



improve your life

GREENSTYLE MULTISPLIT AIR CONDITIONERS – R32

SERVICE MANUAL



INDOOR UNIT

GREENSTYLE DUAL 9000 UI

GREENSTYLE DUAL 12000 UI

OUTDOOR UNIT

GREENSTYLE DUAL 14000 UE

Please read this manual carefully before installing and using the air conditioner, and retain for future reference.

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Part 1 General Information

1. Unit appearance

1.1 Wall - Mounted

Picture	Capacity Range / Mode	
	09 K Btu/h	GREENSTYLE 9000 UI
	12 K Btu/h	GREENSTYLE 12000 UI

1.2 Outdoor Unit

Capacity (Btu)	1 drive 2 - 14k
	GREESTYLE DUAL 14000
Picture	

2. Accessories Included

2.1 Outdoor Units

N°	Name	QUANTITY					
		14K					
1	Installer manual	1					
2	Drainage connector	1					
3	Pipe adaptor	0					
4	copper nuts	8					

2.2 Indoor Units

N°	Name	QUANTITY			
		Wall Mounted			
1	User manual	1			
2	Remote control	1			
3	Batteries for Remote Control	2			
4	Touch screen wired Control	0			
5	Panel screw	0			
6	Drainage tube	0			
7	Pipe adaptor	0			
8	Thermal insulation pipe	0			

Part 2 Features

1. Outdoor Units

Environmental-friendly Refrigerant R32

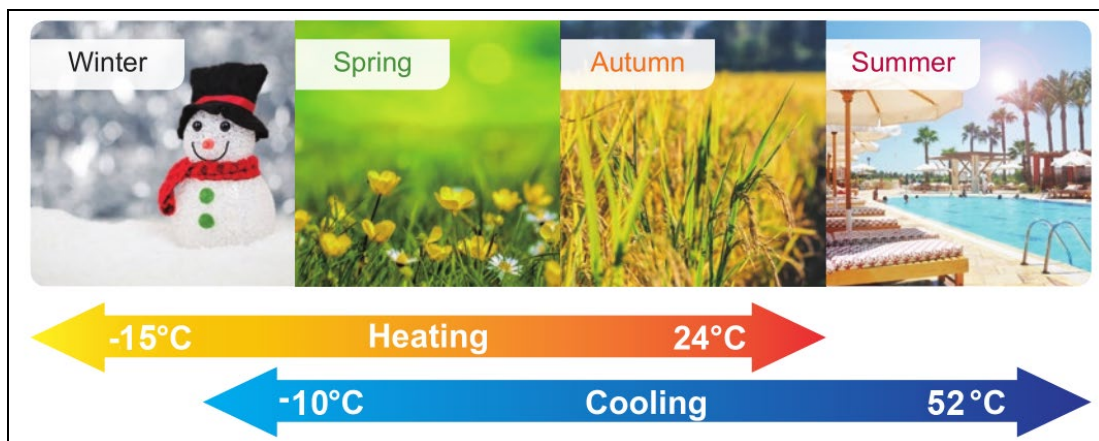
The GWP value of R32 is smaller, so the effect on the greenhouse effect is smaller. The ODP value of R32 is 0, so it's no harm to our planet's ozone layer.

High Efficiency

Equipped with high efficiency DC Inverter compressor, adjustable fan motor and advanced 180° sine wave vector driver, the system can be higher than 6.1 in SEER and 4.0 in SCOP so as to meet the European and Australian new energy efficiency standards.

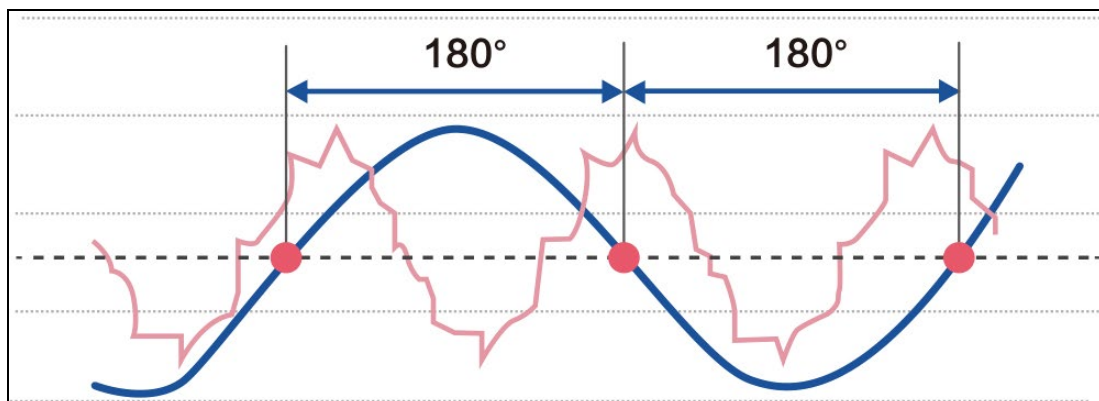
Reliability

Stable cooling under -10°C and heating under -15°C outdoor environment temperature.



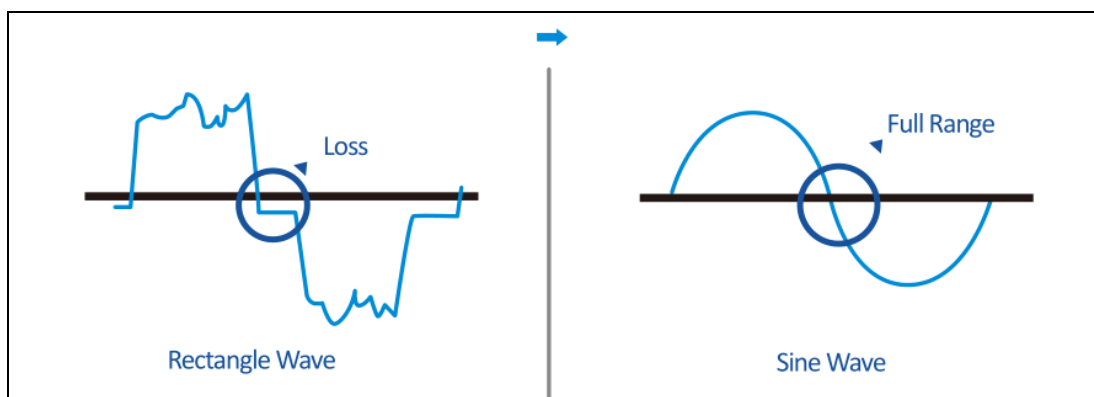
180°Sine Wave Control

DC inverter compressor uses 180°sine wave vector control technique, make compressor motor operate smoothly and efficiency increases significantly.



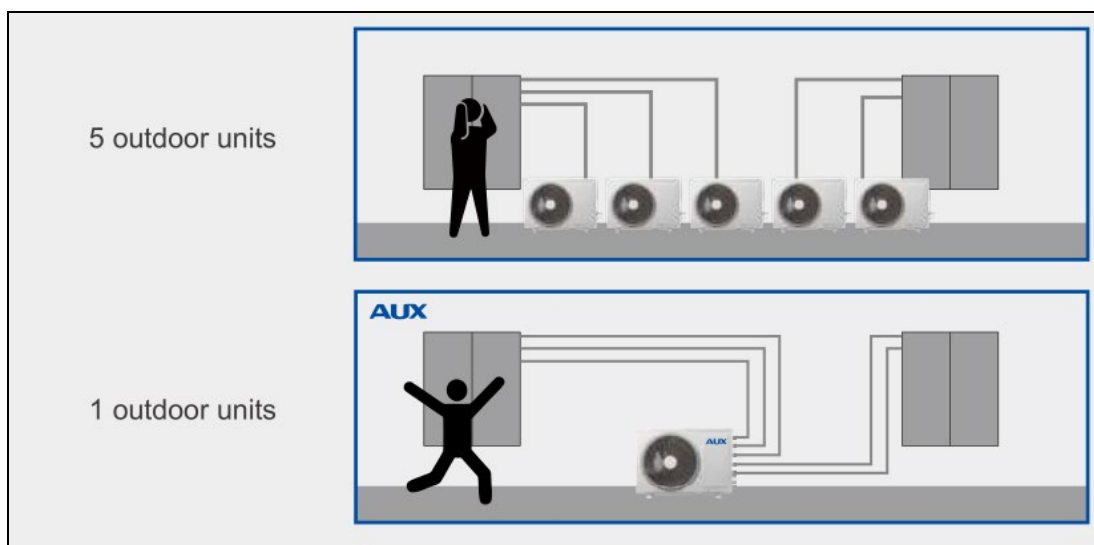
Energy Saving

Cutting-edge DC inverter of sine wave control and active PFC technology realize low noise and economical operation.



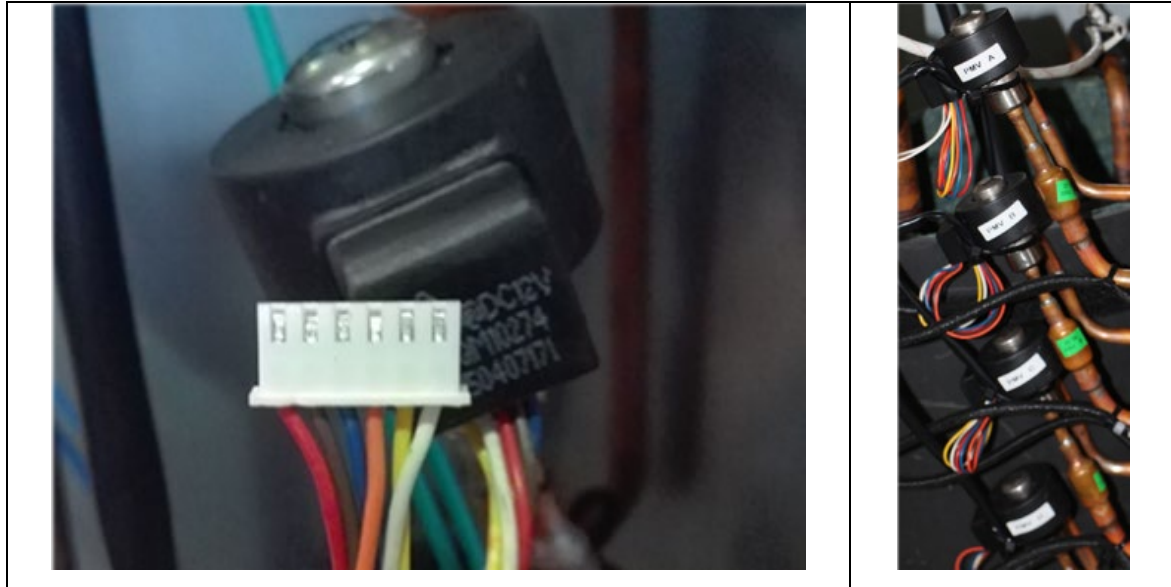
Space-Saving Installation

Up to 5 indoor units can be connected to a single outdoor unit, which reduces the number of outdoor units required so as to save installation space. Besides, each indoor unit can be controlled individually and they even needn't to be installed at the same time.



EXV Regulation

Each Indoor Unit adjusted by a EXV, whole unit could achieve quick cooling/heating, and decrease throttling noise in indoor units.



2 Wall Mounted

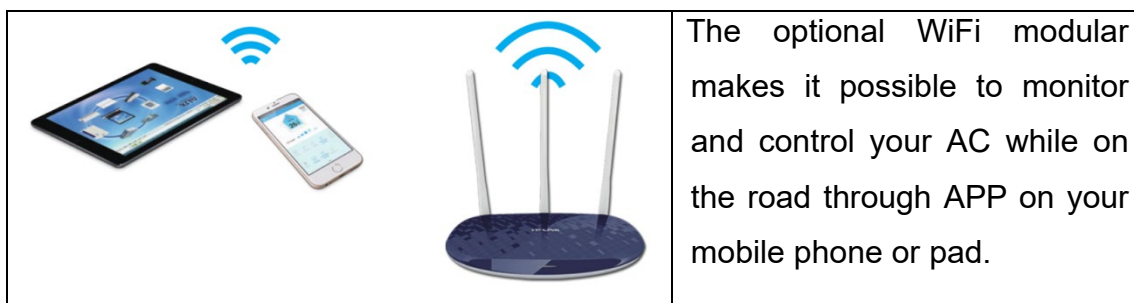
Wall Mounted type A/C is installed by the wall, compared with Floor & Standing type A/C, it has following advantages: Wall mounting installation combining with the decoration, makes the room more elegant; Flexible installation in anywhere in the wall and swing blowing, makes you feel more comfortable.

2 Ways Draining Connection

Both left and right sides of unit are possible for drainage pipe connection, easy for installation.

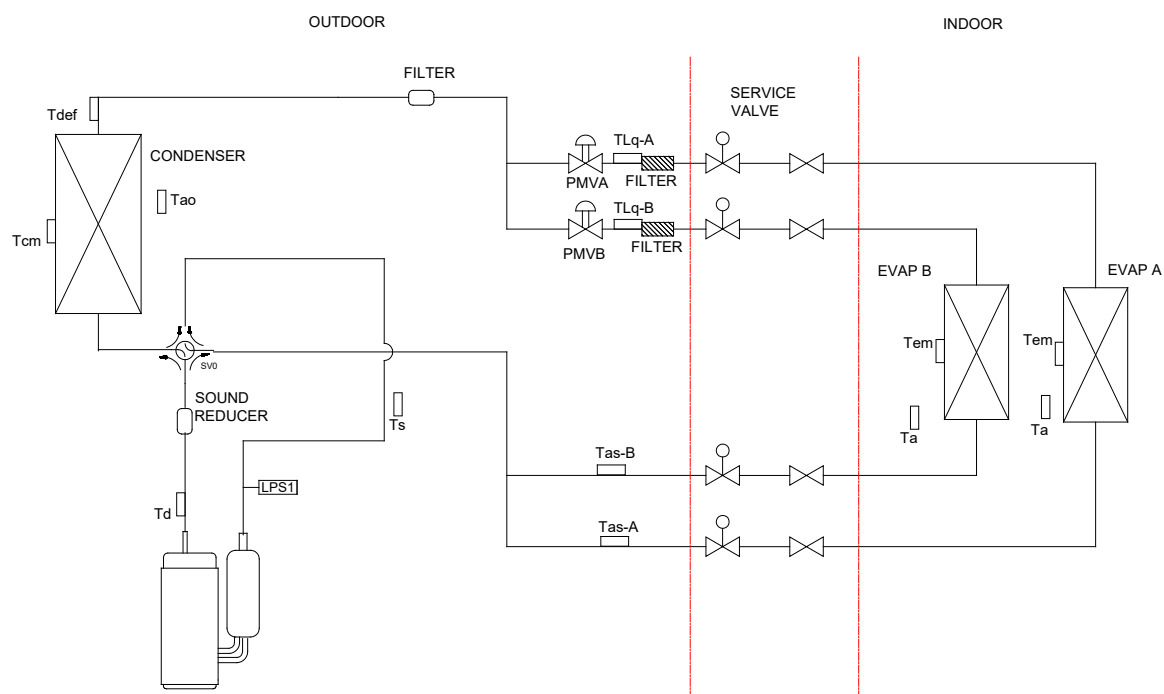


3 WIFI Control



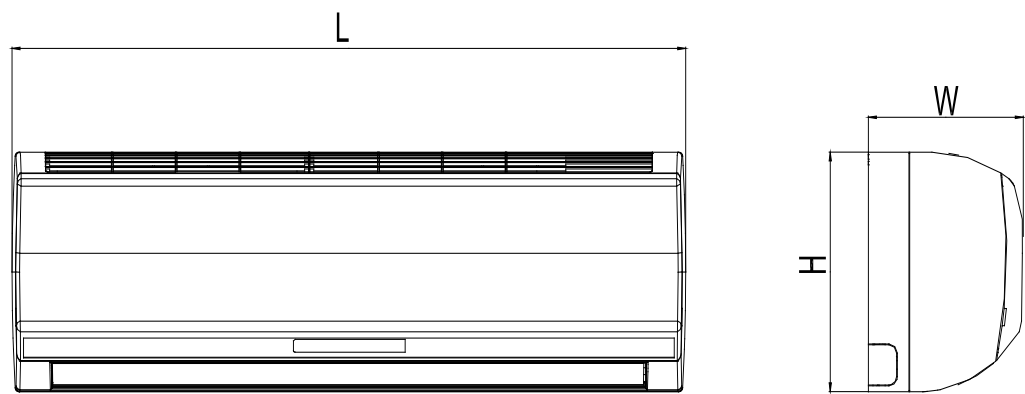
Part 3 Piping System

14K



Part 4 Dimension

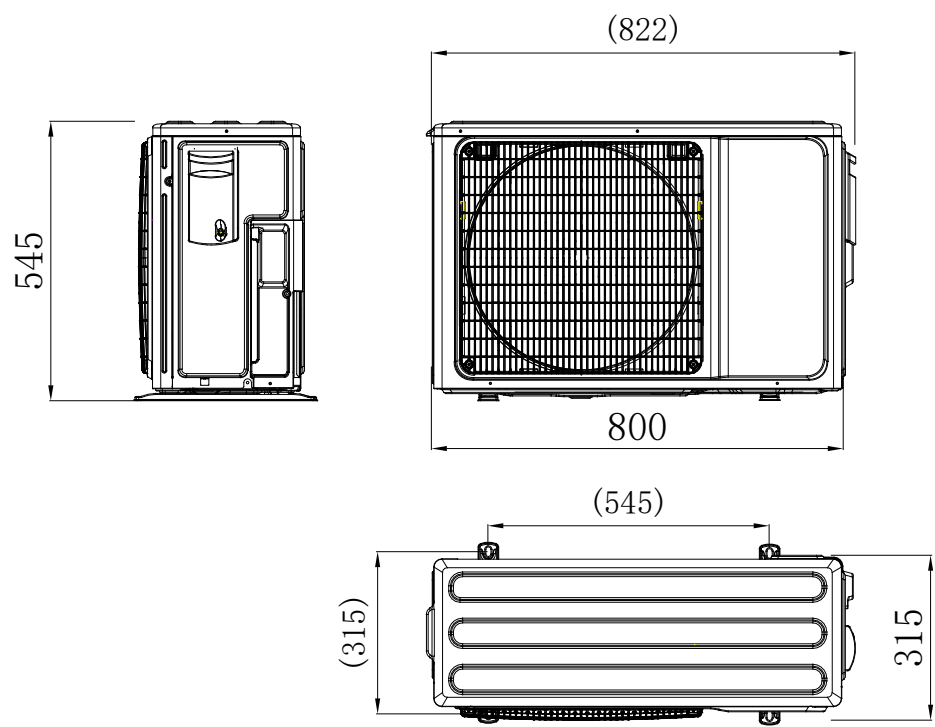
1. Indoor Unit



Physical Dimension		GREENSTYLE 9000 UI	GREENSTYLE 12000 UI
Length	mm	750	750
Height	mm	285	285
Width	mm	200	200

2. Outdoor Unit

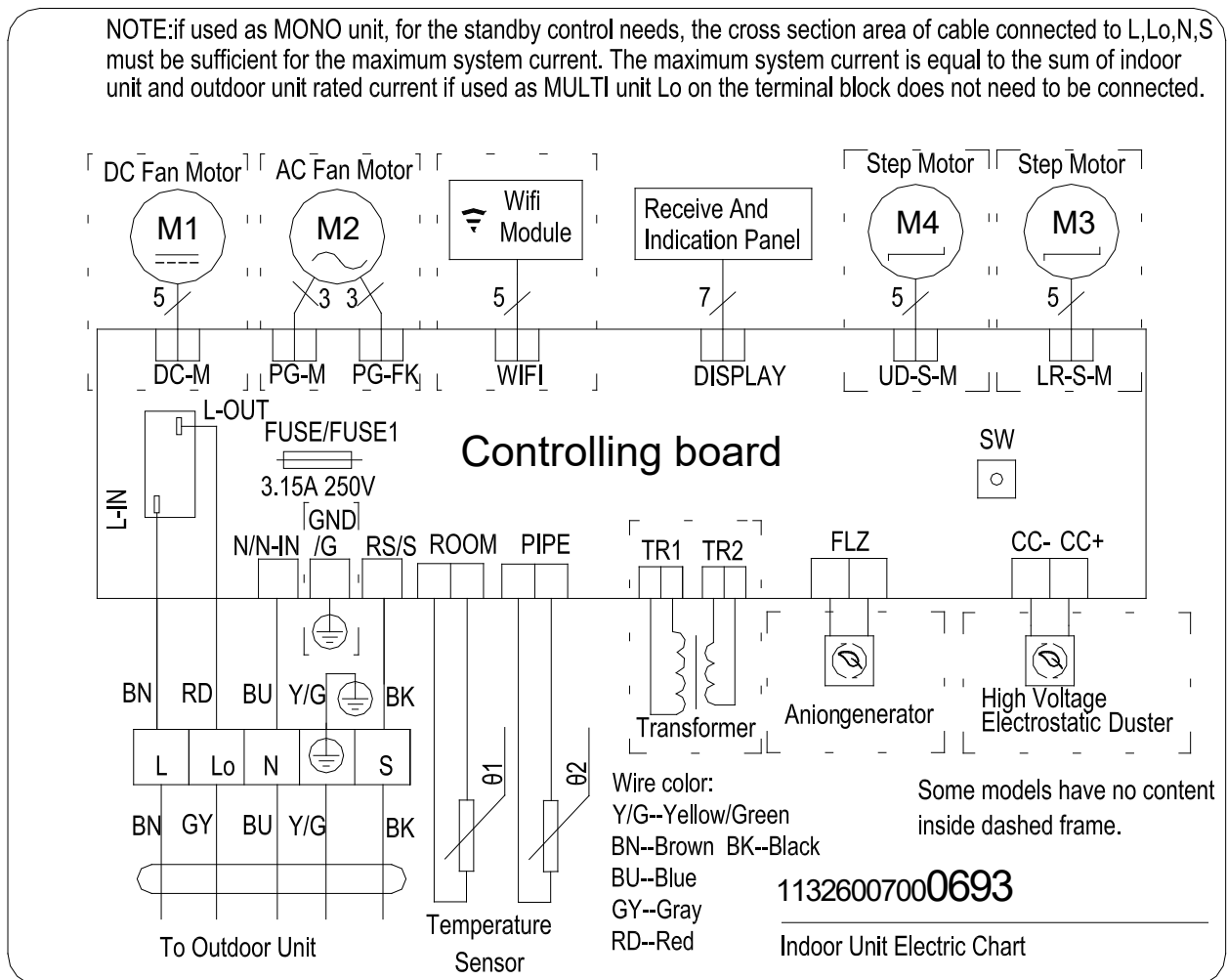
14K



Part 5 Electrical Principle Diagram

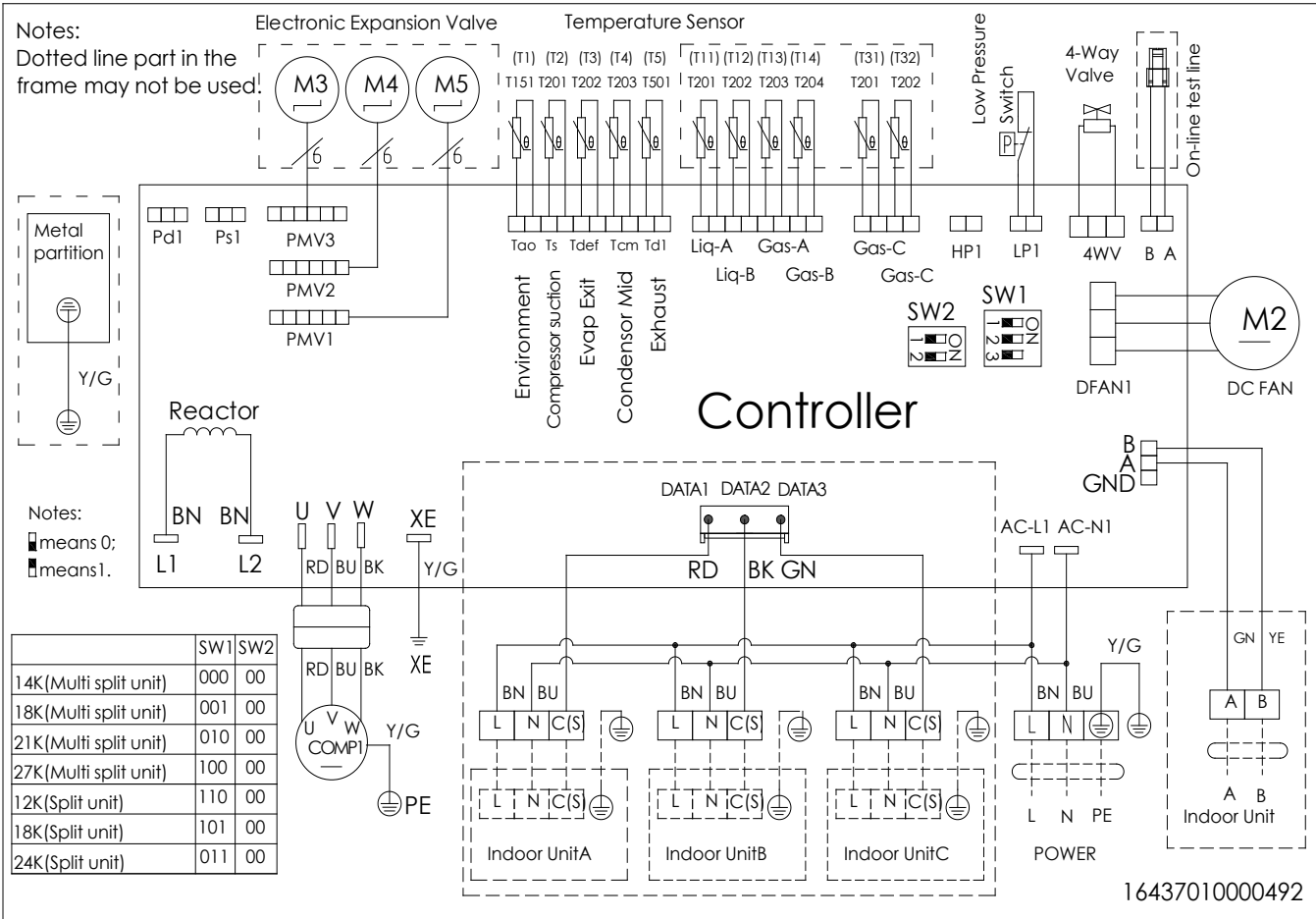
1 Wall Mounted

(09K,12K)



Outdoor Unit

14K



Part 6 Capacity Amendment

1. Operation range

Cooling capacity (KBtu/h)		14K					
Power supply		220-240V~/50Hz					
Voltage		187~242V					
Ambient temperature	Cooling	-10~52℃					
	Heating	-15~24℃					

2. Capacity amendment of different ambient temperature

2.1 Amendment coefficient of Cooling capacity under different indoor/outdoor DB/WB temperature **K1**

IDU temp.℃		Outdoor air inlet DB temperature℃											
DB	WB	-15	-10	0	10	16	25	30	35	40	43	48	52
23	16	1.26	1.19	1.12	1.08	1.05	1	0.95	0.90	0.87	0.85	0.82	0.77
25	18	1.28	1.26	1.19	1.12	1.08	1.05	1	0.95	0.90	0.87	0.85	0.82
27	19	1.30	1.28	1.26	1.19	1.12	1.08	1.05	1	0.95	0.90	0.87	0.85
28	20	1.33	1.30	1.28	1.26	1.19	1.12	1.08	1.05	1	0.95	0.90	0.87
30	22	1.5	1.33	1.30	1.28	1.26	1.19	1.12	1.08	1.05	1	0.95	0.90
32	24	1.7	1.5	1.33	1.30	1.28	1.26	1.19	1.12	1.08	1.05	1	0.95

Actual cooling capacity calculation:

Actual cooling capacity=amendment coefficient of cooling capacity × nominal cooling capacity

——Amendment coefficient of cooling capacity could be found from table above.

2.2 Amendment coefficient of Heating capacity under different indoor/outdoor DB/WB temperature **K2**

IDU temp. °C	Outdoor air inlet DB temperature °C								
DB	-15	-10	-5	0	7	10	15	20	24
16	0.93	0.97	1	1.06	1.08	1.1	1.14	1.2	1.25
18	0.87	0.93	0.97	1	1.06	1.08	1.1	1.14	1.2
20	0.8	0.87	0.93	0.97	1	1.06	1.08	1.1	1.14
22	0.71	0.8	0.87	0.93	0.97	1	1.06	1.08	1.1
24	0.62	0.71	0.8	0.87	0.93	0.97	1	1.06	1.08

Actual heating capacity calculation:

Actual heating capacity = amendment coefficient of heating capacity × nominal heating capacity

—— amendment coefficient of heating capacity could be found from table above.

3. Long piping length

Cooling capacity (KBtu/h)		14K					
Connection Pipe(mm)	Liquid pipe	Φ6.35*2					
	Gas pipe	Φ9.52*2					
Max. length for all rooms (m)		40					
Max. length for one IU (m)		25					
Max. height difference between IU and OU (m)		15					
Max. height difference between IUs (m)		10					

Caution:

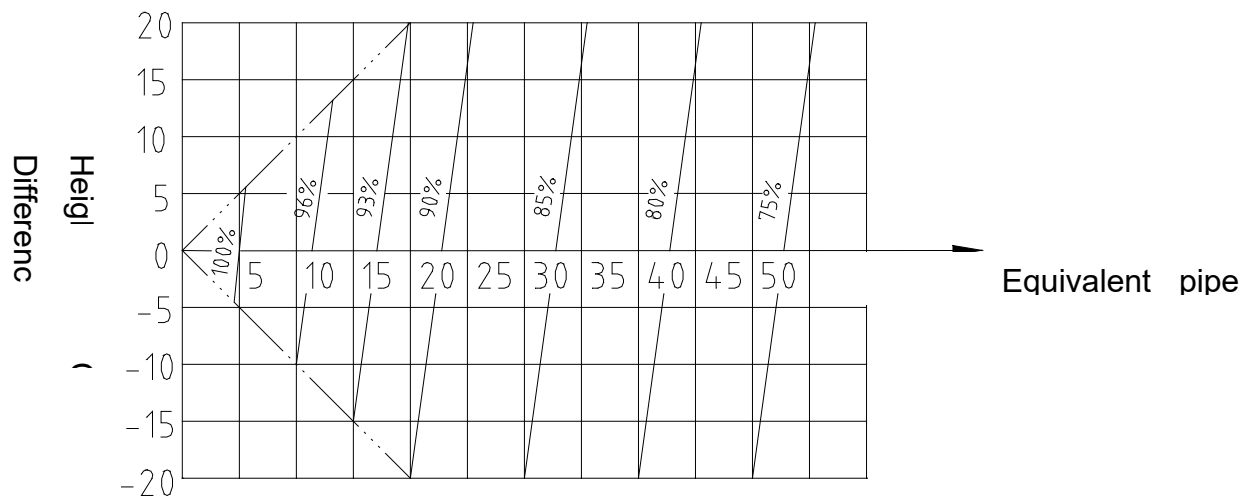
1. The standard Pipe length is 5m, if the pipe length is less than this then no additional charging is necessary. If the pipe length is more than this then you should charge more refrigerant into the system according to the above Charging Data
2. The thickness of the pipe is 0.6-1.0, bearing pressure is 4.2MPa;
3. If the connection pipe is too long, the cooling capacity and stability would be decreased. And the more bend quantity, the resistance in the piping system would be bigger, then the cooling and heating capacity would be decreased even lead to compressor broken. We suggest you to use the shortest connection pipe according to the pipe length parameter in this manual. If the height difference between outdoor and indoor unit is more than 5m, an oil trap should be installed in the gas pipe for every 10 meters.

4. Capacity amendment of different piping length

4.1 Amendment coefficients of heating and cooling capacity under different height drop

K3

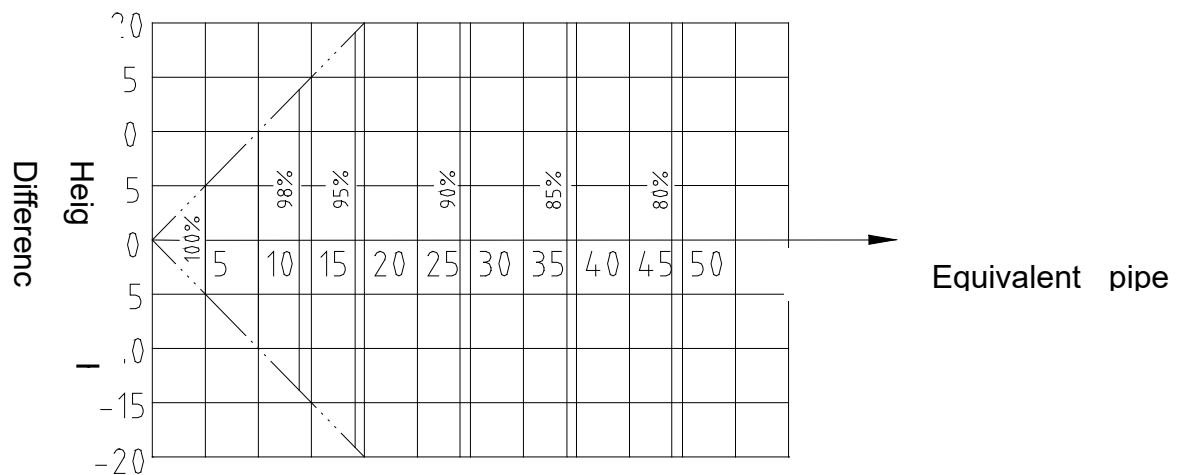
Different Cooling Capacity modified coefficients at different height:



Note:

H = Height of Outdoor Unit — Height of Indoor Unit

Different Heating Capacity modified coefficients at different height:



Note:

H = Height of Outdoor Unit — Height of Indoor Unit

4.2 Correction capability

Cooling capacity = Rated cooling capacity $\times K1 \times K3$

Heating capacity = Rated heating capacity $\times K2 \times K3$

5. Equivalent Pipe length conversion

Equivalent pipe length means converting pipe elbow to straight pipe length after considering the pressure loss.

Bend and Oil Loop Conversion table

Type Pipe Dia.(mm)	Bend (m)	Oil Loop(m)
6.35	0.10	0.7
9.52	0.18	1.3
12.70	0.20	1.5
15.88	0.25	2.0
19.05	0.35	2.4
22.02	0.40	3.0

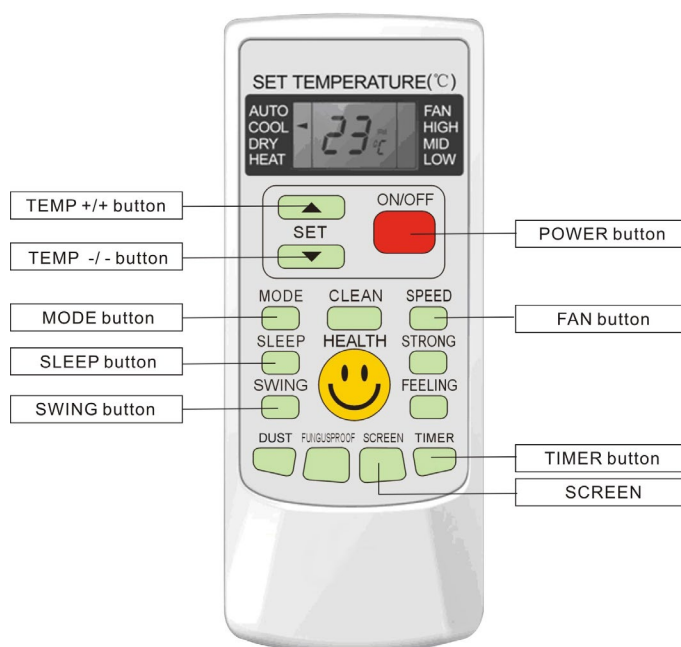
Equivalent Pipe length $L = \text{Actual Pipe length } L + \text{Bend Qty} \times \text{Equivalent pipe bend length} + \text{Oil Loop Qty} \times \text{Equivalent Oil Loop length}$

Note:





If there is a relatively level difference of indoor and outdoor unit, S-shaped oil trap must be installed every 8~10m for vertical pipe.

Part 7 Controller

Controller



POWER button: Switch the unit ON/OFF.

MODE button: Select mode , push the button one time, then the operation modes will change in turn as Auto-Cooling-Dehumidify-Heating  →  →  → 

TEMP + button and TEMP - button: Temperature adjustment range: 16~32

FAN button: Change the fan speed will change in turn as: Low-Medium-High-Auto

SWING button: Press this button for the first time when operation, it will start the swing function. Push the button for the second time, cancel the swing function. (The function is available matched with the concerned unit)

TIMER/CLOCK button:

Clock Setting: Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When press the button for 5 seconds, the time display zone will flicker, then press **【+】** and **【-】** button and to adjust hour that uses 12-hour clock including “A.M.” and “P.M.” time; press the button again to complete the setting.

Timer setting: Press the button to set TIMER ON/OFF , press the button then “ON” will flicker on the display screen. then press **【+】** and **【-】** button and to adjust hour that uses

12-hour clock including “A.M.” and “P.M.” time; press the button again to complete the setting. The “OFF” setting is the same methods.

Remark: When setting functions such as mode, temperature, air port and air velocity, display screen displays all presetting parameters and remains constant; after reaching presetting time, air conditioner will automatically start as per presetting state.

After setting timing ON and OFF function, pressing button of **【Timer/Clock】** can cancel timing setting.

SLEEP button:

1. Press the button to the sleeping indicator light of indoor unit flashes on;
2. After the setting of sleeping mode, the cooling operation enables the set temperature to increase 1°C after 1 hour and another 1°C automatically after 1 hour.
3. After the setting of sleeping mode, the heating operation enables the set temperature to drop 2°C after 1 hour and another 2°C automatically after 1 hour.
4. The air condition runs in sleeping mode for 7hours and stops automatically.

Remark: Press the mode or ON/OFF button, the remote controller clears sleeping mode away.

SCREEN button: Press the button to let the LCD display working or not by pressing the button.

2. Wifi Module

WiFi Module Configuration

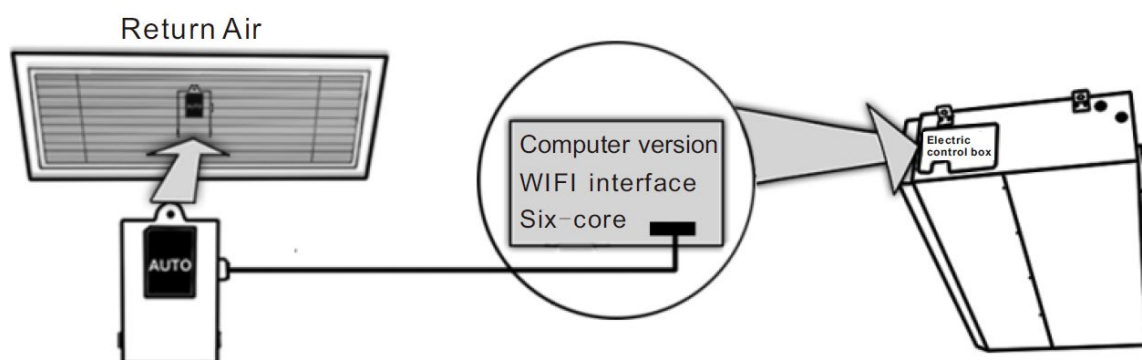
① APP Download

Mobile terminal scan the following dimensional code to download APP, or search “AC Freedom” in APPSTORE and Google store



② Light Commercial WIFI Module Installation

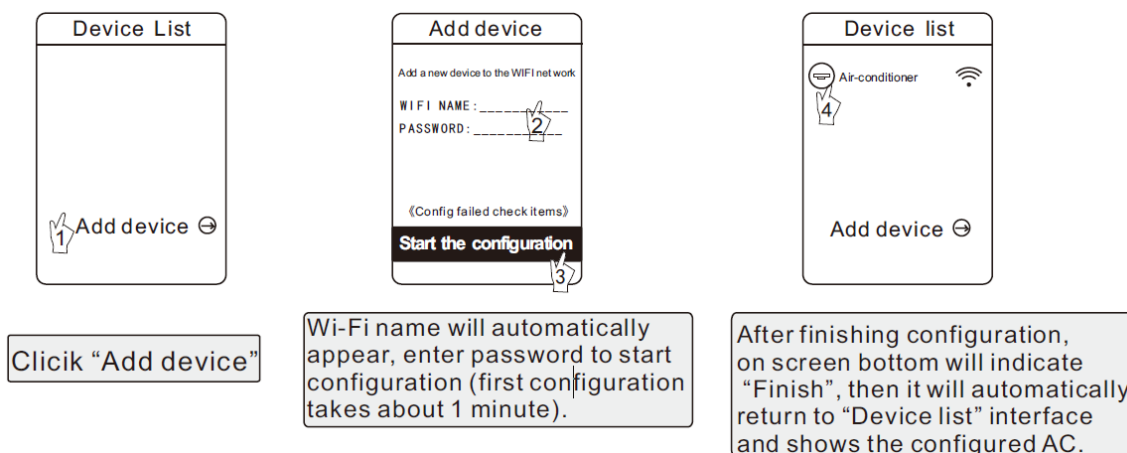
Connect the WIFI module communication wire to WIFI interfaces of main PCB, as shown below:



The WIFI module should be placed in the return air or some other place in WIFI area.
(customers buy the wireless router)

③ APP Configuration

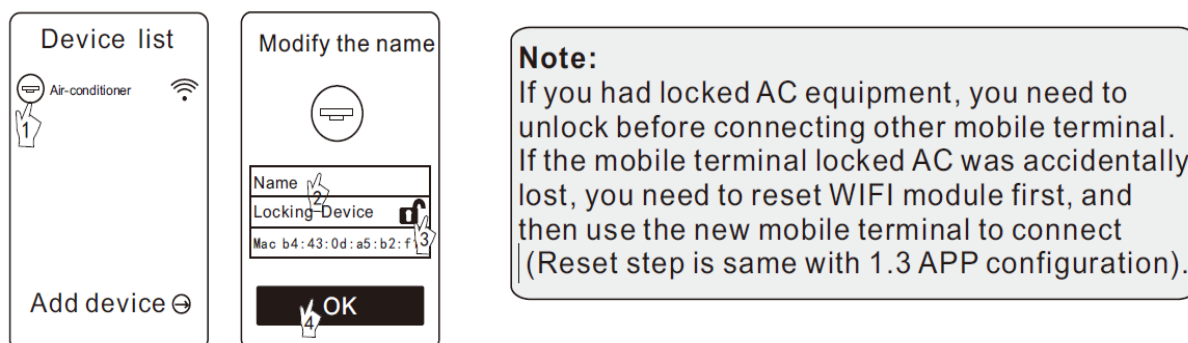
- Press "healthy" button 8 times consecutive, and buzzer even ring two sound then into the configuration
- Connect mobile terminals to WIFI, open APP “AC Freedom”, and then operate following the steps below:



Note: If the configuration fails or you change the password of wireless router, you need to reset the WIFI module to reconnect: Turn on the power of the module, then repeat the steps above for APP configuration.

AC management

① Modify AC name and locking function



② For other instructions, please refer to "HELP" in APP.

③ Remote-control device

Connect the wireless router to internet, then open the GPRS. It means the remote control device, voice control function only effective after connected to the Internet

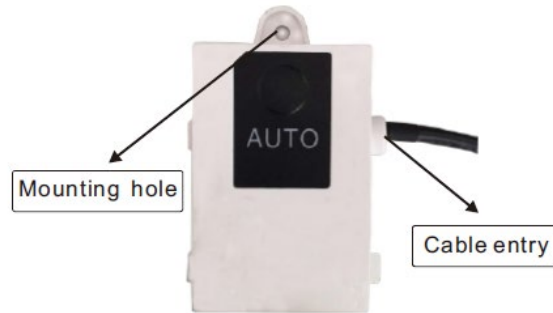
Trouble Shooting

If unable to properly configured or connect the WIFI box:

- Make sure the WIFI box for wiring is properly connected.
- Long press WIFI box 8 seconds to reconfigure the positive button. If the problem can't be solved, please contact after sales person.

Technical Parameters

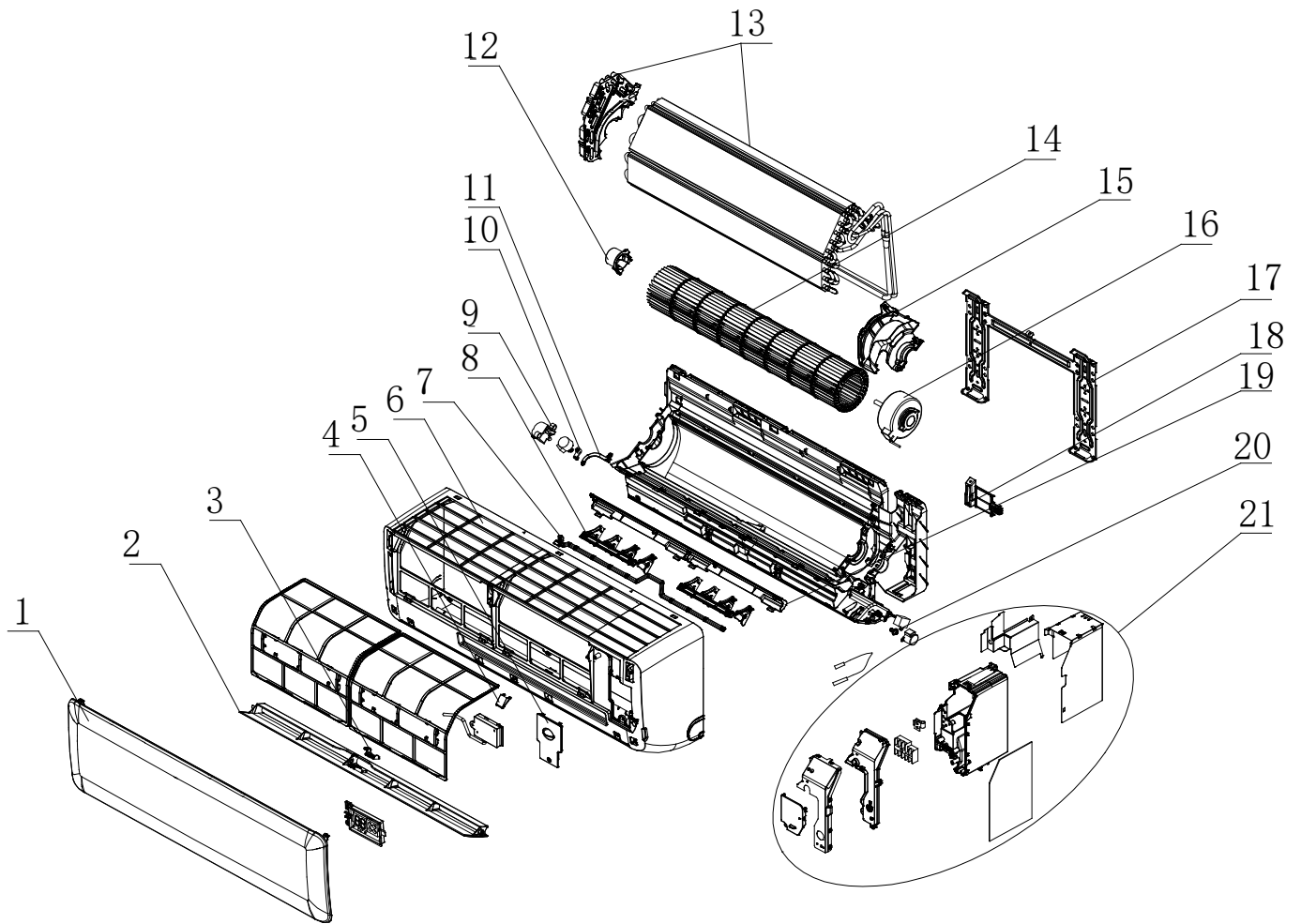
- Working temperature: 0~50℃;
- Working environment humidity: 20~90%RH;
- Dimensions: 78 X 52 X 15.5
- Configuration cable wire length: 1500mm



Part 9 Explosive View

Wall Mounted

09K, 12K



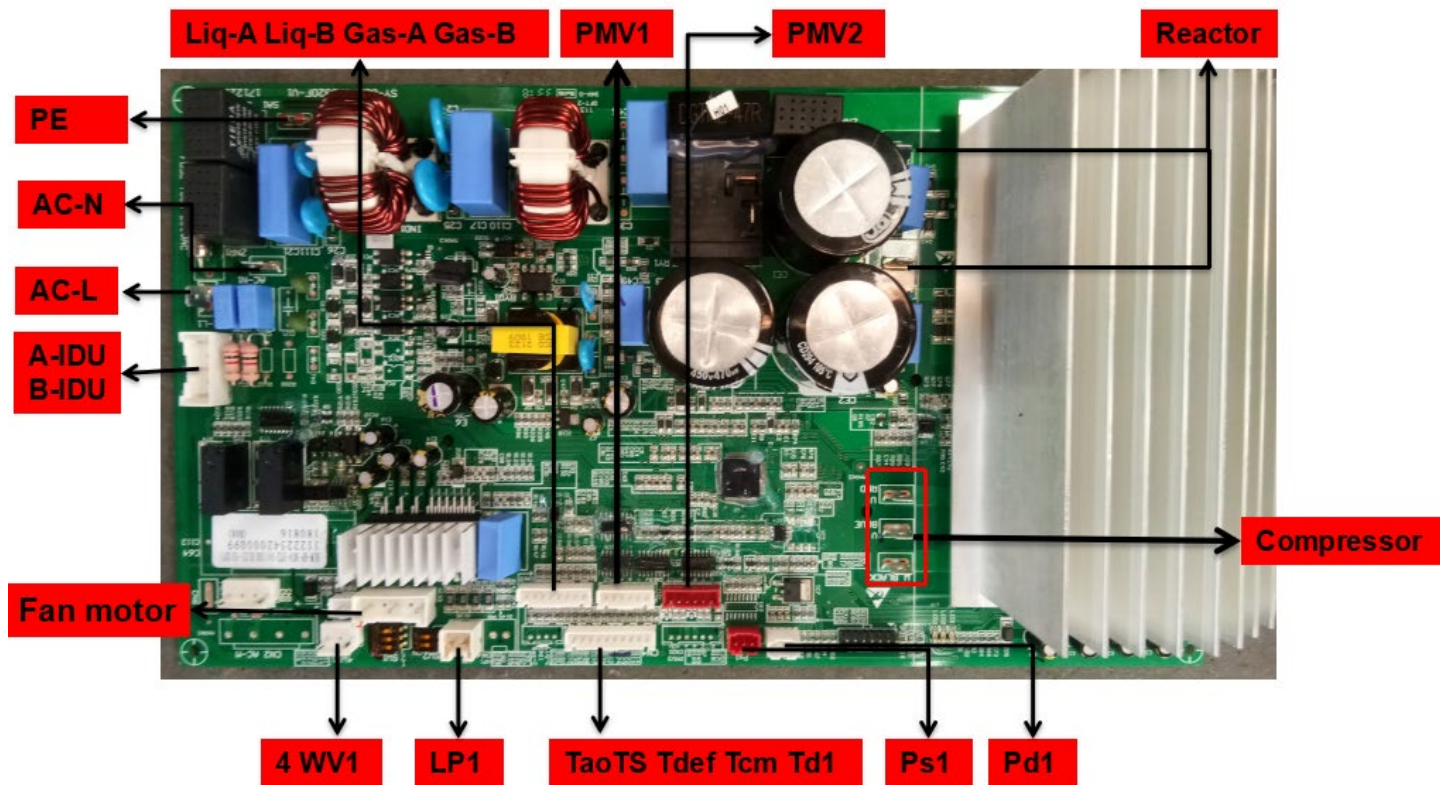
NO.	Material code	Part name	Qty
1	11220502004342	Decro panel	1
2	11320135000018	Air louver (Horizontal)	1
3	11220508000139	Filter	2
4	11320096000104	Screw cover	1
5	11320076000084	Medium frame wiring cover	1
6	11320002000305	Medium frame	1
7	11320085000094	Guide vane linkage	1
8	11320017000125	Left-right swing blade	2
9	11320127000007	Step motor bracket	1
10	11320091000014	Crank link	1
11	11320085000081	Guide vane linkage B	1
12	11320062000028	Bearing fixing bracket	1
13	11224003000649	Evaporator assembly (07/09)	1
	11224003000764	Evaporator assembly (12)	
14	11220513000065	Scroll fan	1
15	11320052000044	Fan motor cover	1
16	11230002000068	IDU fan motor	1
17	11221500000034	Mounting plate assembly	1
18	11320084000013	Pipe clamp	1
19	11320005000381	Horizontal louver	1
20	11320079000016	Step motor shaft sleeve	1
21	11222003002805	Main control assembly	1

Part 10 PCB Instruction

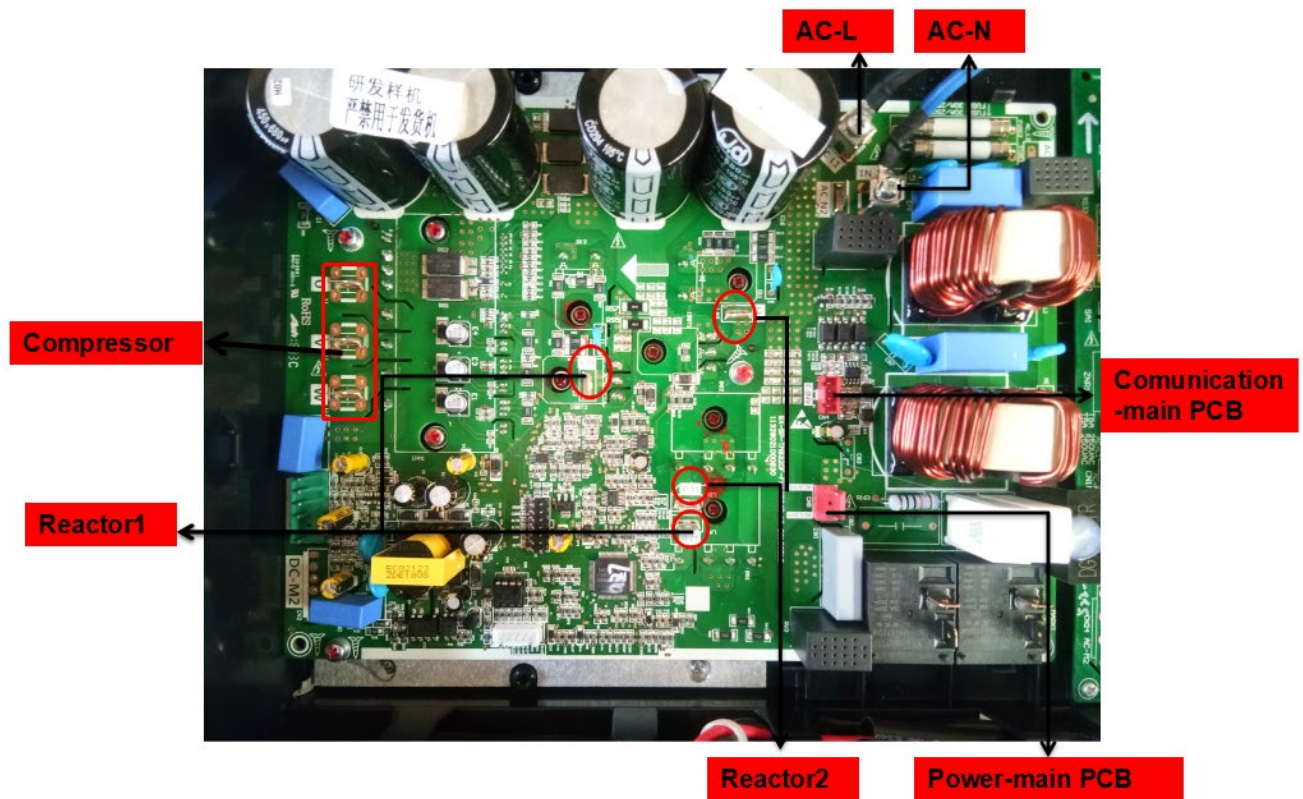
Outdoor Unit PCB

14K,18K

Main PCB and Driver modular



Drive Modular Board



Part 11 Trouble Shooting

WM: wall mounted unit

1. Fault code list

1.1 Temp. sensor fault (**WM** NO.8)

Code display in IDU		Fault code description	Possible reason
	WM		
	E1	Fault with the room temperature sensor on the N # indoor unit	Damage of the room temperature sensor on the indoor unit Poor contact of the room temperature sensor on the indoor unit Damage of wiring of the room temperature sensor on the indoor unit Damage of the main PCB on the indoor unit
	E3	Fault with the temperature Sensor in the Middle of N # indoor evaporator	Damage of the temperature sensor on the indoor unit Poor contact of the temperature sensor on the indoor unit Damage of wiring of the temperature sensor on the indoor unit Damage of the main PCB on the indoor unit
	H3	Fault with the liquid pipe temperature sensor on the N# indoor unit	Damage of the liquid pipe temperature sensor on the indoor unit Poor contact of the liquid pipe temperature sensor on the indoor unit Damage of wiring of the liquid pipe temperature sensor on the indoor unit Damage of the main PCB on the indoor unit
	H4	Fault with the gas pipe temperature sensor on the N# indoor unit	Damage of the gas pipe temperature sensor on the indoor unit Poor contact of the gas pipe temperature sensor on the indoor unit Damage of wiring of the gas pipe temperature sensor on the indoor unit Damage of the main PCB on the indoor unit

Code display in IDU		Fault code description	Possible reason
	WM		
	F6	Fault with the environmental temperature sensor on the outdoor unit	Damage of the Environmental temperature sensor on the outdoor unit Poor contact of the Environmental temperature sensor on the outdoor unit Damage of wiring of the Environmental temperature sensor on the outdoor unit Damage of the main PCB on the outdoor unit
	F4	Fault with the discharge temperature sensor	Damage of the discharge temperature sensor on the outdoor unit Poor contact of the discharge temperature sensor on the outdoor unit Damage of wiring of the discharge temperature sensor on the outdoor unit Damage of the main PCB on the outdoor unit
	FA	Fault with the suction temperature sensor	Damage of the suction temperature sensor on the outdoor unit Poor contact of the suction temperature sensor on the outdoor unit Damage of wiring of the suction temperature sensor on the outdoor unit Damage of the main PCB on the outdoor unit
	E2	Fault with the Temperature Sensor in the middle of Outdoor condenser	Damage of the temperature sensor on the outdoor unit Poor contact of the temperature sensor on the outdoor unit
		Fault with the Defrosting Temperature Sensor on Outdoor	Damage of wiring of the temperature sensor on the outdoor unit Damage of the main PCB on the outdoor unit

1.2 Communication fault (WM NO.5)

Code display in IDU		Fault code description	Possible reason
	WM		
	5E/E5	Communication error between the outdoor unit and the N # indoor unit	Damage of the main PCB on the indoor unit Damage of the main PCB on the outdoor unit poor wiring
	E8/H2	Communication error between the wired controller and main PCB of the N# indoor unit	poor wiring Damage of the wired controller Damage of the main PCB on the indoor unit

	F8	Communication error between the driver PCB and main PCB of the outdoor unit	Damage of the driver PCB on the outdoor unit Damage of the main PCB on the outdoor unit poor wiring
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1.3 IDU fault (WM NO.3)

Code display in IDU		Fault code description	Possible reason
	WM		
	H1	Fault with the drainage on N# Indoor unit	Float switch disconnected or poor wiring Error setting of model parameters Drain plug Damage of the pump
	E4	Fault with the Fan motor of N # indoor unit	Low voltage poor wiring Damage of the main PCB on the indoor unit Damage of the motor
	P7	Indoor anti-freezing protection	Dirty Blockage of evaporator Indoor fan abnormal

1.4 Refrigerant circuit fault (WM NO.6)

Code display in IDU		Fault code description	Possible reason
	WM		
	P5	High discharge temperature Protection	Lack of the refrigerant Stop valve unopened Damage of the main PCB on the outdoor unit
	P4/P6	Cooling: high temperature Protection of outdoor unit Heating: high temperature Protection of indoor unit	Cooling: Poor condenser heat exchange Heating: Poor evaporator heat exchange
	H7	Low pressure protection	Lack of the refrigerant Heat exchanger viscera
	H5	Lower discharge temperature protection	temperature sensor shedding Damage of the main PCB on the outdoor unit
	P3	Lack of refrigerant	Lack of the refrigerant Stop valve unopened

1.5 ODU components fault (WM NO.12)

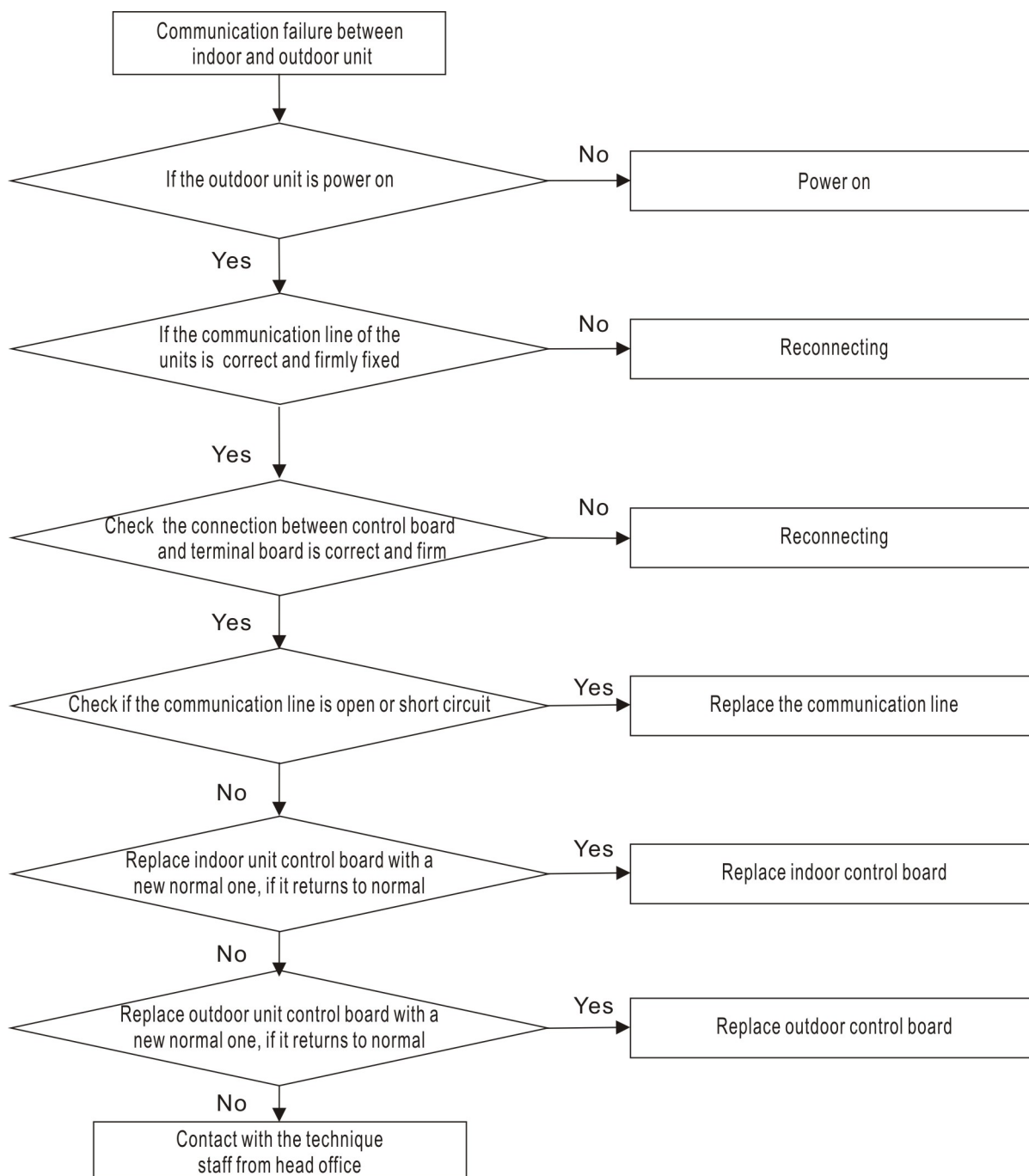
Code display in IDU		Fault code description	Possible reason
	WM		
	P2	High pressure Switch Protection	System dirty blocking Damage of High Voltage Pressure Switch
	H6	Low pressure switch protection	Lack of the refrigerant Stop valve unopened damage of low press switch
	H8	Fault of four-way valve	Damage of four-way valve Damage to coil of four-way valve
	F3/LA/L2 /L3	Compressor failed to start	Compressor power line not connected Compressor sequence connection error Damage of compressor
	F0/LD/LE/LF	Fault with the Fan motor of outdoor unit	Damage of motor
	LF	Outdoor DC Fan Out-of-step Protection & over current protection	DC motor failure High Speed of DC Fan System dirty blocking

1.6 ODU electeic control fault (WM NO.20)

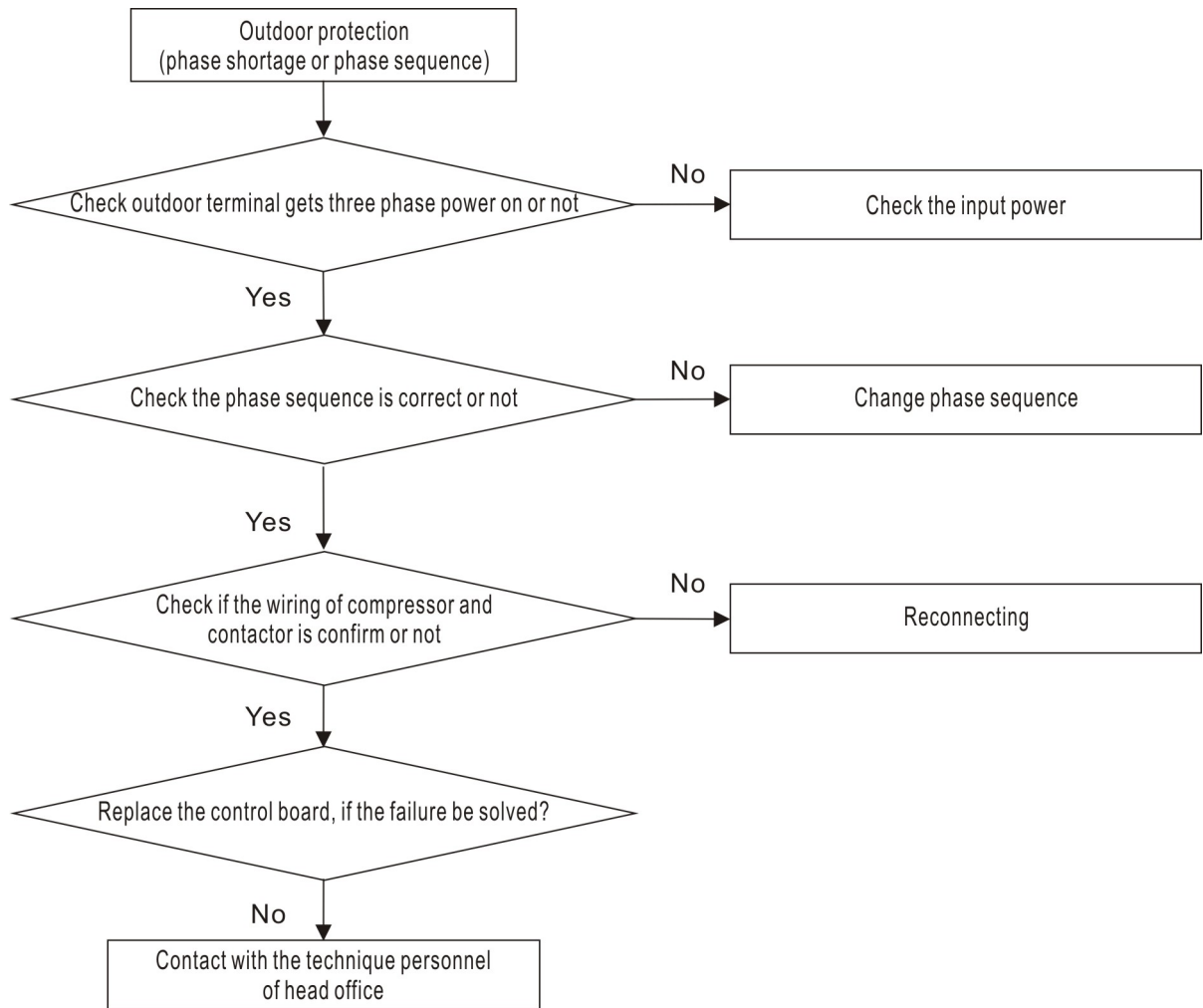
Code display in IDU		Fault code description	Possible reason
	WM		
	F1/L1/L4 /L7/L8	IPM Module failure protection	compressor damage compressor IPM Module damage system blockage
	F9	Compressor drive hardware protection & Fault with the outdoor unit EEPROM	chip damage
	P8/J8	Over-current Protection of the compressor drive modular	Excessive running current of the unit Voltage drops abruptly during operation
	F7/L0	Over-voltage Protection of the compressor drive modular	Excessive input voltage Lower input voltage
	HE/HF	Abnormal temperature sensor in IPM/PFC module	Driver board IPM/PFC module device is broken
	L9	Temperature of compressor drive modular too high protection	Compressor IPM Module sensor damage Poor contact between compressor IPM module and radiator
	LD	AD Abnormal Protection for Outdoor DC Fan Current Detection	Abnormal component of the fan driver modular
	F2/L5/ L6/LC	Compressor drive PFC protection	Damage of the PFC circuit components Reactor damage
	LH	IPM Protection of Outdoor DC Fan drive modular	The IPM Device of DC Motor is Bad

2. Failure analysis

2.1 【E5】 Communication failure between indoor and outdoor unit

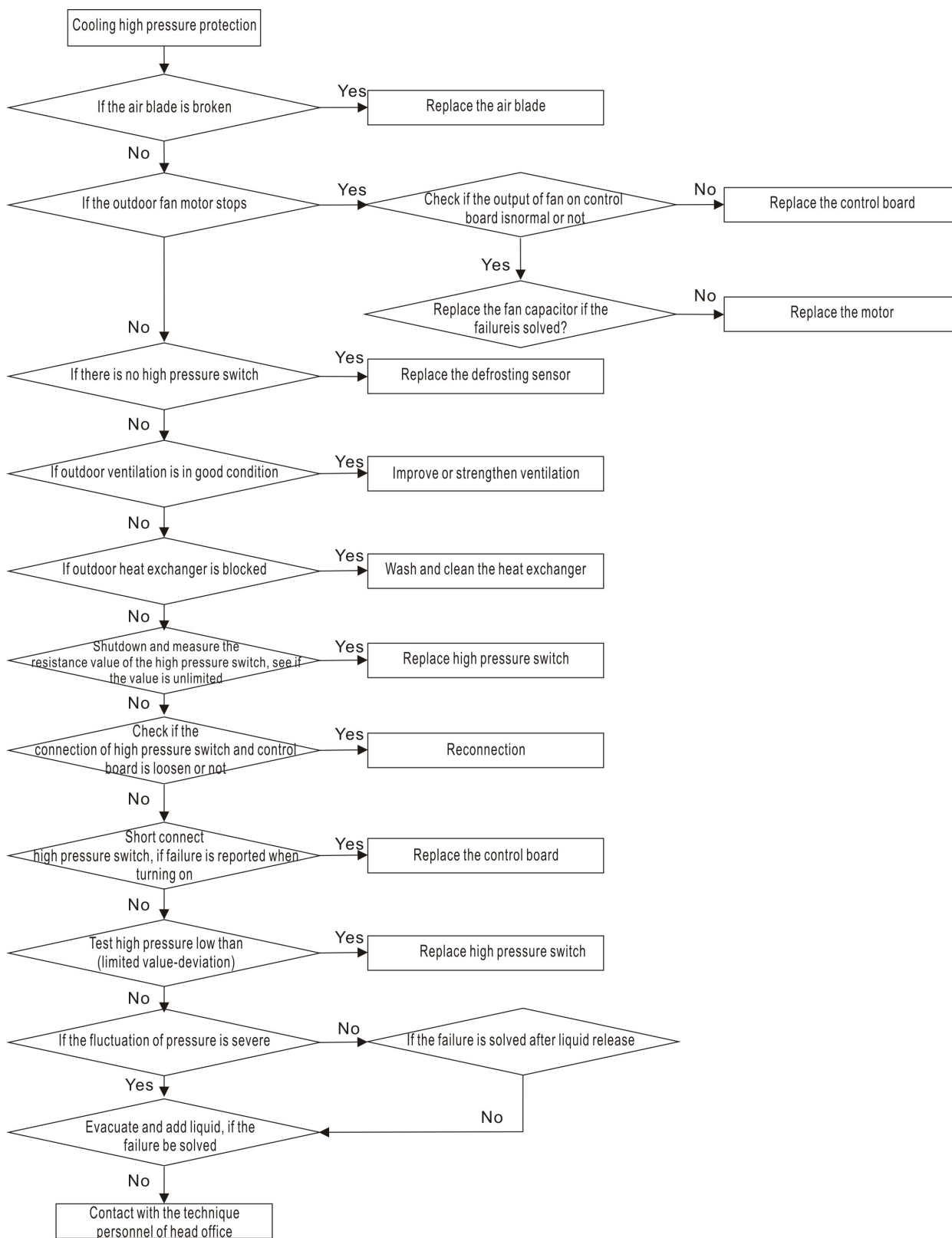


Outdoor protection (phase sequence)

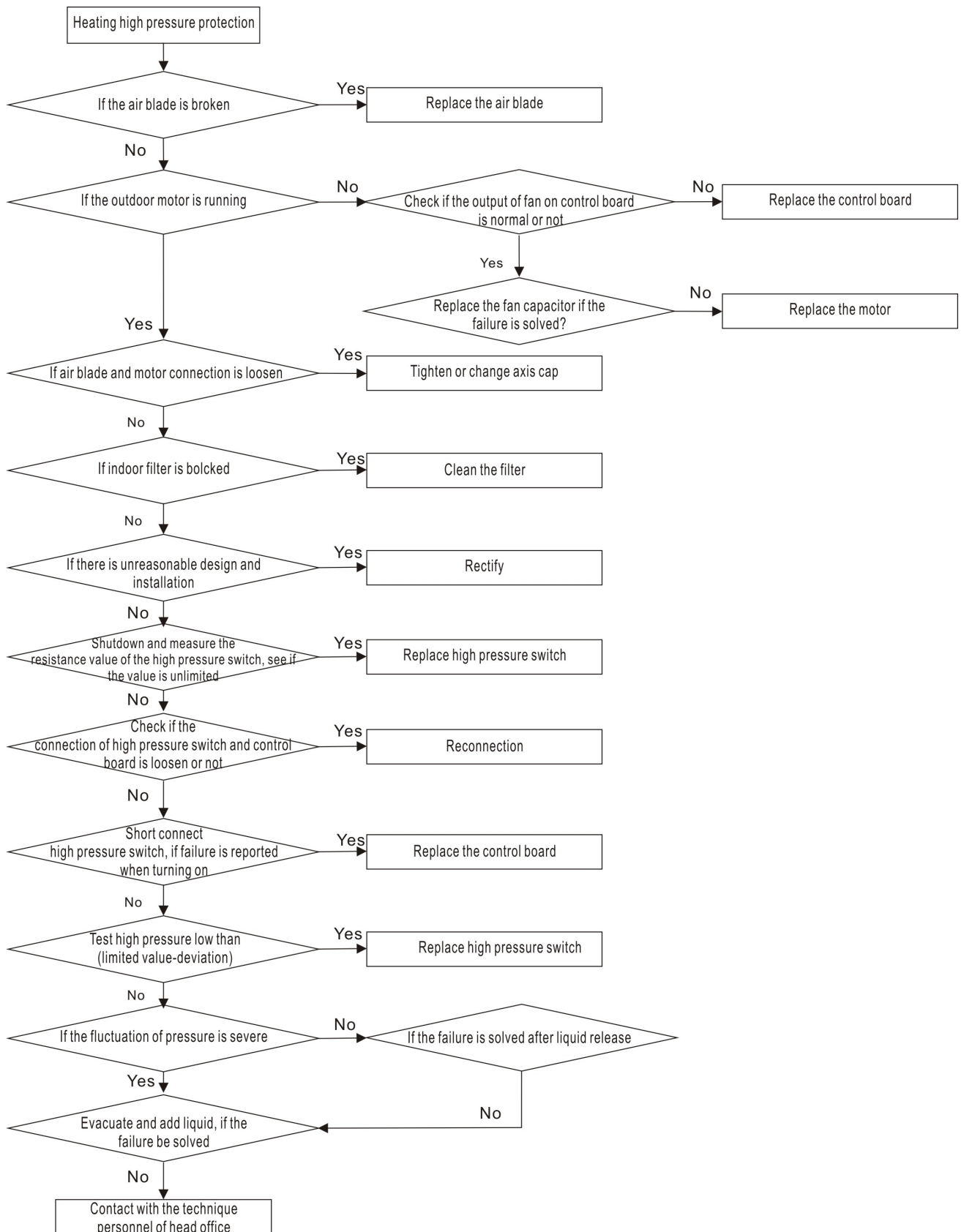


2.2 【P2】 high pressure protection

Cooling high pressure protection

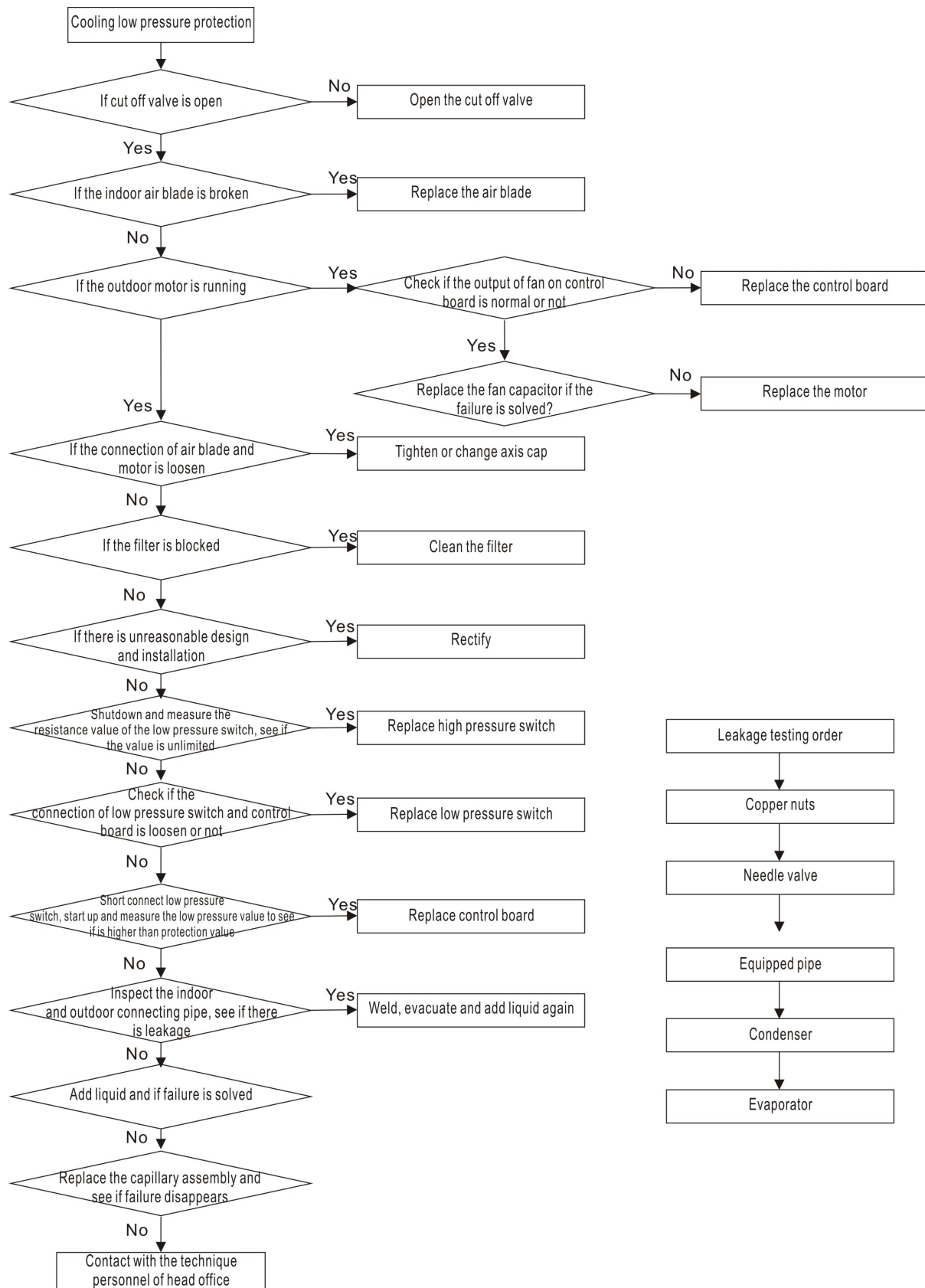


Heating high pressure protection

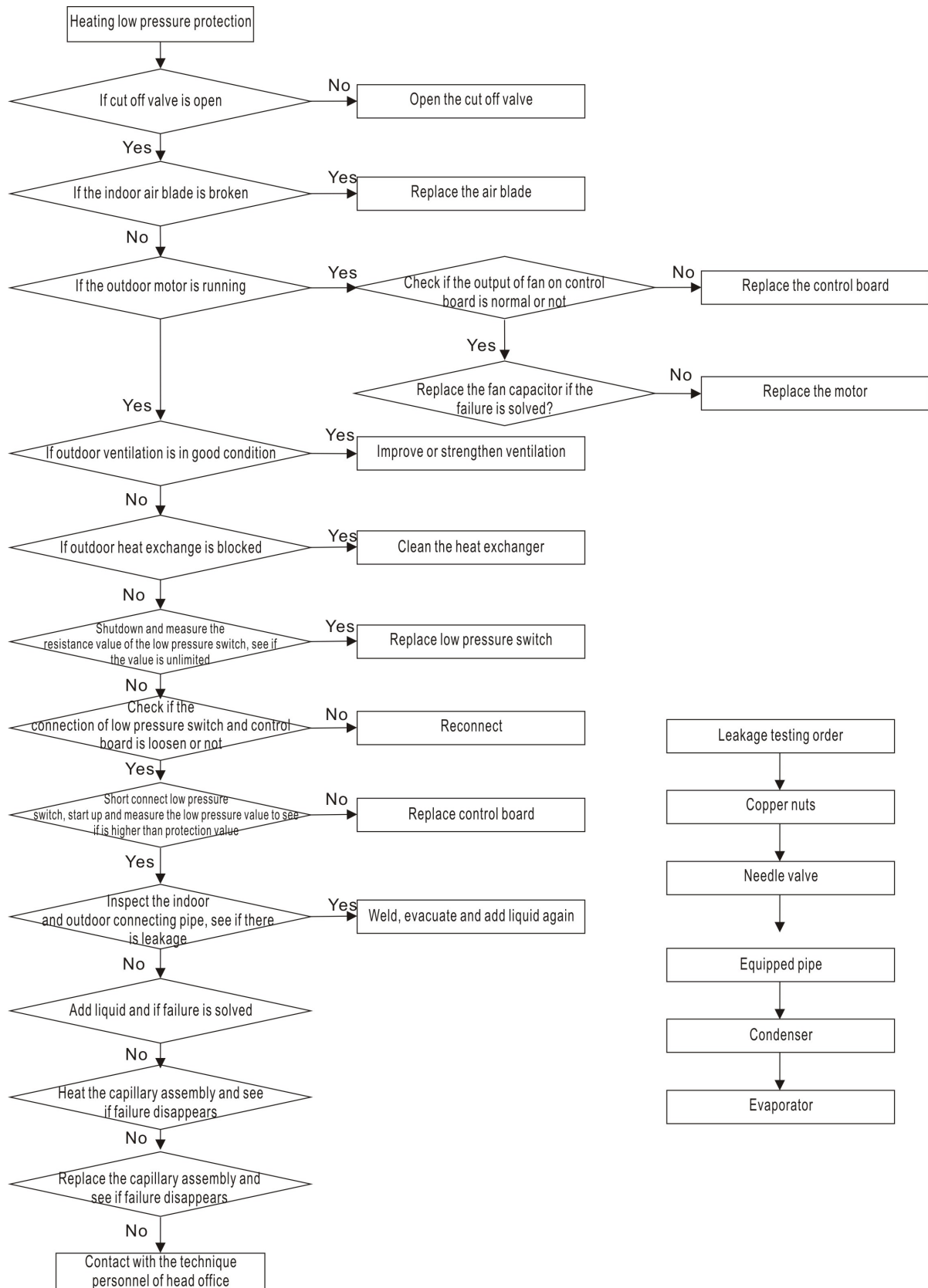


2.3 【H6】 low pressure protection

Cooling low pressure protection

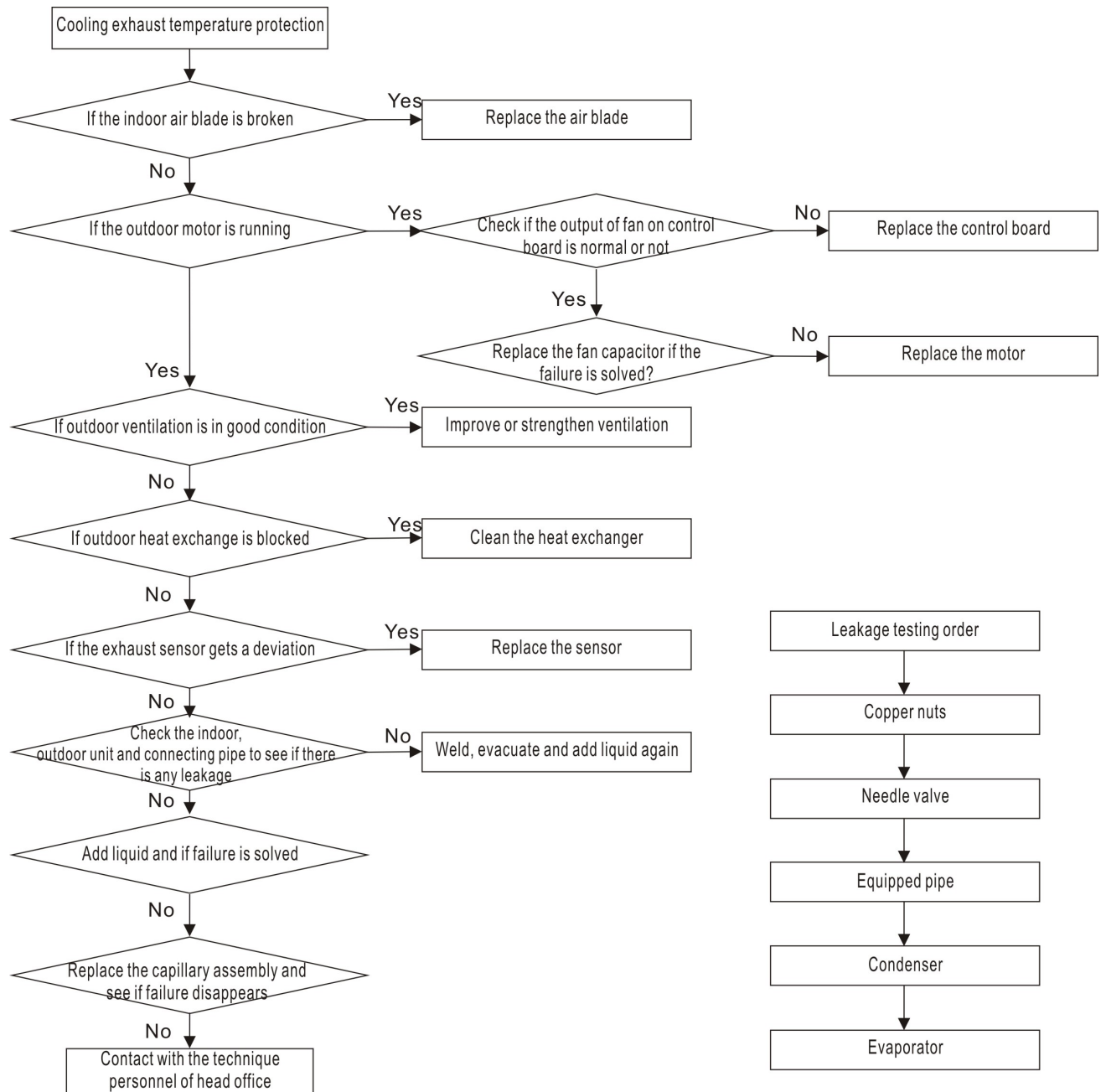


Heating low pressure protection

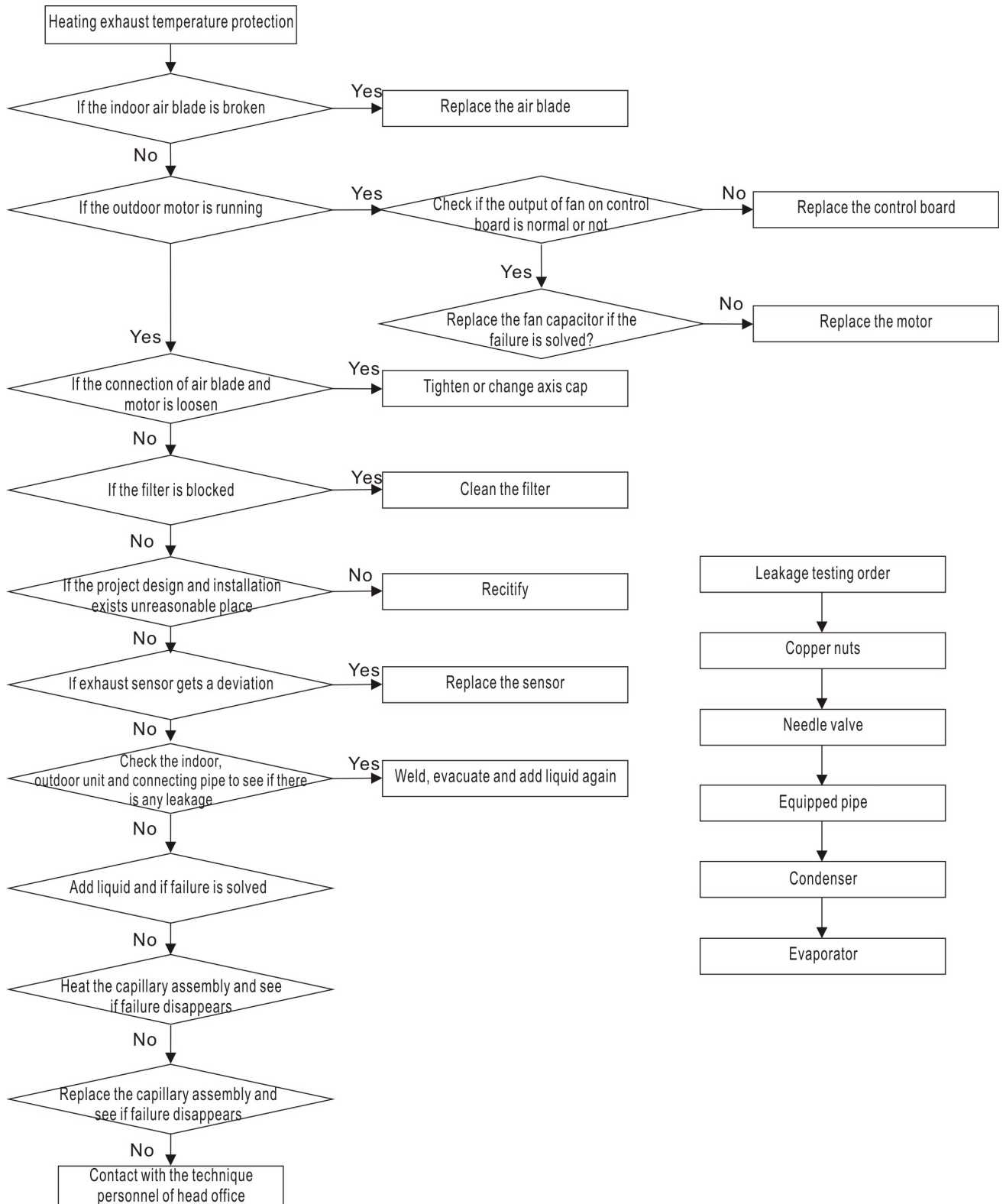


2.4 【P5】 High exhaust temperature protection

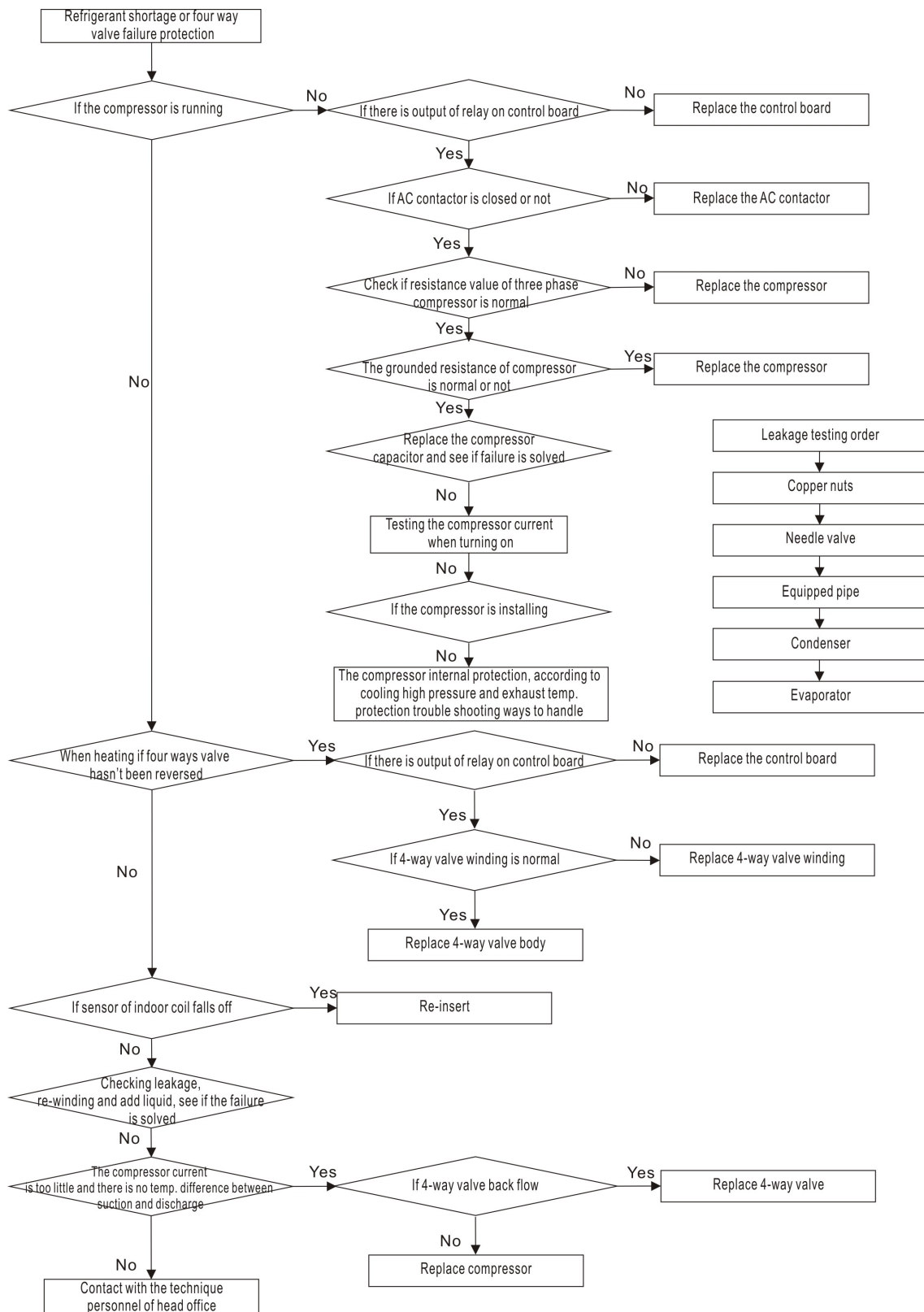
Cooling exhaust temperature protection



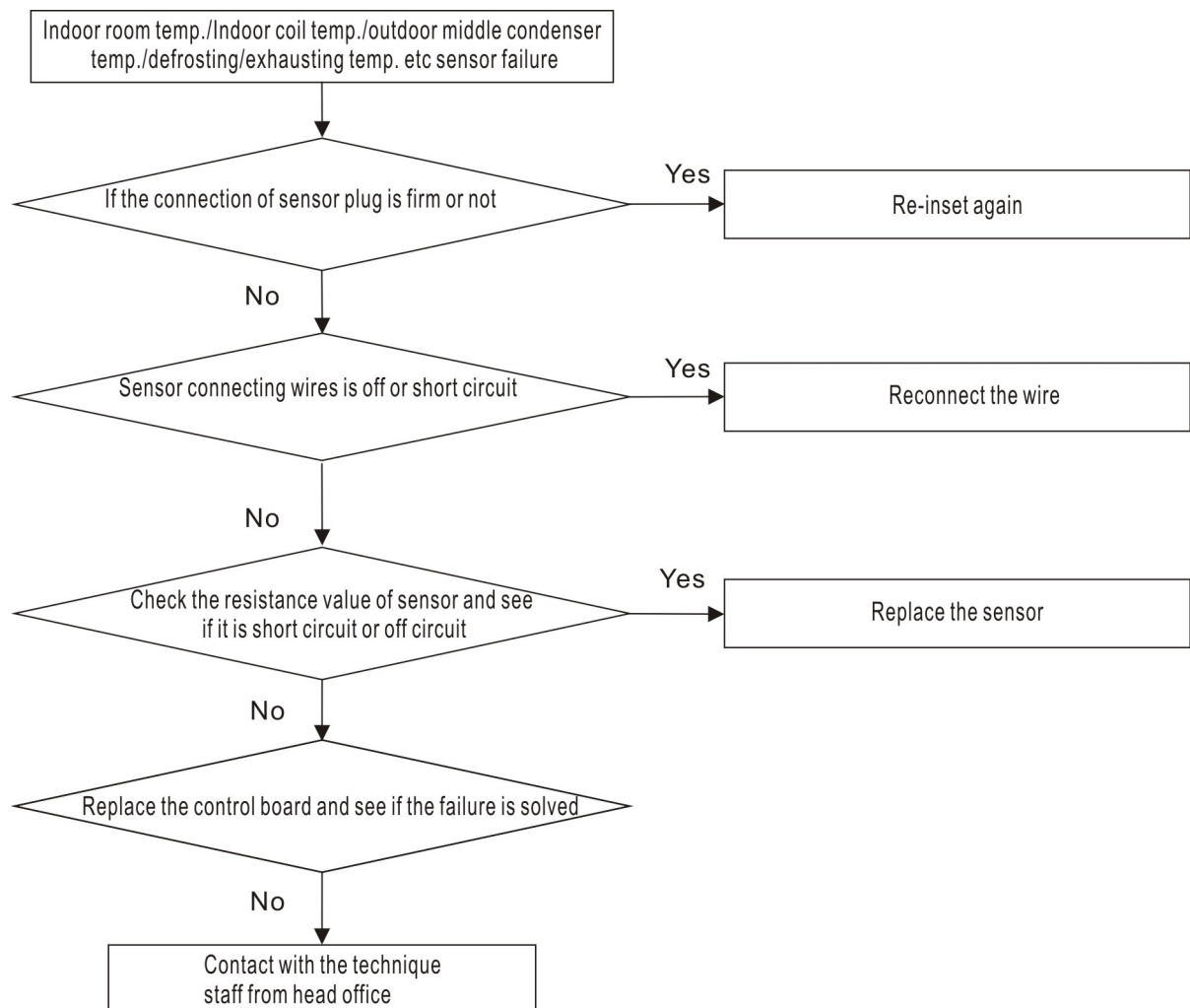
Heating exhaust temperature protection



2.5 【H8】 four way valve failure protection



2.6 Sensor failure protection



REGULATION (EU) No. 517/2014 - F-GAS

The unit contains R32, a fluorinated greenhouse gas with global warming potential (GWP) = 675. Do not release R32 into the atmosphere.

GREENSTYLE DUAL 14000 UE - Kg. 1,07 = 0,722 Tonn CO₂ equiv.



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