WESTERN™
AIRCONDITIONING

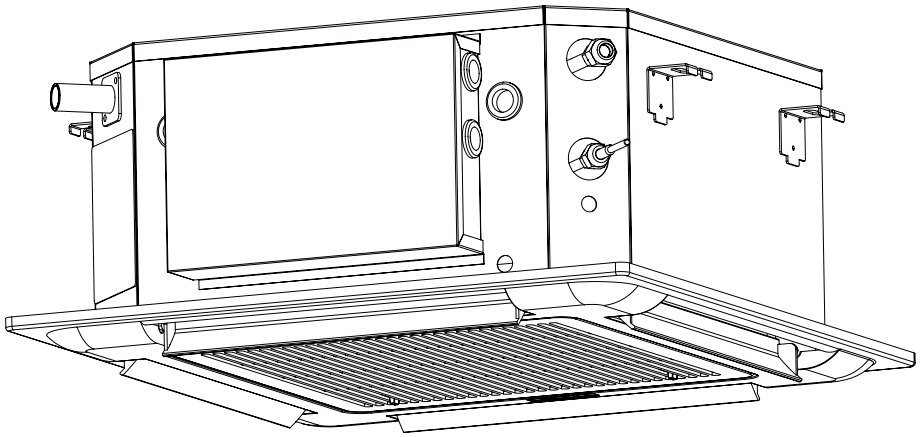
SERVICE MANUAL

MODELS:
CASK-12C
CASK-18C
(Refrigerant R410A)

CONTENT

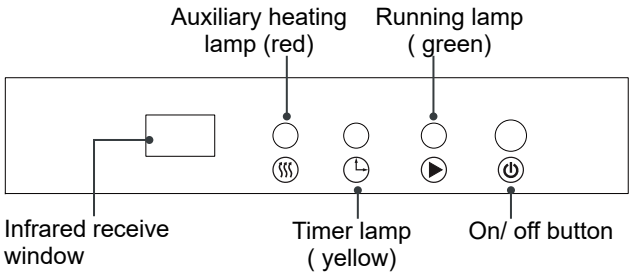
Summary and Features

Indoor Unit



Remote Controller

Display



1. Safety Precautions

Installing, starting up, and servicing air conditioner can behazardous due to system pressure, electrical components, and equipment location, etc.Only trained, qualified installers and service personnel areallowed to install, start-up, and service this equipment.Untrained personnel can perform basic maintenance fun-ctions such as cleaning coils. All other operations should be performed by trained service personnel.When handling the equipment, observe precautions in themanual and on tags, stickers, and labels attached to theequipment. Follow all safety codes. Wear safety glasses andwork gloves. Keep quenching cloth and fire extinguisher nearby when brazing.Read the instructions thoroughly and follow all warnings orcautions in literature and attached to the unit. Consult localbuilding codes and current editions of national as well as local electrical codes.

Recognize the following safety information:

⚠ Warning

Incorrect handling could result inpersonal injury or death.

⚠ Caution

Incorrect handling may result inminor injury,or damage to product or property.

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

⚠ Warning

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

Before installing, modifying, or servicing system, mainelectrical 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 injur .

⚠ 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 filte .

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

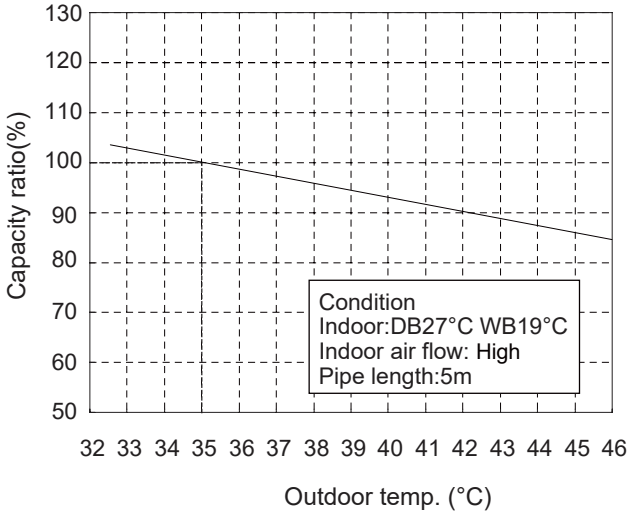
2.1 Unit Specifications

Indoor Unit	Indoor Unit Model	--	**CASK-12C**	**CASK-18C**
	Rated Voltage	V ～	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases	--	1	1
	Power Supply Mode	--	outdoor	outdoor
	Cooling Capacity	W	3500	5200
	Heating Capacity	W	3500	5200
	Cooling Power Input	W	60	73
	Heating Power Input	W	60	73
	Cooling Current	A	0.26	0.32
	Heating Current	A	0.26	0.32
	Air Flow Volume	m^3/h	700	760
	Air Flow Volume	CFM	412	447
	Application Area	m^2	19-29	23-34
	Fan Type	--	Centrifugal	Centrifugal
	Fan Diameter Length(D×L)	mm	φ283/166	φ283/166
	Cooling Speed	r/min	910/820/740	910/820/740
	Heating Speed	r/min	910/820/740	910/820/740
	Fan Motor Power Output	W	30	30
	Fan Motor Capacitor	μF	2	2
	Evaporator Form	--	Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	φ7	φ7
	Evaporator Row-fin Ga	mm	1.6	1.6
	Evaporator Coil Length (L×D×W)	mm	1260×26×205	1260×26×205
	Swing Motor Model	--	/	/
	Swing Motor Power Output	W	/	/
	Set Temperature Range	˚C	16-31	16-31
	Sound Pressure Level	dB (A)	47/44/39	47/44/39
	Sound Power Level	dB (A)	/	/
	Dimension (W×D×H))	mm	570×570×260	570×570×260
	Dimension of Carton Box (W×D×H)	mm	725*725*300	725*725*300
	Dimension of Package(W×D×H)	mm	730*730*300	730*730*300
	Stacked Layers	—	/	/
	Net Weight	kg	19	19
	Gross Weight	kg	22	22
panel	Dimension (W×D×H)	mm	650×650×28	650×650×28
	Dimension of Carton Box (W×D×H)	mm	745*745*100	745*745*100
	Dimension of Package(W×D×H)	mm	750*750*100	750*750*100
	Stacked Layers	—	/	/
	Net Weight	kg	2.2	2.2
	Gross Weight	kg	4	4

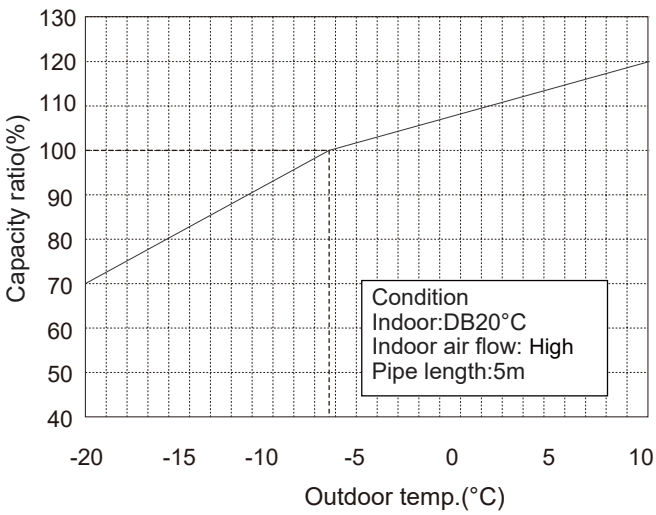
2.2 Capacity Variation Ratio According to Temperature

Heating operation ambient temperature range is -20ºC~24ºC

Cooling

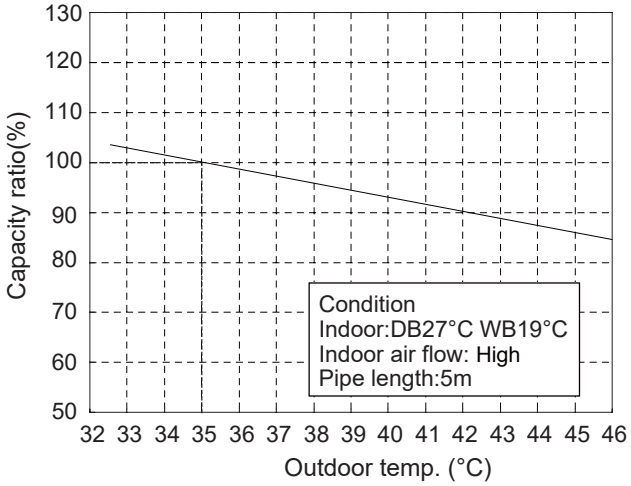


Heating

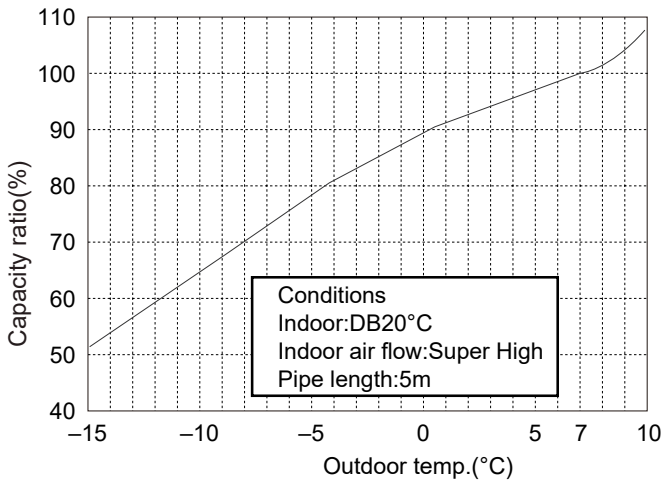


Heating operation ambient temperature range is -15ºC~24ºC

Cooling



Heating



2.3 Cooling and Heating Data Sheet in Rated Frequency

Model	Rated cooling condition(°C) (DB/WB)		Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit
	Indoor	Outdoor	P (MPa)	T1 (°C)	T2 (°C)	
12K	27/19	35/24	0.9~1.1	12 to 14	75 to 37	Super High
18K						

T1: Inlet and outlet pipe temperature of evaporator;
T2: Inlet and outlet pipe temperature of condenser;
P: Pressure of air pipe connecting indoor and outdoor units.
NOTES :
(1) Measure surface temperature of heat exchanger pipe around center of heat exchanger path U bent.(Thermistor themometer)
(2) Connecting piping condition : 5m

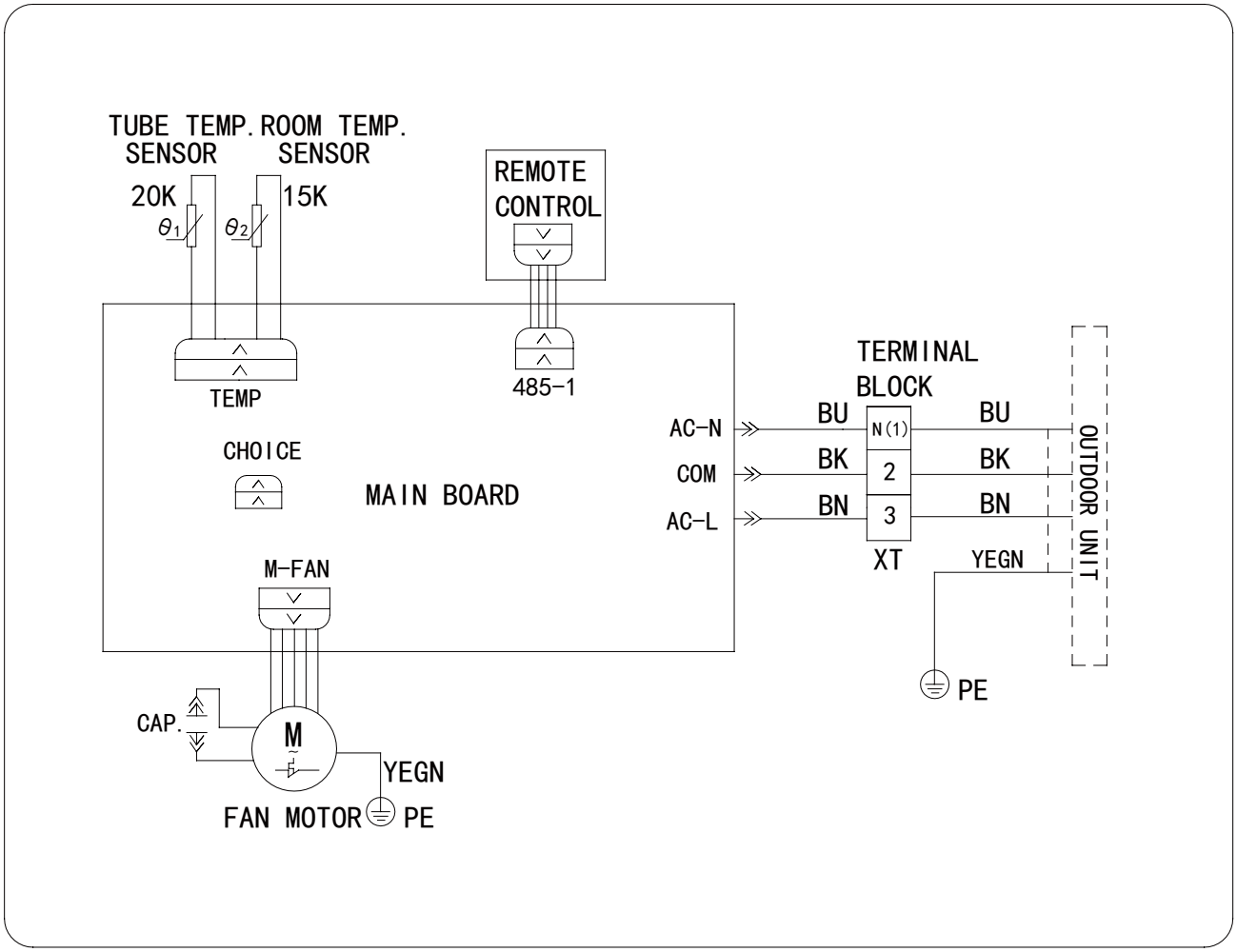
3. Schematic Diagram

3.1 Electrical Wiring

Meaning of marks

Symbol	OG	WH	YE	RD	YEGN	BN	BU	BK	VT
Color symbol	ORANGE	WHITE	YELLOW	RED	YELLOW GREEN	BROWN	BLUE	BLACK	VIOLET
Symbol	COMP		CT1,2		4V	XT		⏚	
Parts name	COMPRESSOR		OVERLOAD		4-WAY VALVE	TERMINAL BLOCK		PROTECTIVE EARTH	

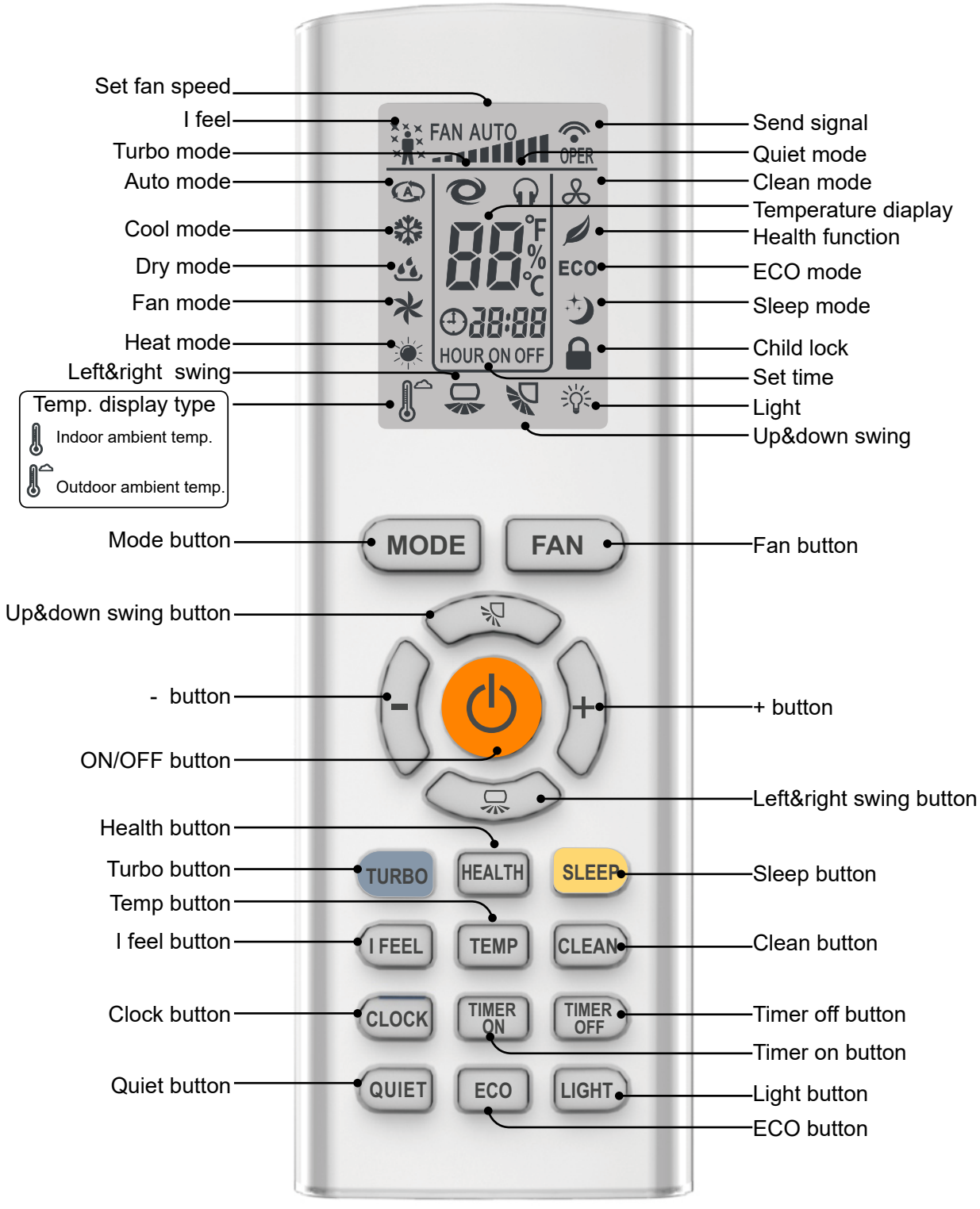
Indoor Unit



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

4. Function and Control

4.1 Remote Controller Operations



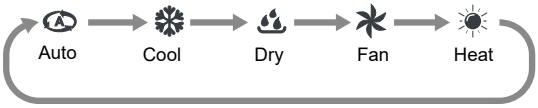
After connecting the power, the air conditioner will make a sound.
Power indicator is ON. After that, you can operate the air conditioner by using remote controller.
Under on status, pressing the button on the remote controller, the signal icon " " on the display of remote controller will blink once and the air conditioner will give out a “de” sound, which means the signal has been sent to the air conditioner.The display will show the corresponding set function icons.
Under off status, light and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corresponding icons will be displayed on the display of remote controller at the same time).

ON/OFF button

Press this button can turn on or turn off the air conditioner.

MODE button

Press this button to select your required operation mode.



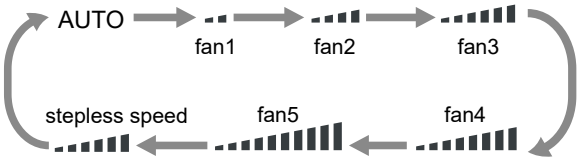
- When selecting auto mode, air conditioner will operate automatically according to ex-factory setting. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press " " or " " button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " " or " " button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at fan1, fan speed can't be adjusted. Press " " or " " button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. Press "FAN" button to adjust fan speed. Press " " or " " button to adjust fan blowing angle.
- When selecting heat mode, the air conditioner operates under heat mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " " or " " button to adjust fan blowing angle. (Cooling only unit won't receive heat mode signal. If setting heat mode with remote controller, press "ON/OFF" button can't start up the unit).

Note:

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~31°C; Fan speed: auto, fan1, fan2 , fan3 , fan4, fan5, stepless speed.

FAN button

Pressing this button can set fan speed circularly as: auto (AUTO), fan1( ), fan2 ( ) ,fan3 ( ) , fan4 ( ), fan5 ( ), stepless speed.



Note:

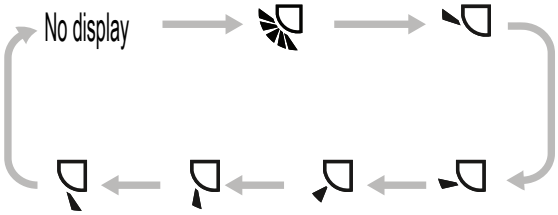
- In AUTO speed, air conditioner will select proper fan speed automatically according to ambient temperature.
- Fan speed under dry mode is fan1.
- After entering the stepless speed mode, users can adjust the fan speed according to the button "+" or "-".

button

Press this button turn on or turn off up & down swing function.The remote controller defaults to static swing condition.

Press "MODE" button and " " button at the same time at remote controller OFF to switch between simple swing and static swing.

In static swing condition, pressing button, the swing angle of up & down louver changes as below:



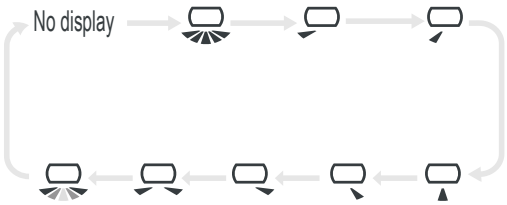
Note:

When selecting " " with remote controller, it's auto swing. Horizontal louver of air conditioner will swing up&down automatically at the maximum angle.

When selecting " , , , , " with remote controller,it's the fixed position swing. Horizontal louver of air conditioner will stop at that position as shown by the icon to swing.

button

Press this button turn on or turn off left & right swing function. The remote controller defaults to static swing condition.
Press "MODE" button and " " button at the same time at remote controller OFF to switch between simple swing and static swing.
In static swing condition, pressing button, the swing angle of left & right louver changes as below:



When selecting " " with remote controller, it's auto swing. Vertical louver of air conditioner will swing up&down automatically at the maximum angle.
When selecting " , , , , , " with remote controller,it's the fixed position swing. ertical louver of air conditioner will stop at that position as shown by the icon to swing.
When selecting " ", it's the circulating swing. Vertical louver of air conditioner will swing circularly according to the angle as shown by the icon.
Note:
There is no this function for the units. If press this button, the main unit will sound, but it also runs under original status.

+ and - button

Press "+" or " -" button once to increase or decrease 1℃ of set temperature.
Holding "+" or "- " button, set temperature on remote controller will change quickly. On releasing button after setting is finished temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
When setting TIMER ON, TIMER OFF or CLOCK, press "+" or " -" button to adjust time (Refer to CLOCK, TIMER ON, TIMER OFF buttons).

TURBO button

Press this button to turn on or turn off the TURBO function under cool、heat、fan mode.
Note:
- Press "QUIET" or "FAN" button the unit will quit this function.
- This function is no use under auto mode or dry mode.

HEALTH button

Press this button to turn on or turn off the health function.

SLEEP button

Press this button to turn on or turn off the SLEEP function under cool、heat、dry mode.
Note:
- This function is off as defaulted after power on.
- It will be cleared after changing mode.
- It is no use under "FAN" mode and "AUTO" mode.

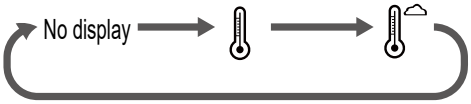
I FEEL button (Some models no this function)

Press this button to start I FEEL function and " " will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the indoor unit and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and " " will disappear.

Note:
Please put the remote controller near user and confirm the unit can receive the remote code when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

TEMP button

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



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

Note:
Outdoor temperature display is not available for some models. At that time, indoor unit receives " " signal, it displays indoor set temperature.

CLEAN button

- Press this button to start or cancel clean function.
- It is unable to set clean function when the unit is on; if the air conditioner runs in cool or dry mode before turning off, press "CLEAN" button and show " " then the clean function is on; press "CLEAN" button again, " " disappeared, then the clean function is off, or running 10 mins in clean function then turn off automatically.
- In the first power on, the clean function is o f acquiescently.
- The clean function can not be set and displayed when the air conditioner is in auto, fan and heat mode before turn off.

CLOCK button

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

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

TIMER ON button

This button can set the time for timer on. After pressing this button, " "icon disappears, "ON" and " " icon on remote controller blinks. Press "+" or "- "button within 5s to set "TIMER ON" time.Each pressing of "+" or " -" button,the time will increase or decrease 1 hour. Press this button again, "ON"and " " icon on remote controller will blink. Press "+" or "- "button within 5s to set the time. Press this button another time, "ON" and " " icon on remote controller will blink. Press "+" or "- "button within 5s to set the time. Hold "+" or " -" button, the time will change quickly until reaching your required time.
Press "TIMER ON" to confirm it.The word "ON" will stop blinking." " icon resumes displaying.

Cancel TIMER ON

Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

TIMER OFF button

This button can set the time for timer off. After pressing this button, " "icon disappears, "OFF" and " " icon on remote controller blink. Press "+" or "- "button within 5s to set "TIMER OFF" time.Each pressing of "+" or " -" button,the time will increase or decrease 1 hour. Press this button again, "OFF"and " " icon on remote controller will blink. Press "+" or "- "button within 5s to set the time. Press this button another time, "OFF" and " " icon on remote controller will blink. Press "+" or "- "button within 5s to set the time. Hold "+" or " -" button, the time will change quickly until reaching your required time.
Press "TIMER OFF" to confirm it.The word "OFF" will stop blinking. " " icon resumes displaying.

Cancel TIMER OFF

Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

QUIET button

Press this button to turn on or turn off the QUIET function in cool、heat、auto mode.

Note:
- Press "TURBO" or "FAN" button the unit will quit this function.
- This function is no use under fan mode or dry mode.

ECO button

In cool mode, press "ECO" button and the unit will operate under ECO mode.
Note:
- Remote controller displays "ECO".
- Air conditioner will operate at auto fan speed. Set temperature can't be adjusted.
- Under cool mode, sleep function can not work with ECO mode together at the same time.
- Change mode will exit the ECO mode.

LIGHT button

Press this button can turn off the light for indoor unit's display. " " icon on remote controller will disappear.Press this button again to turn on the light for indoor unit's display. " " icon on remote controller will be displayed.

Function introduction for combination buttons

Child lock function

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

Temperature display switchover function

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

The minimum cooling temperature setting

In the off mode,pressing "TEMP"and "-" button at the same time,the LCD will display the minimum cooling temperature.The default temperature is 16℃ and you can adjust the temperature with "+" or "-" from 16℃ to 31℃ . After pressing the "TEMP" and "-" button with 3 seconds it will return to the standby mode.

The maximum heating temperature setting

In the off mode,pressing "TEMP" and "+" button at the same time,the LCD will display the maximum heating temperature.The default temperature is 31℃ and you can modulate the temperature with "+" or "-" from 16℃ to 31℃ .After pressing the "TEMP" and "+" button with 3 seconds it will return to the standby mode.

Timing Defrost

Press the "SLEEP" and "TURBO" button 3s at the same time in heating mode,it will enter or exit defrost mode.

Manually defrost

Press the "FAN" and "MODE" 3s at the same time in heating mode,it will enter or exit the manually defrost.Remote controller will display "dF" 5s,and it will show the setting temperature after 5s.

Collecting freon

Repowered within 5mins, set 16 degree under cooling mode, then press the "TURBO" button 6 times within 3s, will enter this function.

Low temperature heating function setting

In heating mode, pressing "MODE" and "+" button at the same time will enter/exit the low temperature heating function.

"LA" would be showed on the remote controller after entered into the low temperature heating funtion.

When switching from one mode to another mode, low temperature heating function was canceled.Turn off and then turn on air conditioner that will remain the low temperature heating function.After powered on, the low temperature heating mode was default to off status.

In the low temperature heating mode, "SLEEP" and "Low temperature heating " function cannot start at same time.When low temperature heating mode has already started,meanwhile you press the "SLEEP" button ,the air conditioner will exit low temperature heating mode and enter the sleep mode .Vice versa.

Note:

1.In the low temperature heating mode,the fan speed was default to Auto and non-ajusatable.
2.In the low temperature heating mode,"TURBO" and "QUIET" can't be set.If enter the low temperature heating mode,the turbo and quiet function that started before will be canceled.As well as when exit the low temperature heating mode,it will not resume.
3.When exit from the low temperature heating mode,the speed and temperature will turn into the original condition before it started.
4.You can set up other function.

Memory setting

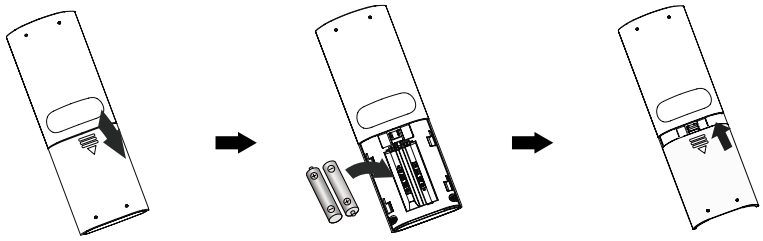
Setting the dehumidifying mode with 30 degree after the unit is powered on within 60s.And then press "LIGHT" → "SLEEP" → "LIGHT" → "SLEEP",it could change the memory to not memory function.The light blink and show the error code 3s.

Display by remote controller

Press "light" and "-" button together for 3s,It could enter or exit this function.It will show the error code when this function is on.

Replacement of Batteries

1. Press the back side of remote controller marked with " ", as shown in the fig,and then push out the cover of battery box along the arrow direction.



2. Installation two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

NOTE:

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

4.2 Description of Each Control Operation

1. The mainboard design with below function

(1) Auto (2) Cooling (3) Dehumidifying (4) Air fan (5) Heating

2. Control

Indoor fan(Quiet、speed 1、speed 2、speed 3、speed 4、speed 5、Turbo), left and right louver, up and down louver, buzzer, display, outdoor electric heater(option), outdoor power, healthy(option).

3. Basis control function

Cooling mode

(1) Setting Temp 16-31 degree,the indoor fan and louver run as the original mode.

(2) The indoor will run as original mode if the outdoor does not work,and the indoor will show error code.

Fan

(1) Setting Temp 16-31 degree,the indoor fan and louver run as the original mode.

(2) The indoor will run as original mode if the outdoor does not work,and the indoor will show error code.

Heating mode

(1) Setting temperature range 16-31 degree.

(2) It will in anti-cold air first when unit run in heating mode,and then heating.It will blow hot air after unit is of

(3) Indoor power light blink and then indoor fan stop after unit entering defrost mode.

(4) Indoor blow hot air one minute if outdoor is malfunction.

(5) Indoor blow hot air 10 minutes after turn off unit when indoor fan is running.

4. Auto mode

(1) When environment temperature is equal or above 26 degree,and setting the cooling mode,the setting temperature will reach 25 degree.

(2)When the environment temperature i is equal or below 19 degree plus additional temperature,it will run in heating mode,and the setting temperature reach 20 degree at that time.

(3) When 1(9 degree +additional temperature,)<environment temperature<26 degree.It will run in airfan mode if it is the firs time entering auto mode.It will run in original mode if it change from cooling and heating mode.If original mode is dehumidifying,it will be in airfan after change into auto mode.

5. Protect

(1)Anti cold air

The louver will be in horizontal level when evaporator temperature is too low,and indoor fan does not work or run in low speed.

(2)Blow hot air

Indoor will run in few minutes before turn off when turn off in heating or indoor temperature above environment temperature.

(3)Sensor malfunction

If the environment sensor or pipe sensor AD is above or equal 250 5s continually or the environment sensor or pipe sensor AD is below 5 when the unit is on ,it means sensor malfunction.

(4)Motor blockage

When mainboard can not findthe indoor fan speed continuall ,or motor fan run in low speed continually ,compressor outdoor fan,indoor fan and louver stop running.Indoor will show error code.

(5)Jumper malfunction

Un-install the jumper

(6)Communication malfunction

When the unit is running except for airfan mode,outdoor and indoor can not communicate 3 minutes.It will show error code.

(7)Defrost

When outdoor condensing defrost,it will start defrost mode.

(8)Manually Defrost

Press the "FAN" and "MODE" 3s at the same time in heating mode,it will enter or exit the manually defrost,and indoor will buzz.

6. Other Function

(1) Auto button

when you press this button,it will enter auto mode,indoor motor in auto fan speed,Indoor fan run and louver motor stop. Press the auto button,unit will be off.

(2) Filter cleaning

Indoor motor fan run 600 hours ,unit will show b3 to notice filter cleaning.The b3 is of after turn o f unit

(3) Health

Indoor healthy function start when push healthy button.

(4) Dry

Unit will run in cooling 10 min after set up dry function.

(5) Saving energy

Indoor will show in ECO after unit run in energy saving mode.

(6) Low temperature heating

Press "MODE" and "+" button at the same time in heating mode,it will show LA.

(7) Environment temperature

push temperature button,it will show environment temperature 5s and the setting temperature.

(8) Outdoor power

Power on,outdoor power is off.

(9) When unit is on except for fan mode,outdoor power supply input high frequency.

(10) Entering off mode or fan mode,outdoor power is off after 4 minutes.

(11) 1W Standby.

7. Display

(1) Basis display,Power on,it maintain 2s-3s display,and then power light is on.
(2) The running light is on when remote controller turn on unit,and indoor show the running mode.
(3) If turn off the light button,and all display is off.
(4) It displays as original mode after setting sleeping function.

5. Installation of the Unit

Standard Accessory Parts

The standard accessory parts listed below are furnished and should be used as required.

	Name	Appearance	Q'ty	Usage
Indoor Unit	Remote controller		1	To control the indoor uint
	Drain pipe		1	To connect with the hard PVC drain pipe
	Others	Instructions、bar code		

Selection of the Installation Location

WARNING!

The unit must be installed where strong enough to withstand the weight of the unit and fixed securely, otherwise the unit would topple or fall off.

CAUTION!

- Do not install where there is a danger of combustible gas leakage.
- Do not install the unit near heat source, steam, or flammable gas
- Children under 10 years old must be supervised not to operate the unit.

Decide the installation location with the customer as follows:

Indoor Unit

1. Obstruct should be put away from the intake or outlet vent of the indoor unit so that the airflow can be blown through all the room.
2. Make sure that the installation meets the requirement of the schematic diagram of installation spaces.
3. Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and vibration.
4. The horizontality of the installation place should be guaranteed.
5. Select the place where is easy to drain out the condensate water, and connect with outdoor unit.
6. Make sure that there are enough space for care and maintenance, and the height fall between the indoor unit and ground is above 2500mm.
7. When installing the suspension bolt, check if the installation place can stand 4 times of the weight of the unit. If not, reinforce it before installation.

Note:

There will be large amount of greasy dirt accumulated on the fan, heat exchanger and water pump located in the dinning room and kitchen, which would reduce the capacity of the heater exchanger, lead to leakage and abnormal operation of the water pump.

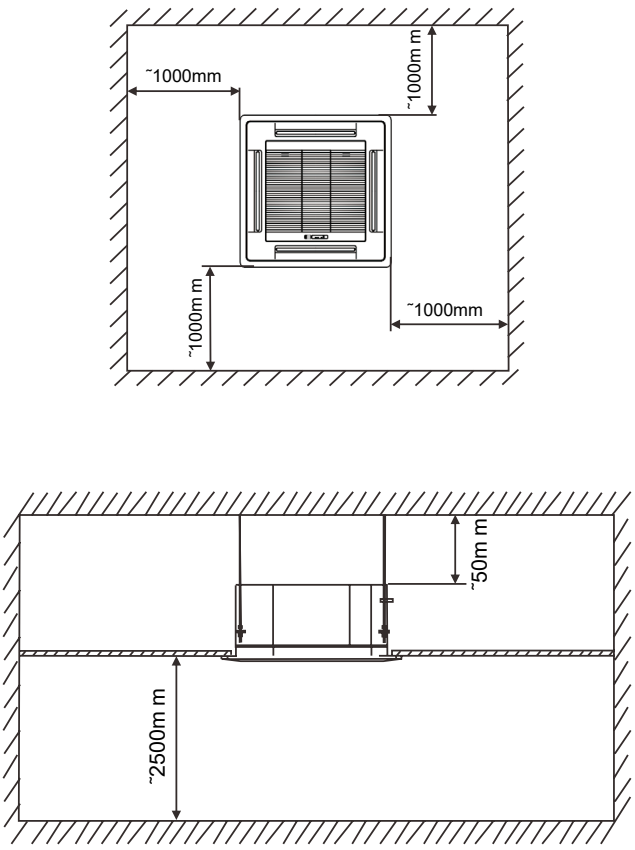


Fig.1

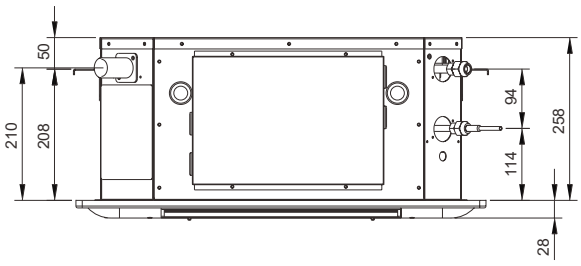
Installation of the Indoor Unit

1. Indoor unit dimension

WARNING!

● Install the indoor unit in a location which can withstand a load of at least five times the weight of the main unit and which will not amplify sound or vibration.
● If the installation location is not strong enough, the indoor unit may fall and cause injuries.
● If the job is done with the panel frame only, there is a risk that the unit will come loose.
Please take care.

Units: mm



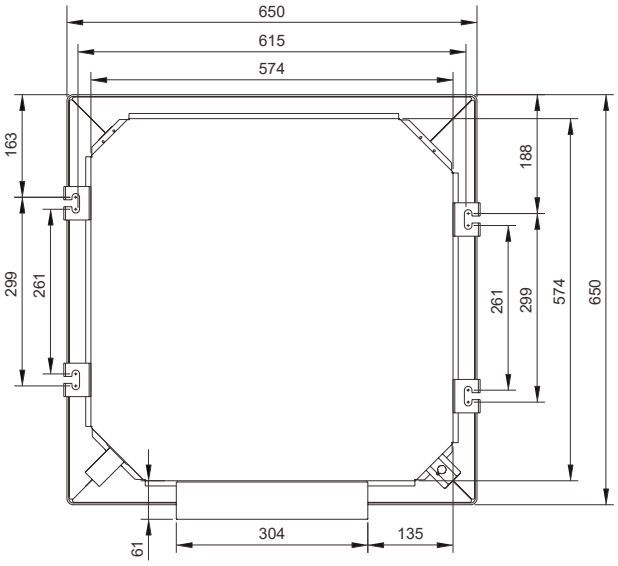


Fig.2

2. Hang the master unit to ceiling

Mark out the fixing points on the ceiling, either by marking through the drillings in the unit itself, or by referring to the measurements given in "DIMENSIONS". Use expansion screw as the hanging pole, hang the unit to it and then tighten the nut, make sure the unit will not loose.

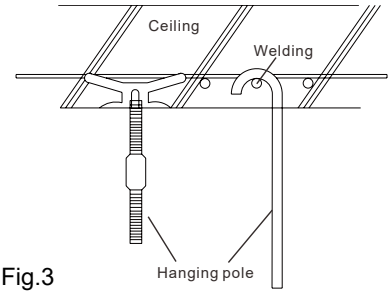


Fig.3

● During installation of indoor unit on the ceiling, it is necessary to note that the ceiling must be in level position, and in order to prevent ceiling vibration, it is necessary to reinforce the ceiling.

● If this unit body is installed on a tilting ceiling, a gasket should be installed between the ceiling and the air outlet panel, in order to ensure that this unit body is installed on a level surface.As shown in fig.

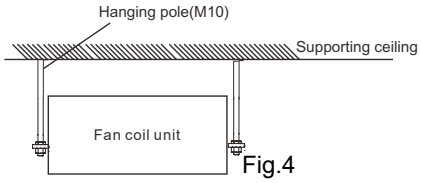


Fig.4

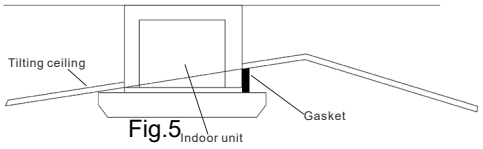


Fig.5

3. Fix the master unit to ceiling

The indoor master unit should be suspended as shown in the sketch below:

● Adjust the relative position of the suspension hook on the suspension bolt so that the master is in Level position in all directions. Check with a level gauge after completion of installation in order to ensure the level of indoor master unit. Or otherwise water leakage and air leakage may be caused.

● Tighten the bolt and ensure that four hooks are in close contact with the nuts and shims, and the unit is suspended firmly and reliably onto the hooks.

● Ensure that after the master unit is installed, it will not shake or be fixed unsteadil .

● Ensure that the center of the indoor master unit should almost coincide with that of the opening on the ceiling.

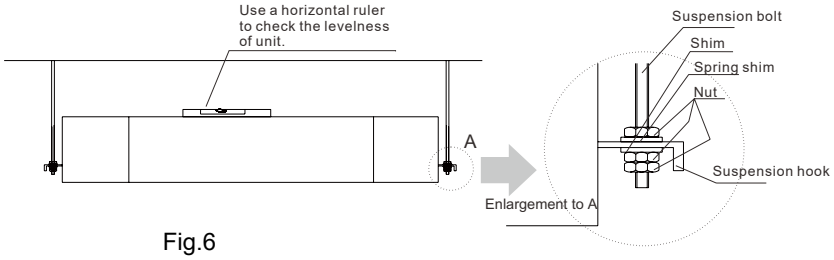


Fig.6

Installation of the Connection Pipe

1. Flare Processing

(1). Cut the connection pipe with the pipe cutter and remove the burrs.

(2). Hold the pipe downward to prevent cuttings from entering the pipe.

(3). Remove the flare nuts at the stop valve of the outdoor unit and inside the accessory bag of the indoor unit, then insert them to the connection pipe, after that, flare the connection pipe with a flaring too

(4). Check if the flare part is spread evenly and there are no cracks (see Fig.7)

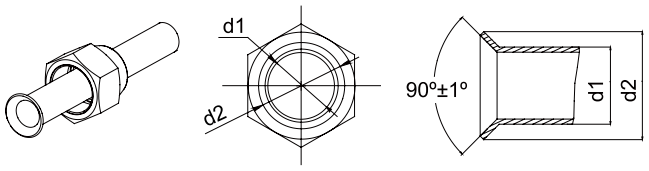
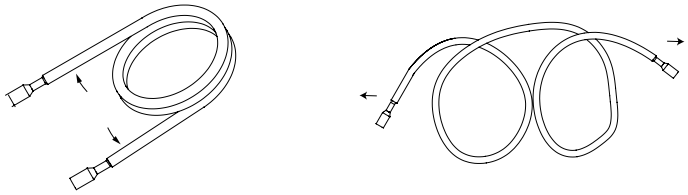


Fig.7

2. Bending Pipes

(1). The pipes are shaped by your hands. Be careful not to collapse them.



√ Extend the pipe by unwinding it ×

Fig.8

(2). Do not bend the pipes in an angle more than 90°.
(3). When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipes more than three times.
(4). When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the heat insulating pipe with a sharp cutter as shown in Fig.9, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.

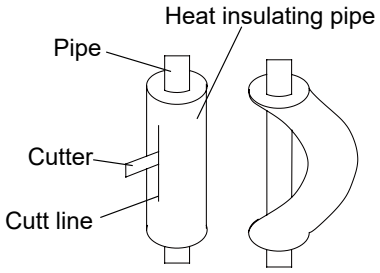


Fig.9

CAUTION!

- To prevent breaking of the pipe, avoid sharp bends.
  Bend the pipe with a radius of curvature of 150 mm or over.
- If the pipe is bent repeatedly at the same place, it will break.

3. Connecting the Pipe at the Indoor Unit Side

Detach the caps and plugs from the pipes.

CAUTION!

- Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged
- Do not remove the flare nut until the connection pipe is to be connected so as to prevent dust and impurities from coming into the pipe system.

Centering the pipe against port on the indoor unit, turn the flare nut with your hand

CAUTION!

Hold the torque wrench at its grip, keeping it in the right angle with the pipe as shown in Fig.10, in order to tighten the flare nut correctly.

When the flare nut is tightened properly by your hand, use a to que wrench to finally tighten it

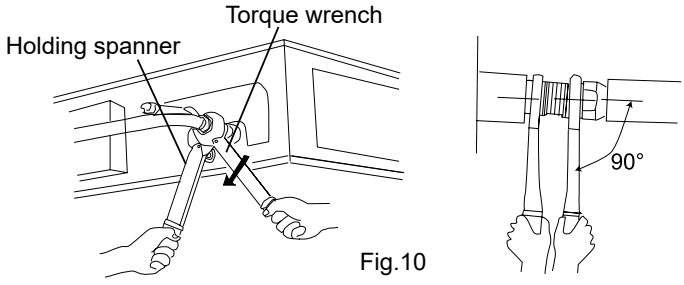


Fig.10

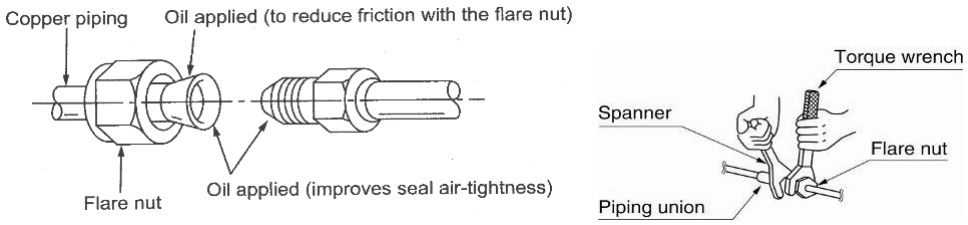


Fig.11

Flare nut tightening torque

Pipe Diameter (Inch)	1/4″	3/8″	5/8″	1/2″	3/4″	7/8″
Tightening Torque (N·m)	15-30	35-40	60-65	45-50	70-75	80-85

CAUTION!

Be sure to connect the gas pipe after connecting the liquid pipe completely.

4. Heat Insulation on the Pipe Joints (Indoor Side Only)

Stick coupler heat insulation (large and small) to the place where connecting pipes.

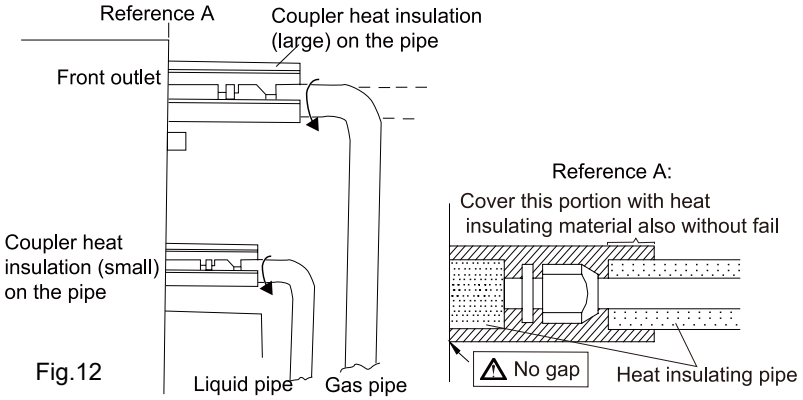


Fig.12

Installation of the Drain Hose

● Installation of Drain Piping

CAUTION!

Install the drain hose in accordance with the instructions in this installation manual and keep the area warm enough to prevent condensation. Problems with the piping may lead to water leaks.

1. Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
2. Keep pipe size equal to or greater than that of the connecting pipe.
3. Install the drain piping as shown and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

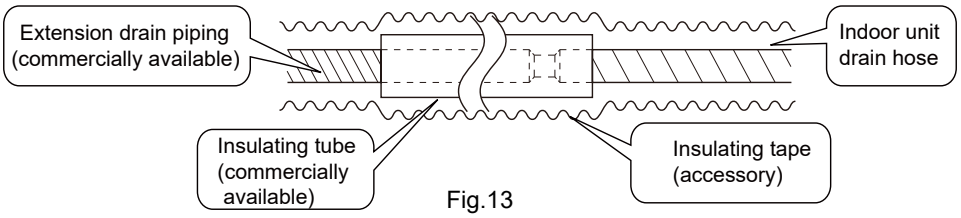


Fig.13

● Installing the Drain Pipes

1. Insert the drain pipe to the drain outlet of the unit .
2. Connect the extension drain pipe to the drain pipe and then tighten the clamp with tape.

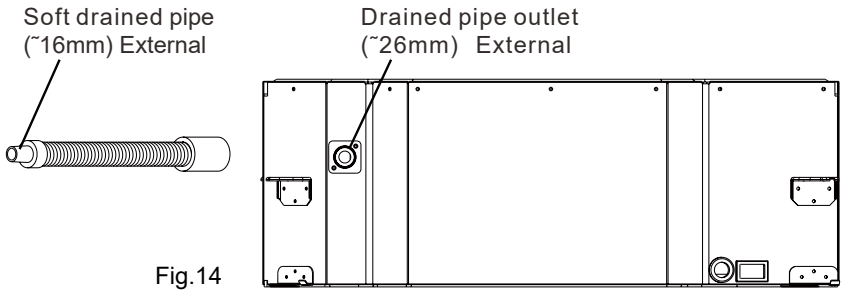


Fig.14

3. When unifying multiple drain pipes, install the pipes as Fig.15. Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.(take the cassette type unit for example)

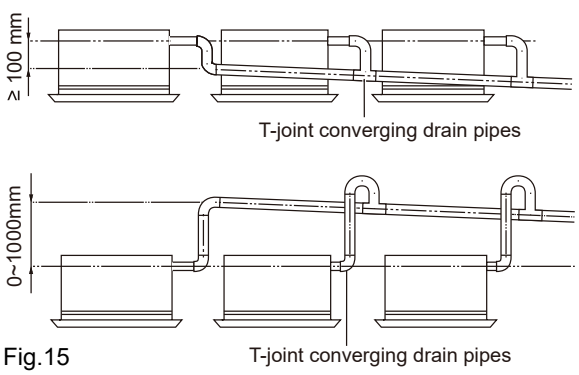


Fig.15

4. When the drain hose cannot keep a sufficient gradient, it is necessary to fit a riser pipe (field supplied) to
5. If the air flow of indoor unit is high, this might cause negative pressure and result in return suction of outdoor air. Therefore, U-type water trap shall be designed on the drainage side of each indoor unit.(Fig.16)
6. Install one water trap for each unit.
7. Installation of water trap shall consider easy cleaning in the future.

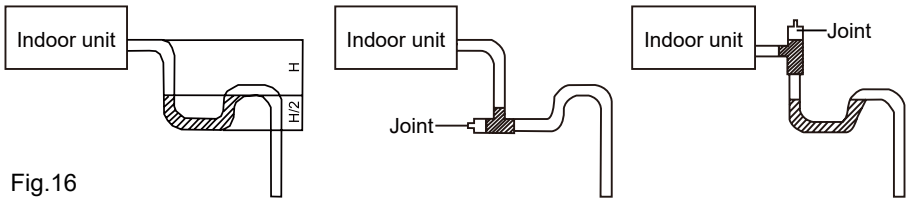


Fig.16

8. Connection of drainage branch pipe to the stand pipe or horizontal pipe of drainage main pipe
The horizontal pipe cannot be connected to the vertical pipe at a same height. It can be connected in a manner as shown below:
NO.1: Attach the 3-way connection of the drainage pipe joint as shown in Fig.17.
NO.2: Attach the drain elbow as shown in Fig.18.
NO.3: Attach the horizontal pipe as shown in Fig.19.

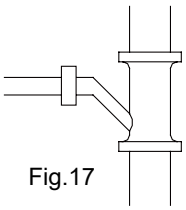


Fig.17

3-way connection of drainage pipe joint

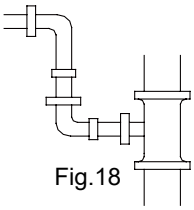


Fig.18

Connection of drain elbow

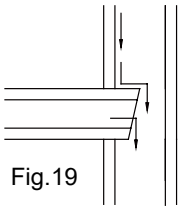


Fig.19

Connection of horizontal pipe

● Precautions When Doing Riser Piping Work

1. Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.
   1). Connect the drain hose to the drain lift pipe, and insulate them.
   2). Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the clamp.

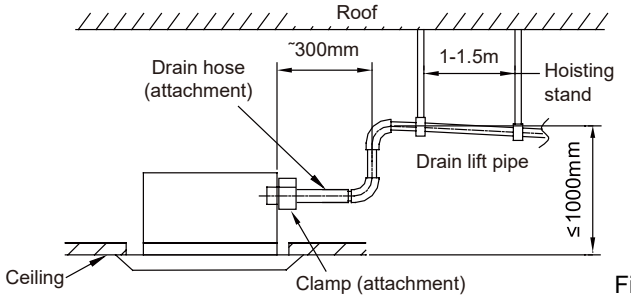


Fig.20

2. Make sure the lift pipe is at most 280mm.
3. Stand the lift pipe vertically, and make sure it is not further than 300mm from the base of the drain outlet.
4. Secure a downward gradient of 1/100 or more for the drain pipe. To accomplish this, mount supporting brackets at an interval of 1 -1.5 m.

● Testing of Drain Piping

After piping work is finished, check if drainage flows smoothly. Add approximately 1 liter of water slowly into the drain pan and check drainage flow during COO running.

Electrical Wiring

1. Wiring Precautions

WARNING!

● Before obtaining access to terminals, all supply circuits must be disconnected.
● Before turning on, verify that the voltage is within the 198~264V range (for single phrase unit) or 342~457V range (for three-phrase unit).
● Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
● Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner.
● The special branch circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole.
● Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
● Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

CAUTION!

● The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacit .
● When the voltage is low and the air conditioner is difficult to start, contact the power company to raise the voltage

2. Electrical Wiring

(1). For solid core wiring (Fig.21)
1). Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation about 25mm (15/16") .
2). Using a screwdriver, remove the terminal screw(s) on the terminal board.
3). Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
4). Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.
(2). For strand wiring (Fig.21)
1). Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation about 10mm (3/8") .
2). Using a screwdriver, remove the terminal screw (s) on the terminal board.
3). Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.
4). Position the round terminal wire, and replace and tighten the terminal screw with a screwdriver.(Fig.22)

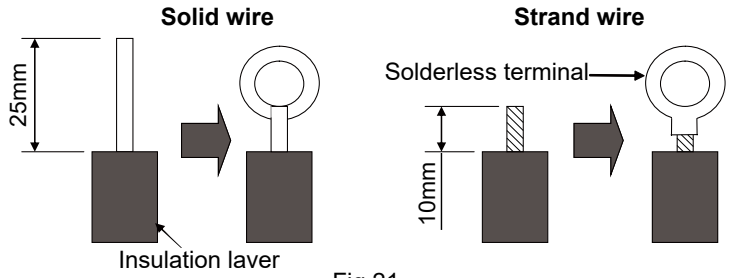


Fig.21

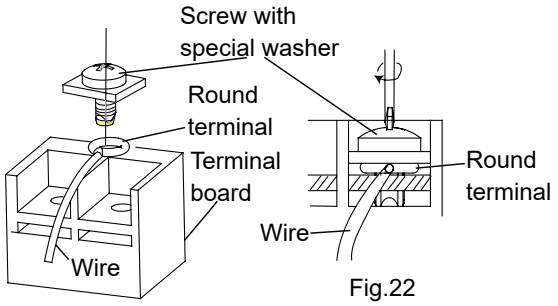


Fig.22

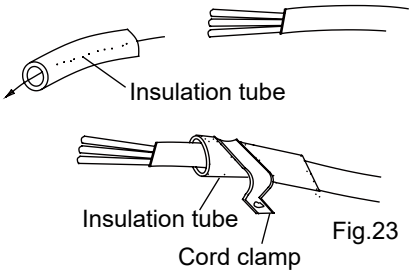


Fig.23

(3). How to fix connection cord and power cord by cord clam
After passing the connection cord and power cord through the insulation tube, fasten it with the cord clamp.(Fig.23)

CAUTION!

- Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.
- Match the terminal block numbers and connection cord colors with those of the indoor unit side.
- Erroneous wiring may cause burning of the electric parts.
- Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fir
- Always fasten the outside covering of the connection cord with cord clamps. (If the insulator is not clamped, electric leakage may occur.)
- Always connect the ground wire.

(4). Electric wiring of indoor unit side

Remove the electric box cover from the electric box sub-assy and then connect the wire.

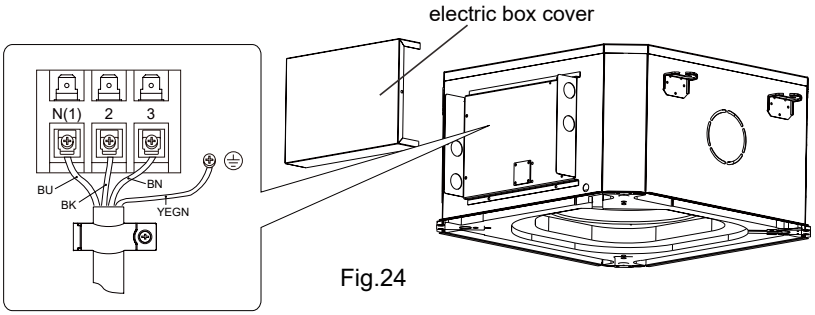


Fig.24

CAUTION!

- The power cord and the wire of the fresh air valve are high-voltage, while the communication cord and connection wire of the wired controller are low-voltage. They should run separately against electromagnetic interference.
- The high-voltage and low-voltage lines should pass through the rubber rings at different electric box covers.
- Do not bundle the connection wire of the wired controller and the communication cord together, or arrange them in parallel, otherwise improper operation would occur.
- The high-voltage and low-voltage lines should be fixed separately and securely, with internal big clamps for the former and small clamps for the latter.
- Tighten the indoor/outdoor connection cord and power cord respectively on the terminal boards with screws. Faulty connection may cause a fire
- If the indoor unit connection cord (to the outdoor unit) and power supply are wired incorrectly, the air conditioner may be damaged.
- Connect the indoor unit connection cord properly based on the corresponding marks.
- Ground both the indoor and outdoor units by attaching a ground wire.
- Unit shall be grounded in compliance with the applicable local and national codes.

The Panel Installation

● Precautions

1. Improper screwing of the screws may cause the troubles as shown below.

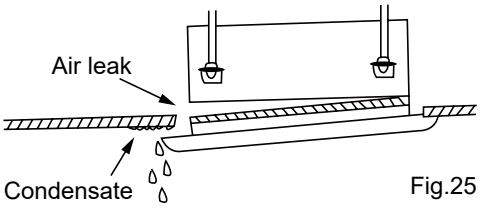


Fig.25

2. If gap still exists between ceiling and decoration panel after tightening the screws, readjust the height of the indoor unit

3. Connect the connector of swing motor (4pcs) & display panel (1pcs) to according connector of master unit

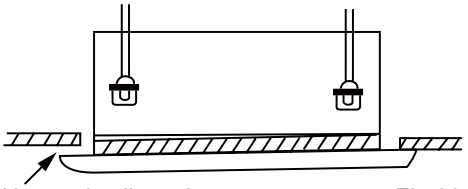


Fig.26

● Installing the Panel

CAUTION!

● Must use 25mm length (M5) bolt(together with packing of panel) to connect the panel and master unit, otherwise might cause condensate water leaking.
● The louver is forbid to be moved by hand

1. Open the grill, and take off the grille from panel.
2.Use the 4 bolts attached at bag of panel carton to connect the panel with master unit ,pls refer to the position shown at right drawing.
3.Tight the 4 bolts until the panel link with the unit, check there have no gap between panel and master unit

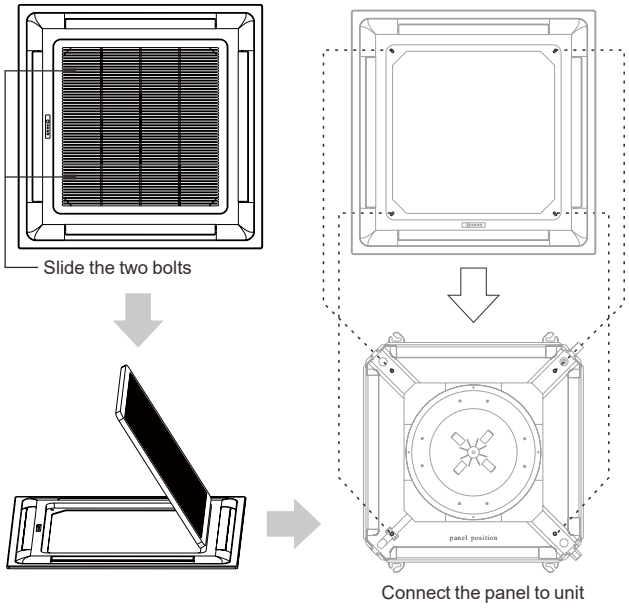
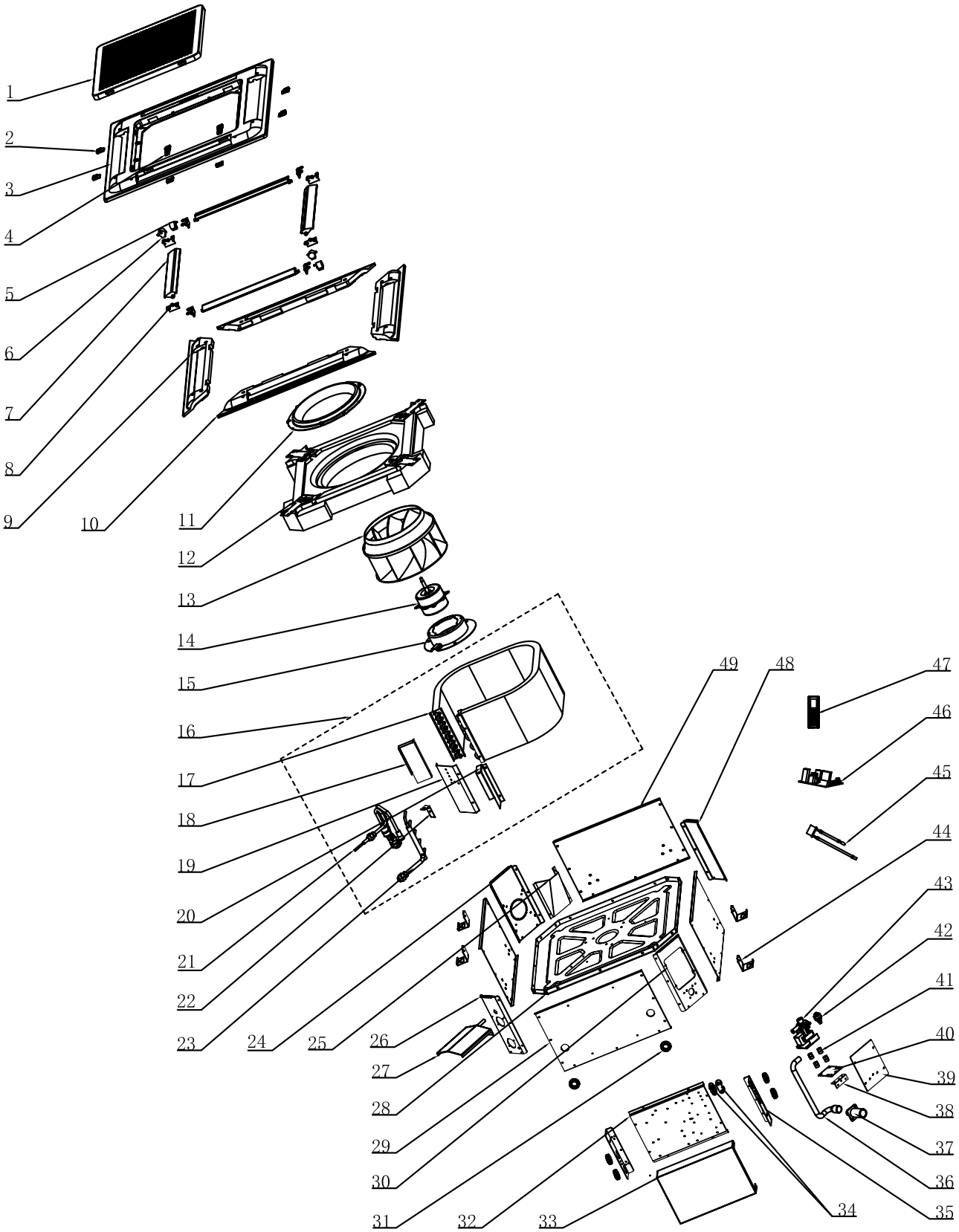


Fig.27

6. Exploded Views and Parts List

6.1 Indoor Unit

Model: CASK-12C



No.	Description	Qty
1	air inlet grill	1
2	filter spu	6
3	panel body	1
4	slip clasp	2
5	step motor (foreward)	2
6	step motor (reversal)	2
7	swing vane	4
8	swing vane holder	8
9	panel foam 2	2
10	panel foam 1	2
11	air guide louver	1
12	water tray subassembly	1
13	centrifugal fan	1
14	fan motor	1
15	tray	1
16	evaporator assembly	1
17	the evaporator subassembly	1
18	evaporator fixing plate	1
19	connection sheet sub-assy	1
20	evaporator fixing plate	1
21	input pipe assembly	1
22	E1 water-level switch supporter	1
23	output pipe assembly	1
24	bracket joint 2	1
25	fresh air outlet metal plate	1
26	bracket joint 1	1
27	K shape external water tray	1
28	chassis assembly	1
29	side plate 1	1
30	bracket joint 3	1
31	protective ring	6
32	K external electric box base	1
33	K external electric box fixe	2
34	Singles hole pressing clamp	1
35	K external electric box cover	2
36	water pump connecting pipe	1
37	drain hose	1
38	water pump fixer	1
39	water pump install plate	1
40	water pump fixer	1
41	rubber mats of water pump	4
42	water level switch	1
43	water pump	1
44	hook	4
45	temperature sensor	1
46	main board	1
47	remote controller	1
48	bracket joint 4	1
49	side plate 2	3

7. Troubleshooting

7.1 Error Code List

The meaning of error codes as shown below:

Operation state	Running (Green)	Timer (Yellow)	Heating (Red)
Standby	○	○	○
Cooling mode	●	○	○
Dehumidification mod	●	○	○
Heating mode	●	○	●
Fan only mode	●	○	○
Timing	*	●	*
Error in indoor unit	★	★	○
Error in outdoor unit	★	★	★

Note:
① ★ mean " flashing ， ● mean " on ", ○ mean " off "
② " * " state base on the mode；

Note: When the unit is connected with the wired controller, the error code will be simultaneously shown on it.

Working Temperature Range

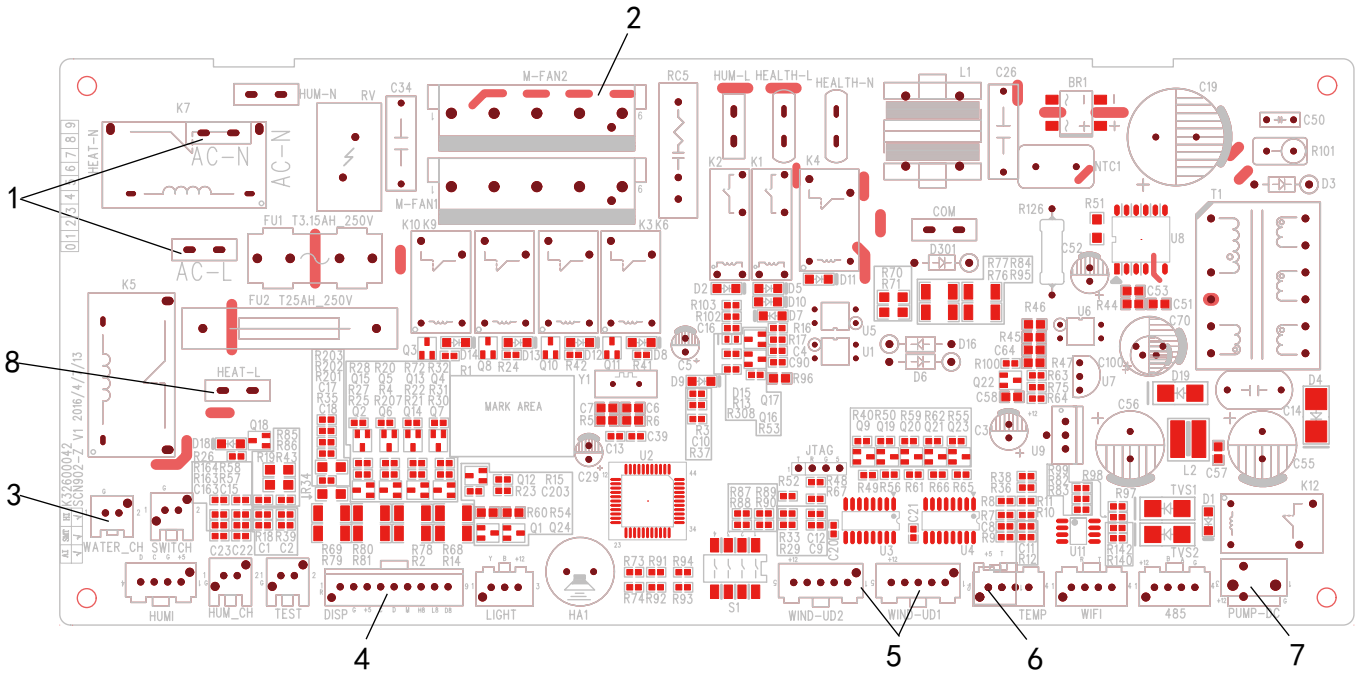
The unit may not work properly temperature range					
Cooling operation	Outdoor side temperature: above 52°C or below 15°C	Heating operation	Outdoor side temperature: above 24°C or below -15°C	Dehumidify operation	Indoor side temperature: below 12°C
	Indoor side temperature: below 21°C		Indoor side temperature: above 27°C		

Note:
1. The design of this unit conforms to the requirements of EN14511 standard.
2. The air volume is measured at the relevant standard external static pressure.

7.2 PCB Printed Diagram

Indoor Unit

- Top View



No.	Function
1	Input port for null line and live line
2	Fan motor connection
3	Water level switch connection
4	Display connection
5	Step motor connection
6	Tem.p sensor connection
7	Water pump connection
8	PTC drive connection

7.3 Procedure of Troubleshooting

Diagram 1:

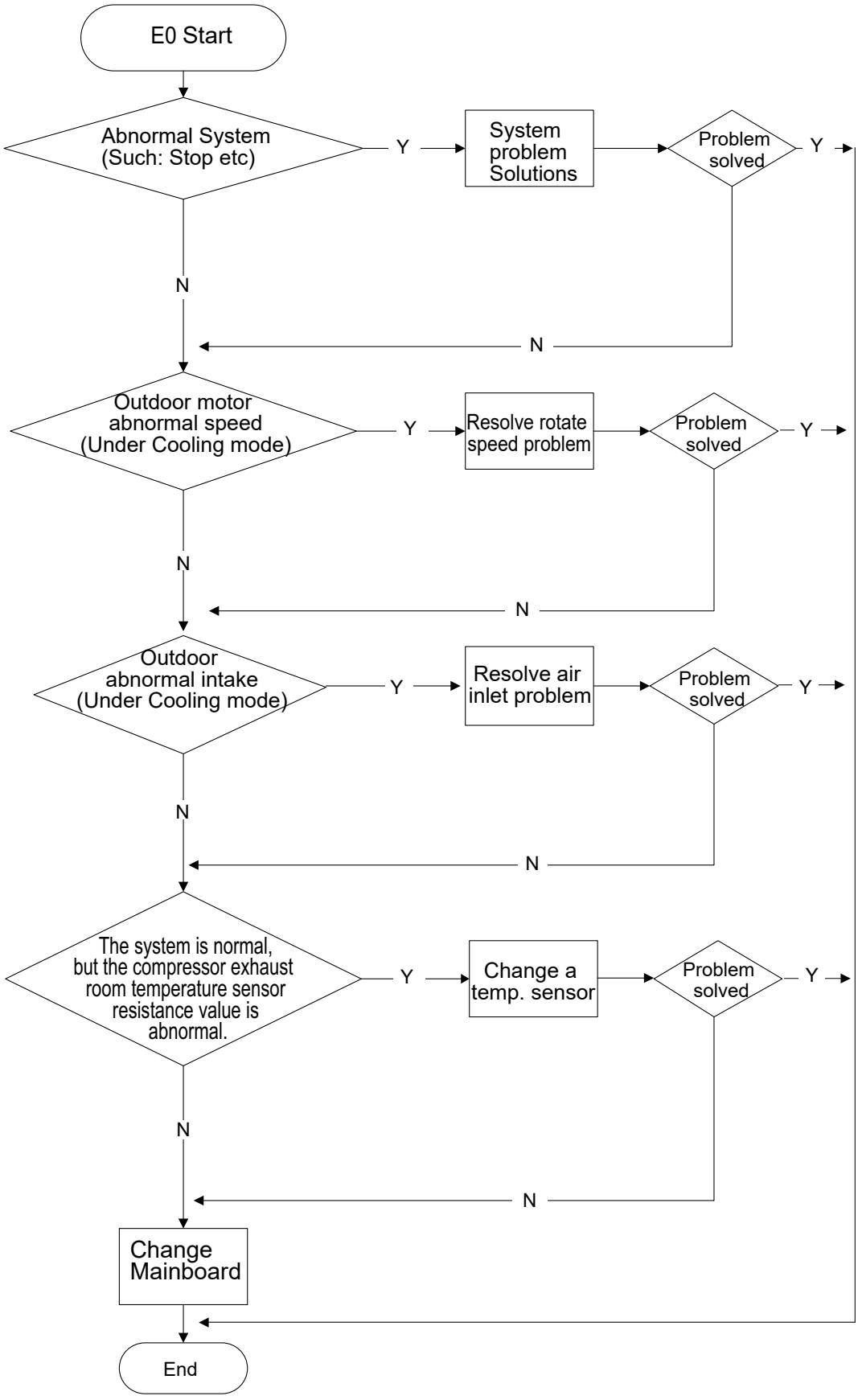


Diagram 2:

Main test points:

- Is the temperature of Indoor and Outdoor Unit too high?
- Is the fan of Indoor and Outdoor Unit operating normal?
- Is the radiating of Indoor and Outdoor Unit well(Including the fan speed is lower or not)?
- Is the pipe temperature sensor normal?

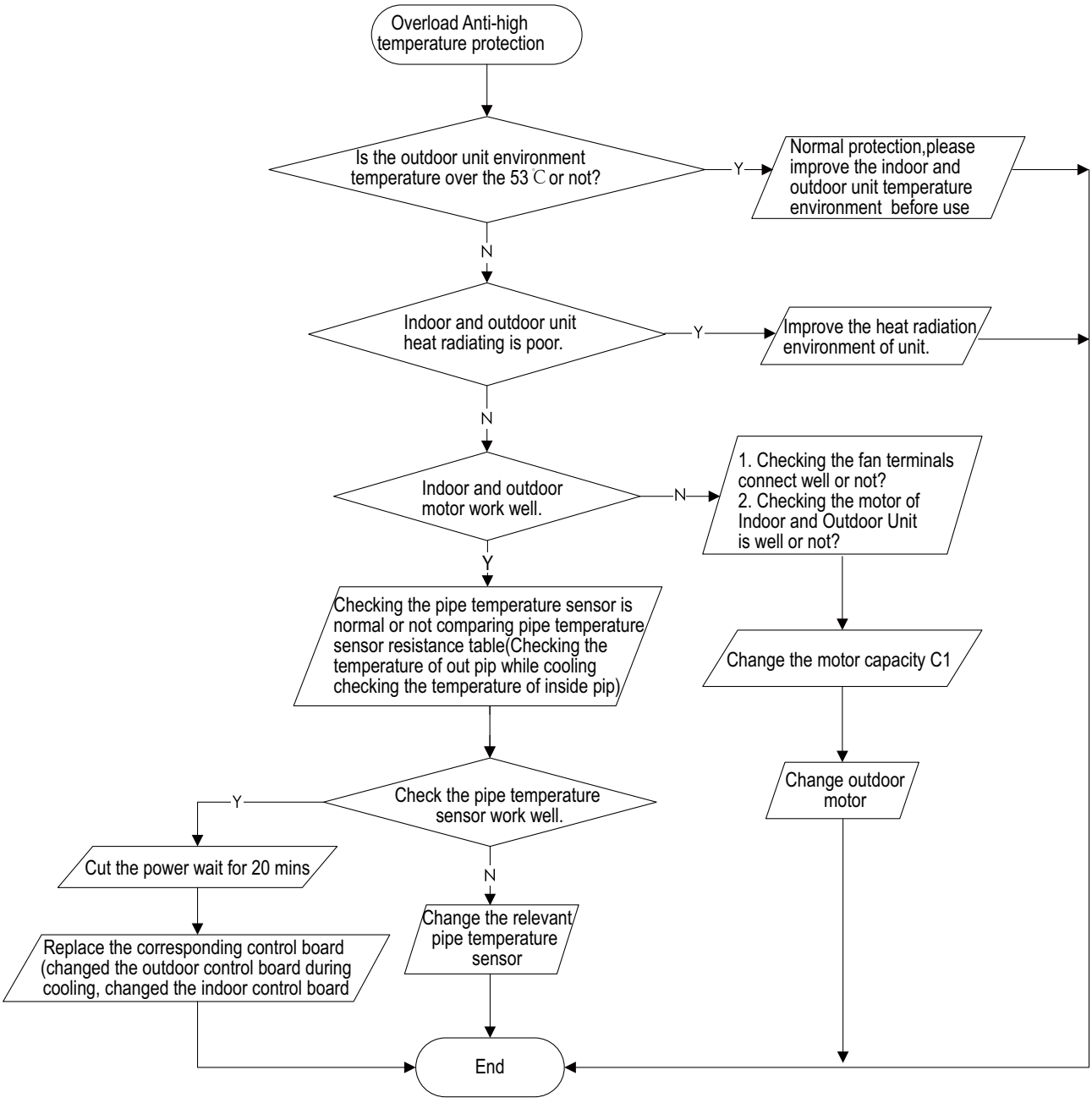


Diagram 3:

Main test points:

- Check the electronic expansion valve is connected.
- Check the electronic expansion valve is in good condition.
- Check the refrigerant leakage or not.
- Check the overload protector is in good condition.
- Check the pipe temperature sensor is in good condition.

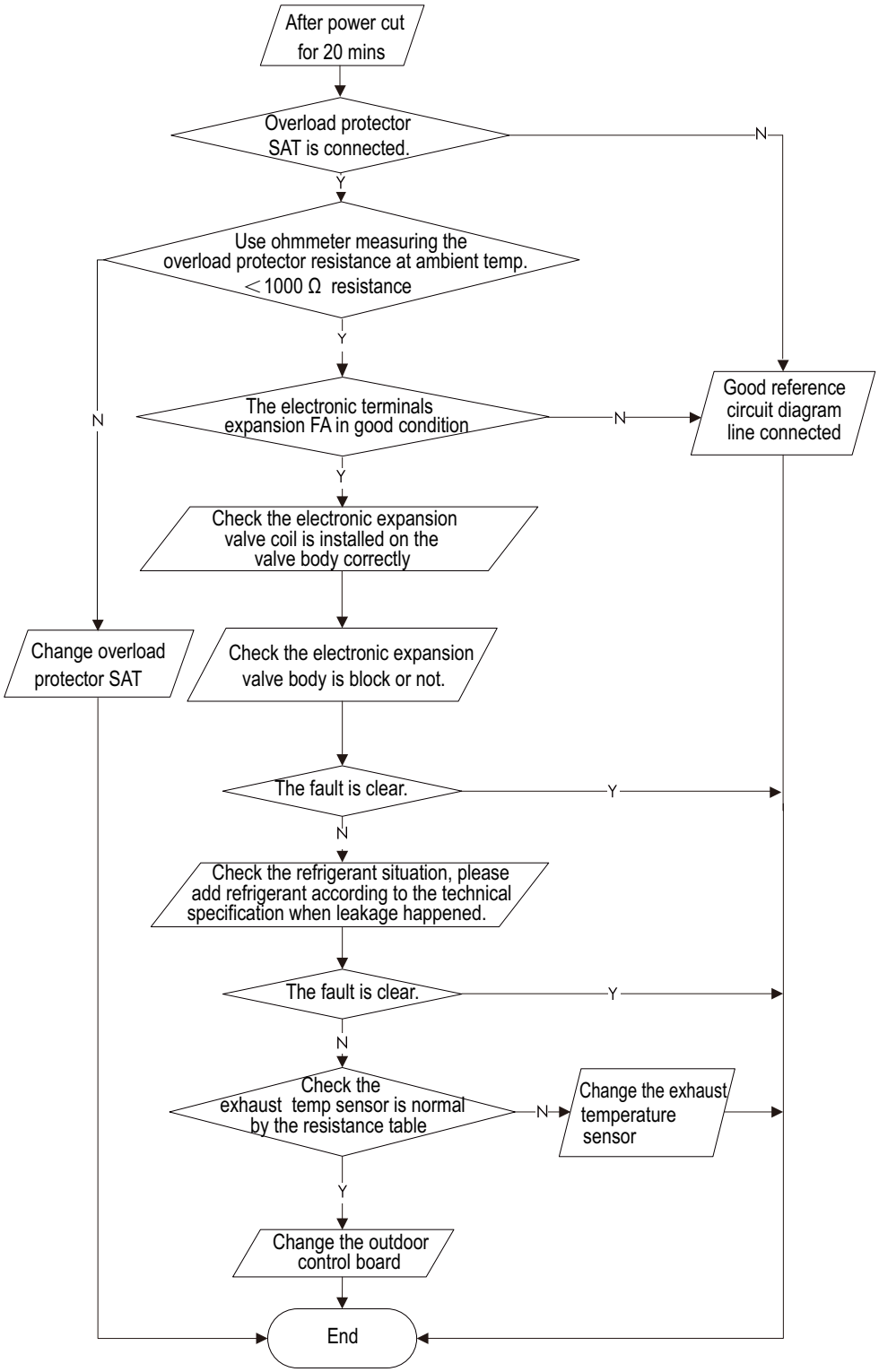


Diagram 4:

Main test points:

- Check the system pressure is high.
- Check the voltage is low.

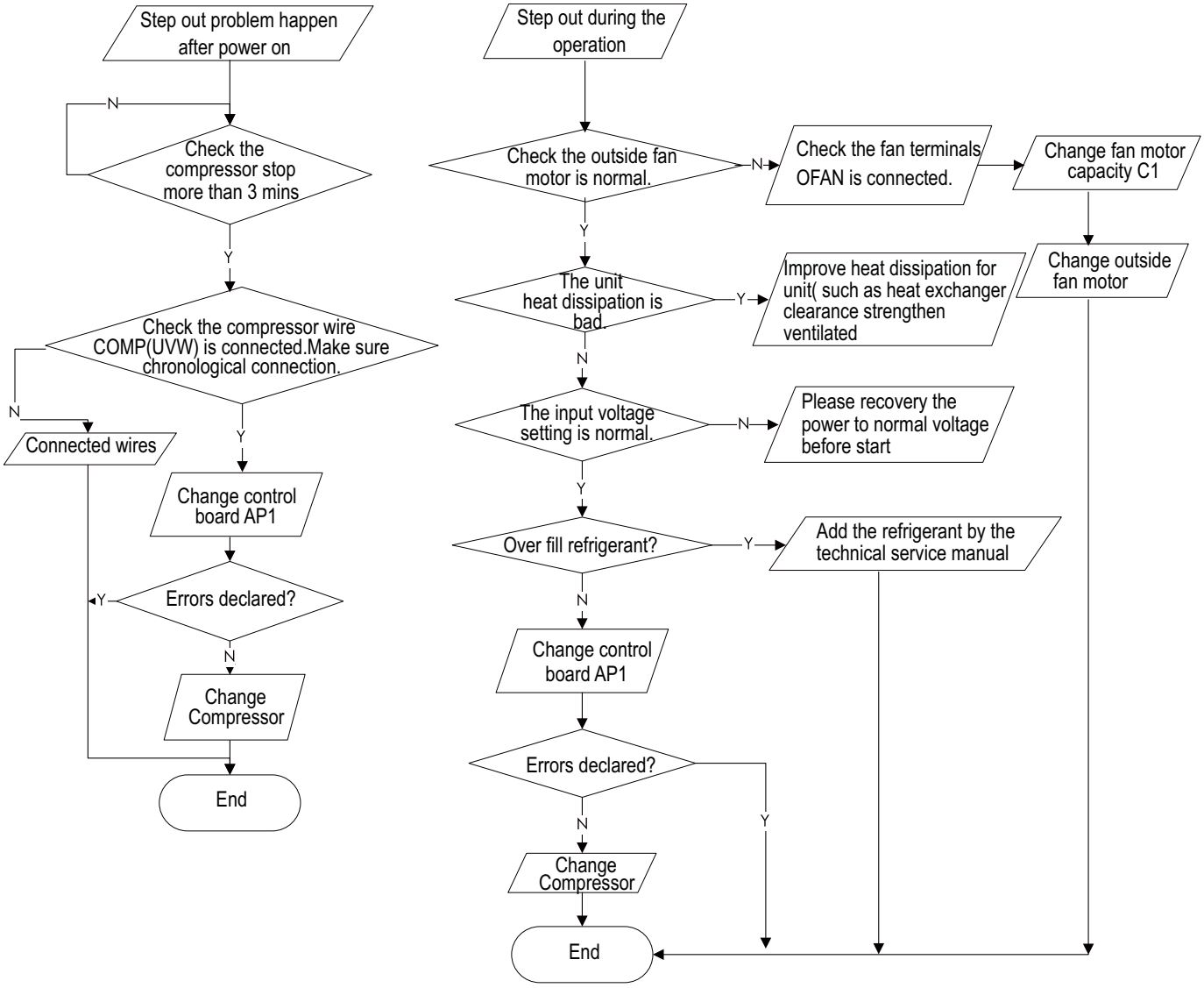


Diagram 5:

Main test points:

- Whether the compressor wiring is connected correct?
- Is compressor broken?
- Is time for compressor stopping enough?
- Whether refrigerant was charged too much?

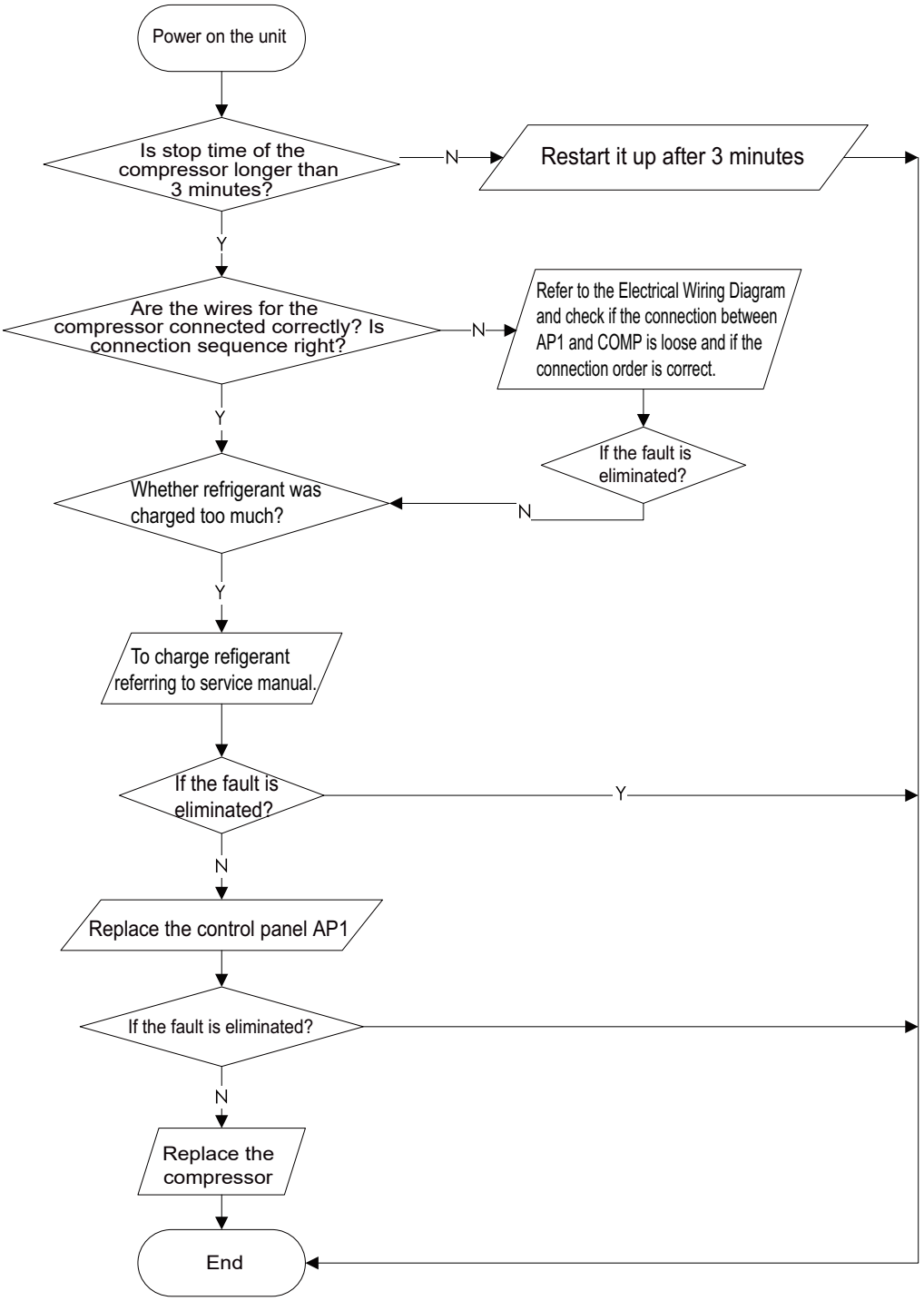


Diagram 6 , 7, 8:

Main check points:

- ●Is the connection between control panel AP1 and compressor COMP secure? Loose? Is the connection in correct order?
- ●Is the voltage input of the machine within normal range? (Use AC voltmeter to measure the voltage between terminal L and N on the wiring board XT)
- ●Is the compressor coil resistance normal? Is the insulation of compressor coil against the copper tube in good condition?
- ●Is the working load of the machine too high? Is the radiation good?
- ●Is the charge volume of refrigerant correct?

Fault diagnosis process:

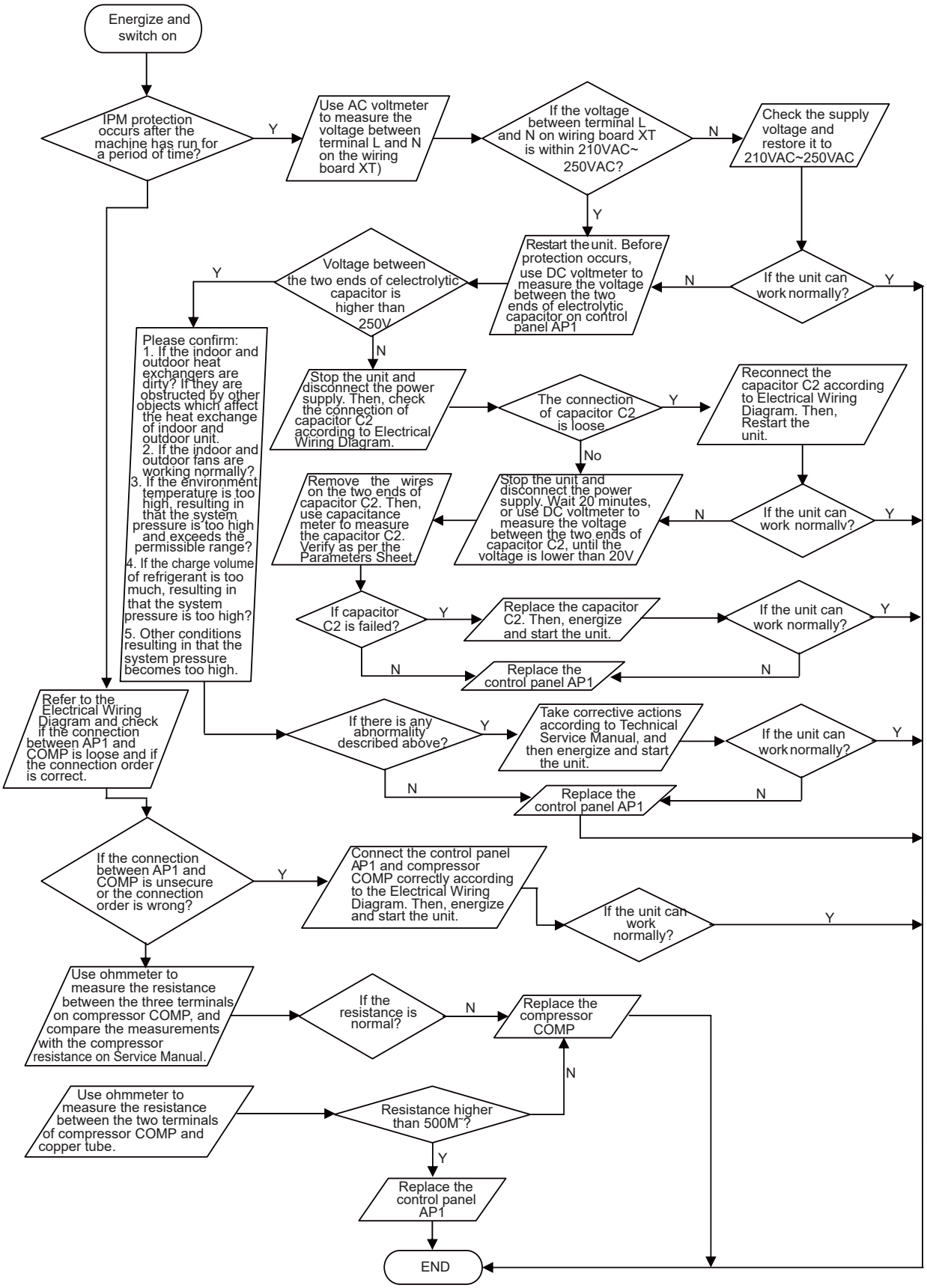


Diagram 9:

Main detection points:

- Is there jumper cap on the main board?
- 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:

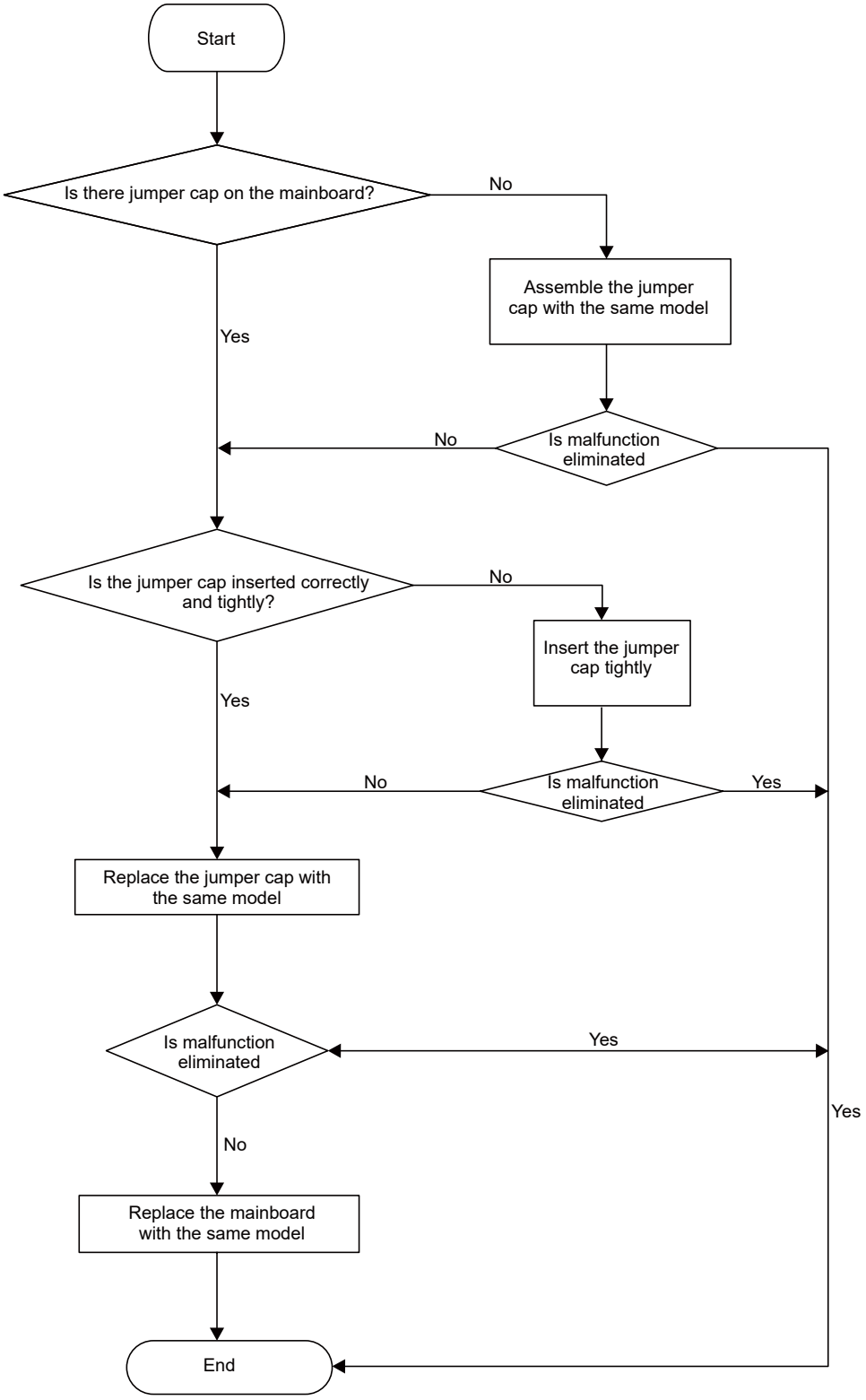


Diagram 10:

Malfunction of Blocked Protection of IDU Fan Motor L2

Main detection points:

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

Malfunction diagnosis process:

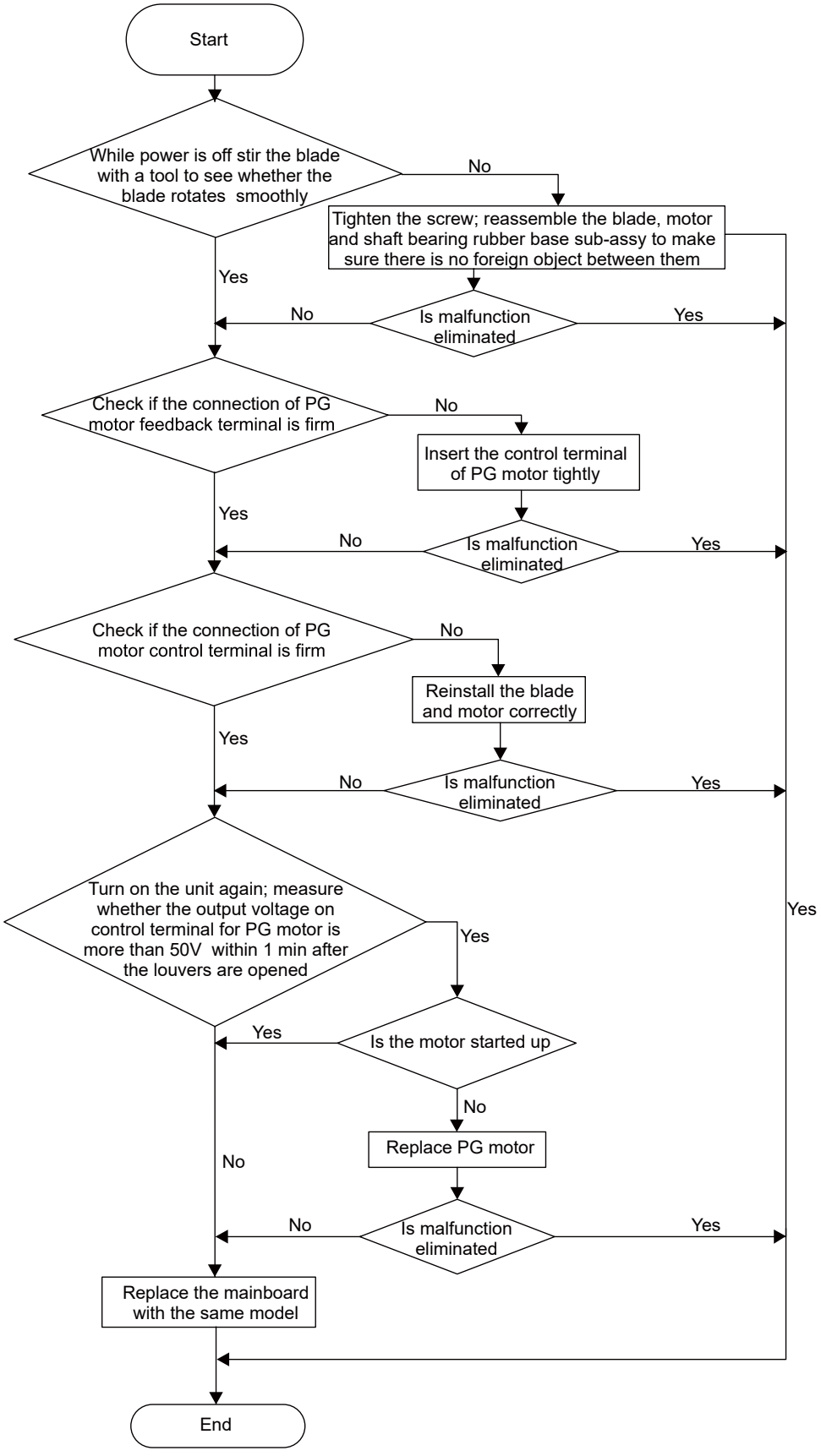


Diagram 11:

Main check points:

- Test the indoor and outdoor unit connection wire and internal wiring is connected or in good condition.
- Check the indoor unit main board communication circuit and outdoor unit main board communication circuit (AP1)are in good condition.

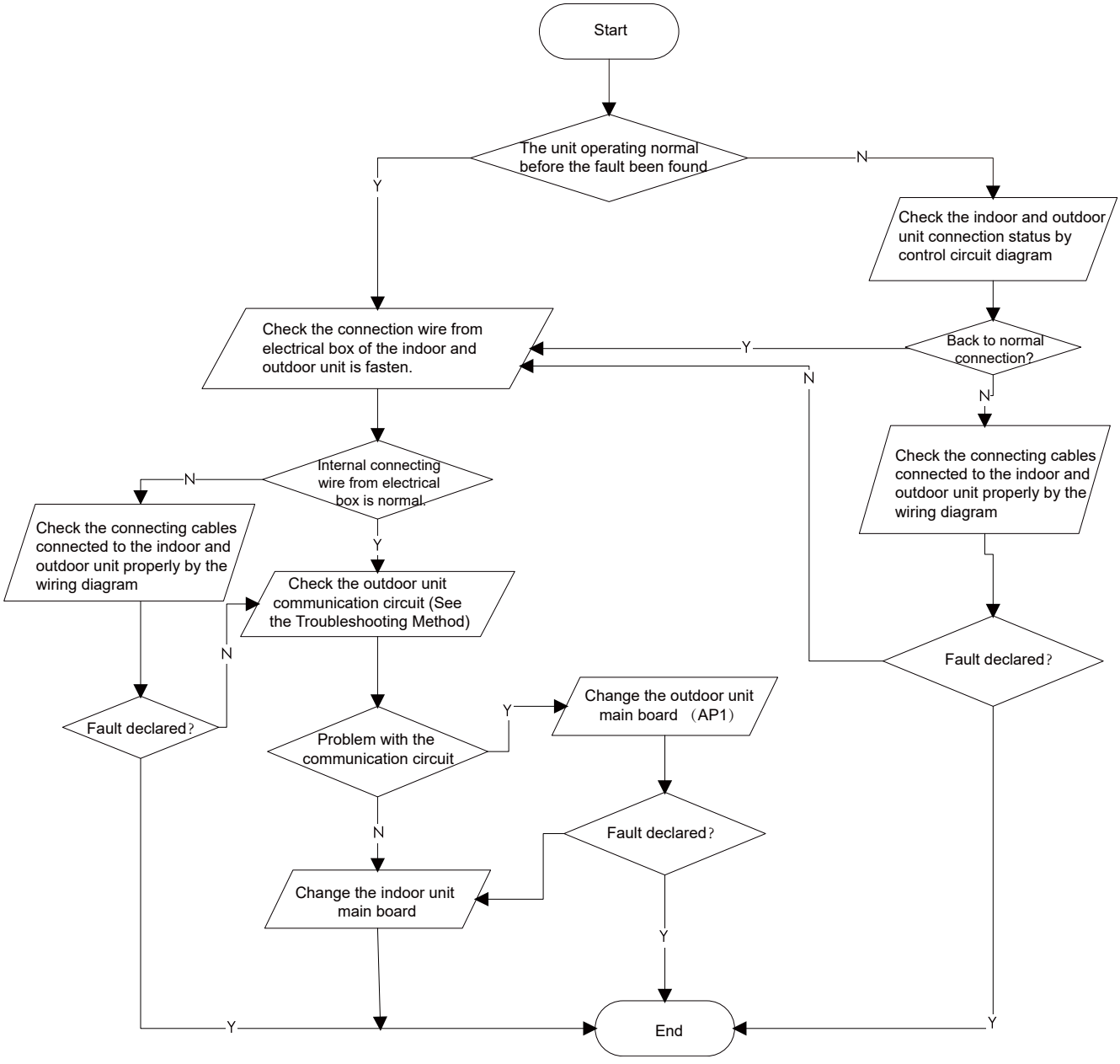


Diagram 12:

Outdoor unit communication circuit detection process as follows (outdoor unit key test points)

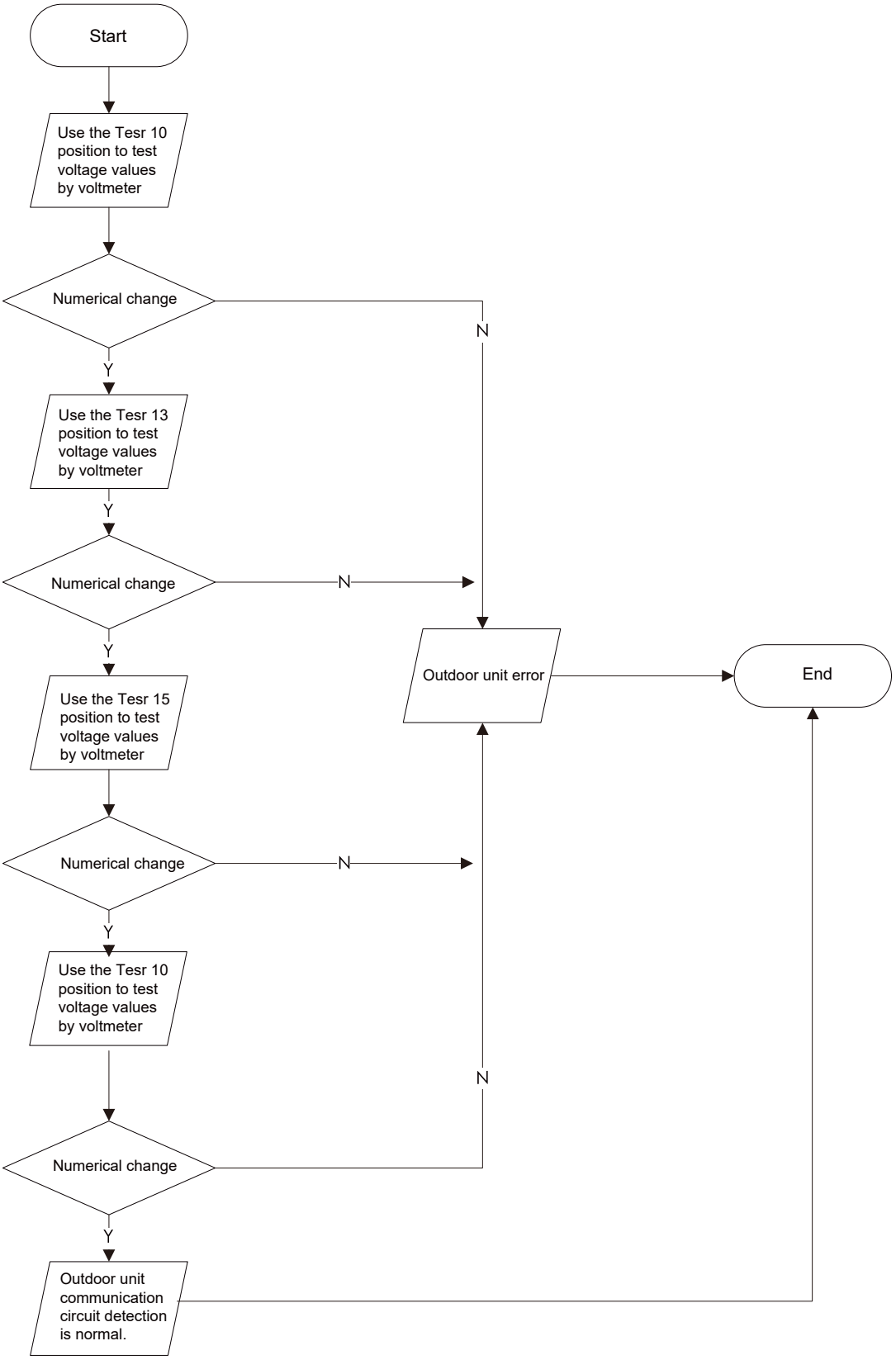


Diagram 13:

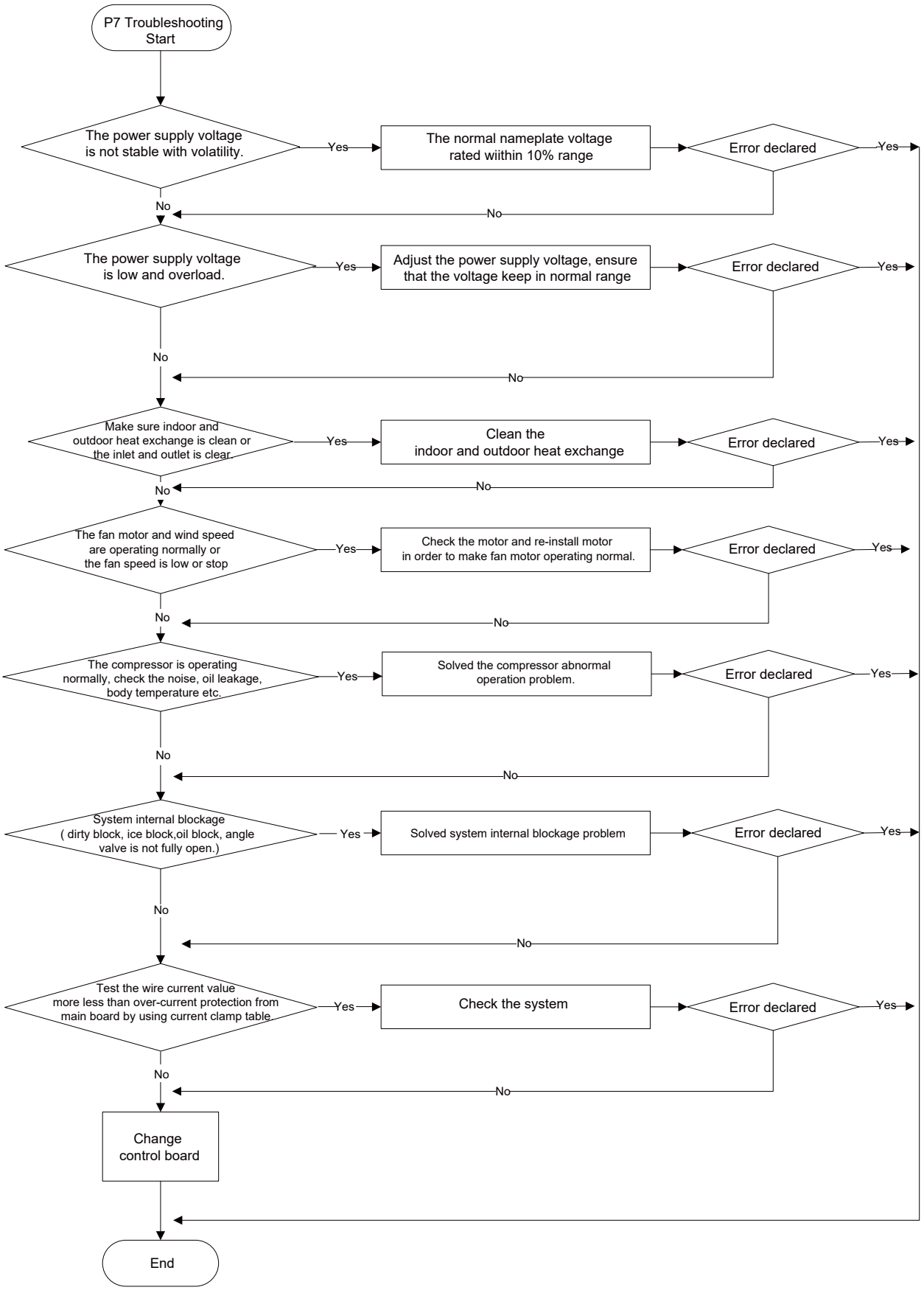
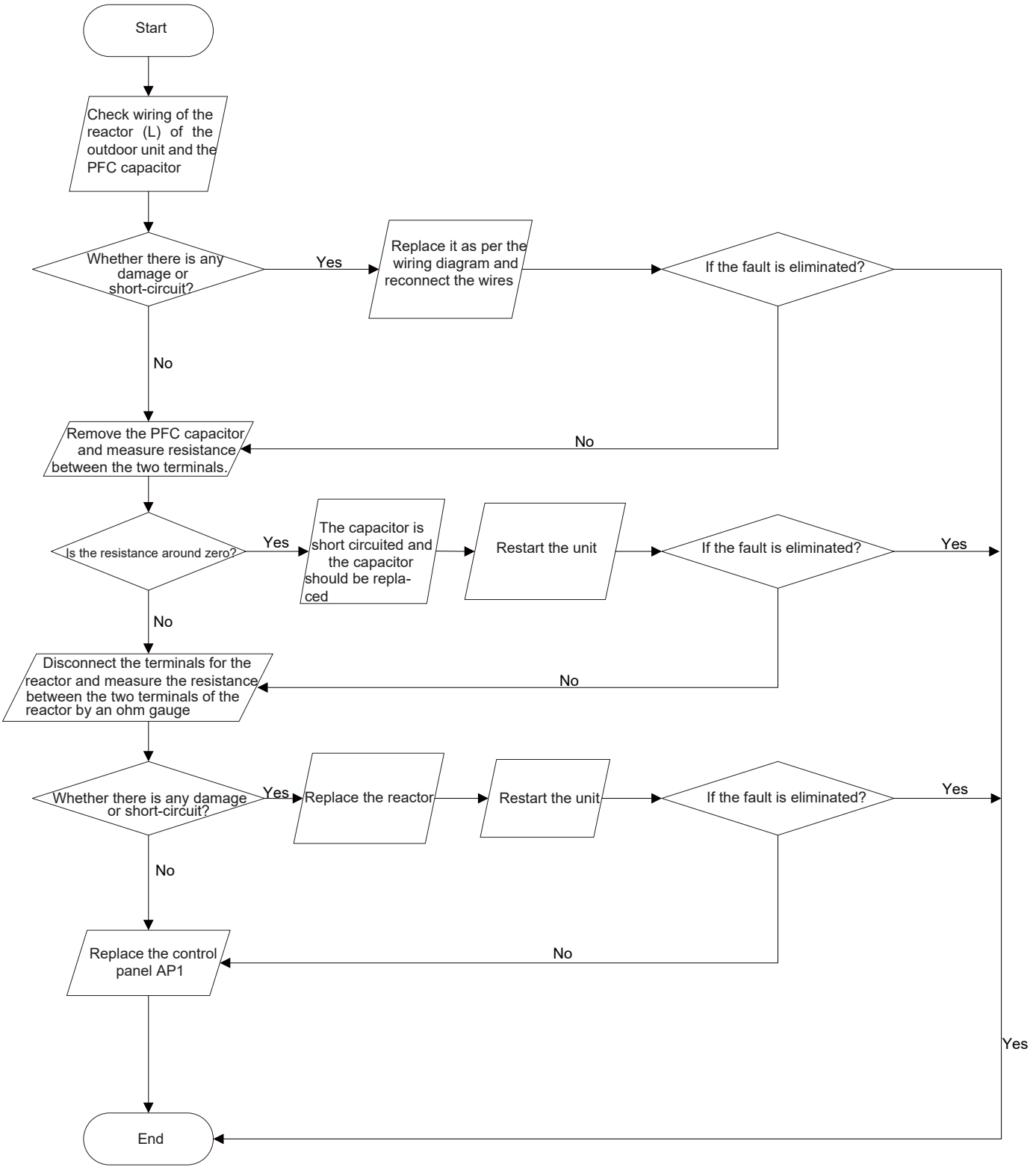

P7 Troubleshooting Start
The power supply voltage is not stable with volatility.
Yes
The normal nameplate voltage rated wiithin 10% range
Error declared
Yes
No
No
The power supply voltage is low and overload.
Yes
Adjust the power supply voltage, ensure that the voltage keep in normal range
Error declared
Yes
No
No
Make sure indoor and outdoor heat exchange is clean or the inlet and outlet is clear.
Yes
Clean the indoor and outdoor heat exchange
Error declared
Yes
No
No
The fan motor and wind speed are operating normally or the fan speed is low or stop
Yes
Check the motor and re-install motor in order to make fan motor operating normal.
Error declared
Yes
No
No
The compressor is operating normally, check the noise, oil leakage, body temperature etc.
Yes
Solved the compressor abnormal operation problem.
Error declared
Yes
No
No
System internal blockage (dirty block, ice block,oil block, angle valve is not fully open.)
Yes
Solved system internal blockage problem
Error declared
Yes
No
No
Test the wire current value more less than over-current protection from main board by using current clamp table.
Yes
Check the system
Error declared
Yes
No
No
Change control board
End

Diagram 14:

Power factor correct (PFC) fault P9 (a fault of outdoor unit) (AP1 here in after refers to the control board of the outdoor unit)
Mainly detect:
● Check if the reactor (L) of the outdoor unit and the PFC capacitor are broken.
Fault diagnosis process:



7.4 Troubleshooting 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 firm
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 blocke	Clean the filt
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 insufficien	The pressure of valves is much lower than that stated in the specificatio	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 firm
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 firm
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with an universal meter and fnd 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 firm
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and fnd 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 airconditioner	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.

Appendix1:Resistance Table for Indoor and Outdoor Ambient Temperature Sensors (15K)							
Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)
-20	144	16	22.53	52	4.986	88	1.451
-19	138.1	17	21.51	53	4.802	89	1.408
-18	128.6	18	20.54	54	4.625	90	1.363
-17	121.6	19	19.63	55	4.456	91	1.322
-16	115	20	18.75	56	4.294	92	1.282
-15	108.7	21	17.93	57	4.139	93	1.244
-14	102.9	22	17.14	58	3.99	94	1.207
-13	97.4	23	16.39	59	3.848	95	1.171
-12	92.22	24	15.68	60	3.711	96	1.136
-11	87.35	25	15	61	3.579	97	1.103
-10	82.75	26	14.36	62	3.454	98	1.071
-9	78.43	27	13.74	63	3.333	99	1.039
-8	74.35	28	13.16	64	3.217	100	1.009
-7	70.5	29	12.6	65	3.105	101	0.9801
-6	66.88	30	12.07	66	2.998	102	0.9519
-5	63.46	31	11.57	67	2.898	103	0.9247
-4	60.23	32	11.09	68	2.797	104	0.8984
-3	57.18	33	10.63	69	2.702	105	0.873
-2	54.31	34	10.2	70	2.611	106	0.8484
-1	51.59	35	9.779	71	2.523	107	0.8246
0	49.02	36	9.382	72	2.439	108	0.8016
1	46.8	37	9.003	73	2.358	109	0.7793
2	44.31	38	8.642	74	2.28	110	0.7577
3	42.14	39	8.297	75	2.205	111	0.7369
4	40.09	40	7.967	76	2.133	112	0.7167
5	38.15	41	7.653	77	2.064	113	0.6971
6	36.32	42	7.352	78	1.997	114	0.6782
7	34.58	43	7.065	79	1.933	115	0.6599
8	32.94	44	6.791	80	1.871	116	0.6421
9	31.38	45	6.529	81	1.811	117	0.625
10	29.9	46	6.278	82	1.754	118	0.6083
11	28.51	47	6.038	83	1.699	119	0.5922
12	27.18	48	5.809	84	1.645	120	0.5765
13	25.92	49	5.589	85	1.594	121	0.5614
14	24.73	50	5.379	86	1.544	122	0.5467
15	23.6	51	5.179	87	1.497	123	0.5324

Appendix2:ResistanceTable for Indoor and Outdoor Ambient Temperature Sensors (20K)							
Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)	Temp.(℃)	Resistance(kΩ)
-30	361.8	6	48.42	42	9.803	78	2.663
-29	339.8	7	46.11	43	9.42	79	2.577
-28	319.2	8	43.92	44	9.054	80	2.495
-27	300	9	41.84	45	8.705	81	2.415
-26	282.2	10	39.87	46	8.37	82	2.339
-25	265.5	11	38.01	47	8.051	83	2.265
-24	249.9	12	36.24	48	7.745	84	2.194
-23	235.3	13	34.57	49	7.453	85	2.125
-22	221.6	14	32.98	50	7.173	86	2.059
-21	208.9	15	31.47	51	6.905	87	1.996
-20	196.9	16	30.04	52	6.648	88	1.934
-19	181.4	17	28.68	53	6.403	89	1.875
-18	171.4	18	27.39	54	6.167	90	1.818
-17	162.1	19	26.17	55	5.942	91	1.763
-16	153.3	20	25.01	56	5.726	92	1.71
-15	145	21	23.9	57	5.519	93	1.658
-14	137.2	22	22.85	58	5.32	94	1.609
-13	129.9	23	21.85	59	5.13	95	1.561
-12	123	24	20.9	60	4.948	96	1.515
-11	116.5	25	20	61	4.773	97	1.47
-10	110.3	26	19.14	62	4.605	98	1.427
-9	104.6	27	18.32	63	4.443	99	1.386
-8	99.13	28	17.55	64	4.289	100	1.346
-7	94	29	16.8	65	4.14	101	1.307
-6	89.17	30	16.1	66	3.998	102	1.269
-5	84.61	31	15.43	67	3.861	103	1.233
-4	80.31	32	14.79	68	3.729	104	1.198
-3	76.24	33	14.18	69	3.603	105	1.164
-2	72.41	34	13.59	70	3.481	106	1.131
-1	68.79	35	13.04	71	3.364	107	1.099
0	65.37	36	12.51	72	3.252	108	1.069
1	62.13	37	12	73	3.144	109	1.039
2	59.08	38	11.52	74	3.04	110	1.01
3	56.19	39	11.06	75	2.94	111	0.9825
4	53.46	40	10.62	76	2.844	112	0.9556
5	50.87	41	10.2	77	2.752	113	0.9295

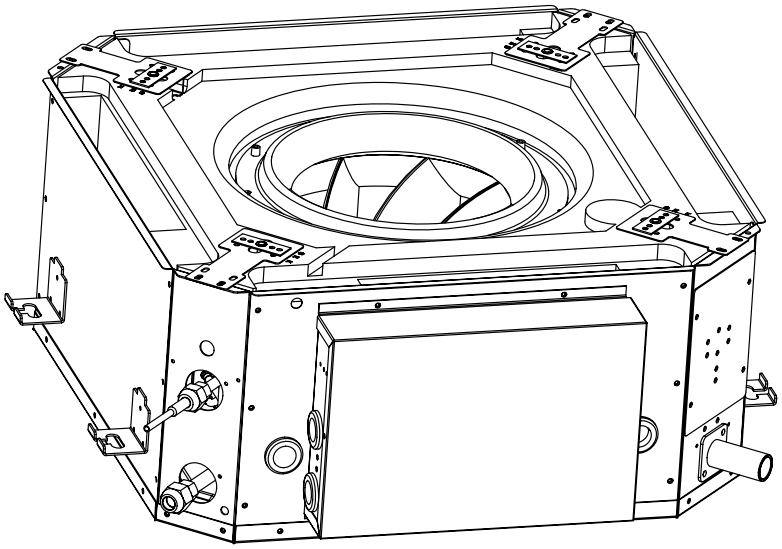
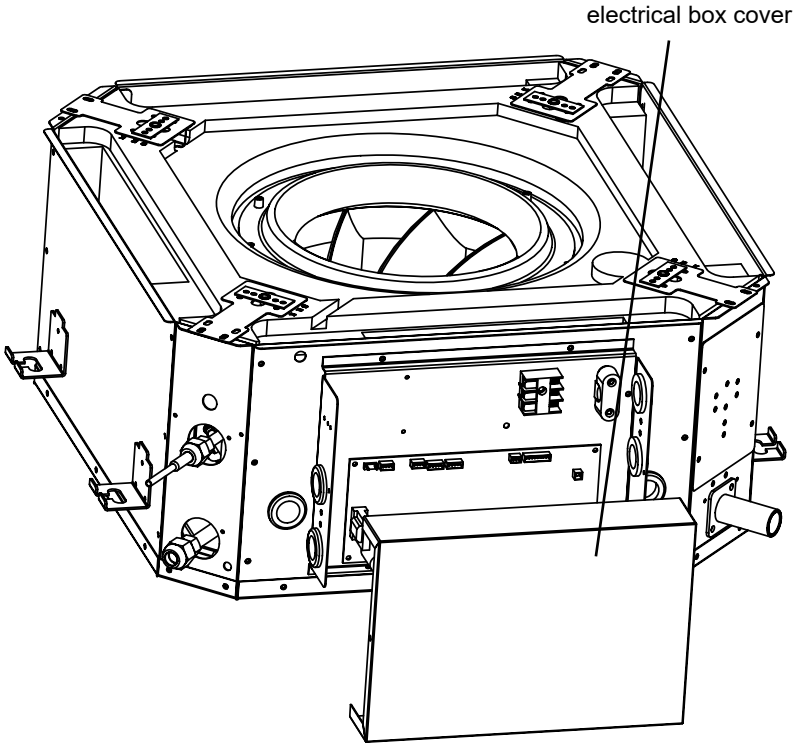
Appendix 3: Resistance Table for Indoor and Outdoor Ambient Temperature Sensors (50K)							
Temp. (℃)	Resistance (kΩ)	Temp. (℃)	Resistance (kΩ)	Temp. (℃)	Resistance (kΩ)	Temp. (℃)	Resistance (kΩ)
-30	894.497	6	121.073	42	24.544	78	6.565
-29	841.108	7	115.255	43	23.584	79	6.350
-28	791.159	8	109.752	44	22.667	80	6.143
-27	744.415	9	104.544	45	21.790	81	5.944
-26	700.663	10	99.615	46	20.951	82	5.752
-25	659.701	11	94.948	47	20.148	83	5.568
-24	621.342	12	90.526	48	19.380	84	5.391
-23	585.412	13	86.337	49	18.644	85	5.220
-22	551.747	14	82.366	50	17.940	86	5.056
-21	520.197	15	78.601	51	17.266	87	4.898
-20	490.621	16	75.030	52	16.620	88	4.746
-19	462.888	17	71.642	53	16.001	89	4.599
-18	436.875	18	68.427	54	15.408	90	4.459
-17	412.468	19	65.374	55	14.840	91	4.323
-16	389.563	20	62.475	56	14.295	92	4.192
-15	368.059	21	59.721	57	13.773	93	4.067
-14	347.865	22	57.104	58	13.272	94	3.946
-13	328.895	23	54.616	59	12.792	95	3.829
-12	311.070	24	52.250	60	12.331	96	3.717
-11	294.315	25	50.000	61	11.889	97	3.609
-10	278.561	26	47.859	62	11.465	98	3.505
-9	263.743	27	45.822	63	11.058	99	3.405
-8	249.801	28	43.882	64	10.667	100	3.309
-7	236.679	29	42.034	65	10.292	101	3.216
-6	224.325	30	40.275	66	9.931	102	3.127
-5	212.690	31	38.598	67	9.585	103	3.041
-4	201.728	32	37.000	68	9.253	104	2.959
-3	191.397	33	35.476	69	8.933	105	2.879
-2	181.657	34	34.023	70	8.627		
-1	172.472	35	32.637	71	8.332		
0	163.807	36	31.315	72	8.049		
1	155.630	37	30.052	73	7.776		
2	147.910	38	28.847	74	7.515		
3	140.620	39	27.697	75	7.263		
4	133.733	40	26.597	76	7.021		
5	127.225	41	25.547	77	6.789		

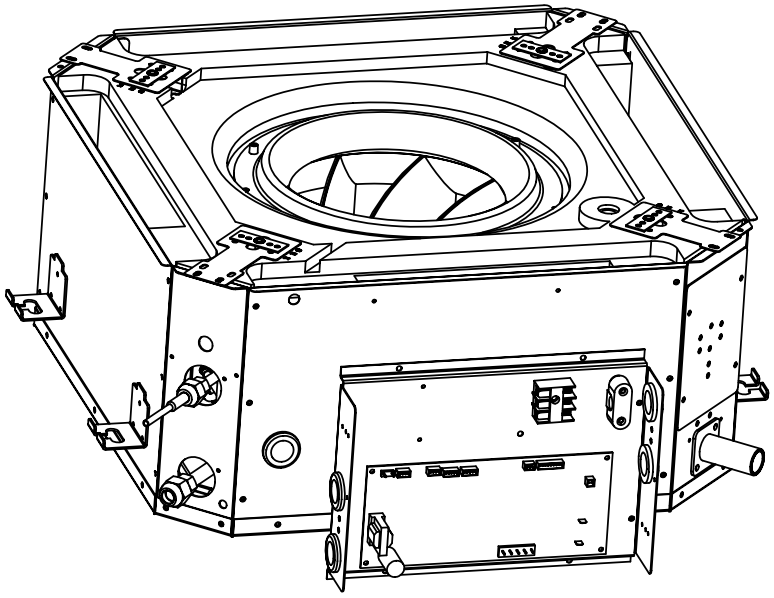
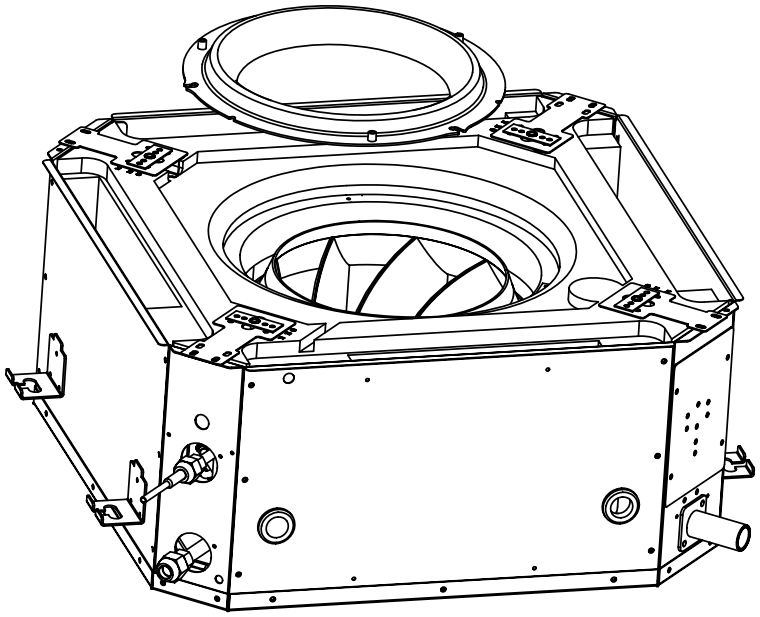
Note: The information above is for reference only.

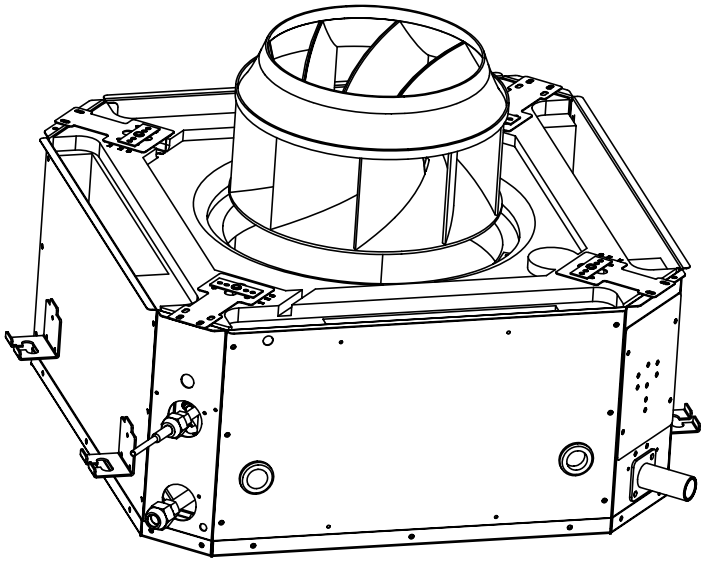
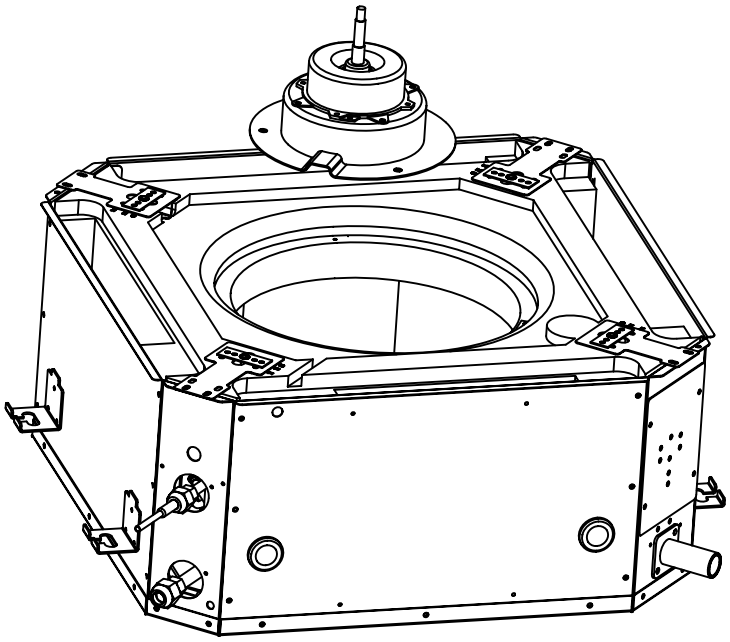
8. Removal Procedure

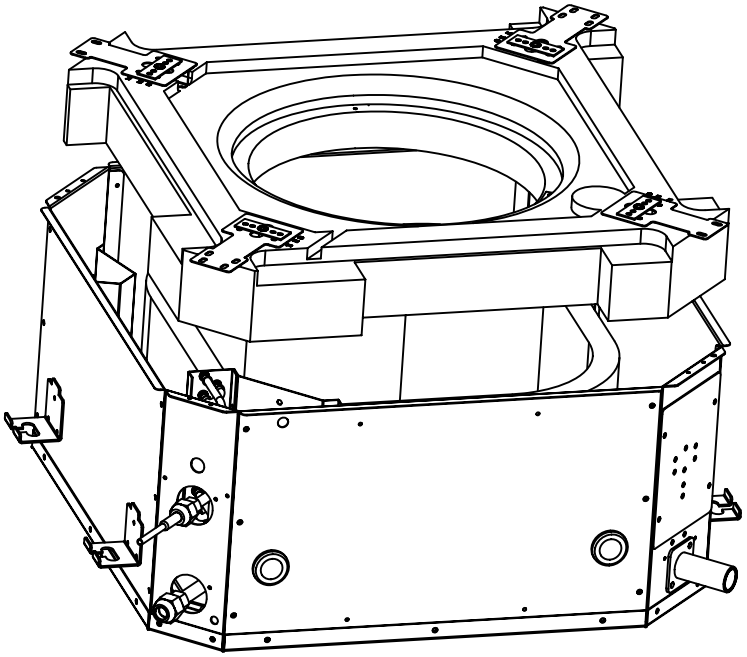
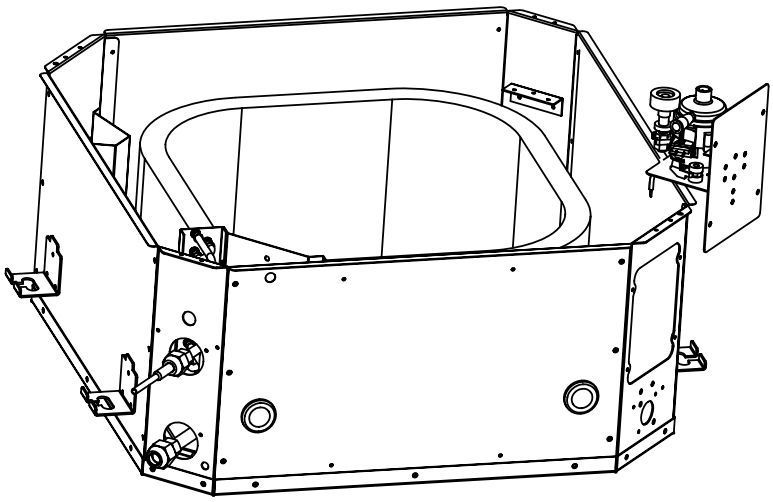
8.1 Removal Procedure of Indoor Unit

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

Procedure	Note
	**1. Before disassembly**
	**2. Rmove electric box cover** Remove the screws on electric box by screws-drivers, Loose buckles of electric box bottom and then remove the electric box cover.

Procedure	Note
 	**3. Remove baffle liner and electric box assembly** Remove the screws between baffle liner and electric box assembly by screws-drivers, and then remove baffle liner and electric box assembly.

Procedure	Note
	**4. Remove centrifugal fan** Loose the fixed screws for centrifugal fan and then scrape the fixing glue and lift up,remove centrifugal fan.
	**5. Remove fan motor** Loose the four screws fixed the fan motor by screws-drivers and then lift-up fan motor and the remove the fan motor.

Procedure	Note
	**6. Remove water pan** Loose the fixed screws on the water pan and then lift- up water pan and then remove water pan .
	**7.Remove the water pump** Loose the screws fixed the water pump by screws-drivers and then pull down the pipe, remove the water pump.

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