Airwell

Just feel well

Service Manual

HDL High Wall

AW-HDL007-N91

7SP023110

R32

English Manual

IMPORTANT NOTE:
Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

20.AW.HDL.07.R32.SM.EN.05.26

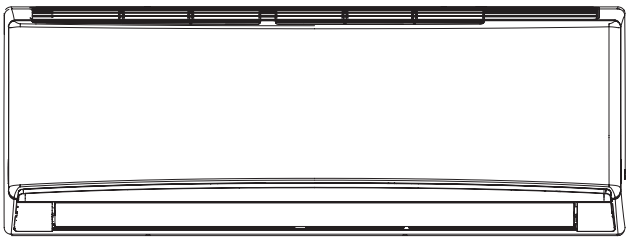
Table of Contents

Part Ⅰ : Technical Information

1. Summary

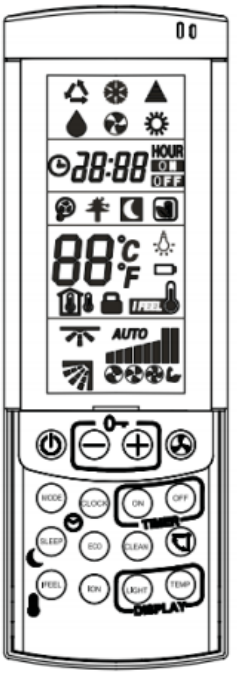
Indoor Unit:

AW-HDL007-N91



Remote Controller:

RC08A



Caution: Risk of fire/flammable material

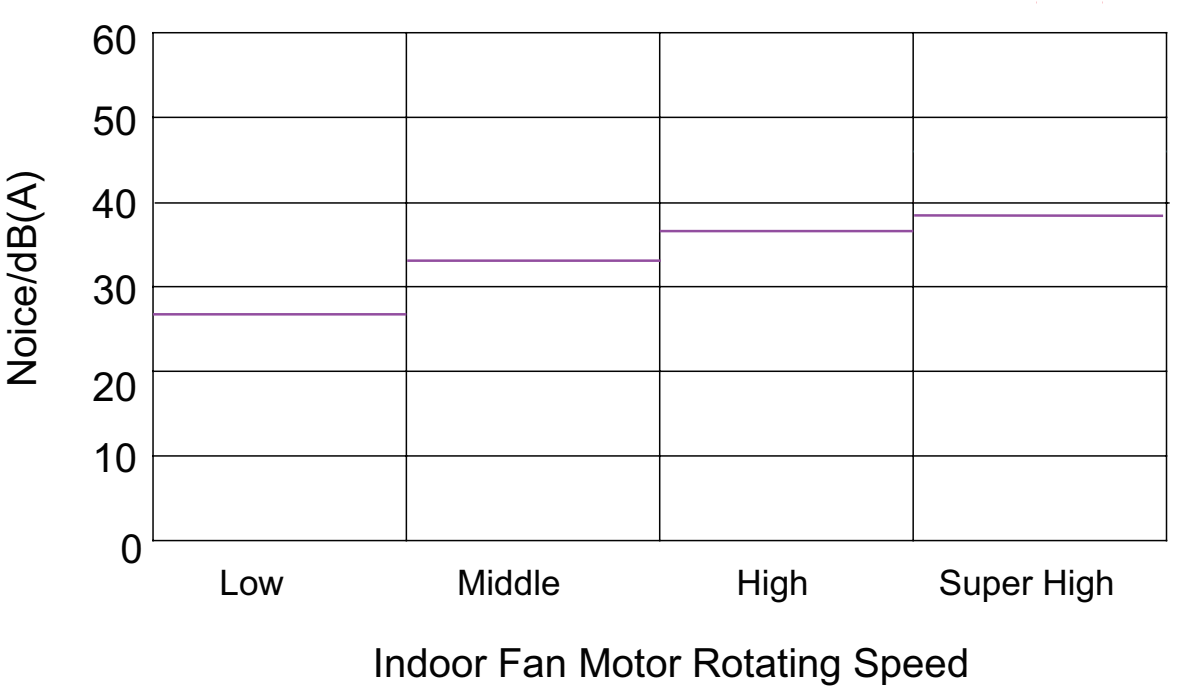
2. Specifications

2.1 Specification Sheet

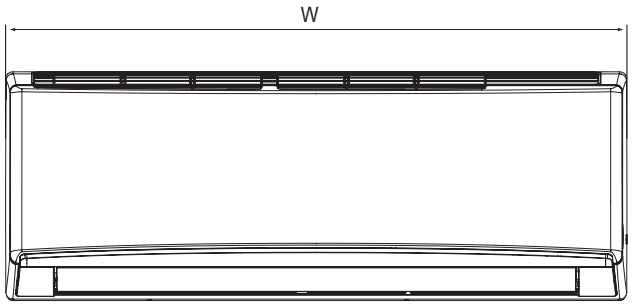
Model		AW-HDL007-N91
Product Code		7SP023110
Rated Voltage	V~	220-240
Rated Frequency	Hz	50
Phases		1
Cooling Capacity	W	2100
Heating Capacity	W	2600
Air Flow Volume (SH/H/M/L)	m^3/h	560/490/430/330
Dehumidifying Volume	L/h	0.6
Fan Type		Cross-flow
Fan Diameter-height	mm	Φ98X580
Fan Motor Speed (SH/H/M/L) Cool	rpm	1300/1200/1050/800
Fan Motor Speed (SH/H/M/L) Heat	rpm	1300/1200/1050/900
Fan Motor Power Output	W	20
Fan Motor Running Current	A	0.22
Fan Motor Capacitor	μF	1
Evaporator Material		Aluminum Fin-copper Tube
Evaporator Pipe Diameter	mm	Φ5
Evaporator Number of Rows		2
Evaporator Fin Pitch	mm	1.4
Evaporator Length(L)XHeight(H)XWidth(W)	mm	584X22.8X266.7
Motor Model		FN20J-PG
Overload Protector		/
Motor Full Load Amp(FLA)	A	/
Sound Pressure Level (SH/H/M/L)	dB (A)	39/36/32/21
Sound Power Level (SH/H/M/L)	dB (A)	49/46/42/38
Outline Dimension (WXHXD)	mm	790X275X200
Package Carton Dimension (LXWXH)	mm	863X268X352
Package Dimension (LXWXH)	mm	866X271X367
Net Weight	kg	9
Gross Weight	kg	11
Liquid pipe	mm	Φ6
Gas Pipe(to indoor unit)	mm	Φ9.52
Note: The connection pipe applies metric diameter.		

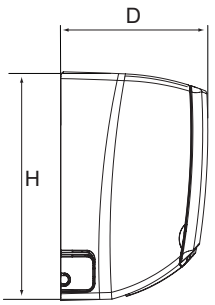
The above data is subject to change without notice; please refer to the nameplate of the unit.

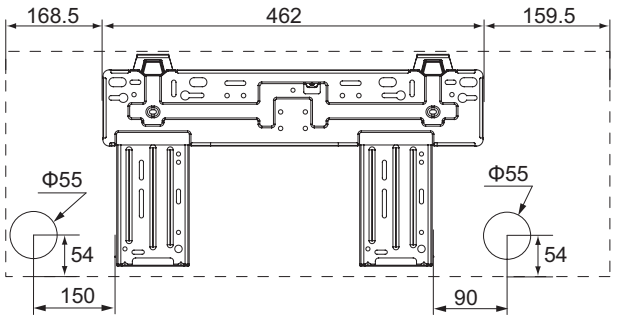
2.2 Noise Criteria Curve Tables for Both Models



3. Outline Dimension Diagram



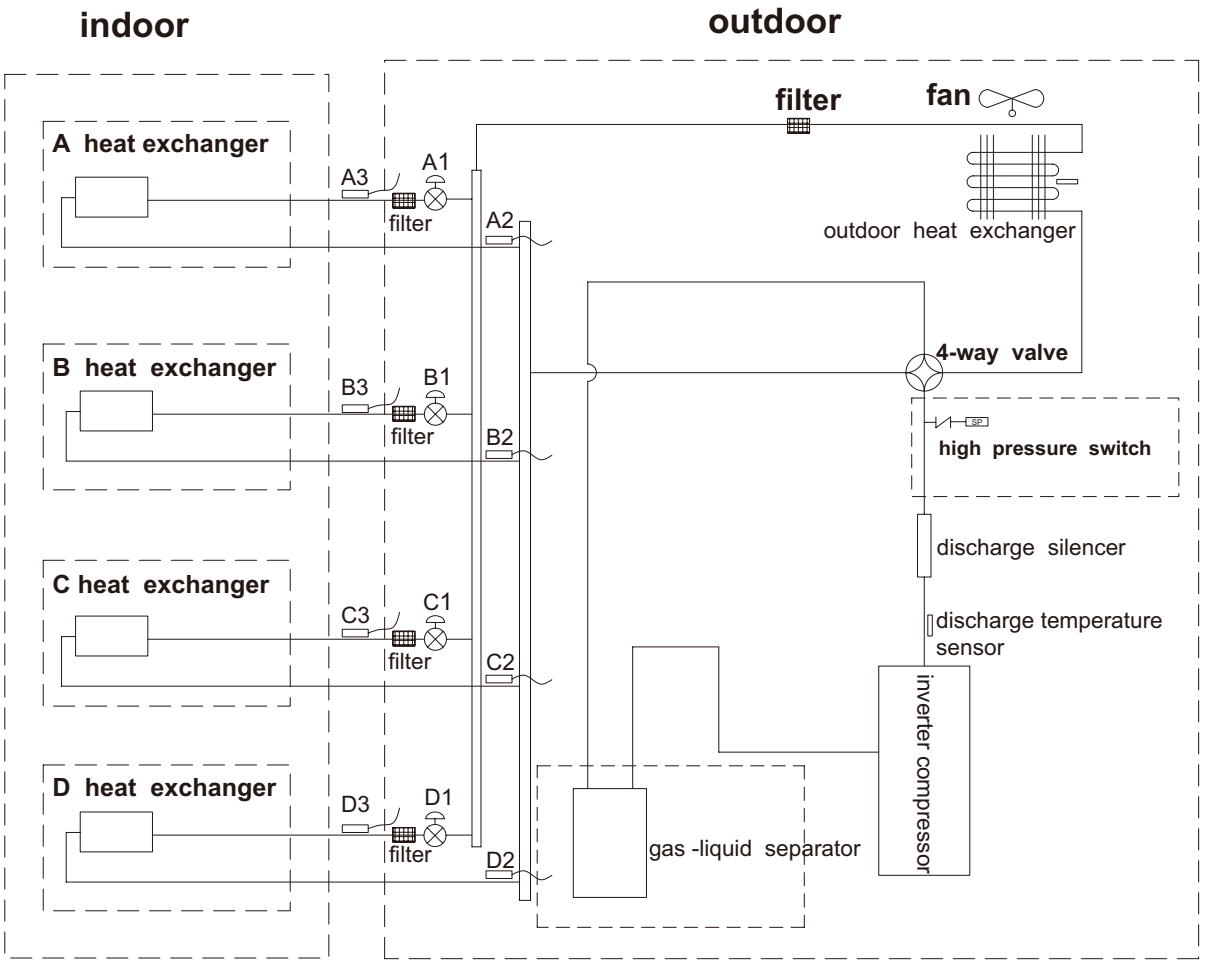




Unit:mm

Model	W	H	D
07K	790	275	200

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. Electrical Part

5.1 Wiring Diagram

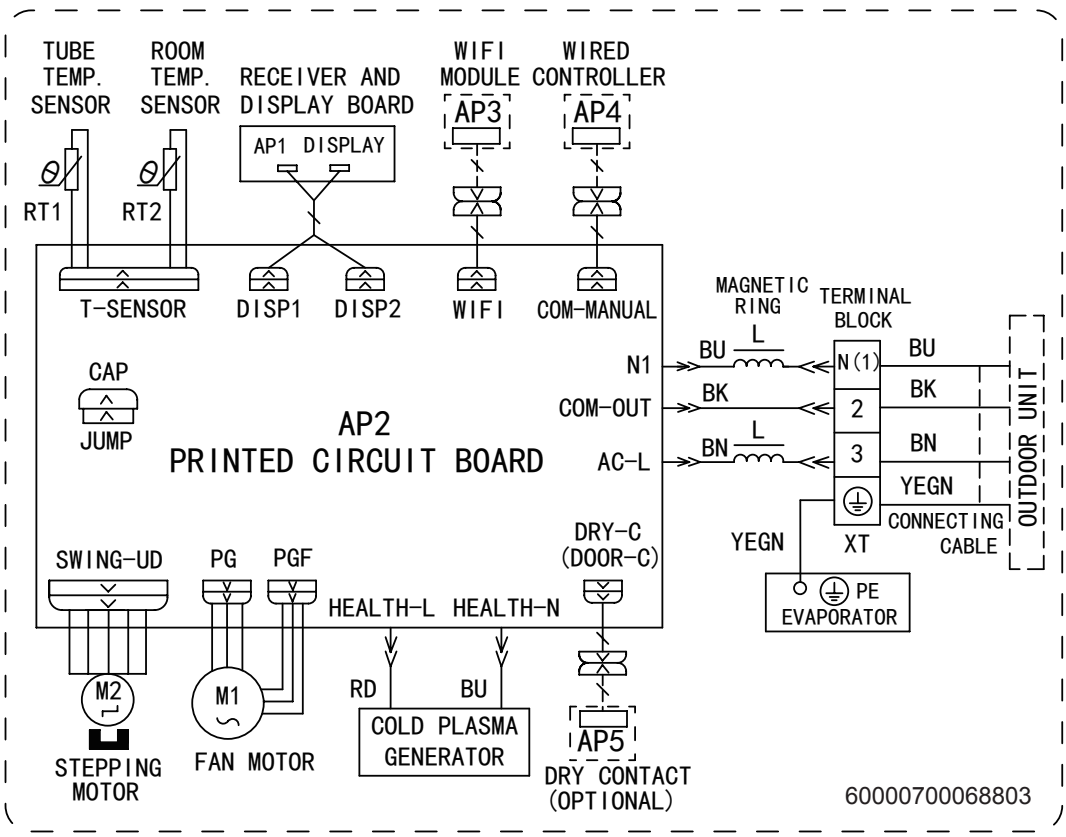
● Instruction

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue	⏚	Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

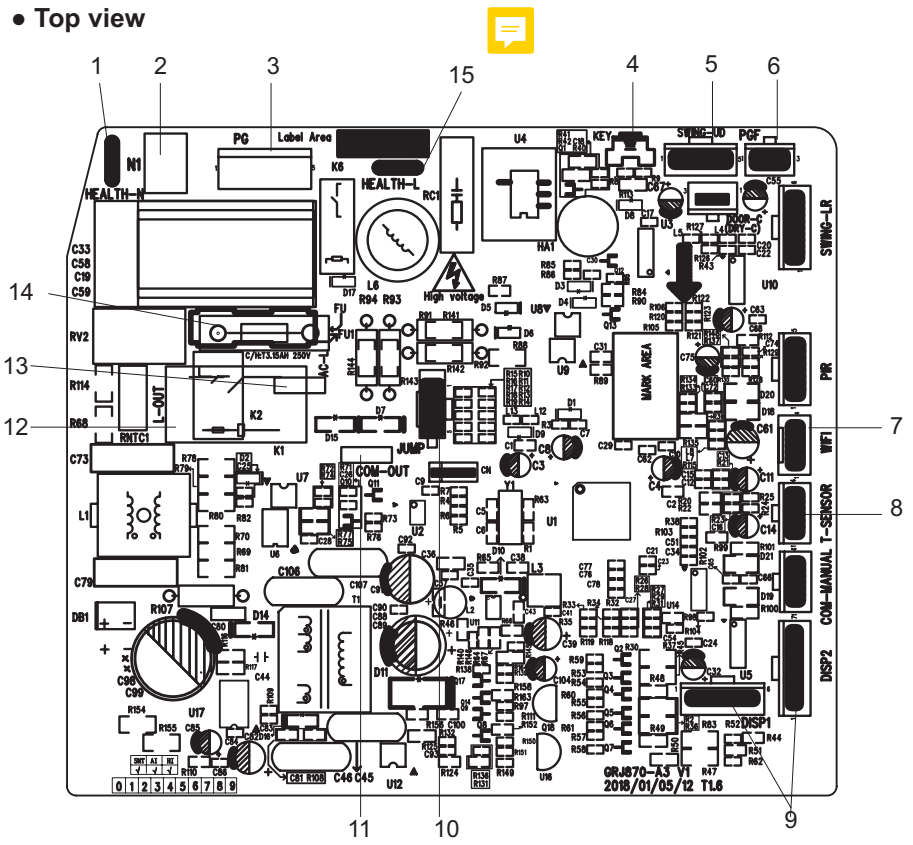
● Indoor Unit

AW-HDL007-N91



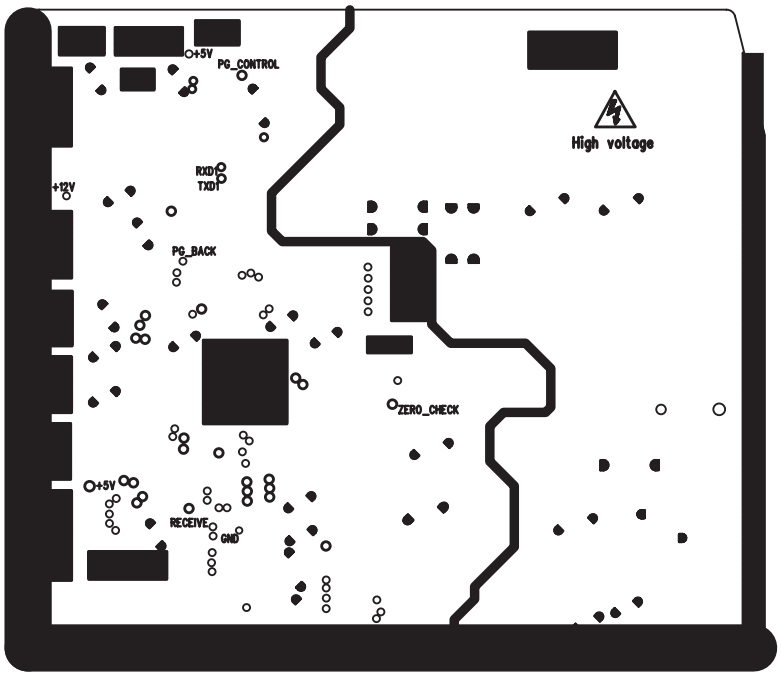
5.2 PCB Printed Diagram

● Top view



No.	Name
1	Interface of health function neutral wire
2	Neutral wire
3	Interface of indoor fan
4	Auto button
5	Interface of up&down swing motor
6	Interface of PG feedback
7	WIFI
8	Temperature sensor
9	Display board
10	Jumper cap
11	Communication wire
12	Terminal with outdoor of power supply live wire terminal
13	Live wire
14	Fuse
15	Interface of health function live wire

● Bottom view



6. Function and Control

6.1 Remote Controller Introduction

CONTENT

PRECAUTIONS

DISPLAY

Information are displayed when the remote control unit is powered up.

Operation Mode

- Automatic
- Heating
- Cooling
- Fan only
- Dehumidification (dry)
- Displayed when data trasmitted

- Clock (Set hours and minutes)
- Displayed when the " timer on " is set and activated
- Displayed when the " timer off " is set and activated

- Indicate that the Clean mode is activated
- Displayed in Sleep Mode Operation
- Display when ionizer is activated
- Indicate that the air conditioner is operating in Economy mode

- Set temperature or show room temperature
- Displayed when the temperature is the room temperature
- Indicate that the air conditioner is operating in I FEEL mode

- Automatic horizontal air flow oscillation switched on (only selected model)
- Automatic supply air flap oscillation switched on

Description of Low battery detection

• The low-battery indicator on the remote control will continue to blink when the batteries are low, it may reduce the transmission distance of the remote control and the display becomes blurred. Replace with new batteries immediately.
• The low-battery indicator will disappear after the batteries are replaced.

Fan speed indication

- Low speed
- Medium speed
- High speed
- Turbo Function
- Automatic fan speed

ON/OFF OPERATION BUTTON

This button turns the air conditioner ON and OFF.

MODE SELECTOR BUTTON

Press this button to modify the air conditioner mode.

(**automatic**)★

When this setting is selected, the air conditioner calculates the difference between the thermostat setting and the room temperature and automatically switches to the ″cool″ ,"dry″ or ″heat″ mode.

(**heating**)

The air conditioner makes the room warmer.

dehumidification (**dry**)

The air conditioner reduces the humidity in the room.

(**cooling**)

The air conditioner makes the room cooler.

(**fan**)

The air conditioner circulate the air.

★ **COOL / DRY / HEAT**

SLEEP

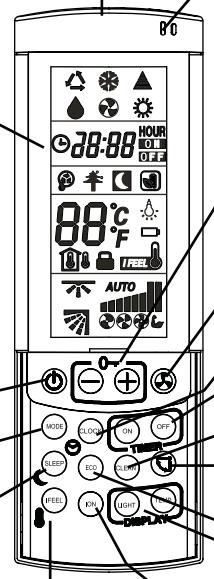
Press this button to turn the SLEEP mode ON or OFF. For the detail, see "SLEEP MODE" function description.

TRANSMITTER

When you press the buttons of the remote control unit, the ▲ mark appears on the display to transmit the setting changes to the receiver in the air conditioner.

SENSOR

Air temperature sensor inside the remote control unit detects the room temperature Where the remote control is located.



TEMPERATURE SETTING BUTTONS

− (**cooler**)Press this button to decrease the set temperature.
+ (**warmer**)Press this button to increase the set temperature.
Press button "-" and "+" simultaneously to lock or unlock the keyboard.

FAN SPEED SELECTOR BUTTON

Fan speed is automatically selected by the microcomputer. Silent speed
Low speed. Medium speed
High speed. Turbo Function.

CLOCK BUTTON

Push this button to the present time.For detail see "HOW TO SET THE PRESENT TIME".

TIMER SETTING

Press the button ON and OFF to start timer ON and OFF setting procedure Details, please see "SETTING THE TIMER".

CLEAN BUTTON

This button turns the clean function ON and OFF in cooling and dehumidifying mode.

SWING BUTTON

Press this button to activate the supply air flap to various position or auto swing. Detail see "ADJUSTING THE AIR FLOW DIRECTION".

ECO BUTTON

Press this button, the remote control will adjust the temperature setting automatically to save energy. The temperature display will show "SE"

I FEEL TEMPERATURE SENSING AND ROOM TEMPERATURE DISPLAY BUTTON

Push this button to activate the temperature sensing function to be around the remote control.

ION (OPTIONAL)

Press this button to turn the Ionizer on for cleaning the indoor air. This function is optional.

TEMP BUTTON

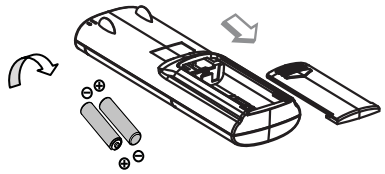
Press this button to indicate set temp, indoor temperature or outdoor temperature.

LIGHT BUTTON

Press this button to turn the indoor unit display ON or OFF.

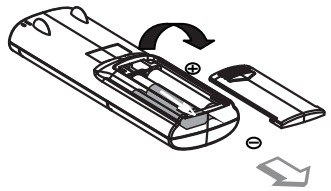
HOW TO INSTALL BATTERIES

- Remove the lid in the rear part of the remote control unit.
- Insert two AAA alkaline batteries of 1, 5 V–DC. Make sure to insert the batteries according to the polarity (+/–) marked in the battery compartment.
- Push the lid back on.



HOW TO REMOVE BATTERIES

- Remove the lid in the rear part.
- Press the battery toward the negative end and lift it out by its positive end as shown.
- Remove the other battery in the same way.



General Note:

Replace the batteries when the remote control unit display fails to light, when the air conditioner does not receive the remote control unit signals or when the low battery icon is displayed.

Remove the batteries if you do not use the remote control unit for more than one month.

The batteries last about six months, depending on how much you use the remote control unit.

The batteries of the remote control contain polluted substances Exhausted batteries must be disposed according to local laws.

TEMPERATURE SENSOR SELECTOR

- Under normal conditions the room temperature is detected and checked by the temperature sensor placed in the air conditioner.
- Press the remote control I FEEL button to activate the temperature sensor placed in the remote control. This function is designed to provide a personalised environment by transmitting the temperature control command from the location next to you. Therefore, in using this function, the remote control should always be aimed, without obstruction, at the air conditioner.

OPERATION WITH THE REMOTE CONTROL UNIT

Check that the circuit breaker on the power panel is turned ON and the STANDBY lamp is light up.

When using the remote control unit, always point the unit transmitter head directly at the air conditioner receiver.

HOW TO TURN ON THE AIR CONDITIONER

Press the ON/OFF button to turn the air conditioner on. The indicator OPERATION will light up, indicating the unit is in operation.

HOW TO SET THE PRESENT TIME

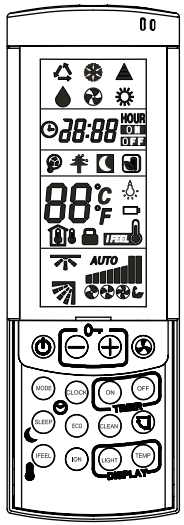
1. Press the CLOCK button. The time indication alone flashes.
2. Press the + or - buttons until the present time is displayed.
3. Press the CLOCK button to stop the indication flashing.

COOLING

Verify that the unit is connected to the main power and the STANDBY lamp is lighted up.
1. Set the MODE selector to COOL ❄.
2. Press the ON/OFF (⏻) button and switch the airconditioner ON.
3. Press the - or +. buttons to set the desired temperature The temperature range is between 16℃ and 30℃(61-86 F).

THE DISPLAY SHOWS THE SELECTED TEMPERATURE..

4. Press the FAN SPEED button to select the fan speed.



HEATING

1. Set the MODE selector to HEAT ☼.
2. Press the ON/OFF (⏻) button and switch the air condioner ON.
3. Press the + or -. buttons to set the desired temperature, the temperature range is between 16℃ and 30℃(61-86F).
4. Press the FAN SPEED button to select the fan speed.

THE DISPLAY SHOWS THE SELECTED TEMPERATURE..

NOTE
For several minutes after the start of heating operation, the indoor fan will not run until the indoor heat exchanger coil has warmed up sufficiently. This is because the COLD DRAFT PREVENTION SYSTEM is operating.

- **DEFROSTING OF HEAT EXCHANGE / OUTDOOR UNIT "STANDBY"**

When the outdoor temperature is low, frost or ice may appear on the heat exchanger coil, reducing the heating performance. When this happens, a microcomputer defrosting system operates. At the same time, the fan in the indoor unit stops until defrosting is completed. Heating operation restarts after several minutes. (This interval will vary slightly depending on the room and outdoor temperature).

- **HEATING PERFORMANCE**

A heat pump air conditioner heats a room by taking heat from outside air. The heating efficiency will reduce when the outdoor temperature is very low.

AUTOMATIC OPERATION

1. Set the MODE selector to AUTO ⌂.
2. Press the ON/OFF (⏻) button and switch the air conditioner ON.
3. Press the + or -. buttons to set the desired temperature (The temperature range is between 16℃ and 30℃(61-86F).

THE DISPLAY SHOWS THE SELECTED TEMPERATURE.

When this setting is selected, the air conditioner calculates the difference between the thermostat setting and the room temperature and automatically switches to the COOL, DRY or HEAT mode as appropriate.
4. Switch the FAN SPEED selector button to the setting you want.

DEHUMIDIFYING (DRY)

1. Set the MODE selector switch to “DRY” .
2. Press the ON/OFF ( ) button and switch the air condioner ON.
3. Press the + or - buttons to set the desired temperature (Adjustable temperature range is 16℃ and 30℃(61-86F)).

THE DISPLAY SHOWS THE SELECTED TEMPERATURE.

NOTE
- Use DRY operation when you want to reduce the humidity in the room.
- Once the room temperature reaches the set level, the unit repeats the cycle of turning on and off automatically
- During DRY operation, the fan speed is automatically set to low or stops to prevent overcooling .
- Dry operation is not possible if the indoor temperature is 15 °C or less.

FAN ONLY

If you want to make air circulate without any temperature control, follow these steps:

1. Set the MODE selector switch to “FAN” .
2. Press the ON/OFF ( ) button and switch the air conditioner ON.

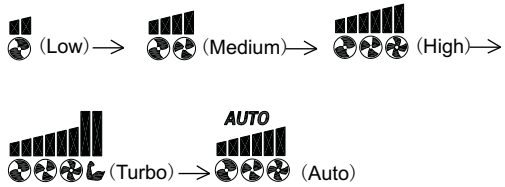
ADJUSTING THE FAN SPEED

- **AUTOMATIC**

Simply set the FAN SPEED selector to the AUTO position . A microcomputer automatically controls the fan speed when the AUTO mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microcomputer which then automatically switches the fan speed to the most suitable level.

- **MANUAL**

If you want to manually adjust speed just set the FAN SPEED selector as desired. Each time the button is pressed, the fan speed is changed in sequence:



- **TURBO FUNCTION**

In Cool or Heat Mode, if start the turbo function, the unit will run at super-high fan speed to cool or heat quickly to approach the set temperature.

SLEEP MODE

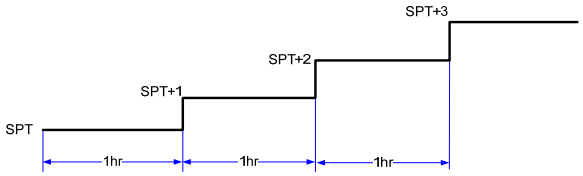
The SLEEP mode enables you to save energy.
1. Set the MODE selector to cool, dry or heat.
2. Press the SLEEP button.
3. The mark appears on the display. Press the SLEEP button again to release the SLEEP function.

What does the SLEEP mode mean?

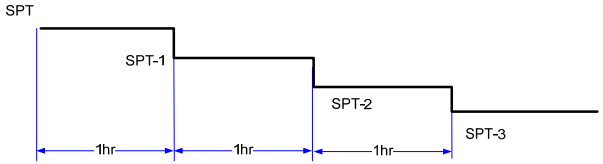
In this mode, the air conditioner will cool or heat the room to the set temperature. After about 1 hour, the air conditioner will automatically reset the set temperature as follows (also refer to graphs).

OPERATING MODE	SET TEMPERATURE CHANGE
Heating	Lowered by 1 ° C
Cooling and Dehumidifying	Raised by 1 ° C

In cooling mode or dehumidifying mode, 1 hour after the sleep curve is set, the setting temperature will rise by 1 degree C , 2 hours later, the setting temperature will rise by 2 degree C. After 3 hours, the setting temperature will not change any more.



In heating mode, 1 hour after the sleep curve is set, the setting temperature will decrease by 1 degree C 2 hours later, the setting temperature will decrease by 2 degree C. After 3 hours, the setting temperature will not change any more.



I FEEL/ROOM TE MP FUNCTION OPERATION

Press button I FEEL to activate the I FEEL function. Thermometer sign will appear on the LCD operation display .Select suitable temperature setting. Make sure that the remote control unit is aimed at the air conditioner. Prevent the I FEEL sensor from being affected by heat sources such as lamps, heaters, direct sun, etc. or from being directly affected by the air conditioner air flow.These may cause the sensor to transmit the wrong temperature data, thereby disturbing the performance of the I FEEL function.

LOCK FUNCTION

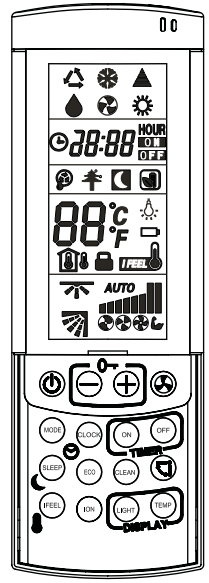
By pressing - and + bottoms simultaneously to lock the last operation program. All the function buttons will be inoperative, including POWER button. By pressing both buttons again the remote control will be released from its locked position.

SETTING THE TIMER

The timer can be selected by pressing TIMER ON button.
The daily timers can be set for ON and OFF separately for two different time periods.
Timer setting will not change until new setting is input.

A) HOW TO SET THE ON TIME

1. Press the TIMER ON button to select the desired timer.
2. Press the TIMER ON button till the ON sign blinks.
3. Press the + or - button until the desired value is displayed.
4. Press the TIMER ON button to activate the timer.



B) HOW TO SET THE OFF TIME

1. Press the TIMER OFF button to select the desired timer.
2. Press the TIMER OFF buttons till the OFF sign blinks.
3. Press the + or - button until the desired value is displayed.
4. Press the TIMER OFF button to activate the timer.

C) HOW TO SET A PROGRAM FOR DAILY ON/OFF OPERATION

1. Press the TIMER OFF button to select the desired timer.
2. Press the TIMER OFF button till the ON sign blinks.
3. Press the + or - button until the desired value is displayed.
4. Press the TIMER OFF button again, the OFF sign blinks.
5. Press the + or - button until the desired value is displayed.
6. Press the TIMER OFF button to activate the timer.

ADJUSTING THE AIR FLOW DIRECTION

Press button to activate the supply aire flap to auto swing, if you push this button again, the flap stops immediately.

Press and CLEAN button together to activate the horizontal louver. If you push them together again to stop it immediately.(Only for selected models)

Caution

Set vertical vanes to the front position during COOLING/DRY operation if humidity is high.
If the vertical vanes are set to the left-most or right-most position, condensation may form around the air outlet and drip off.

Caution

Do not move the flap with your hands when the air conditioner is running.

Caution

Use the button on the remote control to adjust the position of the flap. If you move the flap by hand, the factual flap position and the flap position on the remote control may no longer match. If this should happen, shut off the unit, wait for the flap to close, and then turn on the unit again; the flap position will now be normal again.

NOTES

Some functions of remote controller will not be available when the unit does not support them! By resetting the remote control, shall totally remove the battery for 10 seconds.By pressing the "⊖" and "" together to switch the temperature display between degrees Celsius and degrees Fahrenheit at power off status.

Part Ⅱ : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

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

Please follow the instructions below.

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

Warnings

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.
10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

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

Refrigerant Safety Precautions:

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

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

Safety Precautions for Installing and Relocating the Unit:

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

Warnings

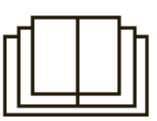
1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.
Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.
2.When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.
Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.
3.When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode.Then, fully close the valve at high pressure side (liquid valve).About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.
If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.
4.During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.
If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
5.When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.
If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
6.Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.
If there leaked gas around the unit, it may cause explosion and other accidents.
7.Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.
Poor connections may lead to electric shock or fire.
8.Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.
Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

Safety Precautions for Refrigerant

●To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32,which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can leads to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
●Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

●Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture.Should repair be necessary,contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example:open flames , an operating gas appliance or an operating electric heater.)
●Do not pierce or burn.
●Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m^2 (see table a).(only applies to appliances that are not fixed appliances).
●Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only.Be aware that refrigrants not contain odour.
●Read specialist's manual.

Safety Operation of Flammable Refrigerant

Qualification requirement for installation and maintenance man

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

Installation notes

●The air conditioner is not allowed to use in a room that has running fire (such as fire source,working coal gas ware, operating heater).
●It is not allowed to drill hole or burn the connection pipe.
●The air conditioner must be installed in a room that is larger than the minimum room area.
The minimum room area is shown on the nameplate or following table a.
●Leak test is a must after installation.

table a - Minimum room area(m^2)

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

Maintenance notes

●Check whether the maintenance area or the room area meet the requirement of the nameplate.
— It's only allowed to be operated in the rooms that meet the requirement of the nameplate.
●Check whether the maintenance area is well-ventilated.
— The continuous ventilation status should be kept during the operation process.
●Check whether there is fire source or potential fire source in the maintenance area.
— The naked flame is prohibited in the maintenance area; and the "no smoking" warning board should be hanged.
●Check whether the appliance mark is in good condition.
— Replace the vague or damaged warning mark.

Welding

●If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:
a. Shut down the unit and cut power supply
b. Eliminate the refrigerant
c. Vacuuming
d. Clean it with N2 gas
e. Cutting or welding
f. Carry back to the service spot for welding
●Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.
●The refrigerant should be recycled into the specialized storage tank.

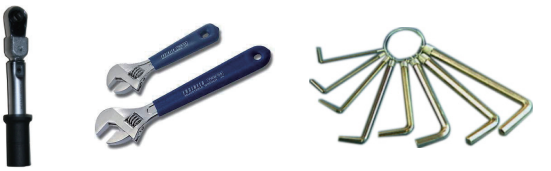
Filling the refrigerant

●Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
●The refrigerant tank should be kept upright at the time of filling refrigerant.
●Stick the label on the system after filling is finished (or haven't finished).
●Don't overfilling.
●After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

Safety instructions for transportation and storage

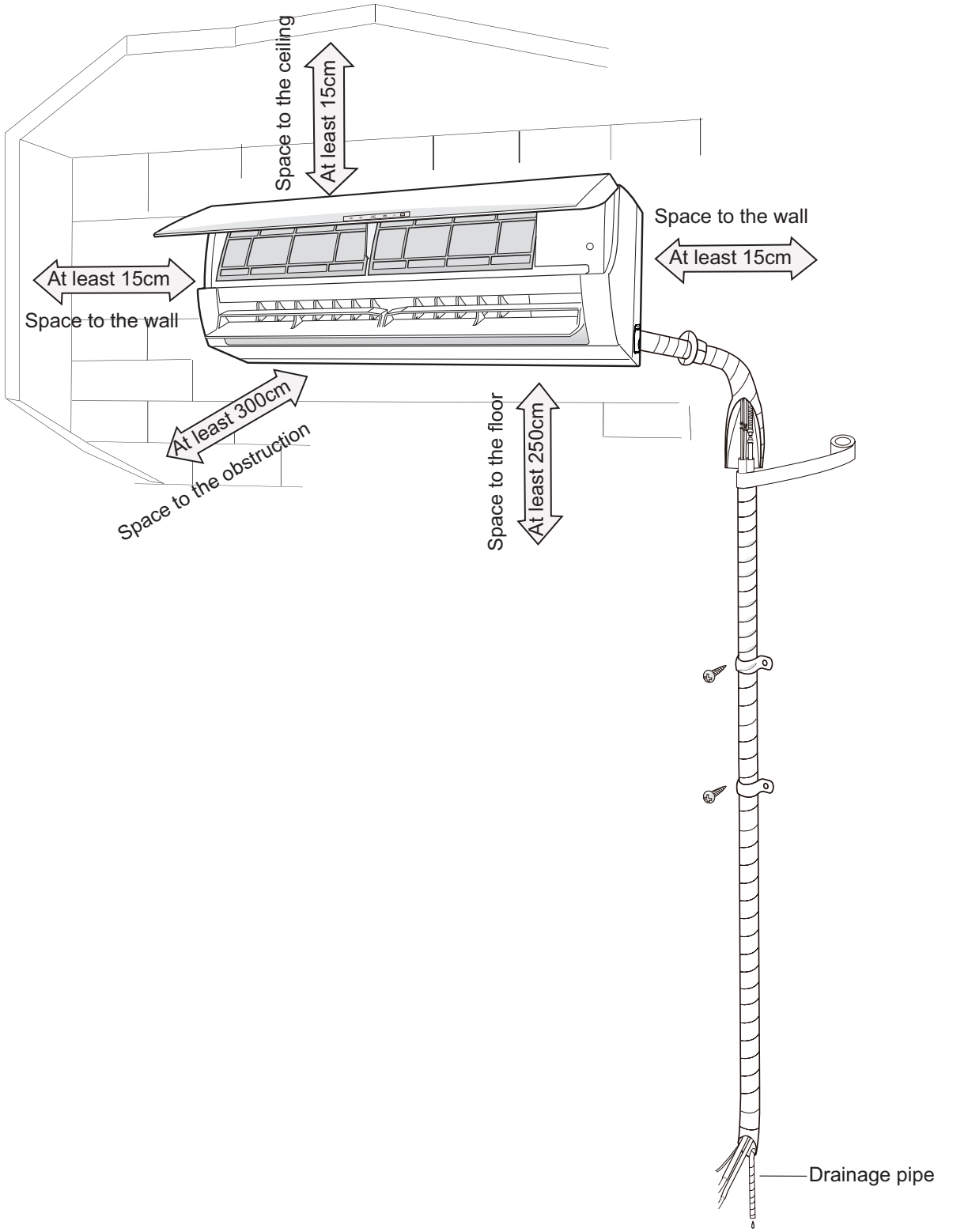
●Please use the flammable gas detector to check before unload and open the container.
●No fire source and smoking.
●According to the local rules and laws.

Main Tools for Installation and Maintenance

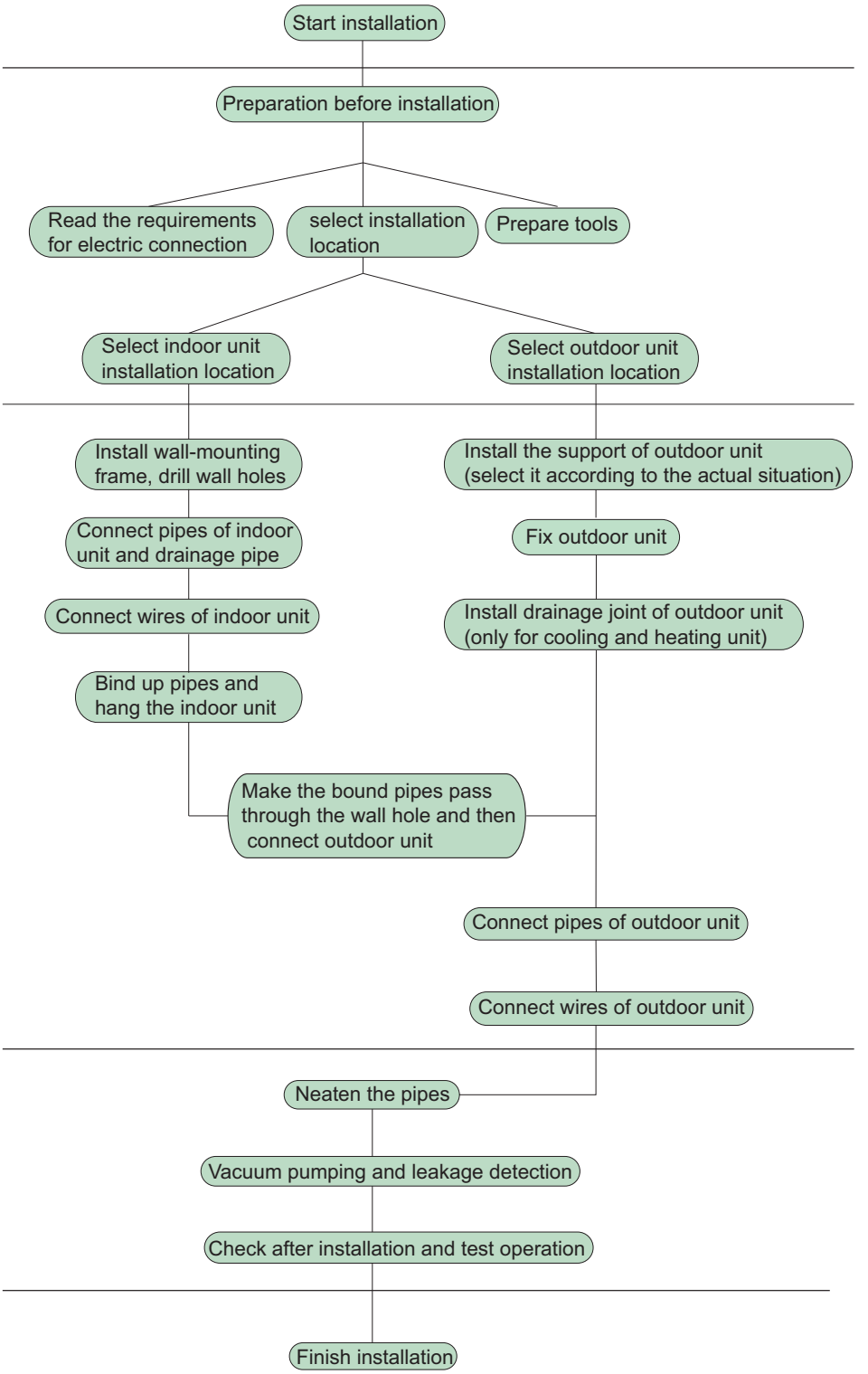
1. Level meter, measuring tape 	**2. Screw driver** 	**3. Impact drill, drill head, electric drill** 
4. Electroprobe 	**5. Universal meter** 	**6. Torque wrench, open-end wrench, inner hexagon spanner** 
7. Electronic leakage detector 	**8. Vacuum pump** 	**9. Pressure meter** 
10. Pipe pliers, pipe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

8. Installation

8.1 Installation Dimension Diagram



Installation procedures



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

8.2 Installation Parts-checking

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

⚠ **Note:**

1.Please contact the local agent for installation.

2.Don't use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

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

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

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

(3) The place near coast area.

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

(5) The place with sulfureted gas.

(6) Other places with special circumstances.

(7) Do not use the unit in the immediate surroundings of a laundry a bath a shower or a swimming pool.

(8) It's not allowed to be installed on the unstable or motive base structure(such as truck) or in the corrosive environment (such as chemical factory).

2. Indoor Unit:

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

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

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

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

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

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

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

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

8.4 Requirements for electric connection

1. Safety Precaution

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

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

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

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

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

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

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

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

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

(10) Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m^2 (see table a).

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

2. Grounding Requirement:

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

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

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

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

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

8.5 Installation of Indoor Unit

1. Choosing Installation location

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

2. Install Wall-mounting Frame

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

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

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

3. Install Wall-mounting Frame

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

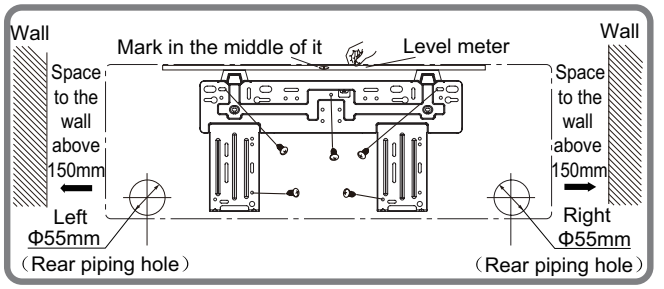


Fig.1

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

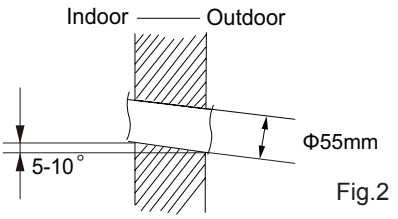


Fig.2

⚠ **Note:**

(1) Pay attention to dust prevention and take relevant safety measures when opening the hole.
(2) The plastic expansion particles are not provided and should be bought locally.

4. Outlet Pipe

(1) The pipe can be led out in the direction of right, rear right, left or rear left.(As show in Fig.3)
(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.(As show in Fig.4)

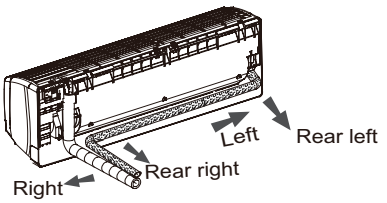


Fig.3

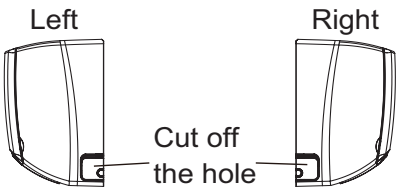


Fig.4

5. Connect the Pipe of Indoor Unit

(1) Aim the pipe joint at the corresponding bellmouth.(As show in Fig.5)
(2) Pretightening the union nut with hand.
(3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench.(As show in Fig.6)
(4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape.(As show in Fig.7)

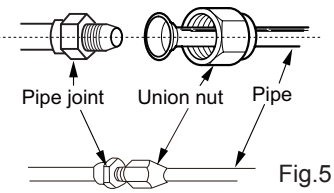


Fig.5

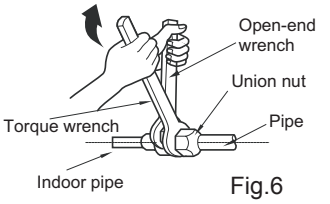


Fig.6

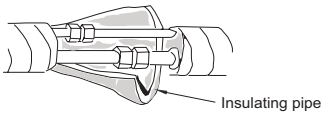


Fig.7

Refer to the following table for wrench moment of force:

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

6. Install Drain Hose

(1) Connect the drain hose to the outlet pipe of indoor unit.(As show in Fig.8)
(2) Bind the joint with tape.(As show in Fig.9)

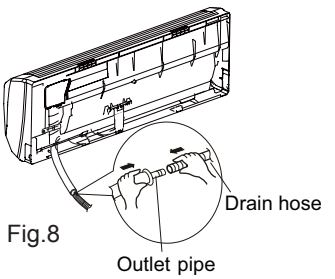


Fig.8

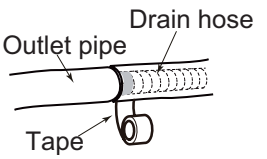


Fig.9

⚠ **Note:**

(1) Add insulating pipe in the indoor drain hose in order to prevent condensation.
(2) The plastic expansion particles are not provided.
(As show in Fig.10)

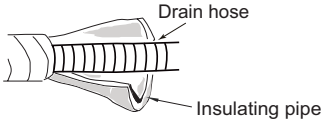


Fig.10

7. Connect Wire of Indoor Unit

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

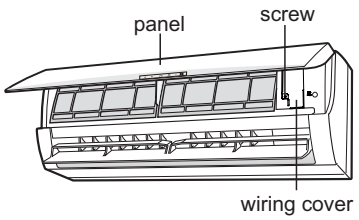


Fig.11

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

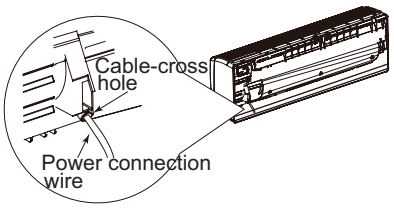
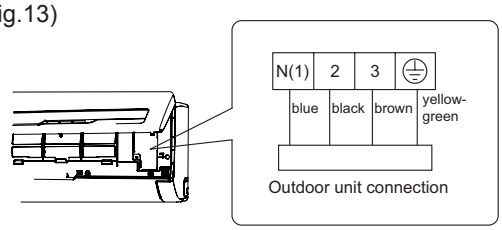


Fig.12

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



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

Fig.13

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

⚠ **Note:**

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

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

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

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

8. Bind up Pipe

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

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

(3) Bind them evenly.

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

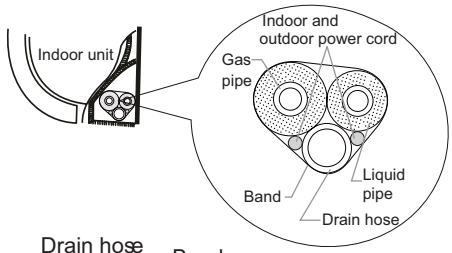


Fig.14

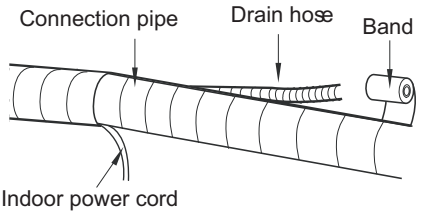


Fig.15

⚠ **Note:**

(1) The power cord and control wire can't be crossed or winding.

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

9. Hang the Indoor Unit

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

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

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

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

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

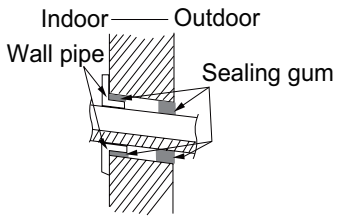
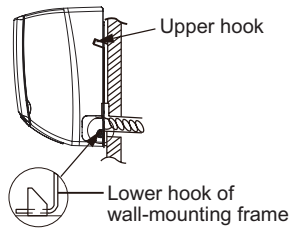


Fig.16

Fig.17



⚠ **Note:**

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

8.6 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

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

2. Test Operation

(1) Preparation of test operation

● The client approves the air conditioner installation.

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

(2) Method of test operation

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

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

● If the ambient temperature is lower than 16℃ , the air conditioner can’t start cooling.

9. Maintenance

9.1 Error Code

1. Malfunction display requirement

When there are several malfunctions, they will be displayed circularly.

2. Malfunction display method

(1) Hardware malfunction: immediate display; refer to “error code list”;

(2) Operation state: immediate display; refer to “error code list”;

(3) Other malfunctions: it is displayed after the compressor stops for 200s; refer to “error code list”.

Note: when the compressor is restarted, the malfunction display delay time (200s) is cleared.

3. Malfunction display control

The indicator lamp and dual 8 nixie tube displays shall be synchronized. That is when the indicator lamp blinks, the dual 8 nixie tube displays the corresponding malfunction code.

4. Display control viaremote controller

Enter display control: press light button successively for 4 times within 3s to display the corresponding malfunction code;

Exit display control: pressing light button successively for 4 times within 3s or after display is shown for 5min, the display will terminate.

Error Code List

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	
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	
4-way valve reversal abnormal		U7		blink 20 times	
Malfunction of detecting plate(WIFI)	Hardware malfunction	JF			

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

1. Malfunction of Temperature Sensor F1, F2

Main detection points:

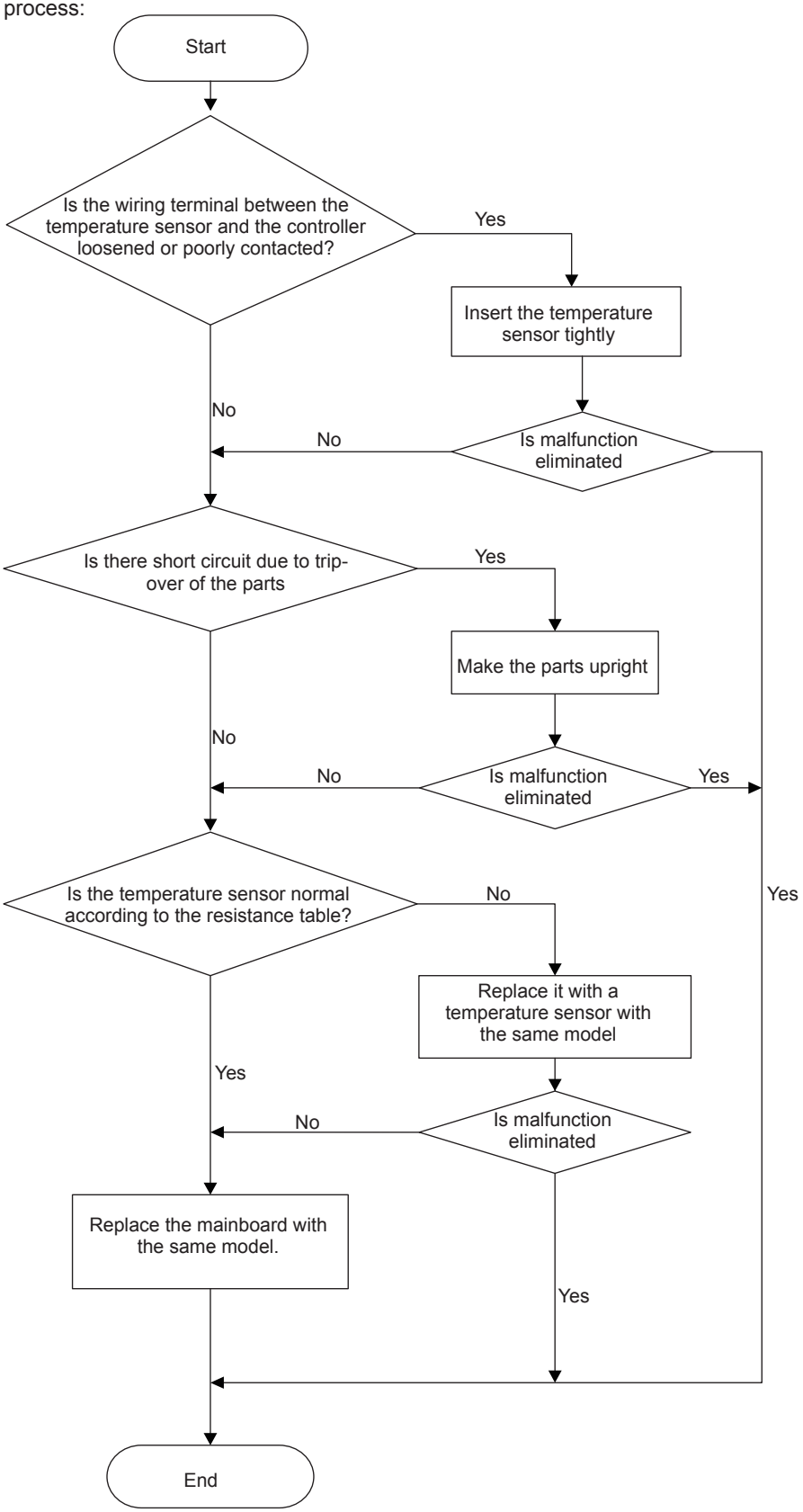
● Is the wiring terminal between the temperature sensor and the controller loosened or poorly contacted?

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

● Is the temperature sensor broken?

● Is mainboard broken?

Malfunction diagnosis process:

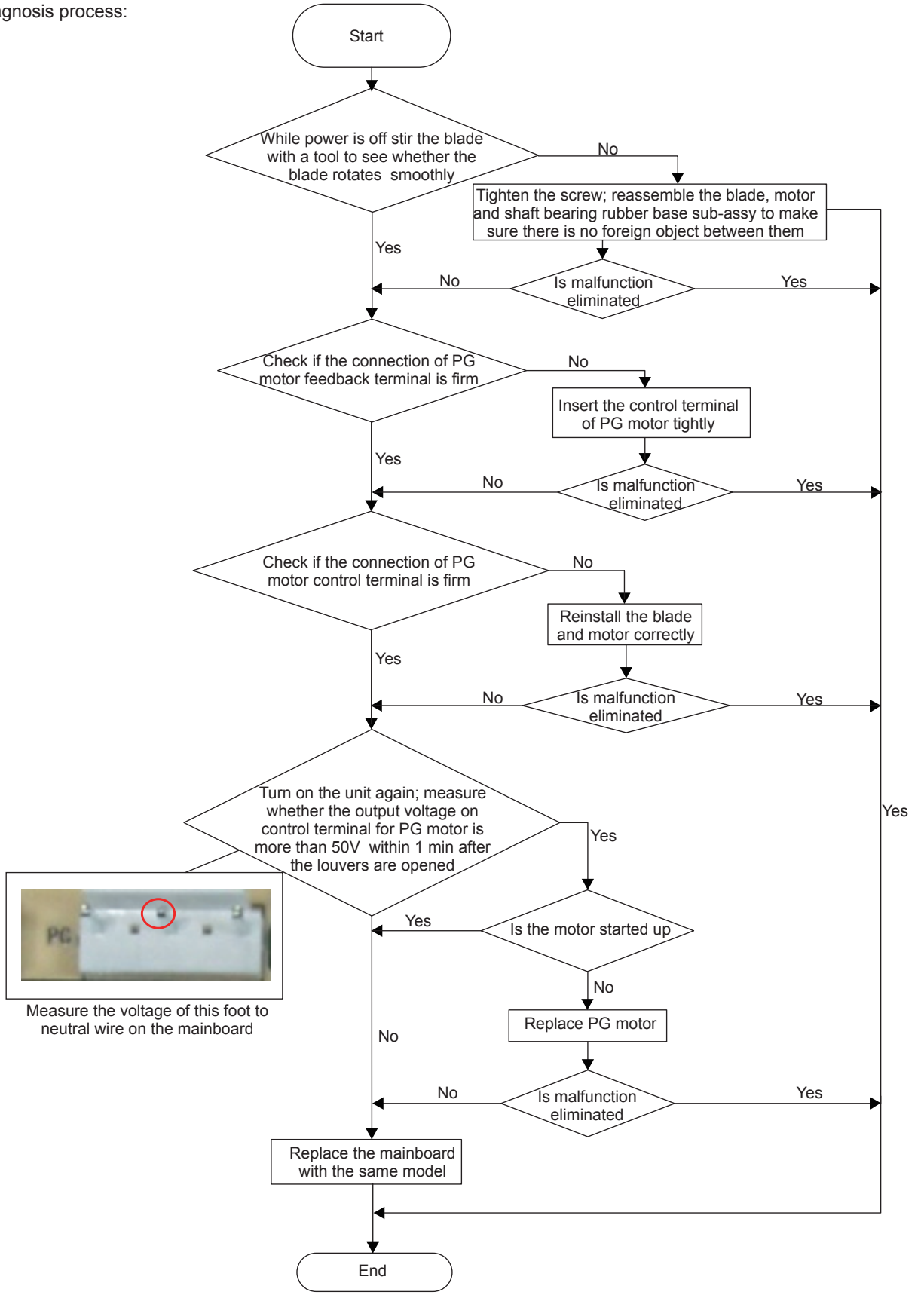


2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothlyls the control terminal of PG motor connected tightly?
- Smoothlyls the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detectioncircuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

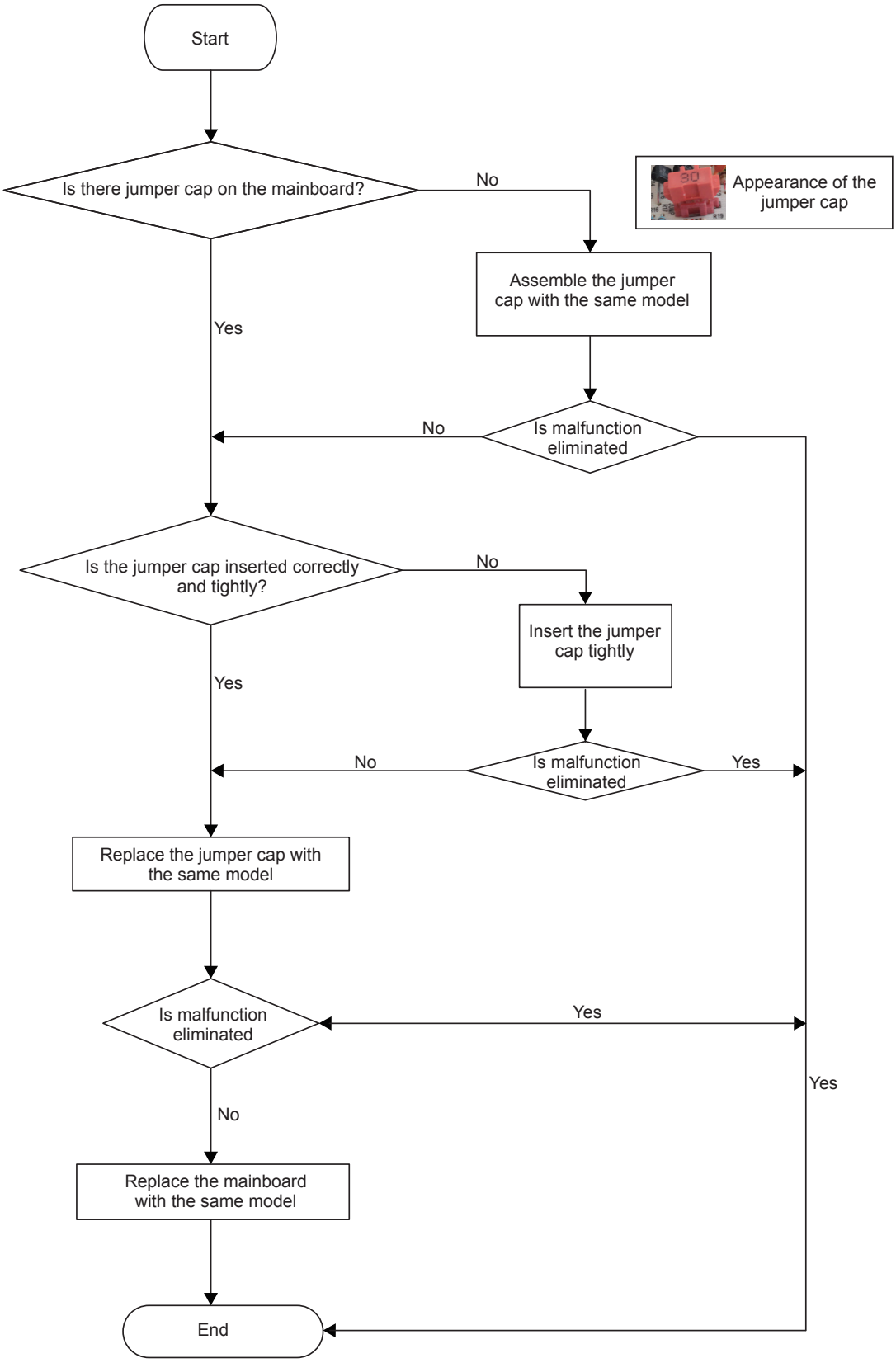


3. Malfunction of Protection of Jumper Cap C5

Main detection points:

- Is there jumper cap on the mainboard?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:



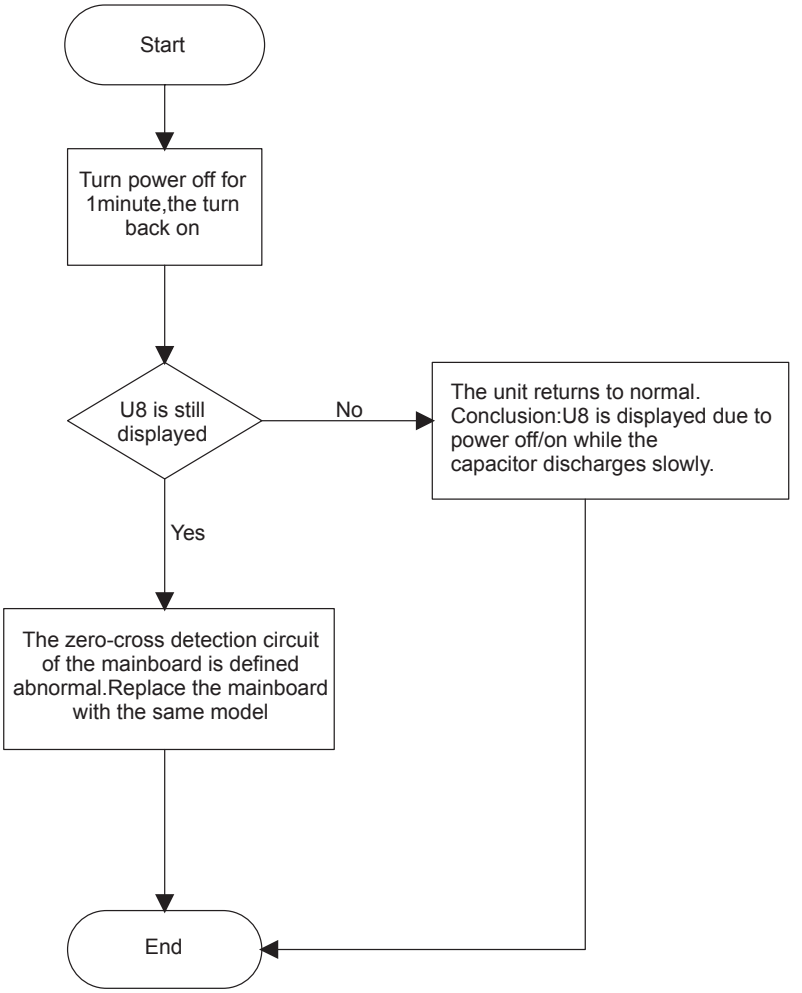
4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

Main detection points:

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

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

Malfunction diagnosis process:

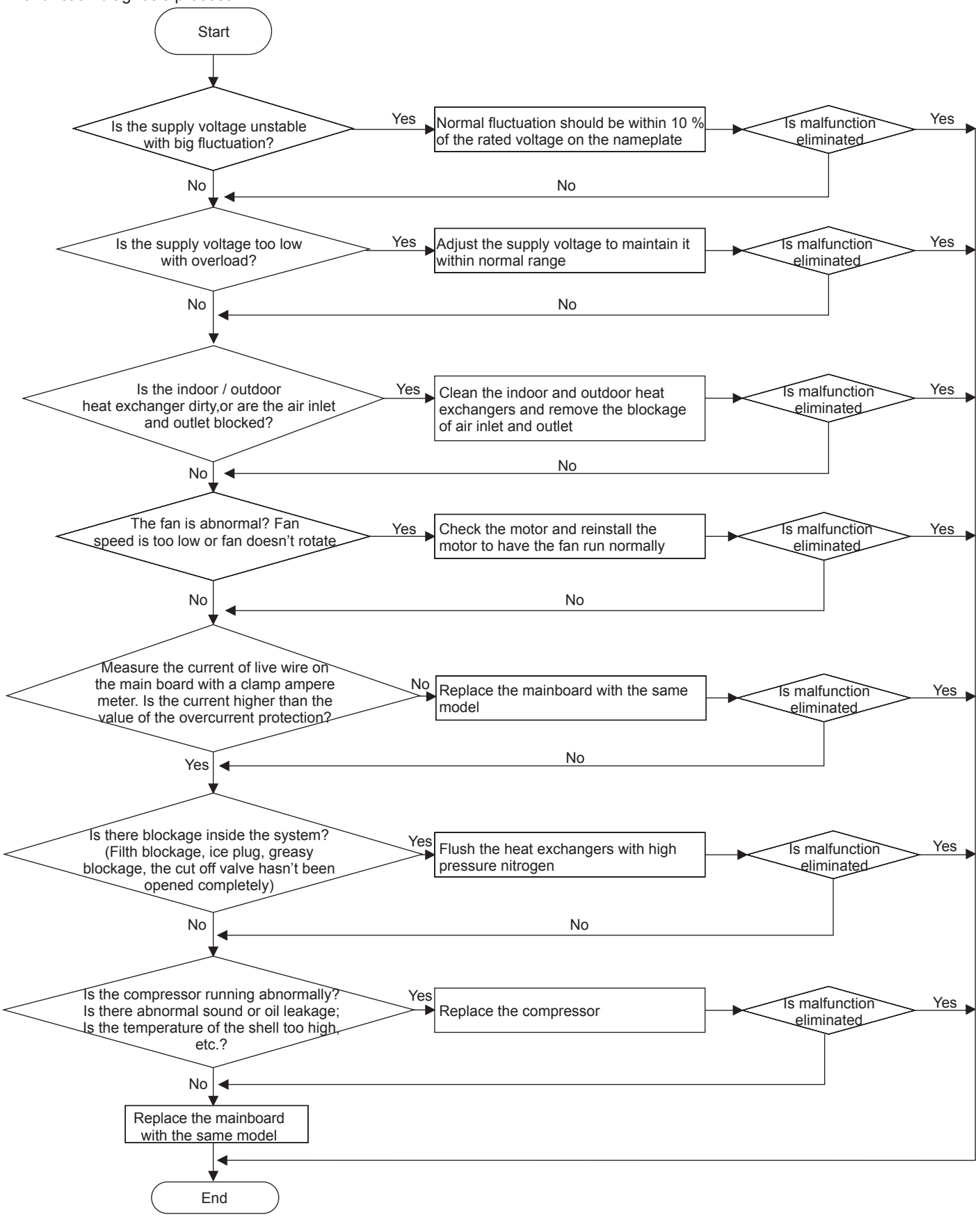


5. Malfunction of Overcurrent Protection E5

Main detection points:

- Is the supply voltage unstable with big fluctuation?
- Is the supply voltage too low with overload?
- Hardware trouble?

Malfunction diagnosis process:

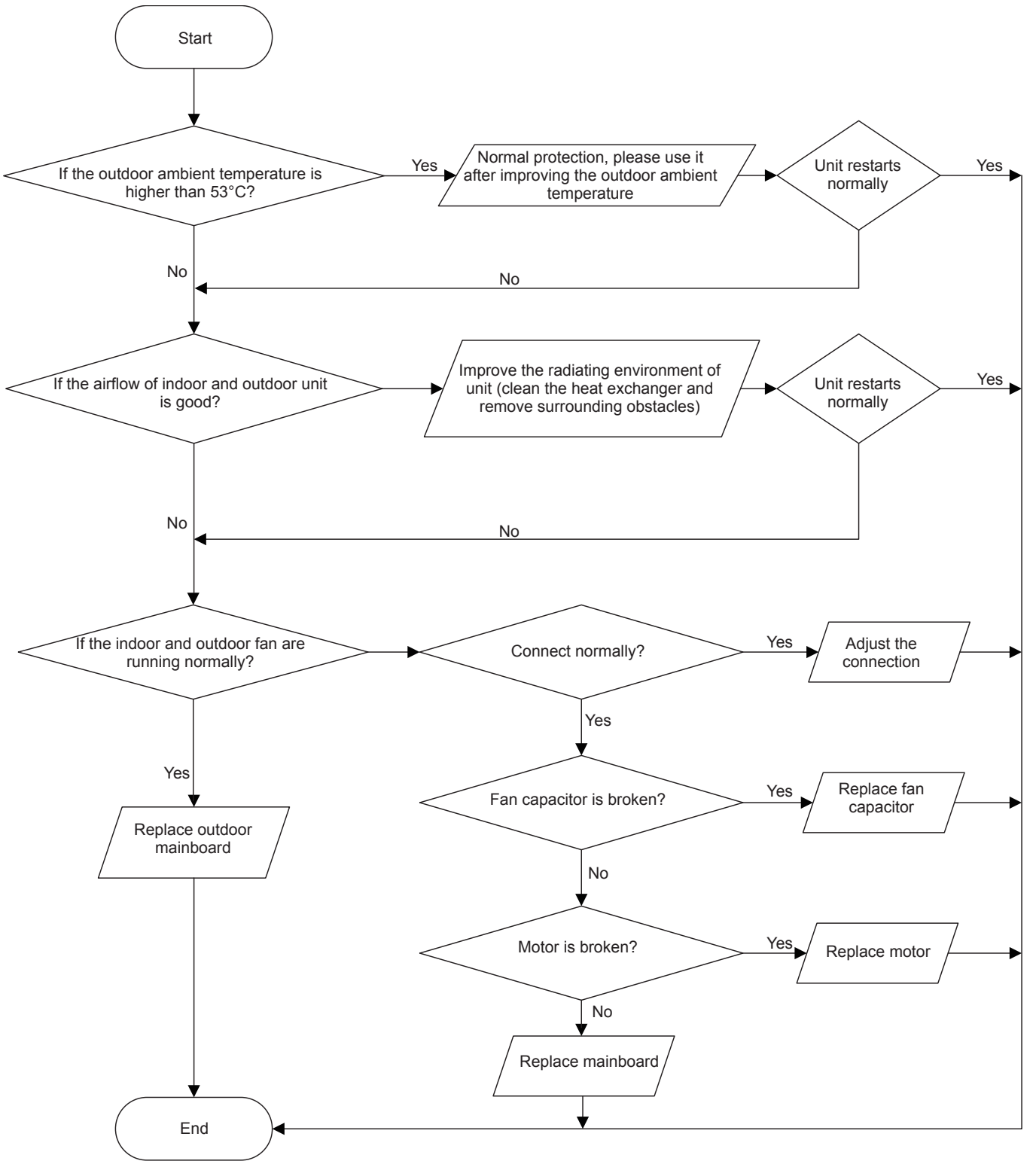


6. High temperature and overload protection (AP1 below means control board of outdoor unit) E8

Main detection points:

- If the outdoor ambient temperature is in normal range;
- If the indoor and outdoor fan are running normally;
- If the radiating environment of indoor and outdoor unit is good.

Malfunction diagnosis process:

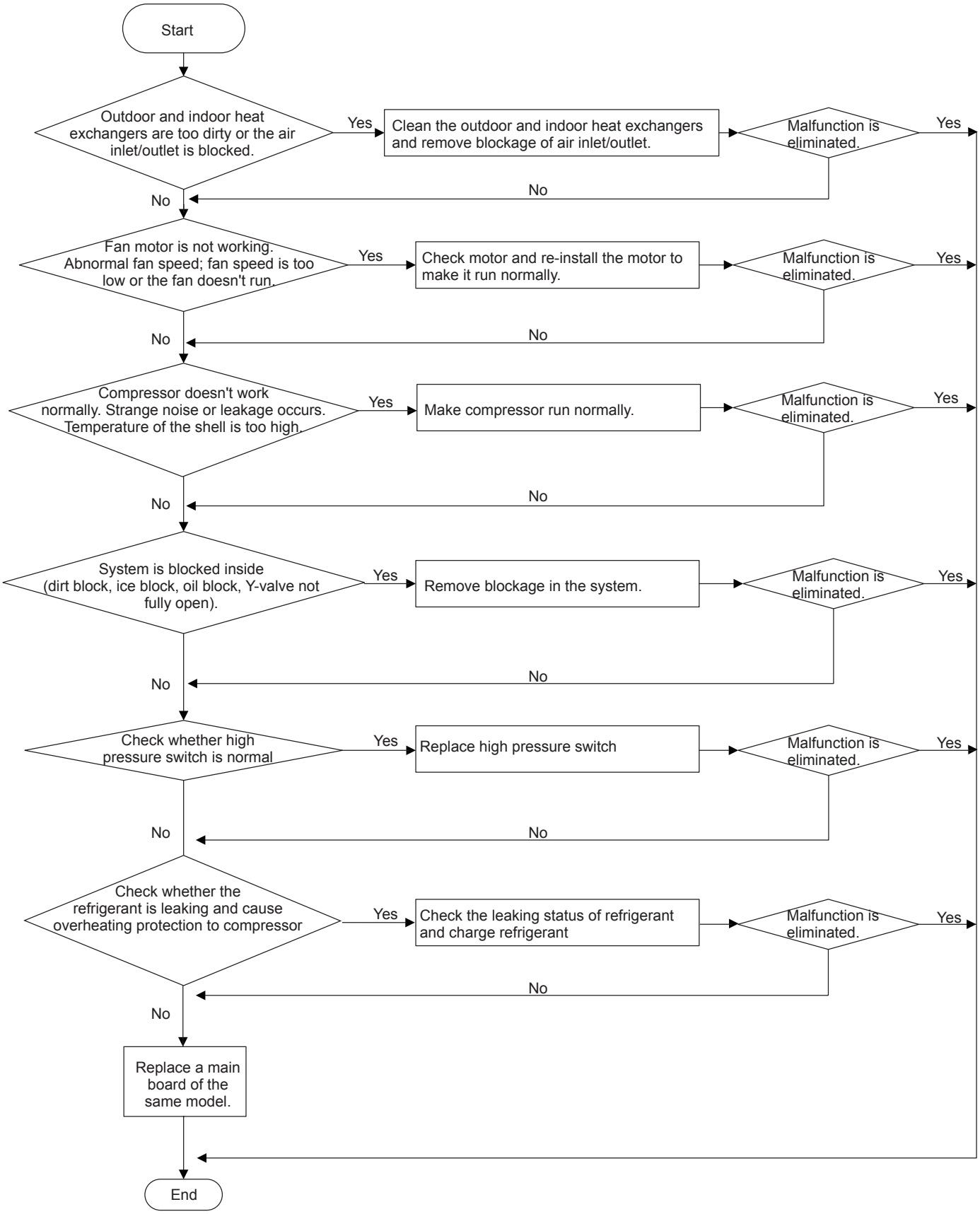


7. Overload Protection Compressor H3

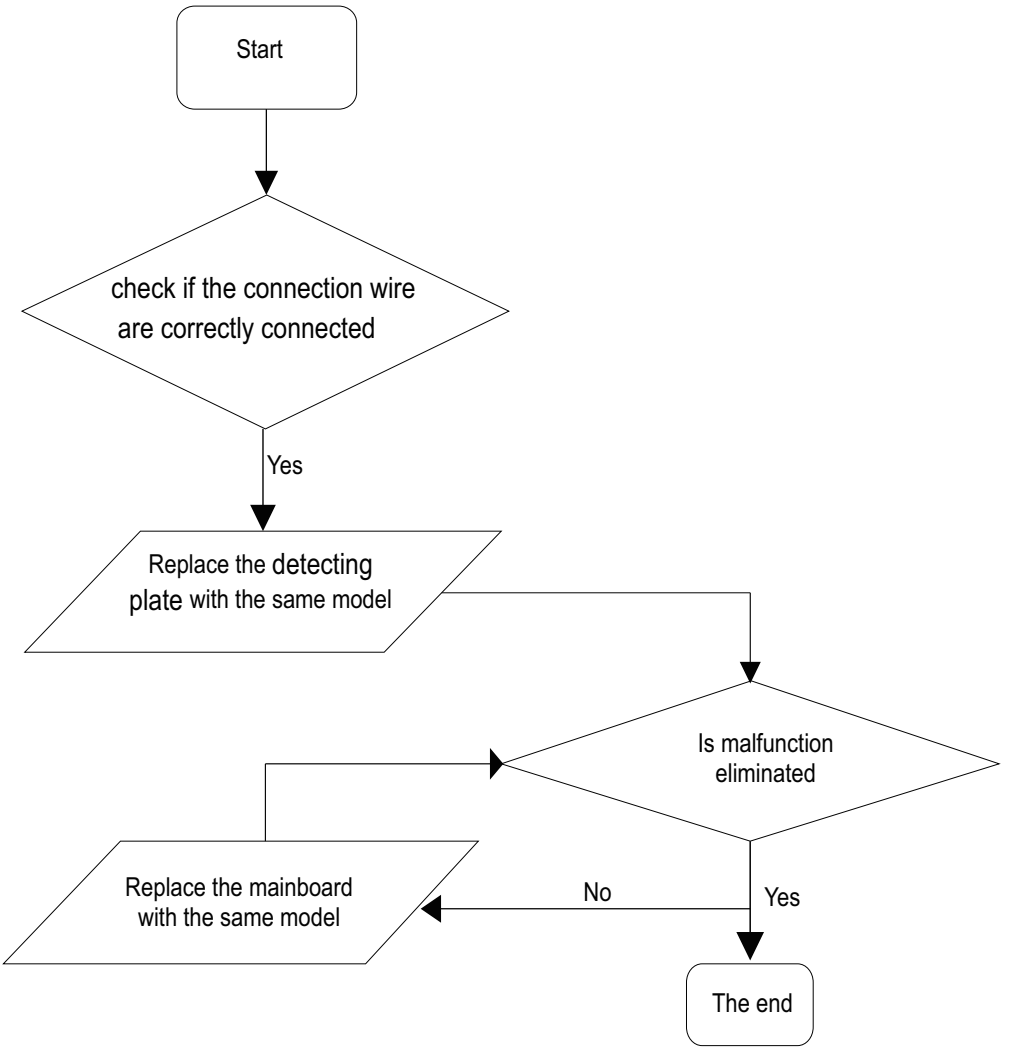
Main detection points:

- Heat exchange of unit is not good? (heat exchanger is dirty and unit radiating environment is bad)
- Fan motor is not working?
- Too much load of the system causes high temperature of compressor after working for a long time?
- Whether high pressure switch is normal?
- If the refrigerant is leaked?

Malfunction diagnosis process:



8. Malfunction of detecting plate(WIFI) JF



9.2 Maintenance Method for Normal Malfunction

1. Air Conditioner Can't be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see it's blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation postion is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit't pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Can't Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

4. ODU Fan Motor Can't Operate

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

5. Compressor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and it's 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

6. Air Conditioner is Leaking

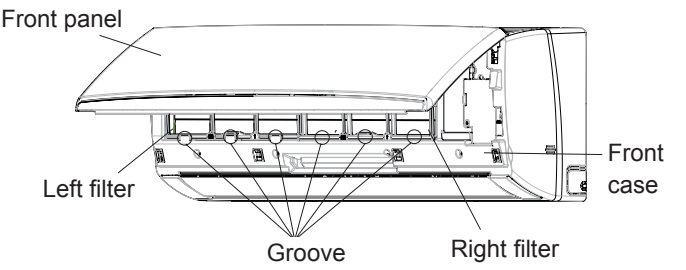
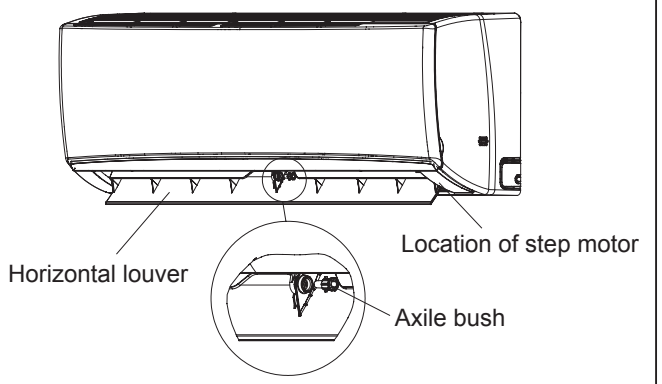
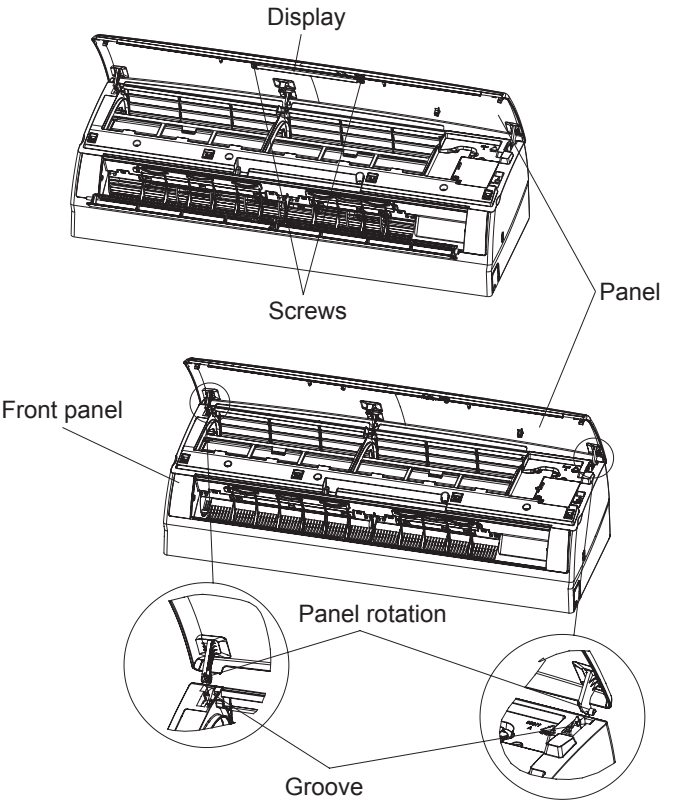
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe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

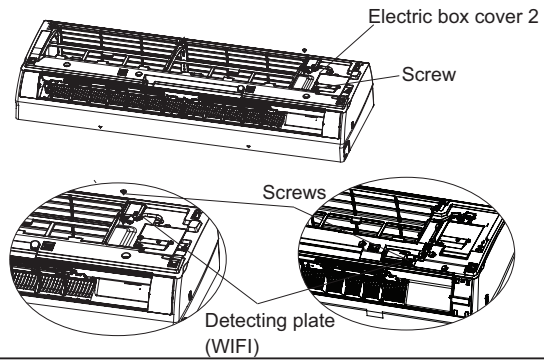
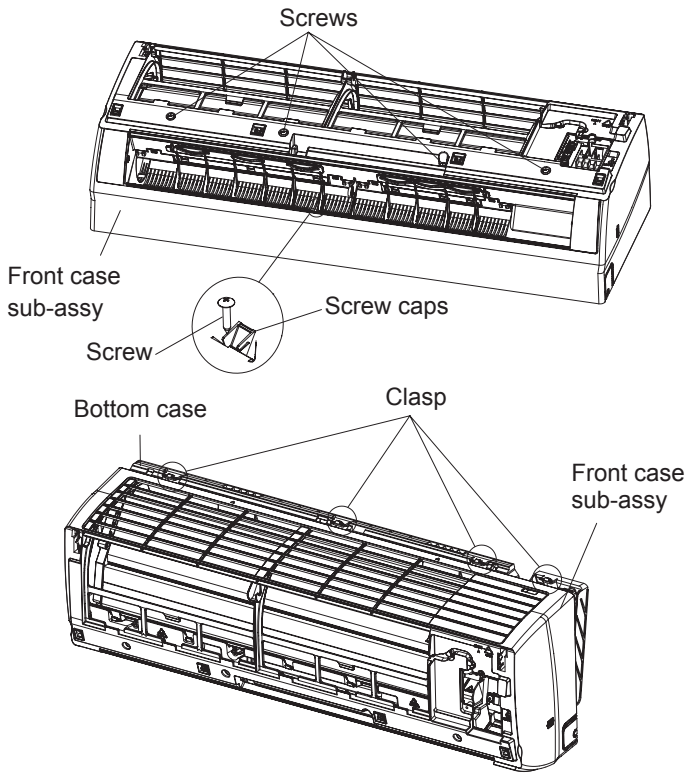
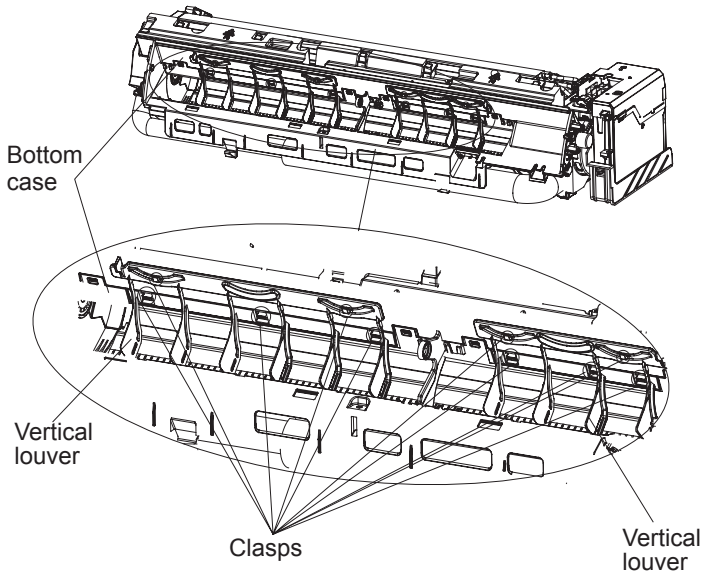
7. Abnormal Sound and Vibration

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

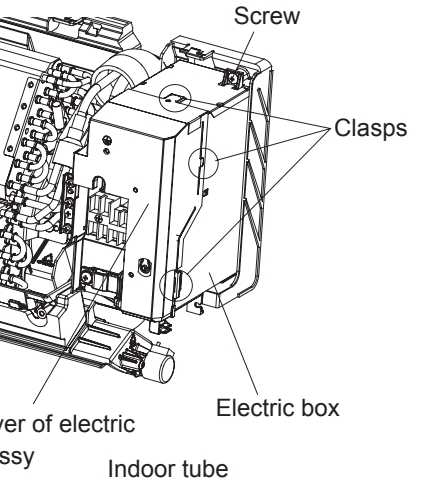
11. Removal Procedure

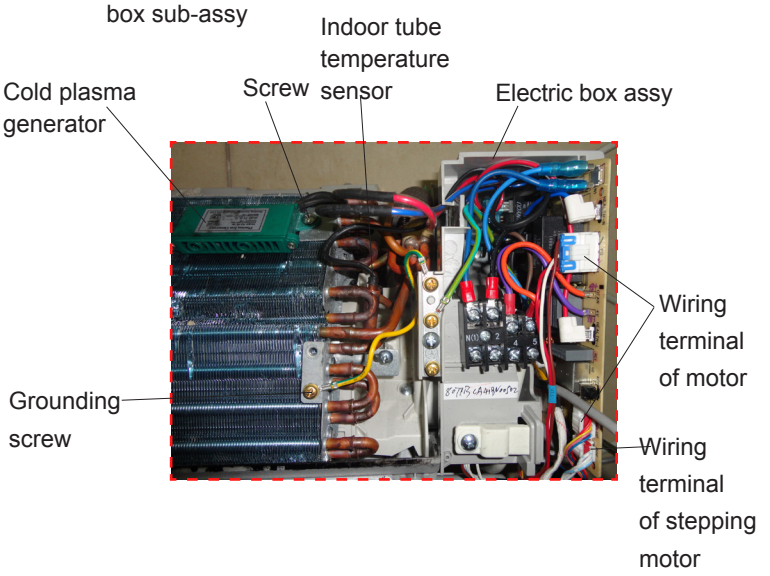
Caution: discharge the refrigerant completely before removal.

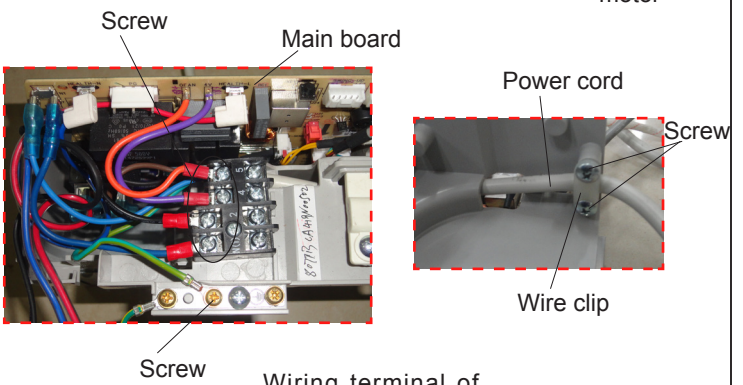
Step	Procedure	
1.Remove filter assy		
	Open the front panel. Push the left and right filters to make them break away from the groove on the front case. Then remove the left and right filters one by one.	
2. Remove horizontal louver		
	Push out the axile bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.	
3. Remove panel		
a	Screw off the 2 screws that are locking the display board. Separate the display board from the front panel.	
b	Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.	

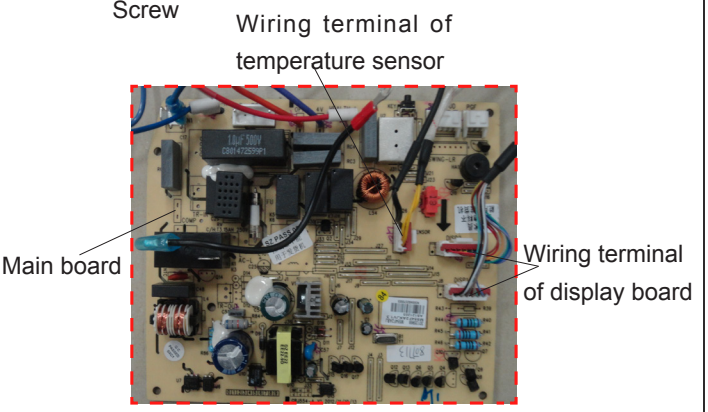
Step	Procedure
4. Remove electric box cover 2 and detecting plate(WIFI)	
Remove the screws on the electric box cover 2 and detecting plate(WIFI), then remove the electric box cover 2 and detecting plate(WIFI).	
5. Remove front case sub-assy	
a Remove the screws fixing front case. Note: 1.Open the screw caps before removing the screws around the air outlet. 2.The quantity of screws fixing the front case sub-assy is different for different models.	
b Loosen the connection clasps between front case sub-assy and bottom case. Lift up the front case sub-assy and take it out.	
6. Remove vertical louver	
Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.	

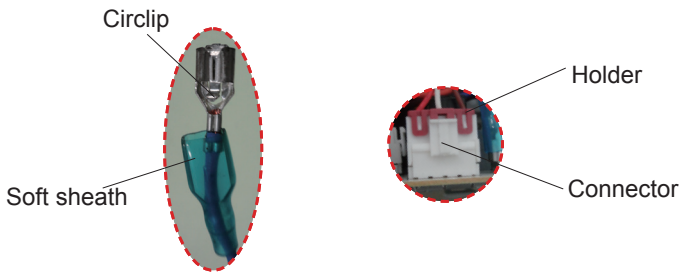
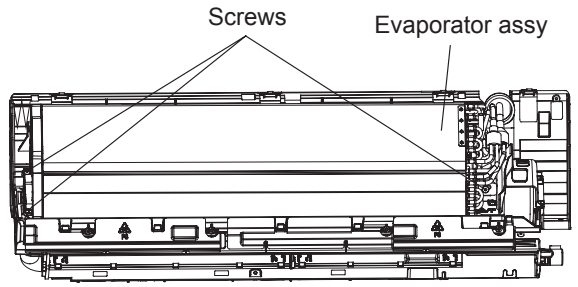
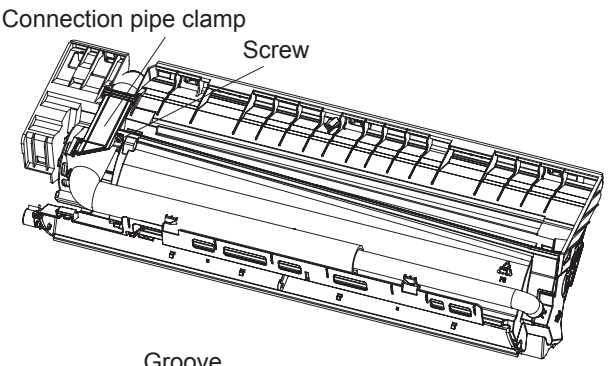
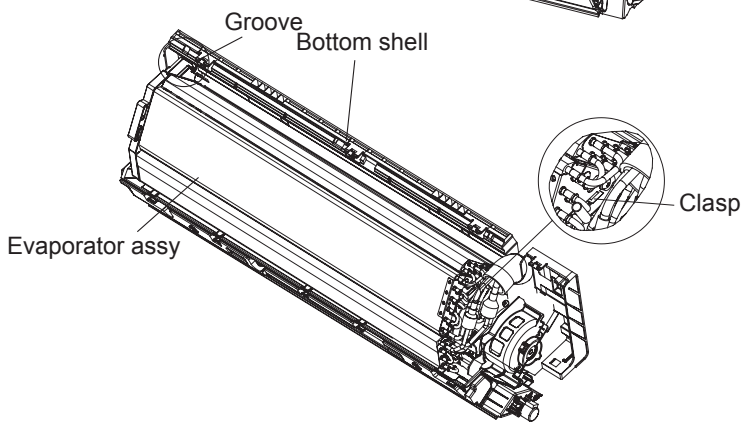
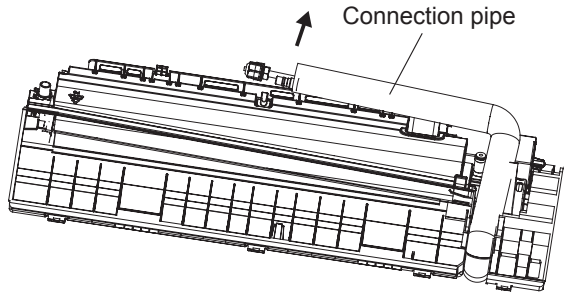
Step	Procedure
7. Remove electric box assy	
a	Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy .
b	① Remove the cold plasma generator by screwing off one locking screw on the generator. ② Take off the indoor tube temperature sensor. ③ Screw off one grounding screw. ④ Remove the wiring terminals of motor and stepping motor. ⑤ Remove the electric box assy.
c	Twist off the screws that are locking lead wire and rotate the electric box assy. Twist off the screws that are locking wire clip. Loosen the power cord and remove its wiring terminal. Lift up the main board and take it off.
d	Remove the display board by taking out its wiring terminal. Remove temperature sensor by taking out its wiring terminal.



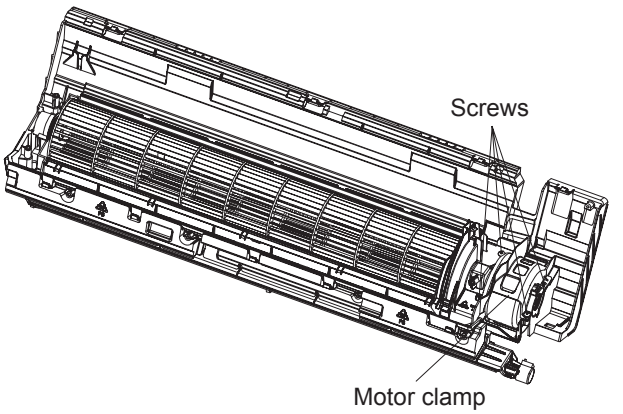


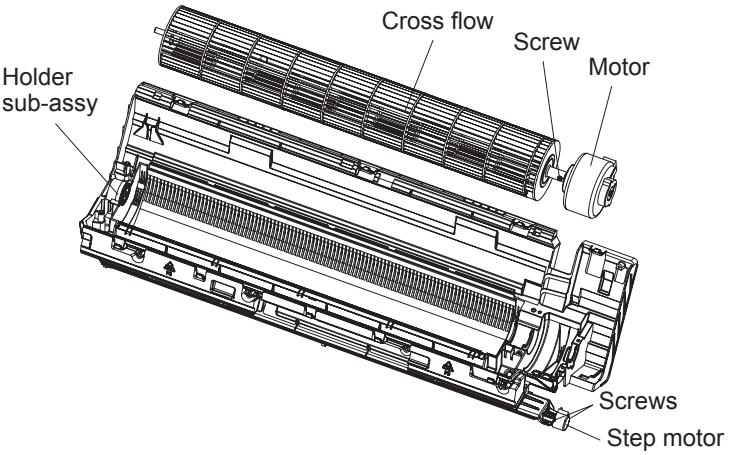




Step	Procedure	
	Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below: 1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals. 2.Pull out the holder for some terminals at first (holder is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

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





Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

Set temperature

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

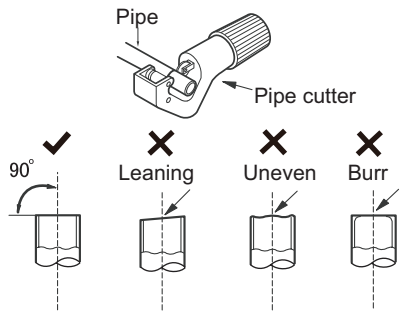
Ambient temperature

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

Appendix 2: Pipe Expanding Method

⚠ **Note:**

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

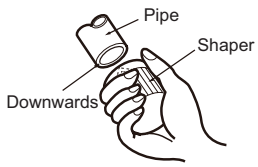


A:Cut the pip

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

B:Remove the burrs

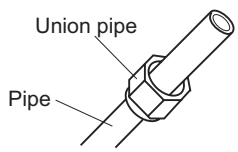
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C:Put on suitable insulating pipe

D:Put on the union nut

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



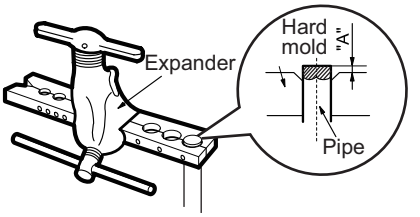
E:Expand the port

- Expand the port with expander.

⚠ **Note:**

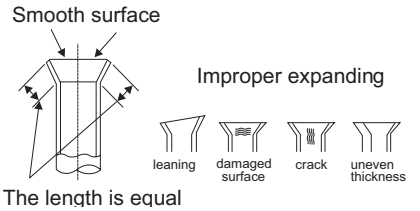
● "A" is different according to the diameter, please refer to the sheet below:

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



F:Inspection

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



Appendix 3: List of Resistance for Temperature Sensor

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

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

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

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

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

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

Airwell

Just feel well

WARNING :
The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.

ATTENTION :
Le design et les données techniques sont donnés à titre indicatif et peuvent être modifiés sans préavis.

AIRWELL RESIDENTIAL SAS
10,Rue du Fort de Saint Cyr,
78180 Montigny le Bretonneux- France
www.airwell.com

20.AW.HDL.07.R32.SM.EN.05.26