

9. Maintenance

9.1 Error Code

No.	Malfunction Name	Display Method of Indoor Unit (Error Code)	A/C Status	Possible Causes(For specific maintenance method, please refer to the following procedure of troubleshooting)
1	Indoor ambient temperature sensor is open/short-circuited	F1	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except IDU fan motor operates, other loads stop operation; During heating operation, the system stops operation.	<ol style="list-style-type: none"> 1.The wiring terminal between indoor ambient temperature sensor and main board is loosened or poorly contacted; 2.Theres short circuit due to trip-over of the parts on controller; 3.Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except IDU fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	<ol style="list-style-type: none"> 1.The wiring terminal between indoor evaporator temperature sensor and main board is loosened or poorly contacted; 2.Theres short circuit due to the trip-over of the parts on controller; 3.Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
3	Blocked protection of IDU fan motor	H6	IDU fan, ODU fan, compressor and electric heat tube stop operation. Horizontal louver stops at the current position.	<ol style="list-style-type: none"> 1.The feedback terminal of PG motor is not connected tightly. 2.The control terminal of PG motor is not connected tightly. 3.Fan blade rotates unsmoothly. 4.Malfunction of motor 5.Main board is broken.
4	Malfunction protection of jumper cap	C5	Operation of remote controller or control panel is available, but the unit wont act.	<ol style="list-style-type: none"> 1.Theres not jumper cap on the main board. 2.Jumper cap is not inserted properly and tightly. 3.Jumper cap is damaged. 4.Controller is damaged.
5	Overcurrent protection(This protection function is not available for those models whose cooling capacity ≤12000Btu/h)	E5	During cooling and drying operation, except IDU fan motor operates, other loads stop operation; During heating operation, the system stops operation.	<ol style="list-style-type: none"> 1.Unstable supply voltage. Normal fluctuation shall be within 10% of the rated voltage on the nameplate. 2.Supply voltage is too low and load is too high. 3.Measure the current of live wire on main board. If the current isnt higher than the overcurrent protection value, please check the controller. 4.The indoor and outdoor heat exchangers are too dirty, or the air inlet and air outlet are blocked. 5.The fan motor is not running. Abnormal fan speed: fan speed is too low or the fan doesnt run 6.The compressor is not running normally. There is abnormal sound, oil leakage or the temperature of the shell is too high, etc. 7.Theres blockage in the system (filth blockage, ice plug, greasy blockage, Y-valve hasnt been opened completely)

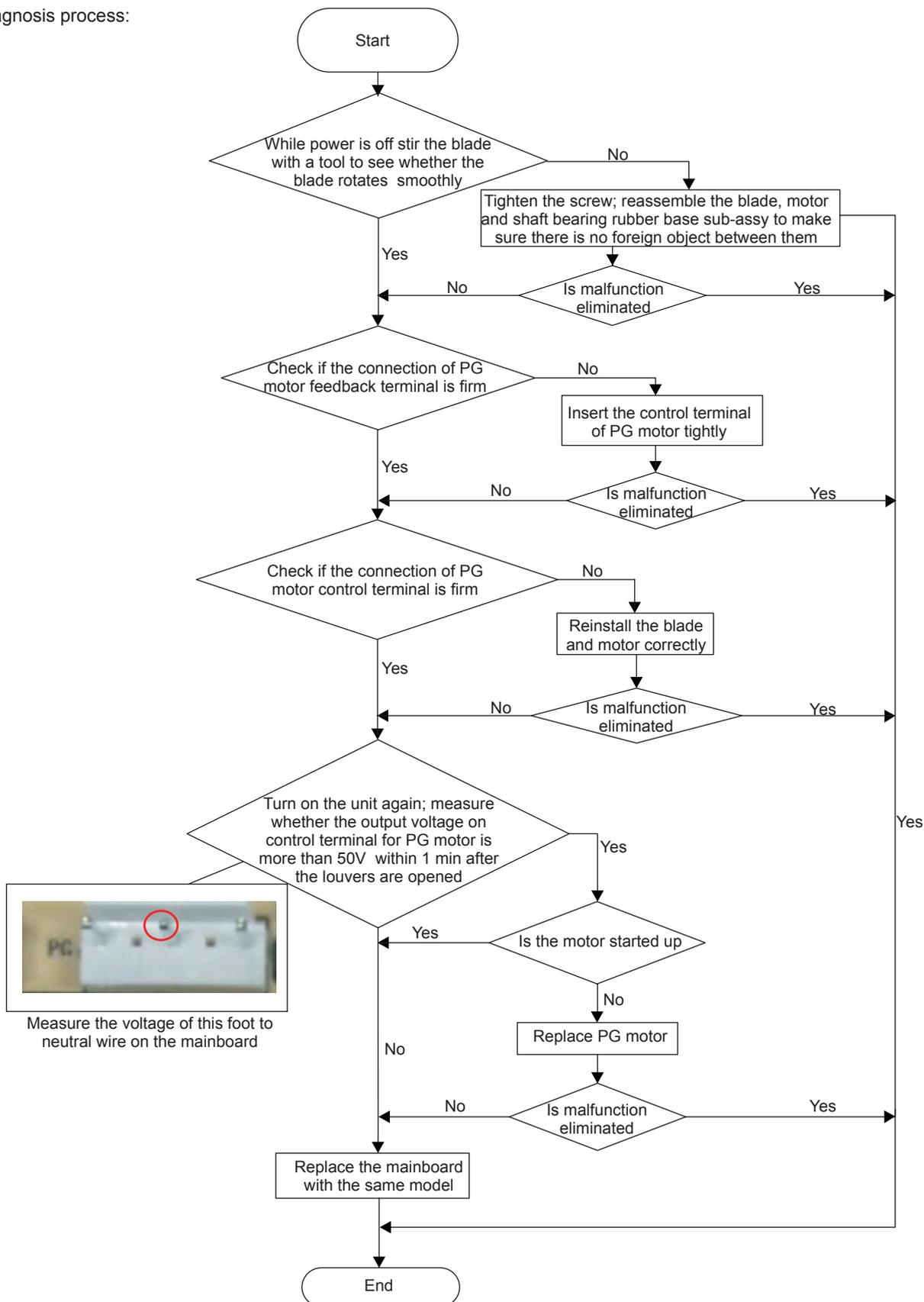
6	Overload malfunction	E8	The entire unit stops.	<ol style="list-style-type: none"> 1. Indoor and outdoor heat exchanger is too dirty? Or air inlet/outlet is blocked? 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor operates normally or not? Is there any abnormal noise or oil leak? Casing is too hot? 4. System is blocked inside? (Dirt blockage? Ice blockage? Oil blockage? Y-valve is not fully open?) 5. Main board temperature sensor detects wrongly.
7	Zero-crossing inspection circuit malfunction of the IDU fan motor	U8	Operation of remote controller or control panel is available, but the unit won't act.	<ol style="list-style-type: none"> 1. Quick de-energization and energization. Wrong judgement by the controller because the electric-discharging of capacitor is slow. 2. Zero-crossing inspection circuit of main board for controller is abnormal.
8	Overload of compressor	H3	The entire unit stops.	<ol style="list-style-type: none"> 1. Outdoor and indoor heat exchangers are too dirty or the air inlet/outlet is blocked. 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor doesn't work normally. Strange noise or leakage occurs. Temperature of the shell is too high. 4. System is blocked inside (dirt block, ice block, oil block, Y-valve not fully open). 5. High pressure switch is abnormal 6. The refrigerant is leaking and causes overheating protection to compressor
9	Lack of refrigerant or block protection for the system or Overload protection compressor	F0	The Dual-8 Code Display will show F0 and the complete unit stops.	<ol style="list-style-type: none"> 1. Refrigerant leakage; 2. Indoor evaporator temperature sensor works abnormally; 3. The unit has been plugged up somewhere; 4. The compressor can't be started up normally. Because the power voltage for the complete unit is too low, and the outdoor working condition is too high.
10	High pressure protection	E1	During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, if it is inverter unit, the complete unit stops; if it is floorstanding unit, the complete unit stops and operation of remote controller or controller is unavailable.	<ol style="list-style-type: none"> 1. The main board and the display panel are not connected well. 2. The HPP terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/outdoor units are blocked. 10. The system pipeline is blocked. 1 11. The gas valve and liquid valve for outdoor unit are not completely opened. 12. The HPP input is at high level.

2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- SmoothlyIs the control terminal of PG motor connected tightly?
- SmoothlyIs the feedback interface of PG motor connected tightly?
- The fan motor cant operate?
- The motor is broken?
- Detectioncircuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

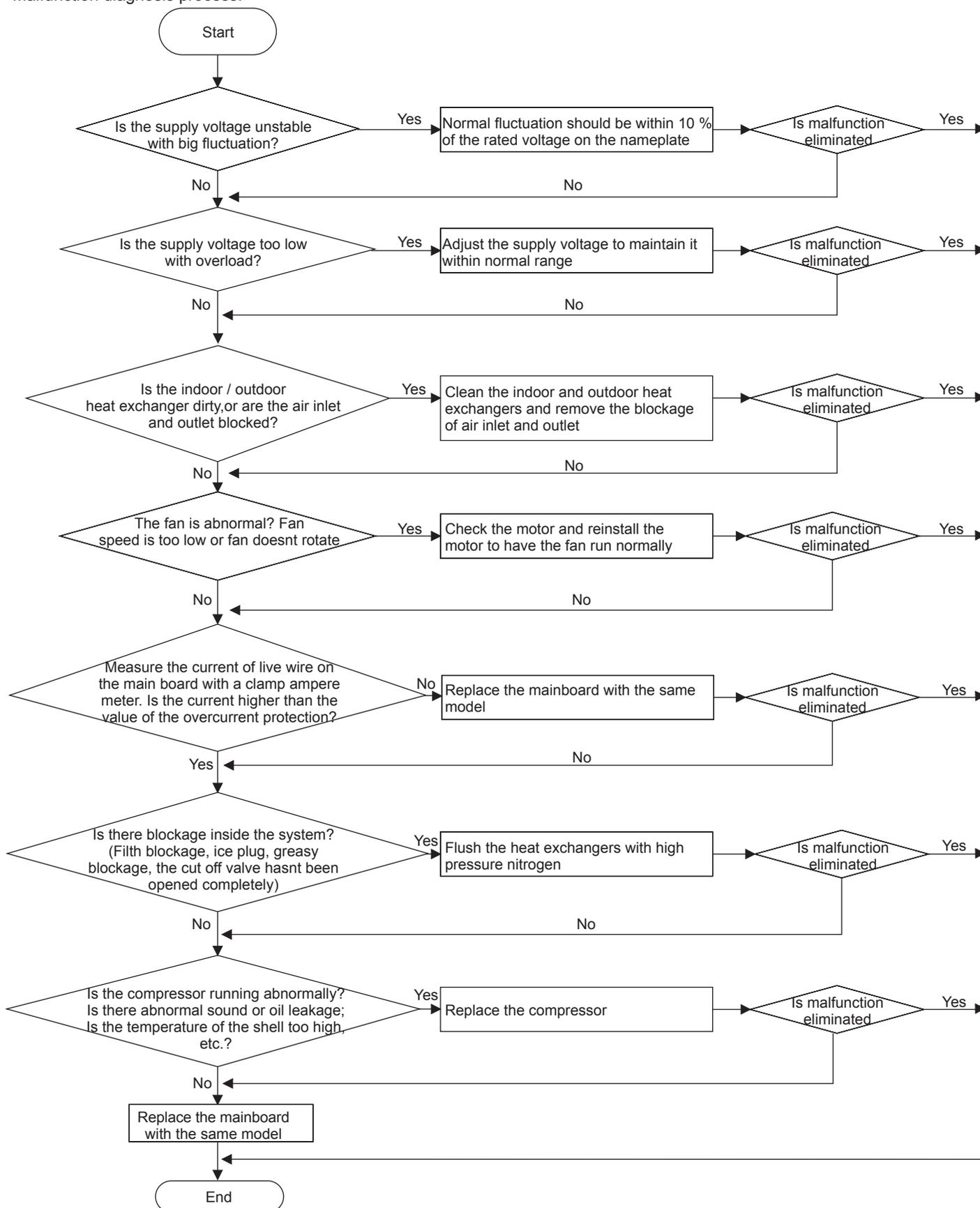


4. Malfunction of Overcurrent Protection E5

Main detection points:

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

Malfunction diagnosis process:

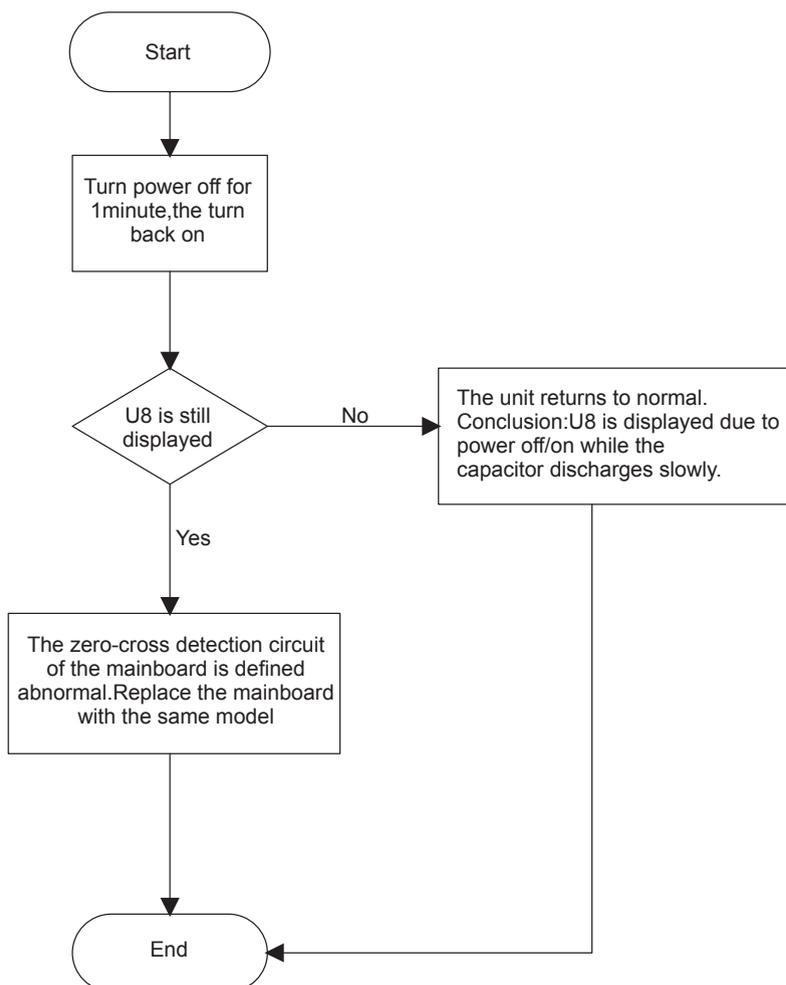


6. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

Main detection points:

- Instant energization after de-energization while the capacitor discharges slowly?
- The zero-cross detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

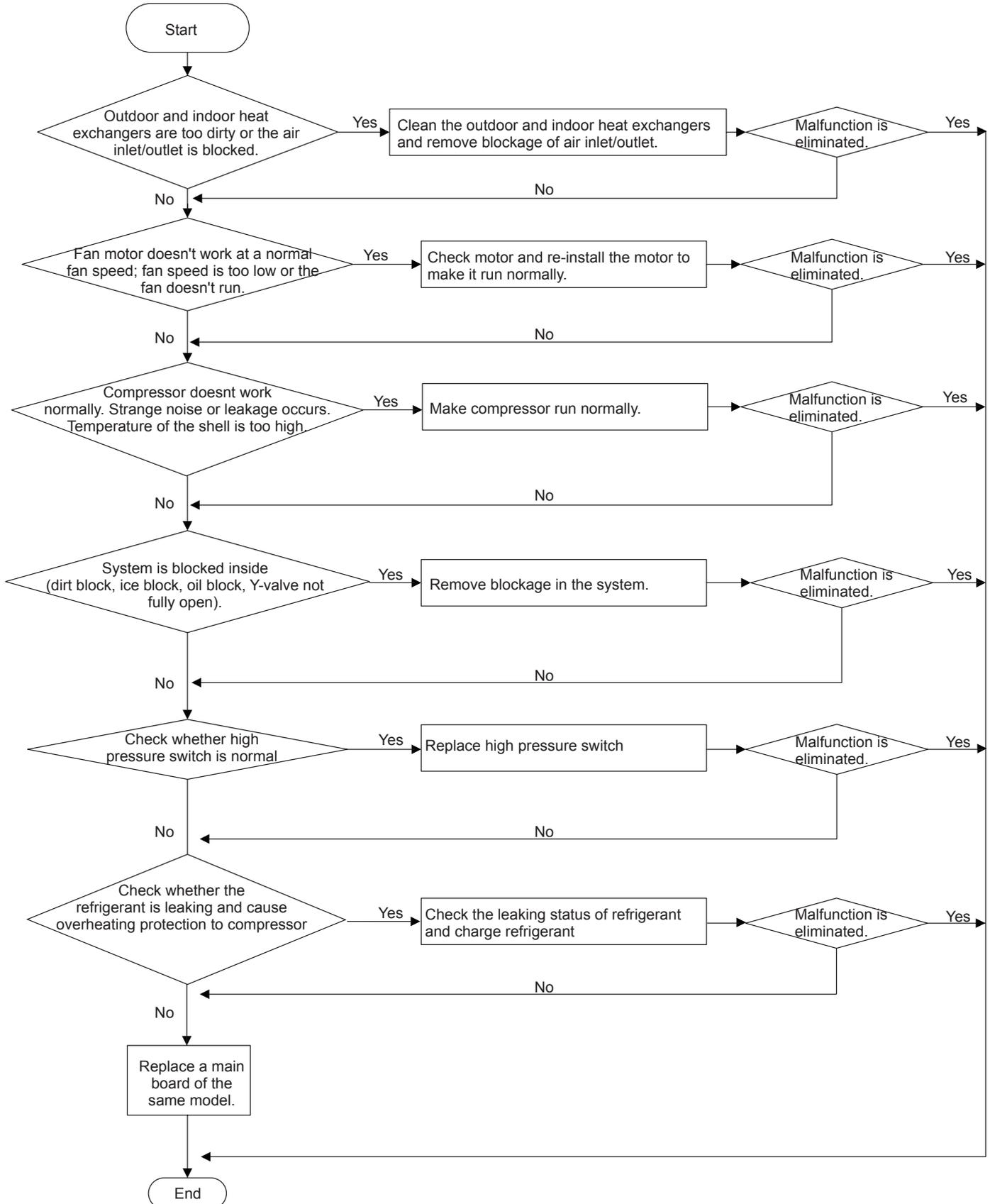


7. Overload Protection Compressor H3

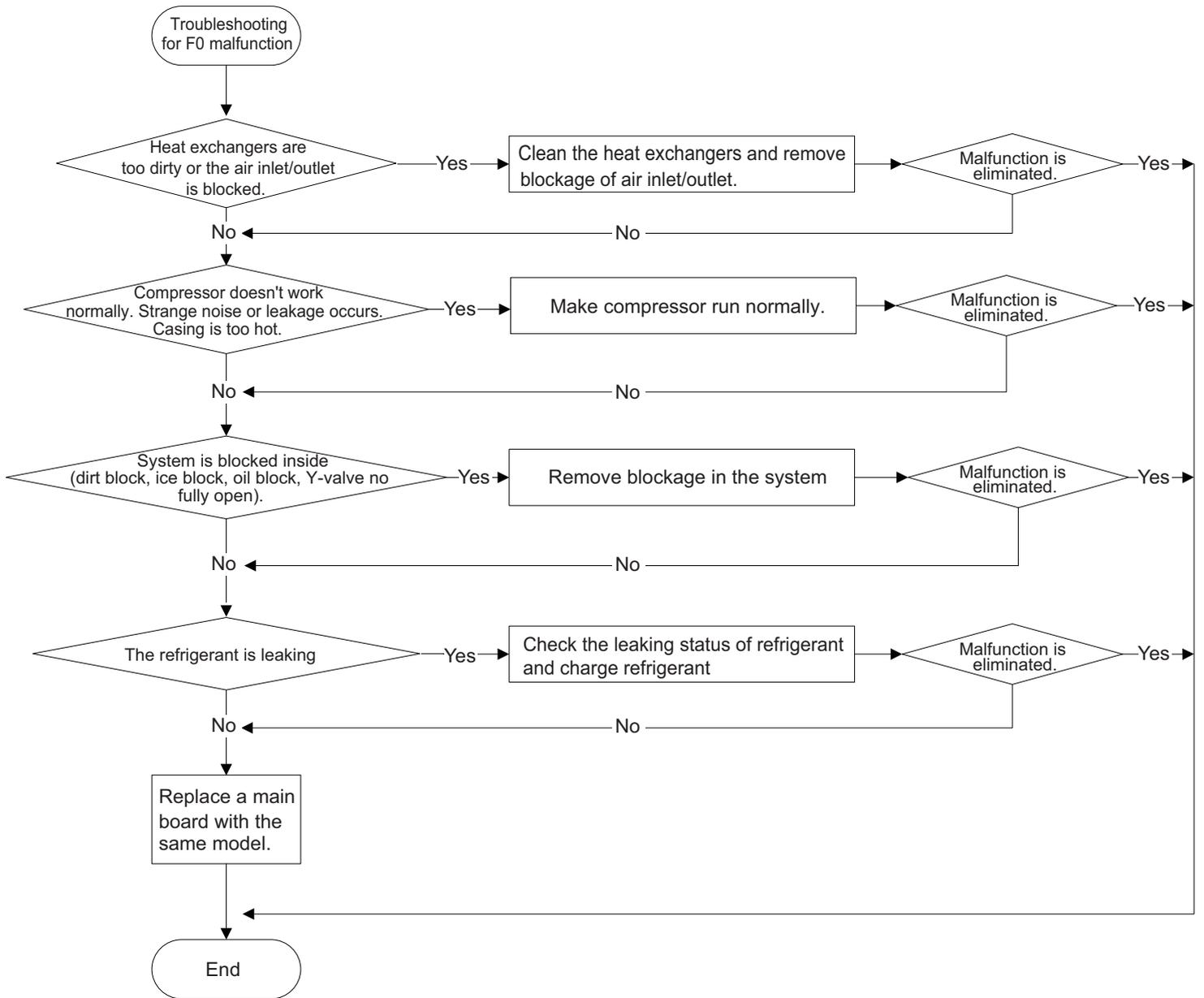
Main detection points:

- 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:



8. Malfunction of Insufficient fluorine protection F0



9.3 Maintenance Method for Normal Malfunction

1. Air Conditioner Cant 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 cant 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 position 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; Unit 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 cant swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor cant operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor cant operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor cant operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Cant 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 cant operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver cant operate	Replace the main board with the same model

4. ODU Fan Motor Cant 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 Cant 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 cant 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.

