GREE
Change for Life

Service Manual

MODELS: GWH(07)MA-K3DNA4E/I
GWH(09)MA-K3DNA4E/I
GWH(12)MB-K3DNA4E/I
GWH(18)MC-K3DNA4E/I

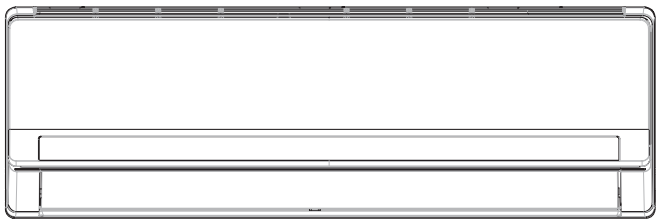
GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

Table of Contents

Summary and Features

Indoor Unit:

GWH(07)MA-K3DNA4E/I
GWH(09)MA-K3DNA4E/I
GWH(12)MB-K3DNA4E/I
GWH(18)MC-K3DNA4E/I



Remote Controller:

YT1F(XFAN)

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.**

⚠ 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.

●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.

⚠ 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

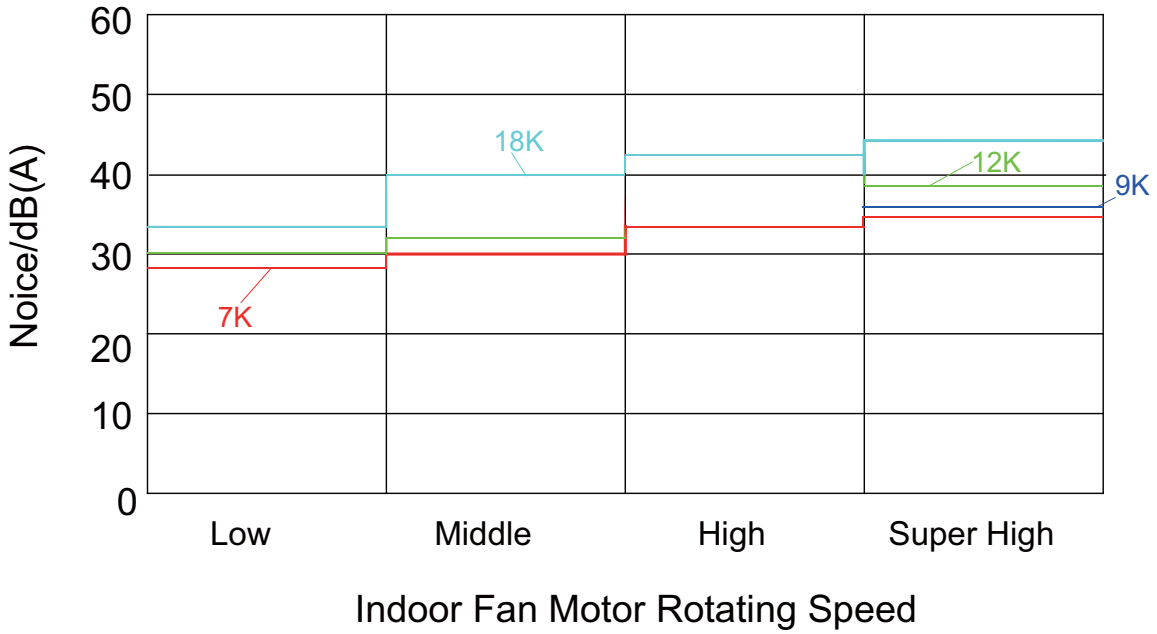
Model		GWH(07)MA-K3DNA4E/I	GWH(09)MA-K3DNA4E/I
Product Code		CB161N05301	CB161N05401
Rated Voltage	V~	220-240	220-240
Rated Frequency	Hz	50	50
Phases		1	1
Cooling Capacity	KW	2.1	2.6
Heating Capacity	KW	2.6	2.8
Air Flow Volume (SH/H/M/L)	m^3/h	450/410/380/320	500/410/380/320
Dehumidifying Volume	L/h	0.6	0.6
Fan Type		Cross-flow	Cross-flow
Fan Diameter-height	mm	Φ85X596	Φ85X596
Fan Motor Speed (SH/H/M/L) Cool	rpm	1260/1050/920/730	1260/1050/920/730
Fan Motor Speed (SH/H/M/L) Heat	rpm	1320/1200/1100/950	1320/1200/1100/950
Fan Motor Power Output	W	10	10
Fan motor running current	A	0.144	0.144
Fan Motor Capacitor	μF	1	1
Evaporator Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
Evaporator Pipe Diameter	mm	7	7
Evaporator Number of Rows		2	2
Evaporator Fin Pitch	mm	1.5	1.5
Evaporator Length(L)XHeight(H) XWidth(W)	mm	581X267X25.4	581X267X25.4
Motor Model		FN10A-PG	FN10A-PG
Overload Protector		3.15	3.15
Motor Full Load Amp(FLA)	A	0.144	0.144
Sound Pressure Level (SH/H/M/L)	dB (A)	36/34/31/28	37/34/31/28
Sound Power Level (SH/H/M/L)	dB (A)	51/49/46/43	52/49/46/43
Outline Dimension (WXHXD)	mm	790X174X265	790X174X265
Package Carton Dimension (LXWXH)	mm	870X248X355	870X248X355
Package Dimension (LXWXH)	mm	873X251X370	873X251X370
Net Weight	kg	9	9
Gross Weight	kg	11	11
Liquid pipe	mm	Φ6	Φ6
Gas Pipe(to indoor unit)	mm	Φ9.52	Φ9.52

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

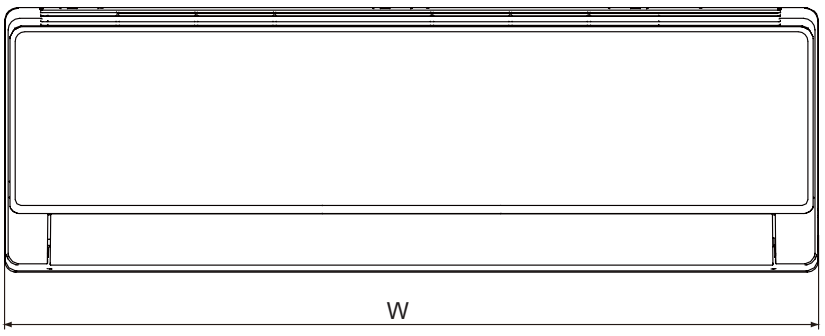
Model		GWH(12)MB-K3DNA4E/I	GWH(18)MC-K3DNA4E/I
Product Code		CB161N05501	CB161N05601
Rated Voltage	V~	220-240	220-240
Rated Frequency	Hz	50	50
Phases		1	1
Cooling Capacity	KW	3.5	5.3
Heating Capacity	KW	3.8	5.8
Air Flow Volume (SH/H/M/L)	m^3/h	630/500/420/350	850/780/650/550
Dehumidifying Volume	L/h	1.4	1.8
Fan Type		Cross-flow	Cross-flow
Fan Diameter-height	mm	Φ92X645	Φ98X710
Fan Motor Speed (SH/H/M/L) Cool	rpm	1260/1070/880/730	1350/1150/1050/900
Fan Motor Speed (SH/H/M/L) Heat	rpm	1280/1080/1000/920	1420/1250/1150/1050
Fan Motor Power Output	W	20	20
Fan motor running current	A	0.22	0.31
Fan Motor Capacitor	μF	1	1.5
Evaporator Material		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
Evaporator Pipe Diameter	mm	7	7
Evaporator Number of Rows		2	2
Evaporator Fin Pitch	mm	1.4	1.4
Evaporator Length(L)XHeight(H)XWidth(W)	mm	690X267X25.4	715X304.8X25.4
Motor Model		FN20J-PG	FN20V-PG
Overload Protector		3.15	3.15
Motor Full Load Amp(FLA)	A	0.22	0.31
Sound Pressure Level (SH/H/M/L)	dB (A)	38/34/32/30	46/43/40/36
Sound Power Level (SH/H/M/L)	dB (A)	53/49/47/45	61/58/55/51
Outline Dimension (WXHXD)	mm	845X180X275	940X200X298
Package Carton Dimension (LXWXH)	mm	915X255X355	1010X285X380
Package Dimension (LXWXH)	mm	918X258X370	1013X288X395
Net Weight	kg	10	13
Gross Weight	kg	12.5	16
Liquid pipe	mm	Φ6	Φ6
Gas Pipe(to indoor unit)	mm	Φ9.52	Φ12.7

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

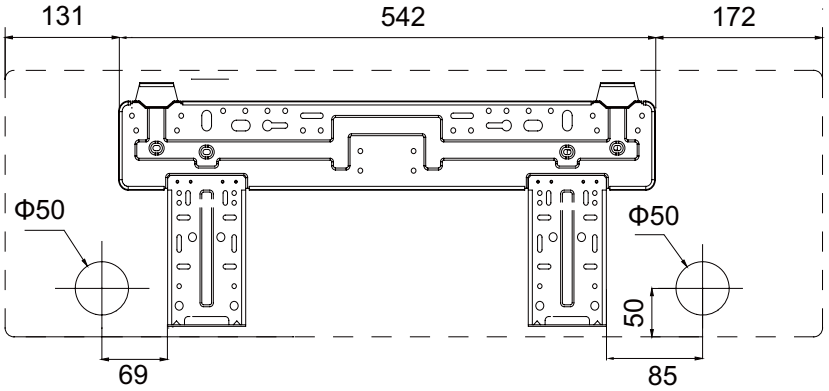
2.2 Noise Criteria Curve Tables for Both Models



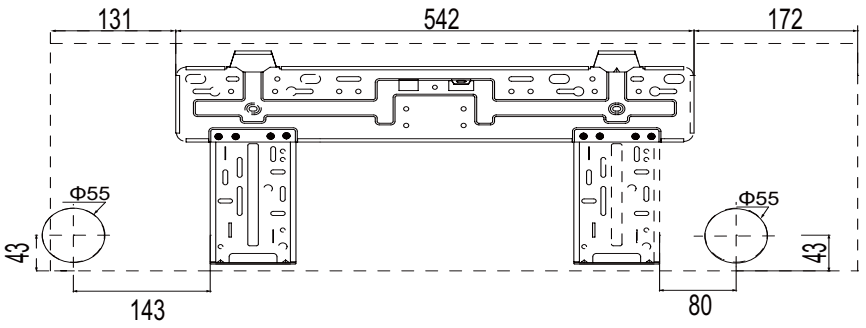
3. Construction Views



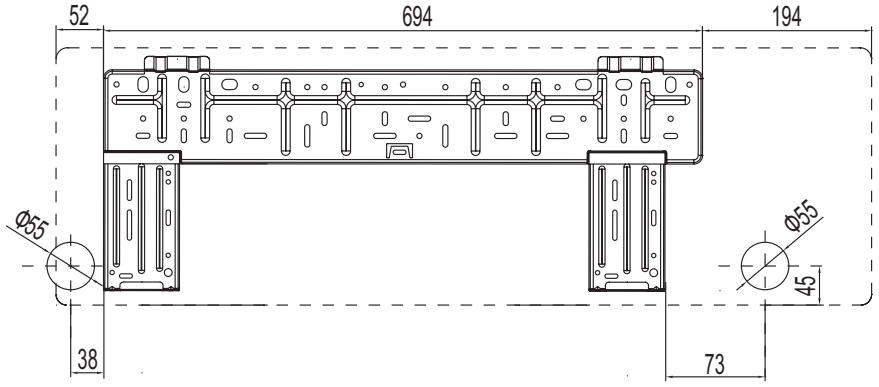
07/09K



12K



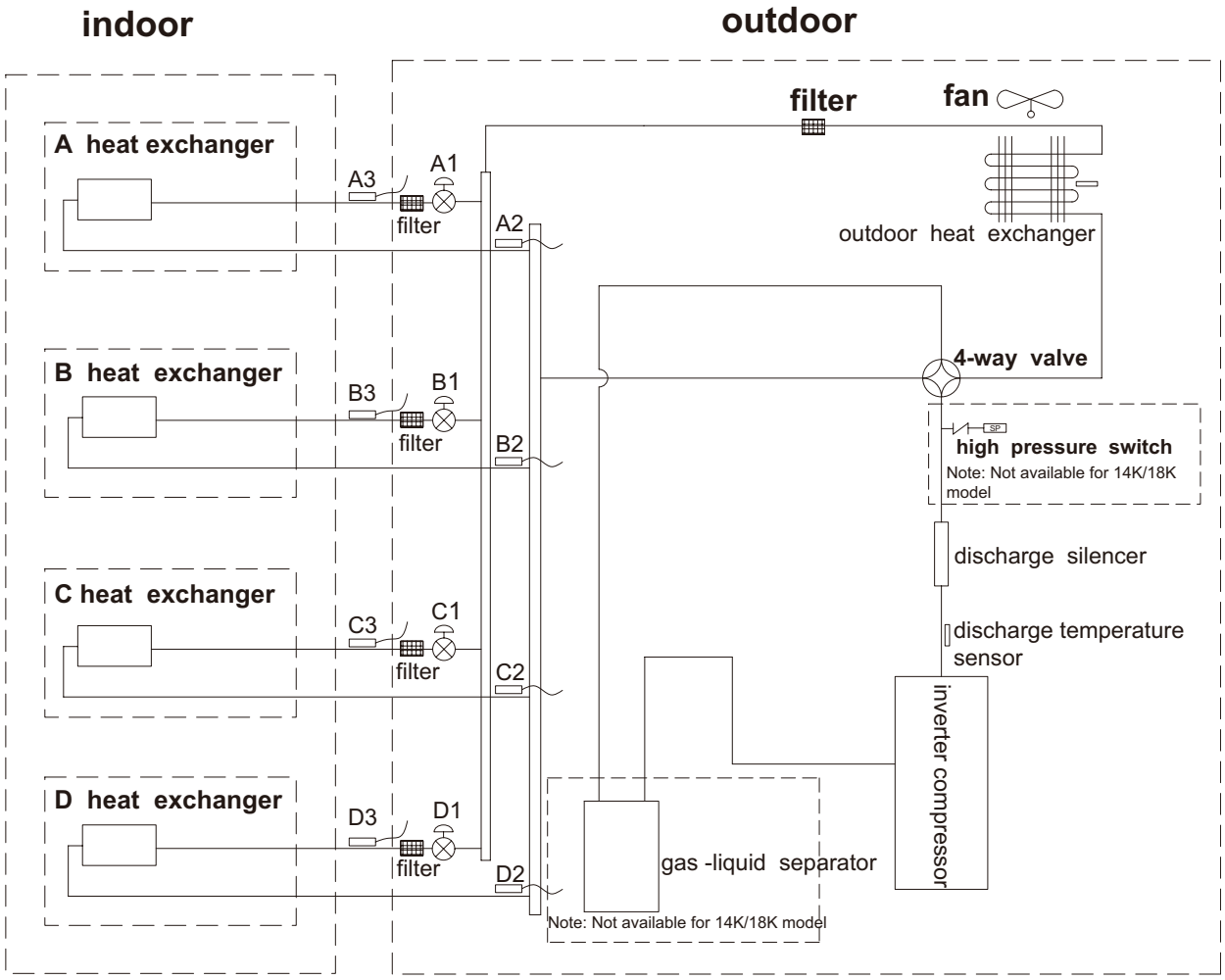
18K



Unit:mm

Model	W	H	D
07/09K	790	265	174
12K	845	275	180
18K	940	200	298

4. Refrigerant System Diagram



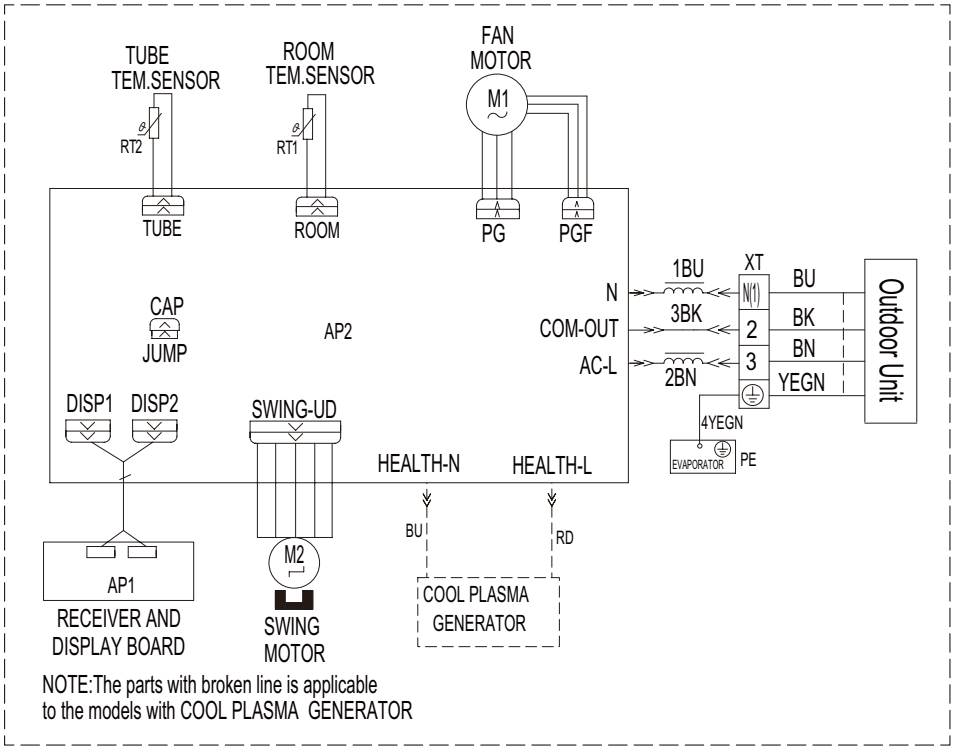
A1:A–unit electronic expansion valve B1:B-unit electronic expansion valve
C1:C-unit electronic expansion valve D1:D-unit electronic expansion valve
A2:A-unit gas pipe temperature sensor B2:B-unit gas pipe temperature sensor
C2:C-unit gas pipe temperature sensor D2:D-unit gas pipe temperature sensor
A3:A–unit liquid pipe temperature sensor B3:B-unit liquid pipe temperature sensor
C3:C-unit liquid pipe temperature sensor D3:D-unit liquid pipe temperature sensor

5. Schematic Diagram

5.1 Electrical Wiring

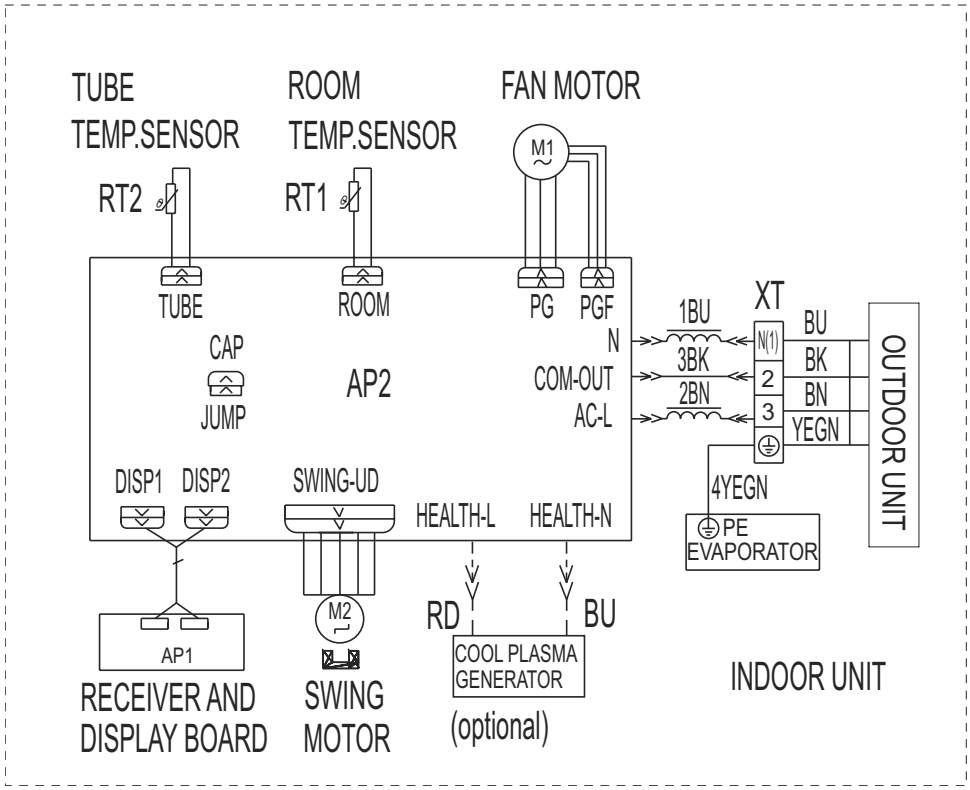
●Indoor Unit

07/09/12K



Symbol	Color symbol
OG	ORANGE
VT	VIOLET
WH	WHITE
YE	YELLOW
RD	RED
YEGN	YELLOW GREEN
SAT	OVERLOAD
BN	BROWN
BU	BLUE
BK	BLACK
Symbol	Parts name
⏚	PROTECTIVE EARTH
COMP	COMPRESSOR

18K

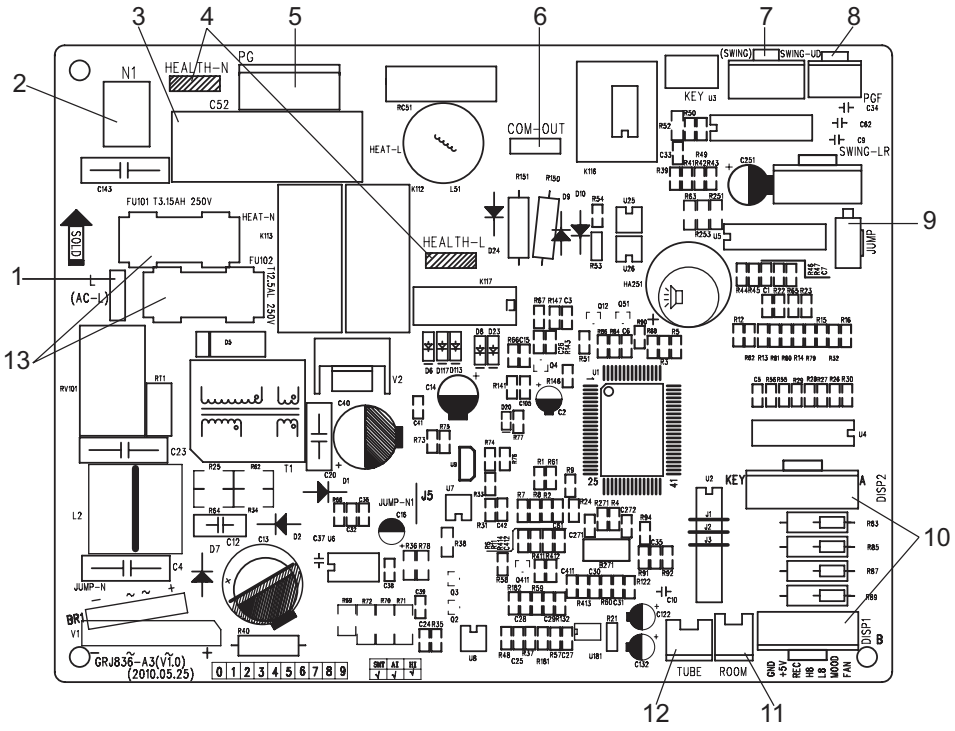


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 Printed Circuit Board

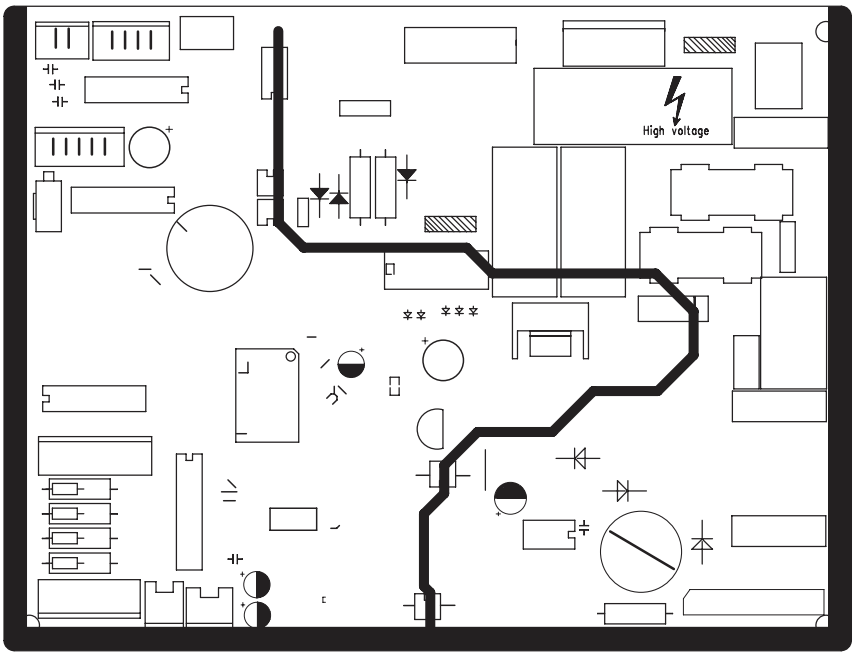
07/09/12K

●TOP VIEW



1	Power supply live wire connector	5	Indoor fan wire terminal	9	Jumper cap terminal
2	Power supply neutral wire connector	6	indoor and outdoor unit communication wire terminal	10	Display panel terminal
3	Fan capacitor	7	Up & down swing control terminal	11	Indoor ambient temperature sensor
4	Health function terminal(optional)	8	Indoor fan feedback terminal	12	Indoor pipe temperature sensor
				13	Protective tube

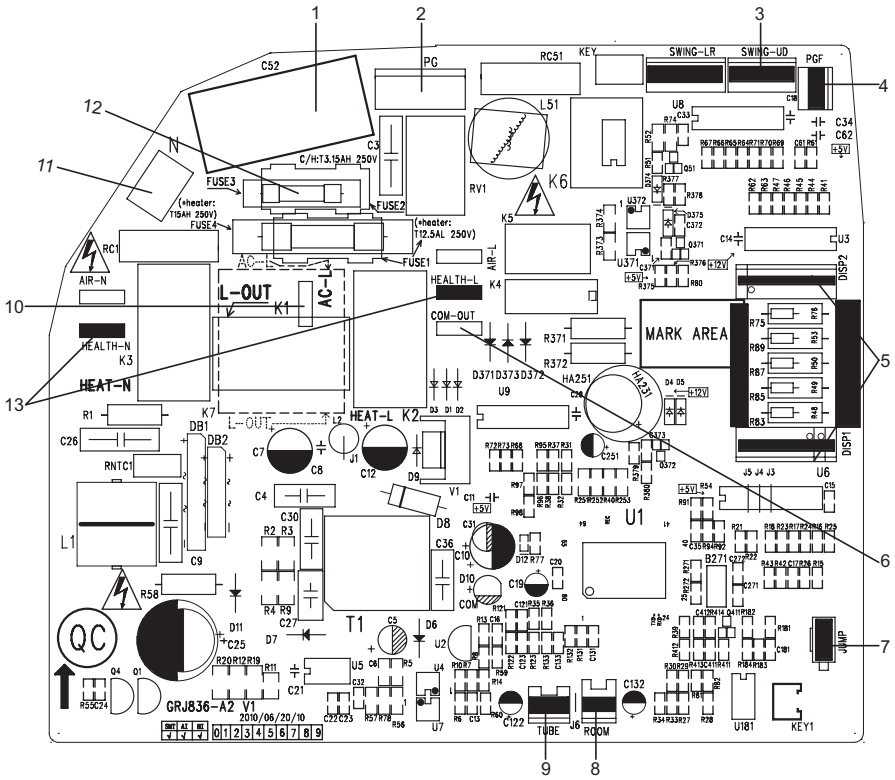
●BOTTOM VIEW



5.3 Printed Circuit Board

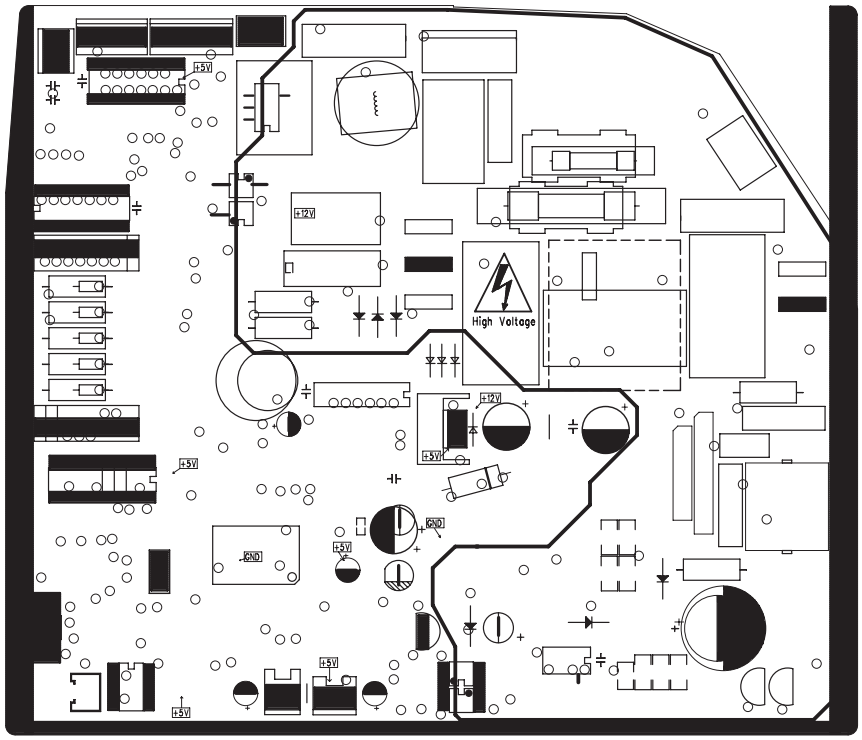
18K

●TOP VIEW



1	Fan capacitor	2	PG motor wiring terminal	3	Up & down swing wiring terminal	4	PG motor feedback wiring terminal
5	Display board insert terminal	6	Indoor and outdoor communication insert terminal	7	Jumper cap terminal	8	Indoor ambient temperature sensor
9	Indoor tube temperature sensor	10	Power live wire terminal	11	Power neutral wire terminal	12	Protective tube
						13	Health function terminal (optional)

●BOTTOM VIEW



6. Function and Control

6.1 Remote Control Operations

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

2 - :
Press it to decrease temperature setting.

3 +:
Press it to increase temperature setting.

4 FAN
Press it to set fan speed.

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

6 I FEEL

7
Press it to set HE ALTH function

8
Press it to set AIR function.

9 CLOCK
Press it set clock.

10 TIMER ON
Press it to set auto-on timer.

11
Press it set swing angle.

12 X-FAN(X-FAN is the alternative expression of BLOW for the purpose of understanding.)

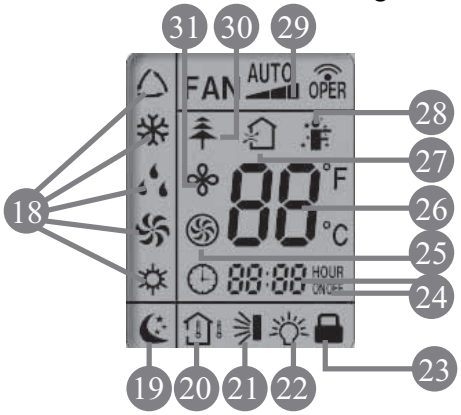
13 TEMP

14 TIMER OFF
Press it to set auto-off timer

15 TURBO

16 SLEEP

17 LIGHT
Press it to turn on/off the light.



18 MODE icon:

If MODE button is pressed, current operation mode icon (AUTO), (COOL), (DRY), (FAN) or (HEAT only for heat pump models) will show.

19 SLEEP icon :

is displayed by pressing the SLEEP button. Press this button again to clear the display.

20 TEMP icon: (" "function is applicable to partial of models.)

Pressing TEMP button, (set temperature), (ambient temperature), (outdoor ambient temperature) and blank is displayed circularly.

21 Up & down swing icon:

is displayed when pressing the up & down swing button. Press this button again to clear the display.

22 LIGHT icon:

is displayed by pressing the LIGHT button. Press LIGHT button again to clear the display.

23 LOCK icon:

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

24 SET TIME display:

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

25 TURBO icon:

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

26 DIGITAL display:

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

27 AIR icon: (NOTE: This function is applicable to partial of models.)

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

28 I FEEL icon:

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

29 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.

30 HEALTH icon:

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

31 X-FAN icon:

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

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 decrease set temperature. Hold it down for above 2 seconds to rapidly decrease set temperature. In AUTO mode, set temperature is not adjustable.

3 +:

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

4 FAN :

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

Low speed Medium speed High speed

5 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.

6 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.

7

Press this button to set HEALTH function ON or OFF. After the unit is turned on, it defaults to HEALTH function ON.

8 (NOTE: This function is applicable to partial of models.)

Press this button to select AIR function ON or OFF.

9 CLOCK :

Pressing CLOCK button, blinks. 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.

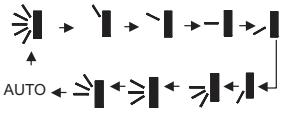
10 TIMER ON :

Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.

After pressing 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 and then 10 minutes. Within 5 seconds after setting, press TIMER ON button to confirm.

11

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



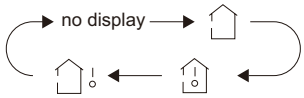
This remote controller is universal. If any command , , or is sent out,the unit will carry out the command as indicates the guide louver swings as:

12 X-FAN:

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

13 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.

14 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.

15 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. (This function is not applicable for some models).

16 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) mode to maintain the most comfortable temperature for you.

17 LIGHT:

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

18 Combination of "+" and "-" buttons: About lock

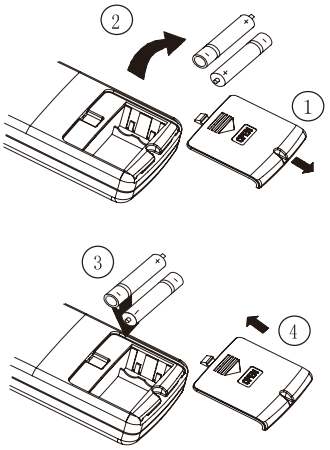
Press "+" and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked, is displayed. In this case, pressing any button, blinks three times.

19 Combination of "MODE" and "-" buttons: About switch between Fahrenheit and Centigrade

At unit OFF, press "MODE" and "-" buttons simultaneously to switch between °C and °F.

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.



Sketch map for replacing batteries

★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.

6.2 Description of Each Control Operation

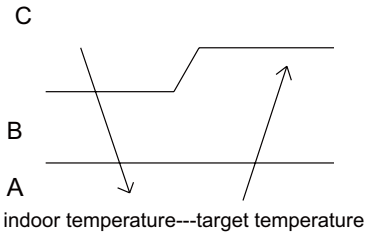
I. Basic Operation Mode

1. Cool; 2.Dry; 3.Heat; 4.Auto; 5.Fan

II. Basic Functions

1.Cooling Only

(1) Under this mode, fan and swing run at preset status, the temperature setting range is 16-30℃ .



(2) Under malfunction for outdoor unit and protection stop, the indoor unit runs with the original status, and display malfunction.

(3) The indoor fan stops when the modes conflict with each other.

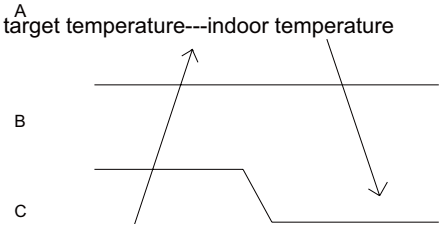
2. Dry Mode

(1) Under this mode, the indoor fan runs with low speed, and swing runs at preset status, the temperature setting range is 16-30℃ .

(2) Under malfunction for outdoor unit and protection stop, the indoor unit runs with the original status, and display malfunction.

3. Heating Mode

(1) Under this mode, the temperature setting range is 16-30℃ .



(2) Working condition and Process of Heating

When the unit is ON and in heating mode, indoor fan starts cold air prevention operation; when the unit is off and the indoor fan stopped before, it blows residual heat.

(3) Protection Function. The compressor stops as the malfunction (including any temperature sensor malfunction) in heating mode, the indoor fan runs with blowing residual heat.

(4) Defrosting and Oil Return

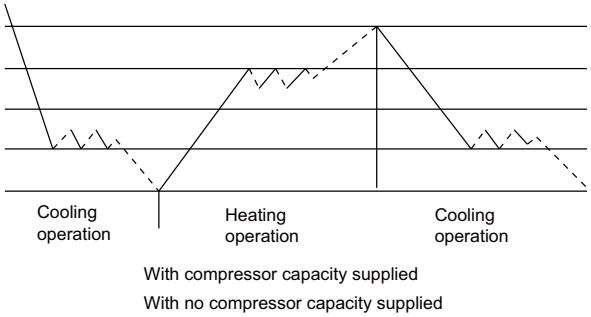
Once defrosting signal of outdoor unit is received, Heating indicator on indoor unit OFF 0.5s and ON 10s.

4. Working Methods of Auto Mode

1) When Tamb.≥26℃ (79 ℉), it operates in Cool mode.

2) For heat pump unit, when Tamb.≤22℃ , it operates in Heat mode.

3) When 22℃ < Tamb.< 26℃ , it operates in auto fan mode upon initial startup of the unit. When changing to auto mode from other modes, it will keep the previous operation mode (when it enter Dry mode, it operates in auto fan mode.).



5. Fan Mode

Only indoor fan operates in Fan mode. Under auto fan speed, it runs in cooling auto fan mode.

III. Other Control

1. Buzzer

The buzzer will give out a beep when the controller is energized, receiving signal from remote controller and auto button.

2. Auto Button

Press this button once, it will operate in Auto mode, and indoor fan operates in Auto fan mode and swing. When the unit is on, pressing this button will turn off the unit.

3. Auto Fan

a. Auto fan speed under heating mode

When Tinddor amb. ≤Tpreset+1℃ , indoor fan operates at high speed;

When Tpreset+1℃ ＜T inddor amb.<Tpreset+3℃ , indoor fan operates at medium speed;

When T inddor amb.≥Tpreset+3℃ , indoor fan operates at low speed.

b. Auto fan speed under cooling or fan mode

WhenT amb.≥Tpreset+3℃ , indoor fan operates at high speed;

When Tpreset+1＜T amb.<Tpreset+3℃ , indoor fan operates at medium speed;

WhenT amb.≤Tpreset+1℃ , indoor fan operates at low speed.

c. Auto fan speed under drying mode is low speed.

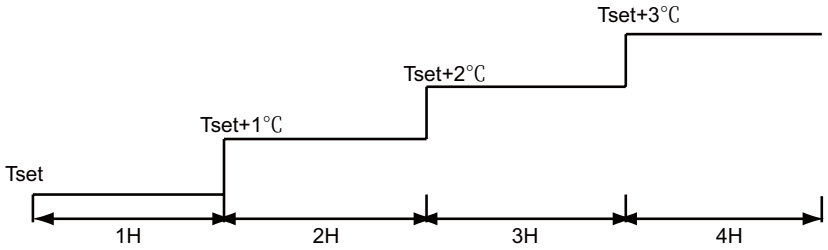
During auto fan speed, there's should be at least 3min and 30s operation time when switching between high speed, medium speed and low speed.

Note: Under auto fan speed, it will shift between high speed and middle speed, middle speed and low speed, high speed and low speed, the operation time must be 3.5min at least.

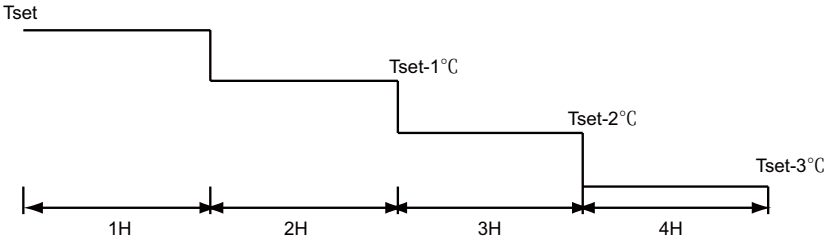
4. Sleep

4.1 The unit will select suitable sleep curve according to set temperature.

4.2 Sleep curve in Heat mode



4.3 Sleep curve in Cool mode



5. Timer Function

(1) General Timer:

1.1 Time On: if Timer On is set when the system is,the controller will operate in the original setting mode after reaching the timer on time. The timer interval is 0.5h, and the setting range is 0.5-24h.

1.2 Timer Off: Timer Off can be set when the unit is on. The unit will be off when timer off time is reahced. The timer interval is 0.5h, and the setting range is 0.5-24h.

(2) Clock Timer:

2.1 Timer On: If Timer On is set when the system runs, it will continue to run; if Timer On is set when the system is off, the system will start to run in the original setting mode when timer on time is reached.

2.2 Timer Off: If timer off is set when the system is off, the system keeps stand-by status; if timer off is set when the system is on, the system stops when reaching timer off time.

2.3 Timer Change:Timer On and Timer OFF can be set via remote ON/OFF button. Timer time can be reset and the system will operate according to the latest setting.

When the unit is on and Timer On and Timer Off are both set, the system will operate according to the set state. When the timer off time is reached, the system will stop.

When the system stops, and Timer On and Timer Off are both set, the system will remain stop until timer on time is reached. After that, the unit will operate according to the set mode everyday when the timer on time is reached. When the timer off time is reached, the system will stop. If timer on time is the same as timer off time, the system will stop.

6. Memory Function

Memory contents: mode, up& down swing, light, set temperature, set fan speed, general timer (but clock timer). After power failure, if the unit is reenergized, it will operate according to memory contents. If Timer function is not set in the last remote control, the system will operate according to the last remote control.
If general timer function is set in the last remote control and power failure occurs before timer time is reached, the unit will operate according to the timer function set in the last remote control. Timer time is calculated after the unit is re-energized.
If general timer function is set in the last remote control and power failure occurs after timer time is reached, the system will operate according to the memory content before power failure. Timer operation is not memorized.

7. HEALTH Function

When the unit is on and the indoor fan operates, press HEALTH button to start this function (if there is no HEALTH button, HEALTH operation is defaulted). When indoor fan stops or turning of HEALTH function by remote controller, HEALTH function will be off.

8. I Feel Function

When the controller receives I Feel order, the controller will operate according to the ambient temperature. The remote controller will send ambient temperature to the controller every 10min. If the controller does not receive the ambient temperature sent by remote controller for 11min, the air conditioner will operate according the ambient temperature around it. If I Feel function is not set, the air conditioner will operate according the ambient temperature around it. This function is not memorized upon power r failure.

9. Reserved Fahrenheit Temperature ℃

The nixie tube will display the set temperature in Celsius temperature or Fahrenheit Temperature according to the order. Setting range is 16~30℃ (61~86 ℉). In Auto mode, it will display 25℃ (77 ℉) during cooling and fan operation, and display 20℃ (68 ℉) during heating operation. For cooling only unit, it displays 25℃ (77 ℉).
The indoor temperature displayed is sent by remote controller, ranging from 0~60 (32~99 ℉). If outdoor ambient temperature is received, the display remains the same. If valid control signal is received, it will display set temperature for 5s and then resume displaying ambient temperature.
For units with memory function, set temperature will be displayed after re-energizing the unit.

10. Cold Plasma Function(此功能可选 **)**

Turning on the cold plasma function with remote controller when the fan operates, this function will act.
Turning off the cold plasma function with remote controller or turning off the fan, this function will end.

11. Turbo Function

When Turbo command is received by controller, indoor fan will operate at high speed while outdoor unit will operate at high frequency in cooling or heating mode.

12. Forcible Defrosting Function

When the unit is in Heat mode and set temperature is 16℃ , press “+, -, +, -, +, -,” successively for 5s, and the indoor unit will enter forcible defrosting setting and send the signal to the outdoor unit.
When the indoor unit receives forcible defrosting signal from the outdoor unit, it will exit forcible defrosting setting.

13. Refrigerant Recovery Function

Enter refrigerant recovery mode: turn on the unit within 5 min after energization and at 16℃ cooling mode. Press remote controller light off button successively for 3 times within 3s and the unit will enter refrigerant recovery mode, displaying Fo. The signal will be sent to the outdoor unit.
Exit refrigerant recovery mode: during refrigerant recovery, if any signal from remote controller is received or refrigerant recovery lasts for 25min, it will exit this mode.
Action of entering refrigerant recovery mode: the indoor fan will operate in Cool mode. The fan speed is high and set temperature is 16℃ . The horizontal louver will be at the smallest angle.
Action of exit refrigerant recovery mode: the indoor fan will operate according to the last remote control setting.

14. Mode Conflict

When the mode of started unit is different from that of operating unit, the indoor unit will display mode conflict code “E7”. The mode sent to the outdoor unit remains the one received by the remote controller.

7. Installation Manual

7.1 Notices for Installation

Caution

1.The unit should be installed only by authorized service center according to local or government regulations and in compliance with this manual.

2.Before installing, please contact with local authorized maintenance center. If the unit is not installed by the authorized service center, the malfunction may not be solved due to incovenient contact between the user and the service personnel.

3.When removing the unit to the other place, please firstly contact with the local authorized service center.

4.Warning: Before obtaining access to terminals, all supply circuits must be disconnected.

5.For appliances with type Y attachment, the instructions shall contain the substance of the following. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

6.The appliance must be positioned so that the plug is accessible.

7.The temperature of refrigerant line will be high; please keep the interconnection cable away from the copper tube.

8.The instructions shall state the substance of the following:

This appliance is not intended for use by persons(including children)with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

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

7.1.1 Installation Site Instructions

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

●strong heat sources, vapours, flammable gas or volatile liquids are emitted.

●high-frequency electro-magnetic waves are generated by radio equipment, welders and medical equipment.

●salt-laden air prevails (such as close to coastal areas).

●the air is contaminated with industrial vapours and oils.

●the air contains sulphures gas such as in hot spring zones.

●corrosion or poor air quality exists.

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 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.

7.1.4 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.

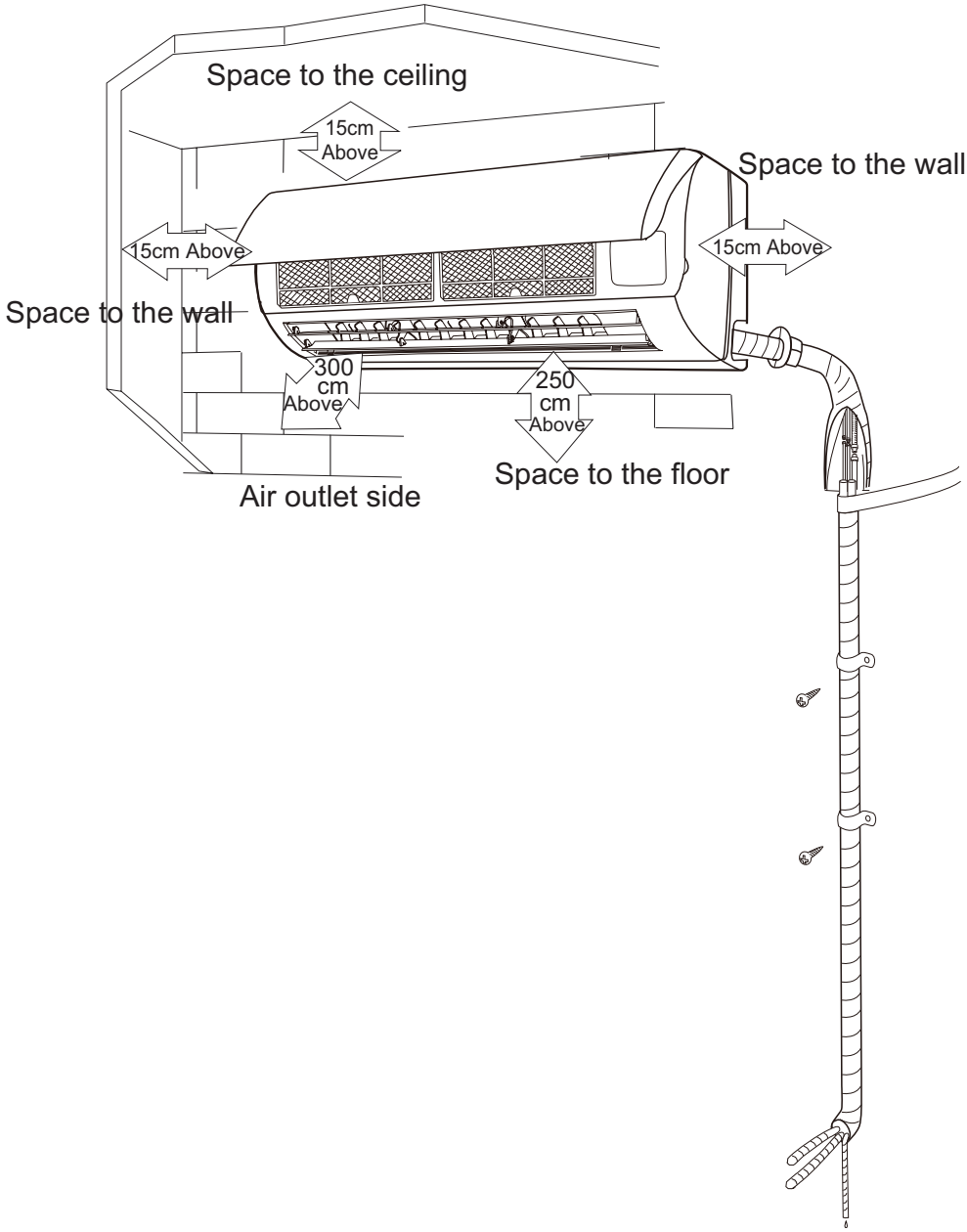
4.The power must have reliable earthing terminal. Please do not connect the earthing wire with the following:

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 Drawing



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.
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.

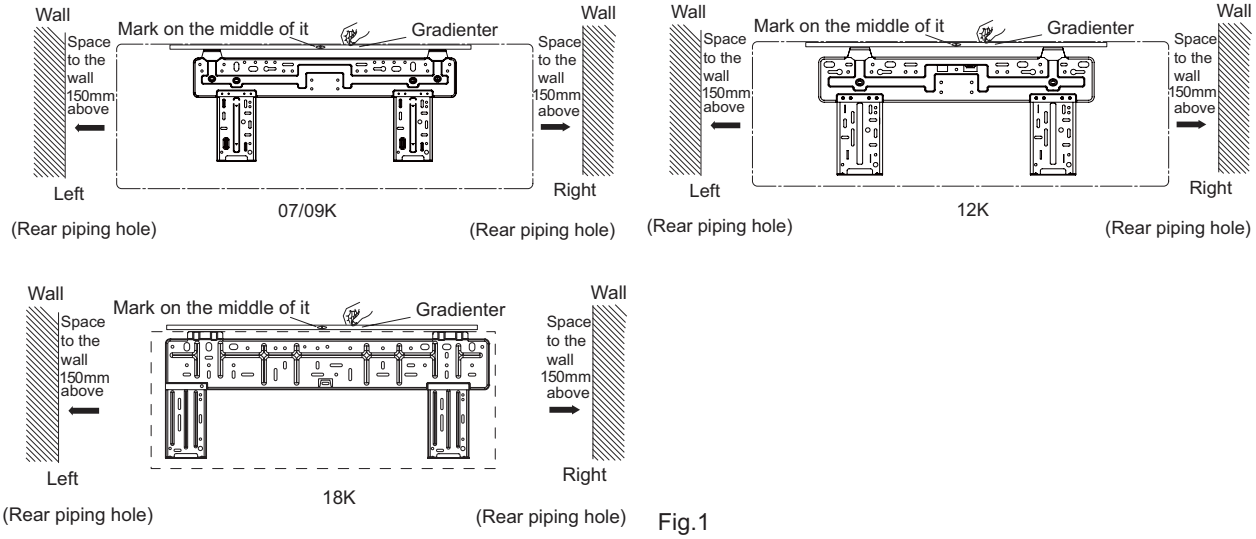
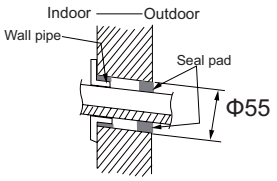


Fig.1

7.3.2 Drill Piping Hole

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

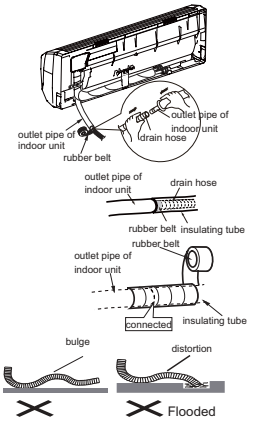


7.3.3 Installation of Drain Hose

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

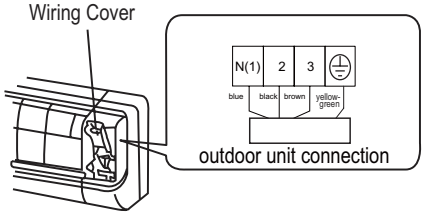


Fig.2

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's firm or not.

●Make sure that the electric connections are earthed properly to prevent electric shock.

●Make sure that all wiring connections are secure and the cover plates are reinstalled properly. Poor installation may cause fire or electric shock.

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.

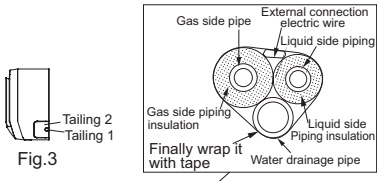


Fig.3

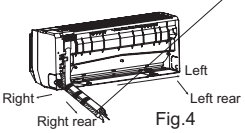


Fig.4

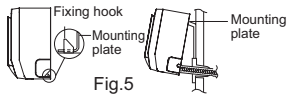


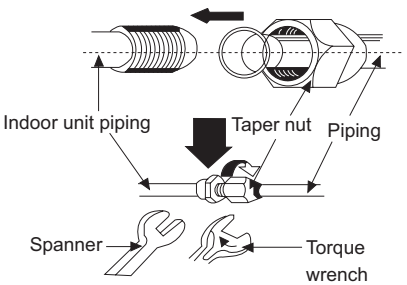
Fig.5

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 nut is tightened firmly, otherwise, it may cause leakage.

7.4 Check after Installation and Operation Test

7.4.1 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 malfunctionor 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 malfunctionor 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.

7.4.2 Operation Test

1.Before Operation Test
(1)Do not switch on power before installation is finished completely.
(2)Electric wiring must be connected correctly and securely.
(3)Cut-off valves of the connection pipes should be opened.
(4)All the impurities such as scraps and thrums must be cleared from the unit.
2.Operation Test Method
(1)Switch on power and press "ON/OFF" button on the remote controller to start operation.
(2)Press MODE button to select the COOL, HEAT (Not available for cooling only unit), FAN to check whether the operation is normal or not.

7.5 Installation and Maintenance of Healthy Filter

7.5.1 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)

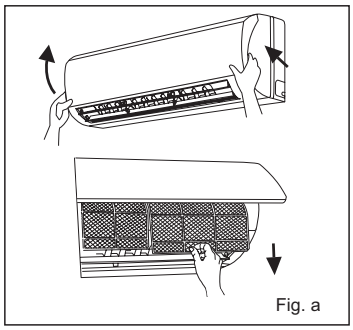


Fig. a

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

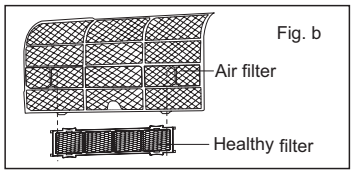


Fig. b

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

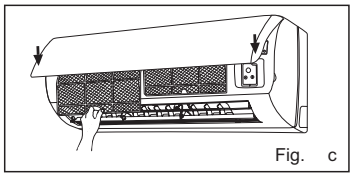


Fig. c

7.5.2 Cleaning and Maintenance

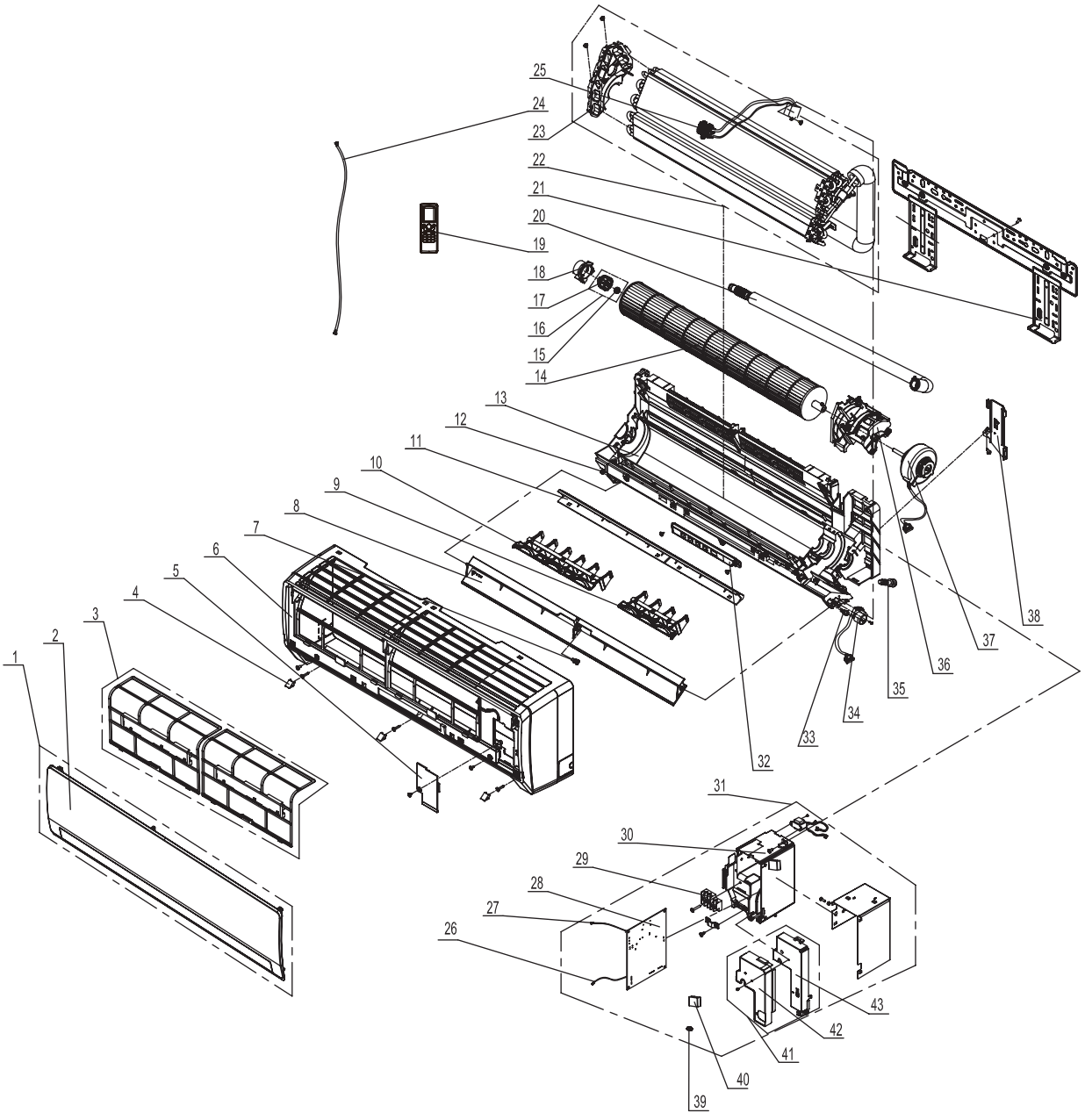
Remove the healthy filter and reinstall it after cleaning according to the installation instruction. Don't use brush or hard things to clean the filter. After cleaning, be sure to dry it in the shade.

7.5.3 Service Life

The general serive life for the healthy filter is about one year under normal condition. As for silver ion filter, it is invalid when its surface becomes black (green).
●This supplementary instruction is provided for reference to the unit with healthy filter. If the graphics provided herein is different from the actual product, please refer to the atual product. The quantity of healthy filters is based on the actual delivery.

8. Exploded Views and Parts List

Models:GWH(09)MA-K3DNA4E/I GWH(12)MB-K3DNA4E/I GWH(07)MA-K3DNA4E/I



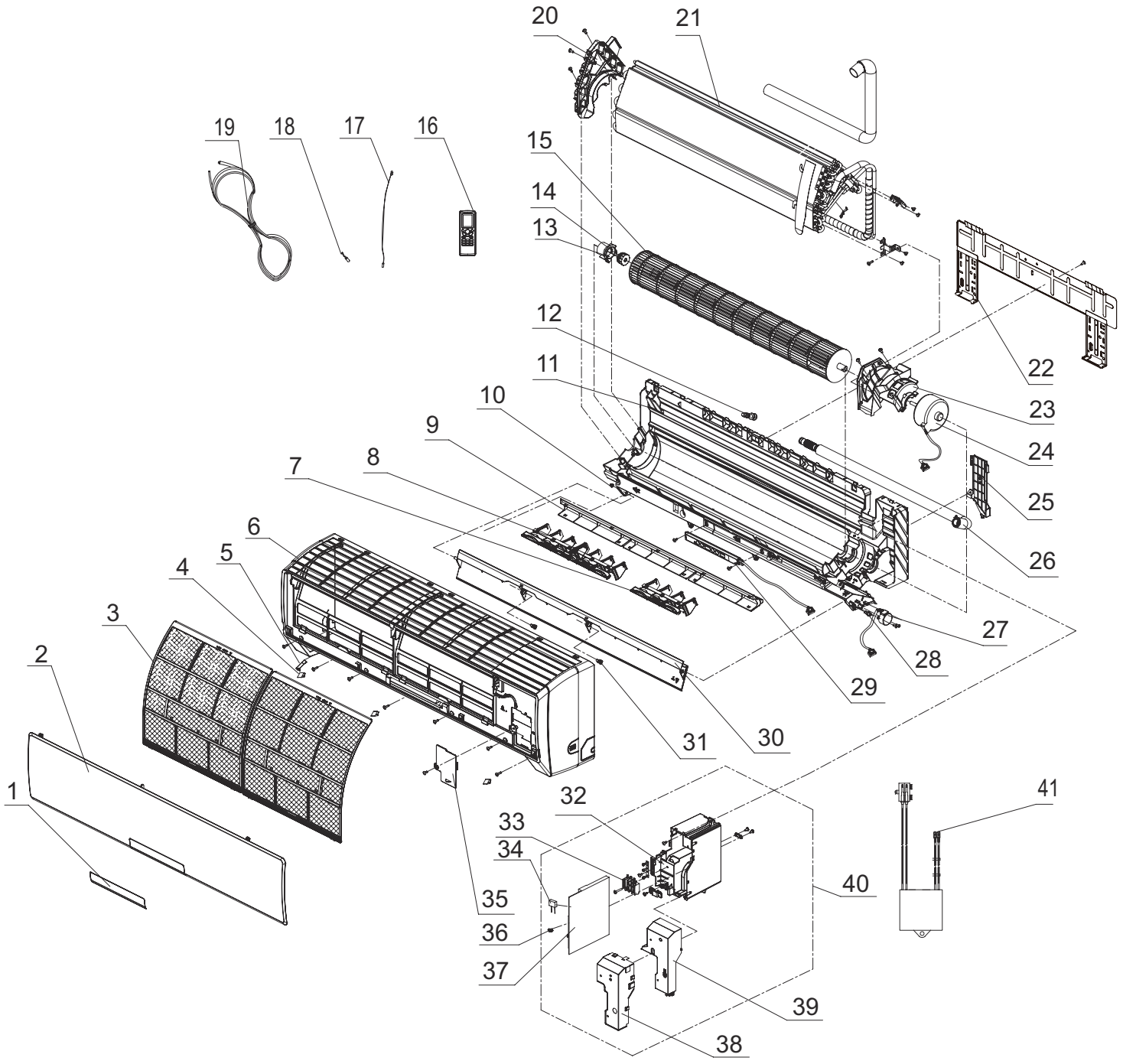
NO.	Description	Part Code		Qty
		GWH(09)MA-K3DNA4E/I	GWH(07)MA-K3DNA4E/I	
	Product Code	CB161N05401	CB161N05301	
1	Front Panel Assy	2001217601	2001217601	1
2	Front Panel A1	20012151S	20012151S	1
3	Filter Sub-Assy	11122081	11122081	2
4	Screw Cover	24252016	24252016	3
5	Electric Box Cover2	20122075	20122075	1
6	Front Case	20012120C	20012120	1
7	Axile Bush	10542704	10542704	1
8	Guide Louver	10512111	10512111	1
9	Air Louver 1	10512113	10512113	1
10	Air Louver 2	10512114	10512114	1
11	Helicoid Tongue	26112162	26112162	1
12	Left Axile Bush	10542036	10542036	1
13	Rear Case assy	2220210111	2220210101	1
14	Cross Flow Fan	10352043	10352018	1
15	Fan Bearing	76512210	76512210	1
16	O-Gasket sub-assy of Bearing	76512051	76512051	1
17	O-Gasket of Cross Fan Bearing	76512203	76512203	1
18	Ring of Bearing	26152022	26152022	1
19	Remote Controller	305100492	305100492	1
20	Drainage Hose	0523001406	523001406	1
21	Wall Mounting Frame	01252015	1252015	1
22	Evaporator Assy	0100274301	100274301	1
23	Evaporator Support	24212090	24212090	1
24	Connecting Cable	400204056	400204056	0
25	Cold Plasma Generator Sub-assy	11140009	1114001602	1
26	Temperature Sensor	390000591	390000599	1
27	Ambient Temperature Sensor	390000453	390000453	1
28	Main Board	30138656	30138655	1
29	Terminal Board	42011233	42011233	1
30	Electric Box	2011216701	2011216701	1
31	Electric Box Assy	20302583	2020209925	1
32	Display Board	30565012	30565012	1
33	Crank	10582070	10582070	1
34	Step Motor	1521212901	1521212901	1
35	Rubber Plug (Water Tray)	76712012	76712012	1
36	Motor Press Plate	26112160	26112160	1
37	Fan Motor	15012115	15012115	1
38	Pipe Clamp	26112164	26112164	1
39	Jumper	4202300101	4202300101	1
40	Capacitor CBB61	33010002	33010002	1
41	Shield Cover of Electric Box Sub-assy	0159207301	0159207301	1
42	Shield Cover of Electric Box	0141203601	141203601	1
43	Electric Box Cover1	20122103	20122103	1

The data above are subject to change without notice.

NO.	Description	Part Code	Qty
		GWH(12)MB-K3DNA4E/I	
	Product Code	CB161N05501	
1	Front Panel Sub-Assy	20012557	1
2	Front Panel A1	20012153S	1
3	Filter Sub-Assy	1112220403	2
4	Screw Cover	24252016	1
5	Electric Box Cover2	20122075	1
6	Front Case Sub-assy	2001213908	1
7	Axile Bush	10542036	1
8	Guide Louver	10512157	1
9	Air Louver 1	10512156	1
10	Air Louver 2	10512155	1
11	Helicoid Tongue	26112163	1
12	Left Axile Bush	10512037	1
13	Rear Case assy	2220210301	1
14	Cross Flow Fan	10352017	1
15	Fan Bearing	76512210	1
16	O-Gasket sub-assy of Bearing	76512051	1
17	O-Gasket of Cross Fan Bearing	76512203	1
18	Ring of Bearing	26152022	1
19	Remote Controller	305100492	1
20	Drainage Hose	0523001401	1
21	Wall Mounting Frame	01252021	1
22	Evaporator Assy	0100274401	1
23	Evaporator Support	24212091	1
24	Connecting Cable	400204056	0
25	Cold Plasma Generator Sub-assy	11140009	1
26	Temperature Sensor	390000591	1
27	Ambient Temperature Sensor	390000453	1
28	Main Board	30138656	1
29	Terminal Board	42011233	1
30	Electric Box	2011216701	1
31	Electric Box Assy	20302584	1
32	Display Board	30565012	1
33	Crank	10582070	1
34	Step Motor	1521212901	1
35	Rubber Plug (Water Tray)	76712012	1
36	Motor Press Plate	26112161	1
37	Fan Motor	150120874	1
38	Pipe Clamp	26112164	1
39	Jumper	4202300105	1
40	Capacitor CBB61	33010002	1
41	Shield Cover of Electric Box Sub-assy	0159207301	1
42	Shield Cover of Electric Box	0141203601	1
43	Electric Box Cover1	20122103	1

The data above are subject to change without notice.

Model:GWH(18)MC-K3DNA4E/I



NO.	Description	Part Code	Qty
		GWH(18)MC-K3DNA4E/I	
	Product Code	CB161N05601	
1	Cold Plasma Generator	1114001602	1
2	Front Panel Assy	20012280	1
3	Filter Sub-Assy	1112208901	2
4	Screw Cover	24252016	3
5	Baffle Plate	26112228	1
6	Front Case Sub-assy	20022172	1
7	Air Louver 2	10512117	1
8	Air Louver 1	10512116	1
9	Helicoid Tongue	26112238	1
10	Left Axile Bush	10512037	1
11	Rear Case assy	12312214	1
12	Rubber Plug (Water Tray)	76712012	1
13	Ring of Bearing	26152022	1
14	O-Gasket sub-assy of Bearing	76512051	1
15	Cross Flow Fan	10352019	1
16	Remote Controller	305100492	1
17	Temperature Sensor	390000599	1
18	Temperature Sensor	390000453	1
19	Connecting Cable	4002052317	0
20	Evaporator Support	24212133	1
21	Evaporator Assy	01002575	1
22	Wall Mounting Frame	01252218	1
23	Motor Press Plate	26112494	1
24	Fan Motor	15012146	1
25	Connecting pipe clamp	26112164	1
26	Drainage Hose	05230014	1
27	SteppingMotor	15012086	1
28	Crank	10582070	1
29	Display Board	30565039	1
30	Guide Louver	10512115	1
31	Axile Bush	10542036	1
32	Electric Box	2011210801	1
33	Terminal Board	42011233	1
34	Capacitor CBB61	33010043	1
35	Electric Box Cover2	20112081	1
36	Jumper	4202300108	1
37	Main Board	30148877	1
38	Shield Cover of Electric Box	01592092	1
39	Electric Box Cover1	20122154	1
40	Electric Box Assy	20402557	1
41	Cold Plasma Generator	1114001602	1

The data above are subject to change without notice.

9. Troubleshooting

9.1 Malfunction Display of Indoor Unit

1. Malfunction Display

If several malfunctions happen at the same time, malfunction protection codes will be displayed in a rotary way.

2. Malfunction Display Methods

(1) Hardware Malfunction: Display immediately. Please refer to “Table of Malfunction Display”;

(2) Operation Status: Display immediately. Please refer to “Table of Malfunction Display:;

(3) Other Malfunctions: Display after compressor is stopped for 200s. Please refer to “Table of Malfunction Display”. (Note: When compressor re-starts, the wait time for malfunction display (200s) will be clear.)

3. Control of Malfunction Display

Malfunction display of indicator and dual-8 shall be in synchronism, which means dual-8 will display malfunction codes while indicator is blinking.

4. Malfunction Inquiry Way of Remote Controller

Enter Malfunction Inquiry: Press light button 6 times in 3s to inquiry malfunction protection code;

Exit Malfunction Inquiry: Press light button 6 times in 3s or wait for 5 min to exit the Malfunction Inquiry.

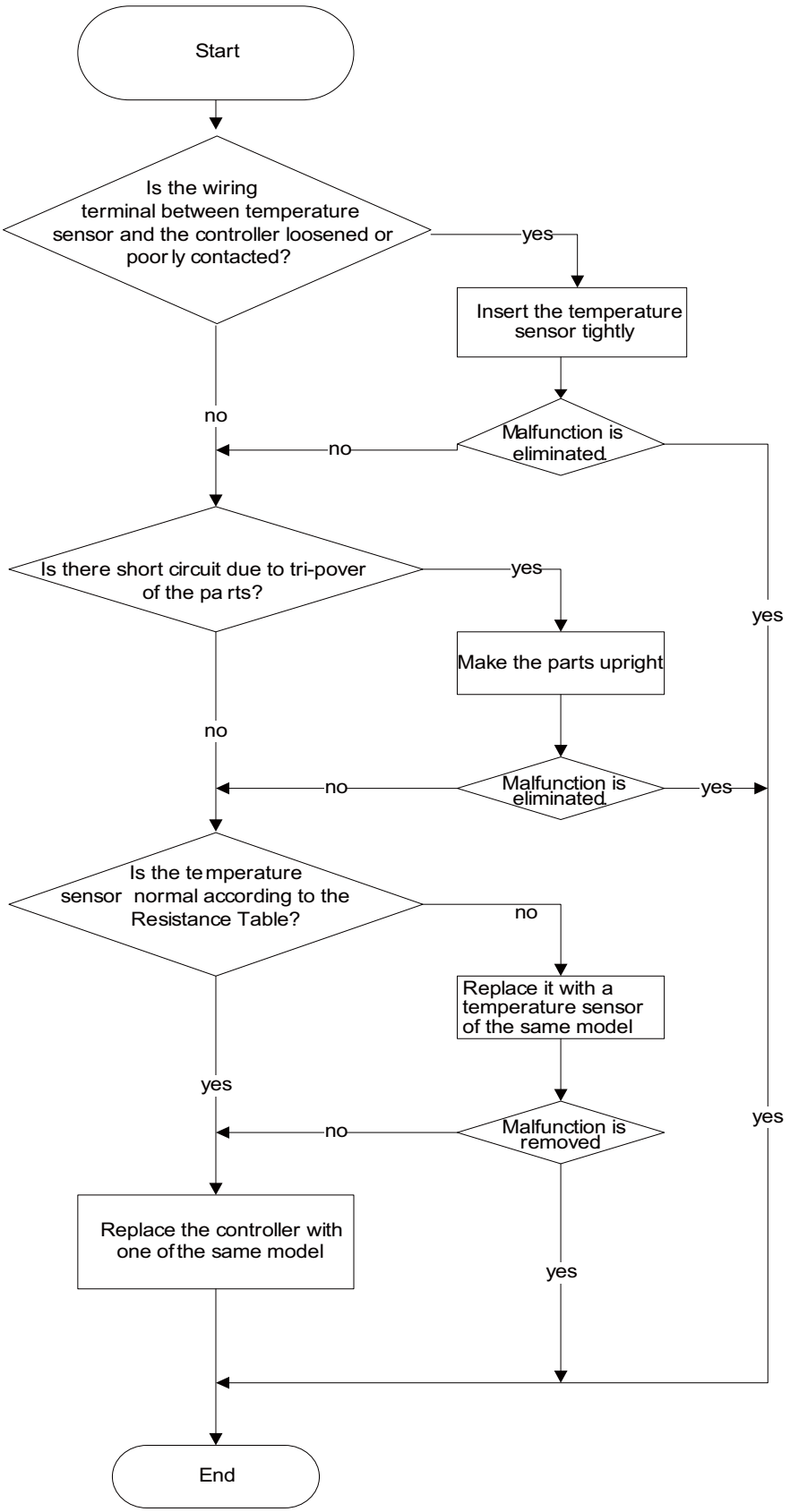
Malfunction Name	Malfunction types	Dual-8 Nixie Tube	Indicator Display		
			Operation indicator	Cooling indicator	Heating indicator
Fault in input power zero	Hardware malfunction	U8	blink 17 times		
Jumper cap malfunction protection	Hardware malfunction	C5	blink 15 times		
No feedback of indoor fan motor	Hardware malfunction	H6	blink 11 times		
Indoor ambient sensor open or short circuit	Hardware malfunction	F1		blink once	
Indoor tube sensor open or short circuit	Hardware malfunction	F2		blink twice	
Inlet tube sensor malfunction	Hardware malfunction	b5		blink 19 times	
Outlet tube sensor malfunction	Hardware malfunction	b7		blink 22 times	
IPM sensor circuit malfunction	Hardware malfunction	P7			blink 18 times
Outdoor ambient sensor open or short circuit	Hardware malfunction	F3		blink 3 times	
Inlet pipe temperature sensor of outdoor condenser is open-circuit/short circuit(commercial air con)	Hardware malfunction	A5			
Outdoor tube sensor open or short circuit	Hardware malfunction	F4		blink 4 times	
Outlet pipe temperature sensor of outdoor condenser is open-circuit/short circuit(commercial air con)	Hardware malfunction	A7			
Exhaust sensor open or short circuit	Hardware malfunction	F5		blink 5 times	
Communication failure between indoor unit and outdoor unit	Hardware malfunction	E6	blink 6 times		
Compressor phase current detection circuit malfunction	Hardware malfunction	U1			blink 12 times
Compressor demagnetization protection	It can be displayed through remote controller within 200s and displayed directly after 200s	HE			blink 14 times
PN voltage drop protection		U3			blink 20 times
IPM high temperature protection		P8			blink 19 times
Refrigerant-lacking or blockage protection		F0		blink 10 times	
Capacitor charge malfunction	Hardware malfunction	PU			blink 17 times
Refrigerant system high pressure protection	Hardware malfunction	E1	blink once		

System low-pressure protection (reserved)	Hardware malfunction	E3	blink 3 times		
Compressor over load protection	It can be displayed through remote controller within 200s and displayed directly after 200s	H3			blink 3 times
Fault in matching	Hardware malfunction	LP	blink 19 times		
Loading EEPROM malfunction	Hardware malfunction	EE			blink 15 times
AC current detect circuit malfunction	Hardware malfunction	U5		blink 13 times	
Outdoor DC fan motor malfunction	Hardware malfunction	L3	blink 23 times		
Mode conflict	operation status	E7	blink 7 times		
Recovery refrigerant mode	operation status	Fo	blink once	blink once	
X-fan	operation status			ON for 0.5s and OFF for 10s	
Defrosting or oil return in heating	operation status				OFF for 0.5s and ON for 10s
Startup failure	It can be displayed through remote controller within 200s and displayed directly after 200s	Lc			blink 11 times
Compressor exhaust high temperature protection		E4	blink 4 times		
Anti-high temperature protection		E8	blink 8 times		
AC over-current protection		E5	blink 5 times		
Over compressor phase current protection		P5			blink 15 times
Compressor loss step protection		H7			blink 7 times
Compressor loss of phase protection		Ld			
IPM protection		H5			blink 5 times
Low PN voltage protection		PL			blink 21 times
Over voltage protection for PN		PH		blink 11 times	
PFC protection		HC			blink 6 times
4-way valve reversal abnormal		U7		blink 20 times	

Note: Please refer to service manual for the troubleshooting procedure for outdoor unit.

9.2 How to Check Simply The Main Part

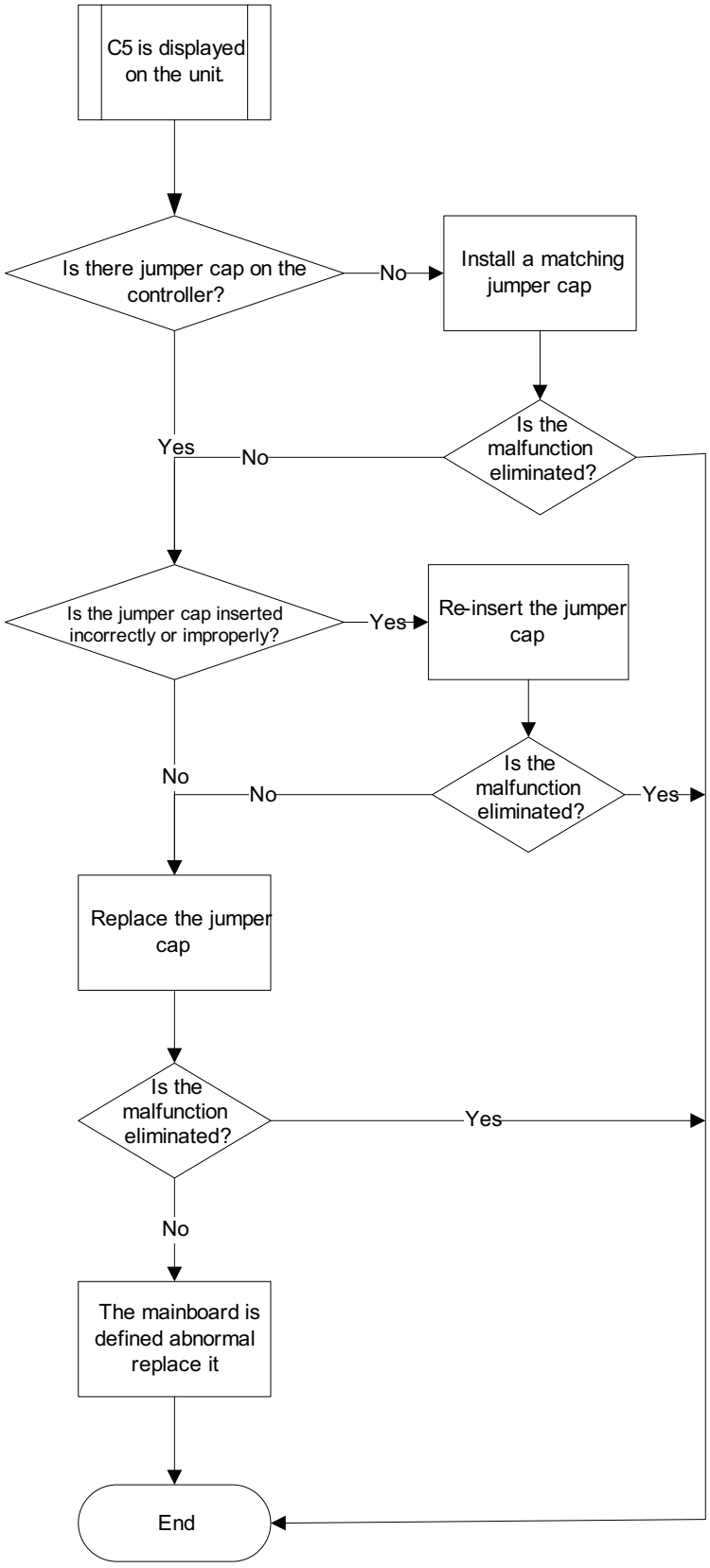
9.2.1 F1/F2 Malfunction



9.2.2 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.

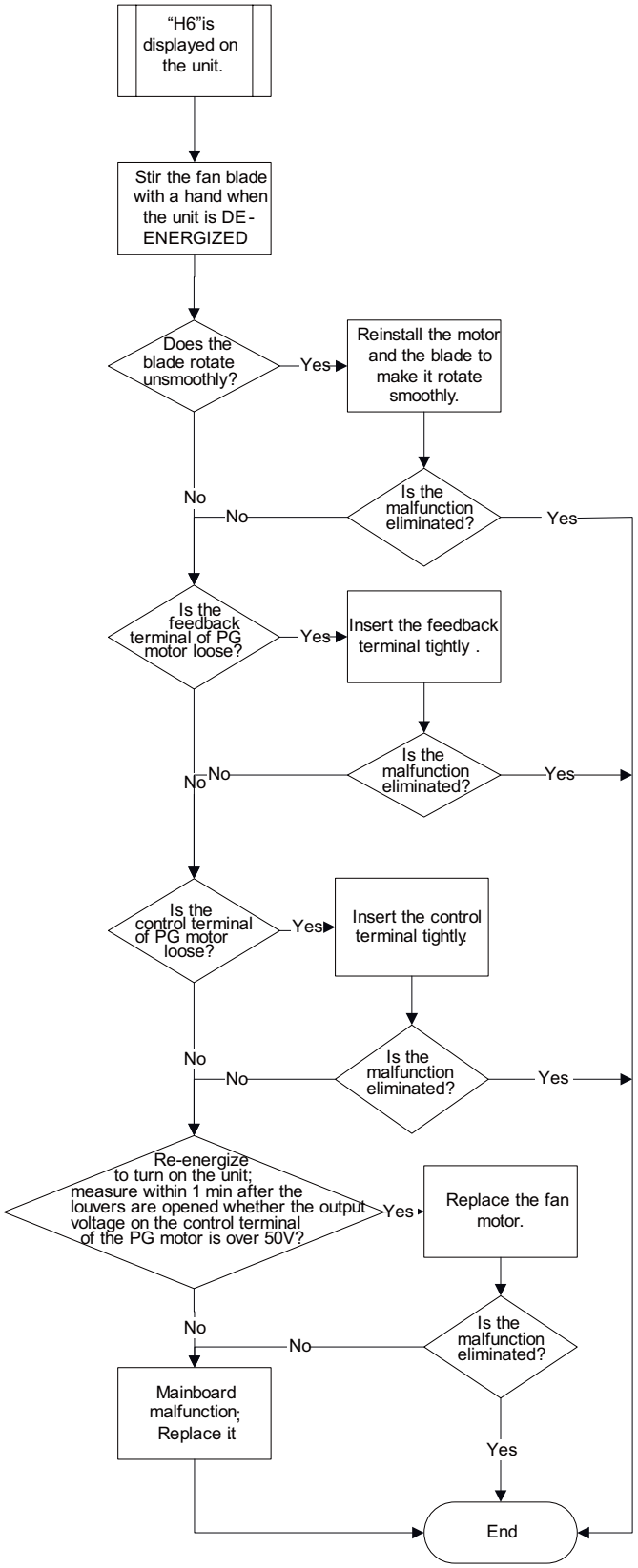
See the flow chart below:



9.2.3 H6 Malfunction

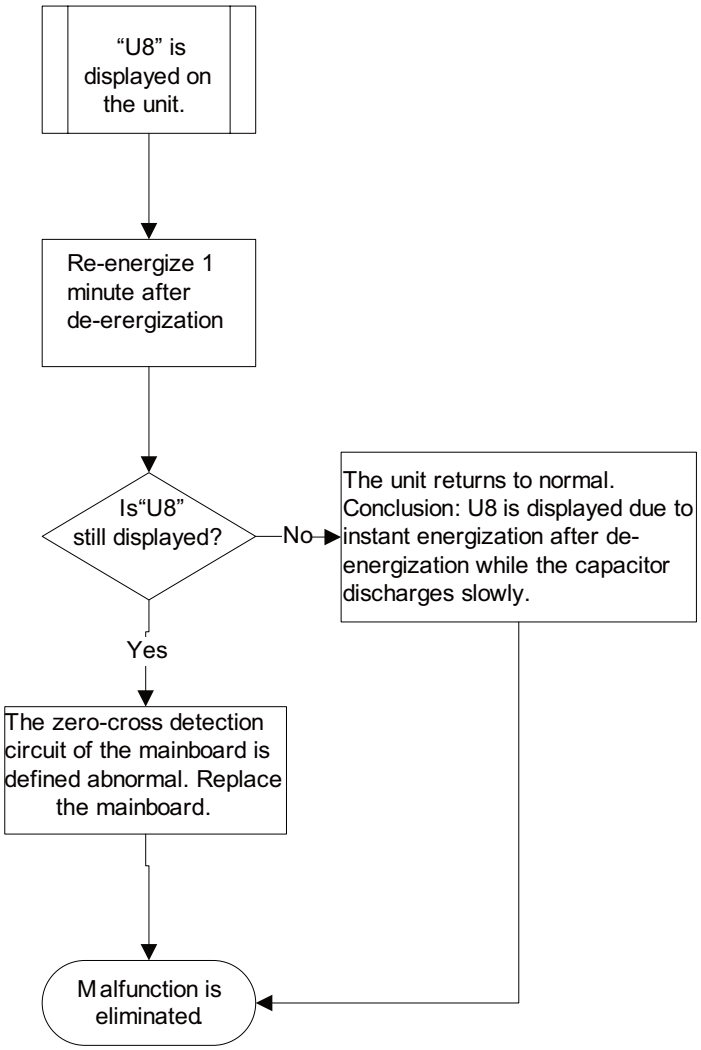
Possible causes:
1. Fan motor is locked;
2. The feedback terminal of PG motor is not connected tightly;
3. The control terminal of PG motor is not connected tightly;
4. Motor is damaged;
5. Malfunction of the rotation speed detection circuit of the mainboard.

See the flow chart below:



9.2.4 U8 Malfunction

Possible causes:
1.The controller diagnoses incorrectly due to instant energization after de-energized while the capacitor discharges slowly;
2.Malfunction of the zero-cross detection circuit of the mainboard.
See the flow chart below:



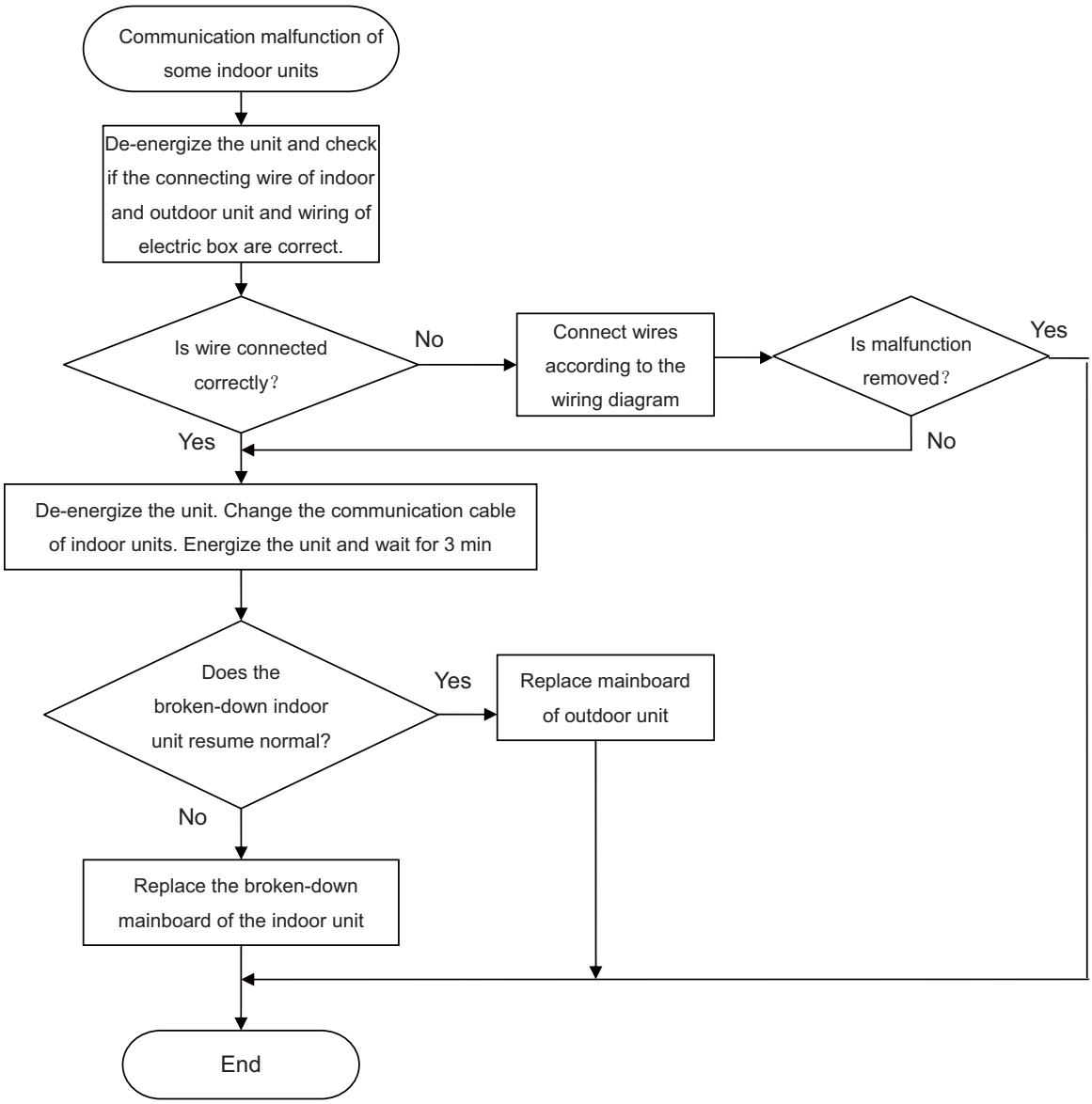
9.2.5 E6 Malfunction

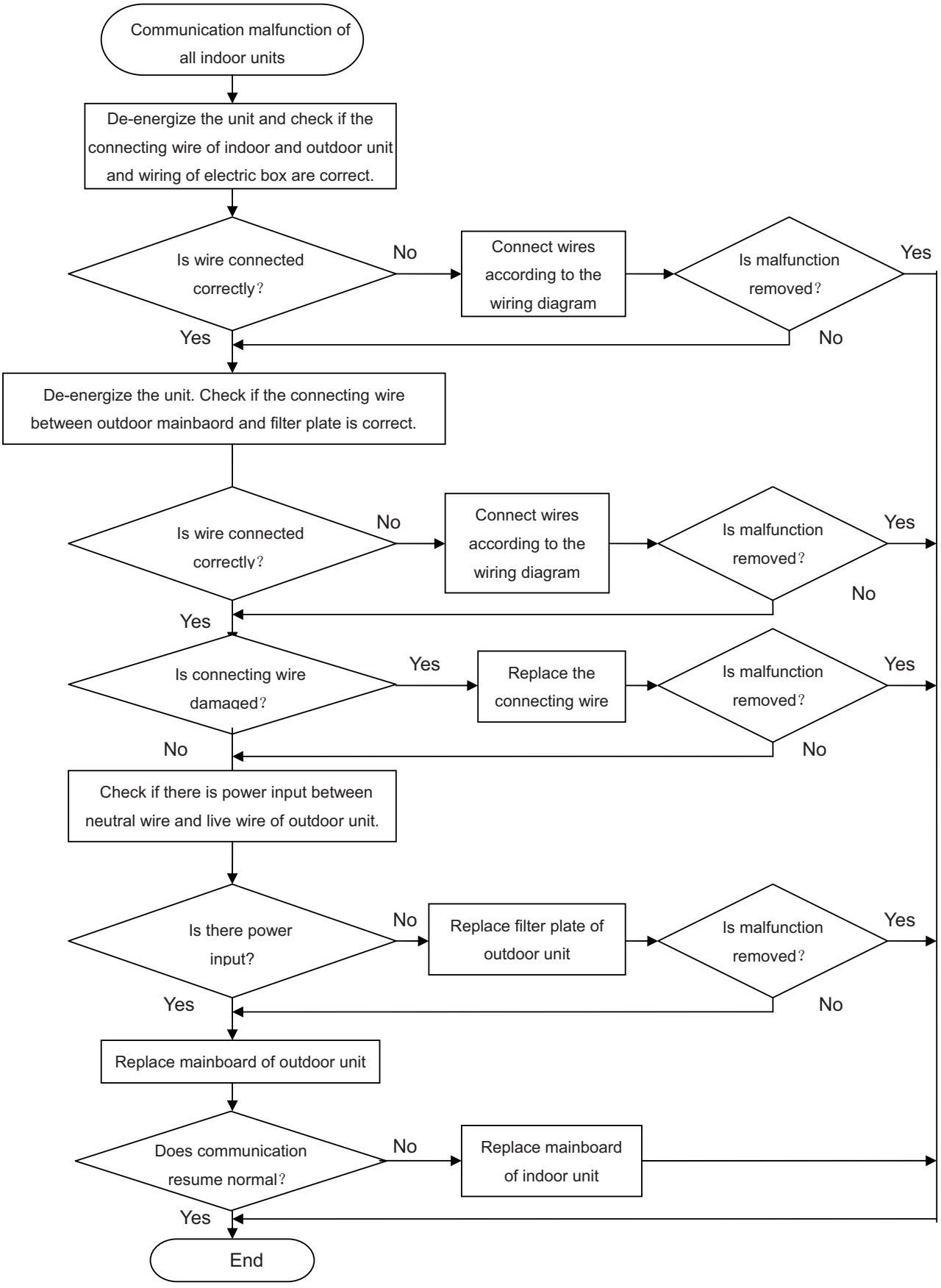
Inspection

1.Check if connection wire between indoor and outdoor units and wire inside the unit are connected well.

2.Check if mainboard of indoor or outdoor unit is damaged.

Flowchart




Communication malfunction of all indoor units
De-energize the unit and check if the connecting wire of indoor and outdoor unit and wiring of electric box are correct.
Is wire connected correctly?
No
Connect wires according to the wiring diagram
Is malfunction removed?
Yes
No
Yes
De-energize the unit. Check if the connecting wire between outdoor mainbaord and filter plate is correct.
Is wire connected correctly?
No
Connect wires according to the wiring diagram
Is malfunction removed?
Yes
No
Yes
Is connecting wire damaged?
Yes
Replace the connecting wire
Is malfunction removed?
Yes
No
No
Check if there is power input between neutral wire and live wire of outdoor unit.
Is there power input?
No
Replace filter plate of outdoor unit
Is malfunction removed?
Yes
No
Yes
Replace mainboard of outdoor unit
Does communication resume normal?
No
Replace mainboard of indoor unit
Yes
End

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

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

Appendix 2: Resistance Table of Outdoor and Indoor Tube Temperature Sensors(20K)

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

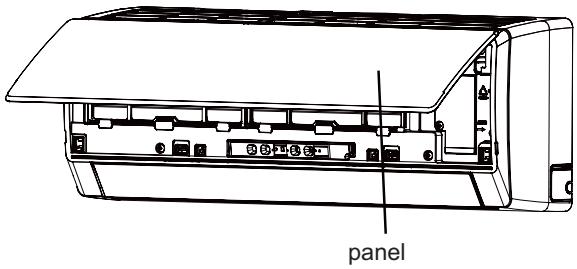
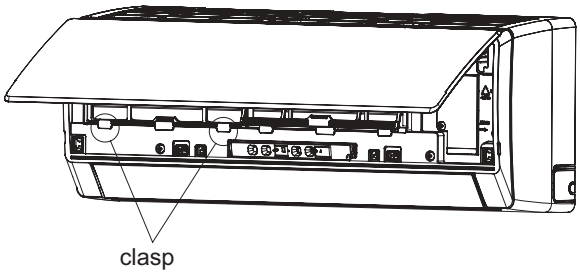
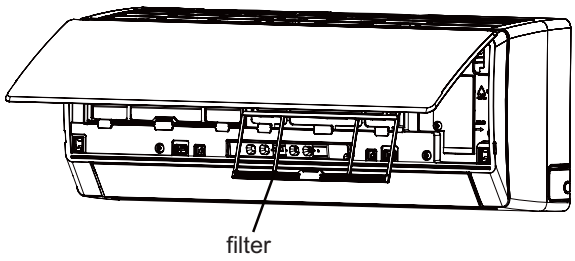
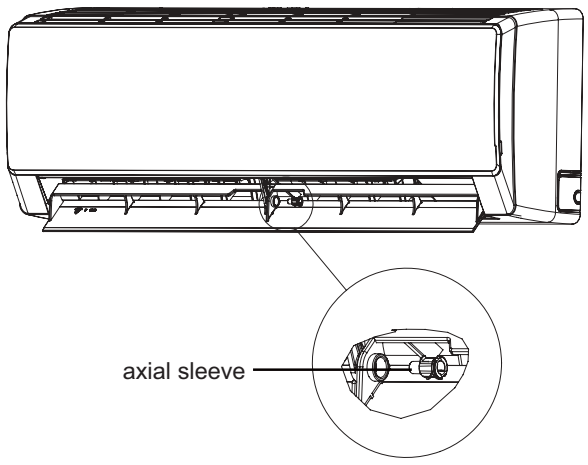
Appendix 3: Resistance Table of Outdoor Discharge Temperature Sensor(50K)

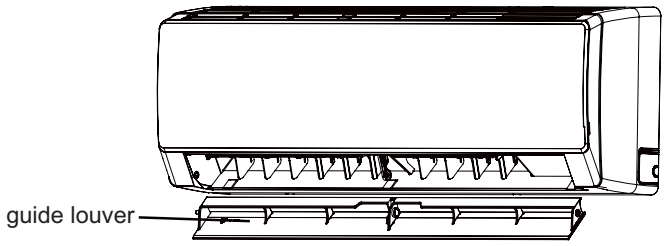
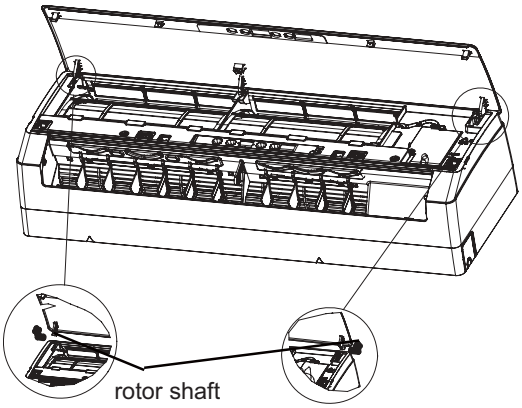
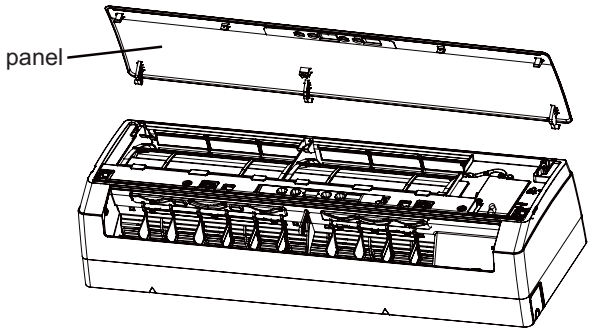
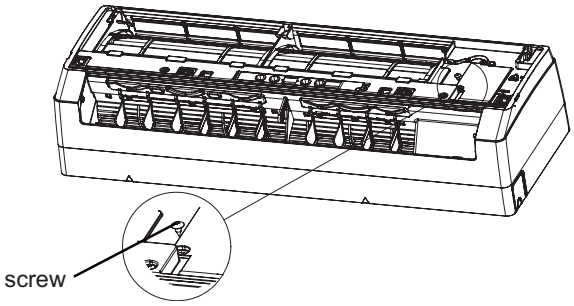
Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）	Temp.（℃）	Resistance（kΩ）
-29	853.5	10	98	49	18.34	88	4.754
-28	799.8	11	93.42	50	17.65	89	4.609
-27	750	12	89.07	51	16.99	90	4.469
-26	703.8	13	84.95	52	16.36	91	4.334
-25	660.8	14	81.05	53	15.75	92	4.204
-24	620.8	15	77.35	54	15.17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

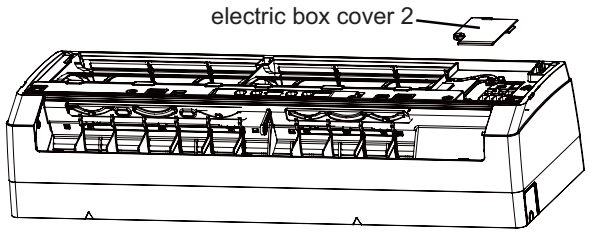
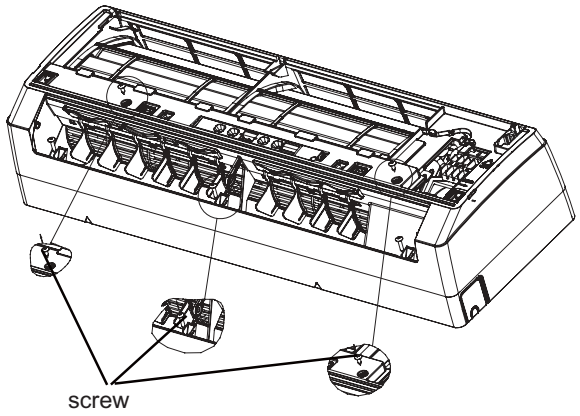
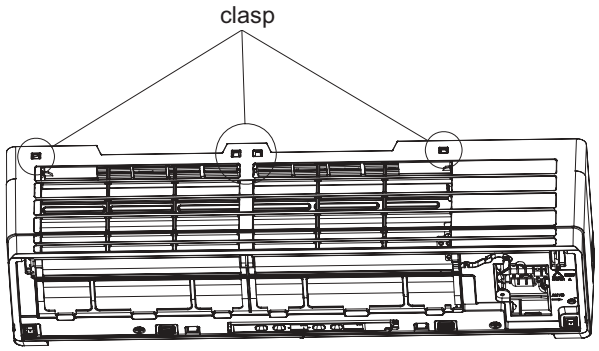
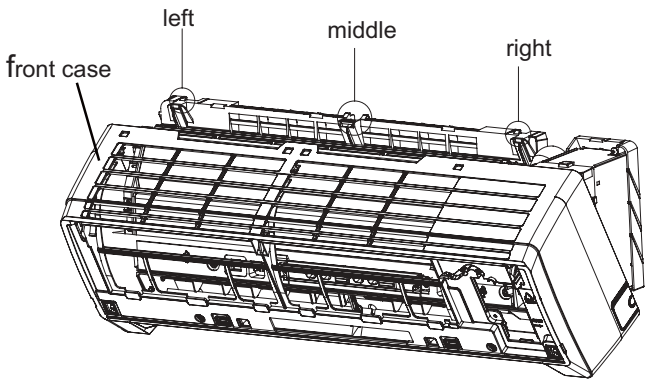
Note: The information above is for reference only.

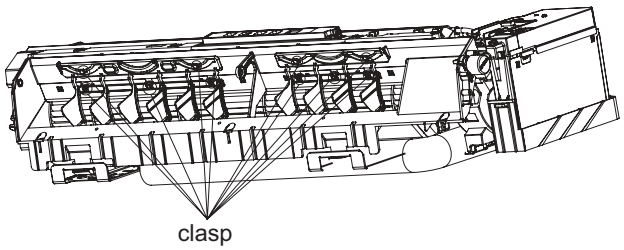
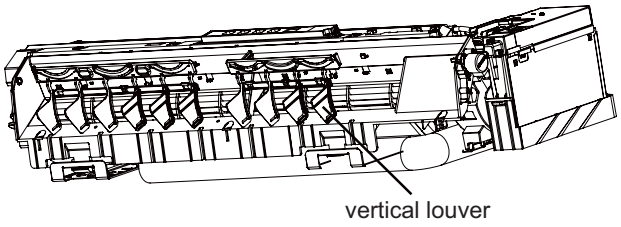
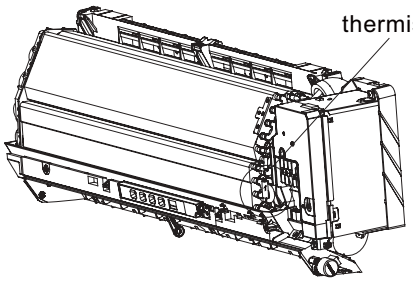
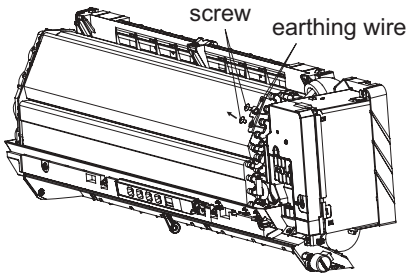
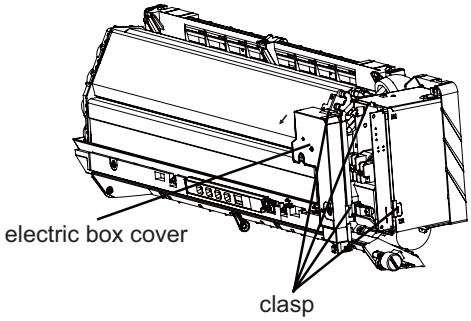
10. Removal Procedure

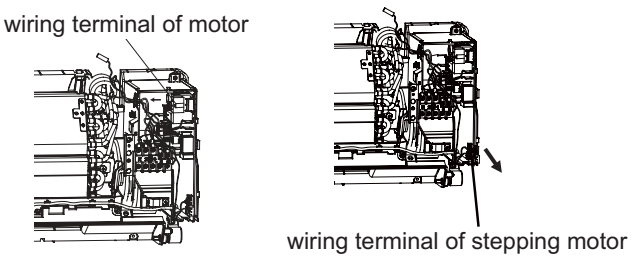
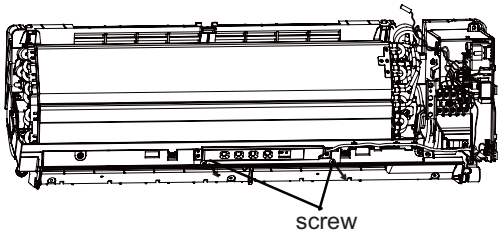
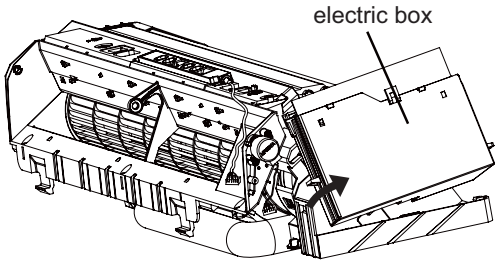
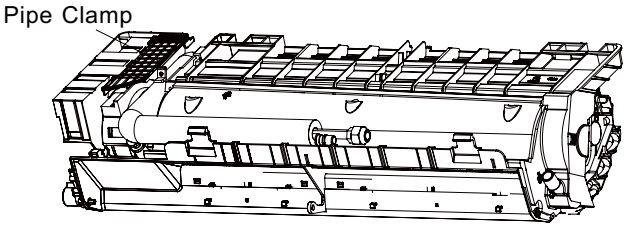
Warning **Be sure to wait for a minimum of 10 minutes after turning off all power supplies before disassembly.**

Step	Procedure	
1.Remove the filter		
1	Open the front panel.	
2	Loosen the clasp of the filter.	
3	Push the filter inward and then draw it upward to remove it.	
2.Remove guide louver		
1	Remove axial sleeve of guide louver.	

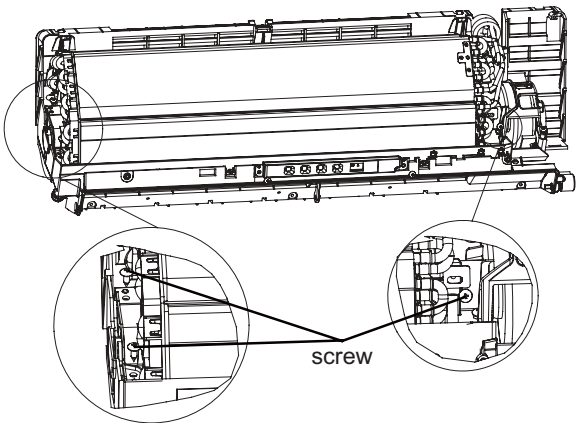
Step	Procedure	
2	Bend the louver outwards and then remove the louver.	
3.Remove panel		
	Push the rotor shaft on both sides of the panel to make it separate from the groove. Remove the panel.	 
4.Remove electric box cover 2		
1	Loosen the screws of the electric box cover 2 with screwdriver.	

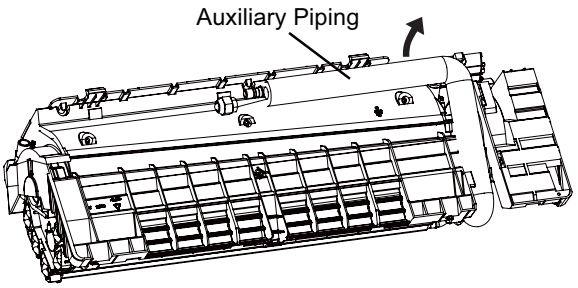
Step	Procedure	
2	Remove the electric box cover, seperate it from the front case.	
5.Remove the front case		
1	Open the screw cap on the front case. Remove the screws fixing the front case.	
2	Loosen the six clasps of the front case.	
3	Remove the front case to seperate it with bottom assembly.	

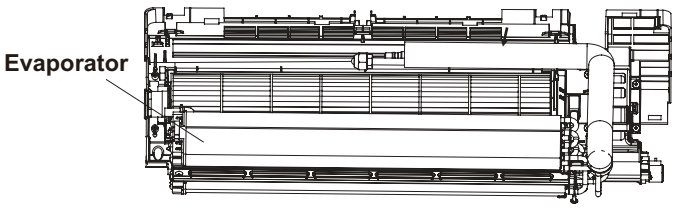
Step	Procedure	
6.Remove vertical louver		
1	Loosen the clasp connecting the vertical louver and rear case assy.	
2	Remove the vertical louver to the separate louver with bottom assembly.	
7.Remove electric box		
1	Disconnect the indoor tube temperature sensor.	
2	Remove the screws at the joint of the earthing wire and evaporator.	
3	Loosen the clasp at the joint of the electric box cover and the electric box. Remove the electric box cover.	

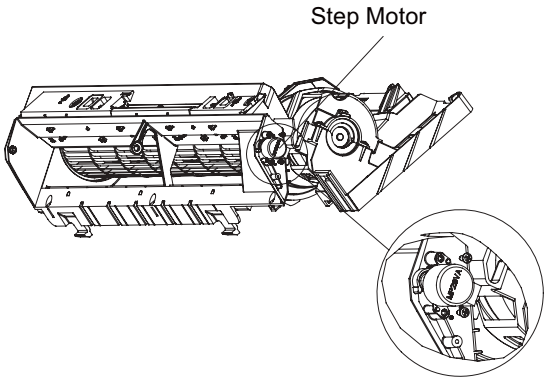
Step	Procedure	
4	Pull out the wiring terminal of motor and stepping motor.	
5	Remove the 2 screws of the display.	
6	Remove the screw of electric box, remove the electric box to separate it with bottom assembly.	
8.Remove the press plate of connection pipe		
	Remove the screw of press board of connection pipe, then remove the press board to separate it with the rear case assy.	

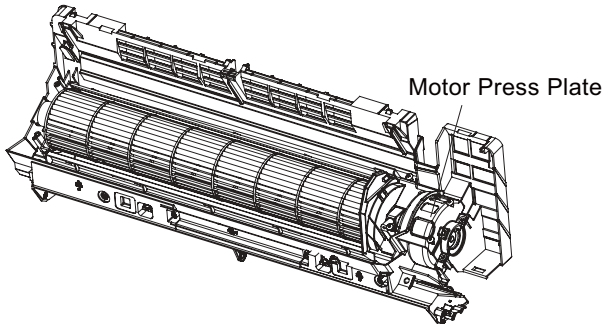
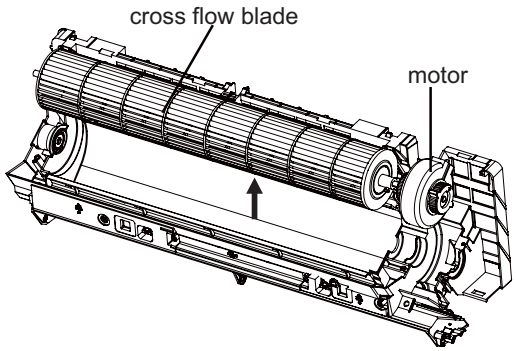
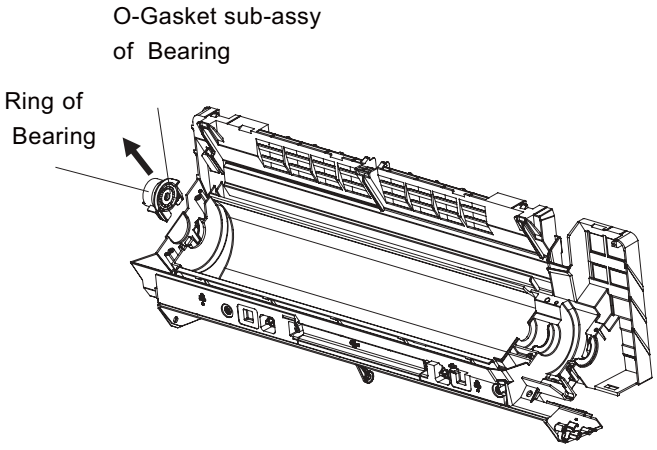
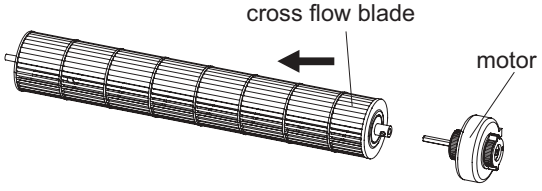
Step	Procedure
9.Remove evaporator	
1	Remove the 3 screws at the joint of the evaporator and rear case.
2	Adjust slightly the pipe on the evaporator to separate the pipe with the evaporator.
3	Remove the evaporator to separate the evaporator with rear case assy.
10.Remove motor and cross flow blade	
1	Remove screws of step motor and then remove the step motor.









Step	Procedure	
2	Remove the screw of the motor press plate and then remove the press plate.	
3	Remove the cross flow blade and motor.	
4	Remove the rubber cushion of the bearing.	
5	Remove the screws at the joint of the cross flow blade and the motor. Take down the motor.	

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