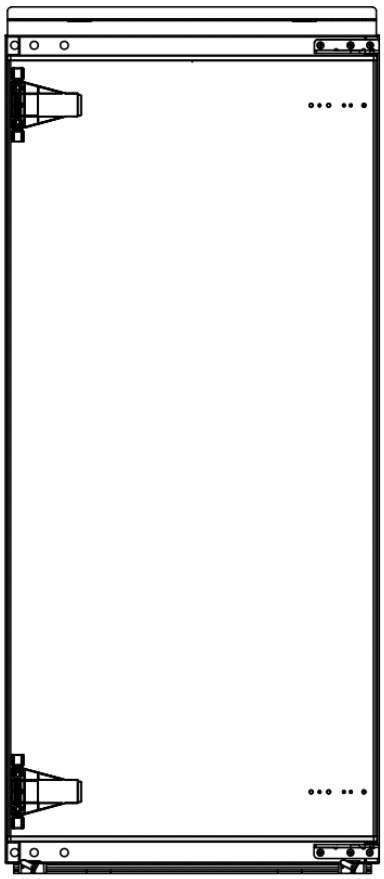
Service Manual

Built-in Series

Market Model	Product Model	Product Code
HS-267LEN.BI	CE-BC205CX-JT	22031010006402
MDRE288FG***		



The picture in this service manual is only for reference, and specific appearance and configuration are subject to the real product.
This manual mainly teaches the method, the specific work skill needs engineer to accumulate through the daily work.

⚠ WARNING

Important Safety Notice

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

⚠ WARNING

Important Safety Notice

The Maintenance Manual is only for the use of maintenance personnel with certain experience and background in electrical, electronic and mechanical field.

Any attempt to repair main devices may lead to personal injury and property loss.

Manufacturers or distributors are not responsible for the content of the Manual and interpretation thereof.

Contents

1. Significant update notes

(SM No.)	Date	Author	Description

2. Safety Warning Code

2.1 Warning for operation safety

Important Safety Instructions

 **CAUTION** **RISK OF ELECTRIC SHOCK** **DO NOT OPEN** 	
	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within your freezer.
	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying your freezer.

WARNING

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this appliance near water.

6) Clean only with a damp cloth.

7) Do not block any ventilation openings.

8) Install in accordance with the manufacturer's instructions.

9) Do not install near any heat sources, such as radiators, heat registers, stoves, or other apparatus that produce heat.

10) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

11) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the appliance.

12) Do not attempt to modify or extend the power cord of this appliance.

13) Unplug this appliance during lightning storms or when it will not be used for long periods of time.

14) Make sure that the available AC power matches the voltage requirements of this appliance.

CONNECTING ELECTRICITY

WARNING Electrical Shock

Hazard.

Plug into a grounded 3-prong outlet.
Do not remove the ground prong.
Do not use an adapter.

Failure to follow these instructions can result in death, fire, or electrical shock.

WARNING

Electric Shock Hazard
Failure to follow these instructions can result in electric shock, fire, or death.

1) WARNING–Keep ventilation openings, in both the freezer and the built-in structure, clear of obstruction.

2) WARNING–Do not touch the interior of the freezer with wet hands. This could result in frost bite.

3) WARNING–Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

4) WARNING–Do not damage the refrigerant circuit.

5) WARNING–Do not damage the refrigerant tubing when handling, moving, or using the freezer.

6) WARNING–DANGER–Never allow children to play with, operate, or crawl inside the freezer. Risk of child entrapment. Before you throw away your old freezer:

6-1) Take off the doors

6-2) Leave the shelves in place so that children may not easily climb inside

7) Unplug the freezer before carrying out user maintenance on it.

8) This freezer can be used by children age eight years and older and persons with reduced physical or mental capabilities or lack of experience and knowledge if they are given supervision or instruction concerning the use of the freezer in a safe way and understand the hazards involved. Children should not play with the freezer. Cleaning and maintenance should not be performed by children without supervision.

9) If a component part is damaged, it must be replaced by the manufacturer, its service agent, or similar qualified persons in order to avoid a hazard.

10) Please dispose of the freezer according to local regulations as the freezer contains flammable gas and refrigerant.

11) Follow local regulations regarding disposal of the freezer due to flammable refrigerant and gas. All refrigeration products contain refrigerants, which under the guidelines of federal law must be removed before disposal. It is the consumer's

responsibility to comply with federal and local regulations when disposing of this product.

12) This freezer is intended to be used in household and similar environments.

13) Do not store or use gasoline or any flammable liquids inside or in the vicinity of this freezer.

14) Do not use extension cords or ungrounded (two-prong) adapters with this freezer. If the power cord is too short, have a qualified electrician install an outlet near the freezer. Use of an extension cord can negatively affect the freezer's performance.

Grounding requirement

This freezer must be grounded. This freezer is equipped with a cord having a grounding wire with a grounding plug. The plug must be inserted into an outlet that is properly installed and grounded.

Improper use of the grounding plug can result in a risk of electric shock. Consult a qualified electrician or service person if the grounding instructions are not completely understood, or if doubt exists as to whether the freezer is properly grounded.

2.2 Safety instruction for refrigerant

Explosion Hazard.

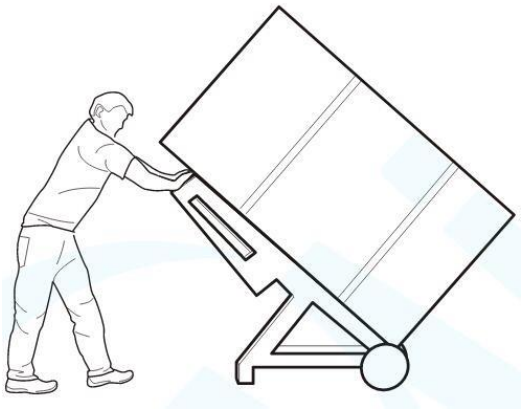
Keep flammable materials and vapors, such as gasoline, away from freezer. Failure to do so can result in fire, explosion, or death.

Safety instruction for refrigerant

DANGER–Risk of Fire or Explosion. Flammable Refrigerant Used. To Be Repaired Only By Trained Service Personnel. Do Not Use Mechanical Devices. Do Not Puncture Refrigerant Tubing. CAUTION–Risk of Fire or Explosion. Flammable Refrigerant Used. Consult Repair Manual/Owner's Guide Before Attempting To Service This Product. All Safety Precautions Must be Followed. CAUTION–Risk of Fire or Explosion. Dispose of Properly In Accordance With Federal Or Local Regulations. Flammable Refrigerant Used. CAUTION–Risk of Fire or Explosion Due To Puncture Of Refrigerant Tubing; Follow Handling Instructions Carefully.
Flammable Refrigerant Used.

3. Installation and commissioning

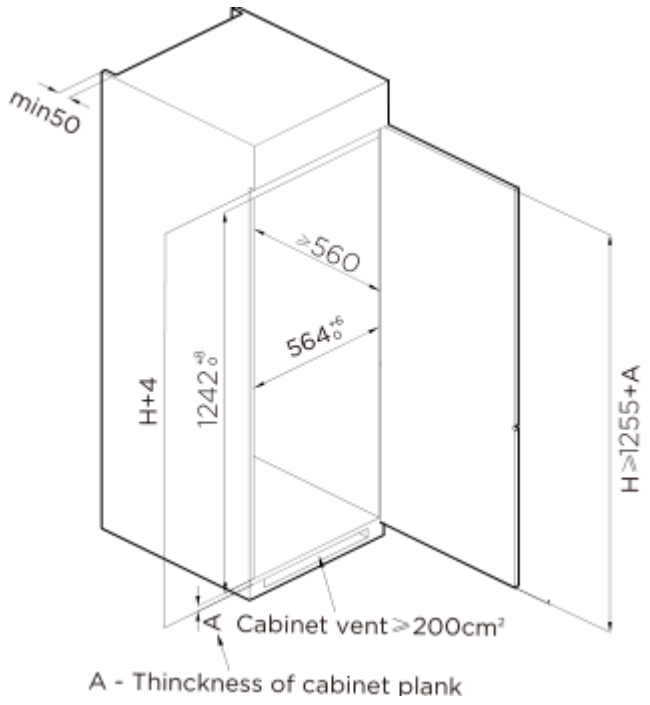
3.1 Handling

Handling	
1)Protect the refrigerator during moving it, same as shown as right photo, please move it by handcart with cushion 2)Remove all packing materials and bottom cushion, then move into house for placement 3)After moving it to appropriate location, wait for 2 hours bef ore power on.	

3.2Door Disassembly and Assembly

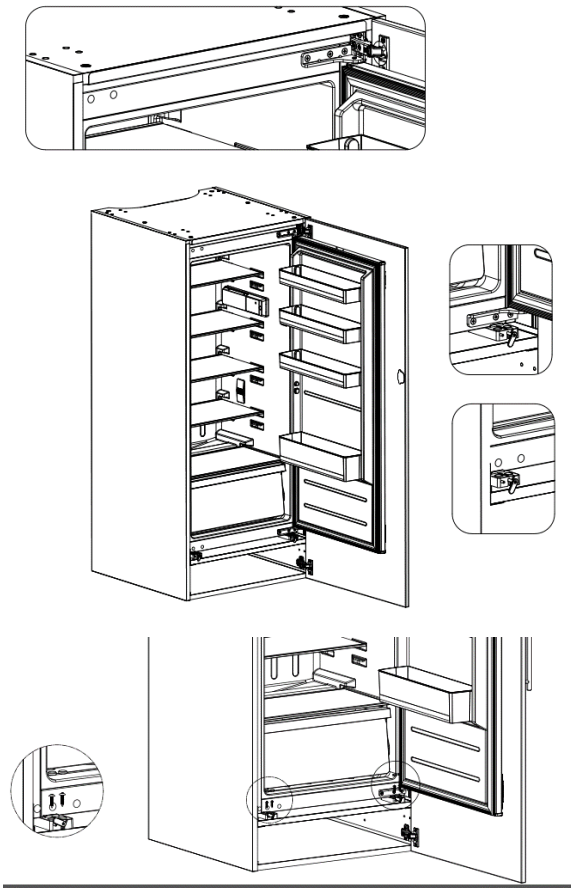
The refrigerator door needs to be dismantled if it cannot enter the room in the whole.

3.3 Installation location

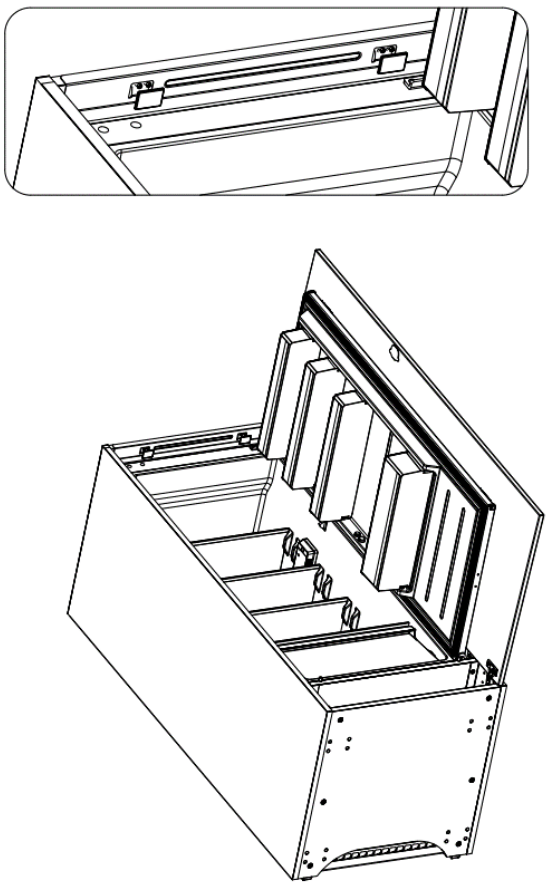
Installation location	
Refrigerator is installed in the cabinet and the size requirements such as the right figure.	
Installation Steps	

1） Push the refrigerator into the cabinet and adjust it to make sure the edge fold of top baffle completely touch the top edge of the cabinet, and the limit hook of supporting leg completely touch the bottom edge of the cabinet.

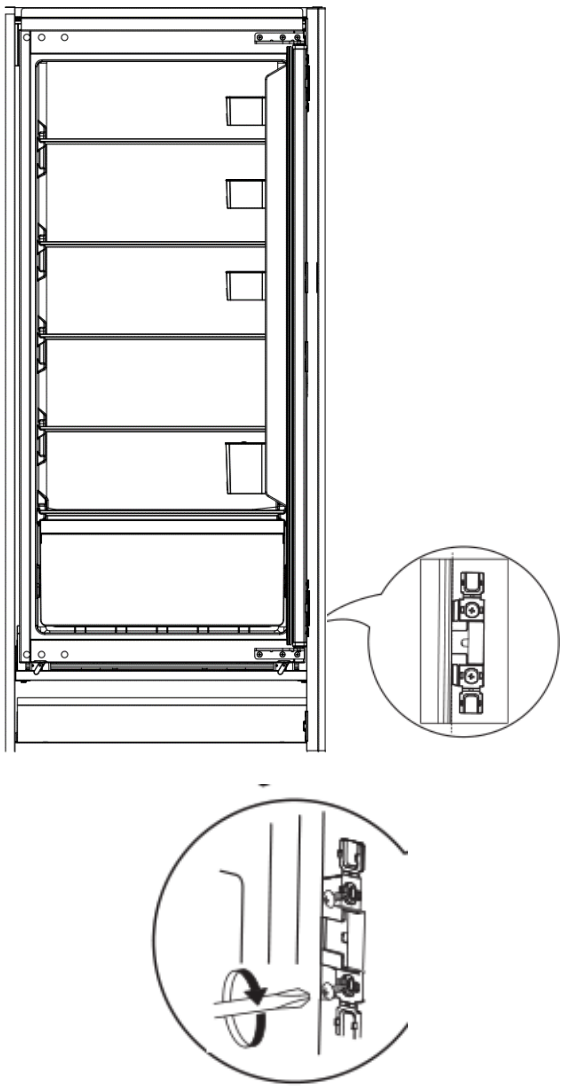
2） Fix the supporting leg with screws, then install the screw caps.



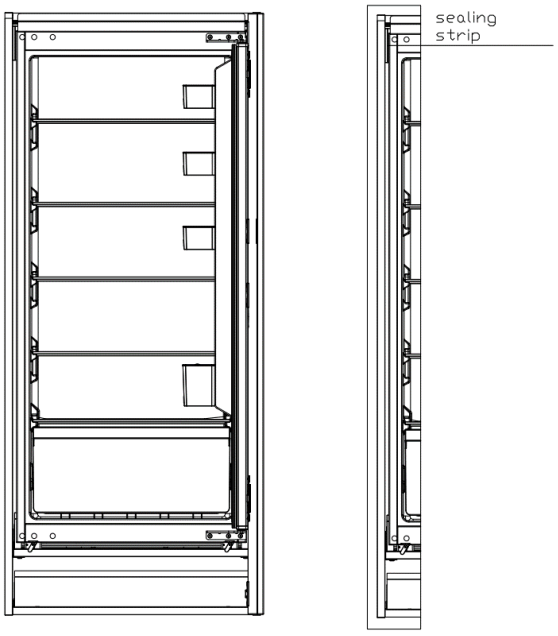
3） Fix the top baffle to the top of the cabinet inner with screws, then install the screw caps.



4） Open the refrigerator door to the maximum angle and open it to the corresponding position. Slide the stopper so that its inner edge aligns with the lower edge of the refrigerator door, then secure the stopper to the cabinet door with screws and install the nut. Replace the fixed positions of the adjustable base and bottom hinge, and then secure them again.



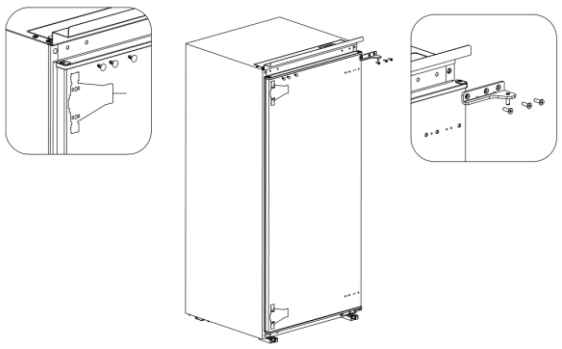
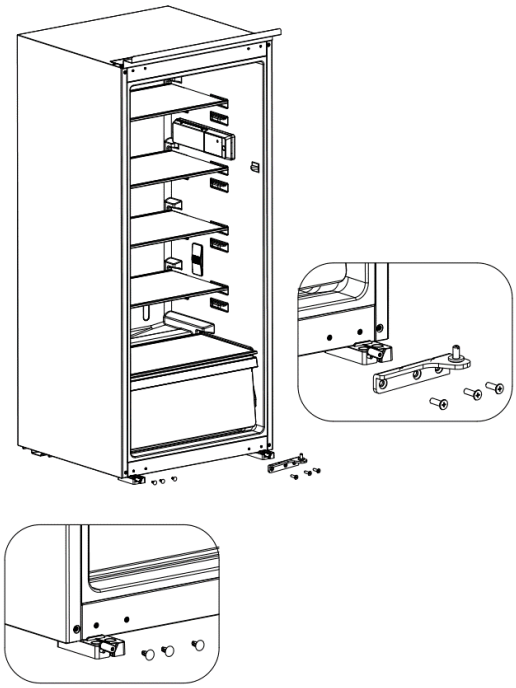
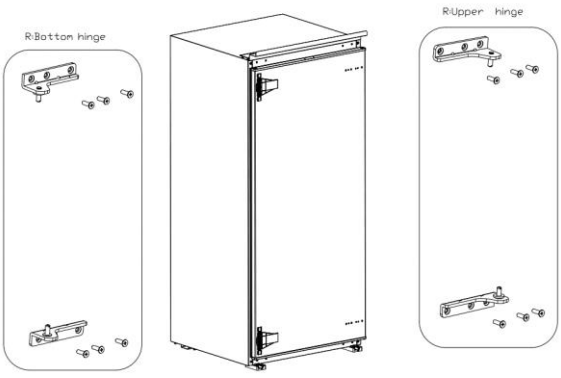
5） Take out the sealing strip from accessory bag, and press it in the gap between the cabinet and the refrigerator. Installation is completed.

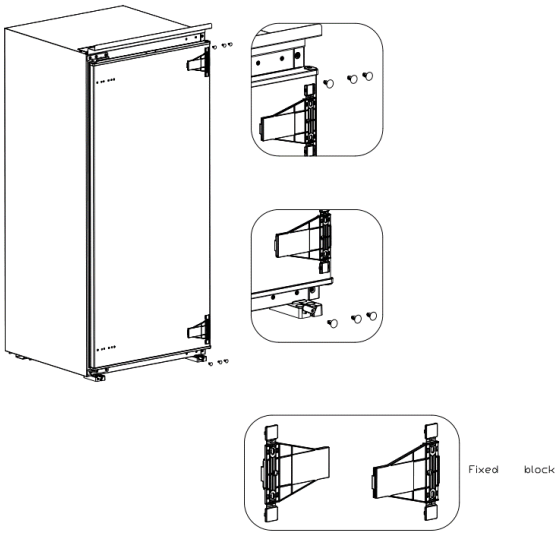
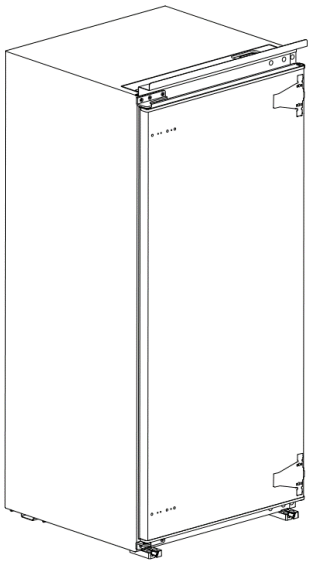


3.4 Leveling of the refrigerator

Leveling of the refrigerator	
The refrigerator does not need to be leveled.	\

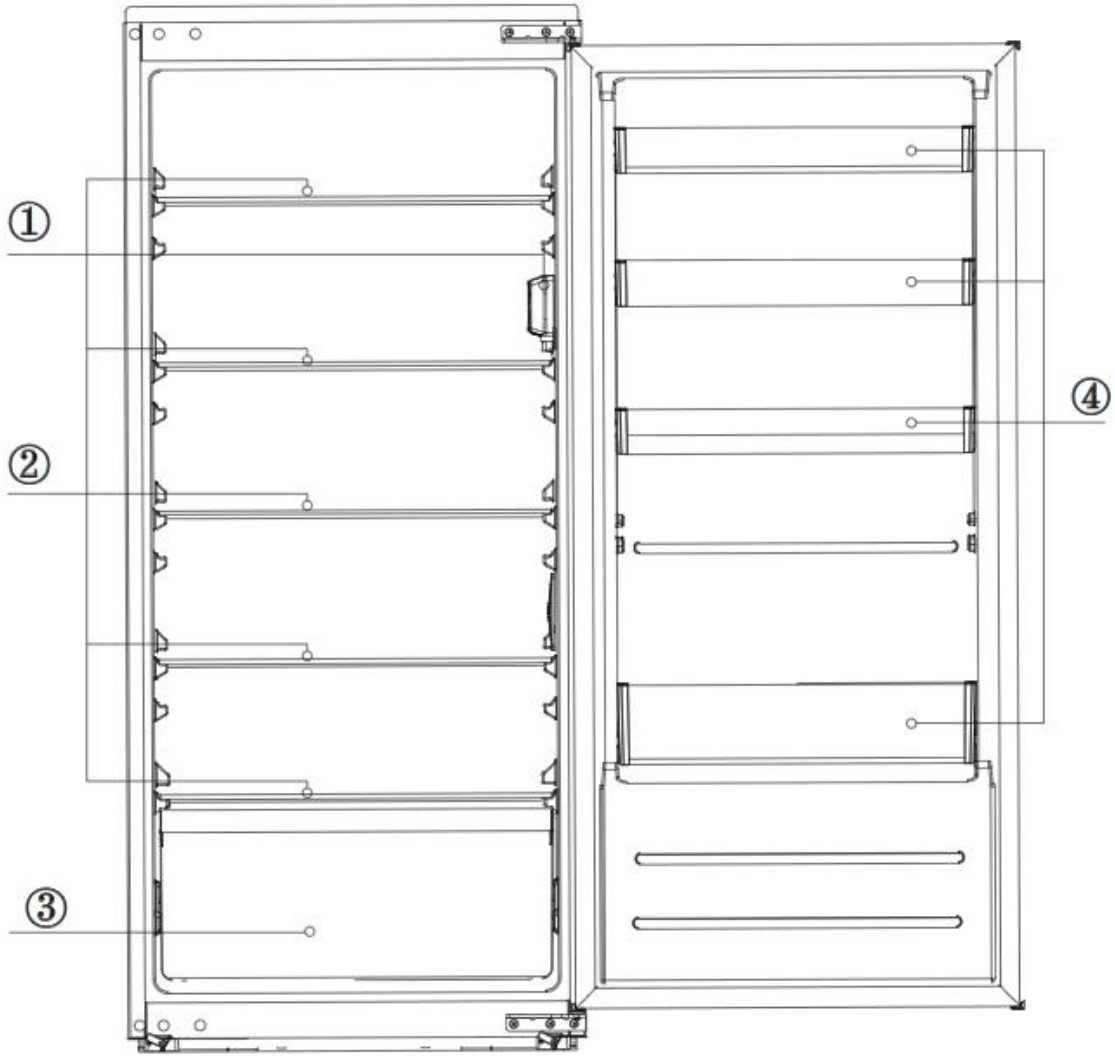
3.5 Left or right open-door reversal

1. Power off the refrigerator, and remove all objects from the door trays. 2. Remove the upper hinge and hole caps of the refrigerator door.	
3. Remove the refrigerator door, the bottom hinge and the hole cover.	
4. Exchange the bottom hinge and upper hinge, then assemble them with the refrigerator door.	

5. Assemble the hole caps，remove the fixed block of fridge door and rotate it for 180°, assemble it on the other side of the refrigerator door.	
6. Finished	

4. Main parts and external dimension

4.1 Main parts

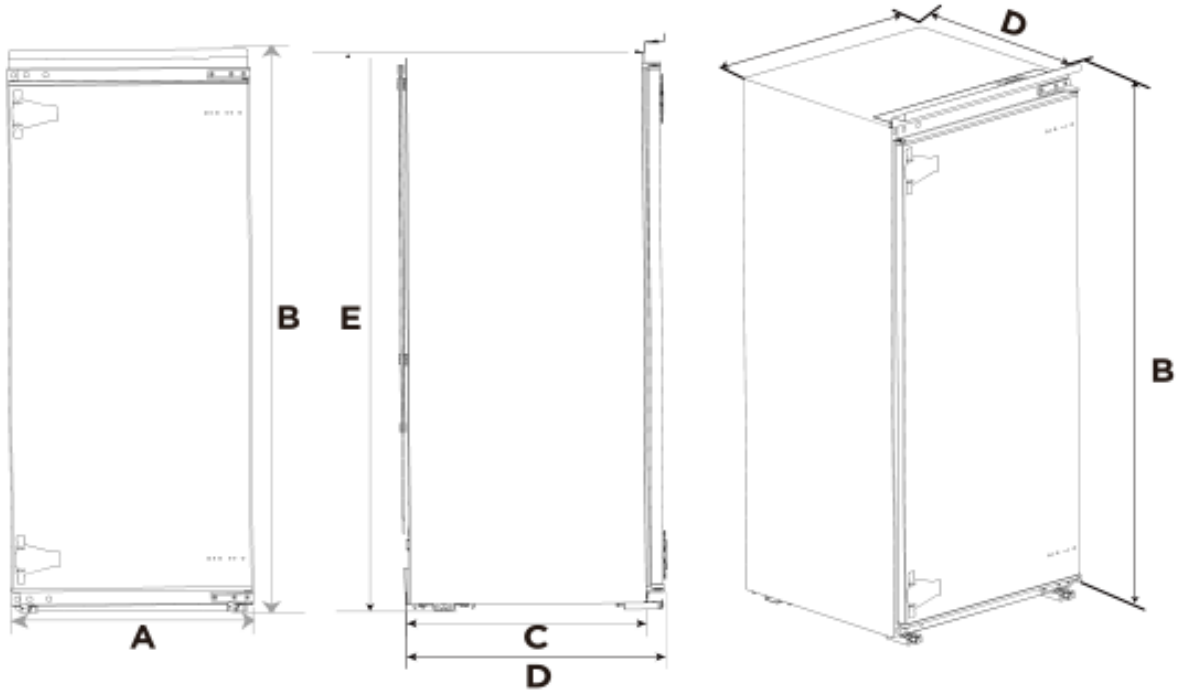


1	Control panel	3	Fruits and vegetables box
2	Glass shelf	4	Door tray

(The picture is only for reference, and specific appearance and configuration are subject to the real product)

4.2 External dimension

Description	Code	Size (mm)
Width	A	540
Overall Height	B	1255
Depth to match the cabinet	C	465
Overall Depth	D	550
Height to match the cabinet	E	1200

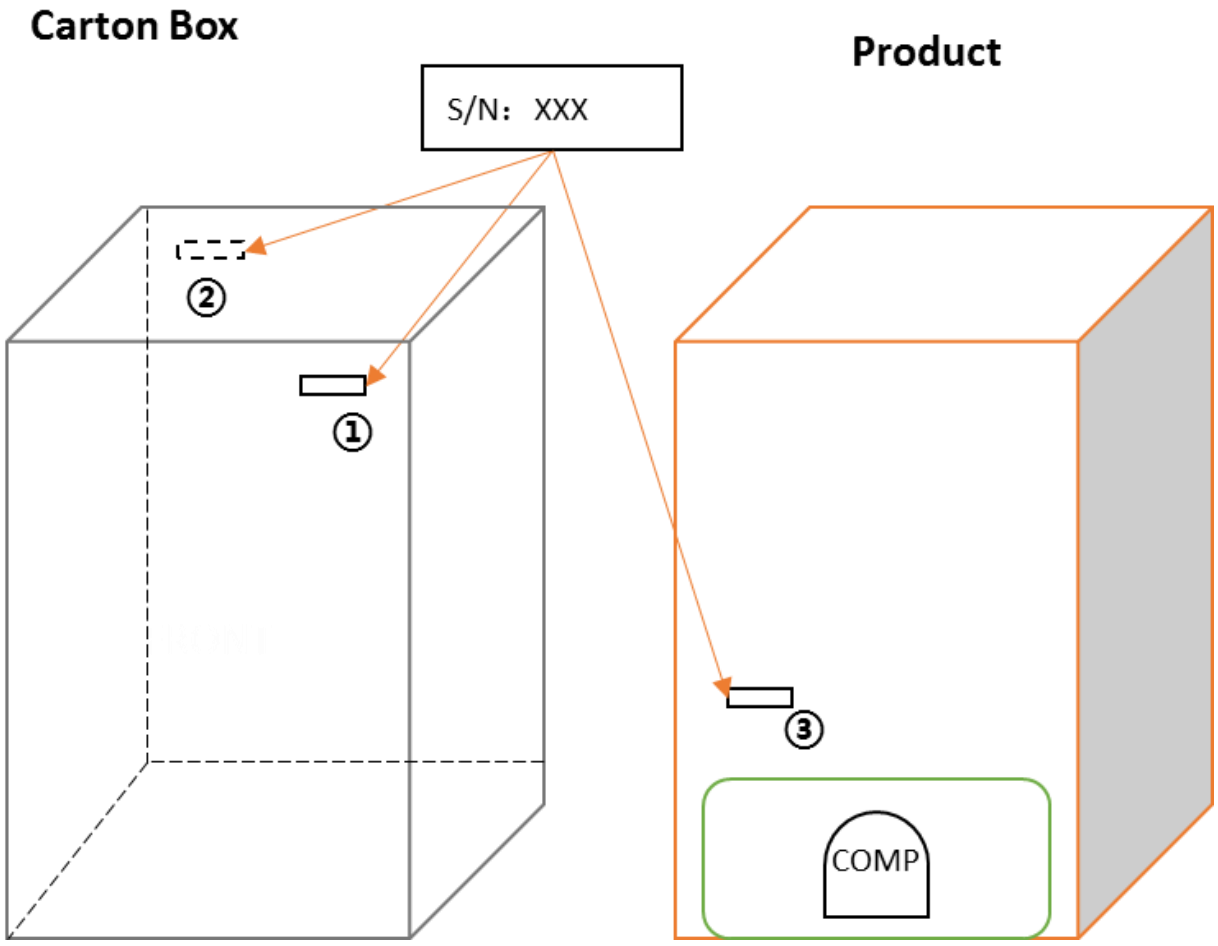


(The picture is only for reference)

4.3 Midea product serial number and location

1） Product Serial Number — Including order number, production date and other information. When the product occur problem, it needs to be recorded or photographed and provided to us.

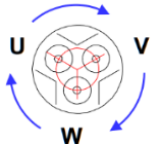
2）Paste location



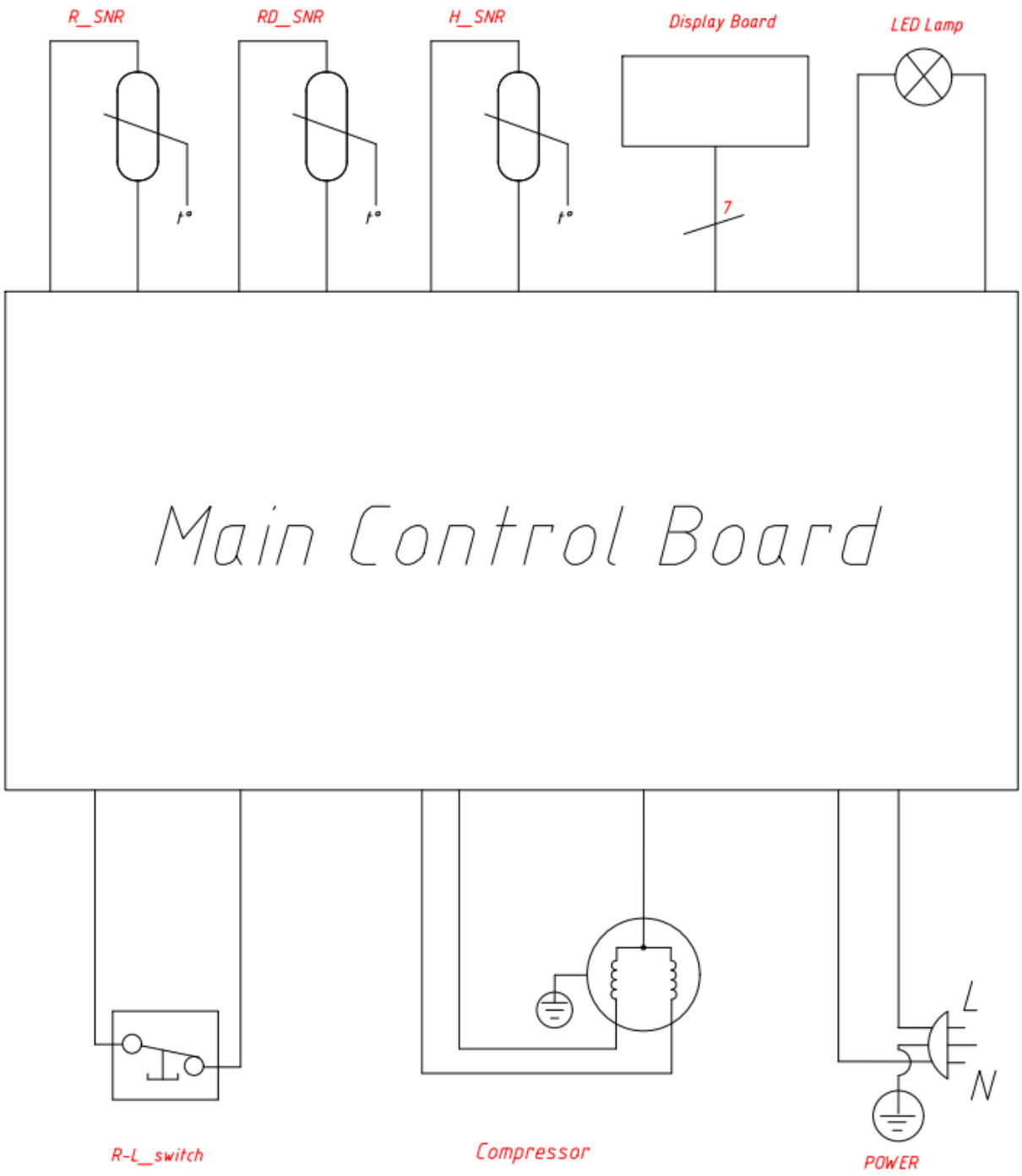
Some products also have S/N on the lower part of the right side of the Cabinet.

5. Electric control system

5.1 Electrical parameters

Applicable Model	HS-267LEN.BI	
Product Model	CE-BC205CX-JT	
Rated Voltage	200-240V、50Hz	
Item	**Specification**	
Refrigerant	R600a	
Compressor	**DZ35Z1A**	
Starting device type	Inverter	
The COP of compressor	1.63(W/W)	
The max cooling capacity of compressor	70W	
Winding resistance of compressor wiring terminal (20℃)	U-W: 22.6Ω±7% U-V: 22.6Ω±7% W-V: 22.6Ω±7%	
Winding resistance picture		
Starter(PTC)	None	
Overload protector(OLP)	None	
Integrate PTC+OLP	None	
Inverter driver board	None	
Capacitor	None	
Power filter (EMI)	None	
Power reactor (EU EMC)	None	
Compensation heating wire	None	
Motor		
Fan motor of the freezing chamber	None	
Fan motor of the refrigerating chamber	None	
Electric damper	None	
Lights		
Lights inside the refrigerating chamber	12V/2W	
Lights inside the freezing chamber	None	
Others Lights	None	
Switch of the light	■Mechanical switch □Magnetism control switch	
Defrosting parts		
Defrosting sensor	NTC B3839 (B5/25=3839K±2%)	
Fuse in freezing chamber	None	
Defrost heater in freezing chamber	None	

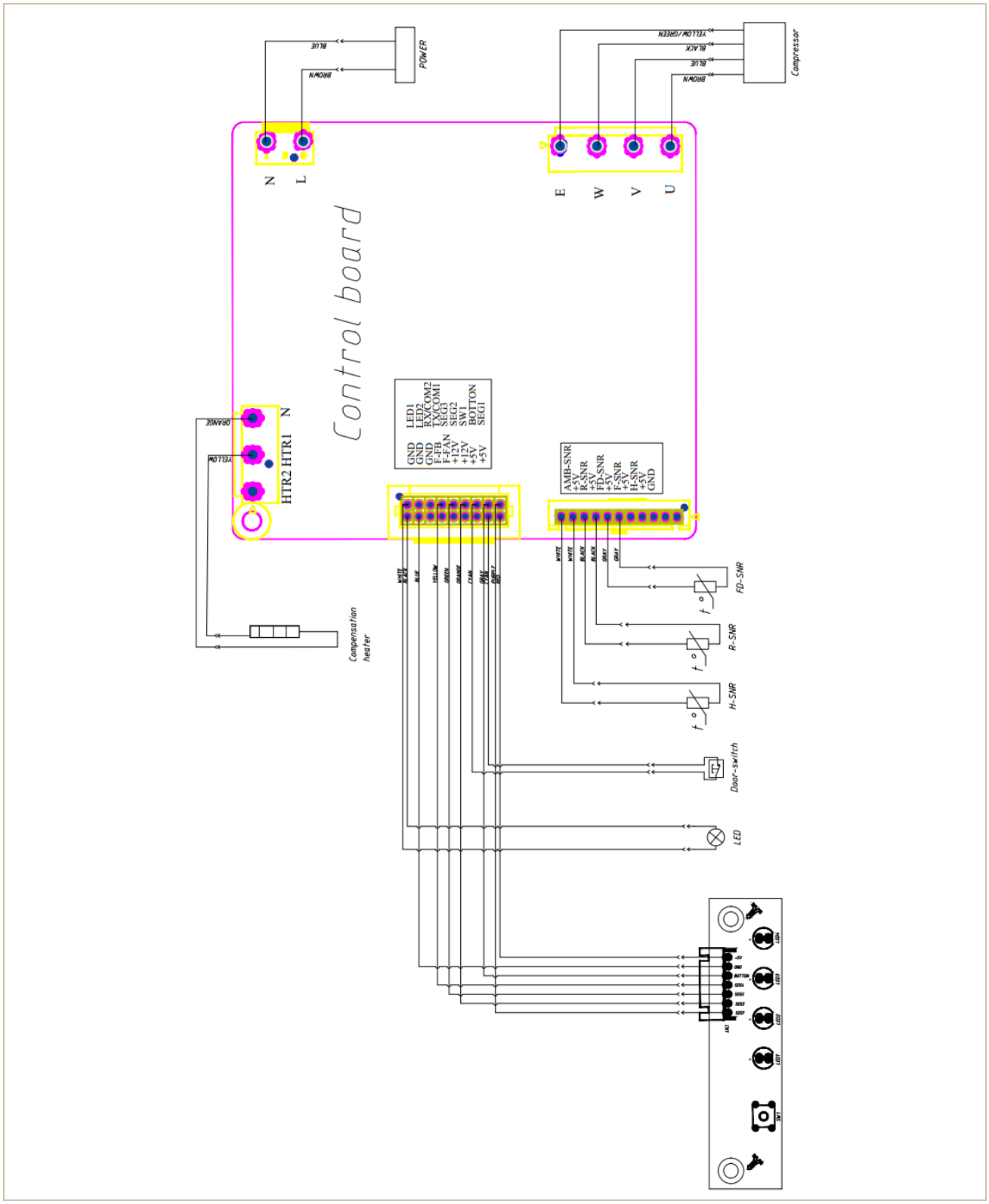
5.2 Circuit diagram



RD: refrigerator defrost R：refrigerator H：ambient temperature

5.3 Wiring diagram

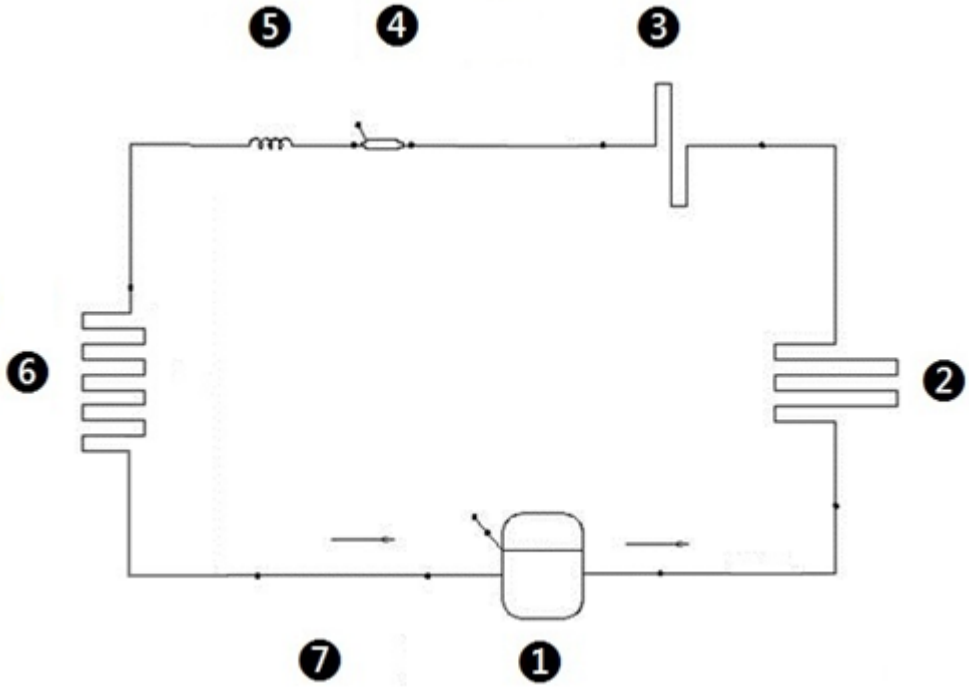
REF_Wiring diagram_CE-BC205CX-JT_22031010006402接线图.pdf


POWER
BLUE
BROWN
N
L
Compressor
YELLOW/GREEN
BLACK
BLUE
BROWN
E
W
V
U
Control board
HTR2 HTR1 N
ORANGE
YELLOW
Compensation heater
LED1
LED2
RXCOM2
TXCOM1
SEG3
SEG2
SW1
BOTTON
SEG1
GND
GND
GND
F-FB
F-FAN
+12V
+12V
+5V
+5V
AMB-SNR
+5V
R-SNR
+5V
FD-SNR
+5V
F-SNR
+5V
H-SNR
+5V
GND
FD-SNR
R-SNR
H-SNR
Door-switch
LED

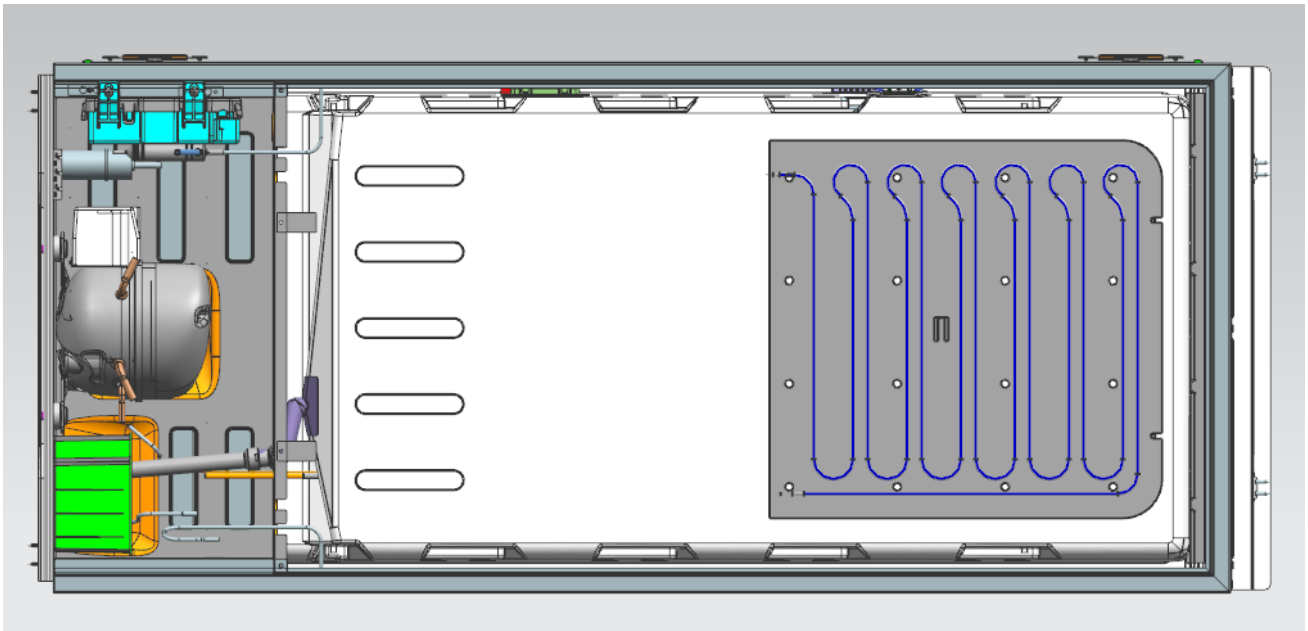
6.Refrigeration system

6.1 Refrigerating piping system

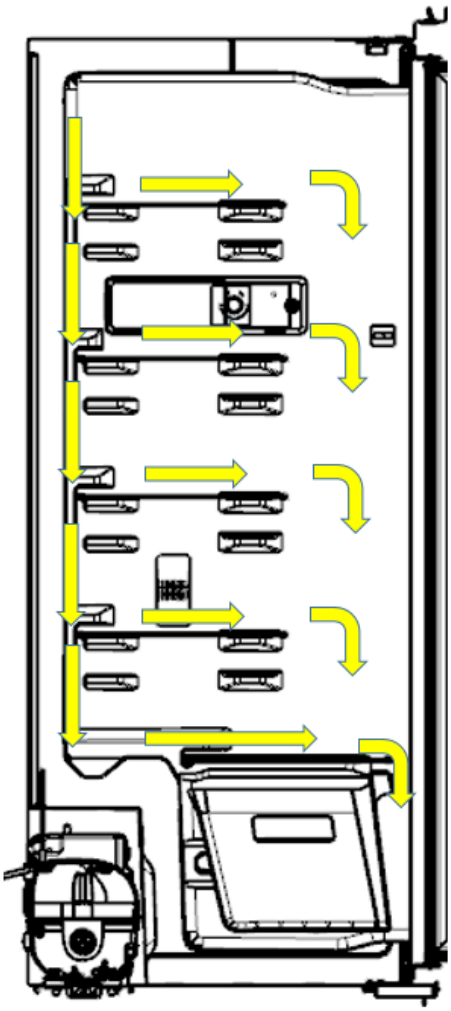
❶Compressor→❷ condenser→❸Anti-condensation tube→❹ Dry filter→❺ Capillary tube→❻ Evaporator→❼ Suction tube→❶Compressor



6.2 Cooling pipeline and drain pipe inside the cabinet

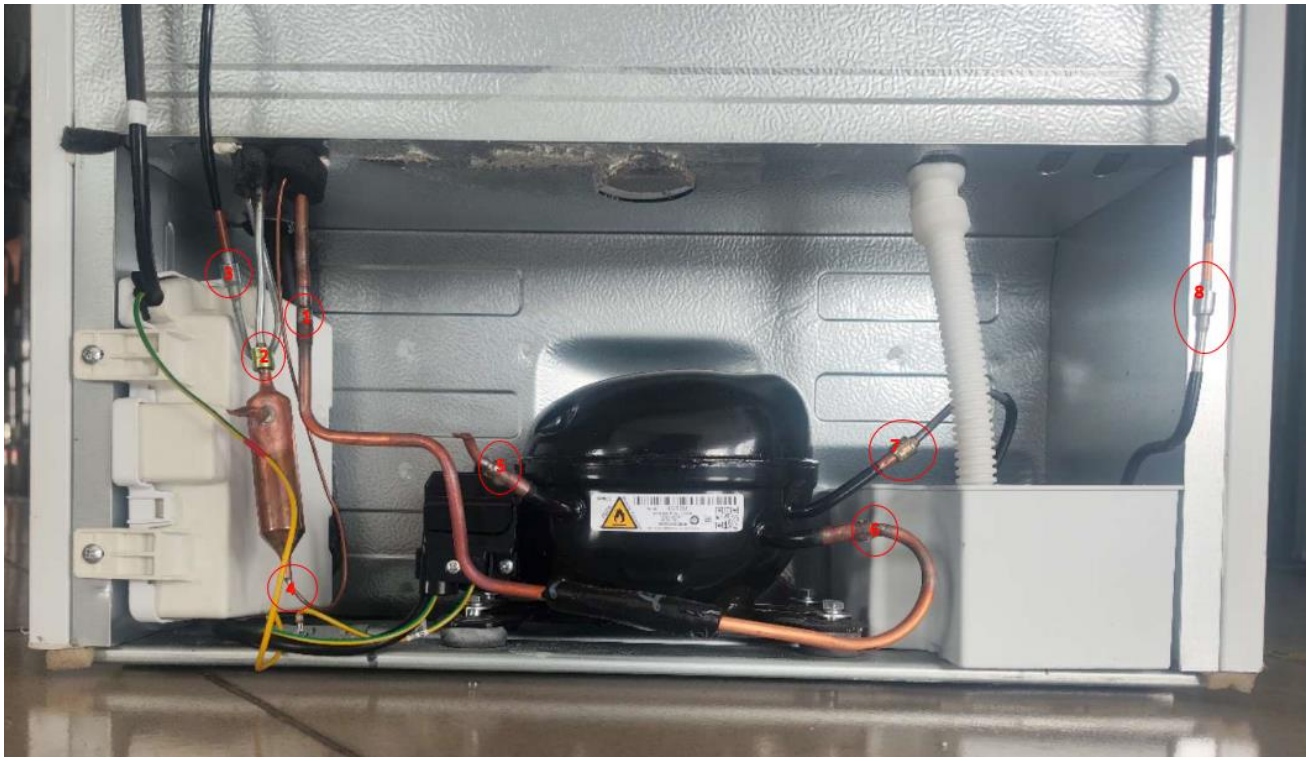


6.3 Circulating route of cooling air



6.4 Welding points in chambers or foam layer (None)

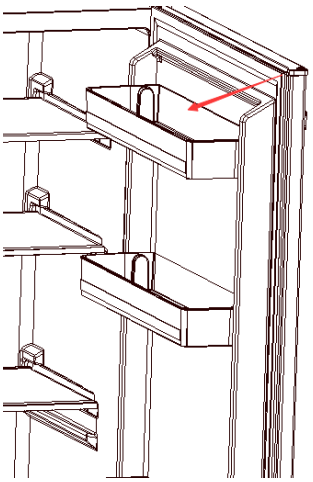
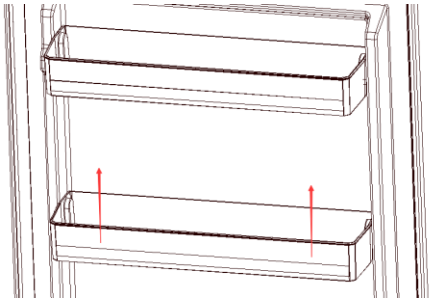
6.5 Pipe welding point in the compressor case



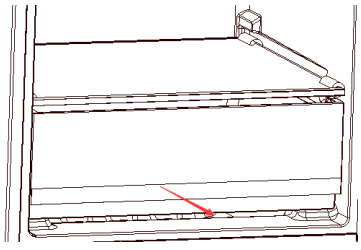
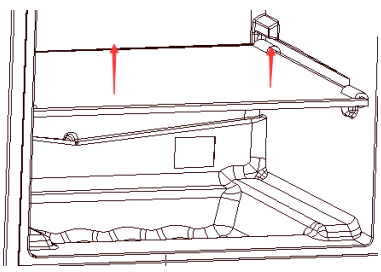
Pipe welding point	Pipe outer diameter (mm)	
1-The outlet of the return air heat exchanger tube and the inlet of the suction connecting tube	Copper pipe: Φ6.0	Copper pipe: Φ6.0
2-Integrated condenser outlet with filter drier inlet	Steel pipe: Φ4.0	Copper pipe: Φ4.0
3-One-piece condenser inlet and rear condenser outlet	Steel pipe: Φ4.0	Steel pipe: Φ4.0
4-Filter drier outlet with capillary inlet	Copper pipe: Φ2.8	Copper pipe: Φ1.8
5-Compressor process tube inlet and process tube outlet	Copper pipe: Φ7.17	Copper pipe: Φ6.0
6-The outlet of the suction connection pipe is connected to the suction pipe of the compressor	Copper pipe: Φ6.0	Copper pipe: Φ7.17
7-Compressor exhaust pipe outlet and evaporation pipe inlet	Steel pipe: Φ5.17	Steel pipe: Φ4.0
8-Evaporation tube outlet and integrated condenser inlet	Steel pipe: Φ4.0	Steel pipe: Φ4.0

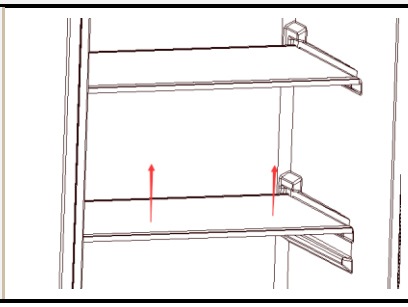
7. Dismantling of parts

7.1 Parts on the door

Door seal	
Door seal is installed into door liner groove. 1)Open the refrigerator door. 2)Take the door seal out of door liner.	
Door tray	
While squeezing it inward, lift up the baffle and take it out from refrigerator liner.	

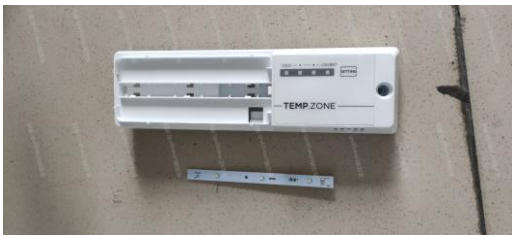
7.2 Parts inside the refrigerator

Refrigerator Fruit box cover	
Remove the crisper cover of ref. compartement accordin g to below steps: 1）Take out the crisper firstly. 2）Pull out the crisper cover completely.	 

Shelves	
1）Lift up the division plate with a proper force and pull it out towards yourself.	

7.3 Light system

Light	
The light is located on the right side of the refrigeration room. 1） Pry off the hole cover on the temperature control box with a blade, and then use a screwdriver to unscrew one screw of the temperature control box. 2）Remove the temperature control box component and unplug and release the connection terminal between the box harness and the LED light 3）Use a screwdriver to pry open the lampshade, and then pry off the LED light panel from the temperature control box 4）The reverse process can complete installation.	    

	
Light switch	
1) There is a light switch on the side wall of the refrigerating chamber. 2) Loosen the hook with small normal screwdriver and pull out the switch until the wire connector reveals. 3) The reverse process can complete installation.	 

7.4 Air duct components refrigerating chamber and damper (None)

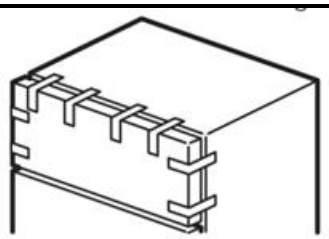
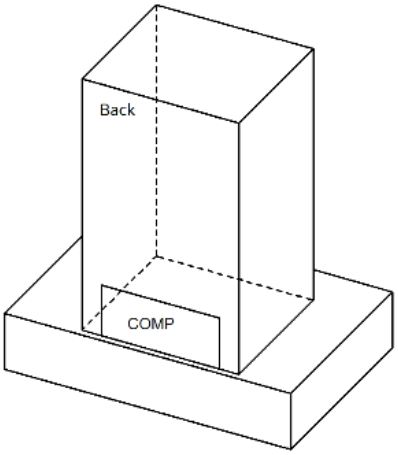
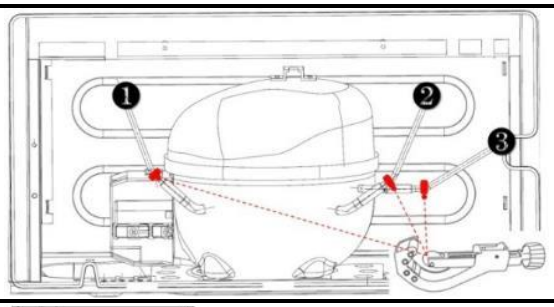
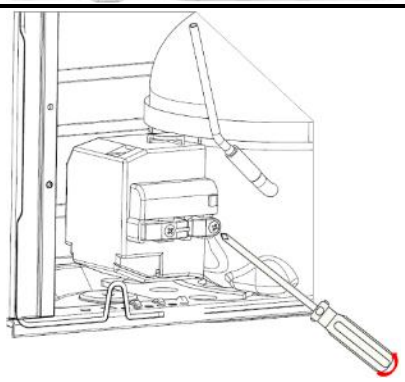
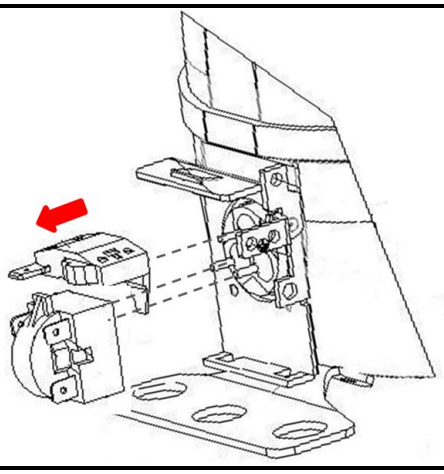
7.5 Air duct components in freezing chamber and fan motor (None)

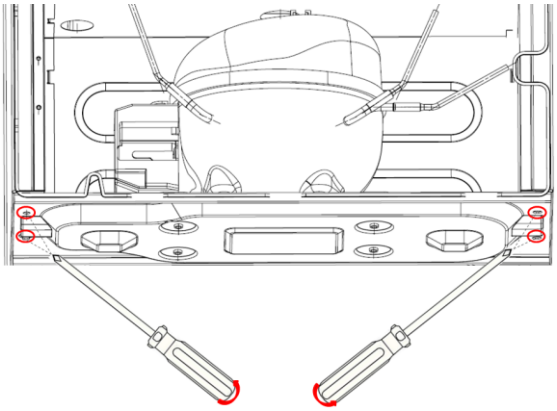
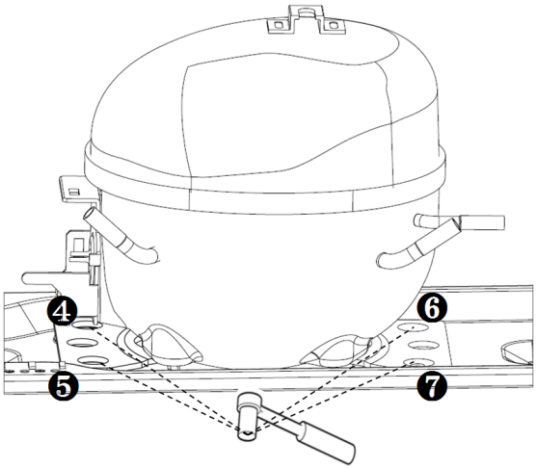
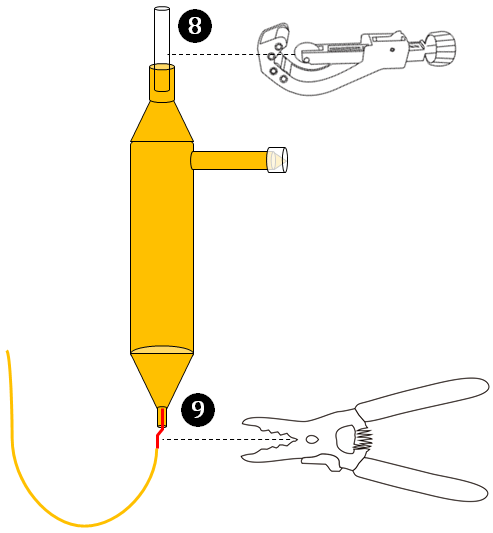
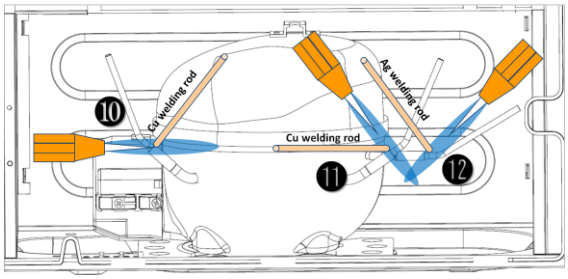
7.6 Evaporator and Defrost system

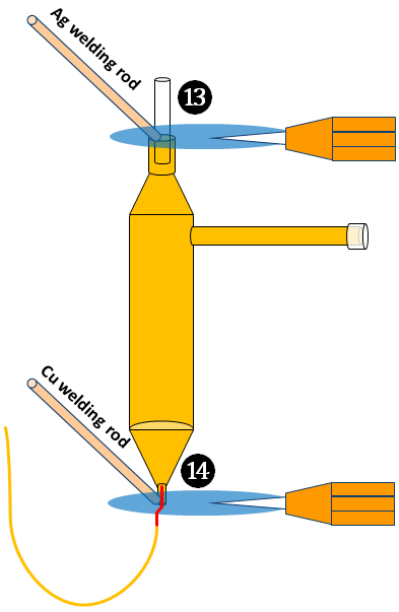
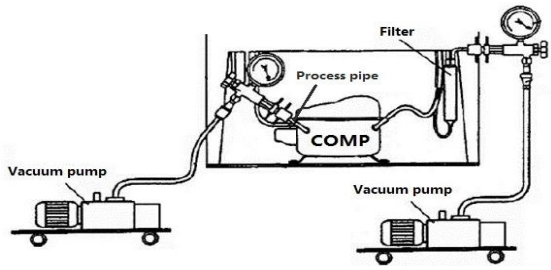
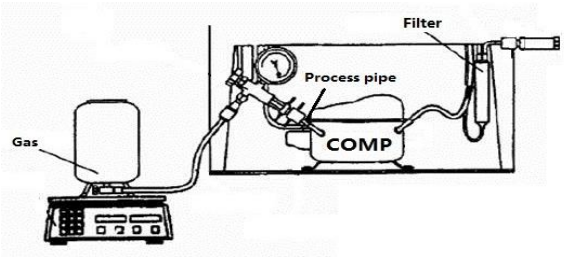
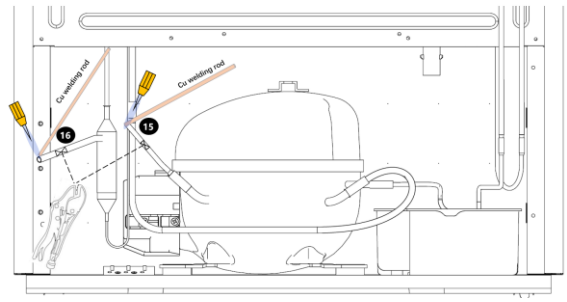
Evaporator in freezing chamber	
Within the foam layer, not repairable	/

7.7 Compressor case

Rear cover	
	None
Compressor and the cooling system pipe	

1）Cut off the power, remove the goods in the refrigerator, with the tape to make the door fixed firmly and prevent the door dropping when the refrigerator dumping.	
2）Place the refrigerator in an area that is open, ventilated, and away from fire sources. Then placing on an operating table and securing it firmly.	
3）Cut off the compressor pipeline. -❶Cut off the process pipeline. -❷Cut off the low-pressure muffler. -❸Cut off the high-pressure exhaust pipe.	
4) **Remove the protective cover** -Two screws outside -Pry the protective cover slowly from the upper part, -Pull it out and remove it.	
5）**Remove the starter and protector** Unplug the starter and protector (you can use a screwdriver to pry it slowly)	

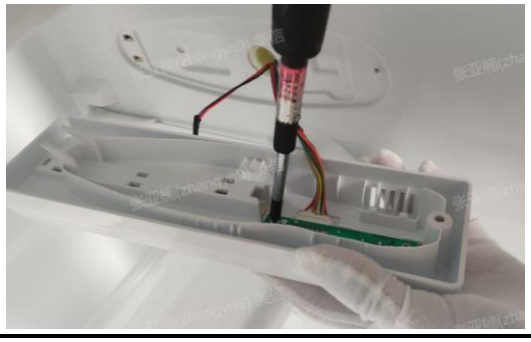
6）Loosen the screw of the compressor bottom plate, remove the floor together with the compressor from the box.	
7）Use the wrench to remove the bolts by steps❹❺❻❼, replace the compressor and reverse process can complete installation.	
8）Use Pipe cutter cut off the condenser tube❽, then Shear off capillary ❾ by the capillary tube scissors.	
9）Replace the compressor and welding the compressor pipeline. -❿Welding the process pipeline. -⓫Welding the low-pressure muffler. -⓬Welding the high-pressure exhaust pipe.	

10）Replace the filter, Cu-Fe tubes welding ⓭ used Ag welding rod, Cu-Cu tubes welding⓮ used Cu welding rod.	
11）Vacuum system, The degree of vacuum below 3Pa.	
12）Perfusion refrigerant.	
13）Use the vise grip pliers clamp the middle of the process pipe, then seal welding process tube⓯⓰.	

Piping system in the compressor case

❶ main control board box assembly	7. compressor
❷Back condenser (exit)	8evaporation tube（enter）9.evaporation tube
❸Integrated condenser(enter)	（exit）10.Back condenser (enter)
❹Integrated condenser(exit)	11.Power wire
❺dry filter	
❻suction transition tube	

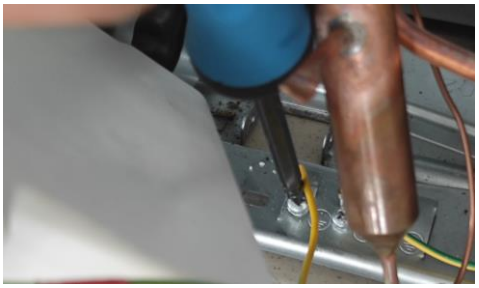
7.8 Display control board

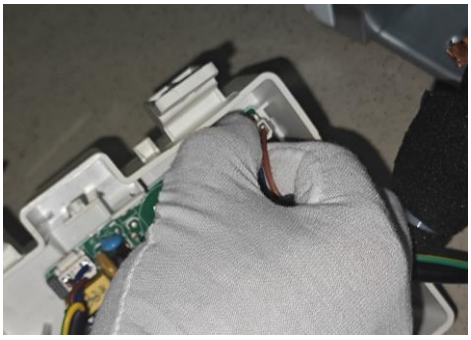
Display control board	
The display and control board is located on the right side of the refrigeration room 1） Pry off the hole cover on the temperature control box with a blade, and then use a screwdriver to unscrew one screw of the temperature control box. 2） Remove the temperature control box component and use a screwdriver to remove the two screws that secure the display and control board 3） Afterwards, unplug the terminals between the display and control board and the box harness to remove the display and control board 4） The reverse process can complete installation.	  

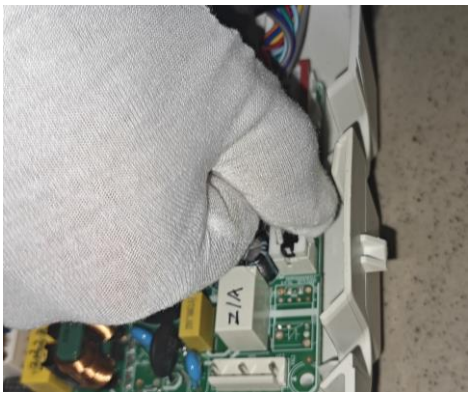
7.9 Main control board

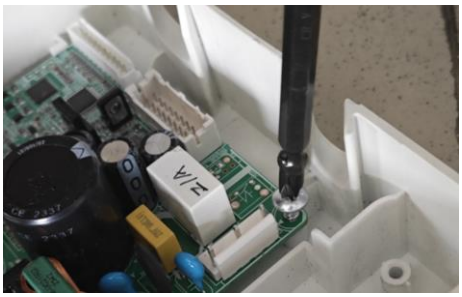
Main control board	
1） The main control board installation box is located on the left side of the press compartment 2） Use a cross screwdriver to loosen the two screws that secure the main control board installation box and one screw that secures the power cord grounding wire, and then remove the main control board installation box by hand 3） Use your hand or a flat screwdriver to pry open the installation box cover 4） Use a screwdriver to loosen one screw that secures the power cord card, unplug the power cord terminal, and remove the power cord 5） Unplug the main control board terminal, use a cross screwdriver to loosen one screw that fixes the main control board, and remove the main control board;	 

6） Replace the master control board in reverse steps.



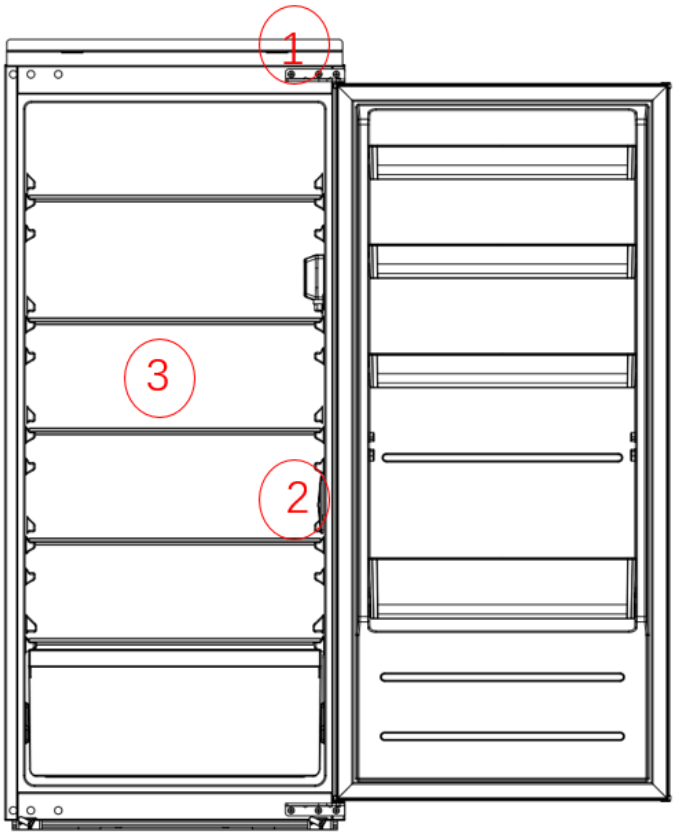






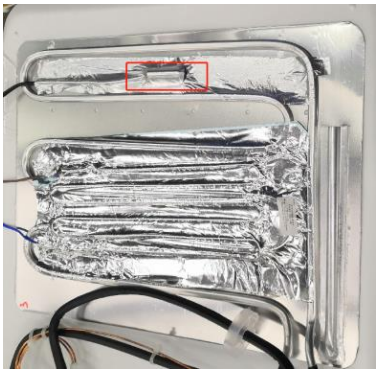
8. Temperature sensing system

8.1 Position of sensors

Position of sensors	
Have 3 sensors ① Ambient temperature sensor ② Sensor in refrigerating chamber ③ Defrost sensor	

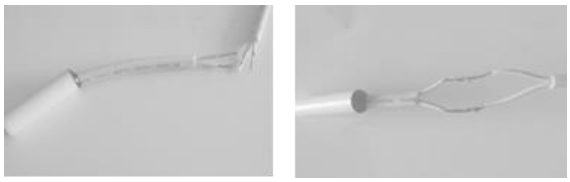
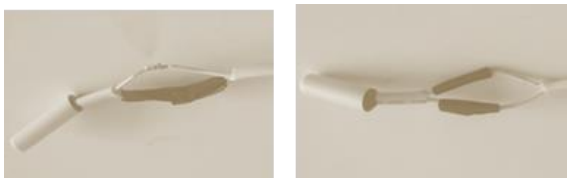
8.2Replacement of sensors

Sensor	
Sensor in refrigerator chamber	
1） Remove the air duct assembly from the refrigerator/freezing. 2） Remove the sensor.	

	
Ambient temperature sensor	
The ambient temperature sensor is located on the top beam	
Defrost sensor	
Inside the foam layer, non-detachable	

8.3 Sensor without terminal replacement

Sensor replacement guidelines	
Cut off the damaged head of sensor.	
Strip off the sensor wiring.	
Take out a new sensor to cut the head of sensor. (Spare parts code：11201007000795) Its technical specifications apply to all MIDEA refrigerators.	

Strip off the head of the sensor and connect it.	
Wrap the two wires together with insulation tape.	
Wrap the two wires together.	

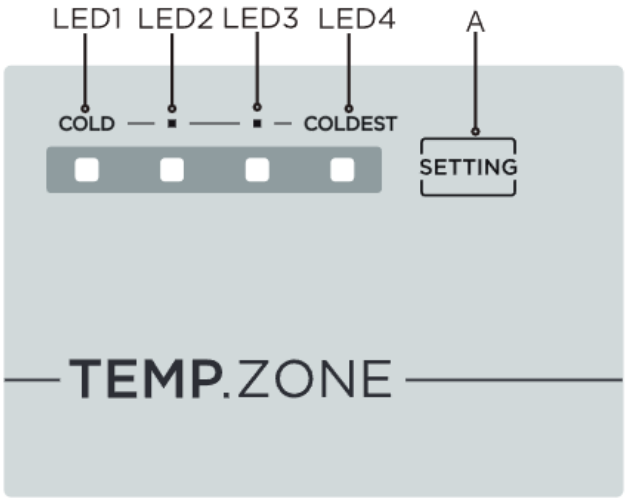
8.4 Sensor resistance (R/T)

Tx(℃)	R (KΩ)	Tx(℃)	R (KΩ)	Tx(℃)	R (KΩ)	Tx(℃)	R (KΩ)	Tx(℃)	R (KΩ)
-30	33.81	**-15**	14.31	**0**	6.495	**15**	3.141	**30**	1.617
-29	31.85	**-14**	13.55	**1**	6.175	**16**	2.999	**31**	1.55
-28	30.01	**-13**	12.83	**2**	5.873	**17**	2.865	**32**	1.486
-27	28.29	**-12**	12.16	**3**	5.587	**18**	2.737	**33**	1.426
-26	26.68	**-11**	11.52	**4**	5.315	**19**	2.616	**34**	1.368
-25	25.17	**-10**	10.92	**5**	5.06	**20**	2.501	**35**	1.312
-24	23.76	**-9**	10.35	**6**	4.818	**21**	2.391	**36**	1.259
-23	22.43	**-8**	9.82	**7**	4.589	**22**	2.287	**37**	1.209
-22	21.18	**-7**	9.316	**8**	4.372	**23**	2.188	**38**	1.161
-21	20.01	**-6**	8.841	**9**	4.167	**24**	2.094	**39**	1.115
-20	18.9	**-5**	8.392	**10**	3.972	**25**	2.005	**40**	1.071
-19	17.87	**-4**	7.968	**11**	3.788	**26**	1.919	**41**	1.029
-18	16.9	**-3**	7.568	**12**	3.613	**27**	1.838	**42**	0.9885
-17	15.98	**-2**	7.19	**13**	3.447	**28**	1.761	**43**	0.9506
-16	15.12	**-1**	6.833	**14**	3.29	**29**	1.687	**44**	0.914

9. Function and operation

9.1 Display operation panel

Icon	Button
LED ❶: One gear——COLD (8˚C) LED ❷: Two gear—— \ (6˚C) LED ❸: Three gear—— \ (4˚C) LED ❹: Four gear ——COLDDEST (2˚C)	**A.** Temperature setting of refrigerator compartment



When powered on for the first time, the full display is displayed for 3 seconds, and then it enters the normal operation display, defaulting to the 3rd gear mode (LED3 is on).

9.2 Temperature control

Press the button '**SETTING**' once, the gear will be changed once. 15 seconds after setting, the refrigerator will be running in accordance with the set value.

9.3 MODE SETTING

9.3.1 Super freeze mode

Long press temperature setting button for 6 seconds, it will enter **Super freeze** mode after 15 seconds, and LED3 and LED4 turn on at the same time.

After running for 40 hours at Super freeze mode or the setting button is pressed, it will quit the Super freeze mode, then go back to the previous setting

9.3.2 Super cool mode

Long press temperature setting button for 3 seconds, it will enter **super cool** mode after 15 seconds,

and LED1 and LED2 turn on at the same time.

After running for 6 hours at super cool mode or the setting button is pressed, it will quit the super cool mode, then go back to the previous setting.

9.3.3 Standby mode

Long press the '**SETTING**' button for 10 seconds, the refrigerator will enter the standby function mode, and the display and control of the refrigerator will be all off.

Long press the '**SETTING**' button for 10 seconds again to exit the standby mode.

9.4 Open door alarm (None)

9.5 Fault code and solutions

Display fault code when there is a fault. No longer displaying fault codes after 30 minutes of power on. If there is a fault after 30 minutes of power on, enter the test mode and display fault code for 15 seconds.

Error code	Fault Type	Troubleshooting and Solutions
LED2 and LED4 flashing	Refrigeration temperature sensor error (E1)	**Step 1**: Check whether the connection terminals are plugged in place and whether there are foreign matters in them; after cleaning the terminals, plug them in again. **Step 2**: If the fault still occurs, pull out the corresponding connection terminal on the main PCB, use a multimeter to check the resistance value of the sensor, and confirm whether it is normal. **Step 3**: If the resistance value is wrong, replace the sensor. **Step 4**: If the fault still occurs, replace the main PCB.
LED3 and LED1 flashing	Ambient temperature sensor error (E7)	
LED1 and LED2 and LED4 flashing	Refrigeration defrost sensor error (E4)	

9.6 Defrosting function

1.Defrost the refrigerator chamber as per the accumulative operation time of the Compressor2.If power failure occurs abruptly to the Compressor,

After that, conduct defrosting according to using condition and ambient temperature in a period between 6 and 36 hours as per the accumulative operation time of the Compressor.

9.7 Test mode

Test items	Testing Method	Expected result
Select to enter into forced cooling mode	Continuously press the refrigeration and temperature adjustment key for 20 seconds, release the key, and enter the forced operation setting mode. The four temperature indicator lights flash, and then continue to press the refrigeration and temperature adjustment key for 7 seconds until the display board is completely off. Press the setting key again to enter the forced operation mode	The gear indicator lights 2, 3, and 4 light up simultaneously, and the compressor is turned on; Normal control of other loads; Operate the compressor in forced operation mode for 72 hours (with a contraction time of 72 minutes), and set the temperature back to the original set gear;

	Press the button twice continuously in forced mode to exit.	The refrigerator will exit the test mode and return to normal mode for operation
Commercial performance mode	Continuously press the refrigeration and temperature control button for 20 seconds, release the button, and enter the forced operation setting mode. The four temperature indicator lights flash, and then continue to press the refrigeration and temperature control button for 7 seconds until the display board is completely off. Press the setting button twice, and the gear indicator lights 2 and 4 will light up simultaneously. After 15 seconds, the display will return to normal display and enter the commercial mode.	The display board is constantly on and the load does not act.
	Continuously press the refrigeration and temperature adjustment button for 20 seconds, release the button, and enter the forced operation setting mode. The four temperature indicator lights flash, and then continue to press the refrigeration and temperature adjustment button for 7 seconds until the display board is completely off. Press the setting button again 3 times to exit the commercial performance mode	
standby mode	Long press for 10 seconds to enter standby mode	All loads are turned off and the display is off;
	In standby mode, press the gear adjustment button again to exit standby mode	
Quick cooling mode	Press and hold for 3 seconds to switch to quick cooling mode, which will take effect after 15 seconds;	The quick cooling indicator light is on (LED1/LED2), and the entire machine operates according to the quick cooling start and stop point control; Run in quick cooling mode for 6 hours (with a reduced time of 6 minutes), and set the temperature back to the original set gear
	In quick cooling mode, press the gear adjustment button again to exit the quick cooling mode	
Quick freezing	; Press and hold for 6 seconds to switch to	1. The quick freezing indicator light is on

mode	quick freezing mode, which will take effect after 15 seconds; In freeze mode, press the gear adjustment button again to exit freeze mode	(LED3/LED4), and the entire machine operates according to the quick freezing start/stop point control; 2. When the temperature of the refrigeration sensor is less than 5 ℃, the compensating heating wire remains on. When the temperature of the refrigeration sensor is greater than 5.5 ℃, the compensating heating wire is turned off. 3. The quick freezing mode does not enter the control of the refrigerated heating wire; 4. Run in quick freeze mode for 40 hours (with a reduction of 12 minutes), and set the temperature back to the original set gear

10. Compressor

10.1 Compressor on and off Control specifications

10.1.1 All the following conditions are met, and the compressor is turned on

The refrigeration room has reached the start-up point

Compressor shutdown time ≥ 7 minutes (shrinkage time is 7 seconds)

Defrosting sensor temperature ≥ 3.5 ℃

10.1.2 The compressor stops when one of the following conditions is met

Tr ≤ Trt

When the continuous shutdown time of the compressor reaches 90 minutes (2 minutes during contraction), the compressor is forced to start, and after reaching the shutdown point and the startup time exceeds 5 minutes (10 seconds during contraction), it is shut down.

10.2 Inverter board fault analysis

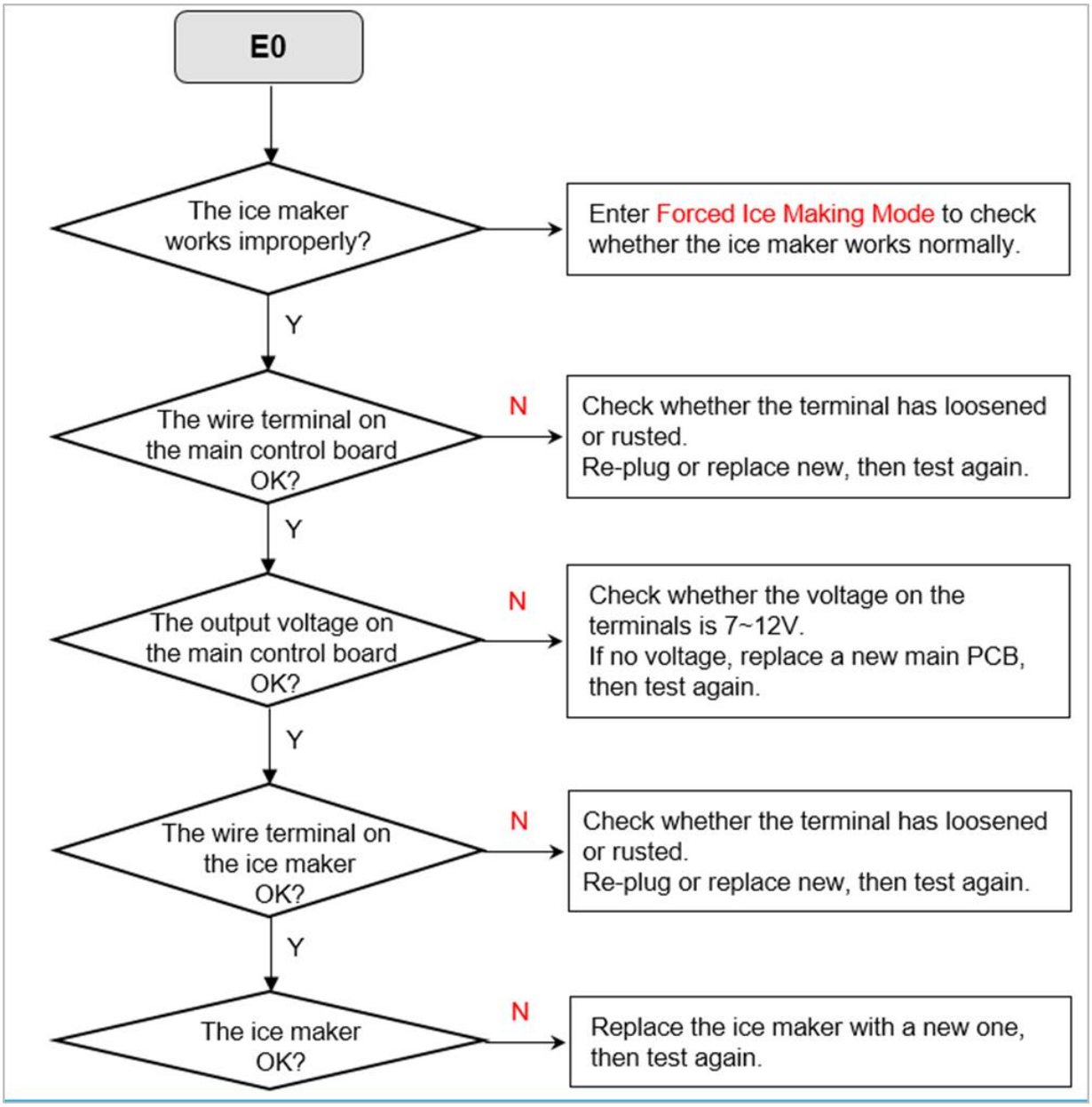
Running status of LED	Fault Type	Troubleshooting and Solutions
Not light	Standby	No repair needed
The light is always on when the power is turned on for the first time, and it is always off after the compressor is turned on and off	Normal working	No repair needed
Blink once: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Software over current protection	Step 1: Disconnect the U-V-W wiring harness, measure the resistance between any two phase of U-V-W terminals (between 5 and 30 Ω and equal in value between any two phase), and measure the resistance between any phase and the fridge metal casing (above 1 MΩ).
		Step 2: If ok, replace a new inverter board
		Step 3: If the fault still occurs, replace a new compressor
Blink twice: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Overvoltage protection	Measure the voltage between L and N
		1）If it is less than 280V, replace a new inverter board
		2）If more than 280V, please check the power supply and power cable
Blink three times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Under voltage protection	Measure the voltage between L and N
		1）If it is less than 160V, replace a new inverter board
		2）If more than 160V, please check the power supply and power cable

Blink four times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Hardware over current protection	Step 1: Disconnect the U-V-W wiring harness, measure the resistance between any two phase of U-V-W terminals (between 5 and 30 Ω and equal in value between any two phase), and measure the resistance between any phase and the fridge metal casing (above 1 MΩ).
		Step 2: If ok, replace a new inverter board
		Step 3: If the fault still occurs, replace a new compressor
Blink five times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	IPM Hardware temperature throttling	In this case, the inverter is usually normal. If the refrigerator cooling function is working, it may be due to insufficient lubrication inside the compressor. If it is not cooling, then there may be a blockage in the refrigeration circuit.
Blink six times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Lack of phase protection	Step 1: Check if the UVW wiring harness is securely connected to the inverter board and compressor.
		Step 2: Disconnect the UVW wiring harness, measure the resistance between any two phases of UVW terminals. If the resistance between any one or two phases is infinite, replace the compressor.
		Step 3: Re-power and if the compressor runs for a period of time before tripping, it may indicate a blockage in the piping system.
		Step 4: If the fault still occurs, replace a new inverter board.
Blink seven times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Voltage bias fault	Step 1: Power off and restart.
		Step 2: If the fault still occurs, replace a new inverter board.
Blink eight times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Misstep protection	Step 1: After powering on, touch the compressor and wait for the indicator light on the inverter board to light up.
		Step 2: If the compressor does not respond and the indicator light is flashing, it means the compressor is damaged, replace a new compressor.
		Step 3: If the compressor shakes when starting and then protects, replace a new inverter board.

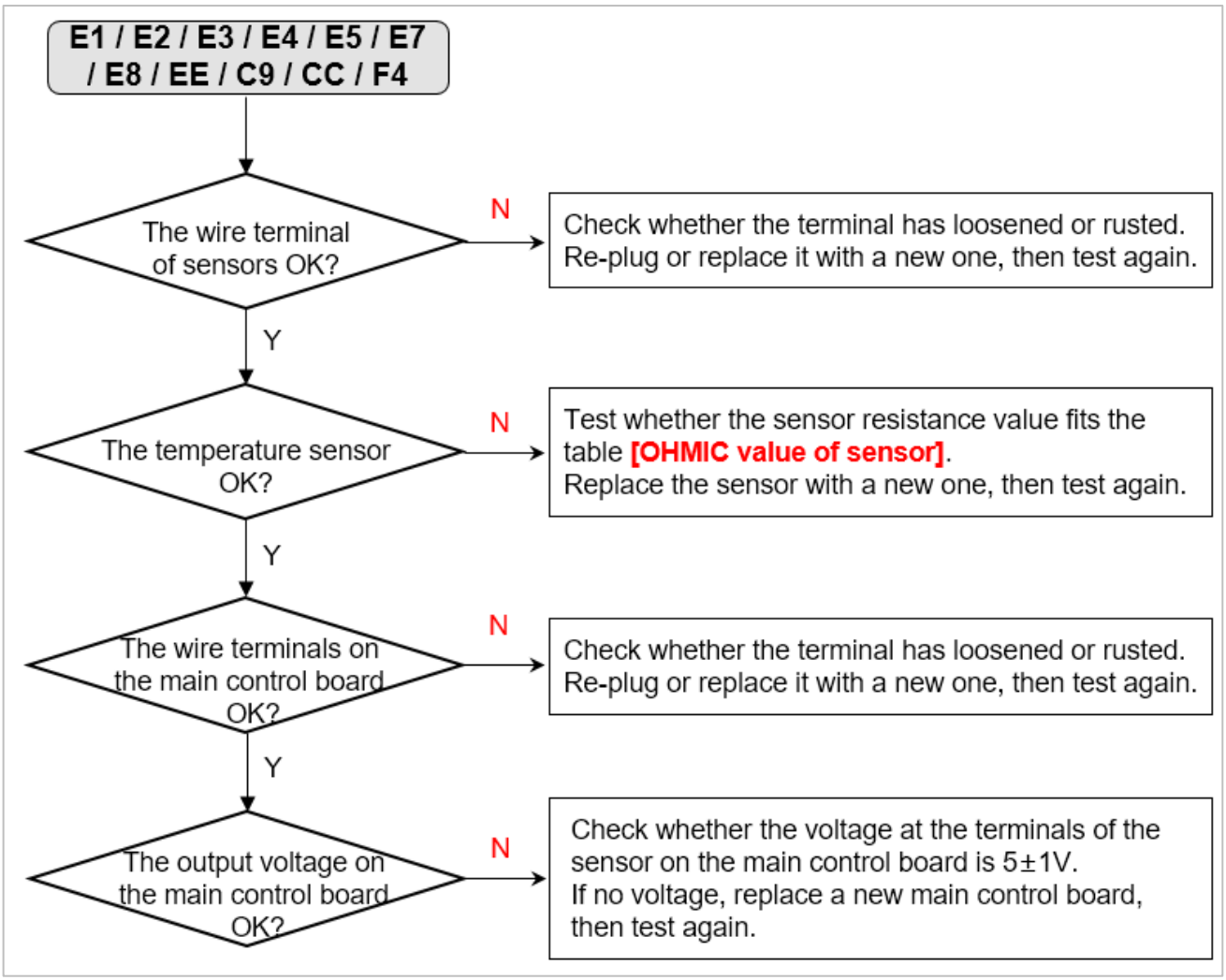
Blink night times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Running block protection	Step 1: After powering on, touch the compressor and wait for the indicator light on the inverter board to light up.
		Step 2: If the compressor does not respond and the indicator light is flashing, it means the compressor is damaged, replace a new compressor.
		Step 3: If the compressor shakes when starting and then protects, replace a new inverter board.
Blink ten times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Over-temperature and over-power shutdown protection for variable frequency board	In this case, the inverter is usually normal. If the refrigerator cooling function is working, it may be due to insufficient lubrication inside the compressor. If it is not cooling, then there may be a blockage in the refrigeration circuit.
Blink eleven times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Starting failure	Step 1: After powering on, touch the compressor and wait for the indicator light on the inverter board to light up.
		Step 2: If the compressor does not respond and the indicator light is flashing, it means the compressor is damaged, replace a new compressor.
		Step 3: If the compressor shakes when starting and then protects, replace a new inverter board.
Blink twelve times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	Power and frequency reduction	In this case, the inverter is usually normal. If the refrigerator cooling function is working, it may be due to insufficient lubrication inside the compressor. If it is not cooling, then there may be a blockage in the refrigeration circuit.
Blink thirteen times: light 0.5 second, extinguish 0.5 second, interval time(extinguish) is 2 second	UART communication failure	Check the communication wiring harness between the main control board and the inverter board. If the connection is good, replace either the main control board or the inverter board.

11. Troubleshooting Method

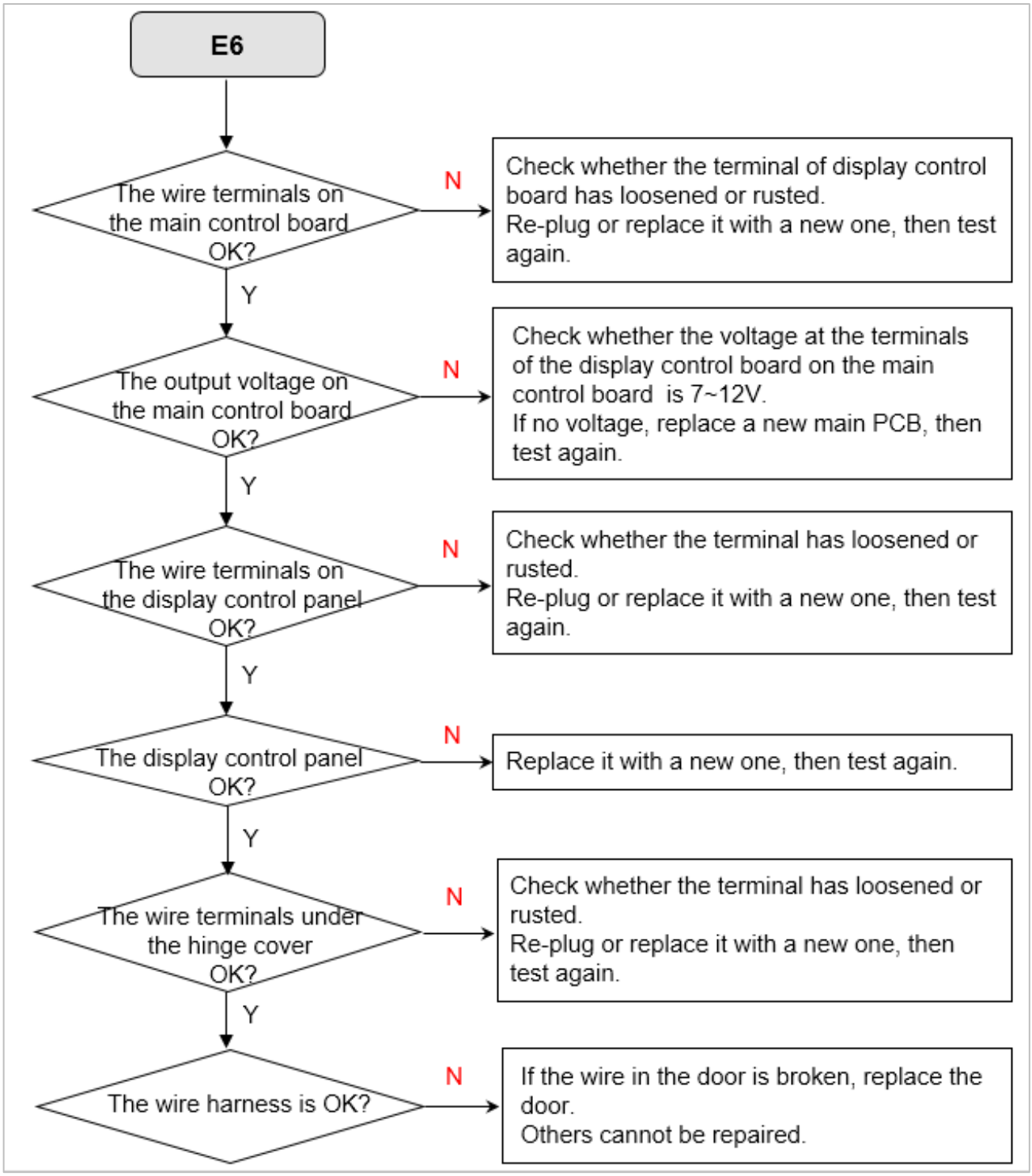
11.1 Error code E0



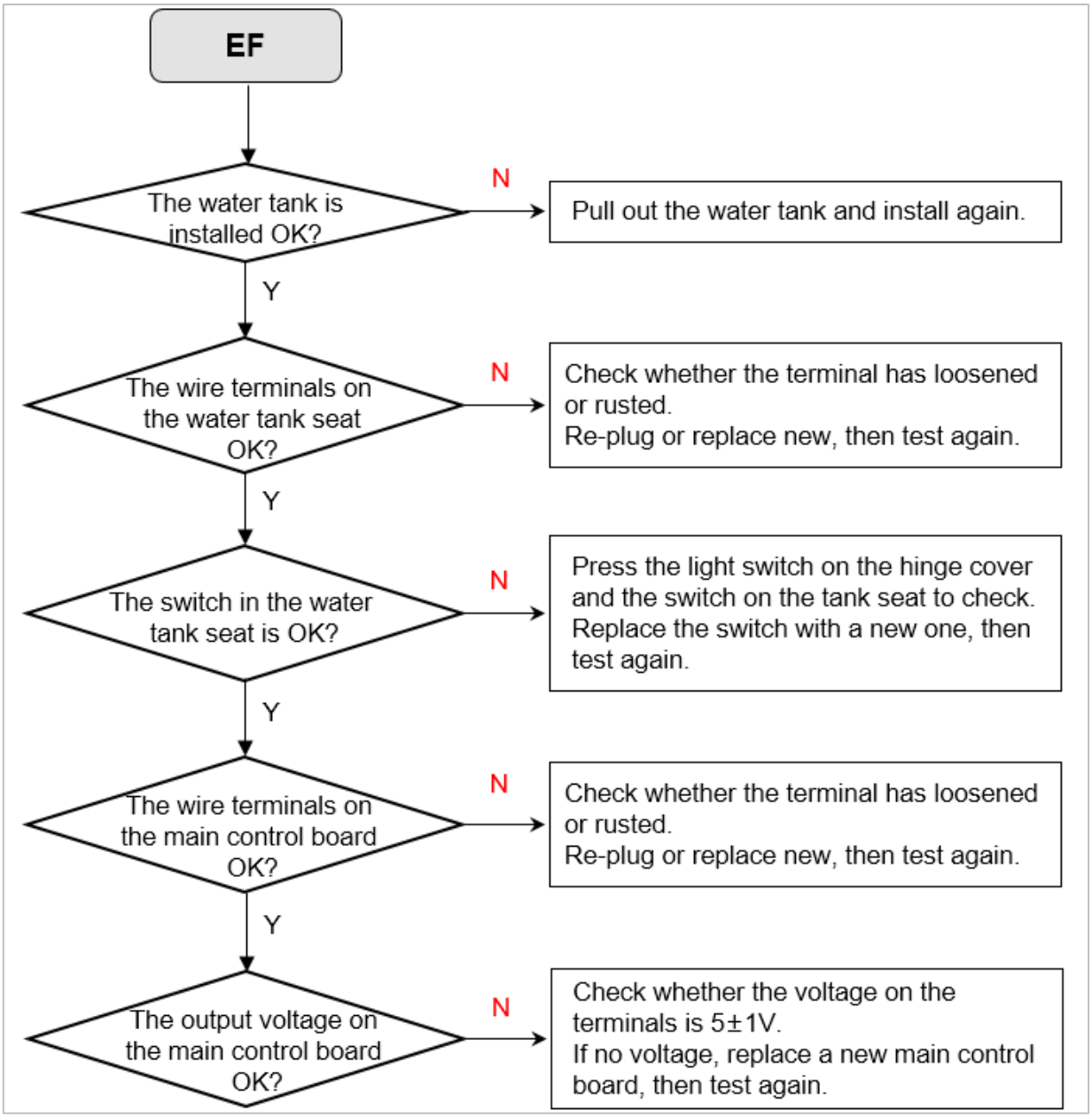
11.2 Error code E1 / E2 / E3 / E4 / E5 / E7 / E8 / EE / C9 / CC / F4



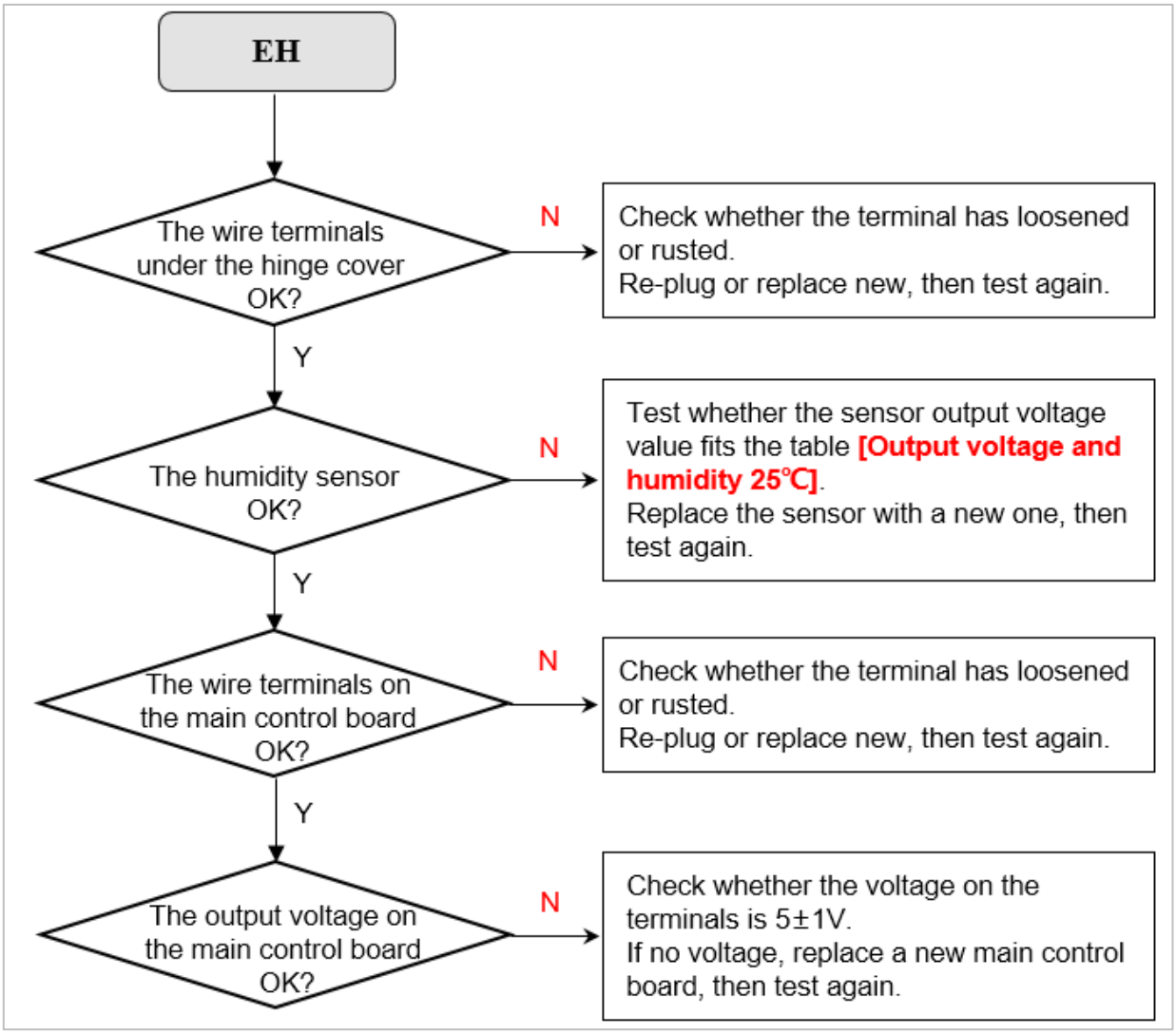
11.3 Error code E6



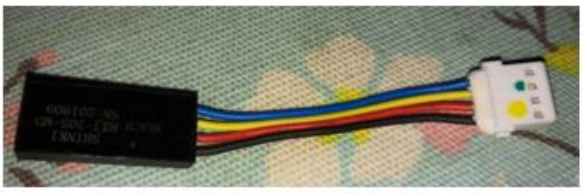
11.4 Error code EF



11.5 Error code EH



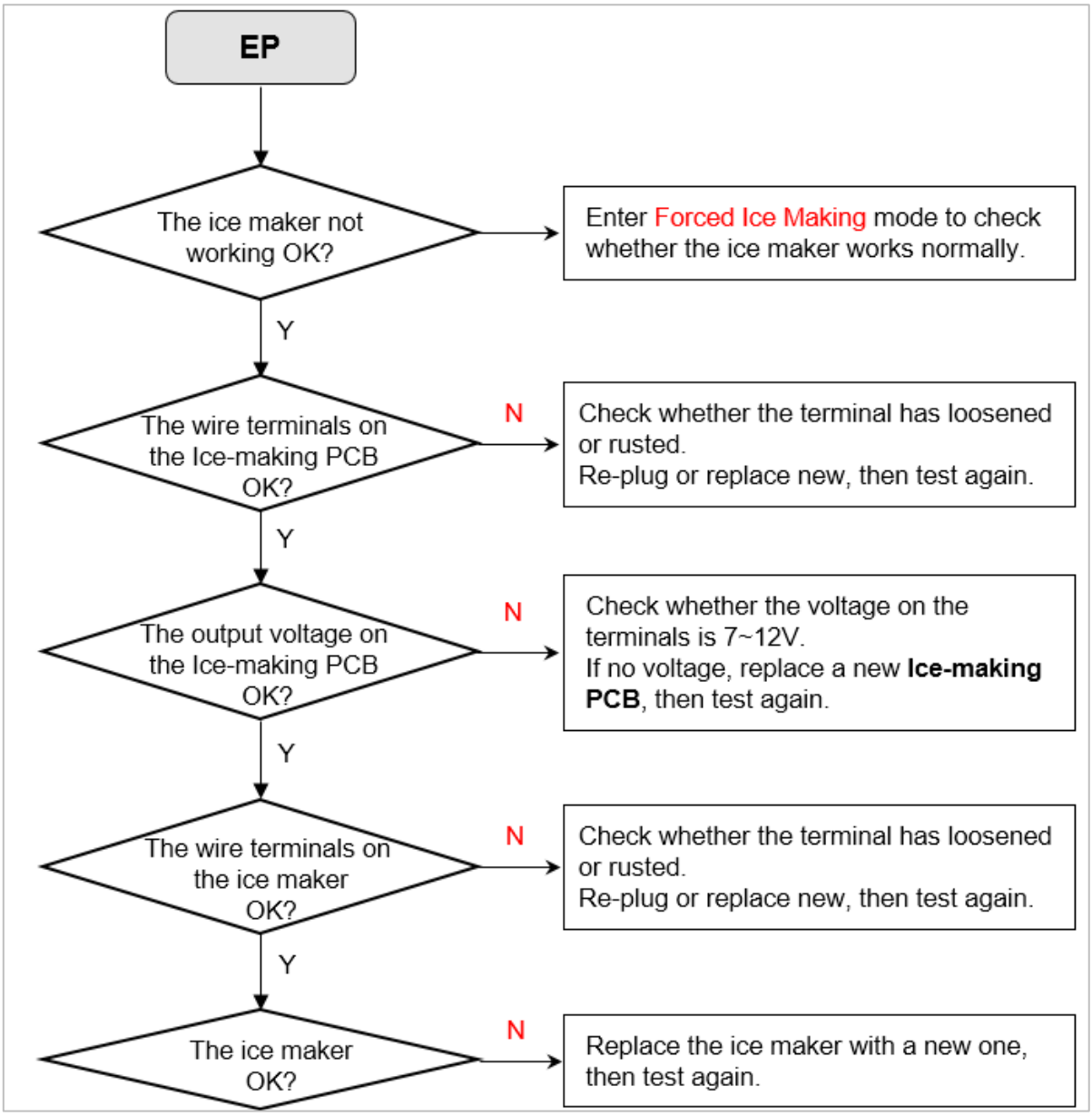
The meaning of different color wires:
Blue: Ambient temperature
Yellow: Humidity
Red: +5V
Black: GND



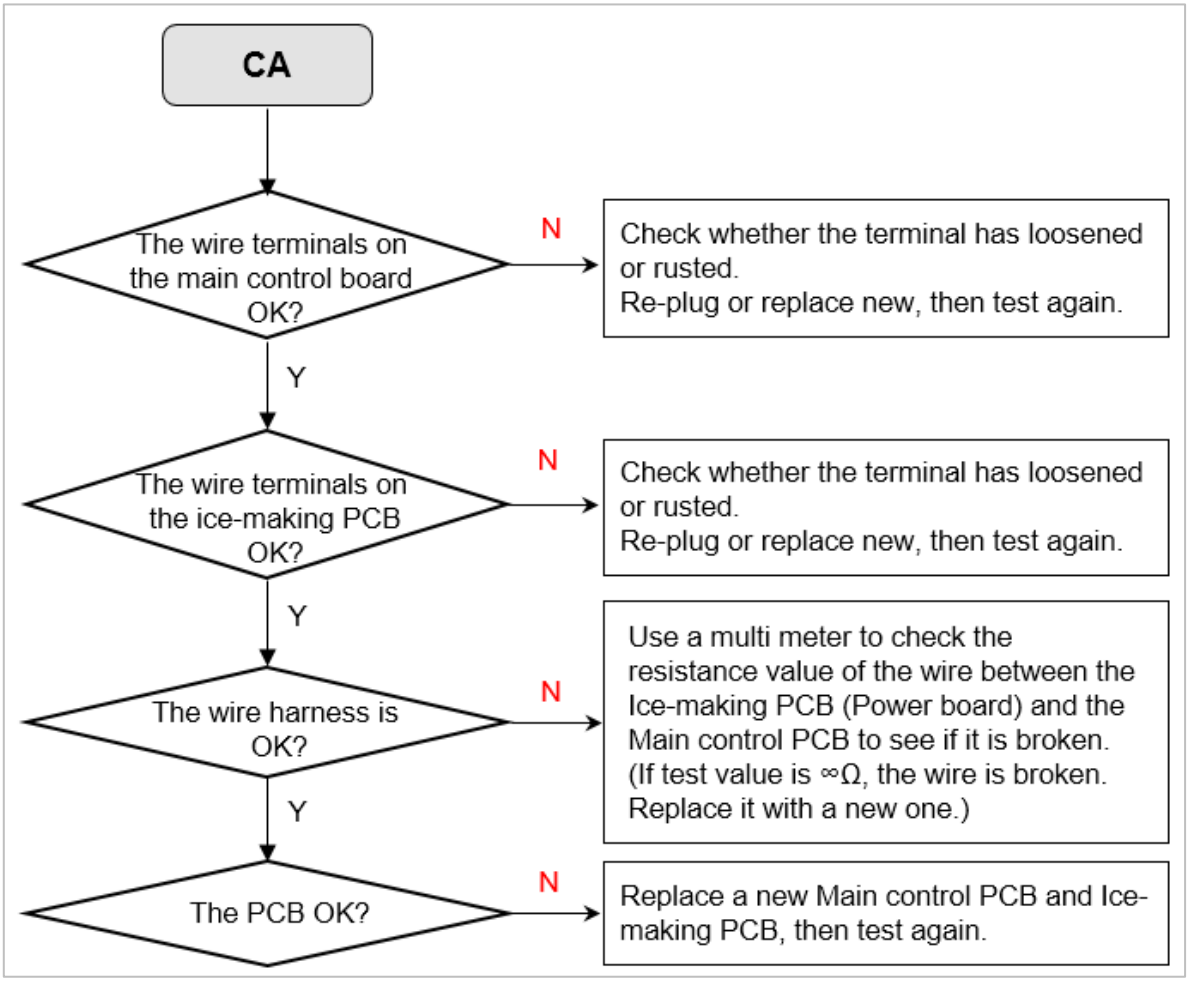
Comparison table of output voltage and humidity at 25℃	
Humidity（%）	Output (V)
20	1.528
40	2.067
60	2.779
80	3.400

1. Check if the sensor has an correct output voltage between **Yellow and Black** wires with a multi meter.
2. If the value is wrong, please replace it with a new one.

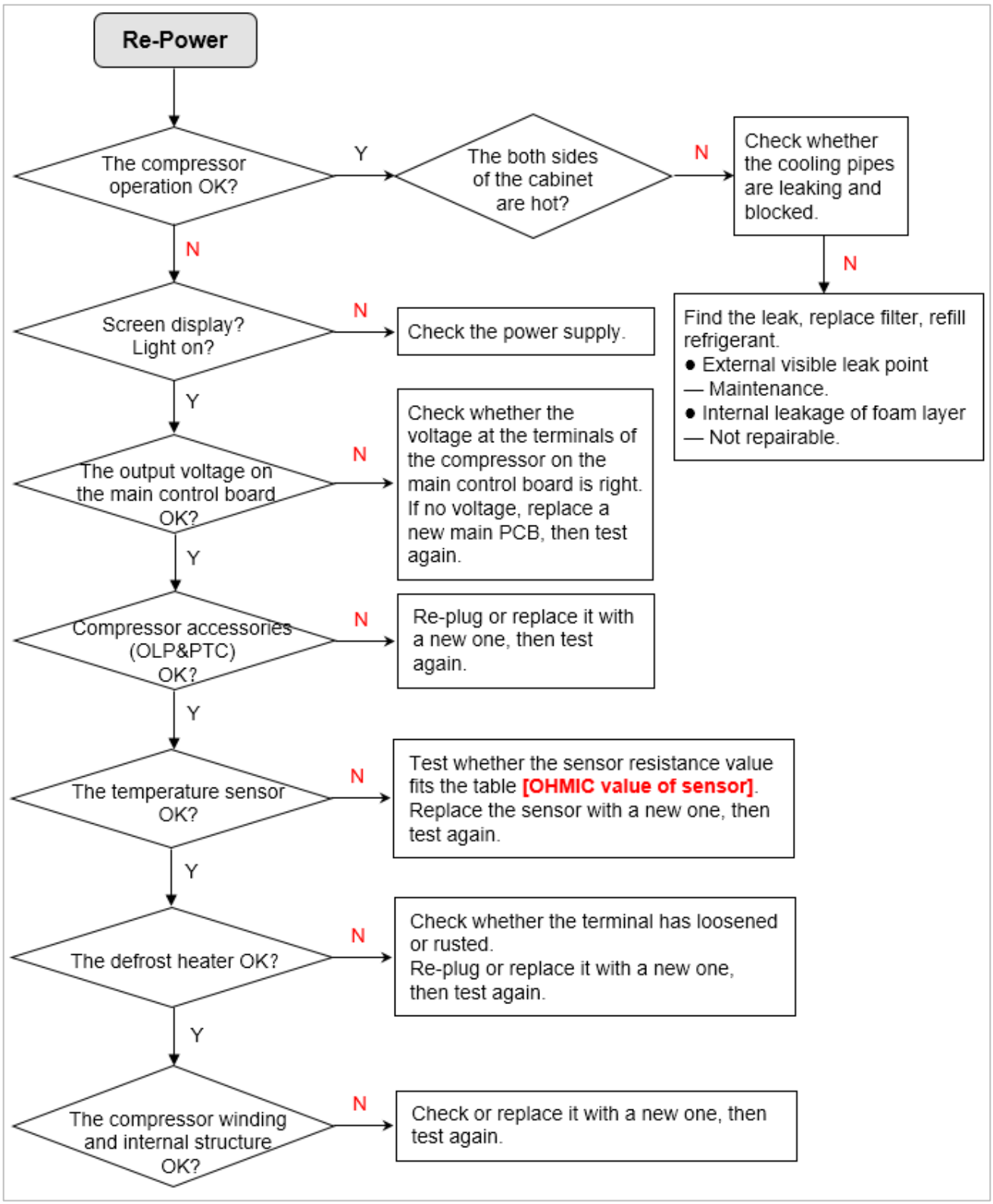
11.6 Error code EP



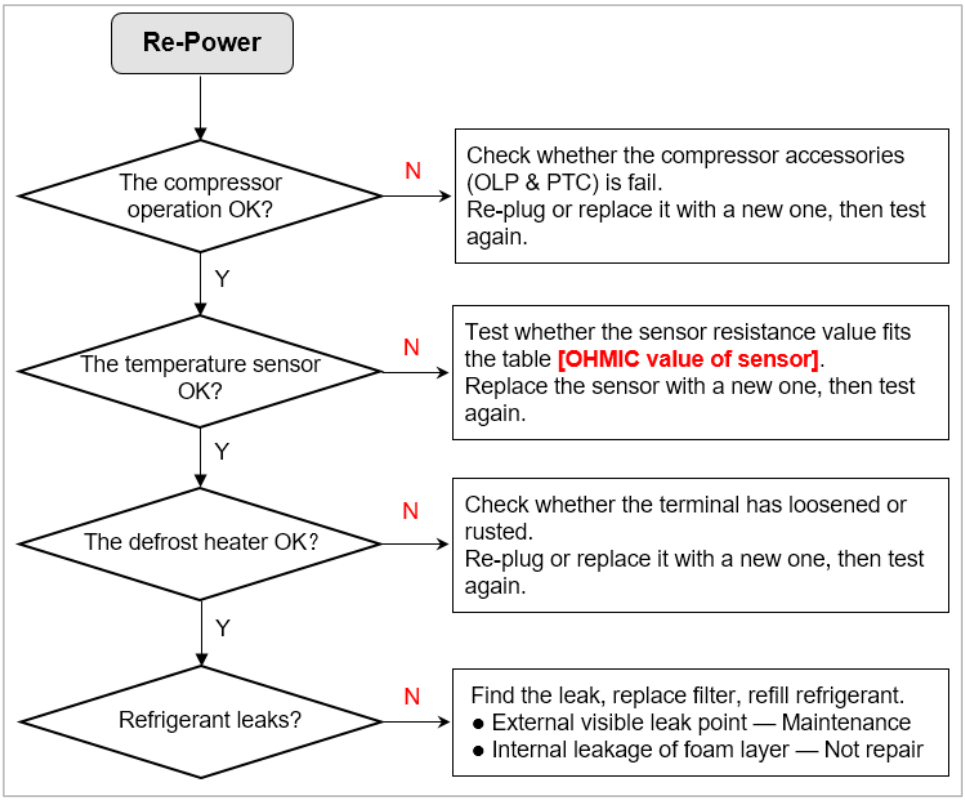
11.7 Error code CA



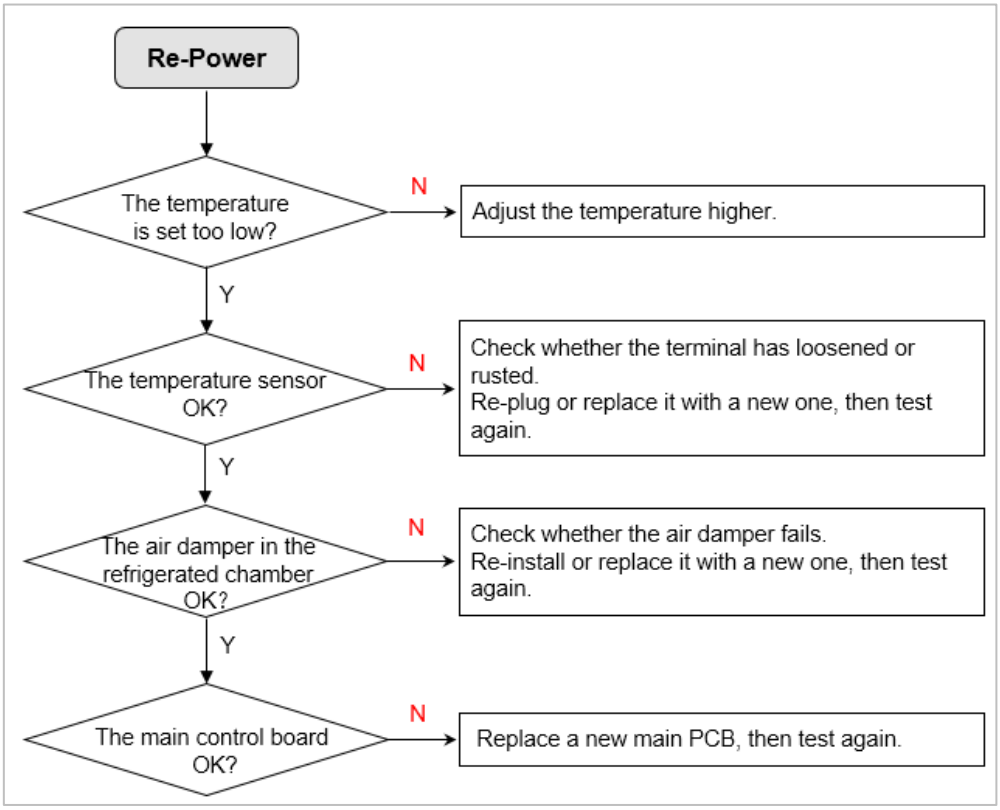
11.8 Not cooling in all the chambers



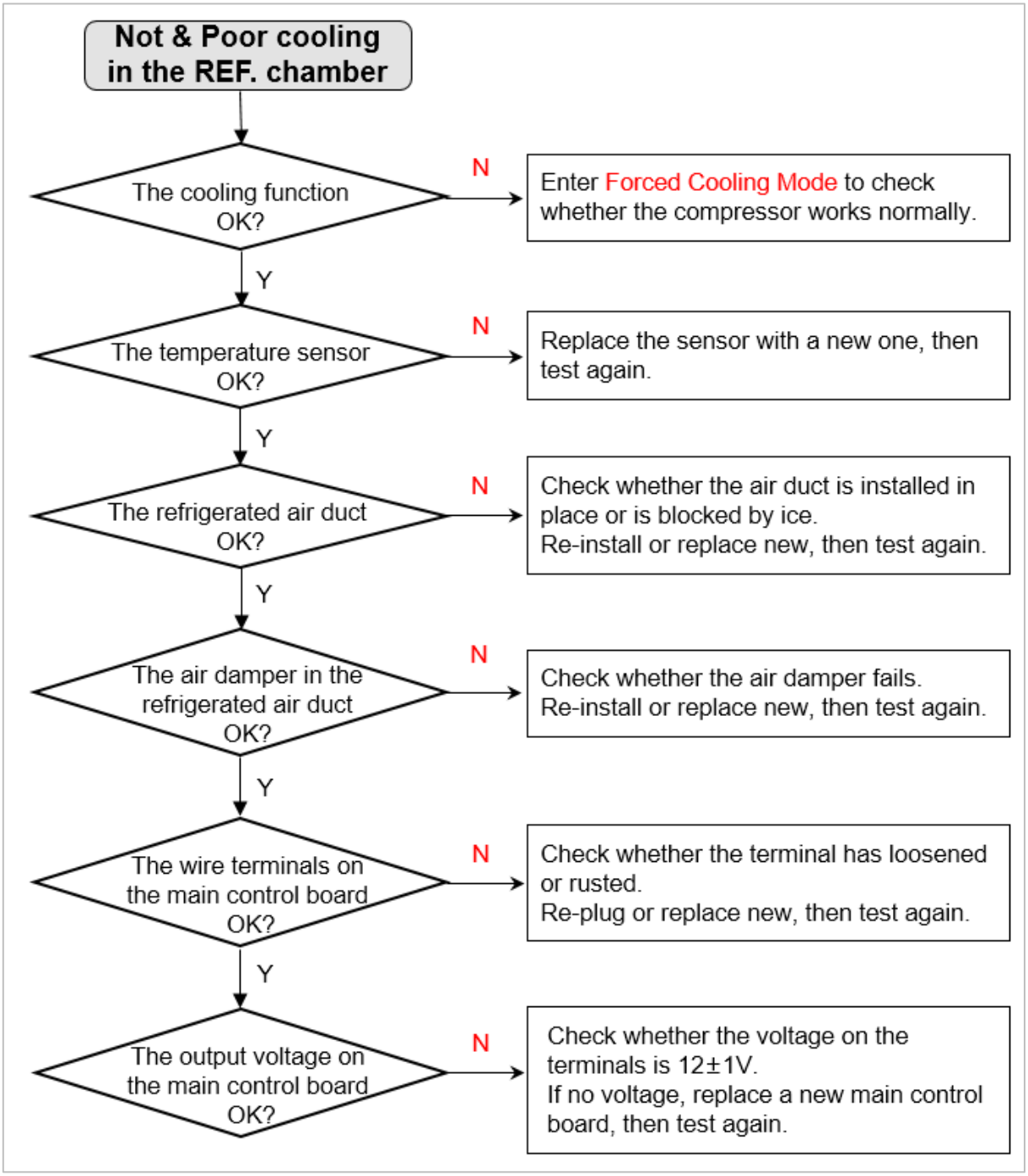
11.9 Poor Cooling in all the chambers



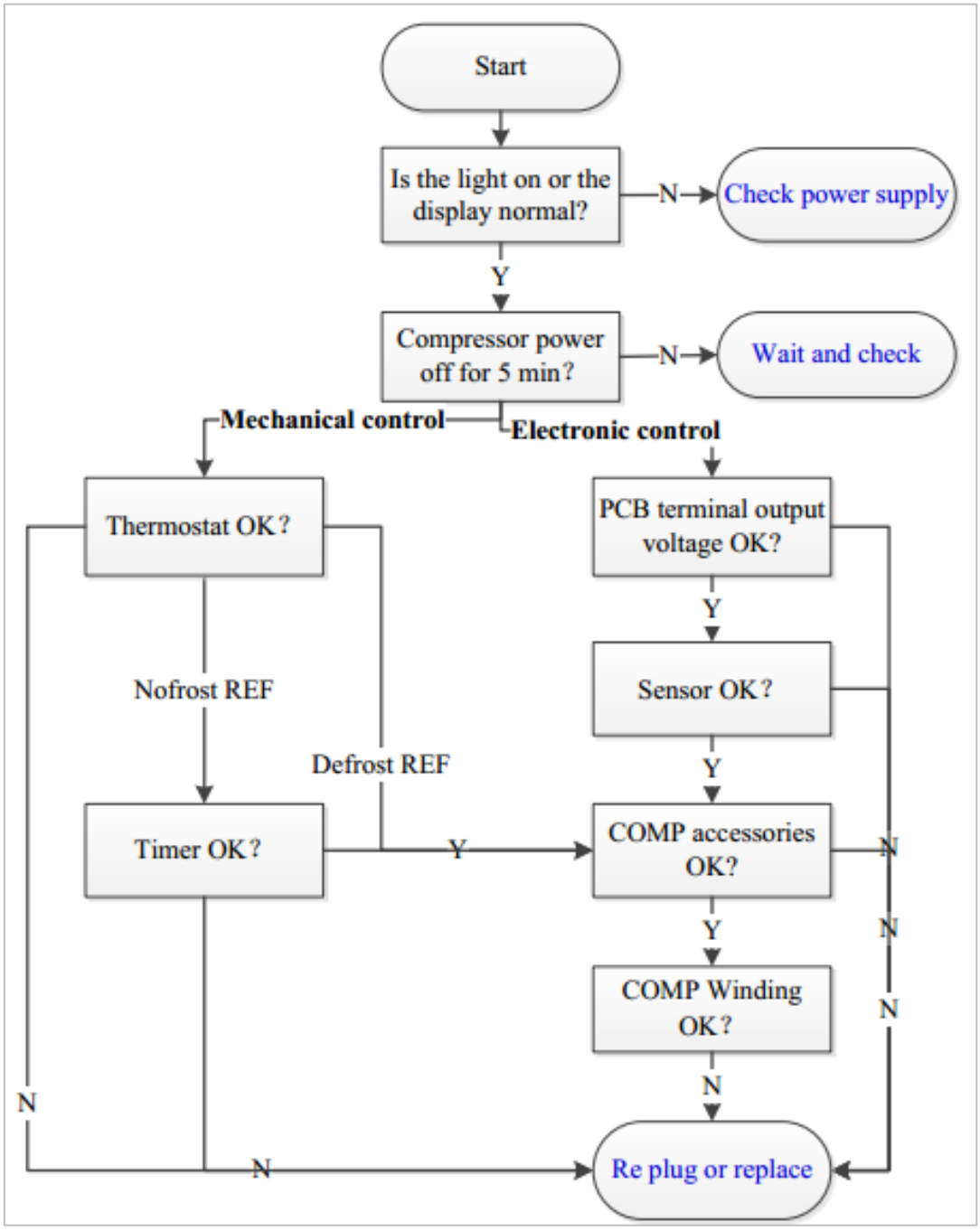
11.10 Overcooling in the refrigerated chamber



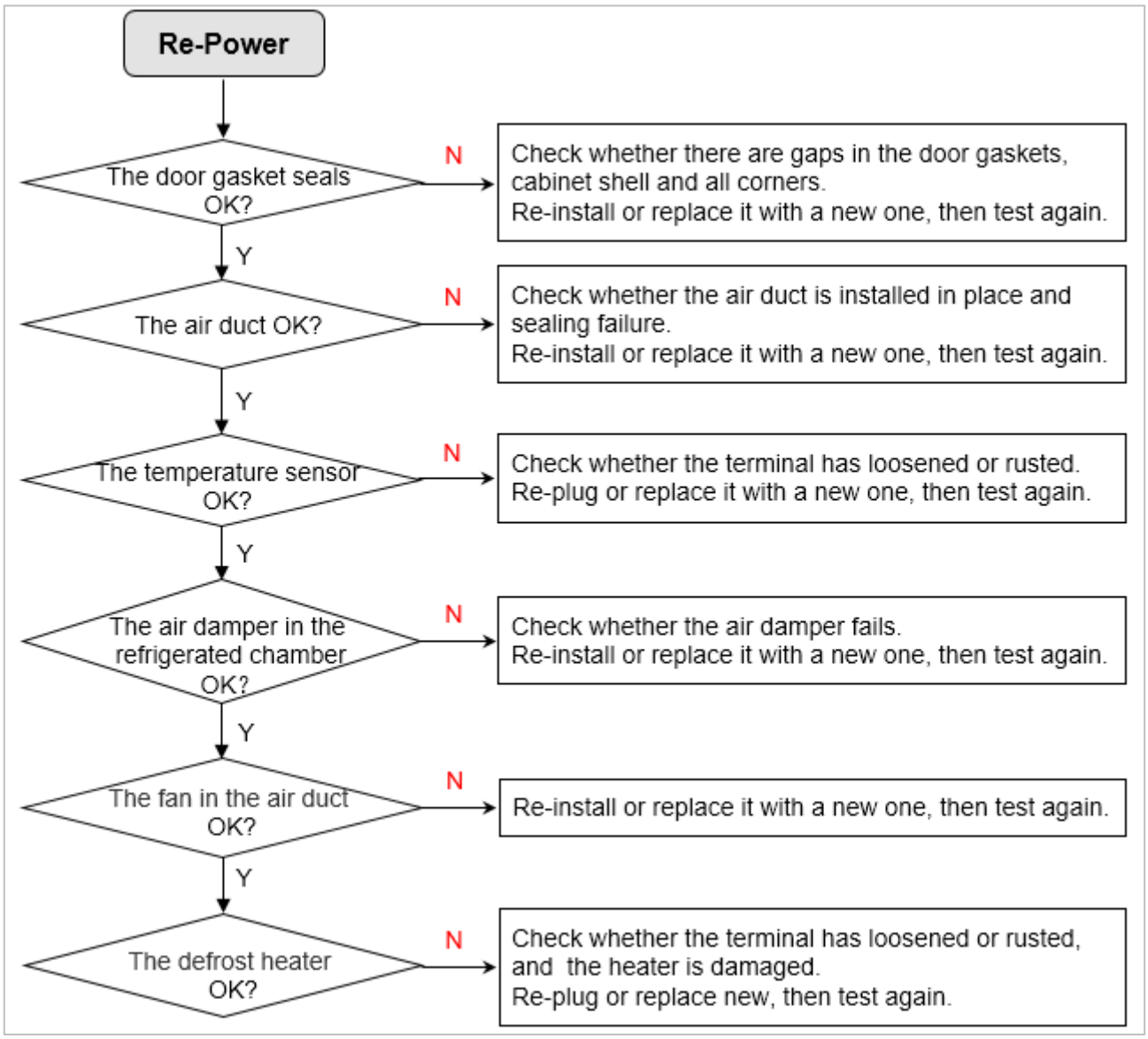
11.11 Not & Poor cooling in the refrigerated chamber



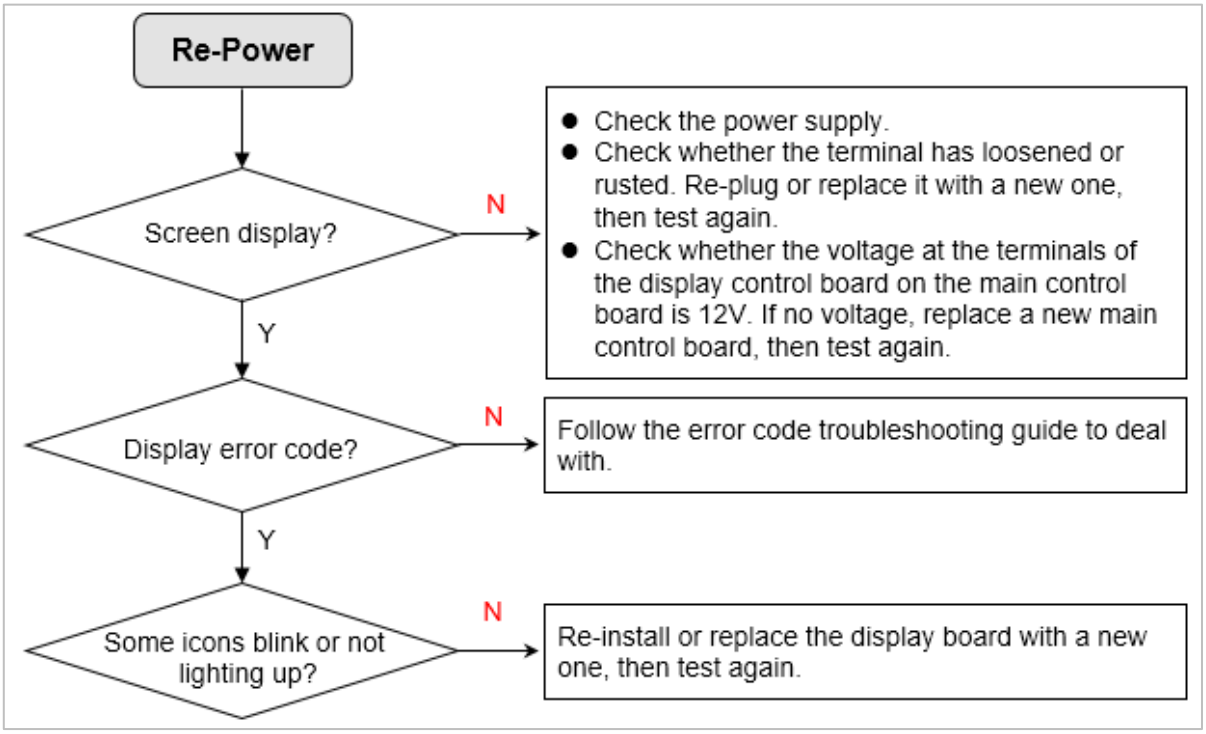
11.12 No working of compressor



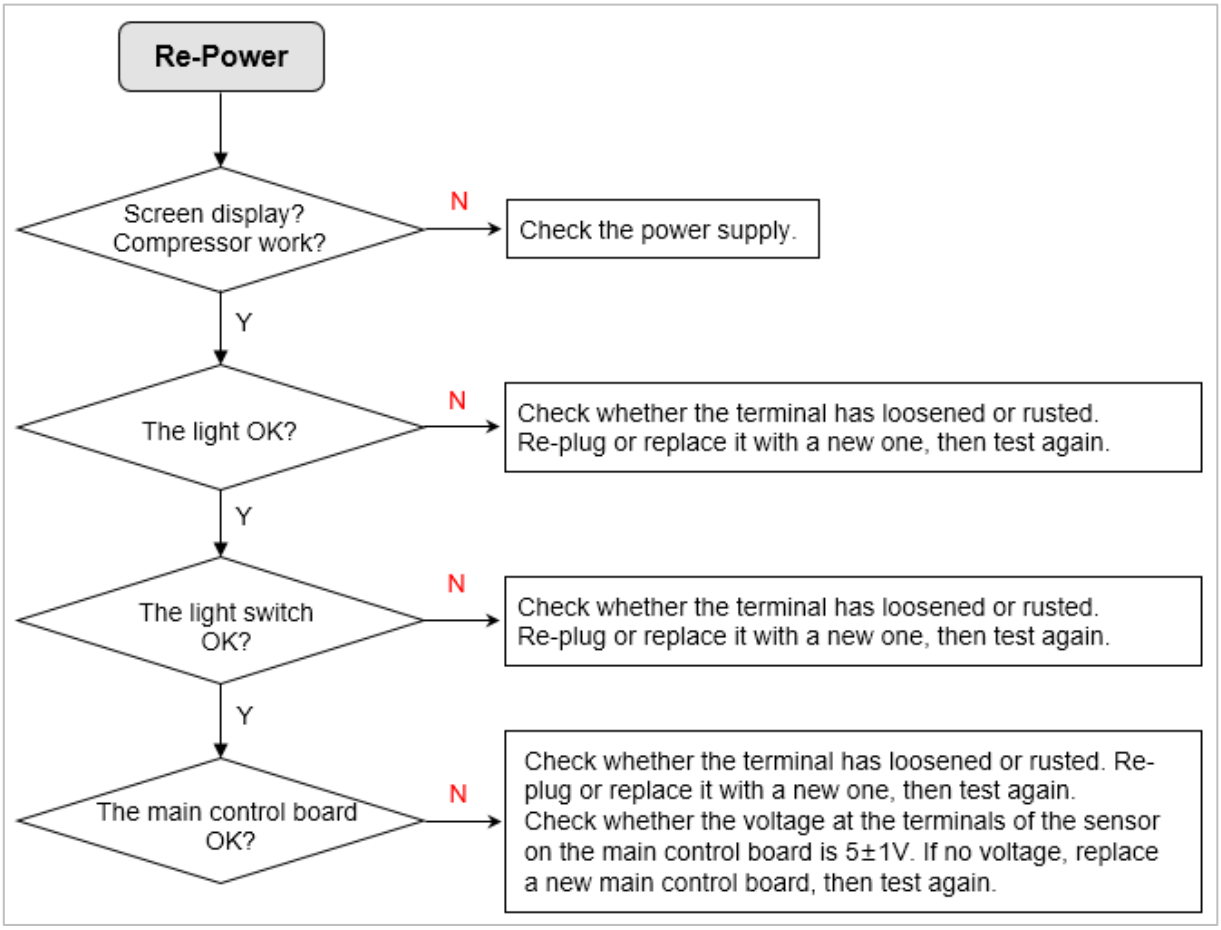
11.13 Condensation & Frost



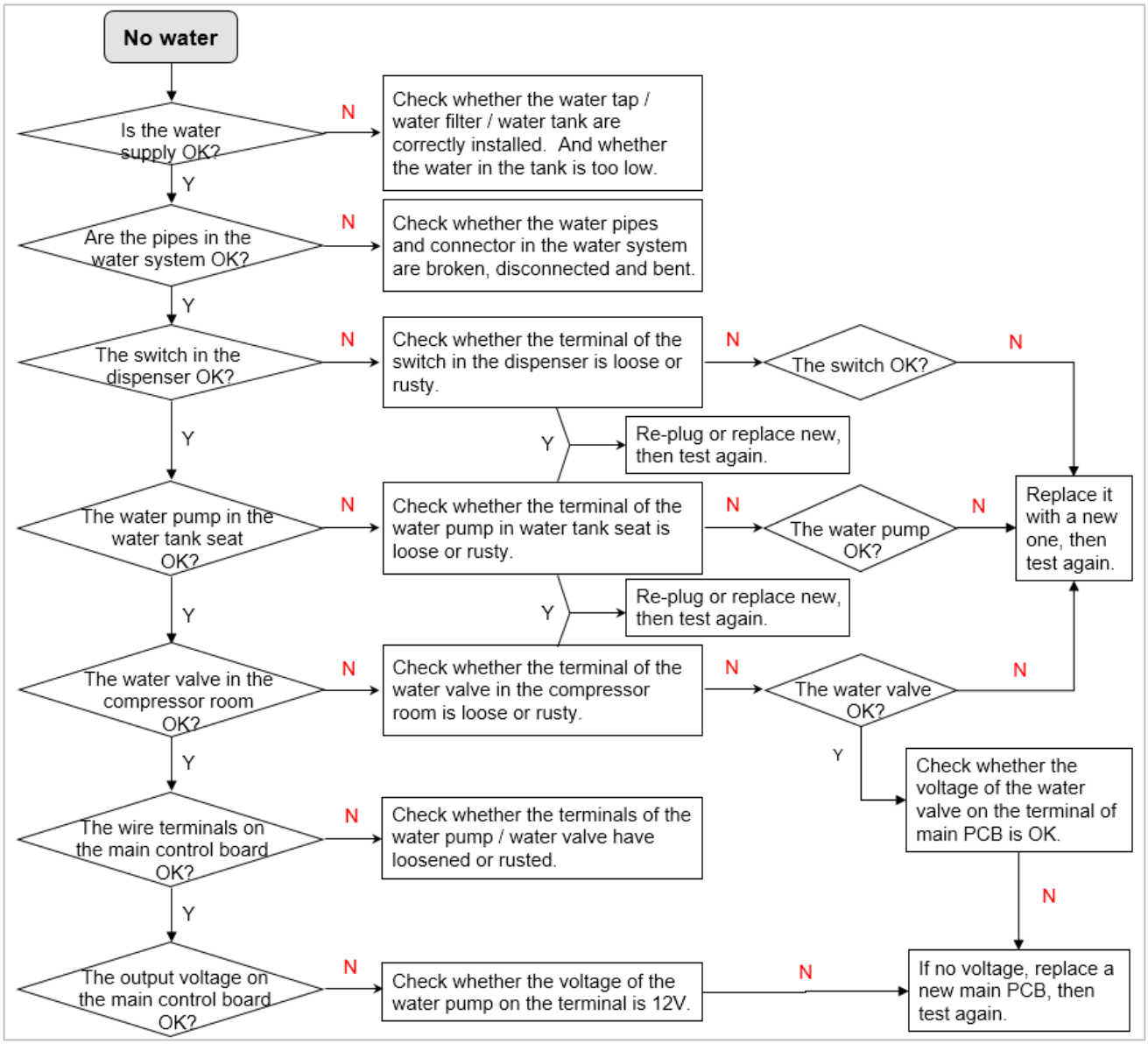
11.14 Display panel failure



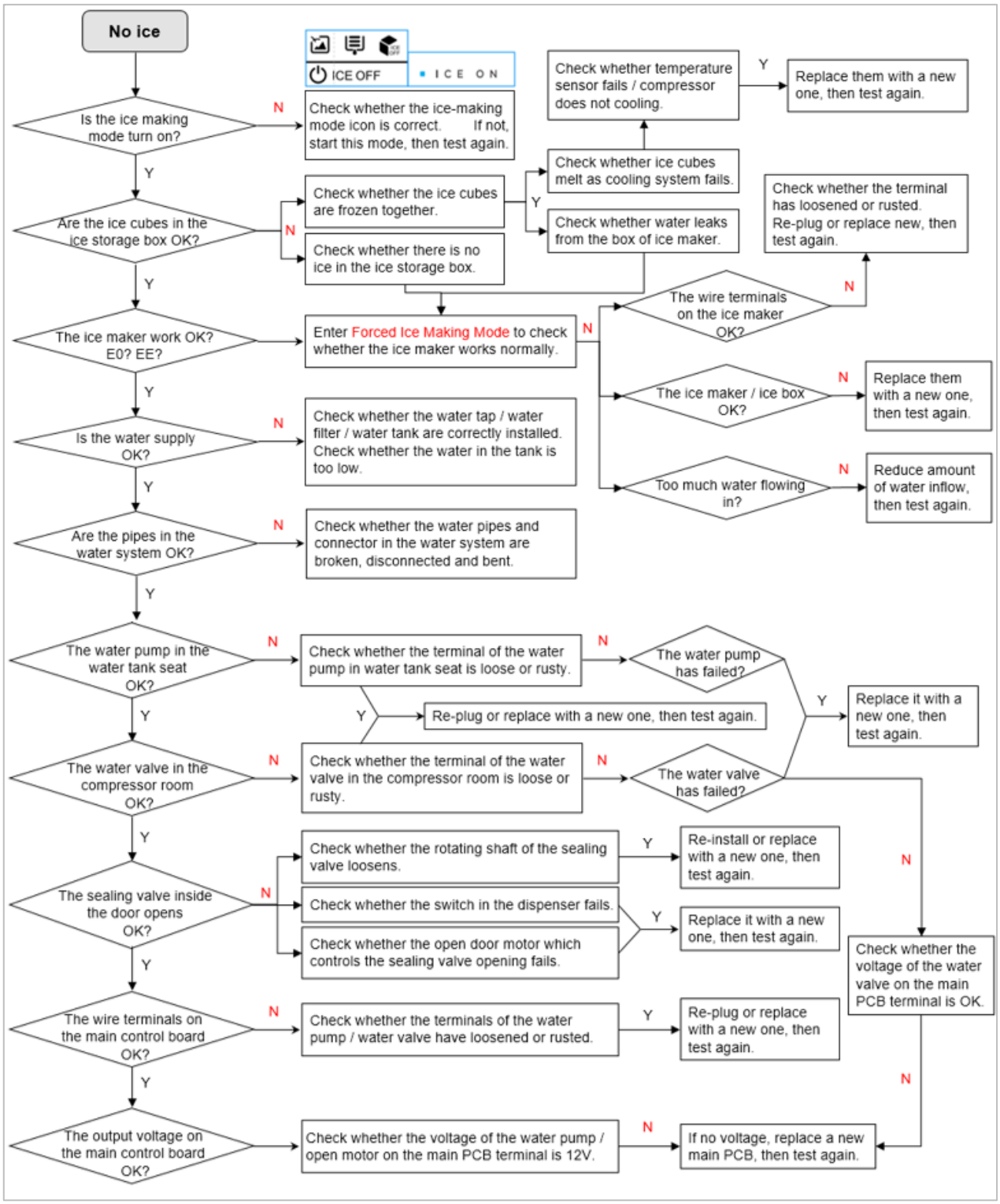
11.15 Light failure



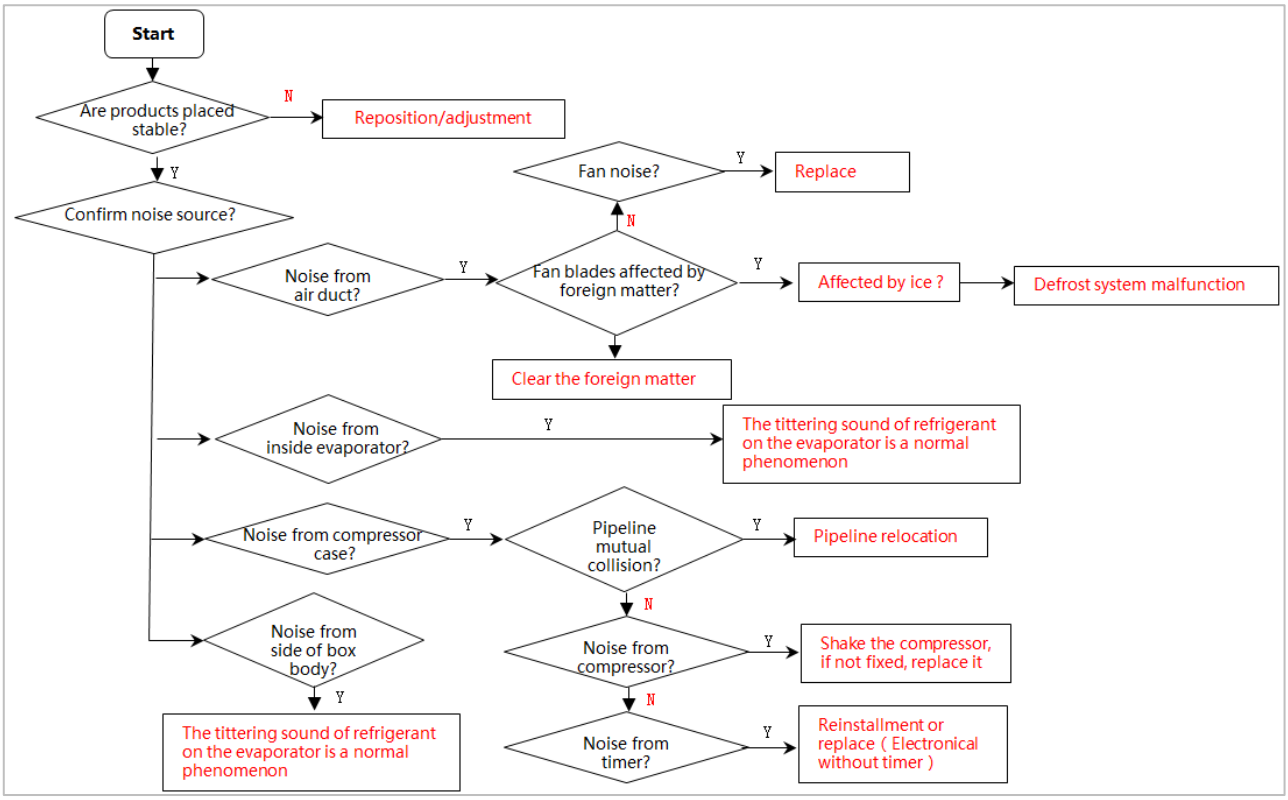
11.16 No water from the ice & water dispenser



11.17 No ice from the ice & water dispenser

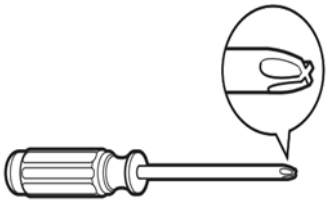
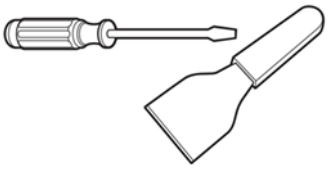
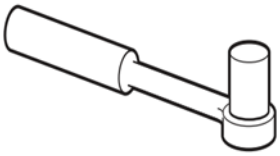


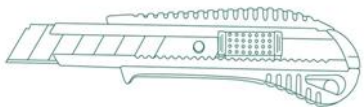
11.18 Noise


Start
Are products placed stable?
N
Reposition/adjustment
Y
Confirm noise source?
Fan noise?
Y
Replace
N
Noise from air duct?
Y
Fan blades affected by foreign matter?
Y
Affected by ice ?
Defrost system malfunction
Clear the foreign matter
Noise from inside evaporator?
Y
The tittering sound of refrigerant on the evaporator is a normal phenomenon
Noise from compressor case?
Y
Pipeline mutual collision?
Y
Pipeline relocation
N
Noise from side of box body?
Y
Noise from compressor?
Y
Shake the compressor, if not fixed, replace it
N
The tittering sound of refrigerant on the evaporator is a normal phenomenon
Noise from timer?
Y
Reinstallment or replace (Electronical without timer)

12. Maintenance tooling, equipment and material

Tooling

No.	Name	Photo	Main Usage
1	Phillips screwdriver		screw assemble and disassemble
2	slotted screwdriver/scraper		screw and rivet assemble and disassemble
3	Socket spanner 5/16″		hinge and compressor screw assemble and disassemble
4	Sucker		display panel and air duct cover disassemble
5	Allen wrench （2.8~4mm）		handle assemble and disassemble
6	Vise grip pliers		sealing process tube

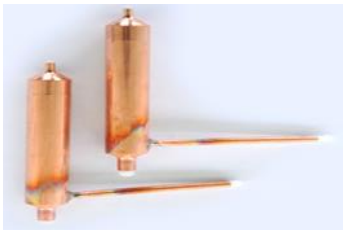
7	Pipe cutter		pipe cutting
8	Knife		assistive tool
9	Nipper pliers		assistive tool
10	Capillary tube scissors		Shear capillary

Equipment

No.	Name	Photo	Main Usage
1	Vacuum pump		vacuum pumping
2	Electronic scale		weighing refrigerant/gas

3	High pressure nitrogen with piezometer		pipe and cooling system(condenser, evaporator, etc) impurities clean
4	Soldering gun		heating and welding
5	Quick coupling		connection process pipeline, vacuum or charge refrigerant will be used.
6	hand leak detector		welding point leakage detect, if no, use soap-suds

Material

No.	Name	Photo	Main Usage
1	Process pipeline		Chargetherefrigerant
2	Dry filter		Involving a system failure to be replaced

3	Copper welding rod		tube welding
4	Refrigerant/gas		Add refrigerant to the system
5	Sealing tape		door fixing for reversible door option

13. Product exploded view and spare parts list

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