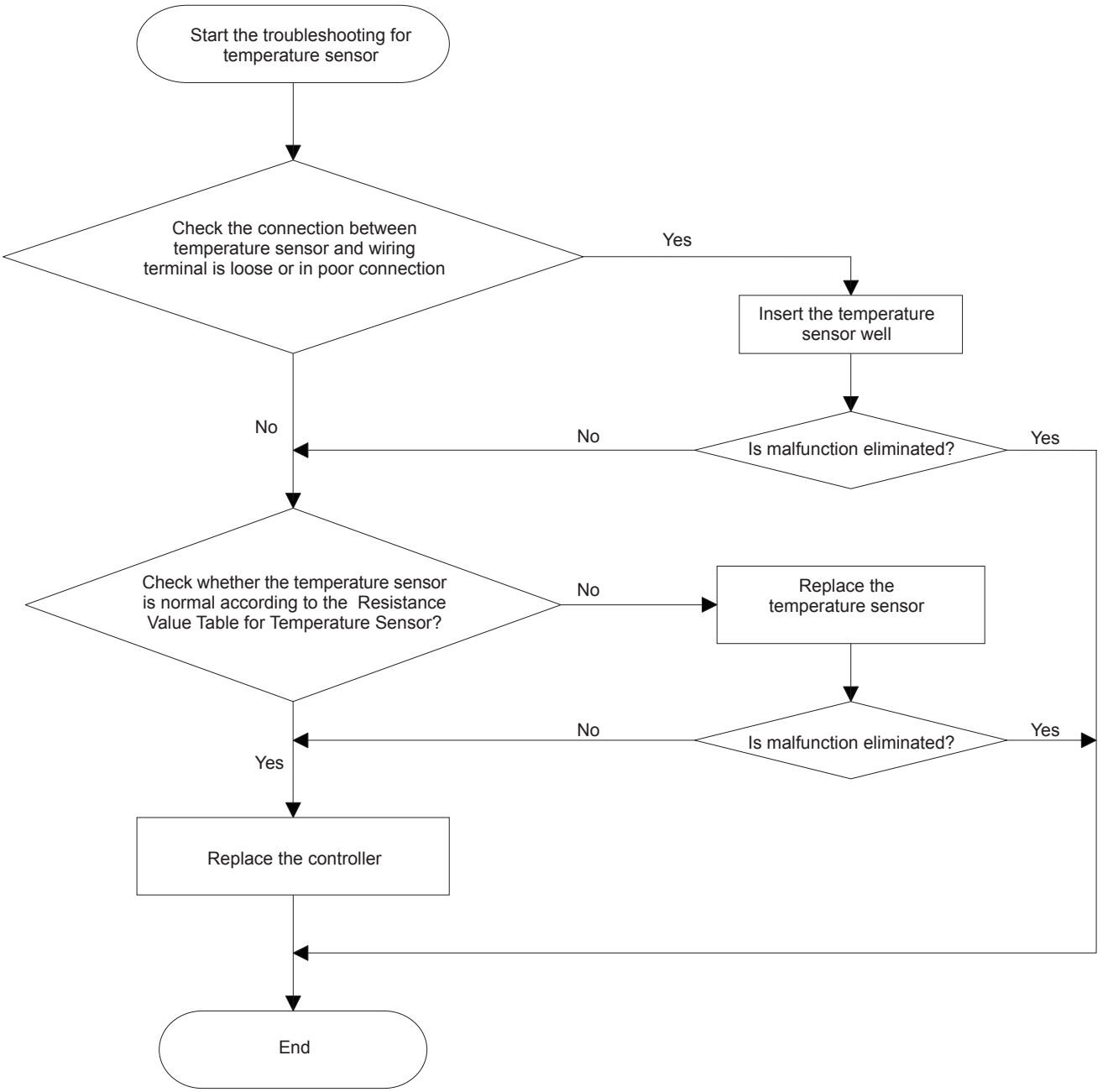
Main check point:

Whether the temperature sensor is damaged?

Whether the terminal of temperature sensor is loose or not connected?

Whether the main board is damaged?

Malfunction diagnosis process:



(3) Malfunction of Overload Protection of Compressor (H3) and Discharge High-temperature Protection of Compressor (E4)

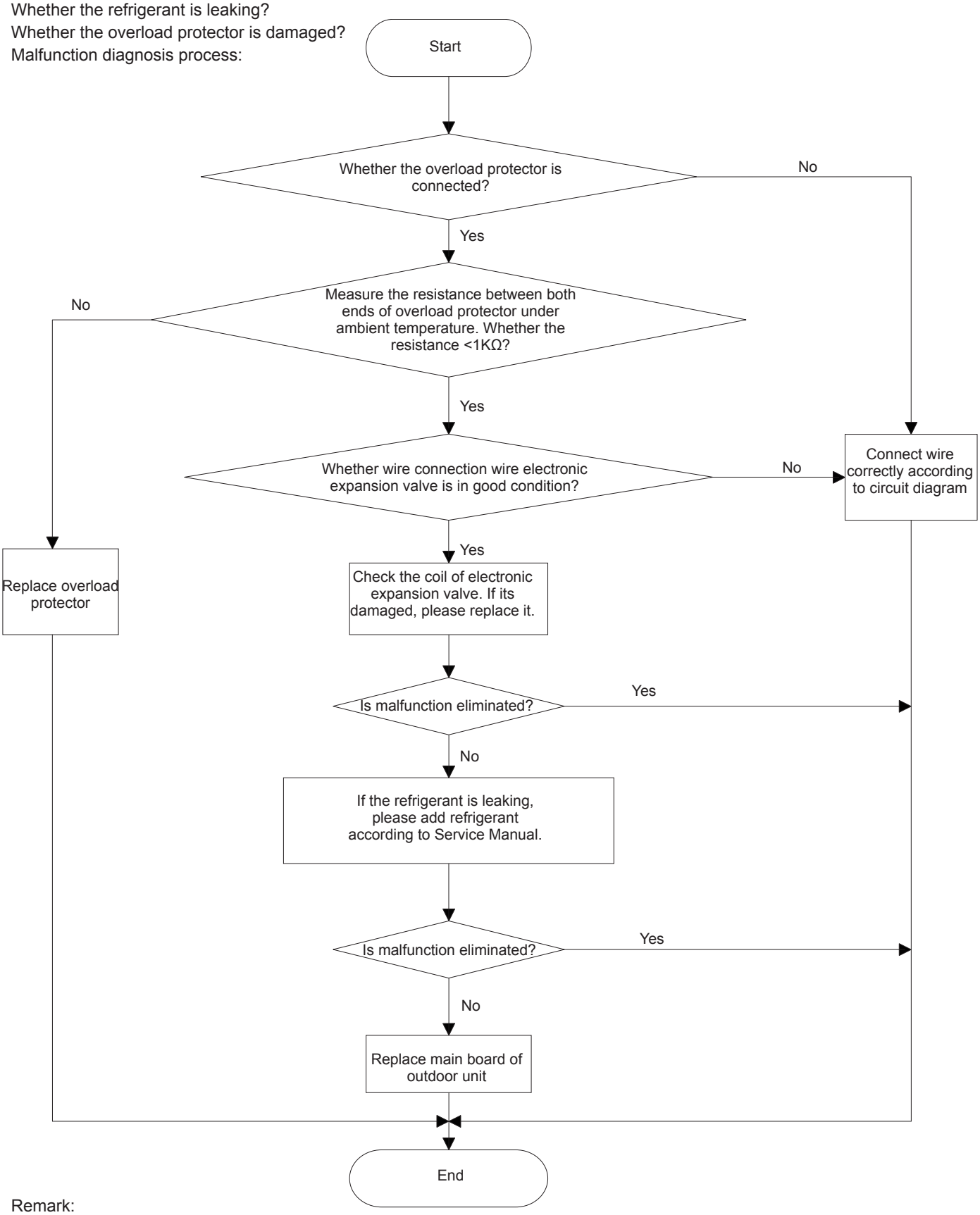
Main check point:

Whether the electronic expansion valve is connected well and whether its damaged?

Whether the refrigerant is leaking?

Whether the overload protector is damaged?

Malfunction diagnosis process:



Remark:

Detection method for electronic expansion valve: There are 5 wires for the coil of electronic expansion valve and one of them are common port (the left or the right wire) .The resistance for other terminals are all most the same (about 100Ω). You can measure those resistance values to judge whether the electronic expansion valve is damaged or not.

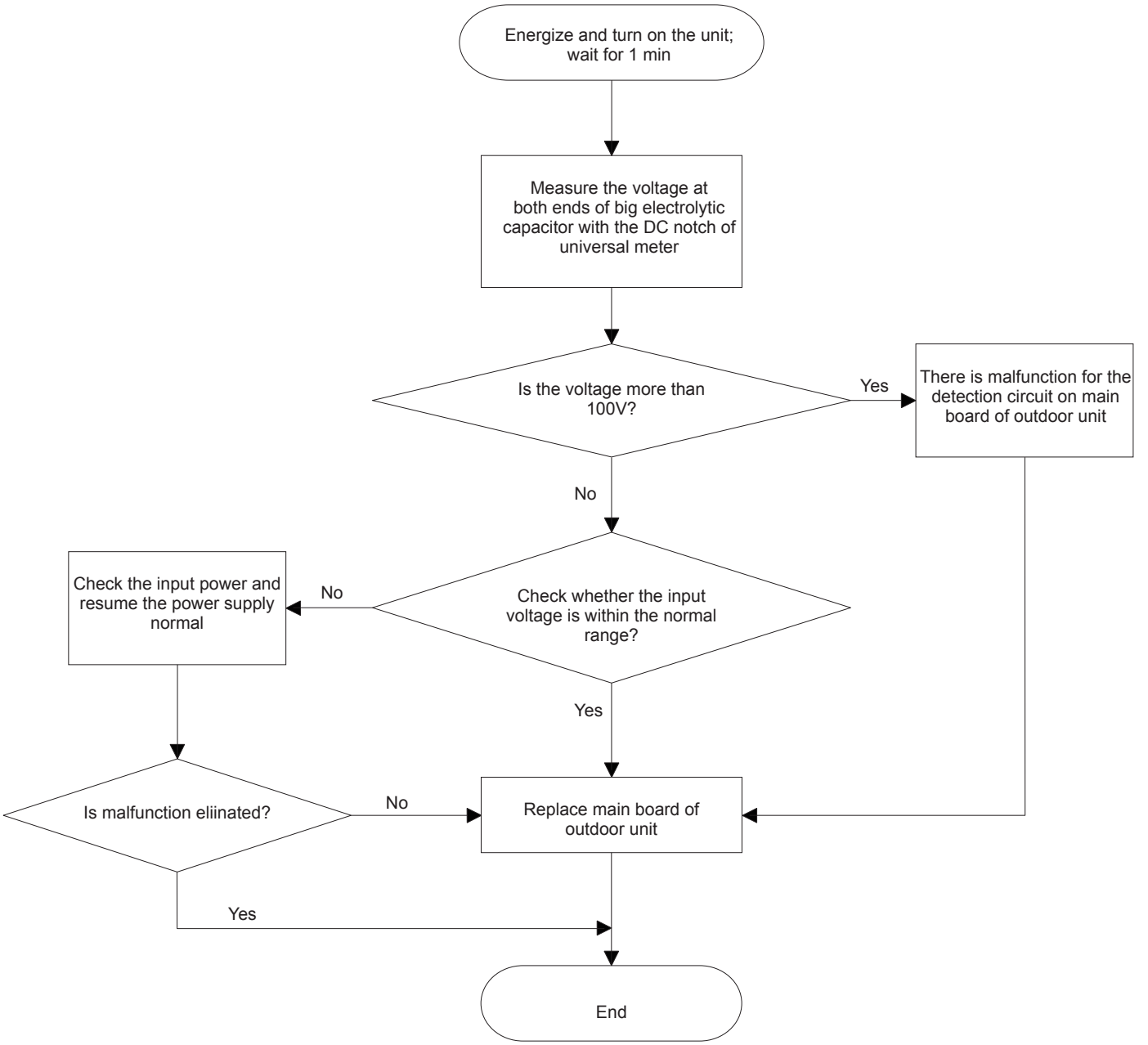
(4) Charging Malfunction of Capacitor (PU)

Main check point:

Whether input power is normal?

Main board is damaged.

Malfunction diagnosis process:



(5) Malfunction of Overload Protection (E8)

Main check point:

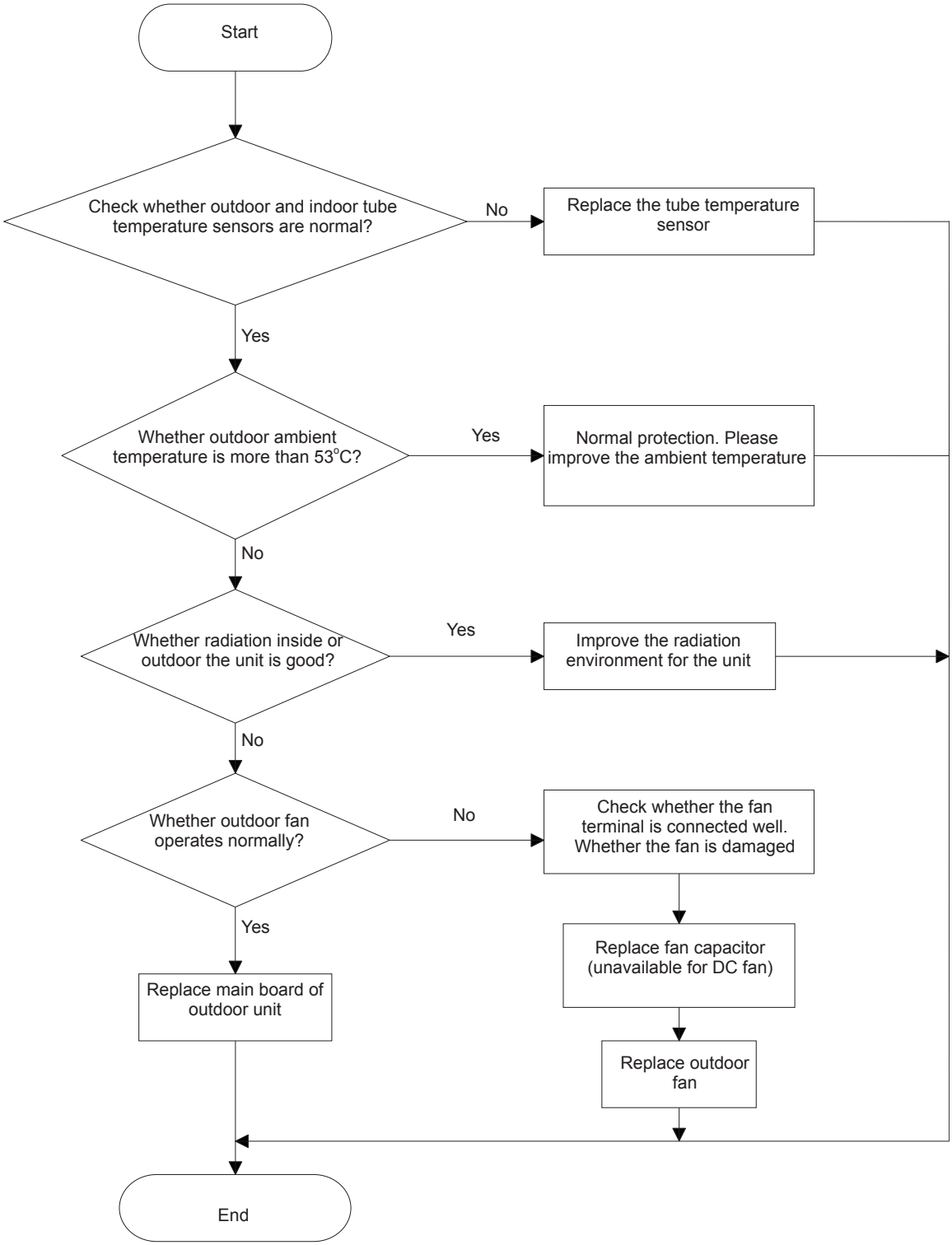
Whether the tube temperature sensor is normal?

Whether the outdoor ambient temperature is within the normal range?

Whether indoor fan and outdoor fan can operate normally?

Whether radiation environment inside or outside the unit is good?

Malfunction diagnosis process:



Remark:

When overload protection occurs under cooling mode, its because the main board detected the outdoor tube temperature sensor exceeds limited temperature and then the unit stops operation. Please check outdoor tube temperature sensor;

When overload protection occurs under heating mode, its because the main board detected the indoor tube temperature sensor exceeds limited temperature and then the unit stops operation. Please check indoor tube temperature sensor;

(6) Malfunction of IPM Protection (H5)

Main check point:

Whether input voltage is within the normal range?

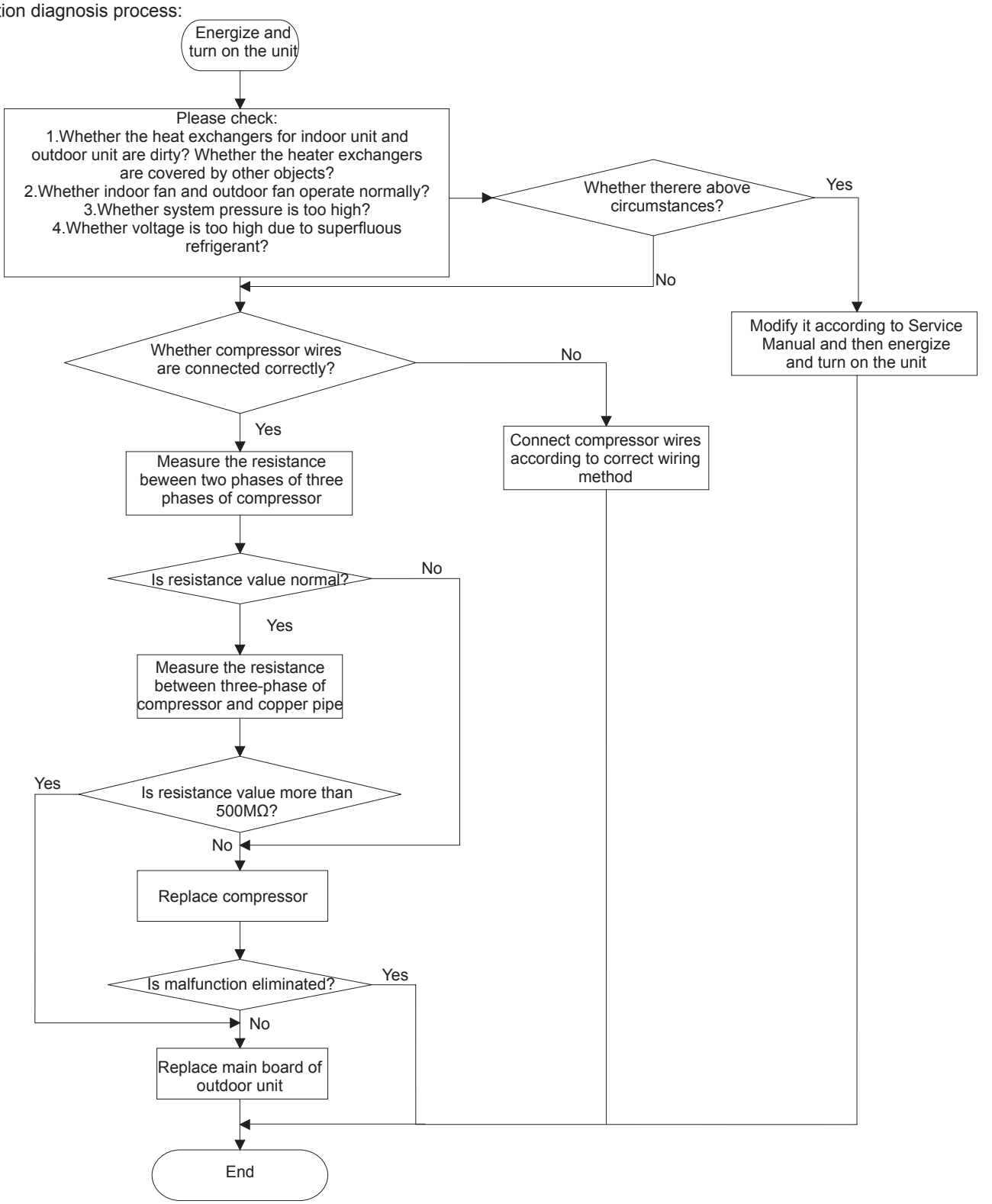
Whether wires of compressor are connected reliably, tightly or correctly?

Whether the resistance of compressor coil is normal? Whether the insulation between compressor coil and copper pipe is in good condition?

Whether the unit is overloading? Whether the radiation for the unit is in good condition?

Whether the volume of charged refrigerant is proper?

Malfunction diagnosis process:

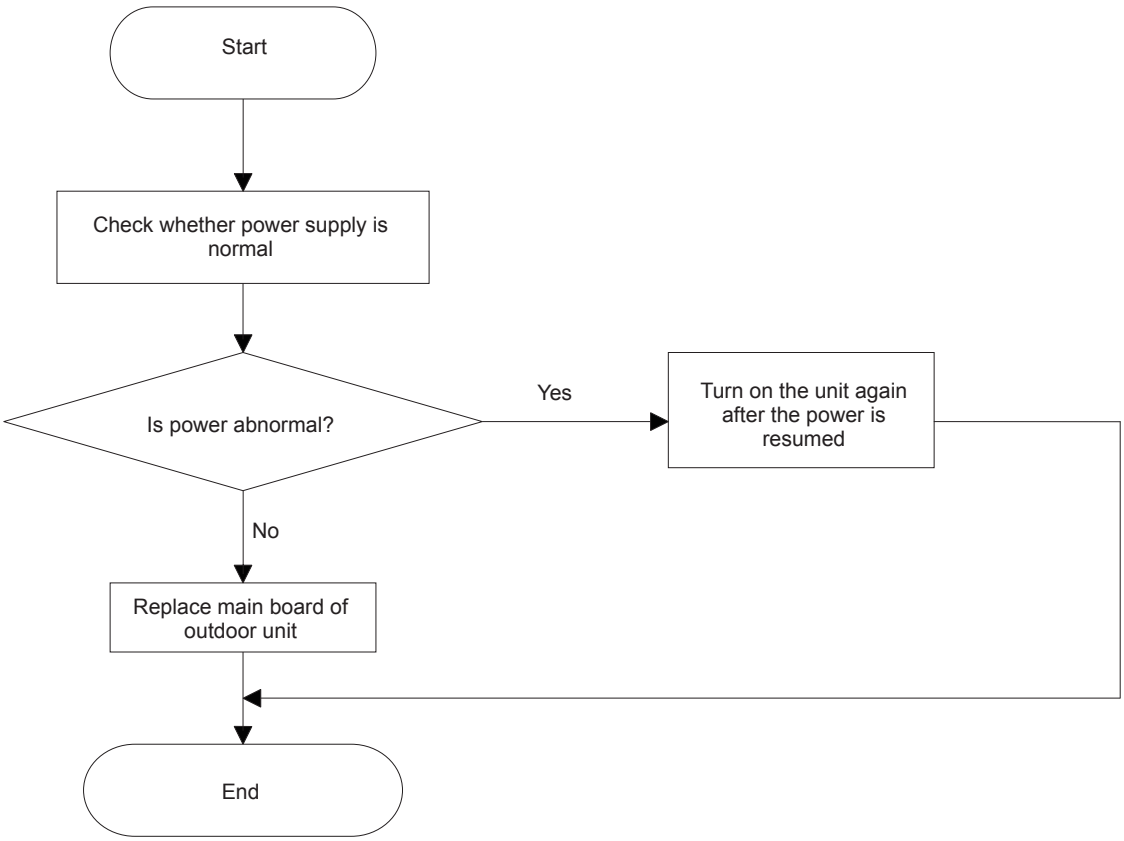


(7) Malfunction of PFC Protection (HC)

Main check point:

Whether power supply is normal?

Malfunction diagnosis process:



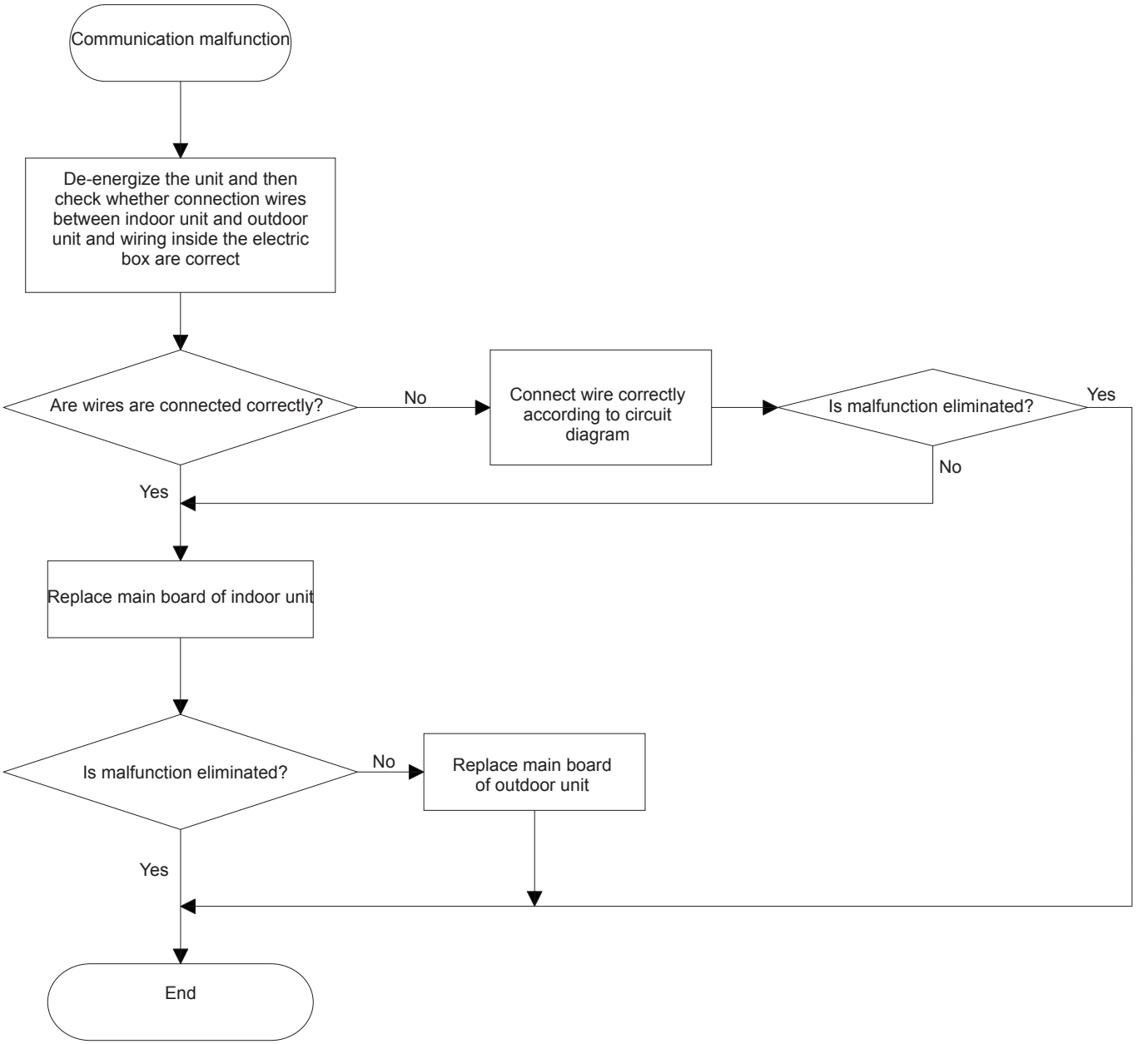
(8) Malfunction of Communication (E6)

Main check point:

Check whether connection wires between indoor unit and outdoor unit and wiring inside the unit are connected well?

Check the main board of indoor unit or main board of outdoor unit is damaged?

Malfunction diagnosis process:



(9) Malfunction of Failure Start-up of Compressor (LC)

Main check point:

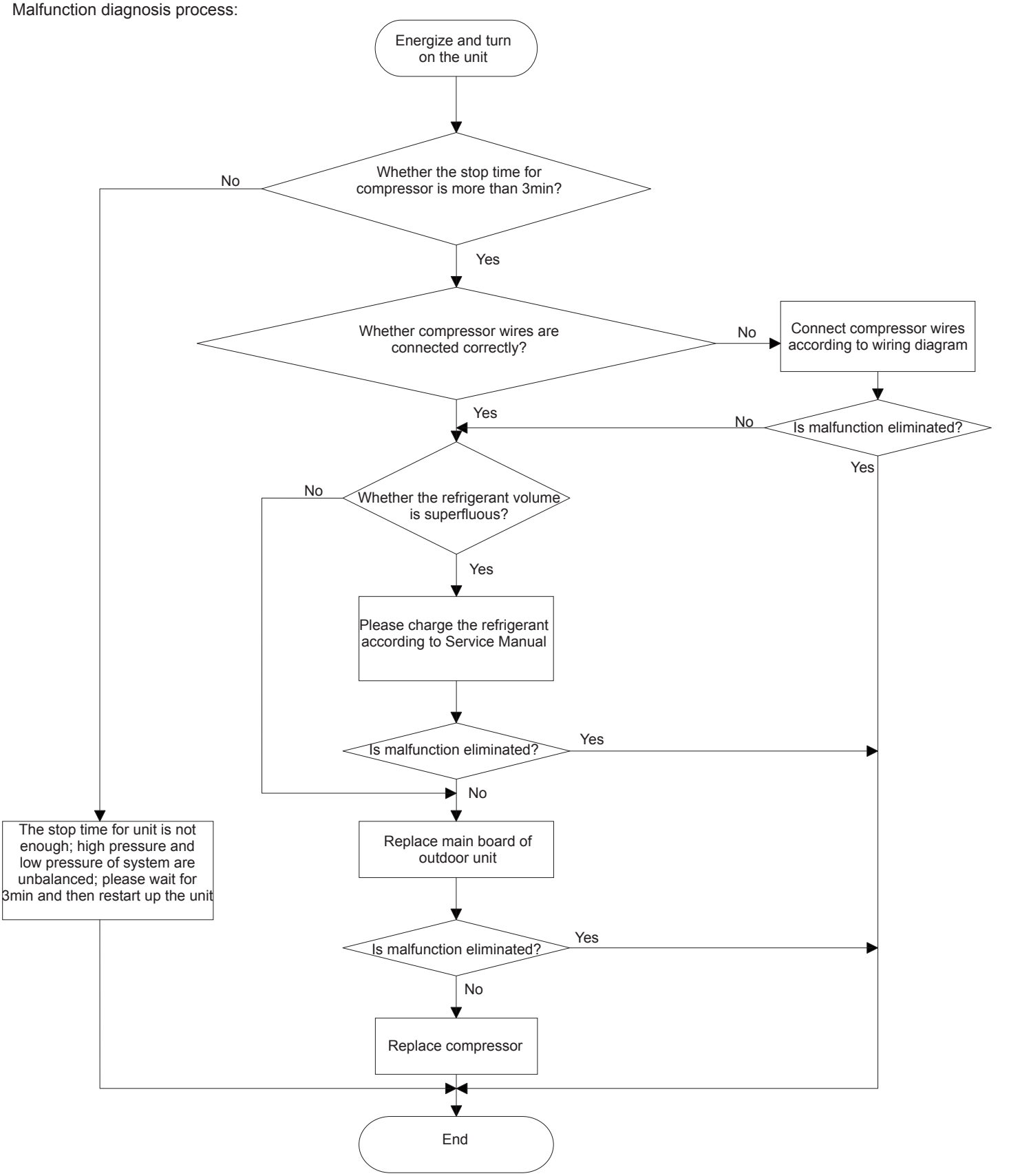
Whether the compressor wires are connected correctly?

Whether the stop time for compressor is enough?

Whether compressor is damaged?

Whether the refrigerant-charging volume is superfluous?

Malfunction diagnosis process:

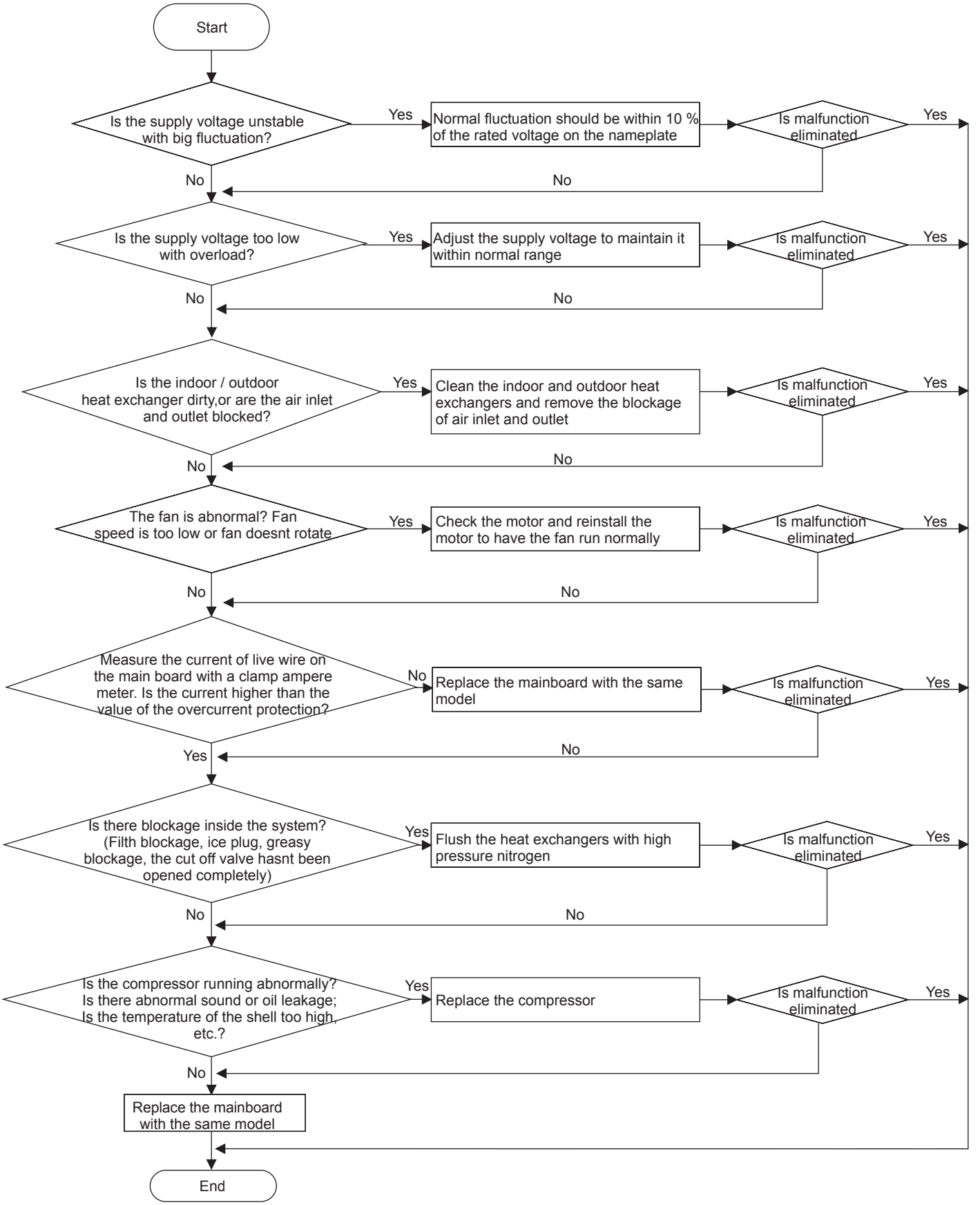


(10) Malfunction of Overcurrent Protection E5

Main detection points:

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

Malfunction diagnosis process:



(11) Other Malfunction

1.IPM module temperature sensor is open-circuited (P7)

Hardware of main board is damaged. Please replace main board.

2.Overheating protection of IPM module (P8)

① Poor radiation because the module radiator is dirty;
② IPM module is damaged;
③ Malfunction of outdoor fan, etc;

3.Detection circuit malfunctions of phase-current of compressor (U1)

Hardware of main board is damaged. Please replace main board.

4.DC busbar voltage is too high (PH)

① Input voltage is too high or unstable;
② Hardware of main board is damaged;

5.DC busbar voltage is too low (PL)

① Input voltage is too low or unstable;
② Hardware of main board is damaged;

6.Malfunction of ODU DC fan (L3)

① The wire terminal of outdoor fan motor is loosed, fix the terminal.
② Motor damaged, replace the motor.
③ Fan motor module on mainboard is damaged, replace the main board AP1

9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner Cant be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation postion is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Units pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unitt pressure is much lower than regulated range. If refrigerant isnt leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver cant swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor cant operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor cant operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor cant operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Cant Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor cant operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver cant operate	Replace the main board with the same model

4. ODU Fan Motor Cant Operate

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

5. Compressor Cant Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and its 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor cant operate	Repair or replace compressor

6. Air Conditioner is Leaking

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

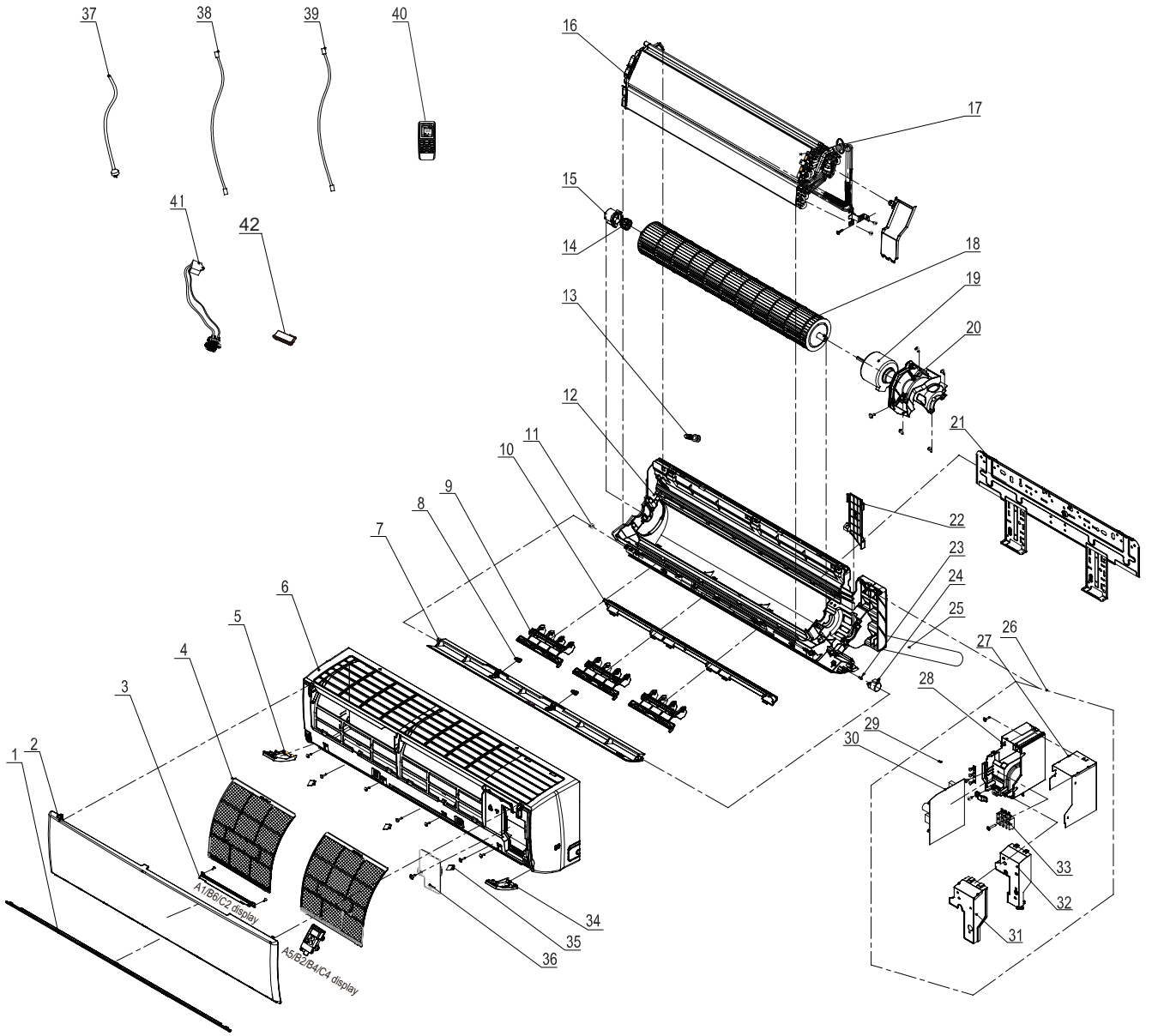
7. Abnormal Sound and Vibration

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

10. Exploded View and Parts List

10.1 Indoor Unit

18K



The component is only for rererence;please refer to the actual product

NO.	Description	Part Code		Qty
		GWH18QD-K3DNA1G/I	GWH18QD-K3DNB6/I	
	Product Code	CB419005603	CB435N00203	
1	Decorative Strip	20192613	/	1
2	Front Panel	20022481S	20000300040	1
3	Display Board	30565233	30565278	1
4	Filter Sub-Assy	11122089	11122089	2
5	Decorative Board (Left)	20192612	20192662	1
6	Front Case	20022484	2002248401	1
7	Guide Louver	10512734	1051276501	1
8	Axile Bush	10542036	10542036	2
9	Air Louver	10512732	10512732	3
10	Helicoid tongue	26112512	26112512	1
11	Left Axile Bush	10512037	10512037	1
12	Rear Case assy	22202571	22202571	1
13	Rubber Plug (Water Tray)	76712012	76712012	1
14	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
15	Ring of Bearing	26152025	26152025	1
16	Evaporator Support	24212177	24212177	1
17	Evaporator Assy	01002000014	01002000014	1
18	Cross Flow Fan	10352060	10352060	1
19	Fan Motor	1501214502	1501214502	1
20	Motor Press Plate	26112511	26112511	1
21	Wall Mounting Frame	01362026	01362026	1
22	Connecting pipe clamp	2611218801	2611218801	1
23	Crank	73012005	73012005	1
24	Stepping Motor	1521240212	1521240212	1
25	Drainage hose	05230014	05230014	1
26	Electric Box Assy	10000203128	10000204232	1
27	Lower Shield of Electric Box	01592139	01592139	1
28	Electric Box	20112211	20112211	1
29	Jumper	4202021912	4202021921	1
30	Main Board	30145099	30145099	1
31	Shield Cover of Electric Box	01592140	01592140	1
32	Electric Box Cover	20112209	20112209	1
33	Terminal Board	42011233	42011233	1
34	Decorative Board (Right)	20192611	20192662	1
35	Screw Cover	242520179	2425201726	3
36	Electric Box Cover2	20112210	20112210	1
37	Power Cord	/	/	/
38	Connecting Cable	/	/	/
39	Connecting Cable	4002052317	4002052317	1
40	Remote Controller	30510468	30510468	1
41	Cold Plasma Generator	1114001602	1114001602	1
42	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

NO.	Description	Part Code		Qty
		GWH18QD-K3DNA5G/I	GWH18QD-K3DNB4G/I	
	Product Code	CB425N03405	CB434N02004	
1	Decorative Strip	20192703P	/	1
2	Front Panel	2002266901S01	20000300028T01	1
3	Display Board	30565260	30565260	1
4	Filter Sub-Assy	11122089	11122089	2
5	Decorative Board (Left)	2019261201	20192662	1
6	Front Case	2002248401	2002248401	1
7	Guide Louver	1051273402	1051276501	1
8	Axile Bush	10542036	10542036	2
9	Air Louver	10512732	10512732	3
10	Helicoid tongue	26112512	26112512	1
11	Left Axile Bush	10512037	10512037	1
12	Rear Case assy	22202571	22202571	1
13	Rubber Plug (Water Tray)	76712012	76712012	1
14	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
15	Ring of Bearing	26152025	26152025	1
16	Evaporator Support	24212177	24212177	1
17	Evaporator Assy	01002000014	01002000014	1
18	Cross Flow Fan	10352060	10352060	1
19	Fan Motor	1501214502	1501214502	1
20	Motor Press Plate	26112511	26112511	1
21	Wall Mounting Frame	01362026	01362026	1
22	Connecting pipe clamp	2611218801	2611218801	1
23	Crank	73012005	73012005	1
24	Stepping Motor	1521240212	1521240212	1
25	Drainage hose	05230014	05230014	1
26	Electric Box Assy	10000204564	10000203074	1
27	Lower Shield of Electric Box	01592139	01592139	1
28	Electric Box	20112211	20112211	1
29	Jumper	4202021912	4202021921	1
30	Main Board	30145099	30145099	1
31	Shield Cover of Electric Box	01592139	01592139	1
32	Electric Box Cover	20112209	20112209	1
33	Terminal Board	42011233	42011233	1
34	Decorative Board (Right)	2019261101	20192662	1
35	Screw Cover	2425201726	2425201726	3
36	Electric Box Cover2	20112210	20112210	1
37	Power Cord	/	/	/
38	Connecting Cable	/	/	/
39	Connecting Cable	4002052317	4002052317	1
40	Remote Controller	30510468	30510474	1
41	Cold Plasma Generator	1114001602	1114001602	1
42	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

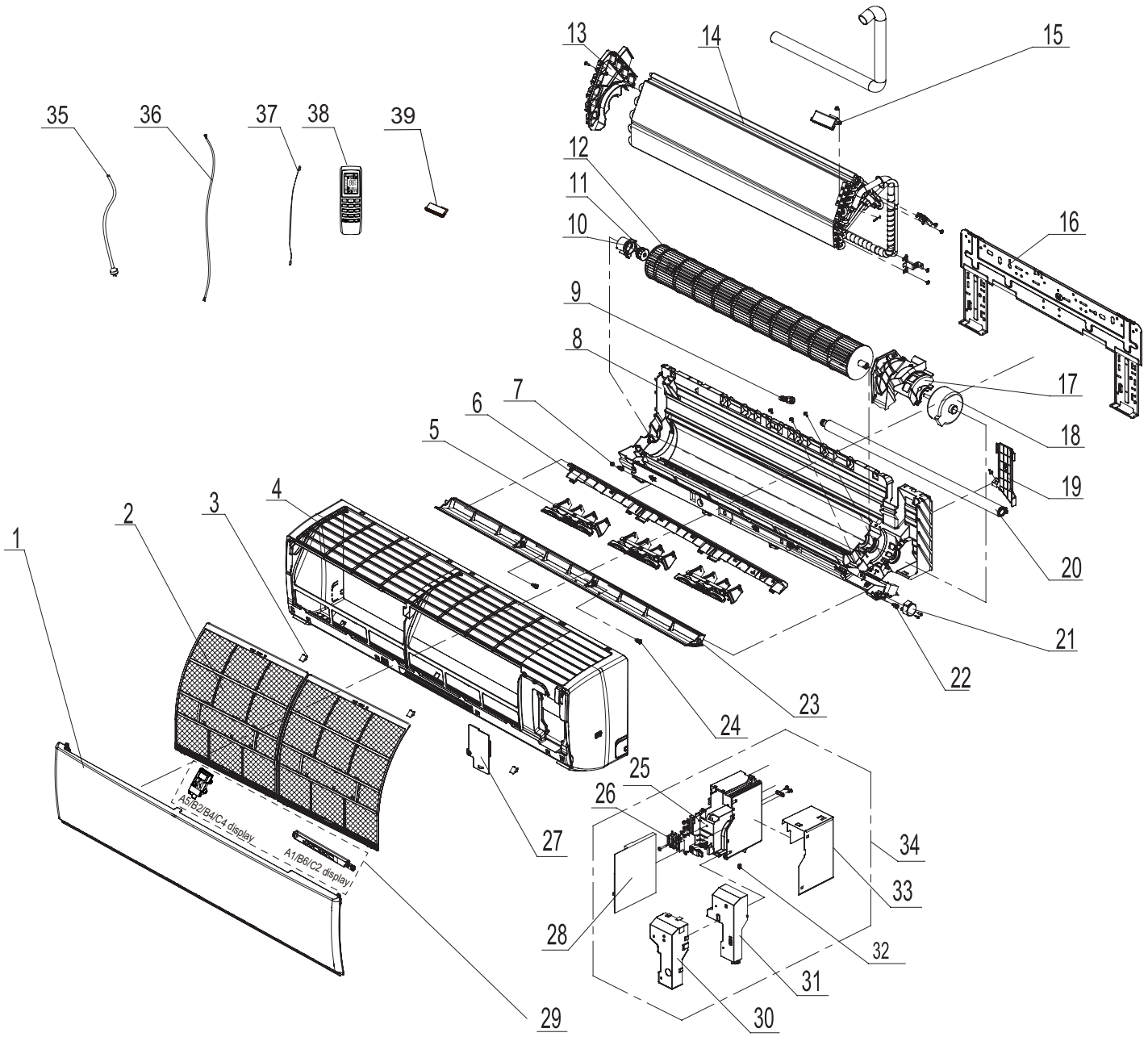
NO.	Description	Part Code		Qty
		GWH18QD-K3DNB4G/I	GWH18QD-K3DNC2G/I	
	Product Code	CB434N02005	CB435N00203	
1	Decorative Strip	/	/	/
2	Front Panel	20000300028T	20000300070S	1
3	Display Board	30565260	30565278	1
4	Filter Sub-Assy	11122089	11122089	2
5	Decorative Board (Left)	20192662	20192662	1
6	Front Case	2002248401	2002248401	1
7	Guide Louver	1051276501	1051276501	1
8	Axile Bush	10542036	10542036	2
9	Air Louver	10512732	10512732	3
10	Helicoid tongue	26112512	26112512	1
11	Left Axile Bush	10512037	10512037	1
12	Rear Case assy	22202571	22202571	1
13	Rubber Plug (Water Tray)	76712012	76712012	1
14	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
15	Ring of Bearing	26152025	26152025	1
16	Evaporator Support	24212177	24212177	1
17	Evaporator Assy	01002000014	01002000014	1
18	Cross Flow Fan	10352060	10352060	1
19	Fan Motor	1501214502	1501214502	1
20	Motor Press Plate	26112511	26112511	1
21	Wall Mounting Frame	01362026	01362026	1
22	Connecting pipe clamp	2611218801	2611218801	1
23	Crank	73012005	73012005	1
24	Stepping Motor	1521240212	1521240212	1
25	Drainage hose	05230014	05230014	1
26	Electric Box Assy	10000203074	10000204232	1
27	Lower Shield of Electric Box	01592139	01592139	1
28	Electric Box	20112211	20112211	1
29	Jumper	4202021921	4202021921	1
30	Main Board	30145099	30145099	1
31	Shield Cover of Electric Box	01592140	01592139	1
32	Electric Box Cover	20112209	20112209	1
33	Terminal Board	42011233	42011233	1
34	Decorative Board (Right)	20192662	20192662	1
35	Screw Cover	2425201726	2425201726	3
36	Electric Box Cover2	20112210	20112210	1
37	Power Cord	/	/	/
38	Connecting Cable	/	/	/
39	Connecting Cable	4002052317	4002052317	1
40	Remote Controller	30510474	30510474	1
41	Cold Plasma Generator	1114001602	1114001602	1
42	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

NO.	Description	Part Code		Qty
		GWH18QD-K3DNC4G/I	GWH18QD-K3DNB2G/I	
	Product Code	CB444N01102	CB432N02303	
1	Decorative Strip	/	/	/
2	Front Panel	20000300106S	20000300023S	1
3	Display Board	30565260	30565260	1
4	Filter Sub-Assy	11122089	11122089	2
5	Decorative Board (Left)	20192662	20192662	1
6	Front Case	2002248401	2002248401	1
7	Guide Louver	1051276501	1051276501	1
8	Axile Bush	10542036	10542036	2
9	Air Louver	10512732	10512732	3
10	Helicoid tongue	26112512	26112512	1
11	Left Axile Bush	10512037	10512037	1
12	Rear Case assy	22202571	22202571	1
13	Rubber Plug (Water Tray)	76712012	76712012	1
14	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
15	Ring of Bearing	26152025	26152025	1
16	Evaporator Support	24212177	24212177	1
17	Evaporator Assy	01002000014	01002000014	1
18	Cross Flow Fan	10352060	10352060	1
19	Fan Motor	1501214502	1501214502	1
20	Motor Press Plate	26112511	26112511	1
21	Wall Mounting Frame	01362026	01362026	1
22	Connecting pipe clamp	2611218801	2611218801	1
23	Crank	73012005	73012005	1
24	Stepping Motor	1521240212	1521240212	1
25	Drainage hose	05230014	05230014	1
26	Electric Box Assy	10000203074	10000203074	1
27	Lower Shield of Electric Box	01592139	01592176	1
28	Electric Box	20112211	20112211	1
29	Jumper	4202021921	4202021921	1
30	Main Board	30145099	30145099	1
31	Shield Cover of Electric Box	01592140	01592092	1
32	Electric Box Cover	20112209	20112209	1
33	Terminal Board	42011233	42011233	1
34	Decorative Board (Right)	20192662	20192662	1
35	Screw Cover	2425201726	2425201726	3
36	Electric Box Cover2	20112210	20112210	1
37	Power Cord	/	/	/
38	Connecting Cable	/	/	/
39	Connecting Cable	4002052317	4002052317	1
40	Remote Controller	30510474	30510474	1
41	Cold Plasma Generator	1114001602	1114001602	1
42	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

24K



The component is only for rererence;please refer to the actual product

NO.	Description	Part Code		Qty
		GWH24QE-K3DNA1G/I	GWH24QE-K3DNB6G/I	
	Product Code	CB419N05303	CB435N00304	
1	Front Panel	20022485	20000300048S	1
2	Filter Sub-Assy	11012007	11012007	2
3	Screw Cover	24252453	2425245301	3
4	Front Case Assy	20022487	00000200043	1
5	Air Louver(Manual)	10512737	10512737	3
6	Helicoid Tongue	26112513	26112513	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	22202570	22202570	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152025	26152025	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Cross Flow Fan	10352057	10352057	1
13	Evaporator Support	24212178	24212178	1
14	Evaporator Assy	01002988	01002988	1
15	Cold Plasma Generator	1114001602	1114001602	1
16	Wall Mounting Frame	01252229	01252229	1
17	Motor Press Plate	26112515	26112515	1
18	Fan Motor	15012145	15012145	1
19	Connecting pipe clamp	26112514	26112514	1
20	Drainage Hose	0523001405	0523001405	1
21	Stepping Motor	1521240212	1521240212	1
22	Crank	73012005	73012005	1
23	Guide Louver	10512738	1051232001	1
24	Axile Bush	10542036	10542036	2
25	Electric Box	20112211	20112211	1
26	Terminal Board	42011233	42011233	1
27	Electric Box Cover2	20112210	20112210	1
28	Main Board	30135000079	30135000079	1
29	Display Board	30565233	30565278	1
30	Shield cover of Electric Box	01592140	01592140	1
31	Electric Box Cover	20112209	20112209	1
32	Jumper	4202021916	4202021925	1
33	Lower Shield of Electric Box	01592139	01592139	1
34	Electric Box Assy	10000202805	10000203126	1
35	Power Cord	/	/	/
36	Connecting Cable	4002052317	4002052317	1
37	Temperature Sensor	3900031302	3900031302	1
38	Remote Controller	30510468	30510468	1
39	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

NO.	Description	Part Code		Qty
		GWH24QE-K3DNA5G/I	GWH24QE-K3DNB2G/I	
	Product Code	CB425N03304	CB432N02403	
1	Front Panel	2002267401	20000300016S	1
2	Filter Sub-Assy	11012007	11012007	2
3	Screw Cover	2425245301	2425245301	3
4	Front Case Assy	00000200013	00000200043	1
5	Air Louver(Manual)	10512737	10512737	3
6	Helicoid Tongue	26112513	26112513	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	22202570	22202570	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152025	26152025	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Cross Flow Fan	10352057	10352057	1
13	Evaporator Support	24212178	24212178	1
14	Evaporator Assy	01002988	01002988	1
15	Cold Plasma Generator	1114001602	1114001602	1
16	Wall Mounting Frame	01252229	01252229	1
17	Motor Press Plate	26112515	26112515	1
18	Fan Motor	15012145	15012145	1
19	Connecting pipe clamp	26112514	26112514	1
20	Drainage Hose	0523001405	0523001405	1
21	Stepping Motor	1521240212	1521240212	1
22	Crank	73012005	73012005	1
23	Guide Louver	1051273802	1051232001	1
24	Axile Bush	10542036	10542036	2
25	Electric Box	20112211	20112211	1
26	Terminal Board	42011233	42011233	1
27	Electric Box Cover2	20112210	20112210	1
28	Main Board	30135000079	30135000079	1
29	Display Board	30565260	30565260	1
30	Shield cover of Electric Box	01592139	01592139	1
31	Electric Box Cover	20112209	20112209	1
32	Jumper	4202021916	4202021925	1
33	Lower Shield of Electric Box	01592139	01592139	1
34	Electric Box Assy	10000204581	10000202809	1
35	Power Cord	/	/	/
36	Connecting Cable	4002052317	4002052317	1
37	Temperature Sensor	3900031302	3900031302	1
38	Remote Controller	30510468	30510474	1
39	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

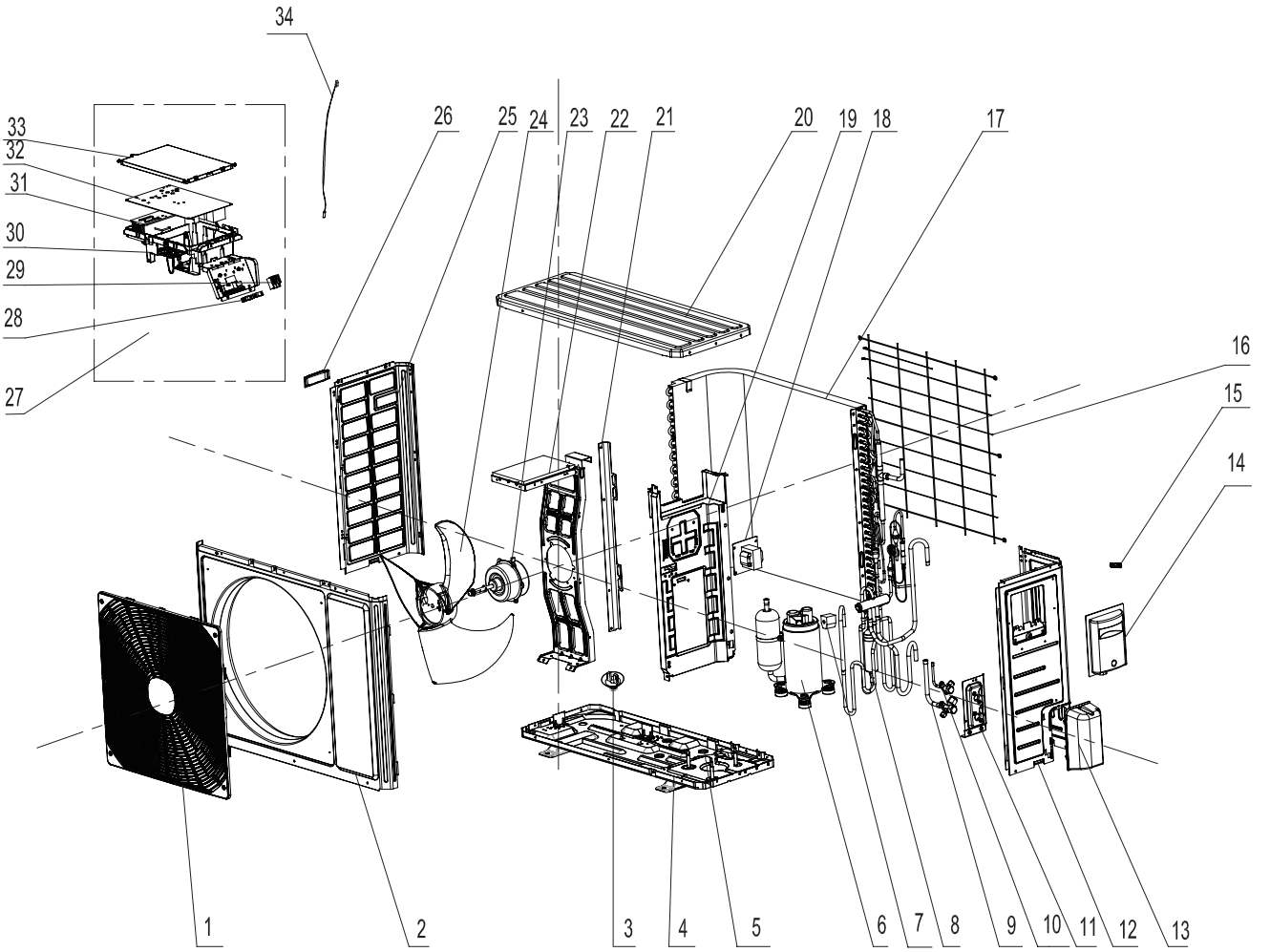
NO.	Description	Part Code		Qty
		GWH24QE-K3DNB4G/I	GWH24QE-K3DNC2G/I	
	Product Code	CB434N02204	CB439N00302	
1	Front Panel	20000300029T	20000300071S	1
2	Filter Sub-Assy	11012007	11012007	2
3	Screw Cover	2425245301	2425245301	3
4	Front Case Assy	00000200043	00000200043	1
5	Air Louver(Manual)	10512737	10512737	3
6	Helicoid Tongue	26112513	26112513	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	22202570	22202570	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	Ring of Bearing	26152025	26152025	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Cross Flow Fan	10352057	10352057	1
13	Evaporator Support	24212178	24212178	1
14	Evaporator Assy	01002988	01002988	1
15	Cold Plasma Generator	1114001602	1114001602	1
16	Wall Mounting Frame	01252229	01252229	1
17	Motor Press Plate	26112515	26112515	1
18	Fan Motor	15012145	15012145	1
19	Connecting pipe clamp	26112514	26112514	1
20	Drainage Hose	0523001405	0523001405	1
21	Stepping Motor	1521240212	1521240212	1
22	Crank	73012005	73012005	1
23	Guide Louver	1051232001	1051232001	1
24	Axile Bush	10542036	10542036	2
25	Electric Box	20112211	20112211	1
26	Terminal Board	42011233	42011233	1
27	Electric Box Cover2	20112210	20112210	1
28	Main Board	30135000079	30135000079	1
29	Display Board	30565260	30565278	1
30	Shield cover of Electric Box	01592139	01592139	1
31	Electric Box Cover	20112209	20112209	1
32	Jumper	4202021925	4202021925	1
33	Lower Shield of Electric Box	01592139	01592139	1
34	Electric Box Assy	10000202809	10000203126	1
35	Power Cord	/	/	/
36	Connecting Cable	4002052317	4002052317	1
37	Temperature Sensor	3900031302	3900031302	1
38	Remote Controller	30510474	30510474	1
39	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

NO.	Description	Part Code	Qty
		GWH24QE-K3DNC4G/I	
	Product Code	CB444N01403	
1	Front Panel	20000300099S	1
2	Filter Sub-Assy	11012007	2
3	Screw Cover	2425245301	3
4	Front Case Assy	00000200043	1
5	Air Louver(Manual)	10512737	3
6	Helicoid Tongue	26112513	1
7	Left Axile Bush	10512037	1
8	Rear Case assy	22202570	1
9	Rubber Plug (Water Tray)	76712012	1
10	Ring of Bearing	26152025	1
11	O-Gasket sub-assy of Bearing	7651205102	1
12	Cross Flow Fan	10352057	1
13	Evaporator Support	24212178	1
14	Evaporator Assy	01002988	1
15	Cold Plasma Generator	1114001602	1
16	Wall Mounting Frame	01252229	1
17	Motor Press Plate	26112515	1
18	Fan Motor	15012145	1
19	Connecting pipe clamp	26112514	1
20	Drainage Hose	0523001405	1
21	Stepping Motor	1521240212	1
22	Crank	73012005	1
23	Guide Louver	1051232001	1
24	Axile Bush	10542036	2
25	Electric Box	20112211	1
26	Terminal Board	42011233	1
27	Electric Box Cover2	20112210	1
28	Main Board	30135000079	1
29	Display Board	30565260	1
30	Shield cover of Electric Box	01592140	1
31	Electric Box Cover	20112209	1
32	Jumper	4202021925	1
33	Lower Shield of Electric Box	01592139	1
34	Electric Box Assy	10000202809	1
35	Power Cord	/	/
36	Connecting Cable	4002052317	1
37	Temperature Sensor	3900031302	1
38	Remote Controller	30510474	1
39	Detecting plate(WIFI)	30110144	1

Above data is subject to change without notice.

10.2 Outdoor Unit



The component is only for rererence;please refer to the actual product

NO.	Description	Part Code		Qty
		GWH18QD-K3DNA1G/O	GWH24QE-K3DNA1G/O	
	Product Code	CB419W05601	CB419W05301	
1	Front Grill	22413045	22413045	1
2	Front Panel	01535013P	01535013P	1
3	Drainage Connecter	06123401	06123401	1
4	Chassis Sub-assy	02803270P	0120581601P	1
5	Drainage hole Cap	06813401	06813401	3
6	Compressor and fittings	00105246G	0010505701	1
7	Magnet Coil	4300040045	4300040078	1
8	4-Way Valve Assy	03015200069	03073274	1
9	Cut off Valve Assy	07133774	07133844	1
10	Cut off Valve Sub-Assy	07133204	07133843	1
11	Valve support assy	01715010P	26113017	1
12	Right Side Plate	0130509402P	0130509001P	1
13	Valve cover	22245002	22245002	1
14	Handle	26233053	26233053	1
15	Wiring Clamp	26115004	71010102	1
16	Rear Grill	01473043	01475020	1
17	Condenser Assy	01100200126	01103000090	1
18	Reactor	/	/	/
19	Clapboard Assy	01233153	01235081	1
20	Coping	01255005P	01255005P	1
21	Supporting Board(Condenser)	01795010	01795031	1
22	Motor Support Sub-Assy	01705036	01705067	1
23	Fan Motor	1501506402	1501506402	1
24	Axial Flow Fan	10335008	10335008	1
25	Left Side Plate	01305093P	01305093P	1
26	left handle	26233053	26233053	1
27	Electric Box Assy	10000100109	10000100098	1
28	Wire Clamp	71010003	71010102	1
29	Terminal Board	420101943	420101943	1
30	Electric Box	20113027	20115003	1
31	Radiator	49010252	49010252	1
32	Main Board	30138000423	30138000418	1
33	Insulated Board (Cover of Electric Box)	/	20113003	1
34	Temperature Sensor	3900030901	3900030902	1

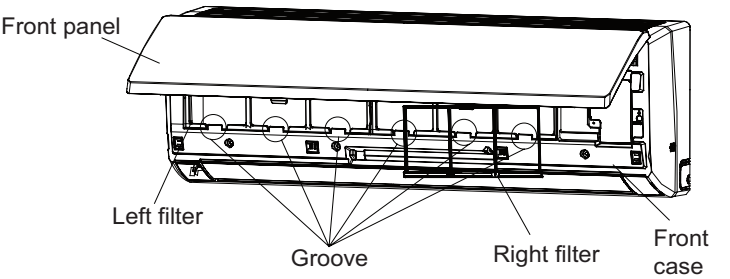
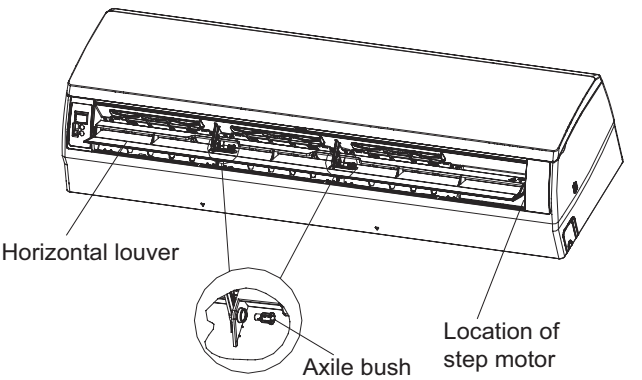
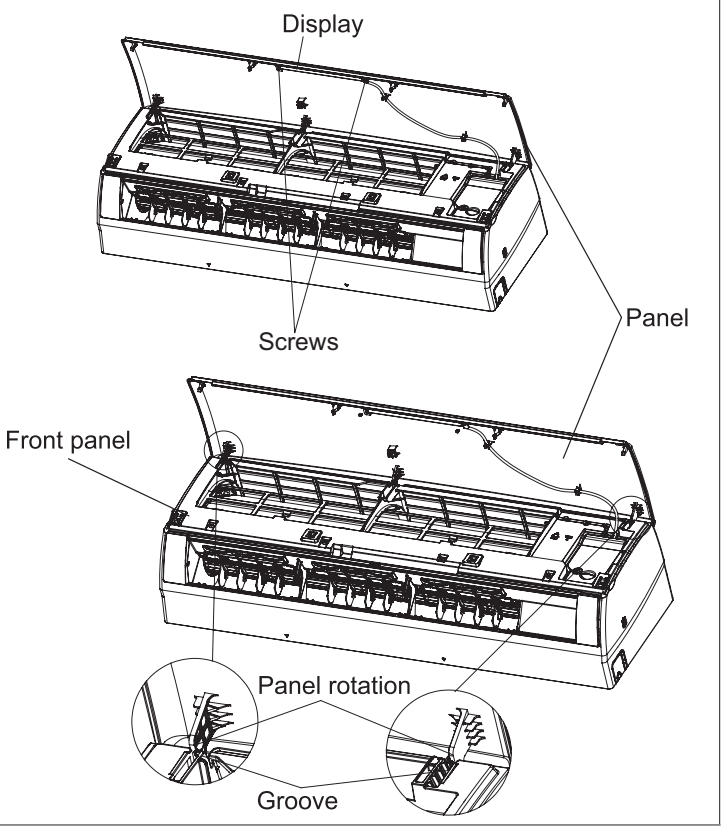
Above data is subject to change without notice.

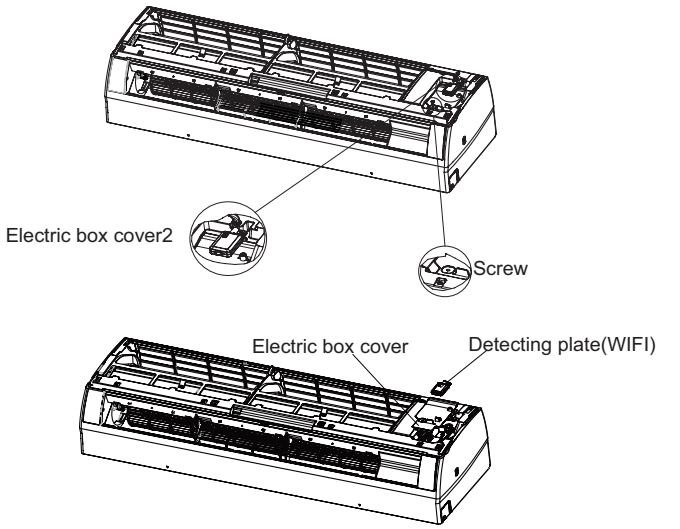
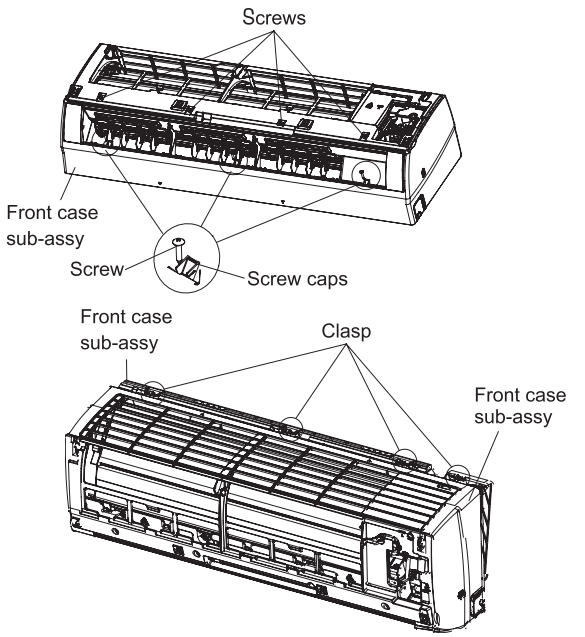
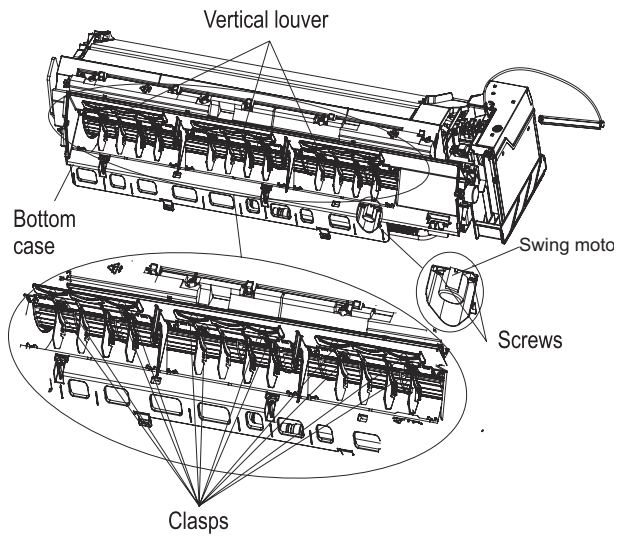
11. Removal Procedure

11.1 Removal Procedure of Indoor Unit

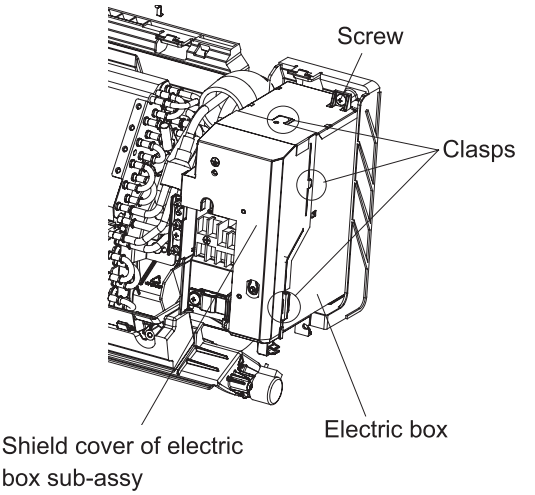
Caution: discharge the refrigerant completely before removal.

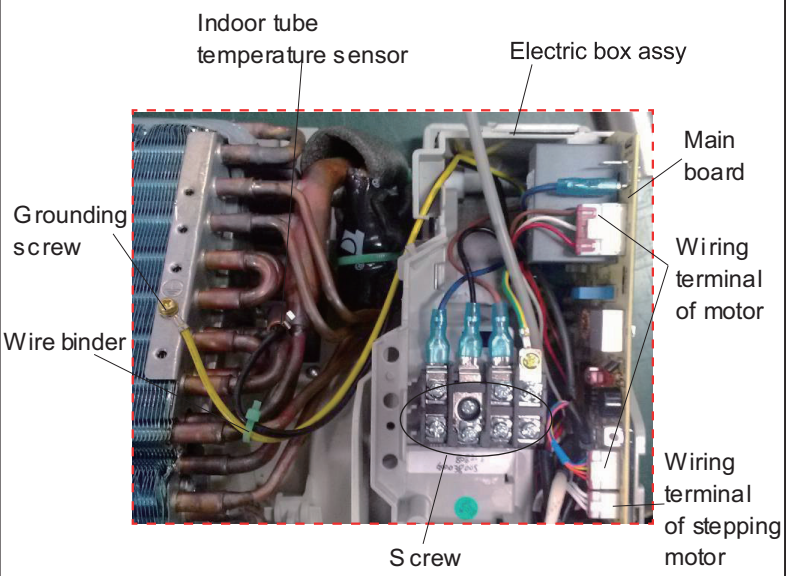
NOTE: Take A1 panel for an example.

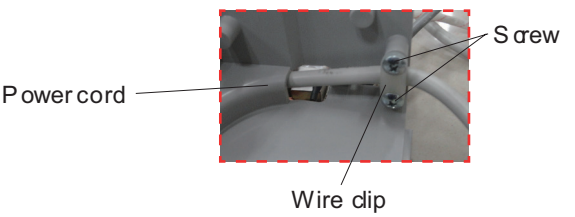
Step	Procedure	
1.Remove fifter assy		
	Open the front panel. Push the left and rightfilters to make them break away from thegroove on the front case. Then remove the leftand right filters one by one.	
2.Remove horizontal louver		
	Push out the axile bush on horizontal louver, Bend the horizontal louver with hand and then separate the horizontal louver from the crank shaft of step motor to remove it.	
3.Remove the front panel		
a	Screw o ff t he 2 screws t hat a re l ocking the display board. Separate the display board from the front panel.	
b	Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.	

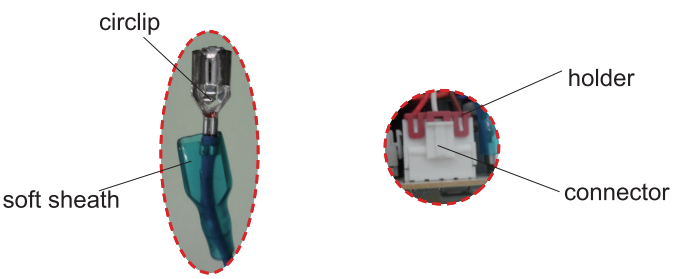
Step	Procedure
4.Remove electric box cover 2	
Remove the screws on the electric box cover 2 and detecting plate(WIFI), then remove the electric box cover 2 and detecting plate(WIFI). Note: The position of detection board(WIFI) may be different for different models.	
5.Remove front case sub-assy	
a Remove the screws fixing front case. Note: ① Open the screw caps before removing the screws arround 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	
a Loosenn the connection clasps between vertical louver and bottom case to remove vertical louver.	
b Screw off the screws that are locking the swing motor and take the motor off.	

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 Cut off the wire binder and pull out the indoor tube temperature sensor. ② Screw off one grounding screw. ③ Remove the wiring terminals of motor and stepping motor. ④ Remove the electric box assy. ⑤ Screw off the screws that are locking each lead wire.
c	Rotate the electric box assy. Twist off the screws that are locking the wire clip and loosen the power cord. Remove the wiring terminal of power cord. Lift up the main board and take it off.
	Instruction: Some wiring terminal of this 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.

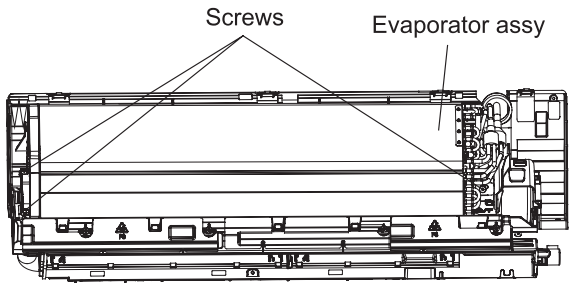


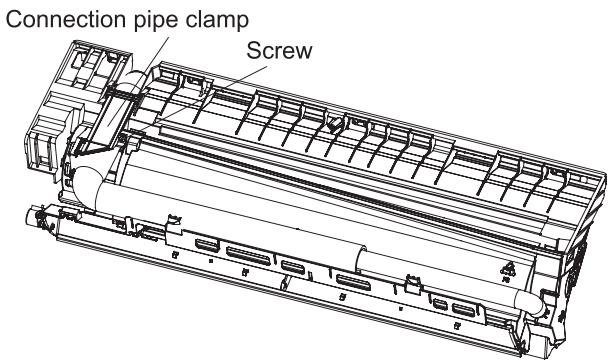


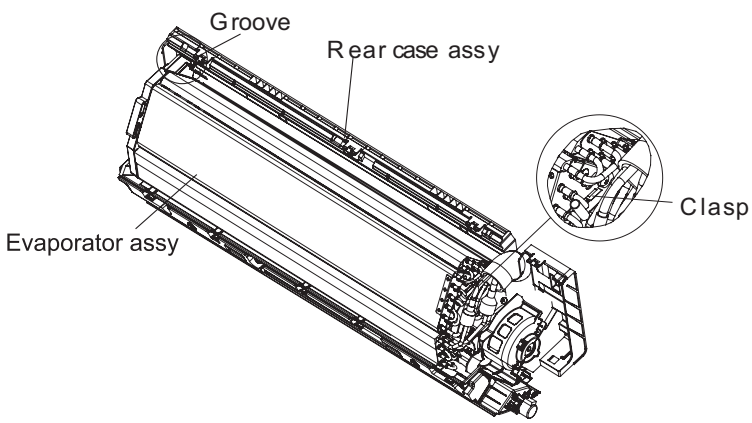


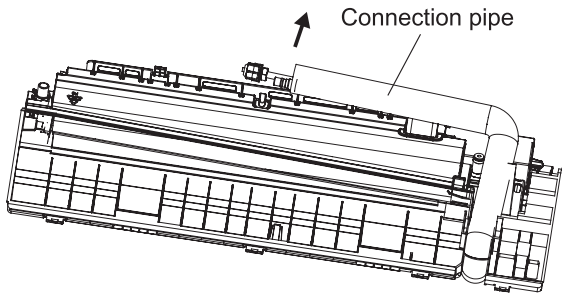


Step	Procedure
8. Remove evaporator assy	
a	Remove 3 screws fixing evaporator assy.
b	At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.
c	First remove the left side of evaporator from the groove on the rear case assy. Then remove the right side from the clasp on the rear case assy.
d	Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.

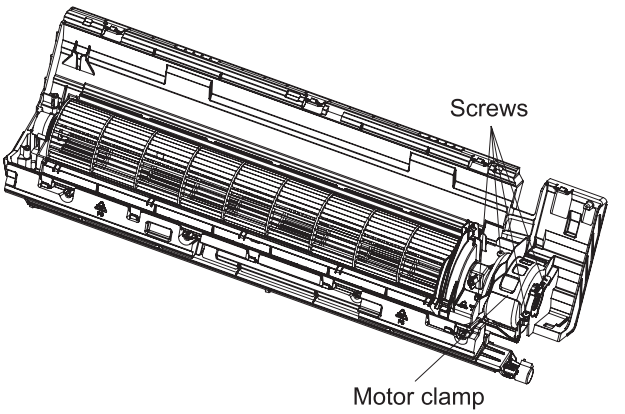


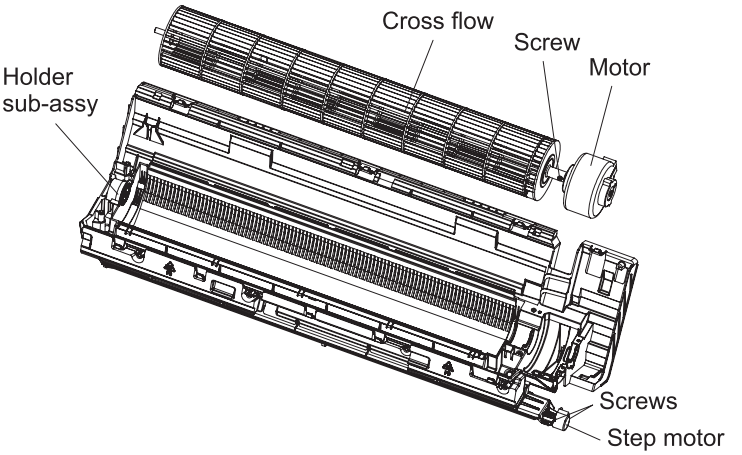






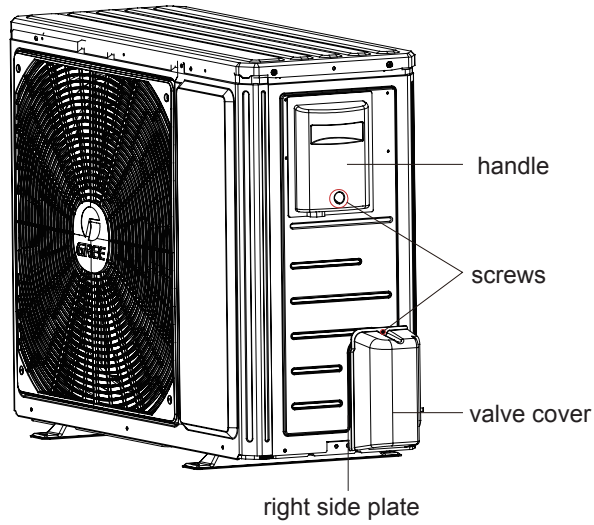
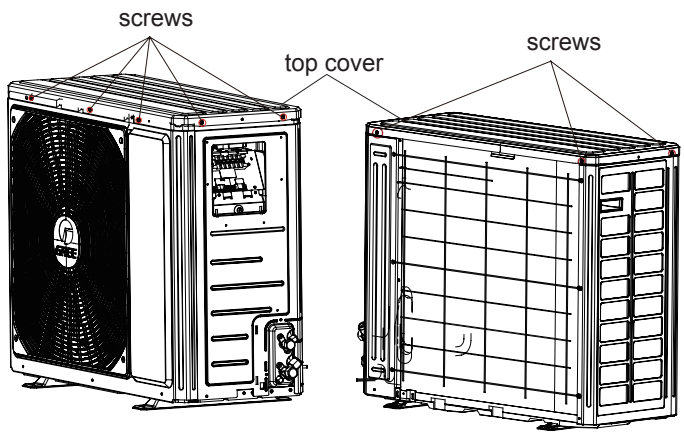
Step	Procedure
9. Remove motor and cross flow blade	
a	Remove the screws fixing motor clamp and then remove the motor clamp.
b	Remove the screws at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them. Remove the bearing holder sub-assy. Remove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

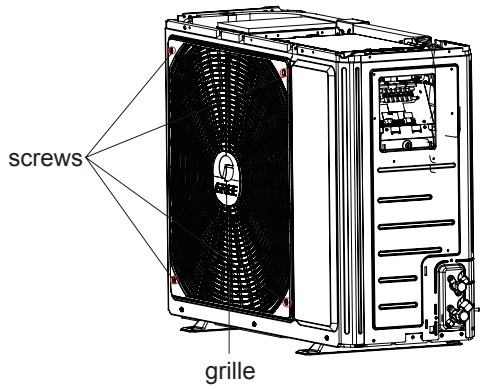
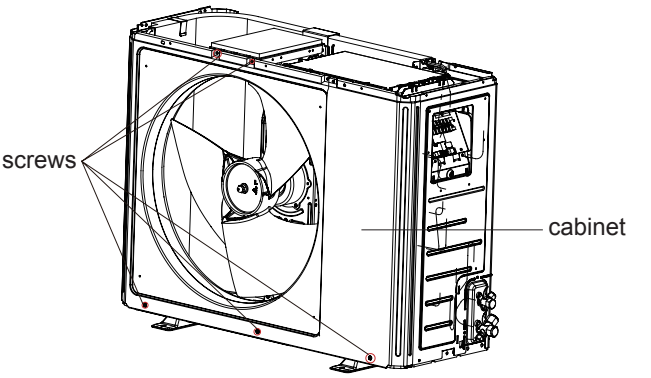
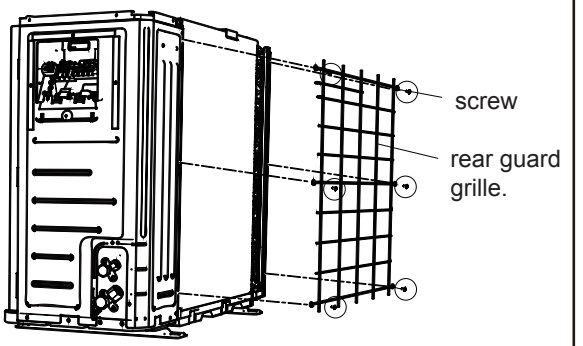
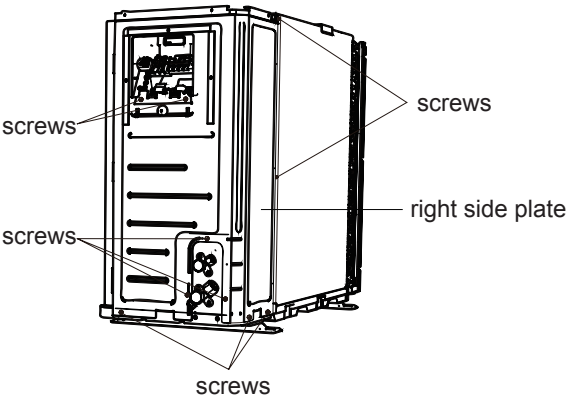


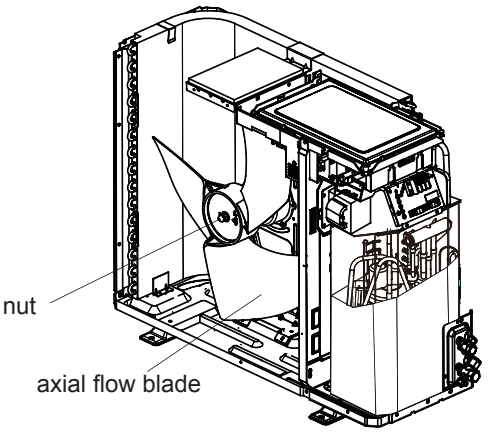
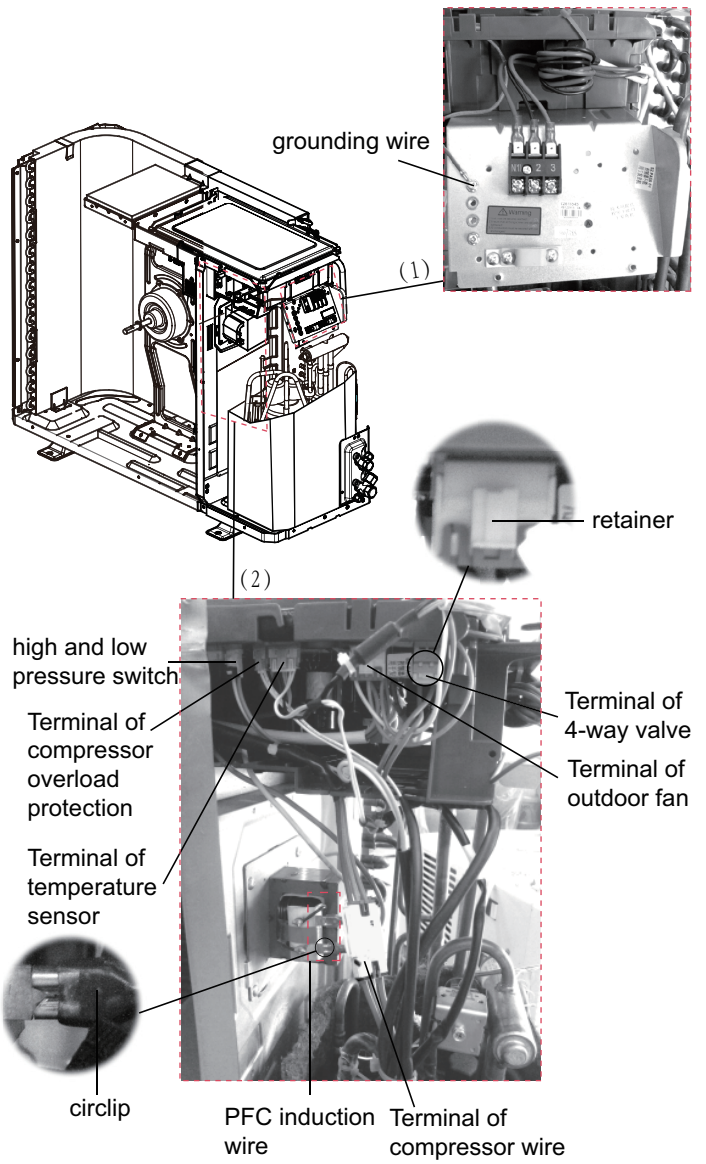


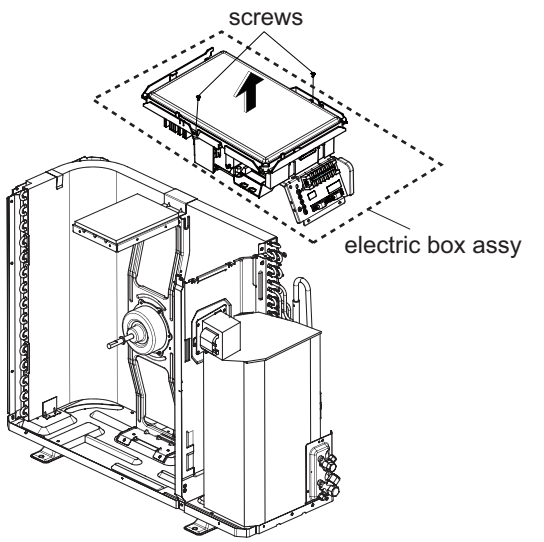
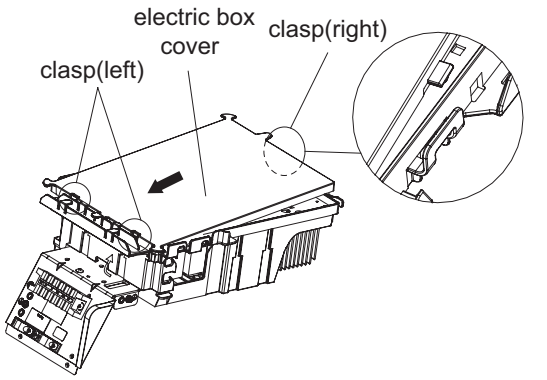
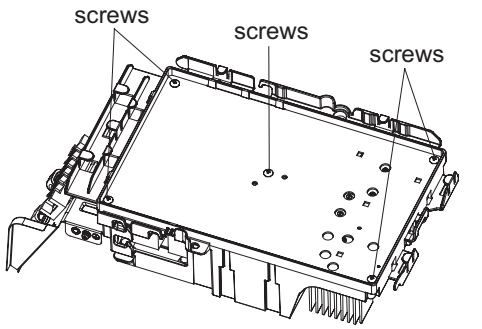
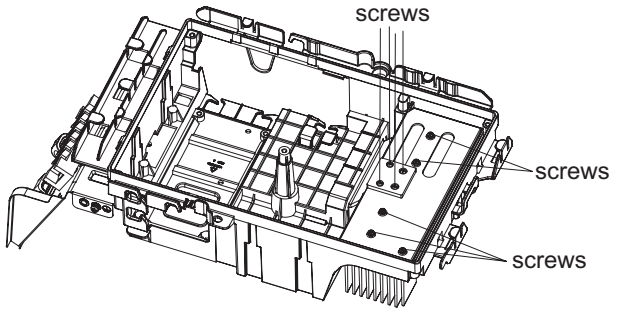
11.2 Removal Procedure of Outdoor Unit

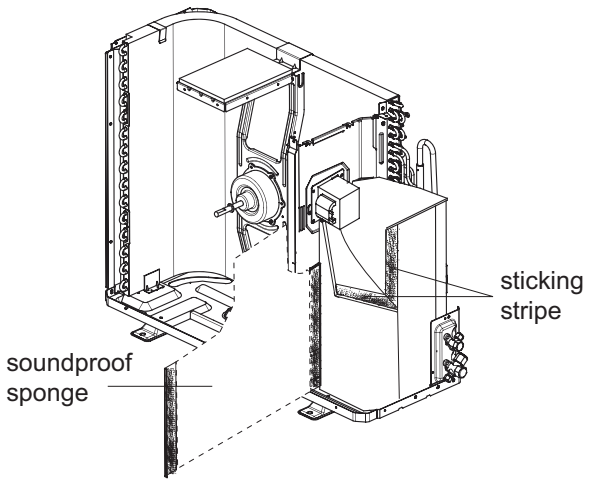
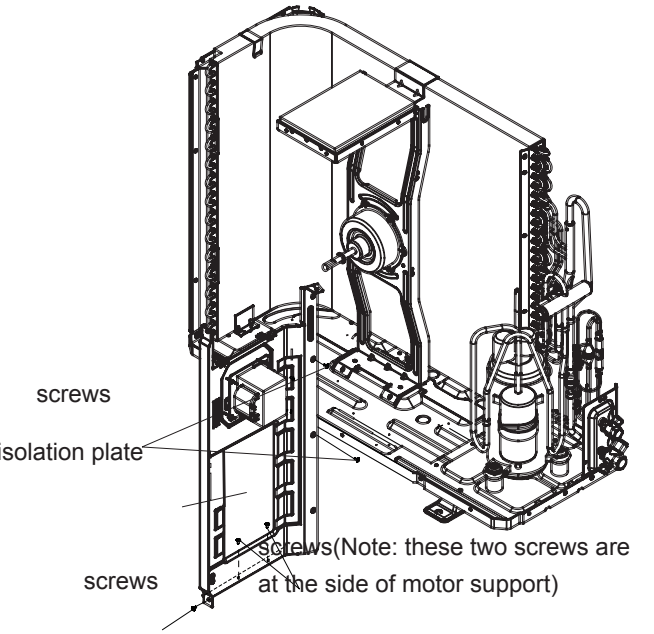
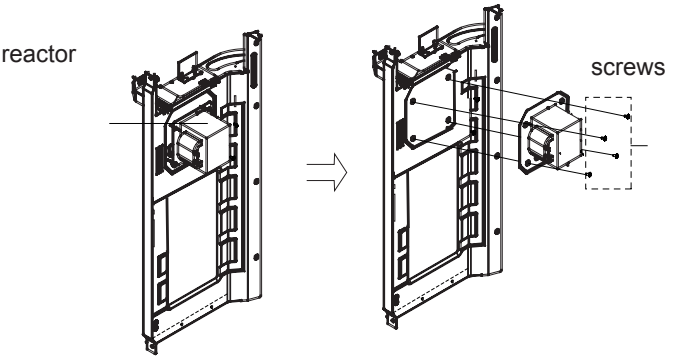
Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.

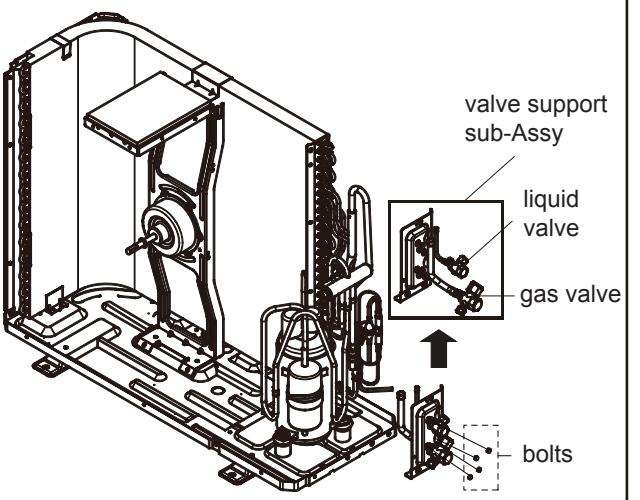
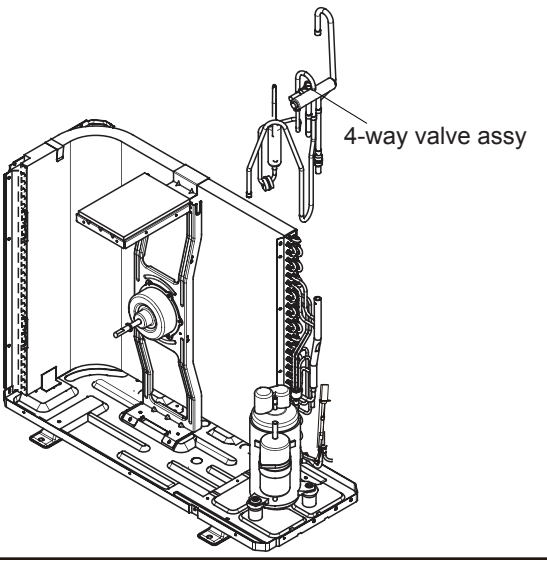
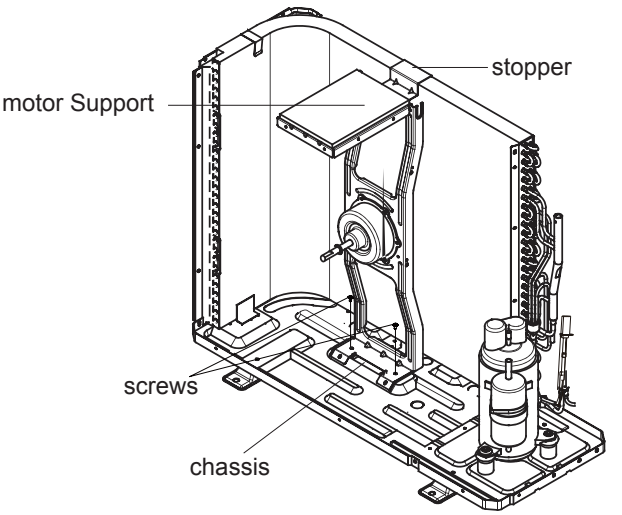
Step	Procedure	
1. Remove big handle,valve cover and top cover		
a	Remove the screw connecting the big handle and right side plate, and then remove the big handle. Remove the screw connecting the valve cover and right side plate, and then remove the valve cover.	
b	Remove the screws connecting the top cover with outer case, right side plate and left side plate; lift the top cover upwards to remove it.	

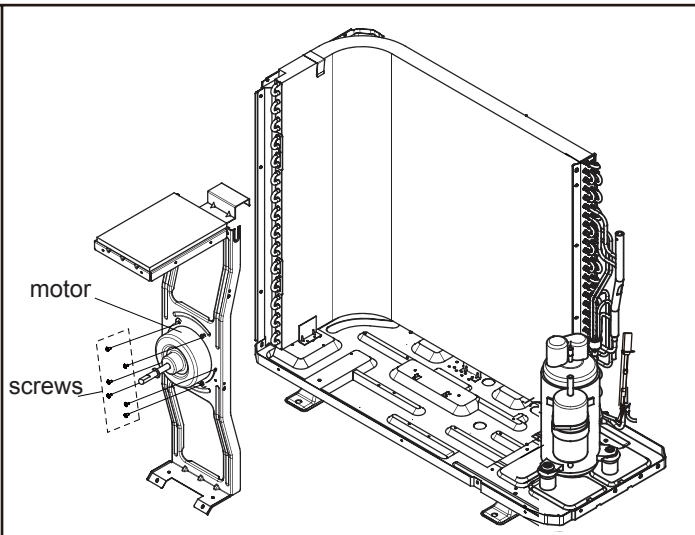
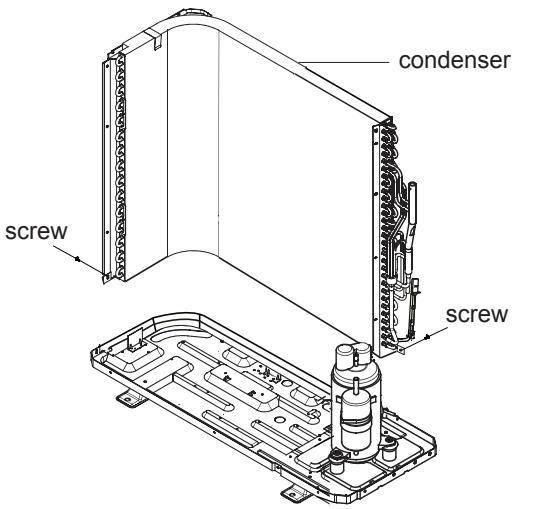
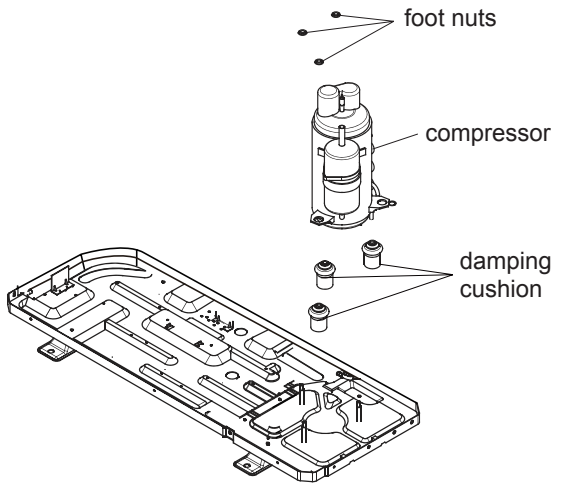
Step	Procedure
2. Remove grille and cabinet	
a	Remove the 4 screws connecting the grille and outer case, and then remove the panel grille.
b	Remove the screws connecting the outer case with motor support, isolation plate and chassis; lift the outer case upwards; loosen the clasps of outer case with right side plate and left side plate, and then remove the outer case. 
3. Remove rear guard grille and right side plate	
a	Remove the 3 screws connecting the grille with right side plate and left side plate, and then remove the rear guard grille.
b	Remove the screws connecting the right side plate with electric box assy, valve support, chassis and condenser side plate, and then remove the right side plate. 

Step	Procedure
4. Remove axial flow blade	
	Remove the nut fixing axial flow blade and then remove the blade.
5.Remove electric box assy	
a	Remove the grounding wire screw on the electric box assy and then remove the grounding wire. (See fig 1)
b	Disconnect the wiring terminals of reactor, compressor, high and low pressure switch, compressor overload protector, temperature sensor, outdoor fan motor and 4-way valve. (See fig 2) Note: keep pressing the circlip when disconnecting the wiring terminal of reactor; keep pressing the retainer when disconnecting other wiring terminals.
c	Remove the wire inside the wiring groove.

Step	Procedure	
d	Remove the 2 screws fixing the electric box assy and then lift the electric box assy upwards to remove it.	
e	Push the electric box cover in the direction of arrow to make the clasp at the right side separate from the groove; then pull it in the opposite direction to make the clasp at the lift side separate from the groove and then remove the electric box cover.	
f	Remove the 5 screws connecting the mainboard and then remove the mainboard.	
g	Remove the 9 screws fixing the radiator and then remove the radiator.	

Step	Procedure	
6.remove the soundproof sponge.		
	Tear off the sticking stripe and then remove the soundproof sponge.	
7.remove the isolation plate and reactor		
a	Remove the 2 screws connecting the isolation plate and condenser side plate; remove the 3 screws connecting the isolation plate and chassis, and then remove the isolation plate.	
b	Remove the 4 screws connecting the reactor and isolation plate, and then remove the reactor	

Step	Procedure
8.Valve Support Sub-Assy	
	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 bolts fixing the gas valve to remove the gas valve. Unsolder the welding joint connecting the liquid valve and Y-shaped pipe; remove the 2 bolts 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.
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.Motor Support Sub-Assy and motor	
a	Remove the 2 screws connecting the motor support and chassis, and then loosen the stopper to remove the motor support.

Step	Procedure	
b	Remove the 6 screws fixing the motor and then remove the motor.	
11.Remove condenser		
	Remove the 2 screws fixing the condenser and chassis, and then lift the condenser upwards to remove it.	
12.Remove compressor		
	Remove the 3 foot nuts fixing compressor and then lift the compressor upwards to remove the compressor and damping cushion. Note: Keep the ports of discharge pipe and suction pipe from foreign objects.	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

Set temperature

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

Ambient temperature

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

Appendix 2: Configuration of Connection Pipe

1.Standard length of connection pipe

● 5m, 7.5m, 8m.

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

3.Max. length of connection pipe and max. high difference.

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

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

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

Cooling capacity	Max length of connection pipe	Max height difference
5000 Btu/h(1465 W)	15 m	5 m
7000 Btu/h(2051 W)	15 m	5 m
9000 Btu/h(2637 W)	15 m	10 m
12000 Btu/h(3516 W)	20 m	10 m
18000 Btu/h(5274 W)	25 m	10 m
24000 Btu/h(7032 W)	25 m	10 m
28000 Btu/h(8204 W)	30 m	10 m
36000 Btu/h(10548 W)	30 m	20 m
42000 Btu/h(12306 W)	30 m	20 m
48000 Btu/h(14064 W)	30 m	20 m

● When the length of connection pipe is above 5m, add refrigerant according to the prolonged length of liquid pipe. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.

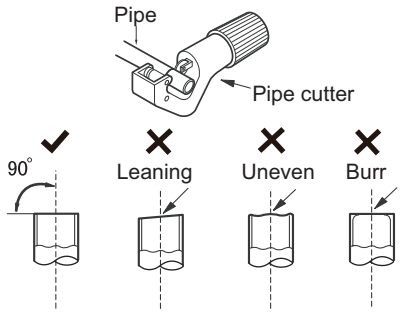
● Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

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

Appendix 3: Pipe Expanding Method

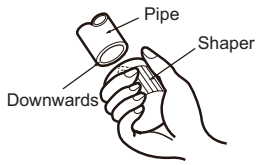
⚠ **Note:**

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



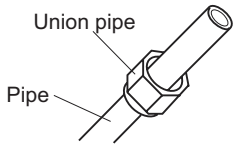
A:Cut the pip
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.

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



C:Put on suitable insulating pipe

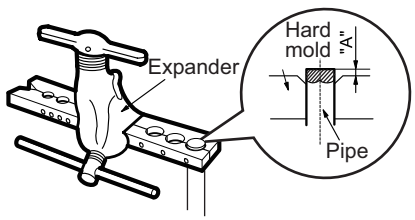
D:Put on the union nut
- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



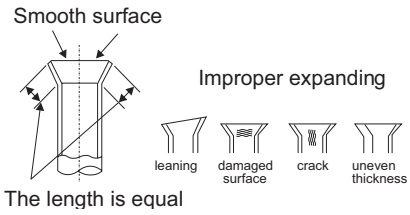
E:Expand the port
- Expand the port with expander.

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

Outer diameter(mm)	A(mm)	
	Max	Min
Φ6 - 6.35 (1/4")	1.3	0.7
Φ9.52 (3/8”)	1.6	1.0
Φ12 - 12.70 (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 (15K)

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

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

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

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

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

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