



Service Manual

Model: GWH07PA-K3NNA3B
GWH07NA-K3NNB3B(Cold Plasma)
GWH09PA-K3NNA3B
GWH09NA-K3NNB3D(Cold Plasma)
GWH12PC-K3NNA3A
GWH12PC-K3NNA4A
GWH12PC-K3NNA5A
(Refrigerant R410A)

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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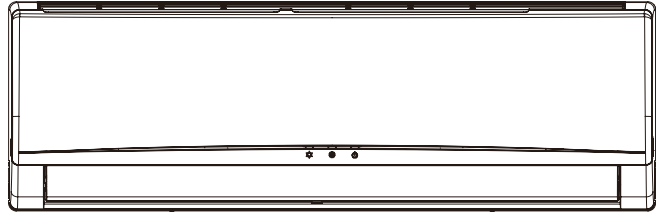


Part I : Technical Information

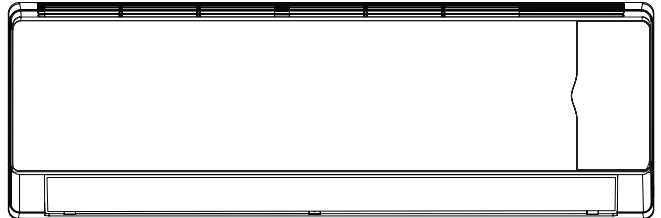
1.Summary

Indoor Unit

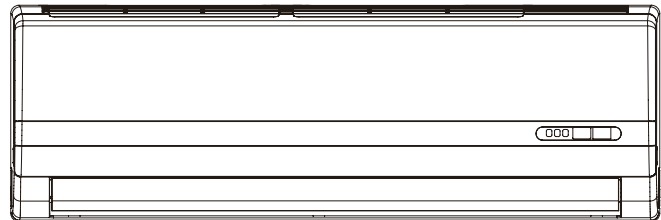
GWH07PA-K3NNA3B/I
GWH09PA-K3NNA3B/I
GWH12PC-K3NNA3A/I



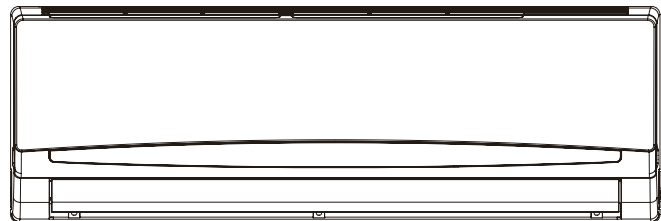
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GWH09NA-K3NNB3D/I



GWH12PC-K3NNA4A/I

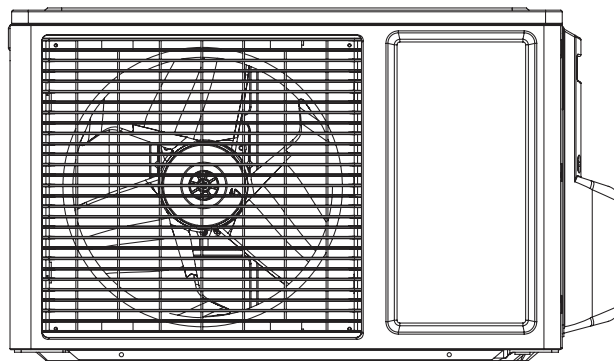


GWH12PC-K3NNA5A/I

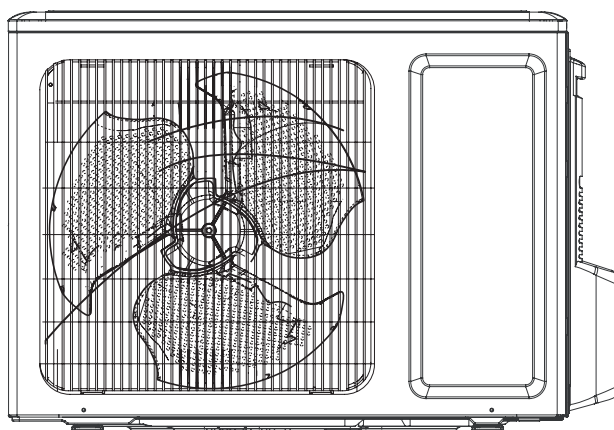


Outdoor Unit

GWH07PA-K3NNA3B/O
GWH09PA-K3NNA3B/O



GWH12PC-K3NNA3A/O



Remote Controller

Model	Product Code	Remote Controller
GWH07PA-K3NNA3B	CA416000800	YB1FA
GWH09PA-K3NNA3B	CA416000900	
GWH12PC-K3NNA3A	CA416000700	
GWH12PC-K3NNA4A	CA418001300	
GWH12PC-K3NNA5A	CA417001100	YV1F7
GWH07NA-K3NNB3B	CA138005800	
GWH09NA-K3NNB3D	CA138003600	

YB1FA



YV1F7



2. Specifications

2.1 Specification Sheet

Model			GWH07PA-K3NNA3B	GWH07NA-K3NNB3B	
Product Code			CA416000800	CA138005800	
Power Supply	Rated Voltage	V~	220-240	220-240	
	Rated Frequency	Hz	50	50	
	Phases		1	1	
Power Supply Mode			Indoor	Indoor	
Cooling Capacity		W	2050	2050	
Heating Capacity		W	2110	2110	
Cooling Power Input		W	732	732	
Heating Power Input		W	659	659	
Cooling Power Current		A	3.25	3.25	
Heating Power Current		A	2.92	2.92	
Rated Input		W	1100	1100	
Rated Current		A	4.88	5.55	
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	400/360/320/290/-	400/360/320/290/-	
Dehumidifying Volume		L/h	0.6	0.6	
EER		W/W	2.8	2.8	
COP		W/W	3.2	3.2	
SEER		W/W	/	/	
HSPF		W/W	/	/	
Application Area		m ²	10-16	10-16	
Indoor Unit	Model of indoor unit		GWH07PA-K3NNA3B/I	GWH07NA-K3NNB3B/I	
	Fan Type		Cross-flow	Cross-flow	
	Diameter Length(DXL)		mm	Φ85X532	Φ85X532
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1220/1100/1000/-	1350/1220/1100/1000/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1320/1220/1120/980/-	1320/1220/1120/980/-
	Output of Fan Motor		W	10	10
	Fan Motor RLA		A	0.13	0.13
	Fan Motor Capacitor		μF	1	1
	Input of Heater		W	/	/
	Evaporator Form			Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7	Φ7
	Row-fin Gap		mm	2-1.5	2-1.5
	Coil Length (LXDXW)		mm	526X25.4X228.6	526X25.4X228.6
	Swing Motor Model			MP24AA	MP24AA
	Output of Swing Motor		W	1.5	1.5
	Fuse		A	3.15	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	43/37/35/32/-	40/37/35/32/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	53/47/45/42/-	50/47/45/42/-
	Dimension (WXHXD)		mm	730X254X184	730X255X184
	Dimension of Carton Box (LXWXH)		mm	790X255X328	790X245X325
	Dimension of Package(LXWXH)		mm	793X258X343	793X248X340
	Net Weight		kg	8	8
Gross Weight		kg	10.5	10.5	

Outdoor Unit	Model of Outdoor Unit		GWH07PA-K3NNA3B/O	
	Compressor Manufacturer/Trademark		Xi'an Qing'an refrigeration Equipment Co.,Ltd	
	Compressor Model		YZG-A082Y2T3	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	L.R.A.	A		17
	Compressor RLA	A		3.35
	Compressor Power Input	W		705
	Overload Protector			B135-140-241E
	Throttling Method			Capillary
	Operation Temp	°C		16~30
	Ambient Temp (Cooling)	°C		18~43
	Ambient Temp (Heating)	°C		-7~24
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	mm		Φ7
	Rows-fin Gap	mm		1-1.4
	Coil Length (LXDXW)	mm		681X12.7X400
	Fan Motor Speed	rpm		950
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.25
	Fan Motor Capacitor	μF		1.5
	Air Flow Volume of Outdoor Unit	m ³ /h		1200
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ320
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa		2.5
	Sound Pressure Level (H/M/L)	dB (A)		50/-/-
	Sound Power Level (H/M/L)	dB (A)		60/-/-
Dimension (WXHXD)	mm		720X428X310	
Dimension of Carton Box (LXWXH)	mm		765X350X475	
Dimension of Package(LXWXH)	mm		768X353X490	
Net Weight	kg		22	
Gross Weight	kg		24.5	
Refrigerant			R410A	
Refrigerant Charge	kg		0.62	
Connection Pipe	Length	m	5	
	Gas Additional Charge	g/m	20	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ9.52	
	Max Distance Height	m	5	
	Max Distance Length	m	15	
Note: The connection pipe applies metric diameter.				

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

Model			GWH09PA-K3NNA3B	GWH09NA-K3NNB3D	
Product Code			CA416000900	CA138003600	
Power Supply	Rated Voltage	V~	220-240	220-240	
	Rated Frequency	Hz	50	50	
	Phases		1	1	
Power Supply Mode			Indoor	Indoor	
Cooling Capacity		W	2638	2638	
Heating Capacity		W	2814	2814	
Cooling Power Input		W	942	942	
Heating Power Input		W	879	879	
Cooling Power Current		A	4.18	4.18	
Heating Power Current		A	3.9	3.9	
Rated Input		W	1250	1250	
Rated Current		A	5.55	5.55	
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	400/370/340/310/-	400/370/340/310/-	
Dehumidifying Volume		L/h	0.8	0.8	
EER		W/W	2.8	2.8	
COP		W/W	3.2	3.2	
SEER		W/W	/	/	
HSPF		W/W	/	/	
Application Area		m ²	12-18	12-18	
Indoor Unit	Model of indoor unit		GWH09PA-K3NNA3B/I	GWH09NA-K3NNB3D/I	
	Fan Type		Cross-flow	Cross-flow	
	Diameter Length(DXL)		mm	Φ85X532	Φ85X532
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1390/1280/1180/1080/-	1390/1280/1180/1080/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1350/1250/1140/1040/-	1350/1250/1140/1040/-
	Output of Fan Motor		W	10	10
	Fan Motor RLA		A	0.13	0.13
	Fan Motor Capacitor		μF	1	1
	Input of Heater		W	/	/
	Evaporator Form			Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7	Φ7
	Row-fin Gap		mm	2-1.5	2-1.5
	Coil Length (LXD _X W)		mm	526X25.4X228.6	526X25.4X228.6
	Swing Motor Model			MP24AA	MP24AA
	Output of Swing Motor		W	1.5	1.5
	Fuse		A	3.15	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	43/37/35/32/-	40/37/35/32/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	53/47/45/42/-	50/47/45/42/-
	Dimension (WXHXD)		mm	730X254X184	730X254X184
	Dimension of Carton Box (LXWXH)		mm	790X255X328	790X245X325
	Dimension of Package(LXWXH)		mm	793X258X343	793X248X340
Net Weight		kg	8	8	
Gross Weight		kg	10.5	10.5	

Outdoor Unit	Model of Outdoor Unit		GWH09PA-K3NNA3B/O	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO. LTD.	
	Compressor Model		QXA-B106C130A	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	L.R.A.	A		17
	Compressor RLA	A		4.1
	Compressor Power Input	W		875
	Overload Protector			UP3-20
	Throttling Method			Capillary
	Operation Temp	°C		16~30
	Ambient Temp (Cooling)	°C		18~43
	Ambient Temp (Heating)	°C		-7~24
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	mm		Φ7
	Rows-fin Gap	mm		1-1.6
	Coil Length (LXDXW)	mm		681X22X406
	Fan Motor Speed	rpm		950
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.25
	Fan Motor Capacitor	μF		1.5
	Air Flow Volume of Outdoor Unit	m ³ /h		1200
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ320
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa		2.5
	Sound Pressure Level (H/M/L)	dB (A)		50/-/-
	Sound Power Level (H/M/L)	dB (A)		60/-/-
	Dimension (WXHxD)	mm		720X428X310
Dimension of Carton Box (LXWXH)	mm		765X350X475	
Dimension of Package(LXWXH)	mm		768X353X490	
Net Weight	kg		26	
Gross Weight	kg		28.5	
Refrigerant			R410A	
Refrigerant Charge	kg		0.73	
Connection Pipe	Length	m	5	
	Gas Additional Charge	g/m	20	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ9.52	
	Max Distance Height	m	10	
	Max Distance Length	m	15	
	Note: The connection pipe applies metric diameter.			

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

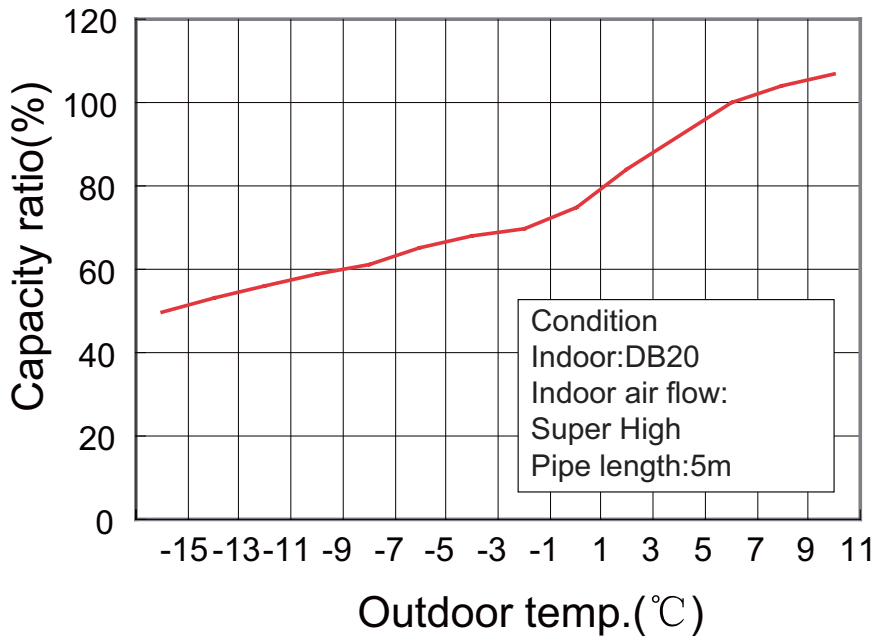
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Product Code			1.CA416000700 2.CA418001300 3.CA417001100	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	3223	
Heating Capacity		W	3370	
Cooling Power Input		W	1150	
Heating Power Input		W	1053	
Cooling Power Current		A	5.1	
Heating Power Current		A	4.63	
Rated Input		W	1450	
Rated Current		A	6.43	
Air Flow Volume(SH/H/M/L/SL)		m ³ /h	600/550/500/450/-	
Dehumidifying Volume		L/h	1.2	
EER		W/W	2.8	
COP		W/W	3.2	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m ²	15-22	
Indoor Unit	Model of indoor unit		1.GWH12PC-K3NNA3A/I 2.GWH12PC-K3NNA4A/I 3.GWH12PC-K3NNA5A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ92X645
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1250/1100/950/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1190/1150/1050/920/-
	Output of Fan Motor		W	20
	Fan Motor RLA		A	0.31
	Fan Motor Capacitor		μF	1
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.4
	Coil Length (LXD _X W)		mm	645X25.4X266.7
	Swing Motor Model			MP24AA
	Output of Swing Motor		W	1.5
	Fuse		A	3.15
	Sound Pressure Level (SH/H/M/L/SL)		dB (A)	42/39/36/33/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	52/49/46/43/-
	Dimension (WXHXD)		mm	848X274X189
	Dimension of Carton Box (LXWXH)		mm	915X255X355
Dimension of Package(LXWXH)		mm	918X258X370	
Net Weight		kg	10	
Gross Weight		kg	13	

Outdoor Unit	Model of Outdoor Unit		GWH12PC-K3NNA3A/O	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO. LTD.	
	Compressor Model		QXA-B120C150	
	Compressor Oil		POE(ZE-GLES RB 68EP)	
	Compressor Type		Rotary	
	L.R.A.	A		22
	Compressor RLA	A		4.7
	Compressor Power Input	W		1020
	Overload Protector			internal
	Throttling Method			Capillary
	Operation Temp	°C		16~30
	Ambient Temp (Cooling)	°C		18~43
	Ambient Temp (Heating)	°C		-7~24
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	mm		Φ7
	Rows-fin Gap	mm		1-1.4
	Coil Length (LXD _X W)	mm		721.5X12.7X495
	Fan Motor Speed	rpm		850
	Output of Fan Motor	W		35
	Fan Motor RLA	A		0.37
	Fan Motor Capacitor	μF		2.5
	Air Flow Volume of Outdoor Unit	m ³ /h		1600
	Fan Type			Axial-flow
	Fan Diameter	mm		Φ394.5
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa		4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa		2.5
	Sound Pressure Level (H/M/L)	dB (A)		52/-/-
	Sound Power Level (H/M/L)	dB (A)		62/-/-
	Dimension (WXHXD)	mm		776X540X320
Dimension of Carton Box (LXWXH)	mm		820X355X580	
Dimension of Package(LXWXH)	mm		823X358X595	
Net Weight	kg		31	
Gross Weight	kg		35	
Refrigerant			R410A	
Refrigerant Charge	kg		0.80	
Connection Pipe	Length	m	5	
	Gas Additional Charge	g/m	15	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ9.52	
	Max Distance Height	m	10	
	Max Distance Length	m	20	
	Note: The connection pipe applies metric diameter.			

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

2.2 Capacity Curve in Different Outdoor Temperature

Heating



2.3 Heating Data Sheet in Rated Frequency

Heating

Temperature condition (°C)		Model name	Standard pressure P (MPa)	Heat exchanger pipe temp.		Indoor fan mode	Outdoor fan mode
Indoor	Outdoor			T1 (°C)	T2 (°C)		
20/-	7/6	07K	3.5~3.8	in:75~85 out:37~43	in:1~3 out:2~5	Super High	High
20/-	7/6	09K	3.5~3.8	in:75~85 out:37~43	in:1~3 out:2~5	Super High	High
20/-	7/6	12K	3.5~3.8	in:75~85 out:37~43	in:1~3 out:2~5	Super High	High

T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

P: Pressure of air pipe connecting indoor and outdoor units

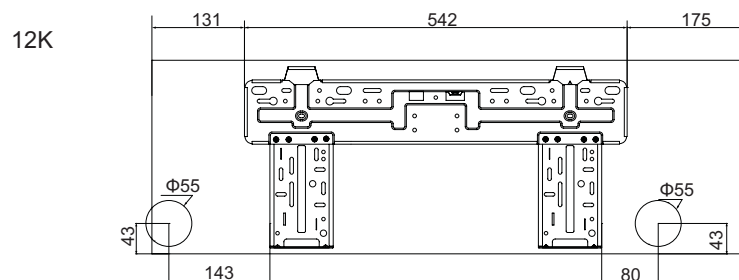
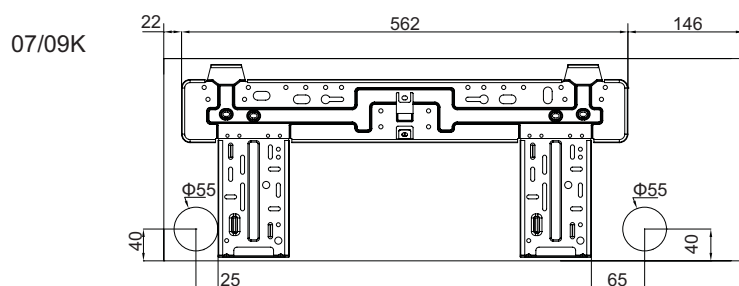
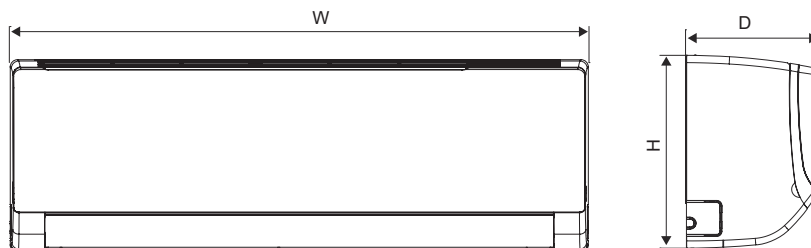
NOTES :

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

(2) Connecting piping condition :5m.

3. Outline Dimension Diagram

3.1 Indoor Unit

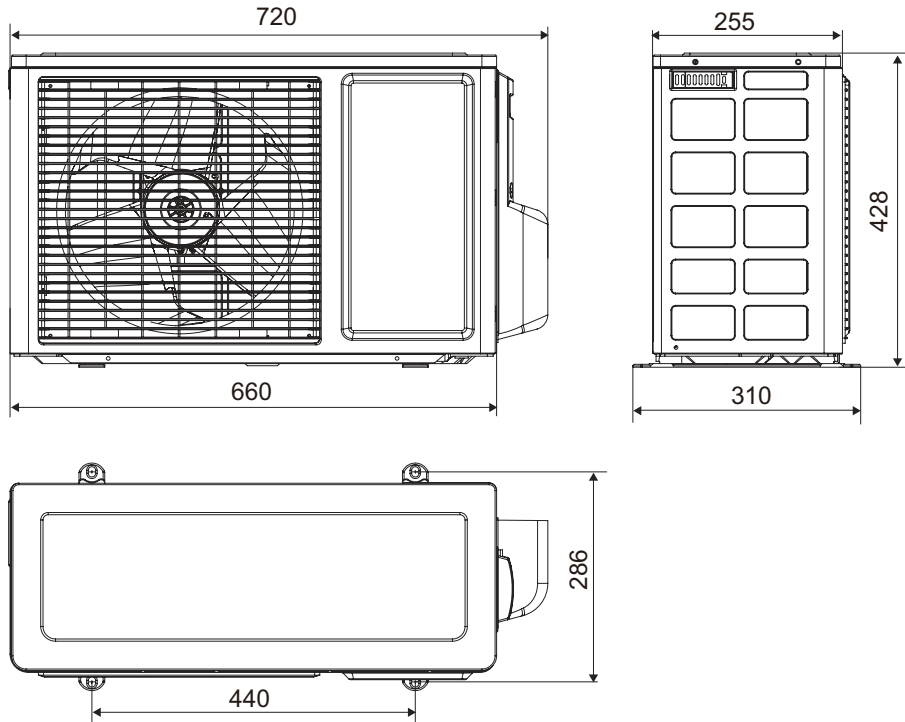


Unit: mm

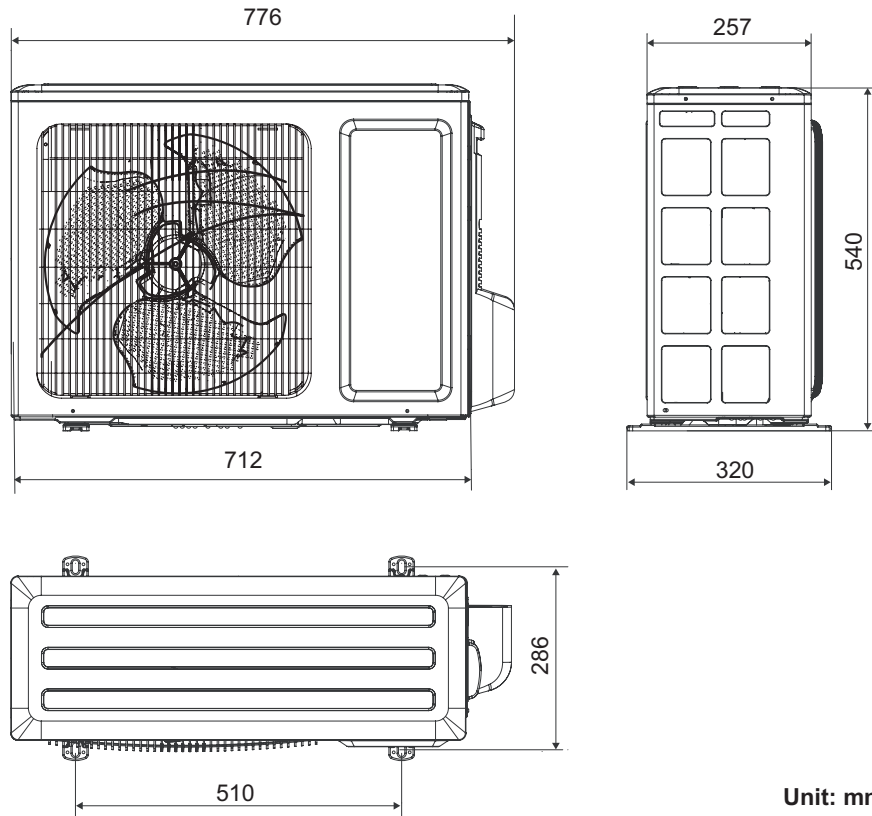
MODEL	W	H	D
07/09K	730	254	184
12K	848	274	189

3.2 Outdoor Unit

GWH07PA-K3NNA3B/O GWH09PA-K3NNA3B/O



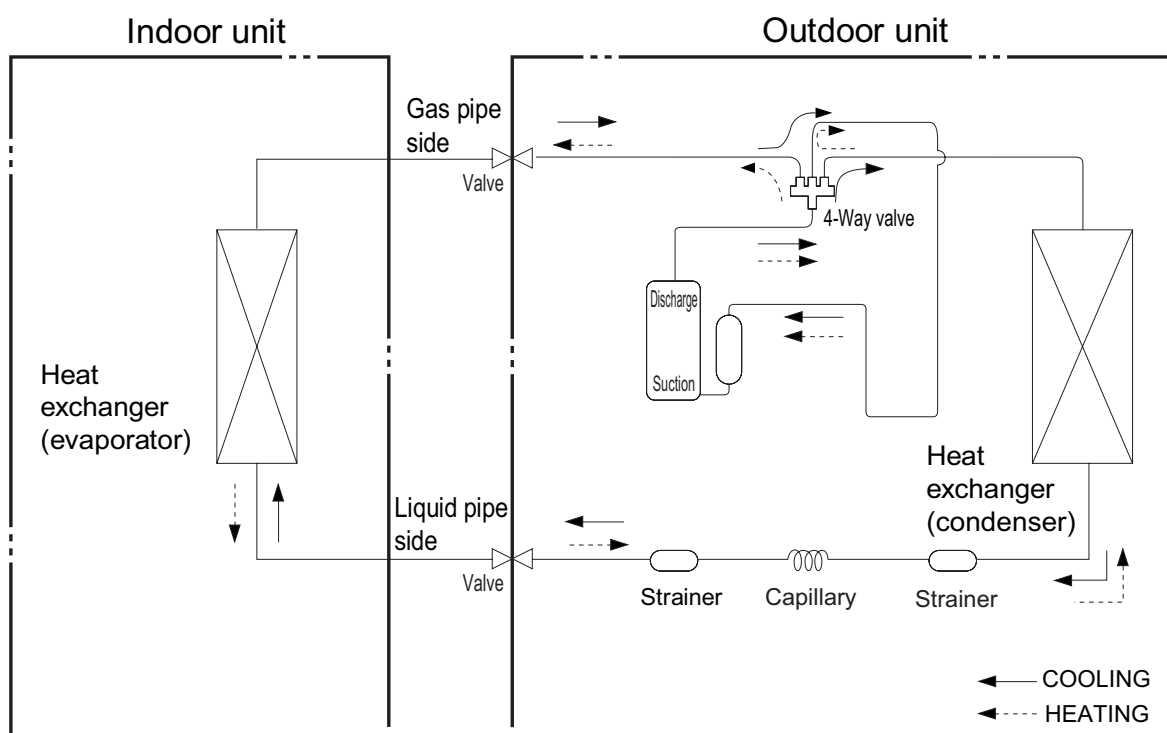
GWH12PC-K3NNA3A/O



Unit: mm

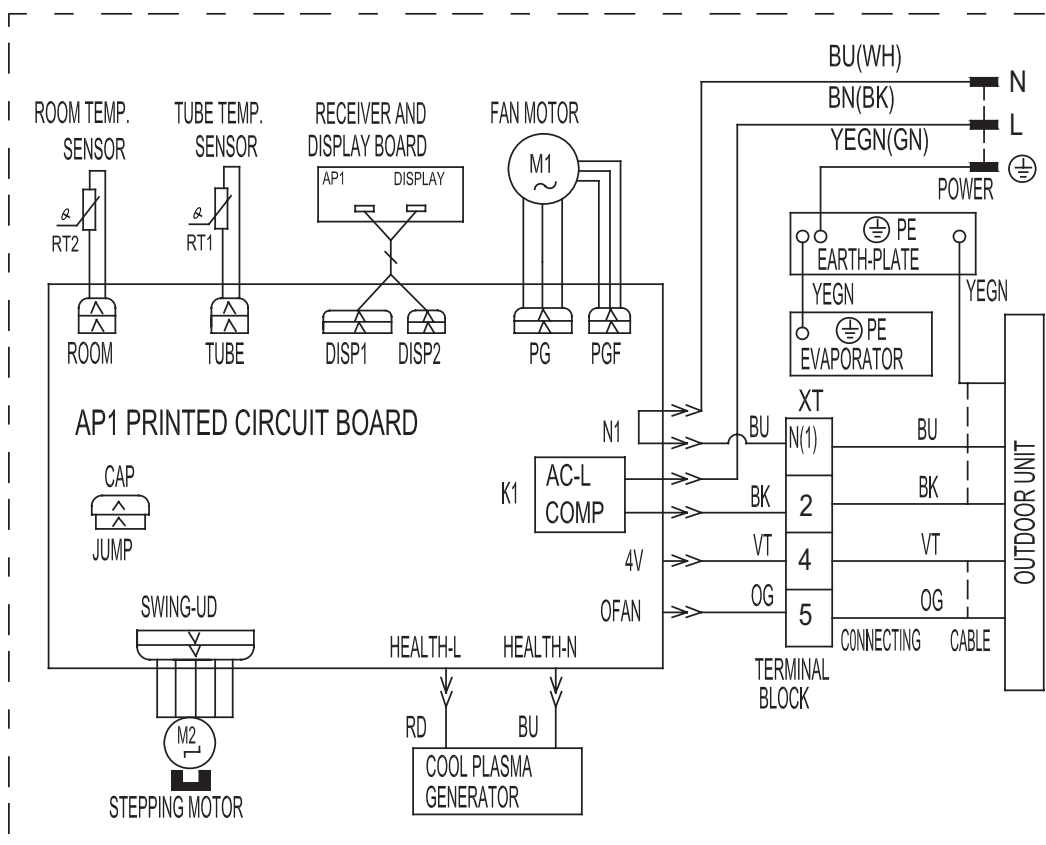
4. Refrigerant System Diagram

Heating model

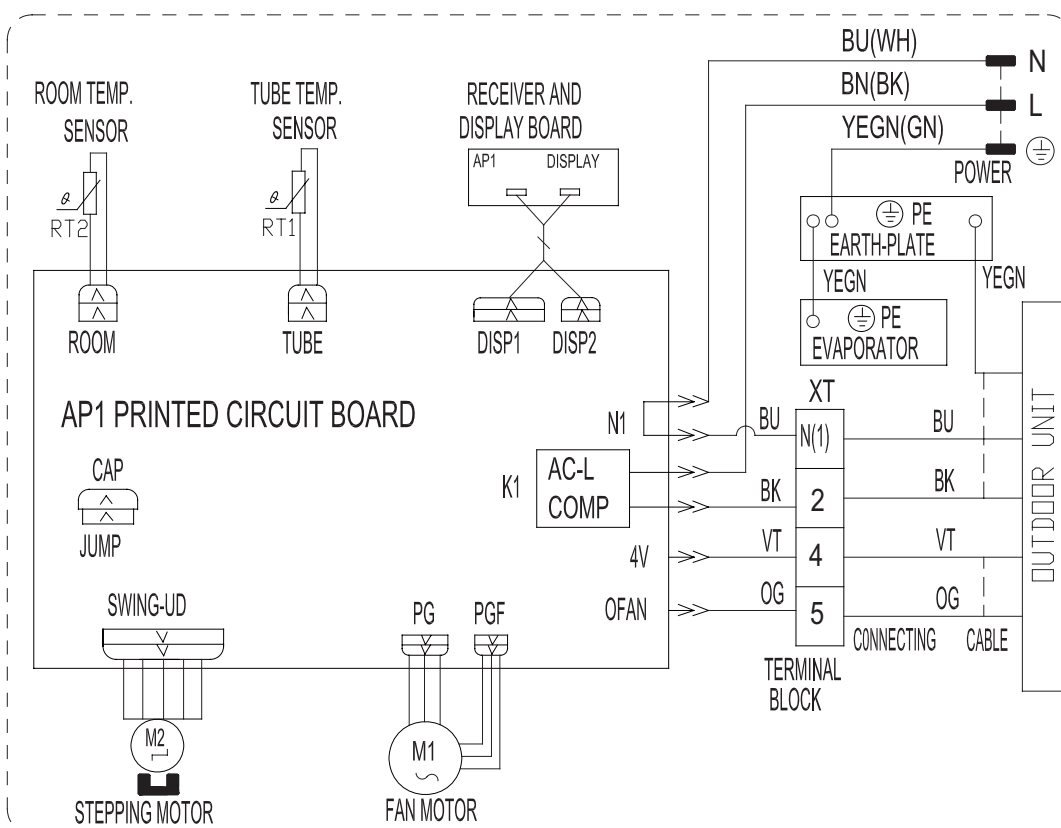


Refrigerant pipe diameter
 Liquid : 1/4" (6 mm)
 Gas : 3/8" (9.52 mm)

GWH07NA-K3NNB3B/I GWH09NA-K3NNB3D/I

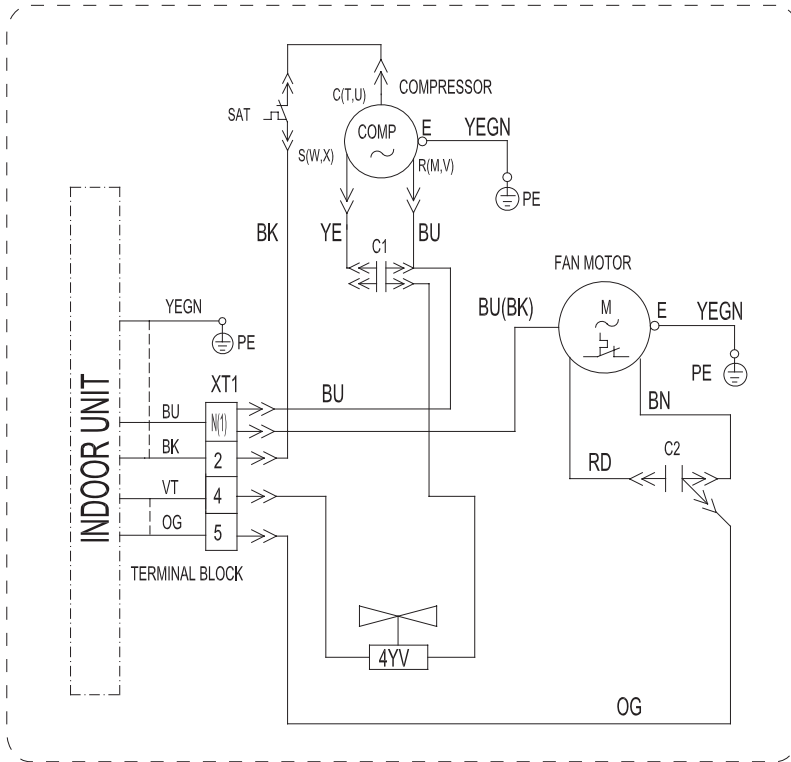


GWH12PC-K3NNA4A/I GWH12PC-K3NNA5A/I



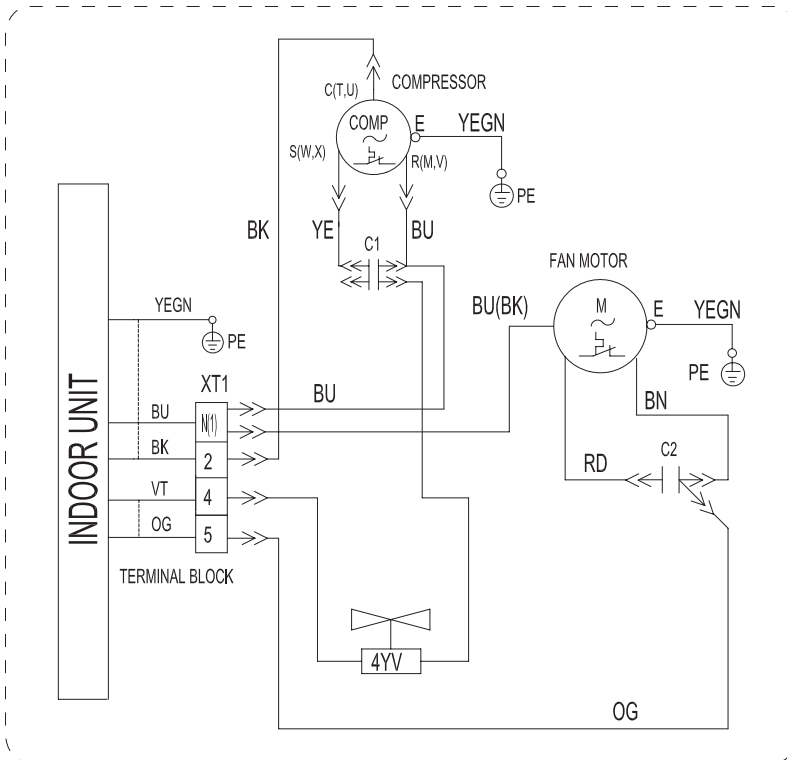
● Outdoor Unit

GWH07PA-K3NNA3B/O



GWH09PA-K3NNA3B/O

GWH12PC-K3NNA3A/O

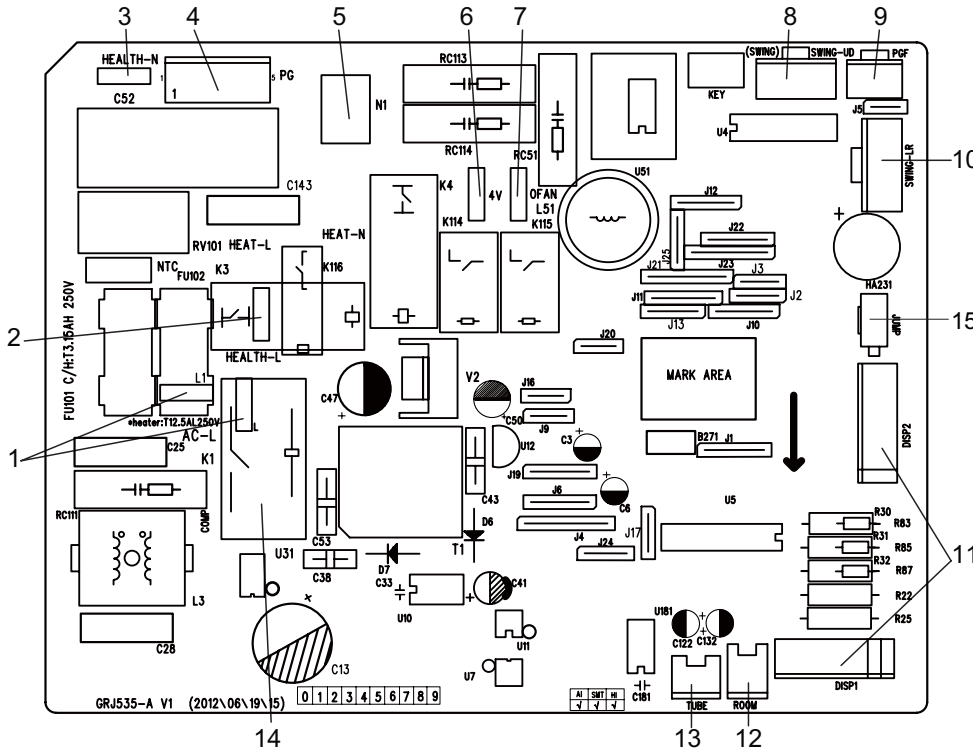


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

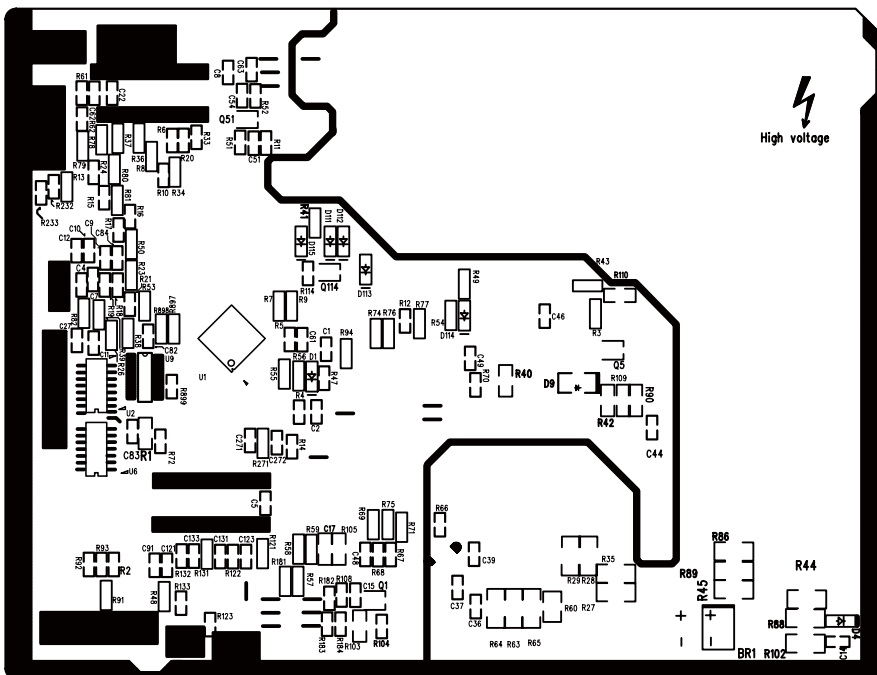
• Top view

GWH07PA-K3NNA3B/I GWH09PA-K3NNA3B/I GWH12PC-K3NNA3A/I GWH12PC-K3NNA4A/I GWH12PC-K3NNA5A/I



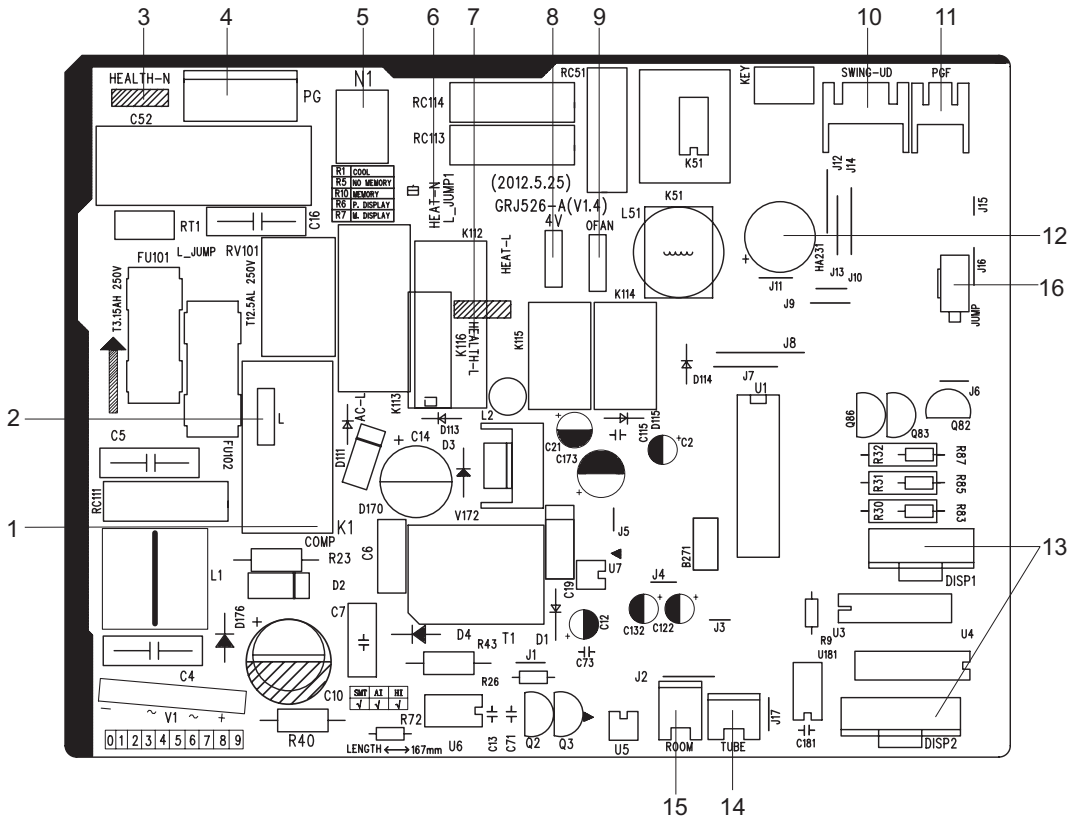
NO.	NAME
1	Interface of live wire
2	Interface of live wire for health function
3	Interface of neutral wire for health function
4	Control interface of PG motor
5	Interface of neutral wire
6	Interface of 4-way valve
7	Interface of outdoor fan
8	Auto button
9	Up & down swing
10	Feedback of indoor fan
11	Interface of display
12	Interface of ambienttemp sensor
13	Interface of pipe tempensor
14	Interface of compressor
15	Jumper Cap Interface

• Bottom view

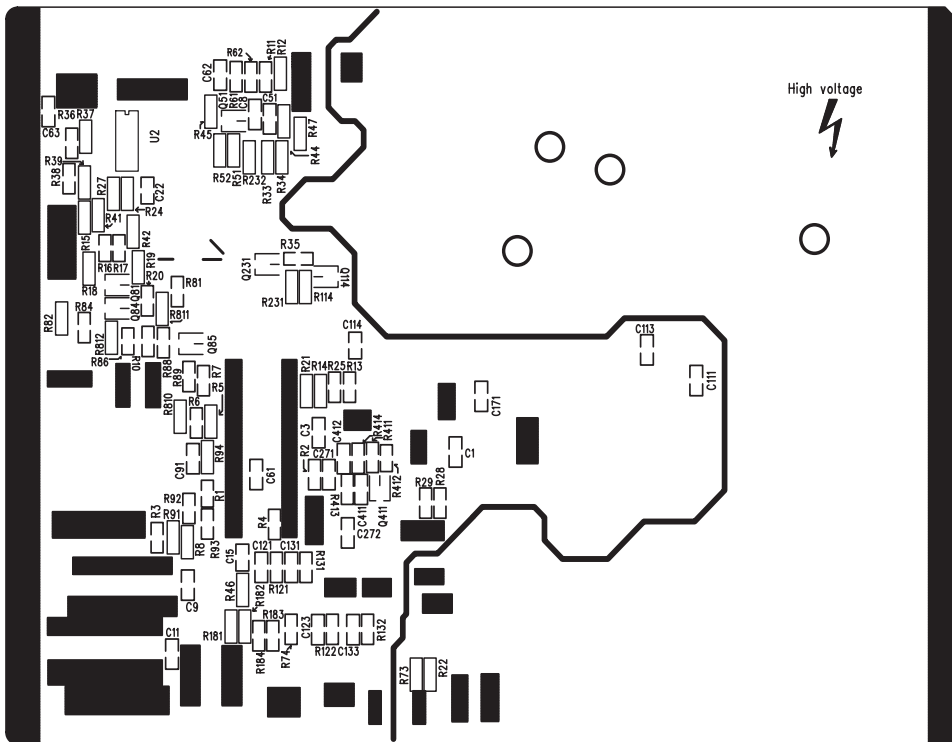


• Top View

GWH07NA-K3NNB3B/I GWH09NA-K3NNB3D/I



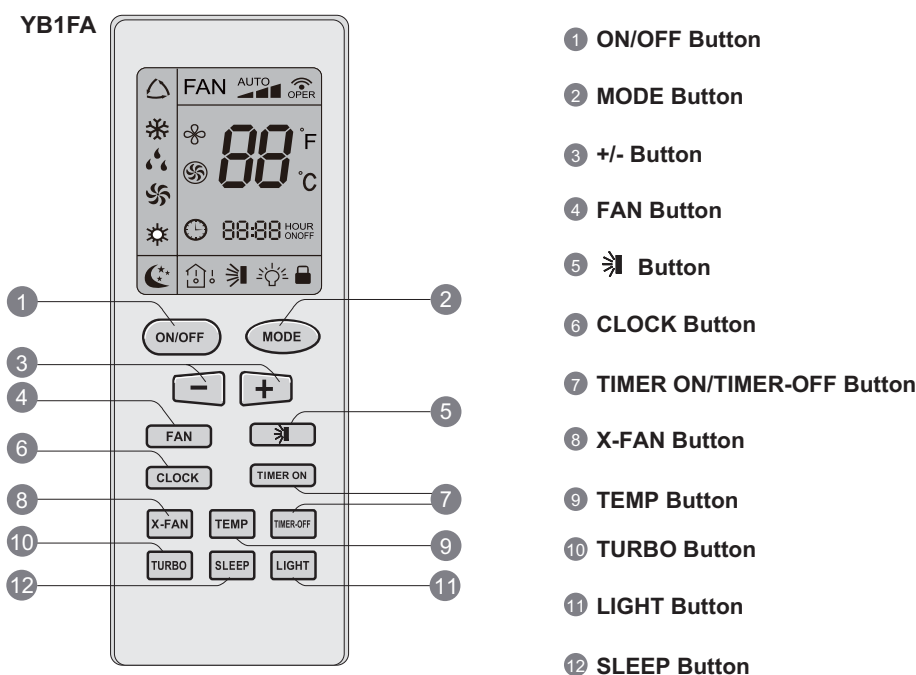
• Bottom View



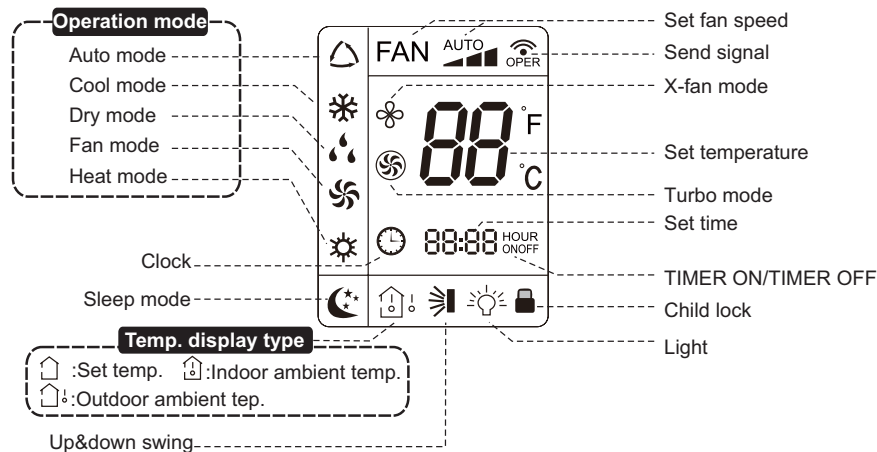
6. Function and Control

6.1 Remote Controller Introduction

Buttons on Remote Controller



Introduction for Icons on Display Screen



Introduction for Buttons on Remote Controller

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

1. ON/OFF Button

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

2. MODE Button

Press this button to select your required operation mode.



- When selecting auto mode, air conditioner will operate automatically according to exfactory setting. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "↻" button can adjust fan blowing angle.
- When 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 "↻" button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Dry indicator "💧" on indoor unit is ON. Under dry mode, fan speed can't be adjusted. Press "↻" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. All mode indicators on indoor display are off, Press "FAN" button to adjust fan speed. Press "↻" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator "🔥" on indoor unit is ON. Press "+" or "-" button to adjust set temperature Press "FAN" button to adjust fan speed. Press "↻" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).




Note:

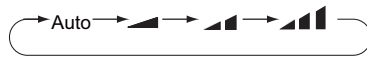
- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C ; Fan speed: auto, low speed, medium speed, high speed.

3. "+" or "-" 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 can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "+" or "-" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

4. FAN Button

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

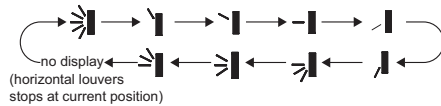


Note:

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

5. ↻ Button

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



- When selecting "↻", air conditioner is blowing fan 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.

6. CLOCK Button

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

Note:

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

7. TIMER-ON/TIMER-OFF Button

- TIMER ON button

TIMER ON button

"TIMER ON" button can set the time for timer on. After pressing this button, "🕒" icon disappears and the word "ON" on remote

controller blinks. Press "+" or "-" button to adjust TIMER ON setting. After each pressing "+" or "-" button, TIMER ON setting will increase or decrease 1min. Hold "+" or "-" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. "🕒" icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

- **TIMER OFF button**

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

Note:

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

8. X-FAN Button

Press this button under cool and dry mode to start up x-fan function, and "🌀" icon on remote controller will be displayed. Press this button again to cancel x-fan function, and "🌀" icon will disappear.

Note:

- When x-fan function is started up, if the air conditioner is turned off, indoor fan will still operate at low speed for a while to blow the residual water inside the air duct.
- During x-fan operation, press X-FAN button to turn off x-fan function. Indoor fan will stop operation immediately.

9. TEMP Button

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



- When selecting "🏠" or no display with remote controller, temperature indicator on indoor unit displays set temperature;
- When selecting "🏠🌡️" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature;
- When selecting "🏠🌡️🌡️" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

Note:

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

10. 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.

11. 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.

12. 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.

Function Introduction for Combination Buttons

Child lock function:

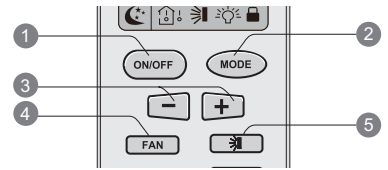
Press "+" and "-" simultaneously to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, it won't send signal.

Temperature display switchover function:

Under OFF status, press "-" and "MODE" buttons simultaneously to switch temperature display between °C and °F.

Operation Guide

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

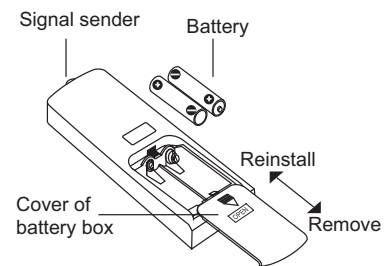


Replacement of Batteries in Remote Controller

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

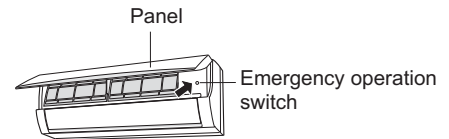
Note:

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



Emergency Operation

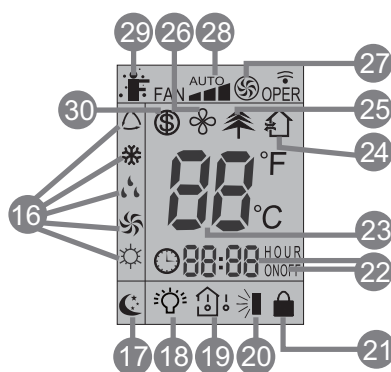
If remote controller is lost or damaged, please use auxiliary button to turn on or turn off the air conditioner. The operation in details are as below: As shown in the fig. Open panel, press aux. button to turn on or turn off the air conditioner. When the air conditioner is turned on, it will operate under auto mode.



YV1F7




- 1 **ON/OFF**
Press it to start or stop operation.
- 2 **▲** : Press it to increase temperature setting.
- 3 **MODE**
Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).
- 4 **SWING**
Press it set swing angle.
- 5 **▼** : Press it to decrease temperature setting.
- 6 **FAN**
Press it to set fan speed.
- 7 **TIMER OFF**
Press it to set auto-off timer.
- 8 **CLOCK**
Press it set clock.
- 9 **TIMER ON**
Press it to set auto-on timer.
- 10 **SLEEP**
- 11 **TEMP**
- 12 **TURBO**
- 13 **X-FAN | LIGHT**
Press the button left to turn X-FAN function on/off.
Press the button right to turn on/off the light.
- 14 **I FEEL**
- 15 **↑ / ↓**
Press it to set HEALTH or AIR function.



- 16 **MODE icon:**
If MODE button is pressed, current operation mode icon △ (AUTO), ❄️ (COOL), 💧 (DRY), 🌀 (FAN) or ☀️ (HEAT is only for heat pump models) will show.
- 17 **SLEEP icon :**
🌙 is displayed by pressing the SLEEP button. Press this button again to clear the display.
- 18 **LIGHT icon:**
💡 is displayed by pressing the LIGHT button.Press LIGHT button again to clear the display.
- 19 **TEMP icon:**
Pressing TEMP button, 🏠 (set temperature), 🏠 (indoor ambient temperature), 🏠 (outdoor ambient temperature)(Optional for some models) and blank is displayed circularly.
- 20 **Up & down swing icon:**
↕️ is displayed when pressing the up & down swing button. Press this button again to clear the display.

21 LOCK icon:

 is displayed by pressing "+" and "-" buttons simultaneously. Press them again to clear the display.


22 SET TIME display:

After pressing TIMER button, ON or OFF will blink. This area will show the set time.

23 DIGITAL display:

This area will show the set temperature. In SAVE mode, "SE" will be displayed. During defrosting operation, "H1" will be displayed.

24 AIR icon:

 is displayed when pressing the AIR button. Press this button again to clear the display. (Optional for some models.)

25 HEALTH icon:

 is displayed when pressing the HEALTH button. Press this button again to clear the display.

26 X-FAN icon:

 is displayed when pressing the X-FAN button. Press this button again to clear the display.

27 TURBO icon:

 is displayed when pressing the TURBO button. Press this button again to clear the display.


28 FAN SPEED display

Press FAN button to select the desired fan speed setting (AUTO Low-Med-High). Your selection will be displayed in the LCD windows, except the AUTO fan speed.

29 I FEEL icon:

 is displayed when pressing the I FEEL button. Press this button again to clear the display.

30 8°C Heating icon:

 is displayed when Pressing "TEMP" and "CLOCK" simultaneously in Heat mode.

Remote Controller Description

1 ON/OFF :

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

2 ▲:

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

3 MODE :

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



*Note: Only for models with heating function.

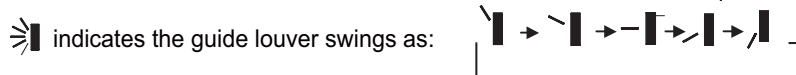
After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.

4 SWING:

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






This remote controller is universal. If any command ,  or  is sent out, the unit will carry out the command as .

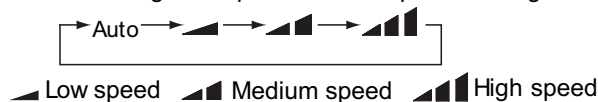





5 ▼ :

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



6 FAN :

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

















- 7** **TIMER OFF :**
Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again. TIMER OFF setting is the same as TIMER ON.
- 8** **CLOCK :**
Press CLOCK button,  blinking. Within 5 seconds, pressing + or - button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then  will be constantly displayed.
- 9** **TIMER ON :**
Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again. After press of this button,  disappears and "ON" blinks. "00:00" is displayed for ON time setting. Within 5 seconds, press + or - button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 Seconds after setting, press TIMER ON button to confirm.
- 10** **SLEEP:**
Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL , HEAT (Only for models with heating function). This function is available in COOL , HEAT (Only for models with heating function) mode to maintain the most comfortable temperature for you.
- 11** **TEMP:**
Press this button, you can see indoor set temperature, indoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:



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

Caution:

- This model hasn't outdoor ambient temperature display function. While remote controller can operate "" and indoor unit displays set temperature.
- It's defaulted to display set temperature when turning on the unit.
- Only for the models with temperature indicator on indoor unit.

- 12** **TURBO:**
Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.
- 13** **X-FAN | :**
X-FAN function: in COOL or DRY mode, the icon  is displayed and the indoor fan will continue operation for 2 minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.  function: turn on the display's light and press this button again to turn off the display's light. If the light is turned on , is  displayed. If the light is turned off,  disappears.
- 14** **I FEEL:**
Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.
- 15** ** / **
Press this button to achieve the on and off of healthy and scavenging functions in operation status. Press this button for the first time to start scavenging function; LCD displays "". Press the button for the second time to start healthy and scavenging functions simultaneously; LCD displays "" and "". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display "". Press this button again to repeat the operation above. (This function is applicable to partial of models)
- 16** **Combination of "+" and "-" buttons: About lock**
Press "+" and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked,  is displayed. In this case, pressing any button,  blinks three times.
- 17** **Combination of "MODE" and "-" buttons : About switch between Fahrenheit and centigrade** At unit OFF, press "MODE" and "-" buttons simultaneously to switch between $^{\circ}\text{C}$ and $^{\circ}\text{F}$.

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

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

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

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

20 About Back-lighting Function

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

Replacement of Batteries

1. Remove the battery cover plate from the rear of the remote controller.

(As shown in the figure)

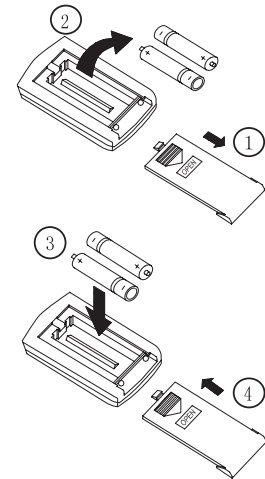
2. Take out the old batteries.

3. Insert two new AAA1.5V dry batteries, and pay attention to the polarity.

4. Reinstall the battery cover plate.

★ **Notes:**

- When replacing the batteries, do not use old or different types of batteries, otherwise, it may cause malfunction.
- If the remote controller will not be used for a long time, please remove batteries to prevent batteries from leaking.
- The operation should be performed in its receiving range.
- It should be kept 1m away from the TV set or stereo sound sets.
- If the remote controller does not operate normally, please take the batteries out and reinsert them after 30 seconds. If it still can't operate properly, replace the batteries.



Sketch map for replacing batteries

6.2 Brief Description of Modes and Functions

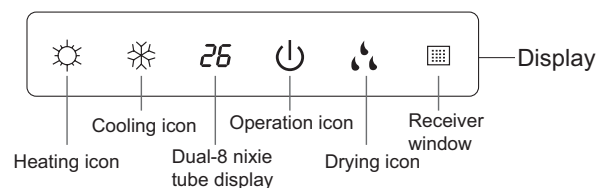
1. Summary

(1) Buzzer

When the controller is energized or receives signal from button (emergency operation switch on air conditioner) or remote controller, the buzzer will give out a beep.

(2) Display

After energization, all icons will be displayed once. Operation icon is in red under standby status. After turning on the unit by remote controller, operation icon is bright and corresponding set operation mode icon will be displayed (Mode icon include: cooling, heating, drying).



(Display content or position may be different from above graphics, please refer to actual products)

(3) Temperature parameter

- ◆ Indoor set temperature (T_{preset})
- ◆ Indoor ambient temperature (T_{amb})
- ◆ Inner tube temperature of indoor evaporator (T_{tube})

2. Introduction of Basic Mode Function

- ◆ Once the compressor is energized, there should be a minimum interval of 3 mins between two start-ups.
 - ◆ If the unit is with memory function and is off before power failure, the compressor can be restarted without an interval of 3 mins; if the unit is on before power failure, the compressor will be restarted with an interval of 3 mins.
- Once compressor is started, it won't stop within 6 mins according to the change of room temp.

(1) Auto mode

① Operation condition and process for auto mode

Under auto mode, the system will automatically select operation mode (cooling, heating, and fan) according to indoor ambient temperature. There will be 30s delayed for protection between mode switchover.

- ◆ When $T_{\text{amb}} \geq 26^{\circ}\text{C}$, the system operates under cooling mode; Ex-factory set temperature is 20°C .
- ◆ Heat pump unit: when $T_{\text{amb}} \geq 22^{\circ}\text{C}$, the system operates under heating mode; Ex-factory set temperature is 25°C .
- ◆ $22^{\circ}\text{C} < T_{\text{amb}} < 26^{\circ}\text{C}$: The system operates under fan mode if turn on the unit to enter into auto mode for the first time; If switch to auto mode from cooling, heating or fan mode, the system keeps previous operation mode; If switch to auto mode from drying mode, the system operates under fan mode.

② Display: Operation icon, actual operation mode icon, set temperature (that's the display content of dual-8 nixie tube)

③ Protection function is same as that under each mode.

(2) Cooling mode

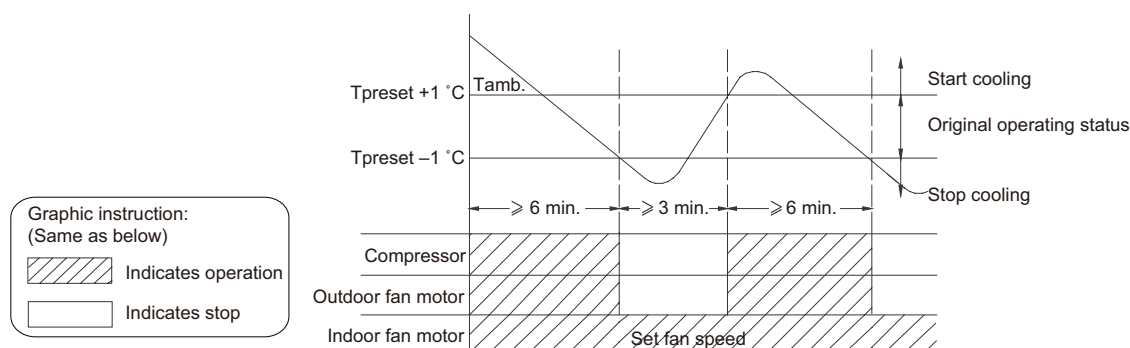
① Operation condition and process for cooling mode

◆ When $T_{\text{amb}} \geq T_{\text{set}} + 1^{\circ}\text{C}$, the system operates under cooling mode. In this case, the compressor, the ODU fan motor and the IDU fan motor operates at set speed.

◆ When $T_{\text{amb}} \leq T_{\text{set}} - 1^{\circ}\text{C}$, the compressor and the ODU fan motor stop, while the IDU fan motor operates at set speed.

◆ When $T_{\text{set}} - 1^{\circ}\text{C} < T_{\text{amb}} < T_{\text{set}} + 1^{\circ}\text{C}$, the system will maintain its previous operation status.

In cooling mode, the 4-way valve is de-energized (4-way valve is not available for cooling only unit). Temperature setting range is $16 \sim 30^{\circ}\text{C}$.



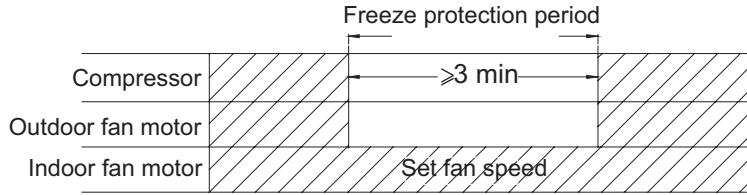
② Display: Operation icon, cooling icon, set temperature.

③ Protection function

- ◆ Freeze protection

During operation, when controller detected that $T_{\text{tube}} \leq 0^{\circ}\text{C}$ for a consecutive period of time, the system enters into freeze protection. In that case, the compressor and the ODU fan stop operation, while the IDU operates at set fan speed. If freeze protection is released and

the compressor has been out of operation for 3 mins, the unit will resume its previous operation status.



◆ Overcurrent protection (this protection function is not available for those models whose cooling capacity $\leq 12000\text{Btu/h}$)

During operation process, if controller detected that system current exceeds the limit value for 3s consecutively (overcurrent), only the fan operates. About 3 mins later, if overcurrent is released, the system will resume original operation.

If overcurrent protection occurs for 6 times consecutively, and resume operation time won't exceed 6min every time, overcurrent protection information will be displayed. After turning off the unit, display won't be displayed.

If turn on the unit again, the system will be restated up again. Overcurrent protection information will be eliminated.

Please refer to maintenance part for display information and disposal method for details.

◆ Locked protection to IDU fan motor

During operation of IDU fan motor, if controller detected that the rotation speed of IDU fan motor less than 300/min or stop rotation, the motor operates abnormally. In order to prevent damage to motor, controller will protect automatically, the system stops operation and blocked information of IDU fan motor will be displayed. After turning off the unit, display won't be displayed.

If turn on the unit again, the system will be restated up again. Blocked information of IDU fan motor will be eliminated. (For some models, they can only be restated up after re-energized)

Please refer to maintenance part for display information and disposal method for details.

(3) Drying mode

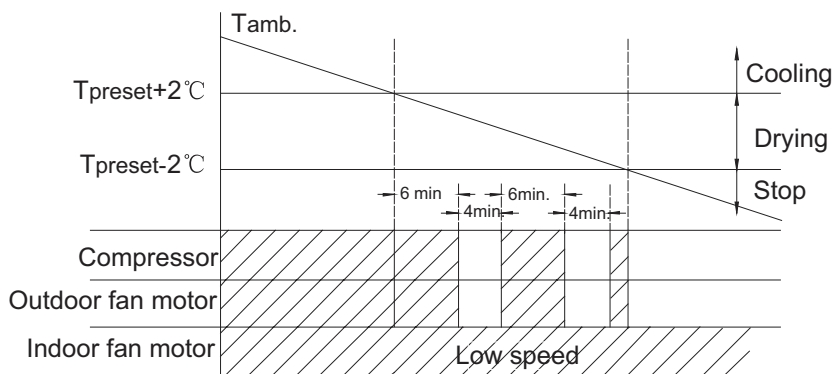
① Operation condition and process for drying mode

◆ When $T_{amb.} > T_{set} + 2^{\circ}\text{C}$, the system starts drying and cooling. In this case, the compressor and the ODU fan motor operate, and the IDU fan motor operates at low speed.

◆ When $T_{set} - 2^{\circ}\text{C} \leq T_{amb.} \leq T_{set} + 2^{\circ}\text{C}$, the system will start drying. In this case, the IDU fan motor operates at low speed; the compressor and the ODU fan motor operate for 6 minutes and stop for 4 minutes in cycle.

◆ When $T_{amb.} < T_{set} - 2^{\circ}\text{C}$, the compressor and the ODU fan motor stop, while the IDU fan motor runs at low speed.

In drying mode, the 4-way valve is de-energized (4-way valve is not available for cooling only unit); Temperature setting range is $16 \sim 30^{\circ}\text{C}$. Fan speed can't be adjusted.



② Display: Operation icon, drying icon, set temperature.

③ Protection function

◆ Freeze protection

During drying and cooling operation, when the controller detected that $T_{tube} \leq 0^{\circ}\text{C}$ for a period of time consecutively, the system will enter into freeze protection. In that case, the compressor and the ODU fan motor stops operation, while the IDU fan motor operates at low speed. When freeze protection is release and the compressor has stopped for 3min, the system will resume original operation.

During drying operation, when the controller detected that $T_{tube} \leq 0^{\circ}\text{C}$ for a period of time consecutively, the system enters into freeze protection. In that case, the compressor, the ODU fan motor stops operation, while the IDU fan motor operates at low speed. When freeze protection is release and the compressor has stopped for 4min, the system will resume original operation.

◆ Other protection is same as that under cooling mode.

(4) Fan mode

① Operation condition and process for fan mode

In fan mode, the IDU fan motor operates at set speed, while the compressor and the ODU fan motor stop. 4-way valve is de-energized (4-way valve is not available for cooling only unit). Temperature setting range is 16~30°C .

② Display: Operation icon, set temperature.

③ Protection function

In fan mode, there are overcurrent protection and blocked protection of IDU fan motor. Please refer to corresponding protection function under cooling mode for details.

(5) Heating mode(no heating mode is not available for cooling only unit)

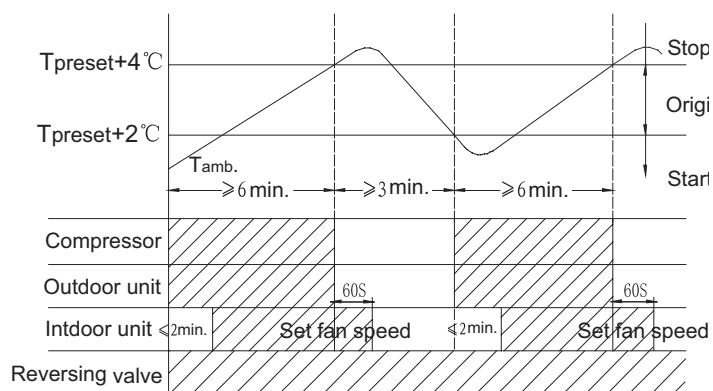
① Operation conditioner and process for heating mode

◆ When $T_{amb.} \leq T_{set} + 2^{\circ}\text{C}$, the system starts heating operation. In this case, the 4-way valve is energized. The compressor and the ODU fan motor operates simultaneously; The IDU fan motor will be started up after delayed for a period of time to make sure the air conditioner won't blow out cold wind.

◆ When $T_{amb.} \geq T_{preset} + 4^{\circ}\text{C}$, the compressor and the ODU motor stop. The 4-way valve is energized all the time. The IDU fan motor will blow residual heat after operating at set speed for a period of time consecutively to make sure the inner temperature of air conditioner won't be too high.

◆ When $T_{preset} < T_{amb.} < T_{preset} + 4^{\circ}\text{C}$, the system will maintain its previous operation status.

In heating mode, 4-way valve is energized. Temperature setting range is 16~30°C .



② Display: Operation icon, heating icon, set temperature.

③ Defrosting condition and process

For ensuring heating effect, air conditioner will defrost automatically according to defrosting status on outdoor unit. Dual-8 nixie tube displays H1 during defrosting. (Heating icon is bright for a period time and then OFF for some models)

④ Protection function

◆ Overheating prevention protection

During operation, when controller is detected that $T_{tube} > 55^{\circ}\text{C}$, the ODU fan motor stops operation; When T_{tube} is resumed normally, the ODU fan motor resumes operation.

◆ Noise silencing protection

When turning off the unit or during mode switchover, the 4-way valve is closed. In order to decrease noise, the 4-way valve will delay 2mins to be closed.

◆ Overcurrent protection (this protection function is not available for those models whose cooling capacity $\leq 12000\text{Btu/h}$)

During operation process, if controller detected that system current exceeds the limit value for 3s consecutively(overcurrent), the system stops operation. About 3mins later, if overcurrent is released, the system will resume original operation. If overcurrent protection occurs for 6 times consecutively, and resume operation time won't exceed 6min every time, overcurrent protection information will be displayed. After turning off the unit, display won't be displayed.

If turn on the unit again, the system will be restated up again. Overcurrent protection information will be eliminated.

Please refer to maintenance part for display information and disposal method for details.

◆ Locked protection to IDU fan motor

During operation of IDU fan motor, if controller detected that the rotation speed of IDU fan motor less than 300/min or stop rotation, the motor operates abnormally. In order to prevent damage to motor, controller will protect automatically, the system stops operation and blocked information of IDU fan motor will be displayed. After turning off the unit, display won't be displayed.

If turn on the unit again, the system will be restated up again. Blocked information of IDU fan motor will be eliminated. (For some models, they can only be restated up after re-energized)

Please refer to maintenance part for display information and disposal method for details.

3. Other Control Function Introduction

(1) Timer function

Controller has general timer function and clock timer function. When you select the remote controller with general timer function, only the general timer function of controller can be activated; when you select the remote controller with clock timer, only the clock timer function of controller can be activated.

① General timer: The precision of general timer is 0.5hour. 24hours circulated timer can't be set.

◆ Timer ON: Timer ON can be set at unit OFF. If selected ON time is reached, the unit will start to operate according to previous setting status. Time setting range is 0.5~24hr in 30-minute increments.

◆ Timer OFF: Timer OFF can be set at unit ON. If selected OFF time is reached, the unit will stop. Time setting range is 0.5~24hr in 30-minute increments.

② Clock timer: The precision of clock timer is 0.5hour. 24hours circulated timer can be set.

◆ Timer ON: If timer ON is set during operation of the unit, the unit will continue to operate. If timer ON is set at unit OFF, upon ON time reaches, the unit will start to run according to previous setting status.

◆ Timer OFF: If timer OFF is set at unit OFF, the system will keep standby status. If timer OFF is set at unit ON, upon OFF time reaches, the unit will stop operation.

◆ Timer change:

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button on the remote controller. You can also reset the timer.

If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep running at current status till OFF time reaches. Upon ON time reached, the system will be turned on automatically. The unit will operate circularly like that every 24hours.

If timer ON and timer OFF are set at unit OFF status, the system keep OFF status till ON time reaches. Upon OFF time reaches, the system will be turned OFF automatically. The unit will operate circularly like that every 24hours.

(2) Emergency operation switch

After pressing this button, the system will operate according under auto mode and the IDU fan motor operates at auto speed. Swing motor operates when the IDU fan motor operates. Press this button again to turn off the unit.



(3) Sleep function

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

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

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

(4) Turbo function

Turbo function can be set under cooling and heating modes. During operation of turbo function, the system operates at the maximum fan speed.

(5) Dry function

Dry function can be set under cooling and drying modes. During operation of drying function, the fan will stop operation after operating for a period of time when turning off the unit.

(6) Auto fan speed control

Auto fan speed control can be set under cooling, heating and fan mode. During operation of auto fan speed control, the IDU fan motor will adjust the fan speed (high, medium or low speed) according to ambient temperature.

(7) Up&down swing control

① After energization, up & down swing motor will firstly have the horizontal louver rotate anticlockwise to position O to close air outlet. If swing function has not been set after start-up of the unit, horizontal louver will turn clockwise to position D in heating mode, or turn clockwise to level position L in other modes.

② If swing function is set when turning on the unit, the horizontal louver will swing between L and D.

Horizontal louver has 7 swing statuses:

◆ Stay at position L: control by remote controller:

◆ Stay at position A: control by remote controller:

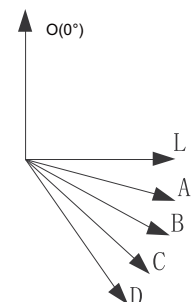
◆ Stay at position B: control by remote controller:

◆ Stay at position C: control by remote controller:

◆ Stay at position D: control by remote controller:

◆ Swing between L and D: control by remote controller:

◆ Stop at any position between L and D (angles between L and D are equiangular) and no display on remote controller.



- ③ When turning off the unit, horizontal louver will close at position O.
- ④ Swing action is valid only when set swing command and the IDU fan motor is operating.

(8) Dual-8 nixie tube display

- ◆ When the air conditioner is turned on for the first time, dual-8 nixie tube defaulted to display current set temperature.
- ◆ When controller receives signal of display set temperature, dual-8 nixie tube displays set temperature. When received remote control signal is switched to indoor ambient temperature display status signal from other display status, dual-8 nixie tube will display indoor ambient temperature for 3-5s, and then turn back to display set temperature. If remote control to set other status, the display keeps the same.
- ◆ When air conditioner has a malfunction, dual-8 nixie tube will show relevant error code.

F1	Indoor ambient temperature sensor is open/short-circuited
F2	Indoor evaporator temperature sensor is open/short-circuited
H6	Blocked protection of IDU fan motor
C5	Malfunction protection of jumper cap
U8	Zero-crossing inspection circuit malfunction of the IDU fan motor

- ◆ When air conditioner defrosts automatically, dual-8 nixie tube displays "H1". (Heating icon is bright for a period time and then OFF for some models)
- ◆ If turn off light button, all display will be turned off.

(10) Memory function

- ① Power failure when turning on the unit
 - ◆ Memory content: ON status, mode, up&down swing, light, set temperature, set fan speed, general timer, Fahrenheit/ Celsius
 - ◆ General timer can be memorized. Time of timer is calculated again from energization.
 - ◆ Clock timer can't be memorized.
- ② Power failure when turning off the unit
 - ◆ Memory content: OFF status, mode, up&down swing, light, set temperature, set fan speed, general timer, Fahrenheit/ Celsius
 - ◆ General timer can be memorized. Time of timer is calculated again from energization.
 - ◆ Clock timer can't be memorized.

4. Special Function

(1) Health function (for the model with health function)

During operation of the IDU fan motor, press health button on the remote controller to start health function (If there is not health button on the remote controller, the unit defaults health function ON).

(2) I Feel function (for all models, but it needs the remote controller which can set this function)

When I FEEL command is received, the controller will operate according to the ambient temperature sent by the remote controller (For defrosting and cold air prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will regularly send ambient temperature data to the controller. When the data has not been received for a long time, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not set, the ambient temperature will be that sensed by the air conditioner.

Part II : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

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



Warnings

Electrical Safety Precautions:

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

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.

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

12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.

13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.

14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.

15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

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

Refrigerant Safety Precautions:

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

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

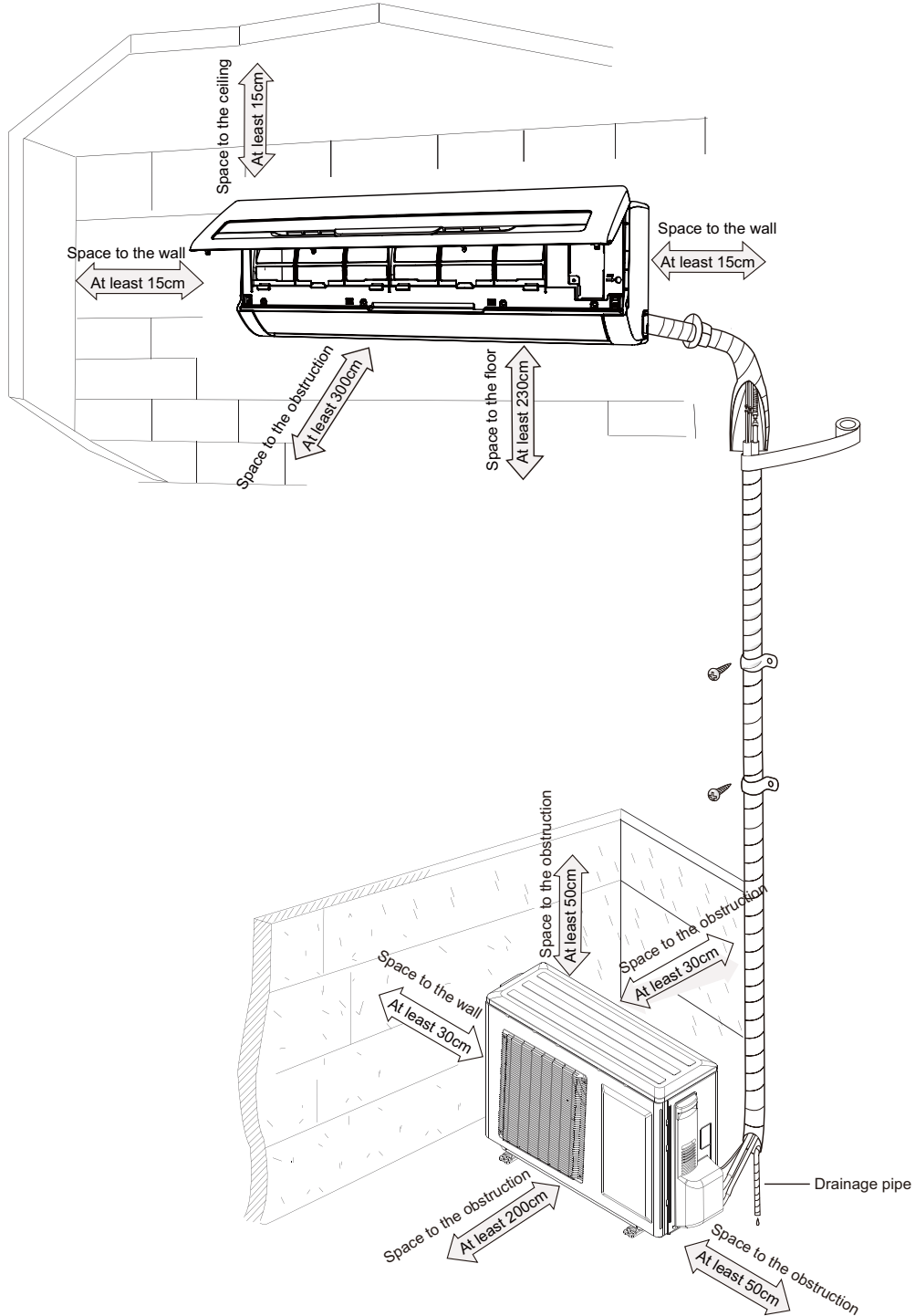
Main Tools for Installation and Maintenance

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

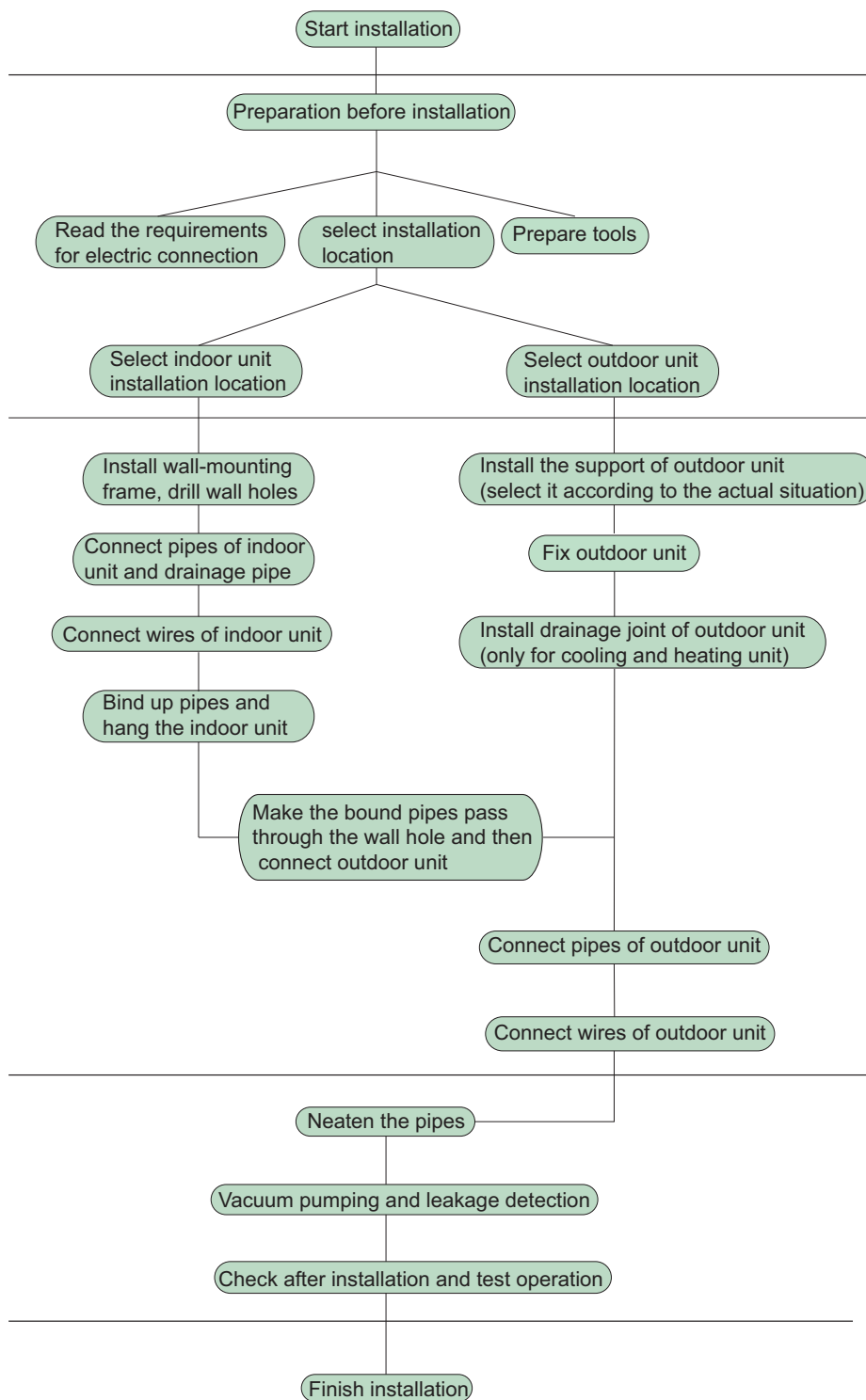
8. Installation

8.1 Installation Dimension Diagram

Installation dimension diagram



Installation procedures



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

8.2 Installation Parts-checking

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

⚠ Note:

- 1.Please contact the local agent for installation.
- 2.Don't use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

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

- (1) The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
- (2) The place with high-frequency devices (such as welding machine, medical equipment).
- (3) The place near coast area.
- (4) The place with oil or fumes in the air. in the air.
- (5) The place with sulfureted gas.
- (6) Other places with special circumstances.

2. Indoor Unit:

- (1) There should be no obstruction near air inlet and air outlet.
- (2) Select a location where the condensation water can be dispersed easily and won'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 height of indoor unit should be between 230-260cm from the floor in order to provide sufficient space for maintenance.
- (7) Don't install the indoor unit right above the electric appliance.
- (8) The appliance shall not be installed in the laundry.

3. Outdoor unit:

- 1.Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.
- 2.The location should be well ventilated and dry, in which the outdoor unit 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 Requirements Forelectric Connection

1. Safety precaution

- (1) Must follow the electric safety regulations when installing the unit.
- (2) According to the local safety regulations, use qualified power supply circuit and air switch.
- (3) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock,fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.

Air-conditioner	Air switch capacity
07K/09K	10A
12K	16A

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

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

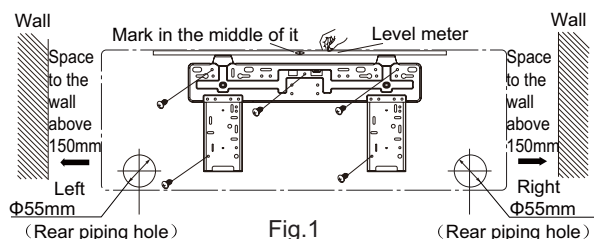
- (1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.
- (2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic expansion particle) and then fill the plastic expansion particles

in the holes.

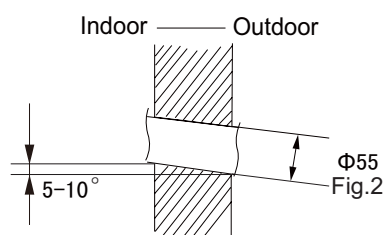
(3) Fix the wall-mounting frame on the wall with tapping screws (ST4.2X25TA) and then check if the frame is firmly installed by pulling the frame. If the plastic expansion particle is loose, please drill another fixing hole nearby.

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)



(2) Open a piping hole with the diameter of Φ55 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)



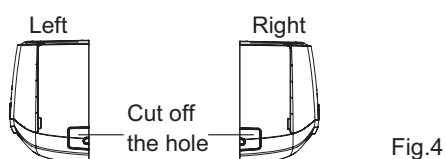
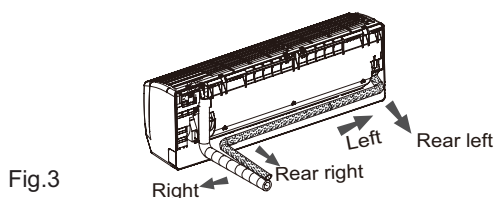
⚠ Note:

- (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

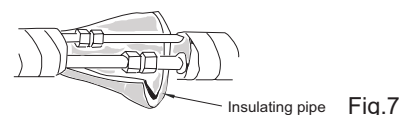
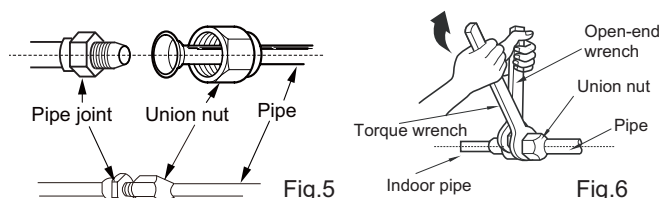
(1) The pipe can be led out in the direction of right, rear right, left or rear left.(As show in Fig.3)

(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)



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)

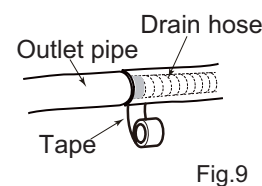
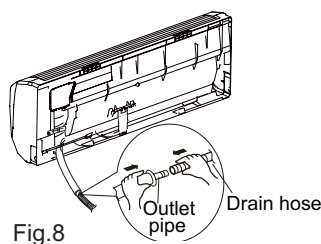


Refer to the following table for wrench moment of force:

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

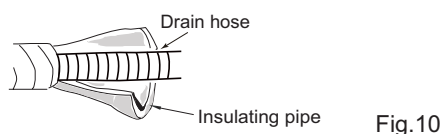
6. Install Drain Hose

- (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)



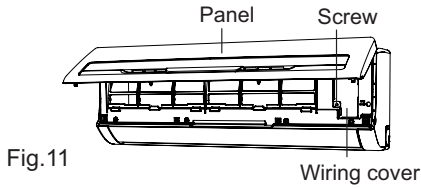
⚠ Note:

- (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)

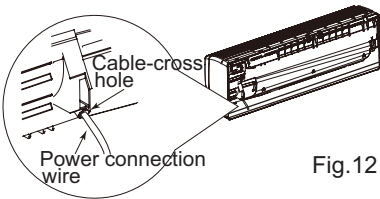


7. Connect Wire of Indoor Unit

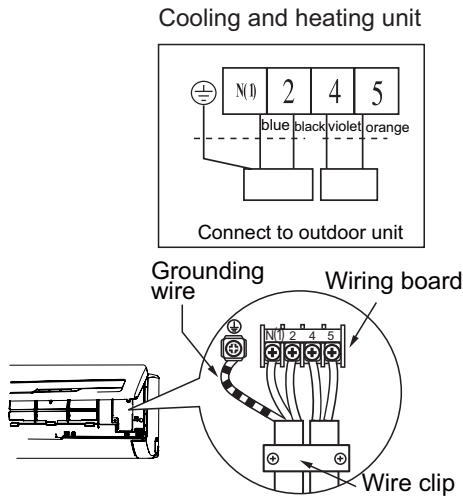
(1) Open the panel, remove the screw on the wiring cover and then take down the cover.(As show in Fig.11)



(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)



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



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

Fig.13

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

⚠ Note:

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

8. Bind up Pipe

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

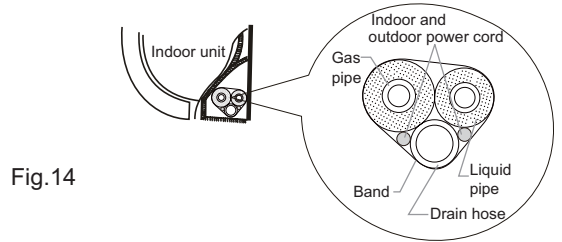


Fig.14

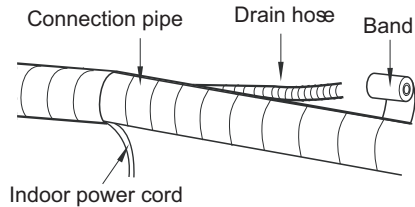


Fig.15

⚠ Note:

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

9. Hang the Indoor Unit

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

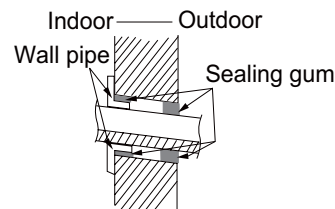


Fig.16

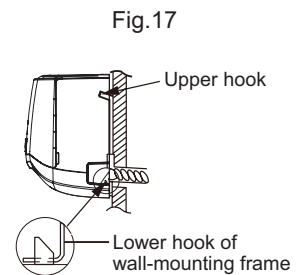


Fig.17

⚠ Note:

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

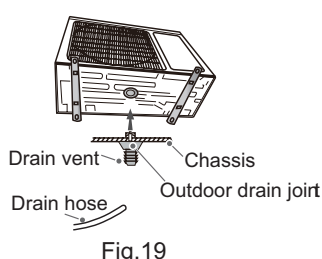
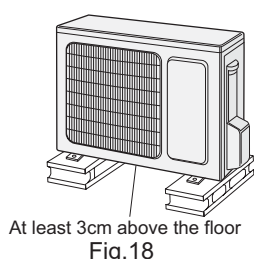
8.6 Installation of Outdoor Unit

1. Fix the support of outdoor unit(select it according to the actual installation situation)

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

⚠ Note:

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

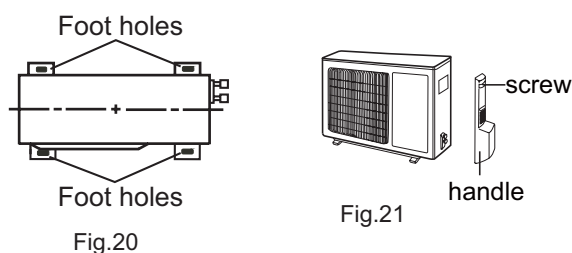


2. Install Drain Joint(Only for cooling and heating unit)

- (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)

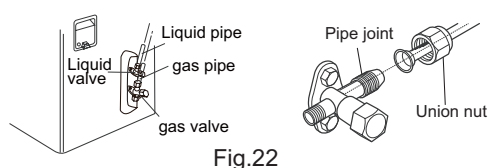
3. Fix Outdoor Unit

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



4. Fix Outdoor Unit

- (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)



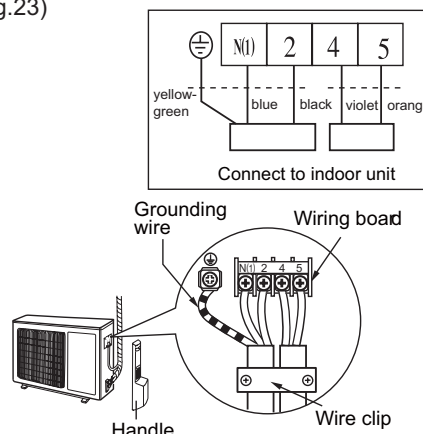
- (3) Pretightening the union nut with hand.
- (4) Tighten the union nut with torque wrench .

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 signal control wire (only for cooling and heating unit) to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)



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

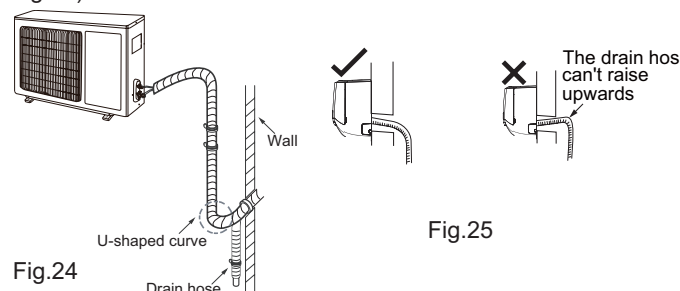
- (2) Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

⚠ 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

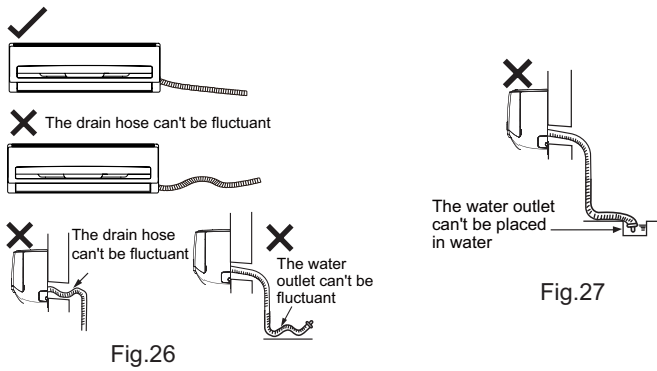
- (1) The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.
- (2) If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting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



⚠ Note:

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

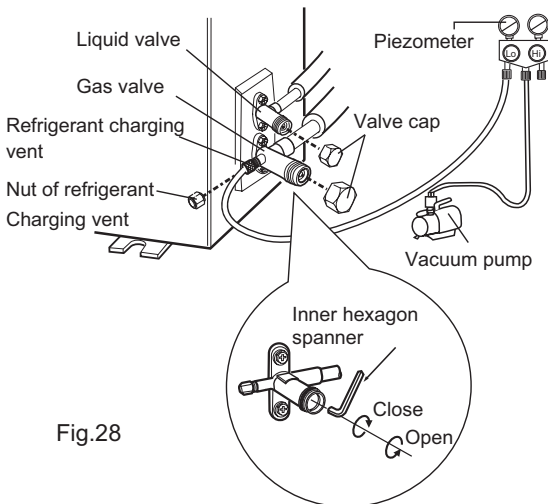
(3) The water outlet can't be placed in water in order to drain smoothly.(As show in Fig.27)



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)



2. Leakage detection

- (1) With leakage detector:
Check if there is leakage with leakage detector.
- (2) With soap water:
If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

8.8 Check After Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

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

2. Test operation

- (1) Preparation of test operation
 - The client approves the air conditioner installation.
 - Specify the important notes for air conditioner to the client.
- (2) Method of test operation
 - Put through the power, press ON/OFF button on the remote controller to start operation.
 - Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
 - If the ambient temperature is lower than 16°C , the air conditioner can't start cooling.

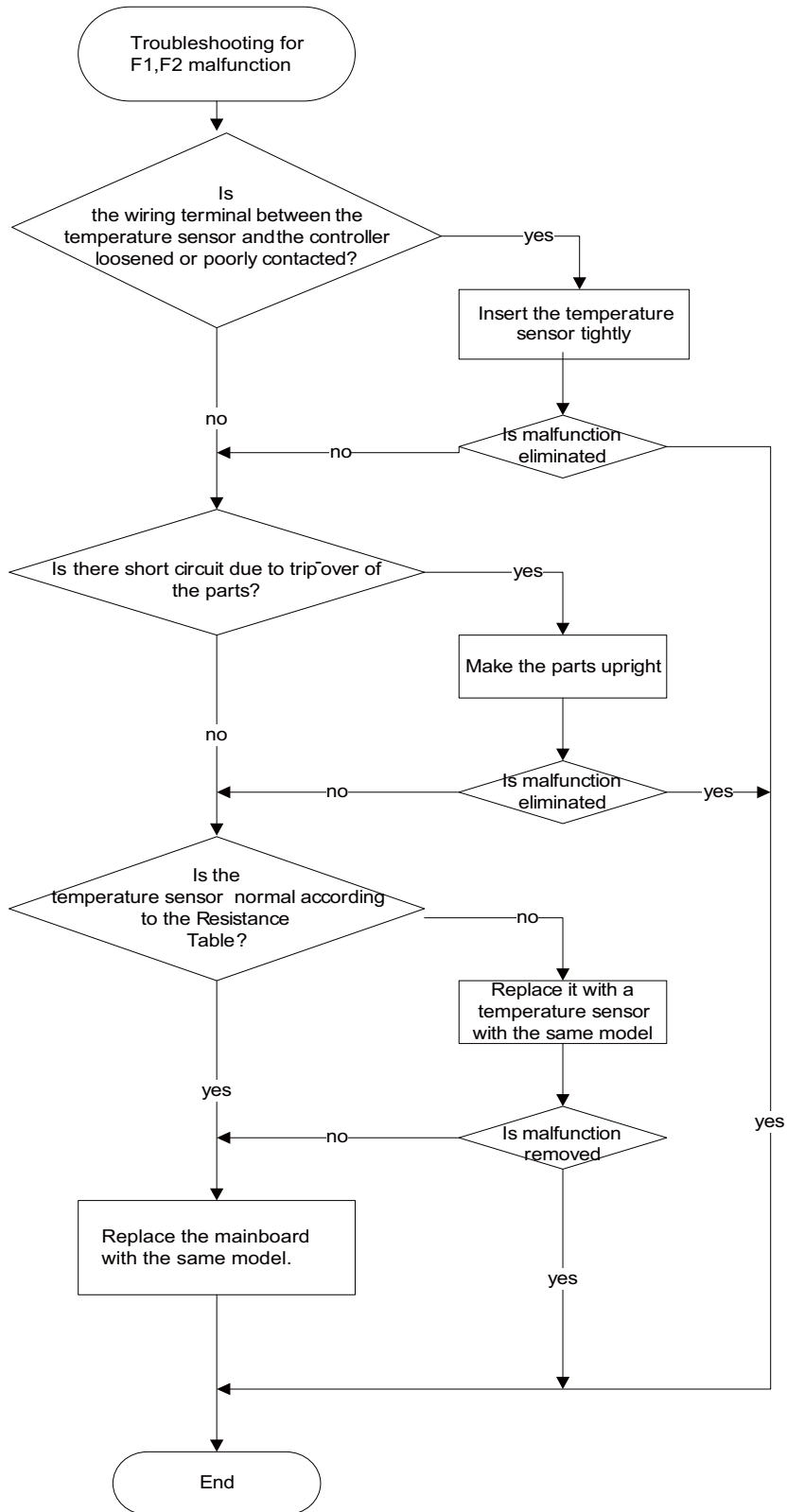
9. Maintenance

9.1 Error Code

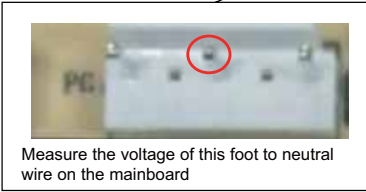
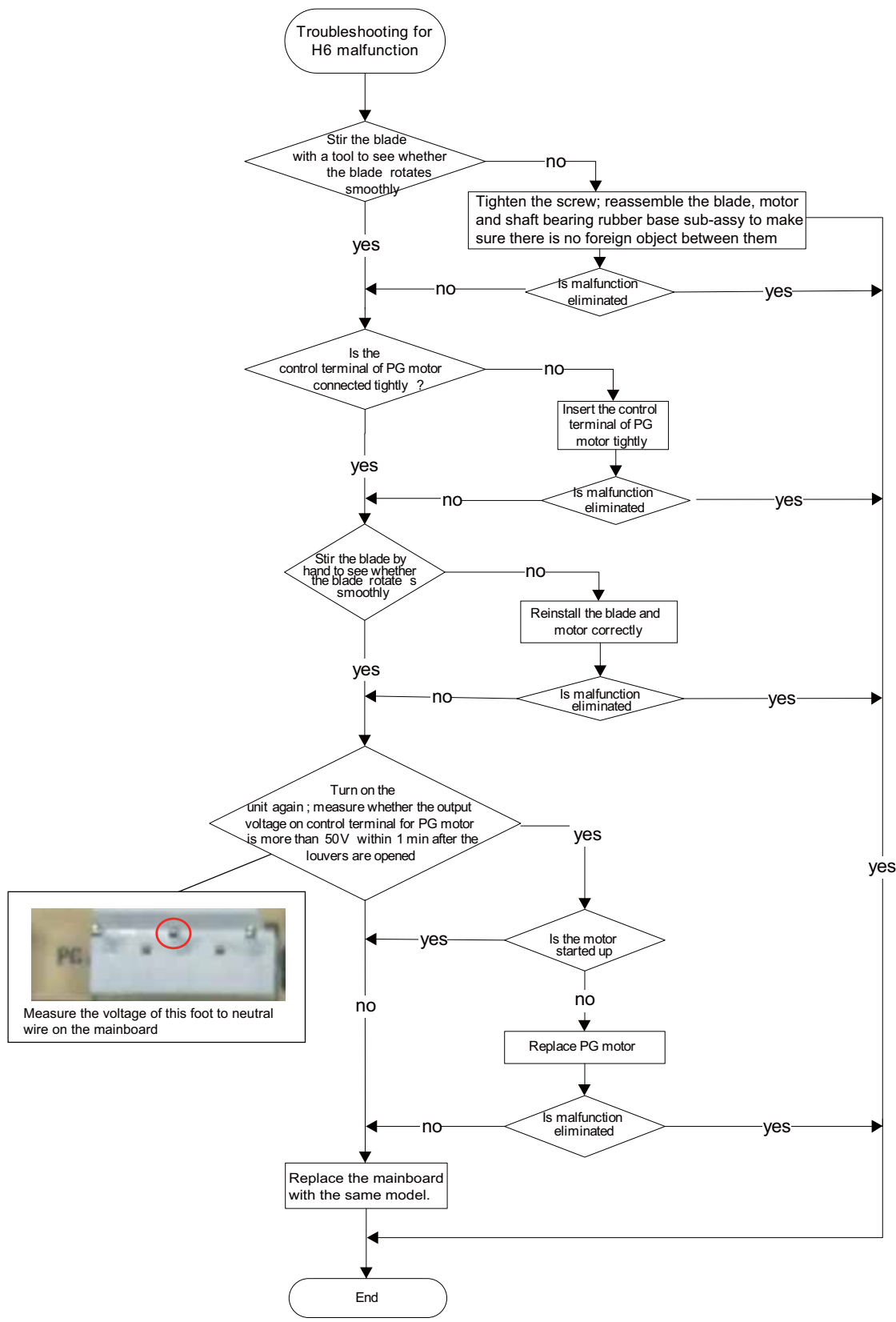
No.	Malfunction Name	Display Method of Indoor Unit			A/C Status	Possible Causes(For specific maintenance method, please refer to the following procedure of troubleshooting)
		Error Code	Indicator lamp (Only for the unit with indicator; during blinking, ON for 0.5S and OFF for 0.5S)	Operation Lamp		
1	Indoor ambient temperature sensor is open/short-circuited	F1		Blinks once every 3s		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except IDU fan motor operates, other loads stop operation; During heating operation, the system stops operation.</p> <ol style="list-style-type: none"> 1. The wiring terminal between indoor ambient temperature sensor and main board is loosened or poorly contacted; 2. There's short circuit due to trip-over of the parts on controller; 3. Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2		Blinks twice every 3s		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except IDU fan operates, other loads stop operation; During heating operation, the complete unit stops operation.</p> <ol style="list-style-type: none"> 1. The wiring terminal between indoor evaporator temperature sensor and main board is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
3	Blocked protection of IDU fan motor	H6	Blinks 11 times every 3s			<p>IDU fan, ODU fan, compressor and electric heat tube stop operation. Horizontal louver stops at the current position.</p> <ol style="list-style-type: none"> 1. The feedback terminal of PG motor is not connected tightly. 2. The control terminal of PG motor is not connected tightly. 3. Fan blade rotates unsmoothly. 4. Malfunction of motor 5. Main board is broken.
4	Malfunction protection of jumper cap	C5	Blinks 15 times every 3s			<p>Operation of remote controller or control panel is available, but the unit won't act.</p> <ol style="list-style-type: none"> 1. There's not jumper cap on the main board. 2. Jumper cap is not inserted properly and tightly. 3. Jumper cap is damaged. 4. Controller is damaged.
6	Zero-crossing inspection circuit malfunction of the IDU fan motor	U8	Blinks 17 times every 3s			<p>Operation of remote controller or control panel is available, but the unit won't act.</p> <ol style="list-style-type: none"> 1. Quick de-energization and energization. Wrong judgement by the controller because the electric-discharging of capacitor is slow. 2. Zero-crossing inspection circuit of main board for controller is abnormal.

9.2 Procedure of Troubleshooting

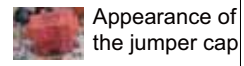
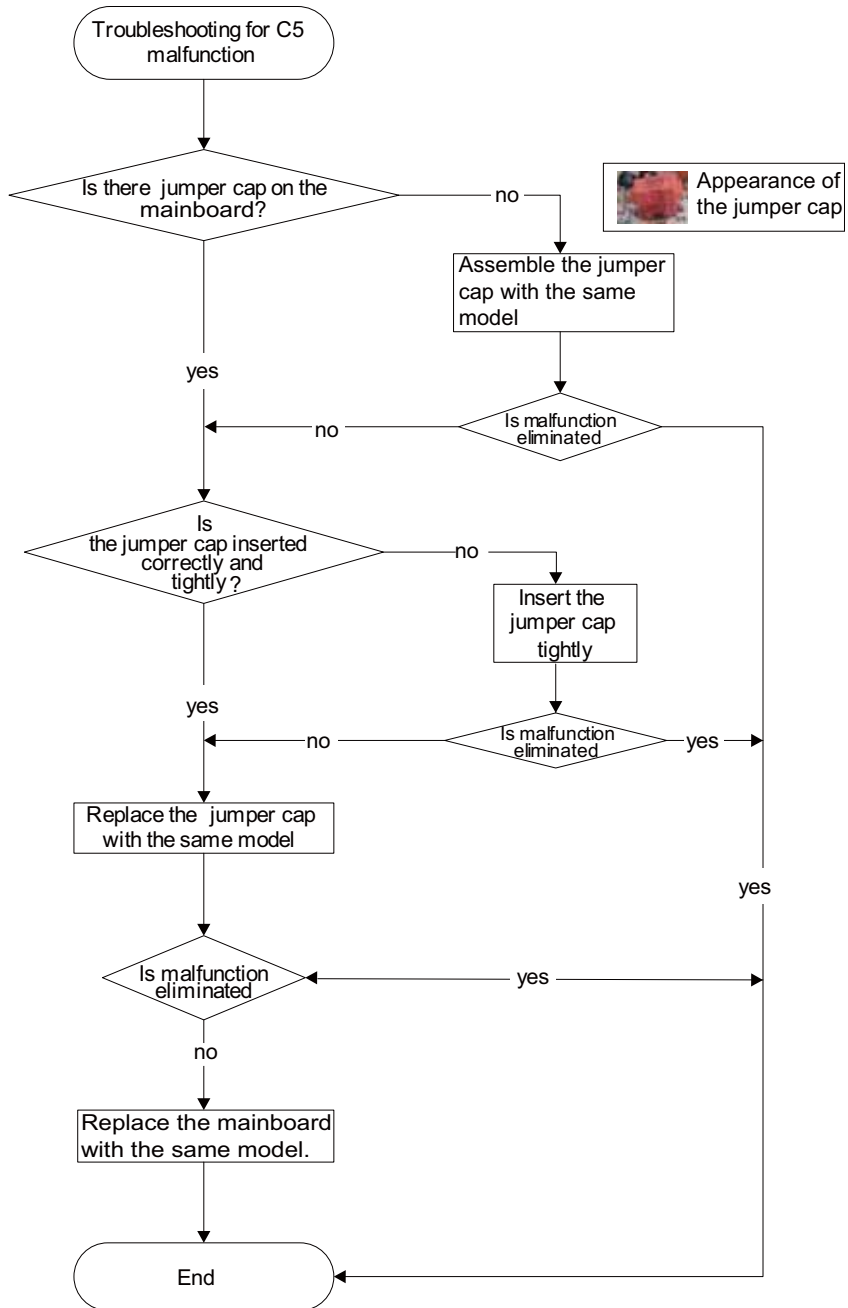
1. Malfunction of Temperature Sensor F1, F2



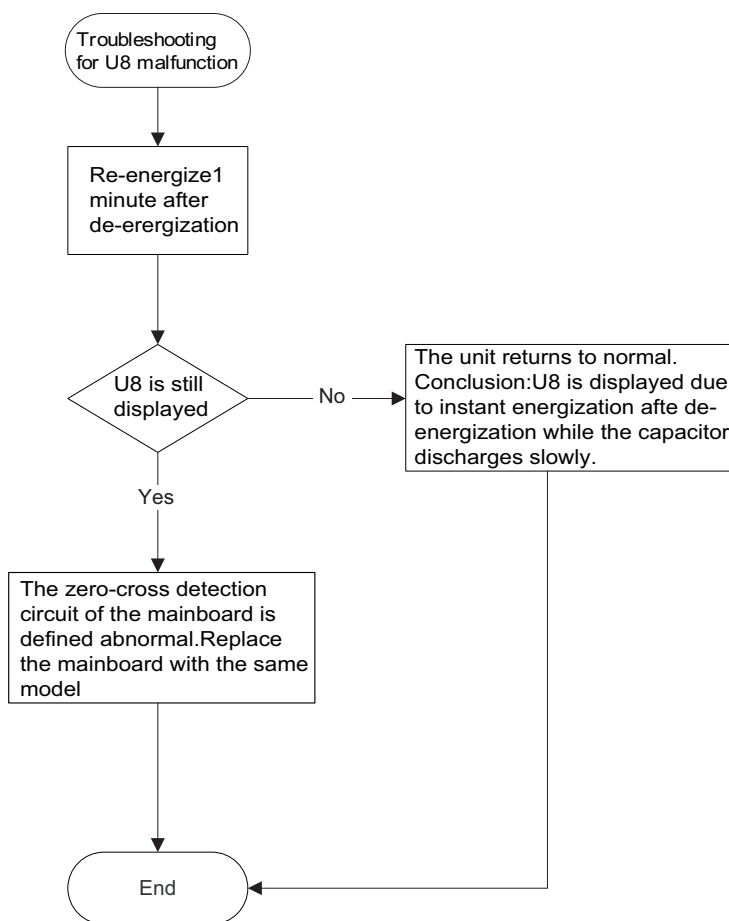
2. Malfunction of Blocked Protection of IDU Fan Motor H6



3. Malfunction of Protection of Jumper Cap C5



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



9.3 Maintenance Method for Normal Malfunction

1. Air Conditioner can't be Started up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer can't give out sound	Confirm whether it's 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 isn't 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 it's blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	Pressure at the valve is much lower than the regulated range	Open the valve completely
Malfunction of horizontal louver	Horizontal louver can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver can't 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 can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

4. ODU fan Motor can't 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 can't 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 it's 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't 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

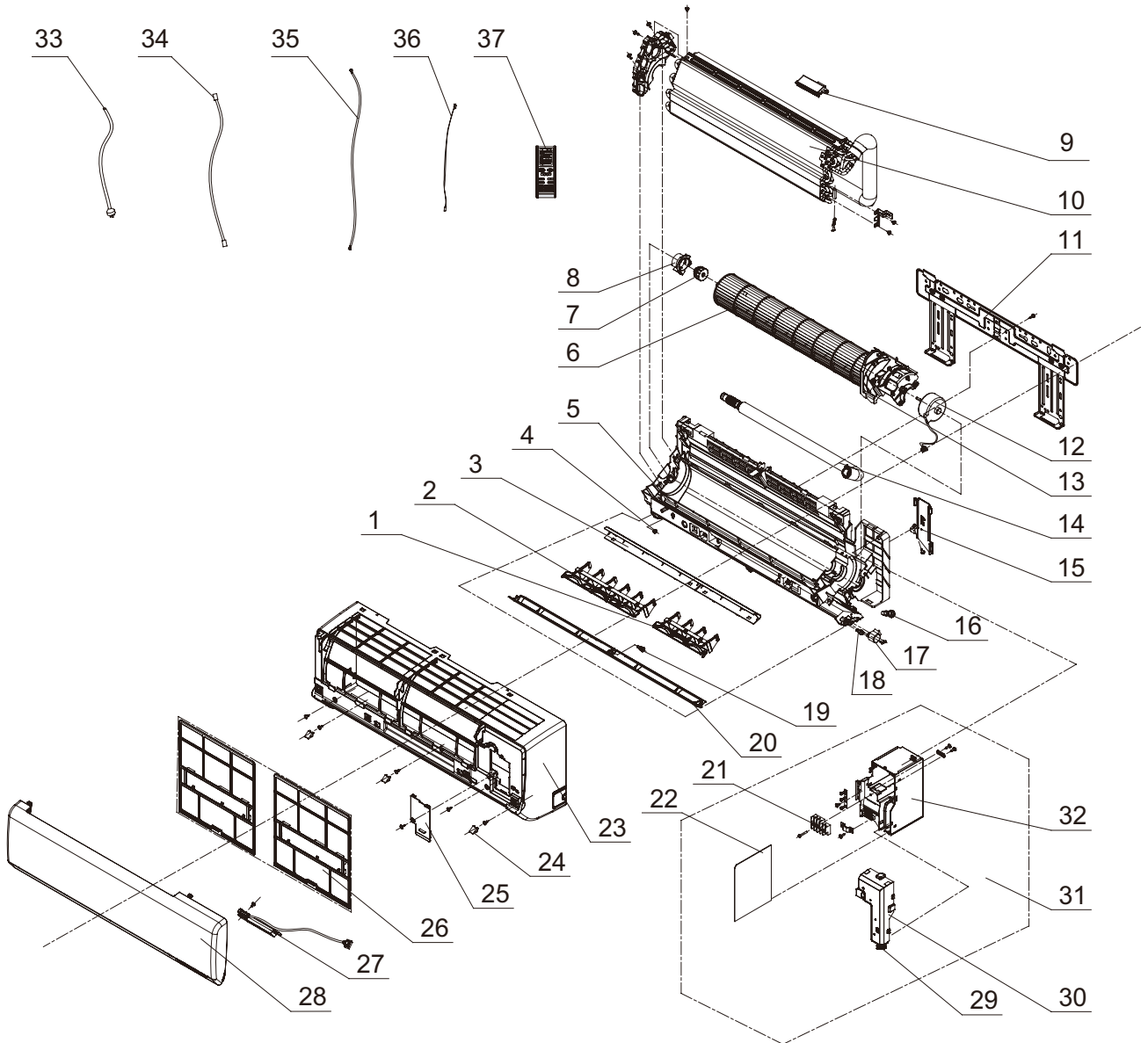
7. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and there's abnormal sound	There's the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, there's 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 there're parts touching together inside the indoor unit	There's 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 there're parts touching together inside the outdoor unit	There's 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

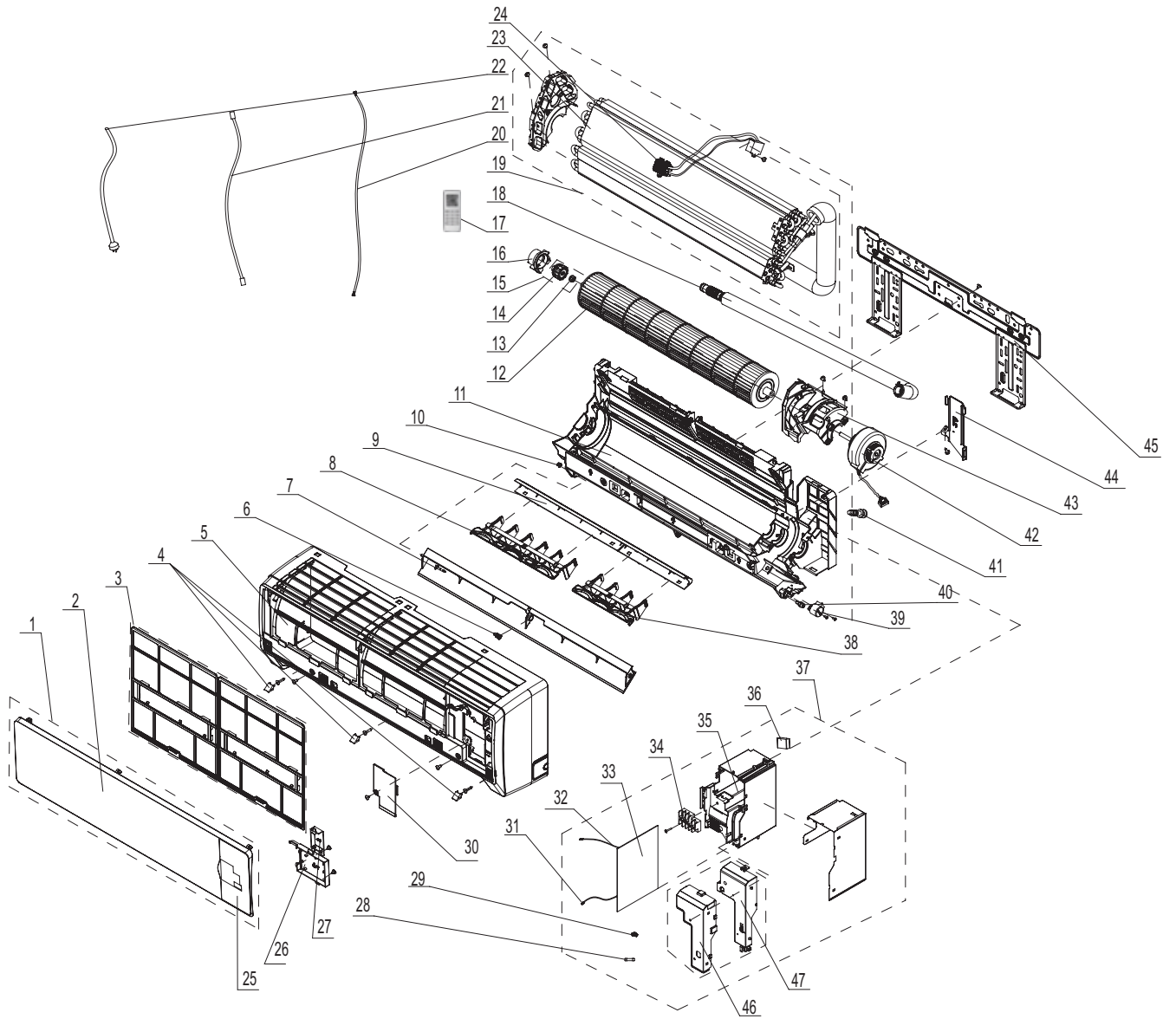
GWH07PA-K3NNA3B/I GWH09PA-K3NNA3B/I



NO.	Description	Part Code		Qty
		GWH07PA-K3NNA3B/I	GWH09PA-K3NNA3B/I	
		Product Code	Product Code	
		CA416N00800	CA416N00900	
1	Air Louver 1	1051211302	1051211302	1
2	Air Louver 2	1051211402	1051211402	1
3	Helicoid Tongue	2611220202	2611220202	1
4	Left Axile Bush	10512037	10512037	1
5	Rear Case assy	22202254	22202254	1
6	Cross Flow Fan	10352034	10352034	1
7	O-Gasket of Cross Fan Bearing	76512203	76512203	1
8	Ring of Bearing	26152022	26152022	1
9	Cold Plasma Generator	1114001602	1114001602	1
10	Evaporator Assy	01002577	01002577	1
11	Wall Mounting Frame	01252231	01252231	1
12	Fan Motor	15012115	15012115	1
13	Motor Press Plate	26112201	26112201	1
14	Drainage Hose	0523001408	0523001408	1
15	Connecting pipe clamp	26112199	26112199	1
16	Rubber Plug (Water Tray)	76712012	76712012	1
17	Stepping Motor	1521212901	1521212901	1
18	Crank	10582070	10582070	1
19	Axile Bush	10542036	10542036	1
20	Guide Louver	10512268	10512268	1
21	Terminal Board	42010268	42010268	1
22	Main Board	30145020	30135576	1
23	Front Case	20022241	20022241	1
24	Screw Cover	24252016	24252016	3
25	Electric Box Cover2	2012216801	2012216801	1
26	Filter Sub-Assy	11122095	11122095	2
27	Display Board	30565212	30565212	1
28	Front Panel Assy	20022309	20022309	1
29	Electric Box Cover	22242112	22242112	1
30	Shield Box (Electric Box)	01592116	01592116	1
31	Electric Box Assy	20402474	20402473	1
32	Electric Box	20112091	20112091	1
33	Power Cord	4002046417	4002046417	1
34	Connecting Cable	40020536	40020536	0
35	Connecting Cable	40020540	40020540	0
36	Temperature Sensor	390000453	390000453	1
37	Remote Controller	305100413	305100413	1

The data above are subject to change without notice.

GWH07NA-K3NNB3B/I GWH09NA-K3NNB3D/I



NO.	Description	Part Code		Qty
		GWH07NA-K3NNB3B/I	GWH09NA-K3NNB3D/I	
		Product Code		
		CA138N05800	CA138N03600	
1	Front Panel Assy	20012462	20012462	1
2	Front Panel	20012452S	20012452S	1
3	Filter Sub-Assy	11122095	11122095	2
4	Screw Cover	24252016	24252016	3
5	Front Case	20022286	20022286	1
6	Axile Bush	10542036	10542036	1
7	Guide Louver	10512162	10512162	1
8	Air Louver 2	10512114	10512114	1
9	Helicoid tongue	26112202	26112202	1
10	Axile Bush	10542704	10542704	1
11	Rear Case assy	22202135	22202135	1
12	Cross Flow Fan	10352034	10352034	1
13	Fan Bearing	7651221001	7651221001	1
14	O-Gasket of Cross Fan Bearing	76512203	76512203	1
15	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
16	Ring of Bearing	26152022	26152022	1
17	Remote Controller	30510468	30510468	1
18	Drainage hose	523001408	523001408	1
19	Evaporator Assy	01002577	01002577	1
20	Connecting Cable	40020536	40020536	0
21	Connecting Cable	40020540	40020540	0
22	Power Cord	4002046417	4002046417	1
23	Evaporator Sub-Assy	01032472	01032472	1
24	Cold Plasma Generator	1114001602	1114001602	1
25	Decorate Piece	68012060	68012060	1
26	Display Board	30565088	30565088	1
27	Display Cover	20122122	20122122	1
28	Fuse	46010055	46010055	1
29	Jumper	4202300115	4202300114	1
30	Electric Box Cover2	20122075	20122075	1
31	Temperature Sensor	390000453	390000453	1
32	Temperature Sensor	390000597	390000597	1
33	Main Board	30135357	30135357	1
34	Terminal Board	42010268	42010268	1
35	Electric Box	20112091	20112091	1
36	Capacitor CBB61	33010002	33010020	1
37	Electric Box Assy	20102000028	2613712	1
38	Air Louver 1	10512113	10512113	1
39	Stepping Motor	1521212901	1521212901	1
40	Crank	10582070	10582070	1
41	Rubber Plug (Water Tray)	76712012	76712012	1
42	Fan Motor	15012115	1501315604	1
43	Motor Press Plate	26112201	26112201	1
44	Connecting pipe clamp	26112199	26112199	1
45	Wall Mounting Frame	01252231	01252231	1
46	ShieldBox (Electric Box)	01592080	01592080	1
47	Electric Box Cover	20122114	20122114	1

The data above are subject to change without notice.

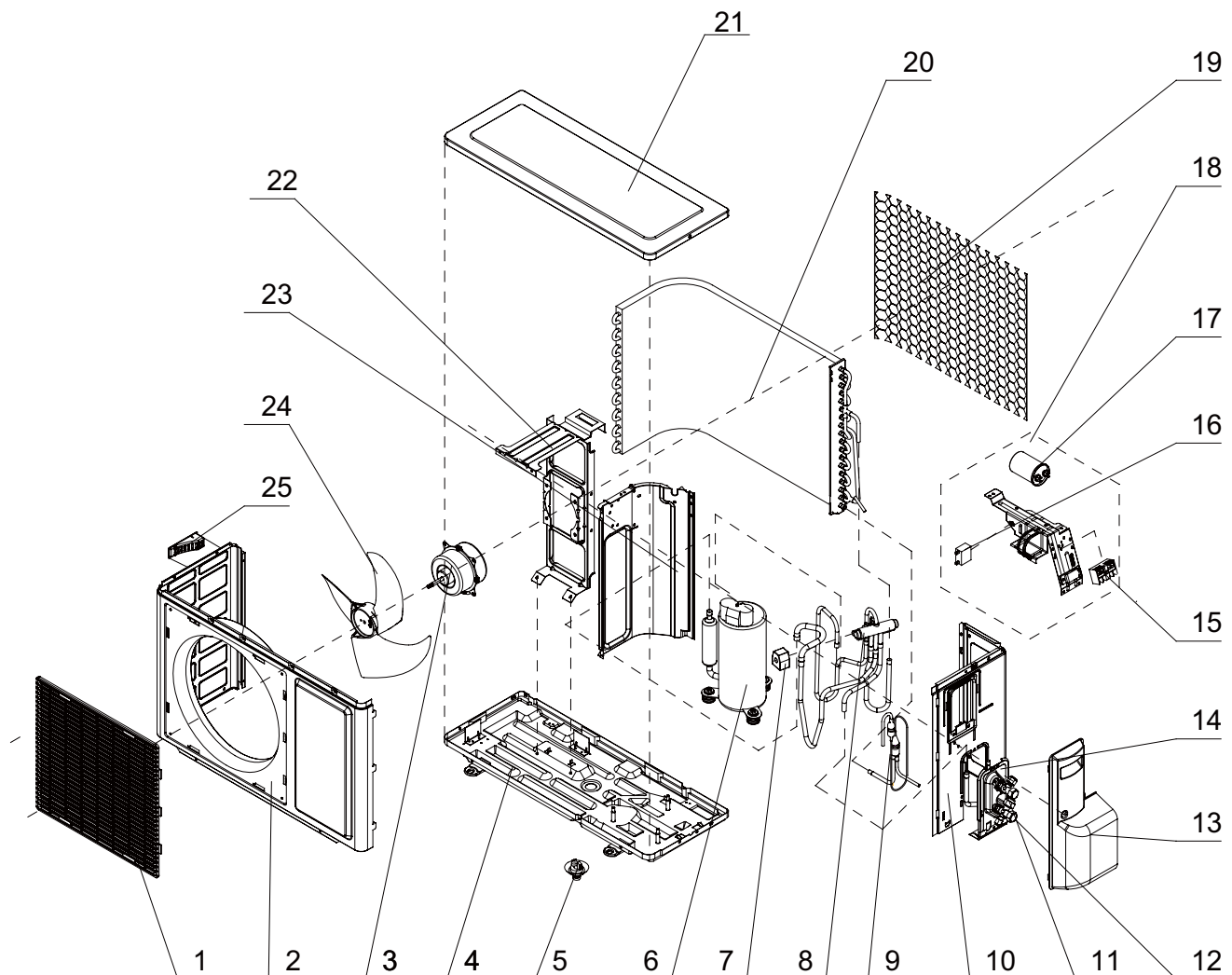
NO.	Description	Part Code			Qty
		GWH12PC-K3NNA3A/I	GWH12PC-K3NNA4A/I	GWH12PC-K3NNA5A/I	
	Product Code	CA416N00700	CA418N01300	CA417N01100	
1	Front Panel Assy	20022267	20022343	20022360	1
2	Display Board	30565212	30565224	30565038	1
3	Filter Sub-Assy	1112220403	1112220403	1112220403	2
4	Screw Cover	24252016	24252016	24252016	1
5	Front Case Sub-assy	20022361	20022361	20022361	1
6	Air Louver 1	1051215603	1051215603	1051215603	1
7	Air Louver 2	1051215503	1051215503	1051215503	1
8	Helicoid Tongue	2611216302	2611216302	2611216302	1
9	Left Axile Bush	10512037	10512037	10512037	1
10	Rear Case assy	22202467	22202467	22202467	1
11	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
12	Ring of Bearing	26152022	/	26152022	1
13	O-Gasket of Cross Fan Bearing	76512051	76512203	76512203	1
14	O-Gasket sub-assy of Bearing	76512203	76512051	7651205102	1
15	Cross Flow Fan	10352017	10352017	10352017	1
16	Evaporator Support	24212091	24212091	24212091	1
17	Evaporator Assy	0100274401	0100274401	0100274401	1
18	Wall Mounting Frame	01252021	01252021	01252021	1
19	Motor Press Plate	26112161	26112161	26112161	1
20	Fan Motor	150120874	150120874	150120874	1
21	Pipe Clamp	2611216401	2611216401	2611216401	1
22	Drainage Hose	0523001401	0523001401	0523001401	1
23	Step Motor	1521212901	1521212901	1521212901	1
24	Crank	10582070	10582070	10582070	1
25	Guide Louver	10512203	10512203	10512203	1
26	Axile Bush	10542036	10542036	10542036	1
27	Electric Box	2011216701	2011216701	2011216701	1
28	Terminal Board	42010268	42010268	42010268	1
29	Electric Box Cover2	20122075	20122075	20122075	1
30	Main Board	30135932	30135550	30135550	1
31	Shield Cover of Electric Box Sub-assy	0159207301	0159207301	0159207301	1
32	Electric Box Cover1	22242135	22242135	22242135	1
33	Electric Box Assy	20402450	20403039	20402910	1
34	Power Cord	4002048718	4002046417	4002046417	1
35	Connecting Cable	40020540	40020540	40020540	0
36	Connecting Cable	40020536	40020536	40020536	0
37	Ambient Temperature Sensor	390000453	390000591	390000591	1
38	Remote Controller	30510425	305100413	305100413	1
39	Temperature Sensor	390000591	390000453	390000453	1

The data above are subject to change without notice.

NO.	Description	Part Code		Qty
		GWH07PA-K3NNA3B/O		
		CA416W00800		
1	Front Grill	22263002		1
2	Front Panel	01533255P		1
3	Fan Motor	1501315604		1
4	Chassis Sub-assy	0280322901P		1
5	Drainage Connector	06123401		1
6	Compressor and Fittings	00106071		1
7	Magnet Coil	43000400		1
8	4-Way Valve	430004022		1
9	4-Way Valve Assy	03073128		1
10	Capillary Sub-assy	03163270		1
11	Right Side Plate Sub-Assy	01303243		1
12	Valve	07100003		1
13	Valve	07100005		1
14	Big Handle	26233042		1
15	Valve Support	01713041		1
16	Terminal Board	42010265		1
17	Capacitor CBB61	33010020		1
18	Capacitor CBB65	33000081		1
19	Electric Box Assy	02613870		1
20	Rear Grill	11123204		1
21	Condenser Assy	01163882		1
22	Top Cover Plate	01253045P		1
23	Motor Support Sub-Assy	01703019		1
24	Clapboard Sub-Assy	01233179		1
25	Axial Flow Fan	10333002		1
26	Small Handle	26233100		1

Above data is subject to change without notice.

GWH09PA-K3NNA3B/O




NO.	Description	Part Code	Qty
		GWH09PA-K3NNA3B/O	
	Product code	CA416W00900	
1	Front Grill	22263002	1
2	Front Panel	01533255P	1
3	Fan Motor	1501315604	1
4	Chassis Sub-assy	02803266P	1
5	Drainage Connector	06123401	1
6	Compressor and Fittings	00101260	1
7	Magnet Coil	4300040047	1
8	4-Way Valve Assy	03073147	1
9	Capillary Sub-assy	03163303	1
10	Right Side Plate Sub-Assy	01303243	1
11	Cut off Valve	07130239	1
12	Valve	07100005	1
13	Big Handle	26233042	1
14	Valve Support	01713041	1
15	Terminal Board	42010265	1
16	Capacitor CBB61	33010020	1
17	Capacitor CBB65	3300008101	1
18	Electric Box Assy	02613712	1
19	Rear Grill	11123204	1
20	Condenser Assy	01163883	1
21	Top Cover Plate	01253045P	1
22	Motor Support Sub-Assy	01703054	1
23	Clapboard Sub-Assy	01233179	1
24	Axial Flow Fan	10333002	1
25	Small Handle	26233100	1

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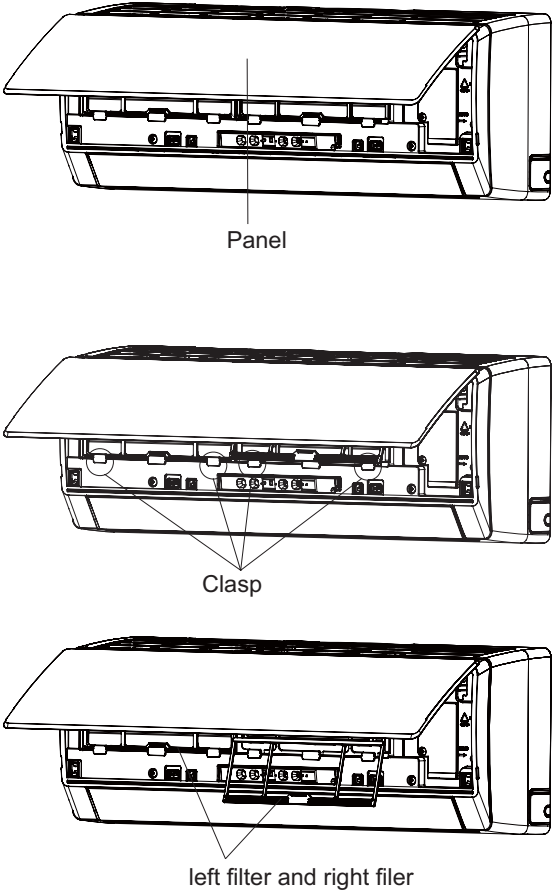
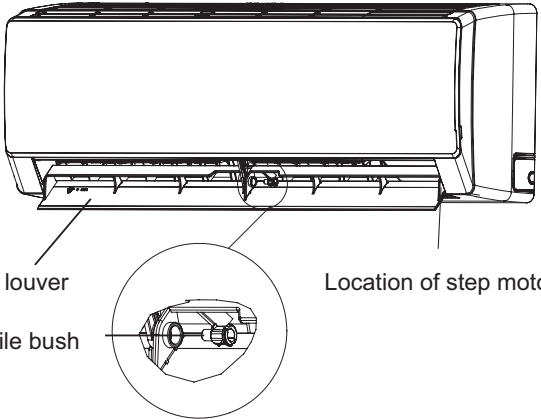
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		GWH12PC-K3NNA3A/O		
		CA416W00700		
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2	Front Panel	01533034P		1
3	Chassis Sub-assy	02803253P		1
4	Drainage Connector	06123401		1
5	Compressor and Fittings	00103281		1
6	Compressor Gasket	76711004		3
7	Magnet Coil	430004002		1
8	4-Way Valve Assy	03073140		1
9	4-way Valve	430004022		1
10	StrainerA	07210022		1
11	Capillary Sub-assy	03163292		1
12	Valve	07100005		1
13	Valve	07100003		1
14	Big Handle	26233433		1
15	Valve Support	0170308901P		1
16	Right Side Plate Sub-Assy	01303183		1
17	Terminal Board	42010265		1
18	Electric Box Assy	02613653		1
19	Capacitor CBB61	33010026		1
20	Capacitor CBB65	3300008102		1
21	Rear grill	1112320501		1
22	Condenser Assy	01163910		1
23	Top Cover Sub-Assy	01253031		1
24	Clapboard Sub-Assy	01233066		1
25	Motor Support Sub-Assy	01703103		1
26	Fan Motor	150130676		1
27	Small Handle	26233100		1
28	Axial Flow Fan	10333427		1

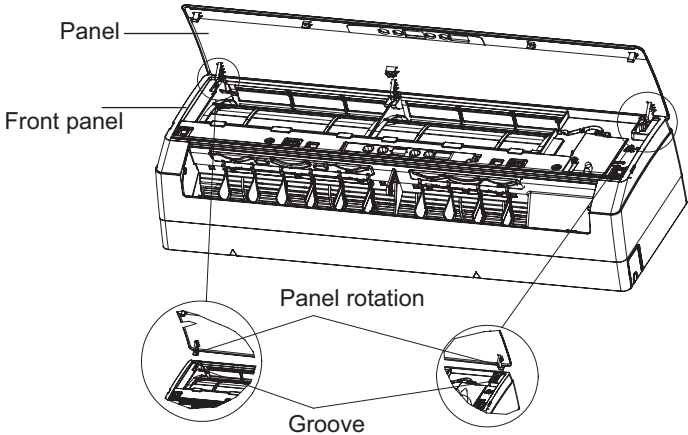
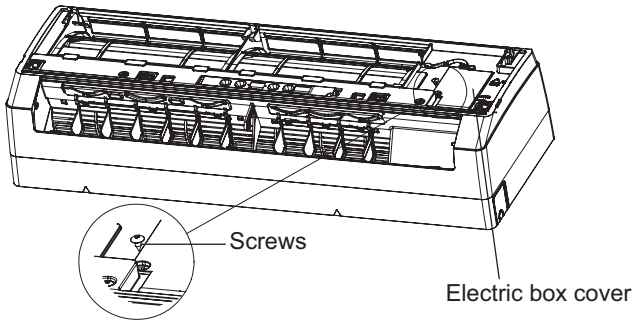
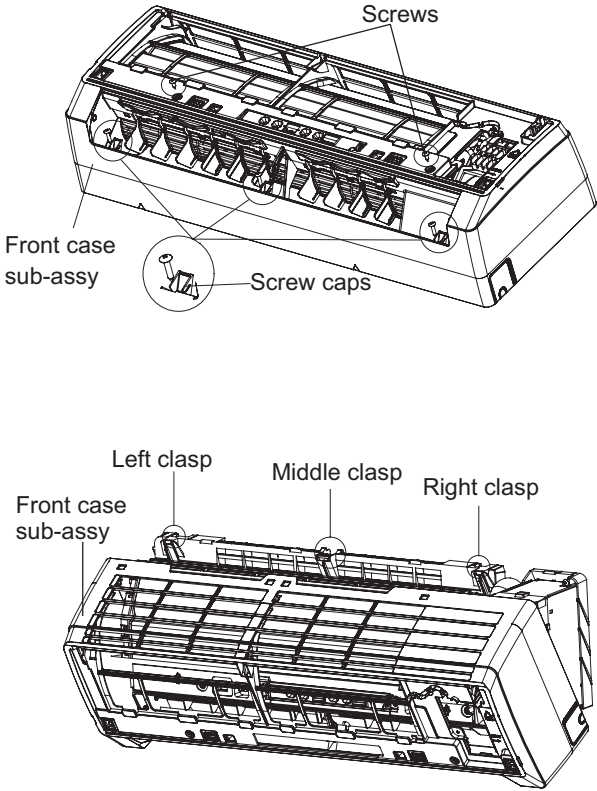
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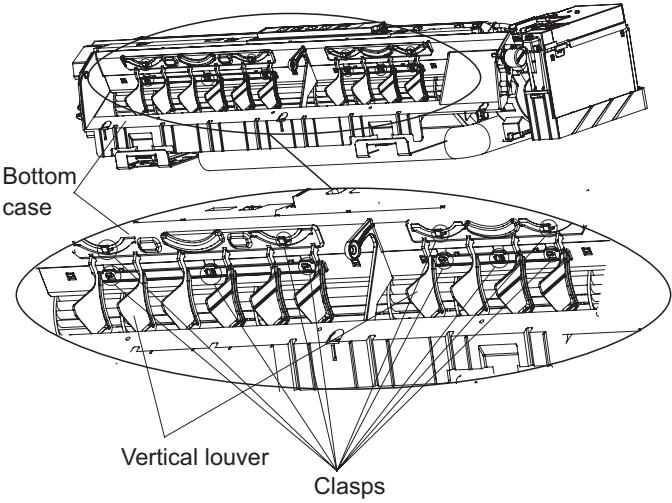
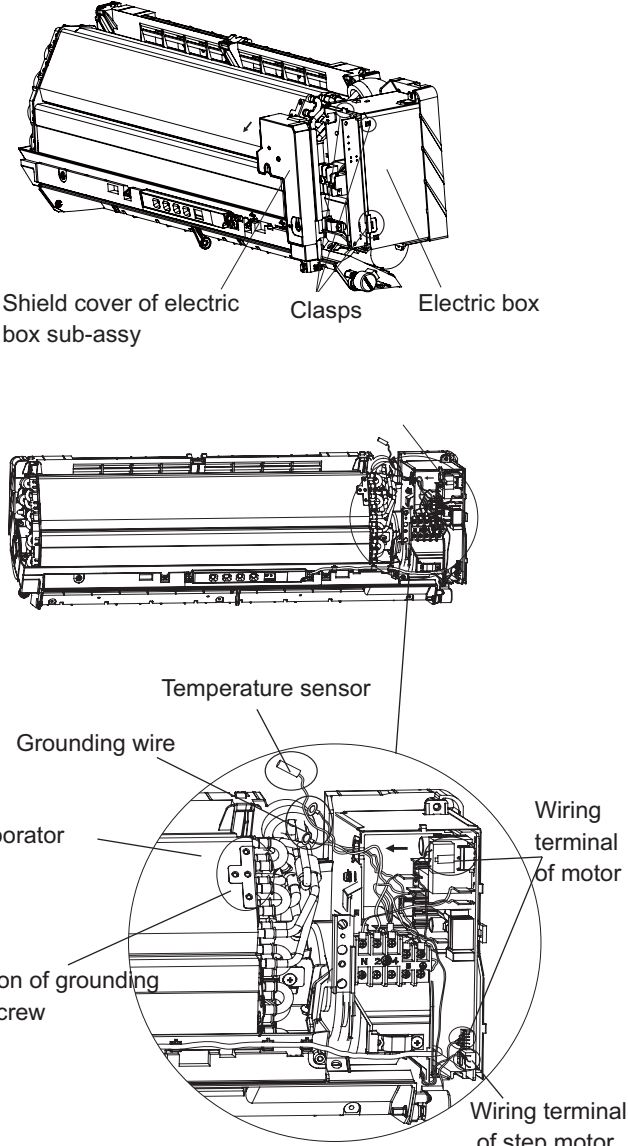
11. Removal Procedure

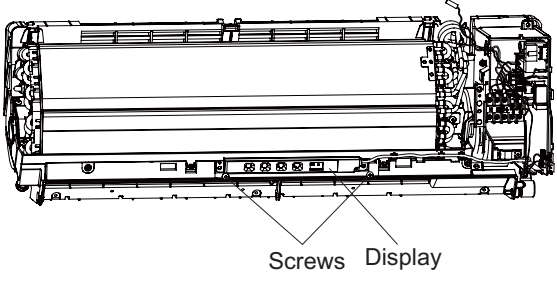
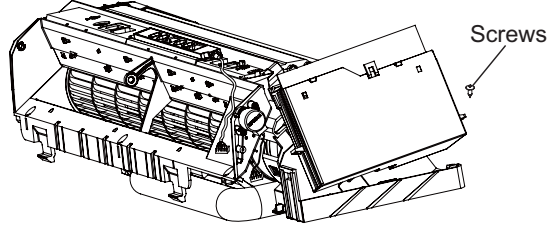
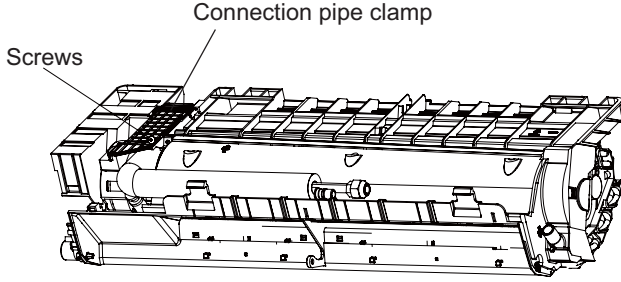
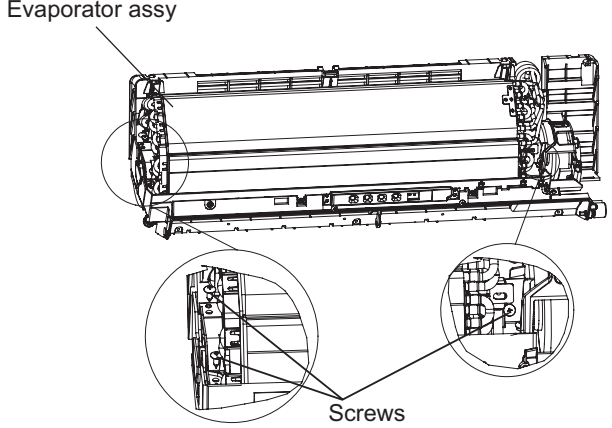
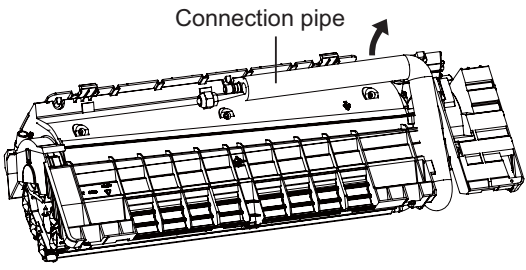
 **Caution: discharge the refrigerant completely before removal.**

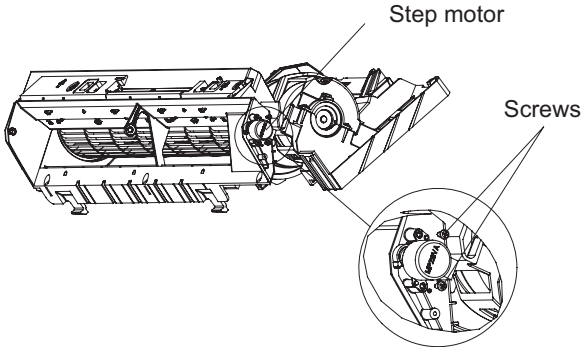
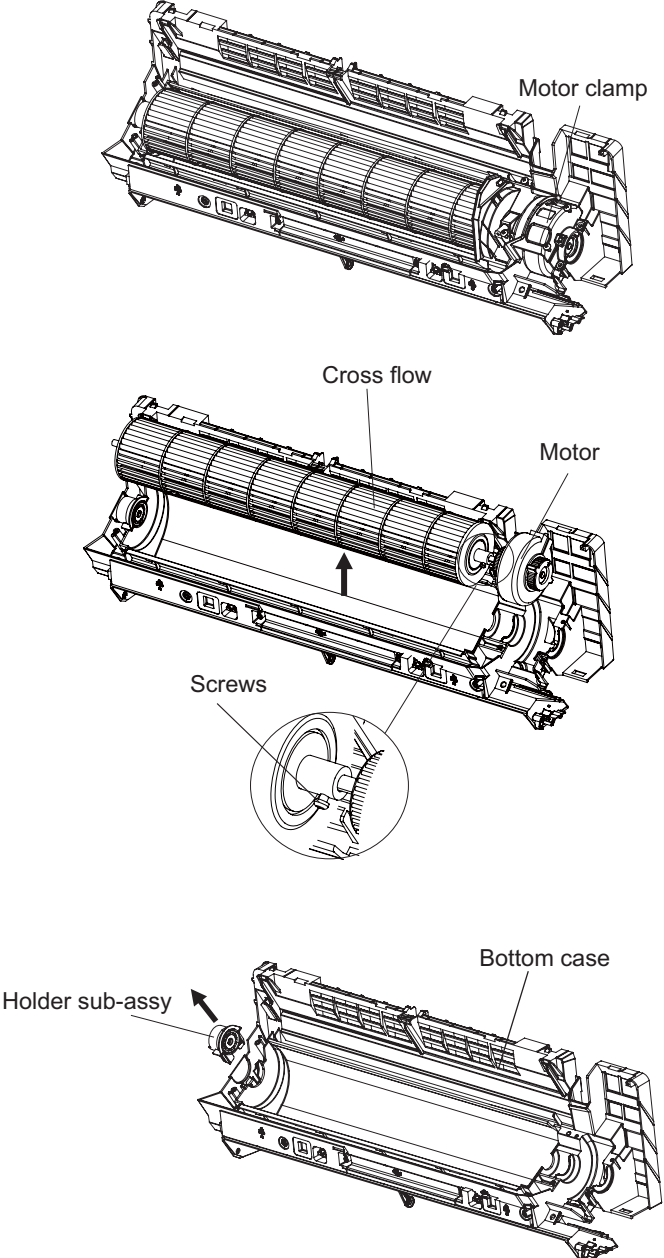
11.1 Removal Procedure of Indoor Unit

Step	Procedure	Procedure
1. Remove filter	<p>a Open the panel.</p> <p>b Loosen the clasp shown in the fig and then pull the left filter and right filter outwards to remove them.</p>	 <p>Panel</p> <p>Clasp</p> <p>left filter and right filter</p>
2. Remove horizontal louver	<p>Push out the axle 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.</p>	 <p>Horizontal louver</p> <p>Location of step motor</p> <p>Axile bush</p>

Step	Procedure	
3. Remove panel	<p>Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.</p> <p>Note: The display of some models is fixed on the panel; unscrew the screws fixing the display on the panel before removing the panel.</p>	
4. Remove electric box cover	<p>Remove the screws on the electric box cover to remove the electric box cover.</p>	
5. Remove front case sub-assy	<p>a Remove the screws fixing front case.</p> <p>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.</p> <p>b Loosen the clasps at left, middle and right sides of front case. Lift the front case sub-assy upwards to remove it.</p>	

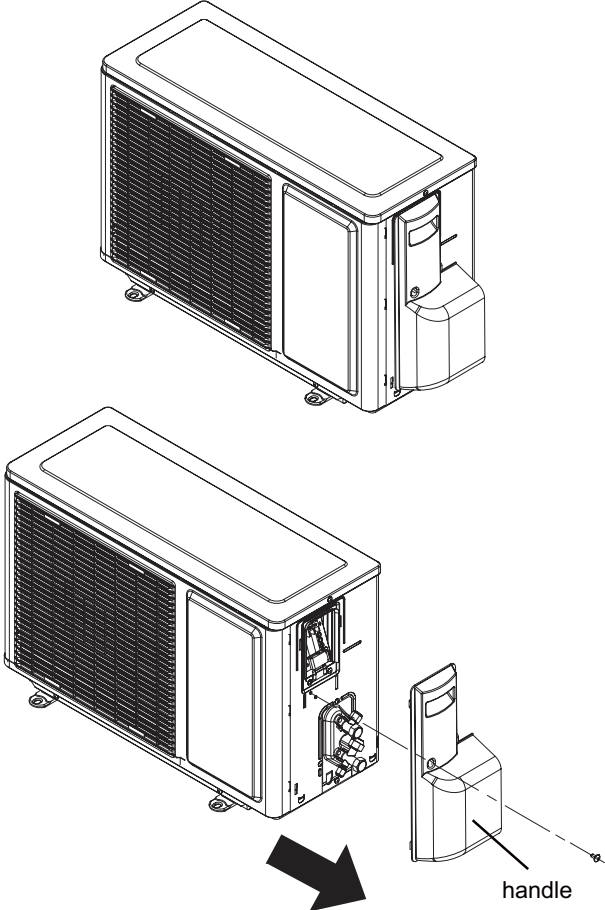
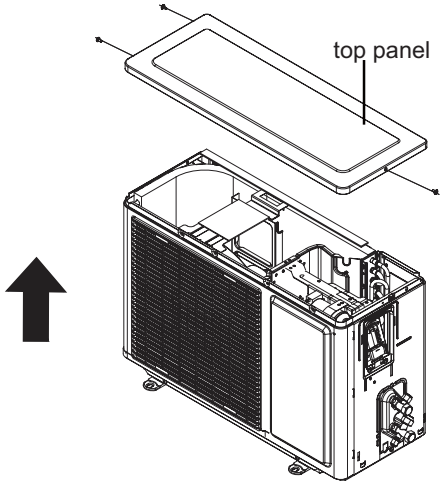
Step	Procedure	Procedure
6. Remove vertical louver	<p>Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.</p>	
7. Remove electric box assy	<p>a Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy.</p> <p>b Cut off the tieline which binding the temperature sensor and grounding wire on the evaporator, and then pull out the indoor tube temperature sensor from the evaporator. Remove the screws at the connection place between grounding wire and evaporator. Pull out the wiring terminal of motor and wiring terminal of step motor from the mainboard.</p> <p>Note: 1.Location of tube temperature sensor and tieline on the evaporator is different for different models. 2.When pulling out the wiring terminal, pay attention to loose the clasp and don't pull it so hard.</p>	

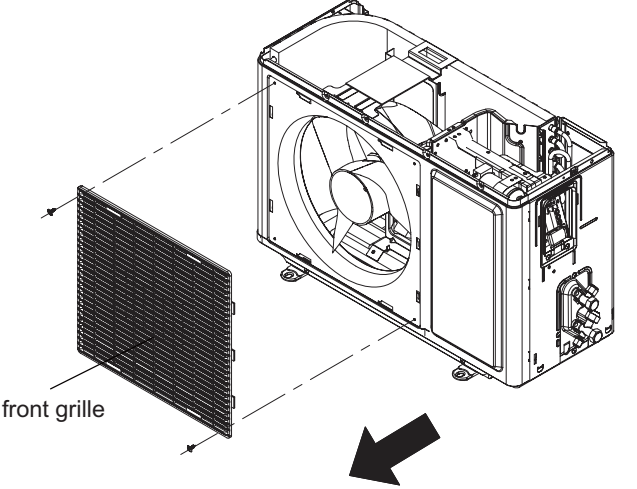
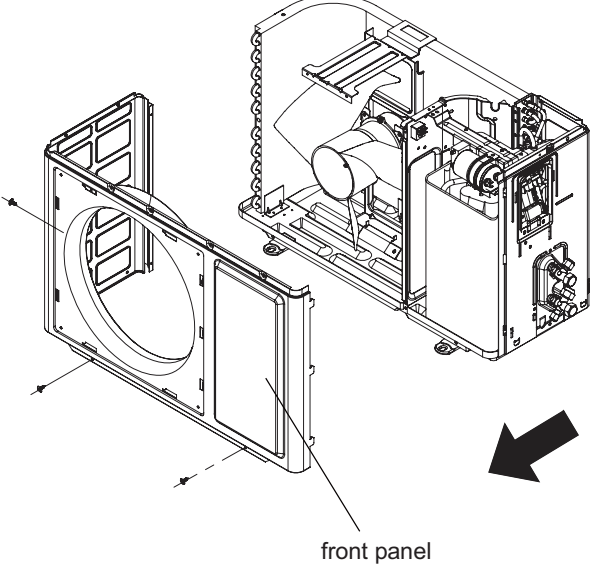
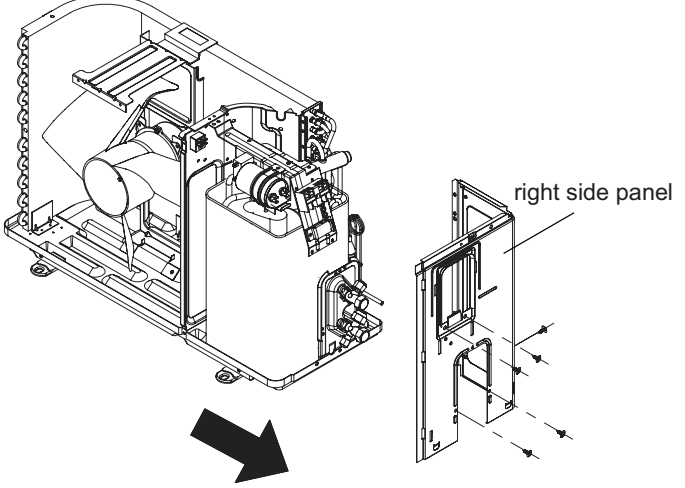
Step	Procedure	Procedure
c	<p>Remove two screws fixing display.</p> <p>Note: The display of some models is fixed on the panel; unscrew the screws fixing the display on the panel before removing the panel.</p>	 <p>Screws Display</p>  <p>Screws</p>
8. Remove evaporator assy		
a	<p>At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.</p>	 <p>Connection pipe clamp</p> <p>Screws</p>
b	<p>Remove 3 screws fixing evaporator assy.</p>	 <p>Evaporator assy</p> <p>Screws</p>
c	<p>Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.</p>	 <p>Connection pipe</p>

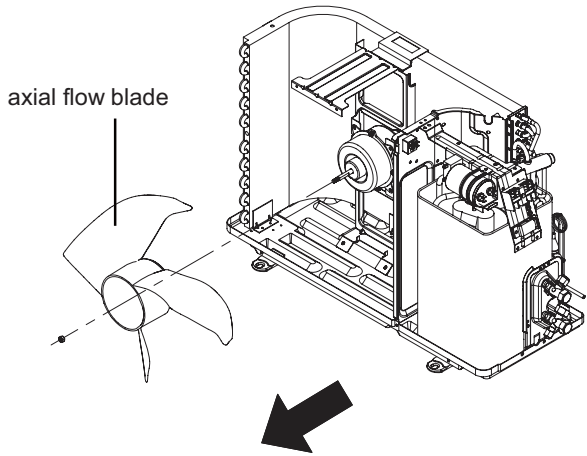
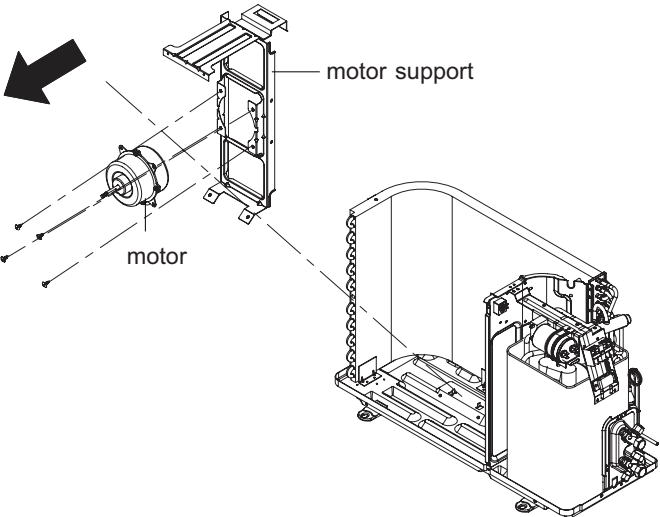
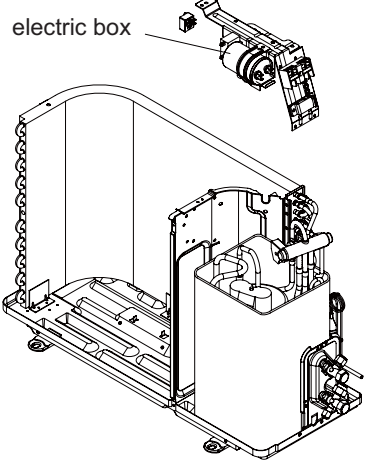
Step	Procedure	Procedure
9. Remove stepping motor	Remove the screw fixing step motor and then remove the step motor.	
10. Remove motor and cross flow blade	<p>a Remove the screws fixing motor clamp and then remove the motor clamp.</p> <p>b Remove the screws at the connection place of cross flow blade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

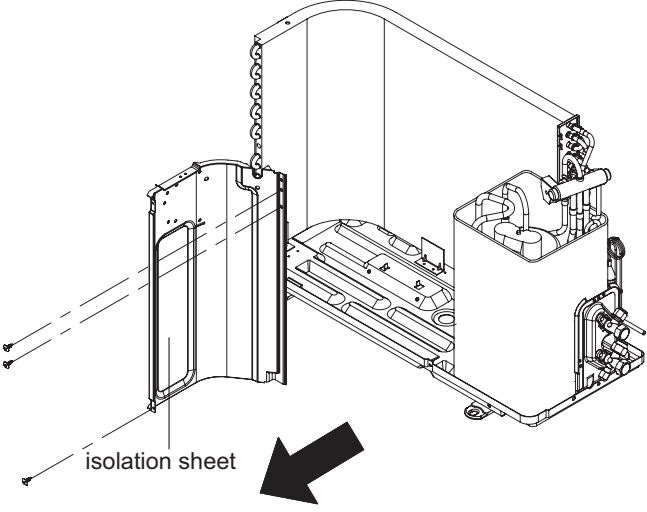
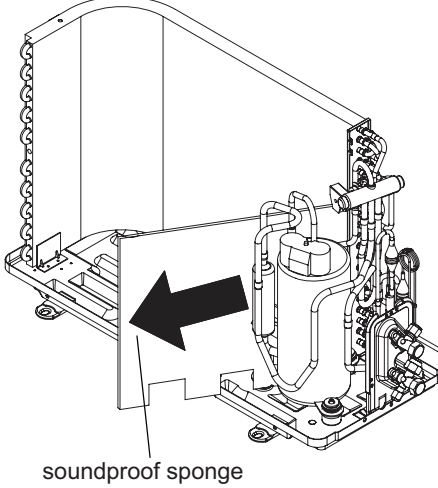
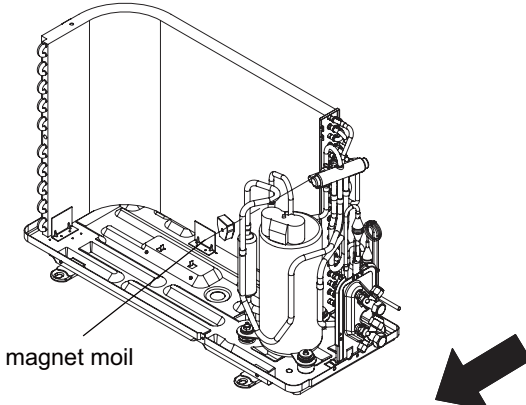
11.2 Removal Procedure of Outdoor Unit

GWH07PA-K3NNA3B/O
GWH09PA-K3NNA3B/O

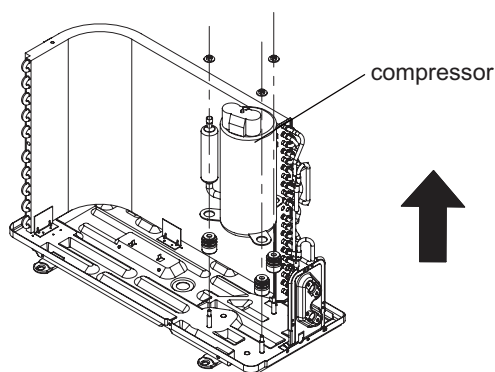
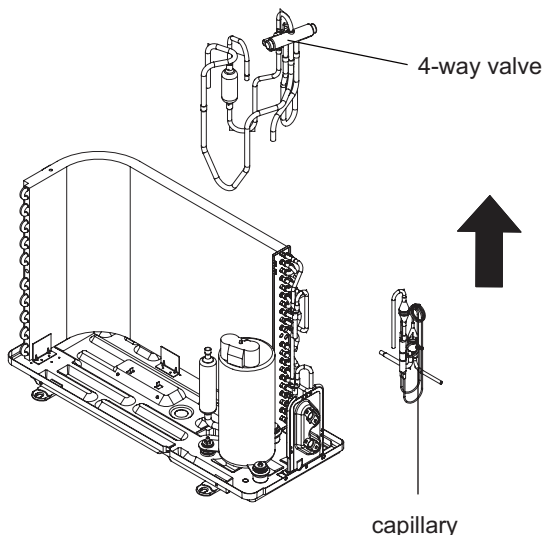
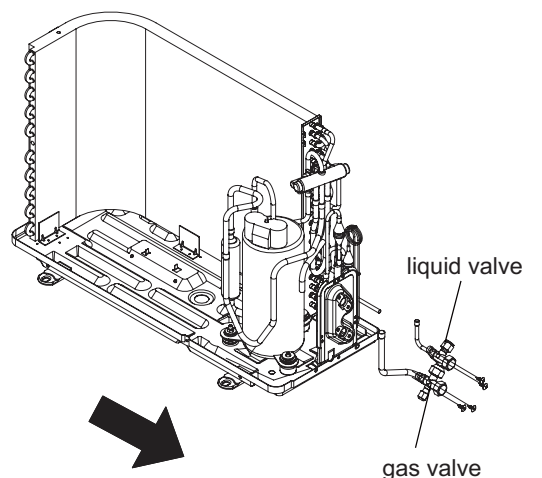
Steps	Procedure	
<p>1. Remove big handle</p> <p>a</p> <p>b</p>	<p>Before disassembly.</p> <p>Remove the screw fixing the big handle. Remove the big handle.</p>	
<p>2. Remove top panel</p>	<p>Remove the 3 screws connecting the top panel with the front panel and the right side panel. Remove the top cover.</p>	

Steps	Procedure	
3.Remove front grille and front panel		
a	Remove the 2 screws connecting the front grille with front panel. Remove front grille.	 <p>front grille</p>
b	Remove the 5 screws connecting the front panel with the chassis and the motor support. Remove the front panel.	 <p>front panel</p>
4. Remove right side panel		
	Remove the 6 screws connecting the right side panel with the chassis, the valve support and the electric box. Remove the right side panel.	 <p>right side panel</p>

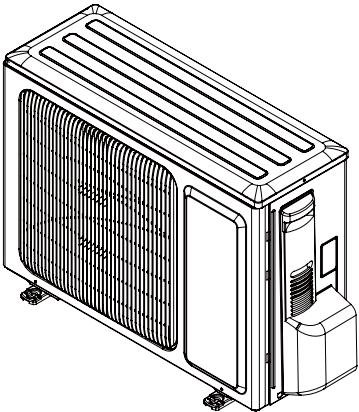
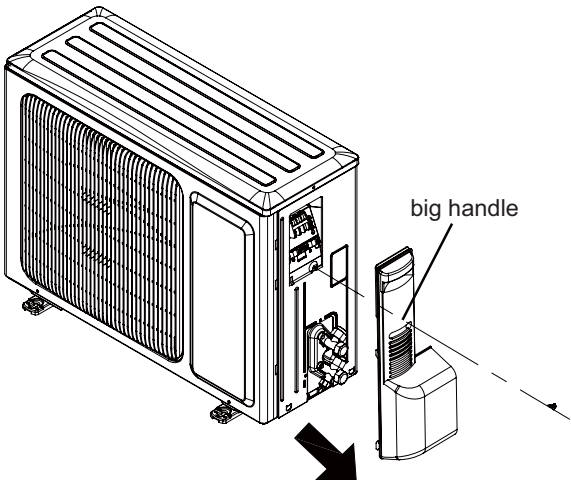
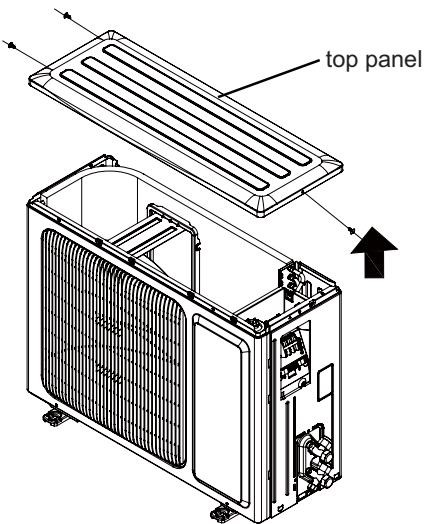
Steps	Procedure	
5. Remove axial flow blade and motor		
a	Remove the nut on the blade. Remove the axial flow blade.	 <p>axial flow blade</p>
b	Remove the tapping screws fixing the motor; disconnect the leading wire insert of the motor. Remove the motor. Remove the tapping screws fixing the motor support. Lift the motor support to remove it.	 <p>motor support</p> <p>motor</p>
6. Remove electric box		
	Remove screws fixing the electric box subassembly. Loosen the wire bundle; unplug the wiring terminals and lift the electric box to remove it.	 <p>electric box</p>

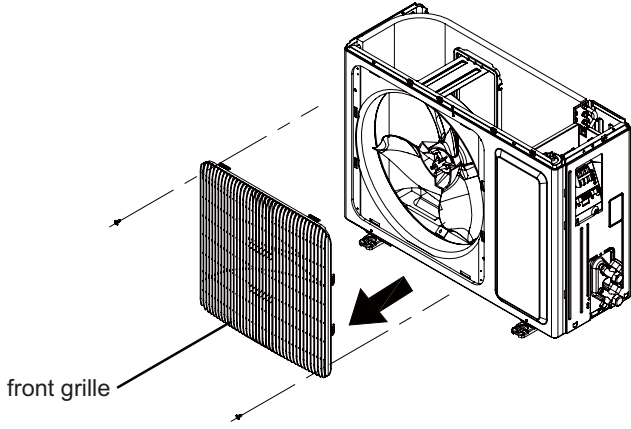
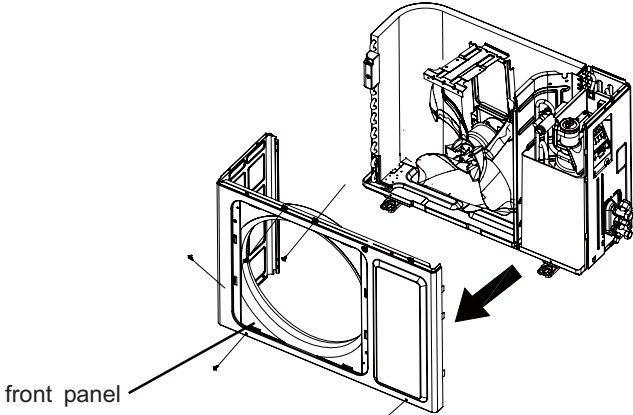
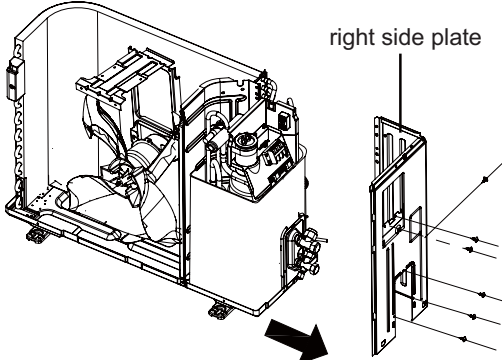
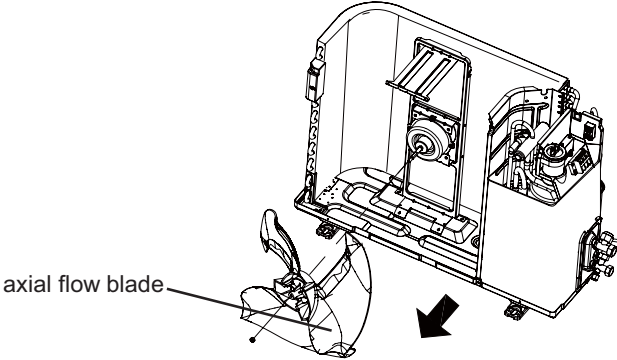
Steps	Procedure
<p>7. Remove isolation sheet</p>	<p>Remove the 3 screws fixing the isolation sheet. Remove the isolation sheet.</p> 
<p>8. Remove soundproof sponge</p>	<p>Remove the soundproof sponge wrapping the compressor.</p> 
<p>9. Remove magnet moi</p>	<p>Remove the screw fixing the magnet moi. Remove the coil.</p> 

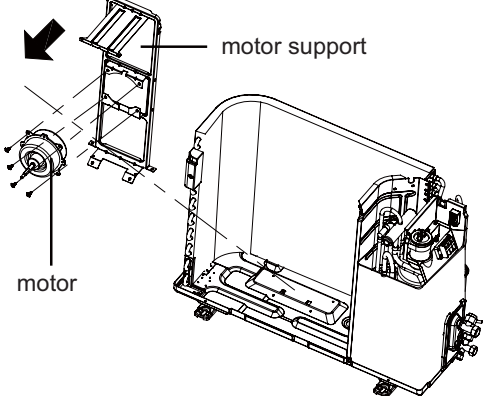
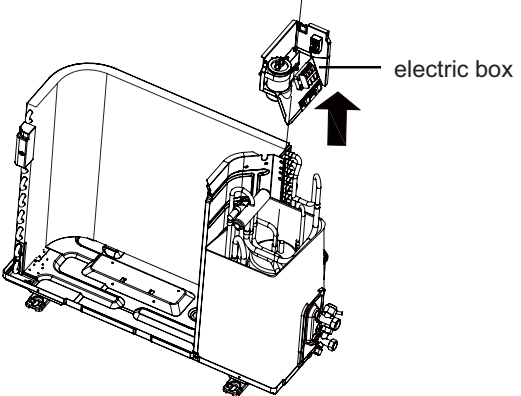
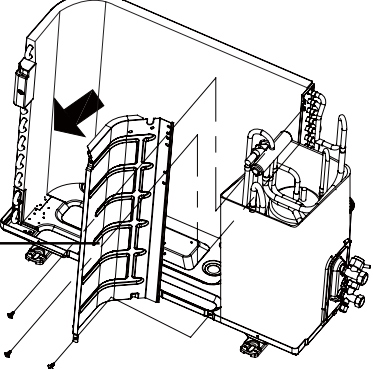
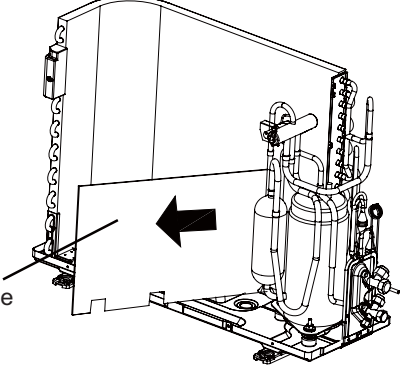
Steps	Procedure
10. Remove compressor	
a	<p>Remove the 2 screws fixing the gas valve. Unsolder the welding joint connecting the gas valve and the air-return pipe. Remove the gas valve. (NOTE: when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.)</p> <p>Remove the 2 screws fixing the liquid valve. Unsolder the welding joint connecting the liquid valve and the Y-type pipe. Remove the liquid valve. (NOTE: Discharge the refrigerant completely before unsoldering.)</p>
b	<p>Unsolder welding joint connecting the capillary, the valve and the outlet pipe of condenser to remove the capillary. Do not block the capillary with welding slag during unsoldering. Unsolder the pipes connected to the compressor. Unsolder the welding joint connecting the 4-way valve to remove it.</p>
c	<p>Remove the 3 foot nuts on the compressor. Remove the compressor.</p>

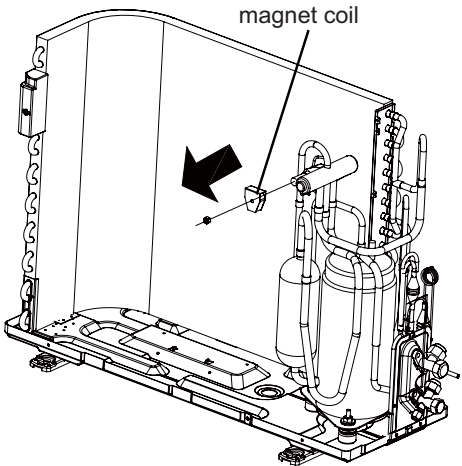
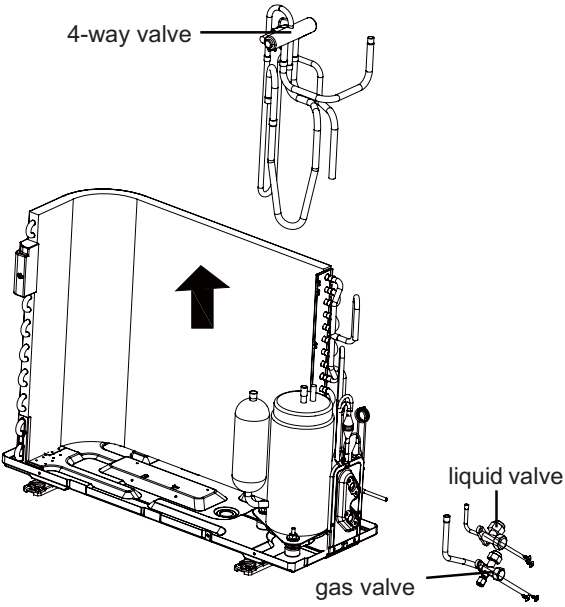
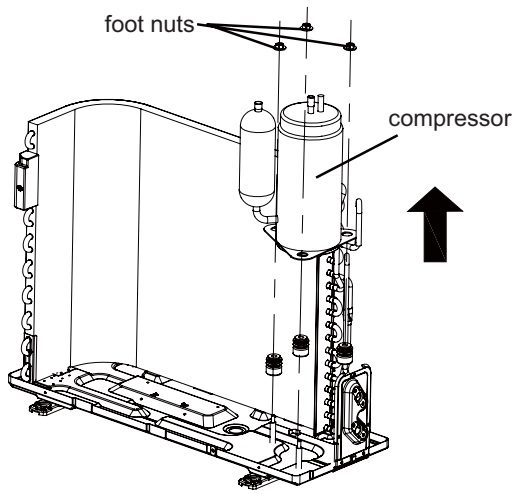


GWH12PC-K3NNA3A/O

Steps	Procedure
1. Before disassembly	
2. Remove big handle	<p data-bbox="225 1070 762 1128">Remove the connection screw fixing the big handle and then remove the handle.</p> 
3. Remove top panel	<p data-bbox="225 1559 762 1648">Remove connection screws connecting the top panel with the front panel and the right side plate, and then remove the top panel.</p> 

Steps	Procedure
<p>4. Remove front grille</p>	<p>Remove connection screws between the front grille and the front panel. Then remove the front grille.</p>  <p>The diagram shows a perspective view of the front of the unit. A separate front grille is shown to the left, with dashed lines and arrows indicating its removal from the front panel. A thick black arrow points from the grille towards the front panel.</p>
<p>5. Remove front panel</p>	<p>Remove connection screws connecting the front panel with the chassis and the motor support, and then remove the front panel.</p>  <p>The diagram shows the front panel being lifted away from the main chassis. Dashed lines and arrows indicate the removal of the panel. A thick black arrow points from the front panel towards the chassis.</p>
<p>6. Remove right side plate</p>	<p>Remove connection screws connecting the right side plate with the chassis, the valve support and the electric box. Then remove the right side plate.</p>  <p>The diagram shows the right side plate being removed from the unit. Dashed lines and arrows indicate the removal of the plate. A thick black arrow points from the side plate towards the main unit.</p>
<p>7. Remove axial flow blade</p>	<p>Remove the nut on the blade and then remove the axial flow blade.</p>  <p>The diagram shows the axial flow blade being removed from the motor assembly. Dashed lines and arrows indicate the removal of the blade. A thick black arrow points from the blade towards the motor assembly.</p>

Steps	Procedure	
<p>8. Remove motor and motor support</p>	<p>Remove the 4 tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the 2 tapping screws fixing the motor support and lift the motor support to remove it.</p>	 <p>motor support</p> <p>motor</p>
<p>9. Remove electric box</p>	<p>Remove screws fixing the electric box subassembly; loosen the wire bundle and unplug the wiring terminals. Then lift the electric box to remove it.</p>	 <p>electric box</p>
<p>10. Remove isolation sheet</p>	<p>Remove the 3 screws fixing the isolation sheet and then remove the isolation sheet.</p>	 <p>isolation sheet</p>
<p>11. Remove soundproof sponge</p>	<p>Remove the soundproof sponge wrapping the compressor.</p>	 <p>soundproof sponge</p>

Steps	Procedure
<p>12. Remove magnet coil</p>	<p>Remove the screw fixing the magnet coil and then remove the coil.</p> 
<p>13. Remove valves and 4-way valve subassembly</p>	<p>Unsolder welding joint connecting the capillary, the valve and the outlet pipe of condenser to remove the capillary. Do not block the capillary with welding slag during unsoldering. Remove the 2 screws fixing the gas valve and unsolder the welding point between the gas valve and the air-return pipe to remove the gas valve. (NOTE: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature). Remove the 2 screws fixing the liquid valve and unsolder the welding joint connecting the liquid valve to the Y-type pipe to remove the liquid valve. Unsolder the welding joint connecting the 4-way valve, the compressor and the condenser to remove the 4-way valve.</p> 
<p>14. Remove compressor</p>	<p>Remove the foot nuts on the compressor and then remove the compressor.</p> 

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

Set temperature

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

Ambient temperature

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

Appendix 2: Configuration of Connection Pipe

1. Standard length of connection pipe

- 5m, 7.5m, 8m.

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

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

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

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

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

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

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

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

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

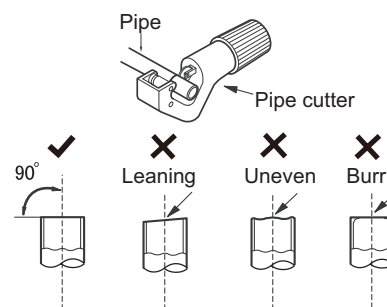
Appendix 3: Pipe Expanding Method

⚠ Note:

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

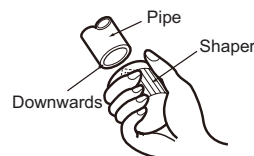
A: Cut the pipe

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



B: Remove the burrs

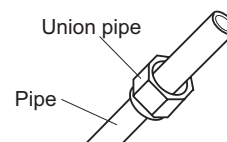
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C: Put on suitable insulating pipe

D: Put on the union nut

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



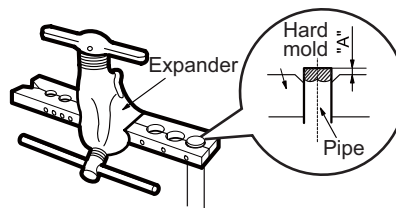
E: Expand the port

- Expand the port with expander.

⚠ Note:

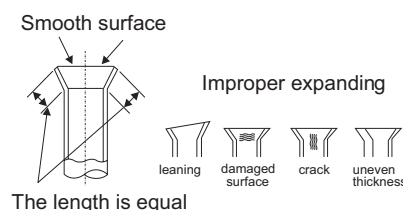
- "A" is different according to the diameter, please refer to the sheet below:

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



F: Inspection

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



Appendix 4: List of Resistance for Ambient Temperature Sensor

Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)

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

Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(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

Appendix 1: Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(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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