

1 Introduction and Features



Model	Remarks
KFHHP-18	1Ph 208 V~230V 60Hz R410A

2 Specifications and Technical Parameters

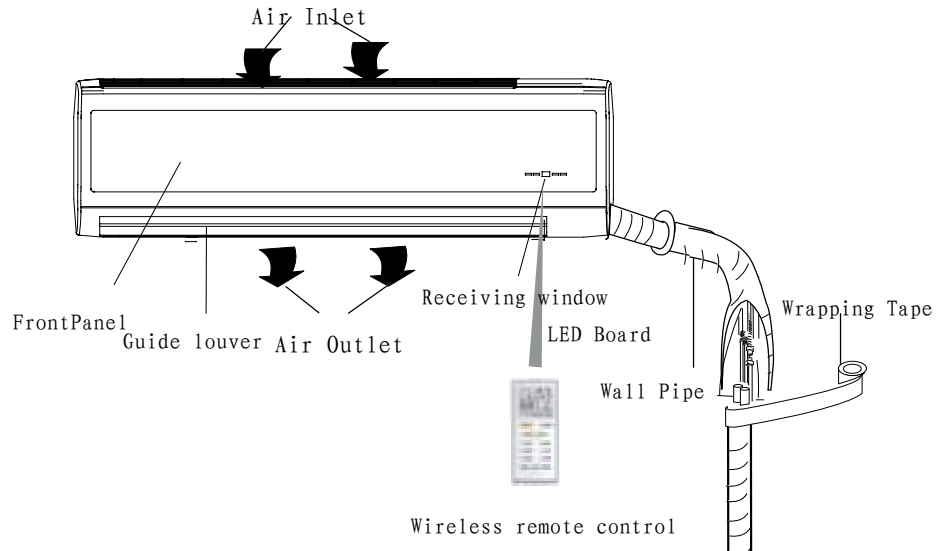
Model		KFHHP-18	
Function		COOLING	HEATING
Rated Voltage		208 V~230V	
Frequency(Hz) (High/Standard)		60HZ	
Total Capacity (W) (High/Standard)		5300	5800
Total Capacity (Btu/h) (High/ Standard)		18000	20000
Nominal Power (W)		1350	1800
Max Input (W)		2440	2440
Rated Current (A)		6.14	8.18
Air Flow Volume (m ³ /h) (H/M/L)		800	
Dehumidifying Volume (l/h)		1.2	
Indoor unit	Model of Indoor Unit	KFHHP-18ID	
	Fan Motor Speed (r/min) (H/M/L)	1350/1250/1150	
	Output of Fan Motor (w)	20	
	Input Power of Heater (w)	/	
	Fan Motor Capacitor (uF)	1	
	Fan Motor RLA(A)	0.09	
	Fan Type-Piece	Cross flow fan – 1	
	Diameter-Length (in)	φ3.78 X 31.38	
	Evaporator	Aluminum fin-copper tube	
	Pipe Diameter (in)	Φ0.2756	
	Row-Fin Gap(in)	2-0.063	
	Coil length (l) x height (H) x coil width (L)	30.8X13.4X10	
	Swing Motor Model	MP24GA	
	Output of Swing Motor (W)	2	
	Fuse (A)	PCB 3.15A Transformer 0.2A	
	Sound Pressure Level dB (A) (H/M/L)	50/47/44	
	Dimension (W/D/H)(in)	40.15X8.94X12.2	
	Dimension of Package (W/D/H)(in)	42.44X12.8X15.35	
Net Weight /Gross Weight (lb)	28.7/37.5		

Outdoor unit	Model of Outdoor Unit	KFHHP-18OD		
	Compressor	HITACHI		
	Compressor Model	EU1013DD		
	Compressor Type	Scroll		
	L.R.A. (A)	27		
	Compressor RLA(A)	6.54		
	Compressor Power Input(W)	1266		
	Overload Protector	4CYC11233		
	Throttling Method	Capillary throttling		
	Starting Method	Transducer starting		
	Working Temp Range (°C)	-10°C ≤ T ≤ 45°C		
	Condenser	Aluminum fin-copper tube		
	Pipe Diameter (in)	0.375		
	Rows-Fin Gap(in)	2-0.06		
	Coil length (l) x height (H) x coil width (L)(in)	28.8X26X1.73		
	Fan Motor Speed (rpm) (H/M/L)	High: 780±20 r/min Low: 620±35 r/min		
	Output of Fan Motor (W)	60		
	Fan Motor RLA(A)	0.3		
	Fan Motor Capacitor (uF)	3		
	Air Flow Volume of Outdoor Unit	/		
	Fan Type-Piece	Axial fan –1		
	Fan Diameter (in)	18.11		
	Defrosting Method	Auto defrost		
	Climate Type	T1		
	Isolation	I		
	Moisture Protection	IP24		
	Permissible Excessive Operating Pressure for the Discharge	3.8MPa		
	Permissible Excessive Operating	1.2MPa		
	Sound Pressure Level dB (A) (H/M/L)	~57		
	Dimension (W/D/H)(in)	37.4X13.39X26.93		
Dimension of Package (W/D/H)(in)	43.3X17.7X29.7			
Net Weight /Gross Weight (lb)	130/141.1			
Refrigerant Charge (oz)	R410A/61.73			
Connecti on Pipe	Length (ft)	26.25		
	Gas additional charge(oz/ft)	0.27		
	Outer Diameter	Liquid Pipe (mm)	Φ9.52(5/8")	
		Gas Pipe (mm)	Φ16(3/8")	
	Max Distance	Height (ft)	39	
Length (ft)		82		

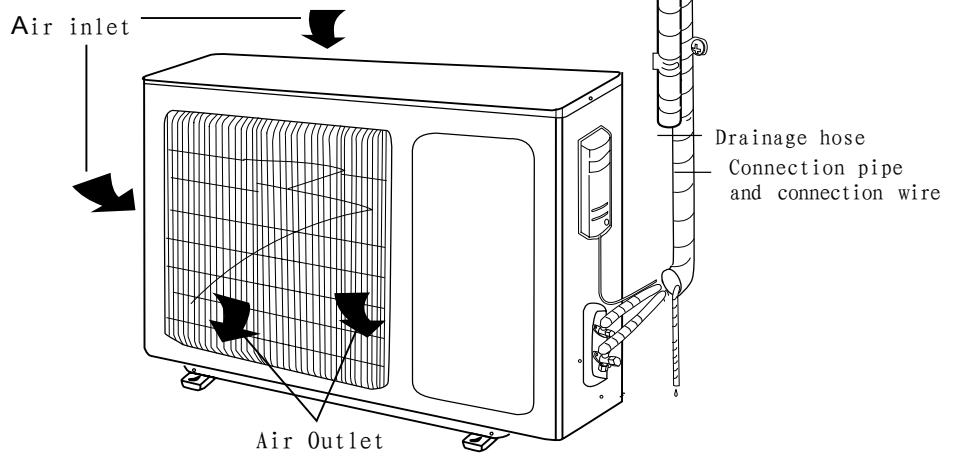
The above data is subject to change without notice. Please refer to the nameplate of the unit.

3 Component Name

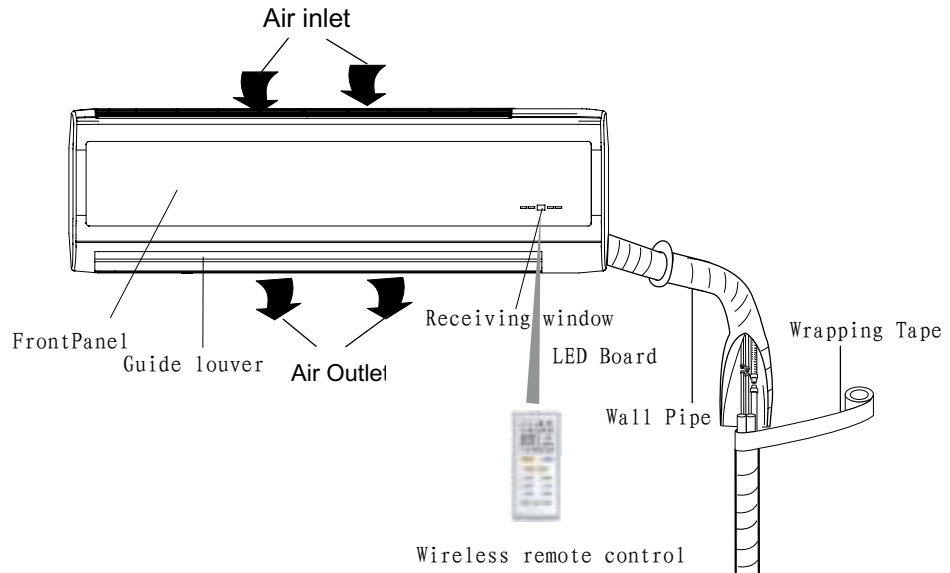
Indoor unit



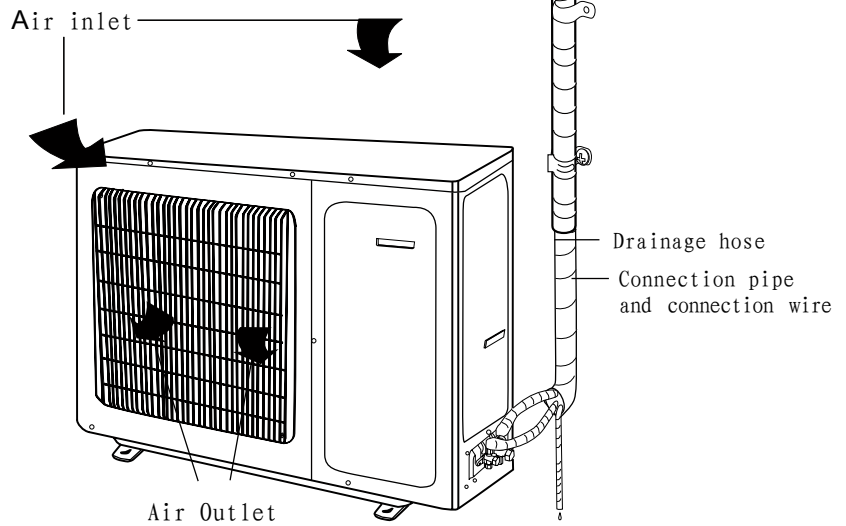
Outdoor Unit



Indoor unit

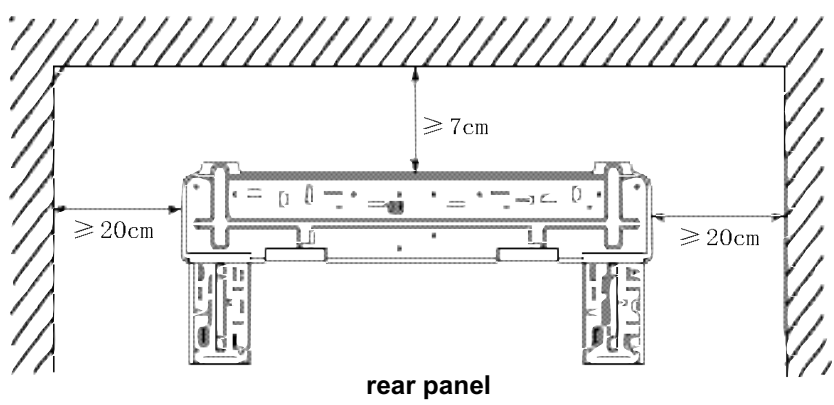
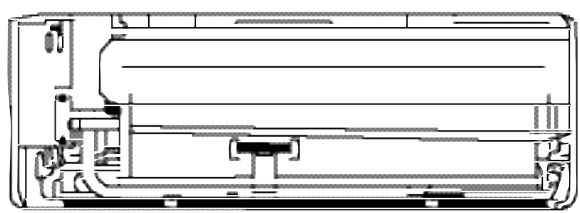
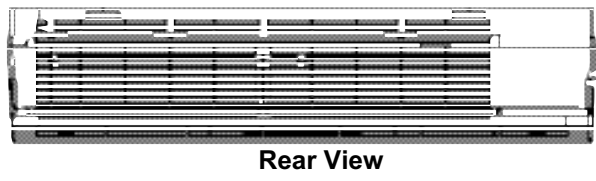
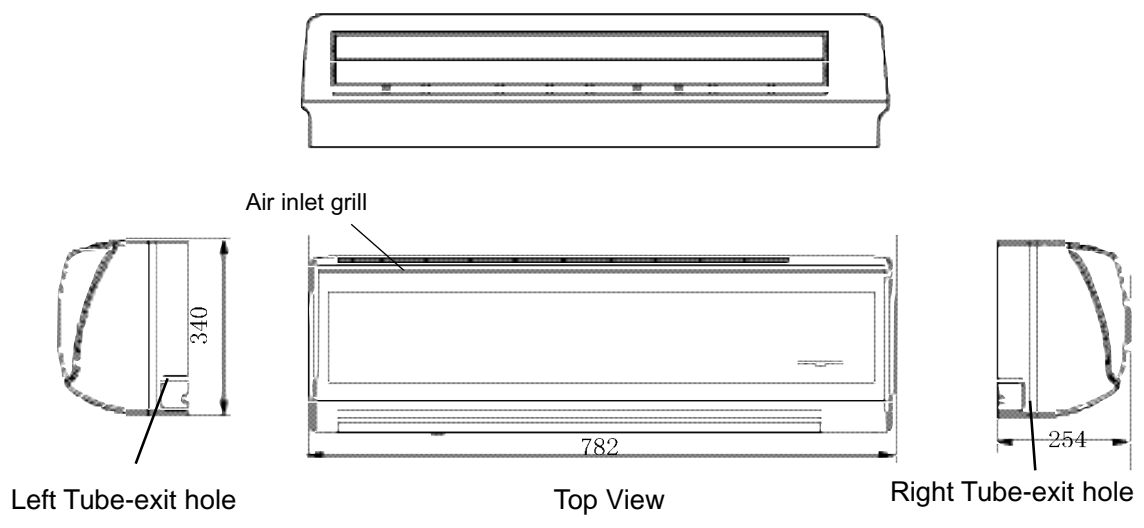


Outdoor Unit

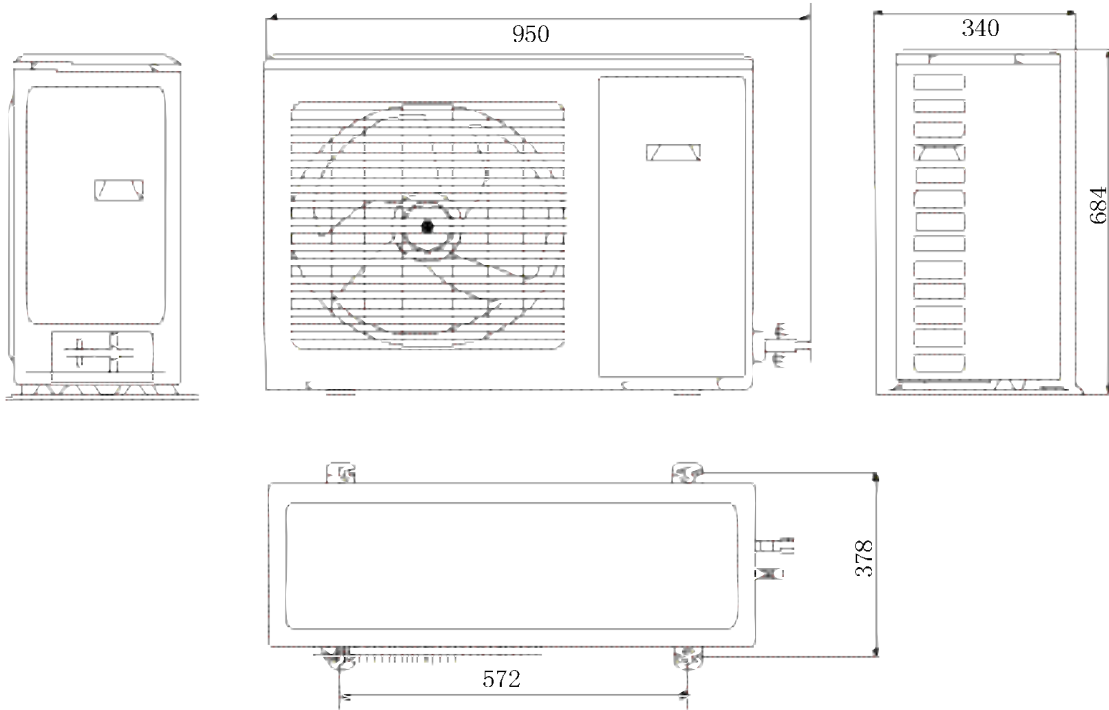


4 Overall and Installing Dimension

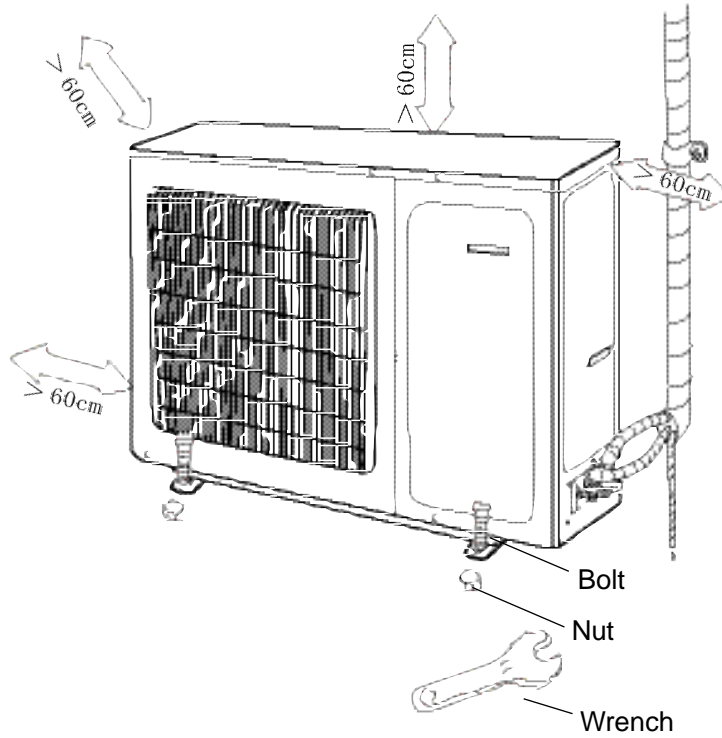
4.1 Overall and Installing Dimension of Indoor Unit



4. 2 Overall and Installing Dimension of Outdoor Unit

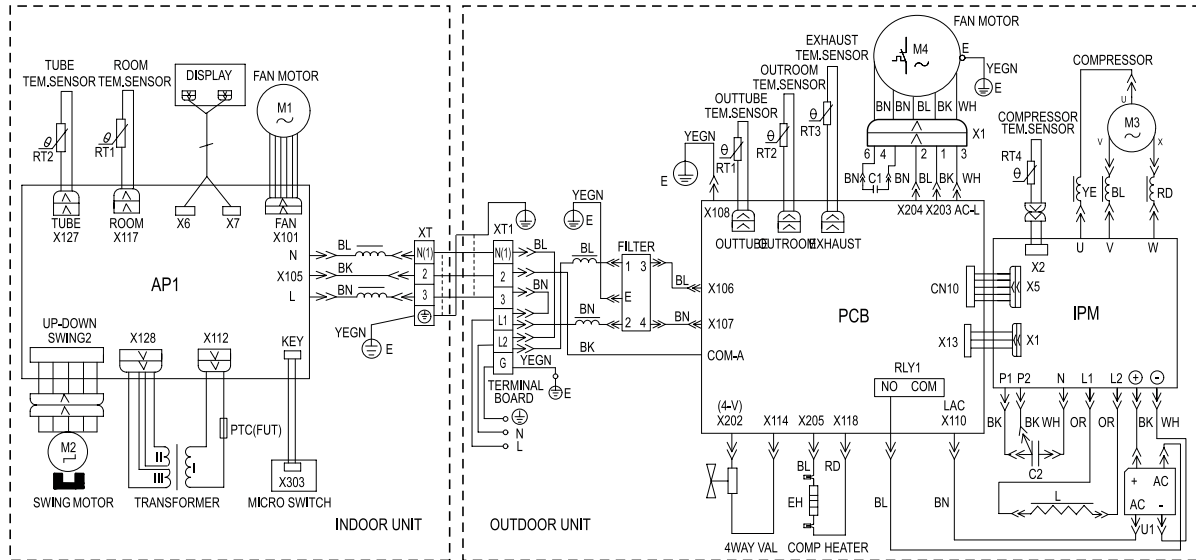


Unit: mm



5 Electrical Diagram

In case of any change in the electrical diagram shown above, please follow the drawing on the cabinet



6 Function manual and operation method of remote controller

6.1 Function manual of remote controller

This function manual only for D C Inverter air conditioner KFHP-18. The indoor and outdoor units of D C Inverter air conditioner have their own main PCB, control different objects and communicate with each other to complete all kinds of the functions.

Main functions for indoor unit

- Mode
 - COOL ● HEAT ● DRY ● FAN ● AUTO
- Detecting indoor room temp.
 - Indoor room temp. sensor (15K Ω), dispart voltage resistance(15K Ω)
 - Indoor pipe temp. sensor (20K Ω), dispart voltage resistance(20K Ω)
- Temp. control
 - Making indoor room temp. reach the preset temp. rapidly and keep at preset temp.
- Remote control signal and manual key signal manage
- Indoor fan
 - high; med; low
- Swing
 - step motor
- Indicator
- Buzzer
- Timer
- Sleep
- Memory
- Heat turn on in heating mode (cold air prevention)
- Antifreeze Protection in cooling mode
- Communicate with outdoor unit

Main functions for outdoor unit

- Wave filter and protection for power supply
- Detecting outdoor ambient temp.
 - Outdoor ambient temp. sensor (15K Ω), dispart voltage resistance(15K Ω)
 - Outdoor pipe temp. sensor (20K Ω), dispart voltage resistance(20K Ω)
 - Exhaust temp. sensor (50K Ω), dispart voltage resistance(15K Ω)
- Outdoor fan
 - high; low
- Invertible compressor
- 4-way valve
- Indicator
- Electric heating belt of compressor
- Power module protective detection
- Power supply current detection
- Communicate with indoor unit

Basic Functions

Cooling Mode

- When $T_{amb.} \geq T_{set} + 0.5^{\circ}\text{C}$, the unit will run under cooling mode, in which case the compressor and outdoor fan will start to run, the indoor fan will run at preset speed.
- According to the change of ambience temp. the outdoor microcomputer will adjust the compressor frequency and outdoor fan speed automatically to make the indoor room temp. reach the preset temp. rapidly.
- When cooling capacity meet the demand, the compressor and outdoor fan will stop.
- Under this mode, the indoor fan will keep running.
- Under this mode, the 4-way valve will be de-energized.
- The temperature can be set within a range from 16 to 30 °C

★ Protection

Antifreeze Protection under cooling mode

- When it is detected that the system is under antifreeze protection, the compressor and outdoor fan will be stopped, the indoor fan will keep running.
When it is detected that the pipe temp. of indoor unit resume normal, and the compressor has been stopped for 3mins the antifreeze protection will be released, the unit will resume its original operating status.
- During Antifreeze Protection, there is display on the outdoor unit, for detail you can see "The state and meaning of outdoor indicator" below.

Dehumidifying Mode

- Under this mode, the indoor fan will run at low speed and other operation and protection are the same as under cooling mode.

Heating Mode

- When $T_{amb.} - 3^{\circ}\text{C} \leq T_{preset} - 0.5^{\circ}\text{C}$, the unit will run under heating mode, in which case the 4-way valve will be energized the compressor and outdoor fan will start running.
- The outdoor microcomputer will adjust the compressor frequency and outdoor fan speed automatically according to the demand of heating capacity to make the indoor temperature reach the preset temp. rapidly.
- When the heating capacity meet the demand, the compressor and outdoor fan will be stopped.
- Under this mode, the indoor fan:
Once the compressor is started, the indoor fan will run under cold air prevention condition (the indoor fan will run 2 minutes(max) delay after the compressor is started, and start with low speed or preset speed).
Once the compressor is stopped, the indoor fan will blow the residual heat for 60s and then will stop.
During defrosting, the indoor fan is stop.
- The 4-way valve is energized (when the unit is stopped under any protection, the 4-way valve will be de-energized after 2 mins delay).
- The temperature can be set within a range from 16 to 30 °C.

★ Defrosting under Heating Mode

- Defrosting: first the compressor will turn to low frequency and run for 20s, the 4-way valve will be reversal, the indoor and outdoor fans will stop, then the compressor will turn to high frequency and defrost.
- The time for defrosting will not exceed 8 mins.
- Get in and get out defrosting is depended on outdoor ambient temp., outdoor tube temp. and the defrosting time, etc.
- The display on outdoor unit during defrosting: for detail you can see "The state and meaning of outdoor indicator" below.

Fan Mode

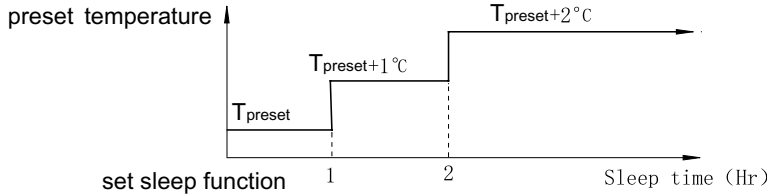
- Under this mode, only the indoor fan and swing motor run at preset status.
- The temperature can be set within a range from 16 to 30 °C.

Auto Mode

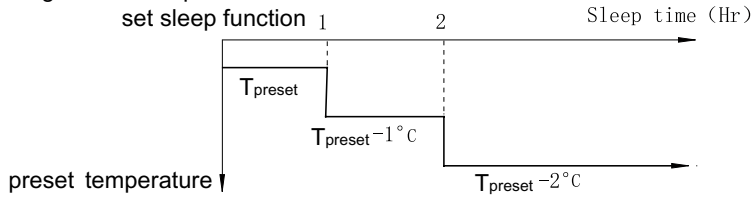
- Under this mode, it will automatically select the run mode (cooling, heating and fan mode) according to the change of ambient temperature.
- Protection function is the same as under cooling and heating mode.
- The temperature can be set within a range from 16 to 30 °C.

Sleep Function

- Under cooling or dehumidifying mode, the preset temperature will automatically rise by 1°C one hour after setting of sleep function from remote controller and rise by another 1°C after 2 hours. It totally rise 2°C in 2 hours, and then will keep running at this temperature.



- Under heating mode, the preset temperature will automatically decrease by 1°C one hour after setting of sleep function from remote controller and decrease by another 1°C after 2 hours. It totally decrease 2°C in 2 hours, and then will keep running at this temperature.



- There is no sleep function under Fan and Auto mode.

Timer Function

The unit will automatically be turned on or off according to the timer set by the remote controller.

Memory Function

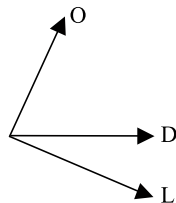
- Contents of memory: Mode , Set fan speed, Set temperature, Swing.
- If the system is de-energized under timer or sleep function, when re-energized ,the preset timer or sleep function will be cancelled. you must reset it.

Indoor fan control

- Indoor fan can be set to run at high, middle, low speed by remote controller, also can be set to AUTO FAN, in which case, the indoor fan will select High, Middle and Low fan speed automatically according to the change of ambient temperature
- There may be about 3.5min delay for changing among the wind speeds.

Swing control

- You can set the swing function by pressing the swing key on the remote controller only when the indoor fan is running.
- After power on, the guide louver will be closed as shown in below fig. : O is close position, D is the min. position and L is the max. position.
- If set swing function after turn on the unit, the guide louver will swing between D and L.



AUTO key (emergency key)

At on status, the unit will be stopped when press this key; at off status, the unit will run at Auto mode when press this key and the swing motor will be started.If there is remote control signal, the unit will run according to the remote control signal.

Buzzer

When the unit is energized,receives signal from press key or receives remote control signal, the buzzer will give out a beep.

Common protection function

★ Overload pretecton

When T_{tube} is detected too high, the compressor will run in limited or dropped frequency.When T_{tube} goes on rising over the stated value, the compressor will stop. When the compressor has stopped for 3 mins and it is detected that T_{tube} has resumed normal, the compressor will resume running.

(T_{tube} : at cooling,it detects the temp. of outdoor heat exchanger,at heating,it detects the temp. of indoor heat exchanger.)

★ Delay pretecton for compressor

Once be stopped, the compressor can not be restarted within 3mins. (except de-energized)

★ Exhaust Temperature Pretecton

If it is detected by the outdoor controller that the exhaust temperature is too high, the compressor will run in limited or dropped frequency. If the exhaust temperature goes on rising over the stated value, the compressor will stop. When the compressor has stopped for 3 mins and it is detected that the exhaust temperature has resumed normal, the compressor will resume running.

If it is detected that the exhaust temperature protection occurs 6 times continuously within 1 hour,the compressor can not resume running, in which case, you need to press ON/OFF to resume.

★ Communication malfunction

There is communication malfunction if it can not receiving correct signal for 3 minutes continuously, in which case, the outdoor unit will stop.

★ Power Module protection

When module is in protection, the compressor will be stopped as the indoor room temperature meet the preset value, after the compressor has stopped for 3 minutes, it will resume its original operating status automatically.

★ Overload protection for compressor

● **Overload protection:** If total current is detected over the stated value, the unit will be stopped as the indoor room temperature meet the preset value, after the compressor has stopped for 3 minutes, it will resume its original operating status automatically. If it is detected that the overload protection occurs over 6 times continuously , the system will be turned off and it can not resume operating status automatically.

● Current dropped frequency or limited frequency control:

The controller will drop the compressor frequency or prohibit the compressor frequency rising according to the change of total current.

Compressor data

- Compressor model : EU1013DD
- DC motor (No-brush)
- The wire-wound resistance between U-V; U-X; V-X are 0.578Ω (in $20 \text{ }^{\circ}\text{C}$)

Display and Meaning of Outdoor Indicator

LED1	Meaning
blink 1 times	compressor starts to run
blink 2 times	exhaust protection stop
blink 3 times	SIPM module protection stop
blink 4 times	overcurrent protection stop
blink 5 times	overload protection stop
blink 6 times	Cooling antifreezing stop
blink 7 times	Sensor malfunction stop
blink 8 times	Communication malfunction stop (including indoor unit and SIPM)
blink 9 times	High-pressure protection stop of compressor
blink 10 times	Low-pressure protection stop of compressor
blink 11 times	(for other model)

LED2	Meaning
blink 1 time	cooling overload protection stop
blink 2 times	heating overload protection stop
blink 3 times	Communicate with indoor unit malfunction
blink 4 times	Communicate with SIPM malfunction
blink 5 times	Communicate with computer malfunction
blink 6 times	outdoor environmental sensor malfunction
blink 7 times	outdoor tube sensor malfunction
blink 8 times	outdoor exhaust sensor malfunction
blink 9 times	Communication malfunction signal sent by indoor unit

LED3	Meaning
blink 1 time	quick cooling / heating
blink 2 times	defrosting
blink 3 times	oil return
blink 4 times	nominal cooling / heating
blink 5 times	max. cooling / heating
blink 6 times	middle cooling / heating
blink 7 times	min. cooling / heating
blink 8 times	switch off
blink 9 times	low pressure can not resume

LED4	Meaning
blink 1 time	exhaust protection dropped frequency
blink 2 times	overcurrent protection dropped frequency
blink 3 times	cooling overload protection dropped frequency
blink 4 times	heating overload protection dropped frequency
blink 5 times	antifreezing dropped frequency
blink 6 times	frequency is dropped to the lowest value stop

LED5	Meaning
blink 1 time	exhaust protection limited frequency
blink 2 times	overcurrent protection limited frequency
blink 3 times	cooling overload protection limited frequency
blink 4 times	heating overload protection limited frequency
blink 5 times	current at 7A frequency keep up 3 mins
blink 6 times	current at 9A frequency keep up 3 mins

LED6	Meaning
blink	(for company enactment)

LED7	Meaning(SIPM information)
blink 1 time	Reset stopping
blink 2 times	Surge current is too high or 17V voltage is too low
blink 3 times	Abnormal low speed
blink 4 times	Switch failure
blink 5 times	Overload stop
blink 6 times	OH over heat
blink 7 times	OH or FIN sensor malfunction
blink 8 times	Poor speed up
blink 9 times	Poor communication
blink 10 times	Volts D.C. too low
blink 11 times	FIN temperature too high
blink 12 times	Abnormal high speed
blink 13 times	EEPROM data exception
blink 14 times	Volts D.C. too high

LED8	Meaning
bright	Receiving or sending indoor data
black	Indoor data received or sent

7 Disassembly procedures

7.1 Disassembly procedures for indoor unit

Operation procedures/pictures

7.1.1 Disassembling the front panel and electric box cover

Unloose the clasps on both sides and lift the panel upward. Unplug the two connecting terminals of the display and slide out the rear clasp from the groove to take off the front panel.(you can use panel support bar to support the panel) Screw off the fixing screws of the electric box cover and open the electric box top cover to take it off.

As shown in Fig.7-1

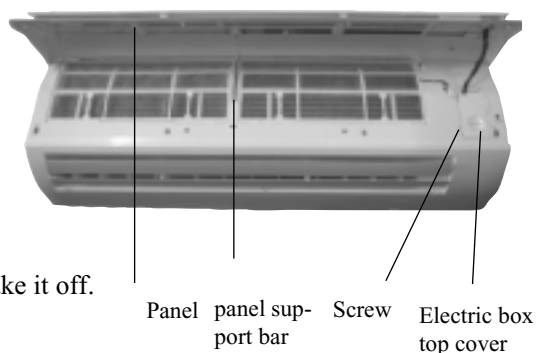


Fig.7-1

7.1.2 Filter

Push the filter up to unloose the clasp to pull out the two filters.

As shown in Fig.7-2

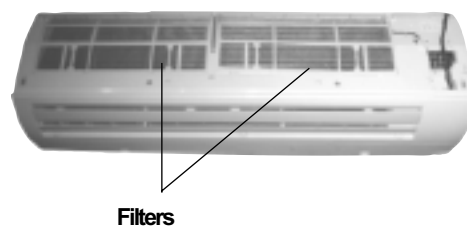


Fig.7-2

7.1.3 Disassembling the guide louver

Bend the guide louver with strength and let out the rotating shaft from the groove to take off the guide louver. As shown in Fig.7-3

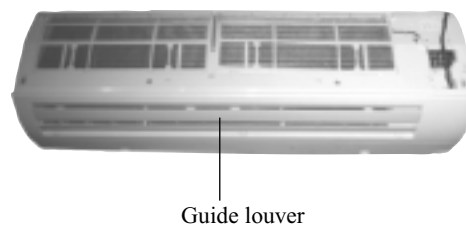


Fig.7-3

Operation procedures/pictures

7.1.4 ||||| **Disassembling the front panel body**

Unclench the 3 screw covers and screw off the 3 pieces of screws that fix the panel body. Unloose the front and rear clasps to take off the panel body.

As shown in Fig.7-4

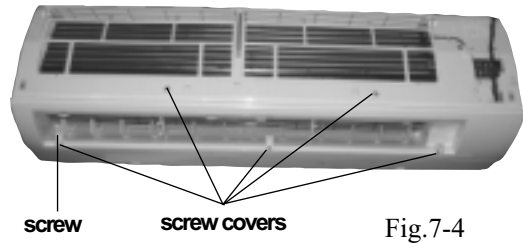


Fig.7-4

7.1.5 ||||| **Disassembling the electric box cover**

Unloose the 3 clasps to take off the electric box cover.

As shown in Fig.7-5

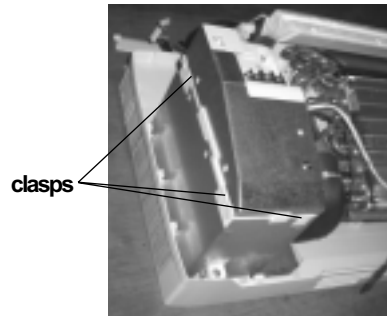


Fig.7-5

7.1.6 ||||| **Disassembling the water-tray assy**

Unloose the clasp on the left side and unplug the connecting terminal of the stepping motor. Carefully to remove the water-tray assy because the drainage pipe is placed here. As shown in Fig7-6, 7-7

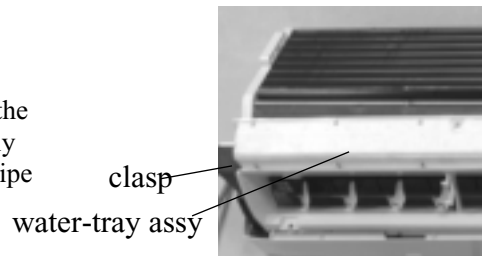
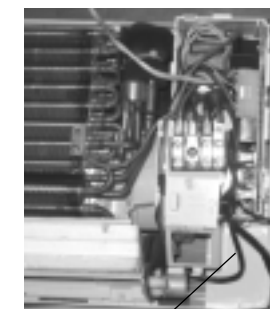


Fig.7-6



connecting terminal

Fig.7-7

Operation procedures/pictures

7.1.7 ||||| Disassembling the electric box

Screw off the two pieces of screws that fix the electric box and unloose the clasp. Pull out the tube sensor, unloose the grounding nut and unplug the motor connecting terminal take out the electric box.

As shown in Fig 7-8

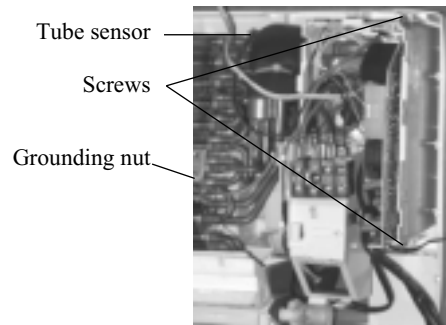


Fig 7-8

7.1.8 ||||| Disassembling the evaporator assy

Screw off the screws that fix the evaporator, one piece on the left and two pieces on the right. As shown in Fig 7-9, 7-10

Lift the left end of the evaporator slightly upward with your hand and push it backward to let out the side clasps of the evaporator from the groove. Take out the evaporator carefully and pay attention to protecting the connecting pipe.

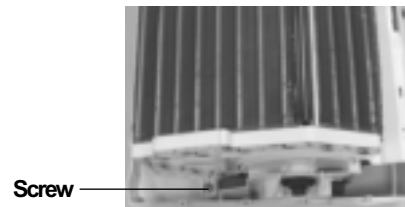


Fig 7-9

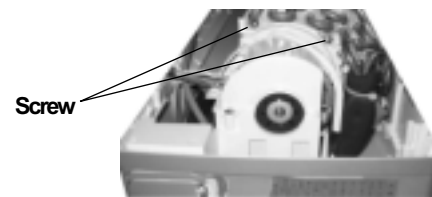


Fig 7-10

7.1.9 ||||| Disassembling the motor

Screw off the 3 pieces of screws that fix the motor clamp to take off the motor clamp. As shown in Fig.7-11

Screw off the fixing nut that fixes the cross flow fan to pull out the motor from the cross flow fan. As shown in Fig.7-12

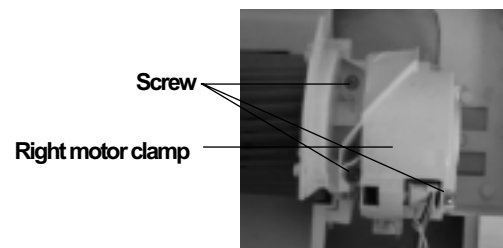


Fig 7-11

7.1.10 ||||| Disassembling the cross flow fan

Refer to the above steps to take out the cross flow fan from the base plate after taking out the motor.

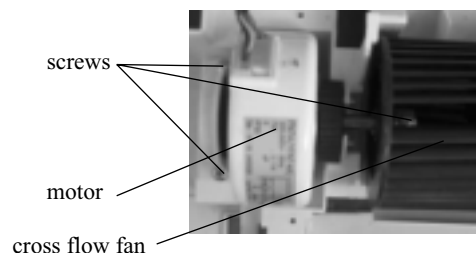


Fig 7-12

7.2 Disassembly Procedures for Outdoor Unit(Tetrad-Split)

Operating Procedures / Photos

7.2.1 Disassemble Front Side Plate

unscrew the four screws at the front side plate, and remove the front side plate.

(refer to Figure7-13)

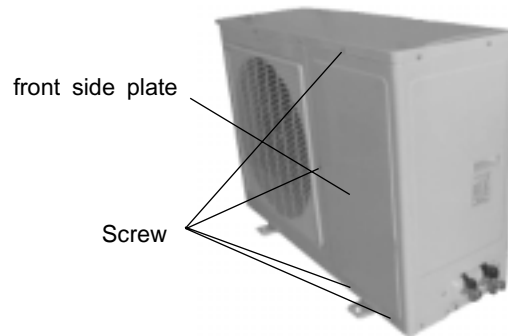


Fig.7-13

7.2.2 Disassemble Top Cover

Unscrew the tapping screws fixing the top cover then pull upward and remove the top cover.

(refer to Figure 7-14)

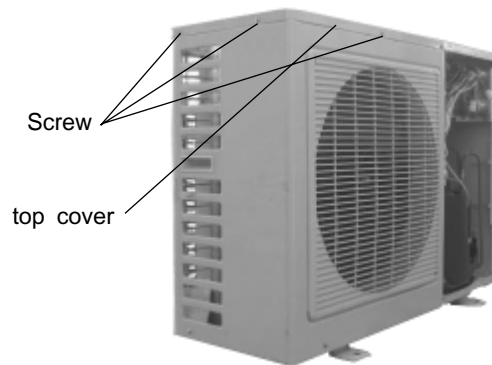


Fig.7-14

7.2.3 Disassemble Rear Grill

Unscrew the four screws around the rear grill, and remove the rear grill.

(refer to Figure 7-15)

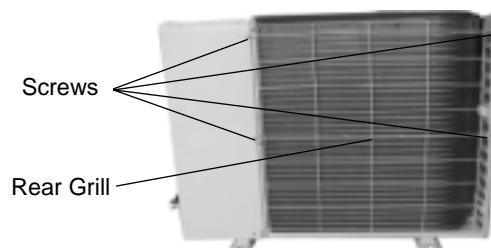


Fig.7-15

7.2.4 ||||| **Disassemble Cabinet**

Unscrew the screws around the cabinet to remove it.

(refer to Figure 7-16)

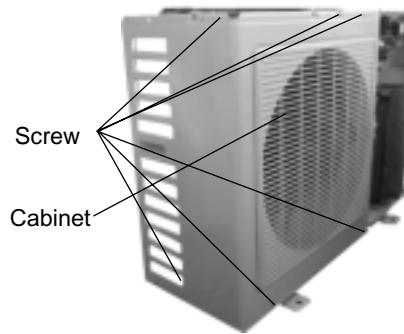


Fig.7-16

7.2.5 ||||| **Disassemble Electric Box**

Use screwdriver to screw off the two screws fixing the electric box, and pull upward to remove the electric box .

(refer to Figure 7-17;7-18)

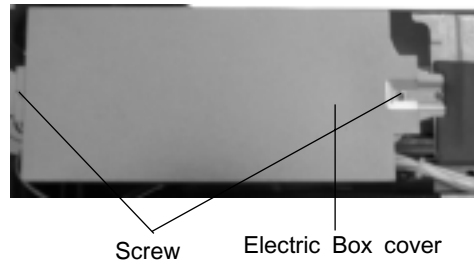


Fig.7-17

7.2.6 ||||| **Disassemble Right Side Plate**

Use screwdriver to screw off the 7 screws at the right side plate, condenser side plate and valve support, and then pull the right side plate sub-assy upward to remove it.

(refer to Figure 7-19)

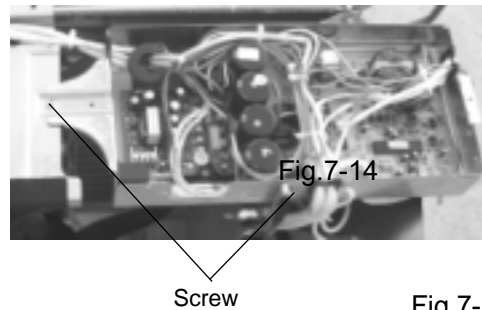


Fig.7-14

Fig.7-18

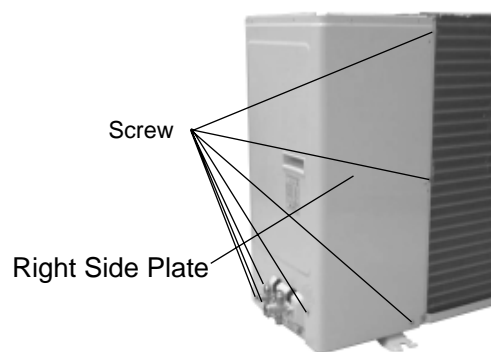


Fig.7-19

Operating Procedures / Photos

7.2.7 ||||| Disassemble Axial Flow Fan

Use spanner to remove the nut at the fan to remove the axial flow fan.
(refer to Figure 7-20)

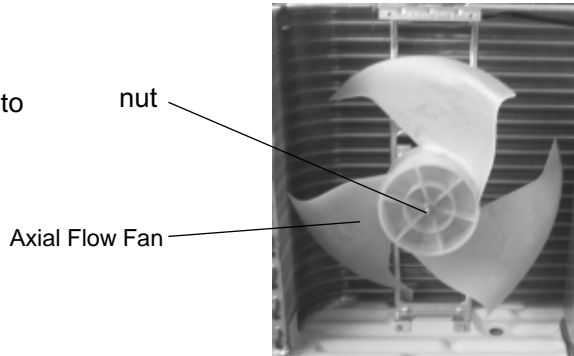


Figure 7-20

7.2.8 ||||| Disassemble Outdoor Motor

Screw off the four tapping screws fixing the motor, pull out the motor lead-out cable plug, and remove the motor. Screw off the two tapping screws fixing the motor support, and pull the motor support upward to remove it.
(refer to Figure 7-21)

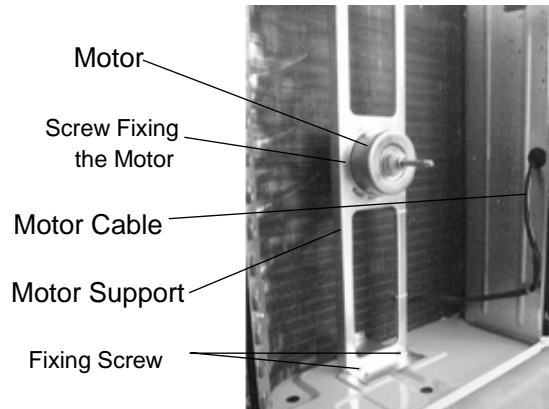


Figure 7-21

7.2.9 ||||| Disassemble 4-Way Valve
(cooling only unit has not 4-way valve)

Screw off the holding nut of the 4-way valve coil and remove the coil. Use wet cotton cloth to wrap the 4-way valve, unsold the four soldering points connecting the 4-way valve, and remove the 4-way valve. Be quick during the unsoldering process, pay attention to keep the wrapping cloth wet and do not allow the soldering flame to burn the compressor lead-out cable.

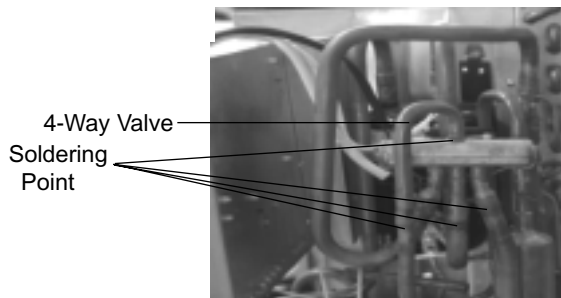


Figure 7-22

(refer to Figure 7-22)

7.2.10 ||||| Disassemble Capillary

Unsolder the soldering points at the capillary, the valve and the condenser to remove the capillary. Pay attention not to allow the soldering slag to block the capillary.

(refer to Figure 7-23)

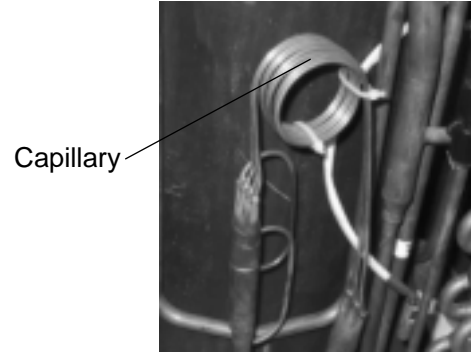


Figure 7-23

7.2.11 ||||| Disassemble Valves

Screw out the 2 bolts that fixing big valve, unsolder the soldered dot connecting big valve with gas return pipe to take off big valve.

(Note: When soldering the soldered dot, wrap big valve completely by moist cloth to prevent valve from damaging by high temperature.)

Screw out the 2 bolts that fixing small valve, unsolder the soldered dot that connected small valve and Y-shape pipe to take off small valve.

(refer to Figure 7-24)

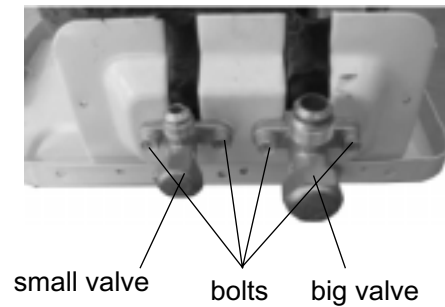


Figure 7-24

7.2.12 ||||| Disassemble Compressor

Unsolder the pipeline that connected with compressor first, then take off the 3 nuts on feet of compressor to take off compressor.

(refer to Figure 7-25)

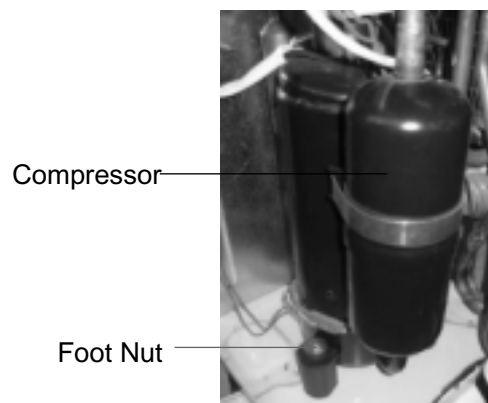
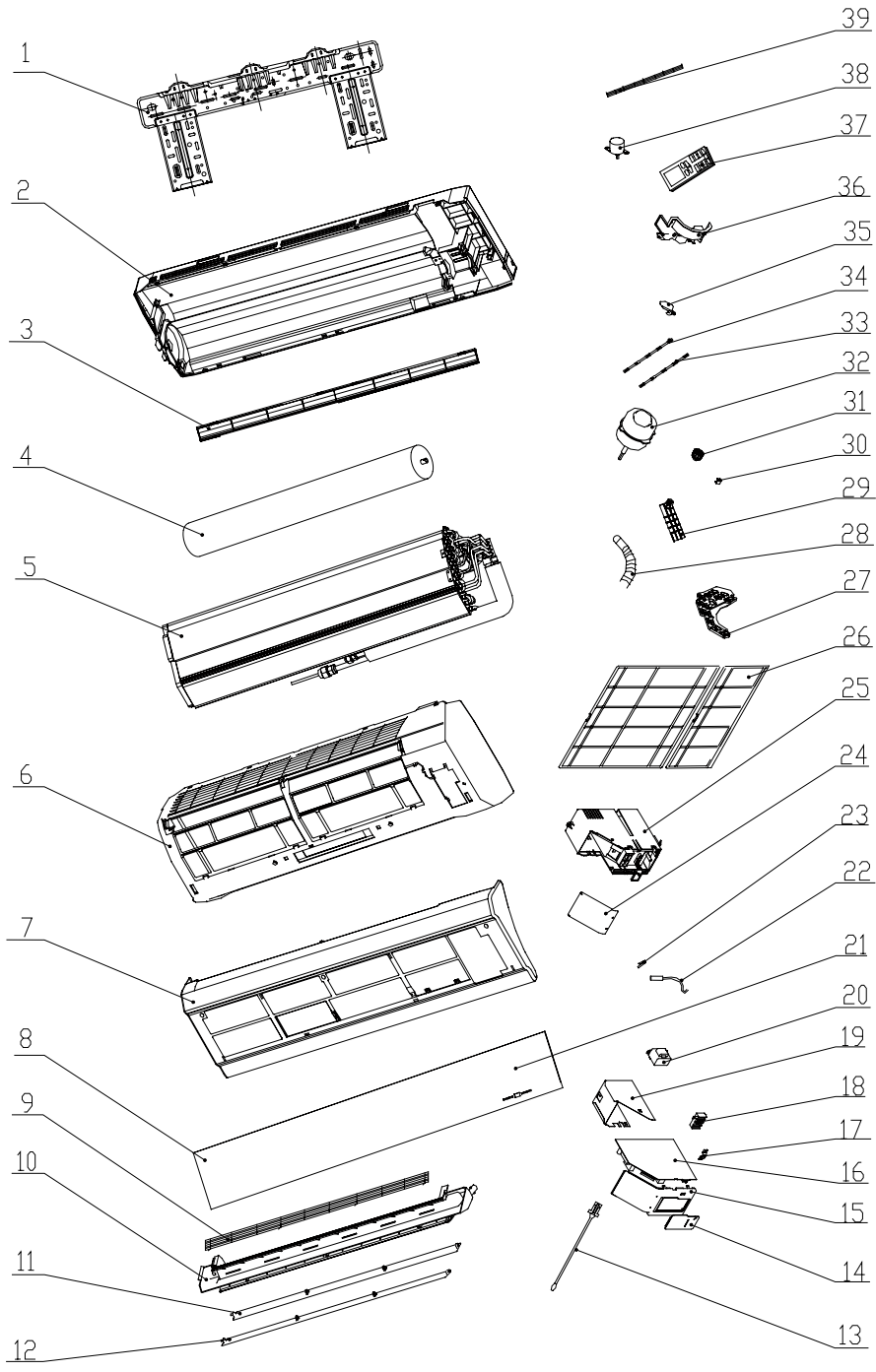


Figure 7-25

8 Exploded View and Components and Parts List

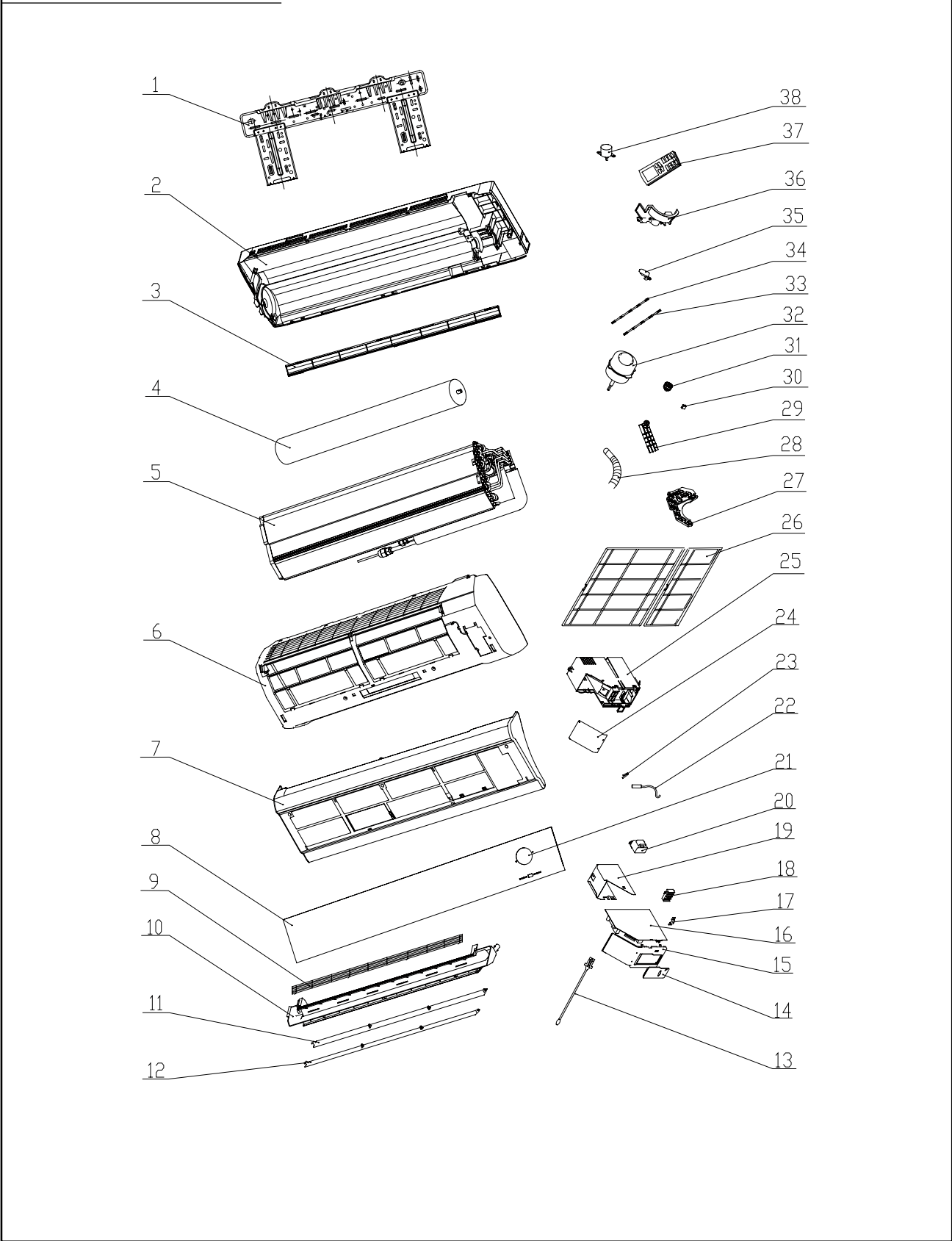
8.1 Exploded View of Indoor Unit



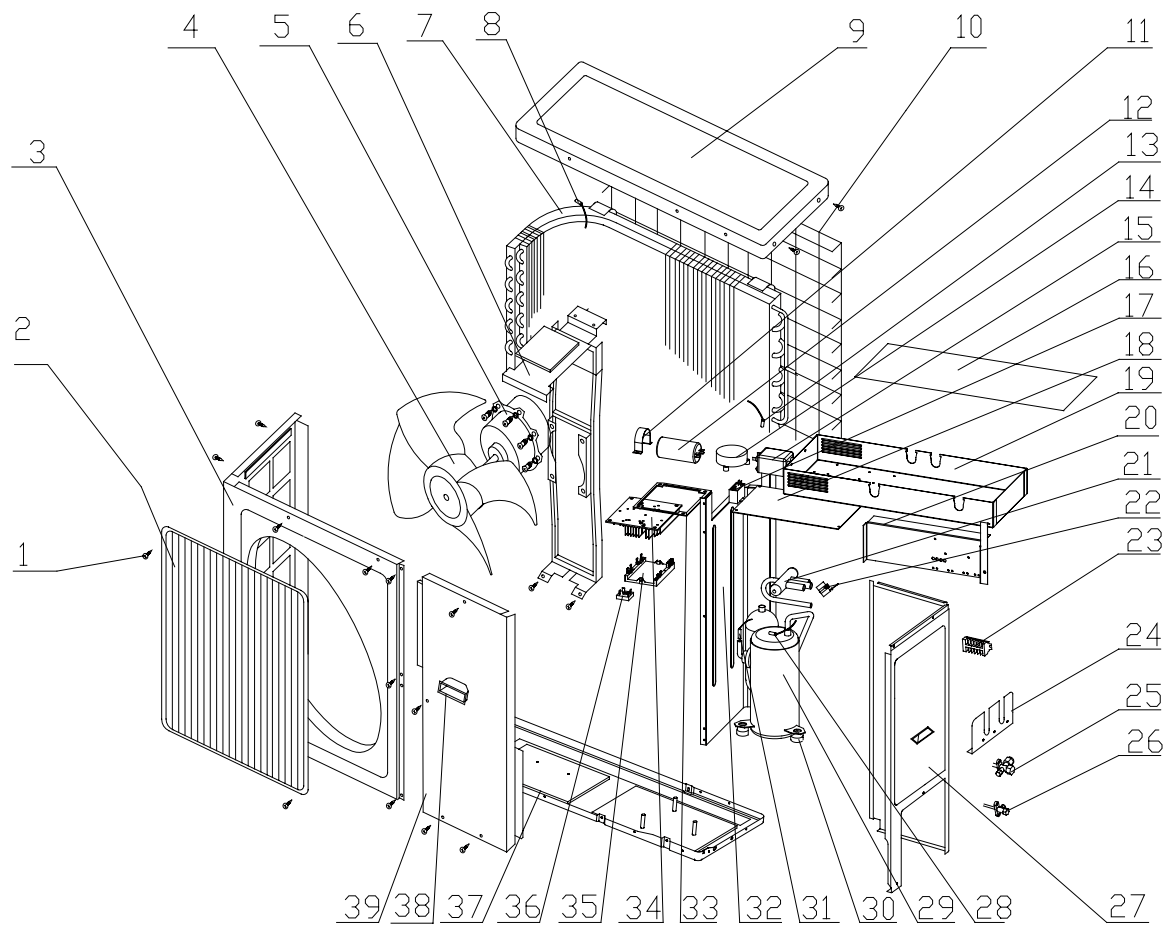
8. 2 Components and Parts List of Indoor Unit

No	Description	Part Code	Qty
		KFHHP-18ID	
1	Wall-Mounting Frame	01252004	1
2	Rear Case	22202329	1
3	Helicoid tongue	262520091	1
4	Cross Flow Fan	10352022	1
5	Evaporator Assy	010024902	1
6	Front Case	200026524	1
7	Big Panel Case	20002582	1
8	Small Panel Case	20002820	1
9	Guard Net	01472007	1
10	Water Tray	20182057	1
11	Guide Louver (up)	105120851	1
12	Guide Louver (down)	105120861	1
13	Room Sensor 15k	390000451	1
14	Electric Box Cover 1	201120191	1
15	Electric Box Cover	201120201	1
16	Main PCB	30039128	1
17	Wire Clamp	71010103	1
18	Terminal Board T4B3A	42011233	1
19	Lower Shield of Electric Box	01592037	1
20	Transformer 57X25F	43110257	1
21	Receiver Board 5H83B	30545557	1
22	Tube Sensor 20k	390000595	1
23	Sensor Insert	42020063	1
24	Upper Shield of Electric Box	01592038	1
25	Electric Box	201120181	1
26	Filter Assy	11122048	2
27	Evaporator Support	24212067	1
28	Drainage Pipe	052324111	1
29	Pipe Clamp	24242001	1
30	Screw Cover	24252015	3
31	Fan Bearing	76512210	1
32	Motor FN20C-PG	15012077	1
32	Motor FN21R	150120678	1
32	Motor FN21X	150120679	1
33	Swing Link 1	10582057	1
34	Swing Link 2	10582058	1
35	Swing Louver	10512429	11
36	Motor Clamp	26112095	1
37	Remote Controller YB1B4F	30511010	1
38	Stepping Motor MP28EA	15212102	1
39	Front Guard	01473039	1

8.3 Exploded View of Indoor Unit



8.5 Exploded View of Outdoor Unit



8. 6 Components and Parts List of Outdoor Unit

No	Description	Part Code		Qty
		KFHHP-18OD		
1	Self-tapping Screw	70140551	70140551	16
2	Front Grill	01473001	01473001	1
3	Front Plate	01433009	01433009	1
4	Axial Flow Fan	10335257	10335257	1
5	Motor FW60H	15013704	15013704	1
6	Motor Support	01703027	01703027	1
7	Condenser Assy	011051324	011051324	1
8	Ambient Sensor 15K	39000186	39000186	1
9	Top Cover	01255262	01255262	1
10	Rear Grill	01473028	01473028	1
11	Capacitor clamp	02143401	02143401	1
12	Capacitor 1000uF/450V	33310110	33310110	1
13	Tube Sensor20K	3900012119	3900012119	1
14	Reactor L0.35mH/30A/14/300	43130172	43130172	1
15	Filter 250VAC/20A	43130008	43130008	1
16	Electric Box Cover	01413040	01413040	1
17	Capacitor CBB61 3uF/450V	33010027	33010027	1
18	Main PCB WB9M25D	30039360	30039360	1
19	Electric Box 1	01413038	01413038	1
20	Electric Box 2	01413039	01413039	1
21	4-Way Valve	430004032	430004032	1
22	4-Way Valve Coil	430004002	430004002	1
23	Wiring Terminal	42010255	42010255	1
24	Valve Support Assy	01715001	01715001	1
25	Big Valve Assy	07103030	07103030	1
26	Valve 3/8"	07130209	07130209	1
27	Rear Side Plate	01303072	01303072	1
28	OH Thermistor	NONE	NONE	1
29	Compressor EU1013DD	00100520	00100520	1
30	Rubber foot of compressor	NONE	NONE	1
31	Discharge Sensor 50K	39000017	39000017	1
32	Isolation Sheet	01233011	01233011	1
33	Radiator Support	24213028	24213028	1
34	Radiator	49013003	49013003	1
35	Power Module	322100692	322100692	1
36	Rectifier S25VB60	46010602	46010602	1
37	Metal Base	01203393	01203393	1
38	Handle	26235253	26235253	1
39	Front Side Plate	01303076	01303076	1

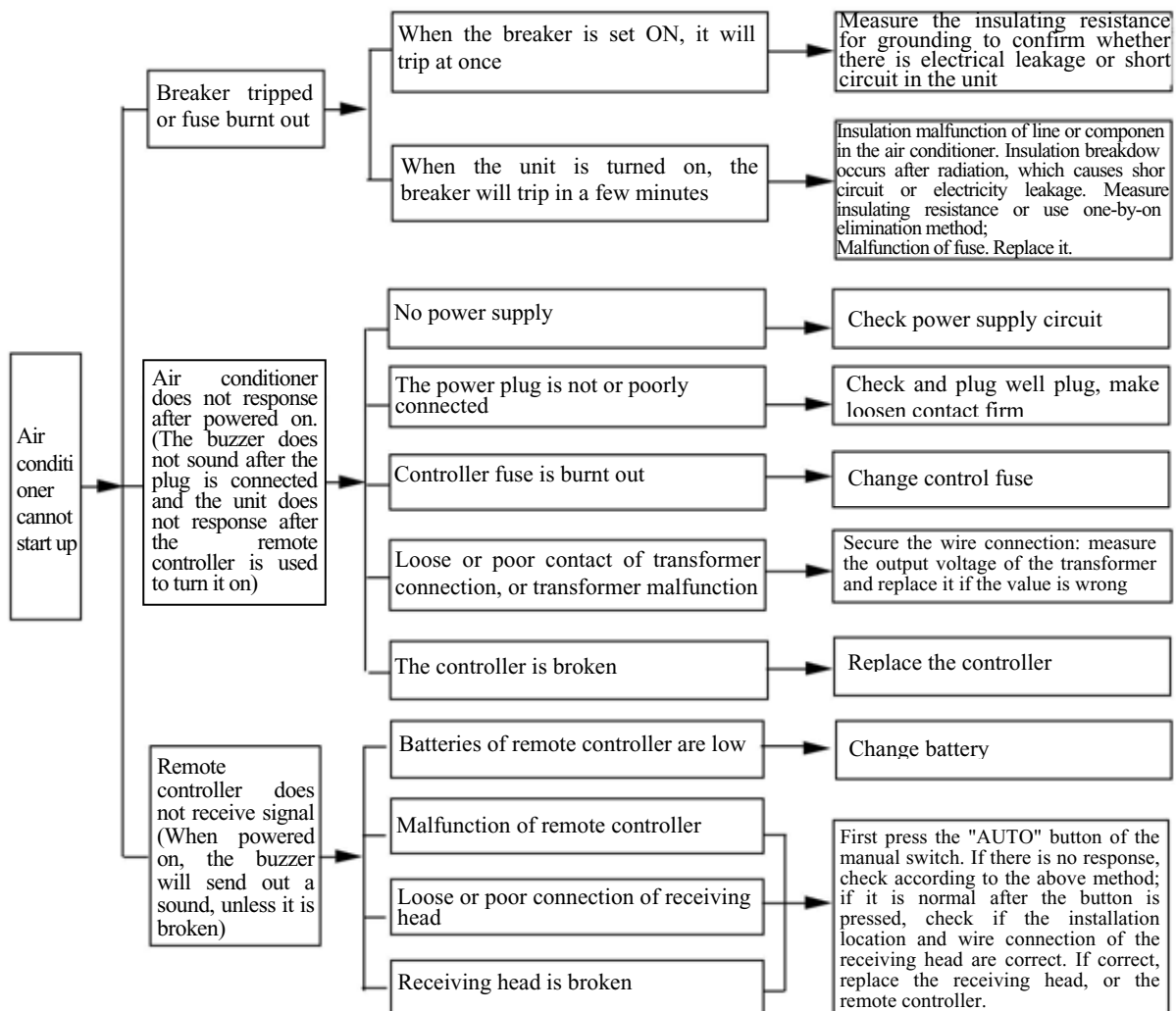
9 Troubleshooting

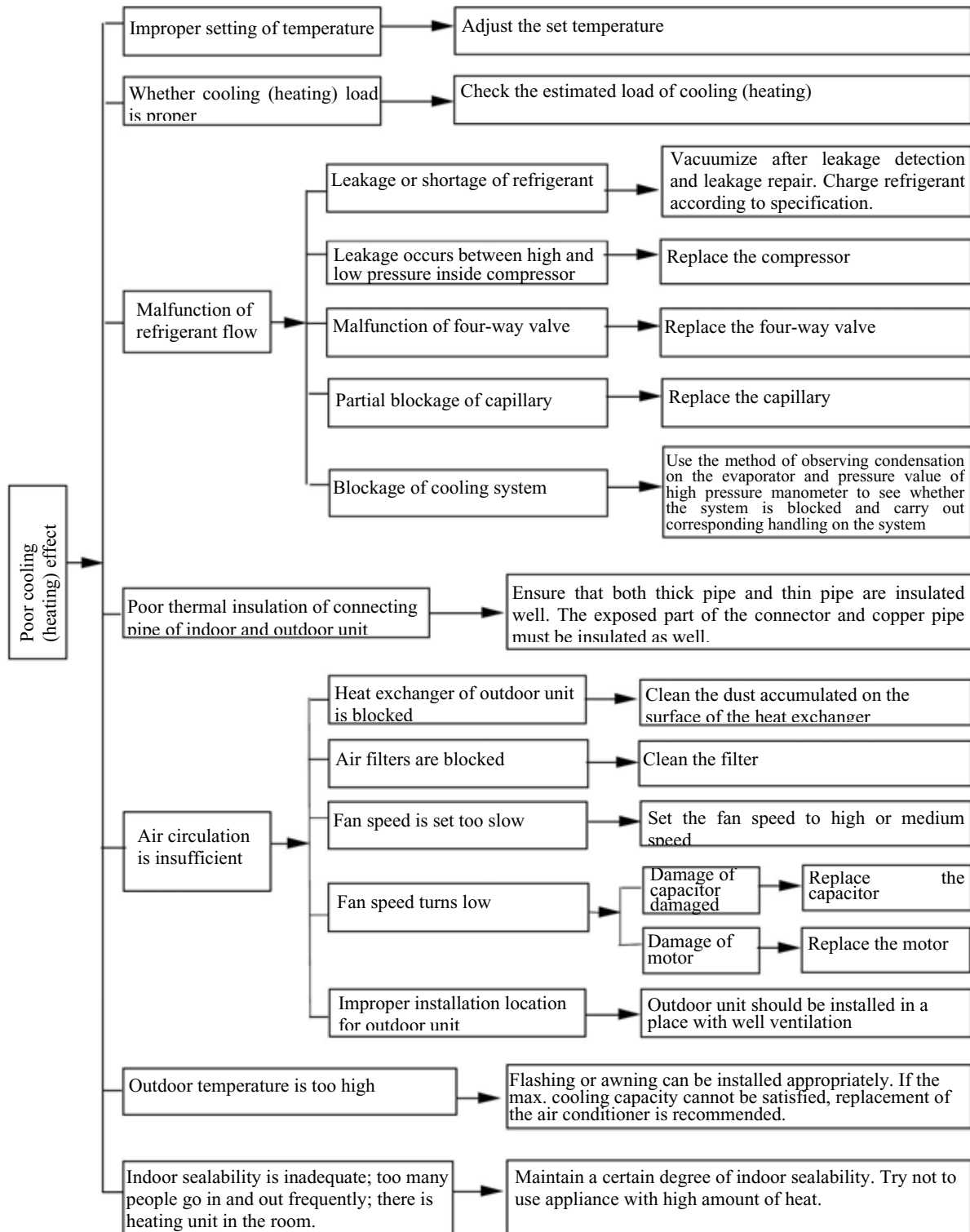
9.1 Common section

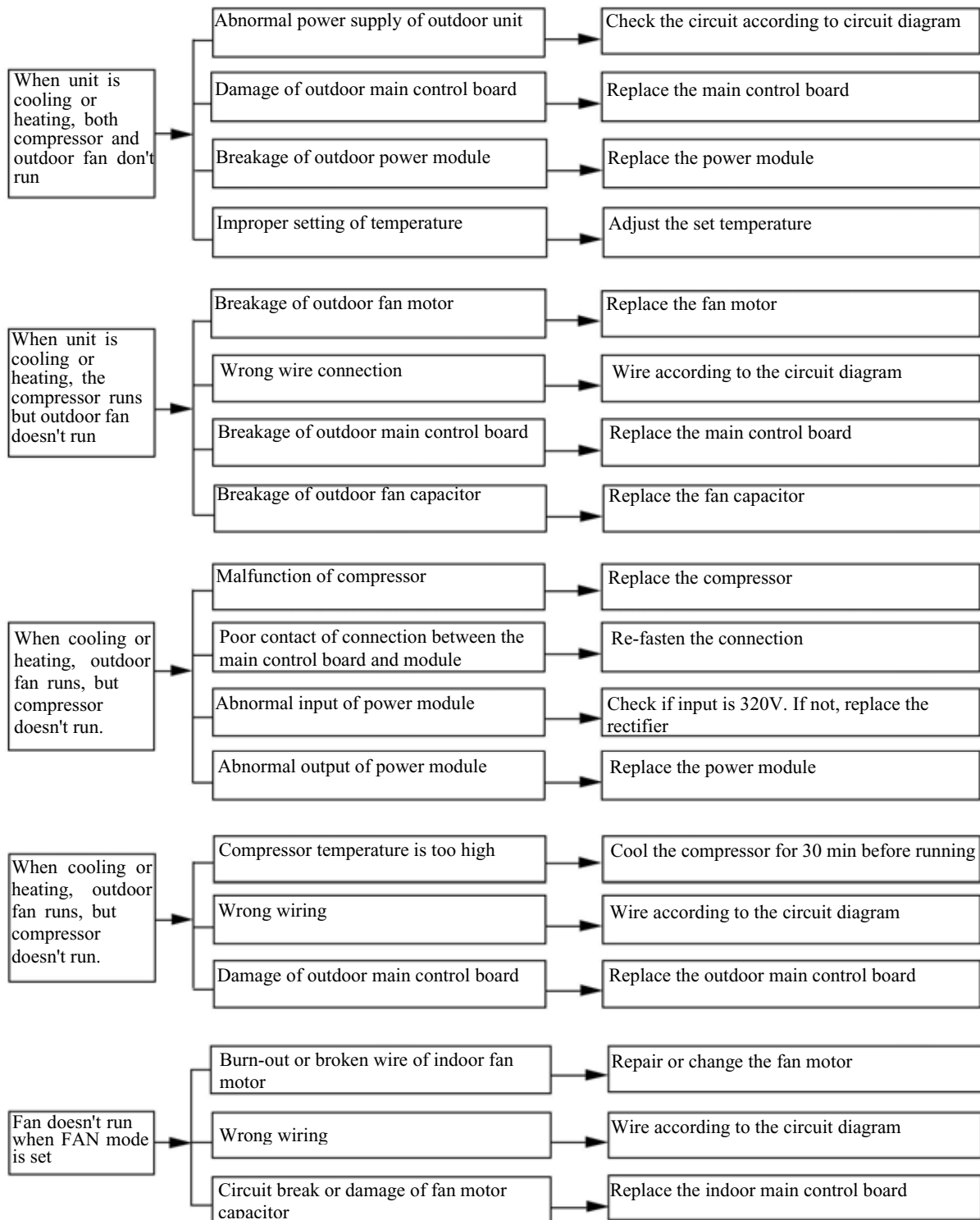
Analysis in this section is used for D.C. Inverter Series. Before analysis, you can diagnose according to the indicator display on outdoor unit. (Refer to 9.2 Malfunction display section).

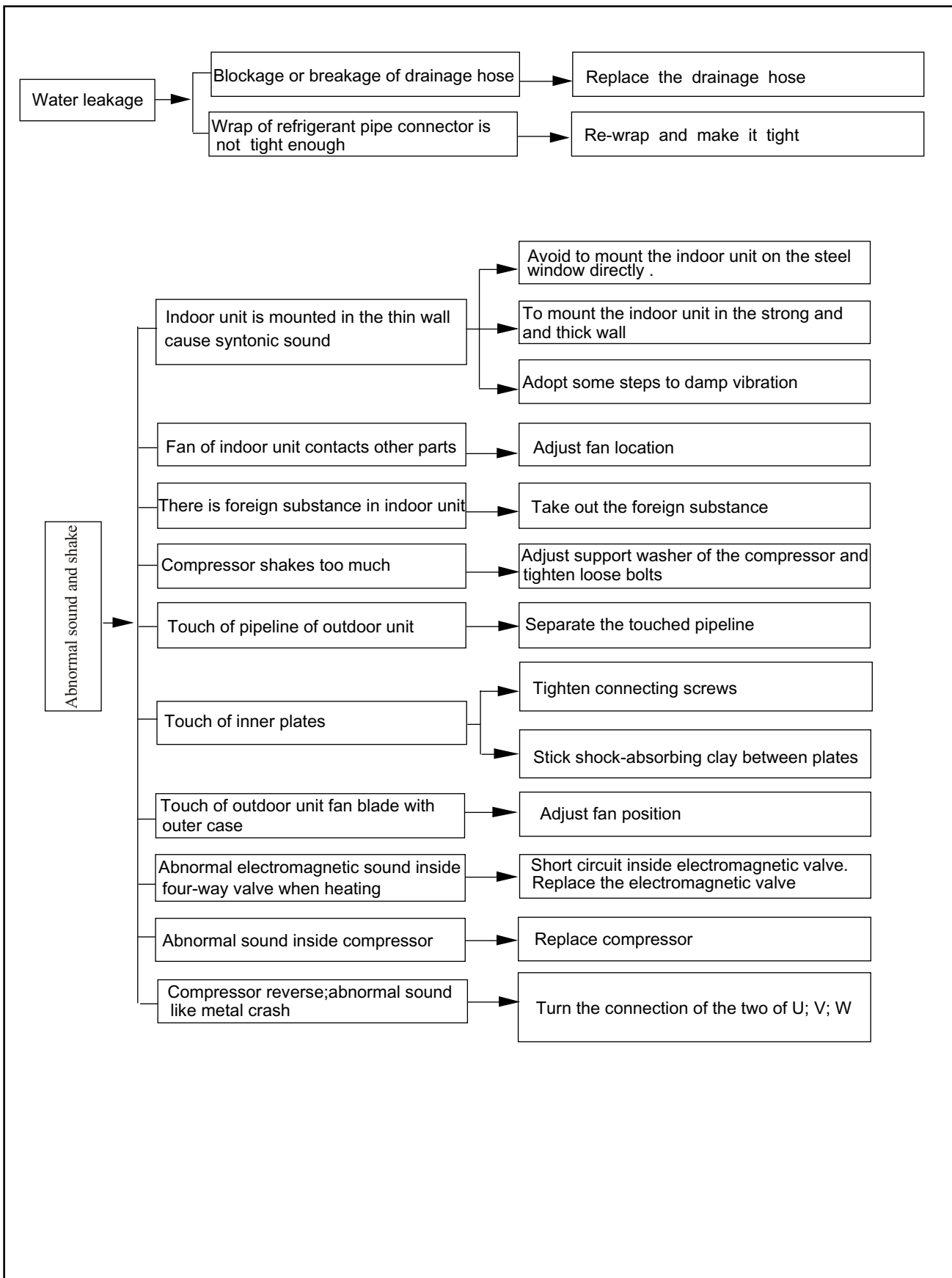
Notice

When repairing, before the voltage between module PN is measured below 50V, do not touch any terminal to avoid electric shock.

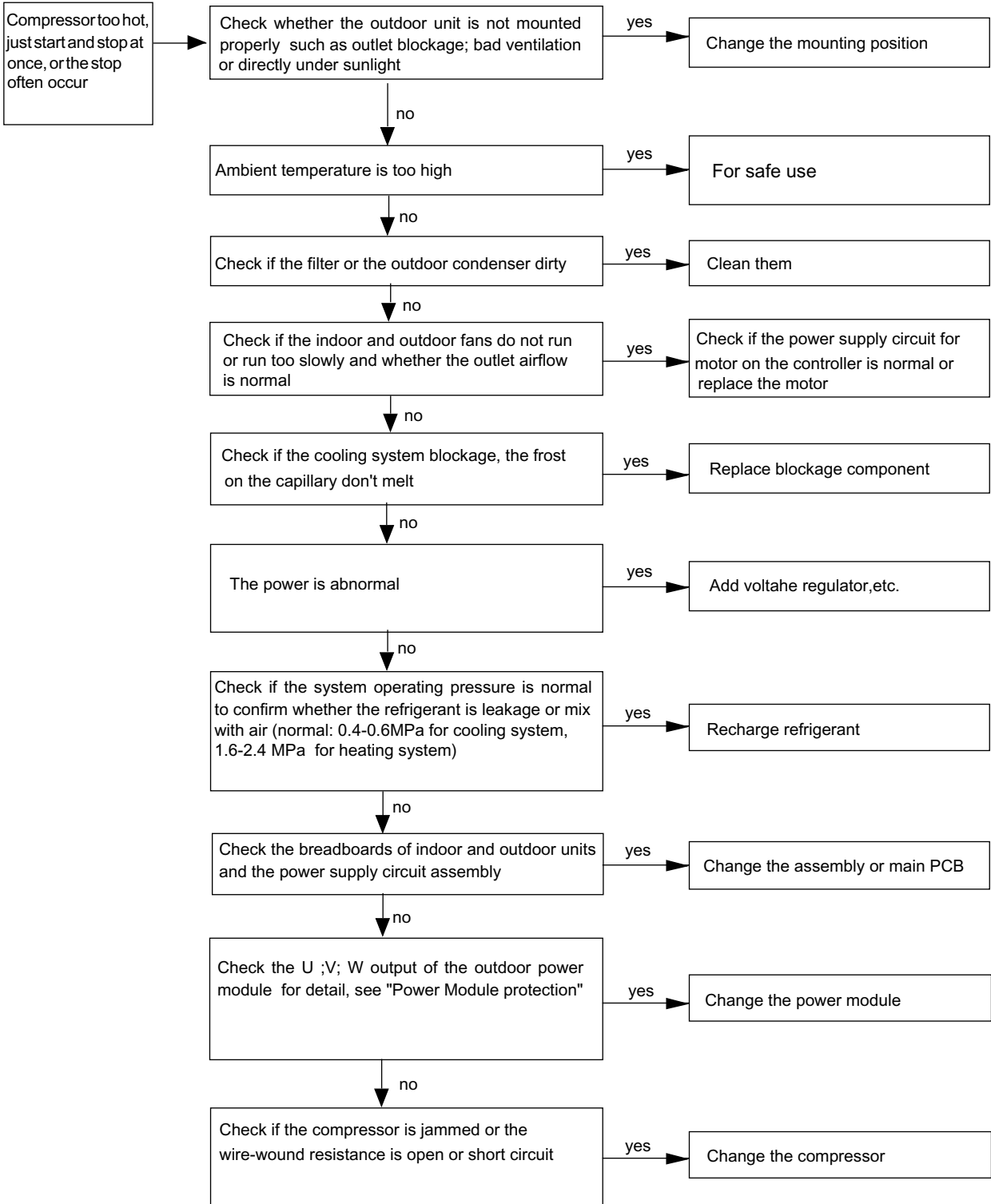








Compressor too hot, the stop often occur



9. 2 Malfunction display section

When malfunction or protection occurs in the air conditioner, the indicators on outdoor main PCB will blink (for detail, see "Display and Meaning of Outdoor Indicator". When protection or malfunction is eliminated, display will be back to normal

Sensor Malfunction

- Handling method:

Check if the corresponding resistance of sensors(thermal resistor) is normal ; plug well; the lead wire is not damage, otherwise it is the sensor circuit or controller malfunction.

You can judge whether the sensor resistance is normal by measure the resistance or voltage and compare it with the corresponding sensor resistance or voltage table

Overcurrent Protection

- Possible reasons: the input voltage descend suddenly or the system overload.

Communicate Malfunction

- Handling method:

Check if the communicate signal wire(indoor and outdoor connecting wire) is connected correctly and reliably.

System Abnormal

- i.e. overload protection. When tube temperature (Check the temperature of outdoor heat exchanger when cooling and check the temperature of indoor heat exchanger when heating) is too high, protection will be activated.
- Possible reasons: the outdoor ambient temperature is too high when cooling, insufficient outdoor air circulation; and the refrigerant flow malfunction.

Compressor Overload Protection

- Possible reasons: the refrigerant is not enough or is too much; the capillary is blocked and the temperature rises; the compressor does not run smoothly(seized or jammed); exhaust valve is breakage; the protector itself has malfunction. (for detail, see " Compressor too hot, the stop often occur")
- Handling method: adjust refrigerant amount; replace the capillary; replace the compressor; use the multimeter to check whether the contactor of the compressor is fine when it is not overheated, if not, then replace the protector.

Exhaust Protection

- Possible reasons: 1. exhaust sensor does not connect well; 2. exhaust sensor resistance is abnormal; 3. sensor circuit malfunction; 4. cooling system malfunction: shortage of refrigerant; blockage of air filter; poor ventilation or air flow short pass for condenser; the system has noncondensing gas (such as air, water etc.); blockage of capillary assy (including filter); leakage inside four-way valve causes incorrect operation; malfunction of compressor; malfunction of protection relay; malfunction of discharge sensor; outdoor temperature too high.
- Handling method: 1. re-plugging the exhaust sensor; 2. replace the exhaust sensor ; 3. replace the circuit board; 4. repair system .

Module protection
Handling method:

