

# Service Manual

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MODEL: GWH07PA-K3NNA1A  
GWH09PA-K3NNA1A  
GWH12PB-K3NNA1A  
(Refrigerant R410A)

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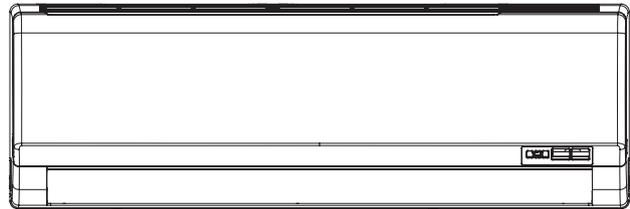
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# Summary and Features

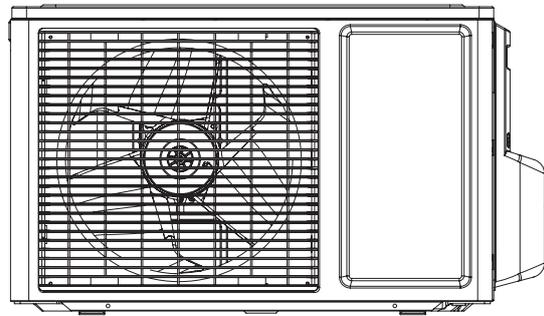
## Indoor Unit

GWH07PA-K3NNA1A/I(CA414N00500)  
GWH07PA-K3NNA1A/I(CA414N00501)  
GWH09PA-K3NNA1A/I(CA414N00600)  
GWH09PA-K3NNA1A/I(CA414N00601)  
GWH12PB-K3NNA1A/I(CA414N00700)  
GWH12PB-K3NNA1A/I(CA414N00701)

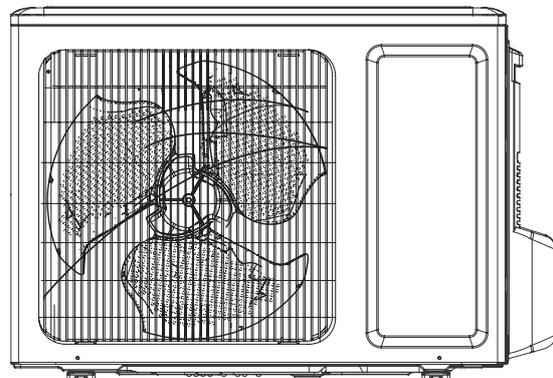


## Outdoor Unit

GWH07NA-K3NNB1A/O



GWH09NA-K3NNB1C/O  
GWH12NB-K3NNB1C/O



## Remote Controller

YAM1F



# 1. Safety Precautions

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

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

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

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

Recognize the following safety information:

 **Warning** Incorrect handling could result in personal injury or death.

 **Caution** Incorrect handling may result in minor injury, or damage to product or property.

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

## Warning

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

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

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

## Caution

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

## 2. Specifications

### 2.1 Unit Specifications

Model			GWH07PA-K3NNA1A	
Product Code			CA414000500/CA414000501	
Power Supply	Rated Voltage	V ~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	2200	
Heating Capacity		W	2380	
Cooling Power Input		W	685	
Heating Power Input		W	659	
Cooling Power Current		A	5.1	
Heating Power Current		A	5.75	
Rated Input		W	1060	
Rated Current		A	5.75	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	400/-/-/-	
Dehumidifying Volume		L/h	0.6	
EER		W/W	3.21	
COP		W/W	3.61	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m <sup>2</sup>	12-18	
Indoor Unit	Model of indoor unit		GWH07PA-K3NNA1A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ85X532
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1220/1100/1000/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1320/1220/1120/980/-
	Output of Fan Motor		W	10
	Fan Motor RLA		A	0.13
	Fan Motor Capacitor		μF	1
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.5
	Coil Length (LXDXW)		mm	526X25.4X228.6
	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)	40/37/35/32/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	50/47/45/42/-
	Dimension (WXHXD)		mm	730X254X184
	Dimension of Carton Box (LXWXH)		mm	790X255X328
Dimension of Package(LXWXH)		mm	793X258X343	
Net Weight		kg	8	
Gross Weight		kg	10.5	

Outdoor Unit	Model of Outdoor Unit		GWH07NA-K3NNB1A/O	
	Compressor Manufacturer/Trademark		Xi'an Qing'an refrigeration Equipment Co.,Ltd	
	Compressor Model		YZG-A082Y2	
	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		2-1.4
	Coil Length (LXD <sub>X</sub> W)	mm		652X25.4X400.5
	Fan Motor Speed	rpm		950
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.35
	Fan Motor Capacitor	μF		1.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /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		3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa		1.2
	Sound Pressure Level (H/M/L)	dB (A)		50/-/-
	Sound Power Level (H/M/L)	dB (A)		60/-/-
	Dimension (WXHXD)	mm		730X428X310
Dimension of Carton Box (LXWXH)	mm		765X350X475	
Dimension of Package(LXWXH)	mm		768X353X490	
Net Weight	kg		23.5	
Gross Weight	kg		26	
Refrigerant			R410A	
Refrigerant Charge	kg		0.76	
Connection Pipe	Length	m	4	
	Gas Additional Charge	g/m	30	
	Outer Diameter Liquid Pipe	mm	Φ6	
	Outer Diameter Gas Pipe	mm	Φ9.52	
	Max Distance Height	m	5	
	Max Distance Length	m	10	

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

Model			GWH09PA-K3NNA1A	
Product Code			CA414000600/CA414000601	
Power Supply	Rated Voltage	V ~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	2638	
Heating Capacity		W	2814	
Cooling Power Input		W	821	
Heating Power Input		W	779	
Cooling Power Current		A	3.64	
Heating Power Current		A	3.46	
Rated Input		W	1120	
Rated Current		A	4.97	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	400/350/310/280/-	
Dehumidifying Volume		L/h	0.8	
EER		W/W	3.21	
COP		W/W	3.61	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m <sup>2</sup>	12-18	
Indoor Unit	Model of indoor unit		GWH09PA-K3NNA1A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ85X532
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1390/1280/1180/1080/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1350/1250/1140/1040/-
	Output of Fan Motor		W	10
	Fan Motor RLA		A	0.13
	Fan Motor Capacitor		μF	1
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.5
	Coil Length (LXD <sub>X</sub> W)		mm	526X25.4X228.6
	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)	40/37/35/32/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	50/47/45/42/-
	Dimension (WXH <sub>X</sub> D)		mm	730X254X184
	Dimension of Carton Box (LXWXH)		mm	790X328X255
Dimension of Package(LXWXH)		mm	793X331X270	
Net Weight		kg	8	
Gross Weight		kg	10.5	

Outdoor Unit	Model of Outdoor Unit		GWH09NA-K3NNB1C/O	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD.	
	Compressor Model		QXA-B102C150	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	L.R.A.	A		15
	Compressor RLA	A		3.9
	Compressor Power Input	W		850
	Overload Protector			Internal(UP3-21)
	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		Φ7.94
	Rows-fin Gap	mm		1-1.4
	Coil Length (LXDXW)	mm		730X19.05X506
	Fan Motor Speed	rpm		830±30
	Output of Fan Motor	W		30
	Fan Motor RLA	A		0.37
	Fan Motor Capacitor	μF		2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /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		3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa		1.2
	Sound Pressure Level (H/M/L)	dB (A)		50/-/-
	Sound Power Level (H/M/L)	dB (A)		60/-/-
Dimension (WXHXD)	mm		776X540X320	
Dimension of Carton Box (LXWXH)	mm		820X355X580	
Dimension of Package(LXWXH)	mm		823X358X595	
Net Weight	kg		31	
Gross Weight	kg		34	
Refrigerant			R410A	
Refrigerant Charge	kg		0.66	
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	

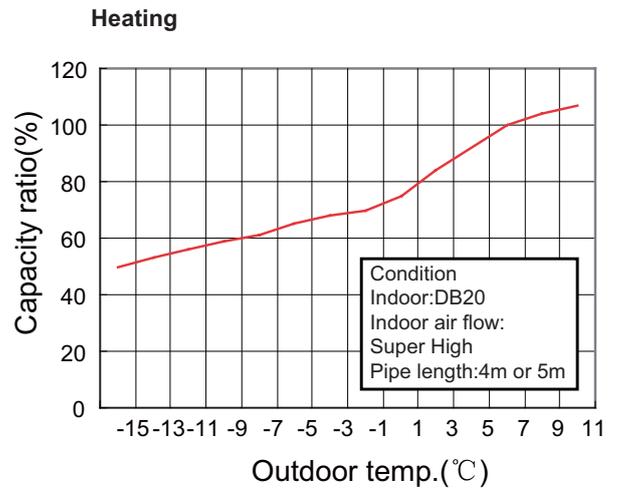
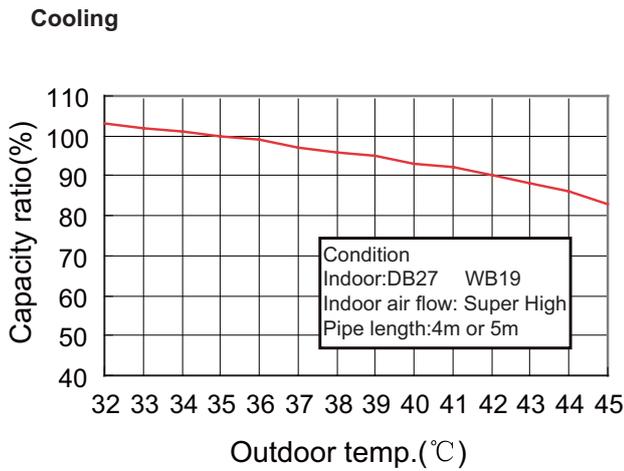
The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			GWH12PB-K3NNA1A	
Product Code			CA414000700/CA414000701	
Power Supply	Rated Voltage	V ~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	3223	
Heating Capacity		W	3516	
Cooling Power Input		W	1004	
Heating Power Input		W	973	
Cooling Power Current		A	4.45	
Heating Power Current		A	4.32 T	
Rated Input		W	1450	
Rated Current		A	6.43	
Air Flow Volume(SH/H/M/L/SL)		m <sup>3</sup> /h	550/500/420/350/-	
Dehumidifying Volume		L/h	1.2	
EER		W/W	3.21	
COP		W/W	3.61	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m <sup>2</sup>	15-22	
Indoor Unit	Model of indoor unit		GWH12PB-K3NNA1A/I	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ85X596
	Fan Motor Cooling Speed(SH/H/M/L/SL)		r/min	1350/1220/1100/1000/-
	Fan Motor Heating Speed(SH/H/M/L/SL)		r/min	1320/1220/1120/980/-
	Output of Fan Motor		W	10
	Fan Motor RLA		A	0.13
	Fan Motor Capacitor		μF	1
	Input of Heater		W	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.5
	Coil Length (LXDXW)		mm	581X25.4X264
	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)	40/37/35/32/-
	Sound Power Level (SH/H/M/L/SL)		dB (A)	50/47/45/42/-
	Dimension (WXHXD)		mm	774X264.5X182
	Dimension of Carton Box (LXWXH)		mm	870X255X350
Dimension of Package(LXWXH)		mm	873X258X365	
Net Weight		kg	9	
Gross Weight		kg	12	

Outdoor Unit	Model of Outdoor Unit		GWH12NB-K3NNB1C/O	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD.	
	Compressor Model		QXA-B120C150	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	L.R.A.	A		23
	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		Φ9.52
	Rows-fin Gap	mm		1-1.4
	Coil Length (LXDXW)	mm		748X22X508
	Fan Motor Speed	rpm		770
	Output of Fan Motor	W		35
	Fan Motor RLA	A		0.35
	Fan Motor Capacitor	μF		2.5
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /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		3.8
	Permissible Excessive Operating Pressure for the Suction Side	MPa		1.2
	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		0.84	
Connection Pipe	Length	m	4	
	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	20	

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

## 2.2 Capacity Variation Ratio According to Temperature



## 2.3 Operation Data

### Cooling

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)		
27/19	35/24	07K	0.85~1.0	in:8~11 out:11~14	in:75~85 out:37~43	Super High	High
27/19	35/24	09K	0.8~1.0	in:8~11 out:11~14	in:75~85 out:37~43	Super High	High
27/19	35/24	12K	0.8~1.0	in:8~11 out:11~14	in:75~85 out:37~43	Super High	High

### 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

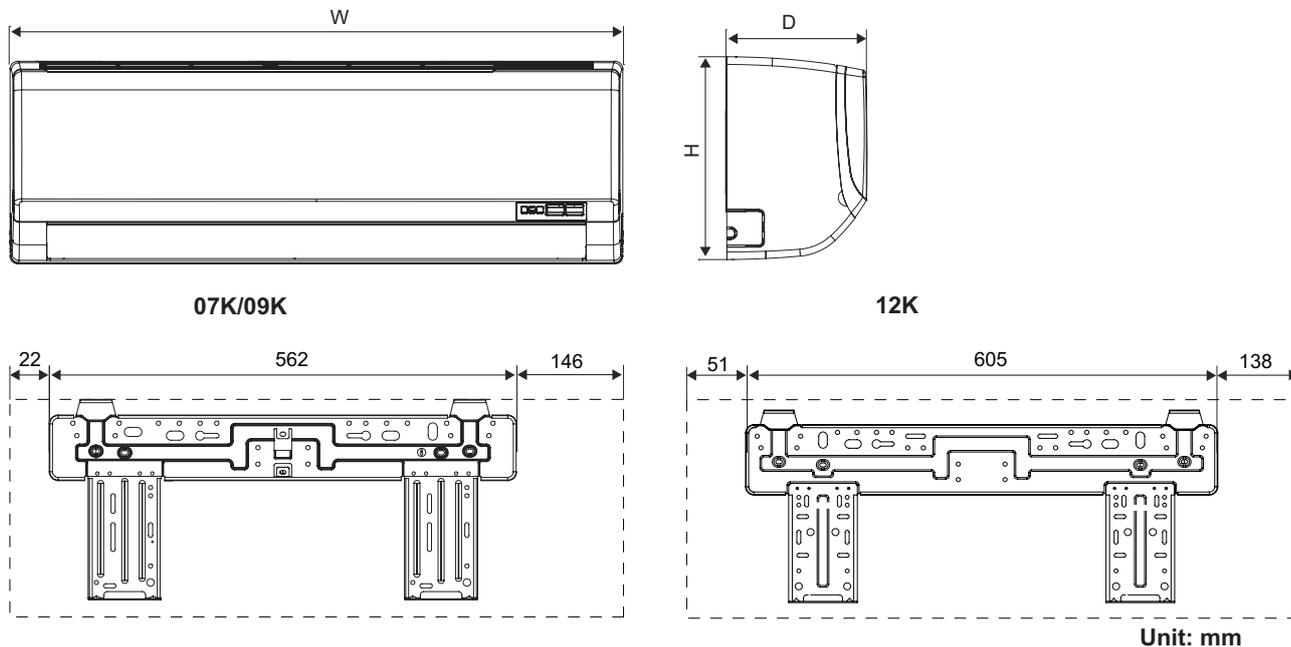
T1: Inlet and outlet pipe temperature of evaporator  
 T2: Inlet and outlet pipe temperature of condenser  
 P: Pressure of air pipe connecting indoor and outdoor units

### NOTES :

- (1) Measure surface temperature of heat exchanger pipe around center of heat exchanger path U bent. (Thermistor thermometer)
- (2) Connecting piping condition : 4m or 5m.

### 3. Construction Views

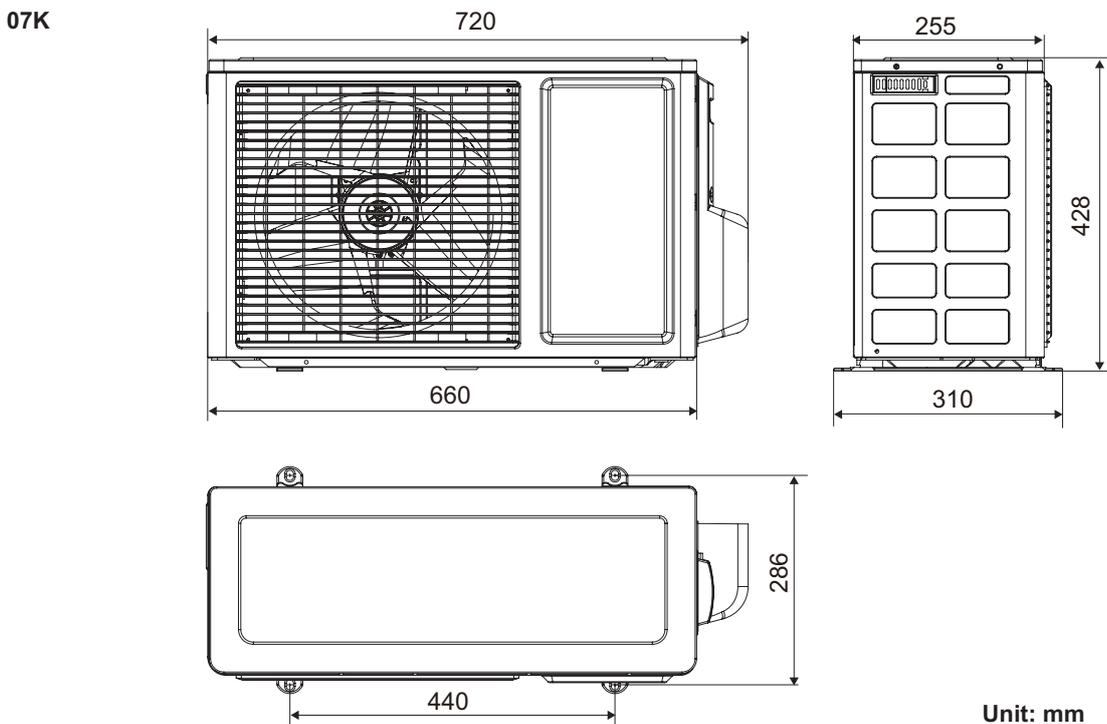
#### 3.1 Indoor Unit



Unit: mm

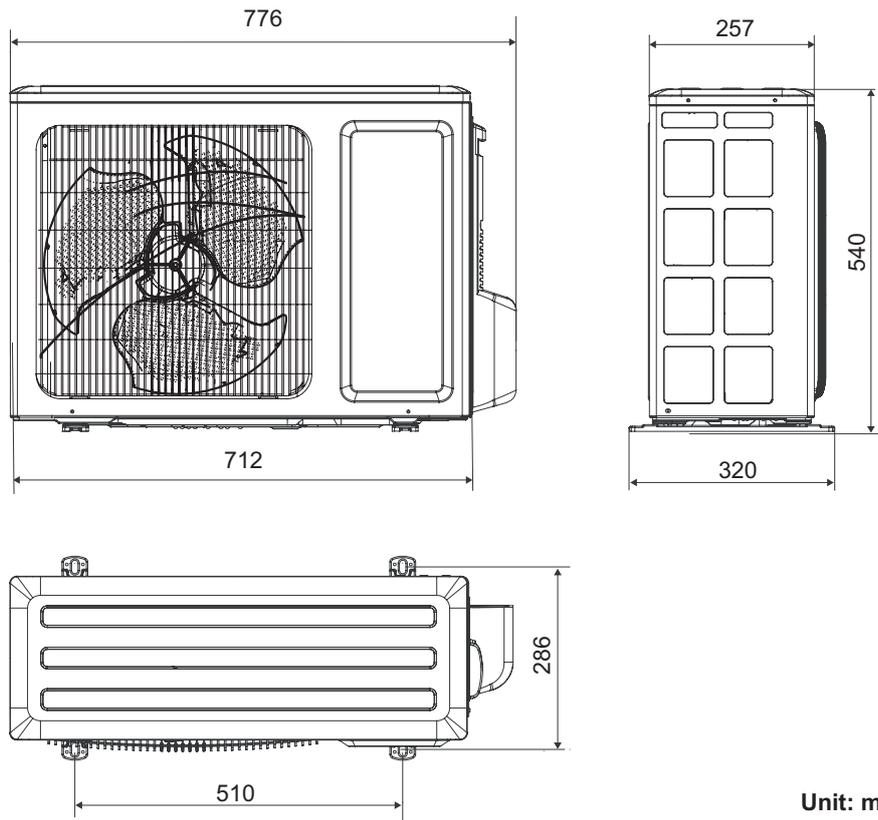
MODEL	W	H	D
07/09K	730	254	184
12K	774	264.5	182

#### 3.2 Outdoor Unit



Unit: mm

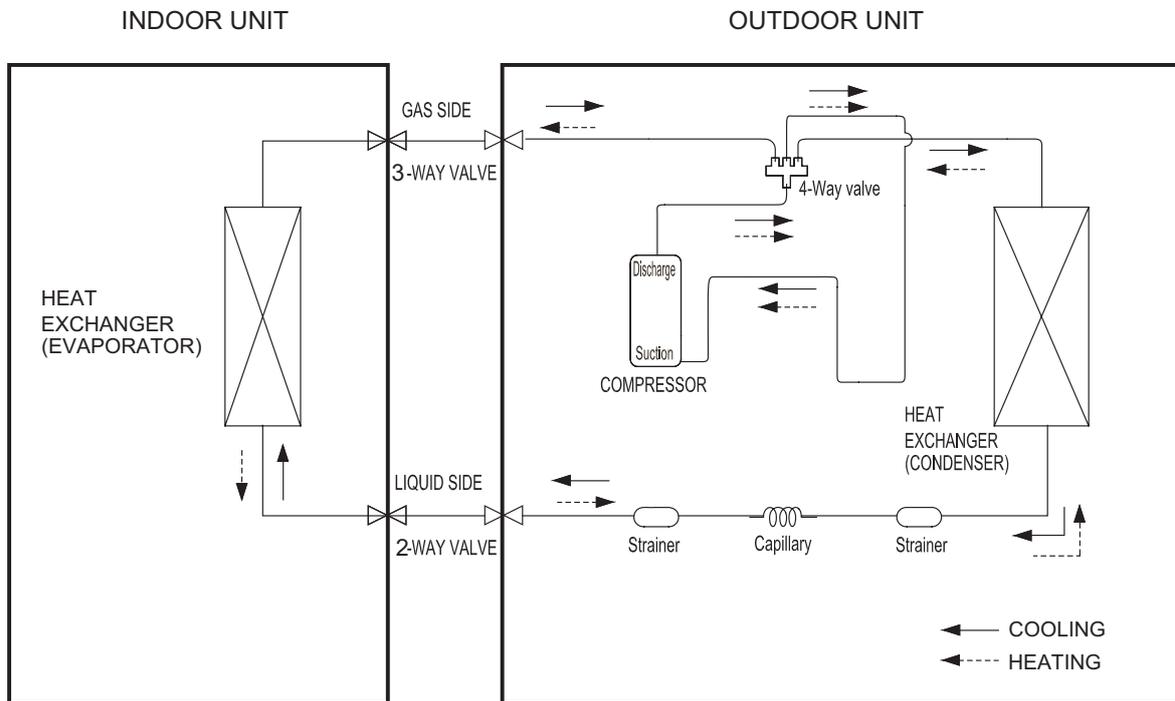
09K/12K



Unit: mm

# 4. Refrigerant System Diagram

• Cooling & Heating Models



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

## 5. Schematic Diagram

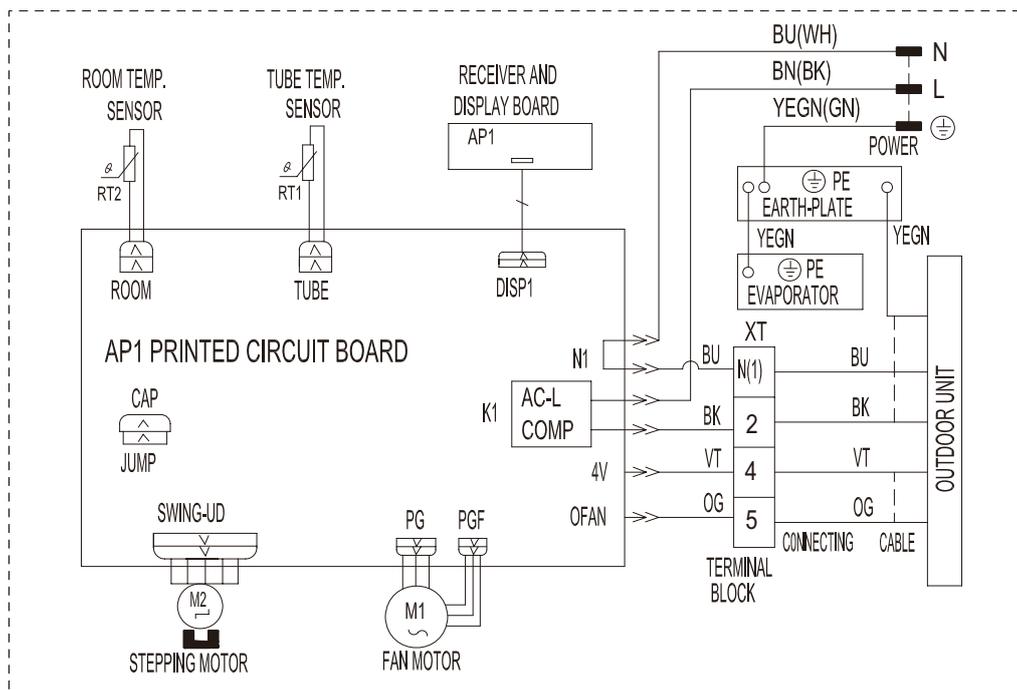
### 5.1 Electrical Wiring

- Electrical Data

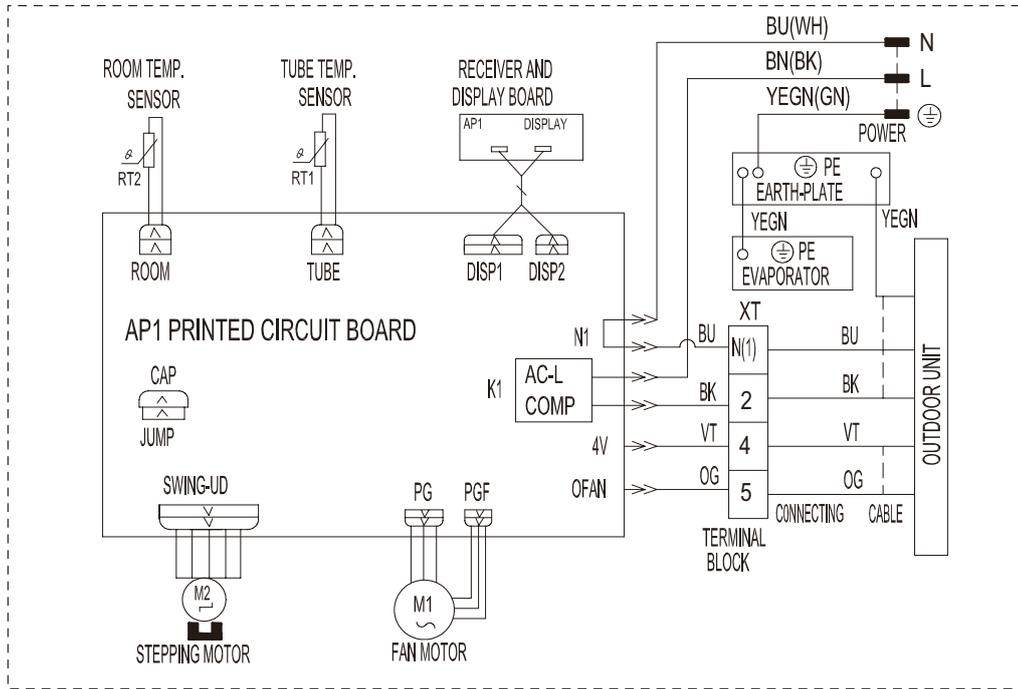
Symbol	Color symbol	Symbol	Color symbol
OG	ORANGE	BN	BROWN
VT	VIOLET	BU	BLUE
WH	WHITE	BK	BLACK
YE	YELLOW	<b>Symbol</b>	<b>Parts name</b>
RD	RED	COMP	COMPRESSOR
YEGN	YELLOW GREEN		PROTECTIVE EARTH

- Indoor Unit

Models:GWH07PA-K3NNA1A/I(CA414N00501) GWH09PA-K3NNA1A/I(CA414N00601) GWH12PB-K3NNA1A/I(CA414N00701)

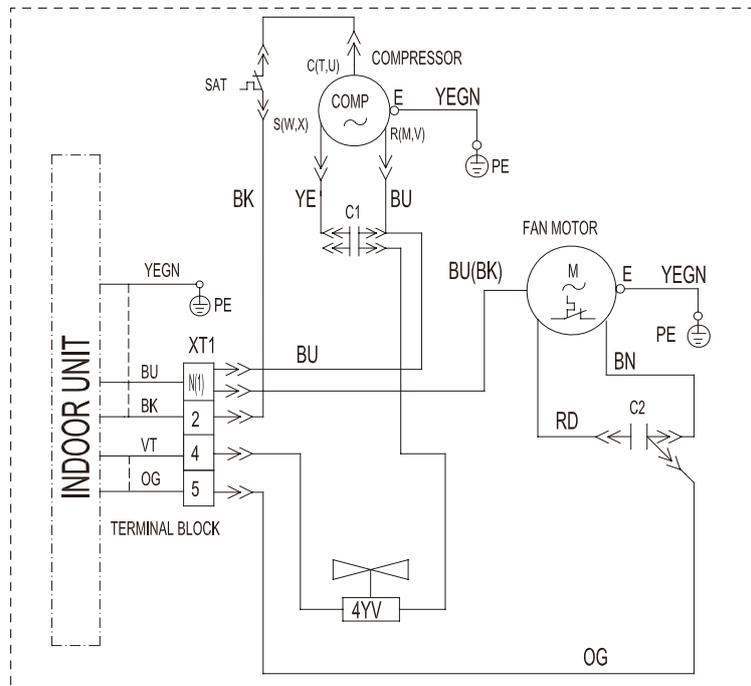


Models: GWH07PA-K3NNA1A/I(CA414N00500) GWH09PA-K3NNA1A/I(CA414N00600) GWH12PB-K3NNA1A/I(CA414N00700)

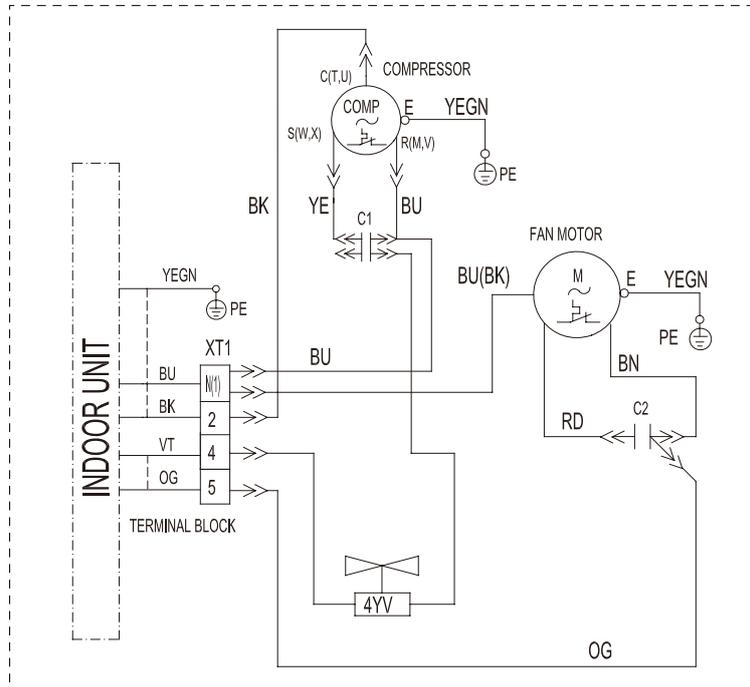


• Outdoor Unit

Model: GWH07NA-K3NNB1A/O



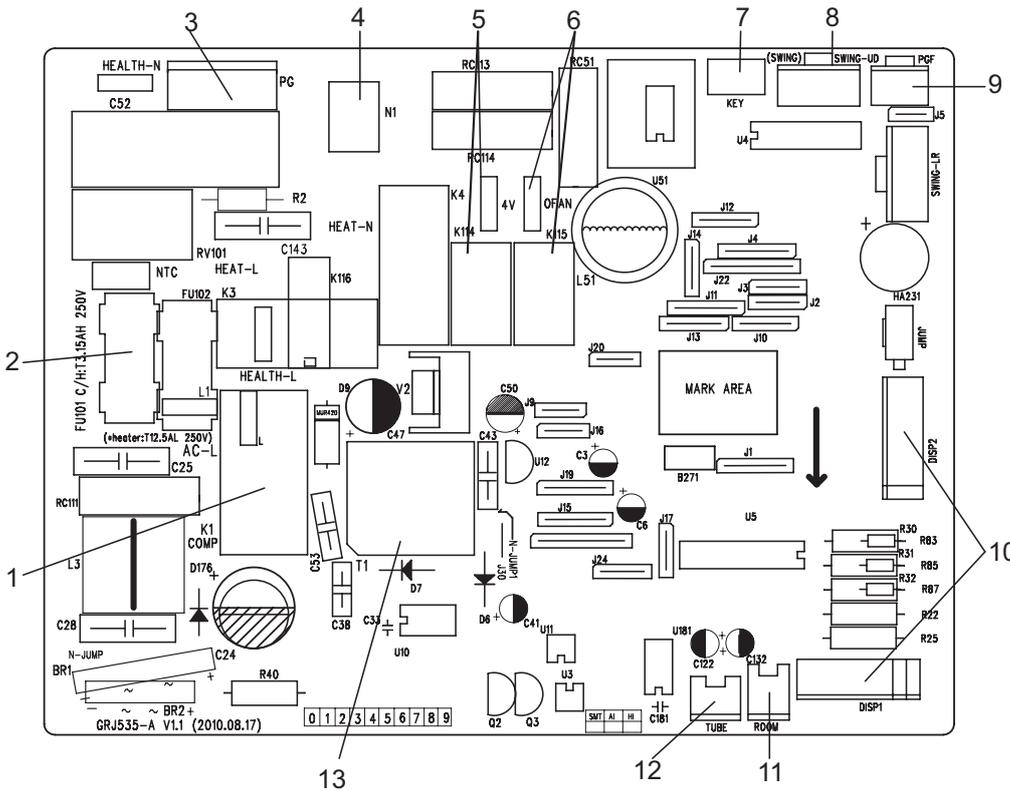
Models: GWH09NA-K3NNB1C/O GWH12NB-K3NNB1C/O



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

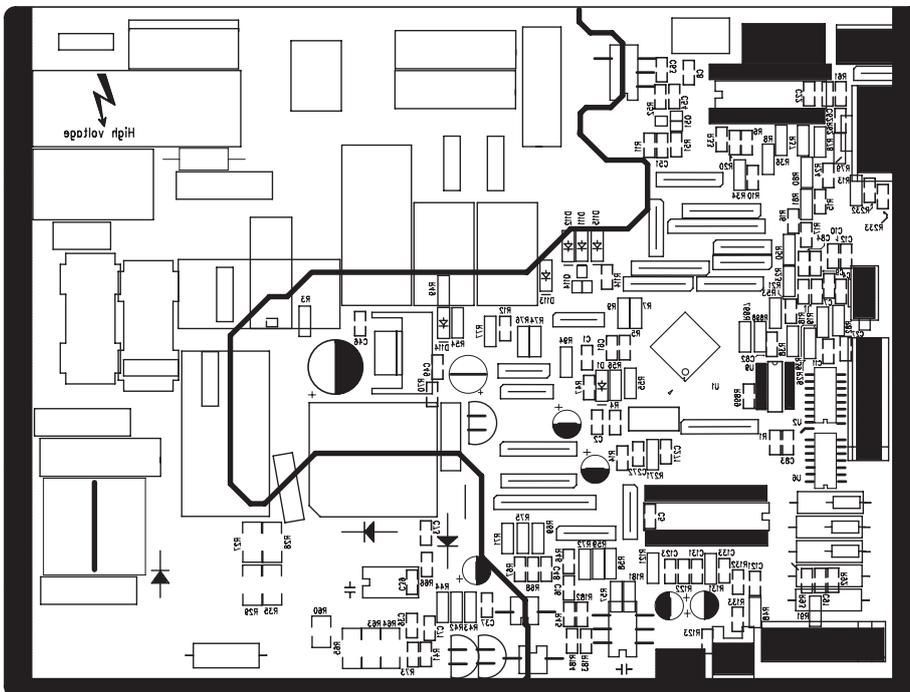
## 5.2 Printed Circuit Board

### • Top View



1	Relay of compressor controller
2	Protective tube
3	Interface of controller of indoor fan
4	Interface of null wire of power supply
5	Interface of controller of 4-way valve and control relay K114
6	Interface of controller of outdoor fan and control relay K115
7	Auto button
8	Vertical swing
9	Feedback of indoor fan
10	Interface of controller for display panel
11	Interface of ambient temp sensor
12	Interface of pipe temp sensor
13	Transformer with high frequency

### • Bottom View

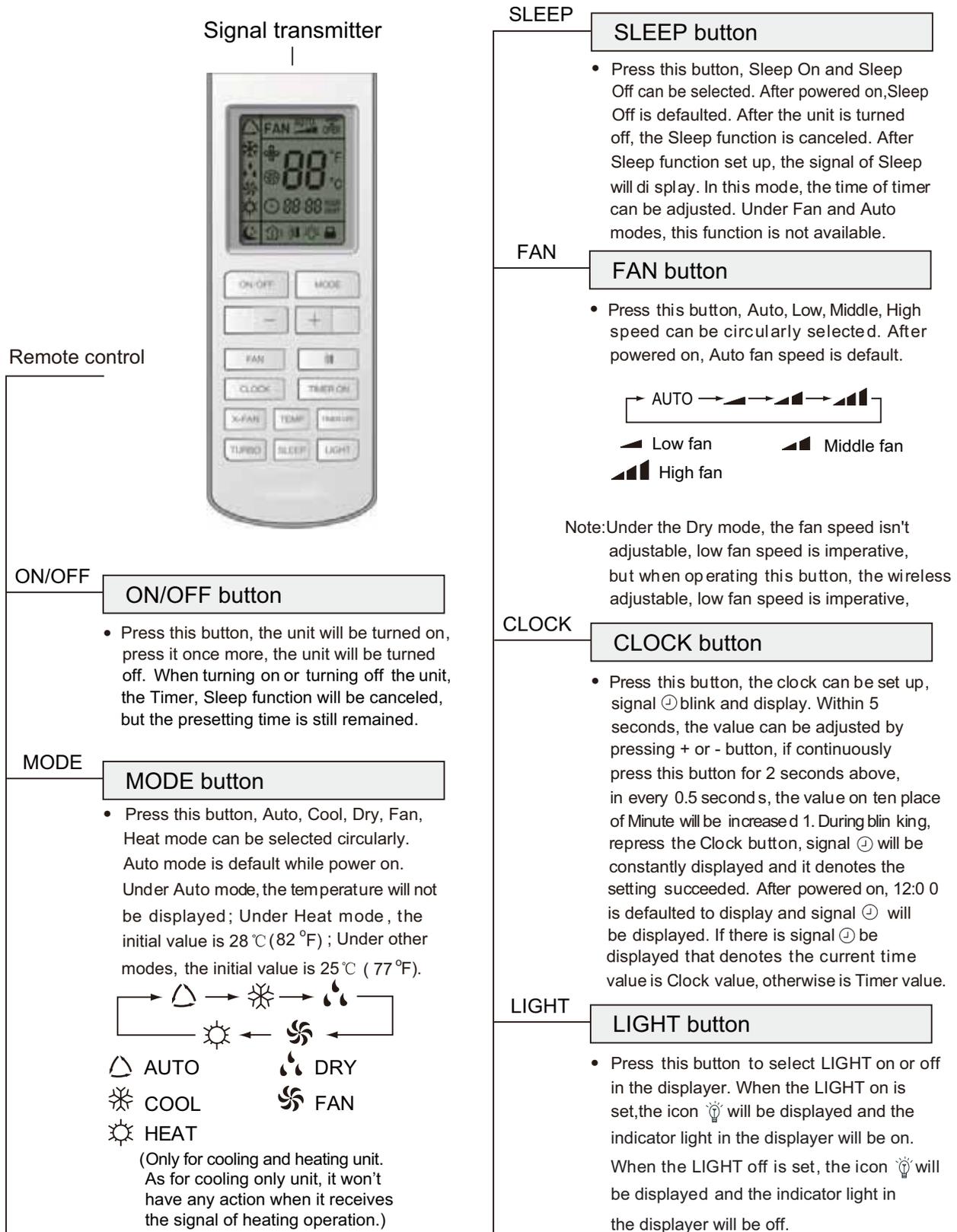


## 6. Function and Control

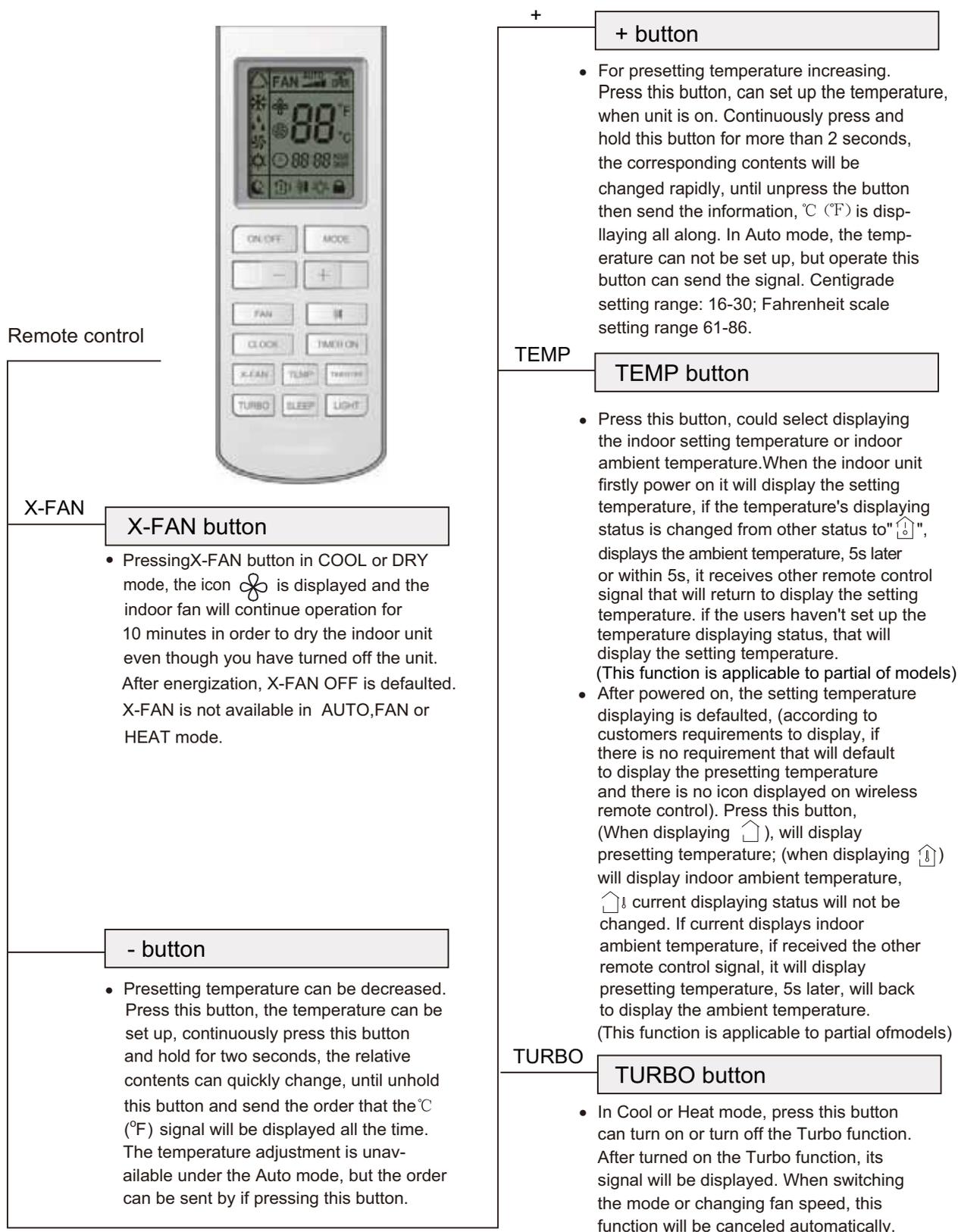
### 6.1 Remote Control Operations

#### Names and Functions of Wireless Remote Control

Note: Be sure that there are no obstructions between receiver and remote controller ;Don't drop or throw the remote control; Don't let any liquid in the remote control and put the remote control directly under the sunlight or any place where is very hot.



Notice: This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.



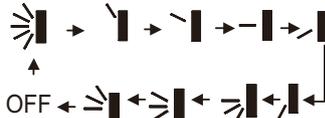
Notice: This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.

Remote control



**SWING UP AND DOWN BUTTON**

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



This is an universal use remote controller. If remote controller sends the following three kinds of status that the swing status of main unit will be:



When the guide louver start to swing up and down, if turn off the Swing, the air guide louver will stop at current position.

which indicates the guide louver swings up and down between that all five positions.

**TIMER ON**

**TIMER ON BUTTON**

- Timer On setting: Signal "ON" will blink and display, signal will conceal, the numerical section will become the timer on setting status. During 5 seconds blink, by pressing + or - button to adjust the time value of numerical section, every press of that button, the value will be increased or decreased 1 minute. Hold pressing + or - button, 2 seconds later, it quickly change, the way of change is: During the initial 2.5 seconds, ten numbers change in the one place of minute, then the one place is constant, ten numbers change in the tens place of minute at 2.5 seconds speed and carry. During 5s blink, press the Timer button, the timer setting succeeds. The Timer On has been set up, repress the timer On button, the Timer On will be canceled. Before setting the Timer, please adjust the Clock to the current actual time.

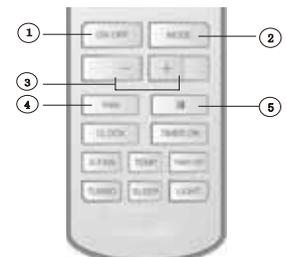
**TIMER OFF**

**TIMER OFF BUTTON**

- Once press this key to enter into TIMER OFF setup, in which case the TIMER OFF icon will blink. The method of setting is the same as for TIMER ON.

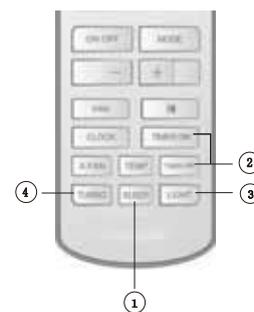
**Guide for Operation - General Operation**

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



## Guide for Operation - Optional Operation

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



## Introduction for Special Function

### ★ About X-FAN function

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

1. Having set X-FAN function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for about 10 min. at low speed. In this period, press X-FAN button to stop indoor fan directly.
2. Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

### ★ About AUTO RUN

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

### ★ About turbo function

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

### ★ About Blow over heat (This function is applicable to partial of models)

When the unit is running in Heat mode or Auto Heat mode, compressor and indoor fan is running, to turn the unit off, the compressor, outdoor fan will stop running. The upper and lower guide board rotate to horizontal position, then the indoor fan will run at low fan speed, 10s later, the unit will turn off.

### ★ About new function of defrosting

Under switch-off state, hold MODE key for 2 seconds to enter or exit defrost H1 function. After being energized, the defrost H1 function is defaulted off. When entering defrost H1 function, the double-8 nixie tube will display H1 under switch-off state. When adjusting to heat mode, the double-8 nixie tube will display in flash for 5 seconds at a frequency of 1 count / sec. After the flash is ended, the remote controller will display the preset heating temperature. Within these 5 seconds, press of +, - or TIMER key will cancel the display H1, while the double-8 nixie tube will display the preset temperature. To switch the display of temperature between Celsius and Fahrenheit after entering defrost H1 function, the temperature value to be switched will be displayed firstly before display of H1 after 5 seconds.

## Replacement of Batteries

1. Remove the battery cover plate from the rear of the remote controller.
2. Take out the used 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.

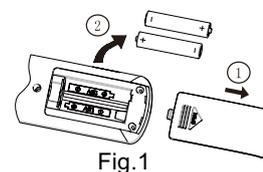


Fig.1

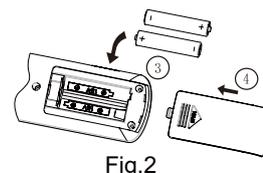


Fig.2

## 6.2 Description of Each Control Operation

### 1 Temperature Parameters

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

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

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

### 2.1 Cooling mode

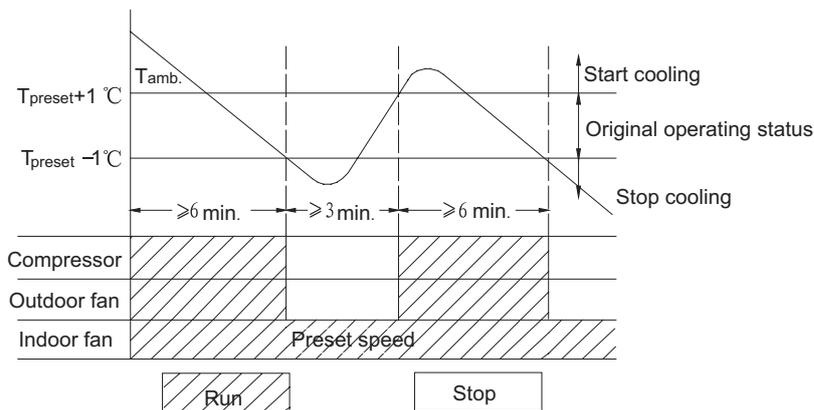
#### 2.1.1 Cooling conditions and process

When  $T_{\text{amb.}} \geq T_{\text{preset}} + 1^\circ\text{C}$ , the unit starts cooling operation. In this case, the compressor and the outdoor fan operate and the indoor fan operates at set speed.

When  $T_{\text{amb.}} \leq T_{\text{preset}} - 1^\circ\text{C}$ , the compressor and the outdoor fan stop while the indoor fan runs at set speed.

When  $T_{\text{preset}} - 1^\circ\text{C} < T_{\text{amb.}} < T_{\text{preset}} + 1^\circ\text{C}$ , the unit will maintain its previous running status.

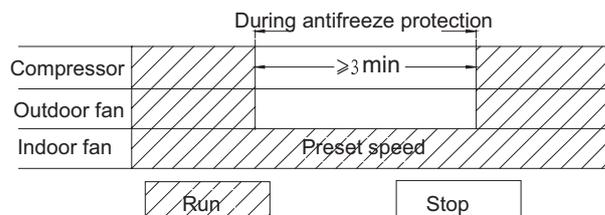
In cooling mode, the four-way valve is de-energized; temperature setting range is  $16 \sim 30^\circ\text{C}$ ; the indoor unit displays operation icon, cooling icon and set temperature.



#### 2.1.2 Protection Functions

- ◆ Freeze protection

If the system is under freeze protection, the compressor and the outdoor fan stop operation, and the indoor fan operates at set speed. If freeze protection is eliminated and the compressor has been out of operation for 3 minutes, the unit will resume its previous running status.



## 2.2 Dry Mode

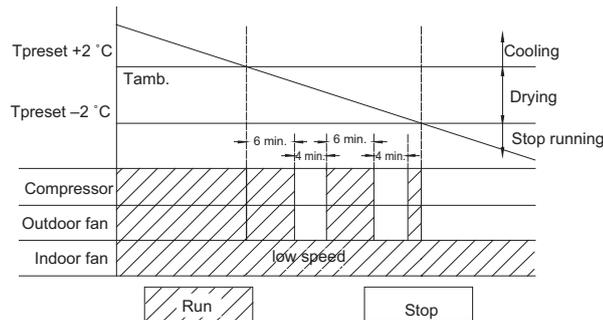
### 2.2.1 Dry Conditions and Process

When  $T_{amb.} > T_{preset} + 2^{\circ}C$ , the unit starts drying and cooling operation. In this case, the compressor and the outdoor fan operate; the indoor fan operates at low speed.

When  $T_{preset} - 2^{\circ}C \leq T_{amb.} \leq T_{preset} + 2^{\circ}C$ , the unit will start drying operation. In this case, the indoor fan operates at low speed; the compressor and the outdoor fan operate for 6 minutes and stop for 4 minutes in cycle.

When  $T_{amb.} < T_{preset} - 2^{\circ}C$ , the compressor and the outdoor fan stop operation; the indoor fan operates at low speed.

In drying mode, the four-way valve is de-energized; temperature setting range is  $16 \sim 30^{\circ}C$ ; the indoor unit displays operation icon, dry icon and set temperature.



### 2.2.2 Protection

#### ◆ Freeze protection

During drying and cooling operation, if the system is under freeze protection, the compressor and outdoor fan stop operation while indoor fan operates at low speed. If freeze protection is eliminated and the compressor has been out of operation for 3 minutes, the complete unit will resume its previous running status.

During the cycle of on for 6 min and off for 4 min, if freeze protection is detected, the compressor and the outdoor fan will stop operation; the indoor fan will operate at low speed. When freeze protection is eliminated and the compressor has been out of operation for 4 minutes, the complete unit will resume its previous running status.

### 2.2.3 Other protection

Other protections are the same as those in cooling mode.

## 2.3 Heating mode

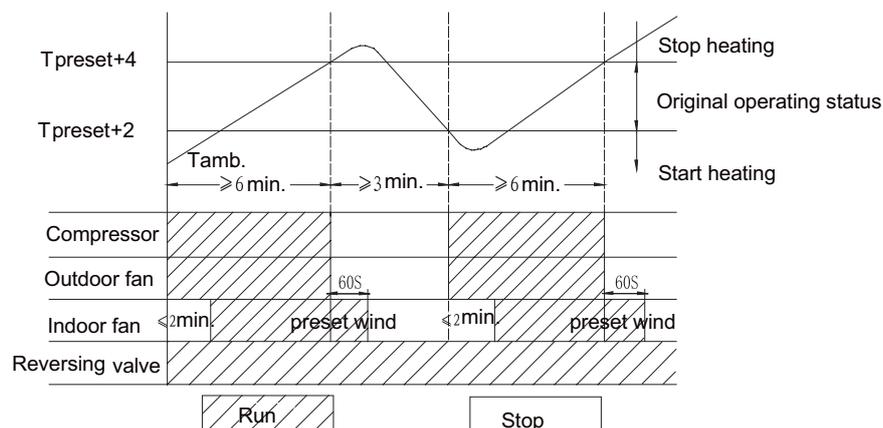
### 2.3.1 Heating conditions and process

When  $T_{amb.} \leq T_{preset} + 2^{\circ}C$ , the unit starts heating operation. In this case, the 4-way valve, compressor and outdoor fan operate simultaneously; the indoor fan operates with a maximum delay of 2 minutes.

When  $T_{amb.} \geq T_{preset} + 4^{\circ}C$ , the compressor and outdoor fan stop operation. The 4-way valve remains energized; the indoor fan blows residual heat.

When  $T_{preset} + 2^{\circ}C < T_{amb.} < T_{preset} + 4^{\circ}C$ , the unit will maintain its previous running status.

Under this mode, the 4-way valve is energized; temperature setting range is  $16 \sim 30^{\circ}C$ ; the indoor unit displays operation icon, heating icon and set temperature.



### 2.3.2 Defrosting Conditions and Process

With intelligent defrosting function, the unit defrosts automatically according to the actual condition. The indoor unit displays "H1".

### 2.3.3 Protection Functions

#### ◆Overheating Prevention Protection

If the evaporator tube temperature overheats, the outdoor fan stops operation. When the tube temperature returns to normal, the outdoor fan resumes operation.

#### ◆Noise Silencing Protection

If the unit is turned off by pressing ON/OFF button or during mode switchover, the 4-way valve stops with a delay of 2 minutes.

### 2.4 Fan mode

In fan mode, indoor fan operates at set speed while the compressor, outdoor fan, 4-way valve and electric heating tube stop operation.

In this mode, temperature setting range is 16~30°C. The indoor unit displays operation icon and set temperature.

### 2.5 Auto Mode

In AUTO mode, the unit will automatically select its operation mode (cooling, heating or fan) with the change of ambient temperature. The indoor unit displays the operation icon, operation mode icon and set temperature. There is a 30-second delay protection for mode switchover. Protection functions are the same as those in any other mode.

## 3 Other Control

### 3.1 Timer function

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

#### 3.1.1 General Timer

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

#### 3.1.2 Clock Timer

##### 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 operate 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 of the remote controller. You can also set the timer once again, and then the unit will operate according to the last setting.

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

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

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

### 3.2 Auto Button

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

### 3.3 Buzzer

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

### 3.4 Sleep Function

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

### 3.5 Turbo Function

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

### 3.6 X-FAN Function

This function can be set in COOL or DRY mode.

### 3.7 Automatic Control of Fan Speed

In this mode, the indoor fan will automatically select high, medium or low speed with the change of ambient temperature.

### 3.8 Up & Down Swing

After energization, up & down swing motor will firstly have the horizontal louver rotate anticlockwise to position 0 to close air outlet.

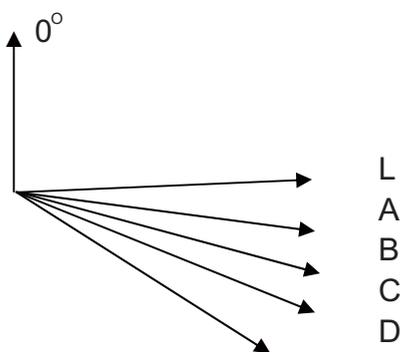
If swing function has not been set after startup of the unit, horizontal louver will turn clockwise to position D in HEAT mode, or turn clockwise to level position L in other modes.

If swing function is set when starting up the unit, the horizontal louver will swing between L and D.

There are 7 swing status of horizontal louver: Positions L, A, B, C and D, swing between L and D and stop at any position between L and D (angles between L and D are equiangular).

Upon turning off the unit, the horizontal louver will close at position 0. Swing function is available only when swing function is set and indoor fan is operating.

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



### 3.9 Display

#### 3.9.1 Operation and Mode Icons

Upon energization, the unit will display all icons. Under standby state, running indicating mark is displayed in red. If the unit is started by remote controller, running indicating mark gives off light; meanwhile, the mark of current running mode will be displayed (mode LED: cooling, heating and dry mode). If the light button is turned off, no mark will be displayed.

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

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

When operating the remote controller during room temperature display, the set temperature will be displayed for 5 seconds firstly and then room temperature display returns.

“F1” will be displayed upon malfunction of room temperature sensor, “F2” upon malfunction of indoor unit tube temperature sensor and “C5” upon malfunction of jumper cap.

For some models, if set temperature display is set by the remote controller, current set temperature will be displayed. After that,

when switching to room temperature display from set temperature or outdoor temperature by the remote controller, room temperature will be displayed for 5 seconds firstly and then set temperature display returns.

### **3.10 Locked protection to PG motor**

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

### **3.11 Memory Function**

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

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

## **4 Special functions (optional)**

### **4.1 HEALTH function**

During operation of the indoor unit fan, 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).

### **4.2 I FEEL 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 blow 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 selected, the ambient temperature will be that sensed by the air conditioner. I FEEL function is not to be memorized.

## 7. Installation Manual

### 7.1 Notices for Installation

- 1.The unit installation work must be done by qualified personnel according to the local rules and this manual.
- 2.Before installing, please contact with local authorized maintenance center, if unit is not installed by the authorized maintenance center, the malfunction may not solved, due to discommodious contacts.
- 3.When removing the unit to the other place, please firstly contact with the authorized Maintenance Center in the local area.
- 4.the appliance must be positioned so that the plug is accessible
- 5.After pull out the power plug then make the appliance operation again,to avoid the icing of outdoor unit damage axial flow fan,should electrify the appliance but not operation for 4 hours for warm-up purpose.

#### 7.1.1 Installation Site Instructions

Install in the following place may cause malfunction. If it is unavoidable contact withservice center please:

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

#### 7.1.2 Installation Site of Indoor Unit

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

#### 7.1.3 Installation Site of Outdoor Unit

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

Model	A	B
07K	5	10
09K	10	15
12K	10	20

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

#### 7.1.4 Safety Precautions for Electric Appliances

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

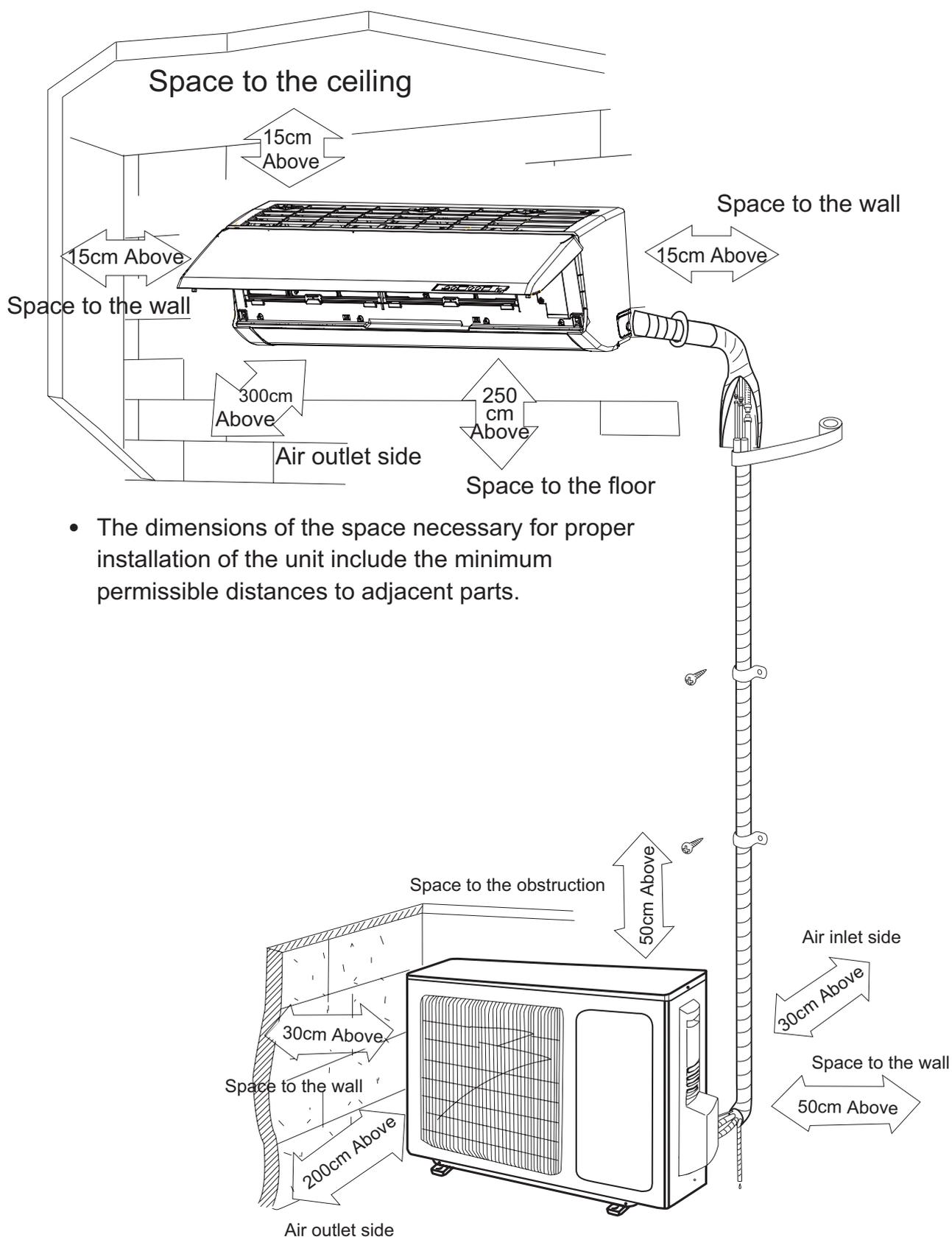
Note:

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

#### 7.1.5 Earthing Requirements

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

## 7.2 Installation Dimension Diagram

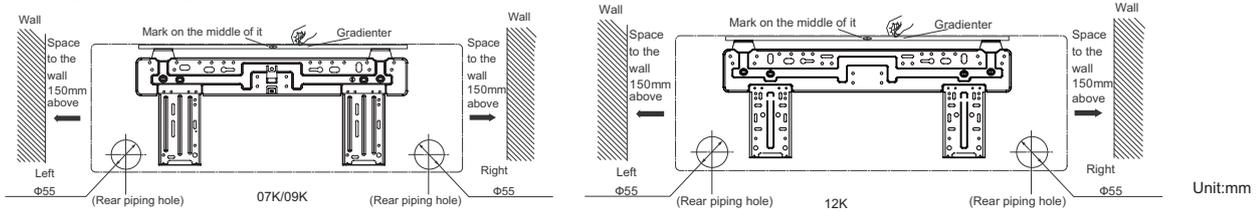


- The dimensions of the space necessary for proper installation of the unit include the minimum permissible distances to adjacent parts.

## 7.3 Install Indoor Unit

### 7.3.1 Installation of Mounting Plate

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



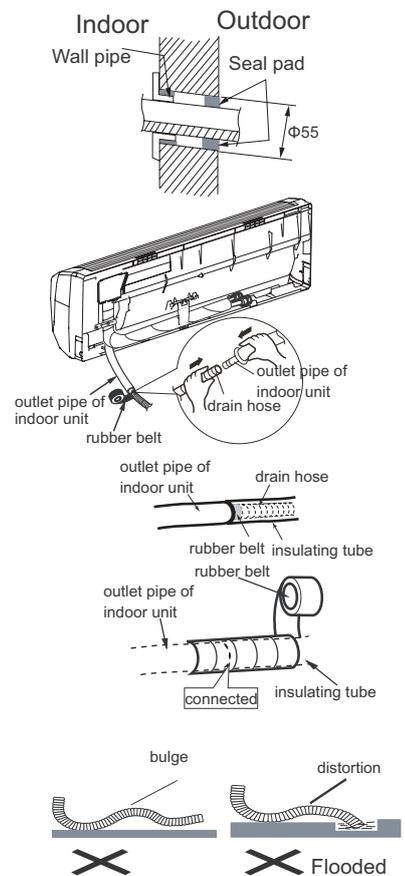
### 7.3.2 Drill Piping Hole

1. Slant the piping hole ( $\Phi 55$ ) on the wall slightly downward to the outdoor side.
2. Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.

### 7.3.3 Installation of Drain Hose

1. Connect the drain hose to the outlet pipe of the indoor unit. Bind the joint with rubber belt.
  2. Put the drain hose into insulating tube.
  3. Wrap the insulating tube with wide rubber belt to prevent the shift of insulating tube.
- Slant the drain hose downward slightly for smooth drainage of condensate.

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



### 7.3.4 Connecting Indoor and Outdoor Electric Wires

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

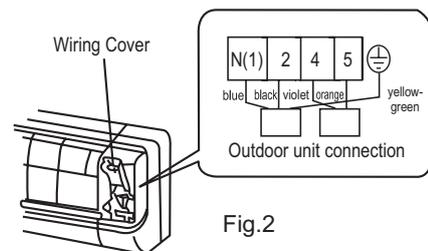


Fig.2

**NOTE:**

All wires between indoor and outdoor units must be connected by the qualified electric contractor.

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

**7.3.5 Installation of Indoor Unit**

- The piping can be output from right, right rear, left or left rear.

1. When routing the piping and wiring from the left or right side of indoor unit, cut off the tailings from the chassis when necessary (As shown in Fig.3)

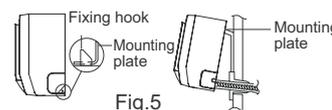
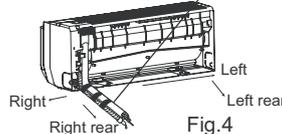
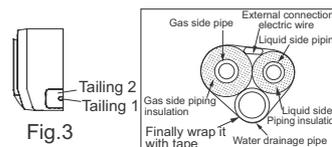
(1) Cut off tailing 1 when routing the wiring only;

(2) Cut off tailing 1 and tailing 2 when routing both the wiring and piping.

2. Take out the piping from body case; wrap the piping, power cords, drain hose with the tape and then make them pass through the piping hole. (As shown in Fig.4)

3. Hang the mounting slots of the indoor unit on the upper hooks of the mounting plate and check if it is firm enough. (As shown in Fig.5)

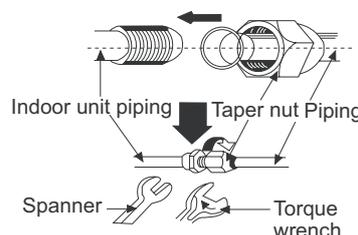
4. The installation site should be 250cm or more above the floor.



**7.3.6 Installation of Connection Pipe**

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

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

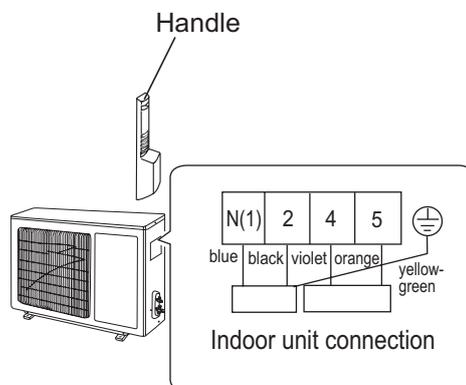


**NOTE:** Connect the connection pipe to indoor unit at first and then to outdoor unit. Handle piping bending with care. Do not damage the connection pipe. Ensure that the joint nuts are tightened firmly, otherwise, it may cause leakage.

**7.4 Install Outdoor Unit**

**7.4.1 Electric Wiring**

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



**NOTE:**

- Incorrect wiring may cause malfunction of spare part.
- After the wire has been fixed, ensure there is free space between the connection and fixing places on the lead wire. Schematic diagram being reference only, please refer to real product for authentic information.

### 7.4.2 Air Purging and Leakage Test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open the handle of Lo manifold valve.
4. Open the vacuum pump for vacuumization. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside (If noise of vacuum pump has been changed, the reading of multimeter is 0). Then tighten the nut.
5. Keep vacuuming for more than 15mins and make sure the reading of multi-meter is  $-1.0 \times 10^5$  pa (-76cmHg).
6. Fully open high/low pressure valves.
7. Remove charging hose from charging end of low pressure valve.
8. Tighten lid of low pressure valve. (As shown in Fig.6)

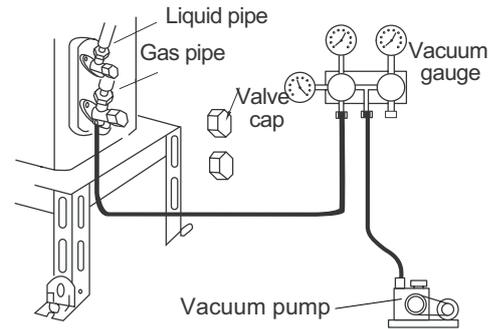
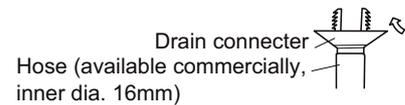
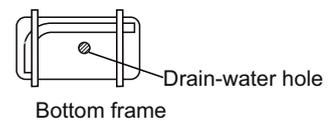


Fig.6

### 7.4.3 Outdoor Condensate Drainage (only for heat pump unit)

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



## 7.5 Check after Installation and Test Operation

### 7.5.1 Check after Installation

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

## 7.5.2 Test Operation

### 1. Before Operation Test

- (1) Do not switch on power before installation is finished completely.
- (2) Electric wiring must be connected correctly and securely.
- (3) Cut-off valves of the connection pipes should be opened.
- (4) All the impurities such as scraps and thrums must be cleared from the unit.

### 2. Operation Test Method

- (1) Switch on power and press ON/OFF button on the remote controller to start operation.
- (2) Press MODE button to select the COOL, HEAT (Not available for cooling only unit), FAN to check whether the operation is normal or not.

## 7.6 Installation and Maintenance of Healthy Filter

### 7.6.1 Installation of Healthy Filter

1. Lift up the front panel from its two ends, as shown by the arrow direction, and then remove the air filter. (as shown in Fig.a)
2. Attach the healthy filter onto the air filter, (as shown in Fig.b).
3. Install the air filter properly along the arrow direction in Fig.c, and then close the panel .

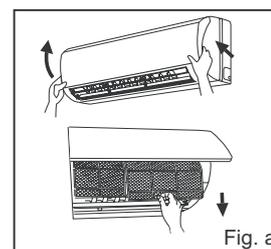


Fig. a

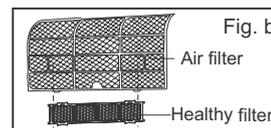


Fig. b

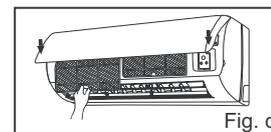


Fig. c

### 7.6.2 Cleaning and Maintenance

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

### 7.6.3 Service Life

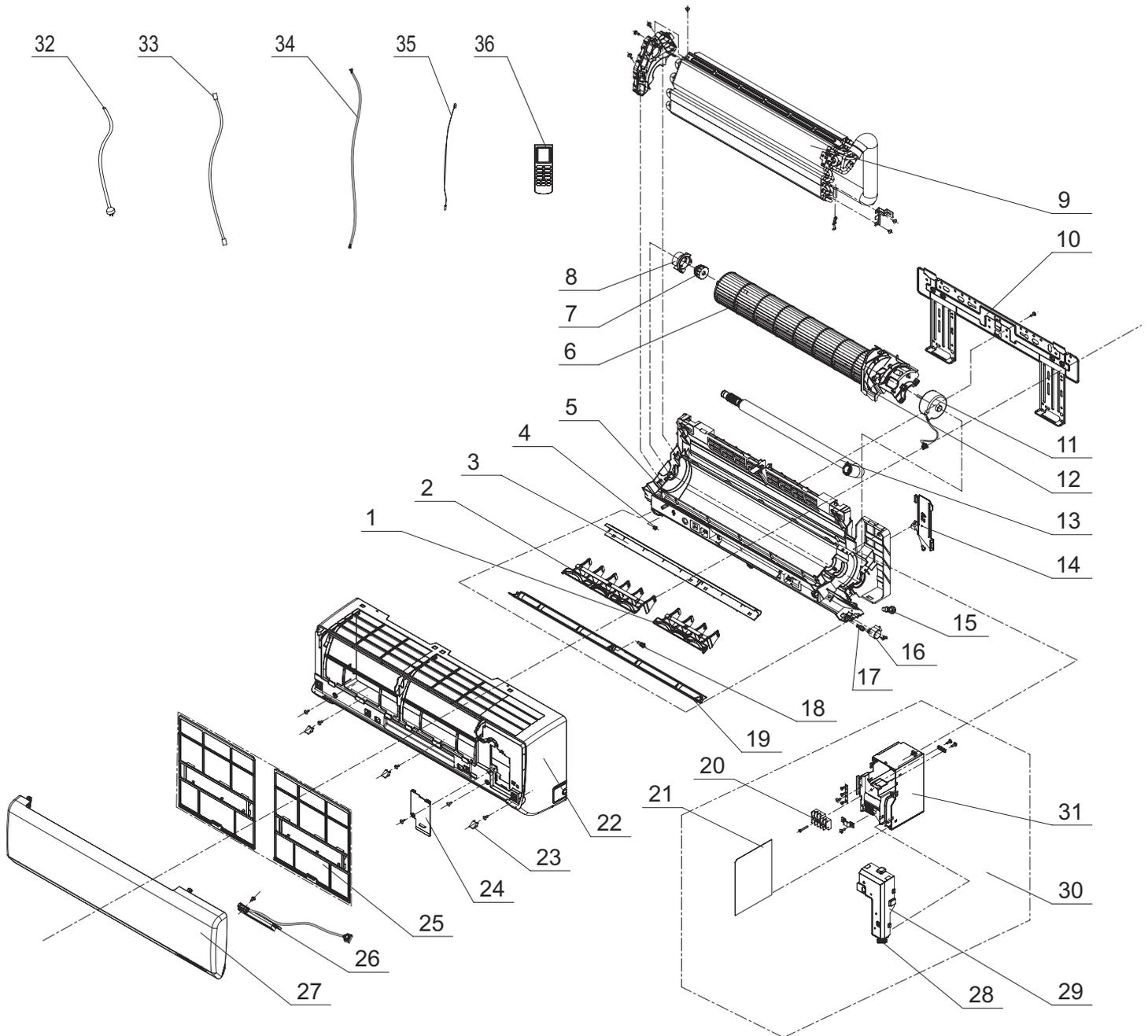
The general service life for the healthy filter is about one year under normal condition. As for silver ion filter, it is ineffective when its surface becomes black (green).

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

# 8. Exploded Views and Parts List

## 8.1 Indoor Unit

Models:GWH07PA-K3NNA1A/I GWH09PA-K3NNA1A/I



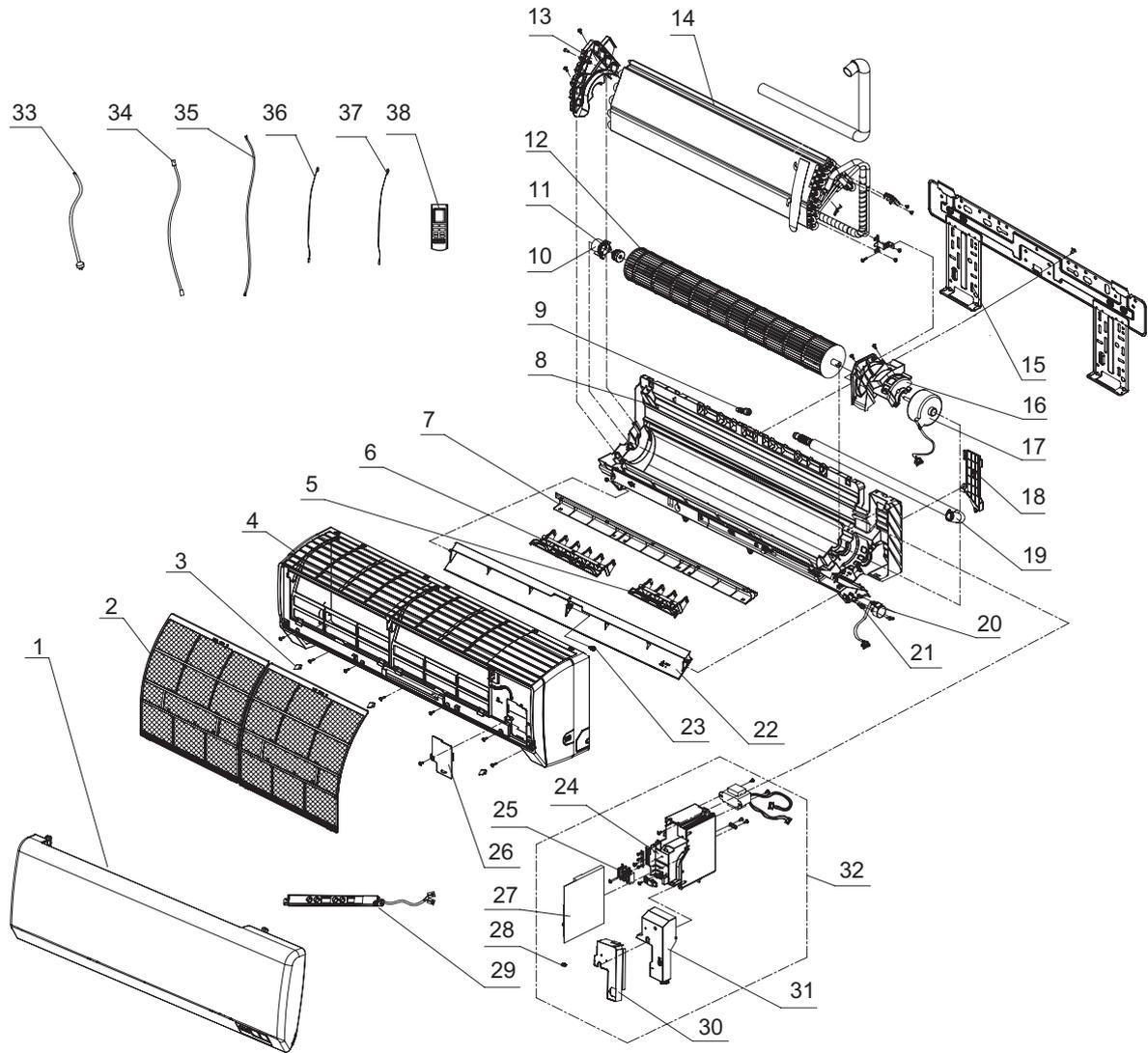
NO.	Description	Part Code		Qty
		GWH07PA-K3NNA1A/I	GWH07PA-K3NNA1A/I	
		Product Code	Product Code	
		CA414N00500	CA414N00501	
1	Air Louver 1	10512113	10512113	1
2	Air Louver 2	10512114	10512114	1
3	Helicoid Tongue	26112202	26112202	1
4	Left Axile Bush	10512037	10512037	1
5	Rear Case assy	22202254	22202254	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	Evaporator Assy	01002577	01002577	1
10	Wall Mounting Frame	01252231	01252231	1
11	Fan Motor	15012115	15012115	1
12	Motor Press Plate	26112201	26112201	1
13	Drainage Hose	0523001408	0523001408	1
14	Pipe Clamp	26112199	26112199	1
15	Rubber Plug (Water Tray)	76712012	76712012	1
16	Step Motor	1521212901	1521212901	1
17	Crank	10582070	10582070	1
18	Axile Bush	10542036	10542036	1
19	Guide Louver	10512268	10512268	1
20	Terminal Board	42010268	42010268	1
21	Main Board	30135913	30135892	1
22	Front Case	20022241	20022241	1
23	Screw Cover	24252016	24252016	3
24	Electric Box Cover2	2012216801	2012216801	1
25	Filter Sub-Assy	11122095	11122095	2
26	Display Board	30565208	30565200	1
27	Front Panel Assy	20022330	20022247	1
28	Electric Box Cover	22242112	22242112	1
29	Shield Box (Electric Box)	01592116	01592116	1
30	Electric Box Assy	20302693	20302692	1
31	Electric Box	20112091	20112091	1
32	Power Cord	4002046417	4002046417	1
33	Connecting Cable	40020536	40020536	0
34	Connecting Cable	40020540	40020540	0
35	Ambient Temperature Sensor	390000453	390000453	1
36	Remote Controller	30510425	30510425	1

The data above are subject to change without notice.

NO.	Description	Part Code		Qty
		GWH09PA-K3NNA1A/I	GWH09PA-K3NNA1A/I	
		Product Code	CA414N00601	
1	Air Louver 1	10512113	10512113	1
2	Air Louver 2	10512114	10512114	1
3	Helicoid Tongue	26112202	26112202	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	76512051	76512051	1
9	Evaporator Assy	01002577	01002577	1
10	Wall Mounting Frame	01252231	01252231	1
11	Fan Motor	15012115	15012115	1
12	Motor Press Plate	26112201	26112201	1
13	Drainage Hose	0523001408	0523001408	1
14	Pipe Clamp	26112199	26112199	1
15	Rubber Plug (Water Tray)	76712012	76712012	1
16	Step Motor	1521212901	1521212901	1
17	Crank	10582070	10582070	1
18	Axile Bush	10542008	10542008	1
19	Guide Louver	10512268	10512268	1
20	Terminal Board	42010268	42010268	1
21	Main Board	30135858	30135857	1
22	Front Case	20022241	20022241	1
23	Screw Cover	24252016	24252016	3
24	Electric Box Cover2	2012216801	2012216801	1
25	Filter Sub-Assy	11122095	11122095	2
26	Display Board	30565200	30565208	1
27	Front Panel Assy	20022247	20022330	1
28	Electric Box Cover	22242112	22242112	1
29	Shield Box (Electric Box)	01592116	01592116	1
30	Electric Box Assy	20302395	20302640	1
31	Electric Box	20112091	20112091	1
32	Power Cord	4002046417	4002046417	1
33	Connecting Cable	40020536	40020536	0
34	Connecting Cable	40020540	40020540	0
35	Ambient Temperature Sensor	390000453	390000453	1
36	Remote Controller	30510425	30510425	1

The data above are subject to change without notice.

Model:GWH12PB-K3NNA1A/I

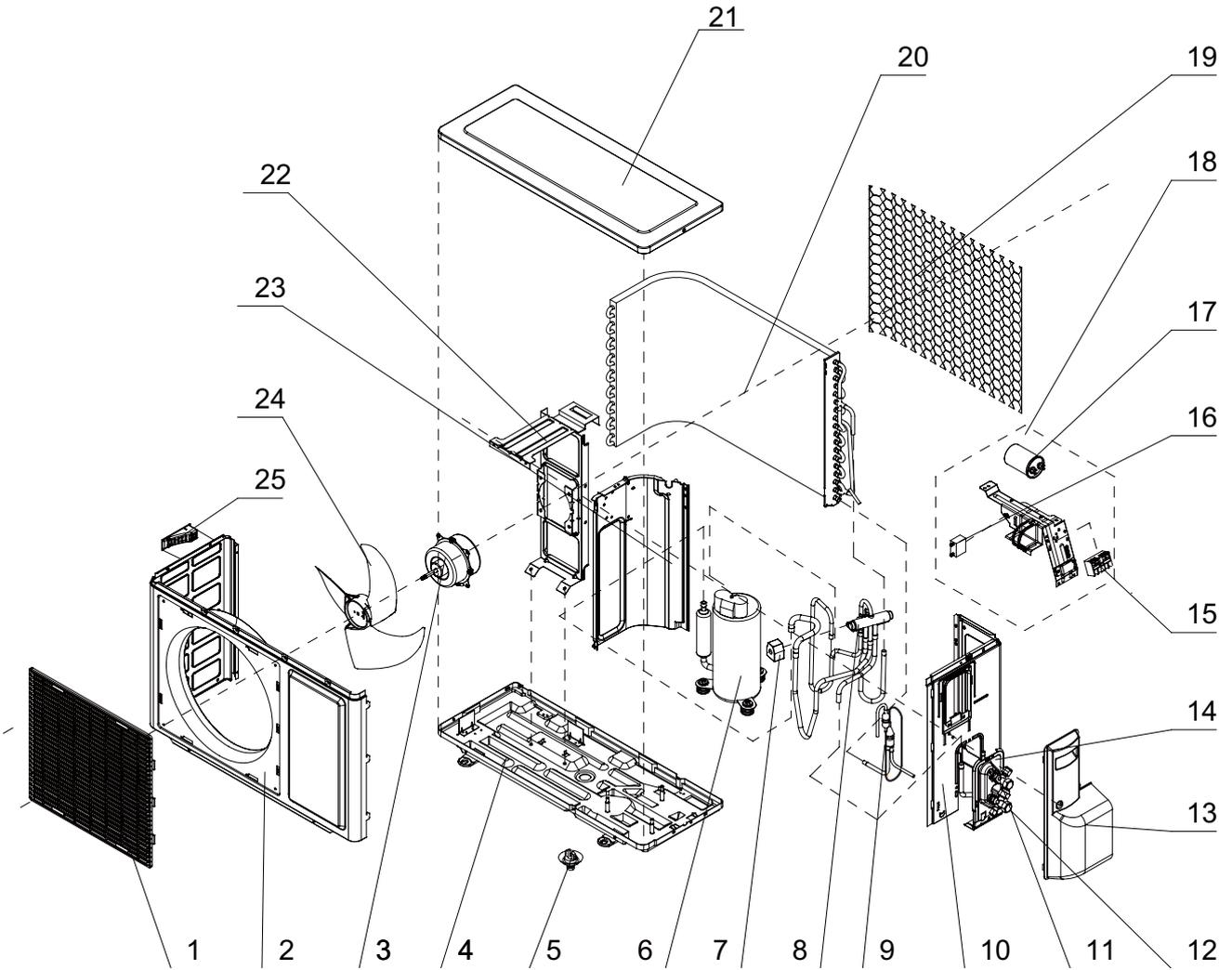


NO.	Description	Part Code		Qty
		GWH12PB-K3NNA1A/I	GWH12PB-K3NNA1A/I	
		Product Code	Product Code	
		CA414N00700	CA414N00701	
1	Front Panel	2002227301	20022228	1
2	Filter Sub-Assy	11122206	11122206	2
3	Screw Cover	24252016	24252016	3
4	Front Case Assy	20022232	20022232	1
5	Air Louver 1	1051211302	1051211302	1
6	Air Louver 2	1051211402	1051211402	1
7	Helicoid Tongue	2611216202	2611216202	1
8	Rear Case assy	22202186	22202186	1
9	Rubber Plug (Water Tray)	76712012	76712012	1
10	O-Gasket sub-assy of Bearing	76512051	76512051	1
11	O-Gasket of Cross Fan Bearing	76512203	76512203	1
12	Cross Flow Fan	10352018	10352018	1
13	Evaporator Support	24212090	24212090	1
14	Evaporator Assy	0100255202	0100255202	1
15	Wall Mounting Frame	01252015	01252015	1
16	Motor Press Plate	26112160	26112160	1
17	Fan Motor	15012115	15012115	1
18	Pipe Clamp	2611216401	2611216401	1
19	Drainage Hose	0523001406	0523001406	1
20	Step Motor	1521212901	1521212901	1
21	Crank	10582070	10582070	1
22	Guide Louver	10512204	10512204	1
23	Axile Bush	10542704	10542704	1
24	Electric Box	2011216701	2011216701	1
25	Terminal Board	42010268	42010268	1
26	Electric Box Cover2	20122075	20122075	1
27	Main Board	30135574	30135550	1
28	Jumper	4202300126	4202300126	1
29	Display Board	30565208	30565200	1
30	Shield Cover of Electric Box Sub-assy	0159207301	0159207301	1
31	Electric Box Cover1	20122103	20122103	1
32	Electric Box Assy	2030248001	20302480	1
33	Power Cord	4002046417	4002046417	1
34	Connecting Cable	40020540	40020540	0
35	Connecting Cable	40020536	40020536	0
36	Ambient Temperature Sensor	390000453	390000453	1
37	Temperature Sensor	390000591	390000591	1
38	Remote Controller	30510425	30510425	1

The data above are subject to change without notice.

## 8.2 Outdoor Unit

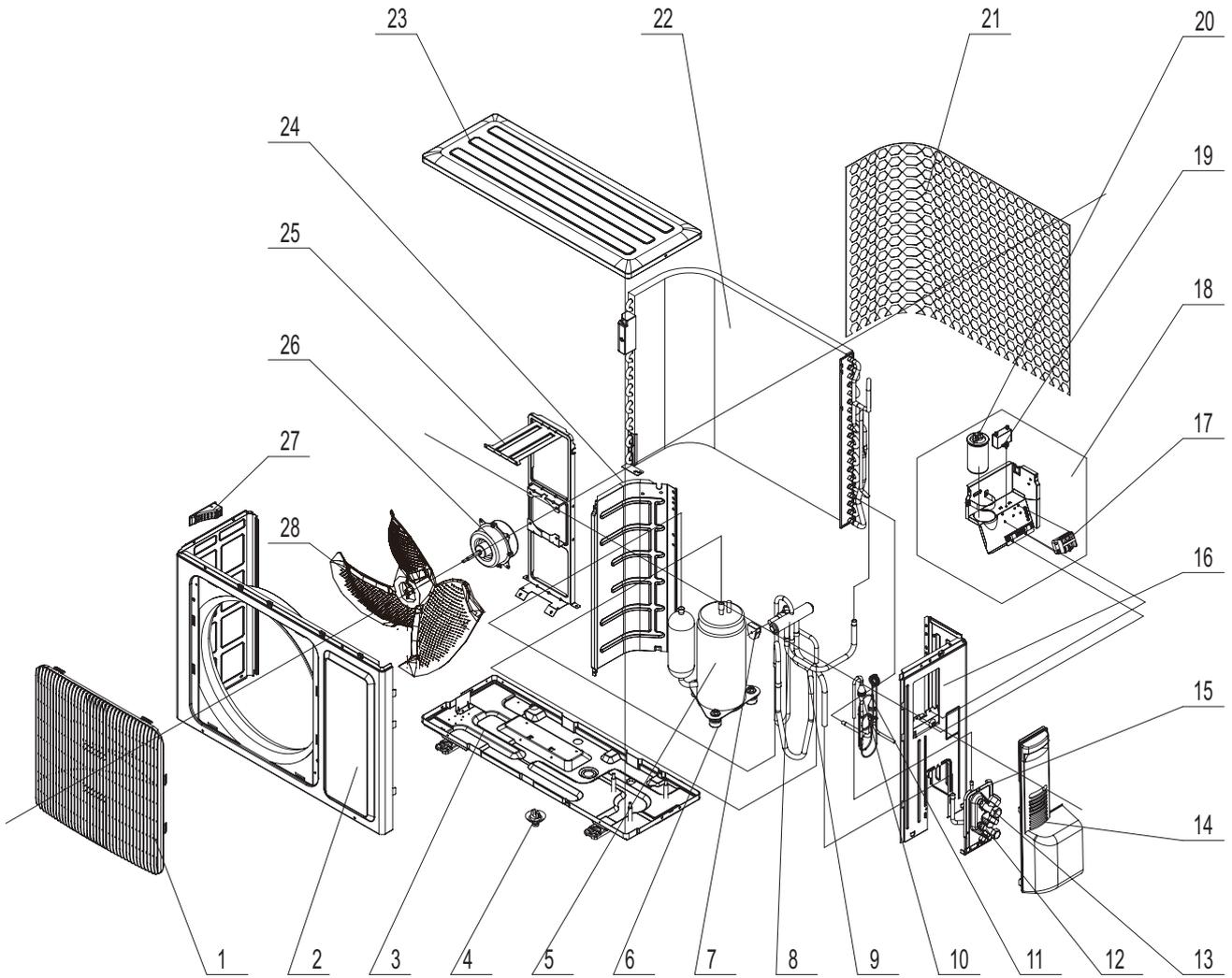
Model:GWH07NA-K3NNB1A/O



NO.	Description	Part Code		Qty
		GWH07NA-K3NNB1A/O		
		CA136W0110		
1	Front Grill	22263002		1
2	Front Panel	01533255P		1
3	Fan Motor	1501315604		1
4	Chassis Sub-assy	01203783P		1
5	Drainage Connector	06123401		1
6	Compressor and fittings	00101076		1
7	Magnet Coil	43000400		1
8	4-way Valve Assy	03123281		1
9	Capillary Sub-Assy	03063015		1
10	Right Side Plate Sub-Assy	01303243		1
11	Valve	07100003		1
12	Valve	07100005		1
13	Big Handle	26233042		1
14	Valve Support	1713041		1
15	Terminal Board	42010265		1
16	Capacitor CBB61	33010020		1
17	Capacitor CBB65	33000017		1
18	Electric Box Assy	02603239		1
19	Rear grill	11123204		1
20	Condenser Assy	01113467		1
21	Top Cover Sub-Assy	01253027		1
22	Motor Support Sub-Assy	01703022		1
23	Clapboard Sub-Assy	01233107		1
24	Axial Flow Fan	10333002		1
25	Small Handle	26233100		1

The data above are subject to change without notice.

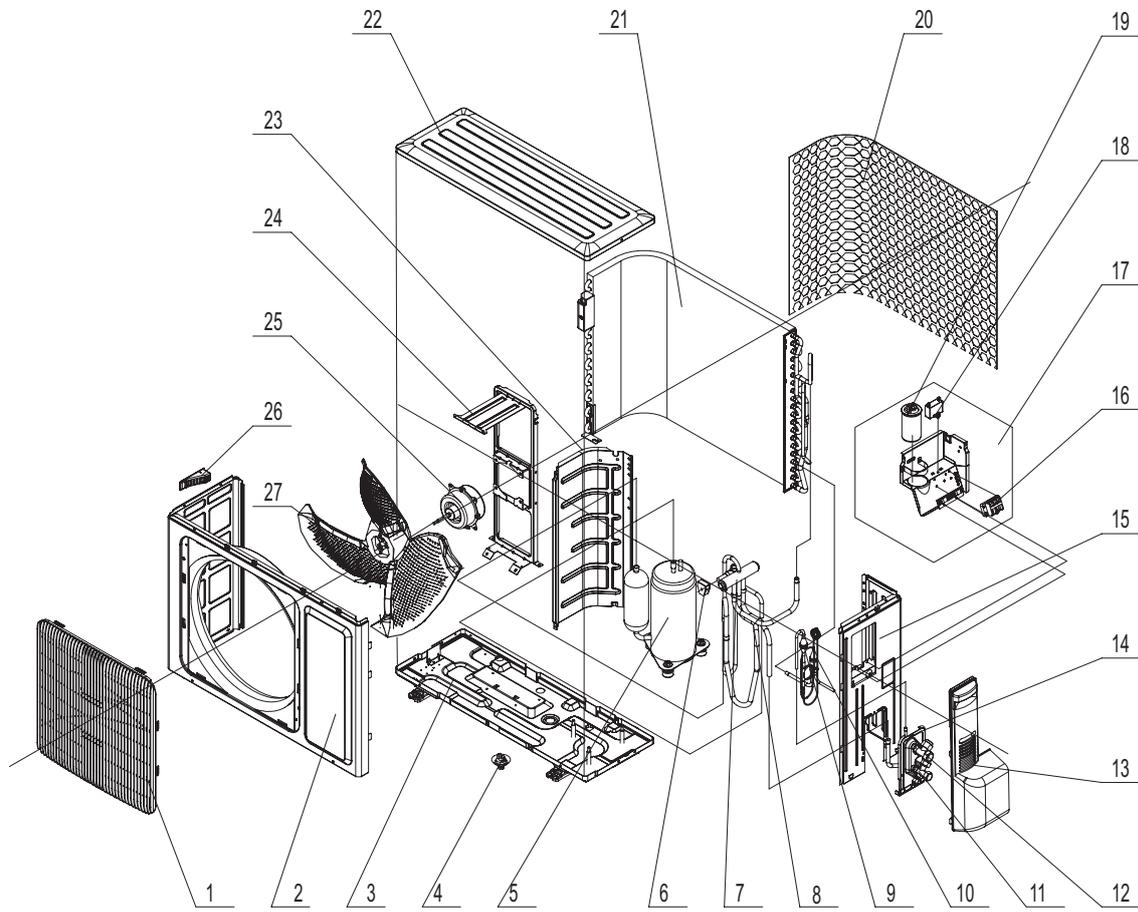
Model:GWH09NA-K3NNB1C/O



NO.	Description	Part Code		Qty
		GWH09NA-K3NNB1C/O		
		CA136W06900		
1	Front grill	22413433		1
2	Front Panel	01533029P		1
3	Chassis Sub-assy	01203748P		1
4	Drainage Connector	06123401		1
5	Compressor and Fittings	00103804		1
6	Compressor Gasket	76710247		3
7	Magnet Coil	430004002		1
8	4-Way Valve Assy	03123646		1
9	4-way Valve	430004022		1
10	StrainerA	07210022		1
11	Capillary Sub-assy	03063533		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	02603599		1
19	Capacitor CBB61	33010026		1
20	Capacitor CBB65	33000017		1
21	Rear grill	1112320501		1
22	Condenser Assy	01163041		1
23	Top Cover Sub-Assy	01253031		1
24	Clapboard Sub-Assy	01233066		1
25	Motor Support Sub-Assy	01703097Y		1
26	Fan Motor	150130671		1
27	Small Handle	26233100		1
28	Axial Flow Fan	10333427		1

The data above are subject to change without notice.

Model:GWH12NB-K3NNB1C/O



NO.	Description	Part Code	Qty
		GWH12NB-K3NNB1C/O	
		Product Code CA136W07000	
1	Front grill	22413433	1
2	Front Panel	01533033P	1
3	Chassis Sub-assy	01203767P	1
4	Drainage Connector	06123401	1
5	Compressor and fittings	00103281	1
6	Magnet Coil	430004002	1
7	4-way Valve Assy	03123642	1
8	4-way Valve	430004032	1
9	StrainerA	07210022	1
10	Capillary Sub-Assy	03103997	1
11	Valve	07100005	1
12	Valve	07100003	1
13	Big Handle	26233433	1
14	Valve Support	0170308901P	1
15	Right Side Plate Sub-Assy	01303183	1
16	Terminal Board	42010265	1
17	Electric Box Assy	02603597	1
18	Capacitor CBB65	33010743	1
19	Capacitor CBB61	33010026	1
20	Rear grill	1112320501	1
21	Condenser Assy	01163034	1
22	Top Cover Sub-Assy	01253031	1
23	Clapboard Sub-Assy	01233066	1
24	Motor Support	01703102	1
25	Fan Motor	150130676	1
26	Small Handle	26233100	1
27	Axial Flow Fan	10333427	1

The data above are subject to change without notice.

## 9. Troubleshooting

### 9.1 Precautions before Performing Inspection or Repair

Be cautious during installation and maintenance. Do operation following the regulations to avoid electric shock and casualty or even death due to drop from high attitude.

\* Static maintenance is the maintenance during de-energization of the air conditioner. For static maintenance, make sure that the unit is de-energized and the plug is disconnected.

\* Dynamic maintenance is the maintenance during energization of the unit. Before dynamic maintenance, check the electricity and ensure that there is ground wire on the site. Check if there is electricity on the housing and connection copper pipe of the air conditioner with voltage tester. After ensure insulation place and the safety, the maintenance can be performed.

Take sufficient care to avoid directly touching any of the circuit parts without first turning off the power.

At times such as when the circuit board is to be replaced, place the circuit board assembly in a vertical position.

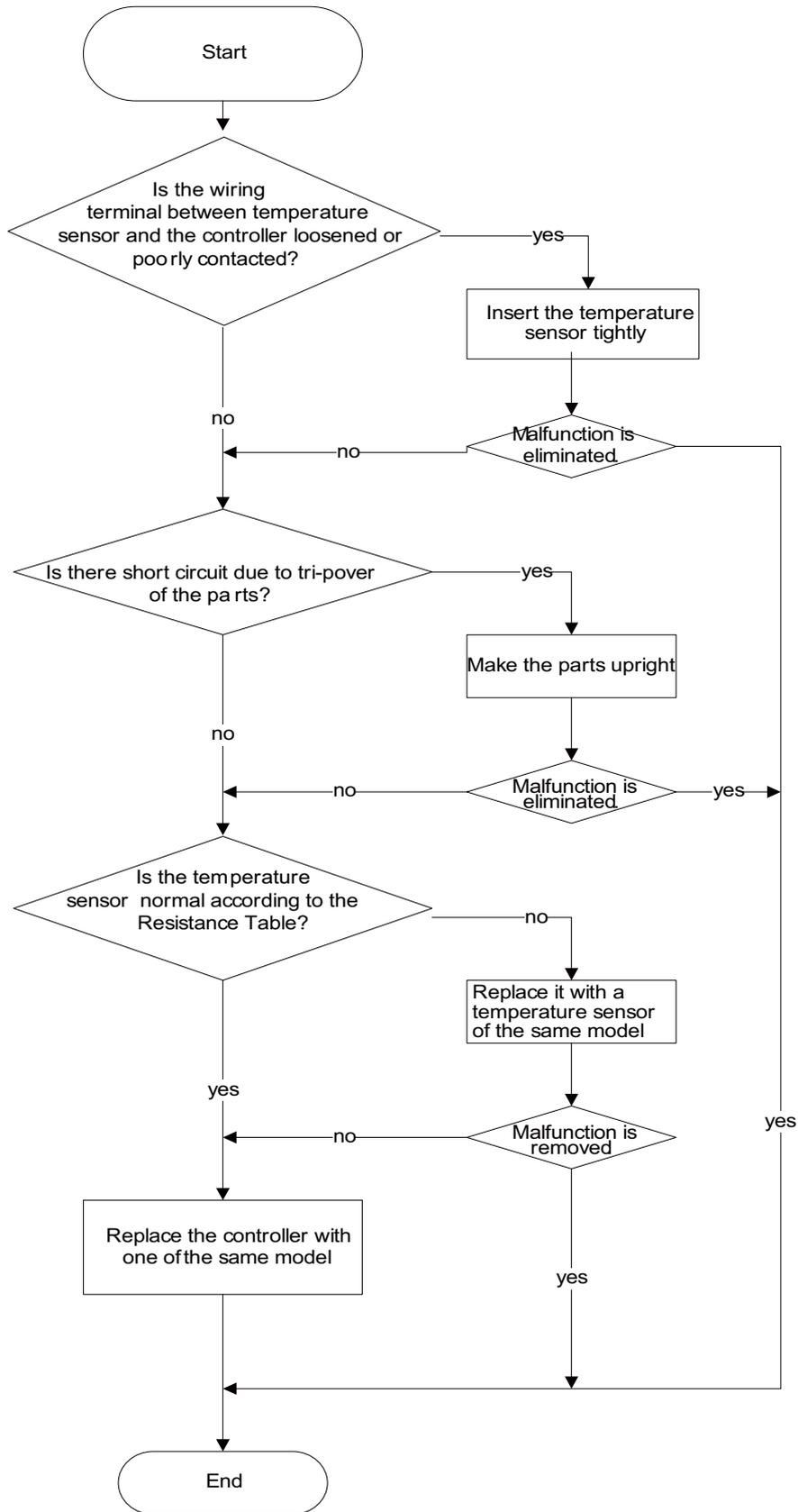
Normally,diagnose troubles according to the trouble diagnosis procedure as described below.(Refer to the check points in servicing written on the wiring diagrams attached to the indoor/outdoor units.)

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

No.	Malfunction Name	Error Code	Display Method of Indoor Unit			A/C Status	Possible Causes
			Indicator lamp				
			(During blinking, ON for 0.5S and OFF for 0.5 S)				
Operation Lamp	COOL Lamp	HEAT Lamp					
1	Indoor ambient temperature sensor is open/short- circuited	F1		OFF 3S and blinks once		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads ( such as compressor, outdoor fan, 4-way valve ) stop operation; During heating operation, the complete unit stops operation.</p>	<ol style="list-style-type: none"> <li>1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted;</li> <li>2. There's short circuit due to trip-over of the parts on controller;</li> <li>3. Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor)</li> <li>4. Main board is broken.</li> </ol>
2	Indoor evaporator temperature sensor is open/short-circuited	F2		OFF 3S and blinks twice		<p>The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.</p>	<ol style="list-style-type: none"> <li>1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted;</li> <li>2. There's short circuit due to the trip-over of the parts on controller;</li> <li>3. Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor)</li> <li>4. Main board is broken.</li> </ol>
3	PG motor (indoor fan motor) does not operate	H6	OFF 3S and blinks 11 times			<p>Indoor fan, outdoor fan, compressor and electric heat tube stop operation. 2 minutes later, 4-way valve stops; horizontal louver stops at the current position.</p>	<ol style="list-style-type: none"> <li>1. The feedback terminal of PG motor is not connected tightly.</li> <li>2. The control terminal of PG motor is not connected tightly.</li> <li>3. Fan blade rotates unsmoothly due to improper installation.</li> <li>4. Motor is not installed properly and tightly.</li> <li>5. Motor is damaged.</li> <li>6. Controller is damaged.</li> </ol>
4	Malfunction protection of jumper cap	C5	OFF 3S and blinks 15 times			<p>Operation of remote controller or control panel is available, but the unit won't act.</p>	<ol style="list-style-type: none"> <li>1. There's not jumper cap on the controller.</li> <li>2. Jumper cap is not inserted properly and tightly.</li> <li>3. Jumper cap is damaged.</li> <li>4. Controller is damaged.</li> </ol>
5	PG motor (indoor fan) circuit malfunction by zero cross detection	U8	OFF 3S and blinks 17 times			<p>Operation of remote controller or control panel is available, but the unit won't act.</p>	<ol style="list-style-type: none"> <li>1. Controller is damaged.</li> </ol>

## 9.3 How to Check Simply the Main Part

### 9.3.1 F1/F2 Malfunction

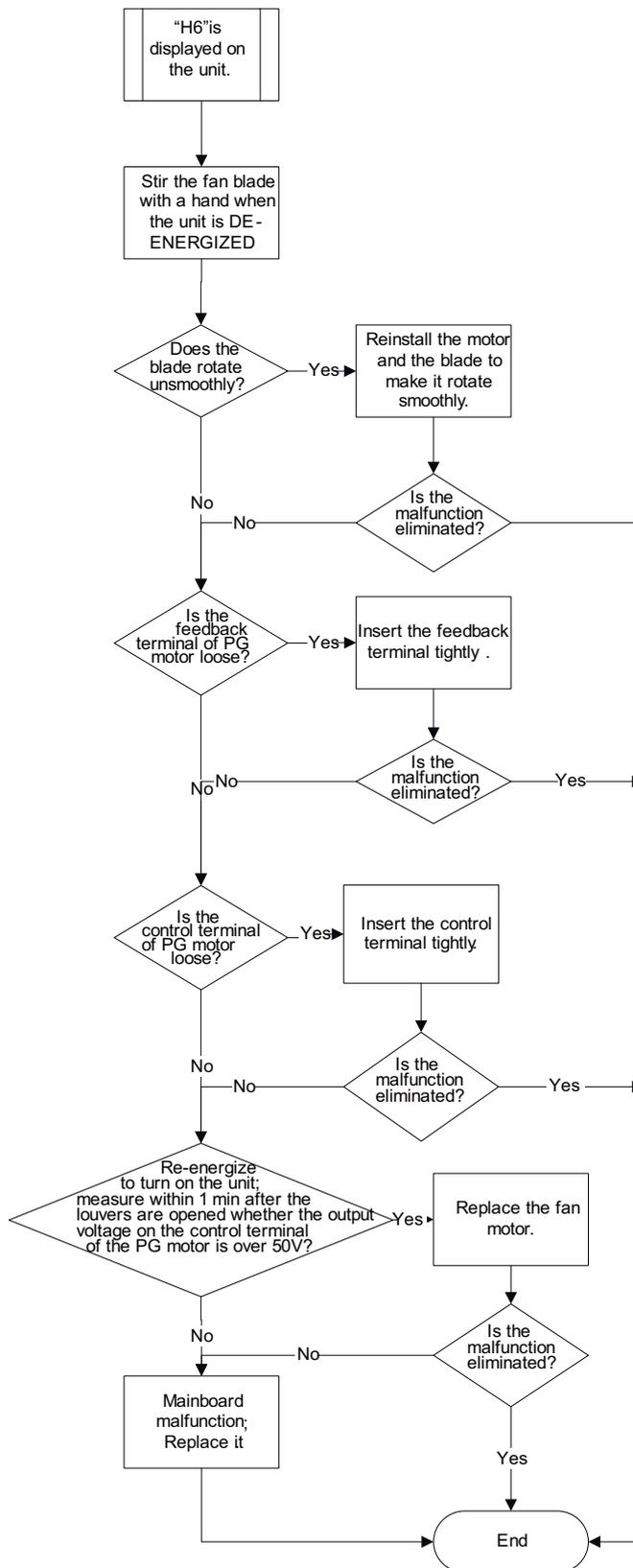


### 9.3.2 H6 Malfunction

Possible causes:

1. Fan motor is locked;
2. The feedback terminal of PG motor is not connected tightly;
3. The control terminal of PG motor is not connected tightly;
4. Motor is damaged;
5. Malfunction of the rotation speed detection circuit of the mainboard.

See the flow chart below:



### 9.3.3 C5 Malfunction

Possible causes:

1. There is no jumper cap on the controller;
2. Jumper cap is not inserted properly and tightly;
3. Jumper cap is damaged;
4. Controller is damaged.

See the flow chart below:

