

## 9. Troubleshooting

### 9.1 Precautions before Performing Inspection or Repair

Be cautious during installation and maintenance. Do operation following the regulations to avoid electric shock and casualty or even death due to drop from high altitude.

\* Static maintenance is the maintenance during de-energization of the air conditioner. For static maintenance, make sure that the unit is de-energized and the plug is disconnected.

\* Dynamic maintenance is the maintenance during energization of the unit. Before dynamic maintenance, check the electricity and ensure that there is ground wire on the site. Check if there is electricity on the housing and connection copper pipe of the air conditioner with voltage tester. After ensure insulation place and the safety, the maintenance can be performed. Take sufficient care to avoid directly touching any of the circuit parts without first turning off the power.

At times such as when the circuit board is to be replaced, place the circuit board assembly in a vertical position.

Normally, diagnose troubles according to the trouble diagnosis procedure as described below. (Refer to the check points in servicing written on the wiring diagrams attached to the indoor/outdoor units.)

NO.	Troubleshooting procedure
1	Confirmation
2	Judgement by Flashing LED of Indoor/Outdoor Unit
3	How to Check simply the main part

### 9.2 Confirmation

(1)Confirmation of Power Supply

Confirm that the power breaker operates(ON) normally;

(2)Confirmation of Power Voltage

Confirm that power voltage is AC 220-230-240 ±10%. If power voltage is not in this range, the unit may not operate normally.

### 9.3 Flashing LED of Indoor/Outdoor Unit and Primary Judgement

Malfunction and mode display sheet						
Malfunction name	Malfunction type	Double 8	Display of indicator			
			Operation indicator	Cooling indicator	Heating indicator	
Zero-cross detection circuit malfunction	Hardware malfunction	U8	blinks 17 times			
Malfunction protection of jumper cap	Hardware malfunction	C5	blinks 15 times			
No feedback of indoor motor	Hardware malfunction	H6	blinks 11 times			
Indoor ambient temperature sensor is open/short- circuited	Hardware malfunction	F1		blinks 1 times		
Indoor evaporator temperature sensor is open/short-circuited	Hardware malfunction	F2		blinks 2 times		
Liquid valve temperature sensor is open/short-circuited	Hardware malfunction	b5		blinks 19 times		
Gas valve temperature sensor is open/short-circuited	Hardware malfunction	b7		blinks 22 times		
Module temperature sensor is open/short-circuited	Hardware malfunction	P7			blinks 18 times	
Outdoor ambient temperature sensor is open/short- circuited	Hardware malfunction	F3		blinks 3 times		
Outdoor condenser inlet pipe temperature sensor is open/short- circuited	Hardware malfunction	A5				
Outdoor condenser middle pipe temperature sensor is open/short- circuited	Hardware malfunction	F4		blinks 4 times		
Outdoor condenser outlet pipe temperature sensor is open/short- circuited	Hardware malfunction	A7	/	/	/	
Outdoor discharge temperature sensor is open/short- circuited	Hardware malfunction	F5		blinks 5 times		

Communication malfunction of indoor unit and outdoor unit	Hardware malfunction	E6	blinks 6 times		
Compressor phase current circuit detection malfunction	Hardware malfunction	U1			blinks 12 times
Compressor demagnetization protection	Hardware malfunction	HE			blinks 14 times
DC busbar voltage drop malfunction	Hardware malfunction	U3			blinks 20 times
Module temperature protection	Hardware malfunction	P8			blinks 19 times
shortage of freon or blockage protection for the system	Hardware malfunction	F0		blinks 10 times	
Capacitor charging malfunction	Hardware malfunction	PU			blinks 17 times
High voltage protection for the system	Hardware malfunction	E1	blinks 1 times		
Low voltage protection for the system	Hardware malfunction	E3	blinks 3 times		
Compressor blockage	Hardware malfunction	LE	/	/	/
Drive module reset	Hardware malfunction	P0	/	/	/
Overspeed	Hardware malfunction	LF	/	/	/
Drive board ambient temperature sensor malfunction	Hardware malfunction	PF	/	/	/
AC contactor protection	Hardware malfunction	P9	/	/	/
Temperature drift protection	Hardware malfunction	PE	/	/	/
Sensor connection protection	Hardware malfunction	Pd	/	/	/
Drive board communication malfunction	Hardware malfunction	P6	blinks 16 times		
Compressor heat overload protection	Hardware malfunction	H3			blinks 3 times
Indoor unit and outdoor unit do not match	Hardware malfunction	LP	blinks 19 times		
Memory chip malfunction	Hardware malfunction	EE			blinks 15 times
Wrong connection of communication cable or expansion valve malfunction	Hardware malfunction	dn	/	/	/
Complete unit current detection malfunction	Hardware malfunction	U5		blinks 13 times	
Wrong connection of communication cable or expansion valve malfunction detection mode	Running mode	dd	/	/	/
Mode conflict	Running mode	E7	blinks 7 times		
Refrigerant recovery mode	Running mode	Fo	blinks 1 times	blinks 1 times	
Defrosting or oil return in heating mode	Running mode	H1			blinks 1 times
Rating cooling or heating	Running mode	P1	/	/	/
Max cooling or heating	Running mode	P2	/	/	/
Middle cooling or heating	Running mode	P3	/	/	/
Min cooling or heating	Running mode	P0	/	/	/

## Troubleshooting

Compressor losing of synchronism	Displayed on the remote controller in 200s; display on the nixie tube after 200s	H7			blinks 7 times
Compressor start failure		Lc			blinks 11 times
High discharge temperature protection of compressor		E4	blinks 4 times		
Overload protection		E8	blinks 8 times		
Complete unit overcurrent protection		E5	blinks 5 times		
Phase current overcurrent protection		P5			blinks 15 times
Module current protection		H5			blinks 5 times
4-way valve commutation malfunction		U7		blinks 20 times	
Complete unit current protection with limiting frequency or lowering down frequency	Displayed on the remote controller	F8		blinks 8 times	
Module current protection with limiting frequency or lowering down frequency	Displayed on the remote controller	En	/	/	/
Overhigh discharge with limiting frequency or lowering down frequency	Displayed on the remote controller	F9		blinks 9 times	
Freeze protection with limiting frequency or lowering down frequency	Displayed on the remote controller	FH		blinks 2 times	blinks 2 times
Overload with limiting frequency or lowering down frequency	Displayed on the remote controller	F6		blinks 6 times	
Module temperature protection with limiting frequency or lowering down frequency	Displayed on the remote controller	EU		blinks 6 times	blinks 6 times
Oil return in cooling mode	Displayed on the remote controller	F7		blinks 7 times	
Cold blow protection	Displayed on the remote controller	E9	blinks 9 times		
Freeze protection	Displayed on the remote controller	E2	blinks 2 times		
Malfunction of outdoor fan (when outdoor fan is blocked or not connected- if there are two outdoor fans, L3 indicates outdoor fan 1 and LA indicates outdoor fan 2)	Hardware malfunction	LA	blinks 24 times		
Malfunction of DC fan/malfunction of outdoor fan (when outdoor fan is blocked or not connected- if there are two outdoor fans, L3 indicates outdoor fan 1 and LA indicates outdoor fan 2)	Hardware malfunction	L3	blinks 23 times		

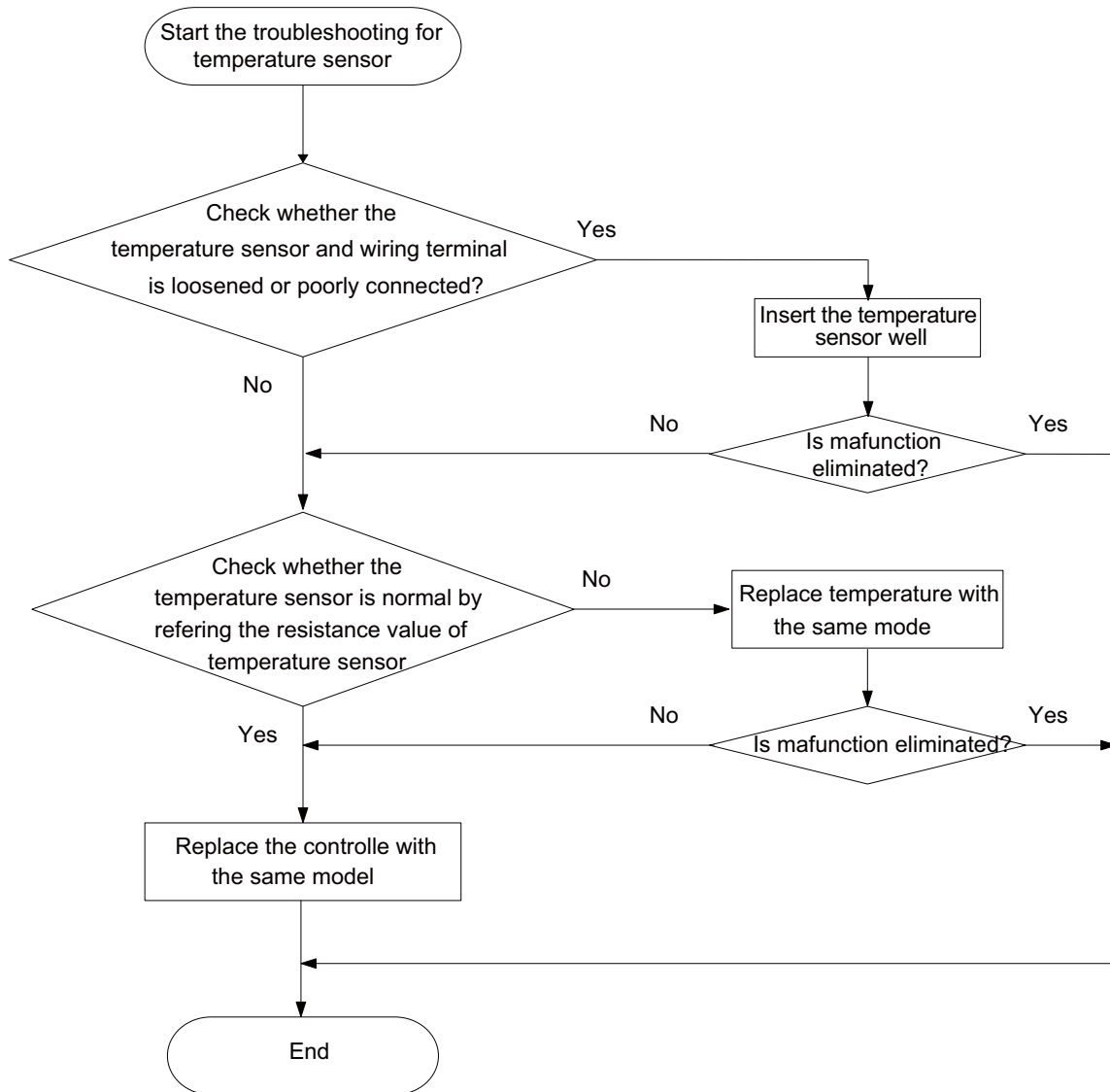
## 9.4 How to Check Simply The Main Part

### (1) Troubleshooting for malfunction of temperature sensor

main check point:

- Whether the temperature sensor is broken or damaged;
- Whether the temperature sensor terminal is loosened or not connected;
- Whether the mainboard is damaged;

Check flow chart:

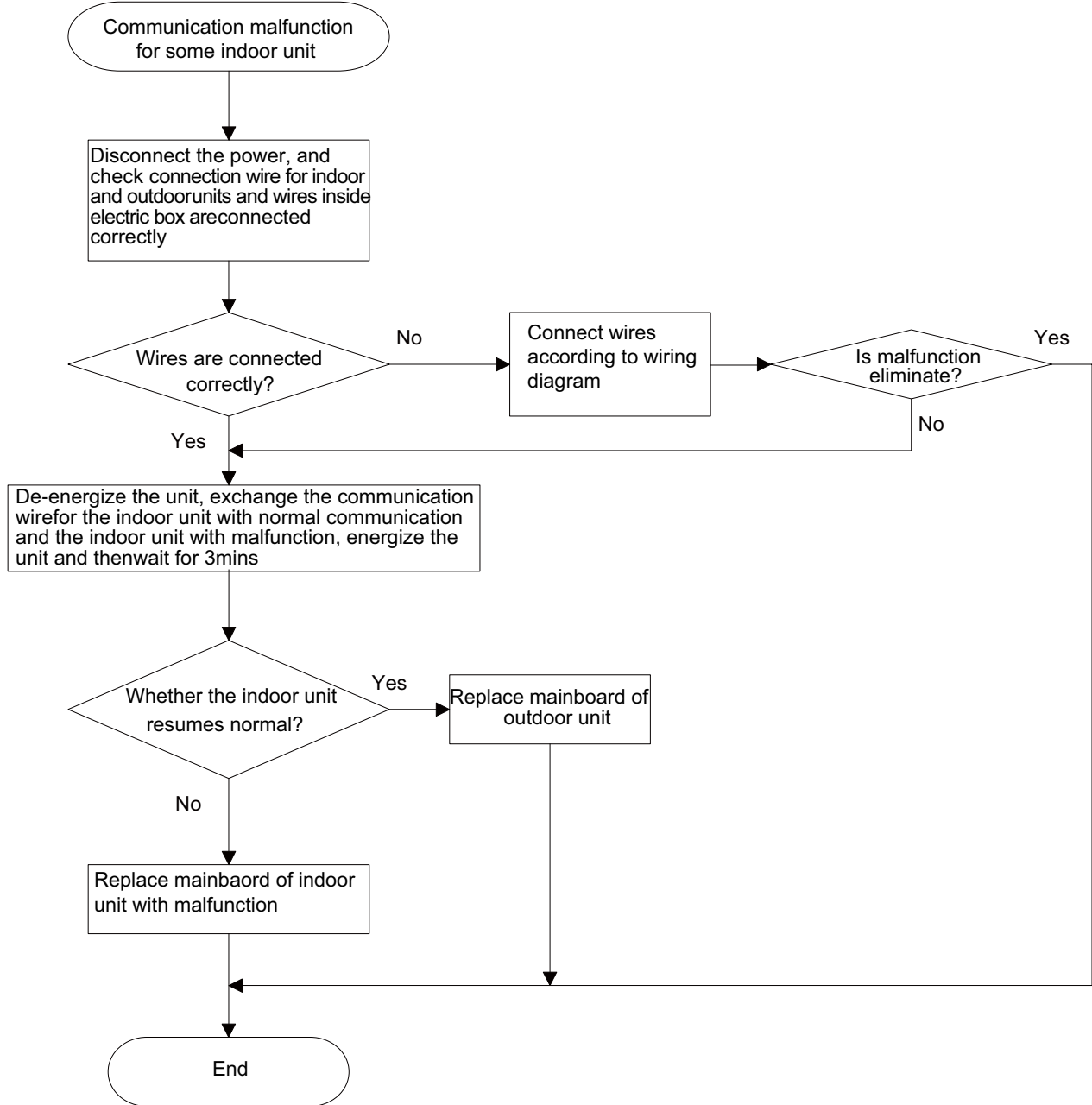


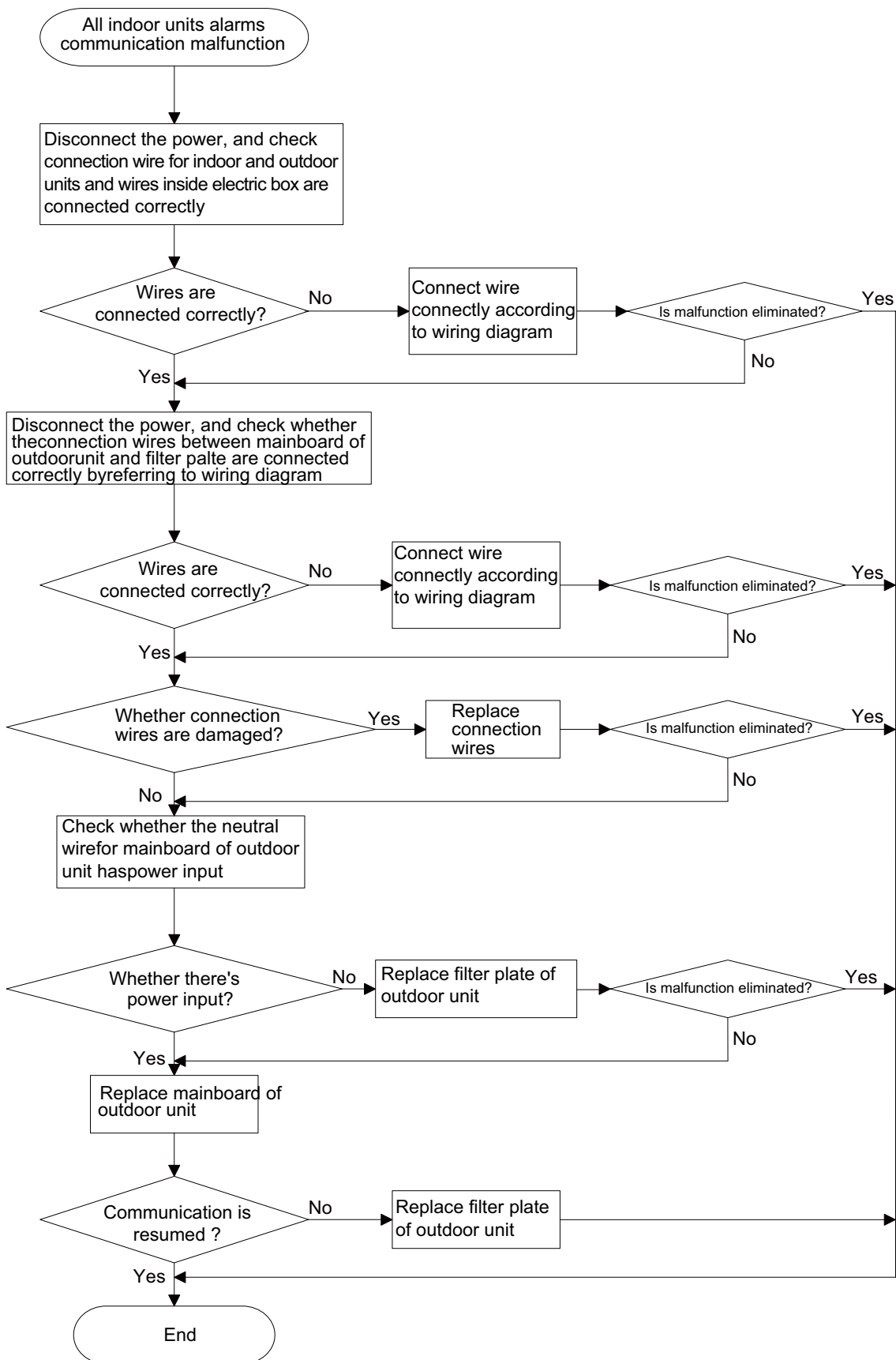
**(2) Troubleshooting for communication malfunction**

Main check point:

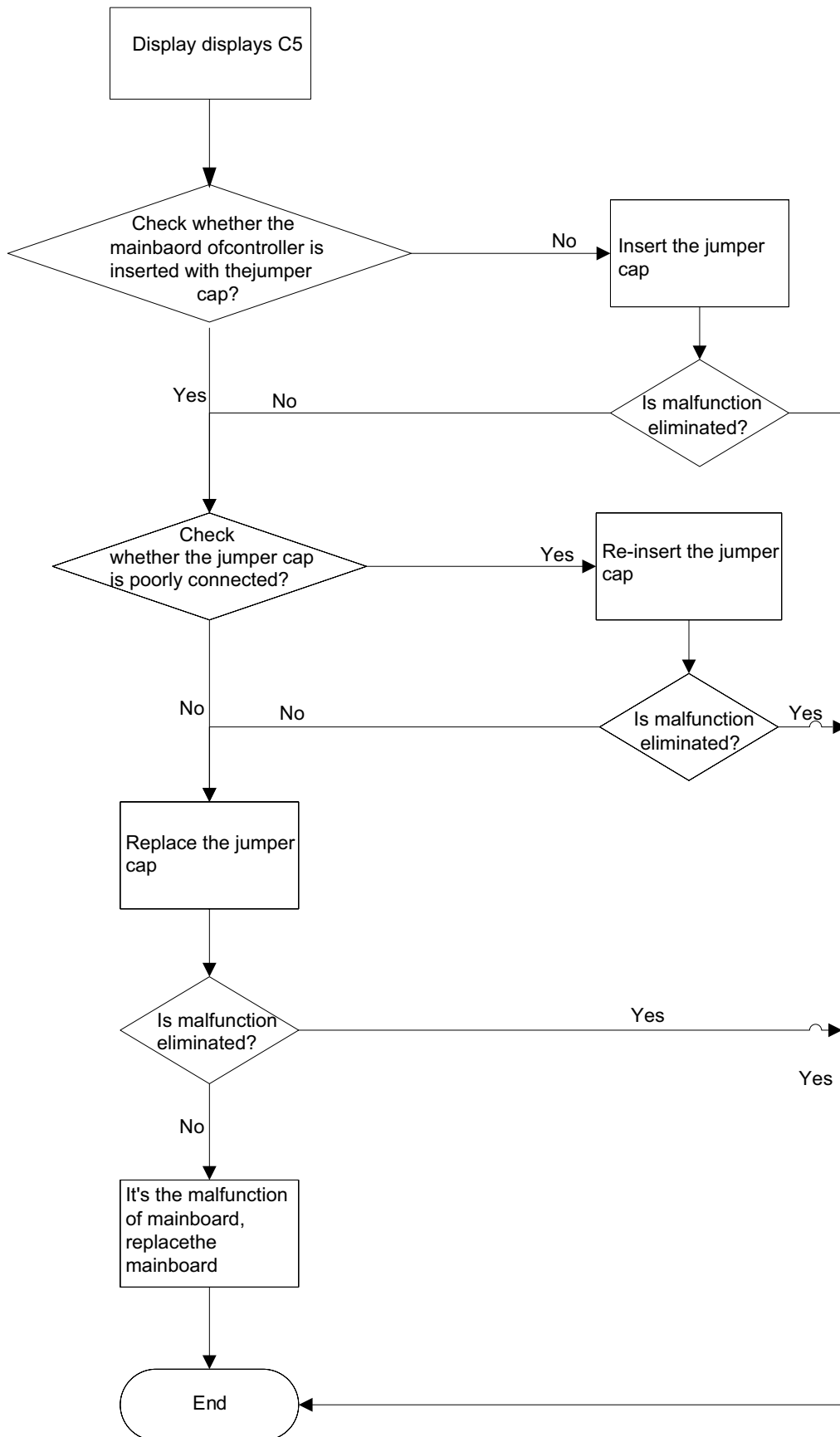
- Check whether the connection wire for indoor and outdoor units and the wires inside the indoor unit is connected well;
- Check whether the mainboards of indoor unit or outdoor unit are damaged;

Check flow chart:





(3) Troubleshooting for C5 malfunction



(4) Troubleshooting for H6 malfunction

