



6. Malfunction of Overcurrent Protection E5

Main detection points:

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

Malfunction diagnosis process:



7. High Temperature and Overload Protection (AP1 below means control board of outdoor unit) E8



8. Overload Protection Compressor H3

Main detection points:

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



9. Malfunction of Insufficient fluorine protection F0



10. Malfunction of detecting plate(WIFI)



Installation and Maintenance

•Outdoor unit:

1.Capacity charging malfunction (outdoor unit malfunction) (AP1 below is control board of outdoor unit)

Main detection point:

- Detect if the voltage of L and N terminal of wiring board is between 210AC-240AC by alternating voltage meter;
- Is reactor (L) well connected? Is connection wire loosened or pull-out? Is reactor (L) damaged?

Malfunction diagnosis process:



2. IPM protection, phase current overcurrent (the control board as below indicates the control board of outdoor unit) H5/P5

Mainly detect:

(1) Compressor COMP terminal (2) voltage of power supply (3) compressor

(4) Refrigerant-charging volume (5) air outlet and air inlet of outdoor/indoor unit

Troubleshooting:



3.IPM protection, phase current overcurrent (the control board as below indicates the control board of outdoor unit) H5/P5

Mainly detect:

- (1) Compressor COMP terminal (2) voltage of power supply (3) compressor
- (4) Refrigerant-charging volume (5) air outlet and air inlet of outdoor/indoor unit
- Troubleshooting:



4. Start-up failure (following AP1 for outdoor unit control board)

Mainly detect:

- •Whether the compressor wiring is connected correct?
- •Is compressor broken?
- •Is time for compressor stopping enough?
- Fault diagnosis process:



5. Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect: •Is the system pressure too high? •Is the input voltage too low? Fault diagnosis process:



6. Overload and air exhaust malfunction diagnosis (following AP1 for outdoor unit control board)

Mainly detect:

•Is the PMV connected well or not? Is PMV damaged? •Is refrigerant leaked?

- Fault diagnosis process:



7. Communication malfunction: (following AP1 for outdoor unit control board)

Mainly detect:

•Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?

•Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any

damage?

Fault diagnosis process:



8. Malfunction of Overcurrent Protection

Main detection points:

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

Malfunction diagnosis process:



9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner Can't be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isnt bright and the buzzer Can't give out sound	Confirm whether its 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 isnt 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 its 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; Units 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; Unitt pressure is much lower than regulated range. If refrigerant isnt 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 its 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 theres abnormal sound	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, theres 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 therere parts touching together inside the indoor unit	Theres 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 therere parts touching together inside the outdoor unit	Theres 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

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The component picture is only for reference please refer to the actual product.

NO.	Description
1	Decorative Strip
2	Front Panel
3	Display Board
4	Filter Sub-Assy
5	Decorative Board (Left)
6	Front Case
7	Guide Louver
8	Axile Bush
9	Air Louver 1
10	Helicoid Tongue
11	Left Axile Bush
12	Rear Case assy
13	Rubber Plug (Water Tray)
14	O-Gasket sub-assy of Bearing
15	Ring of Bearing
16	Evaporator Support
17	Evaporator Assy
18	Cross Flow Fan
19	Fan Motor
20	Motor Press Plate
21	Wall Mounting Frame
22	Connecting pipe clamp
23	Crank
24	Stepping Motor
25	Drainage Hose
26	Electric Box Assy
27	Lower Shield of Electric Box
28	Electric Box
29	Jumper
30	Main Board
31	Air Louver
32	Stepping Motor
33	Air Louver 2
34	Swing Lever
35	Decorative Strip
36	Screw Cover
37	Electric Box Cover2
38	Shield Cover of Electric Box Cover
39	Electric Box Cover
40	Terminal Board
41	Power Cord
42	Connecting Cable
43	Connecting Cable
44	Remote Controller

Some models may not contain some parts, please refer to the actual product.



The component picture is only for reference please refer to the actual product.

NO.	Description
1	Front Panel
2	Filter Sub-Assy
3	Front Case Assy
4	Guide Louver
5	Air Louver 1
6	Flail(Gray)
7	Helicoid Tongue
8	Left Axile Bush
9	Rear Case assy
10	Rubber Plug (Water Tray)
11	Ring of Bearing
12	O-Gasket sub-assy of Bearing
13	Cross Flow Fan
14	Evaporator Support
15	Evaporator Assy
16	Cold Plasma Generator
17	Wall Mounting Frame
18	Motor Press Plate
19	Brushless DC Motor
20	Connecting pipe clamp
21	Drainage Hose
22	Stepping Motor
23	Crank
24	Stepping Motor
25	Air Louver 1
26	Air Louver
27	Axile Bush
28	Electric Box
29	Terminal Board
30	Electric Box Cover2
31	Detecting Plate
32	Main Board
33	Display Board
34	Shield Cover of Electric Box Cover
35	Electric Box Cover
36	Jumper
37	Lower Shield of Electric Box
38	Electric Box Assy
39	Power Cord
40	Connecting Cable
41	Temperature Sensor
42	Remote Controller

Some models may not contain some parts, please refer to the actual product.

10.2 Outdoor Unit

GWH21AGEXF-K6DNA1A/O GWH18QEXF-K6DNC8A/O GWH24AGEXF-K6DNA1A/O



The component picture is only for reference please refer to the actual product.

NO.	Description
1	Grill
2	Front Panel
3	Axial Flow Fan
4	Chassis Sub-assy
5	Compressor and Fittings
6	Electronic Expansion Valve
7	Right Side Plate
8	Valve Support
9	Cut off Valve
10	Cut off Valve
11	Valve Cover
12	Handle
13	Terminal Board
14	4-Way Valve Assy
15	Condenser Assy
16	Clapboard Assy
17	Motor Support
18	Motor
19	Top Cover Assy
20	Left Side Plate
21	Condenser Left Border Plate
22	Electric Box Assy
23	Radiator
24	Electric Box
25	Main Board
26	Electric Box Cover

Some models may not contain some parts, please refer to the actual product.

GWH15QDXE-K6DNA1A/O



The component is only for rererence;please refer to the actual product

NO.	Description
1	Front Panel Assy
2	Front grill
3	Front Panel
4	Axial Flow Fan
5	Drainage hole Cap
6	Chassis Sub-assy
7	Drainage Joint
8	Compressor and Fittings
9	Compressor Gasket
10	4-Way Valve
11	4-Way Valve Assy
12	Electric Expansion Valve Sub-Assy
13	Right Side Plate Assy
14	Valve Support
15	Cut-off valve 1/2(N)
16	Cut-off valve 1/4(N)
17	Valve Support Block
18	Valve Cover
19	handle
20	Sensor Insert
21	Temp Sensor Sleeving
22	Condenser Assy
23	Clapboard Sub-Assy
24	Motor Support Sub
25	Top Cover Sub-Assy
26	Left Side Plate
27	Terminal Board
28	Electric Box Cover
29	Main Board
30	Radiator
31	Electric Box Assy
32	Electric Box
33	Brushless DC Motor

Some models may not contain some parts, please refer to the actual product.

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The component is only for rererence;please refer to the actual product

NO.	Description
1	Front Grill
2	Cabinet
3	Axial Flow Fan
4	Brushless DC Motor
5	Chassis Sub-assy
6	Drainage hole Cap
7	Drainage Joint
8	Cushioned Nut
9	Clap Board Assy
10	Compressor and Fittings
11	4-Way Valve Assy
12	Right Side Plate Assy
13	Valve Support Sub
14	Cut-off Valve
15	Back Cover Nut
16	Cut-off valve 1/4(N)
17	Back Cover Nut
18	Valve Cover
19	Union Nut
20	Union Nut
21	Handle
22	Supporter
23	Valve Support Block
24	Rear Grill
25	Electronic expansion valve member
26	Temperature Sensor
27	Condenser Assy
28	Electric Box Cover
29	Tube Clip
30	Main Board
31	Electric box
32	Top Cover-assy
33	Motherboard radiator
34	Motor Support Sub-Assy
35	Left Side Plate

Some models may not contain some parts, please refer to the actual product.

11. Removal Procedure

11.1 Removal Procedure of Indoor Unit



Caution: discharge the refrigerant completely before removal.

Step	ep Procedure		
1.Rem	nove filter assembly	Front panel	
	Open the front panel. Push the left filter and right filter until they are separate from the groove on the front panel. Remove the left filter and right filter respectively.	Left filter Groove Right filter	
2. Ren	nove horizontal louver		
	Push out the axile bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.	Horizontal louver Location of step motor	
3. Ren	nove panel	Front panel	
а	 A1/B6/C2/C4 display: Screw off the 2 screws that are locking the display board. Separate the display board from the front panel. A2/A3 display: Screw off the 2 screws that are locking the display board. This display can be disassembled only after removing the front case (refer to step 5 of disassembly). A5/B2/B4/B8/C6/D2 display: Screw off the 2 screws that are locking the display board. 	Screws Display	
b	Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.	Panel rotation Groove	

Step		Procedure
4. Ren box	nove detecting plate(wifi) and electric cover2	Electric box cover 2
	Remove the screws fixing detecting plate and remove detecting plate(wifi). Remove the screws fixing electric box cover 2 and remove electric box cover 2.	Detecting plate(WIFI)
5. Rem	ove front case sub-assy	Screw
а	Remove the screws fixing front case. Note: 1.Open the screw caps before removing the screws around the air outlet. 2.The quantity of screws fixing the front case sub-assy is different for different models.	Front case
b	Loosen the connection clasps between front case sub- assy and bottom case. Lift up the front case sub-assy and take it out.	Screw Front case sub-assy
6. Ren	nove vertical louver	
	Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.	

Step		Procedure	
7. Re	move electric box assy		
а	Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy .	Screw Classical cover of electric box sub-assy Indoor tube	asps ectric box
b	 Take off the water retaining sheet. Remove the cold plasma generator byscrewing off the locking screw on the generator. Take off the indoor tube temperature sensor. Screw off 1 grounding screw. Remove the wiring terminals of motor and stepping motor. Remove the electric box assy. 	Cold plasma generator Screw Water retaining sheet	Wiring terminal of motor Viring erminal f stepping notor
С	Twist off the screws that are locking each lead wire and rotate the electric box assy. Twist off the screws that are locking the wire clip. Loosen the power cord and remove its wiring terminal. Lift up the main board and take it off.	Screw Main board Image: Screw Main board Image: Screw Screw	
d	Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below: 1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals. 2.Pull out the holder for some terminals at first (holder is not available for some wiring terminal), hold the connector and then pull the terminal.	Wire clip circlip soft sheath	older

Step	Procedure		
8.Rem	ove evaporator assy	Screw Evaporator assy	
а	Remove 3 screws fixing evaporator assy.		
b	At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.	Connection pipe clamp Screw	
C	First remove the left side of the evaporator from the groove of bottom case and then remove the right side from the clasp on the bottom case.	Groove Bottom case Clasp Evaporator assy	
d	Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.	Connection pipe	

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

Installation and Maintenance

11. Removal Procedure

11.2 Removal Procedure of Outdoor Unit

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Caution: discharge the refrigerant completely before removal.

Step		Procedure
4. Re	move top cover	b
	Remove connection screws connecting the top panel with the front panel and the right side plate, and then remove the top panel.	top cover
5. Rer	nove grille	
	Remove connection screws between the front grille and the front panel. Then remove the grille.	i i i i i i i i i i i i i i i i i i i
6. Re	move front panel	
	Remove connection screws connecting the front panel with the chassis and the motor support and then remove the front panel.	<image/>

Step		Procedure
7. Ren	nove right side plate	right side plate
	Remove connection screws connecting the right side plate with the valve support and the electric box. Then remove the right side plate.	
8. Rem rem	hove the nut and gasket on the blade and then ove the axial flow blade	
	Remove the nut and gasket on the blade and then remove the axial flow blade.	
9. Rer	nove motor and motor support	
	Remove the tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the tapping screws fixing the motor support and lift the motor support to remove it.	motor . Motor support

Step	Procedure
10. Remove Electric Box Assy	
Remove screws fixing the electric box subassembly; loosen the wire bundle and unplug the wiring terminals. Then lift the electric box to remove it.	Electric Box Assy
11. Remove isolation sheet	
Remove the screws fixing the isolation sheet and then remove the isolation sheet.	isolation sheet
12. Remove 4-way valve assy and cut-off valve	welding joint
Remove the valve support bolck, remove the screws fixing the gas valve and the liquid valve,unsolder the welding joint connecting the gas valve and the liquid valve, remove them. Note: Discharge the refrigerant completely befor unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	

liquid valve

gas valve

Step		Procedure
13. Ren	Remove the screws fixing valve support, then remove the valve support.	valve supprt
14. Re	emove 4-way valve assy	4-way valve
	Unsolder the welding joints connecting the 4-way valve assy and cut-off valve, remove the 4-way valve and cut- off valve. Note: Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	velding joint
15. Re	emove electronic expansion valve sub-assy	
	Remove the terminal of the coil of electronic expansion valve, rotate it and then remove the coil of electronic expansion valve. Unsolder the weld joint connecting with the electronic expansion valve sub-assy and then remove the electronic expansion valve sub-assy.	Electric Expand Valve Fitting electronic expansion valve sub-assy welding joint

Step		Procedure
13. Re	Remove left side plate Remove the screws fixing the left side plate and then remove the left side plate.	Ieft side plate
14. R	emove condenser sub-assy	
	Remove the screws fixing the Remove condenser sub- assy and then remove the Remove condenser sub- assy.	condenser sub-assy
15. R	emove compressor	compressor
	Remove the 3 foot nuts on the compressor and then remove the compressor.	foot nuts

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Step		Procedure
4. Rer	nove front panel assy	THINK STATE
	Remove connection screws connecting the front panel assy with the chassis and the motor support, and then remove the front panel assy.	front panel
5. Rem	nove right side plate assy	· · · · · · · · · · · · · · · · · · ·
	Rescrew the ground screws, remove the ground wires, loosen the screws fixing terminal board, remove the terminal board, rescrew the screws fixing the right plate, and remove the right side plate assy.	right side plate
6. Ren	nove gas valve and liquid valve	
	Remove the valve support bolck, remove the screws fixing the gas valve and the liquid valve,unsolder the welding joint connecting the gas valve and the liquid valve, remove them. Note: Discharge the refrigerant completely befor unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	welding joint liquid valve gas valve



Procedure

10. Remove 4-way valve assy

Unsolder the welding joints connecting the 4-way valve assy, remove the 4-way valve.

Note:

Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.



11. Remove axial flow fan

Remove the nut on the fan and then remove the axial flow fan.



12. Remove motor

Remove the screws fixing the motor and then remove the motor.



Step	Procedure	
13. Remove motor support		
Remove the screws fixing the motor s motor support to remove it.	upport and lift the motor su	wpport
14. Remove clapboard assy		clanboard assy
Remove the screws fixing the clapboard remove the clapboard assy.	rd assy and then	
15. Remove compressor		
Remove the 3 foot nuts on the com remove the compressor.	pressor and then	compressor

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Step		Procedure
1. Bef	ore disassembly	
2. Ren	nove top cover	top cover
	Remove the screws fixing top cover and then remove the top cover.	
3. Rer	nove big handle and valve cover	
	Remove the screws fixing big handle, valve cover and then remove them.	big handle



Step		Procedure
7. Rer	nove valve suppprt	
	Remove the valve support bolck, remove the screws fixing valve support, remove the screws fixing the liquid valve and gas valve then remove the valve support.	valve supprt Valve Support Block
8. Rer	nove gas valve and liquid valve	
	Unsolder the welding joint connecting the gas valve and the liquid valve, remove them. Note: Discharge the refrigerant completely befor unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.	welding joint liquid valve gas valve
9. Rer	nove electric box assy	Electric Box Assy
	Remove the terminals, lift up and rotate the electrical box assy to the right so that the snaps on the clapboard are removed and the electrical box assy are removed.	



Remove the nut on the fan and then remove the axial flow fan.



Step	Procedure
13. Remove motor	
Remove the screws fixing the motor and then remove the motor.	motor
14. Remove motor support	
Remove the screws fixing the motor support and lift the motor support to remove it.	motor support
15. Remove clapboard assy	
Remove the screws fixing the clapboard assy and then remove the clapboard assy.	clapboard assy



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(°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature(°F)	Fahrenheit (°F)	Celsius (°C)
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 (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
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	<u>-</u>		

Appendix 2: Configuration of Connection Pipe

1.Standard length of connection pipe(More details please refer to the specifications.)

2.Min length of connection pipeFor the unit with standard connection pipe of 5m, there is no limitation for themin length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.

3.Max. length of connection pipe and max. high difference.(More details please refer to the specifications.)

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):

• Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. 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 R32										
Pipi	ng size	Indoor unit throttle	Indoor unit throttle Outdoor unit thro							
Liquid pipe	Gas pipe	Cooling only, cooling and heating (g / m)	Cooling only(g/m)	Cooling and heating(g/m)						
1/4"	3/8" or 1/2"	16	12	16						
1/4" or 3/8"	5/8" or 3/4"	40	12	40						
1/2"	3/4" or 7/8"	80	24	96						
5/8"	1" or 1 1/4"	136	48	96						
3/4"	/	200	200	200						
7/8"	1	280	280	280						

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.



• 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:

Outor diamatar(mm)	A(mi	m)
Outer diameter(mm)	Max	Min
Ф6 - 6.35 (1/4")	1.3	0.7
Ф9 - Ф9.52 (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.





Installation and Maintenance

Appendix 4: List of Resistance for Temperature Sensor

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

Temp(⁰C)	Resistance(kΩ)	Temp(°C)	Resistance($k\Omega$)	Temp(°C)	Resistance($k\Omega$)	Temp(°C)	Resistance(kΩ)
-19	138.10	0	49.02	20	18.75	40	7.97
-18	128.60	2	44.31	22	17.14	42	7.35
-16	115.00	4	40.09	24	15.68	44	6.79
-14	102.90	6	36.32	26	14.36	46	6.28
-12	92.22	8	32.94	28	13.16	48	5.81
-10	82.75	10	29.90	30	12.07	50	5.38
-8	74.35	12	27.18	32	11.09	52	4.99
-6	66.88	14	24.73	34	10.20	54	4.63
-4	60.23	16	22.53	36	9.38	56	4.29
-2	54.31	18	20.54	38	8.64	58	3.99

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

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance($k\Omega$)	Ter
-19	181.40	20	25.01	60	4.95	
-15	145.00	25	20.00	65	4.14	
-10	110.30	30	16.10	70	3.48	
-5	84.61	35	13.04	75	2.94	
0	65.37	40	10.62	80	2.50	
5	50.87	45	8.71	85	2.13	
10	39.87	50	7.17	90	1.82	
15	31.47	55	5.94	95	1.56	

Temp(°C)	Resistance(kΩ)
100	1.35
105	1.16
110	1.01
115	0.88
120	0.77
125	0.67
130	0.59
135	0.52

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)
-30	911.400	10	98	50	17.65	90	4.469
-25	660.8	15	77.35	55	14.62	95	3.841
-20	486.5	20	61.48	60	12.17	100	3.315
-15	362.9	25	49.19	65	10.18	105	2.872
-10	274	30	39.61	70	8.555	110	2.498
-5	209	35	32.09	75	7.224	115	2.182
0	161	40	26.15	80	6.129	120	1.912
5	125.1	45	21.43	85	5.222	125	1.682



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For product improvement, specifications and appearance in this manual are subject to change without prior notice.