![GREE - Change for Life]

Service Manual

Models: GWH09QB-K6DNA1C
        GWH12QC-K6DNA1C
        (Refrigerant R32)

GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

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Indoor Unit

GWH09QB-K6DNA1C/I
GWH12QC-K6DNA1C/I

Outdoor Unit

GWH09QB-K6DNA1C/O

GWH12QC-K6DNA1C/O

Remote Controller

YAN1F1

2. Specifications

2.1 Specification Sheet

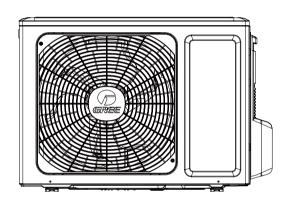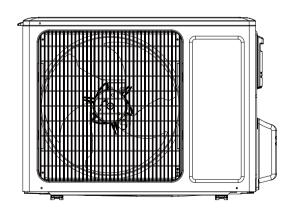| Parameter		Unit	Value	
Model			GWH09QB-K6DNA1C	GWH09QB-K6DNA1C(LCLH)
Product Code			CB419011900	CB419011901
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity(Min~Max)		W	2600(500~3350)	2600(500~3350)
Heating Capacity(Min~Max)		W	2800(500~3500)	2800(500~3500)
Cooling Power Input(Min~Max)		W	805(160~1400)	805(160~1400)
Heating Power Input(Min~Max)		W	755(200~1500)	755(200~1500)
Cooling Current Input		A	3.9	3.9
Heating Current Input		A	3.4	3.4
Rated Input		W	1500	1500
Rated Current		A	6.3	6.3
Air Flow Volume(SH/H/M//L/SL)		m^3/h	560/490/430/330/-	560/490/430/330/-
Dehumidifying Volume		L/h	0.8	0.8
EER		W/W	3.23	3.23
COP		W/W	3.71	3.71
SEER		W/W	6.1	6.1
SCOP(Average/Warmer/Colder)		W/W	4.0/5.1/3.2	4.0/5.1/3.4
Application Area		m^2	12-18	12-18
Indoor Unit	Indoor Unit Model		GWH09QB-K6DNA1C/I	GWH09QB-K6DNA1C/I
	Indoor Unit Product Code		CB419N11900	CB419N11900
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98X580	Φ98X580
	Cooling Speed(SH/H/M//L/SL)	r/min	1300/1200/1050/800/-	1300/1200/1050/800/-
	Heating Speed(SH/H/M//L/SL)	r/min	1300/1200/1050/900/-	1300/1200/1050/900/-
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.215	0.215
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5	Φ5
	Evaporator Row-fin Gap	mm	2-1.4	2-1.4
	Evaporator Coil Length (LXDXW)	mm	584X22.8X266.7	584X22.8X266.7
	Swing Motor Model		MP24AA	MP24AA
	Swing Motor Power Output	W	1.5	1.5
	Fuse Current	A	3.15	3.15
	Sound Pressure Level(SH/H/M//L/SL)	dB (A)	39/36/32/28/-	39/36/32/28/-
	Sound Power Level(SH/H/M//L/SL)	dB (A)	55/52/44/38/-	55/52/44/38/-
	Dimension (WXHXD)	mm	790X275X200	790X275X200
	Dimension of Carton Box (LXWXH)	mm	863X268X352	863X268X352
	Dimension of Package(LXWXH)	mm	866X271X367	866X271X367
	Net Weight	kg	9	9
	Gross Weight	kg	11	11

| Outdoor Unit	Outdoor Unit Model		GWH09QB-K6DNA1C/O	GWH09QB-K6DNA1C/O(LCLH)
	Outdoor Unit Product Code		CB419W11900	CB419W11901
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD	ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXF-B096zE190A	QXF-B096zE190A
	Compressor Oil		FW68DA	FW68DA
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	20.00	20.00
	Compressor RLA	A	4.21	4.21
	Compressor Power Input	W	943	943
	Compressor Overload Protector		1NT11L-6233 HPC115/95U1 KSD115ºC	1NT11L-6233 HPC115/95U1 KSD115ºC
	Throttling Method		Capillary	Capillary
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~43	-15~43
	Heating Operation Ambient Temperature Range	ºC	-15~24	-20~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ7
	Condenser Rows-fin Gap	mm	1-1.4	1-1.4
	Condenser Coil Length (LXDXW)	mm	710X19.05X508	710X19.05X508
	Fan Motor Speed	rpm	900	900
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m³/h	1600	1600
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ400	Φ400
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level (H/M/L)	dB (A)	52/-/-	52/-/-
	Sound Power Level (H/M/L)	dB (A)	61/-/-	61/-/-
	Dimension(WXHXD)	mm	776X540X320	776X540X320
	Dimension of Carton Box (LXWXH)	mm	820X355X580	820X355X580
	Dimension of Package(LXWXH)	mm	823X358X595	823X358X595
	Net Weight	kg	29.5	29.5
	Gross Weight	kg	32	32
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.6	0.6
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52	Φ9.52
	Max Distance Height	m	10	10
	Max Distance Length	m	19	19
	Note: The connection pipe applies metric diameter.			
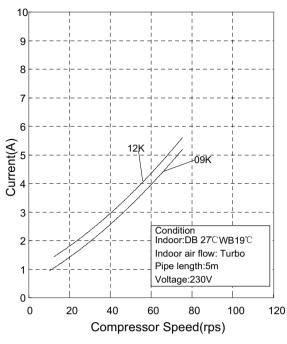
The above data is subject to change without notice. Please refer to the nameplate of the unit.
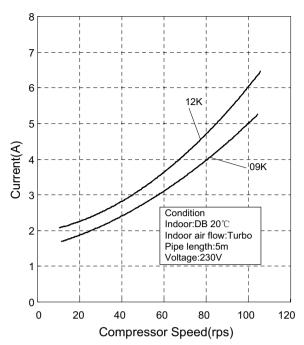
Parameter		Unit	Value	
Model			GWH12QC-K6DNA1C	GWH12QC-K6DNA1C(LCLH)
Product Code			CB419012300	CB419012301
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity(Min~Max)		W	3500(800~3700)	3500(800~3700)
Heating Capacity(Min~Max)		W	3670(900~380)	3670(900~380)
Cooling Power Input(Min~Max)		W	1085(220~1400)	1085(220~1400)
Heating Power Input(Min~Max)		W	990(220~1500)	990(220~1500)
Cooling Current Input		A	5.0	5.0
Heating Current Input		A	4.5	4.5
Rated Input		W	1500	1500
Rated Current		A	7.2	7.2
Air Flow Volume(SH/H/M//L/SL)		m³/h	680/590/490/420/-	680/590/490/420/-
Dehumidifying Volume		L/h	1.4	1.4
EER		W/W	3.26	3.26
COP		W/W	3.71	3.71
SEER		W/W	6.1	6.1
SCOP(Average/Warmer/Colder)		W/W	4.0/5.1/3.4	4.0/5.1/3.4
Application Area		m²	16-24	16-24
Indoor Unit	Indoor Unit Model		GWH12QC-K6DNA1C/I	GWH12QC-K6DNA1C/I
	Indoor Unit Product Code		CB419N12300	CB419N12300
	Fan Type		Cross-flow	Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98X633.5	Φ98X633.5
	Cooling Speed(SH/H/M//L/SL)	r/min	1350/1200/1050/850/-	1350/1200/1050/850/-
	Heating Speed(SH/H/M//L/SL)	r/min	1300/1150/1000/900/-	1300/1150/1000/900/-
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.31	0.31
	Fan Motor Capacitor	µF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ5	Φ5
	Evaporator Row-fin Gap	mm	2-1.5	2-1.5
	Evaporator Coil Length (LXDXW)	mm	635X22.8X306.3	635X22.8X306.3
	Swing Motor Model		MP24BA	MP24BA
	Swing Motor Power Output	W	2	2
	Fuse Current	A	3.15	3.15
	Sound Pressure Level(SH/H/M//L/SL)	dB (A)	42/38/34/31/-	42/38/34/31/-
	Sound Power Level(SH/H/M//L/SL)	dB (A)	56/52/48/45/-	56/52/48/45/-
	Dimension (WXHXD)	mm	845X289X209	845X289X209
	Dimension of Carton Box (LXWXH)	mm	918X278X364	918X278X364
	Dimension of Package(LXWXH)	mm	921X281X379	921X281X379
	Net Weight	kg	10.5	10.5
	Gross Weight	kg	12.5	12.5

			GWH12QC-K6DNA1C/O	GWH12QC-K6DNA1C/O(LCLH)
Outdoor Unit	Outdoor Unit Model		GWH12QC-K6DNA1C/O	GWH12QC-K6DNA1C/O(LCLH)
	Outdoor Unit Product Code		CB419W12300	CB419W12301
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO., LTD	ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		QXF-B096zE190A	QXF-B096zE190A
	Compressor Oil		FW68DA	FW68DA
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	20	20
	Compressor RLA	A	4.21	4.21
	Compressor Power Input	W	943	943
	Compressor Overload Protector		1NT11L-6233 HPC115/95U1 KSD115ºC	1NT11L-6233 HPC115/95U1 KSD115ºC
	Throttling Method		Capillary	Capillary
	Set Temperature Range	ºC	16~30	16~30
	Cooling Operation Ambient Temperature Range	ºC	-15~43	-15~43
	Heating Operation Ambient Temperature Range	ºC	-15~24	-20~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94	Φ7.94
	Condenser Rows-fin Gap	mm	1-1.4	1-1.4
	Condenser Coil Length (LXDXW)	mm	731X19.05X550	731X19.05X550
	Fan Motor Speed	rpm	900	900
	Fan Motor Power Output	W	30	30
	Fan Motor RLA	A	0.36	0.36
	Fan Motor Capacitor	μF	/	/
	Outdoor Unit Air Flow Volume	m³/h	2200	2200
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ438	Φ438
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level (H/M/L)	dB (A)	53/-/-	53/-/-
	Sound Power Level (H/M/L)	dB (A)	62/-/-	62/-/-
	Dimension(WXHXD)	mm	842X596X320	842X596X320
	Dimension of Carton Box (LXWXH)	mm	878X360X630	878X360X630
	Dimension of Package(LXWXH)	mm	881X363X645	881X363X645
	Net Weight	kg	31	31
	Gross Weight	kg	34	34
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.7	0.7
Connection Pipe	Connection Pipe Length	m	5	5
	Connection Pipe Gas Additional Charge	g/m	20	20
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52	Φ9.52
	Max Distance Height	m	10	10
	Max Distance Length	m	20	20
	Note: The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.
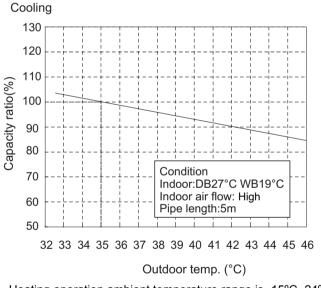
2.2 Operation Characteristic Curve
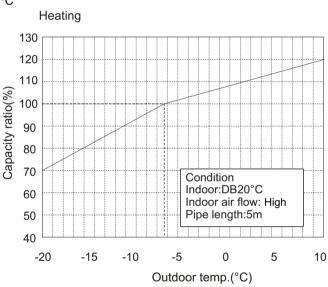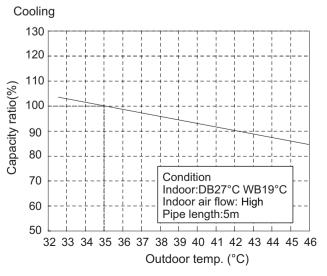
2.3 Capacity Variation Ratio According to Temperature
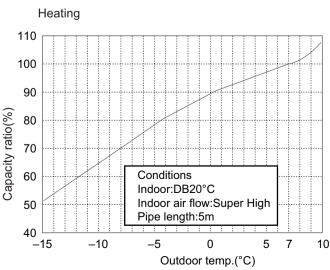
Heating operation ambient temperature range is -20ºC~24ºC

Heating operation ambient temperature range is -15ºC~24ºC

● ● ● ● ● ● <u>Technical Information</u>

2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (rps)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
27/19	35/24	09K	0.8 ~ 1.1	12 to 15	65 to 38	TURBO	High	49
		12K		11 to 14	64 to 37			60

Heating:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (rps)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
20/-	7/6	09K	2.8 ~ 3.2	35 to 63	2 to 5	TURBO	High	59
		12K		35 to 65	2 to 5			67

Instruction:
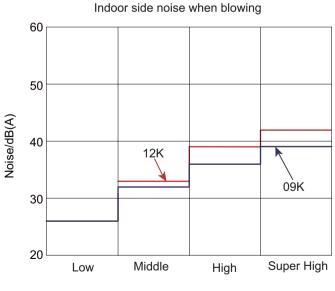
T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser
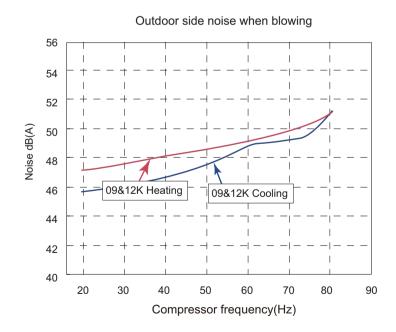
P: Pressure at the side of big valve

Connection pipe length: 5 m.

2.5 Noise Curve

Indoor side noise when blowing

Outdoor side noise when blowing
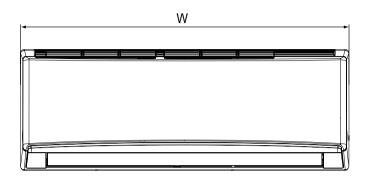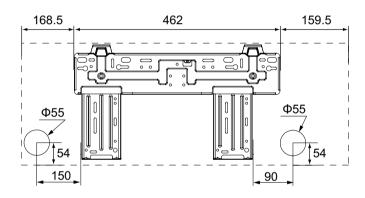
3. Outline Dimension Diagram

3.1 Indoor Unit

09K

12K

Unit:mm
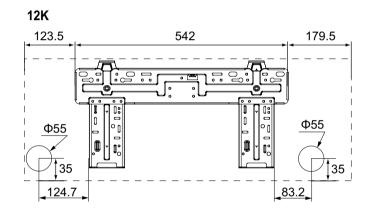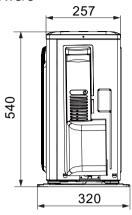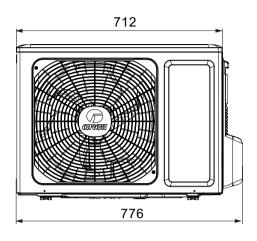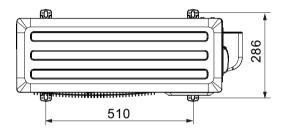
Model	W	H	D
09K	790	275	200
12K	845	289	209

Technical Information

3.2 Outdoor Unit

GWH09QB-K6DNA1C/O

257

540

320

712

776

286

510
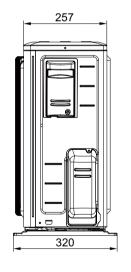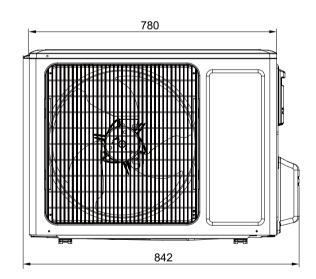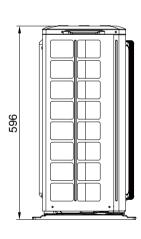
Unit:mm

GWH12QC-K6DNA1C/O

257

320

780

842

596

286

540
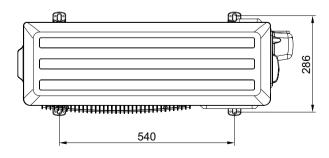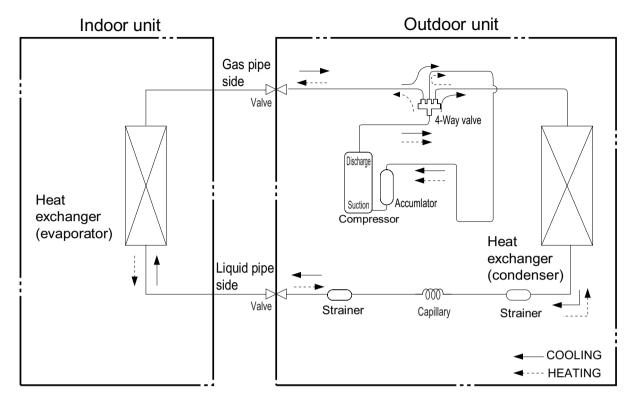
Unit:mm

4. Refrigerant System Diagram

Indoor unit   Outdoor unit

Gas pipe side
Valve

Heat exchanger (evaporator)

Liquid pipe side
Valve

4-Way valve

Discharge

Suction
Compressor
Accumlator

Heat exchanger (condenser)

Strainer   Capillary   Strainer

COOLING
HEATING

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

5. Electrical Part
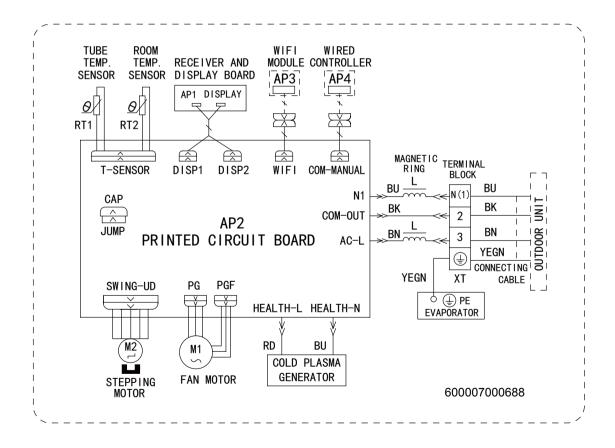
5.1 Wiring Diagram

● **Instruction**

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue	⏚	Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/
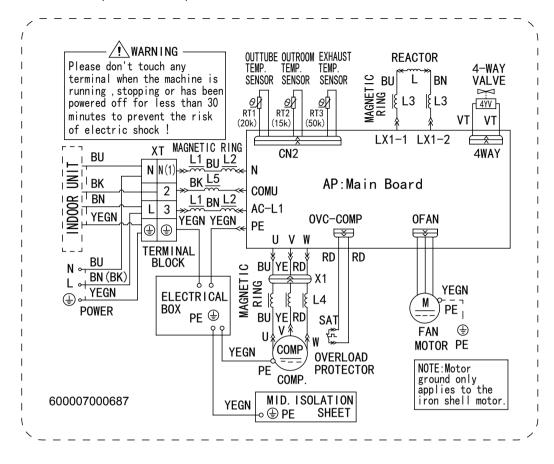
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● **Indoor Unit**

● Outdoor Unit
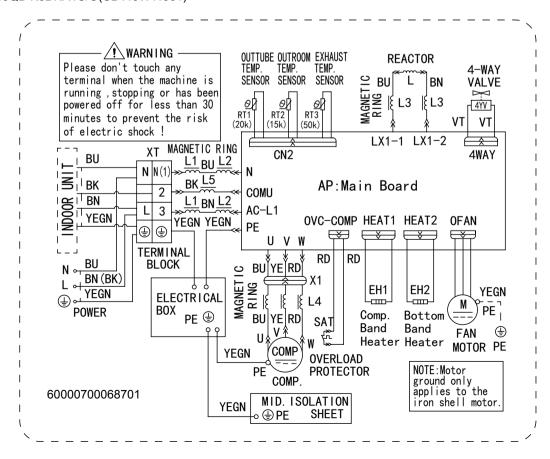
GWH09QB-K6DNA1C/O(CB419W11900)

GWH09QB-K6DNA1C/O(CB419W11901)

GWH12QC-K6DNA1C/O(CB419W12300)

⚠ WARNING
Please don't touch any terminal when the machine is running ,stopping or has been powered off for less than 30 minutes to prevent the risk of electric shock !

OUTTUBE TEMP. SENSOR
OUTROOM TEMP. SENSOR
EXHAUST TEMP. SENSOR
RT1 (20k)
RT2 (15k)
RT3 (50k)
CN2

REACTOR
MAGNETIC RING
BU L BN
L3 L3
LX1-1 LX1-2

4-WAY VALVE
4YV
VT VT
4WAY

INDOOR UNIT
BU
BK
BN
YEGN

XT
N N(1)
2
L 3

MAGNETIC RING
L1 BU L2
L1 BK L2
L1 BN L2
YEGN YEGN

N
COMU
AC-L1
PE

AP:Main Board

TERMINAL BLOCK

OVC-COMP
OFAN

BU
BN (BK)
YEGN
POWER
N
L

ELECTRICAL BOX
PE ⊕

MAGNETIC RING
BU YE RD
X1
L4
BU YE RD
U V W
YEGN
COMP
PE
COMP.

U V W
RD RD

SAT
OVERLOAD PROTECTOR

M
YEGN
PE
FAN MOTOR PE
⊕

NOTE:Motor ground only applies to the iron shell motor.

600007000763

YEGN
MID. ISOLATION
PE SHEET

GWH12QC-K6DNA1C/O(CB419W12301)

⚠ WARNING
Please don't touch any terminal when the machine is running ,stopping or has been powered off for less than 30 minutes to prevent the risk of electric shock !

OUTTUBE TEMP. SENSOR
OUTROOM TEMP. SENSOR
EXHAUST TEMP. SENSOR
RT1 (20k)
RT2 (15k)
RT3 (50k)
CN2

REACTOR
MAGNETIC RING
BU L BN
L3 L3
LX1-1 LX1-2

4-WAY VALVE
4YV
VT VT
4WAY

INDOOR UNIT
BU
BK
BN
YEGN

XT
N N(1)
2
L 3

MAGNETIC RING
L1 BU L2
L1 BK L2
L1 BN L2
YEGN YEGN

N
COMU
AC-L1
PE

AP:Main Board

TERMINAL BLOCK

OVC-COMP HEAT1 HEAT2 OFAN

BU
BN (BK)
YEGN
POWER
N
L

ELECTRICAL BOX
PE ⊕

MAGNETIC RING
BU YE RD
X1
L4
BU YE RD
U V W
YEGN
COMP
PE
COMP.

U V W
RD RD

SAT
OVERLOAD PROTECTOR

EH1
Comp. Band Heater

EH2
Bottom Band Heater

M
YEGN
PE
FAN MOTOR PE
⊕

NOTE:Motor ground only applies to the iron shell motor.

60000700076301

YEGN
MID. ISOLATION
PE SHEET

These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.
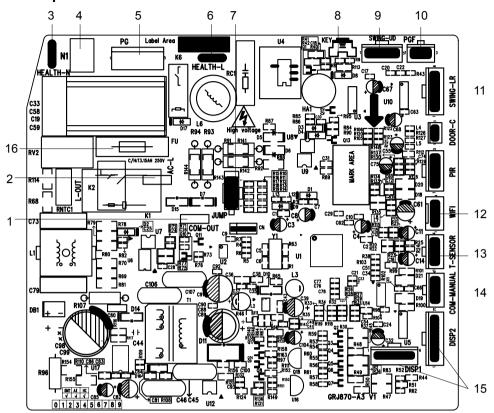
5.2 PCB Printed Diagram
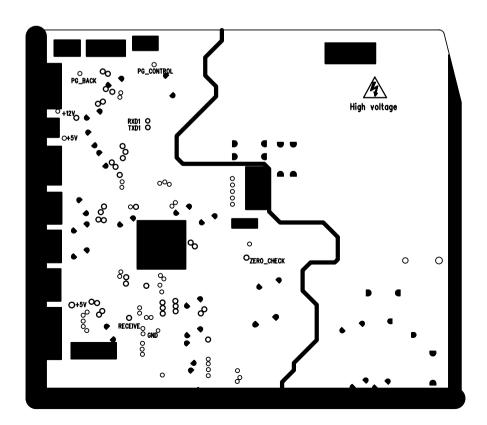
Indoor Unit

● Top view
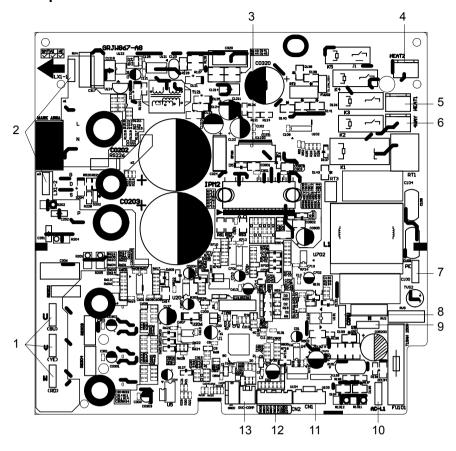
No	Name
1	Interface of communication wire for indoor unit and outdoor unit
2	Interface of live wire
3	Interface of health function neutral wire
4	Interface of neutral wire
5	Interface of fan
6	Interface of health function live wire
7	Jumper cap
8	Auto button
9	Up&down swing interface
10	Feedback interface of indoor unit
11	left&right swing interface
12	Interface of wifi
13	Interface of tube temperature sensor
14	Wired controller
15	Display interface
16	Fuse

● Bottom view
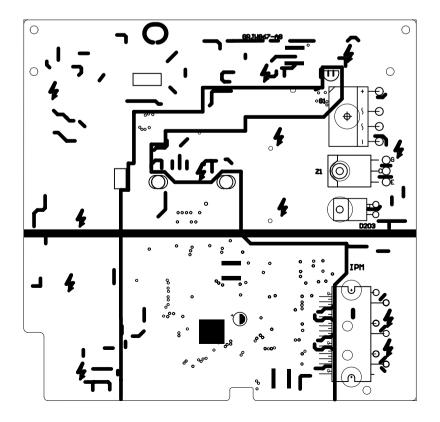
Outdoor Unit

● Top view

No.	Name
1	Compressor wiring terminal
2	Reactor wiring terminal
3	Outdoor fan wiring terminal
4	Terminal of chassis electric heater
5	Terminal of compressor electric heater
6	Terminal of 4-way valve
7	Grounding wire
8	Communication wire
9	Neutral wire
10	Live wire
11	Terminal of electronic expansion valve
12	Terminal of temperature sensor
13	Compressor overload terminal

● Bottom view
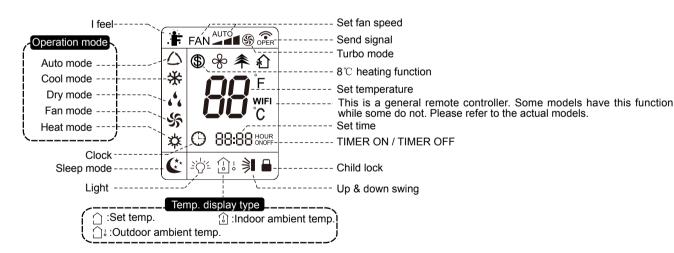
6. Function and Control

6.1 Remote Controller Introduction

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

Introduction for icons on display screen

I feel

Operation mode
- Auto mode
- Cool mode
- Dry mode
- Fan mode
- Heat mode

Clock
Sleep mode
Light

Temp. display type
⌂ :Set temp.   ⌂ :Indoor ambient temp.
⌂ :Outdoor ambient temp.

Set fan speed
Send signal
Turbo mode
8℃ heating function
Set temperature
This is a general remote controller. Some models have this function while some do not. Please refer to the actual models.
Set time
TIMER ON / TIMER OFF
Child lock
Up & down swing

Introduction for buttons on remote controller

Note:

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

● After putting through the power, the air conditioner will give out a sound. Operation indictor " (¹) " is ON (red indicator). After that, you can operate the air conditioner by using remote controller.

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

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

1. ON/OFF button

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

2. MODE button

Press this button to select your required operation mode.

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

Note:

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

3. FAN button

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

Caution:

- Under AUTO speed, air conditioner will select proper fan speed automatically according to ex-factory setting.
- Fan speed under dry mode is low speed.

4. SWING button

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

(horizontal louvers stops at current position)

- When selecting " ⇛▌ ", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "▌、╲▌、─▌、╱▌、▐", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- When selecting " ⇛▌、⇒▌、⇾▌ " , air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold " ⇛▌ "button above 2s to set your required swing angle. When reaching your required angle, release the button.

Note:

- " ⇛▌、⇒▌、⇾▌ " may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically.

5. TURBO button

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

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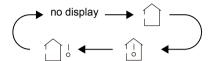
- Press "▲" or "▼" button once increase or decrease set temperature 1°C. Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature cant be adjusted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

7. SLEEP button

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

8. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor units display. The setting on remote controlleris selected circularly as below:

no display → ⌂ → ⌂↑ → ⌂↓ ↺

● When selecting " ⌂ " or no display with remote controller, temperature indicator on indoor unit displays set temperature.
● When selecting " ⌂↑ " with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
● When selecting " ⌂↓ " with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.
Note:
● Outdoor temperature display is not available for some models. At that time, indoor unit receives " ⌂↓ "signal, while it displays indoor set temperature.
● Its defaulted to display set temperature when turning on the unit.There is no display in the remote controller.
● Only for the models whose indoor unit has dual-8 display.
● When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

9. I FEEL button

Press this button to start I FEEL function and " 🌡 " will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and " 🌡 " will disappear.
● Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

10. LIGHT button

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

11. CLOCK button

Press this button to set clock time. " 🕐 " icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼" button, clock time will increase or decrease 1 minute. If hold "▲" or "▼" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. " 🕐 " icon stops blinking.
Note:
● Clock time adopts 24-hour mode.
● The interval between two operation cant exceeds 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

12. TIMER ON / TIMER OFF button

● TIMER ON button
"TIMER ON" button can set the time for timer on. After pressing this button, " 🕐 " icon disappears and the word "ON" on remote controller blinks. Press "▲" or "▼"button to adjust TIMER ON setting. After each pressing "▲" or "▼" button, TIMER ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. " 🕐 " icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.
● TIMER OFF button
"TIMER OFF" button can set the time for timer off. After pressing this button," 🕐 " icon disappears and the word "OFF" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER OFF setting. After each pressing "▲" or "▼" button, TIMER OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER OFF" word "OFF" will stop blinking. " 🕐 " icon resumes displaying. Cancel TIMER OFF. Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.
Note:
● Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
● Before setting TIMER ON or TIMER OFF, please adjust the clock time.
● After starting up TIMER ON or TIMER OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you dont need this function, please use remote controller to cancel it.

Function introduction for combination buttons

1. Energy-saving function

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

Note:

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

● Under energy-saving function, set temperature cant be adjusted. Press "TURBO" button and the remote controller wont send signal.

● Sleep function and energy-saving function cant operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

2. 8 ℃ heating function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8℃ heating function. When this function is started up, " $⑤$ " and "8℃ " will be shown on remote controller, and the air conditioner keep the heating status at 8℃ . Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8℃ heating function.

Note:

● Under 8℃ heating function, fan speed is defaulted at auto speed and it cant be adjusted.

● Under 8℃ heating function, set temperature cant be adjusted. Press "TURBO" button and the remote controller wont send signal.

● Sleep function and 8℃ heating function cant operate at the same time. If 8℃ heating function has been set under cooling mode, press sleep button will cancel 8℃ heating function. If sleep function has been set under cooling mode, start up the 8℃ heating function will cancel sleep function.

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

3. Child lock function

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

4. Temperature display switchover function

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

5. WIFI fuction

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

● This function is only available for some models.

Operation guide

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

Replacement of batteries in remote controller

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

Note:

● During operation, point the remote control signal sender at the receiving window on indoor unit.

● The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.

● Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.

● Replace new batteries of the same model when replacement is required.

● When you dont use remote controller for a long time, please take out the batteries.

● If the display on remote controller is fuzzy or theres no display, please replace batteries.

signal sender   battery

reinstall

remove

Cover of battery box

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

Operation Instructions

Download and install APP
Scan the following QR code with your smart phone and download Wifi Smart.

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

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

Configuration

NOTE: Select either the original configuration or AP configuration according to the APP functions.
1.Original configuration
Before operation, please finish the following configuration in order to realize Wifi control and the connection between air conditioner and intelligent device.
(1).Short-distance control setting for air conditioner using Wifi hotspot
Step 1: Air conditioner Wifi is set in AP mode in factory. You can search the air conditioner Wifi hotspot through your smart phone. The name of Wifi hotspot is the last 8 numbers of the air conditioner mac address. Password is 12345678.

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

NOTE:One AC can be controlled by 4 smart phones in maximum at the same time.
(2).Short-distance and long-distance control setting for air conditioner connecting with router
Step 1: Under short-distance control, return to the homepage "Home Control". Tap ⊞ at the top right corner of the homepage "Device".

● ○ ○ ○ ○ ○ ○ Technical Information

Select "Add device" and enter the page of "Add device". Tap "Manual configuration" and enter the page "Manual configuration".

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

2.AP configuration

4 steps of configuration

Step 1: Enter homepage "Device", and then tap ⊞ at the top right corner.

Select "Add device" and enter the page "Add device". Tap "Manual Configuration".

Step 2: Tap "Next" in the First Step.

Step 3: Select the wireless network of air conditioner. APP will show the password 12345678 (default password of the network of air conditioner). Then tap "Next"; select the name of home Wifi router, then enter the correct password and select a server.

Step 4: If configuration is successful, a window will pop up and read "Configuration succeeded". Then configuration is completed.

NOTE: After configuration is completed, the air conditioner hot spot connected to your phone will disAPPear. You should reconnect your phone to the home Wifi router to realize long-distance control.

The above configuration only needs one phone. Other types of phones shall install this APP, connect with the air conditioner hot spot or wireless router of Wifi air conditioner. When connection is done, open the APP to use short-distance operation to control the air conditioner and then you can use the long-distance control.

Functions introduction

1.User registration

Purpose: To realize long-distance control

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

Operation steps:

(1) Select the sever address

(2) Account login: Slide the page "Device", and enter the page "Menu" on the left. Tap "Login" to enter the page "Register username". New user must first register a username. Tap "Register".

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

(4) If password is forgotten, you can reset the password with your email address.

Tap "Forgot password" and enter the page "Forgot password". Tap "Get verification code" to get an email verification code. Enter a new password and tap "OK" to log in.

2.Personal settings

Purpose: Set name (device name, preset name, etc.) and images (device image) in order to identify a user easily.

(1) Set device name

After quick configuration, a list of controllable smart devices will be generated. Default name for air conditioner is the last 8 numbers of the air condtioner mac address.

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

Step 2: Tap "Name" to change device name. Save it and the new device name will be shown. Enable button "Lock device" to lock the device so that other smart phones can't search the device. Tap "Temp unit" to change the temperature unit.

Step 3: Tap "Firmware update" to upgrade the firmware of the device. Tap"1.8" and then the device will be updated automatically.

(2) Set preset name

Step 1: Tap ➕ at the top right corner of the homepage "Device". Select "Add preset" and enter the page "Preset edit".

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

(3) Set device image

Please refer to step 1 in 2(1)

3.Control functions

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

Step 1: General control

Enter the homepage "Home control" first. Take "babyroom"as an example.

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

Tap [+] or [−] to increase or decrease temperature. Tap [❄ Cool] to change working mode. Tap [⊙] to enter the page of fan speed adjustment.

Tap [△] and go around the circle to adjust fan speed.

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

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

Tap "Add scene" and edit the scene name, for example, "Back home". Add execution devices.

Tap to add commands. On the page "Select execution device", select the air conditioner named "babyroom". Then select "ON" or "OFF".

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

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

(3) Preset includes single-device preset and multi-device preset

Single-device preset: This can preset a certain device to be On/Off at a specific time.

On the homepage "Device", take air conditioner "babyroom" as an example. Tap at the bottom of the page "babyroom". Then you will enter the page "Preset edit".

Slide up and down to set the time. If you need to synchronize the time, tap " synchronize". If such "Hint" interface doesn't show up, please skip this operation step.

Tap "Name" to customize the preset name.

Preset device can't be selected and it will default to "babyroom". Select "On" for the timer type. Select repeating days to complete the preset.

Multi-device preset: This can preset multiple devices to execute a command at a specific time.

Please refer to the instructions as how to set preset time, name, timer type and repeating days for a single device.

Tap "Preset device" to select one or more devices. Then return to the page "Device".

(4) Link(This function is APPlicable to some models)

Select a master device. When the environment satisfies the parameters as set in the master device, slave devices will execute commands to realize devices linkage.

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

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

Enter the page "Select environment parameters".

Tap "Temperature" to enter the page "Select temperature parameter". Slide up or down to adjust temperature. Tap "Upper limit" or "Lower limit".

Tap "Mode" and "On/Off" to select the status of master device. Then tap "Save".

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

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

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

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

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

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

(5) Infrared control (only APPlicable to smart phones with infrared emitter).

Function: Smart phone can be used as a remote controller.

Tap [+] at the top right corner of the homepage "Device". Select "Infrared" and enter the page "Remote controller". Tap [∧] and slide up to enter the page of advanced functions.

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

Tap "Sleep" to enter the page "Sleep". You can select "Traditional sleep", "Expert sleep" or "DIY sleep". Tap "DIY sleep" and then tap the left and right arrows to set sleep time. Tap up and down arrows to adjust temperature at a specific sleep time.

4.Menu functions

Menu functions (Share, Set, History, Feedback)

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

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

Local export

Step 1: Export local data to another smart phone.

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

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

(2) Backup: To keep backup of the quick configuration information and unit's information, including backup to cloud and backup list on the cloud.
Backup to cloud
Enter the "Menu" on the left and tap "Backup".

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

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

(3) Settings

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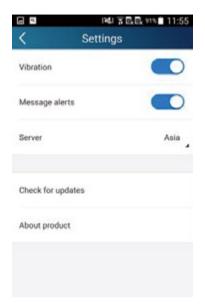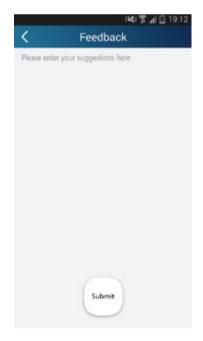
Otherwise, remote control will be invalid.

(4) Feedback

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

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

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

Operation Instructions

Download and install APP
Scan the following QR code with your smart phone and download Wifi Smart.

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

User of IOS system can search for the Wifi Smart in Apple store to download the Apple version APP. Android user can search "WiFi Smart" on Google Play to download it.

Configuration
NOTE: Select either the original configuration or AP configuration according to the APP functions.

1.Original configuration

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

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

Step 1: Air conditioner wifi is set in APP mode in factory.

You can search the air conditioner wifi hotspot through your smart phone.The name of wifi hotspot is the last 8 numbers of the air conditioner mac address. Password is 12345678.

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

2.Configuration method for Android phones

4 steps of configuration
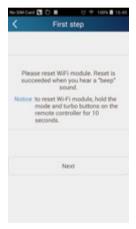
Step 1: Enter homepage "Device", and then tap [+] at the top right corner.

Select "Add device" and enter the page "Add device".

Tap "Manual configuration" and enter the page "Manual configuration".

Step 2: Tap "Next" in the First Step.

Step 3: Select the wireless network of air conditioner. APP will show the password 12345678 (default password of the network of air conditioner). Then tap "Next"; select the name of home WiFi router, then enter the correct password and select a server.

Step 4: If configuration is successful, a window will pop up and read "WIFI module starts to connect the configured wireless router".Then configuration is completed.
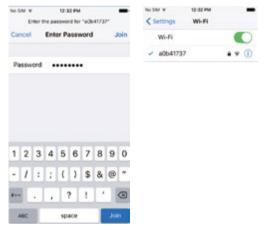
NOTE: After configuration is completed, the air conditioner hot spot connected to your phone will disappear. You should reconnect your phone to the home WiFi router to realize long-distance control.The above configuration only needs onephone. Other types of phones shall install this APP, connect with the air conditioner hot spot or wireless router of WiFi air conditioner. When connection is done, open the APP to use short-distance operation to control the air conditioner and then you can use the long-distance control.

3.Configuration method for Apple phones

Step 1: Turn on Wi-Fi "Settings" on the phone.

Step 2: In general, the hot spot signal of air conditioner is the last 8 bits of MAC address. Eg: Select "a0b41737" and enter the defaulted password "12345678" to connect it.
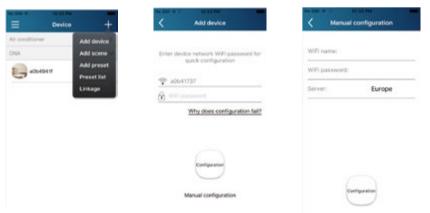
Step 3: Turn on APP, press "+" button, press "Add device" to enter into the page of "Add device" and then select "Manual configuration". Enter wireless router's SSID and PSW on the page of "Manual configuration". The display on the server will be the same as the selection when registering the account (server selection in "Setting").

Eg: WiFi name: Tenda_XXX;

WiFi password:123456789

Server: Europe

Check whether the filled information is correct. If the information is wrong, configuration will fail. Press "Configuration" to start configuration.

Notice:

● Finally, press "Configuration", and APP will send the filled information to Wifi Smart. At this time, the buzzer will give out a sound, which indicates it has started to connect the wireless router.

● If the name of router or the password is wrong, Wifi Smart can't connect to the wireless router. 2 mins later, please conduct the configuration operation again. Reset Wi-Fi adaptor by pointing you remote at the indoor unit and holding the mode and Turbo buttons on your remote control for 10 seconds and until you hear the beep.

● Wrong server selection will cause long-distance control invalid. Therefore, please make sure thatthe server selection when registering the account is the same as this one.

● If the password is blank, no password is defaulted for the wireless router, which is the OPEN mode.

● Configuration should be conducted at one time. As for other phones, they can automatically search for the device after connecting to the wireless router (such as Tenda_XXX) and turning on the APP.

Functions introduction
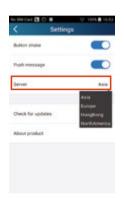
1.User registration

Purpose: To realize long-distance control.

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

Operation steps:

(1) Select the sever address.

(2) Account login: Slide the page "Device", and enter the menu page on the left.Tap "Login" to enter the page "Register username". New user must first register a username. Tap "Register".

(3) If password is forgotten, you can reset the password with your email address.

Tap "Forgot password" and enter the page "Forgot password". Enter your registered email account the first. Tap "Get verification code" to get an email verification code. Enter a new password and tap "OK" to log in.

2.Personal settings

Purpose: Set name (device name, preset name, etc.) and images (device image) in order to identify a user easily.

(1) Set device name

After quick configuration, a list of controllable smart devices will be generated. Default name for air conditioner is the last 8 numbers of the air condtioner mac address.
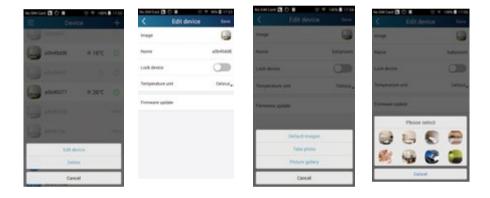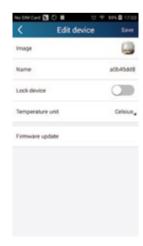
Step 1: Tap and hold the Wifi model name, such as "a0b417ac", to enter the page "Edit device". Tap "Image" to select the source of image. Select from "Default images " or " Take photo" or "Choose from photos" and save an image.

Step 2: Tap "Name" to change device name. Save it and the new device name will be shown. Enable button "Lock device"to lock the device so that other smart phones can't search the device. Tap "Temperature unit" to change the temperature unit.

Notice: If this device is not locked, other phones within the local area network can be found through wifi smart APP and operate the device.

Step 3: Tap "Firmware update" to upgrade the firmware of the device. Tap"1.7" and then the device will be updated automatically.

(2) Set preset name

Step 1: Tap ➕ at the top right corner of the homepage "Device". Select "Add preset" and enter the page "Preset edit".

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

(3) Set device image

Please refer to step 1 in 2(1)

3.Control functions

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

Step 1: General control

Enter the homepage "Device" first. Take "babyroom" as an example.
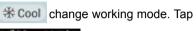
Tap "babyroom" and enter the page of air conditioner control. Tap [⏻] to turn on the control switch.

Tap [+] or [−] to increase or decrease temperature. Tap to [❄ Cool] change working mode. Tap [⦿] to enter the page of fan speed adjustment.

Tap [△] and go around the circle to adjust fan speed.

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

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

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

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

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

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

Slide up and down to set the time. If you need to synchronize the time, tap " synchronize". If such "Hint" interface doesn't show up, please skip this operation step.

Tap "Name" to customize the preset name.

Preset device can't be selected and it will default to "babyroom". Select "On" for the timer type. Select repeating days to complete the preset.

Multi-device preset: This can preset multiple devices to execute a command at a specific time.

Please refer to the instructions as how to set preset time, name, timer type and repeating days for a single device.

Tap "Preset device" to select one or more devices. Then return to the page "Device".

(4) Link(This function is applicable to some models)

Select a master device. When the environment satisfies the parameters as set in the master device, slave devices will execute commands to realize devices linkage.

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

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

Enter the page "Select environment parameters".

Tap "Temperature" to enter the page "Select temperature parameter". Slide up or down to adjust temperature. Tap "Upper limit" or "Lower limit".

Tap "Mode" and "On/Off" to select the status of master device. Then tap "Save".

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

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

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

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

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

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

4.Menu functions

Menu functions (Share, Set, History, Feedback)

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

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

Local export

Step 1: Export local data to another smart phone.

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

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

Notice:
This function requires that the two phones are of the same operating system. They are either Android phones or Apple phones,and are connecting to the same wireless router.
(2) Backup: To keep backup of the quick configuration information and unit's information, including backup to cloud and backup list on the cloud.
Backup to cloud
Enter the menu page on the left and tap "Backup".

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

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

(3) Settings

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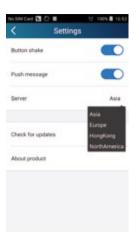
Otherwise, remote control will be invalid.

(4) Help

Please refer to "Help" of APP for the instruction of the latest functions.

6.4 Brief Description of Modes and Functions

● Indoor Unit

1.Basic function of system

(1)Cooling mode

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

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

(2)Drying mode

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

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

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

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

(3)Heating mode

(1) Under this mode, Temperature setting range is 16~30°C.

(2) Working condition and process for heating mode:

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

(4)Working method for AUTO mode:

1.Working condition and process for AUTO mode:

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

2.Protection function

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

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

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

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

(5)Fan mode

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

2. Other control

(1) Buzzer

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

(2) Auto button

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

(3) Auto fan

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

(4) Sleep

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

(5) Timer function:

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

(6) Memory function

memorize compensation temperature, off-peak energization value.

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

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

(7) Health function

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

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

(8)I feel control mode

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

(9)Entry condition for compulsory defrosting function

When turn on the unit under heating ode and set temperature is 16°C (or 16.5°C by remote controller), press "+, -, +, -, +, -" button successively within 5s and then indoor unit will enter into compulsory defrosting setting status:

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

(2) If theres indoor units controller and outdoor units controller, indoor unit will send compulsory defrosting mode signal to outdoor unit and then outdoor unit will operate under normal defrosting mode. After indoor unit received the signal that outdoor unit has entered into defrosting status, indoor unit will cancel to send compulsory mode to outdoor unit. If outdoor unit hasnt received feedback signal from outdoor unit after 3min, indoor unit will also cancel to send compulsory defrosting signal.

(10)Refrigerant recovery function:

Enter into Freon recovery mode actively: Within 5min after energization, turn on the unit at 16°C under cooling mode, and press light button for 3 times within 3s to enter into Freon recovery mode. Fo is displayed and Freon recovery mode will be sent to outdoor unit.

(11)Ambient temperature display control mode

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

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

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

(12)Off-peak energization function:

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

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

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

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

(15) 8°C heating function

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

(16)Turbo function

Turbo function can be set under cooling and heating modes. Press Fan Speed button to cancel turbo setting. Turbo function is not available under auto, drying and fan modes.

● Outdoor Unit

1. Cooling mode:

Working condition and process of cooling mode:

① When Tindoor ambient temperature≥Tpreset, unit enters into cooling mode. Indoor fan, outdoor fan and compressor start operation. Indoor fan operates according to set fan speed.

② When Tindoor ambient temperature≤Tpreset-2℃ , compressor stops operation and outdoor fan will stop 30s later. Indoor fan operates according to set fan speed.

③ When Tpreset-2℃< Tindoor ambient temperature < Tpreset, unit operates according to the previous status.

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

2. Drying mode

(1) Working condition and process of drying mode

① When Tindoor ambient temperature > Tpreset, unit will be in drying mode. Outdoor fan and compressor start operation while indoor fan will operate at low fan speed.

② When Tpreset-2℃ ≤Tindoor ambient temperature≤Tpreset, unit operates according to the previous status.

③ When Tindoor ambient temperature < Tpreset-2℃ , compressor stops operation and outdoor fan will stop 30s later.

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

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

3. Fan mode

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

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

4. Heating mode

Working condition and process of heating mode:

① When Tpreset-(Tindoor ambient temperature-Tcompensation)≥1℃ , unit enters into heating mode. Compressor, outdoor fan and 4-way valve start operation.

② When -2℃< Tpreset-(Tindoor ambient temperature-Tcompensation) < 1℃ , unit operates according to the previous status.

③ When Tpreset-(Tindoor ambient temperature-Tcompensation)≤-2℃ , compressor stops operation and outdoor fan will stop 30s later. Indoor fan will be in residual-heat blowing status.

④ When unit is turned off under heating mode or changed to other modes from heating mode, 4-way valve will be power-off 2min after compressor stops working (compressor is in operation status under heating mode).

⑤ When Toutdoor ambient temperature > 30℃ , compressor stops operation immediately. Outdoor fan will stop 30s later.

⑥ Under the condition that compressor is turned on, when unit is changed to heating mode from cooling or drying mode, 4-way valve will be energized in 2~3mins delay.

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

5. Freon recovery mode

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

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

6. Compulsory defrosting

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

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

7. Auto mode

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

8. 8°C heating

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

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

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

Part Ⅱ: Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions:
Important!

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

Please follow the instructions below.

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

⚠ **Warnings**

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

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

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

Safety Precautions for Installing and Relocating the Unit:

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

⚠ Warnings

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.

Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.

2.When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.

Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.

3.When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode.Then, fully close the valve at high pressure side (liquid valve).About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.

If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.

4.During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

5.When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

6.Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.

If there leaked gas around the unit, it may cause explosion and other accidents.

7.Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.

Poor connections may lead to electric shock or fire.

8.Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.

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

Safety Precautions for Refrigerant

●To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32,which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can leads to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.

●Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

●Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture. Should repair be necessary,contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example:open flames , an operating gas appliance or an operating electric heater.)

●Do not pierce or burn.

●Appliance shall be installed, operated and stored in a room with a floor area larger than 4m (or 6m).

●Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only.Be aware that refrigrants not contain odour.

●Read specialist's manual.

Safety Operation of Flammable Refrigerant

Qualification requirement for installation and maintenance man

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

●It can only be repaired by the method suggested by the equipment's manufacturer.

Installation notes

●The air conditioner is not allowed to use in a room that has running fire (such as fire source,working coal gas ware, operating heater).

●It is not allowed to drill hole or burn the connection pipe.

●The air conditioner must be installed in a room that is larger than the minimum room area.

The minimum room area is shown on the nameplate or following table a.

●Leak test is a must after installation.

table a - Minimum room area(m^2)

	Charge amount (kg)	≤1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3	2.4	2.5
Minimum room area(m^2)	floor location	/	14.5	16.8	19.3	22	24.8	27.8	31	34.3	37.8	41.5	45.4	49.4	53.6
	wall mounted	/	5.2	6.1	7	7.9	8.9	10	11.2	12.4	13.6	15	16.3	17.8	19.3
	window mounted	/	1.6	1.9	2.1	2.4	2.8	3.1	3.4	3.8	4.2	4.6	5	5.5	6
	ceiling mounted	/	1.1	1.3	1.4	1.6	1.8	2.1	2.3	2.6	2.8	3.1	3.4	3.7	4

Maintenance notes

●Check whether the maintenance area or the room area meet the requirement of the nameplate.

— It's only allowed to be operated in the rooms that meet the requirement of the nameplate.

●Check whether the maintenance area is well-ventilated.

— The continuous ventilation status should be kept during the operation process.

●Check whether there is fire source or potential fire source in the maintenance area.

— The naked flame is prohibited in the maintenance area; and the "no smoking" warning board should be hanged.

●Check whether the appliance mark is in good condition.

— Replace the vague or damaged warning mark.

Welding

●If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:

a. Shut down the unit and cut power supply

b. Eliminate the refrigerant

c. Vacuuming

d. Clean it with N2 gas

e. Cutting or welding

f. Carry back to the service spot for welding

●Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.

●The refrigerant should be recycled into the specialized storage tank.

Filling the refrigerant

●Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.

●The refrigerant tank should be kept upright at the time of filling refrigerant.

●Stick the label on the system after filling is finished (or haven't finished).

●Don't overfilling.

●After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

Safety instructions for transportation and storage
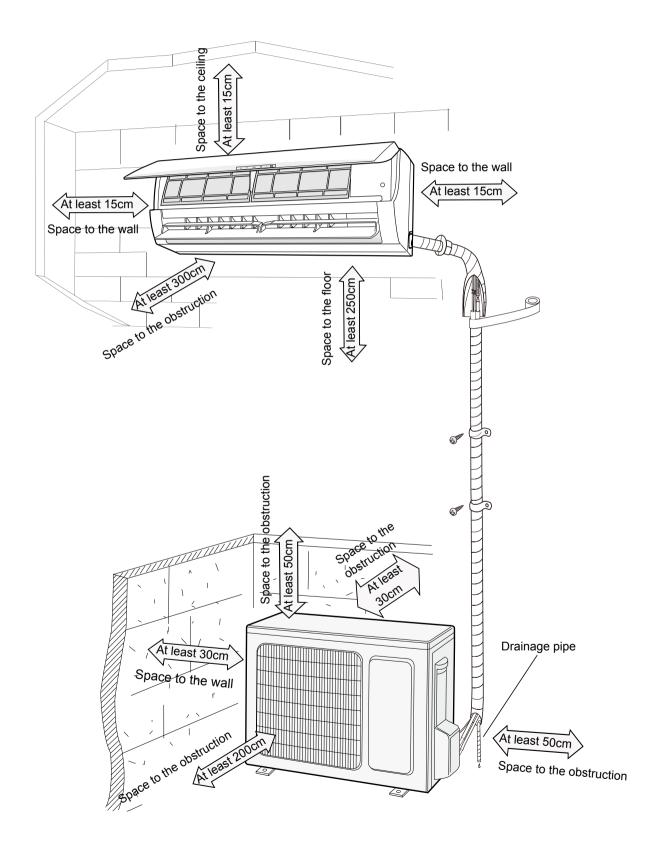
●Please use the flammable gas detector to check before unload and open the container.

●No fire source and smoking.

●According to the local rules and laws.

Installation and Maintenance
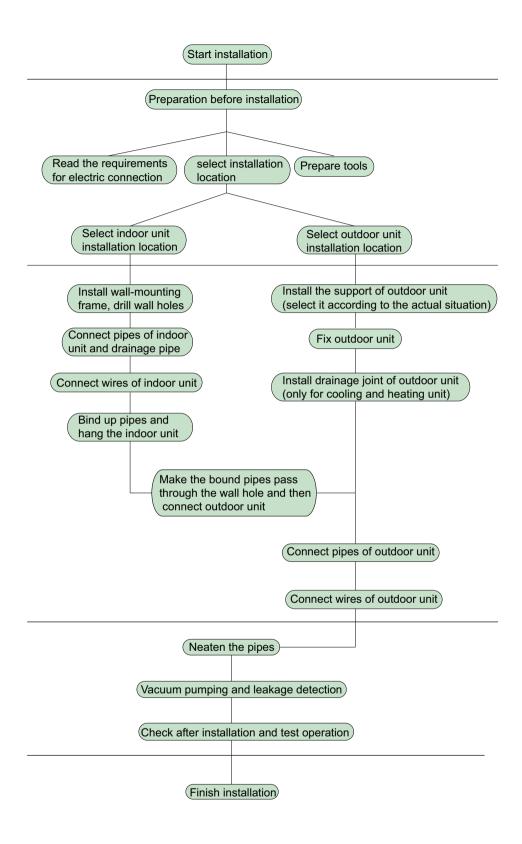
Main Tools for Installation and Maintenance

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

8. Installation

8.1 Installation Dimension Diagram

Space to the ceiling
At least 15cm

Space to the wall
At least 15cm

At least 15cm
Space to the wall

At least 300cm
Space to the obstruction

Space to the floor
At least 250cm

Space to the obstruction
At least 50cm

Space to the obstruction
At least 30cm

At least 30cm
Space to the wall

Drainage pipe

Space to the obstruction
At least 200cm

At least 50cm
Space to the obstruction

```
                              ( Start installation )
 ─────────────────────────────────────┼───────────────────────────────────────
                           ( Preparation before installation )
                                       │
                  ┌────────────────────┼────────────────────┐
        ( Read the requirements   ( select installation   ( Prepare tools )
          for electric connection )  location )
                                       │
                     ┌─────────────────┴─────────────────┐
             ( Select indoor unit              ( Select outdoor unit
               installation location )           installation location )
 ───────────────────────┼───────────────────────────────────┼──────────────────
             ( Install wall-mounting         ( Install the support of outdoor unit
               frame, drill wall holes )       (select it according to the actual situation) )
             ( Connect pipes of indoor              ( Fix outdoor unit )
               unit and drainage pipe )
             ( Connect wires of indoor unit )  ( Install drainage joint of outdoor unit
                                                 (only for cooling and heating unit) )
             ( Bind up pipes and
               hang the indoor unit )
                       │
                   ( Make the bound pipes pass
                     through the wall hole and then
                     connect outdoor unit )
                                              ( Connect pipes of outdoor unit )

                                              ( Connect wires of outdoor unit )
 ──────────────────────────────────────────────────────┼──────────────────────
                   ( Neaten the pipes )

              ( Vacuum pumping and leakage detection )

              ( Check after installation and test operation )
 ──────────────────────────────────────────────────────────────────────────────
                   ( Finish installation )
```

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

8.2 Installation Parts-checking

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

⚠ **Note:**

1.Please contact the local agent for installation.

2.Don't use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

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

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

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

(3) The place near coast area.

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

(5) The place with sulfureted gas.

(6) Other places with special circumstances.

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

2. Indoor Unit:

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

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

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

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

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

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

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

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

3. Outdoor Unit:

(1) Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.

(2) The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind.

(3) The location should be able to withstand the weight of outdoor unit.

(4) Make sure that the installation follows the requirement of installation dimension diagram.

(5) Select a location which is out of reach for children and far away from animals or plants.If it is unavoidable, please add fence for safety purpose.

8.4 Electric Connection Requirement

1. Safety Precaution

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

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

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

Air-conditioner	Air switch capacity
09K	10A
12K	10A

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

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

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

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

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

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

(10) Appliance shall be installed, operated and stored in a room with a floor area larger than 4m.

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

2. Grounding Requirement:

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

(2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.

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

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

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

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

8.5 Installation of Indoor Unit

1. Choosing Installation location

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

2. Install Wall-mounting Frame

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

● ● ● ● ● ● ● Installation and Maintenance
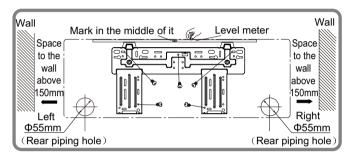
screw fixing holes on the wall.

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

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

3. Install Wall-mounting Frame

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

09K:

12K:
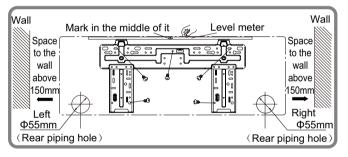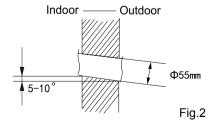
Fig.1

(2) Open a piping hole with the diameter of Φ55mm on the selected outlet pipe position.In order to drain smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of 5-10°.(As show in Fig.2)

Fig.2
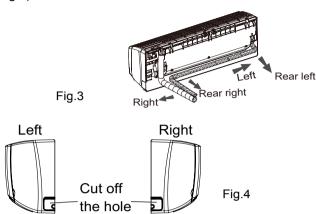
⚠ **Note:**

(1) Pay attention to dust prevention and take relevant safety measures when opening the hole.

(2) The plastic expansion particles are not provided and should be bought locally.
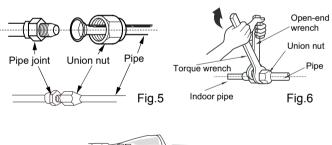
4. Outlet pipe
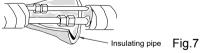
(1) The pipe can be led out in the direction of right, rear right, left or rear left.(As show in Fig.3)

(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.(As show in Fig.4)

Fig.3

Fig.4

5. Connect the Pipe of Indoor Unit

(1) Aim the pipe joint at the corresponding bellmouth.(As show in Fig.5)

(2) Pretightening the union nut with hand.

(3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench.(As show in Fig.6)

(4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape.(As show in Fig.7)
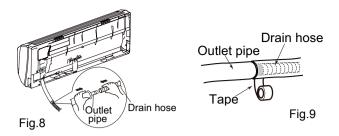
Fig.5

Fig.6

Fig.7

Refer to the following table for wrench moment of force：

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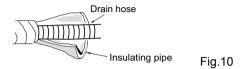
6. Install Drain Hose

(1) Connect the drain hose to the outlet pipe of indoor unit.(As show in Fig.8)

(2) Bind the joint with tape.(As show in Fig.9)

Fig.8

Fig.9
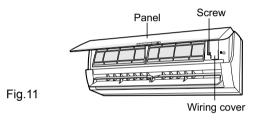
⚠ **Note:**

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

(2) The plastic expansion particles are not provided.

(As show in Fig.10)

Fig.10

7. Connect Wire of Indoor Unit

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

Fig.11

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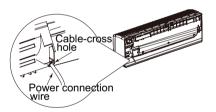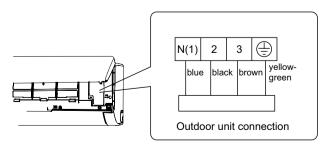
Fig.12

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

N(1)	2	3	⏚
blue	black	brown	yellow-green

Outdoor unit connection

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

Fig.13
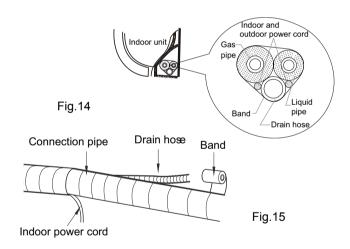
(4) Put wiring cover back and then tighten the screw.

(5) Close the panel.

⚠ **Note:**

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

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

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

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

8. Bind up Pipe

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

(2) Reserve a certain length of drain hose and power cord for installation when binding them. When binding to a certain degree, separate the indoor power and then separate the drain hose.(As show in Fig.15)

(3) Bind them evenly.

(4) The liquid pipe and gas pipe should be bound separately at the end.

Fig.14

Fig.15
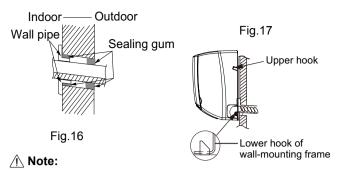
⚠ **Note:**

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

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

9. Hang the Indoor Unit

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

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

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

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

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

Fig.16

Fig.17

⚠ **Note:**

Do not bend the drain hose too excessively in order to prevent blocking.
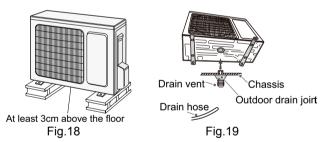
8.6 Installation of Outdoor Unit

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

(1) Select installation location according to the house structure.

(2) Fix the support of outdoor unit on the selected location with expansion screws.

⚠ **Note:**

(1) Take sufficient protective measures when installing the outdoor unit.

(2) Make sure the support can withstand at least four times the unit weight.

(3) The outdoor unit should be installed at least 3cm above the floor in order to install drain joint.(As show in Fig.18)

(4) For the unit with cooling capacity of 2300W~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W~16000W, 10 expansion screws are needed.

At least 3cm above the floor

Fig.18

Fig.19
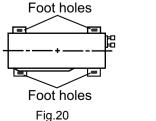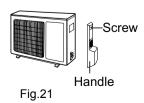
2. Install Drain Joint(Only for cooling and heating unit)

(1) Connect the outdoor drain joint into the hole on the chassis.

(2) Connect the drain hose into the drain vent.

(As show in Fig.19)

3. Fix Outdoor Unit
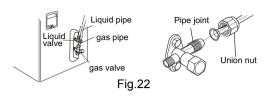
(1) Place the outdoor unit on the support.

(2) Fix the foot holes of outdoor unit with bolts.

(As show in Fig.20)

Foot holes

Foot holes

Fig.20

Screw

Handle

Fig.21

4. Connect Indoor and Outdoor Pipes

(1) Remove the screw on the right handle of outdoor unit and then remove the handle.(As show in Fig.21)

(2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.(As show in Fig.22)

Fig.22
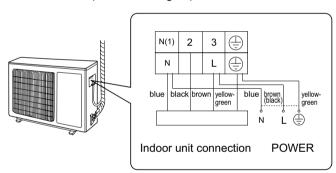
(3) Pretightening the union nut with hand.

(4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force：

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

5. Connect Outdoor Electric Wire

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

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

Fig.23
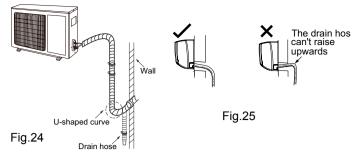
(2) Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

⚠ **Note:**

(1) After tightening the screw, pull the power cord slightly to check if it is firm.

(2) Never cut the power connection wire to prolong or shorten the distance.
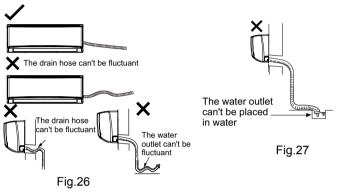
6. Neaten the Pipes

(1) The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.

(2) If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room.(As show in Fig.24)

Fig.24

Fig.25

The drain hos can't raise upwards

Wall

U-shaped curve

Drain hose

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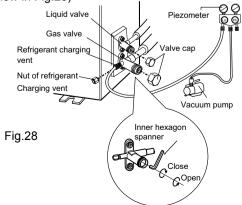
(1) The through-wall height of drain hose shouldnt be higher than the outlet pipe hole of indoor unit.(As show in Fig.25)

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

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

The drain hose can't be fluctuant

The drain hose can't be fluctuant

The water outlet can't be placed in water

The water outlet can't be fluctuant

Fig.26

Fig.27

8.7 Vacuum Pumping and Leak Detection

1. Use Vacuum Pump

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

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

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

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

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

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

Liquid valve

Gas valve

Refrigerant charging vent

Nut of refrigerant Charging vent

Piezometer

Valve cap

Vacuum pump

Fig.28

Inner hexagon spanner

Close

Open

2. Leakage Detection

(1) With leakage detector:

Check if there is leakage with leakage detector.

(2) With soap water:

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

8.8 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

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

2. Test Operation

(1) Preparation of test operation

● The client approves the air conditioner installation.

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

(2) Method of test operation

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

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

● If the ambient temperature is lower than 16℃ , the air conditioner cant start cooling.

9. Maintenance

9.1 Error Code List

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

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)		Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator	Green Indicator		
11	Gathering refrigerant	F0							When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant	Nominal cooling mode
12	Indoor ambient temperature sensor is open/short circuited	F1							During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation.	1. Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal. 2. Components in mainboard fell down leads short circuit. 3. Indoor ambient temp. sensor damaged.(check with sensor resistance value chart) 4. Mainboard damaged.
13	Indoor evaporator temperature sensor is open/short circuited	F2							AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation	1. Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal. 2. Components on the mainboard fall down leads short circuit. 3. Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing) 4. Mainboard damaged.
14	Outdoor ambient temperature sensor is open/short circuited	F3					OFF 3S and blink 6 times		During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
15	Outdoor condenser temperature sensor is open/short circuited	F4					OFF 3S and blink 5 times		During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation.	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
16	Outdoor discharge temperature sensor is open/short circuited	F5					OFF 3S and blink 7 times		During cooling and drying operation, compressor will sop after operating for about 3 mins, while indoor fan will operate; During heating operation, the complete unit will stop after operating for about 3 mins.	1.Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) 2.The head of temperature sensor hasnt been inserted into the copper tube
17	Limit/ decrease frequency due to overload	F6					OFF 3S and blink 3 times		All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)
18	Decrease frequency due to overcurrent	F8					OFF 3S and blink once		All loads operate normally, while operation frequency for compressor is decreased	The input supply voltage is too low; System pressure is too high and overload
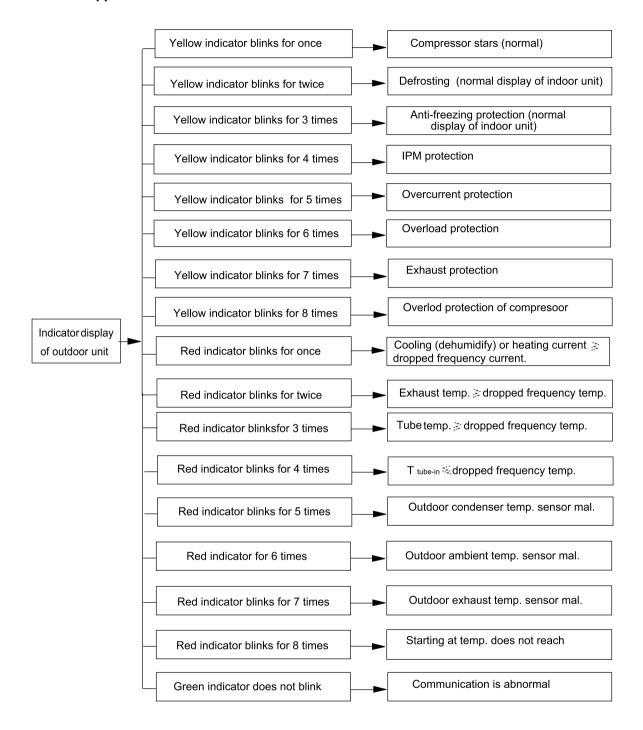
● ● ● ● ● ● Installation and Maintenance

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

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)		Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator	Green Indicator		
26	Compressor intermediate frequence in test state	P3								Showing during middle cooling or middle heating test
27	Overcurrent protection of phase current for compressor	P5							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
28	Charging malfunction of capacitor	PU							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Refer to the part three—charging malfunction analysis of capacitor
29	Malfunction of module temperature sensor circuit	P7							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
30	Module high temperature protection	P8							During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
31	Overload protection for compressor	H3				OFF 3S and blink 8 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm. 2.Refer to the malfunction analysis (discharge protection, overload)
32	IPM protection	H5				OFF 3S and blink 4 times			During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
33	Malfunction of zero-cross detection circuit	U8							The complete unit stops	1.Power supply is abnormal; 2.Detection circuit of indoor control mainboard is abnormal.

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

NO.	Malfunction Name	Display Method of Indoor Unit			Display Method of Outdoor Unit			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)		Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator	Green Indicator		
43	Malfunction of phase current detection circuit for compressor	U1							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
44	Malfunction of voltage dropping for DC bus-bar	U3							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Supply voltage is unstable
45	Malfunction of complete units current detection	U5							During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation.	Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1.
46	The four-way valve is abnormal	U7							If this malfunction occurs during heating operation, the complete unit will stop operation.	1.Supply voltage is lower than AC175V; 2.Wiring terminal 4V is loosened or broken; 3.4V is damaged, please replace 4V.
47	Frequency limiting (power)						OFF 3S and blink 13 times			
48	Compressor is open-circuited					OFF 3S and blink once				
49	The temperature for turning on the unit is reached						OFF 3S and blink 8 times			
50	Frequency limiting (module temperature)						OFF 3S and blink 11 times			

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

Yellow indicator blinks for once	→ Compressor stars (normal)
Yellow indicator blinks for twice	→ Defrosting (normal display of indoor unit)
Yellow indicator blinks for 3 times	→ Anti-freezing protection (normal display of indoor unit)
Yellow indicator blinks for 4 times	→ IPM protection
Yellow indicator blinks for 5 times	→ Overcurrent protection
Yellow indicator blinks for 6 times	→ Overload protection
Yellow indicator blinks for 7 times	→ Exhaust protection
Yellow indicator blinks for 8 times	→ Overlod protection of compresoor
Red indicator blinks for once	→ Cooling (dehumidify) or heating current ⋰ dropped frequency current.
Red indicator blinks for twice	→ Exhaust temp. ⋰ dropped frequency temp.
Red indicator blinksfor 3 times	→ Tube temp. ⋰ dropped frequency temp.
Red indicator blinks for 4 times	→ T $_{tube-in}$ ⋰ dropped frequency temp.
Red indicator blinks for 5 times	→ Outdoor condenser temp. sensor mal.
Red indicator for 6 times	→ Outdoor ambient temp. sensor mal.
Red indicator blinks for 7 times	→ Outdoor exhaust temp. sensor mal.
Red indicator blinks for 8 times	→ Starting at temp. does not reach
Green indicator does not blink	→ Communication is abnormal

Indicator display of outdoor unit →

Analysis or processing of some of the malfunction display:

1. Compressor discharge protection

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

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

2. Low voltage overcurrent protection

Possible cause: Sudden drop of supply voltage.

3. Communication malfunction

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

4. Sensor open or short circuit

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

5. Compressor over load protection

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

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

6. System malfunction

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

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

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

7. IPM module protection

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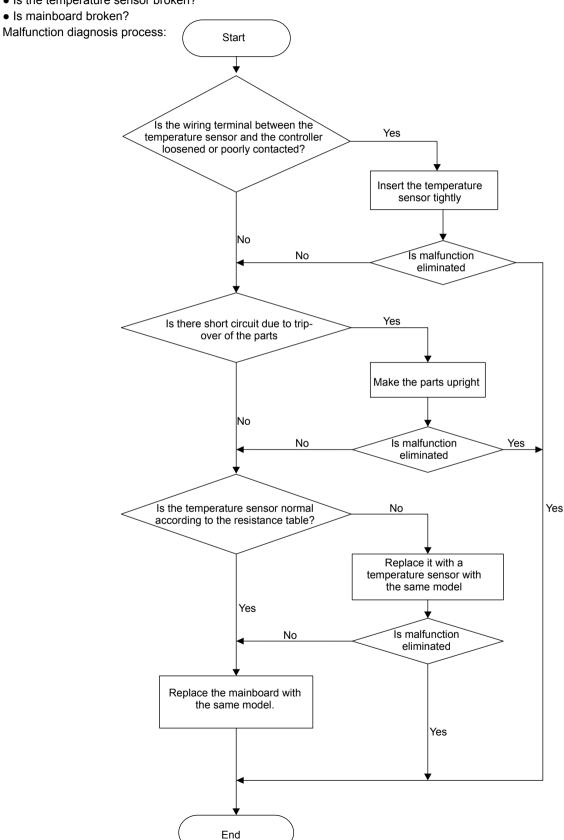
9.2 Procedure of Troubleshooting

Indoor unit

(1) Malfunction of Temperature Sensor F1, F2

Main detection points:

● Is the wiring terminal between the temperature sensor and the controller loosened or poorly contacted?

● Is there short circuit due to trip-over of the parts?

● Is the temperature sensor broken?

● Is mainboard broken?

Malfunction diagnosis process:

```
                              ┌─────────────┐
                              │    Start    │
                              └─────────────┘
                                     │
                                     ▼
        ╱ Is the wiring terminal between the ╲        Yes
       ╱  temperature sensor and the controller ╲──────────────┐
       ╲  loosened or poorly contacted?         ╱               │
        ╲                                      ╱                ▼
                      │                         ┌──────────────────────┐
                      │ No                      │ Insert the temperature│
                      │                         │    sensor tightly      │
                      │                         └──────────────────────┘
                      │                                     │
                      │              No          ╱ Is malfunction ╲
                      │◄────────────────────────╲  eliminated     ╱──────┐
                      ▼                                                   │
        ╱ Is there short circuit due to trip- ╲      Yes                 │
       ╱  over of the parts                    ╲─────────────┐           │
        ╲                                      ╱             ▼           │
                      │                         ┌──────────────────────┐ │
                      │ No                      │  Make the parts upright│ │
                      │                         └──────────────────────┘ │
                      │              No          ╱ Is malfunction ╲  Yes  │
                      │◄────────────────────────╲  eliminated     ╱──────►│
                      ▼                                                   │
        ╱ Is the temperature sensor normal ╲      No                     │ Yes
       ╱  according to the resistance table? ╲────────────┐              │
        ╲                                    ╱            ▼              │
                      │                        ┌──────────────────────┐  │
                      │ Yes                    │   Replace it with a    │  │
                      │                        │ temperature sensor with│  │
                      │                        │    the same model      │  │
                      │                        └──────────────────────┘  │
                      │                                    │              │
                      │             No         ╱ Is malfunction ╲         │
                      │◄──────────────────────╲  eliminated     ╱         │
                      ▼                                   │ Yes           │
        ┌──────────────────────┐                         │               │
        │ Replace the mainboard │                        │               │
        │   with the same model.│                        │               │
        └──────────────────────┘                         │               │
                      │◄──────────────────────────────────┘               │
                      ▼                                                    
                ┌─────────────┐
                │     End     │
                └─────────────┘
```

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

Main detection points:

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

Malfunction diagnosis process:

Start

While power is off stir the blade with a tool to see whether the blade rotates smoothly — No → Tighten the screw; reassemble the blade, motor and shaft bearing rubber base sub-assy to make sure there is no foreign object between them

Is malfunction eliminated — No / Yes

Yes

Check if the connection of PG motor feedback terminal is firm — No → Insert the control terminal of PG motor tightly

Is malfunction eliminated — No / Yes

Yes

Check if the connection of PG motor control terminal is firm — No → Reinstall the blade and motor correctly

Is malfunction eliminated — No / Yes

Yes

Turn on the unit again; measure whether the output voltage on control terminal for PG motor is more than 50V within 1 min after the louvers are opened — Yes → Is the motor started up

Measure the voltage of this foot to neutral wire on the mainboard

PG

Yes

Is the motor started up — No → Replace PG motor

Is malfunction eliminated — No / Yes

No

Replace the mainboard with the same model

Yes

End

Installation and Maintenance

(3) Malfunction of Protection of Jumper Cap C5

Main detection points:
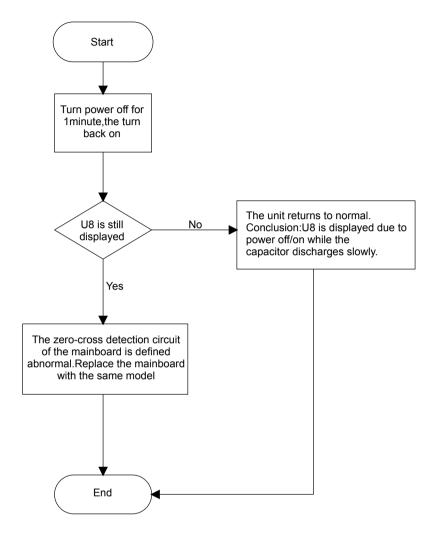
● Is there jumper cap on the mainboard?

● Is the jumper cap inserted correctly and tightly?

● The jumper is broken?

● The motor is broken?

● Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

```
                    ┌──────────┐
                    │   Start   │
                    └────┬─────┘
                         │
                         ▼
              ◇ Is there jumper cap on the mainboard? ◇ ──No──┐       ┌─────────────────────────────┐
                         │                                     │       │ [img]  Appearance of the    │
                        Yes                                    │       │         jumper cap          │
                         │                                     ▼       └─────────────────────────────┘
                         │                          ┌─────────────────────┐
                         │                          │ Assemble the jumper  │
                         │                          │ cap with the same    │
                         │                          │ model                │
                         │                          └──────────┬──────────┘
                         │                                     ▼
                         │◄───────No──────── ◇ Is malfunction eliminated ◇
                         │                                     │
                         ▼                                    Yes
              ◇ Is the jumper cap inserted correctly ◇ ──No──┐ │
                │          and tightly?                       │ │
               Yes                                            ▼ │
                │                               ┌─────────────────┐
                │                               │ Insert the jumper│
                │                               │ cap tightly      │
                │                               └────────┬────────┘
                │                                        ▼
                │◄──────No────── ◇ Is malfunction eliminated ◇ ──Yes──┐
                ▼                                                       │
     ┌─────────────────────┐                                           │
     │ Replace the jumper  │                                           │
     │ cap with the same   │                                           │
     │ model               │                                           │
     └──────────┬──────────┘                                           │
                ▼                                                       │
        ◇ Is malfunction eliminated ◇ ──────────Yes──────────┐         │
                │                                              │         │
               No                                             │        Yes
                ▼                                              │         │
     ┌─────────────────────┐                                  │         │
     │ Replace the         │                                  │         │
     │ mainboard with the  │                                  │         │
     │ same model          │                                  │         │
     └──────────┬──────────┘                                  │         │
                ▼                                              ▼         ▼
           ┌──────────┐◄─────────────────────────────────────────────────
           │   End    │
           └──────────┘
```
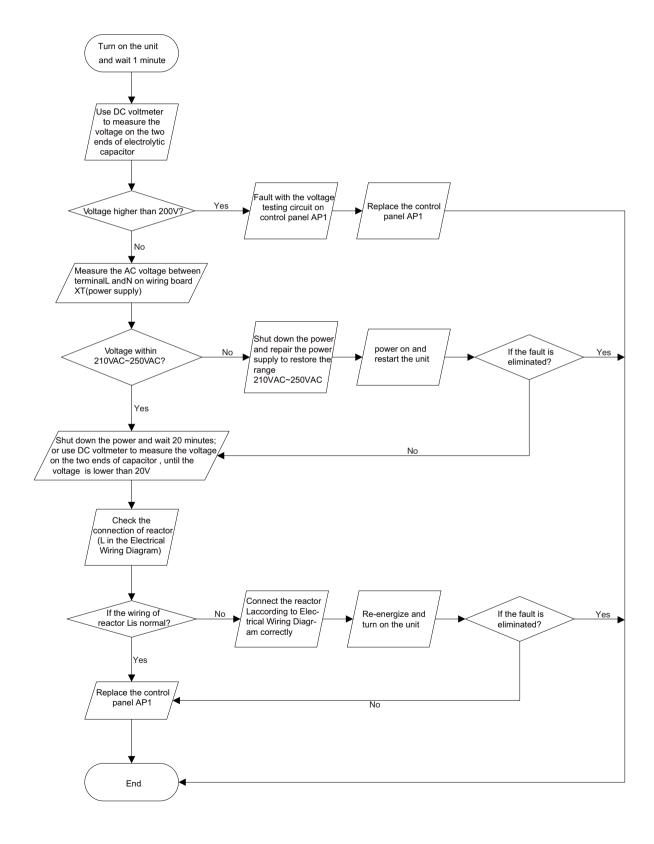
(4) Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

Main detection points:

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

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

Malfunction diagnosis process:

```
                    ┌──────────────┐
                    │    Start     │
                    └──────┬───────┘
                           │
                           ▼
                 ┌───────────────────┐
                 │ Turn power off for │
                 │ 1minute,the turn   │
                 │     back on        │
                 └─────────┬─────────┘
                           │
                           ▼
                      ╱─────────╲          No     ┌────────────────────────────────┐
                     ╱ U8 is still ╲──────────────▶│ The unit returns to normal.    │
                     ╲ displayed   ╱                │ Conclusion:U8 is displayed due │
                      ╲─────────╱                   │ to power off/on while the      │
                           │                        │ capacitor discharges slowly.   │
                           │ Yes                    └───────────────┬────────────────┘
                           ▼                                        │
                 ┌───────────────────────┐                         │
                 │ The zero-cross detection│                        │
                 │ circuit of the mainboard│                       │
                 │ is defined abnormal.    │                       │
                 │ Replace the mainboard   │                       │
                 │ with the same model     │                       │
                 └──────────┬─────────────┘                        │
                            │                                      │
                            ▼                                      │
                    ┌──────────────┐                               │
                    │     End      │◀──────────────────────────────┘
                    └──────────────┘
```

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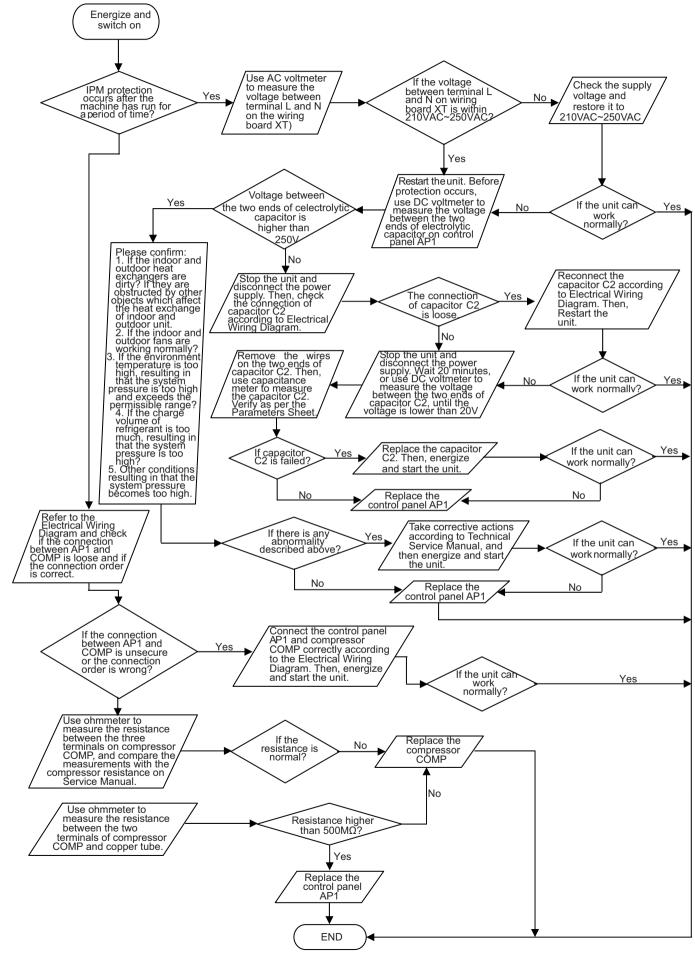
(1) Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)

Main Check Points:

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

●Is the reactor (L) correctly connected? Is the connection loose or fallen? Is the reactor (L) damaged?

Fault diagnosis process:

```
                    ┌──────────────────┐
                    │  Turn on the unit │
                    │  and wait 1 minute│
                    └────────┬─────────┘
                             │
                    ┌────────▼─────────┐
                    │ Use DC voltmeter │
                    │ to measure the   │
                    │ voltage on the   │
                    │ two ends of      │
                    │ electrolytic     │
                    │ capacitor        │
                    └────────┬─────────┘
                             │
                 ┌───────────▼──────────┐     Yes    ┌──────────────────┐      ┌──────────────────┐
                 │ Voltage higher than  │───────────▶│ Fault with the   │─────▶│ Replace the      │
                 │ 200V?                │            │ voltage testing  │      │ control panel AP1│
                 └───────────┬──────────┘            │ circuit on       │      └──────────────────┘
                             │ No                    │ control panel AP1│
                             │                       └──────────────────┘
                 ┌───────────▼──────────┐
                 │ Measure the AC       │
                 │ voltage between      │
                 │ terminalL andN on    │
                 │ wiring board         │
                 │ XT(power supply)     │
                 └───────────┬──────────┘
                             │
                 ┌───────────▼──────────┐     No    ┌──────────────────┐      ┌──────────────┐      ┌──────────────┐  Yes
                 │ Voltage within       │──────────▶│ Shut down the    │─────▶│ power on and │─────▶│ If the fault │─────▶
                 │ 210VAC~250VAC?       │           │ power and repair │      │ restart the  │      │ is eliminated?│
                 └───────────┬──────────┘           │ the power supply │      │ unit         │      └──────┬───────┘
                             │ Yes                  │ to restore the   │      └──────────────┘             │ No
                             │                      │ range            │                                   │
                 ┌───────────▼─────────────────────┐│ 210VAC~250VAC    │◀──────────────────────────────────┘
                 │ Shut down the power and wait 20  │└──────────────────┘
                 │ minutes; or use DC voltmeter to  │
                 │ measure the voltage on the two   │
                 │ ends of capacitor, until the     │
                 │ voltage is lower than 20V        │
                 └───────────┬──────────────────────┘
                             │
                 ┌───────────▼──────────┐
                 │ Check the connection │
                 │ of reactor (L in the │
                 │ Electrical Wiring    │
                 │ Diagram)             │
                 └───────────┬──────────┘
                             │
                 ┌───────────▼──────────┐     No    ┌──────────────────┐      ┌──────────────┐      ┌──────────────┐  Yes
                 │ If the wiring of     │──────────▶│ Connect the      │─────▶│ Re-energize  │─────▶│ If the fault │─────▶
                 │ reactor Lis normal?  │           │ reactor Laccording│     │ and turn on  │      │ is eliminated?│
                 └───────────┬──────────┘           │ to Electrical    │      │ the unit     │      └──────┬───────┘
                             │ Yes                  │ Wiring Diagram   │      └──────────────┘             │ No
                             │                      │ correctly        │                                   │
                 ┌───────────▼──────────┐           └──────────────────┘                                   │
                 │ Replace the control  │◀──────────────────────────────────────────────────────────────────┘
                 │ panel AP1            │
                 └───────────┬──────────┘
                             │
                      ┌──────▼──────┐
                      │     End     │
                      └─────────────┘
```

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

Main check points:

●Is the connection between control panel AP1 and compressor COMP secure? Loose? Is the connection in correct order?

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

●Is the compressor coil resistance normal? Is the insulation of compressor coil against the copper tube in good condition?

●Is the working load of the machine too high? Is the radiation good?

●Is the charge volume of refrigerant correct?

Fault diagnosis process:

Energize and switch on

IPM protection occurs after the machine has run for a period of time?

Yes → Use AC voltmeter to measure the voltage between terminal L and N on the wiring board XT)

→ If the voltage between terminal L and N on wiring board XT is within 210VAC~250VAC?

No → Check the supply voltage and restore it to 210VAC~250VAC

Yes ↓

Restart the unit. Before protection occurs, use DC voltmeter to measure the voltage between the two ends of electrolytic capacitor on control panel AP1

No ← If the unit can work normally? Yes →

Voltage between the two ends of celectrolytic capacitor is higher than 250V

Yes →

Please confirm:
1. If the indoor and outdoor heat exchangers are dirty? If they are obstructed by other objects which affect the heat exchange of indoor and outdoor unit.
2. If the indoor and outdoor fans are working normally?
3. If the environment temperature is too high, resulting in that the system pressure is too high and exceeds the permissible range?
4. If the charge volume of refrigerant is too much, resulting in that the system pressure is too high?
5. Other conditions resulting in that the system pressure becomes too high.

No ↓

Stop the unit and disconnect the power supply. Then, check the connection of capacitor C2 according to Electrical Wiring Diagram.

→ The connection of capacitor C2 is loose.

Yes → Reconnect the capacitor C2 according to Electrical Wiring Diagram. Then, Restart the unit.

No ↓

Stop the unit and disconnect the power supply. Wait 20 minutes, or use DC voltmeter to measure the voltage between the two ends of capacitor C2, until the voltage is lower than 20V

No ← If the unit can work normally? Yes →

Remove the wires on the two ends of capacitor C2. Then, use capacitance meter to measure the capacitor C2. Verify as per the Parameters Sheet.

↓

If capacitor C2 is failed?

Yes → Replace the capacitor C2. Then, energize and start the unit.

→ If the unit can work normally? Yes →

No → Replace the control panel AP1 ← No

Refer to the Electrical Wiring Diagram and check if the connection between AP1 and COMP is loose and if the connection order is correct.

If there is any abnormality described above?

Yes → Take corrective actions according to Technical Service Manual, and then energize and start the unit.

→ If the unit can work normally? Yes →

No → Replace the control panel AP1 ← No

↓

If the connection between AP1 and COMP is unsecure or the connection order is wrong?

Yes → Connect the control panel AP1 and compressor COMP correctly according to the Electrical Wiring Diagram. Then, energize and start the unit.

→ If the unit can work normally? Yes →

↓

Use ohmmeter to measure the resistance between the three terminals on compressor COMP, and compare the measurements with the compressor resistance on Service Manual.

→ If the resistance is normal?

No → Replace the compressor COMP

Use ohmmeter to measure the resistance between the two terminals of compressor COMP and copper tube.

→ Resistance higher than 500MΩ?

No ↑ Replace the compressor COMP

Yes ↓

Replace the control panel AP1

↓

END

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

Mainly detect:

●Is outdoor ambient temperature in normal range?

●Are the outdoor and indoor fans operating normally?

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

Fault diagnosis process:

```
            ┌──────────────────────┐
            │ Overheat and high    │
            │ temperature protection│
            └──────────┬───────────┘
                       │
                       ▼
         ◇ Is outdoor ambient temperature higher than 53? ◇ ──Yes──> ┌──────────────────────────────┐
                       │                                              │ Normal protection, please operate │
                       No                                             │ it after the outdoor ambient temp- │
                       │                                              │ erature is normalized.            │
                       ▼                                              └──────────────────────────────┘
            ┌──────────────────────┐
            │ 20 minutes after the complete │
            │ unit is powered off.  │
            └──────────┬───────────┘
                       │
                       ▼
         ◇ Is heat dissipation of the indoor unit and outdoor unit abnormal? ◇ ──Yes──> ┌──────────────────────┐
                       │                                                                 │ Improve the heat     │
                       No                                                                │ dissipation environ- │
                       │                                                                 │ ment of the unit     │
                       ▼                                                                 └──────────────────────┘
         ◇ Does the outdoor fan work normally? ◇ ──No──> ┌──────────────────────────────────┐
                       │                                  │ 1. Check if the fan terminal OFAN │
                       Yes                                │ is connected correctly           │
                       │                                  │ 2. Resistance between any two     │
                       │                                  │ terminals is measure by an ohm    │
                       │                                  │ gauge and should be less than 1K  │
                       │                                  │ Ohm.                             │
                       │                                  └────────────┬─────────────────────┘
                       │                                               ▼
            ┌──────────────────────┐              ┌──────────────────────┐
            │ Replace the          │              │ Replace the fan      │
            │ control panel AP1    │              │ capacitor C1         │
            └──────────┬───────────┘              └──────────┬───────────┘
                       │                                     ▼
                       │                          ┌──────────────────────┐
                       │                          │ Replace the          │
                       │                          │ outdoor fan          │
                       │                          └──────────┬───────────┘
                       ▼                                     │
                  (  End  ) <──────────────────────────────┘
```

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

Mainly detect:

●Whether the compressor wiring is connected correct?

●Is compressor broken?

●Is time for compressor stopping enough?

Fault diagnosis process:

```
                    ┌─────────────────────┐
                    │   Power on the unit  │
                    └─────────────────────┘
                              │
                              ▼
                    ╱─────────────────────╲           ┌─────────────────────┐
                   ╱ Is stop time of the    ╲   No    │ Restart it up after  │
                   ╲ compressor longer than ╱────────▶│ 3 minutes            │
                    ╲ 3 minutes?           ╱          └─────────────────────┘
                     ╲───────────────────╱
                              │ Yes
                              ▼
                    ╱─────────────────────╲
             No    ╱    Does startup fail?  ╲
            ◀──────╲                        ╱
            │       ╲─────────────────────╱
            │                │ Yes
            │                ▼
            │      ╱───────────────────────────╲        ┌──────────────────────┐
            │     ╱ Are the wires for the        ╲  No  │ Connect the wires as  │
            │     ╲ compressor connected correctly?╱───▶│ per the connection    │
            │      ╲ Is connection sequence right? ╱     │ diagram               │
            │       ╲───────────────────────────╱       └──────────────────────┘
            │                │ Yes
            │                ▼
            │      ┌──────────────────────────┐
            │      │ Replace the control panel │
            │      │ AP1                       │
            │      └──────────────────────────┘
            │                │
            │                ▼
            │      ╱───────────────────────╲
            │     ╱ If the fault is eliminated?╲   Yes
            │     ╲                           ╱─────────┐
            │      ╲─────────────────────────╱          │
            │                │ No                        │
            │                ▼                           │
            │      ┌──────────────────┐                  │
            │      │ Replace the      │                  │
            │      │ compressor       │                  │
            │      └──────────────────┘                  │
            │                │                           │
            └────────────────┼───────────────────────────┘
                             ▼
                    ┌─────────────────────┐
                    │        End          │
                    └─────────────────────┘
```
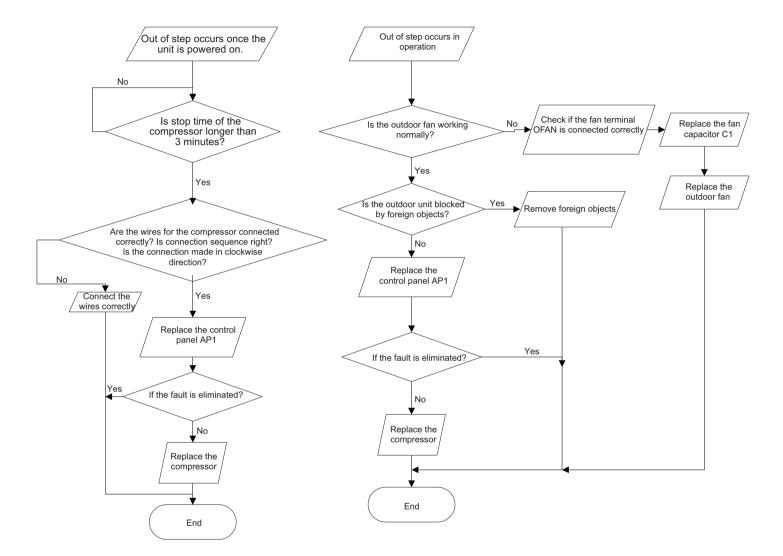
(5) Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

●Is the system pressure too high?

●Is the input voltage too low?

Fault diagnosis process:

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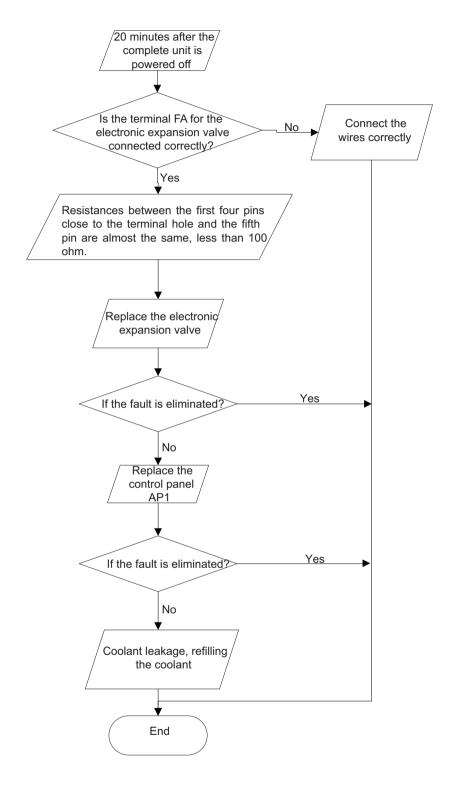
(6) Overload and air exhaust malfunction diagnosis (following AP1 for outdoor unit control board)

Mainly detect:
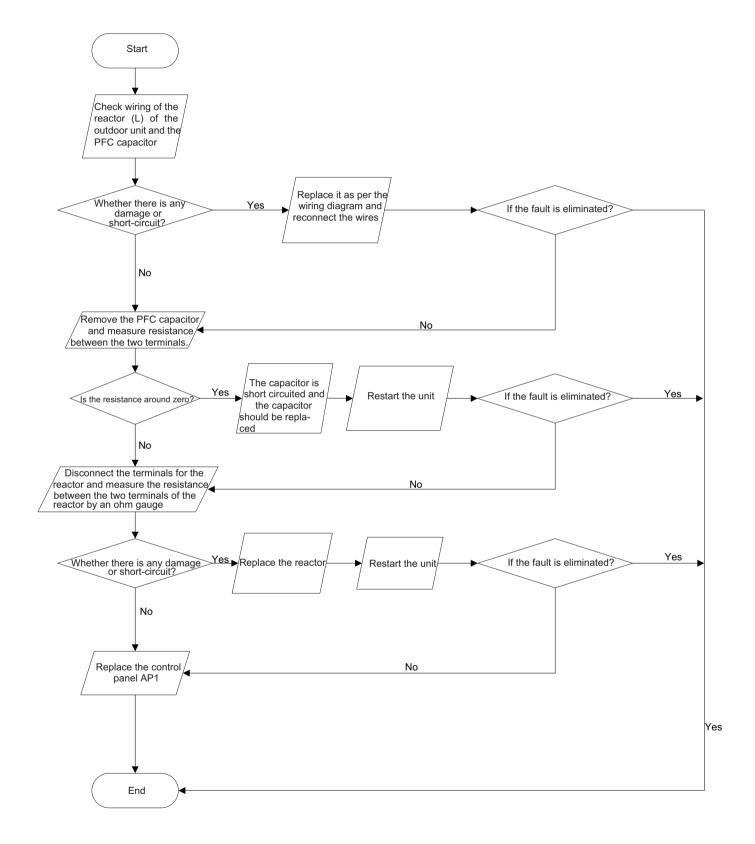
●Is the PMV connected well or not? Is PMV damaged?

●Is refrigerant leaked?

Fault diagnosis process:

```
          ┌──────────────────────┐
         / 20 minutes after the  /
        /  complete unit is      /
       /   powered off          /
      └──────────────────────┘
                  │
                  ▼
         ◇ Is the terminal FA for the ◇        No      ┌──────────────────┐
         ◇ electronic expansion valve ◇ ──────────→   / Connect the      /
         ◇ connected correctly?       ◇              / wires correctly   /
                  │                                  └──────────────────┘
                  │ Yes                                       │
                  ▼                                           │
      ┌────────────────────────────────┐                     │
     / Resistances between the first four pins /              │
    /  close to the terminal hole and the fifth /             │
   /   pin are almost the same, less than 100  /              │
  /    ohm.                                    /               │
  └────────────────────────────────┘                          │
                  │                                            │
                  ▼                                            │
          ┌──────────────────┐                                │
         / Replace the electronic /                           │
        /  expansion valve       /                            │
       └──────────────────┘                                   │
                  │                                            │
                  ▼                                            │
         ◇ If the fault is eliminated? ◇ ──── Yes ───────────→┤
                  │                                            │
                  │ No                                         │
                  ▼                                            │
          ┌──────────────┐                                    │
         / Replace the    /                                   │
        /  control panel   /                                  │
       /   AP1            /                                    │
       └──────────────┘                                       │
                  │                                            │
                  ▼                                            │
         ◇ If the fault is eliminated? ◇ ──── Yes ───────────→┤
                  │                                            │
                  │ No                                         │
                  ▼                                            │
          ┌──────────────────┐                                │
         / Coolant leakage, refilling /                       │
        /  the coolant               /                        │
       └──────────────────┘                                   │
                  │                                            │
                  ▼                                            │
            ╭──────────╮  ◄────────────────────────────────────┘
            │   End    │
            ╰──────────╯
```

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

Mainly detect:

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

Fault diagnosis process:

```
                        ┌──────────────┐
                        │    Start     │
                        └──────────────┘
                               │
                               ▼
                  ┌────────────────────────┐
                  │ Check wiring of the    │
                  │ reactor (L) of the     │
                  │ outdoor unit and the   │
                  │ PFC capacitor          │
                  └────────────────────────┘
                               │
                               ▼
         ╱Whether there is any╲   Yes   ┌──────────────────┐
         ╲ damage or          ╱────────▶│ Replace it as per│───────▶ ╱If the fault is eliminated?╲
         ╱ short-circuit?     ╲         │ the wiring diagram│         ╲                            ╱
         ╲                    ╱         │ and reconnect the │
                               │         │ wires             │
                              No         └──────────────────┘
                               ▼
         ┌────────────────────────┐   ◀── No
         │ Remove the PFC capacitor│
         │ and measure resistance  │
         │ between the two terminals│
         └────────────────────────┘
                               │
                               ▼
         ╱Is the resistance around zero?╲  Yes  ┌─────────────┐  ┌────────────┐
         ╲                              ╱──────▶│The capacitor│─▶│Restart the │─▶╱If the fault is eliminated?╲ ── Yes
                               │                 │is short     │  │unit        │
                              No                 │circuited... │  └────────────┘
                               ▼
         ┌────────────────────────┐  ◀── No
         │ Disconnect the terminals│
         │ for the reactor and     │
         │ measure the resistance  │
         │ between the two terminals│
         │ of the reactor by ohm   │
         └────────────────────────┘
                               │
                               ▼
         ╱Whether there is any damage╲ Yes ┌──────────────┐ ┌────────────┐
         ╲ or short-circuit?         ╱────▶│Replace the   │▶│Restart the │▶ ╱If the fault is eliminated?╲ ── Yes
                               │            │reactor       │ │unit        │
                              No            └──────────────┘ └────────────┘
                               ▼
         ┌────────────────────────┐  ◀── No
         │ Replace the control     │
         │ panel AP1               │
         └────────────────────────┘
                               │
                               ▼                               Yes
                        ┌──────────────┐
                        │     End      │
                        └──────────────┘
```

● ● ● ● ● ● ●   Installation and Maintenance

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

Mainly detect:

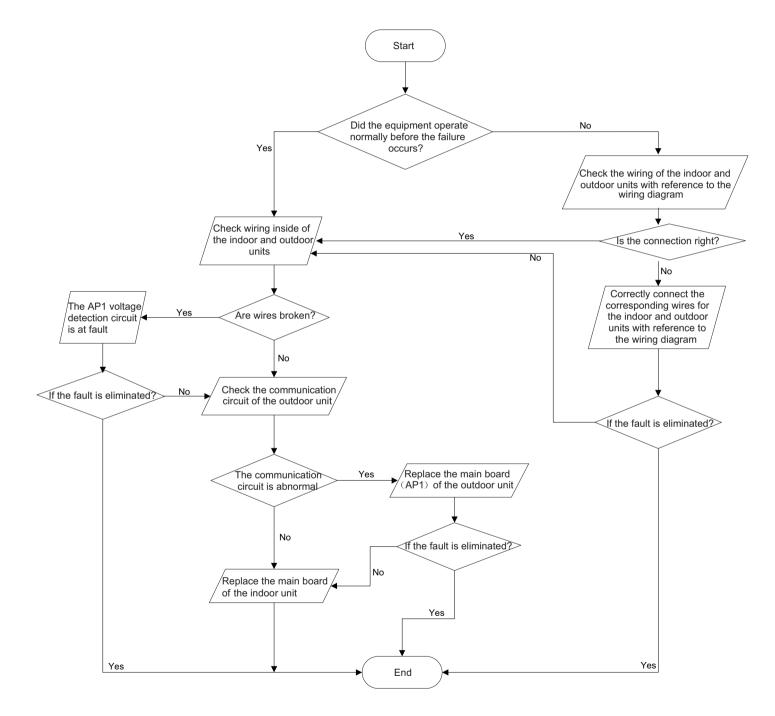●Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?

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

Fault diagnosis process:

```
                              ┌──────────┐
                              │  Start   │
                              └────┬─────┘
                                   │
                          ◇ Did the equipment operate ◇ ──No──┐
                          ◇ normally before the failure ◇      │
                          ◇       occurs?              ◇        │
                                   │                            ▼
                                  Yes              Check the wiring of the indoor and
                                   │               outdoor units with reference to the
                                   │                       wiring diagram
                                   ▼                            │
                        Check wiring inside of ◄──Yes── ◇ Is the connection right? ◇
                        the indoor and outdoor                  │
                                units                          No
                                   │                            ▼
                                   ▼              Correctly connect the corresponding
          The AP1 voltage ◄─Yes─ ◇ Are wires broken? ◇    wires for the indoor and outdoor
          detection circuit                            units with reference to the wiring
          is at fault                │                        diagram
             │                      No                          │
             ▼                       ▼                          ▼
   ◇ If the fault is ◇ ─No─► Check the communication    ◇ If the fault is eliminated? ◇
   ◇ eliminated?   ◇        circuit of the outdoor unit
             │                       │
            Yes                      ▼
             │          ◇ The communication ◇ ─Yes─► Replace the main board
             │          ◇ circuit is abnormal ◇      （AP1）of the outdoor unit
             │                       │                          │
             │                      No              ◇ If the fault is eliminated? ◇
             │                       ▼                    │
             │          Replace the main board ◄─No──────┘
             │          of the indoor unit            Yes
             │                       │                 │
             ▼                       ▼                 ▼
            Yes ──────────────► ┌──────────┐ ◄──────── Yes
                                │   End    │
                                └──────────┘
```
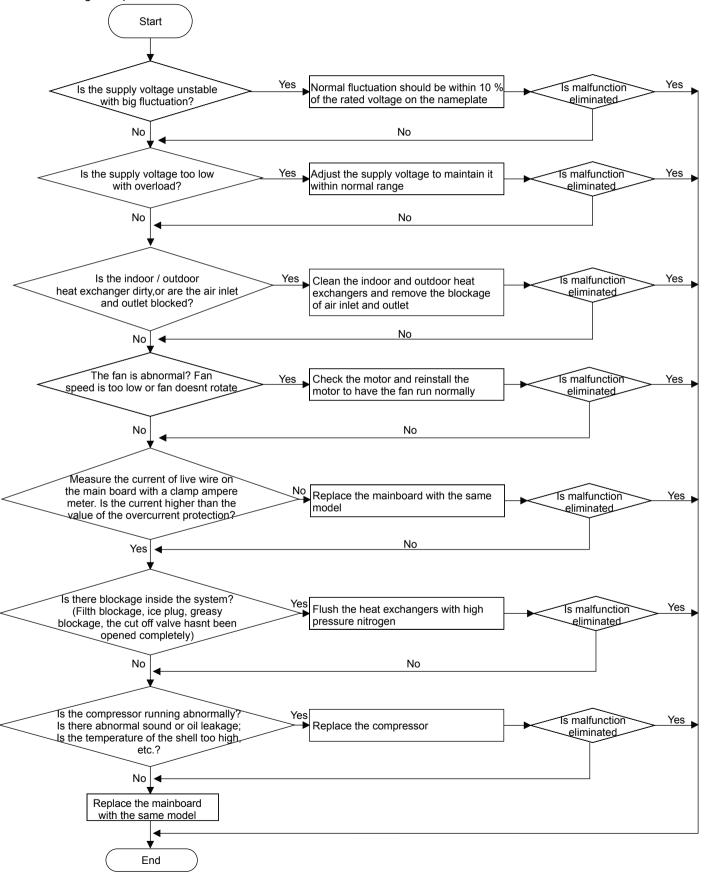
(9) Malfunction of Overcurrent Protection

Main detection points:
- Is the supply voltage unstable with big fluctuation?
- Is the supply voltage too low with overload?
- Hardware trouble?

Malfunction diagnosis process:

```
                           ┌──────────┐
                           │  Start   │
                           └────┬─────┘
                                │
                                ▼
            Is the supply voltage unstable ──Yes──> Normal fluctuation should be within 10 % ──> Is malfunction ──Yes──>
            with big fluctuation?                    of the rated voltage on the nameplate        eliminated
                    │No          <──────────────────── No ────────────────────
                    ▼
            Is the supply voltage too low ──Yes──> Adjust the supply voltage to maintain it ──> Is malfunction ──Yes──>
            with overload?                         within normal range                           eliminated
                    │No          <──────────────────── No ────────────────────
                    ▼
            Is the indoor / outdoor ──Yes──> Clean the indoor and outdoor heat ──> Is malfunction ──Yes──>
            heat exchanger dirty,or are the air inlet  exchangers and remove the blockage  eliminated
            and outlet blocked?                  of air inlet and outlet
                    │No          <──────────────────── No ────────────────────
                    ▼
            The fan is abnormal? Fan ──Yes──> Check the motor and reinstall the ──> Is malfunction ──Yes──>
            speed is too low or fan doesnt rotate  motor to have the fan run normally   eliminated
                    │No          <──────────────────── No ────────────────────
                    ▼
            Measure the current of live wire on ──No──> Replace the mainboard with the same ──> Is malfunction ──Yes──>
            the main board with a clamp ampere          model                                   eliminated
            meter. Is the current higher than the
            value of the overcurrent protection?
                    │Yes         <──────────────────── No ────────────────────
                    ▼
            Is there blockage inside the system? ──Yes──> Flush the heat exchangers with high ──> Is malfunction ──Yes──>
            (Filth blockage, ice plug, greasy             pressure nitrogen                       eliminated
            blockage, the cut off valve hasnt been
            opened completely)
                    │No          <──────────────────── No ────────────────────
                    ▼
            Is the compressor running abnormally? ──Yes──> Replace the compressor ──> Is malfunction ──Yes──>
            Is there abnormal sound or oil leakage;                                    eliminated
            Is the temperature of the shell too high,
            etc.?
                    │No
                    ▼
            ┌──────────────────────┐
            │ Replace the mainboard │
            │ with the same model   │
            └──────────┬───────────┘
                       ▼
                  ┌──────────┐
                  │   End    │
                  └──────────┘
```

9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner Cant be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

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

3. Horizontal Louver Cant Swing

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

4. ODU Fan Motor Cant Operate

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

5. Compressor Cant Operate

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

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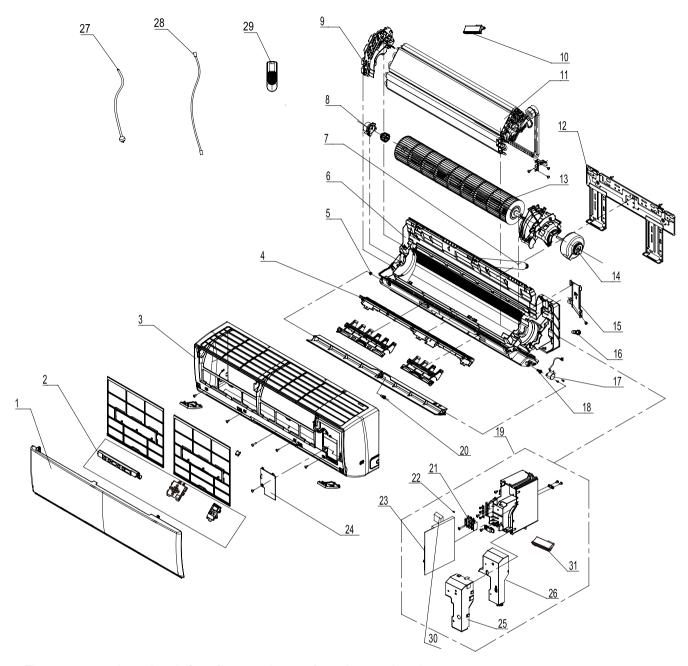
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe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

7. Abnormal Sound and Vibration

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

10. Exploded View and Parts List

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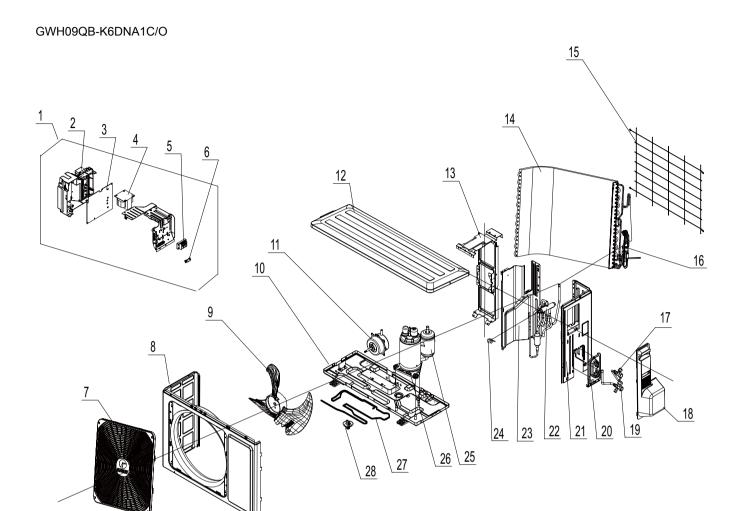
The component picture is only for reference; please refer to the actual product.

NO.	Description	Part Code		Qty
		GWH09QB-K6DNA1C/I	GWH12QC-K6DNA1C/I	
	Product Code	CB419N11900	CB419N12300	
1	Front Panel Assy	20022496	20022493	1
2	Display Board	30565231	30565231	1
3	Front Case Assy	20022495	20022489	1
4	Helicoid Tongue	26112508	26112436	1
5	Left Axile Bush	10512037	10512037	1
6	Rear Case assy	20162010	00000100093	1
7	Drainage Hose	0523001408	05230014	1
8	Ring of Bearing	26152022	26152022	1
9	Evaporator Support	24212180	24212179	1
10	Cold Plasma Generator	1114001603	1114001603	1
11	Evaporator Assy	0100200004406	01100100245	1
12	Wall Mounting Frame	01252043	01252484	1
13	Cross Flow Fan	10352059	10352056	1
14	Fan Motor	150120874	15012146	1
15	Connecting pipe clamp	2611216401	2611216401	1
16	Rubber Plug (Water Tray)	76712012	76712012	1
17	Stepping Motor	1521212901	1521210701	1
18	Crank	73012005	73012005	1
19	Electric Box Assy	100002001192	100002001118	1
20	Axile Bush	10542036	10542036	1
21	Terminal Board	42011233	42011233	1
22	Jumper	4202021901	4202021905	1
23	Main Board	300002000288	300002000291	1
24	Electric Box Cover Sub-Assy	0140206501	0140206501	1
25	Shield Cover of Electric Box Cover	01592150	01592150	1
26	Electric Box Cover	20112207	2011220701	1
27	Power Cord	/	/	/
28	Connecting Cable	4002052317	4002052317	0
29	Remote Controller	30510474	30510474	1
30	Capacitor CBB61A	33010747	3301074712	1
31	Detecting Plate	30110144	30110144	1

Above data is subject to change without notice.

10.2 Outdoor Unit
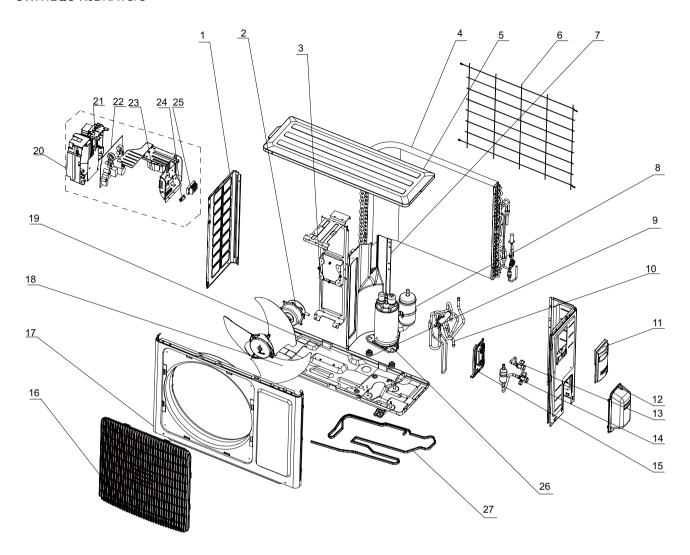
GWH09QB-K6DNA1C/O

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

NO.	Description	Part Code		Qty
		GWH09QB-K6DNA1C/O		
	Product Code	CB419W11900	CB419W11901	
1	Electric Box Assy	100002001193	100002001207	1
2	Electric Box	20113034	20113034	1
3	Main Board	300027000249	300027000250	1
4	Reactor	43130184	43130184	1
5	Terminal Board	42010313	42010313	1
6	Wire Clamp	71010103	71010103	2
7	Front Grill	22413049	22413049	1
8	Front Panel	01533034P	01533034P	1
9	Axial Flow Fan	10333428	10333428	1
10	Chassis Sub-assy	017000000134P	017000000133P	1
11	Brushless DC Motor	1501308511	1501308511	1
12	Top Cover Sub-Assy	01253073	01253073	1
13	Motor Support	01703104	01703104	1
14	Condenser Assy	011002000372	011002000372	1
15	Rear Grill	01473009	01473009	1
16	Capillary Sub-assy	030006000337	030006000337	1
17	Cut off Valve	071302391	071302391	1
18	Big Handle	262334332	262334332	1
19	Cut off Valve	071302391	071302391	1
20	Valve Support	0171314201P	0171314201P	1
21	Right Side Plate Sub-Assy	0130317801	0130317801	1
22	4-Way Valve Assy	030152000171	030152000171	1
23	Clapboard Sub-Assy	0123338502	0123338502	1
24	Magnet Coil	4300040050	4300040050	1
25	Compressor and Fittings	00103925G	00103925G	1
26	Electrical Heater	/	7651300403	1
27	Electrical Heater (Chassis)	/	7651000414	1
28	Drainage Connecter	06123401	06123401	1

Above data is subject to change without notice.

GWH12QC-K6DNA1C/O

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

NO.	Description	Part Code		Qty
		GWH12QC-K6DNA1C/O		
	Product Code	CB419W12300	CB419W12301	
1	Left Side Plate	01303200P	01303200P	1
2	Fan Motor	1501308507	1501308507	1
3	Motor Support	01703136	01703136	1
4	Condenser Assy	011002000359	011002000359	1
5	Top Cover Sub-Assy	01253081	01253081	1
6	Rear Grill	01475014	01475014	1
7	Clapboard Sub-Assy	01233180	01233180	1
8	Compressor and Fittings	00103925G	00103925G	1
9	Compressor Gasket	76710287	76710287	3
10	4-Way Valve Assy	030152000016	030152000016	1
11	Big Handle	2623343106	2623343106	1
12	Valve Cover	22243006	22243006	1
13	Cut off Valve Assy	07133474	07133474	1
14	Cut off Valve Assy	07133474	07133474	1
15	Valve Support	0171314201P	0171314201P	1
16	Front Grill	22413044	22413044	1
17	Cabinet	01433033P	01433033P	1
18	Axial Flow Fan	10333011	10333011	1
19	Chassis Sub-assy	017000000091P	017000000199P	1
20	Electric Box Assy	100002001110	100002001117	1
21	Electric Box	20113032	20113032	1
22	Main Board	300027000261	300027000262	1
23	Reactor	43130184	43130184	1
24	Wire Clamp	71010103	71010103	2
25	Terminal Board	42010313	42010313	1
26	Electrical Heater	/	7651300403	1
27	Electrical Heater (Chassis)	/	7651000414	1

Above data is subject to change without notice.

11. Removal Procedure

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

11.1 Removal Procedure of Indoor Unit

Step	Procedure
1. Remove filter assembly	
	Open the front panel. Push the left filter and right filter until they are separate from the groove on the front panel. Remove the left filter and right filter respectively. Front panel / Left filter / Groove / Right filter / Front case
2. Remove horizontal louver	
	Push out the axile bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it. Horizontal louver / Location of step motor / Axile bush
3. Remove panel	
a	① A1/B6/C2/C4 display: Screw off the 2 screws that are locking the display board. Separate the display board from the front panel. ② A2/A3 display: Screw off the 2 screws that are locking the display board. This display can be disassembled only after removing the front case (refer to step 5 of disassembly). ③ A5/B2/B4/B8/C6/D2 display: Screw off the 2 screws that are locking the display board.
b	Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel. A1 display / Screws / Panel / Front panel / A2/A3 display / Screws / Panel rotation / Groove / A5/B2/B4/B8/C6/D2 display / Screws

Step	Procedure
4. Remove detecting plate and electric box cover2	
Remove the screws fixing detecting plate and remove detecting plate. Remove the screws fixing electric box cober2 and remove electric box2.	Detecting plate · Screw · Electric box cover**2** · Screw
5. Remove front case sub-assy	
a	Remove the screws fixing front case. Note: 1.Open the screw caps before removing the screws around the air outlet. 2.The quantity of screws fixing the front case sub-assy is different for different models.	Screws · Front case sub-assy · Screw caps · Screw
b	Loosen the connection clasps between front case sub-assy and bottom case. Lift up the front case sub-assy and take it out.	Clasp · Front case sub-assy
6. Remove vertical louver	
Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.	Bottom case · Vertical louver · Clasps · Vertical louver
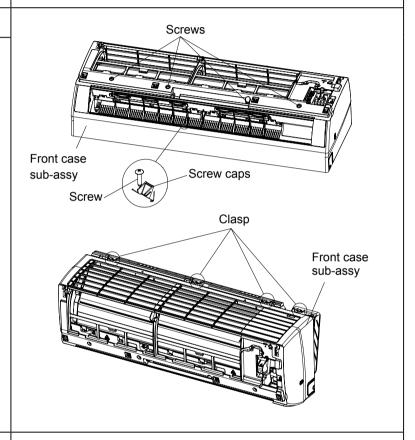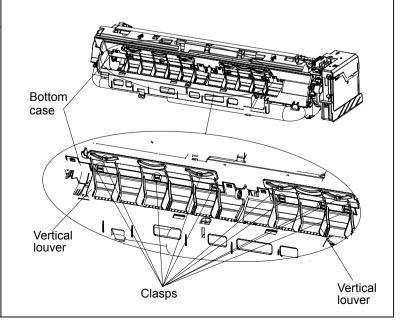
Step	Procedure
7. Remove electric box assy	
a	Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy .
b	① Take off the water retaining sheet. Remove the cold plasma generator by screwing off the locking screw on the generator. ② Take off the indoor tube temperature sensor. ③ Screw off 1 grounding screw. ④ Remove the wiring terminals of motor and stepping motor. ⑤ Remove the electric box assy.
c	Twist off the screws that are locking each lead wire and rotate the electric box assy. Twist off the screws that are locking the wire clip. Loosen the power cord and remove its wiring terminal. Lift up the main board and take it off.

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

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

11.2 Removal Procedure of Outdoor Unit

GWH09QB-K6DNA1C/O

Step	Procedure
1. Remove big handle	
Remove the screw fixing big handle; slide out the big handle upwards to make the clasp of big handle separate from the groove of right side plate, and then remove the big handle.	Right side plate, Screw, Big handle
2. Remove top panel	
Remove the screws fixing top panel and then remove the top panel.	Screws, Top panel, Screw
3. Remove front grille	
Remove connection screws between the front grille and the front panel. Then remove the front grille.	Front grille, Screws
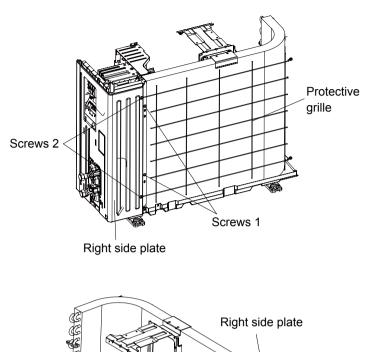
Step	Procedure
4. Remove the front cover	
Screw off the screws that are locking the front cover. Then take it off.	Screws Screws Screws Front cover Screws
5. Remove axial flow blade	
Remove the nut fixing axial flow blade and then remove the axial flow blade.	Nut Axial flow blade
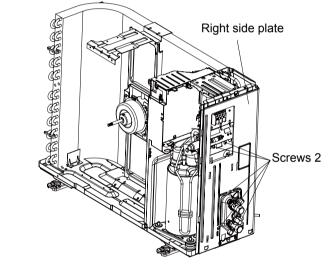
Step	Procedure
6. Remove protective grille and right side plate	

Remove the screws 1 fixing protective grille and then remove the protective grille.

Protective grille

Screws 2

Screws 1

Right side plate

Remove the screws 2 fixing right side plate and then remove the right side plate.

Right side plate

Screws 2

| 7. Remove electric box assy | |
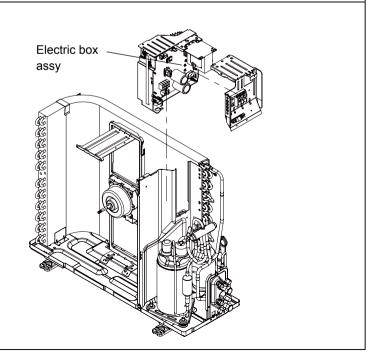
Remove the screws fixing electric box assy ; pull out each wiring terminal; lift the electric box assy upwards to remove it.

Note:
When pulling out the wiring terminal, pay attention to loose the clasp and dont pull it so hard.

Electric box assy
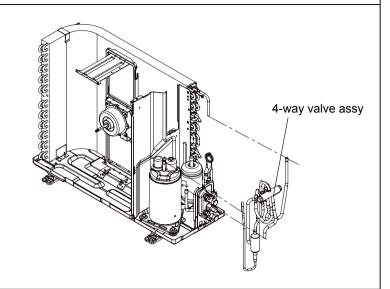
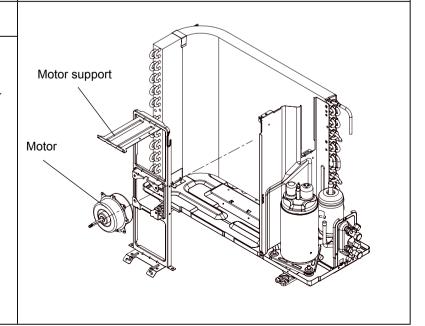| Step	Procedure
8. Remove 4-way valve assy	
Unsolder the spot weld of 4-way valve assy, compressor and condenser, and then remove the 4-way valve assy . Note: When unsoldering the spot weld, wrap the 4-way valve with wet cloth completely to avoid damaging the valve due to high temperature.	4-way valve assy
9. Remove capillary sub-assy	
Unsolder weld point of capillary Sub-assy,valve and outlet pipe of condensator. Thenremove the capillary Sub-assy. Do not blockthe capillary when unsoldering it. (Note: be-fore unsoldering,discharge refrigerantscompletely)	Capillary Sub-assy
10. Remove motor and motor support	
Remove the 4 tapping screws fixing the motor. Pull out the lead-out wire and remove themotor. Remove the 2 tapping screws fixingthe motor support. Lift motor support to re-move it.	Motor support Motor
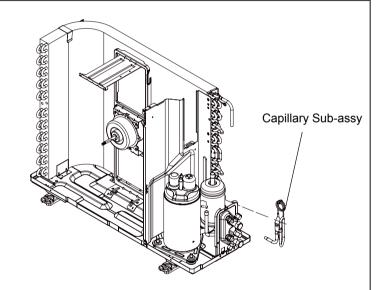
Step	Procedure
11. Remove clapboard sub-assy	Clapboard
Loosen the screws of the Clapboard Sub-Assy . The Clapboard Sub-Assy has a hook on thelower side. Lift and pull the Clapboard Sub-Assyto remove.	
12. Remove Compressor	
Remove the 2 screws fixing the gas valve. Unsolder the welding spot connecting gas valveand air return pipe and remove the gas valve.(Note: it is necessary to warp the gas valve whenunsoldering the welding spot.) Remove the 2screws fixing liquid valve. Unsolder the weld-ing spot connecting liquid valve and remove theliquid valve.	Liquid valve Gas valve
Remove the 3 footing screws of the compressorand remove the compressor.	Compressor

GWH12QC-K6DNA1C/O

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

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

Installation and Maintenance

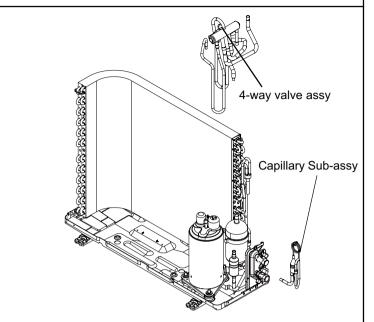| Step	Procedure
6.Remove motor and motor support	
	Remove the screws fixing motor and then remove the motor. Remove the screws fixing motor support and then remove the motor support. motor support motor
7.Remove electric box assy	
	Remove the screws fixing electric box assy; cut off the tieline; pull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

Step	Procedure
9.Remove 4-way valve assy and capillary sub-assy	

Unsolder the welding joints connecting the 4-way valve assy with capillary sub-assy, compressor and condenser; remove the 4-way valve.

Note:
Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.

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)
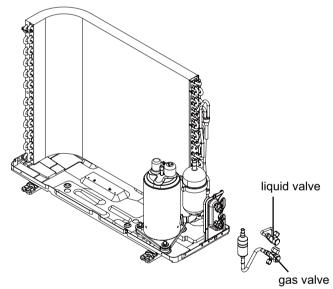
4-way valve assy

Capillary Sub-assy

| 10.Remove liquid valve and gas valve | |

Unsolder the welding joint connecting the valve with capillary and condenser; unsolder the welding joint connecting the gas valve and air-return pipe; remove the 2 screws fixing the gas valve to remove the gas valve.
Unsolder the welding joint connecting the liquid valve and Y-shaped pipe; remove the 2 screws fixing the liquid valve to remove the liquid valve.
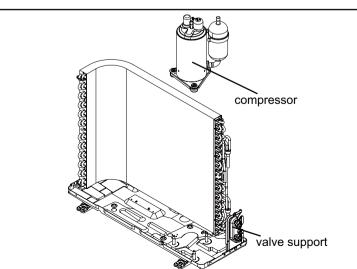Note:
Before unsoldering the welding joint, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.

liquid valve

gas valve

| 11.Remove compressor | |

Remove the 3 footing screws of the compressor and remove the compressor.
Remove the screws fixing valve support and then remove the valve support.

compressor

valve support

● ● ● ● ● ● ● Installation and Maintenance

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

Set temperature

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

Ambient temperature

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

Appendix 2: Configuration of Connection Pipe

1.Standard length of connection pipe

● 5m, 7.5m, 8m.

2.Min length of connection pipeFor the unit with standard connection pipe of 5m, there is no limitation for themin length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.

3.Max length of connection pipe（More details please refer to the specifications）

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

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

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

● Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See Sheet 2.

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

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

Note: The additional refrigerant charging amount in Sheet 2 is recommendedvalue, not compulsory.
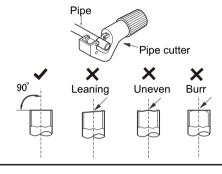
Appendix 3: Pipe Expanding Method

⚠ **Note:**

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

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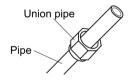● Cut the required pipe with pipe cutter.

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

C:Put on suitable insulating pipe

D:Put on the union nut
● Remove the union nut on the indoor connection pipe and outdoor valve; install
the union nut on the pipe.
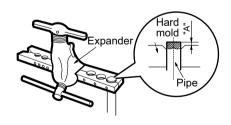
E:Expand the port
● Expand the port with expander.

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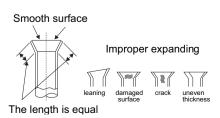
● "A" is different according to the diameter, please refer to the sheet below:

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

F:Inspection
● Check the quality of expanding port. If there is any blemish, expand the
port again according to the steps above.

Appendix 4: List of Resistance for Temperature Sensor

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

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

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

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

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

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

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