LENNOX

America's Premier Climate Comfort Brand since 1895

Service Manual

Models: LM036CI-100P232-1X / LM036CO-100P232-1X
LM036HI-100P232-1X / LM036HO-100P232-1X
(Refrigerant R22)

Thank you for selecting LENNOX air conditioners.

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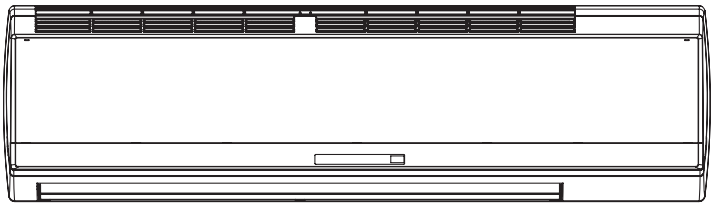
Part Ⅰ : Technical Information

1. Summary

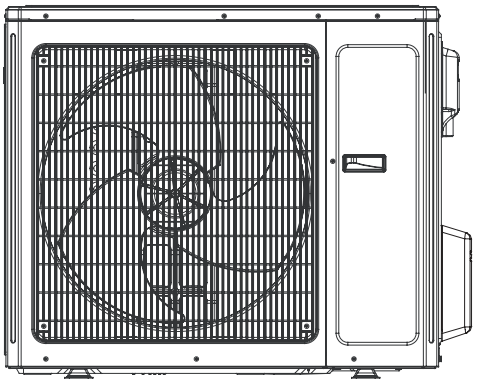
Indoor Unit:

LM036CI-100P232-1X
LM036HI-100P232-1X



Outdoor Unit:

LM036CO-100P232-1X
LM036HO-100P232-1X



Remote Controller:

Y6185

2. Specifications

2.1 Specification Sheet

Model			LM036CI-100P232-1X/LM036CO-100P232-1X
Product Code			Y6695/Y6696
Power Supply	Rated Voltage	V~	220-230
	Rated Frequency	Hz	60
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity		Btu/h	36000
Heating Capacity		W	/
Cooling Power Input		W	3450
Heating Power Input		W	/
Cooling Power Current		A	15.3
Heating Power Current		A	/
Rated Input		W	4300
Rated Current		A	19
Air Flow Volume(SH/H/M/L/SL)		m^3/h	1450/1350/1200/1050/-
Dehumidifying Volume		L/h	3.5
EER		W/W	2.8
COP		W/W	/
SEER			/
HSPF			/
Application Area		m^2	46-70
Indoor Unit	Model of indoor unit		LM036CI-100P232-1X
	Indoor Unit Product Code		Y6695
	Fan Type		Cross-flow
	Diameter Length(DXL)	mm	Φ108X522.7
	Fan Motor Cooling Speed (SH/H/M/L/SL)	r/min	1450/1350/1200/1050/-
	Fan Motor Heating Speed (SH/H/M/L/SL)	r/min	/
	Output of Fan Motor	W	60
	Fan Motor RLA	A	0.52
	Fan Motor Capacitor	μF	3
	Evaporator Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Row-fin Gap	mm	2-1.5
	Coil Length (LXDXW)	mm	1074X25.4X381
	Swing Motor Model		MP24BA
	Output of Swing Motor	W	1.5
	Fuse	A	5
	Sound Pressure Level (SH/H/M/L/SL)	dB (A)	56/54/51/49/-
	Sound Power Level (SH/H/M/L/SL)	dB (A)	66/64/61/59/-
	Dimension (WXHXD)	mm	1350X326X253
	Dimension of Carton Box (LXWXH)	mm	1438X418X343
	Dimension of Package (LXWXH)	mm	1441X421X358
	Net Weight	kg	20
	Gross Weight	kg	27

Outdoor Unit	Model of Outdoor Unit		LM036CO-100P232-1X
	Outdoor Unit Product Code		Y6696
	Compressor Manufacturer/Trademark		MITSUBISHI ELECTRIC(GUANG ZHOU) COMPRESSOR CO.,LTD
	Compressor Model		LHT48NBDC
	Compressor Oil		ATMOS NM56EP
	Compressor Type		Rotary
	L.R.A.	A	95
	Compressor RLA	A	15.4
	Compressor Power Input	W	3250
	Overload Protector		/
	Throttling Method		Capillary
	Operation temp	ºC	16~30
	Ambient temp (cooling)	ºC	18~43
	Ambient temp (heating)	ºC	/
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94
	Rows-fin Gap	mm	2.5-1.5
	Coil Length (LXDXW)	mm	1028.5X38X748
	Fan Motor Speed	rpm	780
	Output of Fan Motor	W	90
	Fan Motor RLA	A	0.78
	Fan Motor Capacitor	μF	4
	Air Flow Volume of Outdoor Unit	m^3/h	4000
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ552
	Defrosting Method		/
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.5
	Sound Pressure Level (H/M/L)	dB (A)	60/-/-
	Sound Power Level (H/M/L)	dB (A)	70/-/-
	Dimension (WXHXD)	mm	1000X790X427
	Dimension of Carton Box (LXWXH)	mm	1080X485X840
	Dimension of Package (LXWXH)	mm	1083X488X855
	Net Weight	kg	73
	Gross Weight	kg	78
	Refrigerant		R22
	Refrigerant Charge	kg	2.6
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	15
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ19
	Max Distance Height	m	10
	Max Distance Length	m	20
	Note:The connection pipe applies metric diameter.		

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

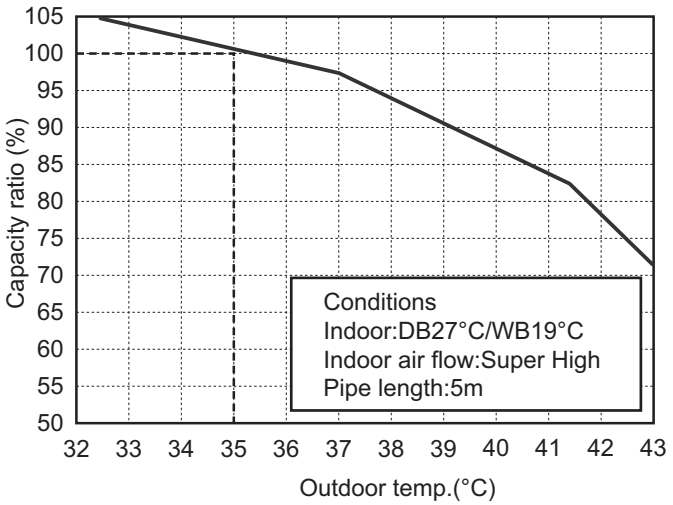
Model			LM036HI-100P232-1X/LM036HO-100P232-1X
Product Code			Y6705/Y6706
Power Supply	Rated Voltage	V~	220-230
	Rated Frequency	Hz	60
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity		Btu/h	36000
Heating Capacity		Btu/h	35000
Cooling Power Input		W	3450
Heating Power Input		W	3360
Cooling Power Current		A	15.3
Heating Power Current		A	14.9
Rated Input		W	4400
Rated Current		A	19.5
Air Flow Volume(SH/H/M/L/SL)		m^3/h	1450/1350/1200/1050/-
Dehumidifying Volume		L/h	3.5
EER		W/W	2.8
COP		W/W	3.05
SEER			/
HSPF			/
Application Area		m^2	46-70
Indoor Unit	Model of indoor unit		LM036HI-100P232-1X
	Indoor Unit Product Code		Y6705
	Fan Type		Cross-flow
	Diameter Length(DXL)	mm	Φ108X522.7
	Fan Motor Cooling Speed (SH/H/M/L/SL)	r/min	1450/1350/1200/1050/-
	Fan Motor Heating Speed (SH/H/M/L/SL)	r/min	1450/1350/1200/1050/-
	Output of Fan Motor	W	60
	Fan Motor RLA	A	0.52
	Fan Motor Capacitor	μF	3
	Evaporator Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Row-fin Gap	mm	2.5-1.5
	Coil Length (LXDXW)	mm	1074X25.X381
	Swing Motor Model		MP24BA
	Output of Swing Motor	W	1.5
	Fuse	A	5
	Sound Pressure Level (SH/H/M/L/SL)	dB (A)	56/54/51/49/-
	Sound Power Level (SH/H/M/L/SL)	dB (A)	66/64/61/59/-
	Dimension (WXHXD)	mm	1350X326X253
	Dimension of Carton Box (LXWXH)	mm	1438X418X343
	Dimension of Package (LXWXH)	mm	1441X421X358
	Net Weight	kg	20
	Gross Weight	kg	27

Outdoor Unit	Model of Outdoor Unit		LM036HO-100P232-1X
	Outdoor Unit Product Code		Y6706
	Compressor Manufacturer/Trademark		MITSUBISHI ELECTRIC(GUANGZHOU) COMPRESSOR CO.,LTD
	Compressor Model		LHT48NBDC
	Compressor Oil		ATMOS NM56EP
	Compressor Type		Rotary
	L.R.A.	A	95
	Compressor RLA	A	15.4
	Compressor Power Input	W	3250
	Overload Protector		/
	Throttling Method		Capillary
	Operation temp	ºC	16~30
	Ambient temp (cooling)	ºC	18~43
	Ambient temp (heating)	ºC	-7~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94
	Rows-fin Gap	mm	2.5-1.5
	Coil Length (LXDXW)	mm	1028.5X38X748
	Fan Motor Speed	rpm	780
	Output of Fan Motor	W	90
	Fan Motor RLA	A	0.78
	Fan Motor Capacitor	μF	4
	Air Flow Volume of Outdoor Unit	m^3/h	4000
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ552
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	1.5
	Sound Pressure Level (H/M/L)	dB (A)	60/-/-
	Sound Power Level (H/M/L)	dB (A)	70/-/-
	Dimension (WXHXD)	mm	1000X790X427
	Dimension of Carton Box (LXWXH)	mm	1080X485X840
	Dimension of Package (LXWXH)	mm	1083X488X855
	Net Weight	kg	75
	Gross Weight	kg	80
	Refrigerant		R22
	Refrigerant Charge	kg	2.6
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	15
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ19
	Max Distance Height	m	10
	Max Distance Length	m	20
	Note:The connection pipe applies metric diameter.		

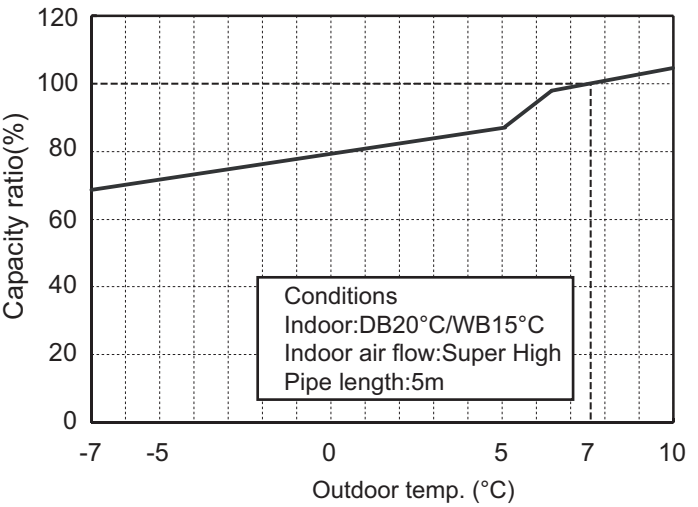
The above data is subject to change without notice; please refer to the nameplate of the unit.

2.2 Capacity Variation Ratio According to Temperature

Cooling:



Heating:



2.3 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)		
27/19	35/24	All models	0.48 ~ 0.7	7.2 to 9.6	78.1 to 38.5	Supper High	High

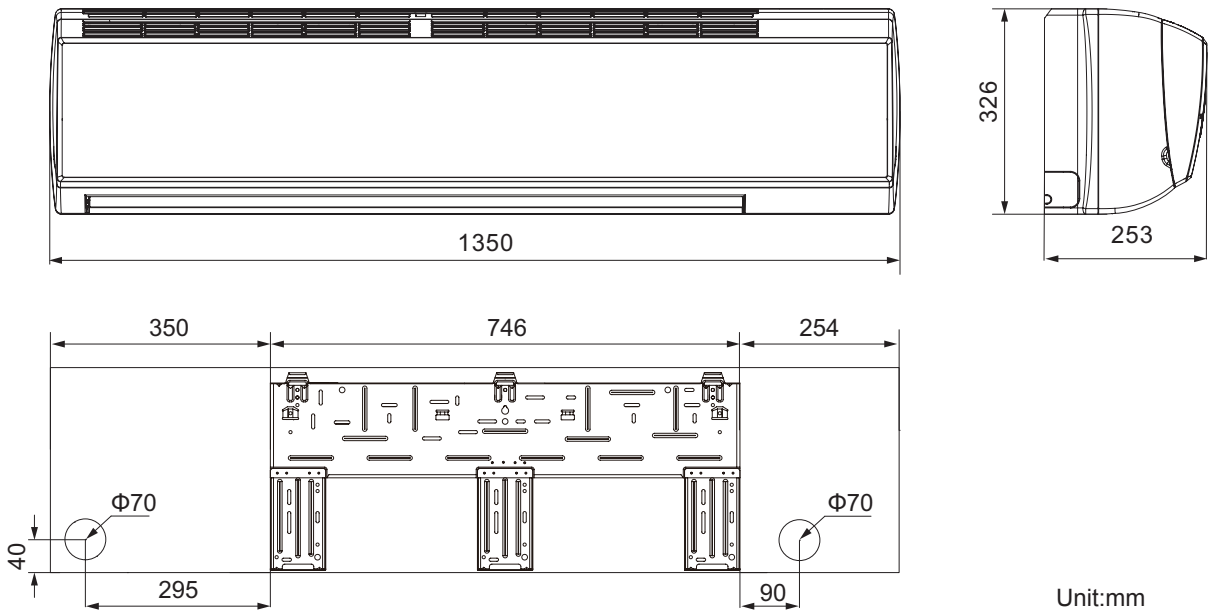
Heating:

Rated heating condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)		
20/15	7/6	All models	1.85 ~ 2.05	78.4 to 38	-0.9 to 16	Supper High	High

Instruction:
T1: Inlet and outlet pipe temperature of evaporator
T2: Inlet and outlet pipe temperature of condenser
P: Pressure at the side of big valve
Connection pipe length: 5 m.

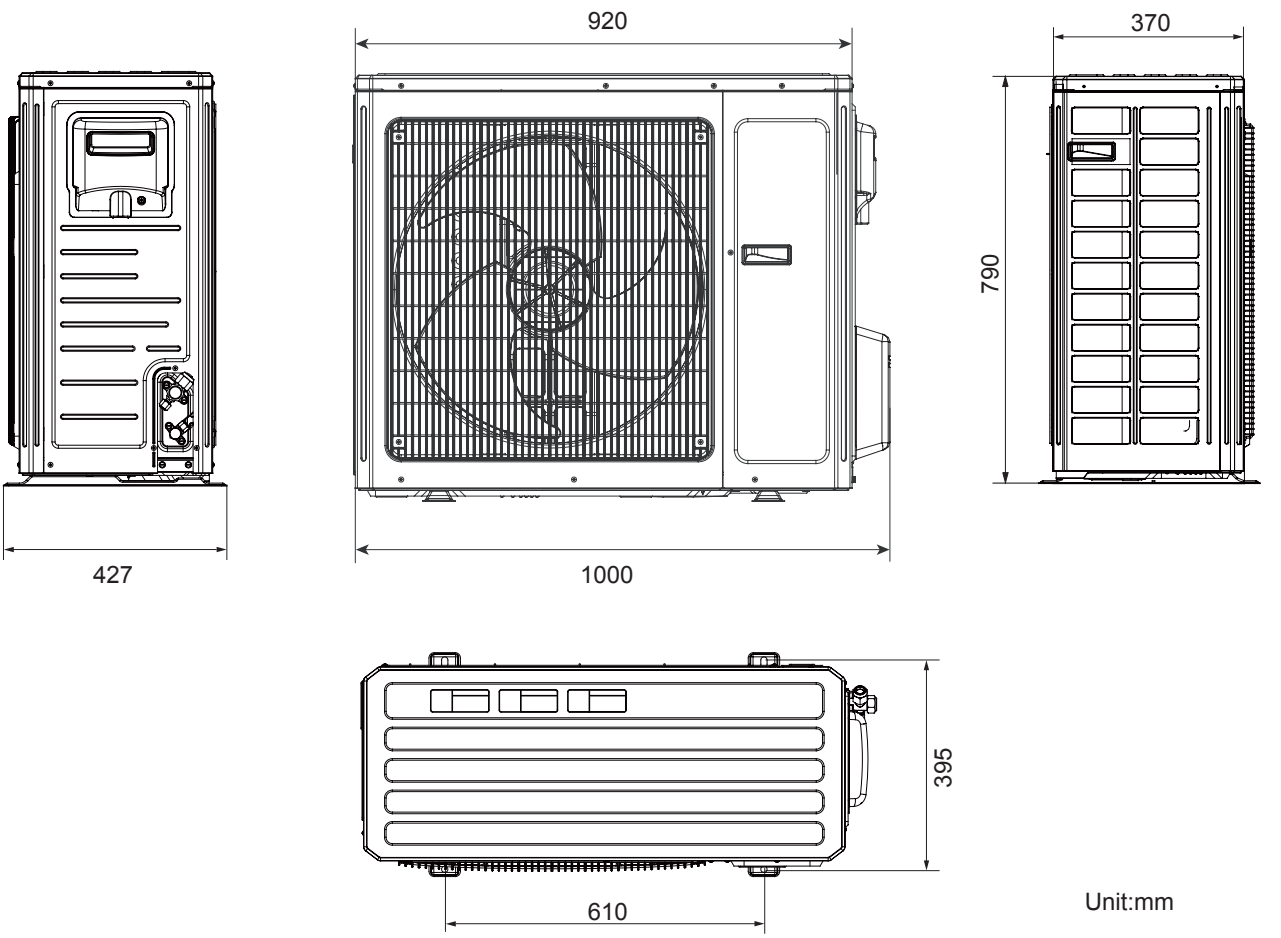
3. Dimensions

3.1 Indoor Unit



Unit:mm

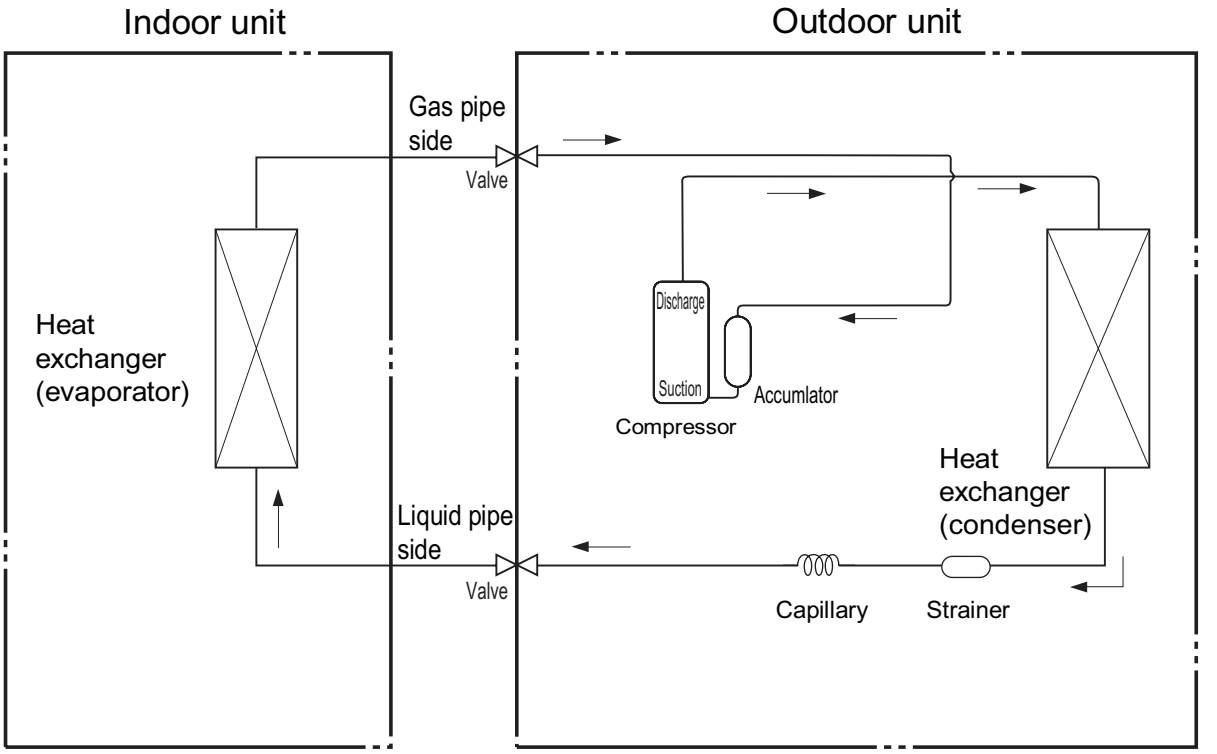
3.2 Outdoor Unit



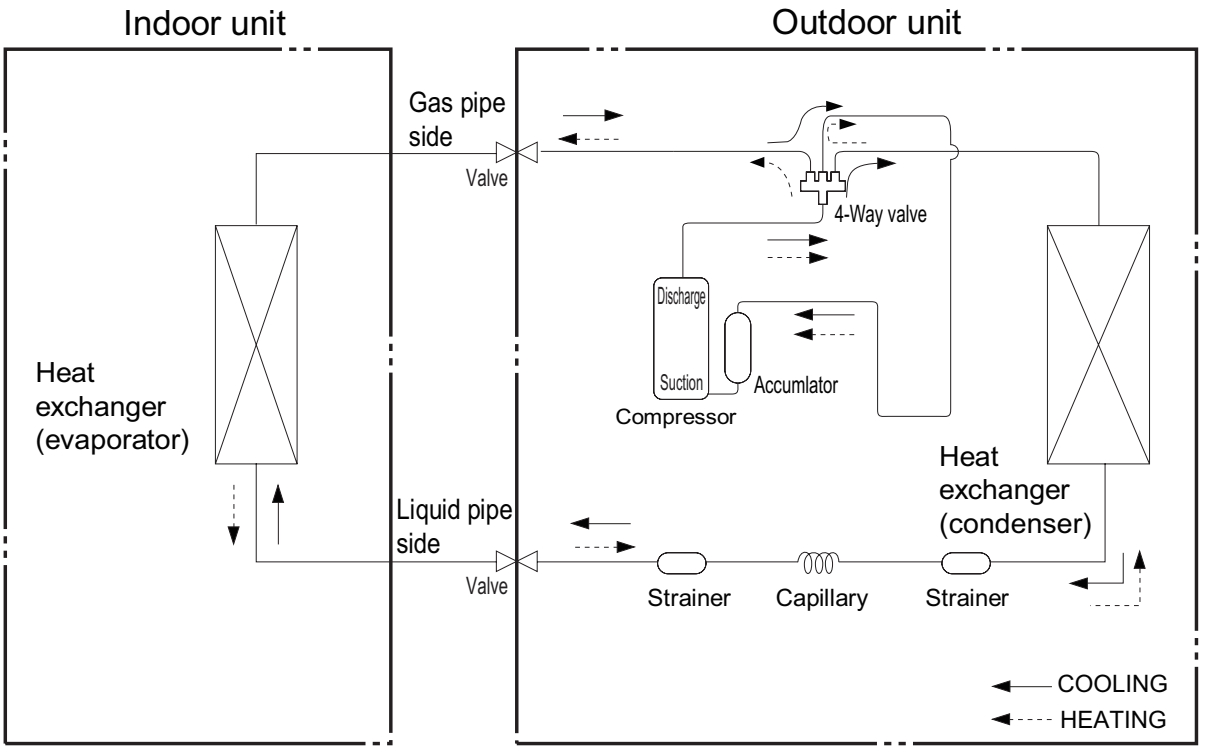
Unit:mm

4. Refrigerant System Diagram

Cooling only model



Cooling and heating model



Refrigerant pipe diameter
Liquid :1/4" (6 mm)
Gas : 3/4" (19mm)

5. Electrical Part

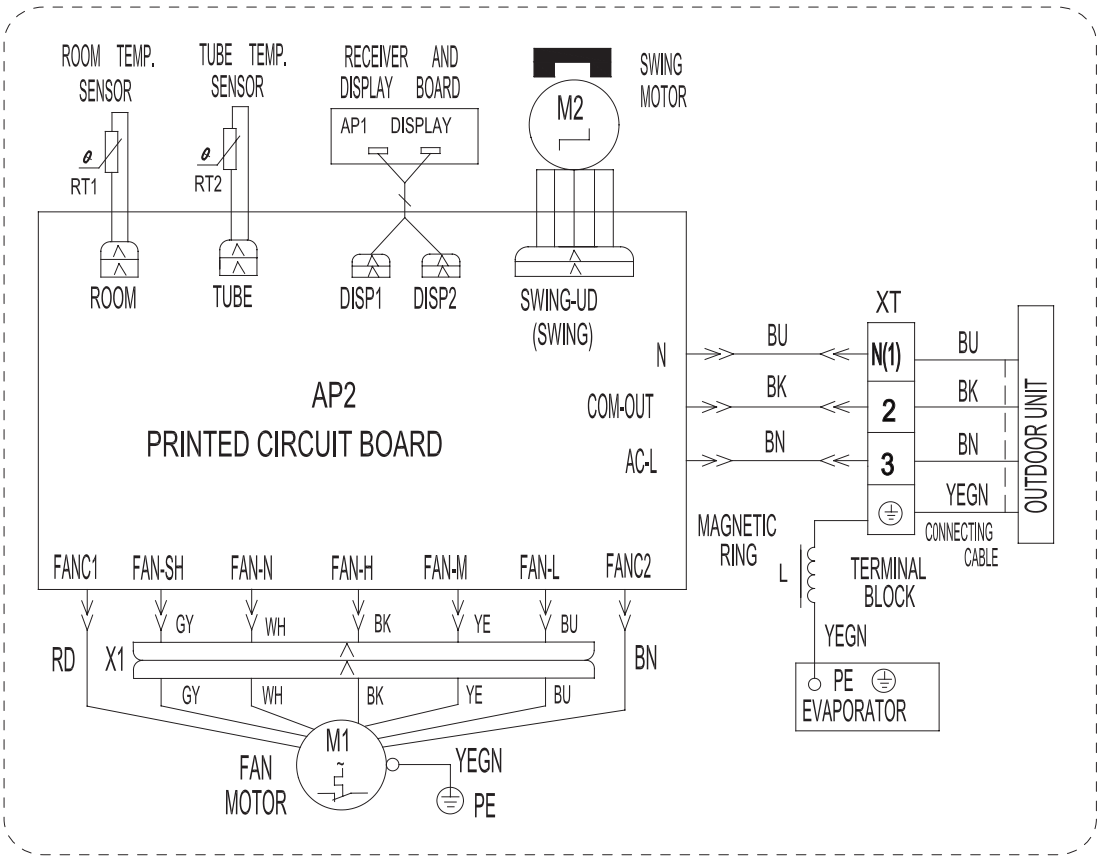
5.1 Wiring Diagram

● Instruction

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

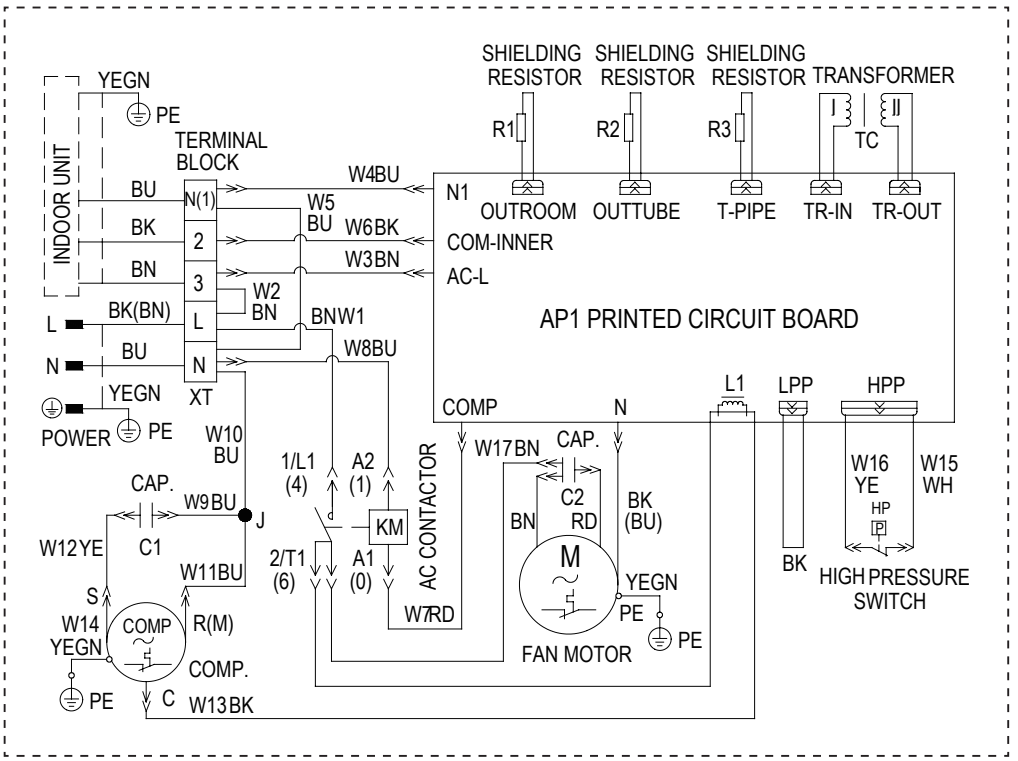
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● Indoor Unit

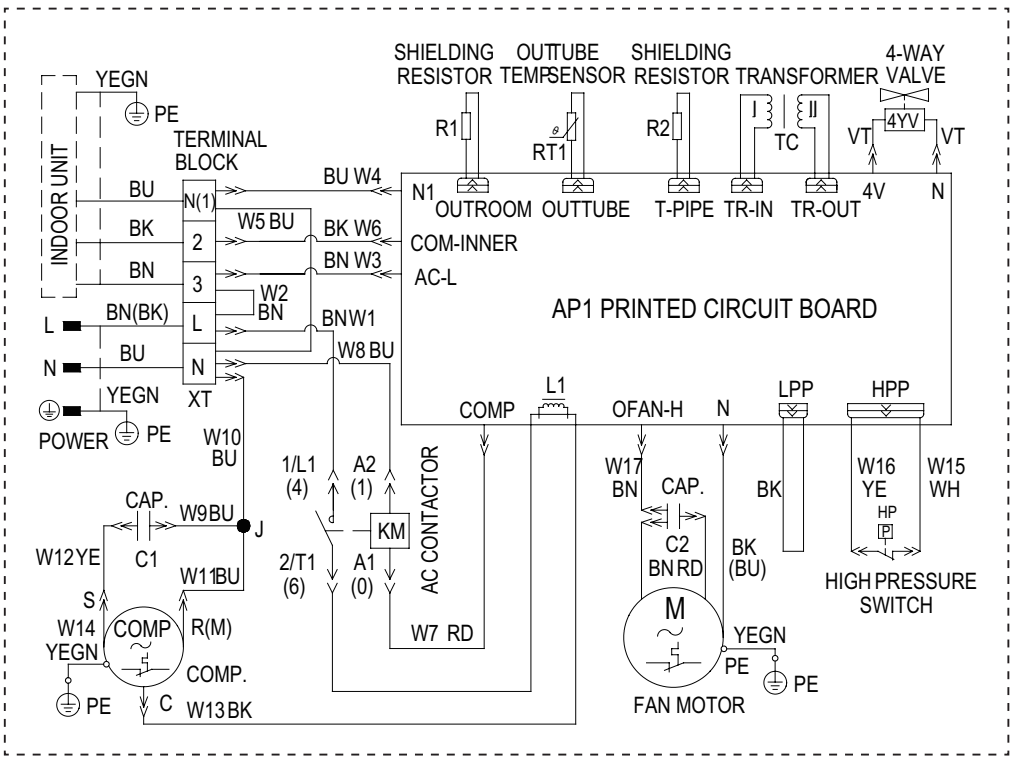


● Outdoor Unit

LM036CO-100P232-1X



LM036HO-100P232-1X

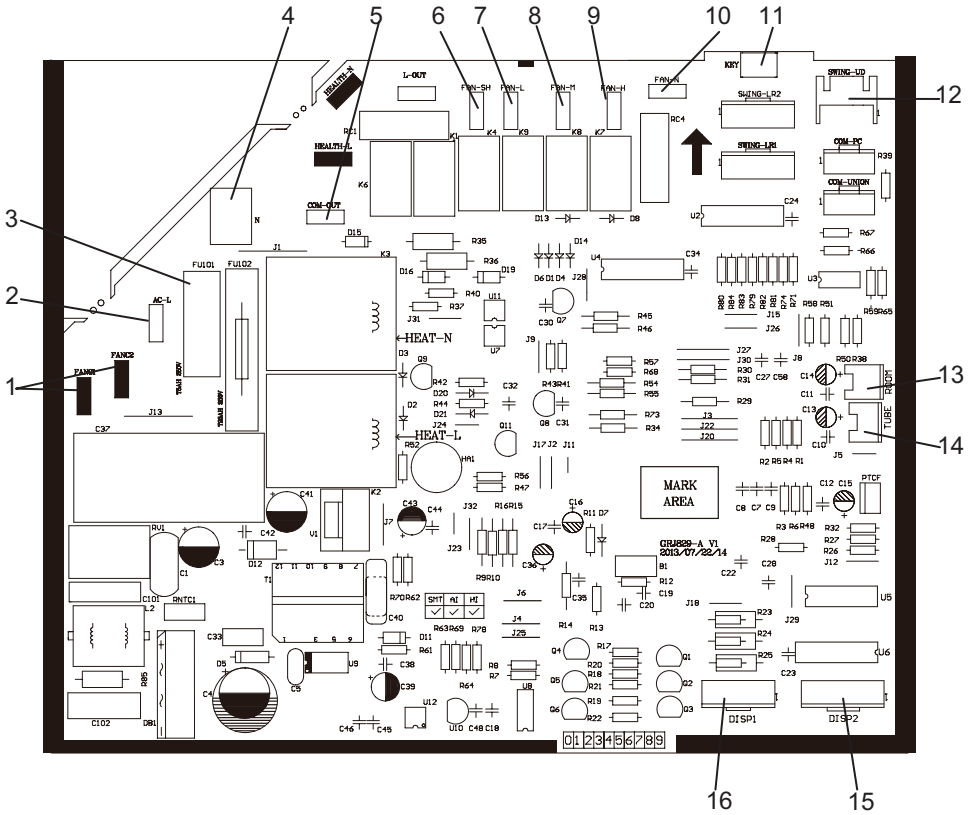


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

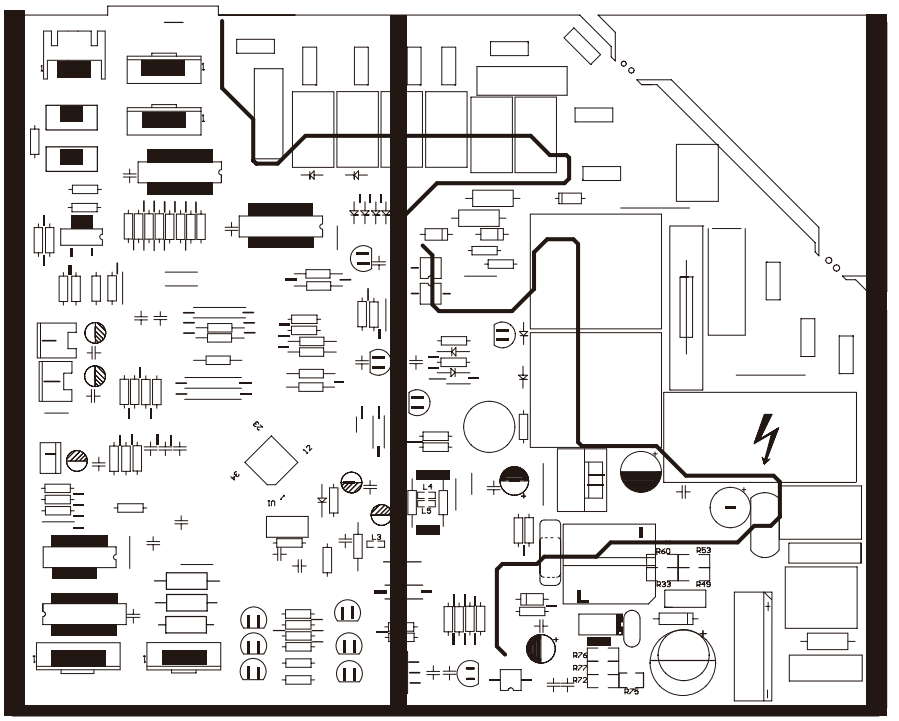
Indoor Unit

● **Top view**



1	Fan motor capacitor terminal
2	Live wire
3	Fuse
4	Neutral wire
5	Indoor & outdoor unit communication cable terminal
6	超强风接插端子
7	Low fan level terminal
8	Medium fan level terminal
9	High fan level terminal
10	风机零线接插端子
11	Auto button
12	Up & down swing terminal
13	Ambient temp. sensor
14	Tube temp. sensor
15	No.2 double-8 display terminal
16	No.1 double-8 display terminal

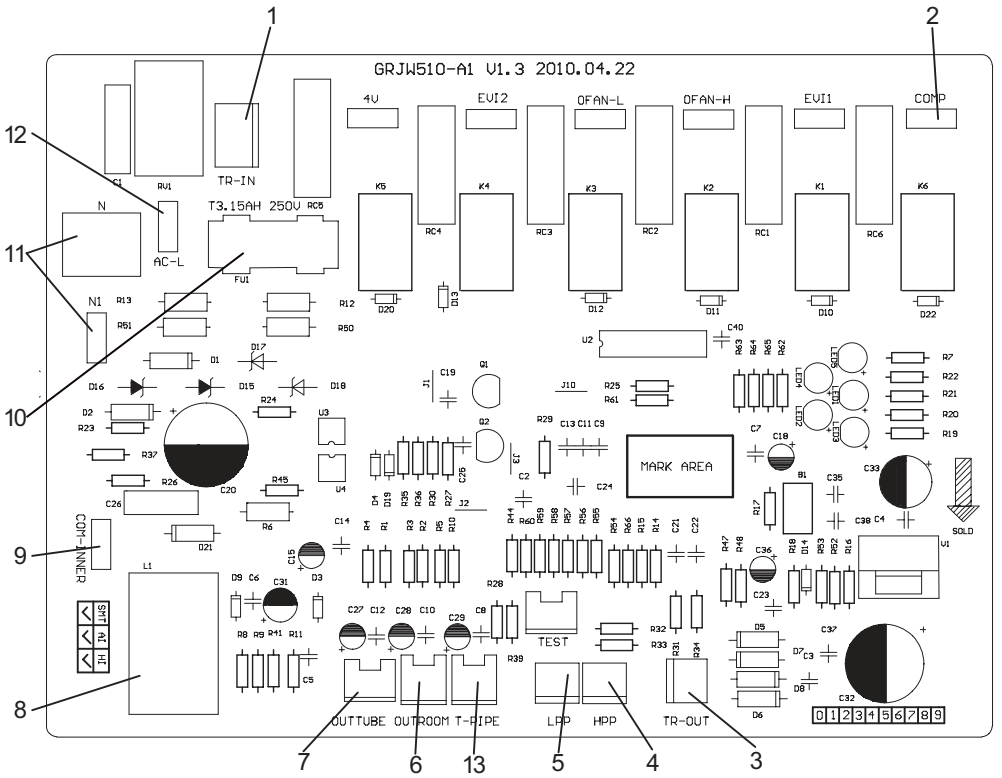
● **Bottom view**



Outdoor Unit

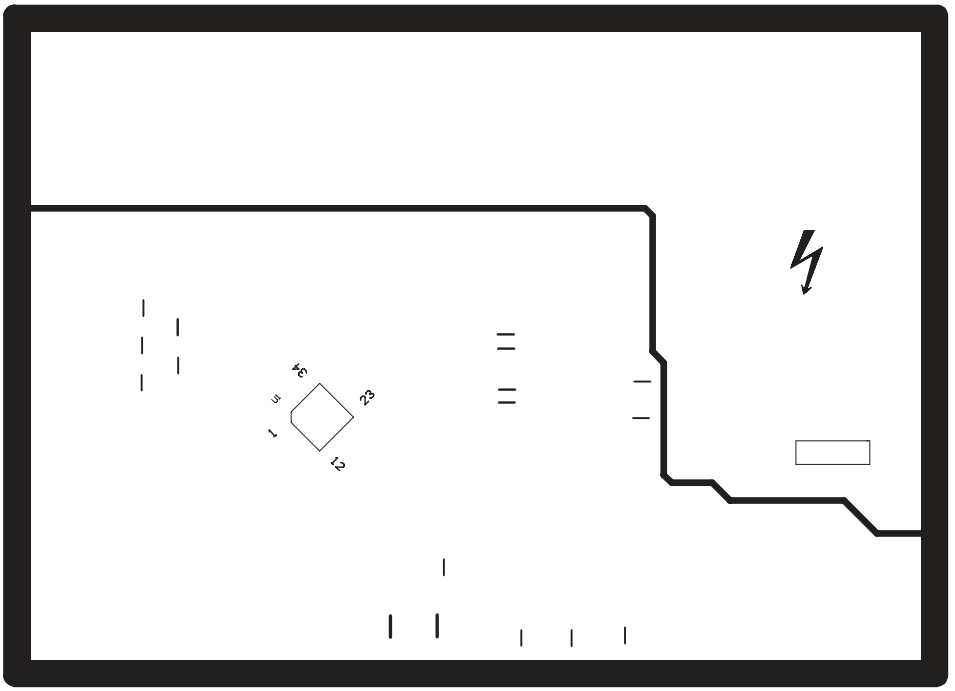
/LM036CO-100P232-1X

● Top view



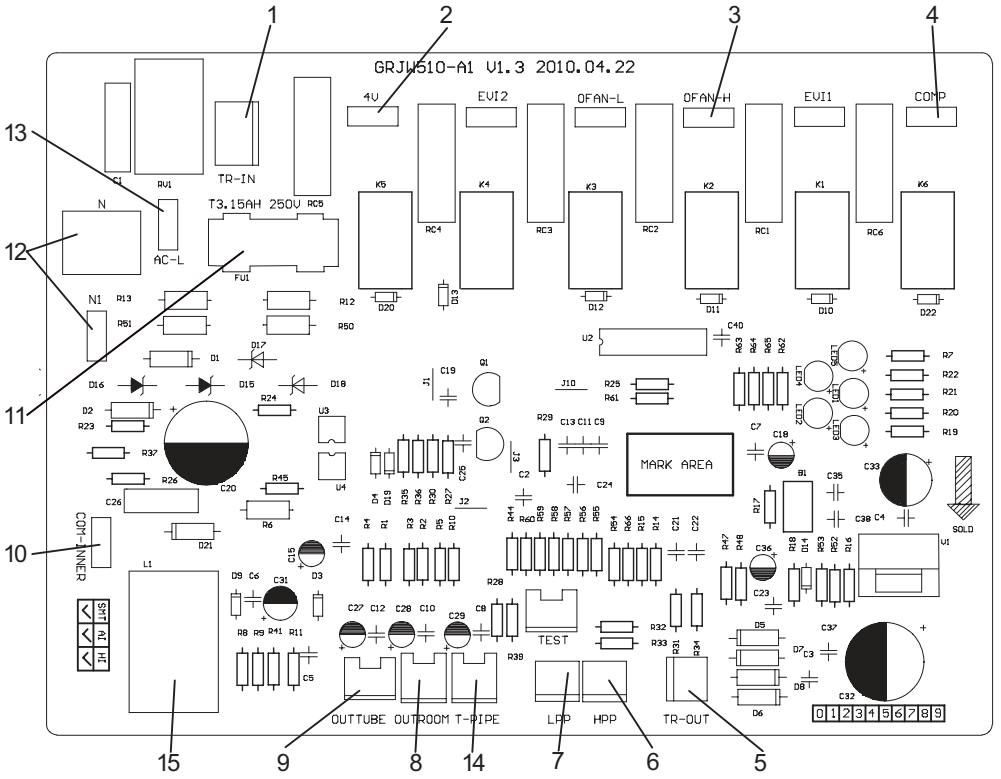
1	Input of transformer
2	Terminal for outdoor fan and compressor
3	Output of transformer
4	Terminal for high pressure protection
5	Terminal for low pressure protection
6	Terminal for outdoor ambient temp sensor
7	Terminal for outdoor pipe temp sensor
8	Current mutual-inductor
9	Terminal for communication wire
10	Protective tube
11	Terminal for neutral wire
12	Terminal for live wire
13	Wiring terminal of outdoor discharge temperature sensor

● Bottom view



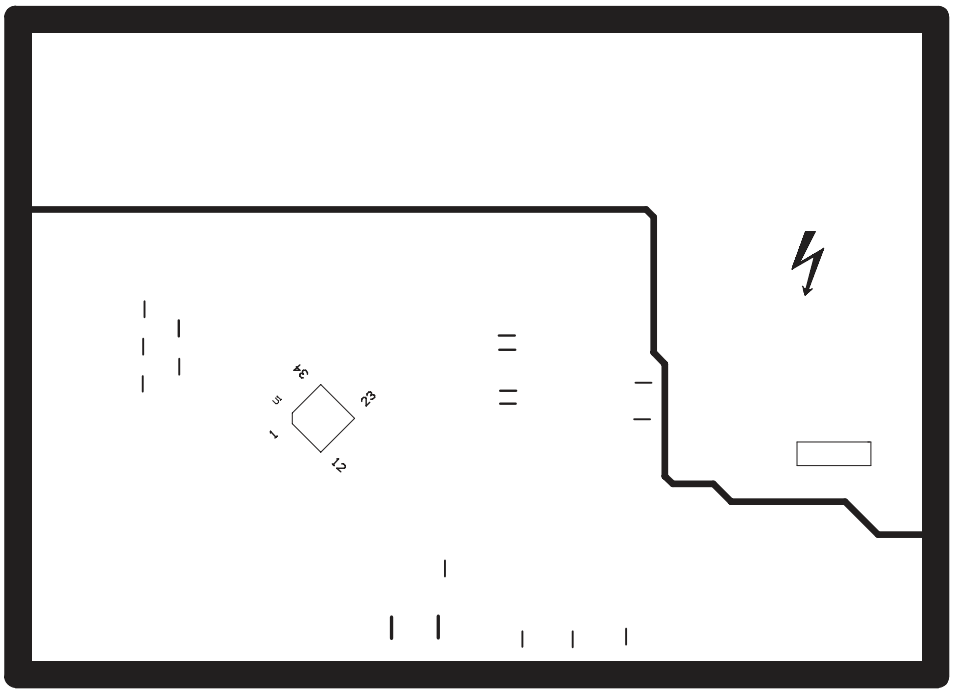
LM036HO-100P232-1X

● Top view



1	Input of transformer
2	Terminal for 4-way valve
3	Terminal for outdoor fan
4	Terminal for compressor
5	Output of transformer
6	Terminal for high pressure protection
7	Terminal for low pressure protection
8	Terminal for outdoor ambient temp sensor
9	Terminal for outdoor pipe temp sensor
10	Terminal for communication wire
11	Protective tube
12	Terminal for neutral wire
13	Terminal for live wire
14	Wiring terminal of outdoor discharge temperature sensor
15	Current mutual-inductor

● Bottom view



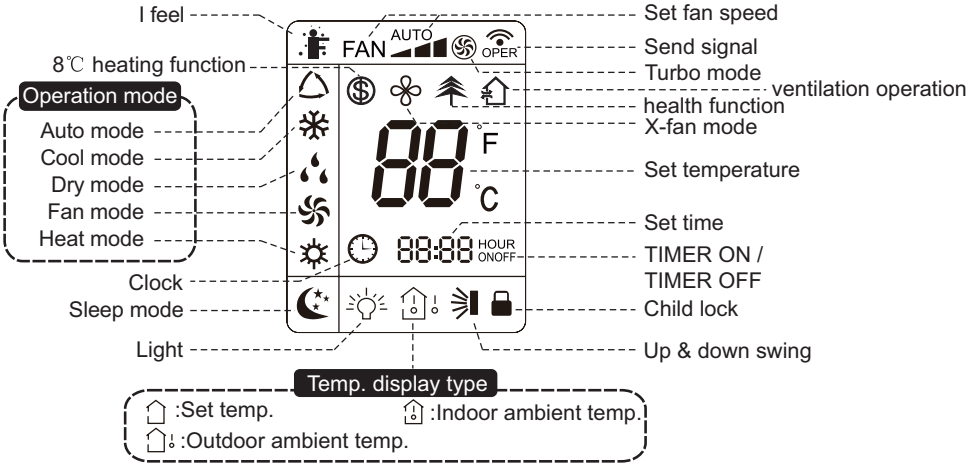
6. Function and Control

6.1 Remote Controller Introduction

Buttons on Remote Controller

1. ON/OFF button
2. ▲ button
3. MODE button
4. SWING button
5. ▼ button
6. FAN button
7. TIMER OFF button
8. CLOCK button
9. TIMER ON button
10. SLEEP button
11. TEMP button
12. TURBO button
13. X-FAN | button
14. I FEEL button
15. / button

Introduction for icons on display screen



Introduction for buttons on remote controller

Note:

- After putting through the power, the air conditioner will give out a sound. Operation indictor "⏻" is ON (red indicator). 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.
- Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corre-sponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding set function icons.

1. ON/OFF button

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

2. ▲ button

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

3. MODE button

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

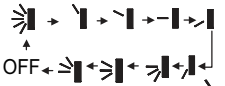
AUTO ▶ COOL ▶ DRY ▶ FAN ▶HEAT*

* Note: Only for models with heating function.

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

4. SWING button

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



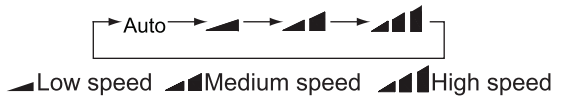
This remote controller is universal . If any command , or is sent out,the unit will carry out the command as indicates the guide louver swings as:

5. ▼button

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

6. FAN button

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



7. TIMER OFF button

Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again.TIMER OFF setting is the same as TIMER ON.

8. CLOCK button

Press CLOCK button, blinking. Within 5 seconds, pressing ▲ or▼ button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then will be constantly displayed.

9. TIMER ON button

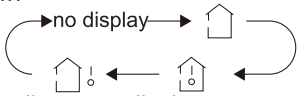
Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.After press of this button, disappears and "ON "blinks. 0 0:00 is displayed for ON timesetting. Within 5 seconds, press ▲ or ▼ button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 Seconds after setting, press TIMER ON button to confirm.

10. SLEEP button

Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL, HEAT (Only for models with heating function) to maintain the most comfortable temperature for you.

11. TEMP button

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



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

Caution:

• This model hasn't outdoor ambient temperature display function. While remote controllercan operate " " and indoor unit displays set temperature.

• It's defaulted to display set temperature when turning on the unit.

• Only for the models with temperature indicator on indoor unit.

12. TURBO button

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.

13. X-FAN / button

X-FAN function: In COOL or DRY mode, the icon is displayed and the indoor fan willcontinue operation for 2 minutes in order to dry the indoor unit even though you haveturned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

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

14. I FEEL button

Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.

15. / button

Press this button to achieve the on and off of healthy and scavenging functions inoperation status. Press this button for the first time to start scavenging function; LCD displays " ". Press the button for the second time to start healthy and scavengingfunctions simultaneously; LCD displays " " and " ". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display " ". Press this button again to repeat the operation above. (This function is applicable to partial of models)

Function introduction for combination buttons

Combination of "▲" and " ▼" buttons: About lock

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

Combination of "MODE" and "▼" buttons:

About switch between Fahrenheit and centigrade

At unit OFF, press "MODE" and "▼" buttons simultaneously to switch between ℃ and ℉ .

Combination of "TEMP" and "CLOCK" buttons:

About Energy-saving Function

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

Combination of "TEMP" and "CLOCK" buttons:

About 8℃ Heating Function

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

About Back-lighting Function

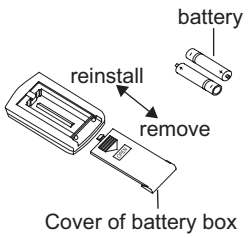
The unit lights for 4s when energizing for the first time, and 3s for later press.

Operation guide

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

Replacement of batteries in remote controller

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



Note:

● During operation, point the remote control signal sender at the receiving window on indoor unit.

● The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.

● Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.

● Replace new batteries of the same model when replacement is required.

● When you don't use remote controller for a long time, please take out the batteries.

● If the display on remote controller is fuzzy or there's no display, please replace batteries.

6.2 Brief Description of Modes and Functions

1Temperature Parameters

◆Indoor preset temperature (Tpreset)

◆Indoor ambient temperature (Tamb.)

2 Basic Functions (The temperature in this manual is expressed by Centigrade. If Fahrenheit is used, the switchover between them is Tf=TcX1.8+32.)

Once the unit is energized, the compressor shall never be restarted except 3mins interval at least. For the first energization, if the unit is at off status before power failure, the compressor can be restarted without 3-min delay. But if the unit is at on status before power failure, the compressor shall be restarted with 3mins delay. Once the compressor is started up, the compressor won't stop running within 6mins with the change of room temperature.

(1) Cooling mode

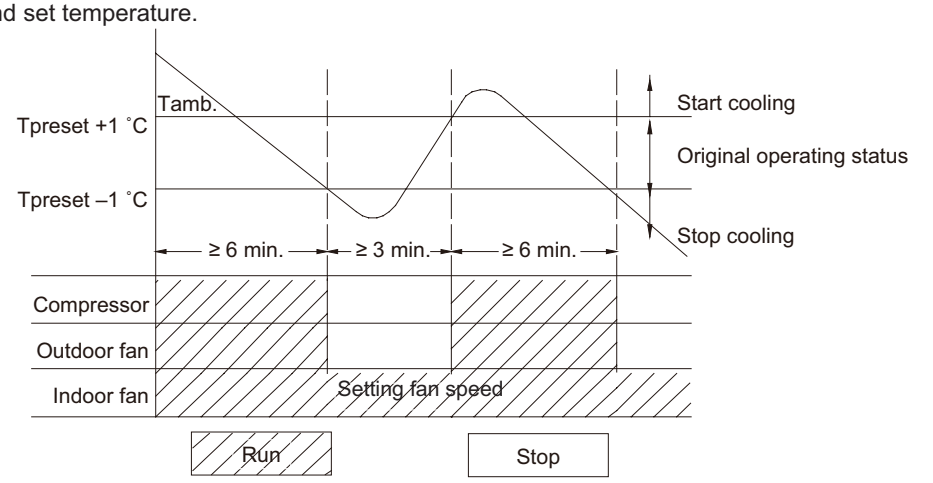
① Cooling conditions and process

When Tamb. ≥Tprese+1℃, the unit starts cooling operation. In this case, the compressor and the outdoor fan operate and the indoor fan operates at set speed.

When Tamb. ≤Tpreset-1℃, the compressor and the outdoor fan stop while the indoor fan operated at set speed.

When Tpreset-1℃＜Tamb. ＜Tpreset+1℃, the unit will maintain its previous operation status.

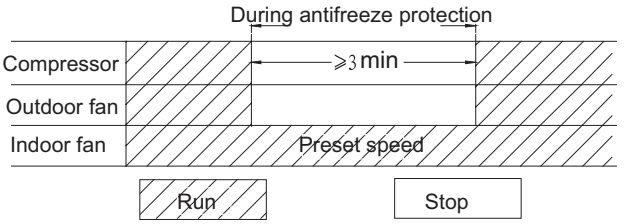
In this mode, the four-way valve is de-energizing. The temperature setting range is 16～30℃ and the indoor unit displays operation icon, cooling icon and set temperature.



② Protection Functions

◆Antifreezing protection

If the system is under antifreezing protection, the compressor and the outdoor fan stops operation, and the indoor fan operates at setting speed. If antifreezing protection is eliminated and the compressor has been stopped for 3 minutes, the unit will resume its previous operation status.



③Overcurrent Protection

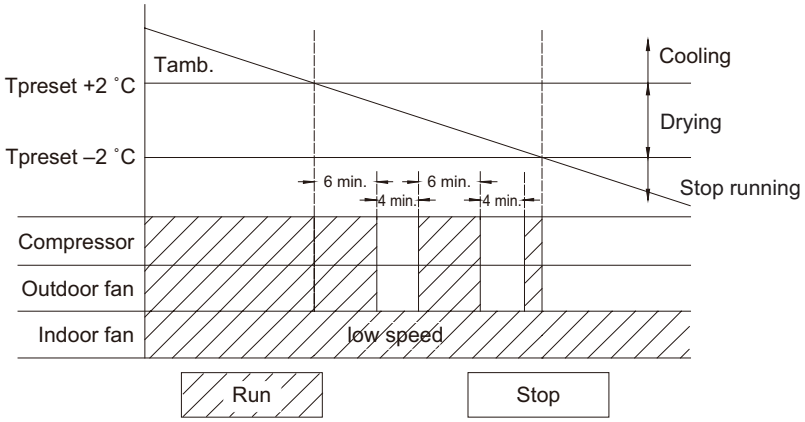
If the system current exceeds the specified value in 3 successive seconds, except indoor fan, the complete unit will stop operation. After 3 minutes, if the overcurrent is eliminated, the complete unit will resume previous operation.

If overcurrent protection occurs for 6 successive times (if the compressor operates for 6 minutes continuously, the protective times will be cleared.), except indoor fan, the complete unit will stop operation. In this case, you should turn off the unit by remote controller and then restart it. During overcurrent protection, the nixie tube displays error code “E5”, and operation indicator lamp blinks (OFF 3 seconds and blinks 5 times).

(2) Dry Mode

①Dry Conditions and Process

When Tamb. ＞Tpreset+2℃, the unit starts drying and cooling operation. In this case, the compressor and outdoor fan operates and the indoor fan operates at low speed.
When Tpreset-2℃≤Tamb. ≤Tpreset+2℃, the unit will start drying operation. In this case, the indoor fan operates at low speed, and the compressor and the outdoor fan operate 6 minutes and stop 4 minutes in cycle.
When Tamb.＜Tpreset-2℃, the compressor and the outdoor fan stops operation while the indoor fan operates at low speed.
In this mode, the four-way valve is de-energizing. The temperature setting range is 16～30℃ and the indoor unit displays operation icon, dry icon and set temperature.



② Protection

◆ Antifreezing protection

During drying and cooling operation, if the system is under antifreezing protection, the compressor and outdoor fan stop operation while indoor fan operates at low speed. If antifreezing protection is eliminated and the compressor has been stopped for 3 minutes, the complete unit will resumes its previous operation status.
During the cycle stage of operating 6 minutes and stopping 4 minutes, if antifreezing protection is detected, the compressor and the outdoor fan will stop operation and the indoor fan will operate at low speed. When the antifreezing protection is eliminated and the compressor has been stopped for 4 minutes, the complete unit will resume its previous operation state.

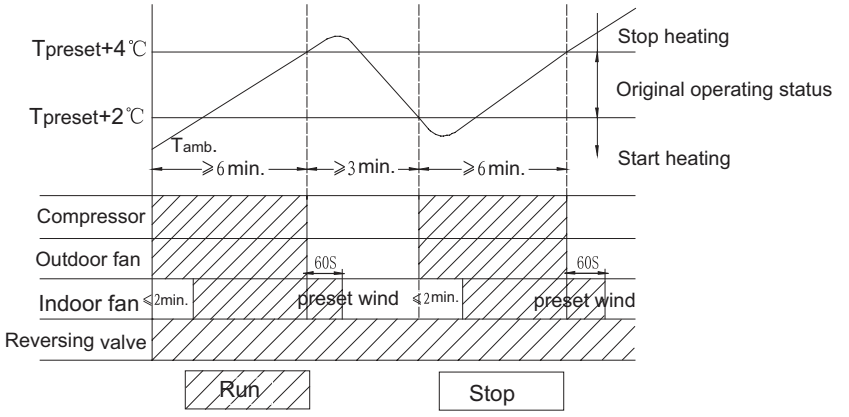
③ Other protection

Other protections are the same as those in cooling mode.

(3)Heating mode (not available for cooling only type)

①Heating conditions and process

When Tamb. ≤Tpreset+2℃, the unit starts heating operation. In this case, the 4-way valve, compressor and outdoor fan operate simultaneously. The indoor fan operates after 2 minutes at most.
When Tamb≥Tpreset+4℃, the compressor and outdoor fan stop operation. The 4-way valve remains energizing and the indoor fan will stop operation after operate at setting fan speed for 60s.
When T_{preset} +2℃＜$T_{amb.}$ ＜ T_{preset} +4℃, the unit will maintain its previous operation status.
In this mode, the 4-way valve is energizing. The temperature setting range is 16～30℃ and the indoor unit displays operation icon, heating icon and set temperature.



②Defrosting Conditions and Process

With intelligent defrosting function, the unit can automatically defrost according to the actual condition. The indoor unit displays “H1”.

③Protection Functions

◆Overheating Prevention Protection

If the evaporator tube temperature overheats, the outdoor fan stops operation. When the tube temperature resumes normally, the outdoor fan resumes operation.

◆Noise Silencing Protection

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

④Overcurrent Protection

This protection is the same as that in cooling mode (But indoor fan will blow residual heat).

(4) Fan mode

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

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

(5) Auto Mode

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

3 Other Control

(1)Timer function

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

① General Timer

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

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

② Clock Timer

Timer ON

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

Timer OFF

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

Timer Change

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button of remote controller. You can also set the timer once again, and then the unit will operate according to the last setting.

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

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

In the future's every day, the system will operate according to presetting mode till OFF time reaches and stop operation till ON time reaches. If ON time and OFF time are the same, timer OFF has the priority.

(2) Auto Button

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

(3) Buzzer

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

(4) Sleep Function

In this mode, the unit will select the suitable sleep curve to operate according to the setting temperature.

(5)Turbo Function

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

(6) X-Fan Function

This function can be set in COOL or DRY mode.

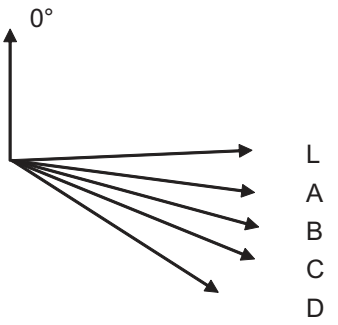
(7) Automatic Control of Fan Speed

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

(8)Up & Down Swing

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

If swing function has not been set after startup of the unit, up & down horizontal louver will clockwise turn to position D in HEAT mode, or clockwise turn to level position L in other modes.
If setting swing function while starting up the unit, the horizontal louver will swing between L and D. There are 7 kinds of swing status of horizontal louver: Positions L, A, B, C and D, swing between Land D and stop at any position between L and D (angles between L and D are equiangular). Upon turning off the unit, the horizontal louver will close at position 0.
Swing function is available only when swing function set and indoor fan is operating.
Note: If the position is set between L and B, A and C or B and D by remote controller, the horizontal louver will swing between L and D.



(9) Display

① Operation and Mode Icons

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

② Display of Dual-8 Nixie Tube

For the first time of startup , the indoor unit defaults to display present set temperature (16～30℃).Then if set temperature display is set by remote controller, it will display set temperature and if room temperature display is set, it will display room temperature. After that, if you operate the remote controller for other settings, the temperature display method will keep original. If you operate the remote controller during room temperature display, the set temperature will be displayed for 5 seconds firstly and then room temperature display returns. “F1” will be displayed upon malfunction of room temperature sensor, “F2” upon malfunction of indoor unit tube temperature sensor and “C5” upon malfunction of jumper cap.
For some models, if set temperature display is set by the remote controller, present set temperature will be displayed. After that, when you set room temperature display from set temperature display or outdoor temperature by the remote controller, the room temperature will be displayed for 5 seconds firstly and then set temperature display returns.

(10) Locked protection to PG motor

When starting the fan, if motor’s rotational speed is slow for a period of time, the unit will display locked and stop running to avoid auto protection for motor. If the unit is at on status currently, error code H6 will be displayed on the nixie tube. If the unit is off currently, this locked malfunction information won’t be displayed.

(11)Memory Function

Memory content includes mode, up & down swing, light, set temperature and set fan speed, general timer (clock timer can’t be memorized), Fahrenheit/Centigrade..
Upon power failure, the unit after power recovery will automatically start operation according to memorized content. The unit, without timer setting before power failure, will operate according to the last setting after power recovery. The unit, with general timer setting which has not been fulfilled before power failure, will memorize the time setting and re-calculate the time after power recovery. If there is timer function in the last remote controller command but setting time has reached, the system will act as timer on/off setting before power failure. After power failure, the system memorizes the operation states before power failure without timer action. Clock timer can not be memorized.

4. Special Functions

(1) HEALTH Function(optional)

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

(2) I FEEL function

If the controller receives I FEEL command, it will operate according to the ambient temperature sent by the remote controller (except defrosting and anti-cold air operation, during which it will operate according to the ambient temperature sensed by the air conditioner). The remote controller will send the ambient temperature value to the controller every a period of time. If the controller has not received the value for a long time, it will operate according to air conditioner’s sensed temperature. If this function is not set, the ambient temperature is sensed by the air conditioner’s temperature. This function won’t be memorized.

Part Ⅱ : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

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

Please follow the instructions below.

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

Warnings

Electrical Safety Precautions:

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

Installation Safety Precautions:

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

Refrigerant Safety Precautions:

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

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

Main Tools for Installation and Maintenance

1. Level meter, measuring tape

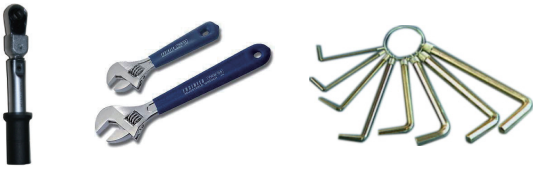
2. Screw driver

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

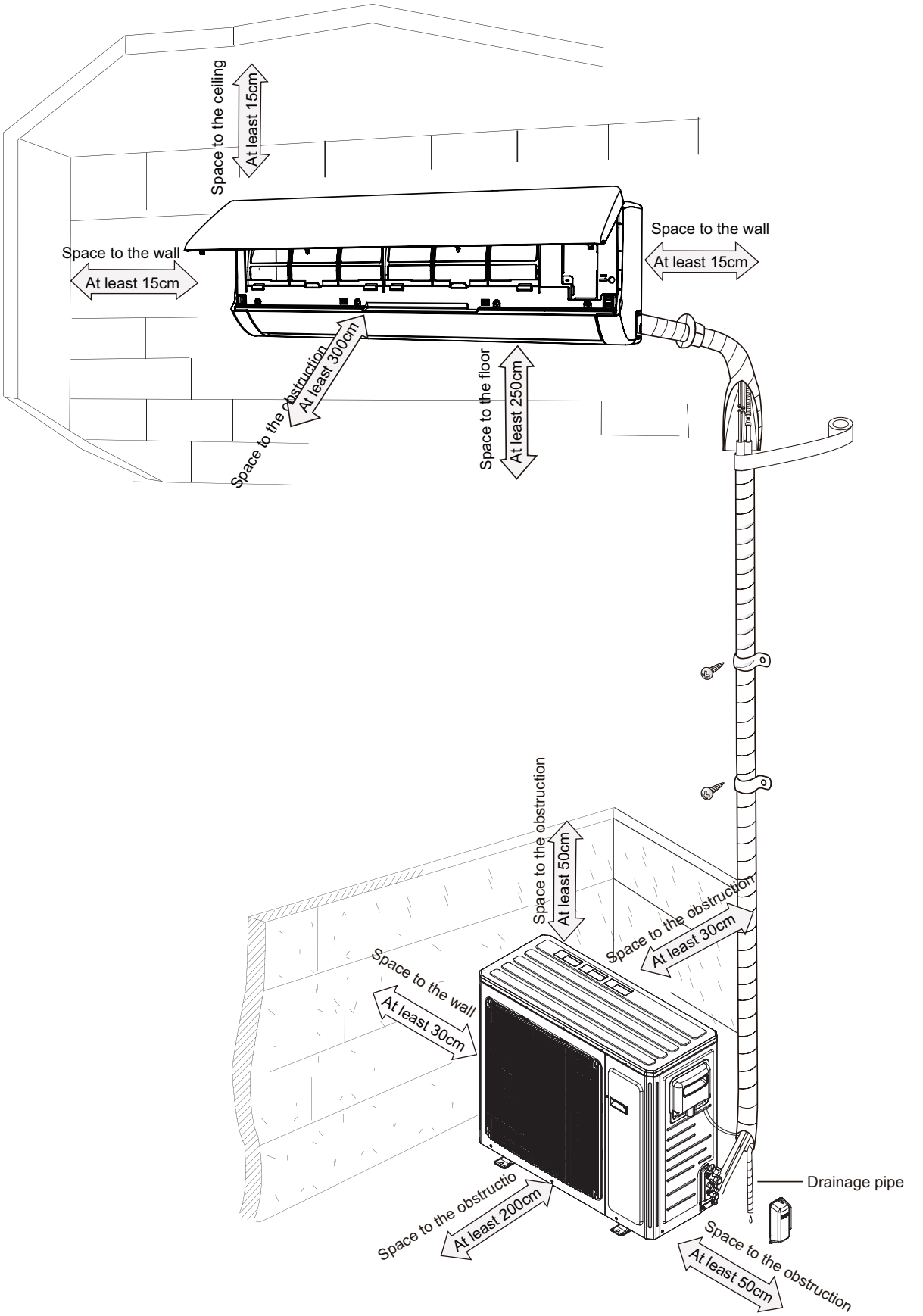
10. Pipe pliers, pipe cutter

11. Pipe expander, pipe bender

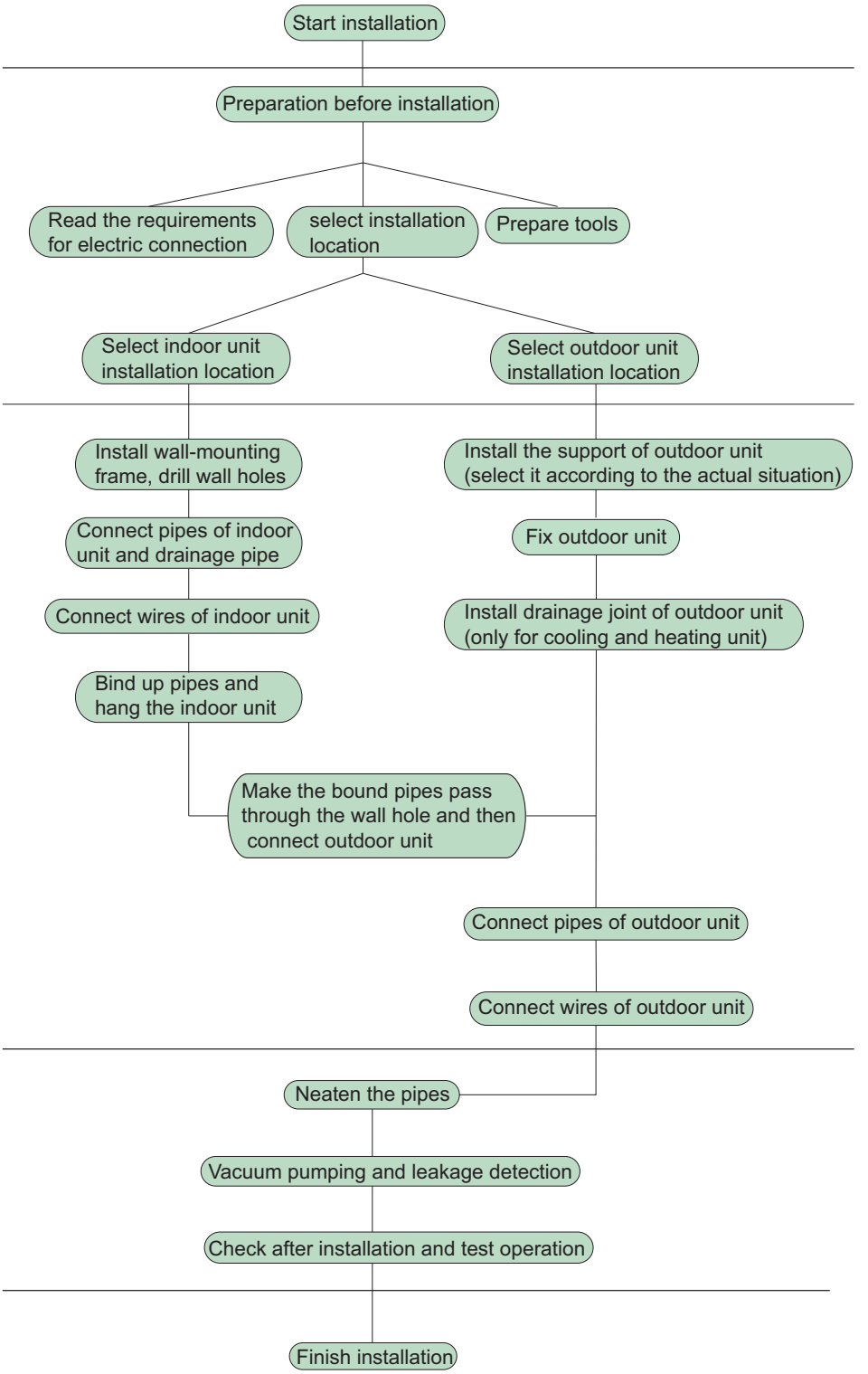
12. Soldering appliance, refrigerant container

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.

2. Indoor Unit:
(1) There should be no obstruction near air inlet and air outlet.
(2) Select a location where the condensation water can be dispersed easily and won't affect other people.
(3) Select a location which is convenient to connect the outdoor unit and near the power socket.
(4) Select a location which is out of reach for children.
(5) The location should be able to withstand the weight of indoor unit and won't increase noise and vibration.
(6) The appliance must be installed 2.5m above floor.
(7) Don't install the indoor unit right above the electric appliance.
(8) The appliance shall not be installed in the laundry.

3. Outdoor Unit:
(1) Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.
(2) The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind.
(3) The location should be able to withstand the weight of outdoor unit.
(4) Make sure that the installation follows the requirement of installation dimension diagram.
(5) Select a location which is out of reach for children and far away from animals or plants.If it is unavoidable, please add fence for safety purpose.

8.4 Electric Connection Requirement

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

Air-conditioner	Air switch capacity
All models	32A

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

2. Grounding Requirement:
(1) The air conditioner is first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
(2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
(3) The grounding resistance should comply with national electric safety regulations.
(4) The appliance must be positioned so that the plug is accessible.
(5) An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
(6) Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

8.5 Installation of Indoor Unit

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

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

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

3. Install Wall-mounting Frame

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

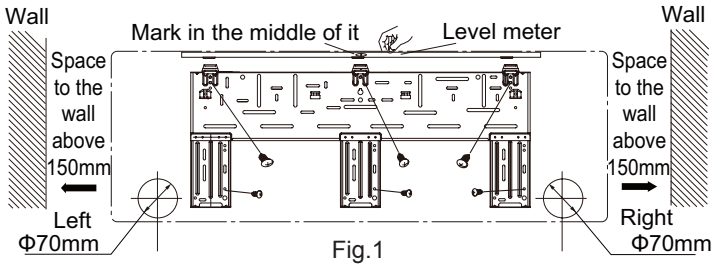


Fig.1

(2) Open a piping hole with the diameter of Φ70mm 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)

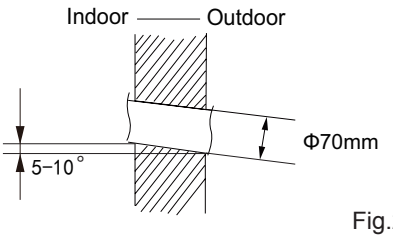


Fig.2

⚠ **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)

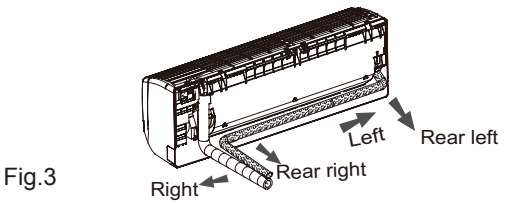


Fig.3

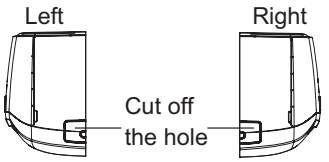


Fig.4

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)

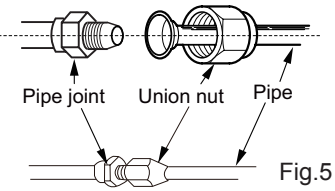


Fig.5

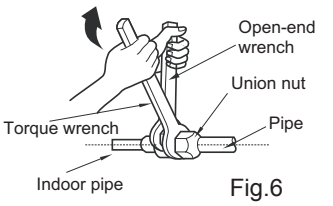


Fig.6

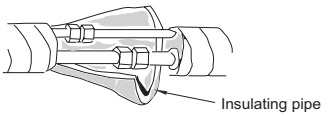


Fig.7

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)

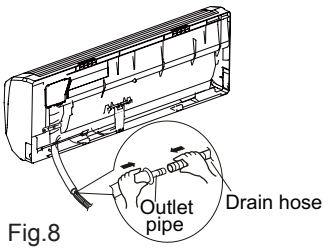


Fig.8

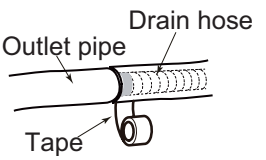


Fig.9

⚠ **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)

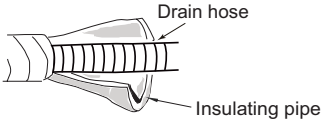


Fig.10

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)

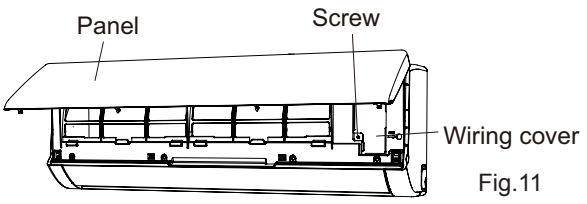


Fig.11

(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)

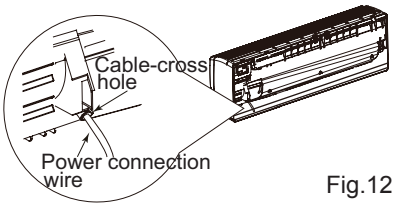
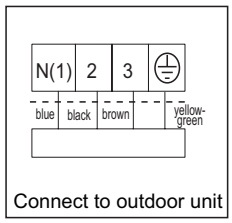


Fig.12

(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)



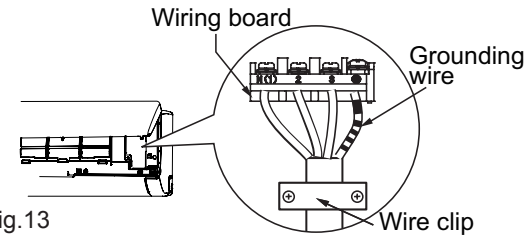


Fig.13

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

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

⚠ **Note:**

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

8. Bind up Pipe

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

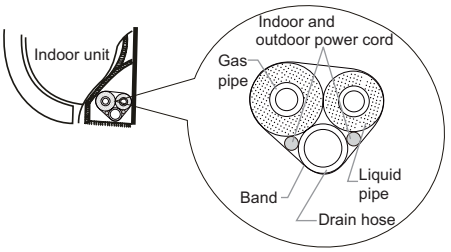


Fig.14

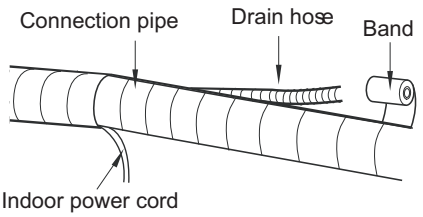


Fig.15

⚠ **Note:**

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

9. Hang the Indoor Unit

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

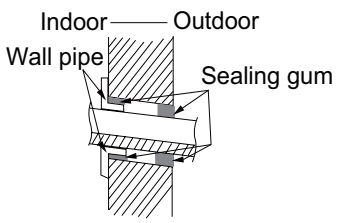
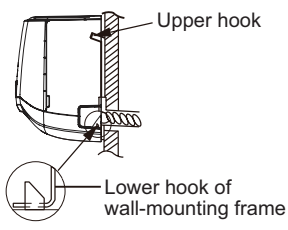


Fig.16

Fig.17



⚠ **Note:**

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

8.6 Installation of Outdoor Unit

1. Fix the Support of Outdoor Unit(Select it according to the actual installation situation)

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

⚠ **Note:**

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

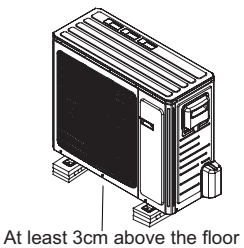


Fig.18

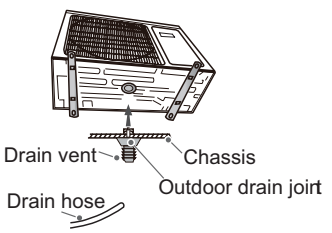


Fig.19

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

(1) Connect the outdoor drain joint into the hole on the chassis.
(2) Connect the drain hose into the drain vent.
(As show in Fig.19)

3. Fix Outdoor Unit

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

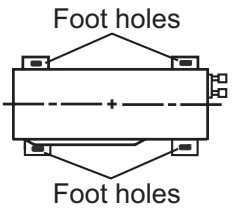


Fig.20

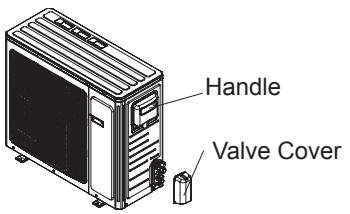


Fig.21

4. Connect Indoor and Outdoor Pipes

(1) Remove the screw on the right handle and valve cover of outdoor unit and then remove the handle and valve cover.(As show in Fig.21)
(2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.(As show in Fig.22)

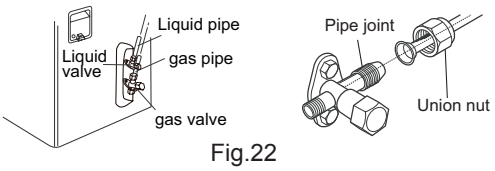


Fig.22

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

Refer to the following table for wrench moment of force:

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

5. Connect Outdoor Electric Wire

(1) Remove the wire clip; connect the power connection wire and power cord to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)

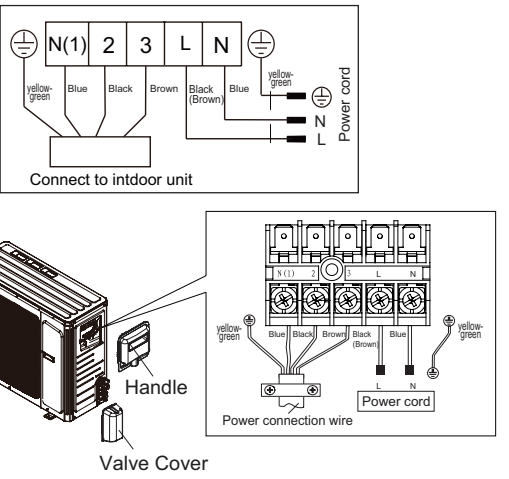


Fig.23

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

(2) Fix the power connection wire and power cord with wire clip.

⚠ **Note:**

(1) After tightening the screw, pull the power cord slightly to check if it is firm.
(2) Never cut the power connection wire to prolong or shorten the distance.

6. Neaten the Pipes

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

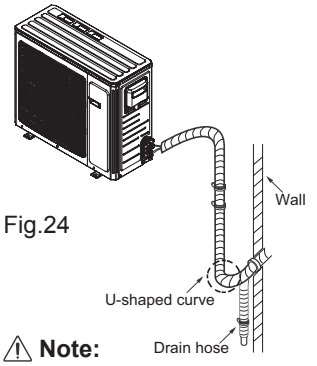


Fig.24

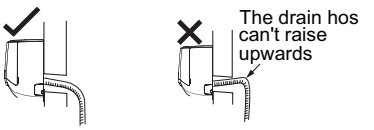


Fig.25

⚠ **Note:**

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

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

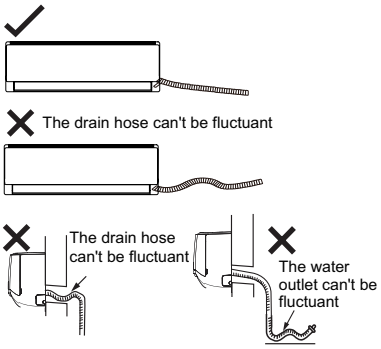


Fig.26

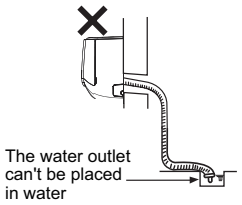


Fig.27

8.7 Vacuum Pumping and Leak Detection

1. Use Vacuum Pump

(1) Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.

(2) Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.

(3) Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.

(4) Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.

(5) Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.

(6) Tighten the screw caps of valves and refrigerant charging vent.(As show in Fig.28)

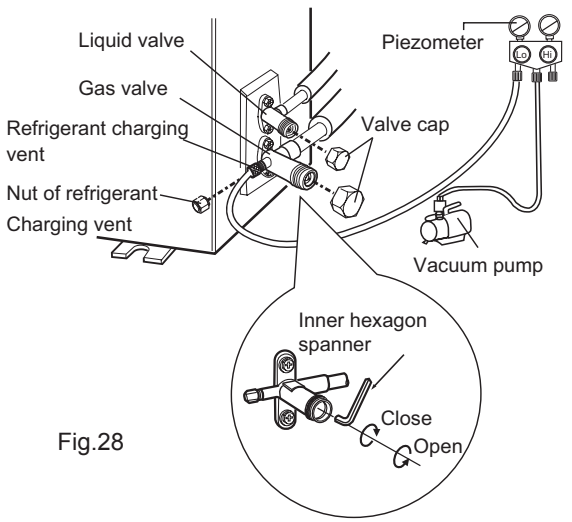


Fig.28

2. Leakage Detection

(1) With leakage detector:

Check if there is leakage with leakage detector.

(2) With soap water:

If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

8.8 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

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

2. Test Operation

(1) Preparation of test operation

● The client approves the air conditioner installation.

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

(2) Method of test operation

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

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

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

9. Maintenance

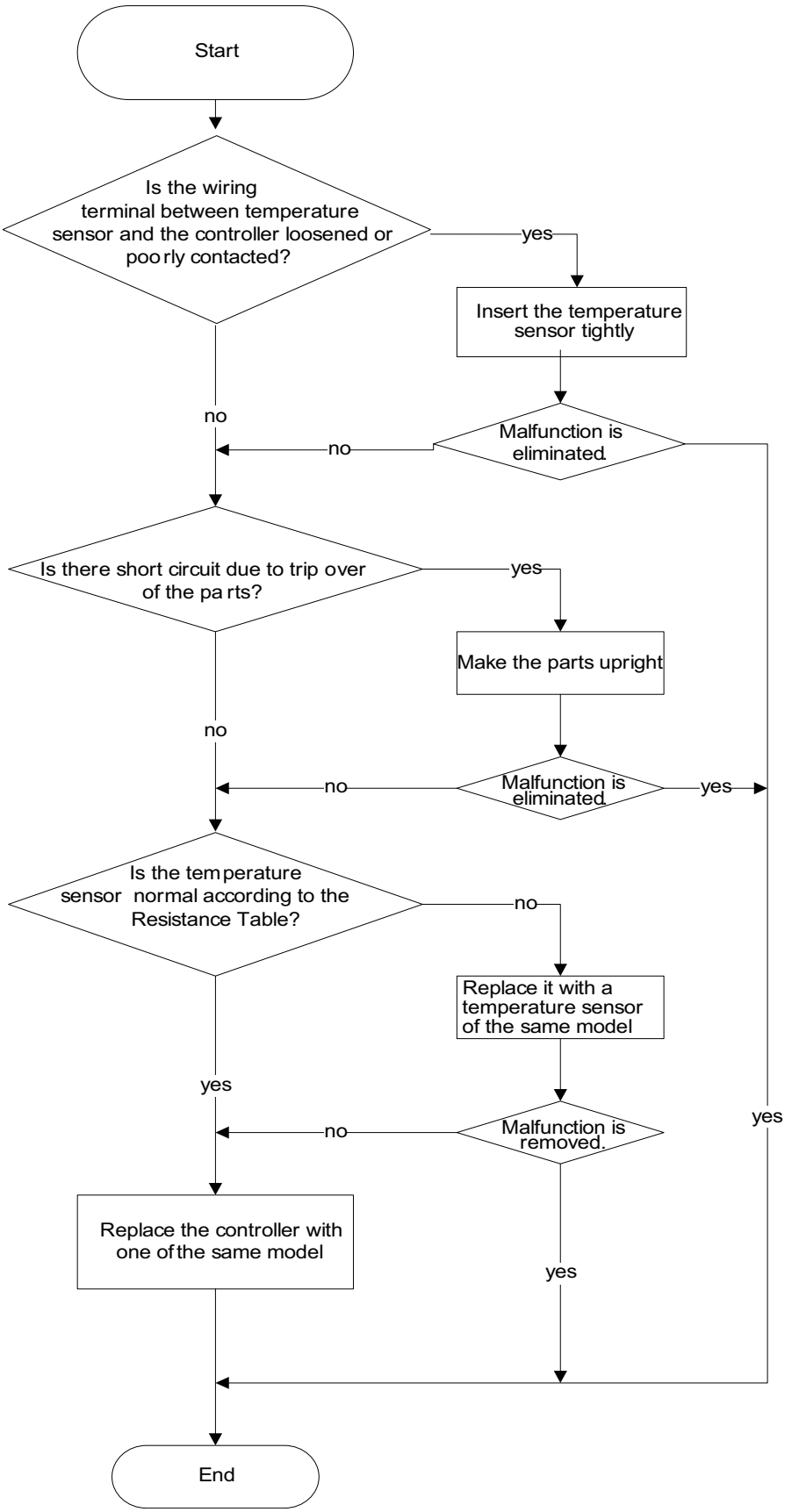
9.1 Error Code

No.	Malfunction Name	Display Method of Indoor Unit				A/C Status	Possible Causes (For specific maintenance method, please refer to the following procedure of troubleshooting)
		Error Code	Indicator lamp (During blinking, ON for 0.5S and OFF for 0.5 S)				
			Operation Lamp	COOL Lamp	HEAT Lamp		
1	Indoor ambient temperature sensor is open/ short- circuited	F1		OFF 3S and blinks once		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads （such as compressor, outdoor fan, 4-way valve） stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to trip-over of the parts on controller; 3.Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/ short-circuited	F2		OFF 3S and blinks twice		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
3	Outdoor ambient temperature sensor is open/ short-circuited	F3		OFF 3S and blinks 3 times		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Outdoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
4	Outdoor condenser temperature sensor is open/ short-circuited	F4		OFF 3S and blinks 4 times		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor condenser temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3.Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
5	Outdoor discharge temperature sensor is open/ short-circuited	F5		OFF 3S and blinks 5 times		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor discharge temperature sensor and controller is loosenedor poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor discharge temperature sensor is damaged. (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.

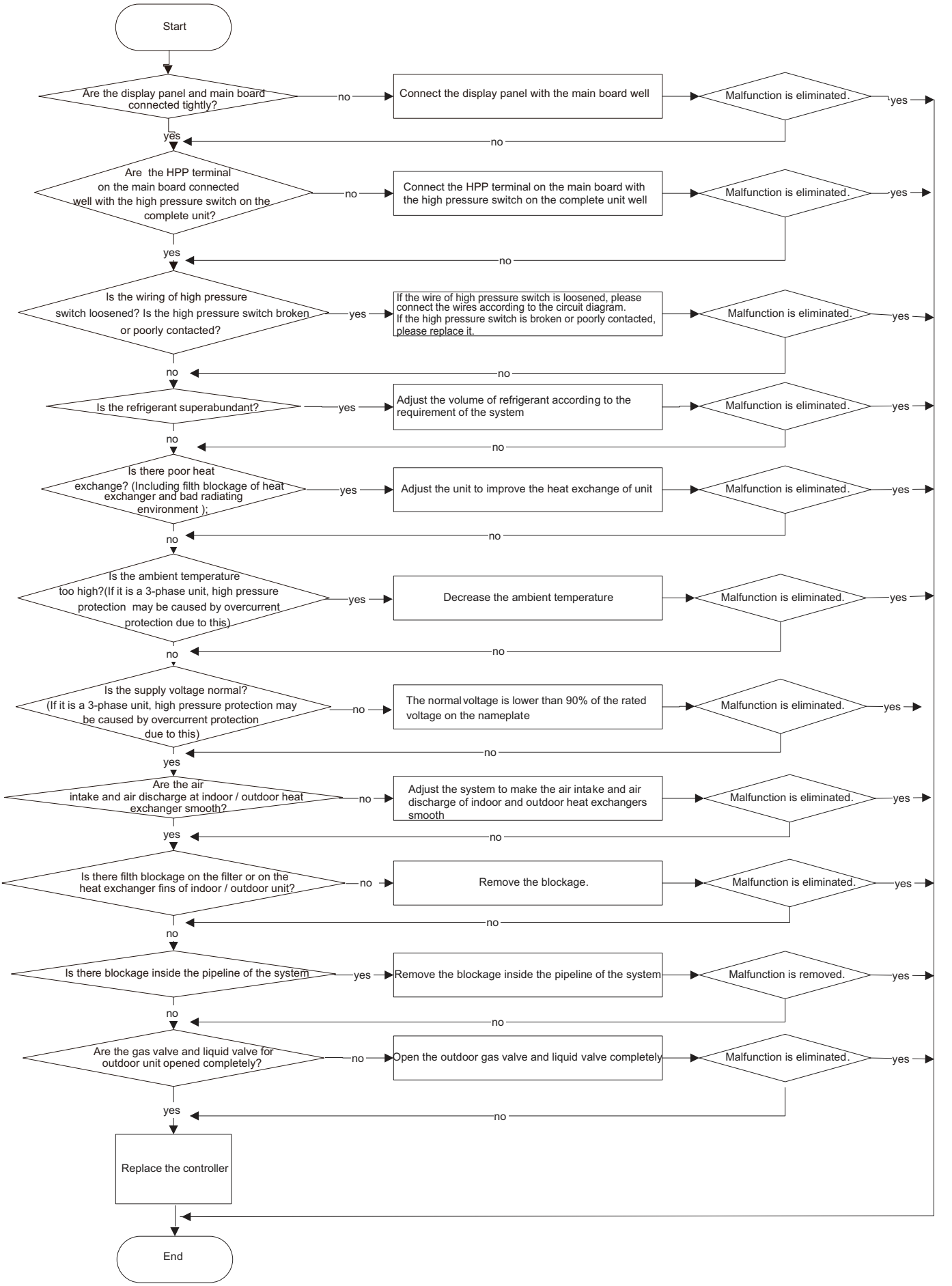
6	High pressure protection	E1	OFF 3S and blinks once			During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, if it is inverter unit, the complete unit stops; if it is floor standing unit, the complete unit stops and operation of remote controller or controller is unavailable.	1. The main board and the display panel are not connected well. 2. The HPP terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/outdoor units are blocked. 10. The system pipeline is blocked. 11. The gas valve and liquid valve for outdoor unit are not completely opened. 12. The HPP input is at high level.
7	Low pressure protection of compressor	E3	OFF 3S and blinks 3 times			The complete unit stops	1. The main board and display panel are not connected well. 2. The LPP terminal on the main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of the high pressure switch is loosened. High pressure switch is damaged or poorly contacted. 4. Insuffi cient or leaking out refrigerant. 5. The LPP input is at high level.
8	High discharge temperature protection of compressor	E4	OFF 3S and blinks 4 times (inverter unit); running indicator blinks (non-inverterfloor standing unit); As for other types of units, please refer to the detailed function requirement.			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation,all loads stop.	1. Abnormal system (e.g.: blockage, etc) 2. Abnormal rotation speed of outdoor motor (cooling) 3. Abnormal air intake (cooling) 4. System is normal, but the compressor discharge temperature sensor is abnormal or poorly contacted.
9	Overcurrent protection	E5	OFF 3S and blinks 5 times			During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	1. Unstable supply voltage. Normal fluctuation shall be within 10% of the rated voltage on the nameplate. 2. Supply voltage is too low and load is too high. 3. Measure the current of live wire on main board. If the current isn't higher than the overcurrent protection value, please check the controller. 4. The indoor and outdoor heat exchangers are too dirty, or the air inlet and air outlet are blocked. 5. The fan motor is not running. Abnormal fan speed: fan speed is too low or the fan doesn't run 6. The compressor is not running normally. There is abnormal sound, oil leakage or the temperature of the shell is too high, etc. 7. There's blockage in the system （filth blockage, ice plug, greasy blockage, Y-valve hasn't been opened completely）
10	Communication malfunction	E6	OFF 3S and blinks 6 times			During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	1. The communication line is not connected tightly or poorly contacted. Poor contact of any line may cause communication malfunction. 2. The match between main board and display panel is incorrect. Indoor and outdoor unit boards are matched incorrectly. 3. Incorrect wire connection. 4. Controller is damaged.

9.2 Procedure of Troubleshooting

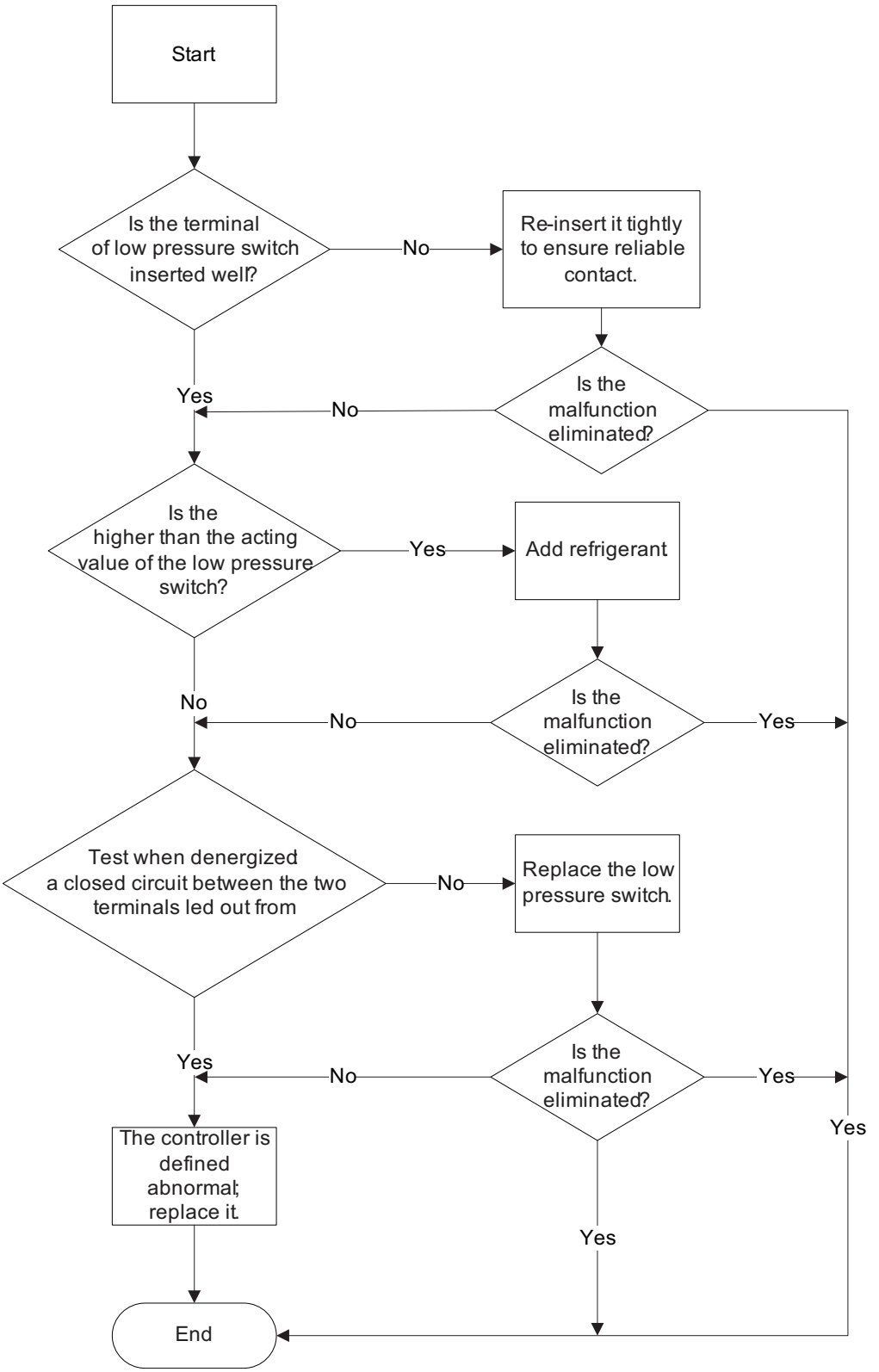
9.2.1 F1~F5 Malfunction



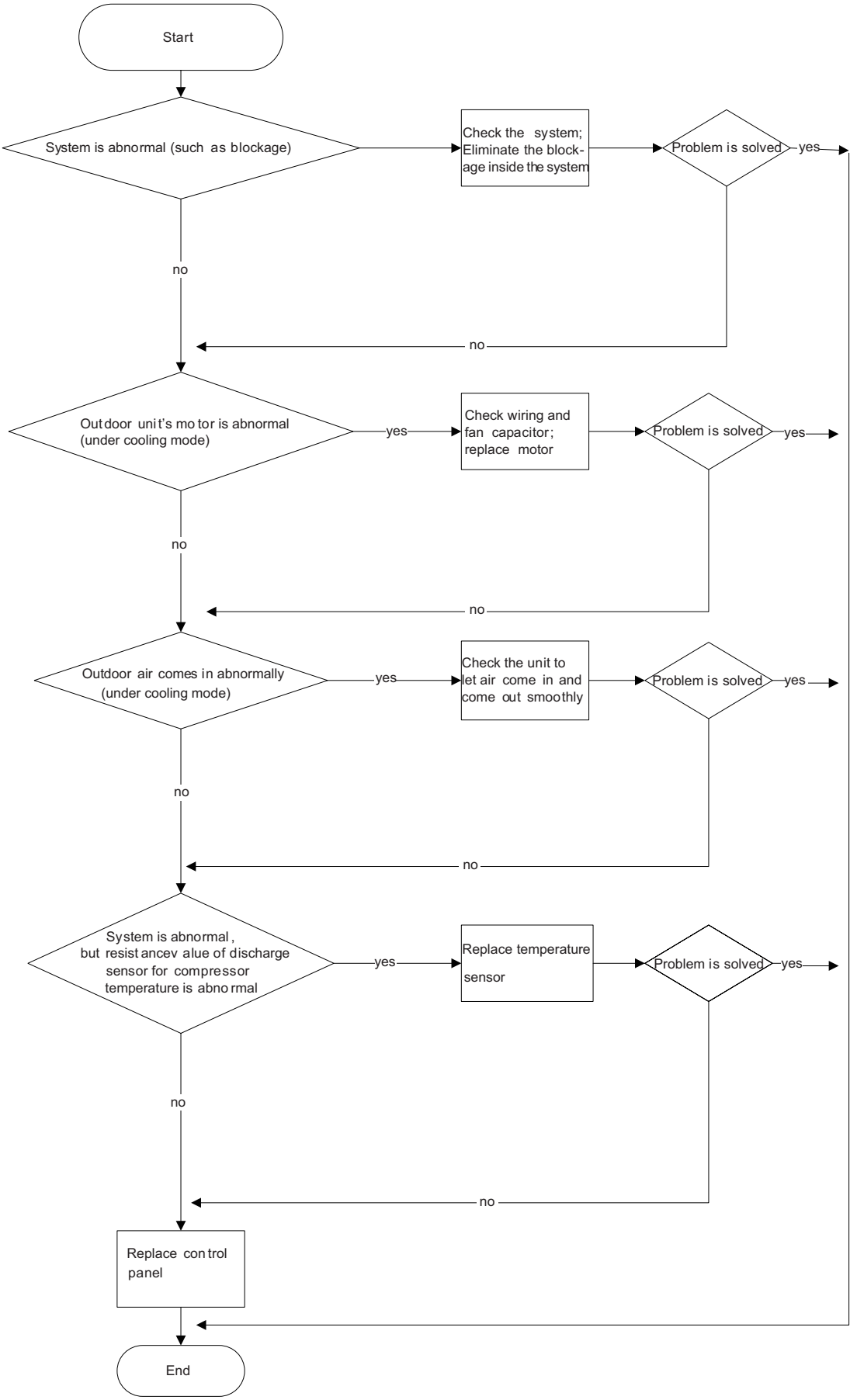
9.2.2 E1 Malfunction



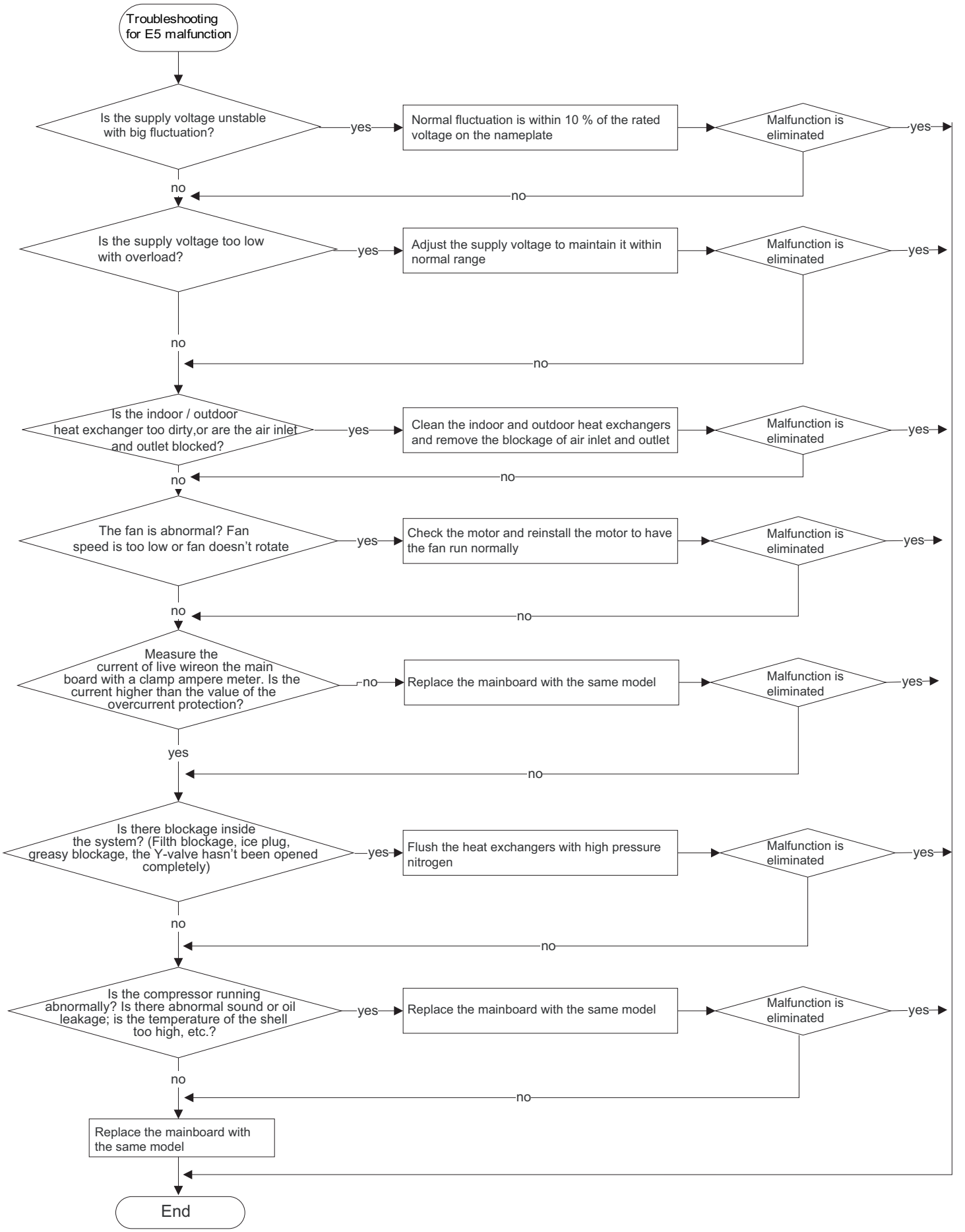
9.2.3 E3 Malfunction



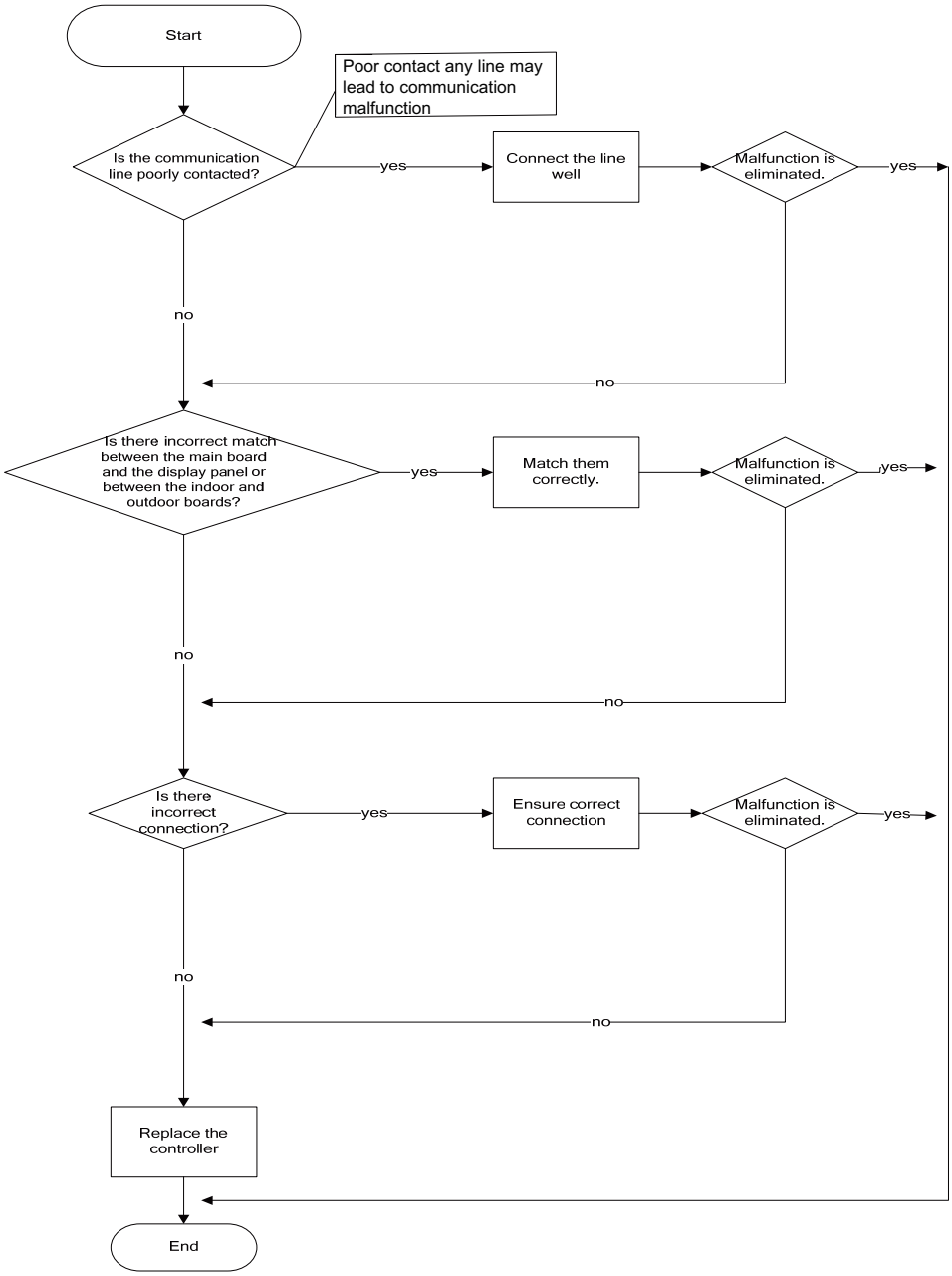
9.2.4 E4 Malfunction



9.2.5 E5 Malfunction



9.2.6 E6 Malfunction



9.3 Maintenance Method for Normal Malfunction

1. Air Conditioner Can't be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see it's blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation 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

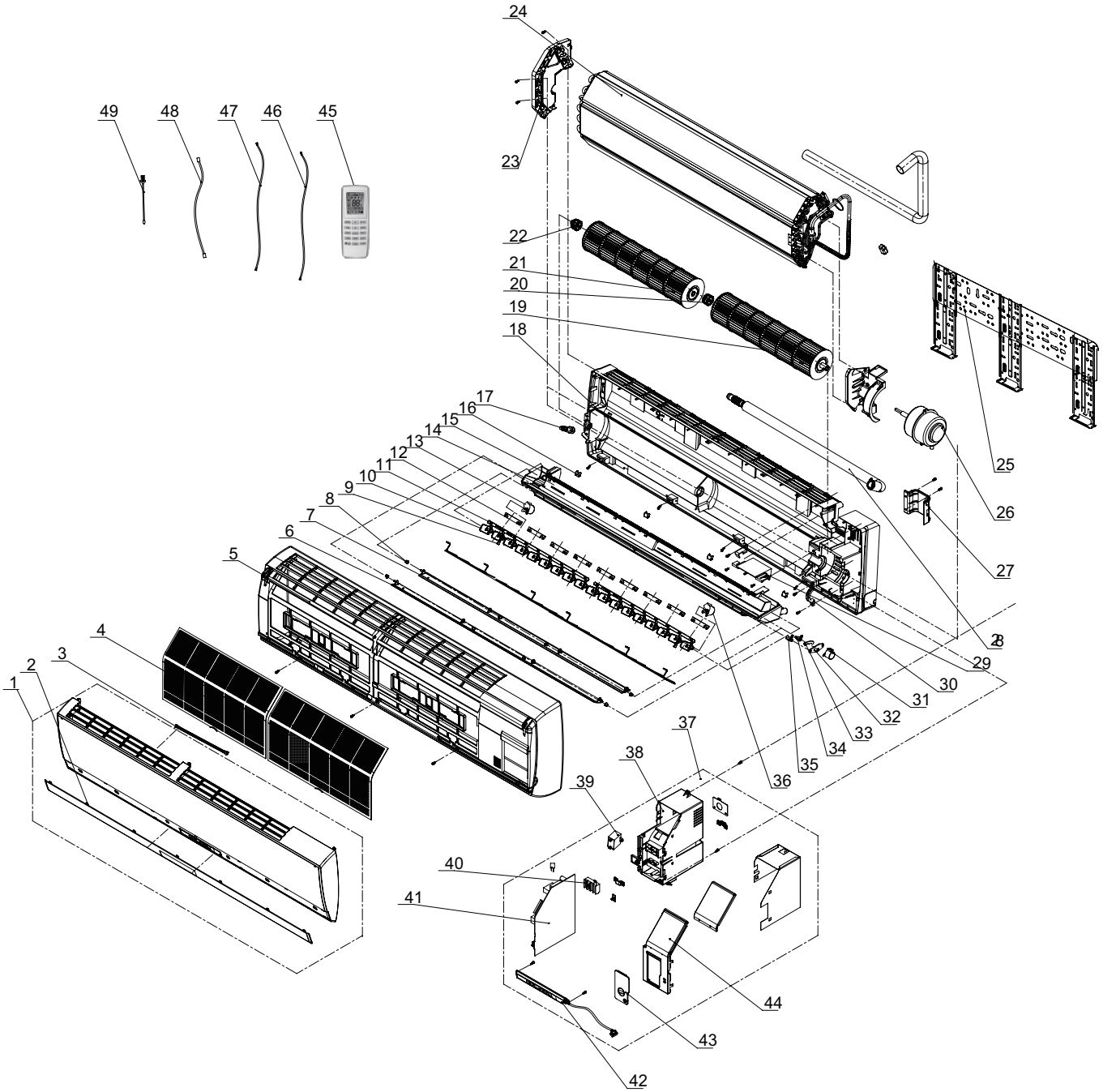
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe 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.

10. Exploded View and Parts List

10.1 Indoor Unit

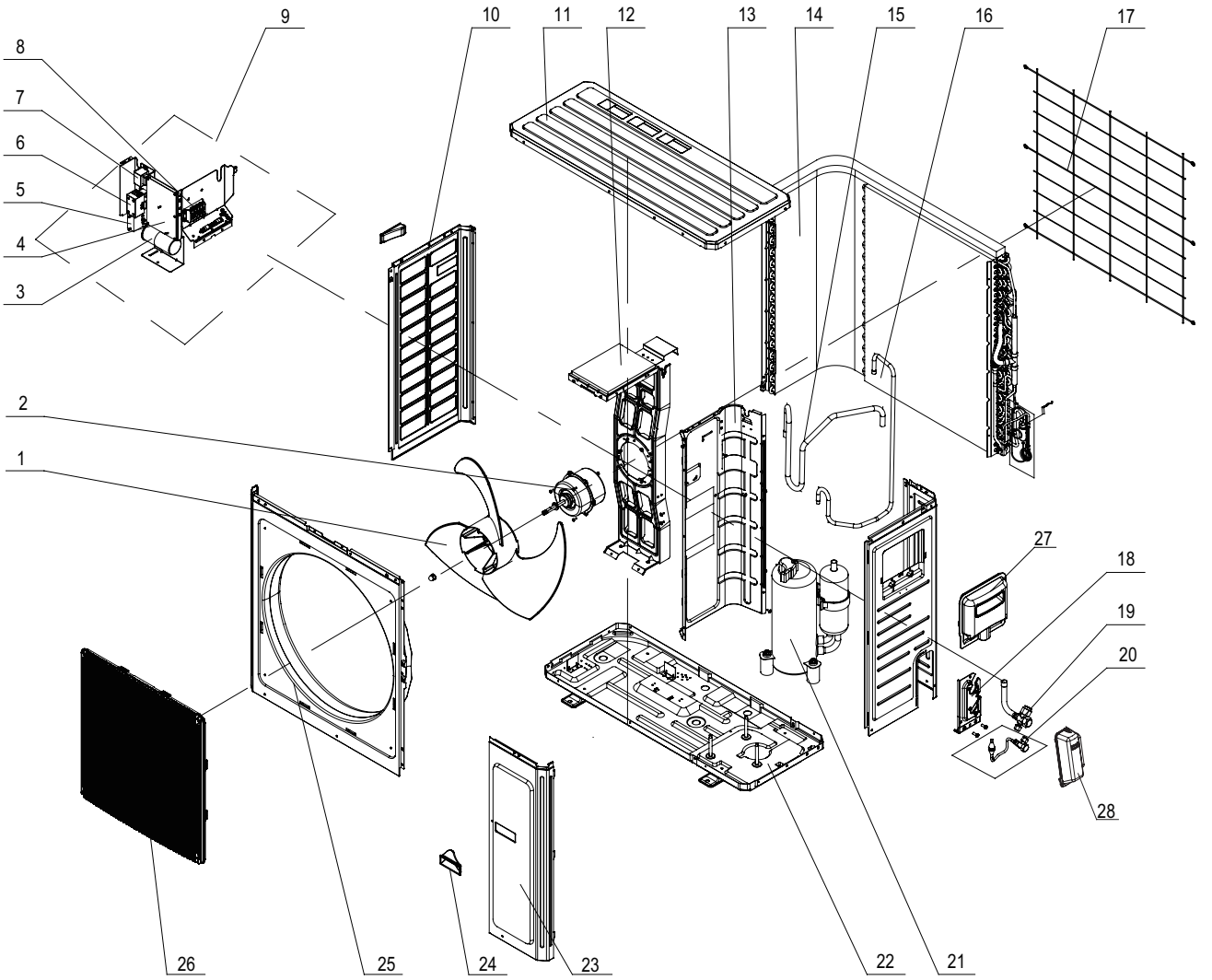


NO.	Description	Part Code		Qty
		LM036CI-100P232-1X	LM036HI-100P232-1X	
	Product Code	Y6695	Y6705	
1	Front Panel Assy	20900700005	20900700005	1
2	Decorative Strip Sub-Assy	/	/	/
3	Stand Bar	2421212001	2421212001	1
4	Filter Sub-Assy	11122106	11122106	2
5	Front Case Sub-assy	20900700005	20900700005	1
6	Upper Guide Louver	1051216601	1051216601	1
7	Lower Guide Louver	1051216701	1051216701	1
8	Axile Bush	10542704	10542704	6
9	Air Louver 2	1051216902	1051216902	2
10	Air Louver 1	1051216802	1051216802	16
11	Connecting Rod	10582086	10582086	2
12	Louver Clamp	26112158	26112158	9
13	Step Motor	/	/	/
14	Water Tray	2018213802	2018213802	1
15	Air Guider System in Water Tray Assy	00007000006	00007000006	1
16	Screw Cover	2425200506	2425200506	4
17	Rubber Plug (Water Tray)	76712012	76712012	1
18	Rear Case Sub-Assy	20162027	20162027	1
19	Cross Flow Fan 1	10352039	10352039	1
20	Bearing Holder Sub-assy	26152028	26152028	1
21	Cross Flow Fan 2	10352040	10352040	1
22	O-Gasket sub-assy of Bearing	76512051	76512051	1
23	Left Evaporator Support	24212041	24212041	1
24	Evaporator Assy	01002596	01002664	1
25	Wall Mounting Frame	01252398	01252398	1
26	Fan Motor	1501212003	1501212003	1
27	Pipe Clamp	26112071	26112071	1
28	Drainage Hose	0523001404	0523001404	1
29	Cover Plate	2012212402	2012212402	1
30	Motor Fixed Clip	26112354	26112354	1
31	Step Motor	1521210701	1521210701	1
32	Press Plate(Crank)	26112070	26112070	1
33	Crank-guide	10582041	10582041	1
34	Upper Crank	10562004	10562004	1
35	Lower Crank	10562005	10562005	1
36	Step Motor	/	/	/
37	Electric Box Assy	10000202768	10000202769	1
38	Electric Box	20112127	20112127	1
39	Capacitor CBB61	3301074713	3301074713	1
40	Terminal Board	42011233	42011233	1
41	Main Board	30135545	30135546	1
42	Display Board	30565277	30565277	1
43	Electric Box Cover	20112044	20112044	1
44	Electric Box Cover	20112044S	20112044S	1
45	Remote Controller	30510112_L29951	30510112_L29951	1
46	Connecting Cable	400205235	400205235	1
47	Connecting Cable	400205402	400205402	1
48	Temperature Sensor	390000451	390000451	1
49	Ambient Temperature Sensor	390000591	390000591	1

Above data is subject to change without notice.

10.2 Outdoor Unit

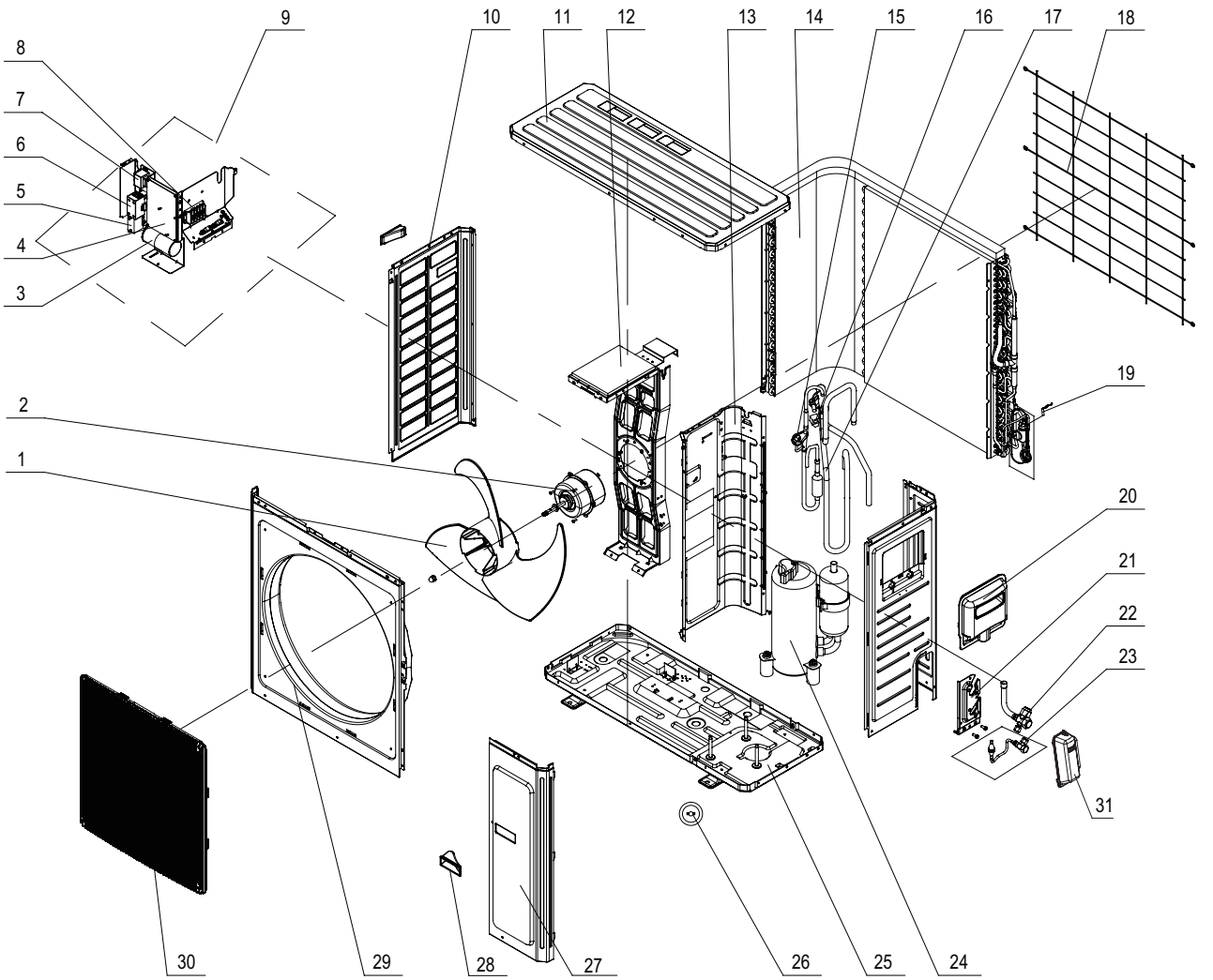
LM036CO-100P232-1X



NO.	Description	Part Code	Qty
		LM036CO-100P232-1X	
	Product Code	Y6696	
1	Axial Flow Fan	10335005	1
2	Fan Motor	1501506203	1
3	Capacitor	3300008105	1
4	Main Board	30135843	1
5	Capacitor CBB61	33010011	1
6	AC Contactor	44010256	1
7	Transformer	43110236	1
8	Terminal Board	4201025801	1
9	Electric Box Assy	02613482	1
10	Left Side Plate	01305043P	1
11	Top Cover Sub-Assy	01255007	1
12	Motor Support Sub-Assy	01705437	1
13	Clapboard	01235063	1
14	Condenser Assy	01163754	1
15	Inhalation Tube	03753538	1
16	Discharge Tube Sub-assy	03833385	1
17	Rear Grill	0147307003	1
18	Valve Support Sub-Assy	0171501201P	1
19	Cut-off Valve	0713507701	1
20	Cut off Valve	071302111	1
21	Compressor and Fittings	00103110	1
22	Chassis Sub-assy	02803193P	1
23	Front Side Plate	01305086P	1
24	Left Handle	26235401	2
25	Cabinet	01435004P	1
26	Front Grill	22415003	1
27	Big Handle	26235001	1
28	Valve Cover	22245003	1

Above data is subject to change without notice.

LM036HO-100P232-1X



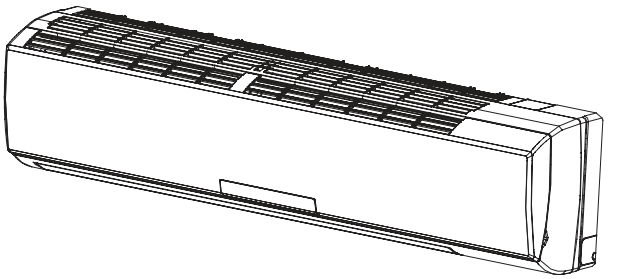
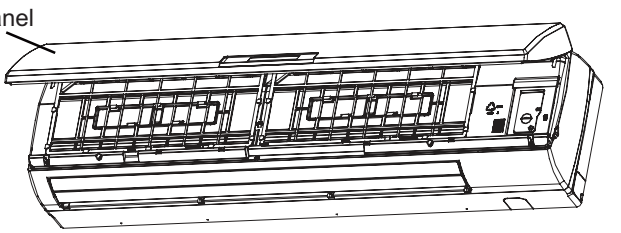
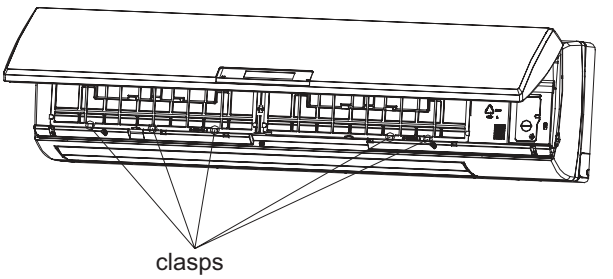
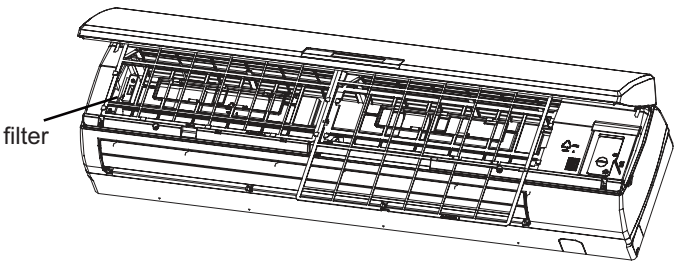
NO.	Description	Part Code	Qty
		LM036HO-100P232-1X	
	Product Code	Y6706	
1	Axial Flow Fan	10335005	1
2	Fan Motor	1501506203	1
3	Capacitor	3300008105	1
4	Main Board	30135844	1
5	Capacitor CBB61	33010011	1
6	AC Contactor	44010256	1
7	Transformer	43110236	1
8	Terminal Board	4201025801	1
9	Electric Box Assy	02613473	1
10	Left Side Plate	01305043P	1
11	Top Cover Sub-Assy	01255007	1
12	Motor Support Sub-Assy	01705437	1
13	Clapboard	01235063	1
14	Condenser Assy	01163742	1
15	Pressure Protect Switch	46020003	1
16	Magnet Coil	430004002	1
17	4-Way Valve Assy	03073086	1
18	Rear Grill	0147307003	1
19	Temperature Sensor	3900012121	1
20	Big Handle	26235001	1
21	Valve Support Sub-Assy	0171501201P	1
22	Cut-off Valve	0713507701	1
23	Cut off Valve	071302111	1
24	Compressor and Fittings	00103110	1
25	Chassis Sub-assy	02803193P	1
26	Drainage Connecter	06123401	1
27	Front Side Plate	01305086P	1
28	Left Handle	26235401	2
29	Cabinet	01435004P	1
30	Front Grill	22415003	1
31	Valve Cover	22245003	1

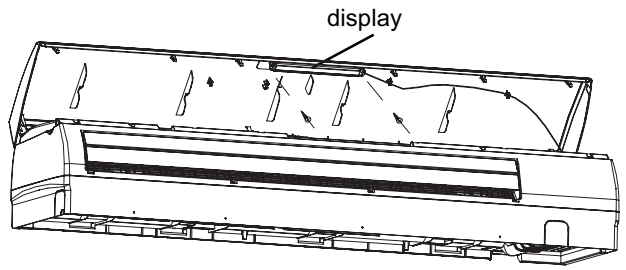
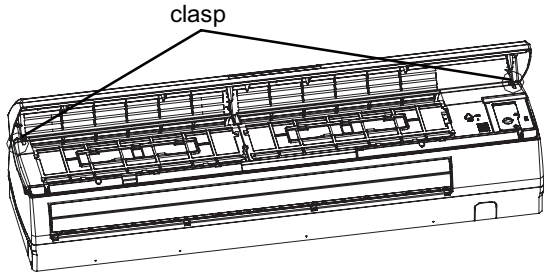
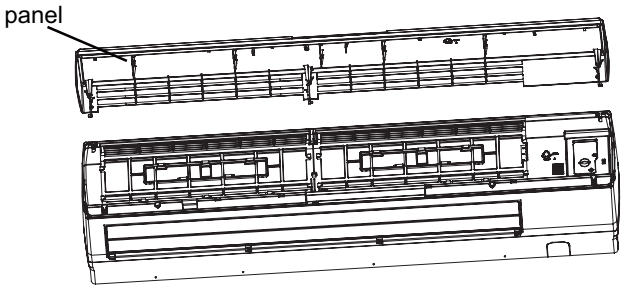
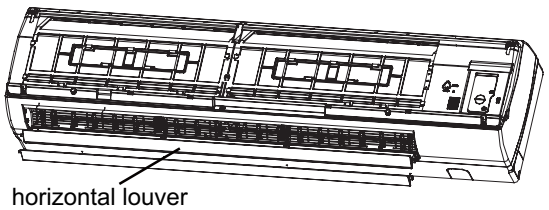
Above data is subject to change without notice.

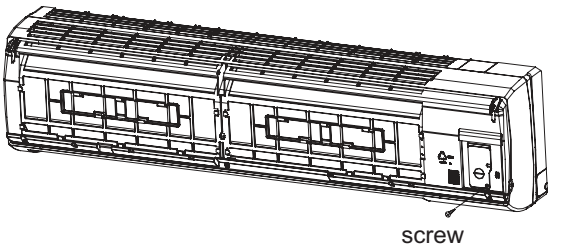
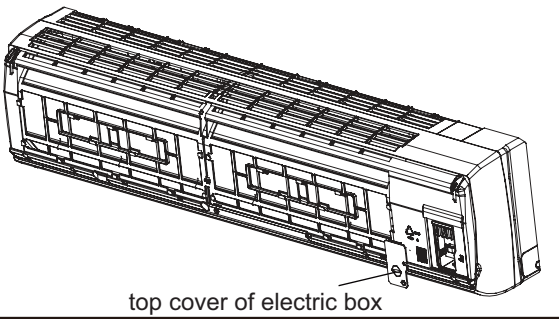
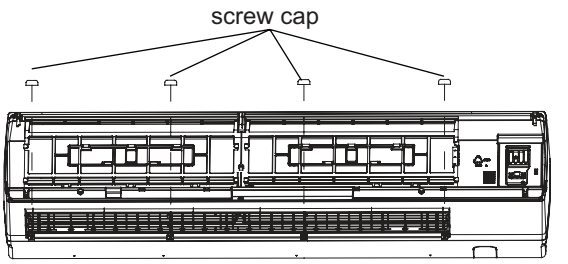
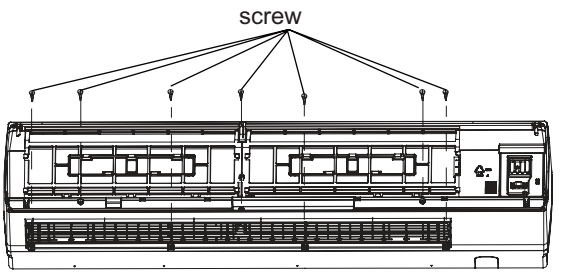
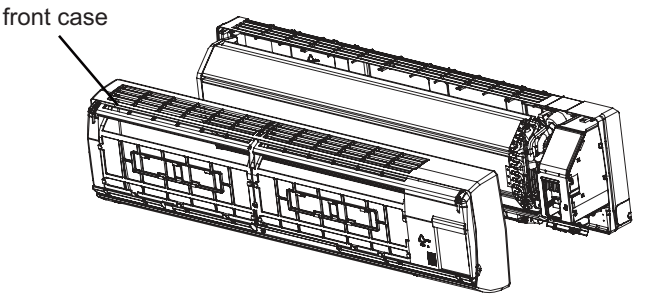
11. Removal Procedure

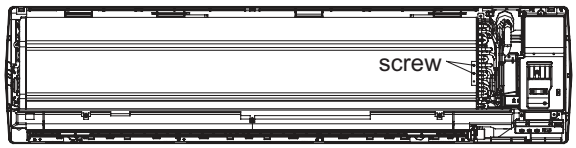
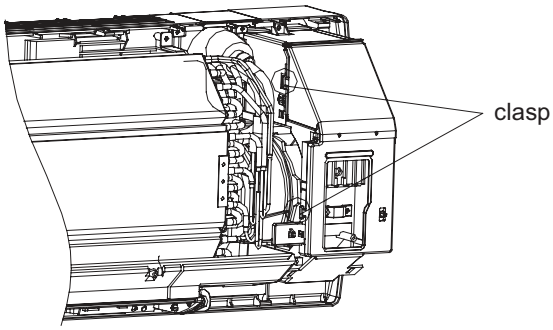
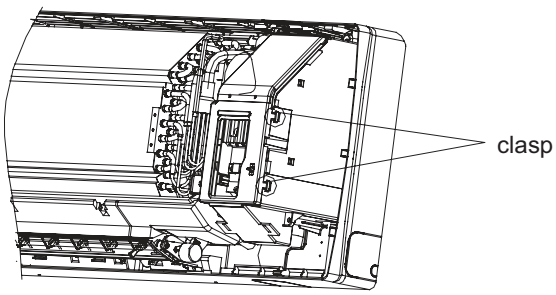
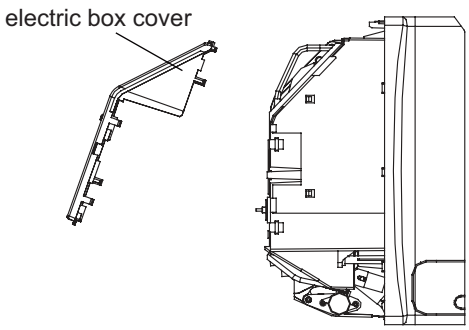
⚠ Warning: Be sure to discharge the refrigerant completely before removal.

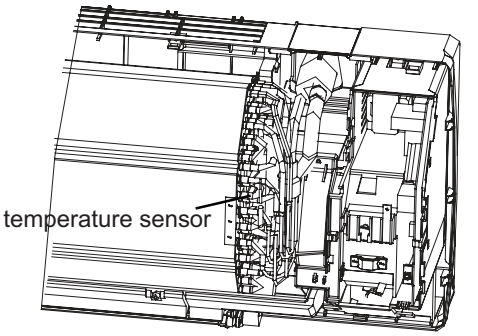
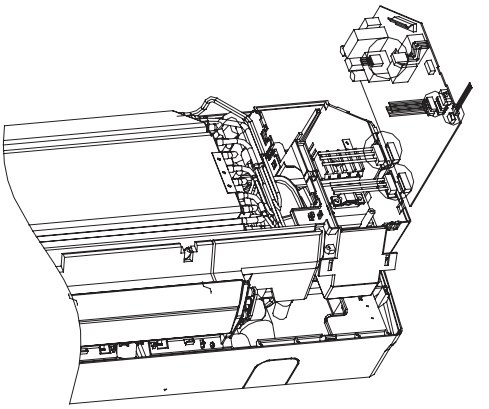
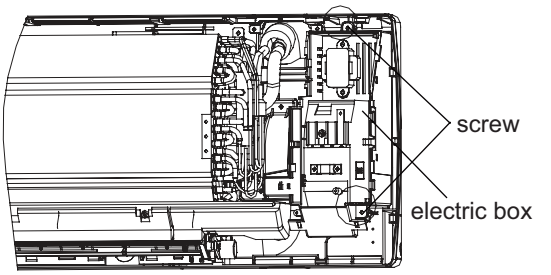
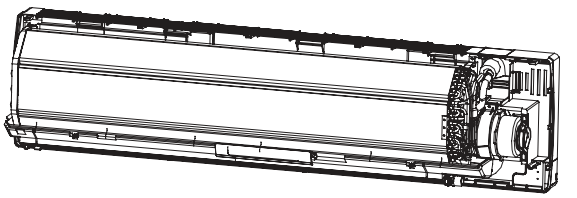
11.1 Removal Procedure of Indoor Unit

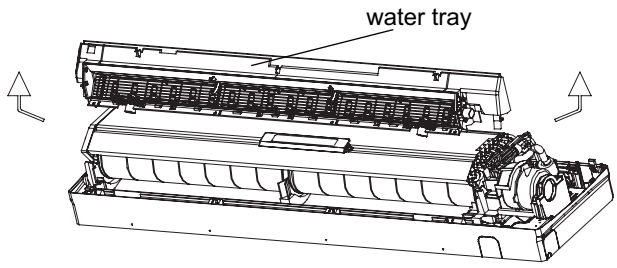
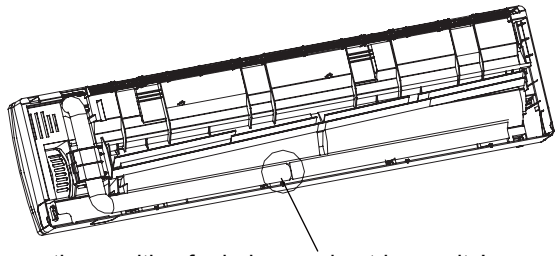
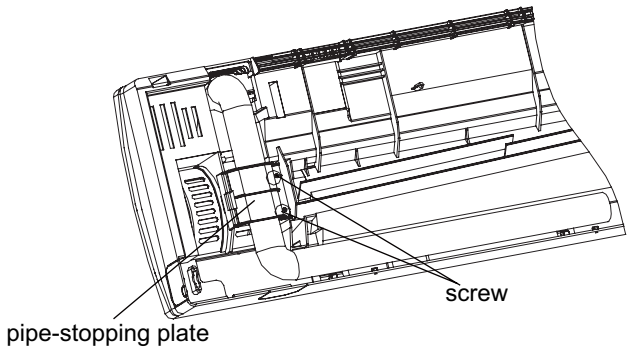
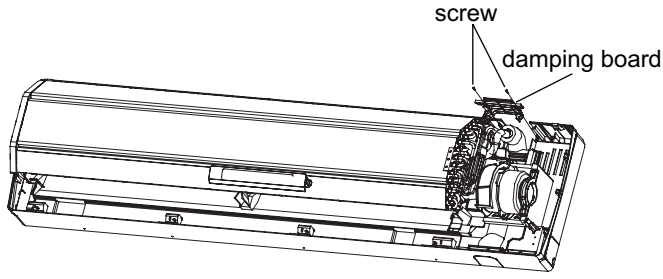
Steps	Procedure	
1.Before disassembly of the unit		
	Axonometric drawing for the complete unit.	
2.Remove filter		
a	Open the panel.	
b	Loosen the clasps on the filter.	
c	Draw out two pieces of filter.	

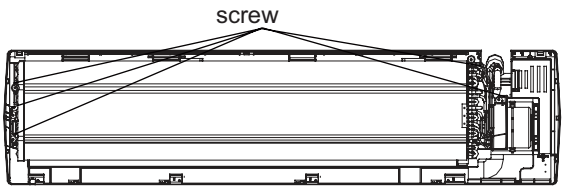
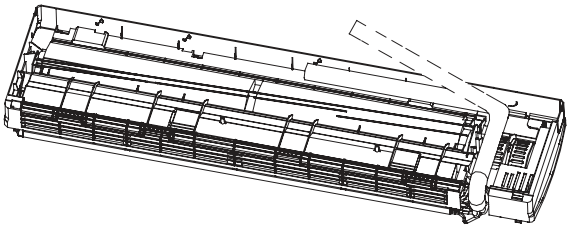
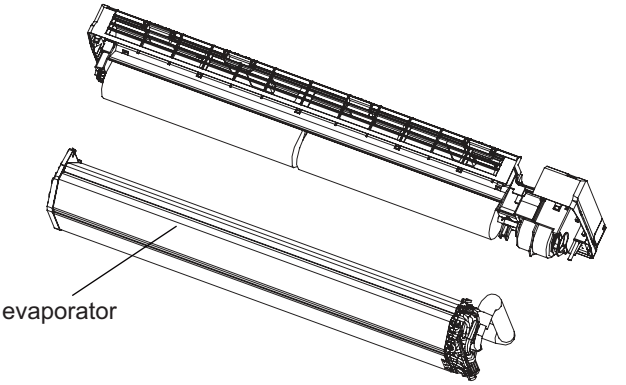
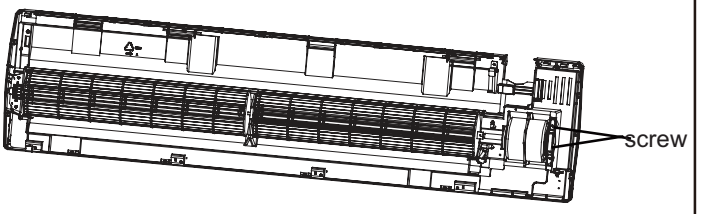
Steps	Procedure	
3.Remove display		
	Remove 2 screws fixing display, and then remove the filter.	
4.Remove panel		 
	Pull the clasps at both sides slightly, and then remove the panel.	
5.Remove horizontal louver		
	Remove the axial bush on the horizontal louver, and then remove the horizontal louver.	

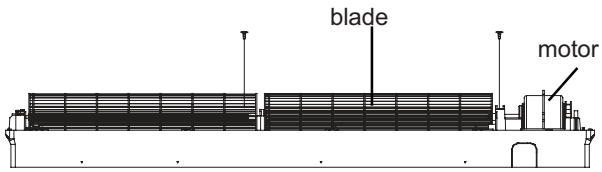
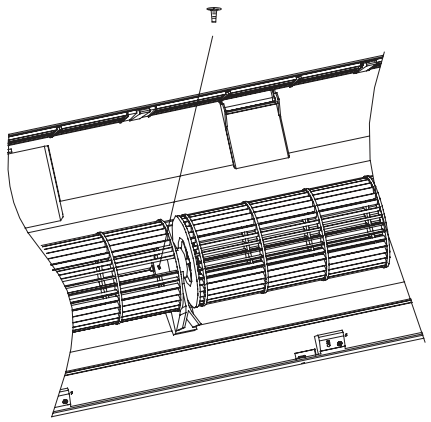
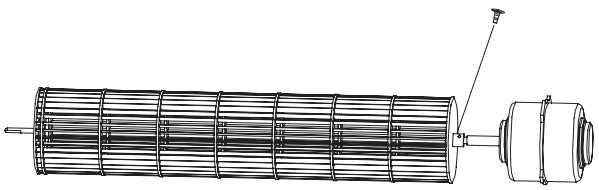
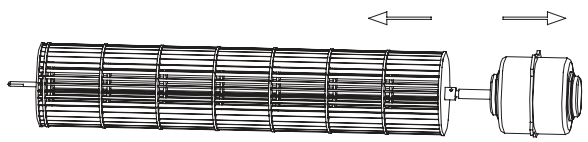
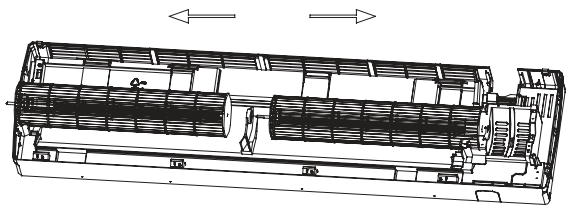
Steps	Procedure	
6.Remove top cover of electric box		
a	Remove screws fixing the top cover of electric box.	
b	Remove the top cover of electric box.	
7.Remove front case		
a	Remove the screw caps on front case.	
b	Remove screws connecting the front case.	
c	Remove the front case.	

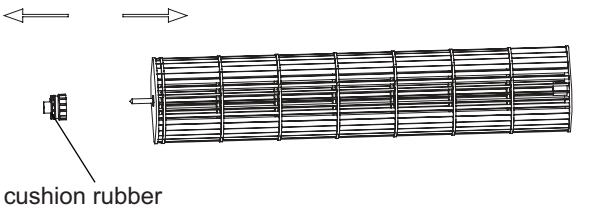
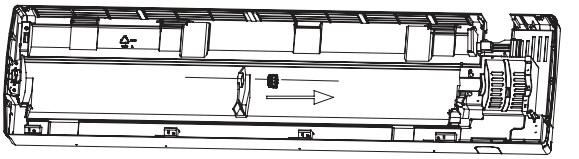
Steps	Procedure	
8.Remove earthing wire		
	Remove earthing screws, and then remove the earthing wire.	
9.Remove electric box cover		
a	Loosen clasps at the left side of electric box.	
b	Loosen clasps on the right side of electric box.	
c	Remove electric box cover.	

Steps	Procedure	
10.Remove temperature sensor		
	Pull out the indoor temperature sensor.	
11.Remove electric box		
a	Pull out 6 sockets on PCB board.	
b	Pull out two screws on electric box.	
c	Remove the electric box.	

Steps	Procedure
12.Remove water tray	
	Pull the water tray upwards, and then remove the water tray.
	
13.Remove connection pipe between indoor and outdoor units	
	Separate the connection pipe between indoor and outdoor units.
	
14.Remove pipe-stopping plate	
	Remove two screws on pipe-stopping plate for indoor unit, and then remove the pipe-stopping plate.
	
15.Remove damping board	
	Remove 2 screws on damping board, and then remove the damping board.
	

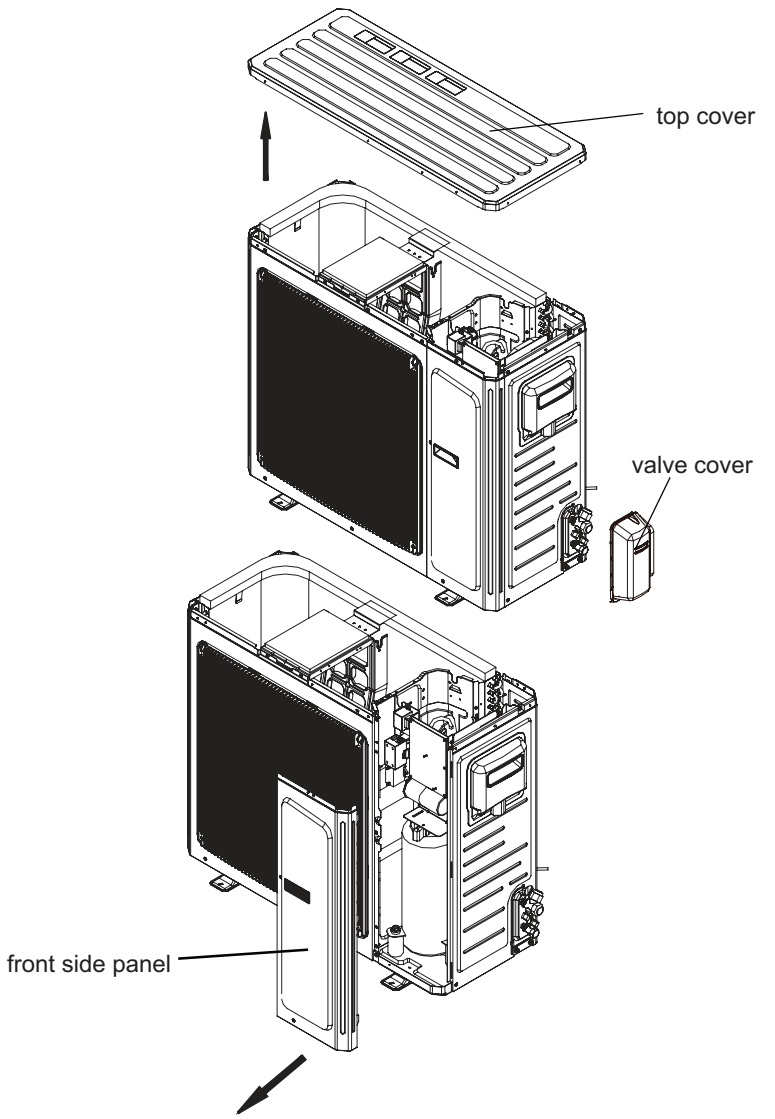
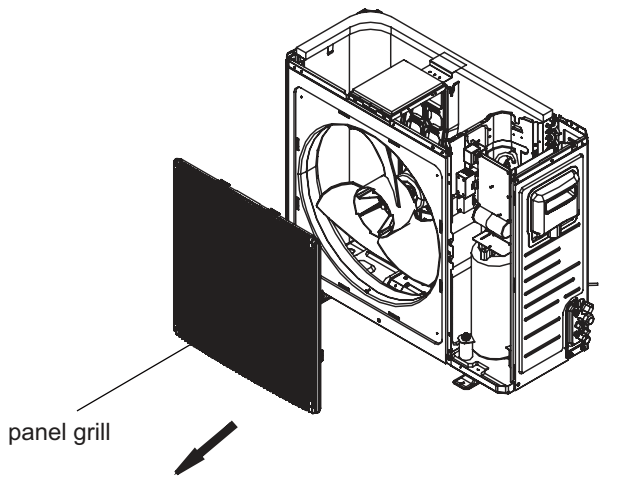
Steps	Procedure	
16.Remove evaporator		
a	Remove screws between evaporator and bottom case.	
b	Turn over the indoor unit and adjust the pipe line to the position as shown by the broken line.	
c	Lift up the evaporator, and then remove the evaporator.	
17.Remove the fixing plate of motor		
	Remove 2 screws on fixing plate of motor, and then remove the fixing pate of motor.	

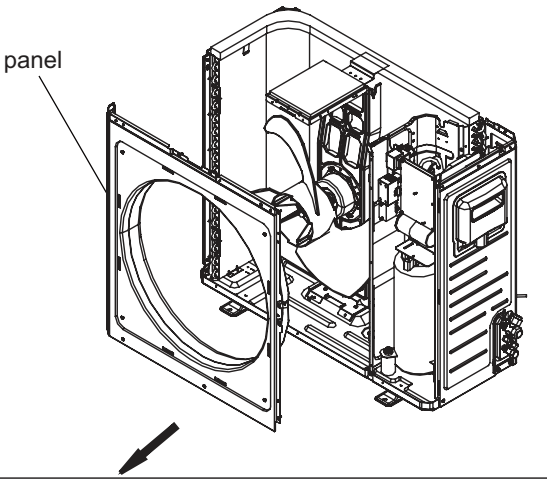
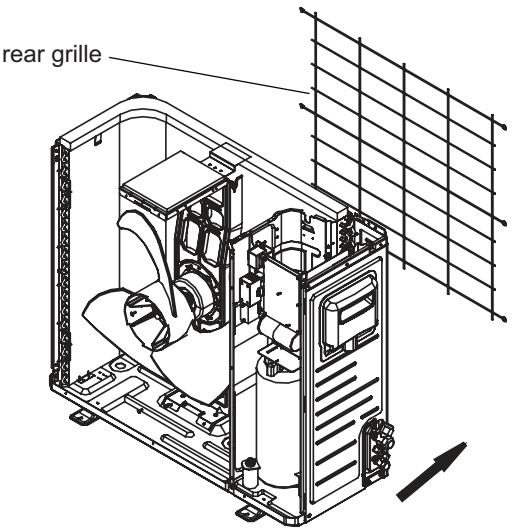
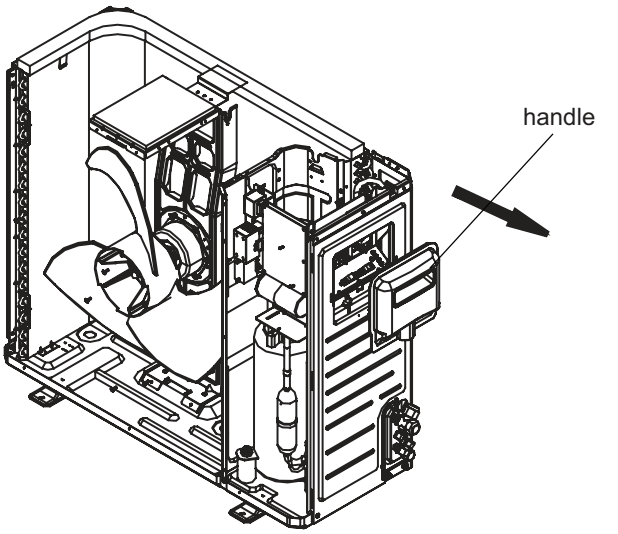
Steps	Procedure	
18.Remove cross flow blade and motor		
a	Remove screws fixing cross flow blade and motor.	
		
		
b	Remove the motor sub-assy.	
c	Separate two cross flow blade.	

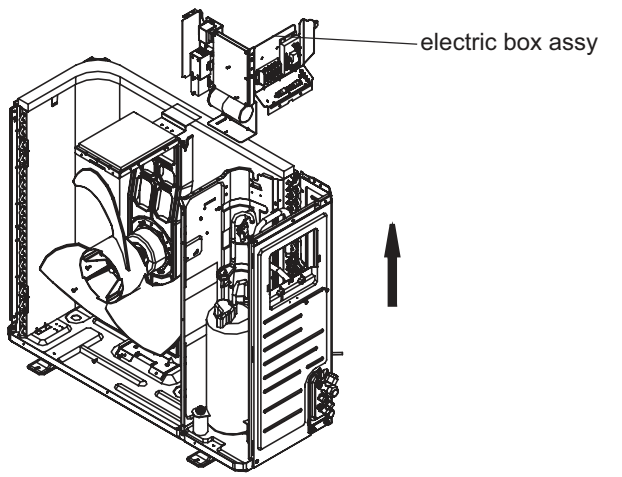
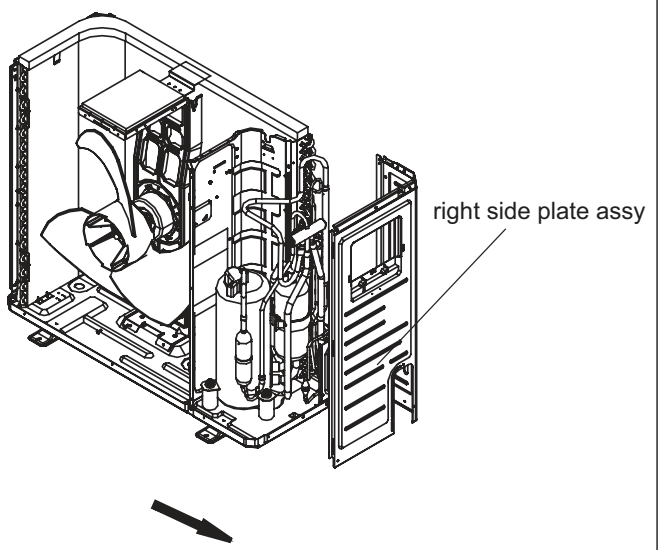
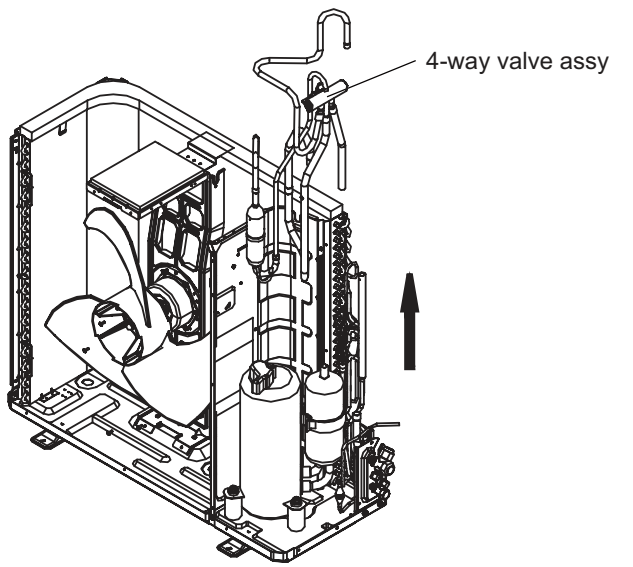
Steps	Procedure	
19.Remove cushion rubber		
a	Remove the cushion rubber on cross flow blade.	
b	Remove the cushion rubber from the base.	

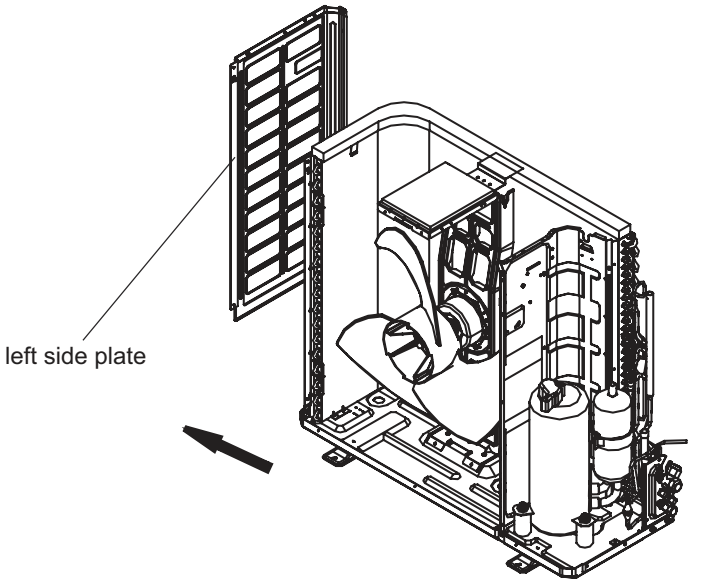
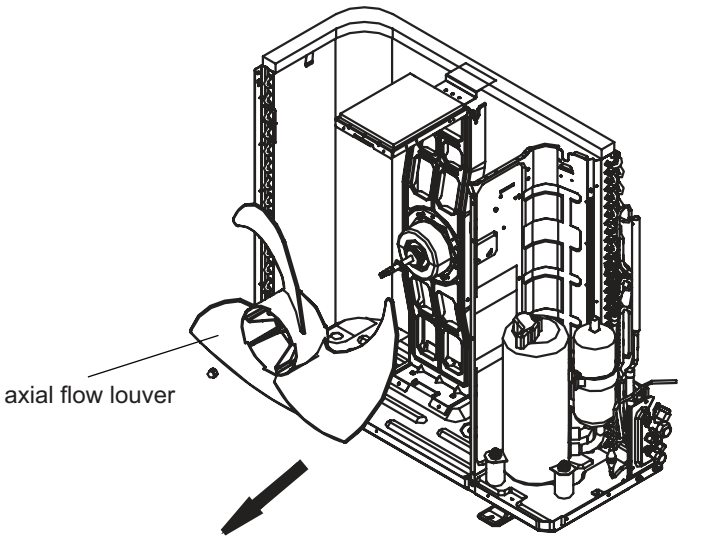
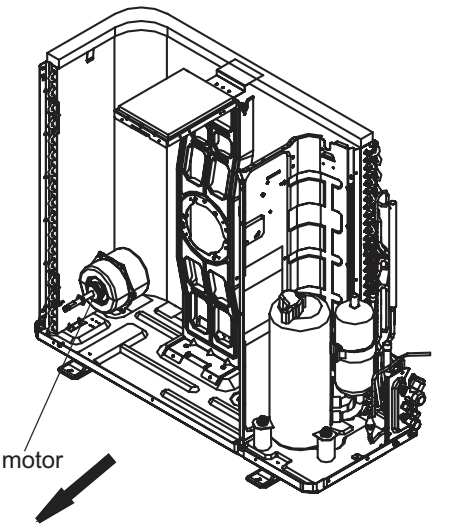
11.2 Removal Procedure of Outdoor Unit

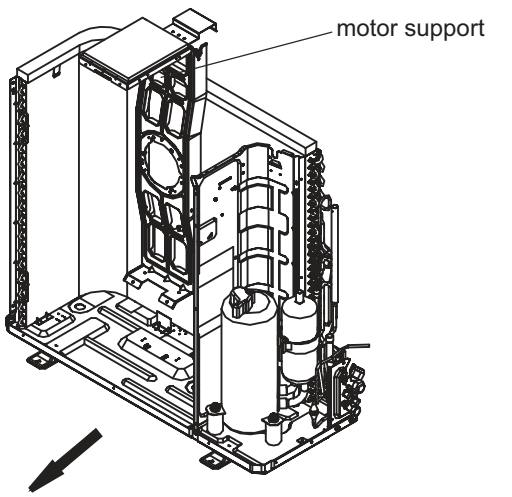
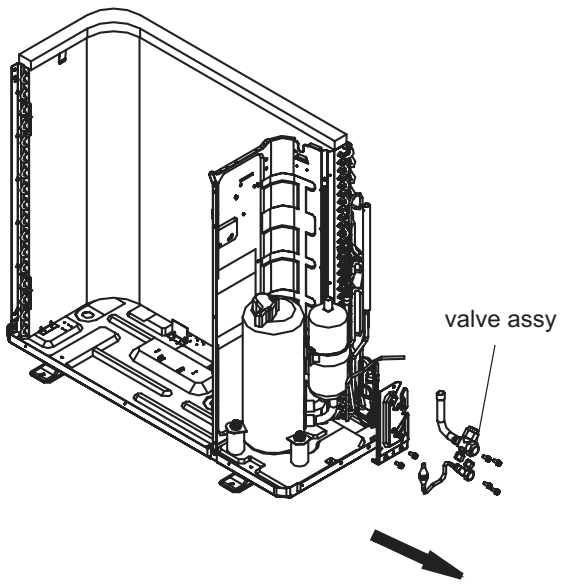
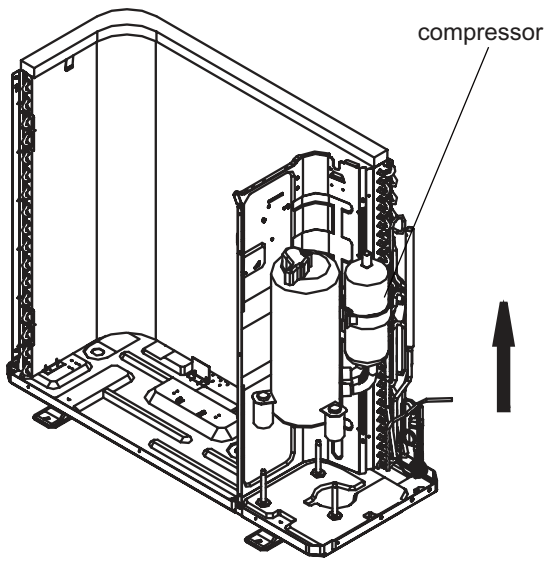
NOTE:Take LM036HO-100P232-1X unit as example.

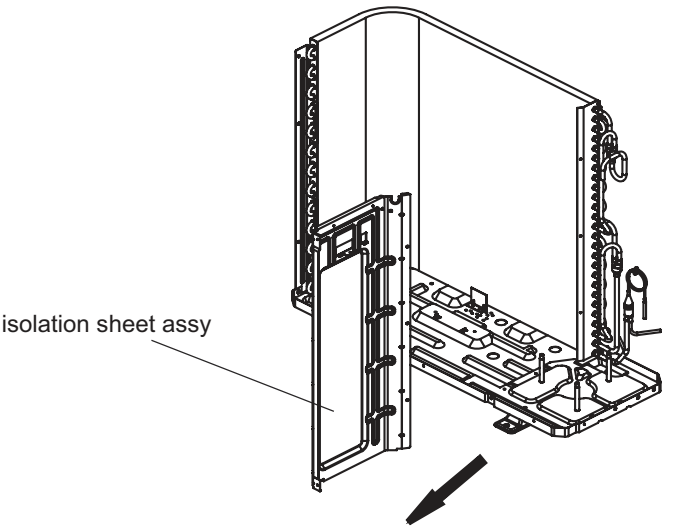
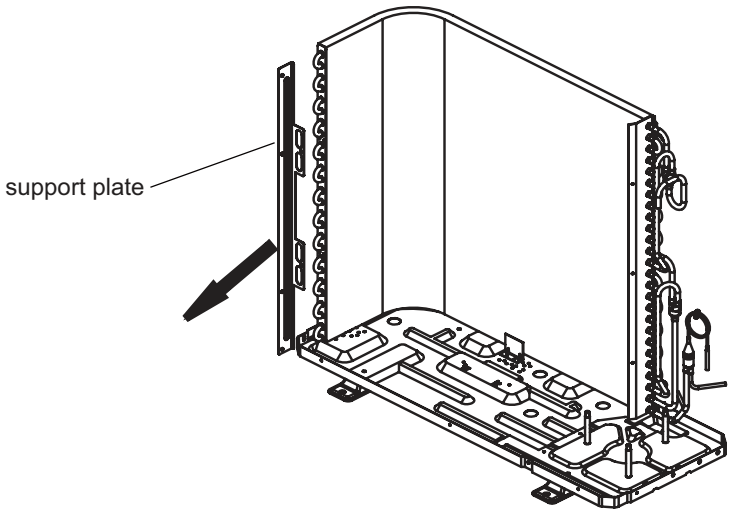
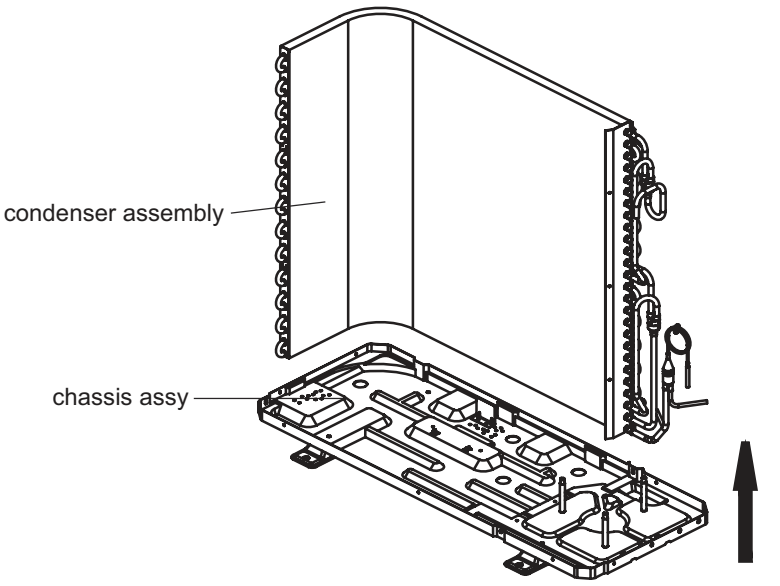
Steps	Procedure
1. Remove top cover plate and front side panel	
a Unscrew the screws connect to top cover plate, panel, right ,left side panel and valve cover by screwdriver to remove the top cover plate and valve cover.	
b Unscrew the screws connect front side panel, protecting case and chassis to remove the front side panel.	
2. Remove panel grill and panel	
a Unscrew the screws of fixing panel grill and panel by screwdriver to remove the panel grill.	

Steps	Procedure	
b	Unscrew the screws of panel, chassis and motor support by screwdriver to remove the panel.	
3. Remove rear grille		
	Disassemble the screws fixing rear grille and right&left side panel by screwdriver to remove the rear grille .	
4. Remove handle		
	Unscrew the screws fixing handle by screwdriver to remove the handle.	

Steps	Procedure
5. Remove electric box assy Unscrew the connection screws of electric box assy and isolation sheet by screwdriver to remove the electric box assy.	
6. Remove right side plate assy Unscrew the connection screws of right side plate and chassis, valve support and condenser assy to remove the right side plate assy.	
7. Remove 4-way valve assy Unsolder the pipeline connect compressor, condenser assy, gas valve and liquid valve to remove the 4-way valve (Must discharge the refrigerant first).	

Steps	Procedure
8. Remove left side plate Unscrew the connection screws of left side plate and chassis by screwdriver to remove the left side plate.	
9. Remove axial flow louver Unscrew the nuts of louver by wrench to remove the axial flow louver.	
10. Remove motor Unscrew the tapping screws fixing motor, pull out the pin of leading wire to remove the motor.	

Steps	Procedure
11. Remove motor support Unscrew the tapping screw fixing motor support, lift it upward to remove the motor support.	
12. Remove valve assy Unscrew the 2 bolts fixing valve assy, unsolder the spot weld of gas valve and return-air pipe t remove the gas valve (Note: Please wrap the gas valve completely by wet cloth to avoid high temperature damage valve when unsoldering the spot weld, and discharge the refrigerant). Unsolder the spot weld of liquid valve and connection pipe of liquid valve to remove the liquid valve.	
13. Remove compressor Unscrew the 3 foot nuts of compressor to remove the compressor.	

Steps	Procedure
14. Remove isolation sheet assy Unscrew the screws of isolation sheet, side plate of condenser and chassis to remove the isolation sheet.	
15. Remove isolating support plate (condenser) Unscrew the screws of isolating support plate (condenser) and condenser assy to remove the isolating support plate (condenser).	
16. Remove chassis assy and condenser assembly Lift it upward to remove to disassemble chassis assy and condenser assembly.	

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: Configuration of Connection Pipe

1.Standard length of connection pipe

● 5m, 7.5m, 8m.

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

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

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

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

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

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

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

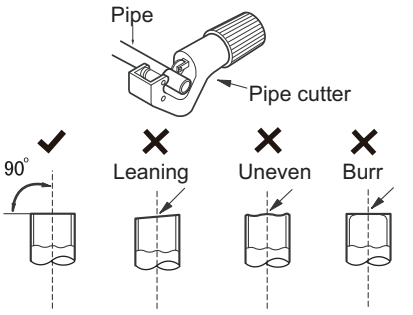
● Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

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

Appendix 3: Pipe Expanding Method

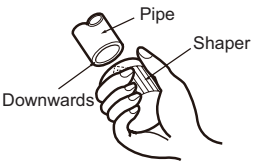
⚠ **Note:**

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



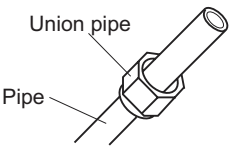
A:Cut the pip
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.

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.

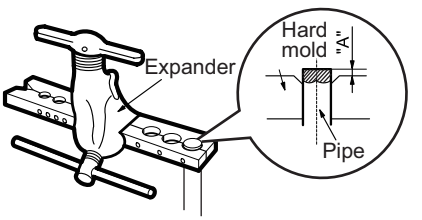


E:Expand the port
- Expand the port with expander.

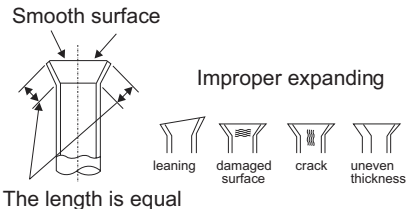
⚠ **Note:**

- "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 4: 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

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