

# Service Manual

---

Models:GWH09TB-S3DNA1D  
GWH09TB-S3DNA1E  
GWH09TB-S3DNA2D  
GWH09TB-S3DNA3D  
GWH12TB-S3DNA1D  
GWH12TB-S3DNA2D  
GWH12TB-S3DNA3D  
(Refrigerant R410A)

## Table of Contents

<b>Part I : Technical Information</b> .....	1
<b>1. Summary</b> .....	1
<b>2. Specifications</b> .....	3
2.1 Specification Sheet.....	3
2.2 Operation Characteristic Curve .....	9
2.3 Capacity Variation Ratio According to Temperature .....	9
2.4 Noise Curve.....	10
2.5 Cooling and Heating Data Sheet in Rated Frequency .....	10
<b>3. Outline Dimension Diagram</b> .....	11
3.1 Indoor Unit.....	11
3.2 Outdoor Unit.....	12
<b>4. Refrigerant System Diagram</b> .....	13
<b>5. Electrical Part</b> .....	14
5.1 Wiring Diagram.....	14
5.2 PCB Printed Diagram .....	18
<b>6. Function and Control</b> .....	20
6.1 Remote Controller Introduction .....	20
6.2 Brief Description of Modes and Functions.....	25
<b>Part II : Installation and Maintenance</b> .....	33
<b>7. Notes for Installation and Maintenance</b> .....	33
<b>8. Installation</b> .....	35
8.1 Installation Dimension Diagram.....	35
8.2 Installation Parts-checking .....	37
8.3 Selection of Installation Location.....	37
8.4 Electric Connection Requirement.....	37
8.5 Installation of Indoor Unit.....	37
8.6 Installation of Outdoor Unit.....	40
8.7 Vacuum Pumping and Leak Detection .....	41
8.8 Check after Installation and Test Operation .....	41





## Model List

NO.	Model	Product code	Indoor model	Indoor product code	Outdoor model	Outdoor product code
1	GWH09TB-S3DNA1D	CB148008400	GWH09TB-S3DNA1D/I	CB148N08400	GWH09TB-S3DNA1D/O	CB148W08400
2	GWH09TB-S3DNA2D	CB411002902	GWH09TB-S3DNA2D/I	CB411N02902		
3	GWH09TB-S3DNA3D	CB412003300	GWH09TB-S3DNA3D/I	CB412N03300		CB148W08401
4	GWH09TB-S3DNA1D	CB148008401	GWH09TB-S3DNA1D/I	CB148N08400		
5	GWH09TB-S3DNA1D	CB148008407	GWH09TB-S3DNA1D/I	CB148N08402		
6	GWH12TB-S3DNA1D	CB148008300	GWH12TB-S3DNA1D/I	CB148N08300	GWH12TB-S3DNA1D/O	CB148W08300
7	GWH12TB-S3DNA2D	CB411003002	GWH12TB-S3DNA2D/I	CB411N03002		
8	GWH12TB-S3DNA3D	CB412003500	GWH12TB-S3DNA3D/I	CB412N03500		CB148W08301
9	GWH12TB-S3DNA1D	CB148008301	GWH12TB-S3DNA1D/I	CB148N08300		
10	GWH12TB-S3DNA1D	CB148008307	GWH12TB-S3DNA1D/I	CB148N08302		
11	GWH09TB-S3DNA1E	CB148009300	GWH09TB-S3DNA1E/I	CB148N09300	GWH09TB-S3DNA1E/O	CB148W09300
12	GWH09TB-S3DNA1E	CB148009301				CB148W09301

## 2. Specifications

### 2.1 Specification Sheet

Model			1.GWH09TB-S3DNA1D 2.GWH09TB-S3DNA2D 3.GWH09TB-S3DNA3D	GWH09TB-S3DNA1D
Product Code			1.CB148008400 2.CB411002902 3.CB412003300	CB148008401 CB148008407
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50/60	50/60
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	2600	2600
Heating Capacity		W	3000	3000
Cooling Power Input		W	600	600
Heating Power Input		W	650	650
Cooling Current Input		A	2.7	2.7
Heating Current Input		A	3.2	3.2
Rated Input		W	1600	1600
Rated Current		A	7.1	7.1
Air Flow Volume(SH/H/MH/M/ML/L/SL)		m <sup>3</sup> /h	650/600/550/500/450/400/350	650/600/550/500/450/400/350
Dehumidifying Volume		L/h	0.8	0.8
EER		W/W	4.33	4.33
COP		W/W	4.62	4.62
SEER			8.5	8.5
HSPF			/	/
Application Area		m <sup>2</sup>	12-18	12-18
Indoor Unit	Indoor Unit Model		1.GWH09TB-S3DNA1D/I 2.GWH09TB-S3DNA2D/I 3.GWH09TB-S3DNA3D/I	GWH09TB-S3DNA1D/I
	Indoor Unit Product Code		1.CB148N08400 2.CB411N02902 3.CB412N03300	CB148N08400 CB148N08402
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)		mm	Φ98X662
	Cooling Speed(SH/H/MH/M/ML/L/SL)		r/min	1300/1050/1000/900/800/700/500
	Heating Speed(SH/H/MH/M/ML/L/SL)		r/min	1300/1150/1080/1030/980/900/850
	Fan Motor Power Output		W	15
	Fan Motor RLA		A	0.07
	Fan Motor Capacitor		μF	/
	Evaporator Form			Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm	Φ7
	Evaporator Row-fin Gap		mm	2-1.5
	Evaporator Coil Length (LXDXW)		mm	662X25.4X305
	Swing Motor Model			MP24HA/MP24HB/MP24HC
	Swing Motor Power Output		W	2
	Fuse Current		A	3.15
	Sound Pressure Level (SH/H/MH/M/ML/L/SL)		dB (A)	43/36/34/32/30/28/26
	Sound Power Level (SH/H/MH/M/ML/L/SL)		dB (A)	55/48/46/44/42/40/38
	Dimension (WXHXD)		mm	866X292X209
	Dimension of Carton Box (LXWXH)		mm	942X374X282
Dimension of Package (LXWXH)		mm	945X377X297	
Net Weight		kg	11	
Gross Weight		kg	13	

Outdoor Unit	Outdoor Unit Model		GWH09TB-S3DNA1D/O	GWH09TB-S3DNA1D/O
	Outdoor Unit Product Code		CB148W08400	CB148W08401
	Compressor Manufacturer		ZHUHAI GREE DAIKIN DEVICE CO., LTD	ZHUHAI GREE DAIKIN DEVICE CO., LTD
	Compressor Model		1GDY23AXD	1GDY23AXD
	Compressor Oil		FVC50K	FVC50K
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	16.5	16.5
	Compressor RLA	A	4	4
	Compressor Power Input	W	845	845
	Compressor Overload Protector		HPC 115/95	HPC 115/95
	Throttling Method		Electron expansion valve	Electron expansion valve
	Set Temperature Range	°C	16~30	16~30
	Cooling Operation Ambient Temperature Range	°C	-15~48	-15~48
	Heating Operation Ambient Temperature Range	°C	-20~24	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94	Φ7.94
	Condenser Rows-fin Gap	mm	2.5-1.5	2.5-1.5
	Condenser Coil Length (LXDXW)	mm	733X57X550	733X57X550
	Fan Motor Speed	rpm	900/600	900/600
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.15	0.15
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m <sup>3</sup> /h	2400	2400
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ438	Φ438
	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)	54/-/-	54/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-	63/-/-
	Dimension (WXHXD)	mm	899X596X378	899X596X378
	Dimension of Carton Box (LXWXH)	mm	945X417X630	945X417X630
	Dimension of Package (LXWXH)	mm	948X420X645	948X420X645
	Net Weight	kg	41	41
	Gross Weight	kg	44	44
	Refrigerant		R410A	R410A
	Refrigerant Charge	kg	1.2	1.2
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52	Φ9.52
	Max Distance Height	m	10	10
	Max Distance Length	m	15	15
Note: The connection pipe applies metric diameter.				

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



Outdoor Unit	Outdoor Unit Model		GWH12TB-S3DNA1D/O	GWH12TB-S3DNA1D/O
	Outdoor Unit Product Code		CB148W08300	CB148W08301
	Compressor Manufacturer		CHINA RESOURCES SANYO COMPRESSOR CO. LTD.	CHINA RESOURCES SANYO COMPRESSOR CO. LTD.
	Compressor Model		C-6RZ110H1A	C-6RZ110H1A
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	33	33
	Compressor RLA	A	4.59	4.59
	Compressor Power Input	W	800	800
	Compressor Overload Protector		1NT11L-3979	1NT11L-3979
	Throttling Method		Electron expansion valve	Electron expansion valve
	Set Temperature Range	°C	16~30	16~30
	Cooling Operation Ambient Temperature Range	°C	-15~48	-15~48
	Heating Operation Ambient Temperature Range	°C	-20~24	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ9.52	Φ9.52
	Condenser Rows-fin Gap	mm	2-1.4	2-1.4
	Condenser Coil Length (LXDXW)	mm	803X44X559	803X44X559
	Fan Motor Speed	rpm	850/750/600	850/750/600
	Fan Motor Power Output	W	40	40
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m <sup>3</sup> /h	2400	2400
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ445	Φ445
	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)	54/-/-	54/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-	63/-/-
Dimension (WXHXD)	mm	899X596X378	899X596X378	
Dimension of Carton Box (LXWXH)	mm	945X417X630	945X417X630	
Dimension of Package (LXWXH)	mm	948X420X645	948X420X645	
Net Weight	kg	43	43	
Gross Weight	kg	46	46	
Refrigerant		R410A	R410A	
Refrigerant Charge	kg	1.3	1.3	
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ12	Φ12
	Max Distance Height	m	10	10
	Max Distance Length	m	20	20
	Note: The connection pipe applies metric diameter.			

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



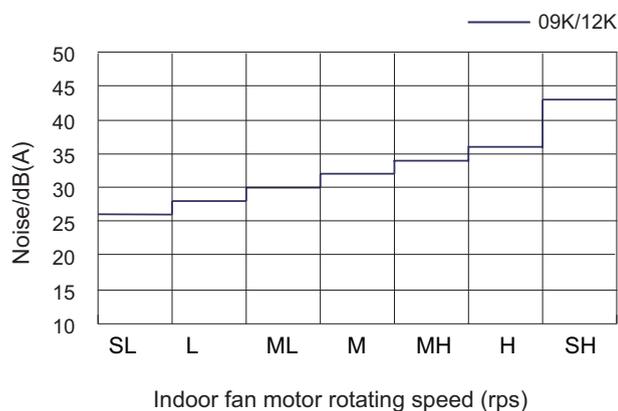
		GWH09TB-S3DNA1E/O	
Outdoor Unit	Outdoor Unit Model		
	Outdoor Unit Product Code		CB148W09300      CB148W09301
	Compressor Manufacturer		ZHUHAILINDACOMPRESSOR CO.,LTD DAIKIN DEVICE CO., LTD      ZHUHAILINDACOMPRESSOR CO.,LTD DAIKIN DEVICE CO., LTD
	Compressor Model		QXA-B102zE190      QXA-B102zE190
	Compressor Oil		RB68EP      RB68EP
	Compressor Type		Rotary      Rotary
	Compressor LRA.	A	35      35
	Compressor RLA	A	4.8      4.8
	Compressor Power Input	W	1020      1020
	Compressor Overload Protector		/      /
	Throttling Method		Electron expansion valve      Electron expansion valve
	Set Temperature Range	°C	16~30      16~30
	Cooling Operation Ambient Temperature Range	°C	-15~48      -15~48
	Heating Operation Ambient Temperature Range	°C	-20~24      -20~24
	Condenser Form		Aluminum Fin-copper Tube      Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94      Φ7.94
	Condenser Rows-fin Gap	mm	2.5-1.5      2.5-1.5
	Condenser Coil Length (LXD <sub>X</sub> W)	mm	733X57X550      733X57X550
	Fan Motor Speed	rpm	900/600      900/600
	Fan Motor Power Output	W	30      30
	Fan Motor RLA	A	0.15      0.15
	Fan Motor Capacitor	μF	/      /
	Outdoor Unit Air Flow Volume	m <sup>3</sup> /h	2400      2400
	Fan Type		Axial-flow      Axial-flow
	Fan Diameter	mm	Φ438      438
	Defrosting Method		Automatic Defrosting      Automatic Defrosting
	Climate Type		T1      T1
	Isolation		I      I
	Moisture Protection		IPX4      IPX4
	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)	54/-/-      54/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-      63/-/-
Dimension (WXHXD)	mm	899X596X378      899X596X378	
Dimension of Carton Box (LXWXH)	mm	945X417X630      945X417X630	
Dimension of Package (LXWXH)	mm	948X420X645      948X420X645	
Net Weight	kg	40.5      40.5	
Gross Weight	kg	43.5      43.5	
Refrigerant		R410A      R410A	
Refrigerant Charge	kg	1.2      1.2	
Connection Pipe	Connection Pipe Length	m	5      5
	Connection Pipe Gas Additional Charge	g/m	20      20
	Outer Diameter Liquid Pipe	mm	Φ6      Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52      Φ9.52
	Max Distance Height	m	10      10
	Max Distance Length	m	15      15
	Note: The connection pipe applies metric diameter.		

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

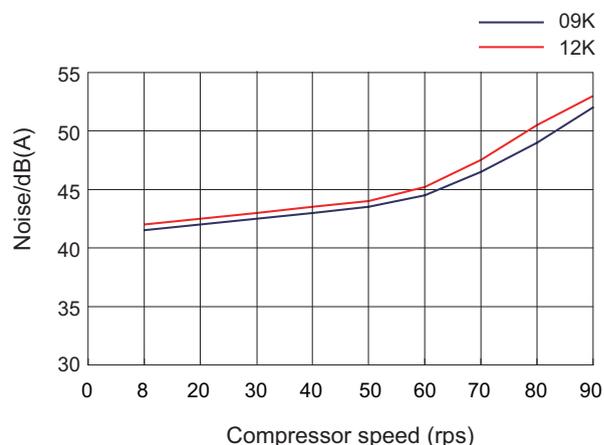


## 2.4 Noise Curve

Indoor side noise



Outdoor side noise



## 2.5 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 revolution (rps)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
27/19	35/-	09K	0.9~1.2	12 to 14	41 to 43	Super High	High	34
		12K		10 to 12	43 to 45			55

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 revolution (rps)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
20/15	7/6	09K	2.0~2.6	33 to 35	3 to 5	Super High	High	41
		12K		42 to 44	3 to 5			55

### Instruction:

T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

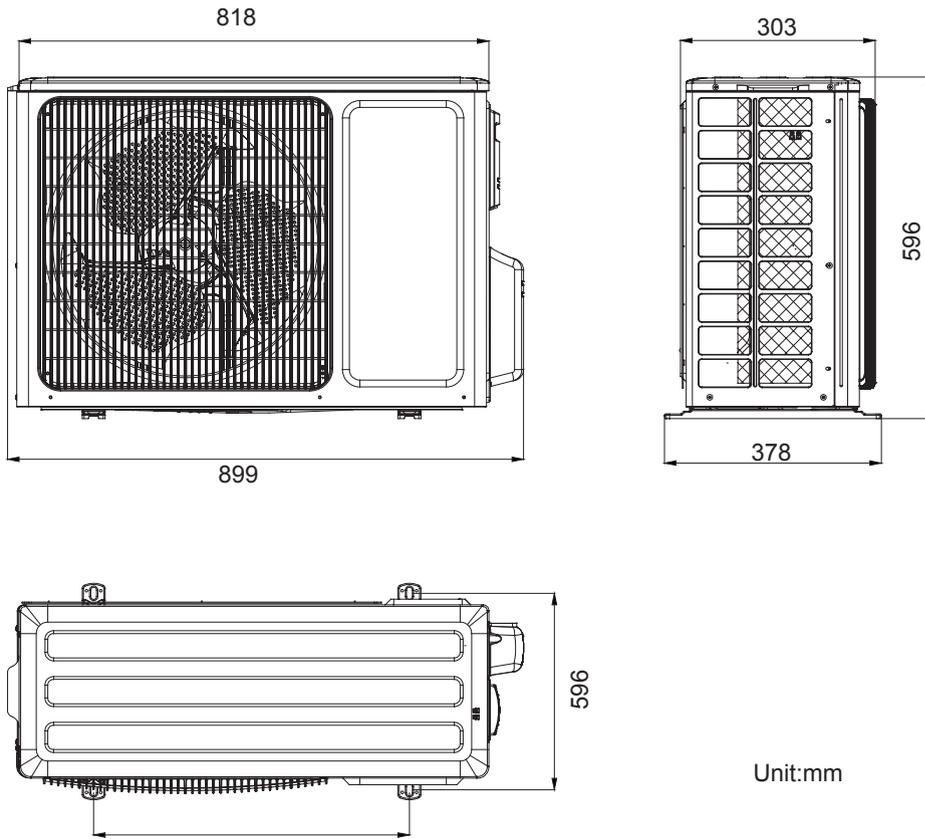
P: Pressure at the side of big valve

Connection pipe length: 5 m.



### 3.2 Outdoor Unit

GWH09TB-S3DNA1D/O GWH12TB-S3DNA1D/O GWH09TB-S3DNA1E/O





## 5. Electrical Part

### 5.1 Wiring Diagram

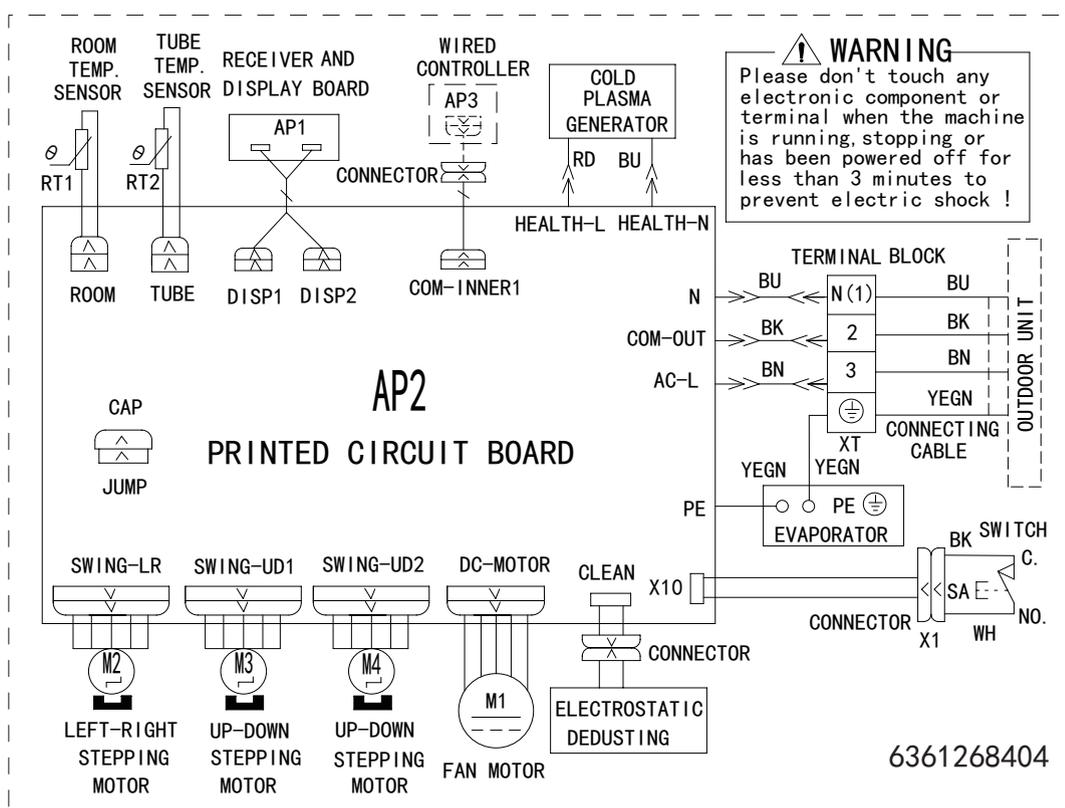
● **Instruction**

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 lever for this model.

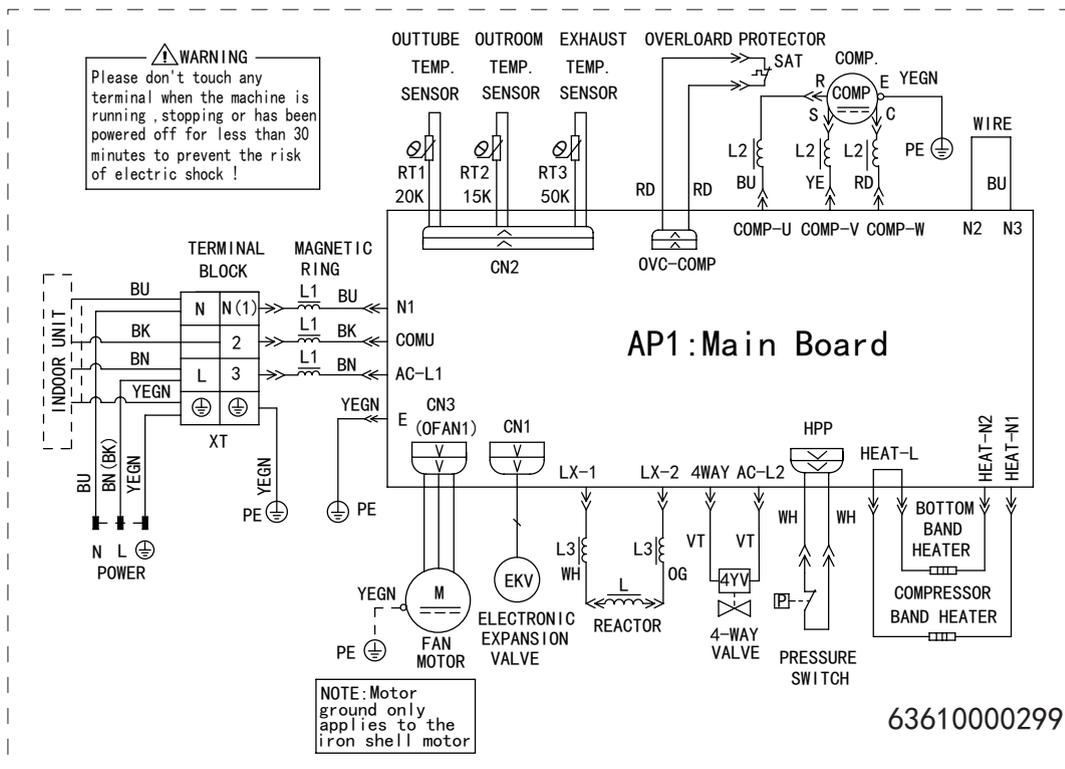
● **Indoor Unit**

GWH09TB-S3DNA1D/I    GWH12TB-S3DNA1D/I    GWH09TB-S3DNA2D/I    GWH12TB-S3DNA2D/I  
 GWH09TB-S3DNA3D/I    GWH12TB-S3DNA3D/I

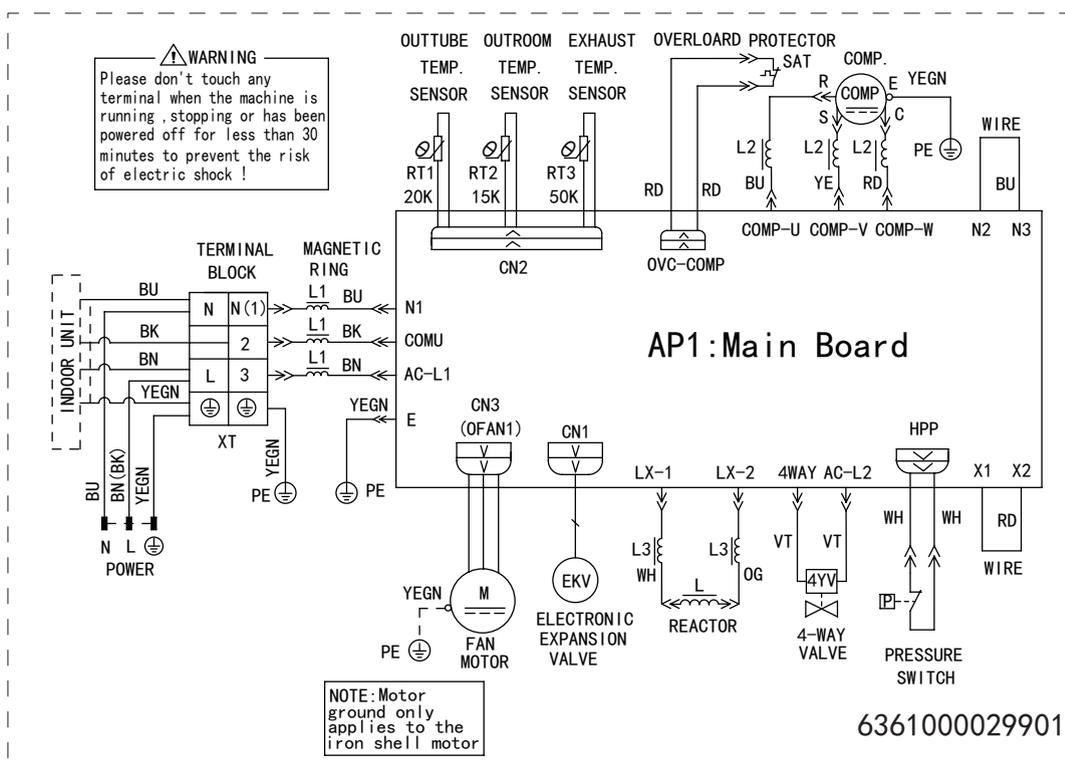




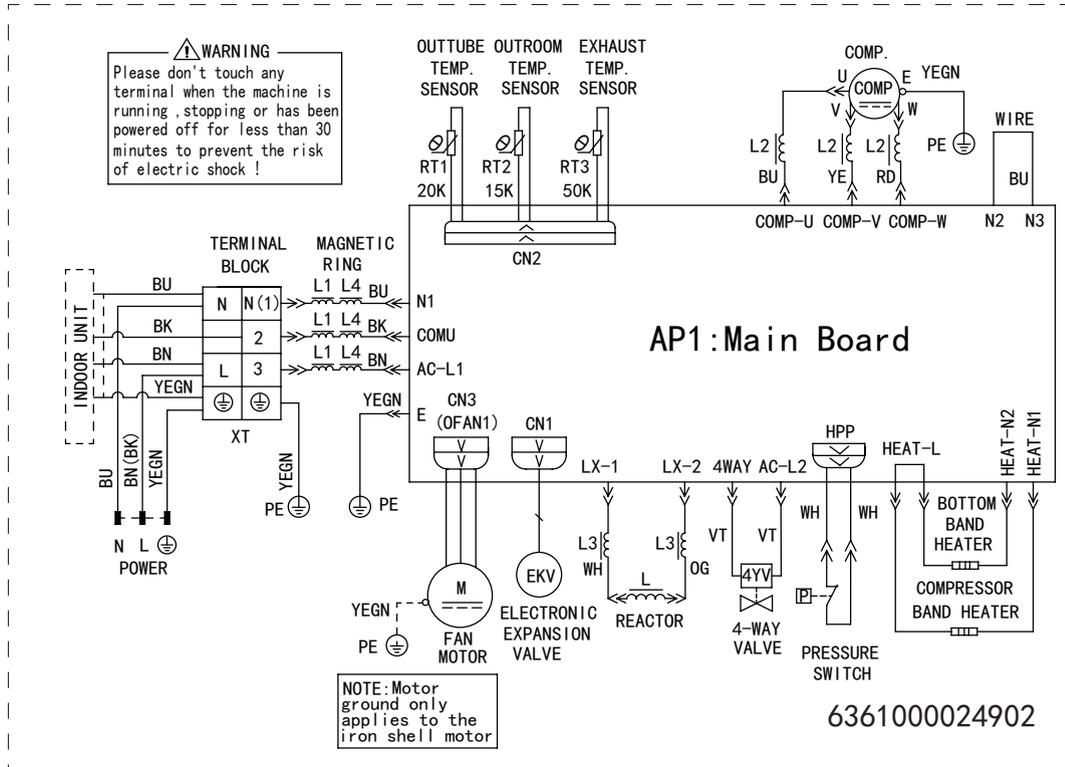
(3) GWH12TB-S3DNA1D/O(CB148W08300)



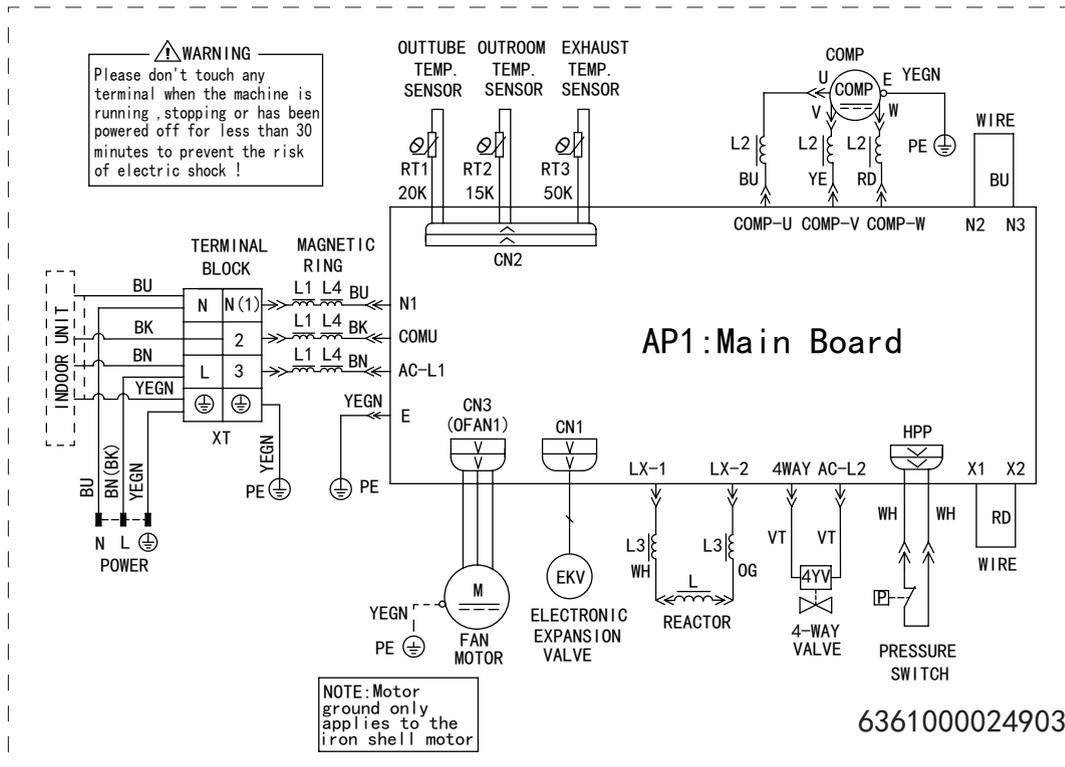
(4) GWH12TB-S3DNA1D/O(CB148W08301)



(5) GWH09TB-S3DNA1E/O (CB148W09300)



(6) GWH09TB-S3DNA1E/O (CB148W09301)



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

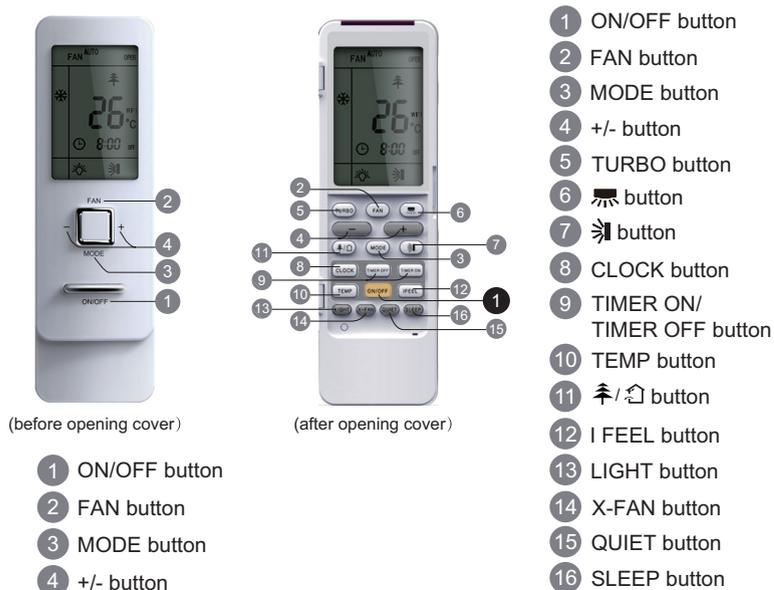




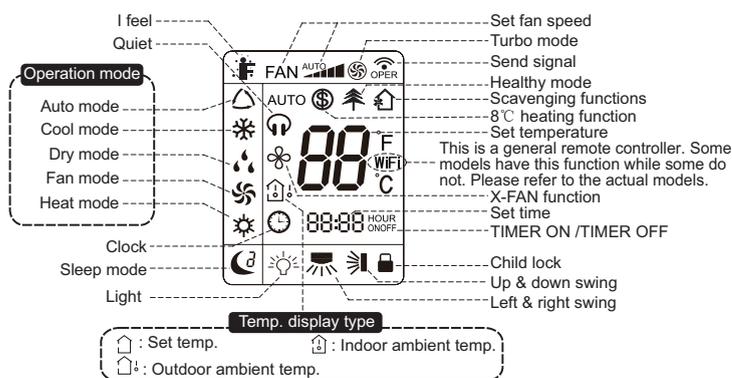
## 6. Function and Control

### 6.1 Remote Controller Introduction

#### Buttons on Remote Controller



#### Introduction for Icons on Display Screen



#### Introduction for Buttons on Remote Controller

##### Note:

- This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model don't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Operation indicator " " is ON (red indicator). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon " " on the display of remote controller will blink once and the air conditioner will give out a "de" sound, which means the signal has been sent to the air conditioner.
- Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corresponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding set function icons.

##### 1. ON/OFF button

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



## 10. TEMP button

Press this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor units 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, temperature indicator on indoor unit displays indoor ambient temperature; When selecting "🏠+" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature. 3s later it will return to the setting temperature or it depends on the other received signal within 3s.

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

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

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

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

## 12. I FEEL button

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

## 13. LIGHT button

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

## 14. X-FAN button

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

## 15. QUIET button

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

## 16. SLEEP button

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

In Cool mode:

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

In Heat mode:

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

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

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

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

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

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

**17. About X-FAN function**

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

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

**18. About AUTO RUN**

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

**19. About turbo function**

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

**20. About lock**

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

**21. About swing up and down**

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

**22. About swing left and right**

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

**23. About switch between Fahrenheit and Centigrade**

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

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

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

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

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

**26. About Auto Quiet function**

When auto quiet function is selected:

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

**27. About Sleep function**

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

## Operation Guide

### 1. General operation

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

### 2. Optional operation

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

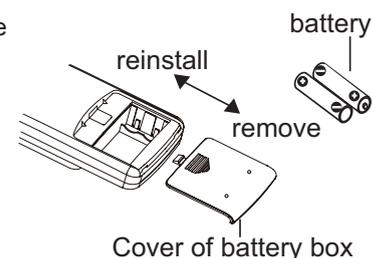


## Replacement of Batteries in Remote Controller

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

Note:

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



## 6.2 Brief Description of Modes and Functions

### ● Indoor Unit

#### 1 Temperature Parameters

◆ Indoor preset temperature ( $T_{\text{preset}}$ )

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

2 Basic functions (The temperature in this manual is expressed by Centigrade. If Fahrenheit is used, the switchover between them is  $T_f = T_c \times 1.8 + 32$ .)

Once the compressor is energized, there should be a minimum interval of 3 minutes between two start-ups. But if the unit is de-energized and then energized, the compressor can restart within 3 minutes.

#### 2.1 Cooling mode

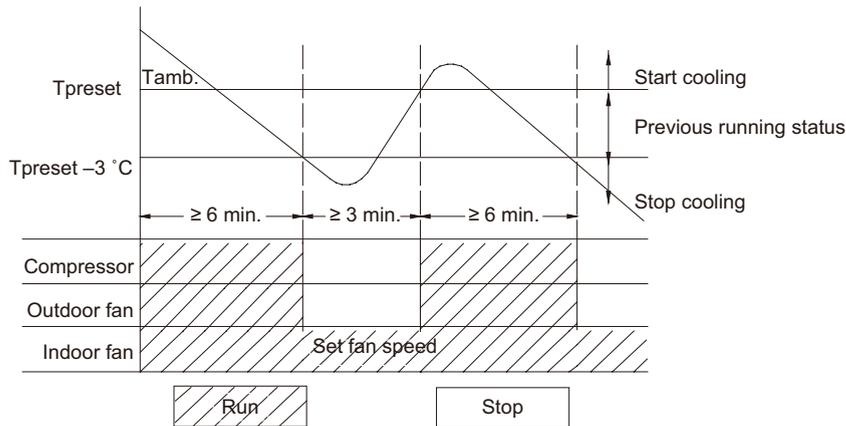
##### 2.1.1 Cooling conditions and process

When  $T_{\text{amb}} \geq T_{\text{preset}}$ , the unit starts cooling operation. In this case, the compressor and the outdoor fan operate and the indoor fan operates at set speed.

When  $T_{\text{amb}} \leq T_{\text{preset}} - 3^\circ\text{C}$ , the compressor and the outdoor fan stop while the indoor fan runs at set speed.

When  $T_{\text{preset}} - 3^\circ\text{C} < T_{\text{amb}} < T_{\text{preset}}$ , the unit will maintain its previous running status.

In cooling mode, temperature setting range is  $16 \sim 30^\circ\text{C}$ ; the indoor unit displays operation icon, cooling icon and set temperature.



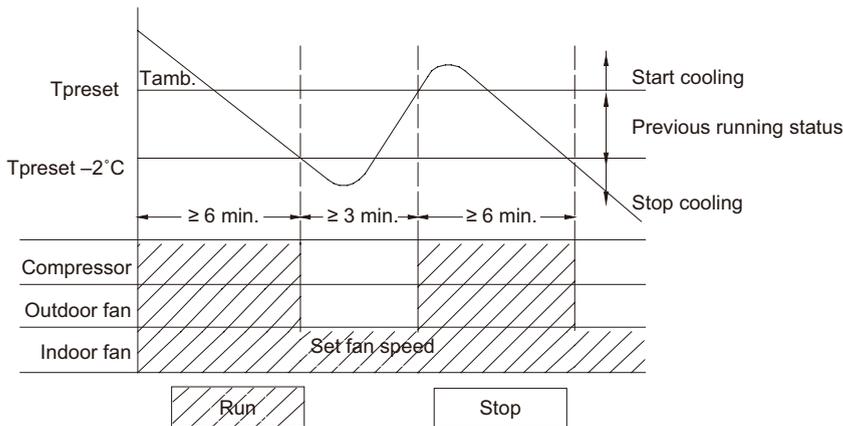
2.1.2 When outdoor unit has malfunction or stops for protection, indoor unit will keep previous operation status and display malfunction code.

2.1.3 The protection status is as the same as the cooling mode.

#### 2.2 Dry Mode

##### 2.2.1 Dry Conditions and Process

When  $T_{\text{amb}} > T_{\text{preset}}$ , the unit operates in cooling mode. Meanwhile, compressor and outdoor fan operate, and indoor fan operates at set fan speed (low fan speed, quiet fan speed or auto quiet fan speed). When  $T_{\text{preset}} - 2^\circ\text{C} < T_{\text{amb}} \leq T_{\text{preset}}$ , the unit keeps previous operation status. When  $T_{\text{amb}} \leq T_{\text{preset}} - 2^\circ\text{C}$ , compressor, outdoor fan and indoor fan operate at set fan speed (low fan speed, quiet fan speed or auto quiet fan speed). Under this mode, the temperature setting range is  $16 \sim 30^\circ\text{C}$ . Display displays operation icon, drying icon and set temperature.



#### 2.3 Heating mode (not available for cooling only type)

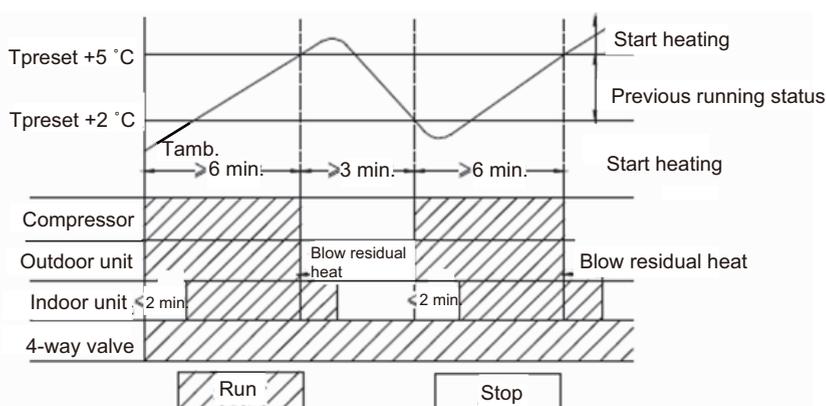
##### 2.3.1 Heating conditions and process

When  $T_{\text{amb}} \leq T_{\text{preset}} + 2^\circ\text{C}$ , the unit starts heating operation. In this case, compressor and outdoor fan operate simultaneously; the indoor fan operates at cold-air prevention mode.

When  $T_{\text{amb}} \geq T_{\text{preset}} + 5^\circ\text{C}$ , the compressor and outdoor fan stop operation; the indoor fan blows residual heat.

When  $T_{\text{preset}} + 2^\circ\text{C} < T_{\text{amb}} < T_{\text{preset}} + 5^\circ\text{C}$ , the unit will maintain its previous running status.

Under this mode, temperature setting range is  $16 \sim 30^\circ\text{C}$ ; the indoor unit displays operation icon, heating icon and set temperature.



### 2.3.2 Defrosting and Oil Return

When receiving the signal of defrosting and oil return, the horizontal louver (big one) will rotate to the position where the angle is minimum and the other horizontal louver (small one) will close. In 10 seconds later, indoor fan will stop operation. During defrosting, oil return and 5 minutes after quit, all indoor pipe temperature sensors will not be detected. When receiving oil return signal or defrosting signal sent by outdoor unit, "dual 8" nixie tube will display "H1". (H1 is not malfunction code.)

### 2.3.3 Blow residual heat

In heating mode, when temperature reaches the set temperature, the compressor and outdoor fan will stop.

The horizontal louver (big one) will rotate to the default position for cooling and the other one (small one) will close. Indoor unit will operate at set speed for 60s and then stop operation.

When the unit is in heating mode or auto heating mode, and also the compressor and indoor fan are operating, if turning off the unit, compressor and outdoor fan will stop. Horizontal louver (big one) will rotate to the position where gentle wind is blown out (default position for cooling) and the other horizontal louver (small one) will close. Indoor unit will operate at low speed for 10 seconds and then the unit will be turned off.

### 2.4 Fan Mode

In this mode, indoor fan operates at set speed while compressor and outdoor fan stop operation. The set temperature range is 16~30°C. Operation icon and set temperature are displayed.

### 2.5 Auto Mode

In this mode, operation mode (Cool, Heat, Fan) will be automatically selected according to change of ambient temperature. Operation icon, actual operation icon and set temperature will be displayed. There is 30s delay for protection when changing mode. The protection function is as the same as that under each mode.

2.5.1 When  $T_{amb} \geq 26^\circ\text{C}$ , the unit will operate at cooling mode, the default set temperature is 25°C.

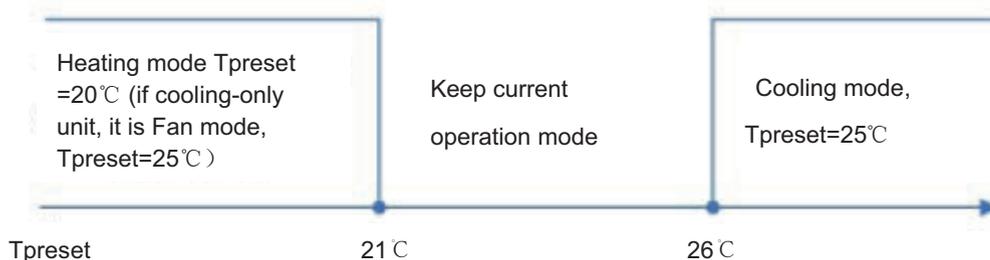
2.5.2 When  $T_{amb} \leq 21^\circ\text{C}$ , the unit will operate at heating mode, the default set temperature is 20°C (if the cooling only unit operates at fan mode, the default set temperature is 25°C.);

2.5.3 When  $22^\circ\text{C} \leq T_{amb} \leq 25^\circ\text{C}$ , and the unit is turned on for the first time, if it changes to auto mode from other mode, the previous operation mode will be maintained; If it changes to auto mode from dry mode, the unit will operate at fan mode.

2.5.4 When the unit operates at auto mode, the frequency of compressor is as the same as that under cooling mode, while it is as the same as that under heating mode.

### Protection function

- A. Under cooling mode, the protection function is as the same as that under cooling mode.
- B. Under heating mode, the protection function is as the same as that under heating mode.



### 2.6. "8°C" Heating

Under heating mode, press buttons "Temp" and "Clock" simultaneously, the 8°C heating function will be activated and "cold air prevention" will be shielded.

2.6.1 8°C heating can't co-exist with sleep function. If 8°C heating function is set, it can be cancelled by pressing sleep button. In that case, the set temperature will be that before entering 8°C heating; If sleep function is set, press buttons "Temp" and "Clock" simultaneously to activate 8°C function and cancel sleep function at the same time.

2.6.2 Set temperature is 8°C, and it is displayed on the indoor display panel.

2.6.3 In this mode, TURBO can't be set and fan speed can't be adjusted.

2.6.4 In this mode, when compressor operates, fan speed will be adjusted as follows; when compressor stops operation, indoor unit will operate at blowing residual heat.

When  $T_{indoor\ amb} \leq 9^\circ\text{C}$ , indoor unit will operate at high speed;



### Timer Change

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button of the remote controller. You can also set the timer once again, and then the unit will operate according to the last setting.

If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep operating at current status till OFF time reaches.

If timer ON and timer OFF are set at the same time at unit OFF, the unit will keep off status till ON time reaches.

Each day in future, the system will operate according to preset mode till OFF time reaches and stop operation till ON time reaches. If ON time and OFF time are the same, OFF command will prevail.

### 3.2 Auto Button

If this button is pressed, the unit will operate in AUTO mode and indoor fan will operate at auto speed; meanwhile, the swing motor operates. Press this button again to turn off the unit.

### 3.3 Buzzer

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

### 3.4 Sleep Function

In SLEEP mode, the unit will automatically select appropriate sleep curve to operate according to different temperature setting.

### 3.5 Turbo Function

This function can be set in cooling or heating mode to quickly cool or heat the room.

### 3.6 X-FAN Function

3.6.1 When the unit is operating at COOL or DRY mode( it is not available under AUTO, HEAT, FAN modes), the X-FAN function can be turned on/off. When it is turned on,once pressing ON/OFF button to turn off the unit, indoor fan will continue operation at low speed for 10 minutes. Within the 10 minutes, horizontal louver will keep its previous status while cold plasma and static dedusting will be forced to be turned on and other loads will be turned off. Then the complete unit will be turned off; When X-FAN function is set to be off, once pressing ON./OFF button, the complete unit will be turned on immediately.

3.6.2 During X-FAN operation, press X-FAN button, the indoor fan, horizontal louver, cold plasma and static-dedusting will be turned off immediately.

### 3.7 Control of Indoor Fan

Indoor fan can be set by remote control within the range of Mute, Fan speed 1, Fan speed 2, Fan speed 3, Fan speed 4, Fan speed 5 and Turbo and Fan will operate at low, med. high or super high speed accordingly. And also, auto fan speed can be set. Under auto fan speed mode, indoor fan will automatically select high, med., low or mute speed according to change of ambient temperature.

3.7.1 Under Auto Heat mode or regular Heat mode, auto fan speed will be as follows:

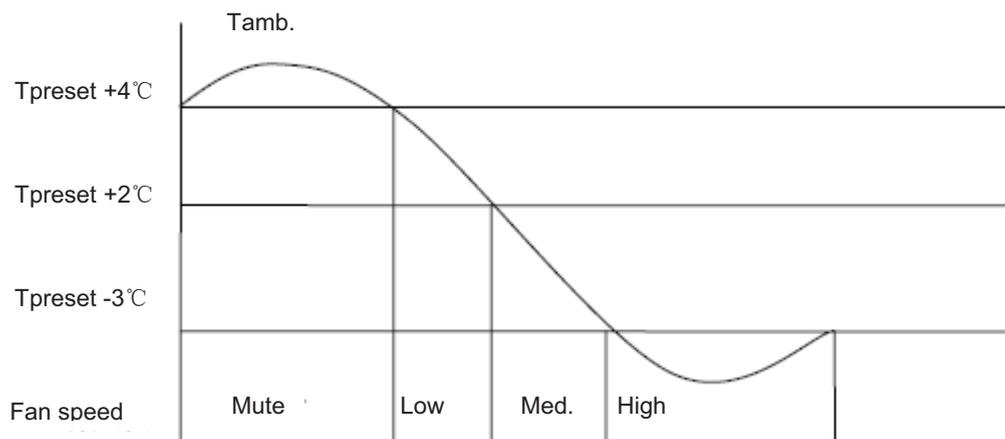
When  $T_{amb} < T_{preset} - 3^{\circ}\text{C}$ , indoor fan will operate at high speed;

When  $T_{preset} - 3^{\circ}\text{C} \leq T_{amb} < T_{preset} + 2^{\circ}\text{C}$ , indoor fan will operate at med. speed;

When  $T_{preset} + 2^{\circ}\text{C} \leq T_{amb} < T_{preset} + 4^{\circ}\text{C}$ , indoor fan will operate at low fan speed;

When  $T_{amb} \geq T_{preset} + 4^{\circ}\text{C}$ , indoor fan will operate at mute.

Control Diagram of Auto Fan Speed under HEAT Mode



3.7.2 Under FAN or COOL mode: if it is auto cooling mode or regular cooling mode, auto fan speed will be as follows:

When  $T_{amb} \geq T_{preset} + 3^{\circ}\text{C}$ , indoor fan will operate at high speed;

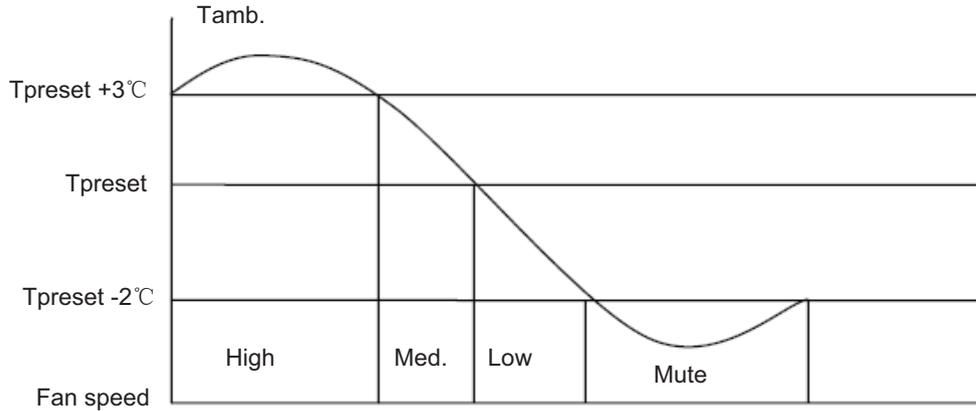
When  $T_{preset} < T_{amb} < T_{preset} + 3^{\circ}\text{C}$ , indoor fan will operate at med. speed;

When  $T_{preset} - 2^{\circ}\text{C} < T_{amb} \leq T_{preset}$ , indoor fan will operate at low speed;

When  $T_{amb} \leq T_{preset} - 2^{\circ}\text{C}$ , indoor fan will operate at mute;

3.7.3 There is no auto fan speed under DRY mode

Note: Fan speed "High", "Med." and "Low" are respectively corresponding to "Fan speed 5", "Fan speed 3" and "Fan speed 1". There is 210 seconds delay for fan speed switchover of auto fan.



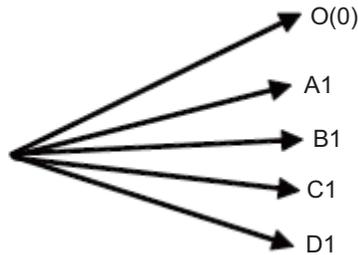
### 3.8 Vertical Swing

#### 3.8.1 Small Horizontal Louver

After energization, vertical swing motor will firstly have the horizontal louver rotate anticlockwise to position O to close air outlet. If swing function has not been set after startup of the unit, horizontal louver will turn clockwise to position D1 in HEAT mode. If swing function is set when starting up the unit, the horizontal louver will swing between O and D1. There are 7 swing status of horizontal louver: Positions O, A1, B1, C1 and D1, swing between O and D1 and stop at any position between L and D (angles between O and D1 are equiangular). Upon turning off the unit, the horizontal louver will close at position O. Swing function is available only when swing function is set and indoor fan is operating.

Note:

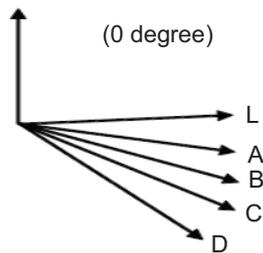
- a. If the position is set between O and D1, A 1 and C1 or B1 and D1 by remote controller, the horizontal louver will swing between O and D1.
- b. For model 9K/12K, only when big horizontal louver rotates to the second position for heating( 62° of corresponding angle), this louver will be activated.
- c. Under cooling mode, this horizontal louver will be always in the position O.



#### 3.8.2 Big Horizontal Louver

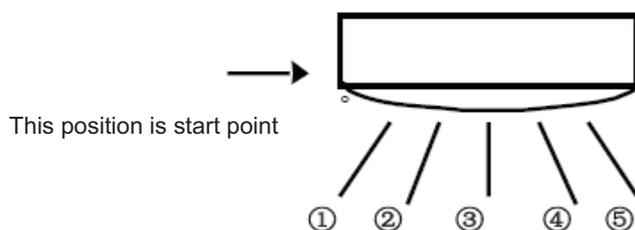
After energization, up & down swing motor will firstly have the horizontal louver rotate anticlockwise to position O to close air outlet. If swing function has not been set after startup of the unit, horizontal louver will turn clockwise to position D in HEAT mode, or turn clockwise to level position L in other modes. If swing function is set when starting up the unit, the horizontal louver will swing between L and D. There are 7 swing status of horizontal louver: Positions L, A, B, C and D, swing between L and D and stop at any position between L and D (angles between L and D are equiangular). Upon turning off the unit, the horizontal louver will close at position O.

Note: If the position is set between L and B, A and C or B and D by remote controller, the horizontal louver will swing between L and D.



### 3.9 Horizontal Swing

Upon energization, the vertical louver will be reset to the start position firstly and then stop in the middle position. When setting horizontal swing, there are 7 status: Position ①, Position ②, Position ③, Position ④, Position ⑤, swing between ① and ⑤ and stop at any position between ① and ⑤. If setting horizontal swing during operation of the unit, the horizontal swing motor will drive the louver to swing horizontally. When cancelling horizontal swing or it is not set when turning on the unit, the louver will stop in the current position and it will not move when turning off the unit. Only when swing is set and indoor fan is operating, the vertical louver can horizontally swing.



### 3.10 Display

#### 3.10.1 Operation and Mode Icons

Upon energization, the unit will display all icons within 3 seconds. Under standby state, LED lamp of standby is on. If the unit is turned on by remote controller, LED lamp of operation is on; meanwhile, the mark of current running mode will be displayed. If the light button is turned off, no mark will be displayed.

#### 3.10.2 Display of Nixie Tube on Indoor Unit

When energized & started for the first time, the indoor unit defaults to displaying current set temperature (16~30°C). When set temperature display is set by remote controller, it will display set temperature; when room temperature display is set, it will display room or outdoor temperature. After that, when operating the remote controller for other settings, the temperature display method will keep original.

When operating the remote controller during room temperature display, the set temperature will be displayed for 5 seconds firstly and then room temperature display returns. If there is malfunction, corresponding malfunction code will be displayed. For example, if ambient temperature sensor has malfunction, "F1" will be displayed; if indoor pipe temperature has malfunction, "F2" will be displayed; if jumper cap has malfunction, "C5" will be displayed.

#### 3.11 Memory Function

Memorized items: mode, up & down swing, light, set temperature and set fan speed.

When power is recovered after power failure, the unit will automatically start operation according to memorized status. After power recovery, the unit without timer setting before power failure will operate according to the last setting; the unit with general timer setting which has not been fulfilled before power failure will memorize the timer setting and re-calculate the time after.

#### 3.12 I FEEL function

When I FEEL command is received by controller, and also the ambient temperature is received from remote control, the controller will operate according to the ambient temperature sent by the remote controller (For cold blow prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will send ambient temperature data to the controller for every 10 minutes. When the data has not been received for 11 minutes, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not selected, the ambient temperature will be that sensed by the air conditioner. Ambient temperature of I FEEL displayed by controller is 1°C~59°C.

#### 3.13 Health and Cold Plasma Function

When the unit is operating, turn health or cold plasma to be ON/OFF by health button in remote control (if there is no such button in remote control, the health is on as default). Only when health or cold plasma is turned on and indoor fan is operation, such function can be activated.

#### 3.14 Static Dedusting Function

When the unit is operating, turn static dedusting ON/OFF by health button in remote control (if there is no such button in remote control, the health is on as default). Only when static dedusting is turned on and indoor fan is operation, such function can be activated.

#### 3.15. Fahrenheit Display

Nixie tube displays current set temperature. If remote signal is Fahrenheit, the temperature will be displayed in Fahrenheit. The set temperature range is 16~30°C (61~86°F). Under Auto mode, in COOL operation and FAN operation, 25°C(77°F) will be displayed, while in HEAT operation and FAN operation, 20°C(68°F) will be displayed. For cooling-only controller, only 25°C(77°F) will be displayed.

#### 3.16 Locked protection to Indoor Fan Motor

If the indoor fan motor keeps low rotation speed for a continuous period of time after startup, the unit will stop operation and display "H6".

#### 3.17 Mute Mode

3.17.1 Auto Mute: When selecting fan speed of auto mute, the fan speed will be adjusted according to change of ambient temperature; when temperature meets the requirement of the setting, the unit will operate at lowest speed.

3.17.2 Mute mode: When selecting fan speed of mute, the unit will directly operate at lowest fan speed.

#### 3.18 Compulsory defrosting function

When indoor unit operates in formidable environment, for example, temperature is too low, humidity is very high or there's too much frost on outdoor unit, which affects the heating efficiency of outdoor unit, user can select the compulsory defrosting function to improve outdoor unit's heating efficiency.

Entry method of compulsory defrosting function:

When the unit is turned on in heating by remote controller and the set temperature is 16°C, press "+,-,+,-,+,-" continuously within 5s, the indoor unit turns to compulsory defrosting setting and it will send compulsory defrosting mode to outdoor unit. The outdoor fan will operate in compulsory defrosting mode.



11.2 Under cooling or drying mode, if  $T_{\text{inner tube}} < 6$ , the operation frequency of compressor may increase or decrease;

11.2.1 If the unit is stopped because of freeze protection for 6 times successively, it can't resume operation automatically and the malfunction will be displayed continuously, which can only be resumed by pressing ON/OFF button. During operation, if operation time of compressor is over, the times of stop operation because of freeze protection will be cleared. If turn off the unit or switch to fan/heating mode, malfunction and times of malfunction is eliminated immediately.

## 12. Overload protection

12.1 Overload protection under cooling or drying mode: If  $T_{\text{overload stop operation temp. in cooling}} \leq T_{\text{outdoor tube}}$ , the unit stops operation because of overload in cooling; if  $T_{\text{outdoor tube}} < T_{\text{overload limit-frequency temp in cooling}}$  and the compressor has stopped for 3min, the complete unit can resume operation.

12.2 Under cooling or drying mode, if  $T_{\text{overload limit-frequency temp. in cooling}} \leq T_{\text{outdoor tube}}$ , the frequency of compressor may increase or decrease;

12.3 Overload protection under heating mode: If  $T_{\text{overload stop operation temp. in heating}} \leq T_{\text{indoor tube}}$ , the unit stops operation because of overload in heating; if  $T_{\text{indoor tube}} < T_{\text{overload limit-frequency temp. in heating}}$  and the compressor has stopped for 3min, the complete unit can resume operation.

12.4 Under heating mode. If  $T_{\text{overload limit-frequency temp. in heating}} \leq T_{\text{indoor tube}}$ , operation frequency of compressor may increase or decrease;

12.5 If the unit is stopped because of overload protection for 6 times successively, it can't resume operation automatically and the malfunction will be displayed continuously, which can only be resumed by pressing ON/OFF button. During operation, if operation time of compressor is over, the times of stop operation because of overload protection will be cleared. If turn off the unit, fan or switch to fan/heating mode, malfunction and times of malfunction is eliminated immediately.

## 13. Discharge temperature protection of compressor

13.1 If  $T_{\text{stop operation temperature for discharge}} \leq T_{\text{discharge}}$ , the unit stops operation because of discharge protection; If  $T_{\text{discharge}} < T_{\text{limit-frequency temperature for discharge}}$  and compressor has stopped for 3min, the complete unit can resume operation;

13.2 If  $T_{\text{normal speed decrease-frequency for discharge}} \leq T_{\text{discharge}}$ , operation frequency of compressor may decrease or increase;

13.3 If the unit is stopped because of discharge protection of compressor for 6 times successively, it can't resume operation automatically, which can only be resumed by pressing ON/OFF button. During operation, if operation time of compressor is over, the times of stop operation because of discharge protection will be cleared. If turn off the unit, or switch to fan/heating mode, malfunction and times of malfunction is eliminated immediately.

## 14. Current protection function

14.1 If  $13A \leq I_{\text{AC current}}$ , operation frequency of compressor may decrease or increase;

14.2 If  $17A \leq I_{\text{AC current}}$ , the system will stop operation because of overcurrent; the complete unit can resume operation only after the compressor stops for 3min;

14.3 If the unit is stopped because of overcurrent for 6 times successively, it can't resume operation automatically, which can only be resumed by pressing ON/OFF button. During operation, if operation time of compressor is over, the times of stop operation because of overcurrent protection will be cleared.

## 15. Voltage drop protection

During operation of compressor, if the voltage is decreasing quickly, the system may stop operation and voltage drop malfunction is caused. 3min later, the system will be restarted up automatically.

## 16. Communication malfunction

When it hasn't received the correct signal from indoor unit for 3min, the unit will stop operation because if communication malfunction; If communication malfunction is eliminated and compressor has stopped for 3in, the complete unit can resume operation.

## 17. OPM module protection

After compressor is turned on, if the overcurrent happens for IPM module, or control voltage is too low because of abnormal causes, IPM will detect module protection signal immediately. Once it detected the module protection signal, the unit will stop operation because of module protection. If module protection is resumed and compressor has stopped for 3min, the complete unit will resume operation.

If the unit is stopped because of module protection for 3 times successively, the unit can resume operation automatically unless press ON/OFF button. If the operation time for compressor is over, the times of stop operation because of module protection will be cleared.

## 18. Overheat protection of module

18.1 If  $T_{\text{normal speed frequency-decreasing temp. of module}} \leq T_{\text{module}}$ , the operation frequency of compressor may decrease or increase;

18.2 If  $T_{\text{stop operation temperature of module}} \leq T_{\text{module}}$ , the syste will stop operation for protection. If  $T_{\text{module}} < T_{\text{frequency-limiting temperature of module}}$  and compressor has stopped for 3min, the complete unit will resume operation;

18.3 If the unit is stopped because of overheating of compressor module for 6 times successively, it can't resume operation automatically, which can only be resumed by pressing ON/OFF button. During operation, if operation time of compressor is over, the times of stop operation because of compressor overheating protection will be cleared. If turn off the unit, or switch to fan mode, times of malfunction is eliminated immediately.

## 19. Overload protection of compressor

19.1 If it detected that the overload switch for compressor is open for 3min successively, the complete unit will stop operation for protection;

19.2 If overload protection is resumed and compressor has stopped for 3min, the complete unit can resume operation;

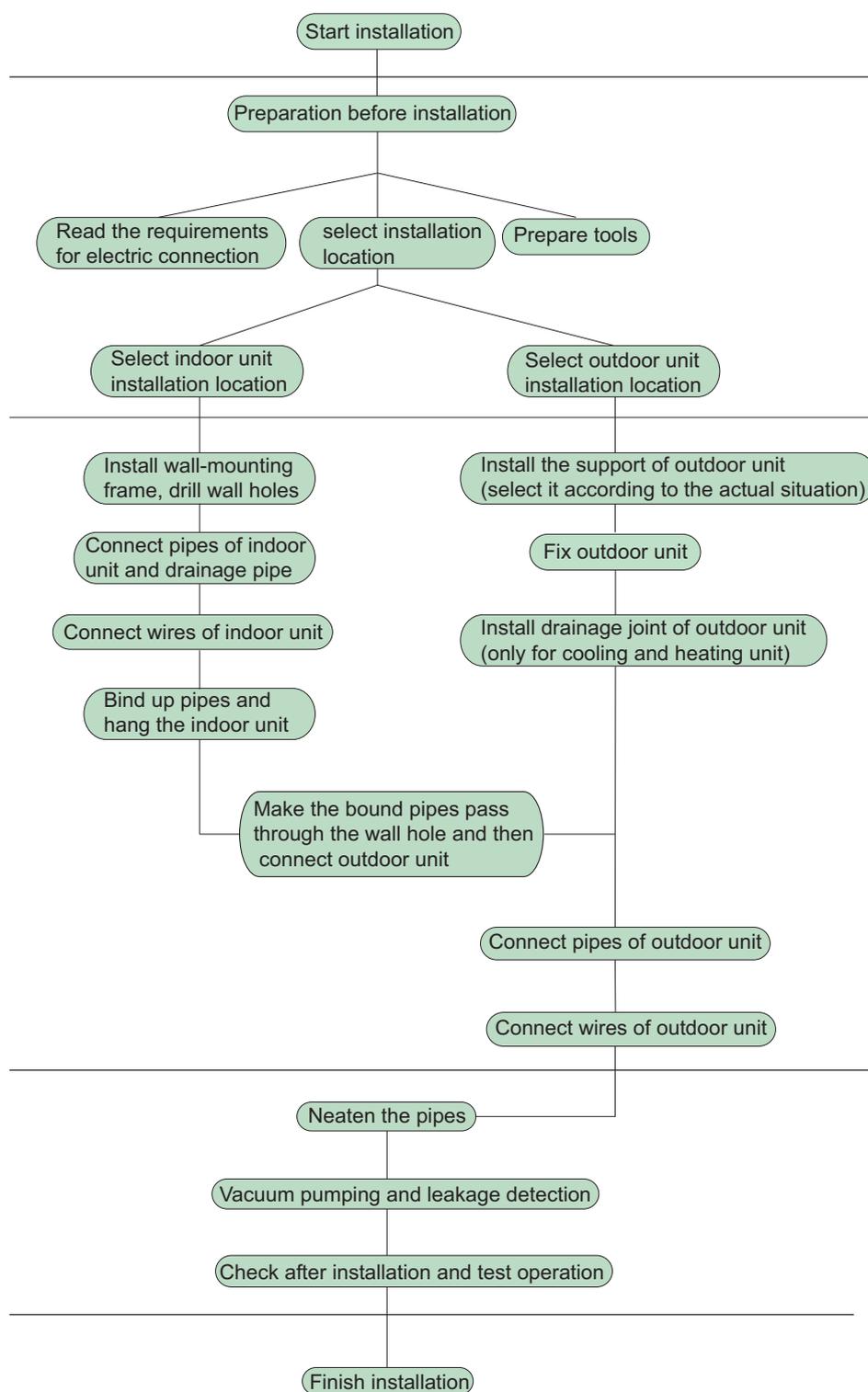
19.3 If the unit stops operation because of overload protection for compressor for 3times successively, it can't resume operation automatically, which can only be resumed by pressing ON/OFF button. After compressor has operated for 30min, overload protection times for compressor will be eliminated.







## 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.

### 2. Indoor Unit:

- (1) There should be no obstruction near air inlet and air outlet.
- (2) Select a location where the condensation water can be dispersed easily and wont affect other people.
- (3) Select a location which is convenient to connect the outdoor unit and near the power socket.
- (4) Select a location which is out of reach for children.
- (5) The location should be able to withstand the weight of indoor unit and wont increase noise and vibration.
- (6) The appliance must be installed 2.5m above floor.
- (7) Dont install the indoor unit right above the electric appliance.
- (8) The appliance shall not be installed in the laundry.

### 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
09K/12K	16A

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

### 2. Grounding Requirement:

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





## 8.6 Installation of Outdoor Unit

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

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

**⚠ Note:**

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

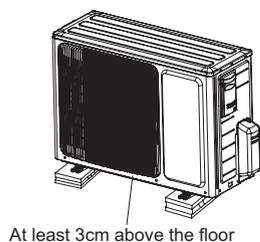


Fig.18

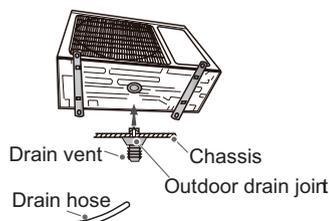


Fig.19

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

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

### 3. Fix Outdoor Unit

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

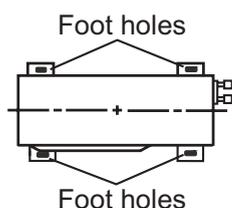


Fig.20

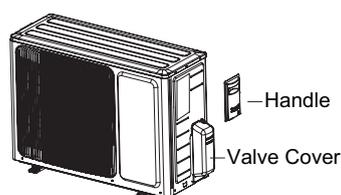


Fig.21

### 4. Connect Indoor and Outdoor Pipes

- (1) Remove the screw on the right handle 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)

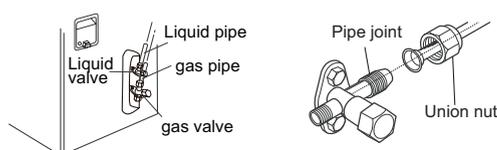


Fig.22

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

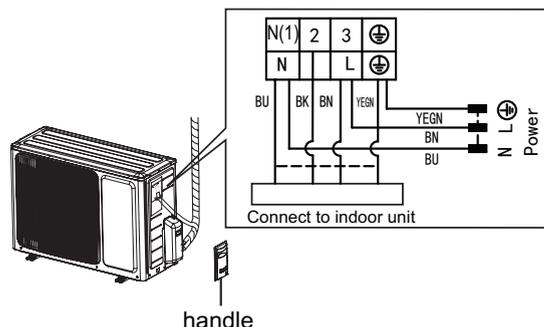


Fig.23

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

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

**⚠ Note:**

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

### 6. Neaten the Pipes

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

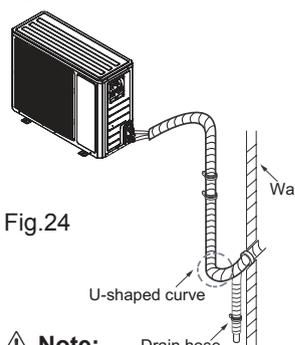


Fig.24

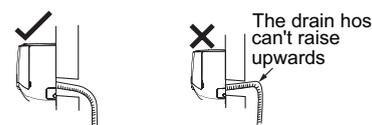


Fig.25

**⚠ Note:**

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



## 9. Maintenance

### 9.1 Judgement by Flashing LED of Indoor/Outdoor Unit

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator	Green Indicator		
1	High pressure protection of system	E1	OFF 3s and blink once						During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, the complete unit stops.	Possible reasons: 1. Refrigerant was superabundant; 2. Poor heat exchange (including filth blockage of heat exchanger and bad radiating environment ); Ambient temperature is too high.
2	Antifreezing protection	E2	OFF 3S and blink twice			OFF 3S and blink 3 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates.	1. Poor air-return in indoor unit; 2. Fan speed is abnormal; 3. Evaporator is dirty.
3	System block or refrigerant leakage	E3	OFF 3S and blink 3 times				OFF 3S and blink 9 times		The Dual-8 Code Display will show E3 until the low pressure switch stop operation.	1.Low-pressure protection of system 2.Low-pressure protection of compressor
4	High discharge temperature protection of compressor	E4	OFF 3S and blink 4 times			OFF 3S and blink 7 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	Please refer to the malfunction analysis (discharge protection, overload).
5	Overcurrent protection	E5	OFF 3S and blink 5 times			OFF 3S and blink 5 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	1. Supply voltage is unstable; 2. Supply voltage is too low and load is too high; 3. Evaporator is dirty.
6	Communication Malfunction	E6	OFF 3S and blink 6 times					OFF	During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	Refer to the corresponding malfunction analysis.
7	High temperature resistant protection	E8	OFF 3S and blink 8 times			OFF 3S and blink 6 times			During cooling operation: compressor will stop while indoor fan will operate. During heating operation, the complete unit stops.	Refer to the malfunction analysis (overload, high temperature resistant).
8	EEPROM malfunction	EE			OFF 3S and blink 15 times	OFF 3S and blink 11 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
9	Limit/ decrease frequency due to high temperature of module	EU		OFF 3S and blink 6 times	OFF 3S and blink 6 times				All loads operate normally, while operation frequency for compressor is decreased	Discharging after the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
10	Malfunction protection of jumper cap	C5	OFF 3S and blink 15 times						Wireless remote receiver and button are effective, but can not dispose the related command	1. No jumper cap insert on mainboard. 2. Incorrect insert of jumper cap. 3. Jumper cap damaged. 4. Abnormal detecting circuit of mainboard.

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator			Green Indicator
11	Gathering refrigerant	F0	OFF 3S and blink 1 times	OFF 3S and blink 1 times				When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant	Nominal cooling mode	
12	Indoor ambient temperature sensor is open/short circuited	F1		OFF 3S and blink once				During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation.	<ol style="list-style-type: none"> <li>Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal.</li> <li>Components in mainboard fell down leads short circuit.</li> <li>Indoor ambient temp. sensor damaged.(check with sensor resistance value chart)</li> <li>Mainboard damaged.</li> </ol>	
13	Indoor evaporator temperature sensor is open/short circuited	F2		OFF 3S and blink twice				AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation	<ol style="list-style-type: none"> <li>Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal.</li> <li>Components on the mainboard fall down leads short circuit.</li> <li>Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing)</li> <li>Mainboard damaged.</li> </ol>	
14	Outdoor ambient temperature sensor is open/short circuited	F3		OFF 3S and blink 3 times			OFF 3S and blink 6 times	During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation	Outdoor temperature sensor hasn't been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)	
15	Outdoor condenser temperature sensor is open/short circuited	F4		OFF 3S and blink 4 times			OFF 3S and blink 5 times	During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation.	Outdoor temperature sensor hasn't been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)	
16	Outdoor discharge temperature sensor is open/short circuited	F5		OFF 3S and blink 5 times			OFF 3S and blink 7 times	During cooling and drying operation, compressor will sop after operating for about 3 mins, while indoor fan will operate; During heating operation, the complete unit will stop after operating for about 3 mins.	<ol style="list-style-type: none"> <li>Outdoor temperature sensor hasn't been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)</li> <li>The head of temperature sensor hasn't been inserted into the copper tube</li> </ol>	
17	Limit/ decrease frequency due to overload	F6		OFF 3S and blink for 6 times			OFF 3S and blink 3 times	All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)	
18	Decrease frequency due to overcurrent	F8		OFF 3S and blink 8 times			OFF 3S and blink once	All loads operate normally, while operation frequency for compressor is decreased	The input supply voltage is too low; System pressure is too high and overload	

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator			Green Indicator
19	Decrease frequency due to high air discharge	F9		OFF 3S and blink 9 times				OFF 3S and blink twice	All loads operate normally, while operation frequency for compressor is decreased	Overload or temperature is too high; Refrigerant is insufficient; Malfunction of electric expansion valve (EKV)
20	Limit/decrease frequency due to antifreezing	FH		OFF 3S and blink 2 times	OFF 3S and blink 2 times			OFF 3S and blink 4 times	All loads operate normally, while operation frequency for compressor is decreased	Poor air-return in indoor unit or fan speed is too low
21	Voltage for DC bus-bar is too high	PH		OFF 3S and blink 11 times				OFF 3S and blink 13 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 265VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1)
22	Voltage of DC bus-bar is too low	PL			OFF 3S and blink 21 times			OFF 3S and blink 12 times	During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 150VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1)
23	Compressor Min frequency in test state	P0		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)					Showing during min. cooling or min. heating test
24	Compressor rated frequency in test state	P1		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)					Showing during nominal cooling or nominal heating test
25	Compressor maximum frequency in test state	P2		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)					Showing during max. cooling or max. heating test

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)		Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator		
26	Compressor intermediate frequency in test state	P3		(during blinking, ON 0.25s and OFF 0.25s)	(during blinking, ON 0.25s and OFF 0.25s)				Showing during middle cooling or middle heating test
27	Overcurrent protection of phase current for compressor	P5		OFF 3S and blink 15 times				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor).
28	Charging malfunction of capacitor	PU			OFF 3S and blink 17 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Refer to the part three—charging malfunction analysis of capacitor
29	Malfunction of module temperature sensor circuit	P7			OFF 3S and blink 18 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
30	Module high temperature protection	P8			OFF 3S and blink 19 times			During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
31	Decrease frequency due to high temperature resistant during heating operation	H0			OFF 3S and blink 10 times			All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)
32	Static dedusting protection	H2			OFF 3S and blink twice				
33	Overload protection for compressor	H3			OFF 3S and blink 3 times	OFF 3S and blink 8 times		During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm. 2.Refer to the malfunction analysis ( discharge protection, overload)

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator			Green Indicator
34	System is abnormal	H4			OFF 3S and blink 4 times	OFF 3S and blink 6 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (overload, high temperature resistant)
35	IPM protection	H5			OFF 3S and blink 5 times	OFF 3S and blink 4 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
36	Module temperature is too high	H5			OFF 3S and blink 5 times	OFF 3S and blink 10 times				
37	Internal motor (fan motor) do not operate	H6	OFF 3S and blink 11 times						Internal fan motor, external fan motor, compressor and electric heater stop operation,guide louver stops at present location.	1. Bad contact of DC motor feedback terminal. 2. Bad contact of DC motor control end. 3. Fan motor is stalling. 4. Motor malfunction. 5. Malfunction of mainboard rev detecting circuit.
38	Desynchronizing of compressor	H7			OFF 3S and blink 7 times				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
39	PFC protection	HC			OFF 3S and blink 6 times	OFF 3S and blink 14 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis
40	Outdoor DC fan motor malfunction	L3	OFF 3S and blink 23 times				OFF 3S and blink 14 times		Outdoor DC fan motor malfunction lead to compressor stop operation,	DC fan motor malfunction or system blocked or the connector loosed
41	power protection	L9	OFF 3S and blink 20 times			OFF 3S and blink 9 times			compressor stop operation and Outdoor fan motor will stop 30s latter , 3 minutes latter fan motor and compressor will restart	To protect the electrical components when detect high power
42	Indoor unit and outdoor unit doesnt match	LP	OFF 3S and blink 19 times			OFF 3S and blink 16 times			compressor and Outdoor fan motor cant work	Indoor unit and outdoor unit doesnt match
43	Failure start-up	LC			OFF 3S and blink 11 times				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis

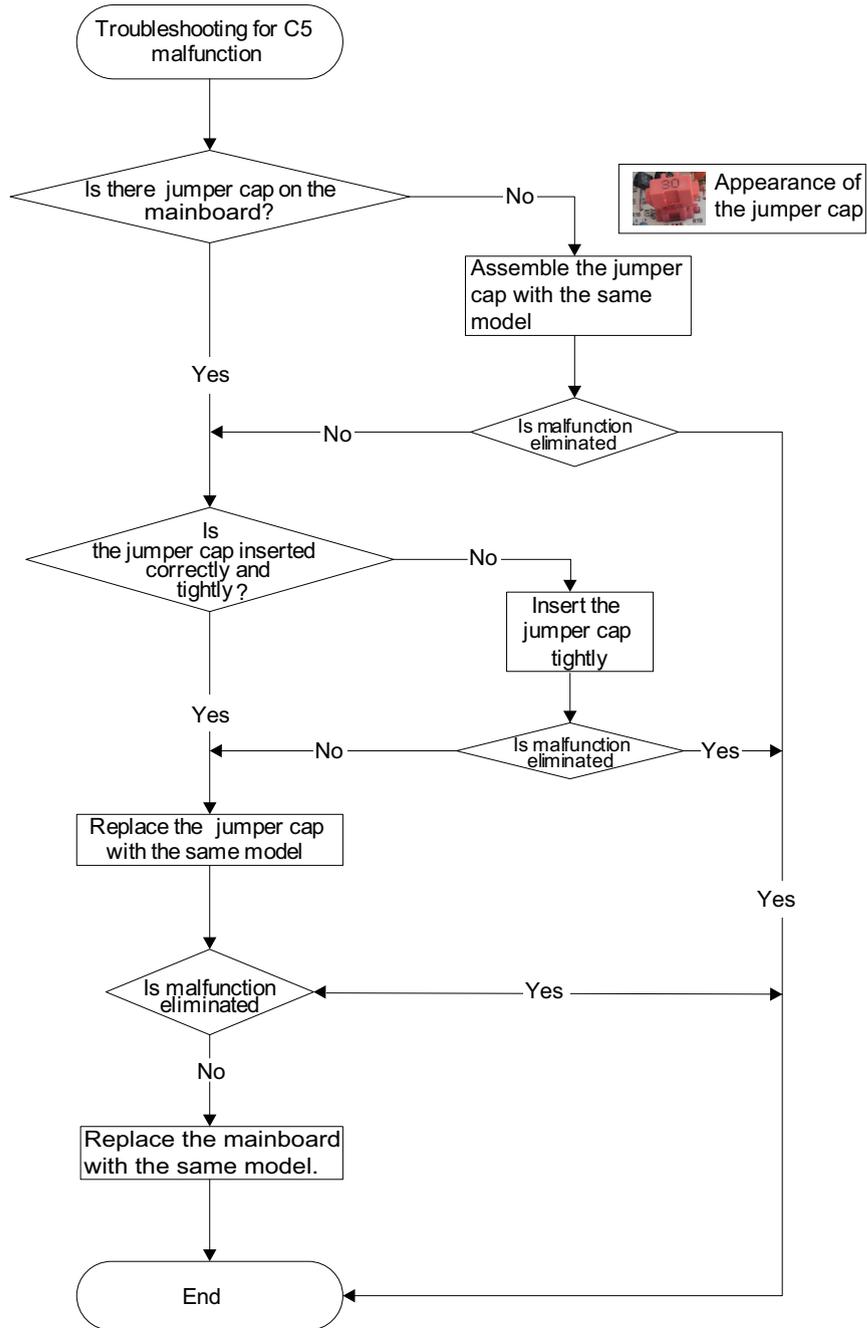
NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes	
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator			Green Indicator
44	Malfunction of phase current detection circuit for compressor	U1			OFF 3S and blink 13 times				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
45	Malfunction of voltage dropping for DC bus-bar	U3			OFF 3S and blink 20 times				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Supply voltage is unstable
46	Malfunction of complete units current detection	U5		OFF 3S and blink 13 times					During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation.	Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1.
47	The four-way valve is abnormal	U7		OFF 3S and blink 20 times					If this malfunction occurs during heating operation, the complete unit will stop operation.	1. Supply voltage is lower than AC175V; 2. Wiring terminal 4V is loosened or broken; 3. 4V is damaged, please replace 4V.
48	Zero-crossing malfunction of outdoor unit	U9	OFF 3S and blink 18 times						During cooling operation, compressor will stop while indoor fan will operate; during heating, the complete unit will stop operation.	Replace outdoor control panel AP1
49	Frequency limiting (power)						OFF 3S and blink 13 times			
50	Compressor is open-circuited					OFF 3S and blink once				
51	The temperature for turning on the unit is reached						OFF 3S and blink 8 times			
52	Frequency limiting (module temperature)						OFF 3S and blink 11 times			







### 3. Malfunction of Protection of Jumper Cap C5







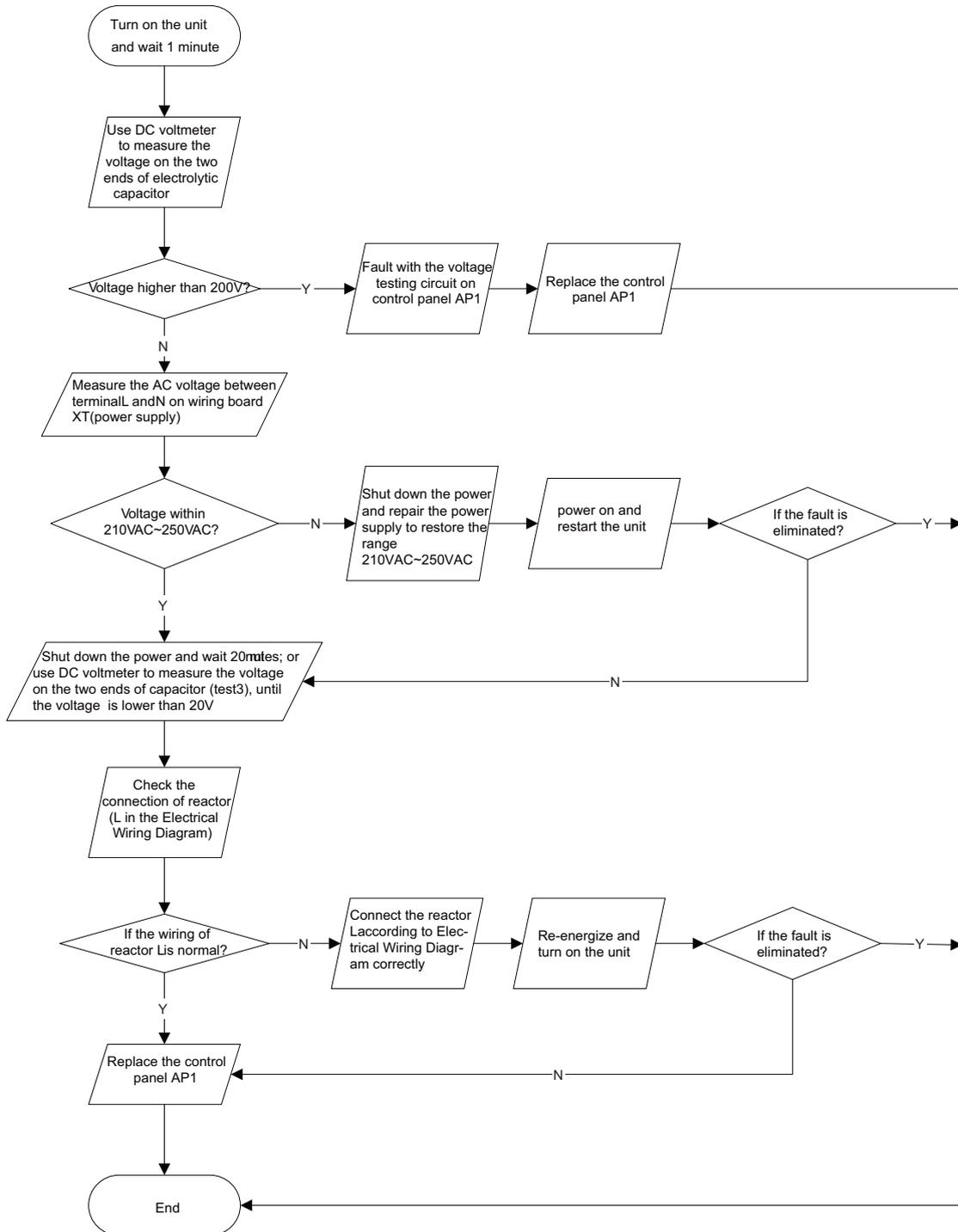
Test Point SN	Test Point	Related Specification	Test Value in normal condition
1	Between AC-L1 and N1	Neutral and live wire	165 V ~ 253 V
2	Left side of R201, radiator U404	DC bus bar	230 V ~ 380 V
3	Top of D304, Bottom of D304	IPM drive voltage +15V	13.5 V ~15.5 V
4	Top of C116, bottom of C116	Relay drive voltage +12V	11 V ~13 V
5	Right side of R228, left side of R228	PFC drive voltage +15V	13.5 V ~15.5 V
6	Left and top ends of U4, bottom of U4	Chip +3.3V	3.1 V ~3.3 V
7	Right and top ends of U4, bottom of U4	+5V	4.8 V ~5.1 V
8	Bottom of R506, bottom of U4	Outdoor unit receiving signal	Fluctuate between 0 and 3.3V
9	Bottom of R523, bottom of U4	Outdoor unit sending signal	Fluctuate between 0 and 3.3V

## 2. Capacity charging malfunction (outdoor unit malfunction) (AP1 below is control board of outdoor unit)

### Main detection point:

- Detect if the voltage of L and N terminal of wiring board is between 210VAC-240VAC by alternating voltage meter;
- Is reactor (L) well connected? Is connection wire loosened or pull-out? Is reactor (L) damaged?

### Malfunction diagnosis process:



**3. IPM protection, desynchronizing malfunction, phase current of compressor is overcurrent (AP1 below is control board of outdoor unit)****Main detection point:**

If control board AP1 and compressor COMP is well connected? If they are loosened? If the connection sequence is correct?

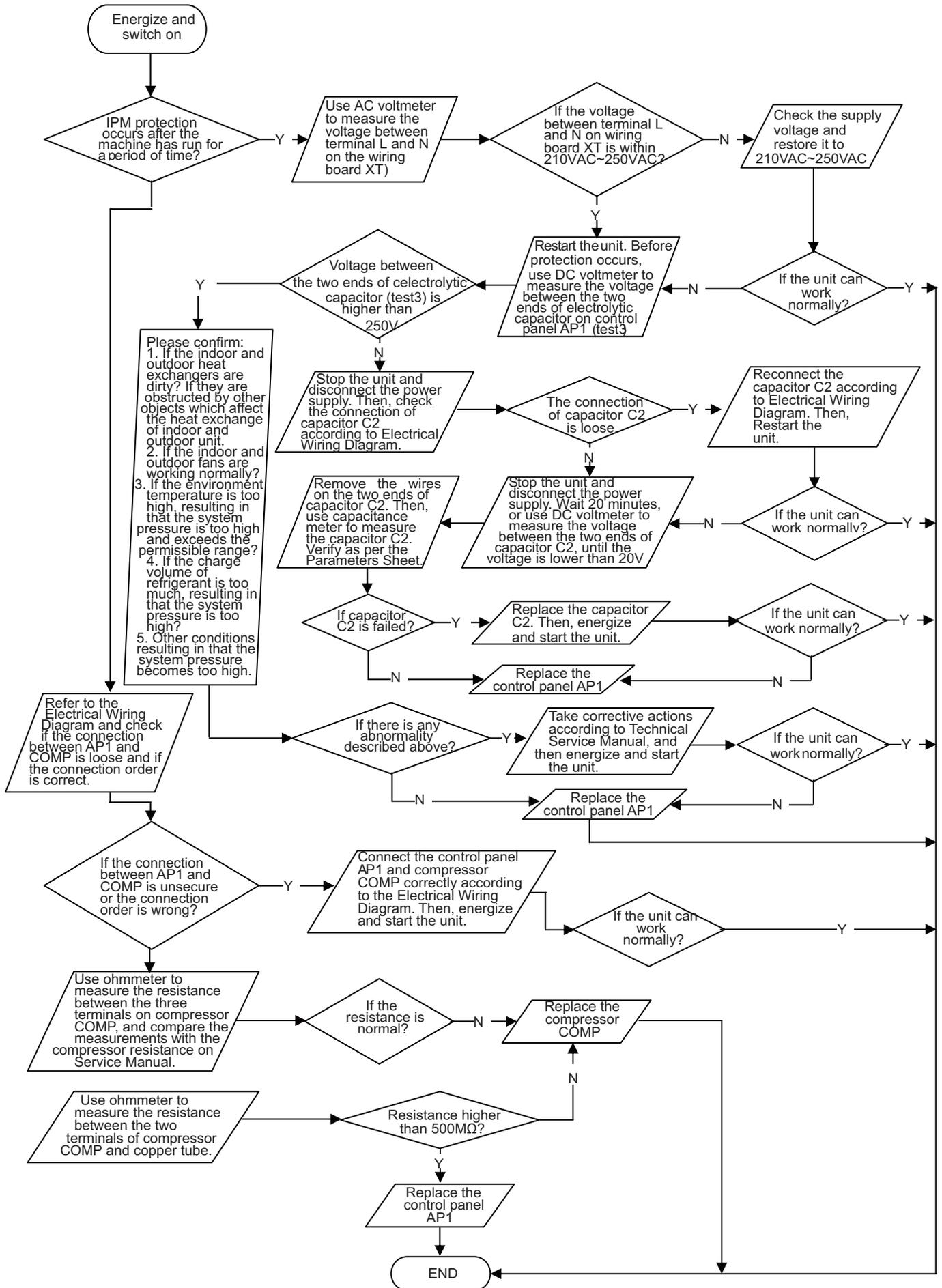
Is voltage input in the normal range (Test the voltage between L, N of wiring board XT by DC voltage meter)?

If coil resistance of compressor is normal? Is compressor coil insulating to copper pipe well?

If the work load of unit is heavy? If radiating of unit is well?

If the refrigerant charging is appropriate?

**Malfunction diagnosis process:**



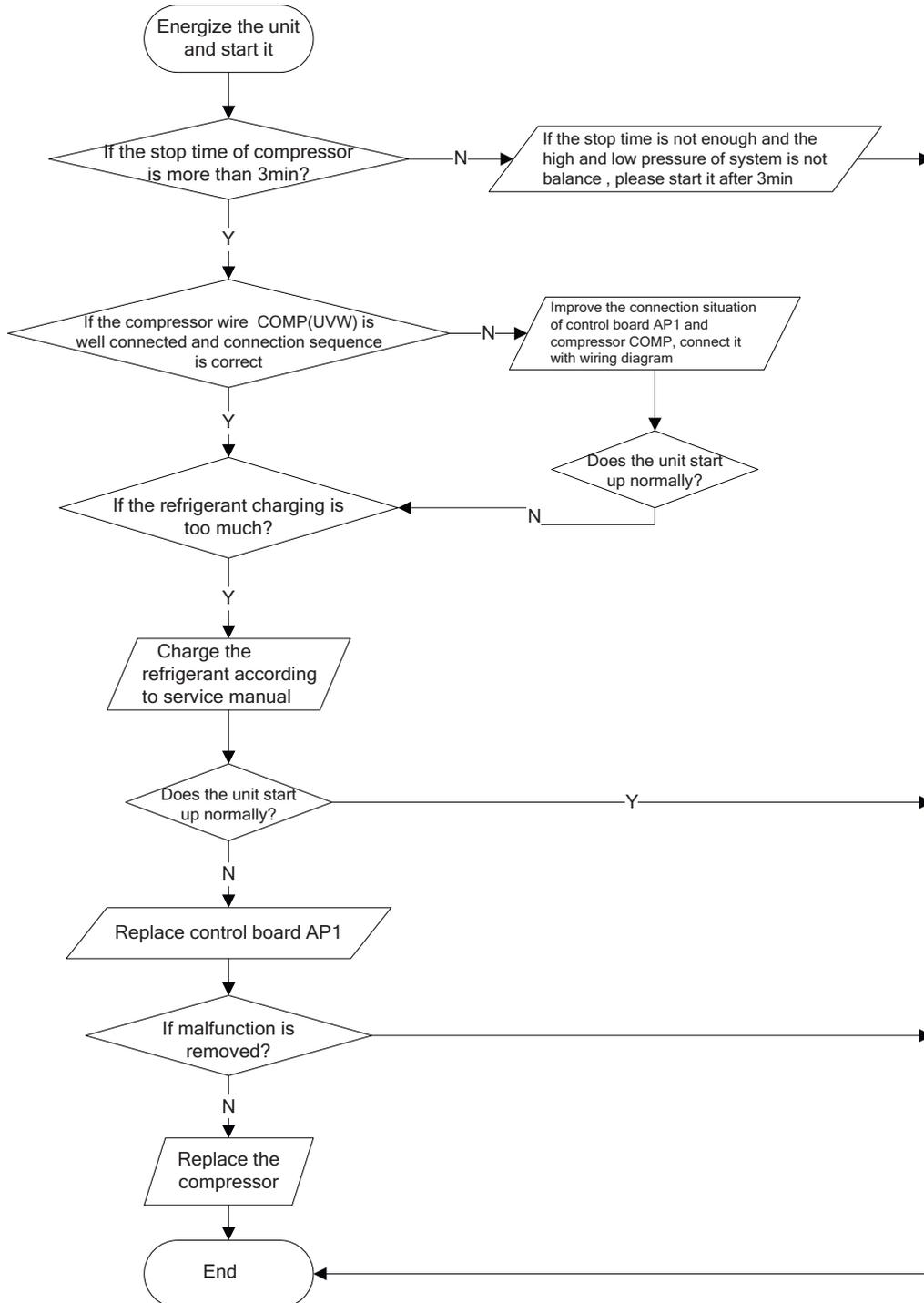


**5. Diagnosis for failure start up malfunction (AP1 below is control board of outdoor unit)**

**Main detection point:**

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

**Malfunction diagnosis process:**



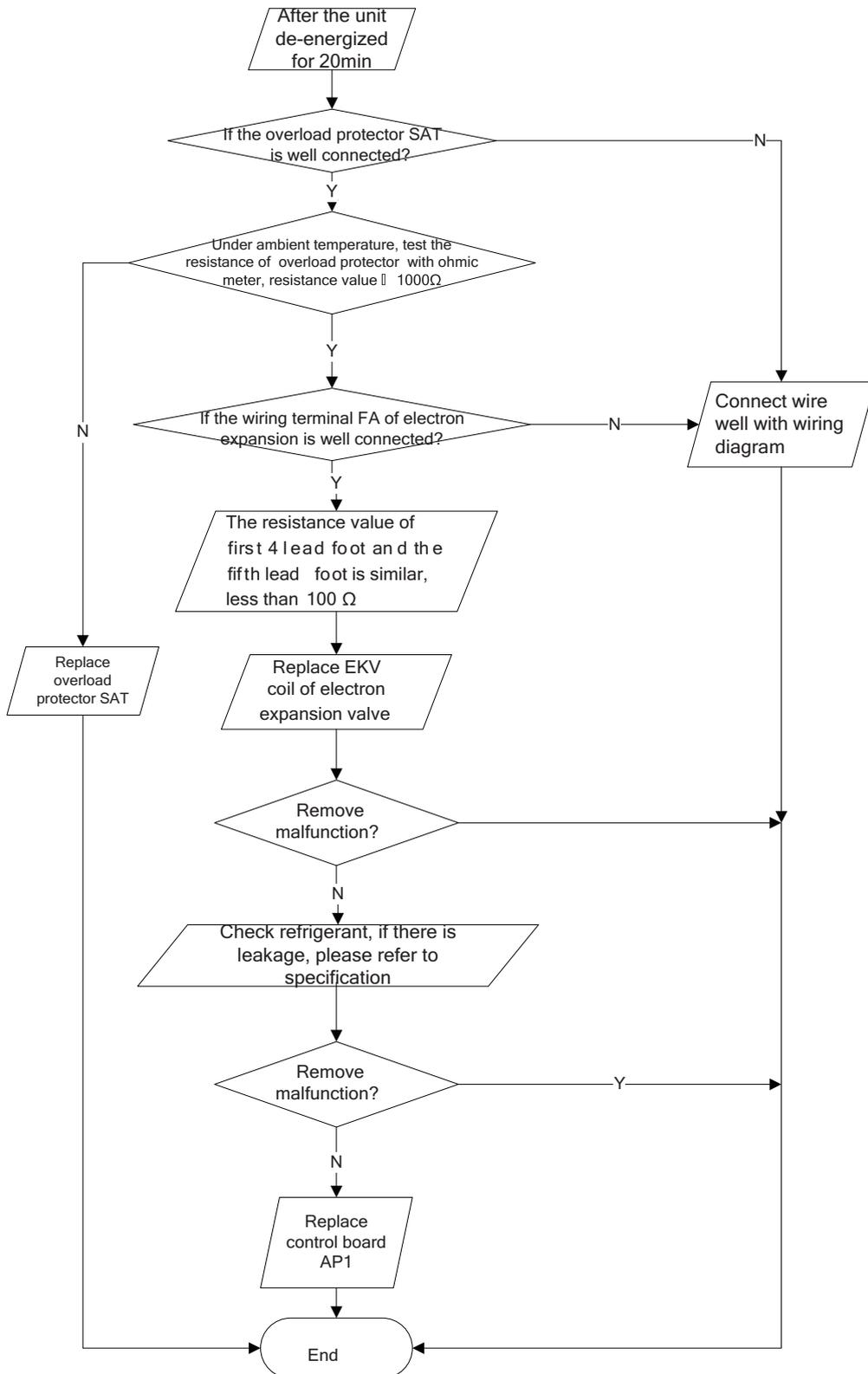


**7. Diagnosis for overload and discharge malfunction (AP1 below is control board of outdoor unit)**

Main detection point:

- If the electron expansion valve is connected well? Is the expansion valve damaged?
- If the refrigerant is leakage?
- If the overload protector is damaged?

**Malfunction diagnosis process:**



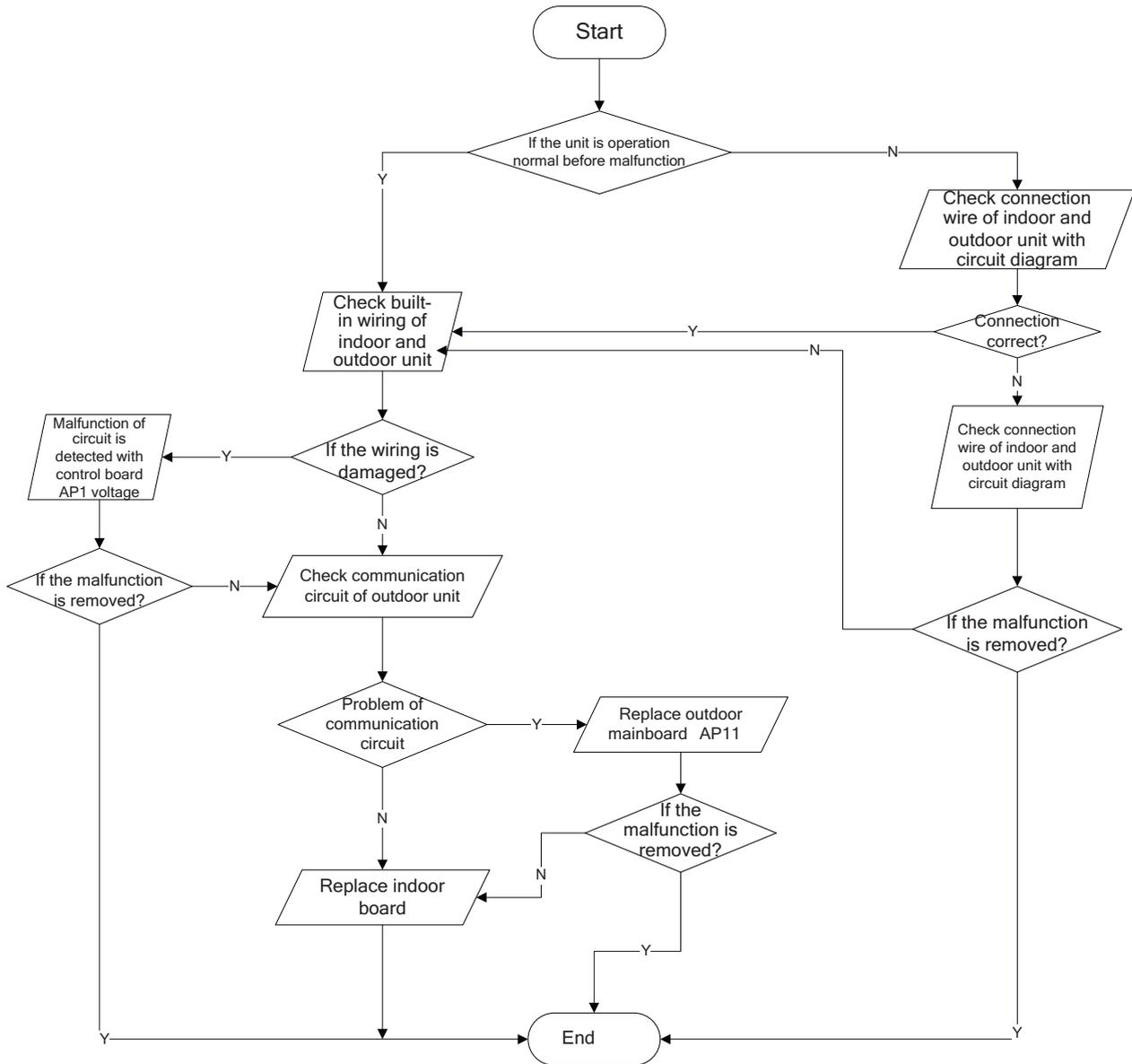


**9. Communication malfunction (AP1 below is control board of outdoor unit)**

**Main detection point:**

- Check if the connection wire and the built-in wiring of indoor and outdoor unit is connected well and no damaged;
- If the communication circuit of indoor mainboard is damaged? If the communication circuit of outdoor mainboard (AP1) is damaged

**Malfunction diagnosis process:**



## 9.3 Troubleshooting for Normal Malfunction

### 1. Air Conditioner Cant be Started Up

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

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

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

### 3. Horizontal Louver Cant Swing

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

**4. ODU Fan Motor Cant Operate**

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

**5. Compressor Cant Operate**

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

**6. Air Conditioner is Leaking**

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

**7. Abnormal Sound and Vibration**

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



No.	Description	Part Code		Qty
		GWH09TB-S3DNA1D/I	GWH09TB-S3DNA2D/I	
		Product Code	Product Code	
1	Front Panel	20012850T	20022266	1
2	Display Board	30565140	30565145	1
3	Filter Sub-Assy	1112211602	1112211602	2
4	Front Case Sub-assy	2001288901	00000200088	1
5	Guide Louver	10512147	1051214702	1
6	Guide Louver (small)	10512127	10512127	1
7	Crank	10582070	10582070	2
8	Air Louver (left)	10512232	10512232	1
9	Helicoid Tongue sub-assy	2611224401	2611224401	1
10	Left Axile Bush	10512037	10512037	2
11	Step Motor	15212123	15212123	1
12	Propeller Axile Bush	1054202101	1054202101	1
13	Evaporator Support	24212114	24212114	1
14	Cold Plasma Generator	1114001601	1114001601	1
15	Evaporator Assy	0100294511	0100294511	1
16	Cross Flow Fan	10352033	10352033	1
17	Drainage Hose	05230014	05230014	1
18	Fan Motor	15012510	15012510	1
19	Wall Mounting Frame	01252484	01252484	1
20	Motor Press Plate	26112209	26112209	1
21	Rubber Plug (Water Tray)	76712012	76712012	1
22	Pipe Clamp	2611216402	2611216402	1
23	Rear Case assy	2220216104	2220216104	1
24	Axile Bush	10542036	10542036	3
25	Step Motor	15212125	15212125	1
26	Step Motor	15212126	15212126	1
27	Electric Box	20112181	20112181	1
28	Electric Box Cover	2012240901	2012240901	1
29	Jumper	4202300102	4202300102	1
30	Main Board	30138000636	30138000636	1
31	Electric Box Assy	10000201684	10000202927	1
32	Terminal Board	42011233	42011233	1
33	Electric Box Cover2	20122075	2012207507	1
34	Screw Cover	24252016	242520179	1
35	Pipe Connection Nut accessories	06320020	06320020	1
36	Temperature Sensor	390000598	390000598	1
37	Connecting Cable	4002052317	4002052317	0
38	Temperature Sensor	390000451	390000451	1
39	Remote Controller	30510137	30510137	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH09TB-S3DNA3D/I	GWH12TB-S3DNA1D/I	
		Product Code	Product Code	
		CB412N03300	CB148N08300	
1	Front Panel	20022240	20012850T	1
2	Display Board	30565203	30565140	1
3	Filter Sub-Assy	1112211602	1112211602	2
4	Front Case Sub-assy	00000200088	2001288901	1
5	Guide Louver	1051214702	10512147	1
6	Guide Louver (small)	10512127	10512127	1
7	Crank	10582070	10582070	2
8	Air Louver (left)	10512232	10512232	1
9	Helicoid Tongue sub-assy	2611224401	2611224401	1
10	Left Axile Bush	10512037	10512037	2
11	Step Motor	15212123	15212123	1
12	Propeller Axile Bush	1054202101	1054202101	1
13	Evaporator Support	24212114	24212114	1
14	Cold Plasma Generator	1114001601	1114001601	1
15	Evaporator Assy	0100294511	01002641	1
16	Cross Flow Fan	10352033	10352033	1
17	Drainage Hose	05230014	05230014	1
18	Fan Motor	15012510	15012510	1
19	Wall Mounting Frame	01252484	01252484	1
20	Motor Press Plate	26112209	26112209	1
21	Rubber Plug (Water Tray)	76712012	76712012	1
22	Pipe Clamp	2611216402	2611216402	1
23	Rear Case assy	2220216104	2220216104	1
24	Axile Bush	10542036	10542036	3
25	Step Motor	15212125	15212125	1
26	Step Motor	15212126	15212126	1
27	Electric Box	20112181	20112181	1
28	Electric Box Cover	2012240901	2012240901	1
29	Jumper	4202300102	4202300103	1
30	Main Board	30138000636	30138000636	1
31	Electric Box Assy	10000202502	10000201696	1
32	Terminal Board	42011233	42011233	1
33	Electric Box Cover2	2012207507	20122075	1
34	Screw Cover	242520179	24252016	1
35	Pipe Connection Nut accessories	06320020	06320020	1
36	Temperature Sensor	390000598	390000598	1
37	Connecting Cable	4002052317	4002052317	0
38	Temperature Sensor	390000451	390000451	1
39	Remote Controller	30510137	30510137	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12TB-S3DNA2D/I	GWH12TB-S3DNA3D/I	
		Product Code		
		CB411N03002	CB412N03500	
1	Front Panel	20022266	20022240	1
2	Display Board	30565145	30565203	1
3	Filter Sub-Assy	1112211602	1112211602	2
4	Front Case Sub-assy	20022266	20022256	1
5	Guide Louver	1051214702	1051214702	1
6	Guide Louver (small)	10512127	10512127	1
7	Crank	10582070	10582070	2
8	Air Louver (left)	10512232	10512232	1
9	Helicoid Tongue sub-assy	2611224401	2611224401	1
10	Left Axile Bush	10512037	10512037	2
11	Step Motor	15212123	15212123	1
12	Propeller Axile Bush	1054202101	1054202101	1
13	Evaporator Support	24212114	24212114	1
14	Cold Plasma Generator	1114001601	1114001601	1
15	Evaporator Assy	01002641	01002641	1
16	Cross Flow Fan	10352033	10352033	1
17	Drainage Hose	05230014	05230014	1
18	Fan Motor	15012510	15012510	1
19	Wall Mounting Frame	01252484	01252484	1
20	Motor Press Plate	26112209	26112209	1
21	Rubber Plug (Water Tray)	76712012	76712012	1
22	Pipe Clamp	2611216402	2611216402	1
23	Rear Case assy	2220216104	2220216104	1
24	Axile Bush	10542036	10542036	3
25	Step Motor	15212125	15212125	1
26	Step Motor	15212126	15212126	1
27	Electric Box	20112181	20112181	1
28	Electric Box Cover	2012240901	2012240901	1
29	Jumper	4202300103	4202300103	1
30	Main Board	30138000636	30138000636	1
31	Electric Box Assy	10000202736	10000202558	1
32	Terminal Board	42011233	42011233	1
33	Electric Box Cover2	2012207507	2012207507	1
34	Screw Cover	242520179	242520179	1
35	Pipe Connection Nut accessories	06320020	06320020	1
36	Temperature Sensor	390000598	390000598	1
37	Connecting Cable	4002052317	4002052317	0
38	Temperature Sensor	390000451	390000451	1
39	Remote Controller	30510137	30510137	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12TB-S3DNA1D/I	GWH09TB-S3DNA1D/I	
		Product Code	Product Code	
		CB148N08302	CB148N08402	
1	Front Panel	20012850T	20012850T	1
2	Display Board	30565140	30565140	1
3	Filter Sub-Assy	1112211602	1112211602	2
4	Front Case Sub-assy	20012889	20012889	1
5	Guide Louver	10512147	10512147	1
6	Guide Louver (small)	10512127	10512127	1
7	Crank	10582070	10582070	2
8	Air Louver (left)	10512232	10512232	1
9	Helicoid Tongue sub-assy	2611224401	2611224401	1
10	Left Axile Bush	10512037	10512037	2
11	Step Motor	15212123	15212123	1
12	Propeller Axile Bush	1054202101	1054202101	1
13	Evaporator Support	24212114	24212114	1
14	Cold Plasma Generator	/	/	/
15	Evaporator Assy	01002641	0100294511	1
16	Cross Flow Fan	10352033	10352033	1
17	Drainage Hose	05230014	05230014	1
18	Fan Motor	15012510	15012510	1
19	Wall Mounting Frame	01252484	01252484	1
20	Motor Press Plate	26112209	26112209	1
21	Rubber Plug (Water Tray)	76712012	76712012	1
22	Pipe Clamp	2611216402	2611216402	1
23	Rear Case assy	2220216104	2220216104	1
24	Axile Bush	10542036	10542036	3
25	Step Motor	15212125	15212125	1
26	Step Motor	15212126	15212126	1
27	Electric Box	20112181	20112181	1
28	Electric Box Cover	2012240901	2012240901	1
29	Jumper	4202300103	4202300102	1
30	Main Board	30138000957	30138000957	1
31	Electric Box Assy	10000203249	10000203248	1
32	Terminal Board	42011233	42011233	1
33	Electric Box Cover2	20122075	20122075	1
34	Screw Cover	24252016	24252016	1
35	Pipe Connection Nut accessories	06320020	06320020	1
36	Temperature Sensor	390000598	390000598	1
37	Connecting Cable	4002052317	4002052317	0
38	Temperature Sensor	390000451	390000451	1
39	Remote Controller	30510137	30510137	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH09TB-S3DNA1E/I		
		CB148N09300		
1	Front Panel	20012850T		1
2	Display Board	30565140		1
3	Filter Sub-Assy	1112211602		2
4	Front Case Sub-assy	2001288901		1
5	Guide Louver	10512147		1
6	Guide Louver (small)	10512127		1
7	Crank	10582070		2
8	Air Louver (left)	10512232		1
9	Helicoid Tongue sub-assy	2611224401		1
10	Left Axile Bush	10512037		2
11	Step Motor	15212123		1
12	Propeller Axile Bush	1054202101		1
13	Evaporator Support	24212114		1
14	Cold Plasma Generator	1114001601		1
15	Evaporator Assy	0100294511		1
16	Cross Flow Fan	10352033		1
17	Drainage Hose	05230014		1
18	Fan Motor	15012510		1
19	Wall Mounting Frame	01252484		1
20	Motor Press Plate	26112209		1
21	Rubber Plug (Water Tray)	76712012		1
22	Pipe Clamp	2611216402		1
23	Rear Case assy	2220216104		1
24	Axile Bush	10542036		3
25	Step Motor	15212121		1
26	Step Motor	15212126		1
27	Electric Box	20112181		1
28	Electric Box Cover	2012240901		1
29	Jumper	4202300102		1
30	Main Board	30138000636		1
31	Electric Box Assy	10000201684		1
32	Terminal Board	42011233		1
33	Electric Box Cover2	20122075		1
34	Screw Cover	24252016		1
35	Pipe Connection Nut accessories	06320020		1
36	Temperature Sensor	390000598		1
37	Connecting Cable	4002052317		0
38	Temperature Sensor	390000451		1
39	Remote Controller	30510137		1

Above data is subject to change without notice.



No.	Description	Part Code		Qty
		GWH09TB-S3DNA1D/O	GWH12TB-S3DNA1D/O	
		Product Code		
		CB148W08400	CB148W08300	
1	Front Grill	22413015	22413015	1
2	Cabinet	01433034P	01433034P	1
3	Axial Flow Fan	10333011	10333417	1
4	Brushless DC Motor	1501308507	15013717	1
5	Clapboard	01233125	01233125	1
6	Drainage Joint	26113009	26113009	1
7	Chassis Sub-assy	02803345P	0170000060P	1
8	Compressor Gasket	76713027	76710236	3
9	Compressor and fittings	00103892	00205212	1
10	Compressor Overload Protector(External)	00183111	00180002	1
		00183114	/	1
11	Valve Support Sub-Assy	01703242P	01703242P	1
12	Right Side Plate	0130324403P	0130324403P	1
13	Valve cover	22243005	22243005	1
14	Big Handle	2623343106	2623343106	1
15	Cut off Valve Sub-Assy	03005700089	03005700088	1
16	Cut off Valve Sub-Assy	03005700082	03005700082	1
17	4-Way Valve Assy	03073291	03073351	1
18	Magnet Coil	4300040022	4300040022	1
19	Reactor	43130178	43130184	1
20	Electric Expand Valve Fitting	4300034401	4300876717	1
21	Condenser Assy	01103000204	01100200254	1
22	Top Cover	01253034P	01253034P	1
23	Motor Support Sub-Assy	01703180	01703398	1
24	Left Side Plate	01303169P	01303169P	1
25	Electric Box Assy	10000100299	10000100298	1
26	Electric Box Cover Sub-Assy	0260309601	0260309601	1
27	Main Board	30138000639	30138000645	1
28	Electric Box 1	20113005	20113005	1
29	Terminal Board	42010313	42010313	1
30	Electric Box Sub-Assy	0140300022701A	02603616A	1
31	Temperature Sensor	3900030903G	3900030903G	1
32	Electric Heater(Compressor)	76513004	76513004	1
33	Electrical Heater (Chassis)	76510004	76510004	1

Above data is subject to change without notice.





NO	Description	PartCode		Qty
		GWH09TB-S3DNA1E/O		
		Product Code	CB148W09300	
1	Front Grill	22413046	22413046	1
2	Cabinet	01433034P	01433034P	1
3	Axial Flow Fan	10333011	10333011	1
4	Fan Motor	1501308511	1501308511	1
5	Clapboard	01233125	01233125	1
6	Chassis Sub-assy	017000000077P	01700000007701P	1
7	Compressor Gasket	70210142	70210142	3
8	Compressor and fittings	00103364	00103364	1
9	Compressor Overload Proctector(External)	/	/	/
10	Valve Support Sub-Assy	01703242P	01703242P	1
11	Right Side Plate	0130324403P	0130324403P	1
12	Valve cover	22243005	22243005	1
13	Big Handle	2623343106	2623343106	1
14	Cut off Valve Sub-Assy	03005700082	03005700082	1
15	Cut off Valve Sub-Assy	03005700082	03005700082	1
16	Discharge Tube Sub-assy	030013000175	030013000175	1
17	Inhalation Tube Sub-assy	030010000222	030010000222	1
18	Reactor	43130178	43130178	1
19	Magnet Coil	4300040022	4300040022	1
20	Condenser Assy	01103000204	01103000204	1
21	Top Cover	01253034P	01253034P	1
22	Motor Support Sub-Assy	01703180	01703180	1
23	Left Side Plate	01303169P	01303169P	1
24	Electric Box Assy	10000100893	10000100894	1
25	Electric Box Cover Sub-Assy	0260309601	0260309601	1
26	Main Board	300027000028	300027000027	1
27	Electric Box 1	20113005	20113005	1
28	Terminal Board	42010313	42010313	1
29	Electric Box Sub-Assy	0140300022701	0140300022701	1
30	Temperature Sensor	3900030903	3900030903	1

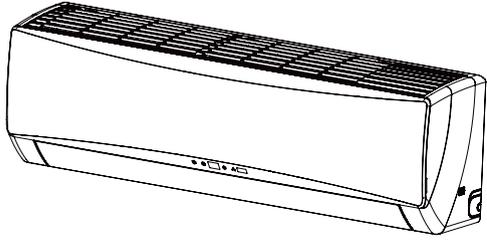
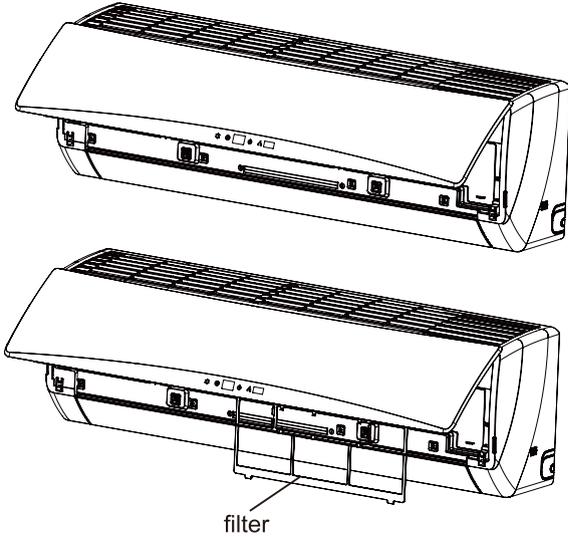
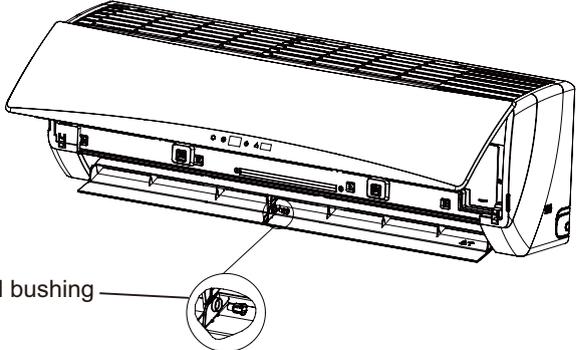
Above data is subject to change without notice.

# 11. Removal Procedure

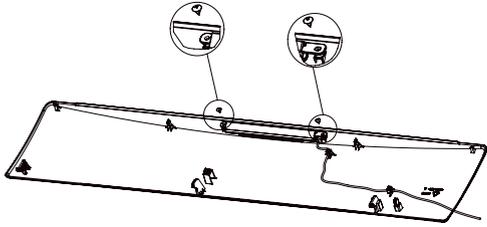
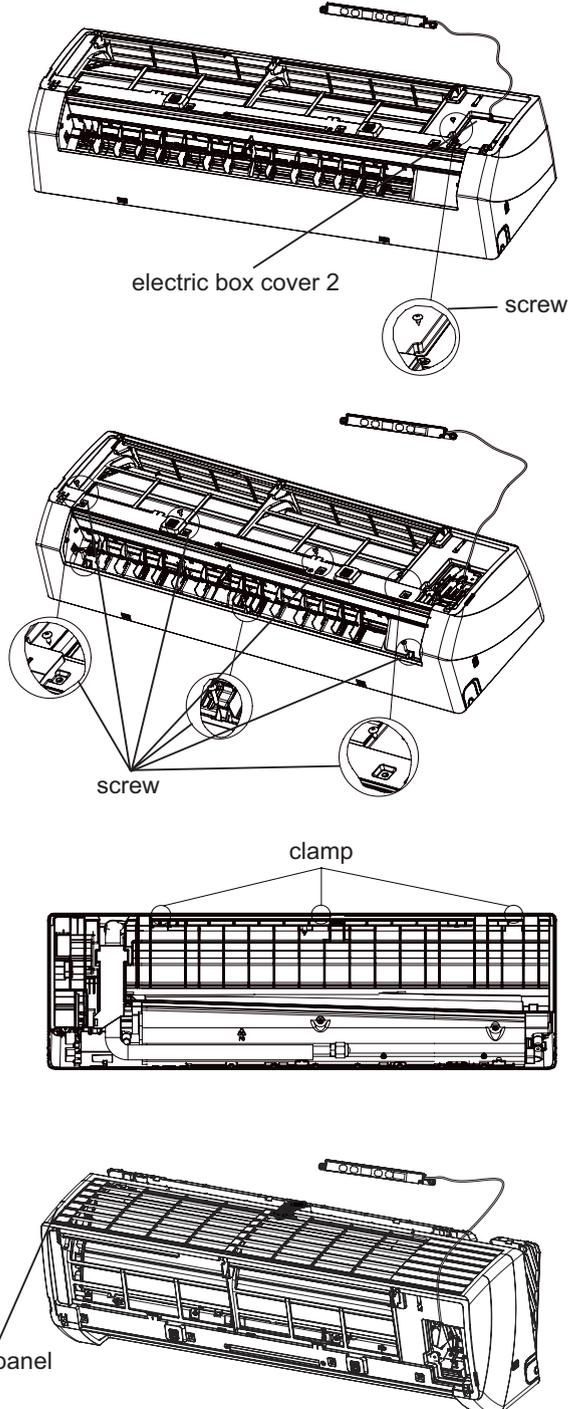
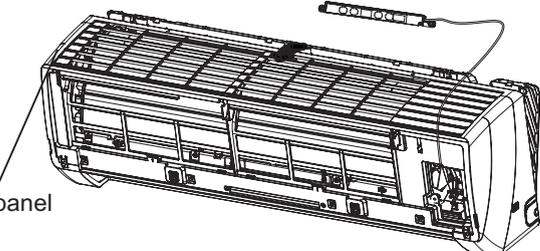


**Warning:** Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.

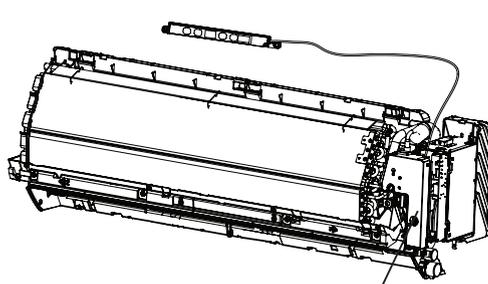
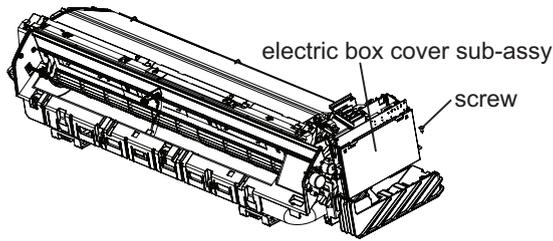
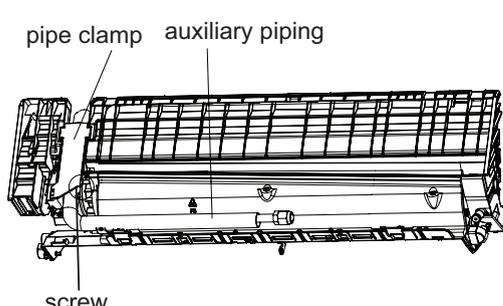
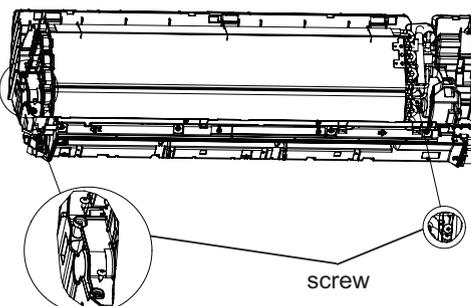
## 11.1 Removal Procedure of Indoor Unit

Steps		Procedure
1. Before disassembling the unit	Before disassembling the unit.	
2. Remove filter	<p>a Open the panel.</p> <p>b Loosen the clasps on filter, push the filter inward and then pull it upward, then the filter can be removed.</p>	 <p style="text-align: center;">filter</p>
3. Remove guide louver	<p>a Remove the axial bushing of big guidelouver.</p>	 <p style="text-align: center;">axial bushing</p>



Steps	Procedure	
b	Remove the screws fixing display on the panel, to remove the display.	
5.Remove front case		
a	Remove the screws fixing electric box cover 2, to remove the electric box cover 2.	 <p>electric box cover 2</p> <p>screw</p> <p>screw</p> <p>clamp</p> <p>front panel</p>
b	Remove the screws fixing front panel, loosen the clamps, to remove the front panel.	



Steps	Procedure	
c	Remove the clamps fixing electric boxcover, to remove the cover.	 <p>electric box cover</p>
d	Remove every wiring terminals, and remove the screws fixing electric box cover, to remove the electric box cover sub-assy.	 <p>electric box cover sub-assy screw</p>
8.Remove evaporator sub-assy		
a	Remove the screws fixing connection pipe clamp, to remove the connection pipeclamp.	 <p>pipe clamp auxiliary piping screw</p>  <p>screw</p>

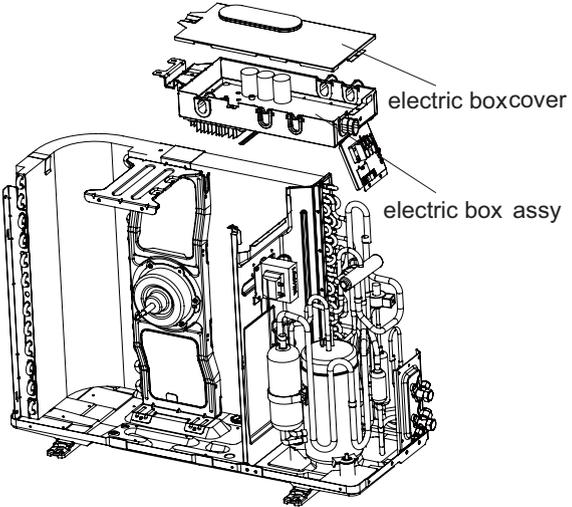
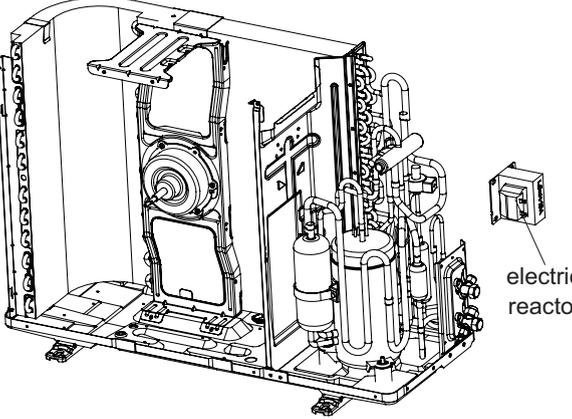
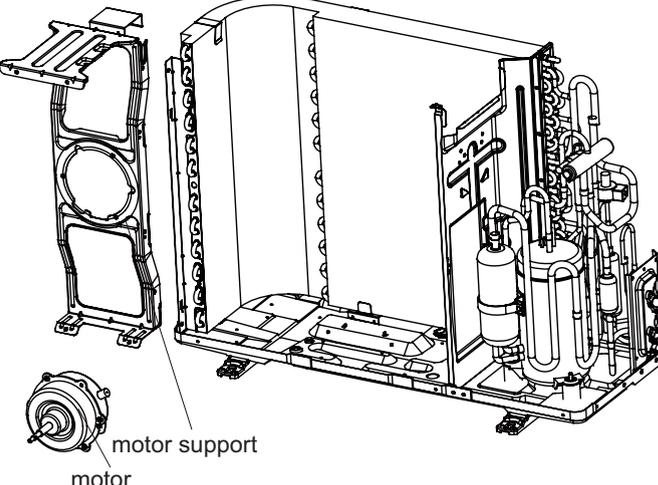










Steps	Procedure
<p>9. Remove electric box assy</p>	<p>Remove screws fixing electric box assy and mid-isolation board, loosen the bonding tie, pull off the wiring terminal, lift to remove the electric box assy.</p>  <p>electric boxcover electric box assy</p>
<p>10. Remove electric reactor</p>	<p>Remove the screws fixing electric reactor, to remove the electric reactor.</p>  <p>electric reactor</p>
<p>11. Remove motor and motor support</p>	<p>Remove the four tapping screws fixing motor, pull out the contact tag of motor wiring, to remove the motor. Remove the two tapping screws fixing motor support and chassis, lift to remove the motor support.</p>  <p>motor support motor</p>





# Appendix:

## Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

### Set temperature

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

### Ambient temperature

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

## Appendix 2: Configuration of Connection Pipe

1. Standard length of connection pipe

- 5m, 7.5m, 8m.

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

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

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

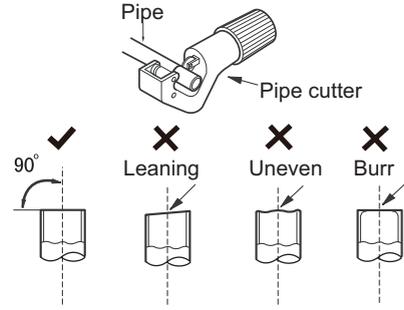
## Appendix 3: Pipe Expanding Method

**⚠ Note:**

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

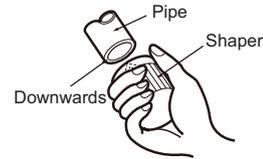
**A: Cut the pipe**

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



**B: Remove the burrs**

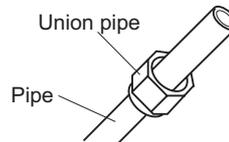
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



**C: Put on suitable insulating pipe**

**D: Put on the union nut**

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



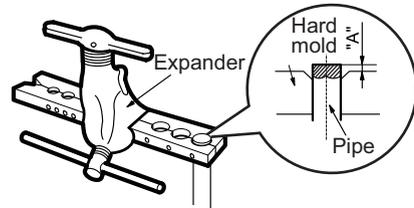
**E: Expand the port**

- Expand the port with expander.

**⚠ Note:**

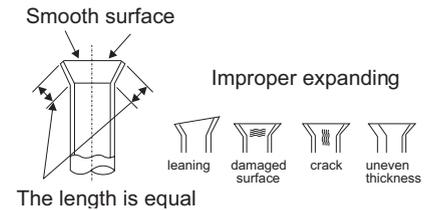
- "A" is different according to the diameter, please refer to the sheet below:

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



**F: Inspection**

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



## Appendix 4: List of Resistance for Temperature Sensor

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

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

**Resistance Table of Tube Temperature Sensors for 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

JF00302344



**GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI**

Add: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070

Tel: (+86-756) 8522218 Fax: (+86-756) 8669426

Email: [gree@gree.com.cn](mailto:gree@gree.com.cn) [Http://www.gree.com](http://www.gree.com)

**HONG KONG GREE ELECTRIC APPLIANCES SALES LIMITED**

Add: Unit 2612,26/F.,Miramar Tower 132 Nathan Road,TST,Kowloon,HK

Tel: (852) 31658898 Fax: (852) 31651029

For product improvement, specifications and appearance in this manual are subject to change without prior notice.