

## 9. Troubleshooting

### 9.1 Error Code List

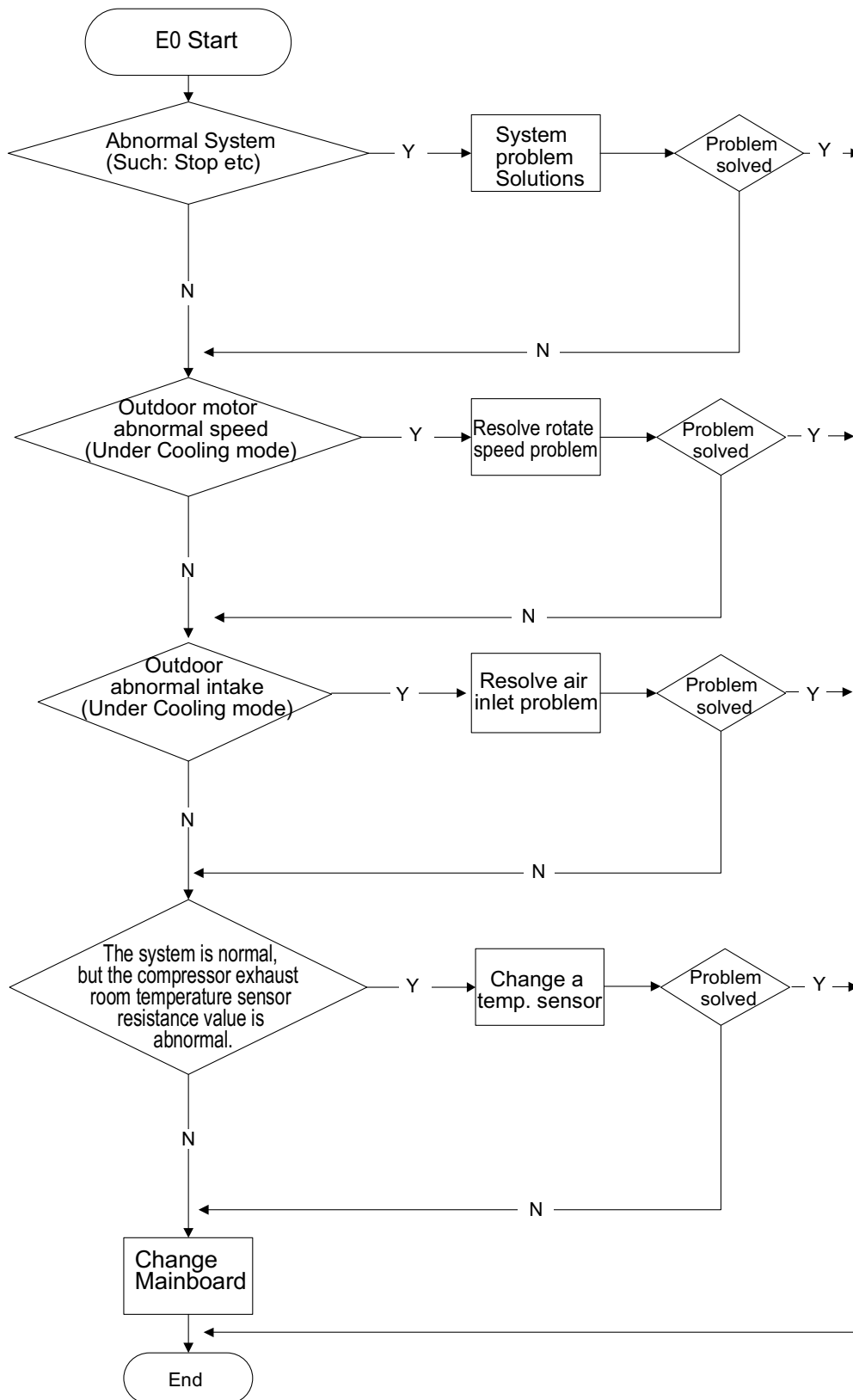
Error Code	Name of malfunction and status	Way of display			Error Type	Possible Causes	Solution
		Display directly	By remote control procedure only	By remote control procedure within compressor stop 200s or directly after compressor stop 200s			
CL	Filter cleaning reminder	√			Indoor	Filter may have dust	Clean the filter
d0	Compressor RMS phase current limit down		√		Outdoor	Compressor phase current effective value is too high, the compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function.
d1	RMS machine current limit down		√		Outdoor	The whole unit current effective value is too high, compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function.
d2	Exhaust gas temperature limit down		√		Outdoor	The Exhaust pipe temperature is too high, compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function.
d3	Anti-freeze limit down		√		Outdoor	The inner pipe temperature is too low, compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function.
d4	Overload limit down		√		Outdoor	The system is overload, compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function.
d5	IPM temp limit down		√		Outdoor	The compressor module temperature is too high, compressor need to limit the frequency or frequency reduction operation	The normal limit frequency reduction function
E0	High discharge temp protection			√	Outdoor	See Diagram 1	See Diagram 1
E1	Overload protection			√	Outdoor	See Diagram 2	See Diagram 2
E2	Compressor overload protection			√	Outdoor	See Diagram 3	See Diagram 3
E3	Anti-freeze protection			√	Outdoor	1. Indoor machine return air is not smooth. 2. The fan speed is too low. 3. The filter or evaporator not clean. 4. The inner temperature sensor abnormal.	1. Indoor machine return air is not smooth. 2. The fan speed is too low. 3. The filter or evaporator not clean. 4. Change the temperature sensor abnormal.
E7	4 way valve malfunction			√	Outdoor	1. Supply voltage is unstable 2. Mainboard and 4-Way valve unconnected. 3. 4-Way valve is broken.	1. Check the voltage of power supply. 2. Check the connecting of mainboard and 4-way valve. 3. Change the 4-Way valve.
E8	Outdoor ambient temperature abnormal protection		√		Outdoor	1. The outdoor environment temperature is too high or too low. 2. The outdoor environment temperature sensor is damage.	1. The outdoor environment temperature is in normal range. 2. Change the temperature sensor.
H0	Compressor stalling			√	Outdoor	See Diagram 4	See Diagram 4
H1	Start up failure			√	Outdoor	See Diagram 5	See Diagram 5

H2	Compressor phase current peak protection			√	Outdoor	See Diagram 6	See Diagram 6
H3	Compressor phase current RMS protection			√	Outdoor	See Diagram 7	See Diagram 7
H4	IPM protection			√	Outdoor	See Diagram 8	See Diagram 8
H5	IPM overheat protection			√	Outdoor	1. The radiator ventilation is abnormal 2. IPM module thermal paste dry solid or screw loose 3. the mainboard is damage	1. Check the radiator ventilation is normal 2. Check the IPM module thermal paste dry solid or screw loose is normal 3. Change the main board
H6	Compressor phase circuit detection error	√			Outdoor	the mainboard is broken	change the mainboard
H7	Compressor phase loss error			√	Outdoor	1.mainboard and compressor unconnected 2.the mainboard is broken	1.check the connecting of mainboard and compressor 2.change the mainboard
H8	Outdoor DC fan motor error			√	Outdoor	1.Outdoor motor fan is blocked 2.mainboard and DC fan motor unconnected 3.the mainboard is broken 4.DC fan motor is broken	1.remove the block 2.check the connecting of mainboard and DC fan motor 3.change the mainboard 4.change the DC fan motor
H9	Outdoor DC fan motor phase current detection circuit error	√			Outdoor	The mainboard is broken	Change the mainboard
L0	Jumper error	√			Indoor	See Diagram 9	See Diagram 9
L1	PG Indoor motor zero crossing detecting circuit malfunction	√			Indoor	The mainboard is broken	Change the mainboard
L2	Indoor fan motor error	√			Indoor	See Diagram 10	See Diagram 10
L3	Indoor display communication between Indoor and Outdoor failure	√			Indoor	See Diagram 11	See Diagram 11
L4	Select the port level abnormal error		√		Indoor	The mainboard is broken	Change the mainboard
L5	Indoor EEPROM error		√		Indoor	See Diagram	See Diagram
L6	Outdoor display communication between Indoor and Outdoor failure	√			Outdoor	See Diagram 12	See Diagram 12
LL	Trial running		√		Indoor	Normal Function	Normal Function
P0	Outdoor EEPROM error	√			Outdoor	1.EEPROM chip(U8)loose. 2.The mainboard is broken.	1.Check the EEPROM chip(U8)is fixed. 2.Change the mainboard.
P1	Power On failure \ Chaging circuit error	√			Outdoor	1.The voltage of power supply is too low. 2.The mainboard is broken.	1.Check the voltage of power supply. 2.Change the mainboard.
P2	Alternating current protection \ Feedforward voltage protection			√	Outdoor	1.The voltage of power supply is too low. 2.The mainboard is broken	1.Check the voltage of power supply. 2.Change the mainboard.
P3	High voltage protection			√	outdoor	1.The voltage of power supply is too high. 2.The mainboard is broken.	1.Check the voltage of power supply. 2.Change the mainboard.
P4	Low voltage protection			√	Outdoor	1.The voltage of power supply is too low. 2.The mainboard is broken.	1.Check the voltage of power supply. 2.Change the mainboard.
P5	DC line voltage drop protection			√	Outdoor	1.The voltage of power supply is unstable. 2.The mainboard is broken.	1.Check the voltage of power supply. 2.Change the mainboard.
P6	Machine current detection circuit error	√			Outdoor	1.Refrigerant leakage. 2.The mainboard is broken.	1.Check the refrigerant leakage. 2.Change the mainboard.
P7	Over-current protection			√	Outdoor	See Diagram 13	See Diagram 13
P8	PFC current detection circuit error	√			Outdoor	The mainboard is broken	Change the mainboard
P9	PFC protection			√	Outdoor	See Diagram 14	See Diagram 14

PA	Indoor and outdoor mismatch	√			Outdoor	1. The outdoor unit valve is close. 2. The refrigerant connecting pipe installation errors. 3. The inside and outside the machine connecting wiring error. 4. The refrigerant connecting pipe with the connection order sequence.	1. Check the outdoor unit valve is open. 2. The refrigerant connecting pipe installation errors. 3. Check the inside and outside the machine connecting wiring is correct. 4. Check the refrigerant connecting pipe with the connection is in order sequence.
PC	Mode conflict	√			Outdoor	Failure in indoor model conflicts with the operation mode of the outdoor unit.	Power off or change the failure in indoor unit mode to non-conflicts mode.
U0	Indoor ambient temp sensor short/open	√			Indoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U1	Indoor mid pipe temp sensor short/open	√			Indoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U2	Outdoor ambient temp sensor short/open	√			Outdoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U3	Outdoor mid-coil temp sensor short/open	√			Outdoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U4	Outdoor pipe temp sensor short/open	√			Outdoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U5	IPM temp sensor short/open	√			Outdoor	The IPM temp sensor is broken.	Change the mainboard.
U6	Liquid pipe outlet temp sensor short/open	√			Outdoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U7	Gas pipe outlet temp sensor short/open	√			Outdoor	1.The wiring terminal between the temperature sensor and the mainboard loosened or poorly contacted. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the wiring terminal. 2.Change the sensor. 3.Change the mainboard.
U8	Discharge temp sensor short/open	√			Outdoor	1.Outdoor pipe temp sensor is not in the right position. 2.The sensor is broken. 3.The mainboard is broken.	1.Check the sensor position. 2.Change the sensor. 3.Change the mainboard.

## 9.2 Procedure of Troubleshooting

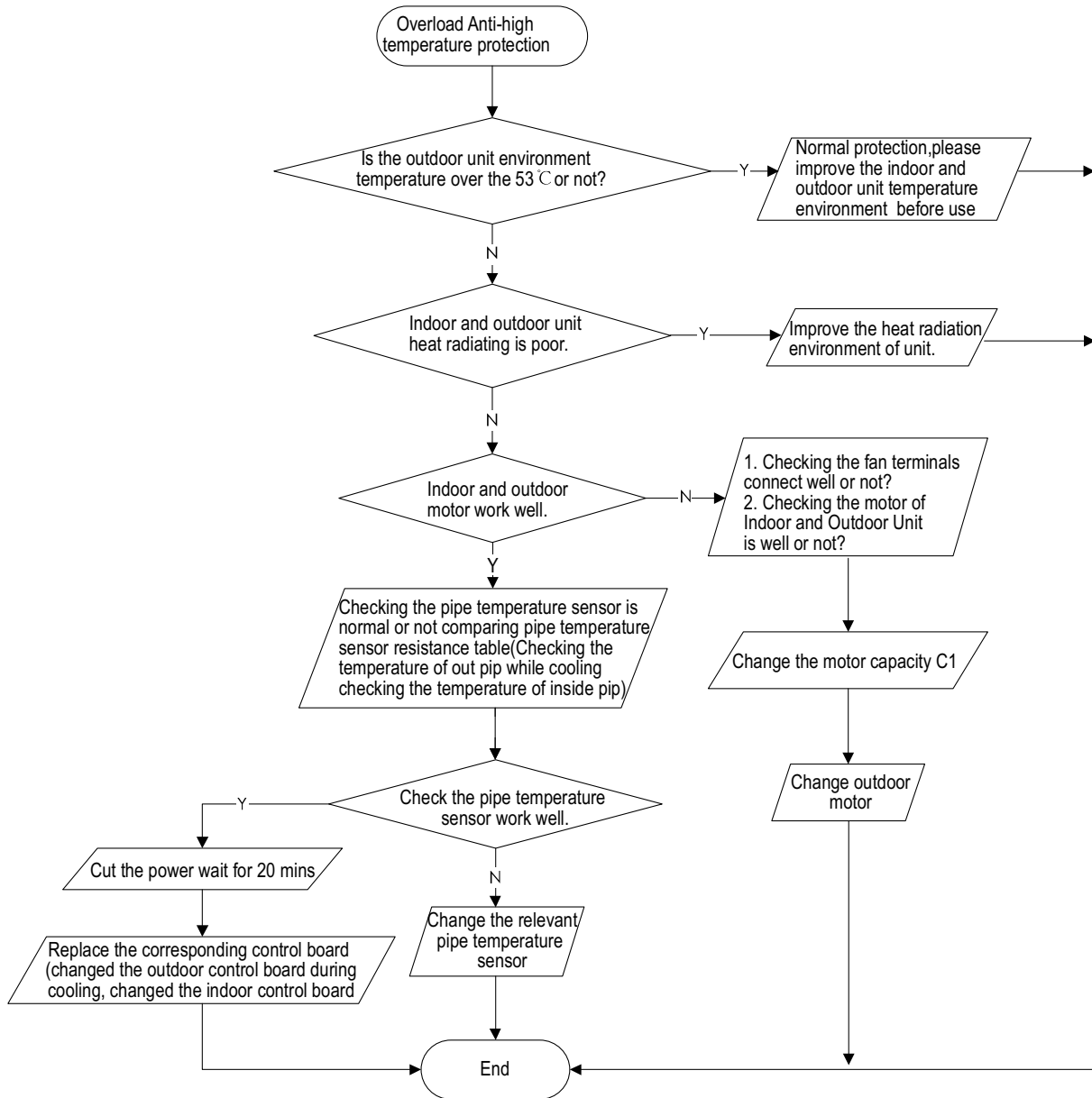
Diagram 1:



## Diagram 2:

Main test points:

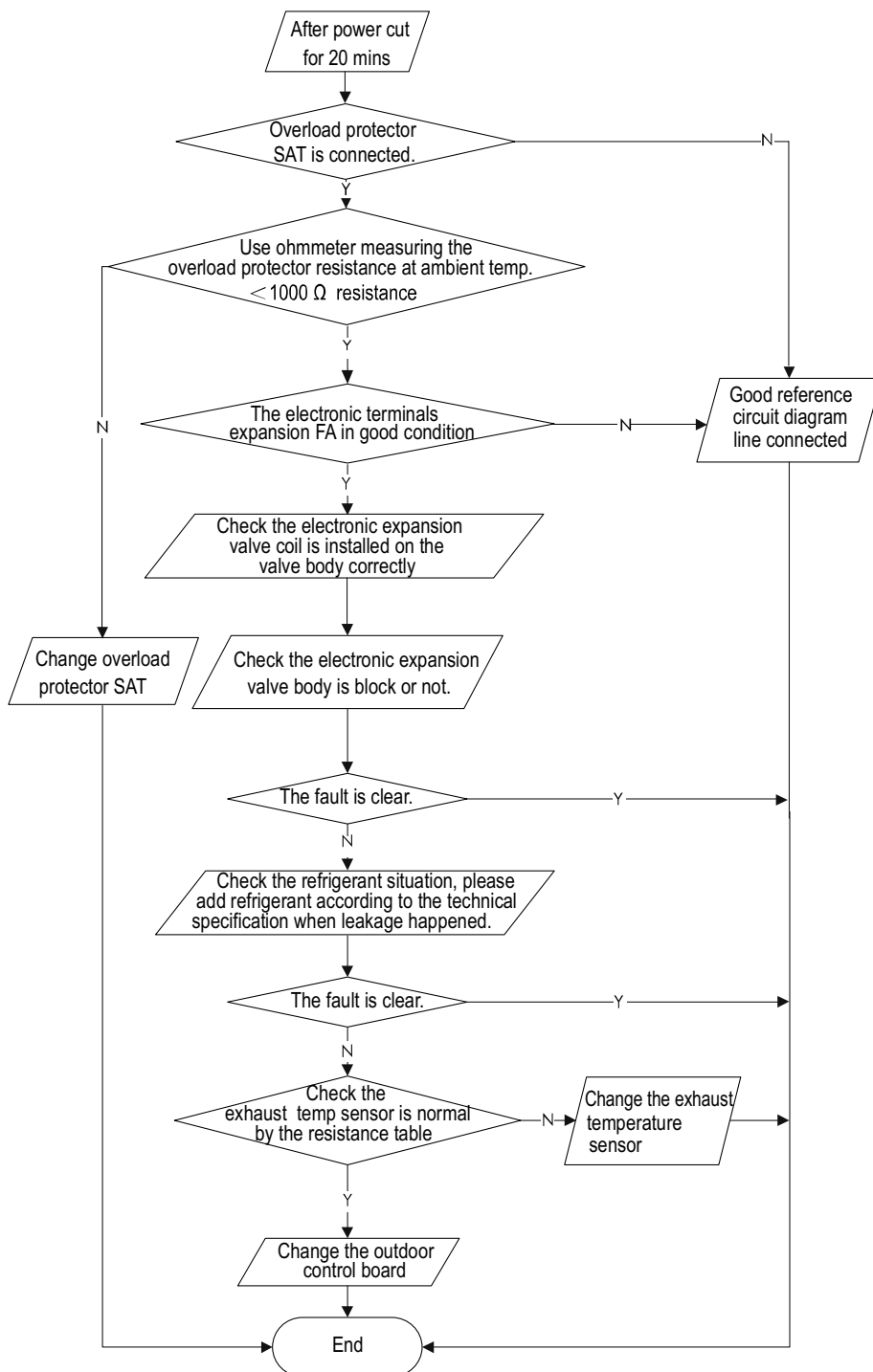
- Is the temperature of Indoor and Outdoor Unit too high?
- Is the fan of Indoor and Outdoor Unit operating normal?
- Is the radiating of Indoor and Outdoor Unit well(Including the fan speed is lower or not )?
- Is the pipe temperature sensor normal?



### Diagram 3:

Main test points:

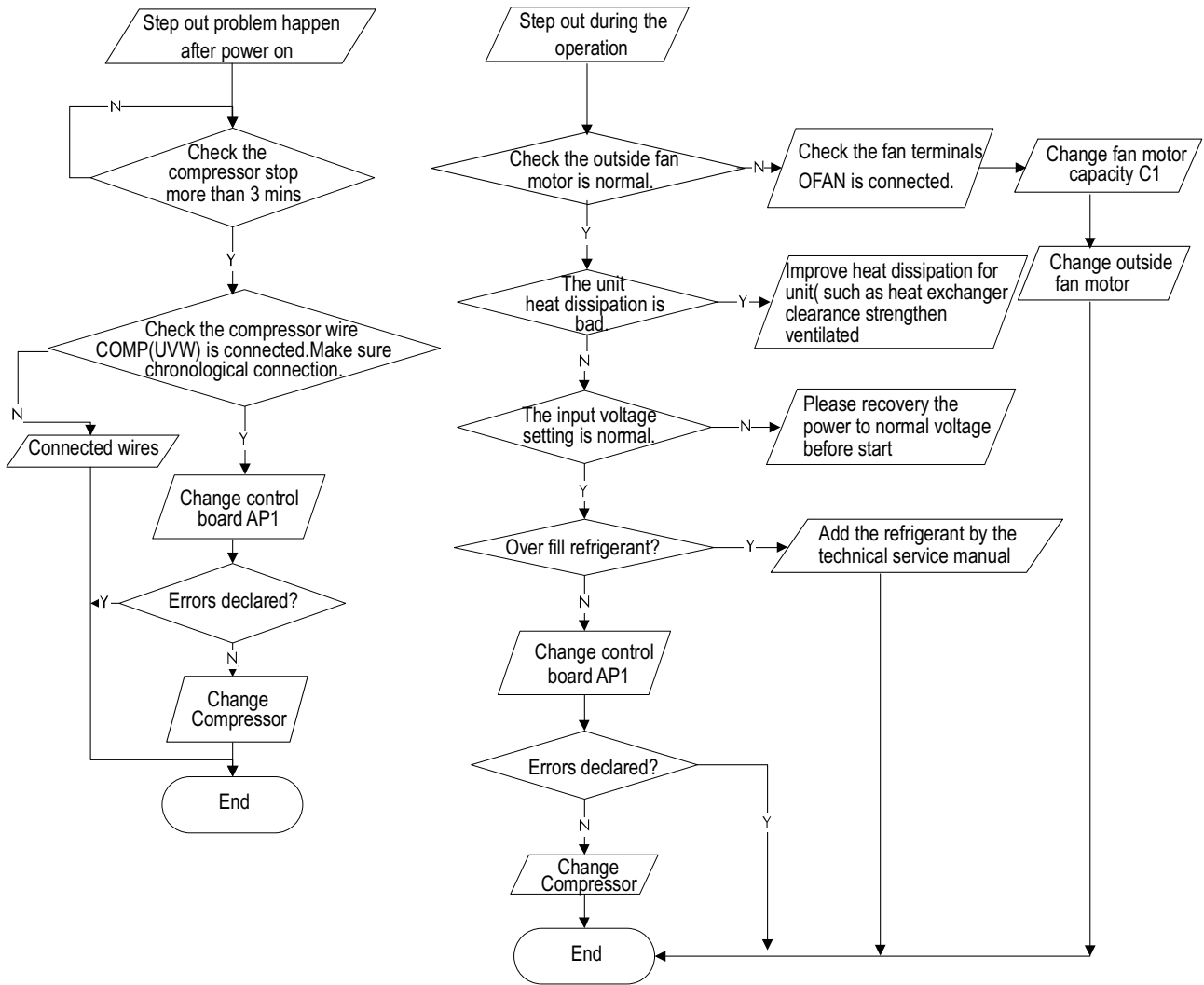
- Check the electronic expansion valve is connected.
- Check the electronic expansion valve is in good condition.
- Check the refrigerant leakage or not.
- Check the overload protector is in good condition.
- Check the pipe temperature sensor is in good condition.



### Diagram 4:

Main test points:

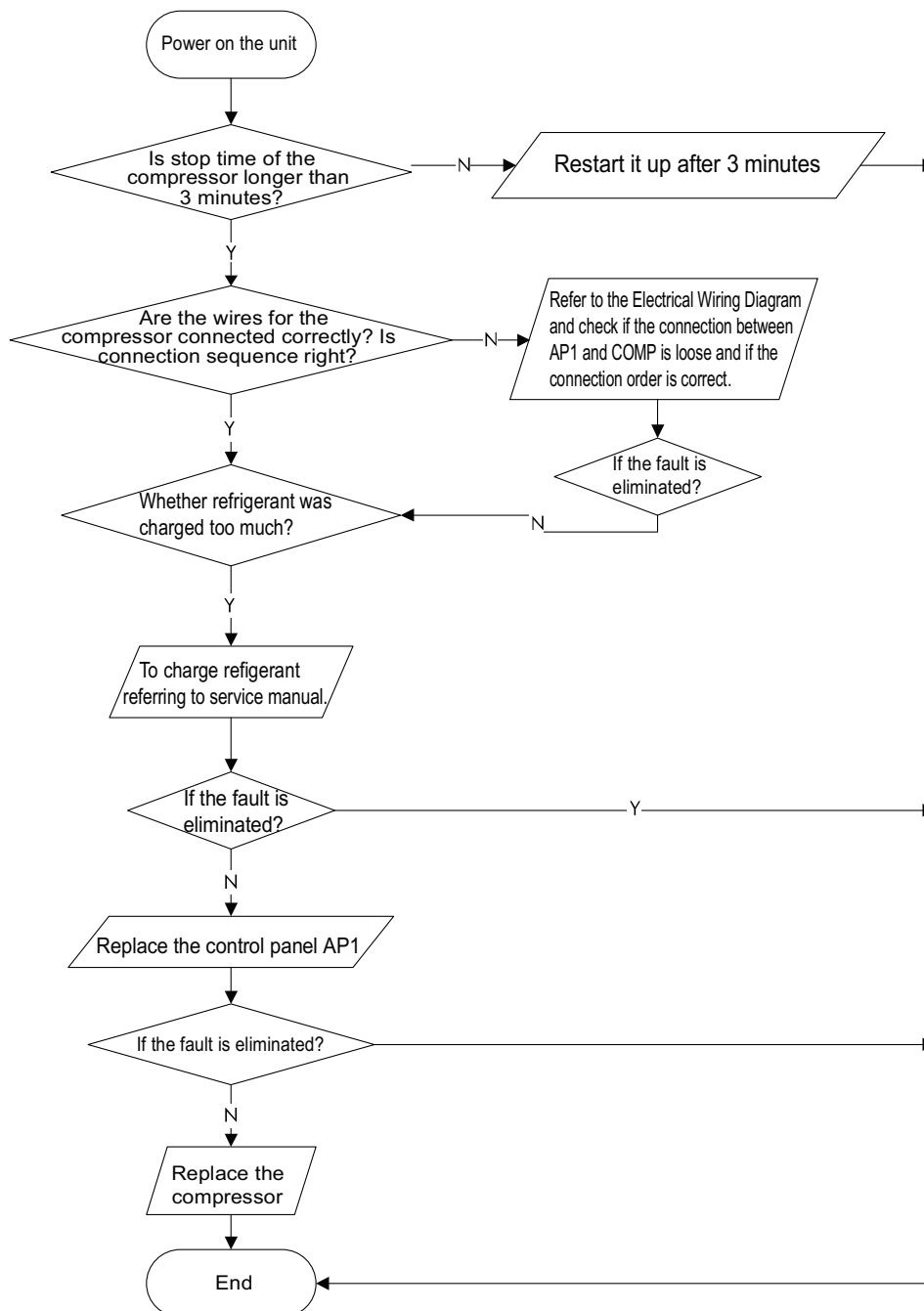
- Check the system pressure is high.
- Check the voltage is low.



**Diagram 5:**

Main test points:

- Whether the compressor wiring is connected correct?
- Is compressor broken?
- Is time for compressor stopping enough?
- Whether refrigerant was charged too much?



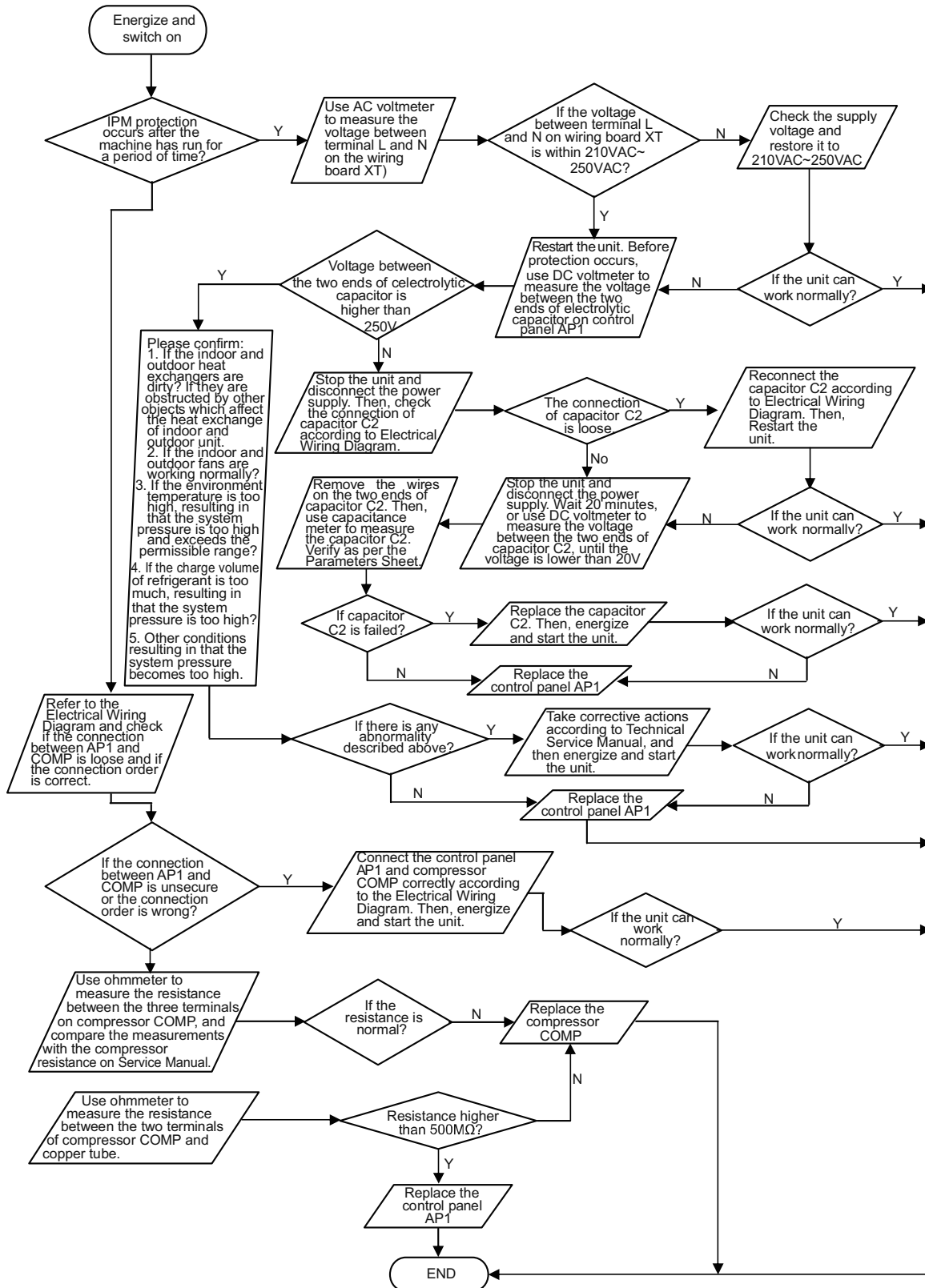


### Diagram 6 , 7, 8:

Main check points:

- Is the connection between control panel AP1 and compressor COMP secure? Loose? Is the connection in correct order?
- Is the voltage input of the machine within normal range? (Use AC voltmeter to measure the voltage between terminal L and N on the wiring board XT)
- Is the compressor coil resistance normal? Is the insulation of compressor coil against the copper tube in good condition?
- Is the working load of the machine too high? Is the radiation good?
- Is the charge volume of refrigerant correct?

Fault diagnosis process:

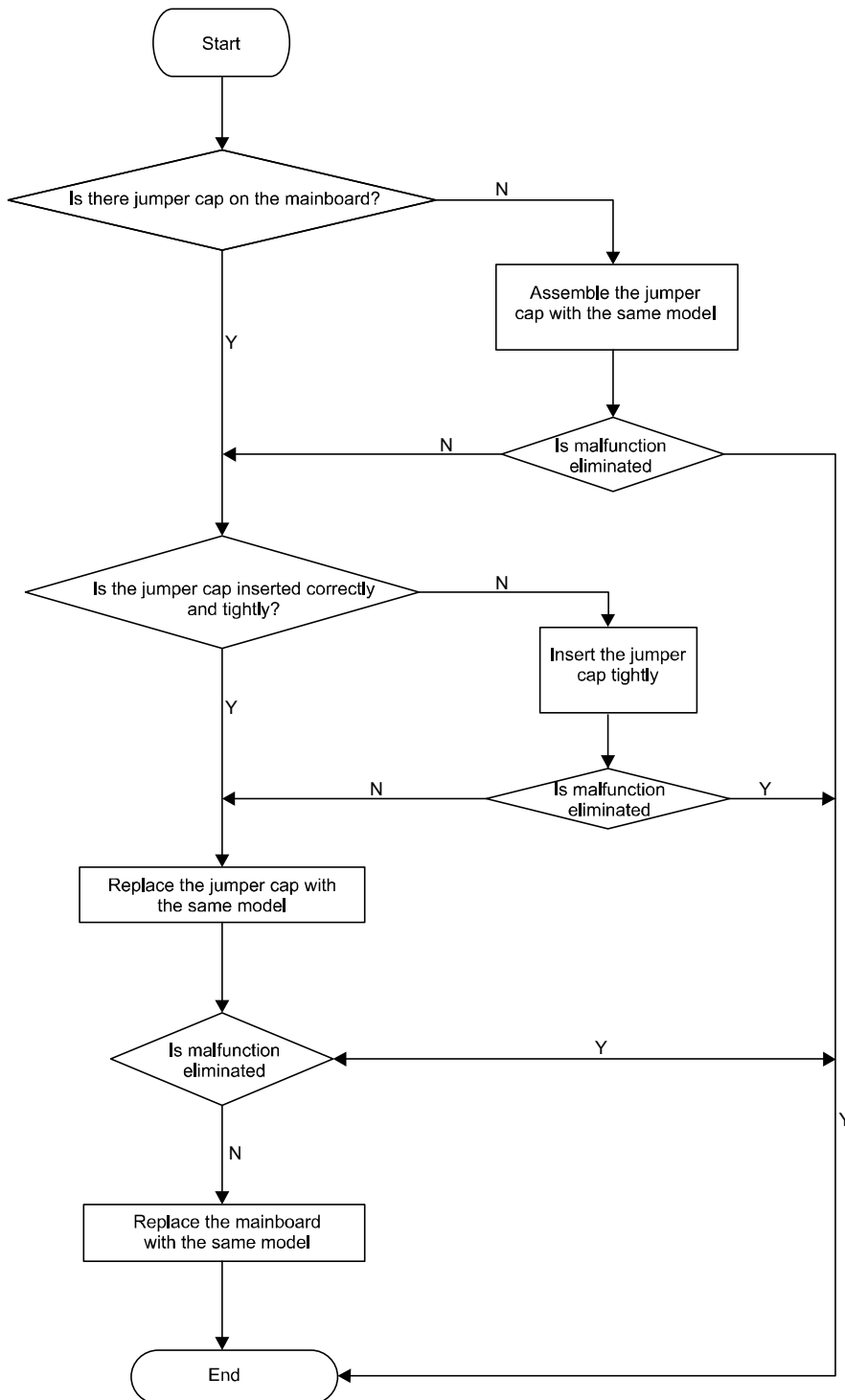


### Diagram 9:

Main detection points:

- Is there jumper cap on the main board?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal.

Malfunction diagnosis process:



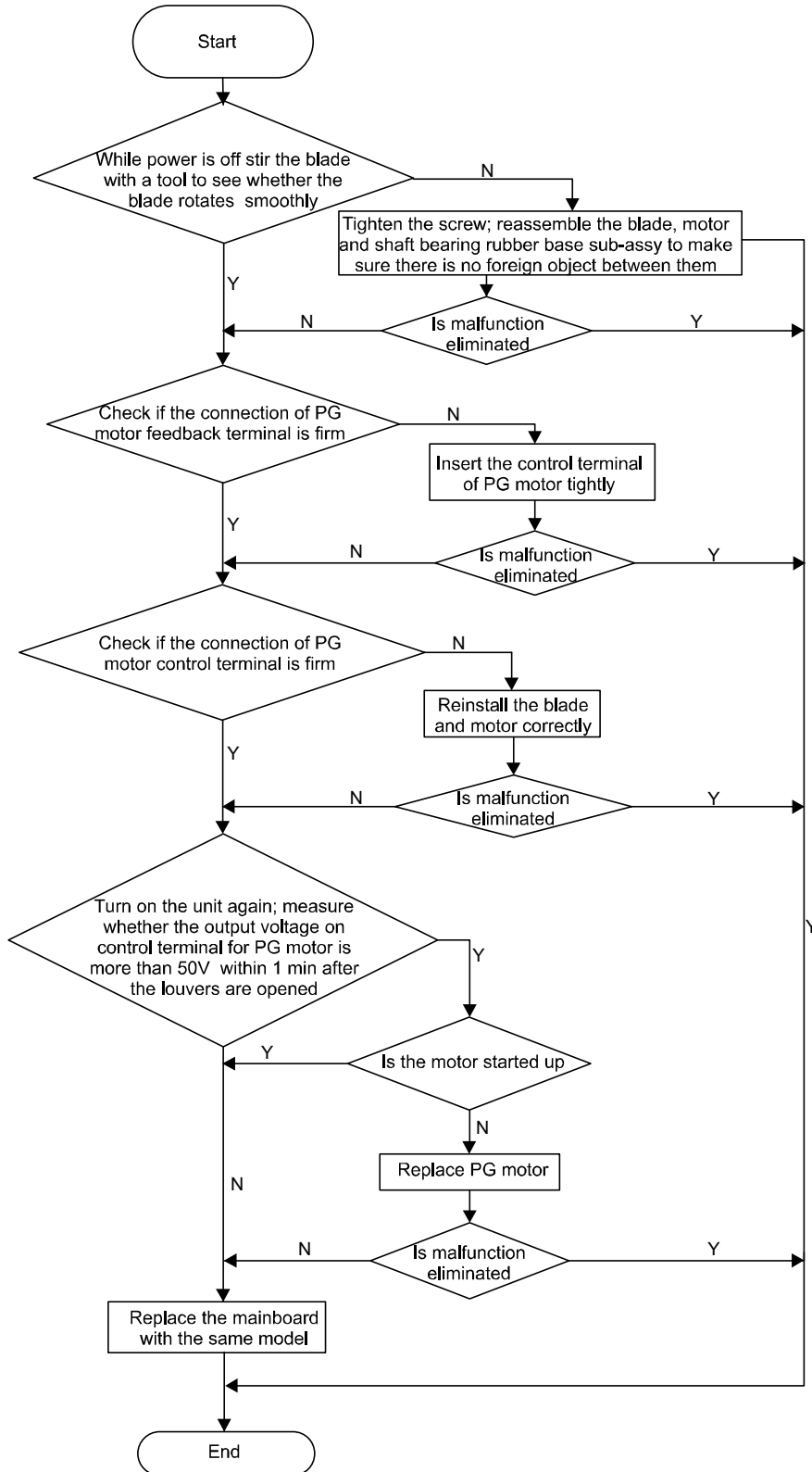
**Diagram 10:**

Malfunction of Blocked Protection of IDU Fan Motor L2

Main detection points:

- Smoothly Is the control terminal of PG motor connected tightly?
- Smoothly Is the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal

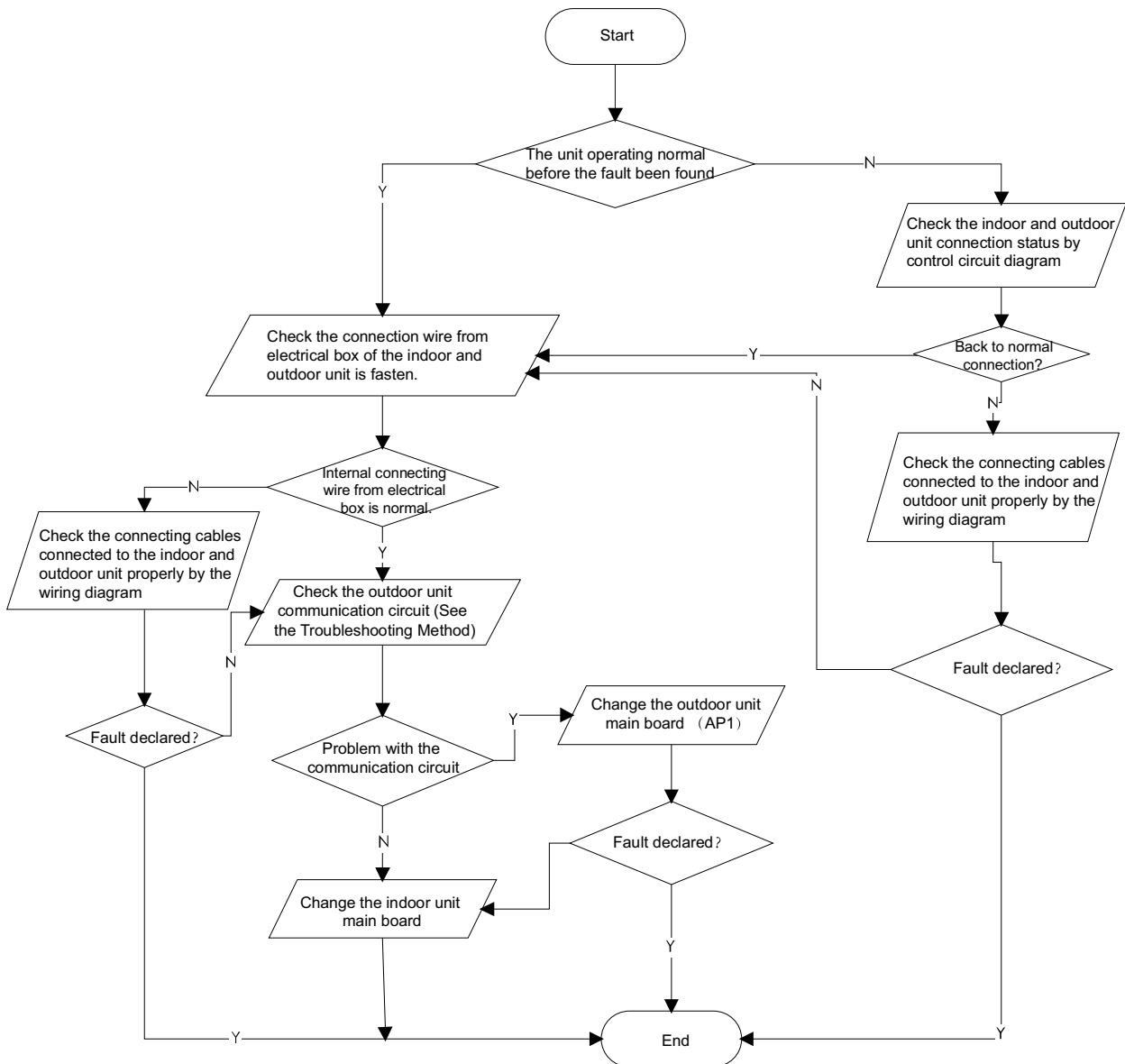
Malfunction diagnosis process:



**Diagram 11:**

Main check points:

- Test the indoor and outdoor unit connection wire and internal wiring is connected or in good condition.
- Check the indoor unit main board communication circuit and outdoor unit main board communication circuit (AP1) are in good condition.



### Diagram 12:

Outdoor unit communication circuit detection process as follows ( outdoor unit key test points)

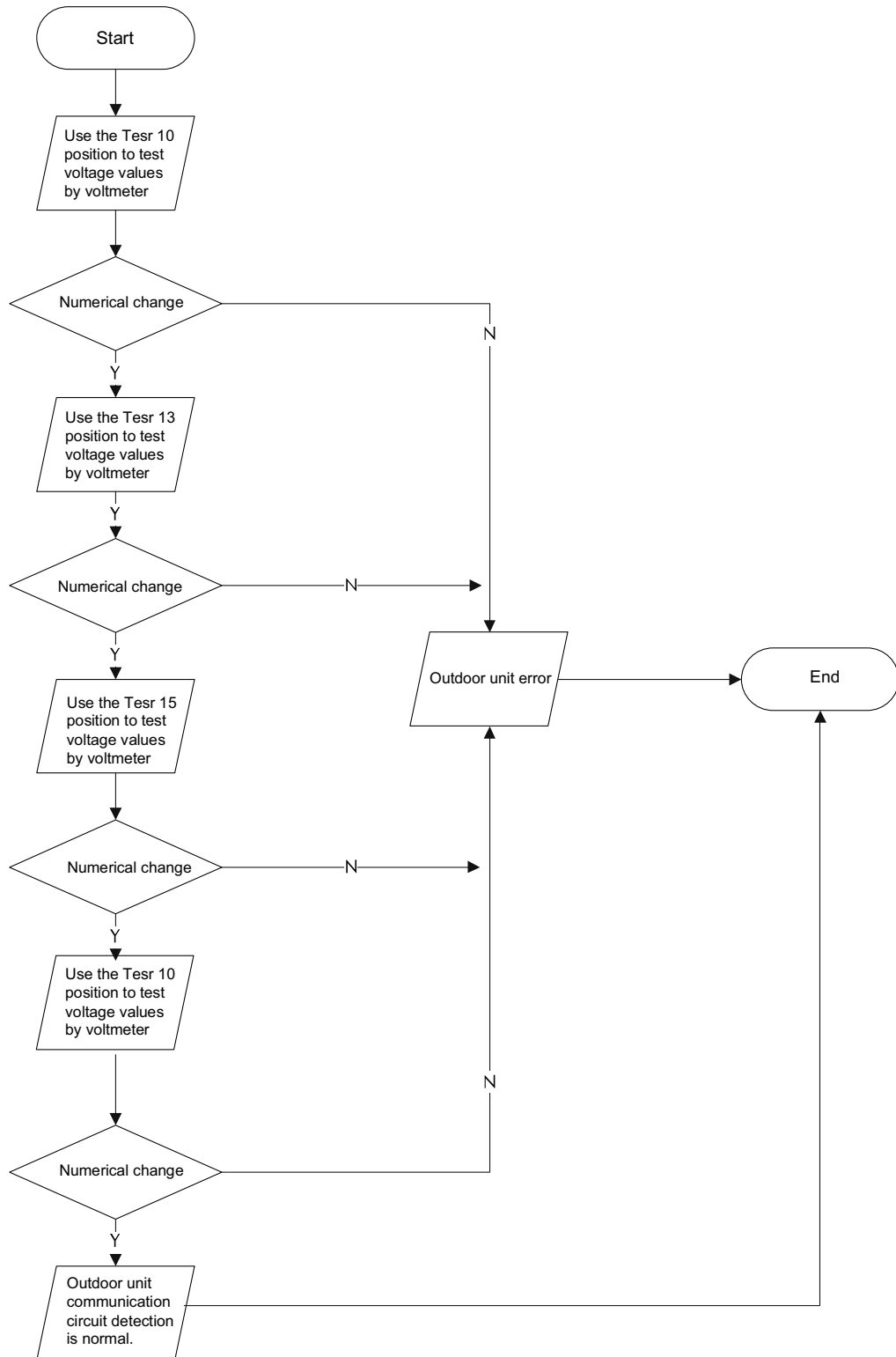
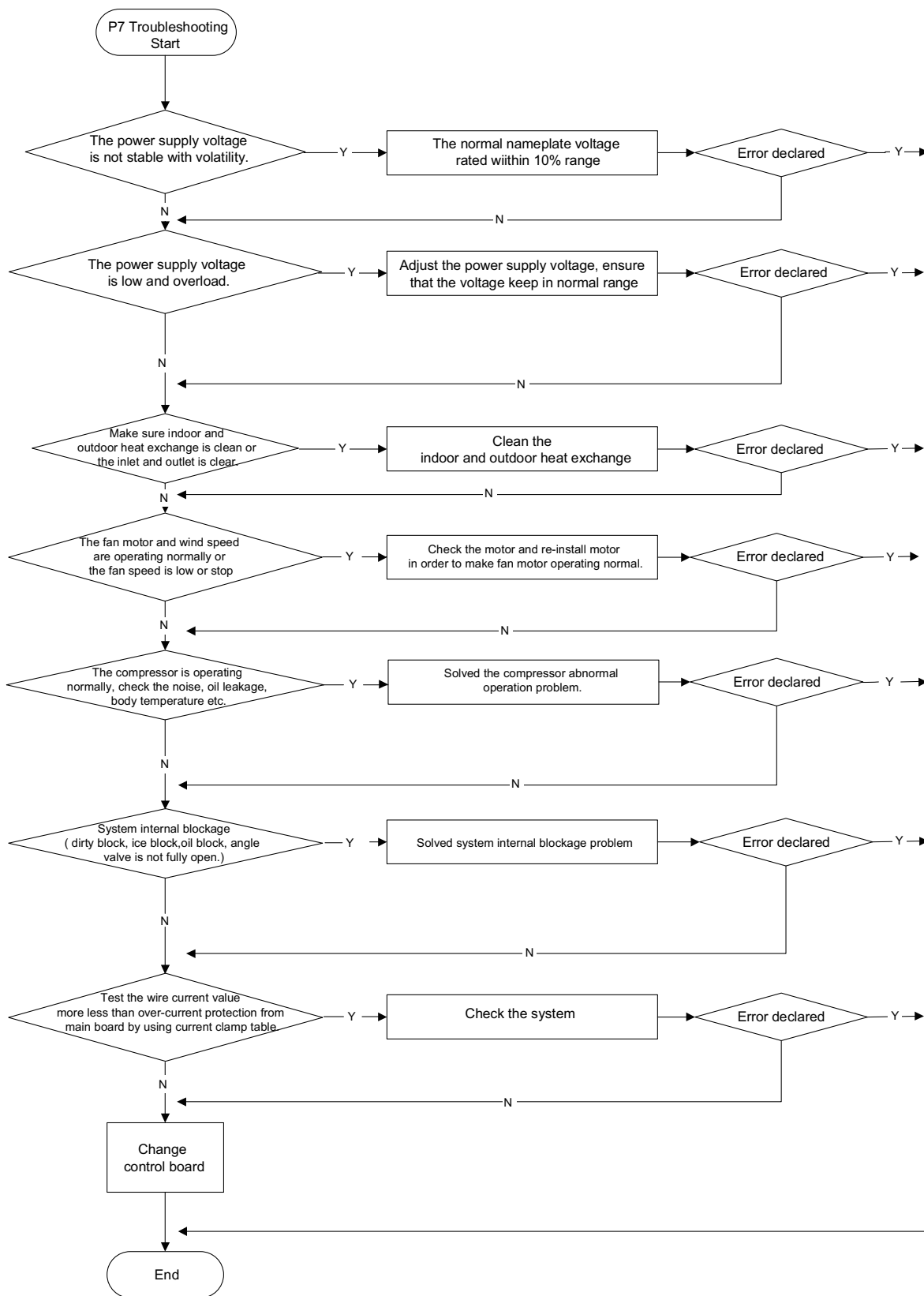


Diagram 13:



### Diagram 14:

Power factor correct (PFC) fault P9 (a fault of outdoor unit) (AP1 here in after refers to the control board of the outdoor unit)

Mainly detect:

- Check if the reactor (L) of the outdoor unit and the PFC capacitor are broken.

Fault diagnosis process:

