GREE
Change for Life

Service Manual

MODELS: GWC09UB-K3DNA1A
GWH09UB-K3DNA1A
GWC12UB-K3DNA1A
GWH12UB-K3DNA1A
GWH09UB-K3DNA2A
GWH12UB-K3DNA2A
(Refrigerant R410A)

GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

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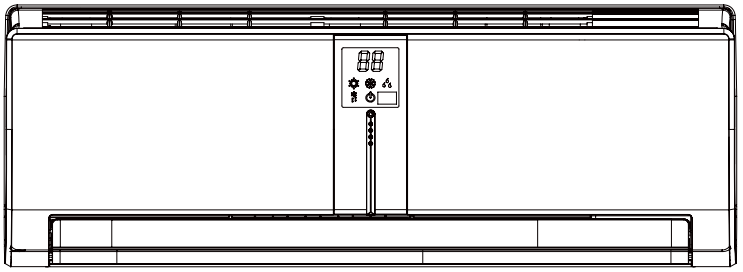
Summary and Features

Indoor Unit:

GWC09UB-K3DNA1A/I
GWH09UB-K3DNA1A/I
GWC12UB-K3DNA1A/I
GWH12UB-K3DNA1A/I



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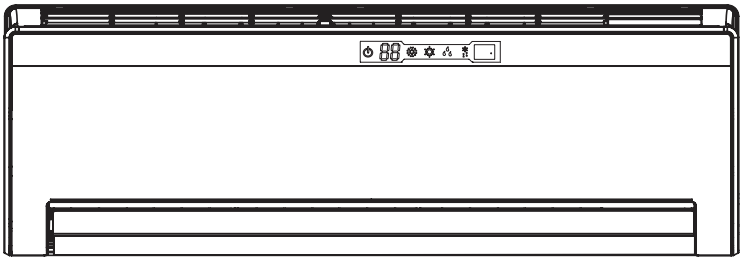
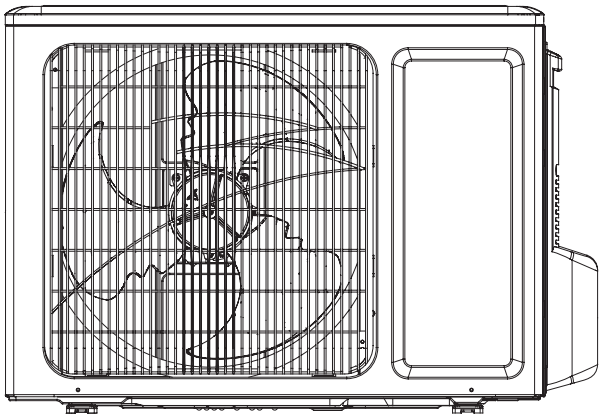
GWH12UB-K3DNA2A/I

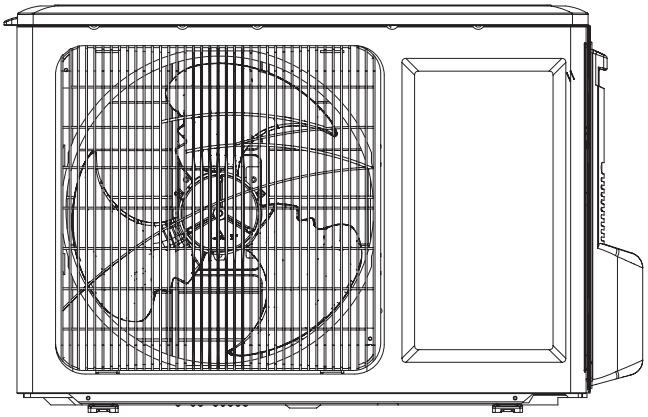


Outdoor Unit:

GWC09UB-K3DNA1A/O
GWH09UB-K3DNA1A/O

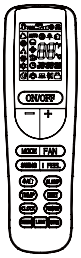


GWC12UB-K3DNA1A/O
GWH12UB-K3DNA1A/O



Remote Controllor:

YAA1FB1



1.Safety Precautions

Installing, starting up, and servicing air conditioner can be hazardous due to system pressure, electrical components, and equipment location, etc.

Only trained, qualified installers and service personnel are allowed to install, start-up, and service this equipment. Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When handling the equipment, observe precautions in the manual and on tags, stickers, and labels attached to the equipment. Follow all safety codes. Wear safety glasses andwork gloves. Keep quenching cloth and fire extinguisher nearby when brazing.

Read the instructions thoroughly and follow all warnings or cautions in literature and attached to the unit. Consult local building codes and current editions of national as well as local electrical codes.

Recognize the following safety information:

⚠ Warning	Incorrect handling could result in personal injury or death.
⚠ Caution	Incorrect handling may result in minor injury,or damage to product or property.

⚠ Warning

All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.

- Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.
- Never supply power to the unit unless all wiring and tubing are completed, reconnected and checked.
- This system adopts highly dangerous electrical voltage. Incorrect connection or inadequate grounding can cause personal injury or death. Stick to the wiring diagram and all the instructions when wiring.
- Have the unit adequately grounded in accordance with local electrical codes.
- Have all wiring connected tightly. Loose connection may lead to overheating and a possible fire hazard.

All installation or repair work shall be performed by your dealer or a specialized subcontractor as there is the risk of fire, electric shock, explosion or injury.

⚠ Caution

- Never install the unit in a place where a combustible gas might leak, or it may lead to fire or explosion.
- Make a proper provision against noise when the unit is installed at a telecommunication center or hospital.
- Provide an electric leak breaker when it is installed in a watery place.
- Never wash the unit with water.
- Handle unit transportation with care. The unit should not be carried by only one person if it is more than 20kg.
- Never touch the heat exchanger fins with bare hands.
- Never touch the compressor or refrigerant piping without wearing glove.
- Do not have the unit operate without air filter.
- Should any emergency occur, stop the unit and disconnect the power immediately.
- Properly insulate any tubing running inside the room to prevent the water from damaging the wall.

- Make sure the outdoor unit is installed on a stable, level surface with no accumulation of snow, leaves, or trash beside.
- Make sure the ceiling/wall is strong enough to bear the weight of the unit.
- Make sure the noise of the outdoor unit does not disturb neighbors.
- Follow all the installation instructions to minimize the risk of damage from earthquakes, typhoons or strong winds.
- Avoid contact between refrigerant and fire as it generates poisonous gas.
- Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture and other hazards.
- Make sure no refrigerant gas is leaking out when installation is completed.
- Should there be refrigerant leakage, the density of refrigerant in the air shall in no way exceed its limited value, or it may lead to explosion.
- Keep your fingers and clothing away from any moving parts.
- Clear the site after installation. Make sure no foreign objects are left in the unit.
- Always ensure effective grounding for the unit.

2. Specifications

2.1 Unit Specifications

Model			GWC09UB-K3DNA1A	GWH09UB-K3DNA1A GWH09UB-K3DNA2A
Product Code			CB204000100	CB204000200 CB221000201
Power Supply	Rated Voltage	V~	220/240	220/240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Indoor	Indoor
Cooling Capacity (Min~Max)		W	2600(1000~3400)	2600(1000~3400)
Heating Capacity (Min~Max)		W	/	2870(600~3800)
Cooling Power Input (Min~Max)		W	645(200~1200)	645(200~1200)
Heating Power Input (Min~Max)		W	/	695(160~1250)
Cooling Power Current		A	2.83	2.83
Heating Power Current		A	/	3.05
Rated Input		W	1400	1450
Rated Current		A	5.25	5.50
Air Flow Volume(Min~Max)		m^3/h	560/490/450/400/360/350/340	560/490/450/400/360/350/340
Dehumidifying Volume		L/h	0.8	0.8
EER		W/W	4.01	4.01
COP		W/W	/	4.11
SEER		W/W	/	/
HSPF		W/W	/	/
Application Area		m^2	12-18	12-18
Indoor Unit	Model of indoor unit		GWC09UB-K3DNA1A/I	GWH09UB-K3DNA1A/I GWH09UB-K3DNA2A/I
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ85X687	Φ85X687
	Fan Motor Cooling Speed(Min~Max)	r/min	1400/1200/1100/1000/900/800/700	1400/1200/1100/1000/900/800/700
	Fan Motor Heating Speed(Min~Max)	r/min	/	1380/1250/1170/1090/1020/950/900
	Output of Fan Motor	W	20	20
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	/	/
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	670X25.4X324	670X25.4X324
	Swing Motor Model		MP24AC/MP24AD	MP24AC/MP24AD
	Output of Swing Motor	W	0.6	0.6
	Fuse	A	3.15	3.15
	Sound Pressure Level(Min~Max)	dB (A)	38/34/32/29/27/25/22	38/34/32/29/27/25/22
	Sound Power Level(Min~Max)	dB (A)	48/44/42/39/37/35/32	48/44/42/39/37/35/32
	Dimension (WXHXD)	mm	896X320X159	896X320X159
	Dimension of Carton Box (L/W/H)	mm	970X400X240	970X400X240
	Dimension of Package (L/W/H)	mm	973X403X255	973X403X255
	Net Weight	kg	11.5	11.5
	Gross Weight	kg	14.5	14.5

Outdoor Unit	Model of Outdoor Unit		GWC09UB-K3DNA1A/O	GWH09UB-K3DNA1A/O
	Compressor Manufacturer/Trademark		LANDA	LANDA
	Compressor Model		QXA-A086zC190	QXA-A086zC190
	Compressor Oil		FVC 68D or RB 68EP	FVC 68D or RB 68EP
	Compressor Type		Rotary	Rotary
	L.R.A.	A	25	25
	Compressor RLA	A	12	12
	Compressor Power Input	W	850±3%	850±3%
	Overload Protector		1NT11L-6233	1NT11L-6233
	Throttling Method		Electron expansion valve	Electron expansion valve
	Operation temp	ºC	16~30	16~30
	Ambient temp (cooling)	ºC	18~43	18~43
	Ambient temp (heating)	ºC	/	-5~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Rows-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	725X38.1X508	725X38.1X508
	Fan Motor Speed	rpm	900/660	900/660
	Output of Fan Motor	W	30	30
	Fan Motor RLA	A	0.27	0.27
	Fan Motor Capacitor	μF	0	0
	Air Flow Volume of Outdoor Unit	m^3/h	1600	1600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	400	400
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.8	2.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2	1.2
	Sound Pressure Level(Min~Max)	dB (A)	50/48/44/39/37/35/32	50/48/44/39/37/35/32
	Sound Power Level(Min~Max)	dB (A)	60/58/52/49/47/45/42	60/58/52/49/47/45/42
	Dimension (WXHXD)	mm	776X540X320	776X540X320
	Dimension of Carton Box (L/W/H)	mm	820X355X580	820X355X580
	Dimension of Package (L/W/H)	mm	823X358X595	823X358X595
	Net Weight	kg	29	29
	Gross Weight	kg	33	33
	Refrigerant		R410A	R410A
	Refrigerant Charge	kg	0.85	0.85
Connection Pipe	Length	m	5	5
	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

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

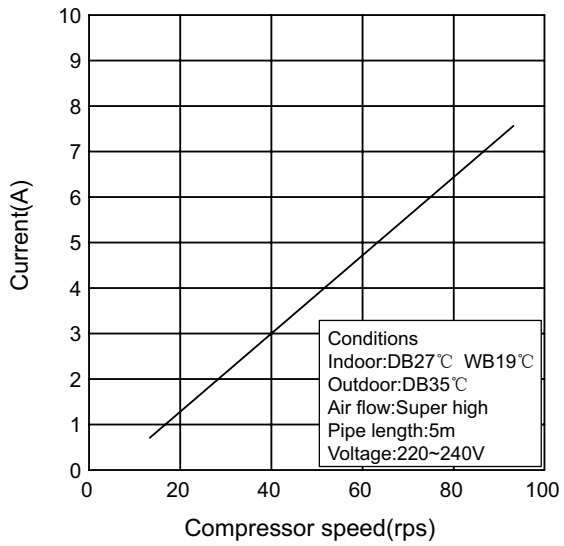
Model			GWC12UB-K3DNA1A	GWH12UB-K3DNA1A GWH12UB-K3DNA2A
Product Code			CB204000300	CB204000400 CB221000401
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Indoor	Indoor
Cooling Capacity (Min~Max)		W	3500(1300~4000)	3500(1300~4000)
Heating Capacity (Min~Max)		W	/	3810(900~4300)
Cooling Power Input (Min~Max)		W	970(360~1300)	970(360~1300)
Heating Power Input (Min~Max)		W	/	1055(340~1360)
Cooling Power Current		A	4.22	4.22
Heating Power Current		A	/	4.58
Rated Input		W	1500	1600
Rated Current		A	5.76	6.15
Air Flow Volume(Min~Max)		m^3/h	560/490/450/400/360/350/340	560/490/450/400/360/350/340
Dehumidifying Volume		L/h	1.4	1.4
EER		W/W	3.61	3.61
COP		W/W	/	3.61
SEER		W/W	/	/
HSPF		W/W	/	/
Application Area		m^2	16-24	16-24
Indoor Unit	Model of indoor unit		GWC12UB-K3DNA1A/I	GWH12UB-K3DNA1A/I GWH12UB-K3DNA2A/I
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ85X687	Φ85X687
	Fan Motor Cooling Speed(Min~Max)	r/min	1400/1250/1150/1050/950/850/700	1400/1250/1150/1050/ 950/850/700
	Fan Motor Heating Speed(Min~Max)	r/min	/	1400/1270/1180/1100/1040/980/900
	Output of Fan Motor	W	20	20
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Input of Heater	W	/	/
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	670X25.4X324	670X25.4X324
	Swing Motor Model		MP24AC/MP24AD	MP24AC/MP24AD
	Output of Swing Motor	W	0.6	0.6
	Fuse	A	3.15	3.15
	Sound Pressure Level(Min~Max)	dB (A)	39/36/34/31/28/25/23	39/36/34/31/28/25/23
	Sound Power Level(Min~Max)	dB (A)	49/46/44/41/38/35/33	49/46/44/41/38/35/33
	Dimension (WXHXD)	mm	896X320X159	896X320X159
	Dimension of Carton Box (L/W/H)	mm	970X400X240	970X400X240
	Dimension of Package (L/W/H)	mm	973X403X255	973X403X255
	Net Weight	kg	11.5	11.5
	Gross Weight	kg	14.5	14.5

Outdoor Unit	Model of Outdoor Unit		GWC12UB-K3DNA1A/O	GWH12UB-K3DNA1A/O
	Compressor Manufacturer/Trademark		ZHUHAI GREE DAIKIN DEVICE CO., LTD.	PANASONIC WANBAO COMPERSSOR (GUANGZHOU) CO.LTD/PANASONIC
	Compressor Model		1YC23AEXD	5RS102ZJA21
	Compressor Oil		FV50S	FV50S
	Compressor Type		Rotary	Rotary
	L.R.A.	A	25.00	25
	Compressor RLA	A	5.00	4.47
	Compressor Power Input	W	600	985
	Overload Protector		CS-7SA	1NT11L-5270
	Throttling Method		Capillary	Capillary
	Operation temp	ºC	16~30	16~30
	Ambient temp (cooling)	ºC	18~48	18~43
	Ambient temp (heating)	ºC	/	-7~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ9.52	Φ9.52
	Rows-fin Gap	mm	2-1.4	2-1.4
	Coil Length (LXDXW)	mm	785X44X508	785X44X508
	Fan Motor Speed	rpm	900/660	900/660
	Output of Fan Motor	W	30	30
	Fan Motor RLA	A	0.27	0.27
	Fan Motor Capacitor	μF	0	0
	Air Flow Volume of Outdoor Unit	m^3/h	1600	1600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	400	400
	Defrosting Method		/	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IP24	IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	2.8	2.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.2	1.2
	Sound Pressure Level (H/M/L)	dB (A)	52/-/-	52/-/-
	Sound Power Level (H/M/L)	dB (A)	62/-/-	62/-/-
	Dimension (WXHXD)	mm	848X540X320	848X540X320
	Dimension of Carton Box (L/W/H)	mm	878X360X580	878X360X580
	Dimension of Package (L/W/H)	mm	881X363X595	881X363X595
	Net Weight	kg	35	38
	Gross Weight	kg	40	43
	Refrigerant		R410A	R410A
	Refrigerant Charge	kg	1.26	1.26
Connecti on Pipe	Length	m	5	5
	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

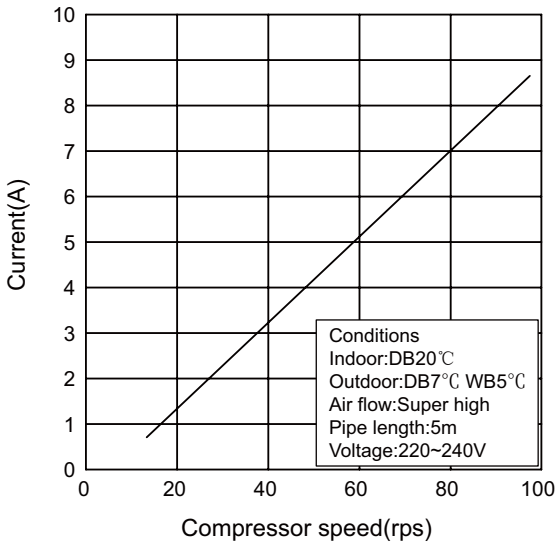
The above data is subject to change without notice. Please refer to the nameplate of the unit.

2.2 Operation Characteristic Curve

Cooling

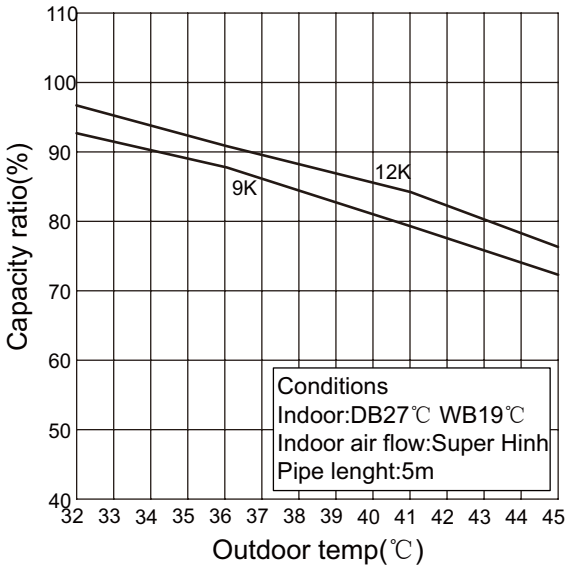


Heating

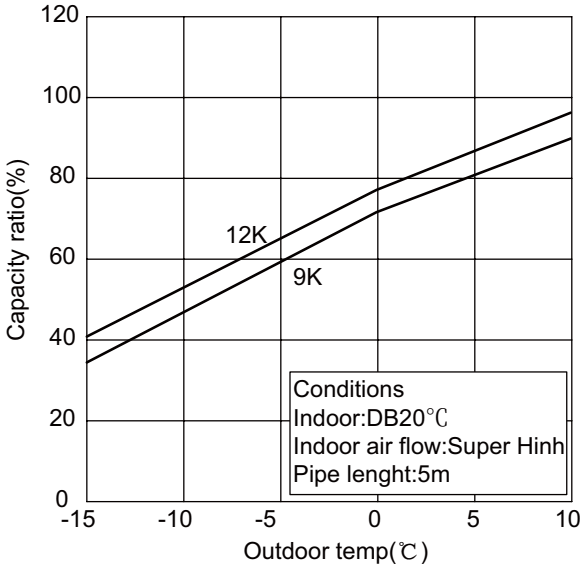


2.3 Capacity Variation Ratio According to Temperature

Cooling



Heating



2.4 Operation Data

Cooling

Temperature condition (°C)		Model name	Standard pressure	Heat exchanger pipe temp.		Indoor fan mode(rpm)	Outdoor fan mode(rpm)	Compressor revolution(rps)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
27/19	35/-	9K	0.58	in 10/out 11	in 78/out 38	1400	900/600	64
		12K	0.6	in 11/out 12	in 80/out 38	1400	900/600	64

Heatling

Temperature condition (°C)		Model name	Standard pressure	Heat exchanger pipe temp.		Indoor fan mode(rpm)	Outdoor fan mode(rpm)	Compressor revolution(rps)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
20/-	7/6	9K	2.6	in 76/ out 42	in 3/out 1	1380	900/600	66
		12K	2.7	in 76/ out 42	in 4/out 2	1400	900/600	66

NOTES :

(1) Measure surface temperature of heat exchanger pipe around center of heat exchanger path U bent. (Thermistor themometer)

(2) Connecting piping condition : 5m.

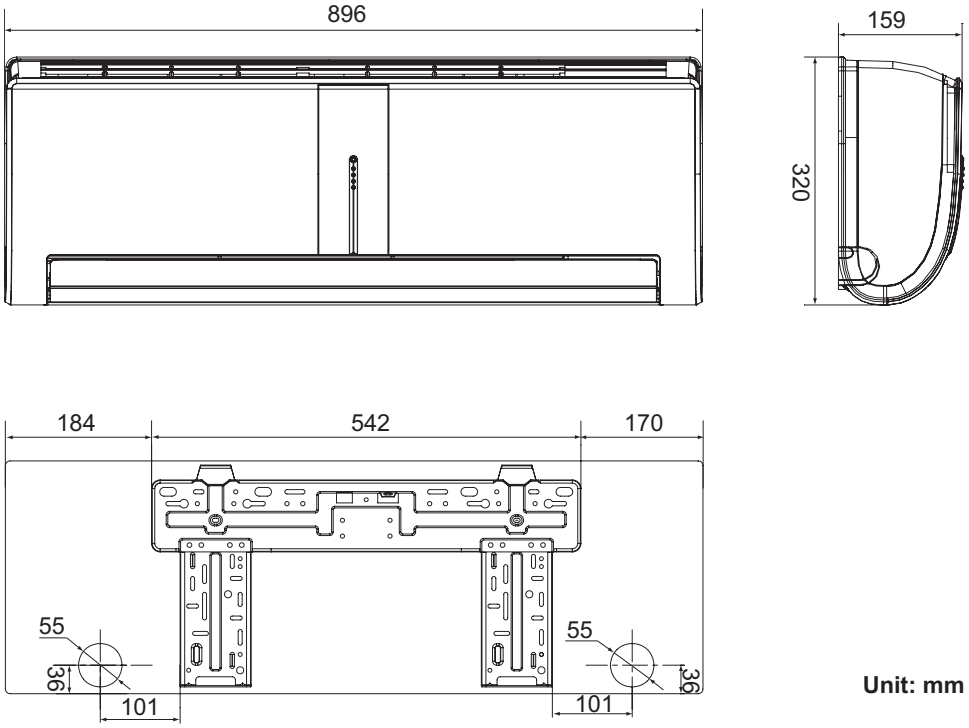
T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

P: Pressure of air pipe connecting indoor and outdoor units

3. Construction Views

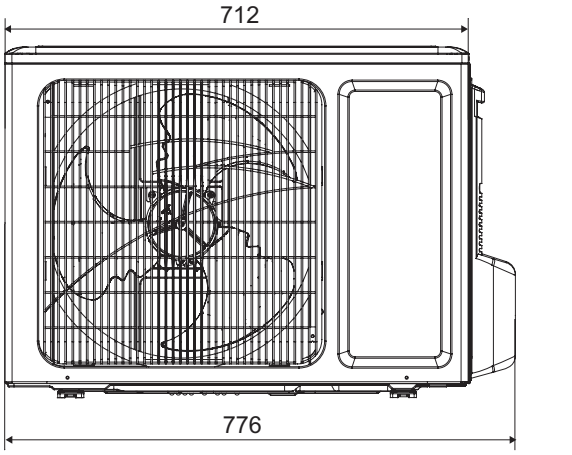
3.1 Indoor Unit

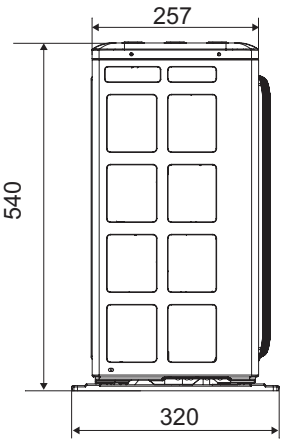


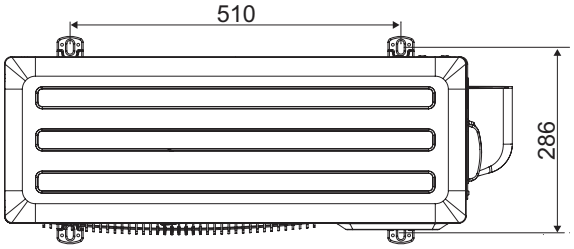
Unit: mm

3.2 Outdoor Unit

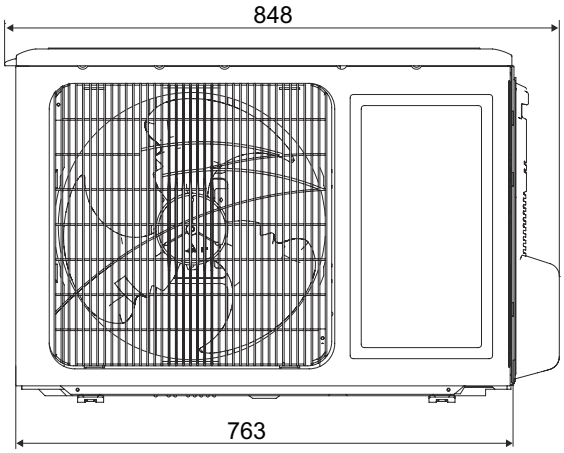
09K

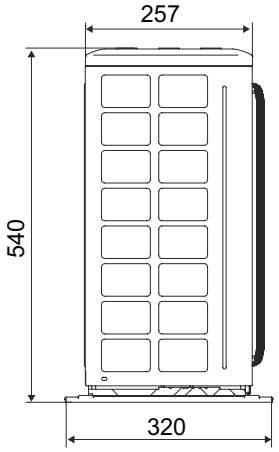


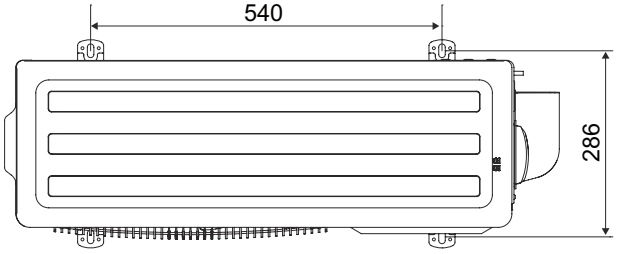




12K



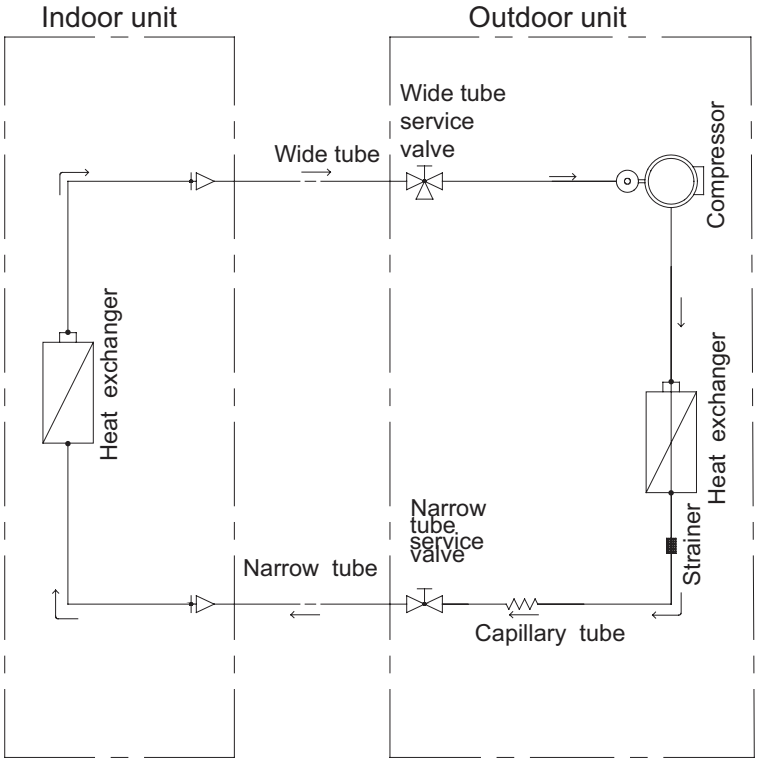




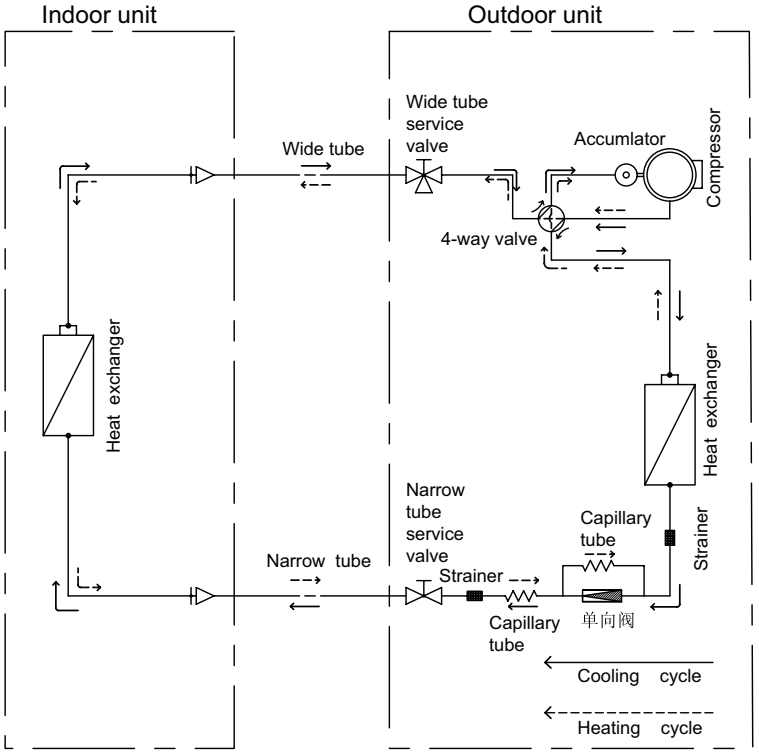
Unit: mm

4. Refrigerant System Diagram

Cooling Models



Cooling & Heating Models



Refrigerant pipe diameter

Liquid : 1/4" (6 mm)

Gas : 3/8" (9.52mm)(09K)

Gas : 1/2" (12mm)(12K)

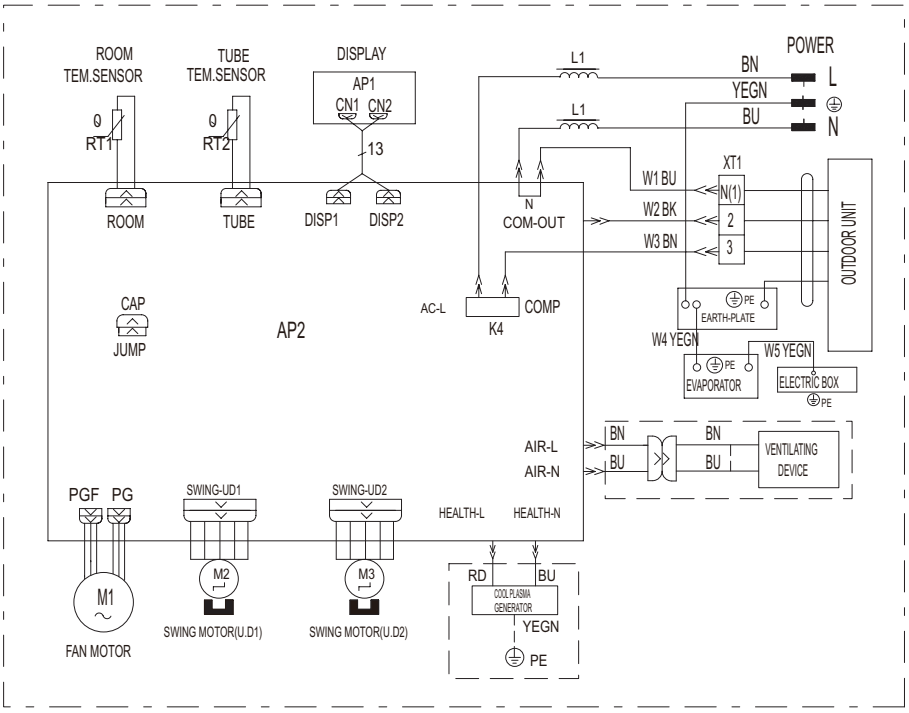
5. Schematic Diagram

5.1 Electrical Wiring

● **Electrical Data**

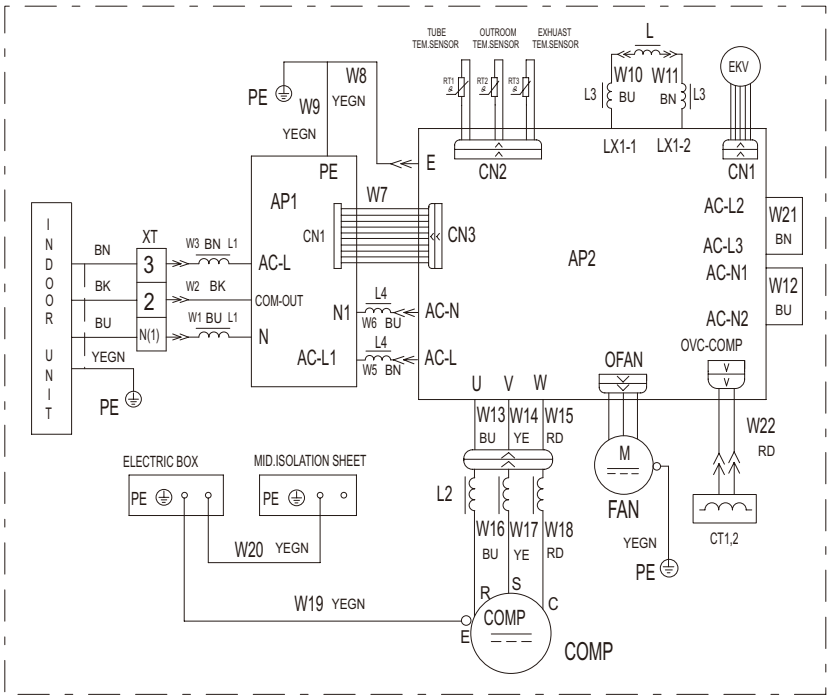
Symbol	Color symbol	Symbol	Color symbol
BU	BLUE	**BN**	BROWN
YE	YELLOW	**BK**	BLACK
RD	RED	**YEGN**	YELLOW GREEN
VT	VIOLET	**WH**	WHITE
OG	ORANGE	⏚	PROTECTIVE EARTH

● **Indoor Unit**

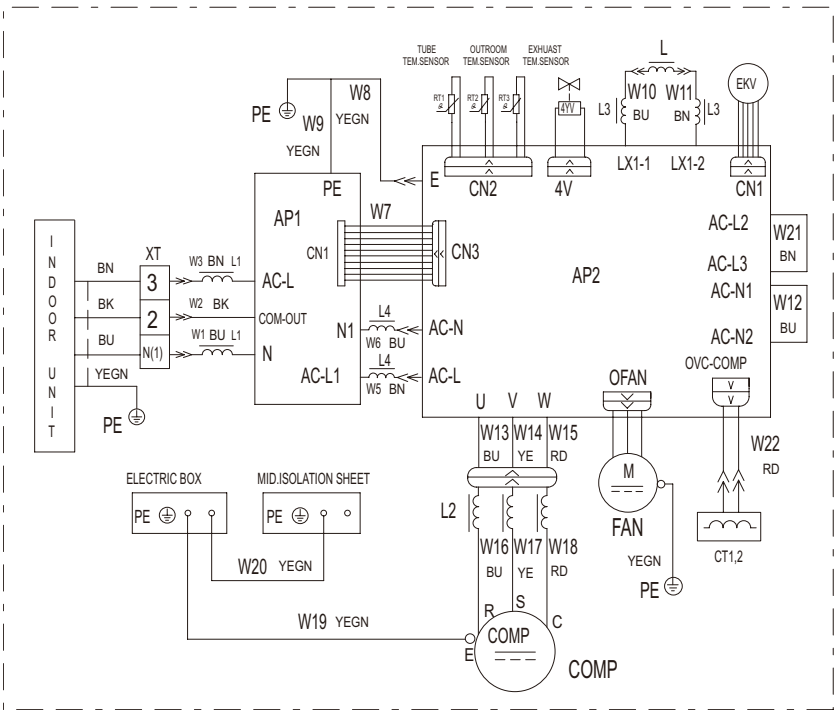


● Outdoor Unit

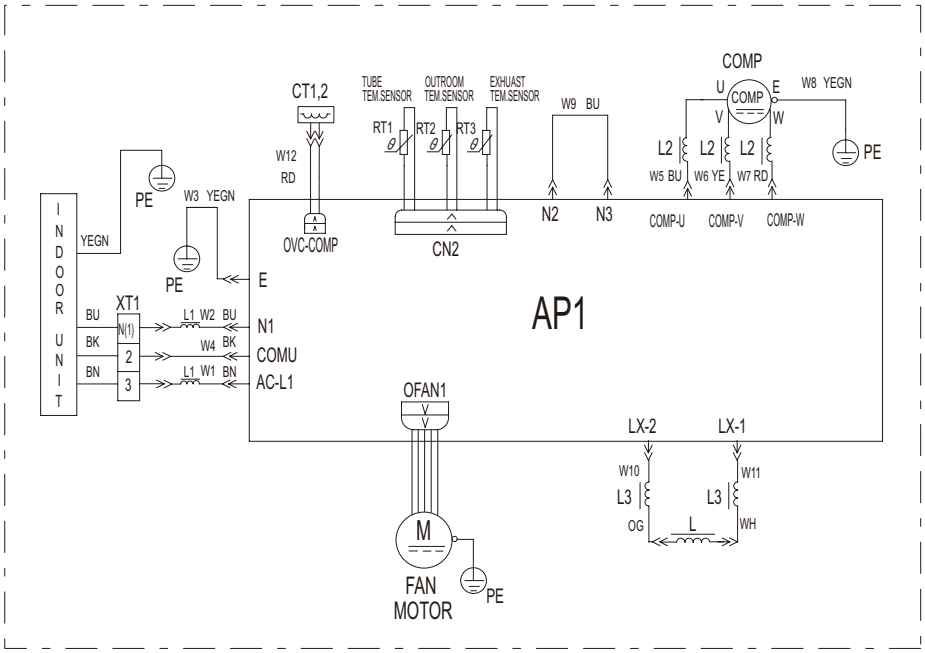
GWC09UB-K3DNA1A/O



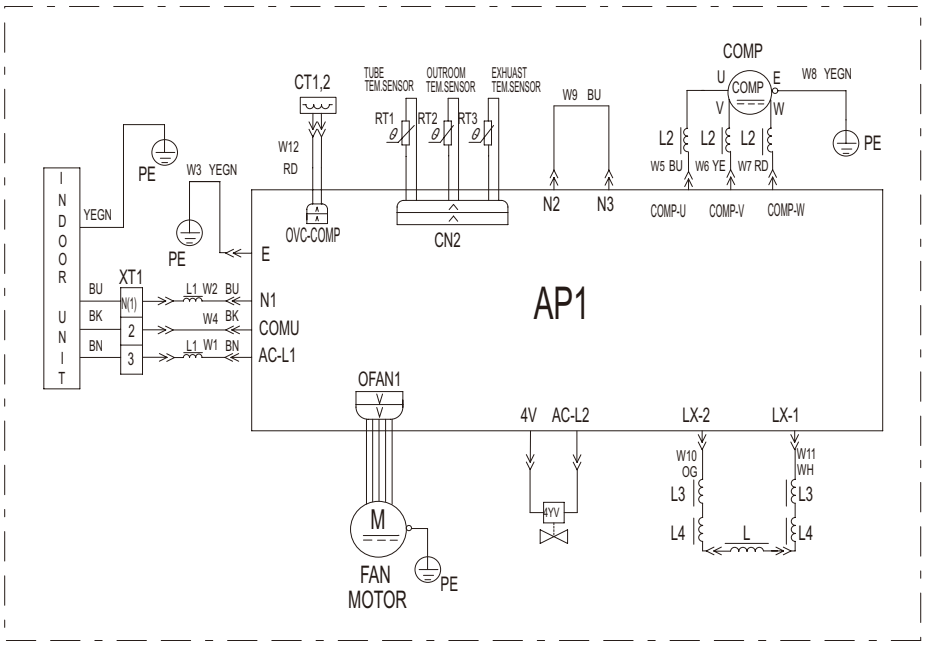
GWH09UB-K3DNA1A/O



GWC12UB-K3DNA1A/O



GWH12UB-K3DNA1A/O

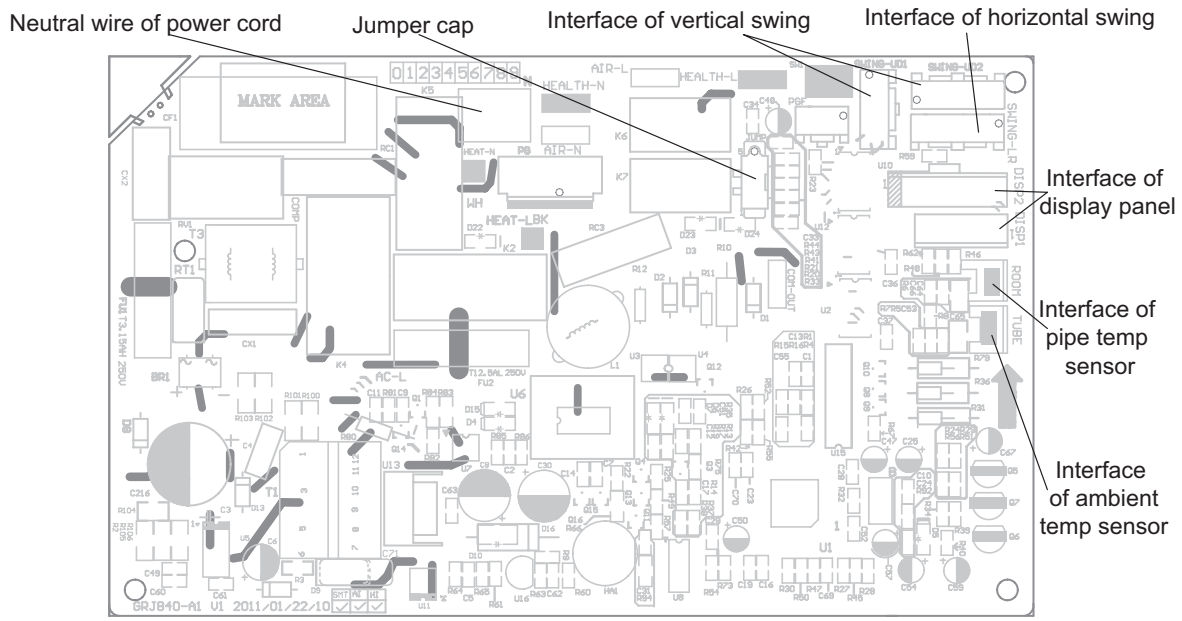


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

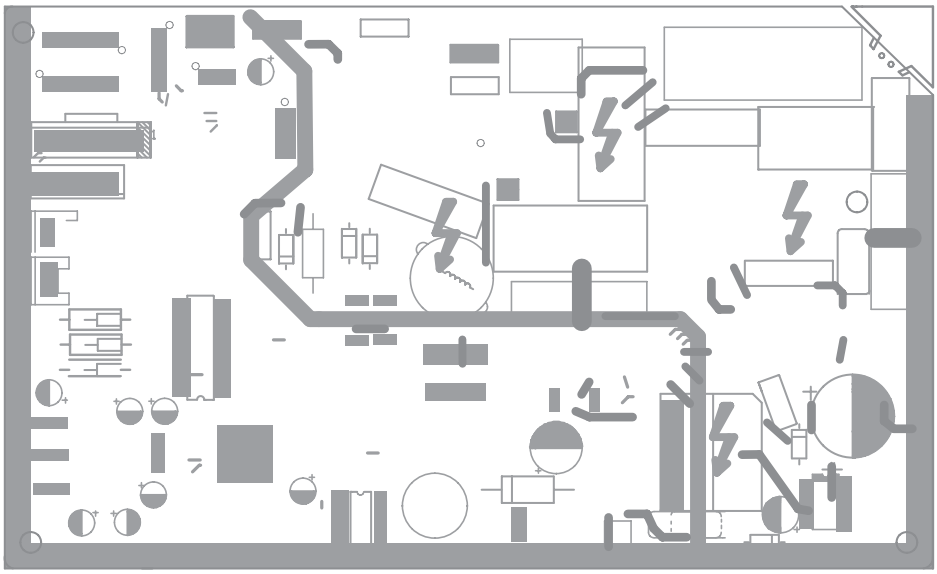
5.2 Printed Circuit Board

Indoor Unit

● **TOP VIEW**



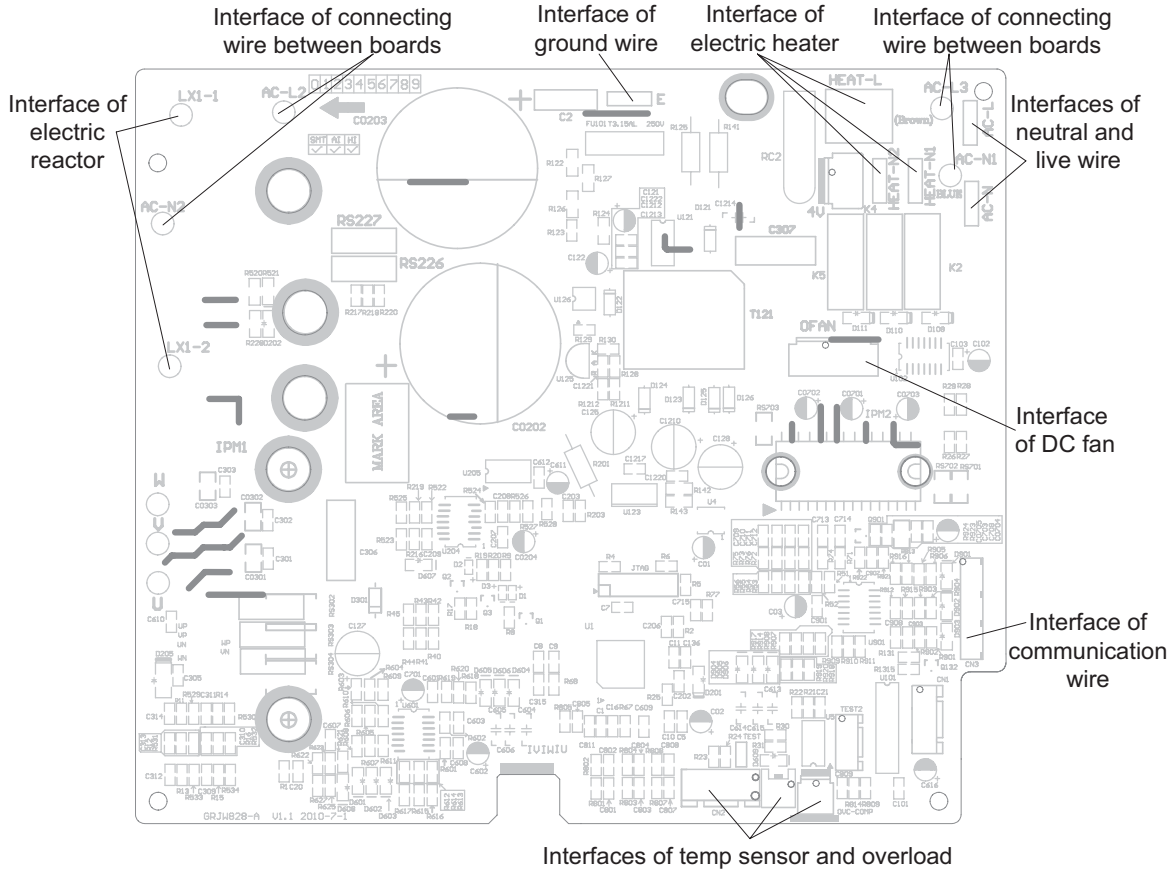
● **BOTTOM VIEW**



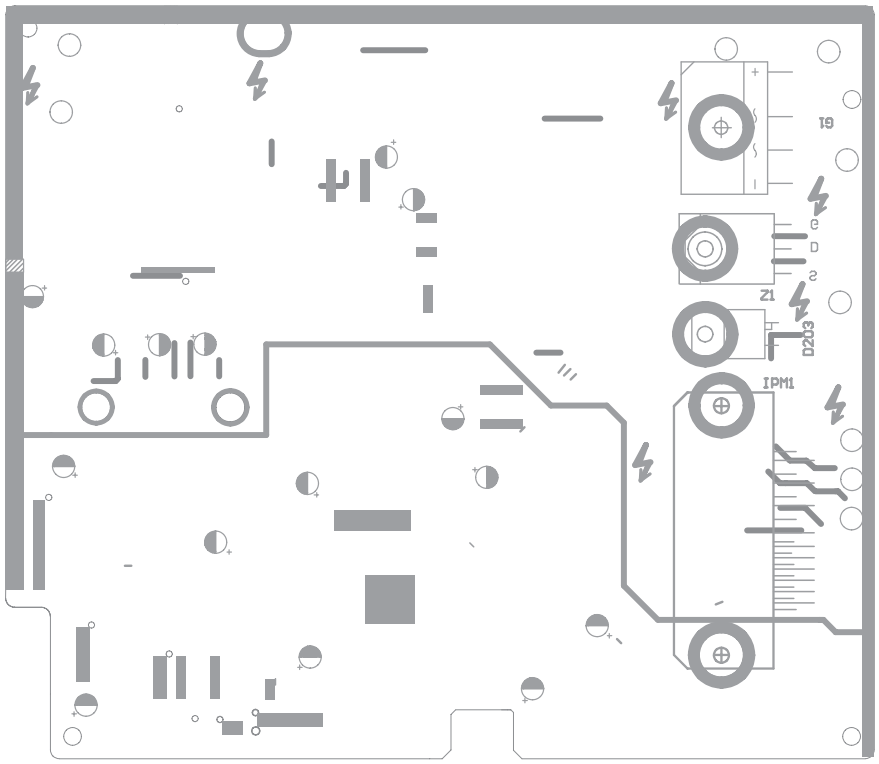
Outdoor Unit

GWC09UB-K3DNA1A/O, GWH09UB-K3DNA1A/O

- **TOP VIEW**

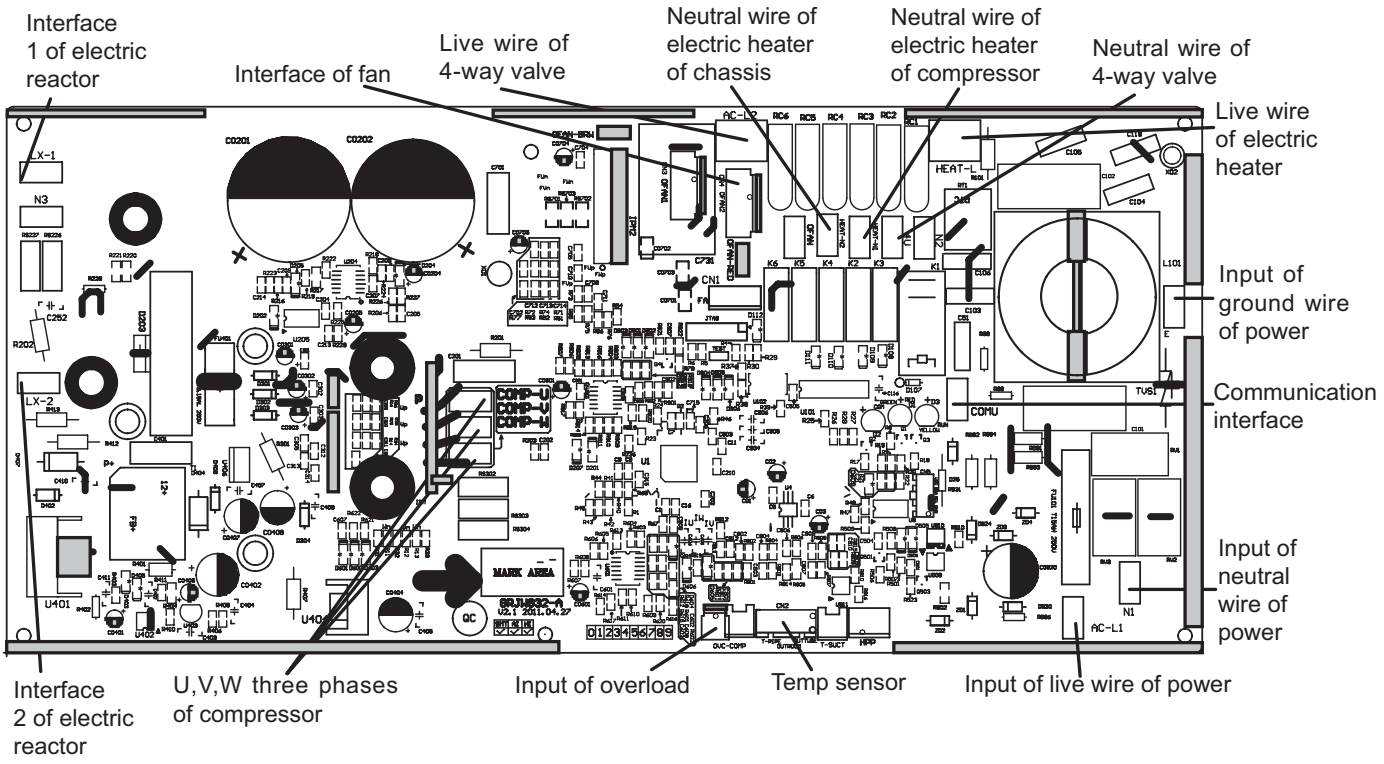


- **BOTTOM VIEW**

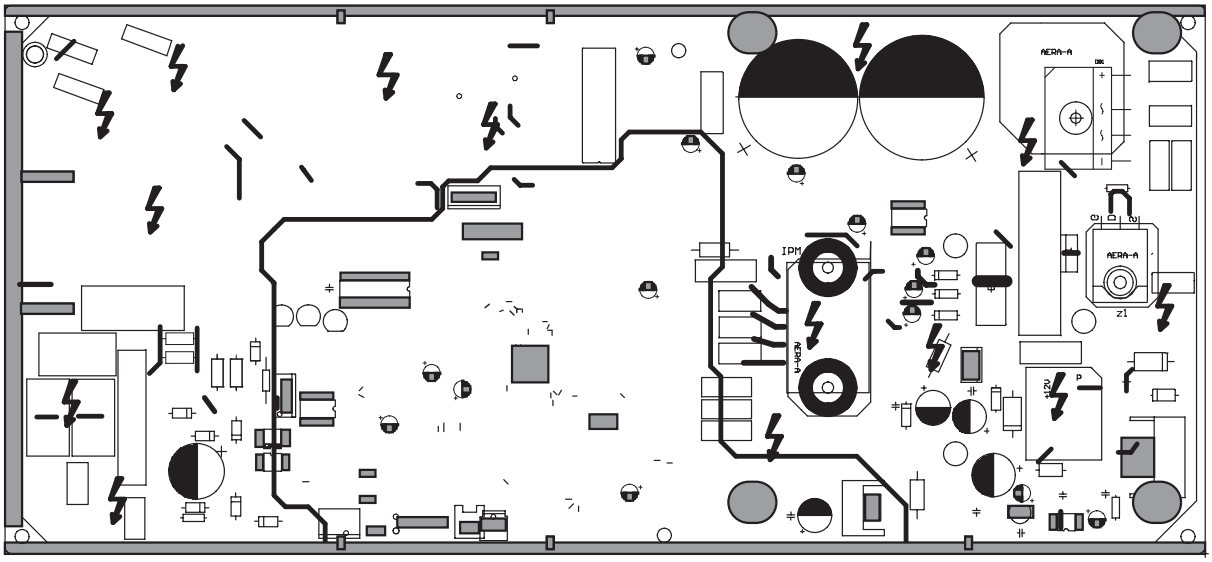


GWC12UB-K3DNA1A/O, GWH12UB-K3DNA1A/O

● **TOP VIEW**



● **BOTTOM VIEW**



6. Function and Control

6.1 Remote Control Operations

1 ON/OFF
Press it to start or stop operation.

2 -

Press it to decrease temperature setting.

3 +

Press it to increase temperature setting.

4 MODE

Press it to select operation mode(AUTO/COOL/DRY/FAN/HEAT).

5 FAN

Press it to set fan speed.

6 SWING

Press it set swing angle.

7 I FEEL

8 /

Press it to set HEALTH or AIR function.

9 SLEEP

10 TEMP

11 QUIET

Pressitto set QUIET function.

12 CLOCK

Press it set clock.

13 T-ON|T-OFF

Press it to set auto-off/auto-on timer.

14 TURBO

15 LIGHT

Press it to turn on/off the light.

16 X-FAN

1 ON/OFF

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

2 -

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

3 +

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

4 MODE

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

AUTO▶ COOL ▶ DRY ▶ FAN ▶HEAT*

*Note:Only for models with heating function.

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

5 FAN

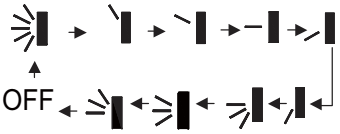
This button is used for setting Fan Speed in the sequence that goes from AUTO, , , , , , to then back to Auto.

Low speed Low-Medium speed Medium speed

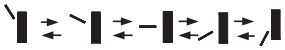
Medium-High speed High speed

6 SWING

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



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



7 I FEEL

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

8 /

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.

9 SLEEP

- ●Press this button, can select Sleep 1 ( ), Sleep 2 ( ),Sleep 3 ( ) 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 ℃,setting temperature increased 2℃, the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1 ℃, 2 hours, setting temperature will decrease 2 ℃, then the unit will run at this setting temperature.
- ●Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.
- ●Sleep 3- the sleep curve setting under Sleep mode by DIY:

(1) Under Sleep 3 mode, press "Turbo" button for a long time, remote 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 "Trubo "button for confirmation;

(3) At this time, 1hour will be automatically increased at the timer postion 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 within10s, there is no button pressed, the sleep curve setting within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "ON/OFF" button, "Mode" button, "Timer"button or "Sleep" button, the sleep curve setting or enquiry status will quit similarly.

10 TEMP

Press this button, could select displaying the indoor setting temperature or indoor ambient temperature.When the indoor unit firstly power on it will display the setting temperature, if the temperature's displaying status is changed from other status to" ",displays the ambient temperature, 5s later or within 5s, it receives other remote control signal that will return to display the setting temperature. if the users haven't set up the temperature displaying status,that will display the setting temperature.

11 QUIET

Press this button, the Quiet status is under the Auto Quiet mode (display "AUTO"signal)and Quiet mode (display " " singal) and Quiet OFF (there is no signal of " " displayed),after powered on, the Quiet OFF is defaulted. Note: the Quiet function cannot be set up in Fan and Dry mode;Under the Quiet mode (Display " " Under the Quiet mode (Display " " signal), the fan speed is not available.

12 CLOCK

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

13 T-ON\T-OFF

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

14 TURBO

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

15 LIGHT

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

16 X-FAN

Pressing X-FAN button in COOL or DRY mode,the icon is displayed and the indoor fan will continue operation for 10 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.

17 Combination of "+" and "-" buttons: About lock
Press "+ " and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked, is displayed. In this case, pressing any button, blinks three times.

18 Combination of "MODE " and "-" buttons : About switch between Fahrenheit and centigrade At unit OFF, press "MODE" and " - " buttons simultaneously to switch between ℃ and ℉ .

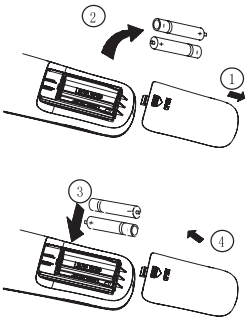
19 Combination of " TEMP " and "CLOCK" buttons : About Energy-saving Function
Press “TEMP” and “CLOCK” simultaneously in COOL mode to start energy-saving function. Nixie tube on the remote controller displays “SE”. Repeat the operation to quit the function.

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

21 About Back-lighting Function
The unit lights for 4s when energizing for the first time, and 3s for later press.

Replacement of Batteries

1.Remove the battery cover plate from the rear of the remote controller.
(As shown in the figure)
2.Take out the old batteries.
3.Insert two new AAA1.5V dry batteries, and pay attention to the polarity.
4. Reinstall the battery cover plate.
★Notes:
●When replacing the batteries, do not use old or different types of batteries,
●If the remote controller will not be used for a long time, please
otherwise, it may cause malfunction.
remove batteries to prevent batteries from leaking.
●The operation should be performed in its receiving range.
●It should be kept 1m away from the TV set or stereo sound sets.
●If the remote controller does not operate normally, please take the
batteries out and reinsert them after 30 seconds.If it still can't operate properly,
replace the batteries.



Sketch map for
replacing batteries

6.2 Description of Each Control Operation

1. Temperature Parameters

◆ **Indoor preset temperature (Tpreset)**

◆ **Indoor ambient temperature (Tamb.)**

2. Basic Functions

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

(1) Cooling Mode

① **Working conditions and process of cooling**

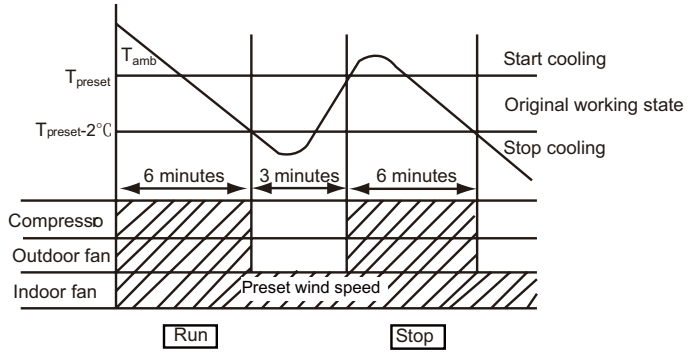
When Tamb.≥Tpreset, the unit will enter cooling operation, in which case the indoor fan, the outdoor fan and the compressor will work and the indoor fan will run at preset speed.

When Tamb.≤Tpreset -2℃ , the compressor will stop, the outdoor fan will stop with a time lag of 30s, and the indoor fan will run at preset speed.

When Tpreset -2℃ < Tamb.< Tpreset, the unit will remain at its previous state.

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

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



② **Protection**

◆ **Antifreeze protection**

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

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

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

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

(2) Dehumidifying Mode

① **Working conditions and process of dehumidifying**

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

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

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

② **Protection**

Protection is the same as that under the cooling mode.

(3) Heating Mode

① **Working conditions and process of heating**

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

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

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

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

② Condition and process of defrost

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

(1). T outdoor ambient ＞ 5℃ , T outdoor tube≤-2℃ ;

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

(3) -5℃ ≤T outdoor ambient ＜ -2℃ , T outdoor tube≤-8℃ ;
(4) -10℃ ≤T outdoor ambient ＜ -5℃ , T outdoor tube≤(T outdoor ambient-3) ℃ .
9K: In that case, indoor fan and compressor stop operation, in 30s later, outdoor fan stop operation and in another 30s later, 4-way valve stop operation; in 30s later, compressor increases its frequency for defrosting. When compressor operates for defrosting for 9min, or TB outdoor pipe B≥10℃ , the target frequency will be set as 46Hz and in 30s later, compressor will stop operation and in another 30s, 4-way valve will start operation; in 60s later, compressor and outdoor fan will operate while indoor fan operates at cold-air prevention operation. H1 will be displayed on display panel and the defrosting frequency is 85Hz.
12K: In that case, indoor fan and compressor stop operation, in 30s later, outdoor fan stop operation and in another 30s later, 4-way valve stop operation; in 30s later, compressor increases its frequency for defrosting. When compressor operates for defrosting for 7.5min, or TB outdoor pipe B≥10 ℃ , the compressor will decreases its frequency and in 30s later, compressor will stop operation and in another 30s, 4-way valve will start operation; in 60s later, compressor and outdoor fan will operate The defrosting frequency is 80Hz.

③ **Protection**

◆ **Cold air prevention**

In heating mode, compressor operates or enters defrosting mode, and horizontal louver will turn to P7 position of heating (18K: the upper horizontal louver will clockwise rotate to 120° while lower horizontal louver will clockwise rotate to 145°).When the horizontal louver is not at swing status, if Tpipe ＞ 31℃ , horizontal louver will rotate the default degree or the previous position. Such operation will be only executed once. If Tpipe ≤ 31℃ and cold air prevention operation finishes, horizontal louver will rotate to P3 position of heating and stop at the position until Tpipe ≥ 35 ℃ . Then horizontal louver will rotate the default degree or the previous position. Such operation will be only executed once. In other conditions, when cold air prevention operation quit, horizontal louver will return to previous status. Within 9min, when Tpipe ≤ Tindoor amb.+ 5℃ , indoor fan will not operate. After 9min, or when Tpipe ＞ Tindoor amb.+ 5℃ , such condition will not be detected to avoid frequent startup and turning off of the fan. And also, the unit will operate at the following mode:

① When Tindoor amb. ＜ 24℃ :

Within 2min: if Tpipe ⩽ 40℃ , indoor fan will not operate; after 2min, if Tpipe ＞ 27℃ , indoor fan will operate at low speed for 2min or 3min,the cold air prevention will quit and the unit will operate at heating control mode of indoor fan. Within 5min of cold air prevention, if Tpipe ＞ 40℃ , cold air prevention will quit immediately, and the unit will operate at heating control mode of indoor fan.

② When Tindoor amb. ⩾ 24℃ , if Tpipe ⩽ 27℃ , indoor fan will not operate; if Tpipe ＞ 27℃ or in 2min later, cold air prevention will quit and the unit will operate at heating control mode of heating.

When the unit stop operation due to protection or reaching set temperature, the horizontal louver will stop at the position when indoor unit stops. Note: 1. the text with underlined is applicable to the one-to-two unit and not applicable to one-to-one unit. 2. Tindoor amb. means the indoor ambient temperature before starting compressor under heating mode or the indoor ambient temperature before clearing defrosting mark after defrosting operation quits.

◆ **Protection when total current increases and frequency decreases:**

When total current IB total B ⩽ W, frequency is allowed to increase;
When total current IB total B ⩾ X, frequency is prohibited to increase;
When total current IB total B ⩾ Y, the compressor decreases frequency;
When total current IB total B ⩾ Z, compressor stops operation and in 30s later, outdoor fan stops operation.
W=6A, X=7A, Y=8A, Z=9A

◆ **Protection of compressor power:**

When Pc ⩾ 1500w, frequency is prohibited to increase;
When PcB ⩾ 1600w, the compressor decreases frequency;
When PcB ⩾ 1700w, compressor stops operation;
When Pc ⩽ 1400w, protection will be removed.

(4) Fan Mode

Under the mode, the indoor fan will run at preset speed and the compressor, the outdoor fan, the four-way valve and the electric heater will stop.
Under the mode, temperature can be set within a range of 16 - 30℃ .

(5) AUTO Mode

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

a. When T ambient ≥26℃ , the unit will operate in Cool mode. The set temperature is 25℃ .
b. When T ambient ≤22℃ , the heat pump unit will operate in Heat mode., set temperature be 20℃ ; the cooling only unit will operate in Fan mode, set temperature be 25℃ .
c. When 23℃ ≤T ambient ≤25℃ , the unit will operate in the previous state. If it is energized for the first time, it will operate in Fan mode.
d. When the unit operates in Auto mode, the compressor frequency during cooling operation is the same with that of heating mode.

② **Protection**

a. In cooling operation, protection is the same as that under the cooling mode;
b. In heating operation, protection is the same as that under the heating mode;
c. When ambient temperature changes, operation mode will be converted preferentially. Once started, the compressor will remain unchanged for at least 6 minutes.

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

① **Overload protection**

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

1) Cooling overload

a. If T tube≤52℃ , the unit will return to its original operation state.
b. If T tube≥55℃ , frequency rise is not allowed.
c. If T tube≥58℃ , the compressor will run at reduced frequency.
d. If T tube≥62℃ , the compressor will stop and the indoor fan will run at preset speed.

2) Heating overload

a. If T tube≤50℃ , the unit will return to its original operation state.
b. If T tube≥53℃ , frequency rise is not allowed.
c. If T tube≥56℃ , the compressor will run at reduced frequency.
d. If T tube≥60℃ , the compressor will stop and the indoor fan will blow residue heat and then stop.

② **Exhaust temperature protection of compressor**

If exhaust temperature ≥98℃ , frequency is not allowed to rise.
If exhaust temperature ≥103℃ , the compressor will run at reduced frequency.
If exhaust temperature ≥110℃ , the compressor will stop.
If exhaust temperature ≤90℃ and the compressor has stayed at stop for at least 3 minutes, the compressor will resume its operation.

③ **Communication fault**

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

④ **Module protection**

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

⑤ **Overload protection**

If temperature sensed by the overload sensor is over 115℃ , the compressor will stop and the outdoor fan will stop with a time lag of 30 seconds. If temperature is below 95℃ , the overload protection will be relieved℃ .
If voltage on the DC bus is below 150V or over 420V, the compressor will stop and the outdoor fan will stop with a time lag of 30 seconds. When voltage on the DC bus returns to its normal value and the compressor has stayed at stop for at least 3 minutes, the compressor will resume its operation.

⑥ **Faults of temperature sensors**

Designation of sensors	Faults
Indoor ambient temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Indoor tube temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Outdoor ambient temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds
Outdoor tube temperature	The sensor is detected to be open-circuited or short-circuited for successive 30 seconds, and no detection is performed within 10 minutes after defrost begins.
Exhaust	After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.
Overload	After the compressor has operated for 3 minutes, the sensor is detected to be open-circuited or short-circuited for successive 30 seconds.

3. Other Controls

(1) ON/OFF

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

(2) Mode Selection

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

(3) Temperature Setting Option Button

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

(4) Time Switch

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

(5) SLEEP State Control

1. Sleep mode 1

1.1 In cooling and drying mode, in 1 hour after setting sleep mode, Tpreset increases 1℃ ; in 2 hours later, Tpreset increases 2℃ ; After that, Tpreset will not change.

1.2 In heating mode, , in 1 hour after setting sleep mode, Tpreset decreases 1℃ ; in 2 hours later, Tpreset decreases 2℃ ; After that, Tpreset will not change.

1.3 In auto mode, Tpreset will not change after setting sleep mode.

2. Sleep mode 2

2.1 Cooling mode:

When initial set temperature range is 16~23℃ , if turning on sleep mode, temperature will increase 1℃ for every hour. After 3℃ has been increased, the temperature will not change. In 7 hours later, temperature will decrease 1℃ . After that, the unit will keep operating at that temperature.

When initial set temperature range is 24~27℃ , if turning on sleep mode, temperature will increase 1 ℃ for every hour. After 2℃ has been increased, the temperature will not change. In 7 hours later, temperature will decrease 1℃ . After that, the unit will keep operating at that temperature.

When initial set temperature range is 28~29℃ , if turning on sleep mode, temperature will increase 1℃ for every hour. After 1℃ has been increased, the temperature will not change. In 7 hours later, temperature will decrease 1℃ . After that, the unit will keep operating at that temperature.
When initial set temperature range is 30℃ , the unit will operate at that temperature. In 7 hours later, temperature will decrease 1℃ . After that, the unit will keep operating at that temperature.

(6) Indoor Fan Control

The Indoor Fan can be set as HIGH, MED, LOW by remote control, and the Indoor Fan will be respectively run at high, medium, low speed. It will also be set as AUTO, and the Indoor Fan is as the followings at the automatic wind speed.
Cooling mode: T ring ≥ T setting + 2, high speed; T setting - 2<T ring<T setting + 2, medium speed; T rings≤ T setting - 2, low speed.
Sending wind mode: : T ring> T setting+ 4, high speed; T setting +2≤T ring≤T setting + 4, medium speed; T ring<T setting +2, low speed.
Moisture removal mode: force to be set as the low speed
Heating mode: T rings≤ T setting + 1 high speed; T setting +1<T ring<T setting + 5, medium speed; T ring ≥T setting + 2, low speed.

(7) Buzzer Control

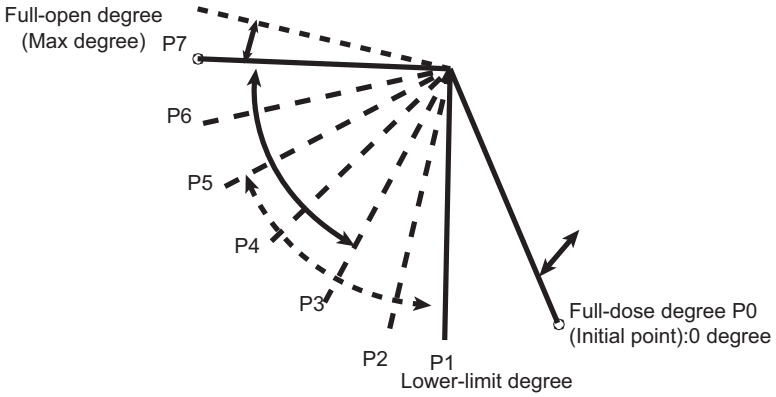
The buzzer will send a “Di” sound when the air conditioner is powered up or received the information sent by the remote control or there is a button input, the single tube cooler doesnt receive the remote control ON signal under the mode of heating mode.

(8) Auto button

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

(9)Up & Down Swing

① After energization, the upper horizontal louver will firstly open to a certain degree and then the up & down horizontal louver will rotate to P0 to close the air outlet.
② Swing function has not been set after startup of the unit Start up the unit, after finishing swinging and rotating to P0, the horizontal louver will firstly open to a certain degree and then the up & down horizontal louver will rotate at the same time. In other modes except heating mode, the up & down horizontal louver will rotate to P7. In heating mode, the up & down horizontal louver will rotate to P4.
③ Swing function is set when starting up the unit
In other modes except heating mode, the set degrees of swinging are: P7-P6-P5-P4-P3. In heating mode, the set degrees of swinging are: P2-P3-P4-P5-P6.
④ Auto swing
When receive the order of auto swing from the remote controller, under other modes except heating mode, the up & down horizontal louver will rotate from P7 to P3; under heating mode, the up & down horizontal louver will rotate from P2 to P6. If auto swing is cancelled, the horizontal louver will stop at the present position.
⑤ Anti-moisture protection (available in cooling, auto cooling and dry modes)
When the indoor fan runs in quiet speed, the rotation range of the upper horizontal louver is from P6-P4.
⑥ Anti-noise function
The indoor fan, the compressor and the outdoor fan are able to be energized when the horizontal louver rotates to P2.
⑦ Swing function after turning off the unit
After turning off the unit, the horizontal louver will close at P0.



(10) Display

① Operation pattern and mode pattern display
All the display patterns will display for a time when the power on, the operation indication pattern will display in red under standby status. When the machine is start by remote control, the indication pattern will light and display the current operation mode (the mode light includes: Cooling, heating and dehumidify). If you close the light key, all the display patterns will close.
② Double-8 display
According to the different setting of remote control, the nixie light may display the current temperature (the temperature scope is from 16℃ to 30℃) and indoor ambient temperature. The heating and air supply temperature will display 25℃ under auto-mode, the temperature will display 18℃ under the heating mode, Defrosting indicator is ON during defrosting; Dual-8 nixie tube won’t display H1.(If you set the fahrenheit temperature display, the nixie light will display according to fahrenheit temperature)

(11) Protection function and failure display

E2: Freeze-proofing protection E4: Exhausting protection E5: Overcurrent protection
E6: Communication failure E8: Overload protection
F1: Indoor ambient sensor start and short circuit (continuously measured failure in 30S)
F2: Indoor evaporator sensor start and short circuit (continuously measured failure in 30S)
F3: Outdoor ambient sensor start and short circuit (continuously measured failure in 30S)
F4: Outdoor condenser sensor start and short circuit (continuously measured failure in 30S, and dont measure within 10 minutes after defrosted)
F5: Outdoor exhausting sensor start and short circuit (continuously measured failure in 30S after the compressor operated 3 minutes)
H3: Overload protection of compressor H5: Module protection
PH: High-voltage protection PL: Low-voltage protection
P1: Nominal cooling and heating P2: Maximum cooling and heating
P3: Medium cooling and heating P0: Minimum cooling and heating

(12) Drying Function

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

(13) Memory function when interrupting the power supply

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

7. Installation Manual

7.1 Notices for Installation

! Caution

1. The unit should be installed only by authorized service center according to local or government regulations and in compliance with this manual.
2. Before installing, please contact with local authorized maintenance center. If the unit is not installed by the authorized service center, the malfunction may not be solved due to incovenient contact between the user and the service personnel.
3. When removing the unit to the other place, please firstly contact with the local authorized service center.
4. Warning: Before obtaining access to terminals, all supply circuits must be disconnected.
5. 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.
6. The appliance must be positioned so that the plug is accessible.
7. The temperature of refrigerant line will be high; please keep the interconnection cable away from the copper tube.
8. The instructions shall state the substance of the following:This appliance is not intended for use by persons(including children)with reduced physical,sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Installation Site Instructions

Proper installation site is vital for correct and efficient operation of the unit. Avoid the following sites where:

- strong heat sources, vapours, flammable gas or volatile liquids are emitted.
- high-frequency electro-magnetic waves are generated by radio equipment,welders and medical equipment.
- salt-laden air prevails (such as close to coastal areas).
- the air is contaminated with industrial vapours and oils.
- the air contains sulphures gas such as in hot spring zones.
- corrosion or poor air quality exists.

Installation Site of Indoor Unit

1. The air inlet and outlet should be away from the obstructions. Ensure the air can be blown through the whole room.
2. Select a site where the condensate can be easily drained out, and where it is easily connected to outdoor unit.
3. Select a place where it is out of reach of children.
4. Select a place where the wall is strong enough to withstand the full weight and vibration of the unit.
5. Be sure to leave enough space to allow access for routine maintenance. The installation site should be 250cm or more above the floor.
6. Select a place about 1m or more away from TV set or any other electric appliance.
7. Select a place where the filter can be easily taken out.
8. Make sure that the indoor unit is installed in accordance with installation dimension instructions.
9. Do not use the unit in the laundry or by swimming pool etc.

Installation Site of Outdoor Unit

1. Select a site where noise and outflow air emitted by the unit will not annoy neighbors.
2. Select a site where there is sufficient ventilation.
3. Select a site where there is no obstruction blocking the inlet and outlet.

3. Select a site where there is no obstruction blocking the inlet and outlet.
4. The site should be able to withstand the full weight and vibration.
5. Select a dry place, but do not expose the unit to direct sunlight or strong wind.
6. Make sure that the outdoor unit is installed in accordance with the installation instructions, and is convenient for maintenance and repair.
7. The height difference between indoor and outdoor units is within A m, and the length of the connecting tubing does not exceed B m.

	A	B
09K	10	15
12K	10	20

8. Select a place where it is out of reach of children.
9. Select a place where the unit does not have negative impact on pedestrians or on the city.

Safety Precautions for Electric Appliances

1. A dedicated power supply circuit should be used in accordance with local electrical safety regulations.
2. Don't drag the power cord with excessive force.
3. The unit should be reliably earthed and connected to an exclusive earth device by the professionals.
4. The air switch must have the functions of magnetic tripping and heat tripping to prevent short circuit and overload.
5. The minimum distance between the unit and combustive surface is 1.5m.
6. The appliance shall be installed in accordance with national wiring regulations.
7. An all-pole disconnection switch with a contact separation of at least 3mm in all poles should be connected in fixed wiring.

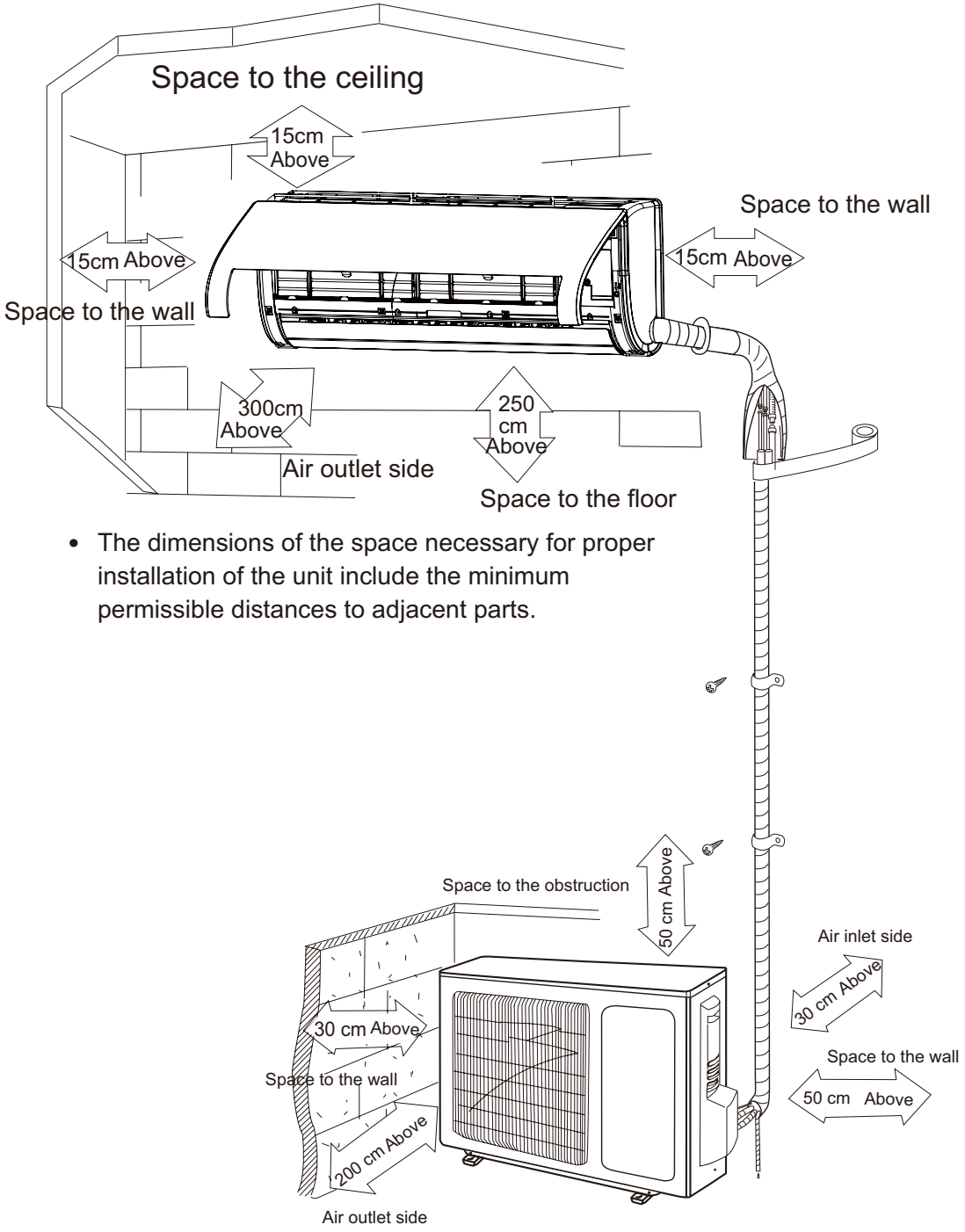
Note:

Make sure the live wire ,neutral wire and earth wire in the family power socket are properlly connected. There should be reliable circuit in the diagram.
Inadequate or incorrect electrical connections may cause electrocution or fire.

Earthing requirements

1. Air conditioner is type I electric appliance. Please ensure that the unit is reliably earthed.
2. The yellow-green wire in air conditioner is the earthing wire which can not be used for other purposes. Improper earthing may cause electric shock.
3. The earth resistance should accord to the national criterion.
4. The power must have reliable earthing terminal. Please do not connect the earthing wire with the following:
(1) Tap water pipe (2) Gas pipe (3) Contamination pipe
(4) Other places that professional personnel consider is unreliable
5. The model and rated values of fuses should accord with the silk print on fuse cover or related PCB.

7.2 Installation Drawing

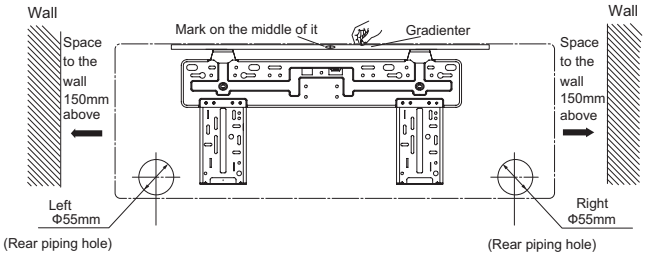


- The dimensions of the space necessary for proper installation of the unit include the minimum permissible distances to adjacent parts.

7.3 Install indoor unit

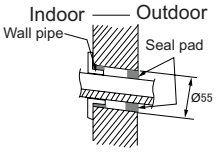
Install the rear panel

1. Mounting plate should be installed horizontally. As the water tray's outlet for the indoor unit is two-way type, during installation, the indoor unit should slightly slant to water tray's outlet for smooth drainage of condensate.
2.Fix the mounting plate on the wall with screws.
3.Be sure that the mounting plate has been fixed firmly enough to withstand about 60 kg. Meanwhile, the weight should be evenly shared by each screw.



Install the piping hole

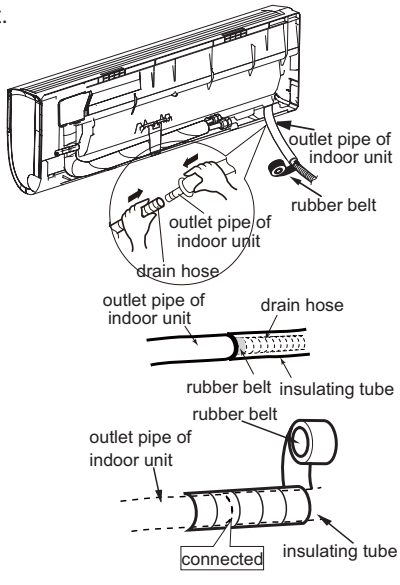
1.Slant the piping hole (Φ55) on the wall slightly downward to the outdoor side.
2.Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.



Install Drain Hose

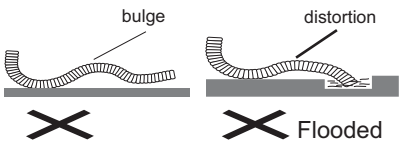
1.Connect the drain hose to the outlet pipe of the indoor unit. Bind the joint with rubber belt.

2.Put the drain hose into insulating tube.



3.Wrap the insulating tube with wide rubber belt to prevent the shift of insulating tube. Slant the drain hose downward slightly for smooth drainage of condensate.

Note: The insulating tube should be connected reliably with the sleeve outside the outlet pipe. The drain hose should be slanted downward slightly, without distortion, bulge or fluctuation. Do not put the outlet in the water.



Connecting Indoor and Outdoor Electric Wires

1.Open the front panel.
2.Remove the wiring cover,connect and fix power connection cord to the terminal board as shown in Fig 1.
3.Make the power connection cord pass through the hole at the back of indoor unit.
4.Reinstall the cord anchorage and wiring cover.
5.Reinstall the front panel.

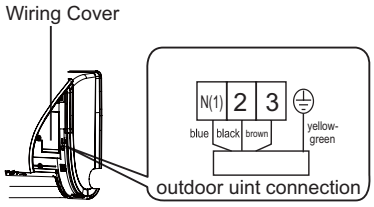


Fig 1

NOTE:

All wires between indoor and outdoor units must be connected by the qualified electric contractor.
- Electric wires must be connected correctly. Improper connection may cause malfunction.
- Tighten the terminal screws securely.
- After tightening the screws, pull the wire slightly to confirm whether it's firm or not.
- Make sure that the electric connections are earthed properly to prevent electric shock.
- Make sure that all wiring connections are secure and the cover plates are reinstalled properly. Poor installation may cause fire or electric shock.

Install the indoor unit

The piping can be output from right, right rear, left or left rear.
1. When routing the piping and wiring from the left or right side of indoor unit, cut off the tailings from the chassis when necessary(As shown in Fig.2)
(1)Cut off tailing 1 when routing the wiring only;
(2)Cut off tailing 1 and tailing 2 when routing both the wiring and piping.
2. Take out the piping from body case; wrap the piping, power cords, drain hose with the tape and then make them pass through the piping hole. (As shown in Fig.3)
3. Hang the mounting slots of the indoor unit on the upper hooks of the mounting plate and check if it is firm enough. (As shown in Fig.4)
4. The installation site should be 250cm or more above the floor.

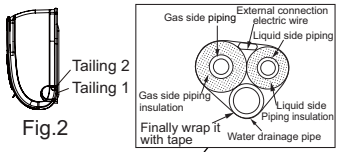


Fig.2

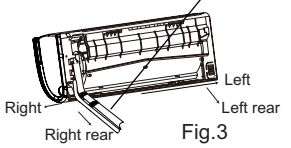


Fig.3

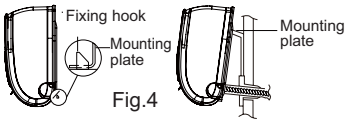
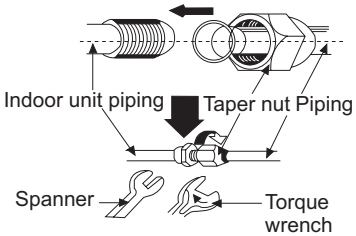


Fig.4

Install the connection pipe

1. Align the center of the pipe flare with the related valve.
2. Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench by referring to the following:

Hex nut diameter	Tightening torque(N·m)
Φ6	15~20
Φ 9.52	31~35
Φ 12	50~55
Φ 16	60~65
Φ 19	70~75

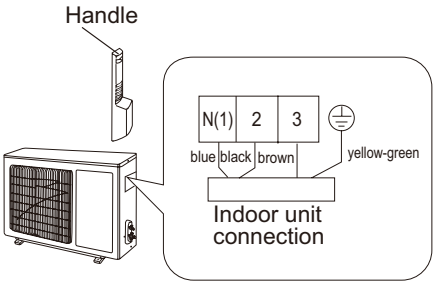


NOTE: Connect the connection pipe to indoor unit at first and then to outdoor unit. Handle piping bending with care. Do not damage the connection pipe. Ensure that the joint nut is tightened firmly, otherwise, it may cause leakage.

7.4 Install Outdoor Unit

Electric Wiring

1. Remove the handle on the right side plate of outdoor unit.
2. Take off wire cord anchorage. Connect and fix power connection cord to the terminal board. Wiring should fit that of indoor unit.
3. Fix the power connection cord with wire clamps and then connect the corresponding connector.
4. Confirm if the wire has been fixed properly.
5. Reinstall the handle.



NOTE:

- Incorrect wiring may cause malfunction of spare part.
- After the wire has been fixed, ensure there is free space between the connection and fixing places on the lead wire.

Schematic diagram being reference only, please refer to real product for authentic information.

Air purging and leakage test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open the handle of Lo manifold valve.
4. Open the vacuum pump for vacuumization. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside (If noise of vacuum pump has been changed, the reading of multimeter is 0). Then tighten the nut.
5. Keep vacuuming for more than 15mins and make sure the reading of multi-meter is $-1.0X10^5$pa(-76cmHg).
6. Fully open high/low pressure valves.
7. Remove charging hose from charging end of low pressure valve.
8. Tighten lid of low pressure valve. (As shown in Fig.5).

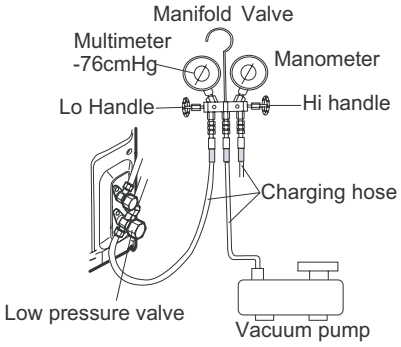
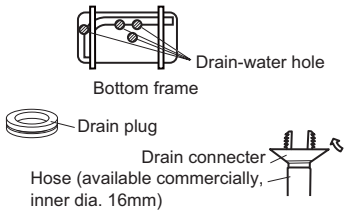


Fig.5

Outdoor Condensate Drainage (only for Heat pump unit)

During heating operation, the condensate and defrosting water should be drained out reliably through the drain hose. Install the outdoor drain connector in a 25 hole on the base plate and attach the drain hose to the connector so that the waste water formed in the outdoor unit can be drained out .The hole diameter 25 must be plugged. Whether to plug other holes will be determined by the dealers according to actual conditions.



7.5 Check After Installation and Test Operation

Check after installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating) capacity.
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage well?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.
Is the electric wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part
Is the inlet and outlet been covered?	It may cause insufficient cooling(heating) capacity.
Has the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

Operation Test

1. Before Operation Test

(1)Do not switch on power before installation is finished completely.

(2)Electric wiring must be connected correctly and securely.

(3)Cut-off valves of the connection pipes should be opened.

(4)All the impurities such as scraps and thrums must be cleared from the unit.

2. Operation Test Method

(1)Switch on power and press "ON/OFF" button on the remote controller to start operation.

(2)Press MODE button to select the COOL, HEAT (Not available for cooling only unit), FAN to check whether the operation is normal or not.

7.6 Installation and Maintenance of Healthy Filter

Installation Instructions

1. Lift up the front panel from its two ends, as shown by the arrow direction, and then remove the air filter.(as shown in Fig.a)

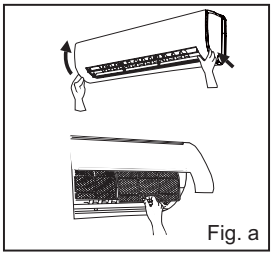


Fig. a

2. Attach the healthy filter onto the air filter,(as shown in Fig.b).

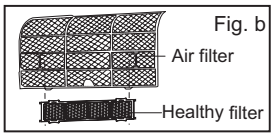


Fig. b

3. Install the air filter properly along the arrow direction in Fig.c, and then close the panel.

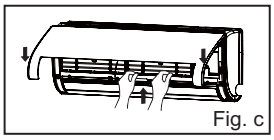


Fig. c

Cleaning and Maintenance

Remove the healthy filter and reinstall it after cleaning according to the installation instruction. Do not use brush or hard objects to clean the filter. After cleaning, be sure to dry it in the shade.

Service Life

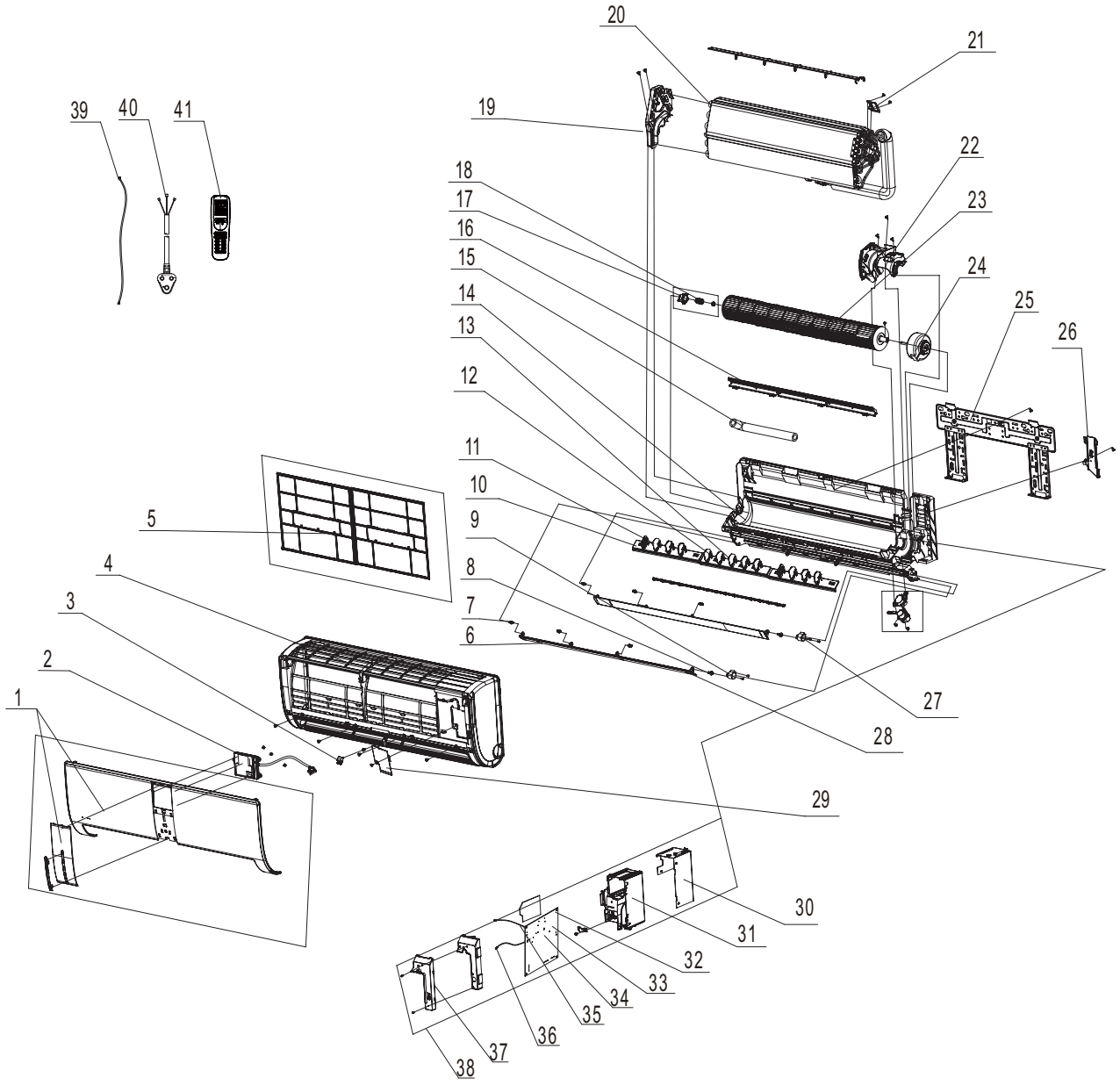
The general service life for the healthy filter is about one year under normal condition. As for silver ion filter, it is ineffective when its surface becomes black (green).

This supplementary instruction is provided for reference to the unit with healthy filter. If the graphics provided herein are different from the actual product, please refer to the actual product. The quantity of healthy filters is based on the actual delivery.

8. Exploded Views and Parts List

8.1 Indoor Unit

For A1 panel



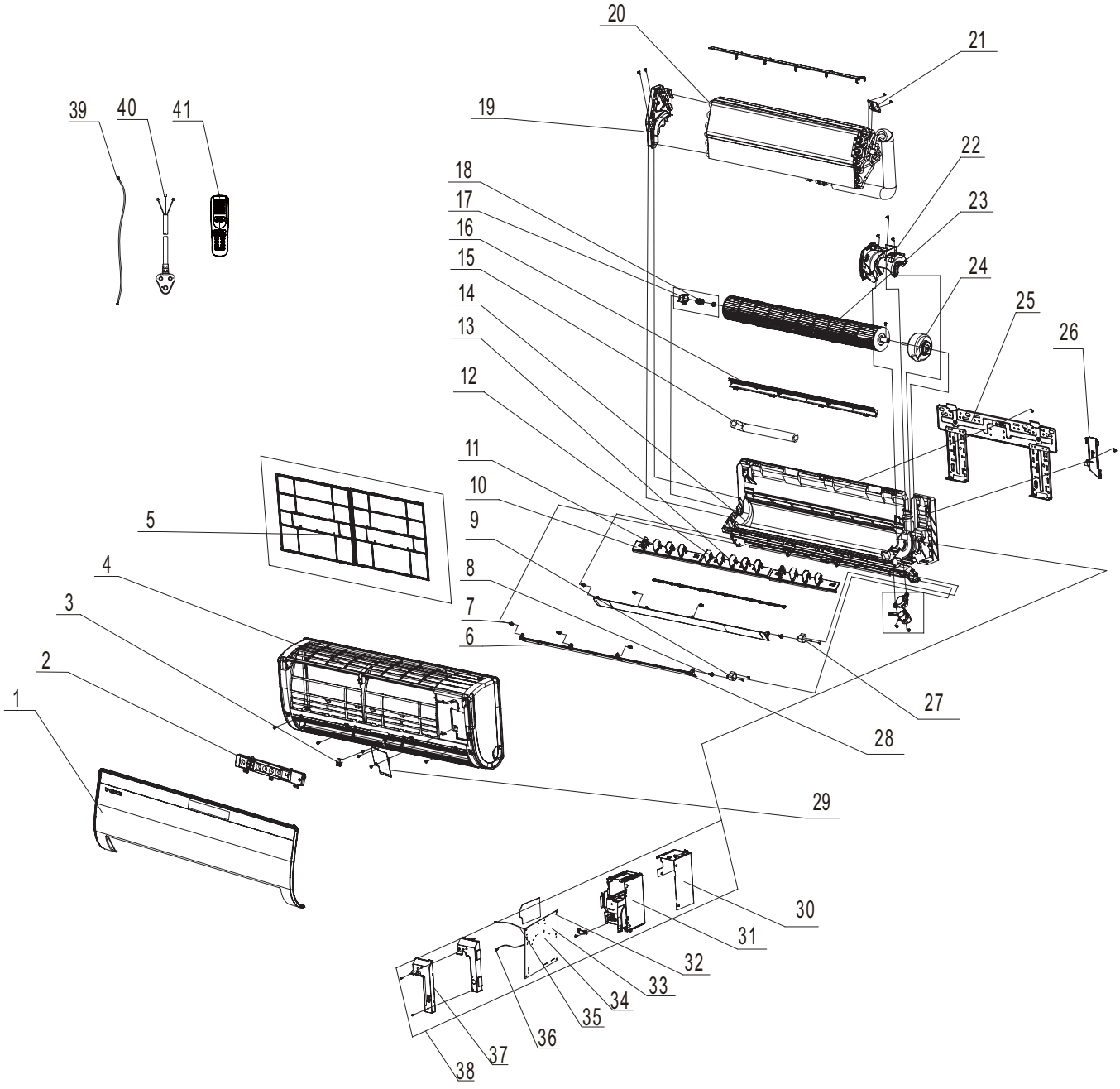
NO.	Description	Part Code		Qty
		GWC09UB-K3DNA1A/I	GWH09UB-K3DNA1A/I	
	Product Code	CB204N00100	CB204N00200	
1	Front Panel Assy	20012859	20012859	1
2	Display Board	30565133	30565133	1
3	Screw Cover	24252024	24252024	1
4	Front Case Sub-Assy	20012727	20012727	1
5	Filter Sub-Assy	11122134	11122134	2
6	Guide Louver 2	10512215	10512215	1
7	Shaft of guide louver	1054202001	1054202001	6
8	Crank	73012005	73012005	2
9	Step Motor	1521212201	1521212201	1
10	Louver Clamp1	26112263	26112263	2
11	Air Louver 1	10512184	10512184	2
12	Louver Clamp2	26112264	26112264	1
13	Air Louver 2	10512185	10512185	1
14	Rear Case assy	22202200	22202200	1
15	Drainage hose	05230014	05230014	1
16	Helicoid tongue	26112262	26112262	1
17	Axile Bush sub-assy	10542024	10542024	1
18	Damping washer sub-assy	76512011	76512011	1
19	Evaporator Support	24212128	24212128	1
20	Evaporator Assy	0100229401	0100229401	1
21	Shield board (elbow)	01382010	01382010	1
22	Motor Press Plate	26112261	26112261	1
23	Cross Flow Fan	10352041	10352041	1
24	Fan Motor	150120874	150120874	1
25	Wall Mounting Frame	01252121	01252121	1
26	Pipe Clamp	26112164	26112164	1
27	Step Motor	1521210804	1521210804	1
28	Guide Louver 1	10512214	10512214	1
29	Electric Box Cover2	20122133	20122133	1
30	Lower Shield sub-assy of Electric Box	01592300	01592300	1
31	Electric Box	20112121	20112121	1
32	Capacitor CBB61	33010002	33010002	1
33	Main Board	301388711	301388701	1
34	Jumper	4202300102	4202300102	1
35	Tube Sensor	3900007402G	3900007402G	1
36	Temperature Sensor	390000453	390000453	1
37	Upper Shield Cover sub-assy of Electric Box	01592301	01592301	1
38	Electric Box Assy	2020273806	2020273801	1
39	Connecting Cable	400204055	400204055	1
40	Power Cord	4002046422	4002046422	1
41	Remote Controller	30510134	30510134	1

The data above are subject to change without notice.

NO.	Description	Part Code		Qty
		GWC12UB-K3DNA1A/I	GWH12UB-K3DNA1A/I	
	Product Code	CB204N00300	CB204N00400	
1	Front Panel Assy	20012859	20012859	1
2	Display Board	30565133	30565133	1
3	Screw Cover	24252024	24252024	1
4	Front Case Sub-Assy	20012727	20012727	1
5	Filter Sub-Assy	11122134	11122134	2
6	Guide Louver 2	10512215	10512215	1
7	Shaft of guide louver	1054202001	1054202001	6
8	Crank	73012005	73012005	2
9	Step Motor	1521212201	1521212201	1
10	Louver Clamp1	26112263	26112263	2
11	Air Louver 1	10512184	10512184	2
12	Louver Clamp2	26112264	26112264	1
13	Air Louver 2	10512185	10512185	1
14	Rear Case assy	22202200	22202200	1
15	Drainage hose	05230014	05230014	1
16	Helicoid tongue	26112262	26112262	1
17	Axile Bush sub-assy	10542024	10542024	1
18	Damping washer sub-assy	76512011	76512011	1
19	Evaporator Support	24212128	24212128	1
20	Evaporator Assy	01002294	01002294	1
21	Shield board (elbow)	01382010	01382010	1
22	Motor Press Plate	26112261	26112261	1
23	Cross Flow Fan	10352041	10352041	1
24	Fan Motor	150120874	150120874	1
25	Wall Mounting Frame	01252121	01252121	1
26	Pipe Clamp	26112164	26112164	1
27	Step Motor	1521210804	1521210804	1
28	Guide Louver 1	10512214	10512214	1
29	Electric Box Cover2	20122133	20122133	1
30	Lower Shield sub-assy of Electric Box	01592300	01592300	1
31	Electric Box	20112121	20112121	1
32	Capacitor CBB61	33010002	33010002	1
33	Main Board	301388711	301388701	1
34	Jumper	4202300104	4202300104	1
35	Tube Sensor	3900007402G	3900007402G	1
36	Temperature Sensor	390000453	390000453	1
37	Upper Shield Cover sub-assy of Electric Box	01592301	01592301	1
38	Electric Box Assy	2020273807	2020273802	1
39	Connecting Cable	400204055	400204055	1
40	Power Cord	4002046422	4002046422	1
41	Remote Controller	30510134	30510134	1

The data above are subject to change without notice.

For A2 panel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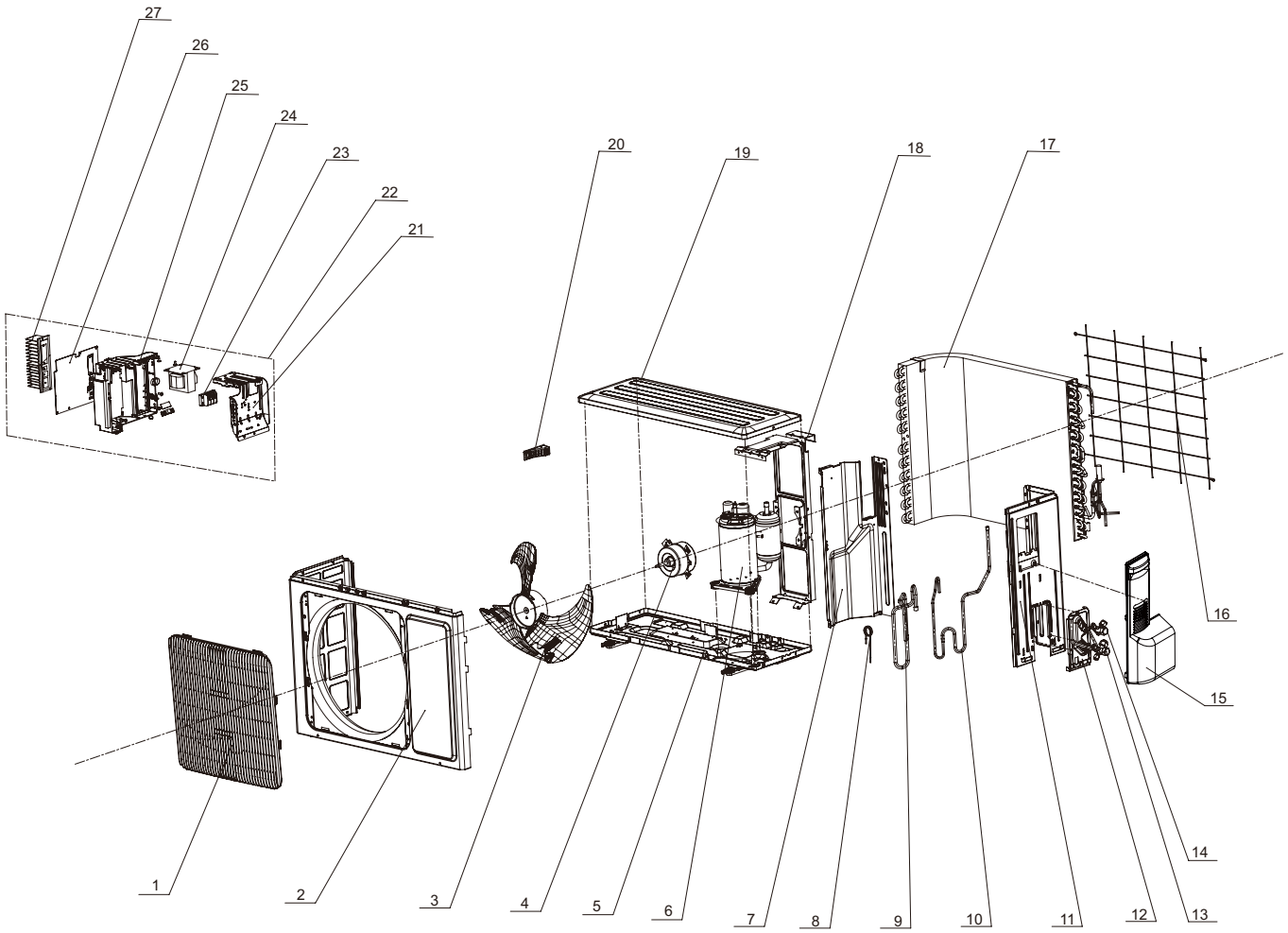
NO.	Description	Part Code		Qty
		GWH09UB-K3DNA2A/I	GWH12UB-K3DNA2A/I	
	Product Code	CB221N00201	CB221N00401	
1	Front Panel Assy	20022103	20022103	1
2	Display Board	30565152	30565152	1
3	Screw Cover	2425202401	2425202401	1
4	Front Case Sub-Assy	2001263101	2001263101	1
5	Filter Sub-Assy	1112213402	1112213402	2
6	Guide Louver 2	1051221501	1051221501	1
7	Shaft of guide louver	10542020	10542020	6
8	Crank	73012005	73012005	2
9	Step Motor	1521212201	1521212201	1
10	Louver Clamp1	2611226301	2611226301	2
11	Air Louver 1	1051218401	1051218401	2
12	Louver Clamp2	2611226401	2611226401	1
13	Air Louver 2	1051218501	1051218501	1
14	Rear Case assy	2220222001	2220222001	1
15	Drainage hose	05230014	05230014	1
16	Helicoid tongue	2611226201	2611226201	1
17	Axile Bush sub-assy	10542024	10542024	1
18	Damping washer sub-assy	76512011	76512011	1
19	Evaporator Support	24212128	24212128	1
20	Evaporator Assy	0100229401	01002294	1
21	Shield board (elbow)	01382010	01382010	1
22	Motor Press Plate	26112261	26112261	1
23	Cross Flow Fan	10352041	10352041	1
24	Fan Motor	150120874	150120874	1
25	Wall Mounting Frame	01252121	01252121	1
26	Pipe Clamp	26112164	26112164	1
27	Step Motor	1521210804	1521210804	1
28	Guide Louver 1	1051221401	1051221401	1
29	Electric Box Cover2	20122133	20122133	1
30	Lower Shield sub-assy of Electric Box	01592300	01592300	1
31	Electric Box	20112121	20112121	1
32	Capacitor CBB61	33010002	33010002	1
33	Main Board	301388701	301388701	1
34	Jumper	4202300102	4202300104	1
35	Tube Sensor	3900007402G	3900007402G	1
36	Temperature Sensor	390000453	390000453	1
37	Upper Shield Cover sub-assy of Electric Box	01592301	01592301	1
38	Electric Box Assy	2020273809	2020273805	1
39	Connecting Cable	400204055	400204055	1
40	Power Cord	4002046422	4002046422	1
41	Remote Controller	30510134	30510134	1

The data above are subject to change without notice.

8.2 Outdoor Unit

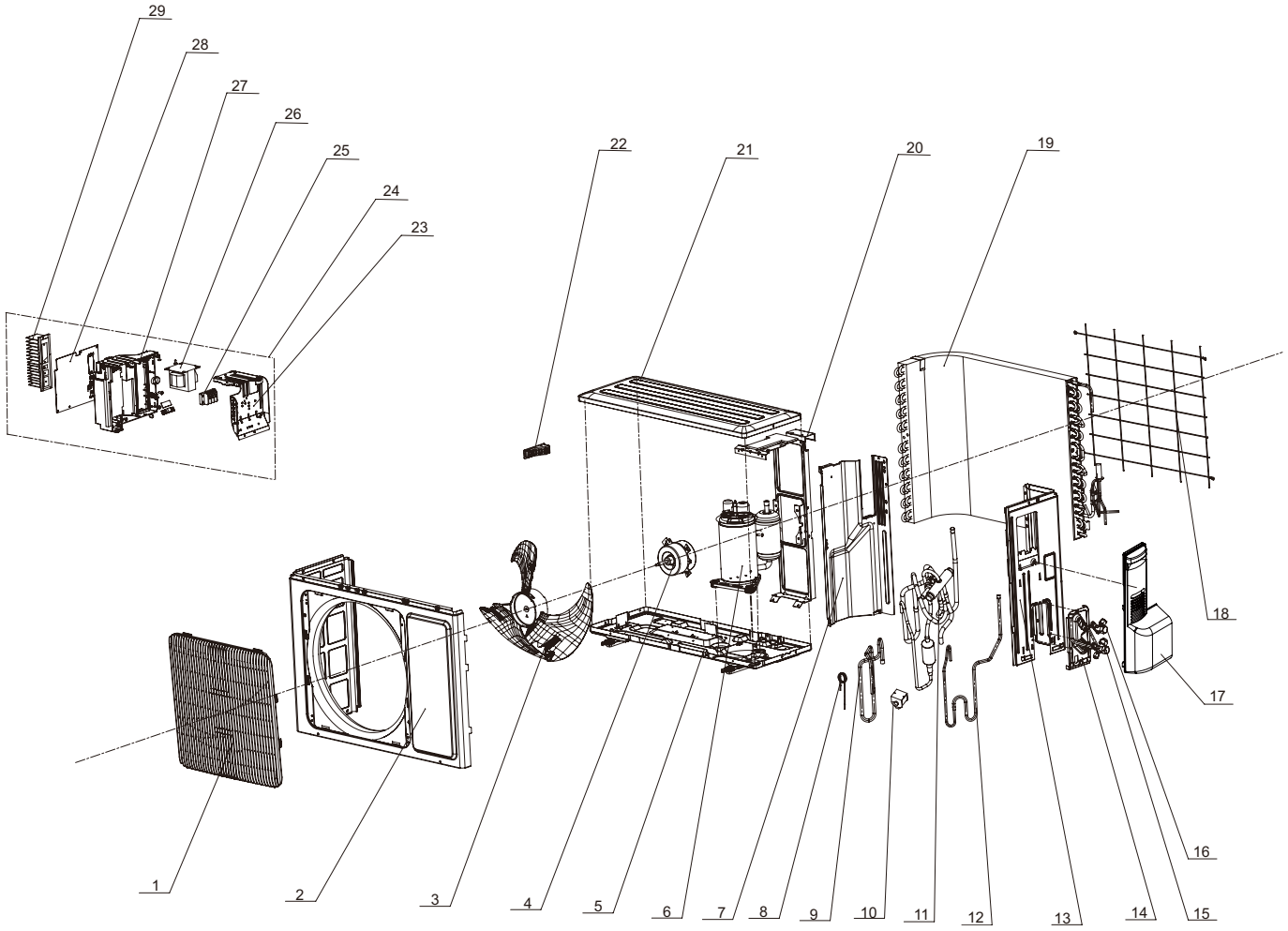
GWC09UB-K3DNA1A/O



NO.	Description	Part Code	Qty
		GWC09UB-K3DNA1A/O	
	Product Code	CB204W00100	
1	Front Grill	22413433	1
2	Front Panel	01533029P	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308502	1
5	Chassis Sub-assy	01203912P	1
6	Compressor and fittings	00103224_G	1
7	Clapboard Sub-Assy	01233385	1
8	Capillary Sub-Assy	03133860	1
9	Inhalation Tube Sub-Assy	03733191	1
10	Vent-pipe Sub-Assy	03733192	1
11	right Side Plate Sub-Assy	0130317801	1
12	Valve support	0170308901P	1
13	Cut-off valve	07133082	1
14	Valve	07100005	1
15	big Handle	26233433	1
16	Rear Grill	01473009	1
17	Condenser Assy	01163054	1
18	Motor Support	0170309701Y	1
19	Top Cover Sub-Assy	01253454	1
20	small handle	26233100	1
21	Terminal Board support-Assy	01713149	1
22	Electric Box Assy	260347802	1
23	Terminal Board	42011113	1
24	Reactor	43130184	1
25	Electric Box	20113014	1
26	Main Board	30138875	1
27	Radiator	49013027	1

The data above are subject to change without notice.

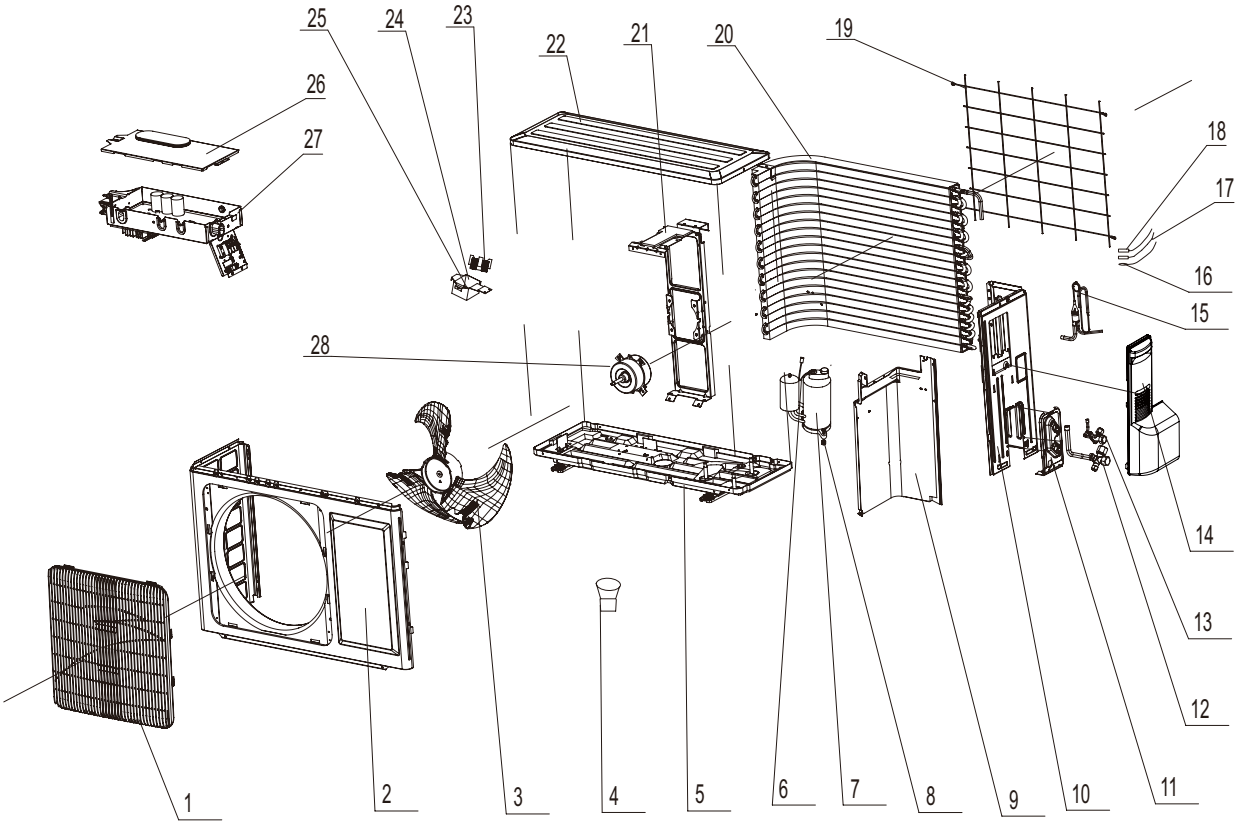
GWH09UB-K3DNA1A/O



NO.	Description	Part Code	Qty
		GWH09UB-K3DNA1A/O	
	Part Code	CB204W00200	
1	Front Grill	22413433	1
2	Front Panel	01533029P	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308502	1
5	Chassis Sub-assy	01203912P	1
6	Compressor and fittings	00103224_G	1
7	Clapboard Sub-Assy	01233385	1
8	Capillary Sub-Assy	03133253	1
9	Inhalation Tube Sub-Assy	03733079	1
10	Magnet Coil	4300040050	1
11	4-Way Valve Assy	3123385	1
12	Vent-pipe Sub-Assy	03733230	1
13	right Side Plate Sub-Assy	0130317801	1
14	Valve support	0170308901P	1
15	Cut-off valve	07133082	1
16	Valve	07100005	1
17	big Handle	26233433	1
18	Rear Grill	01473009	1
19	Condenser Assy	01113546	1
20	Motor Support	0170309701Y	1
21	Top Cover Sub-Assy	01253454	1
22	small handle	26233100	1
23	Terminal Board support-Assy	01713149	1
24	Electric Box Assy	0260347801	1
25	Terminal Board	42011113	1
26	Reactor	43130184	1
27	Electric Box	20113014	1
28	Main Board	30138874	1
29	Radiator	49013027	1

The data above are subject to change without notice.

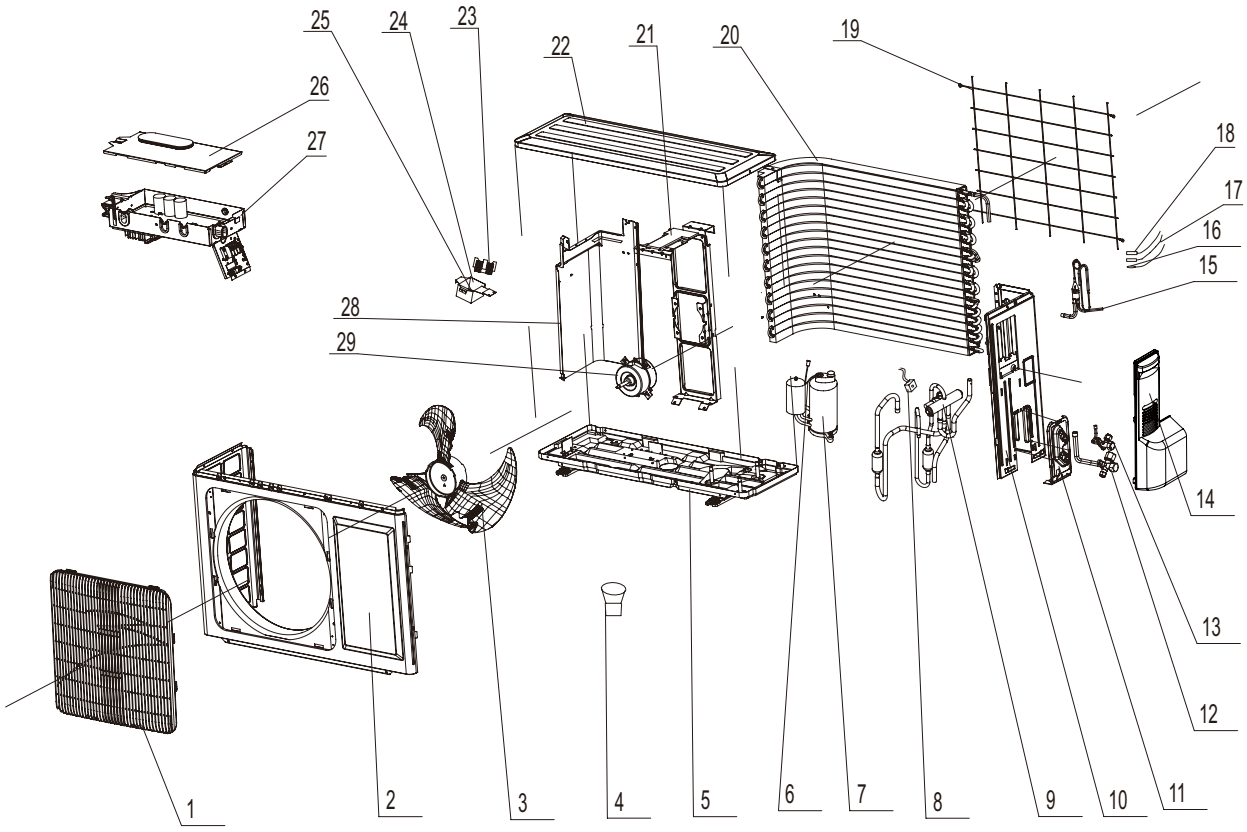
GWC12UB-K3DNA1A/O



NO.	Description	Part Code	Qty
		GWC12UB-K3DNA1A/O	
	Product Code	CB204W00300	
1	Front grill	22413433	1
2	Front Panel	015330124	1
3	Axial Flow Fan	10333004	1
4	Drainage Connecter	06123401	1
5	Chassis Sub-assy	0120380601P	1
6	Temperature Sensor	02143017	1
7	Compressor and fittings	0010376101P	1
8	Compressor Gasket	76713027	3
9	Clapboard assy	01233034	1
10	Right Side Plate Assy	0130200404	1
11	Valve Support	01713041	1
12	Valve	07100006	1
13	Valve	07100004	1
14	Big Handle	26233433	1
15	Capillary Sub-Assy	03063595	1
16	Temperature Sensor	39000310G	1
17	Tube Sensor	39000310G	1
18	Discharge sensor	39000310G	1
19	Rear Grill	01473014	1
20	Condenser Assy	01163055	1
21	Motor Support Sub-Assy	017030501	1
22	Top Cover Plate	01253443	1
23	Reactor	43130185	1
24	Reactor Box	01413092	1
25	Base Plate (reactor)	01413029	1
26	Electric Box Cover Sub-Assy	0260309601	1
27	Electric Box Assy	0140398698	1
28	Fan Motor	15013085	1

The data above are subject to change without notice.

GWH12UB-K3DNA1A/O



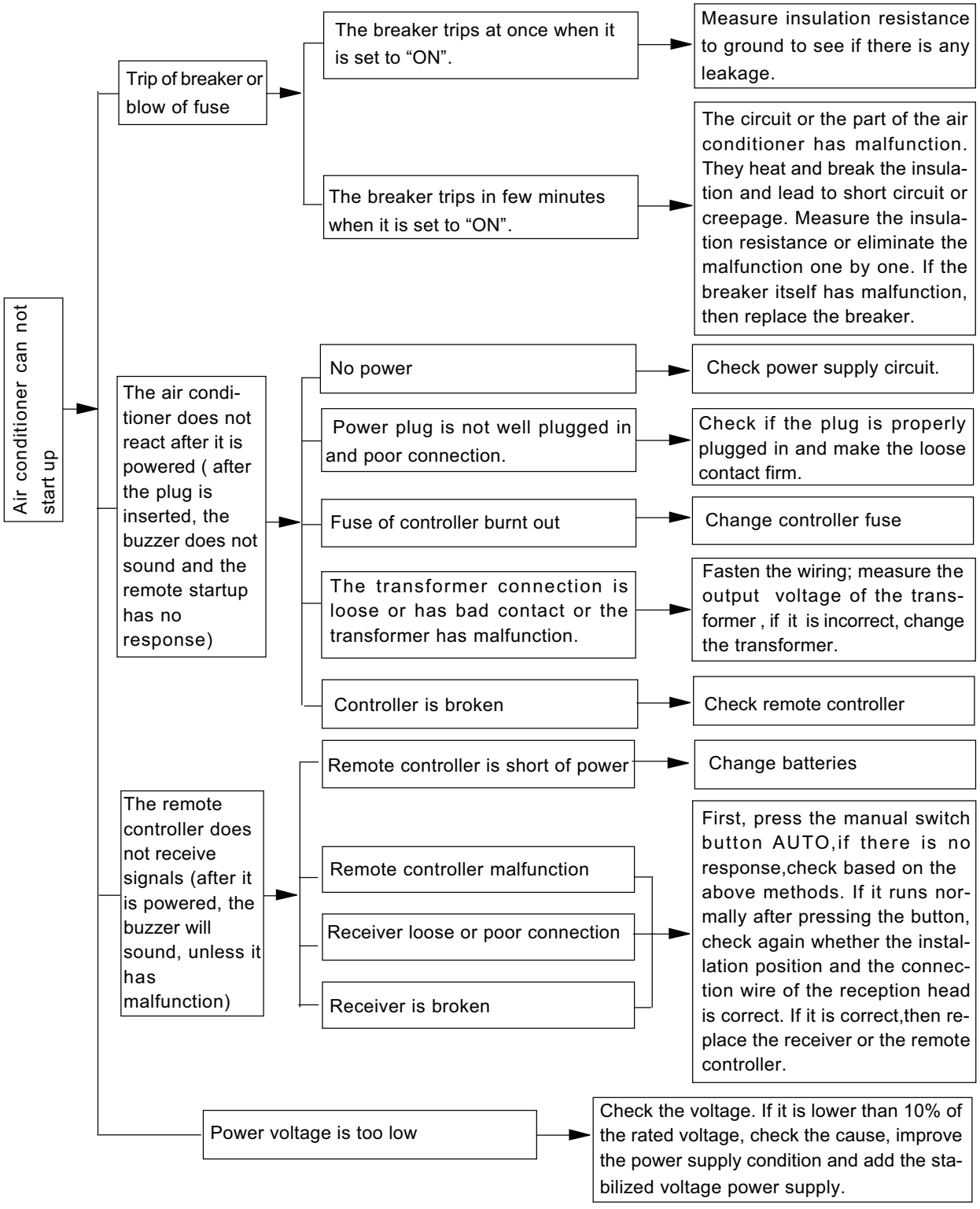
NO.	Description	Part Code	Qty
		GWH12UB-K3DNA1A/O	
	Product Code	CB204W00400	
1	Front grill	22413433	1
2	Front Panel	015330124	1
3	Axial Flow Fan	10333004	1
4	Drainage Connecter	06123401	1
5	Chassis Sub-assy	0120391901P	1
6	Temperature Sensor	02143017	1
7	Compressor and fittings	00103215	1
8	4-way Valve Fittings	4300040047	1
9	4-way Valve Sub-Assy	0312342001	1
10	Right Side Plate Assy	0130200404	1
11	Valve Support	01713041	1
12	Valve	07100006	1
13	Valve	07100004	1
14	Big Handle	26233433	1
15	Capillary Sub-Assy	03063596	1
16	Temperature Sensor	39000310G	1
17	Tube Sensor	39000310G	1
18	Discharge sensor	39000310G	1
19	Rear Grill	01473014	1
20	Condenser Assy	01163124	1
21	Motor Support Sub-Assy	017030501	1
22	Top Cover Plate	01253443	1
23	Reactor	43130185	1
24	Reactor Box	01413092	1
25	Base Plate (reactor)	01413029	1
26	Electric Box Cover Sub-Assy	0260309601	1
27	Electric Box Assy	0140398695	1
28	Clapboard assy	01233034	1
29	Fan Motor	15013085	1

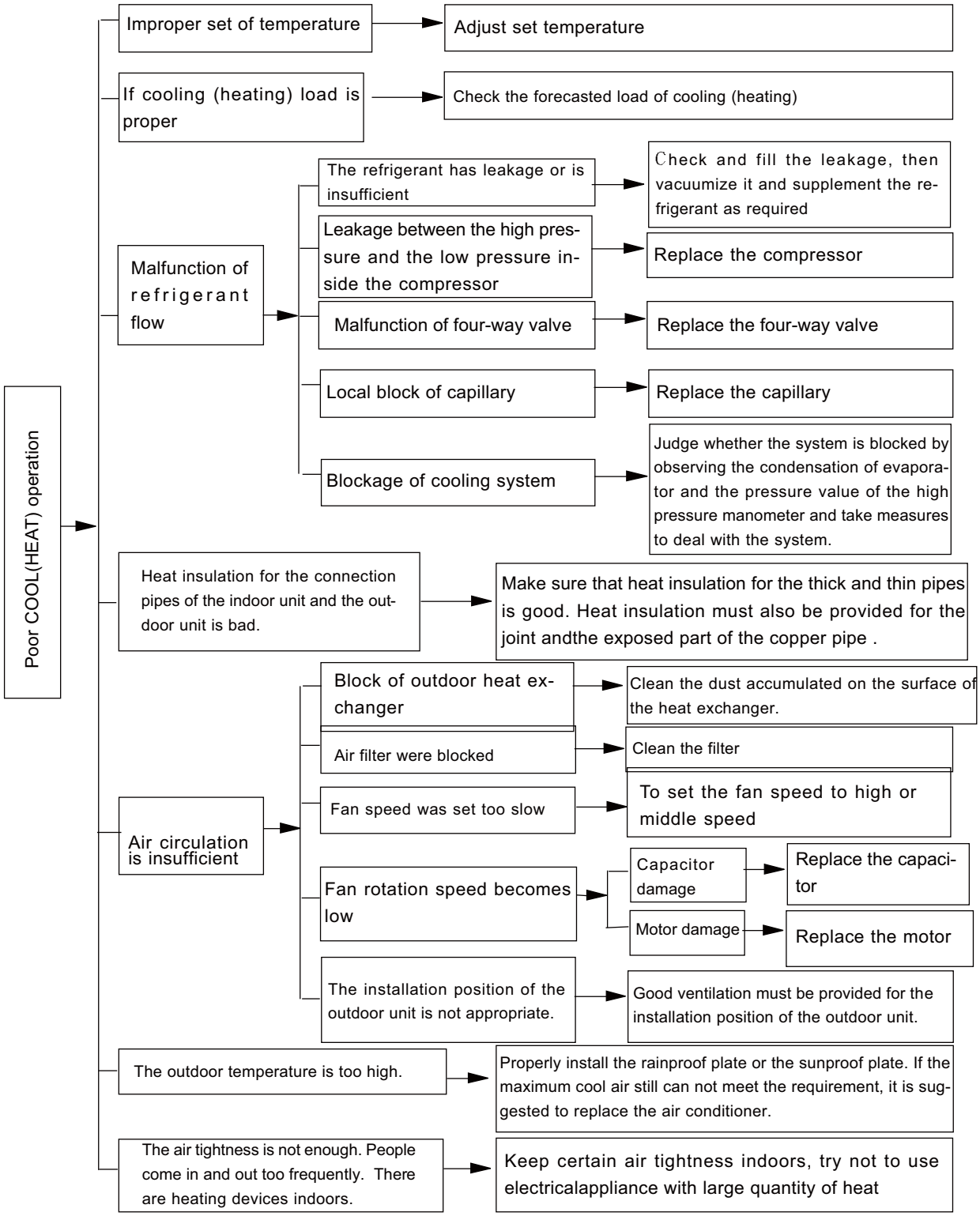
The data above are subject to change without notice.

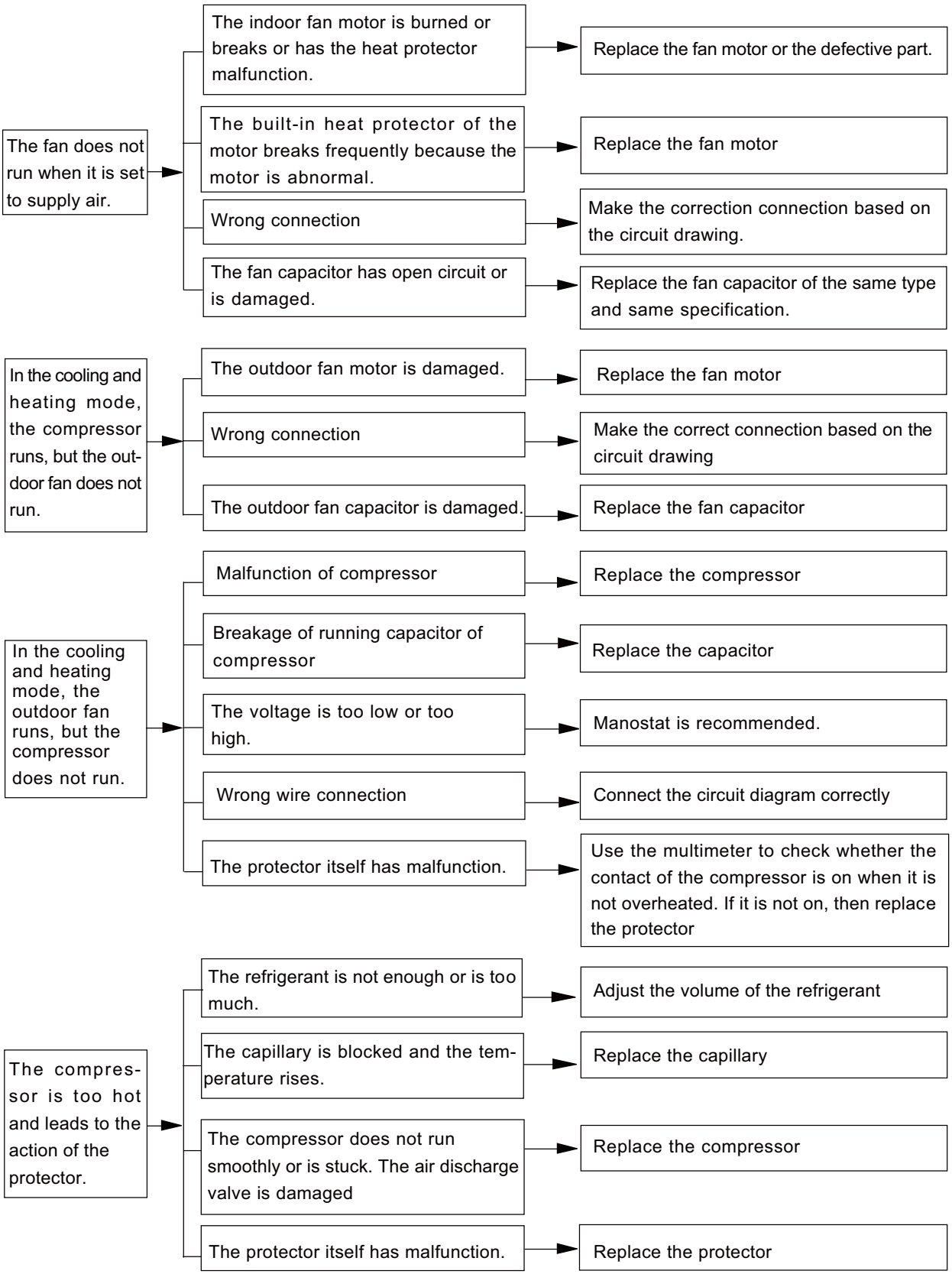
9. Troubleshooting

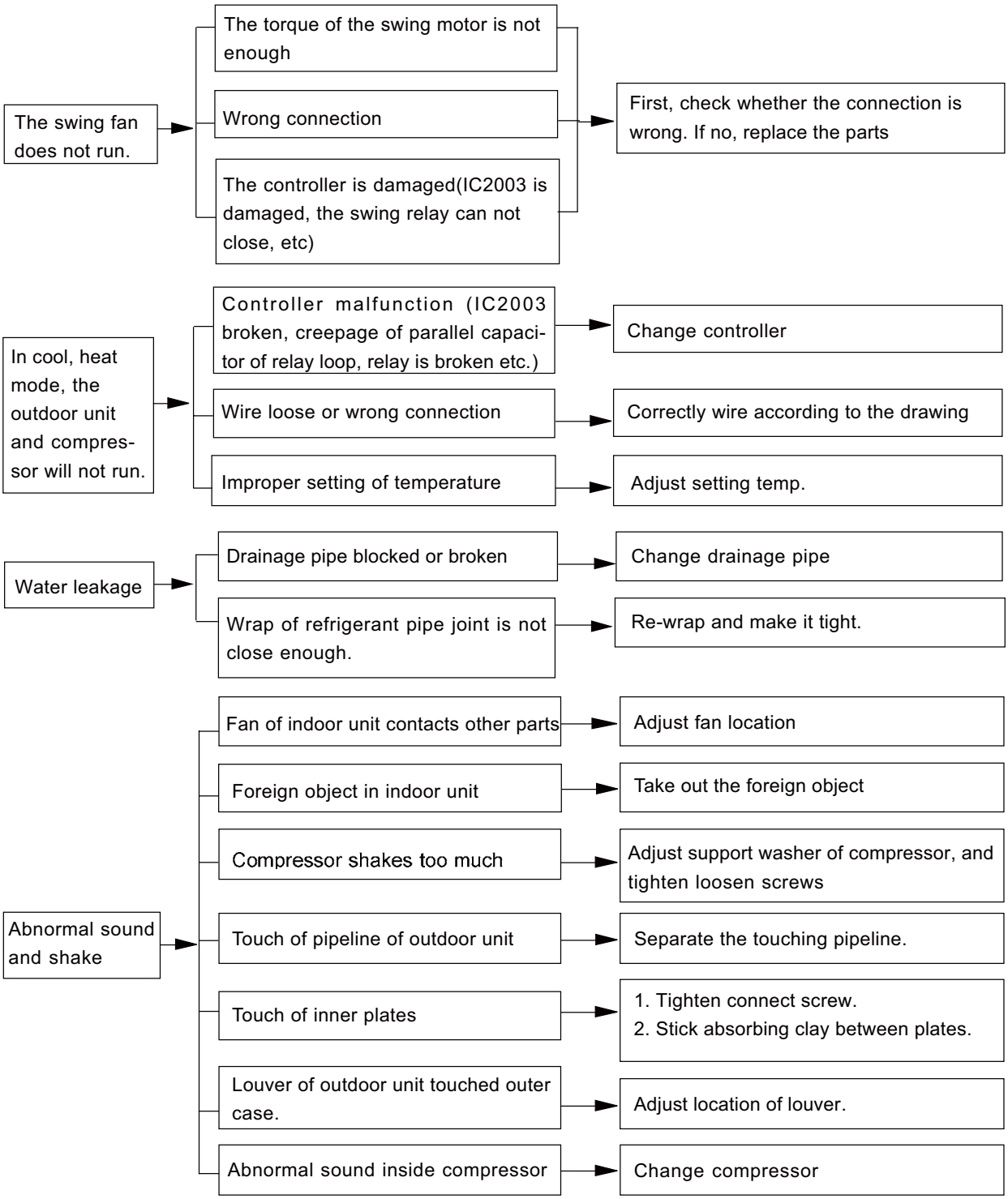
9.1 Malfunction Analysis

Note:When replacing the controller, make sure insert the wire jumper into the new controller, otherwire the unit will display C5.




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


The fan does not run when it is set to supply air.
The indoor fan motor is burned or breaks or has the heat protector malfunction.
Replace the fan motor or the defective part.
The built-in heat protector of the motor breaks frequently because the motor is abnormal.
Replace the fan motor
Wrong connection
Make the correction connection based on the circuit drawing.
The fan capacitor has open circuit or is damaged.
Replace the fan capacitor of the same type and same specification.
In the cooling and heating mode, the compressor runs, but the outdoor fan does not run.
The outdoor fan motor is damaged.
Replace the fan motor
Wrong connection
Make the correct connection based on the circuit drawing
The outdoor fan capacitor is damaged.
Replace the fan capacitor
In the cooling and heating mode, the outdoor fan runs, but the compressor does not run.
Malfunction of compressor
Replace the compressor
Breakage of running capacitor of compressor
Replace the capacitor
The voltage is too low or too high.
Manostat is recommended.
Wrong wire connection
Connect the circuit diagram correctly
The protector itself has malfunction.
Use the multimeter to check whether the contact of the compressor is on when it is not overheated. If it is not on, then replace the protector
The compressor is too hot and leads to the action of the protector.
The refrigerant is not enough or is too much.
Adjust the volume of the refrigerant
The capillary is blocked and the temperature rises.
Replace the capillary
The compressor does not run smoothly or is stuck. The air discharge valve is damaged
Replace the compressor
The protector itself has malfunction.
Replace the protector


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

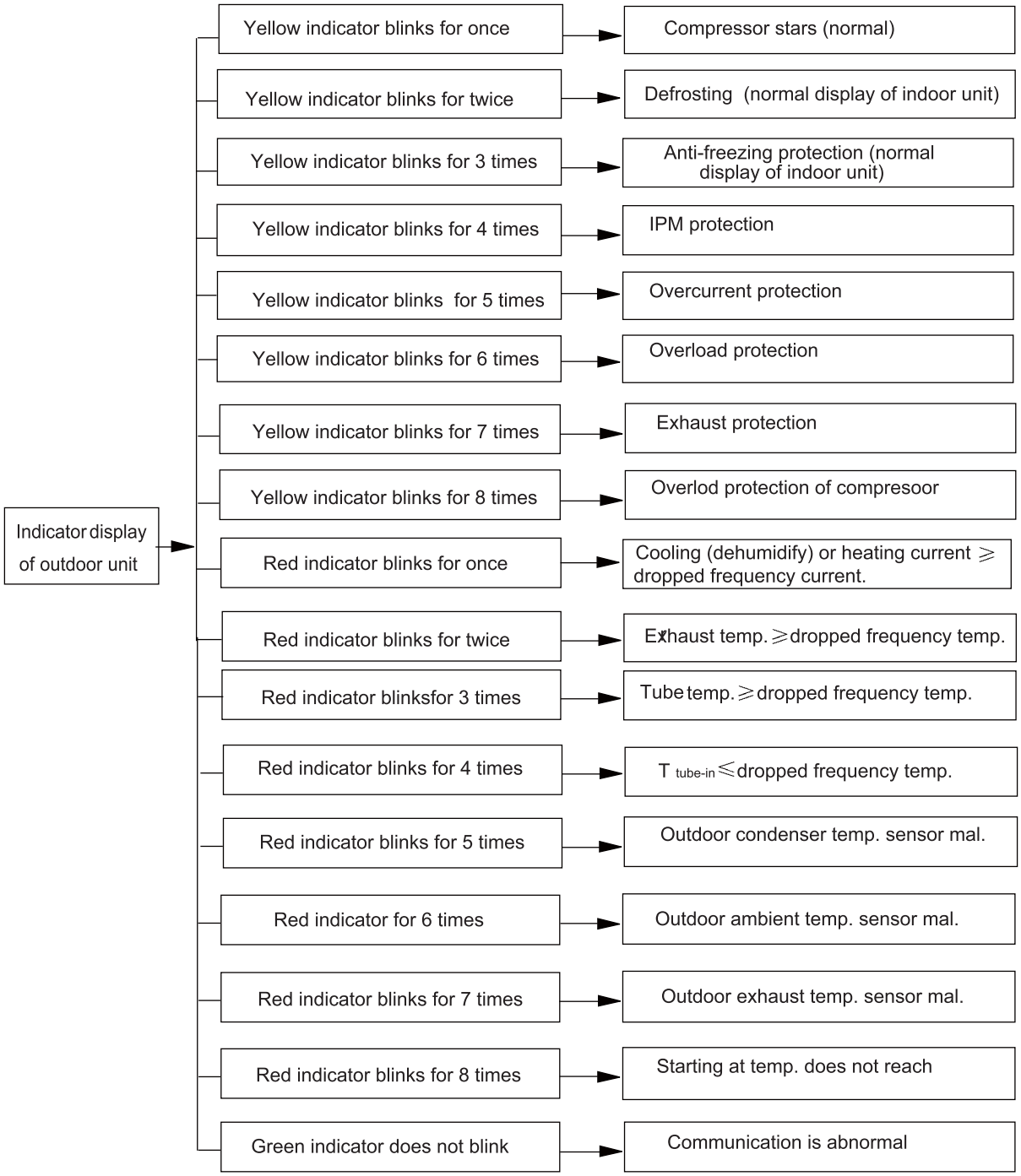
9.2 Malfunction Code

Flashing LED of Indoor/Outdoor Unit and Primary Judgement

	Name of Operation Status	Yellow LED	Red LED	Green LED	Display on IDU
1	Compressure operates	Blink once			
2	Defrosting	Blink twice			H1
3	Freeze prevention protection	Blink for 3 times			E2
4	IPM protection	Blink for 4 times			H5(displayed after it occurs for successively 6 times)
5	Overcurrent protection	Blink for 5 times			E5
6	Overload protection	Blink for 6 times			H4
7	Discharge protection	Blink for 7 times			E4
8	Overload protection	Blink for 8 times			H3
9	Capacity power protection	Blink for 9 times			L9
10	Read-write malfunction of EEPROM	Blink for 11 times			
11	Low-voltage protection	Blink for 12 times			PL
12	High-voltage protection	Blink for 13 times			PH
13	PFC overcurrent protection	Blink for 14 times			HC
14	Models of IDU and ODU don't not match	Blink for 16 times			LP
15	Limit frequency(current)		Blink once		
16	Limit frequency(discharge)		Blink twice		
17	Limit frequency(overload)		Blink for 3 times		
18	Limit frequency(freeze prevention)		Blink for 4 times		
19	Malfunction of outdoor ambient temp sensor		Blink for 6 times		F3
20	Malfunction of outdoor pipe temp sensor		Blink for 5 times		F4
21	Malfunction of outdoor discharge temp sensor		Blink for 7 times		F5
22	Temperature for operation of the unit is reached.		Blink for 8 times		
23	Limit frequency(power)		Blink for 13 times		
24	Protection of fan		Blink for 14 times		
25	Normal communication			Continuously blink	
26	Malfunction of communication			Off	E6
27	Malfunction of indoor ambient temp sensor				F1
28	Malfunction of indoor pipe temp sensor				F2

Malfunction Display

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



Analysis or processing of some of the malfunction display:

1. Compressor discharge protection

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

2. Low voltage overcurrent protection

   Possible reason: Sudden drop of supply voltage.

3. Communication malfunction

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

4. Sensor open or short circuit

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

5. Compressor overload protection

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

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

6. System malfunction

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

   Possible reasons: Outdoor temperature is too high when cooling; insufficient outdoor air circulation; refrigerant flow malfunction.
   please refer to the malfunction analysis in the previous section for handling method .

7. IPM module protection

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

9.3 How to Check Simply the Main Part

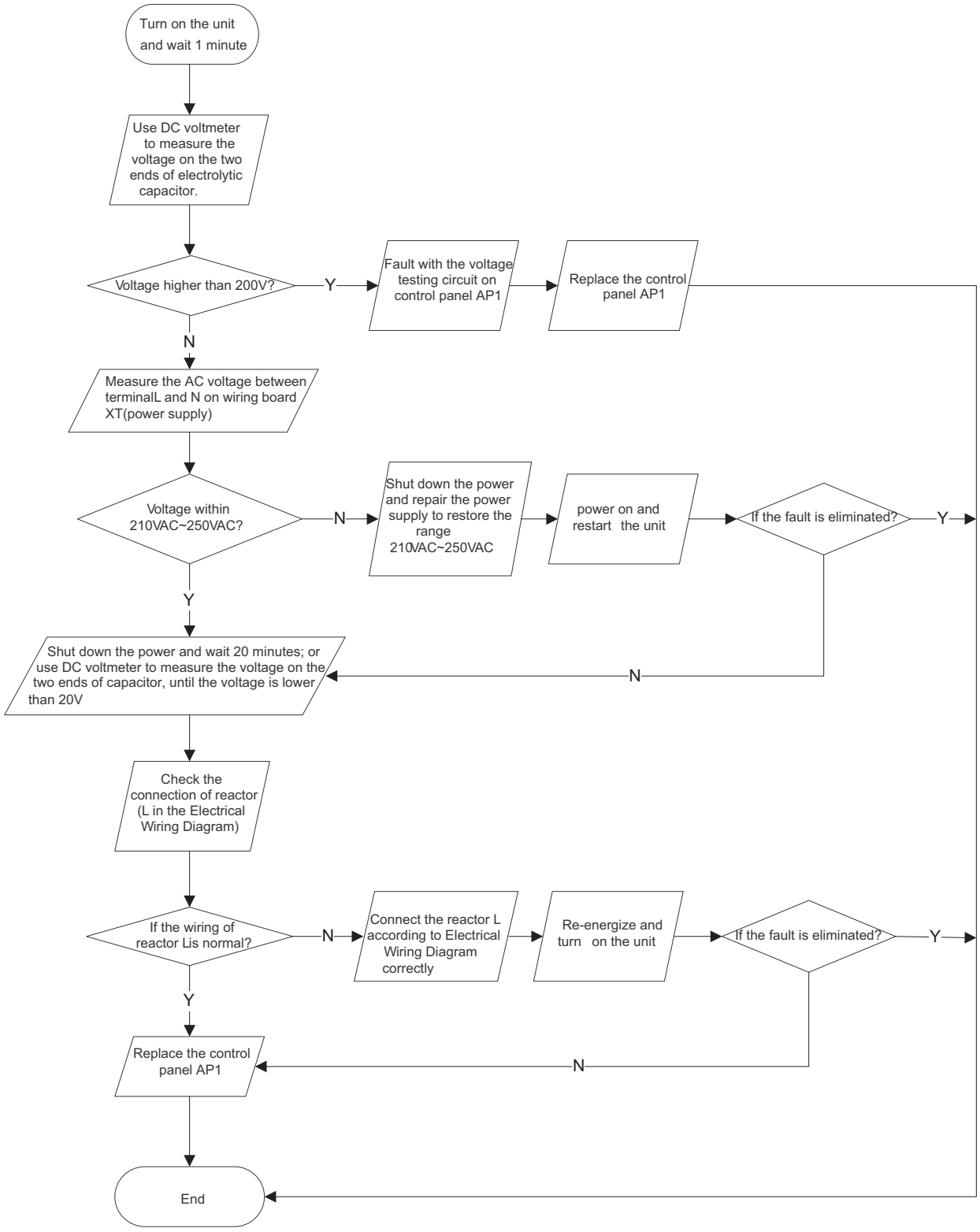
(1) Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)

Main Check Points:

Use AC voltmeter to check if the voltage between terminal L and N on the wiring board is within 210VAC~240VAC.

If the reactor (L) is correctly connected? If the connection is loose or fallen? If the reactor (L) is damaged?

Fault diagnosis process:



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

Mainly detect:

● If the connection between control panel AP1 and compressor COMP is secure? If loose? If the connection is in correct order?

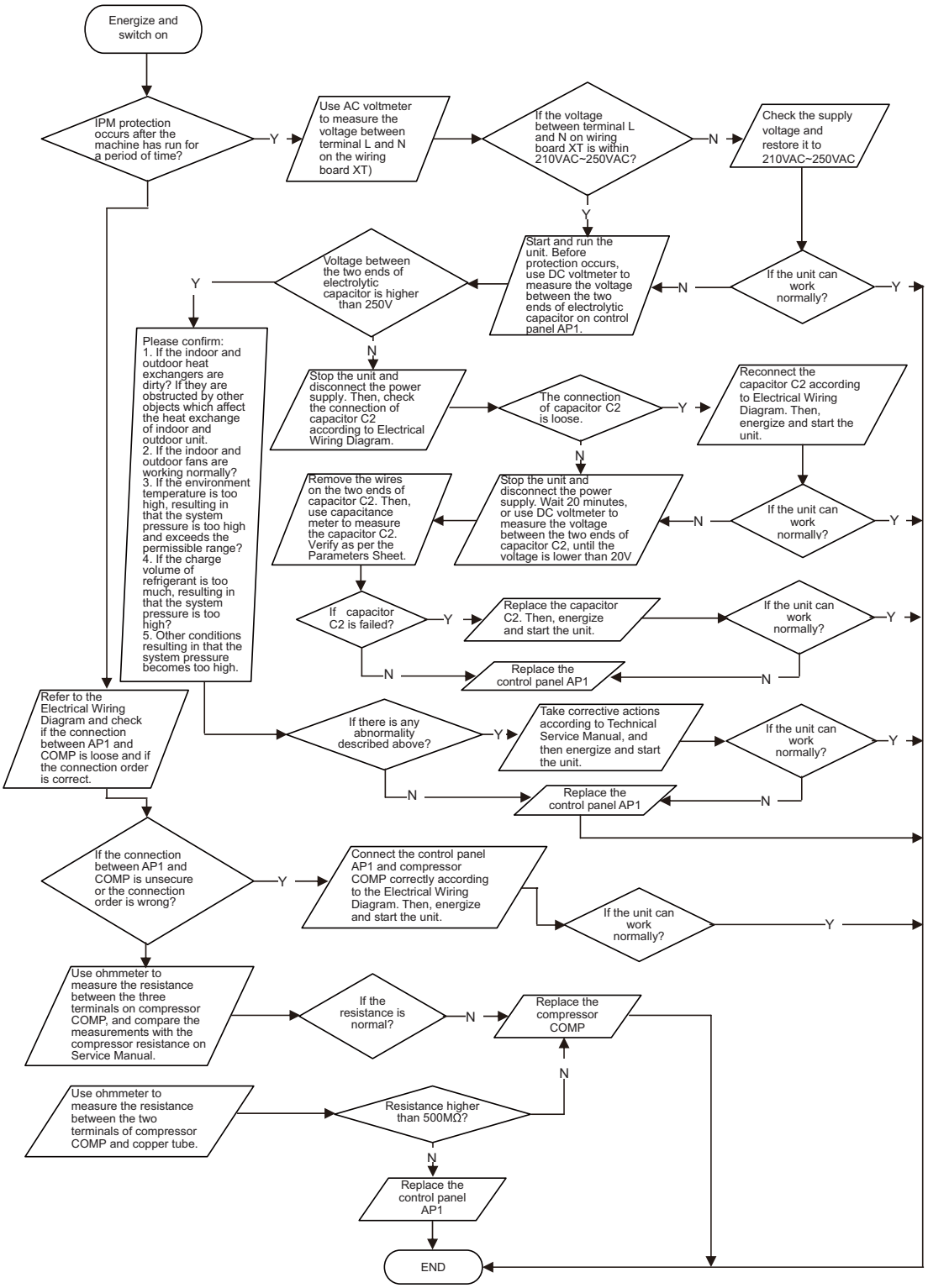
● If the voltage input of the machine is within normal range? (Use AC voltmeter to measure the voltage between terminal L and N on the wiring board XT)

● If the compressor coil resistance is mormal? If the insulation of compressor coil against the coppertube is in good condition?

● If the working loads of the machine are too high? If the radiation is good?

● If the charge volume of refrigerant is correct?

Fault diagnosis process:



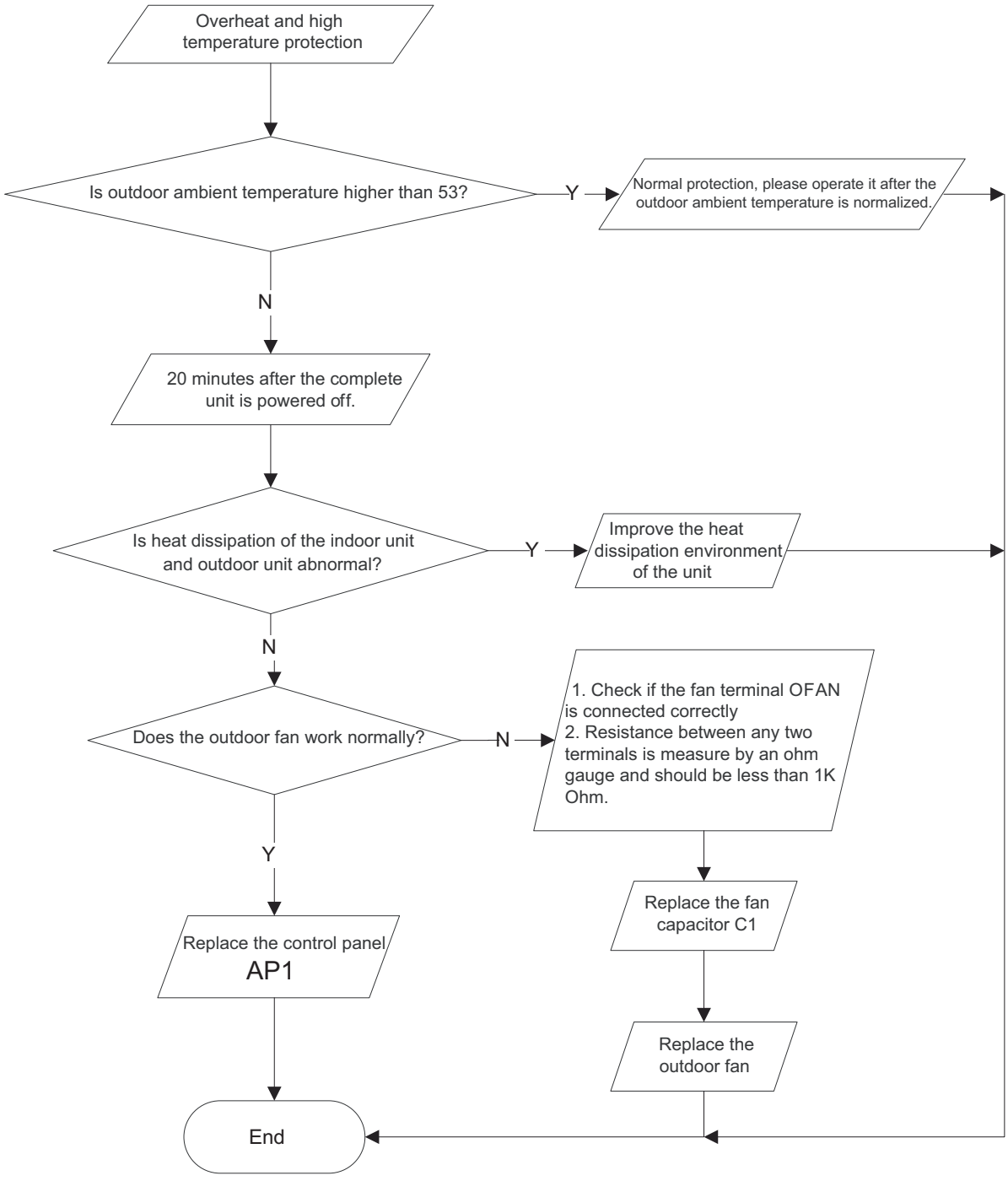
(3)High temperature and overload protection diagnosis (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

Is outdoor ambient temperature in normal range?

Are the outdoor and indoor fans operating normally?

Is the heat dissipation environment inside and outside the unit is good?



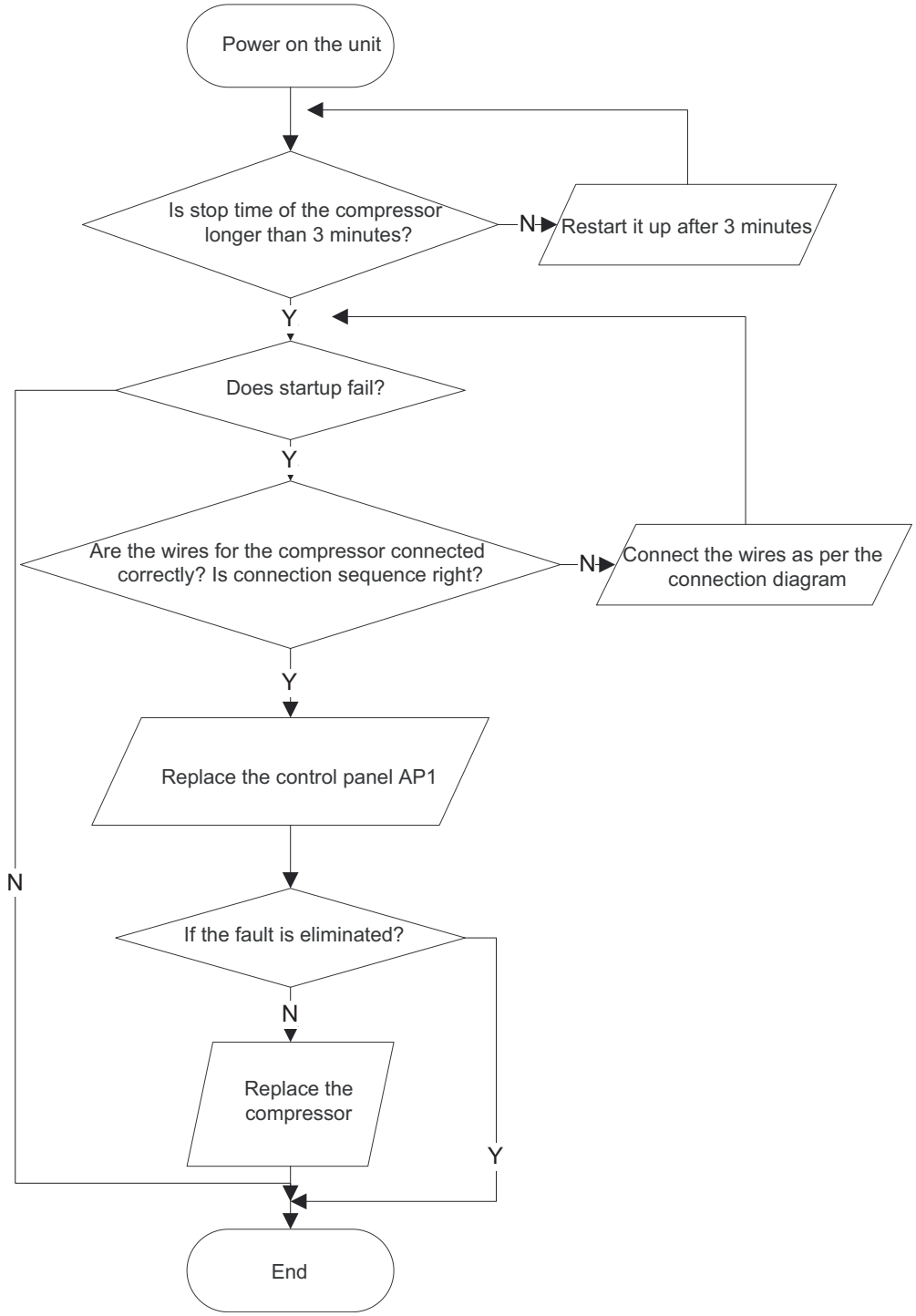
(4) Start-up failure(following AP1 for outdoor unit control board)

Mainly detect:

Whether the compressor wiring is connected correct?

Is time for compressor stopping enough?

Is compressor broken?

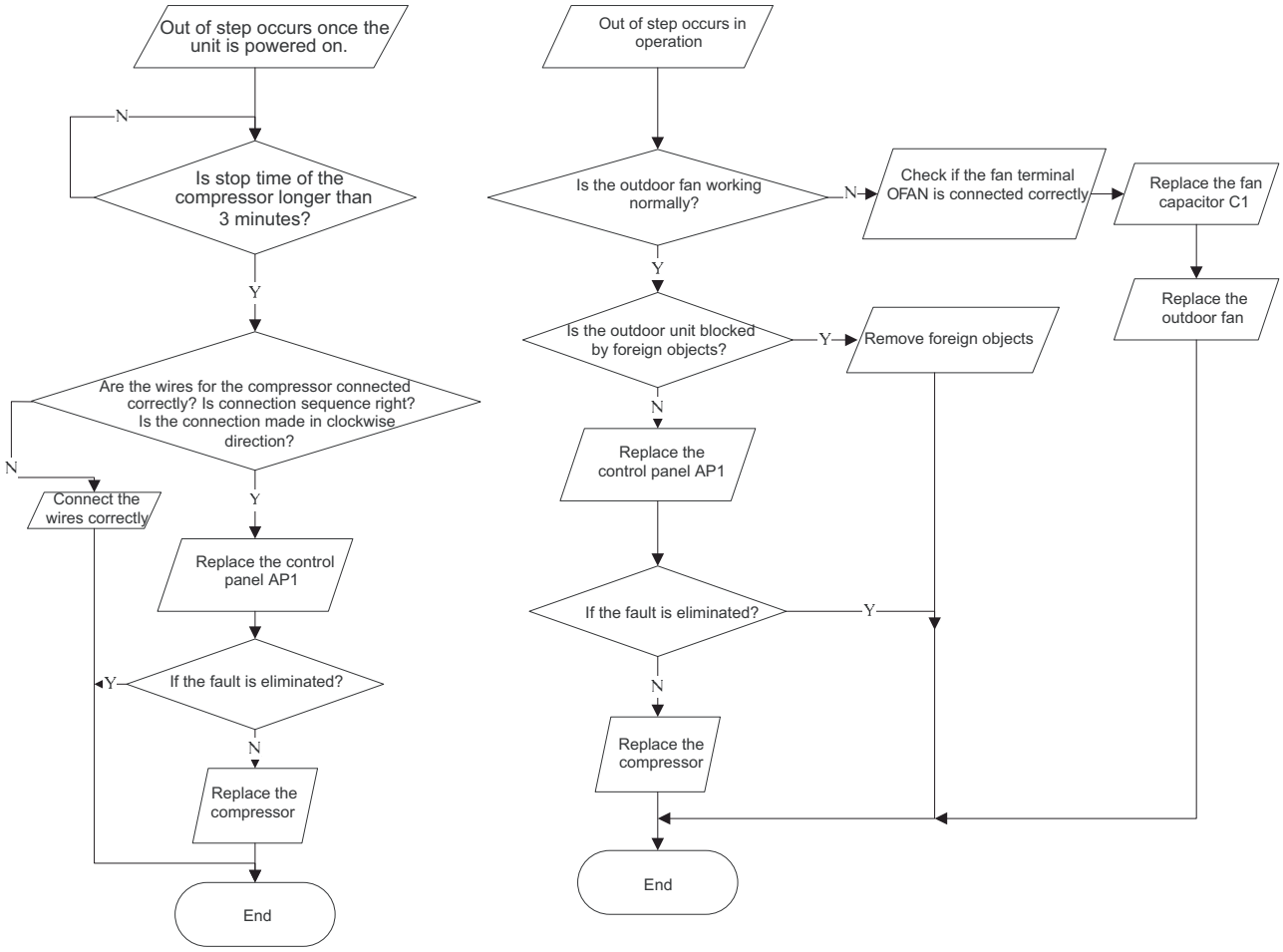


(5) Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

Whether the system pressure is too high?

Whether the input voltage is too low?

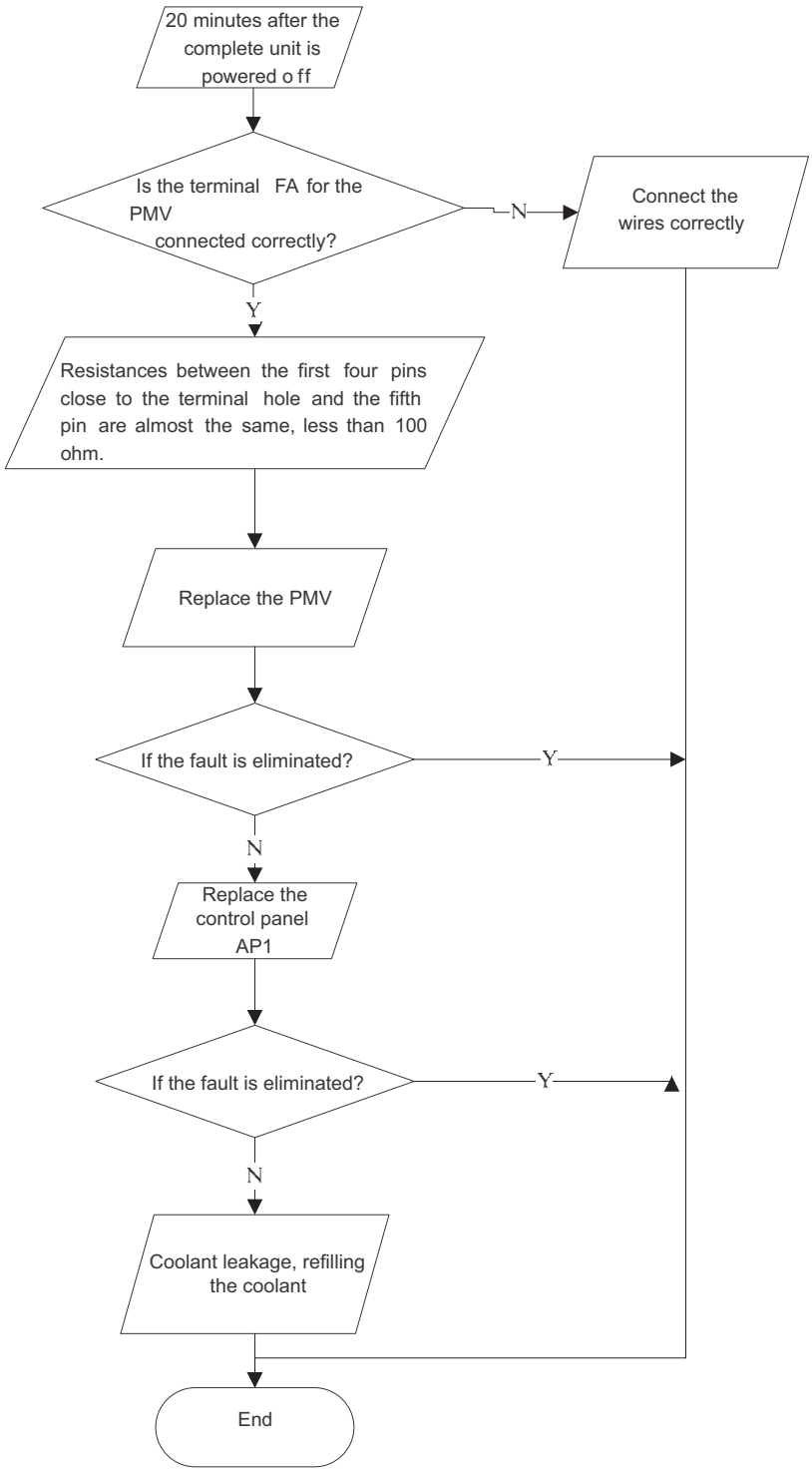


(6)Overload and air exhaust malfunction diagnosis (following AP1 for outdoor unit unit control board)

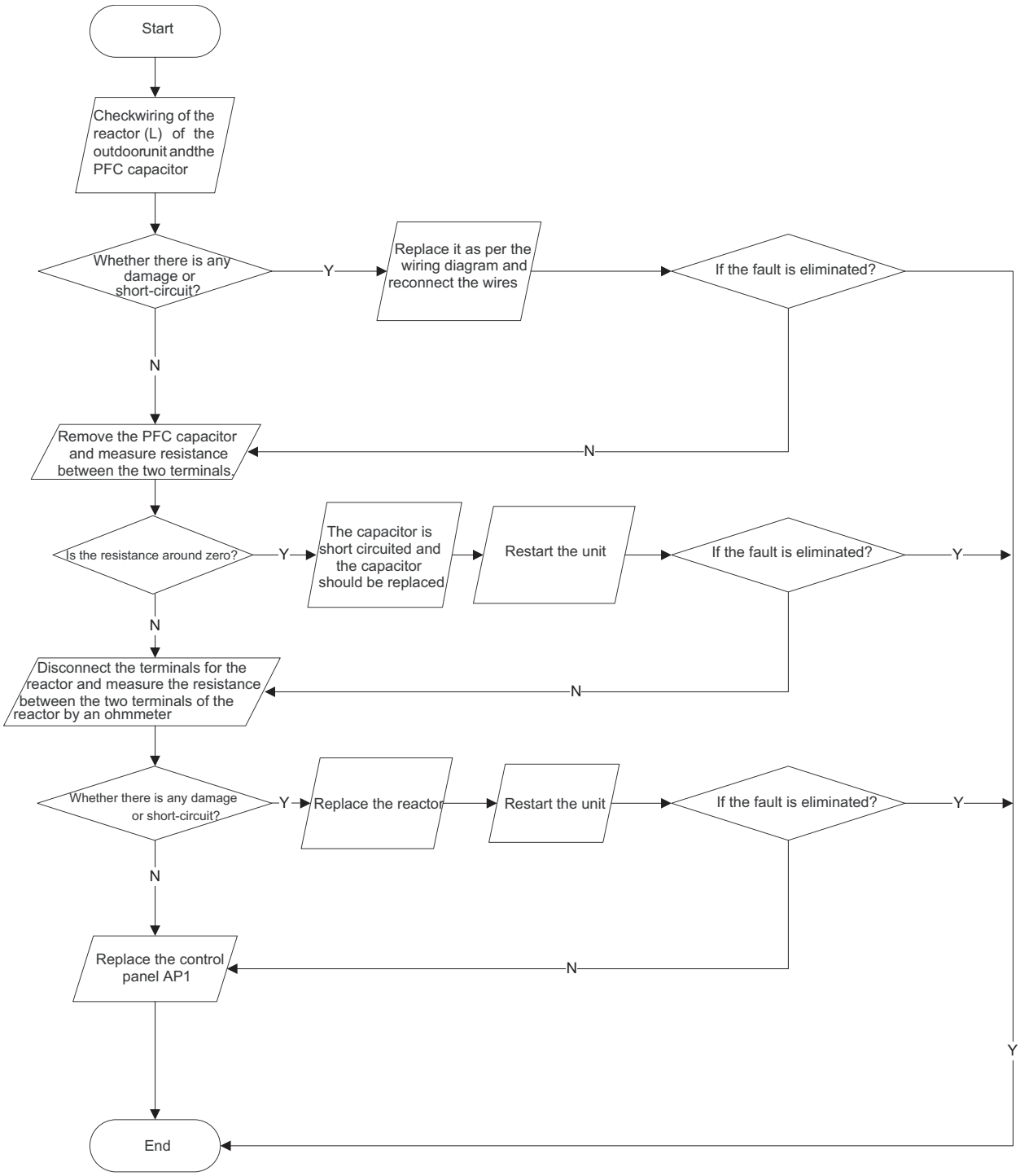
Mainly detect:

Wether the PMV is connected well or not? Is PMV damaged?

Is refrigerant leaked?



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



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

Mainly detect:

Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any damage?

Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?

The flow chart for malfunction detect:

Appendix 1: Resistance Table for Indoor and Outdoor Ambient Temperature Sensors (15K)							
Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	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

Appendix 2: Resistance Table for Indoor and Outdoor Tube Temperature Sensor (20K)							
Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	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

Appendix 3: Resistance Table for Outdoor Discharge Temperature Sensor (50K)							
Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）
-29	853.5	10	98	49	18.34	88	4.754
-28	799.8	11	93.42	50	17.65	89	4.609
-27	750	12	89.07	51	16.99	90	4.469
-26	703.8	13	84.95	52	16.36	91	4.334
-25	660.8	14	81.05	53	15.75	92	4.204
-24	620.8	15	77.35	54	15.17	93	4.079
-23	580.6	16	73.83	55	14.62	94	3.958
-22	548.9	17	70.5	56	14.09	95	3.841
-21	516.6	18	67.34	57	13.58	96	3.728
-20	486.5	19	64.33	58	13.09	97	3.619
-19	458.3	20	61.48	59	12.62	98	3.514
-18	432	21	58.77	60	12.17	99	3.413
-17	407.4	22	56.19	61	11.74	100	3.315
-16	384.5	23	53.74	62	11.32	101	3.22
-15	362.9	24	51.41	63	10.93	102	3.129
-14	342.8	25	49.19	64	10.54	103	3.04
-13	323.9	26	47.08	65	10.18	104	2.955
-12	306.2	27	45.07	66	9.827	105	2.872
-11	289.6	28	43.16	67	9.489	106	2.792
-10	274	29	41.34	68	9.165	107	2.715
-9	259.3	30	39.61	69	8.854	108	2.64
-8	245.6	31	37.96	70	8.555	109	2.568
-7	232.6	32	36.38	71	8.268	110	2.498
-6	220.5	33	34.88	72	7.991	111	2.431
-5	209	34	33.45	73	7.726	112	2.365
-4	198.3	35	32.09	74	7.47	113	2.302
-3	199.1	36	30.79	75	7.224	114	2.241
-2	178.5	37	29.54	76	6.998	115	2.182
-1	169.5	38	28.36	77	6.761	116	2.124
0	161	39	27.23	78	6.542	117	2.069
1	153	40	26.15	79	6.331	118	2.015
2	145.4	41	25.11	80	6.129	119	1.963
3	138.3	42	24.13	81	5.933	120	1.912
4	131.5	43	23.19	82	5.746	121	1.863
5	125.1	44	22.29	83	5.565	122	1.816
6	119.1	45	21.43	84	5.39	123	1.77
7	113.4	46	20.6	85	5.222	124	1.725
8	108	47	19.81	86	5.06	125	1.682
9	102.8	48	19.06	87	4.904	126	1.64

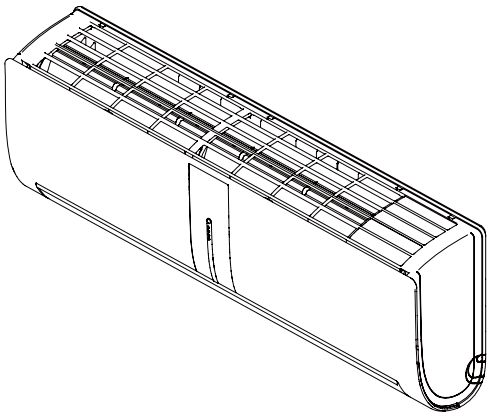
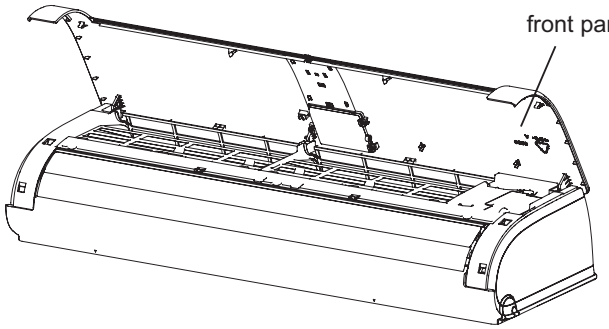
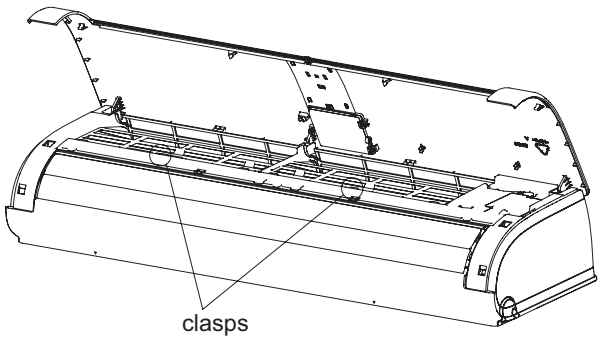
Note: The information above is for reference only.

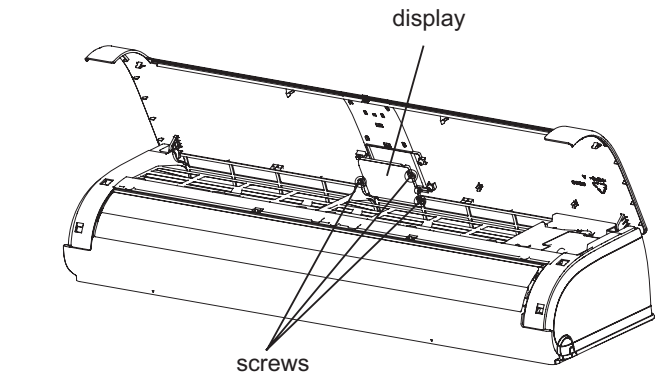
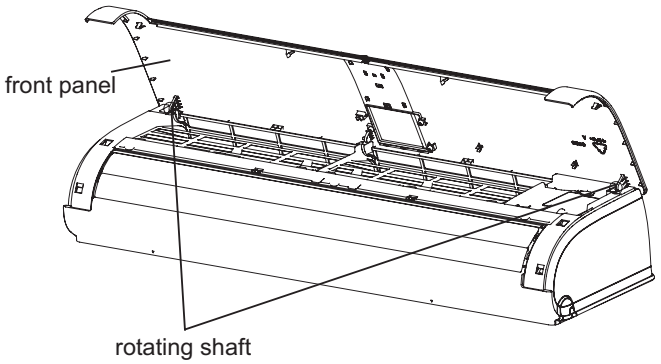
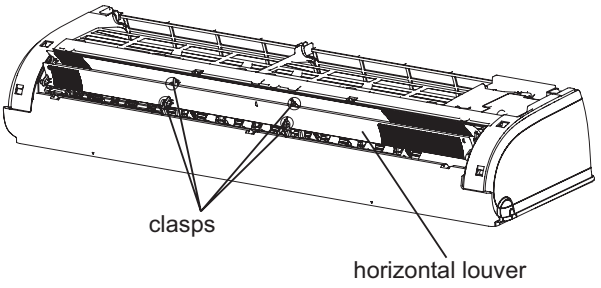
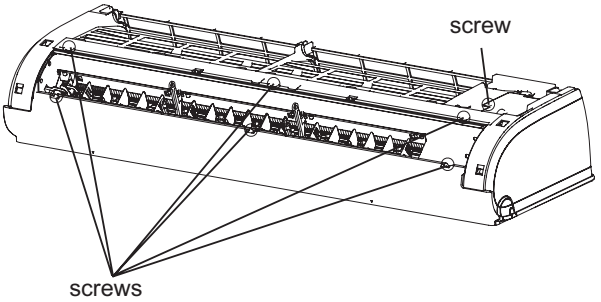
10. Removal Procedure

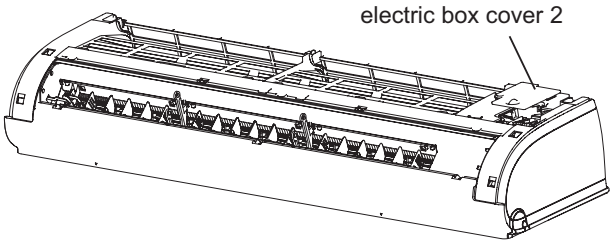
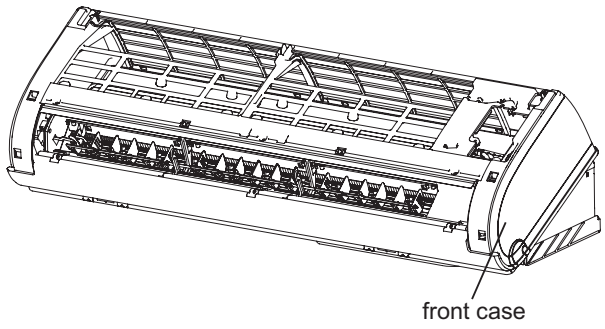
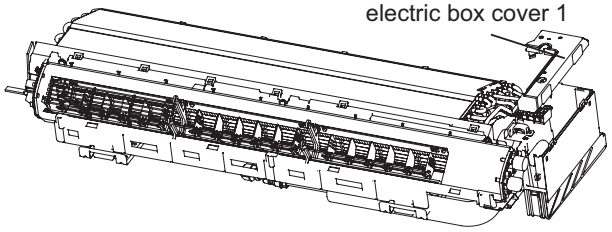
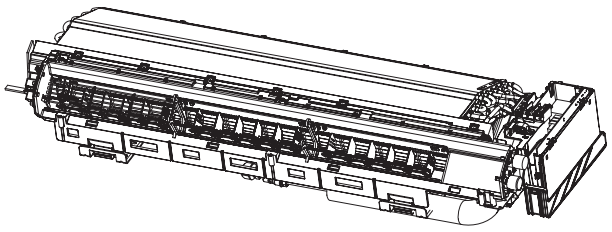
10.1 Removal Procedure of Indoor Unit

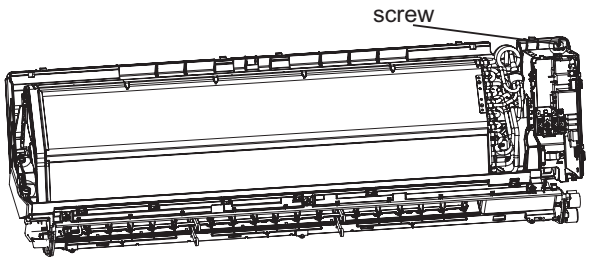
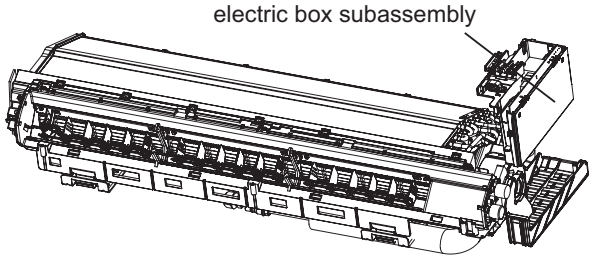
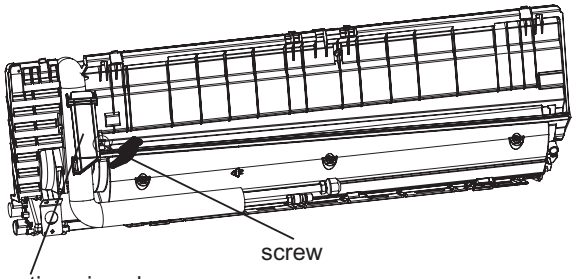
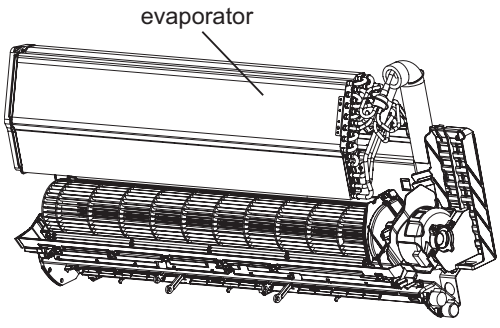
⚠ Warning Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

Take A1 panel for example.

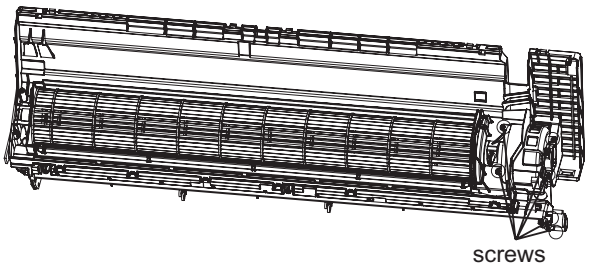
Steps	Procedure	
1. Before disassembly		
2. Remove filter		
1	Loosen clasps on both sides of front panel and open front panel.	
2	Loosen clasps on filter and push the filter inwards. Then lift it up to remove it.	

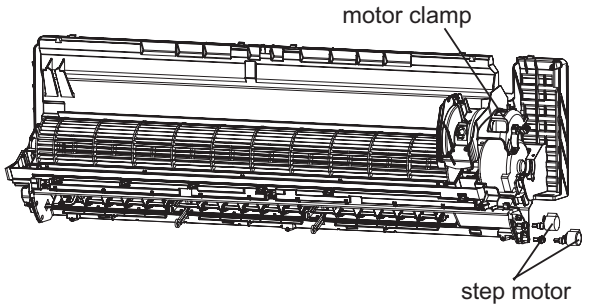
Steps	Procedure
3. Remove front panel	
Remove screws fixing display on front panel. Slide rotating shaft of front panel along the groove to remove the front panel.	
4. Remove horizontal louver	
Remove axle sleeve of horizontal louver and bend the horizontal louver. Then draw it outwards to remove it.	
5. Remove front case	
1 Open screw caps and remove 6 screws fixing front case and 1 screw on electric box cover 2.	

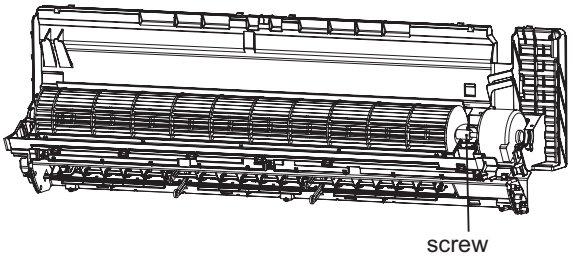
Steps	Procedure	
2	Remove electric box cover 2	
3	Loosen clasps on the rear of front case. Lift the front case up to remove it.	
6. Remove electric box subassembly		
1	Loosen clasps on the joint of electric box cover 1 and electric box. Then remove electric box cover 1.	
2	Unplug splicing ear of motor and step motor inside electric box.	

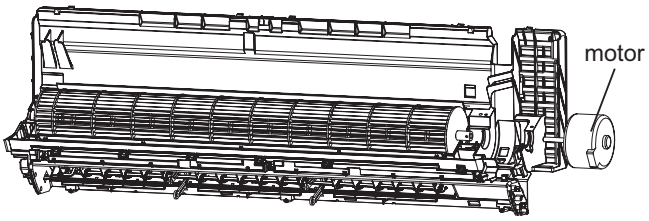
Steps	Procedure	
3	Remove screw fixing electric box.	
4	Remove electric box subassembly.	
7. Remove evaporator		
1	Remove screws on connecting pipe clamp and then remove the connecting pipe clamp.	
2	Remove screws on the joint of evaporator and rear case. Slightly adjust pipe of evaporator and then remove evaporator.	

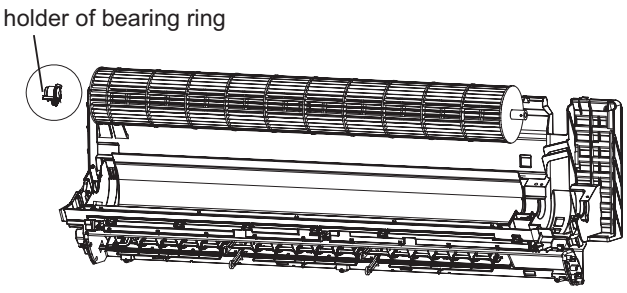
Steps	Procedure
8. Remove cross flow fan blade and motor	
1	Remove screws fixing motor clamp and step motor.
2	Remove motor clamp and step motor.
3	Remove screws on the joint of cross flow fan blade and motor.
4	Remove motor.
5	Unplug holder of bearing ring.

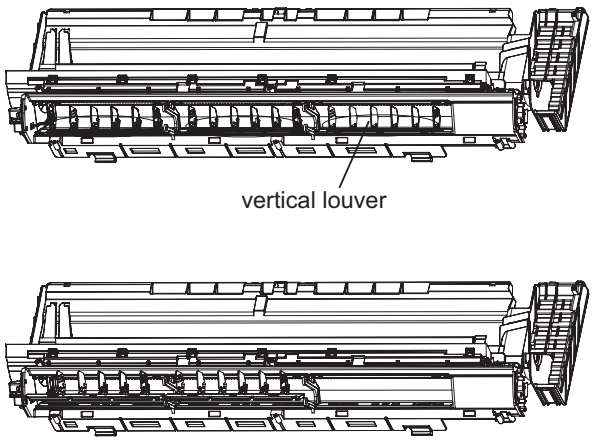










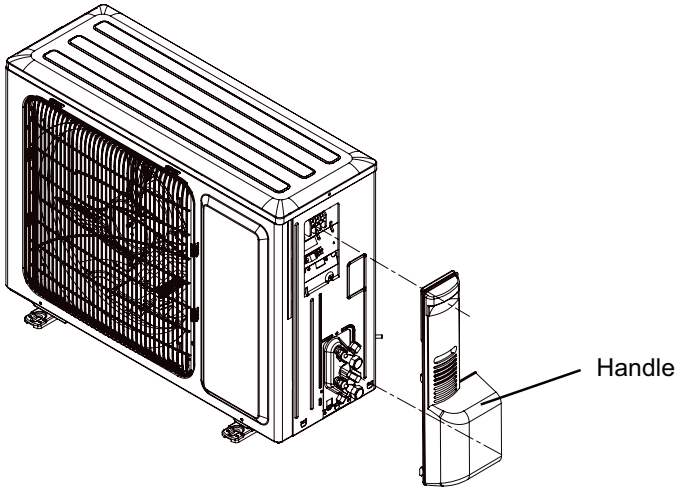
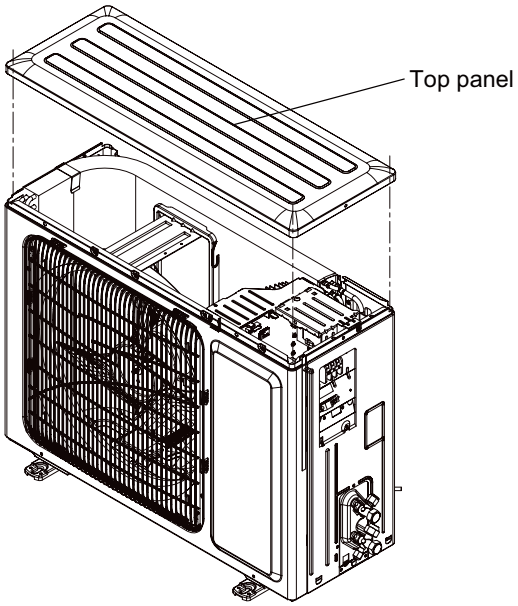
Steps	Procedure
9. Remove vertical louver	
Loosen clasps between vertical louver and rear case. Then remove vertical louver.	

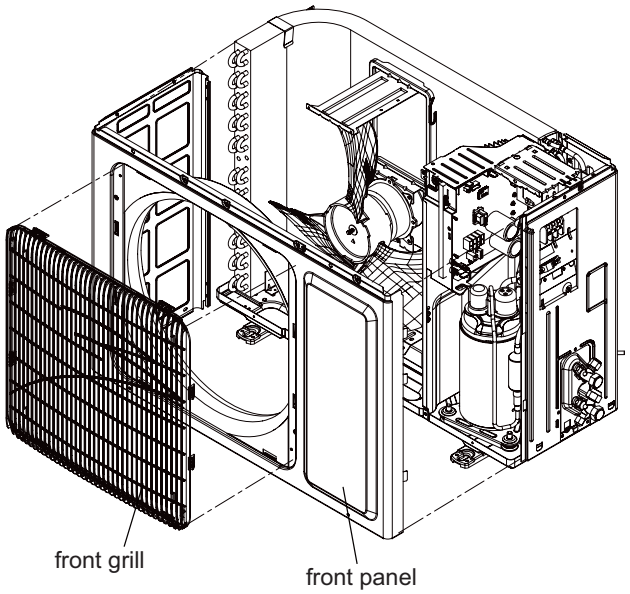
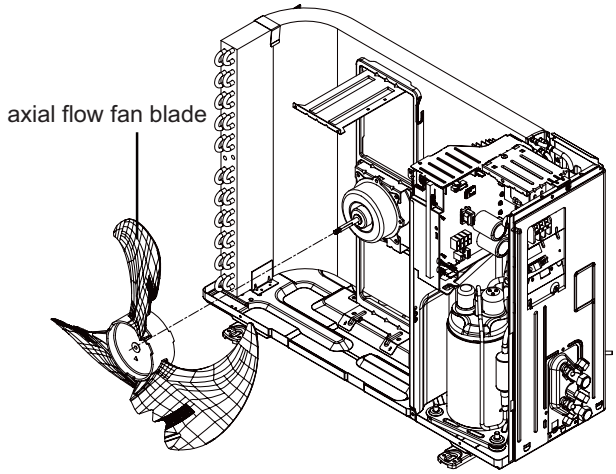
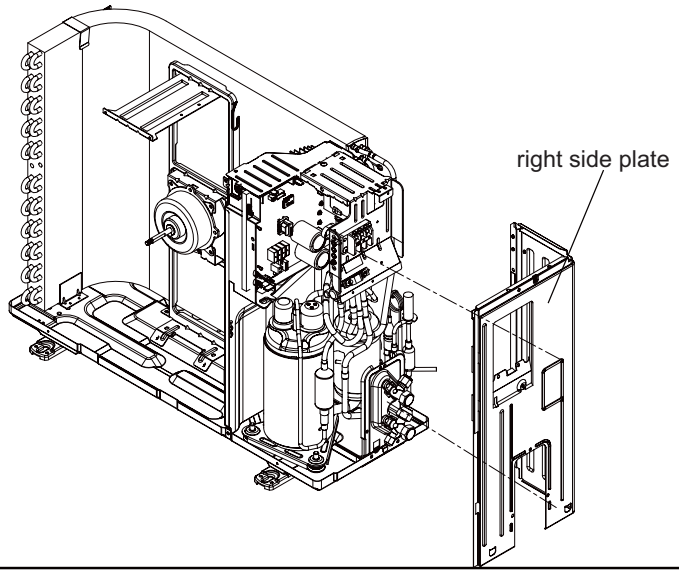
10.2 Removal Procedure of Outdoor Unit

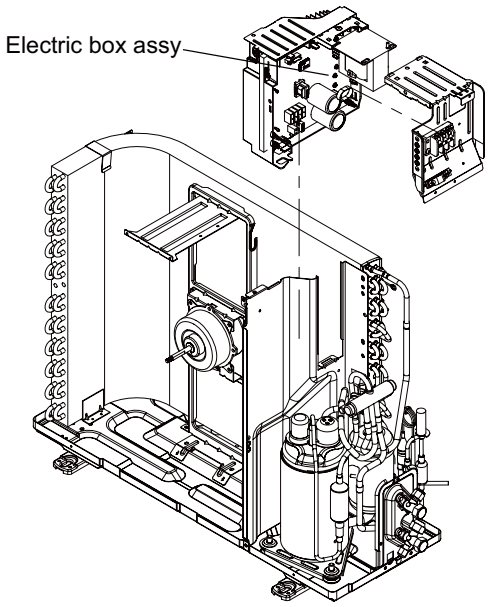
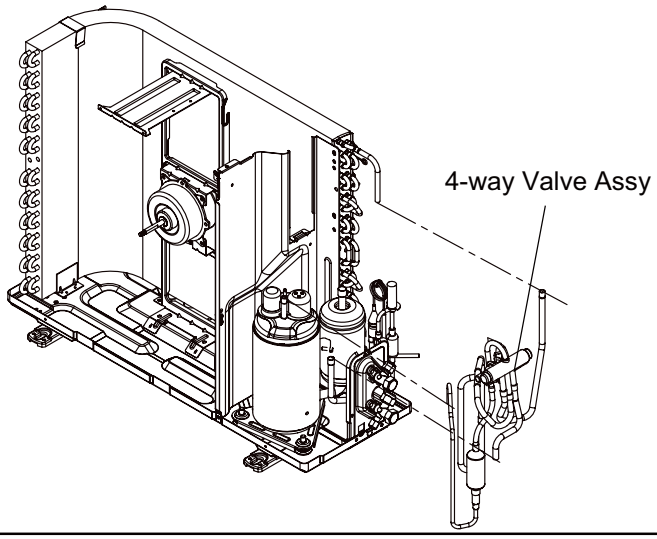
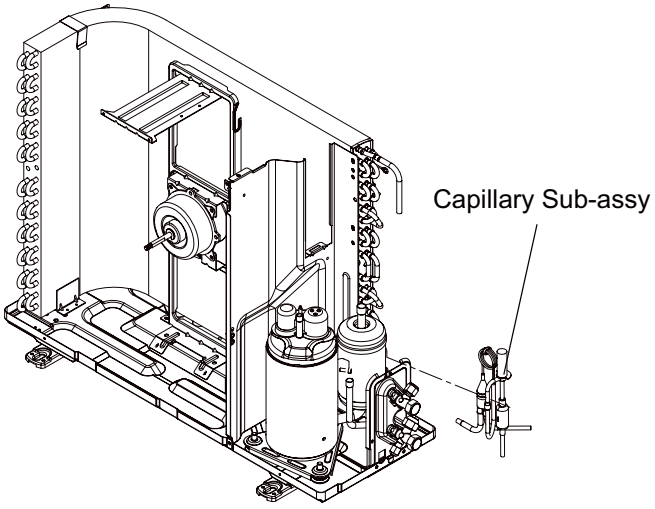
⚠ Warning Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

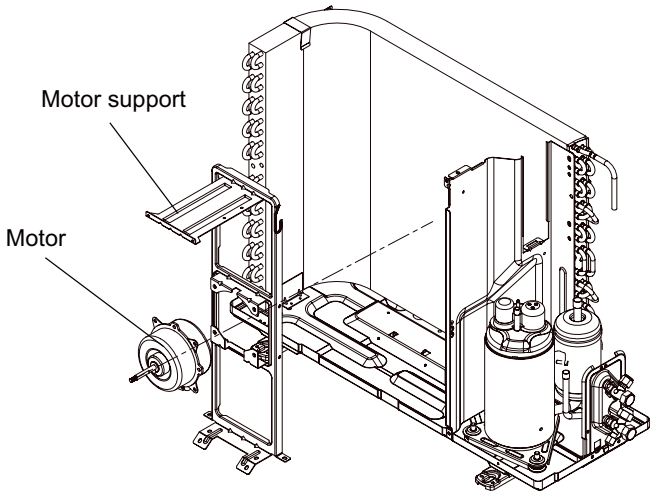
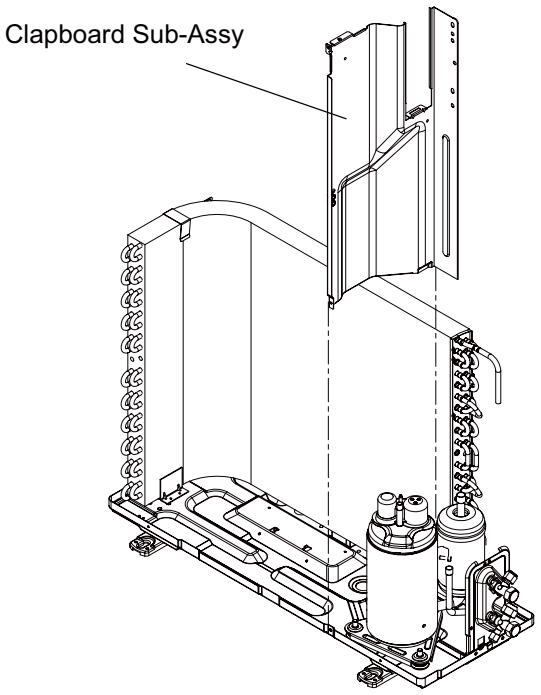
注：以冷暖机为准。

09K

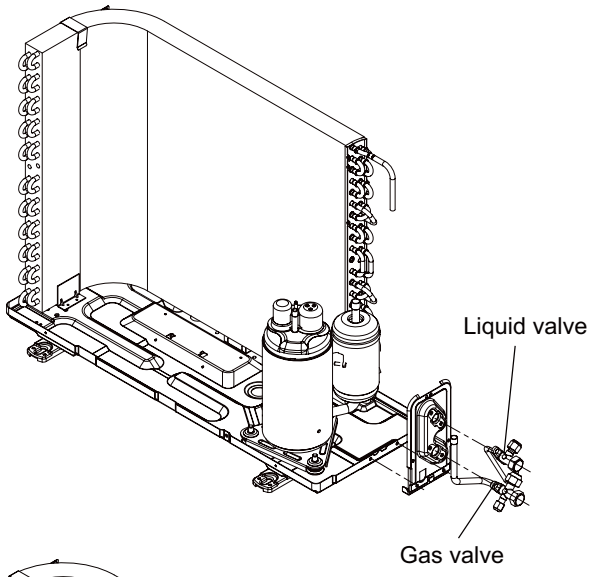
Steps	Procedure	
1. Remove big handle		
	Remove 1 connection screw fixing big handleand then removethe big handle.	
2. Remove top cover plate		
	Remove 3 connection screws among top cover plate, front panel and right sideplate. Then remove top cover plate.	

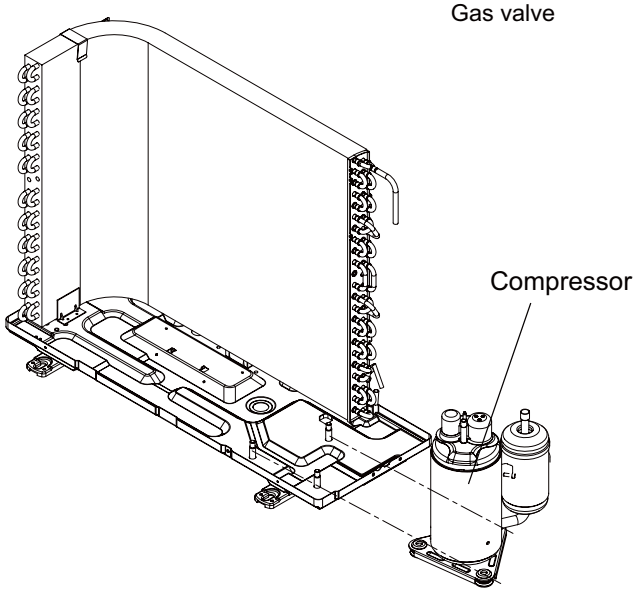
Steps	Procedure
3. Remove front grill and front panel	
1	Remove 2 connection screws between front grill and front panel. Then remove front panel.
2	Remove 5 connection screws among front panel, chassis and motor support. Then remove front panel.
4. Remove axial flow fan blade	
	Remove nut of fan blade, and then remove axial flow fan blade.
5. Remove right side plate	
	Remove 7 connection screws among right side plate, chassis, valve support and electric box.

Steps	Procedure
6. Remove electric box assy	
Remove the 2 screws fixing the cover of electric box. Lift to remove the cover. Loosen the wire and disconnect the terminal. Lift to remove the electric box assy.	
7. Disassemble 4-way Valve Assy	
Unscrew the fastening nut of the 4-way Valve Assy coil and remove the coil. Wrap the 4-way Valve Assy with wet cotton and unsolder the 4 weld spots connecting the 4-way Valve Assy to take it out.(Note: Refrigerant should be discharged firstly.) Welding process should be as quickly as possible and keep wrapping cotton wet all the time. Be sure not to burn out the lead-out wire of compressor.	
8. Disassemble Capillary Sub-assy	
Unsolder weld point of capillary Sub-assy, valve and outlet pipe of condensator. Then remove the capillary Sub-assy. Do not block the capillary when unsoldering it. (Note: before unsoldering,discharge refrigerants completely)	

Steps	Procedure
9. Disassemble motor and motor support	
Remove the 4 tapping screws fixing the motor. Pull out the lead-out wire and remove the motor. Remove the 2 tapping screws fixing the motor support. Lift motor support to remove it.	
10. Disassemble Clapboard Sub-Assy	
Loosen the screws of the Clapboard Sub-Assy . The Clapboard Sub-Assy has a hook on the lower side. Lift and pull the Clapboard Sub-Assy to remove.	

Steps	Procedure
11. Disassemble Compressor	
1	Remove the 2 screws fixing the gas valve. Unsolder the welding spot connecting gas valve and air return pipe and remove the gas valve. (Note: it is necessary to warp the gas valve when unsoldering the welding spot.) Remove the 2 screws fixing liquid valve. Unsolder the welding spot connecting liquid valve and remove the liquid valve.
2	Remove the 3 footing screws of the compressor and remove the compressor.





⚠ Warning Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.

注：以冷暖机为准。

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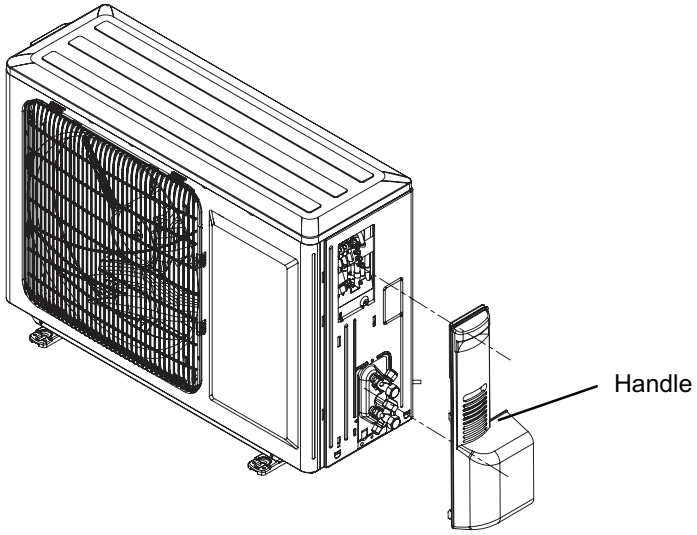
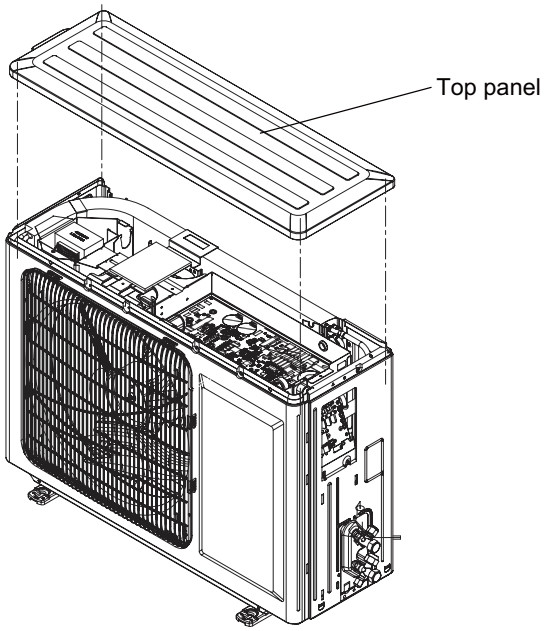
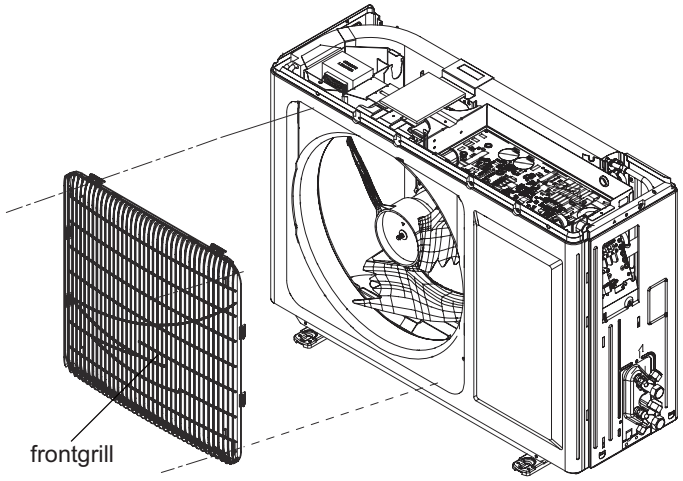
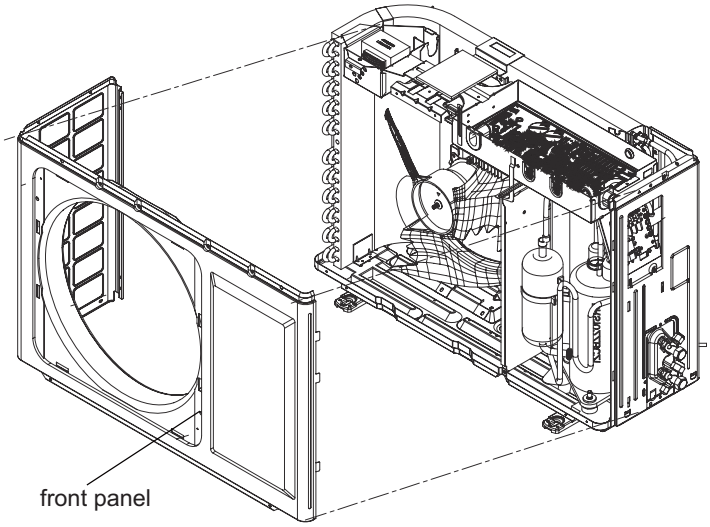
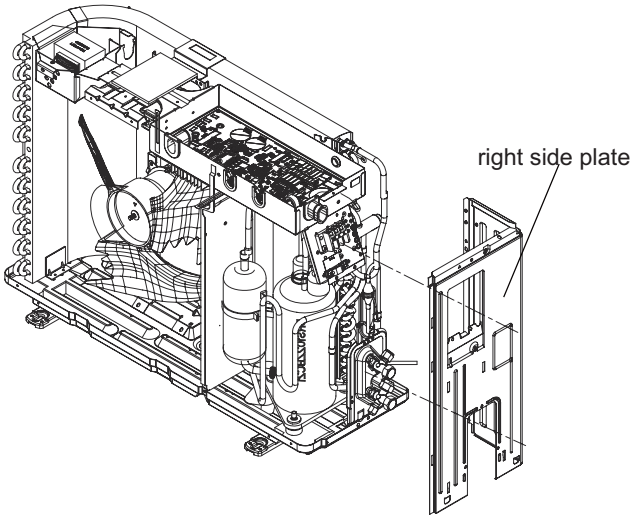
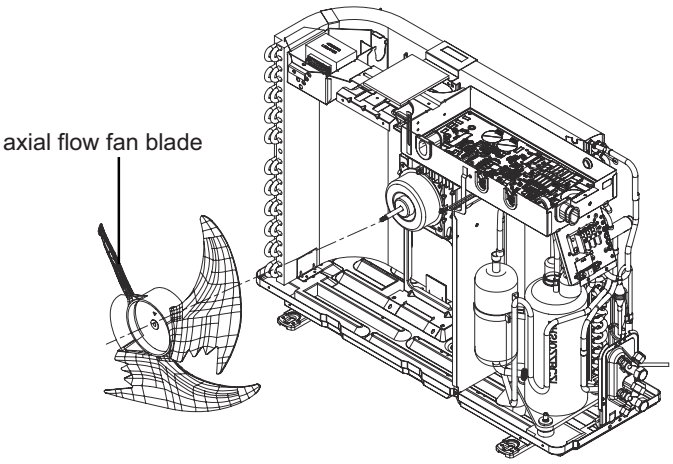
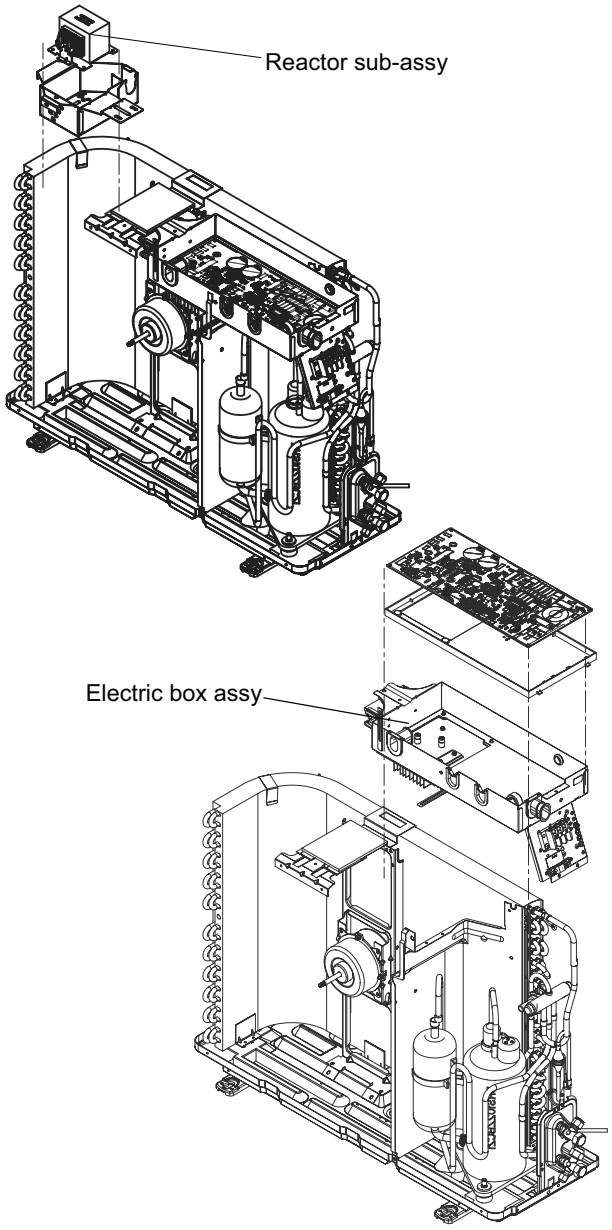
Steps	Procedure	
1. Remove big handle		
	Remove 1 connection screw fixing big handleand then removethe big handle.	
2. Remove top cover plate		
	Remove 3 connection screws among top cover plate, front panel and right sideplate. Then remove top cover plate.	

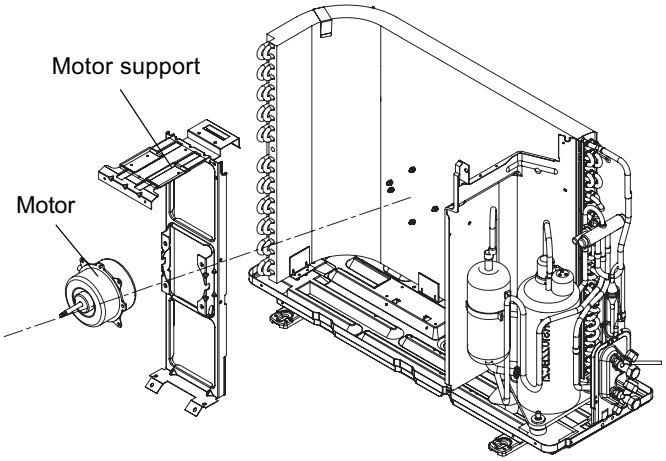
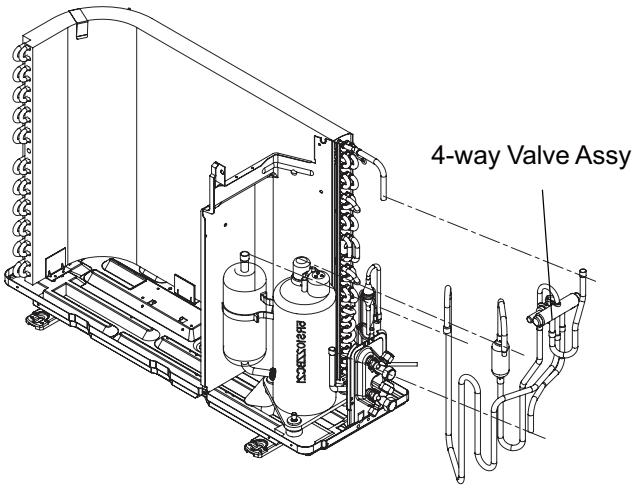
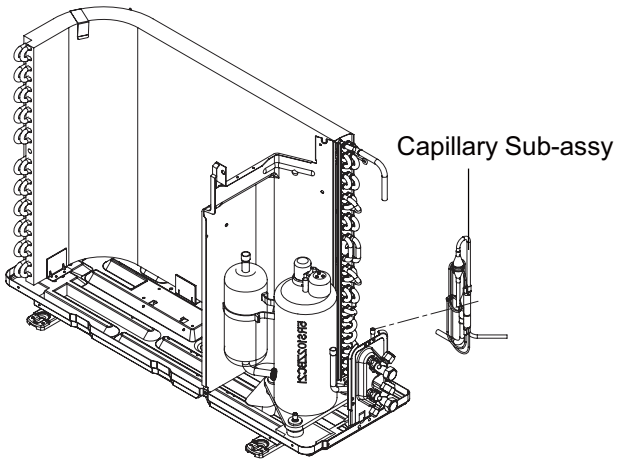
Steps	Procedure	
3. Remove front grill and front panel		
1	Remove 2 connection screws between front grill and front panel.Then remove front panel.	
2	Remove 5 connection screws among front panel, chassis and motor support. Then remove front panel.	
4. Remove right side plate		
	Remove 7 connection screws among right side plate, chassis, valve support and electric box.	

Steps	Procedure
5. Remove axial flow fan blade	
	Remove nut of fan blade, and then remove axial flow fan blade.

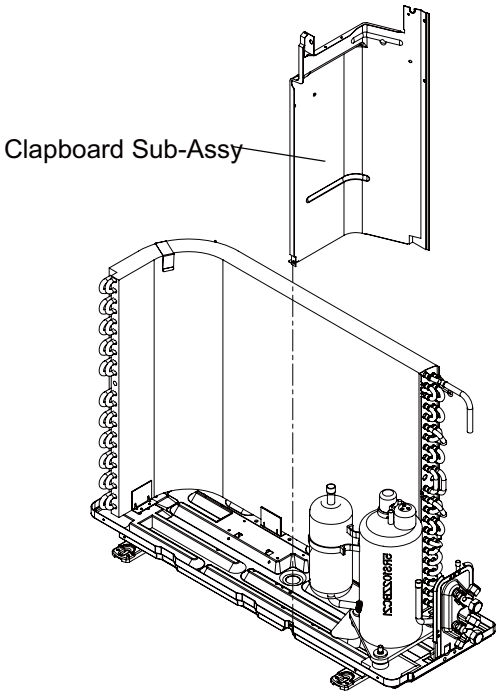


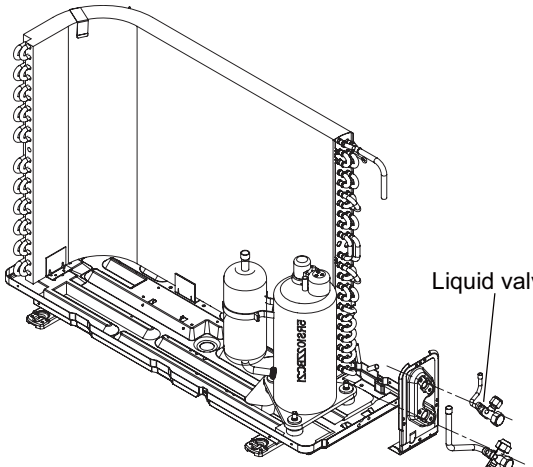
6. Remove electric box assy	
1	Remove the screws of theReactor sub-assy and then remove it.
2	Remove the 2 screws fixing the cover of electric box. Lift to remove the cover. Loosen the wire and disconnect the terminal. Lift to remove the electric box assy.

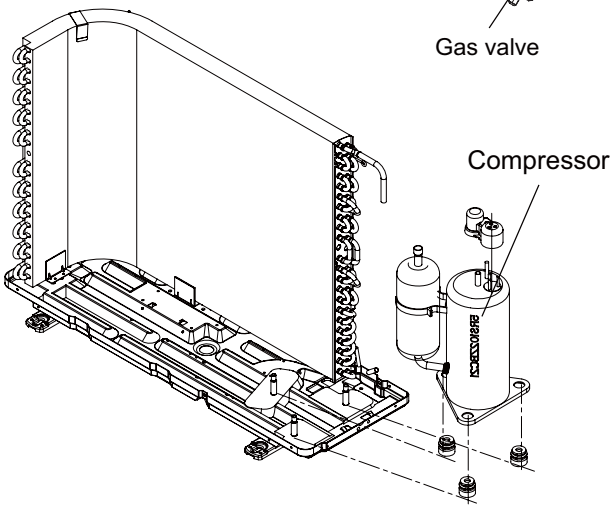


Steps	Procedure
7. Disassemble motor and motor support	
Remove the 4 tapping screws fixing the motor. Pull out the lead-out wire and remove the motor. Remove the 2 tapping screws fixing the motor support. Lift motor support to remove it.	
8. Disassemble 4-way Valve Assy	
Unscrew the fastening nut of the 4-way Valve Assy coil and remove the coil. Wrap the 4-way Valve Assy with wet cotton and unsolder the 4 weld spots connecting the 4-way Valve Assy to take it out.(Note: Refrigerant should be discharged firstly.) Welding process should be as quickly as possible and keep wrapping cotton wet all the time. Be sure not to burn out the lead-out wire of compressor.	
9. Disassemble Capillary Sub-assy	
Unsolder weld point of capillary Sub-assy, valve and outlet pipe of condensator. Then remove the capillary Sub-assy. Do not block the capillary when unsoldering it. (Note: before unsoldering,discharge refrigerants completely)	

Steps	Procedure
10. Disassemble Clapboard Sub-Assy	
	Loosen the screws of the Clapboard Sub-Assy . The Clapboard Sub-Assy has a hook on the lower side. Lift and pull the Clapboard Sub-Assy to remove.
11. Disassemble Compressor	
1	Remove the 2 screws fixing the gas valve. Unsolder the welding spot connecting gas valve and air return pipe and remove the gas valve. (Note: it is necessary to warp the gas valve when unsoldering the welding spot.) Remove the 2 screws fixing liquid valve. Unsolder the weld-ing spot connecting liquid valve and remove the liquid valve.
2	Remove the 3 footing screws of the compressor and remove the compressor.







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