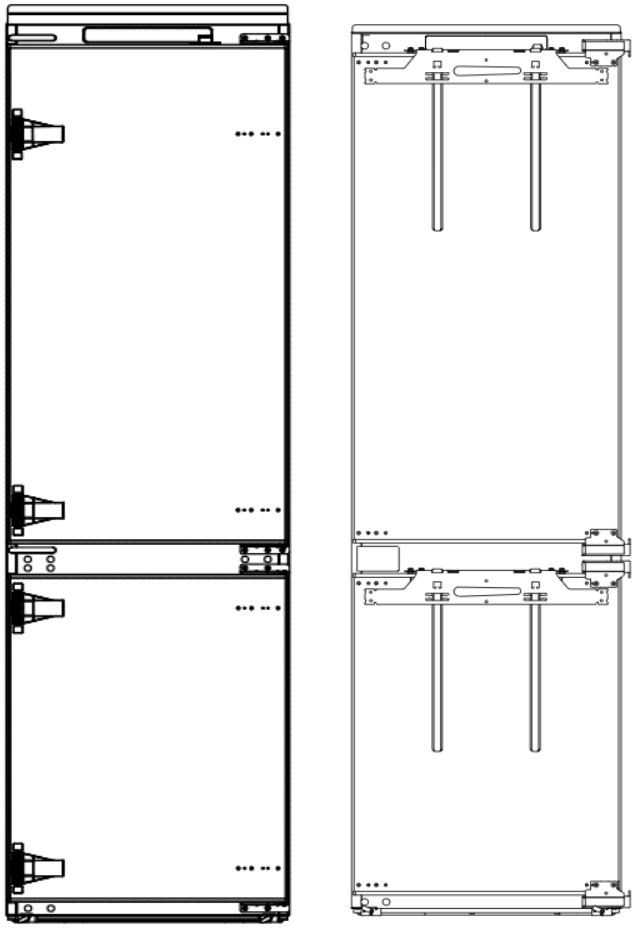
Service Manual

BMF No Frost Series

Market Model	Product Model	Product Code
HD-390RWEN BI	CE-BCD300WX-JT	22031020011081
MDRE411FG***		



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.

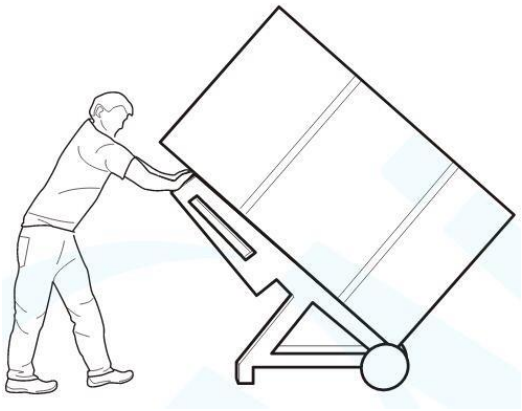
Keep flammable materials and vapors, such as gasoline, away from freezer. Failure to do so can result in fire, explosion, or death.

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

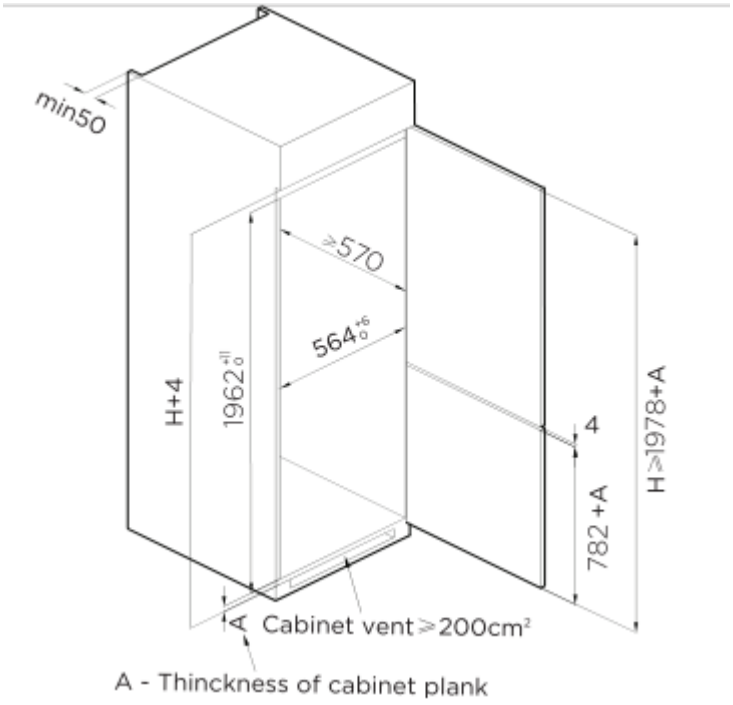
3.1 Handling

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.	

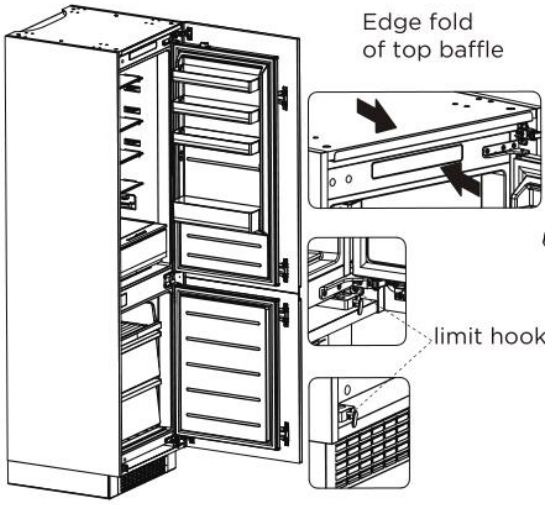
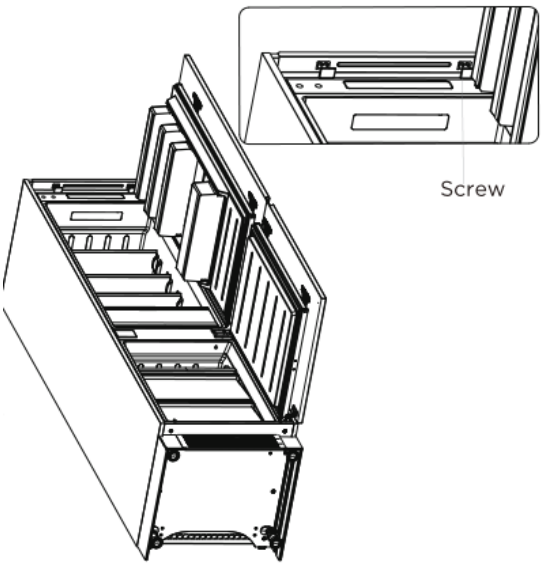
3.2Door Disassembly and Assembly

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

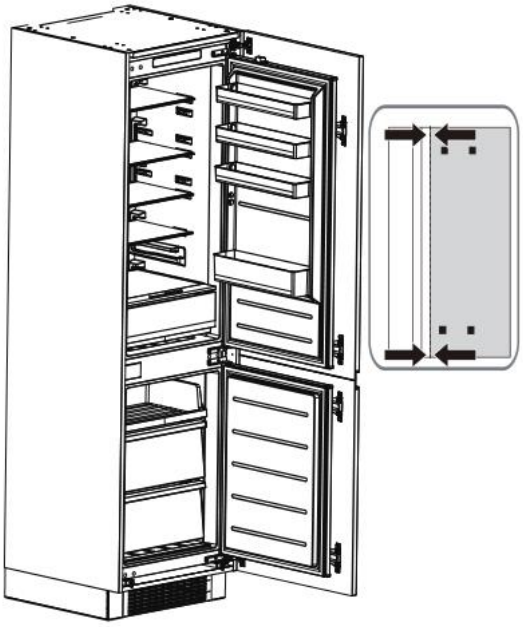
3.3 Installation location

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

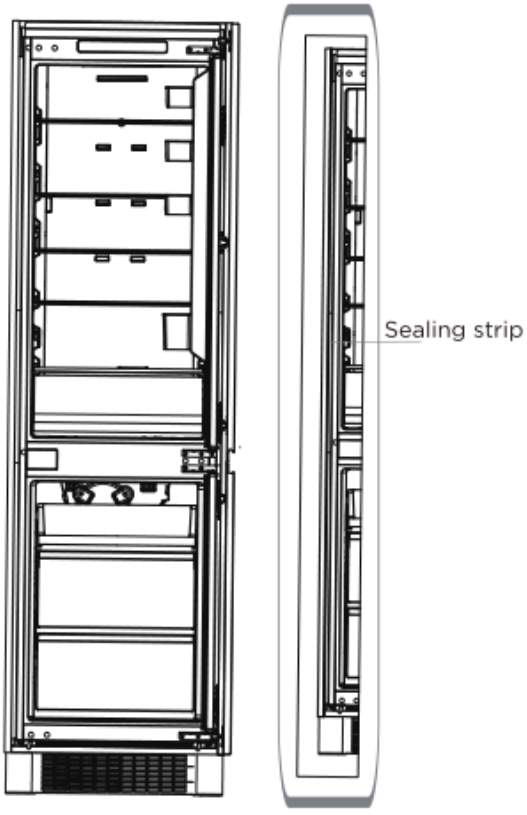
3.4 Installation Steps

A. Installation steps for common sliders and hinges	
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, and 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 lower door of cabinet the maximum angle, and open the lower door of the refrigerator to the corresponding position. Sliding the block to make sure inner edge align with the lower door edge of refrigerator, then fix the block to the door of cabinet with screw and install screw caps. Fix the upper refrigerator door to the cabinet door in the same way. Exchange the fixed position of the adjustable foot and the bottom hinge, and then fix them again.



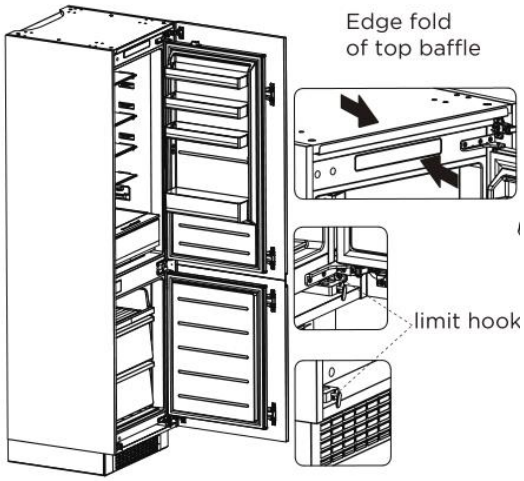
5） Take out the sealing strip from accessory bag, and press it in the gap between the cabinet and the refrigerator. Installation is completed.



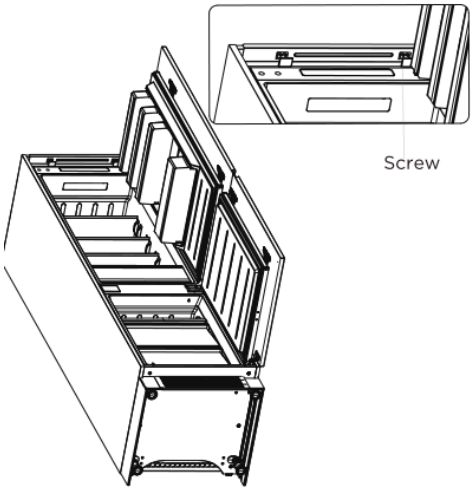
B. Installation steps for DOD hinges

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.

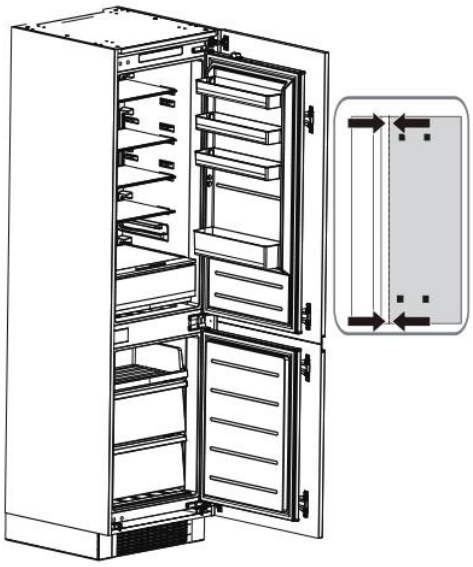
2） Fix the supporting leg with screws, and then install the screw caps.



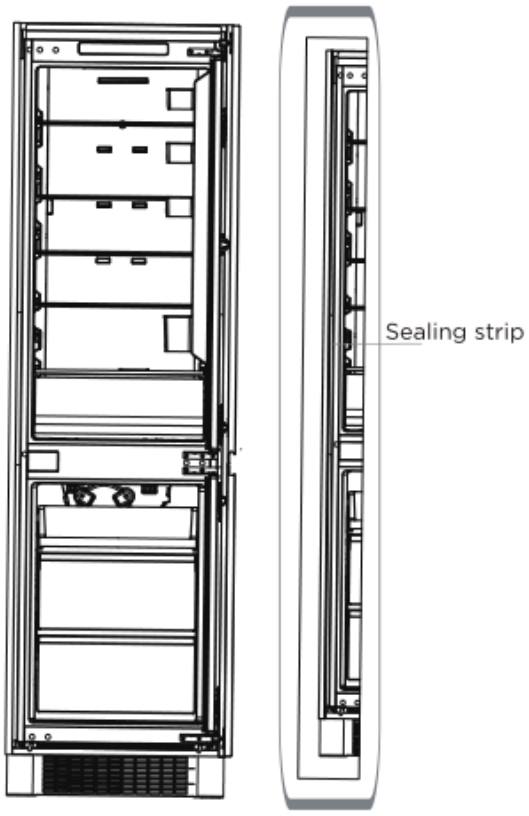
3） Fix the top baffle to the top of the cabinet inner with screws, then install the screw caps.



4） Open the lower door of cabinet the maximum angle, and open the lower door of the refrigerator to the corresponding position. Sliding the block to make sure inner edge align with the lower door edge of refrigerator, then fix the block to the door of cabinet with screw and install screw caps. Fix the upper refrigerator door to the cabinet door in the same way. Exchange the fixed position of the adjustable foot and the bottom hinge, and then fix them again.

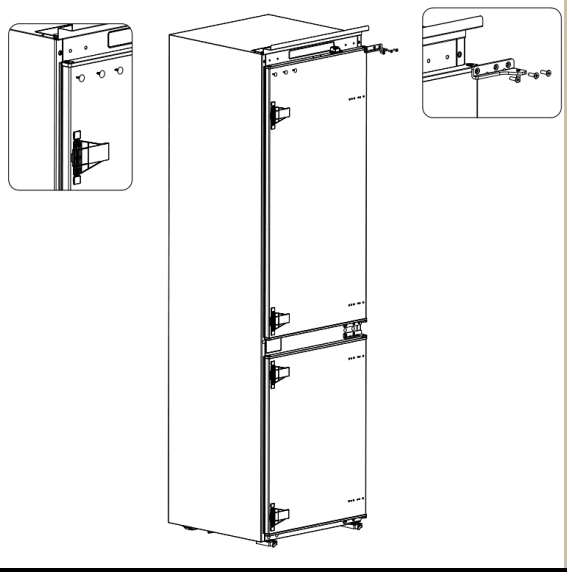


5） Take out the sealing strip from accessory bag, and press it in the gap between the cabinet and the refrigerator. Installation is completed.

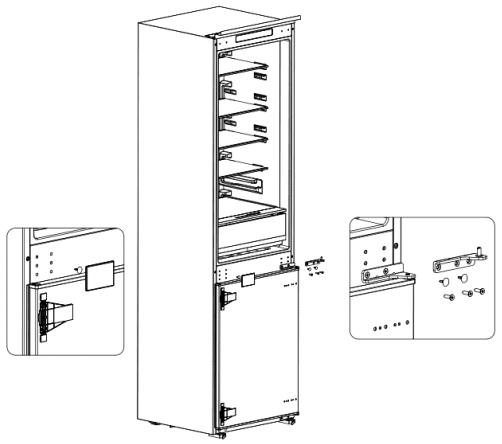


3.5 Door reversal

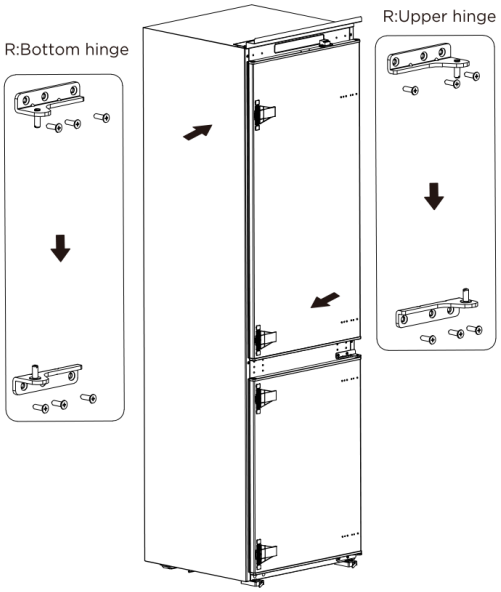
1. Power off the refrigerator, and remove all objects from the door trays.
2. Remove the upper hinge and hole caps of the refrigerator door.



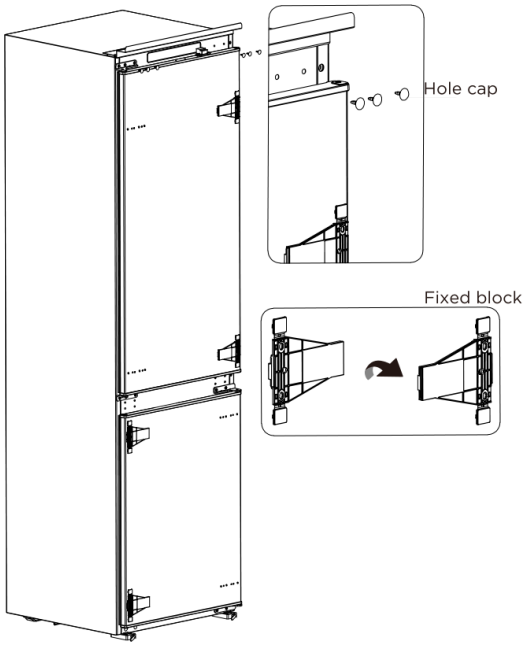
3. Remove the refrigerator door, the bottom hinge and the hole cover.

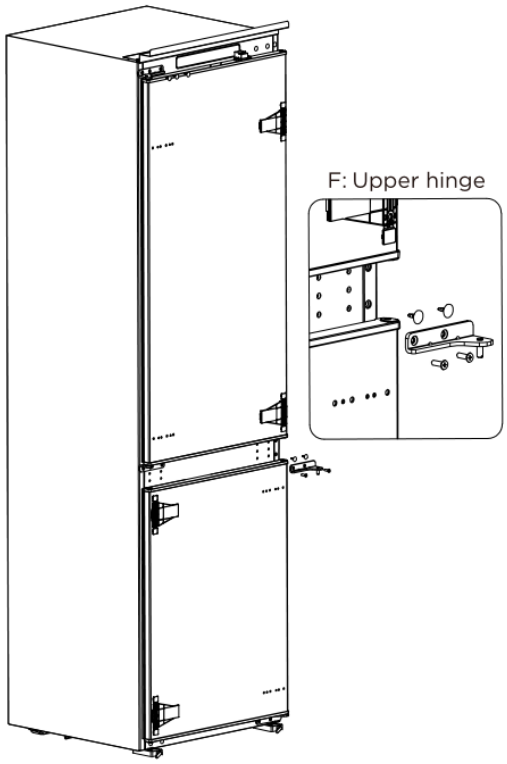
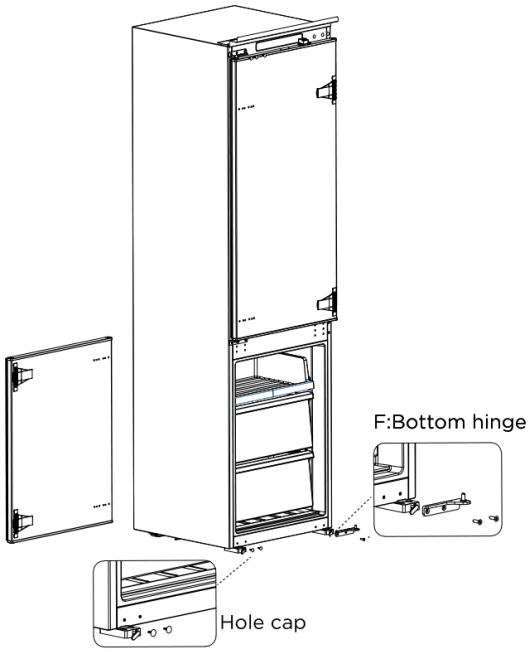


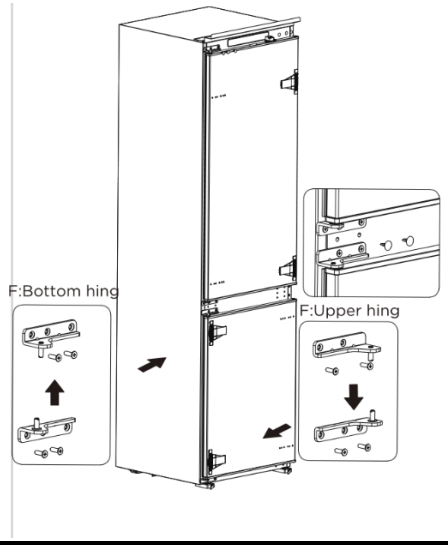
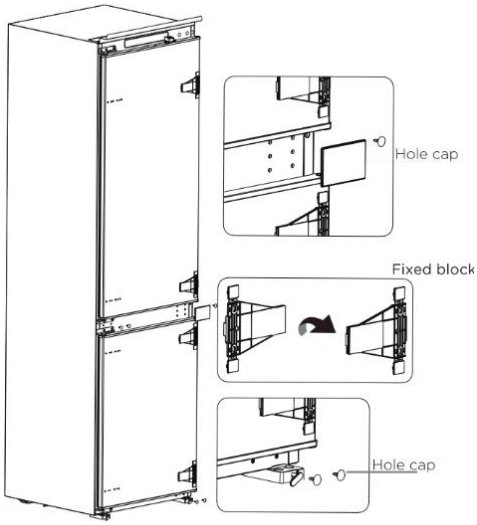
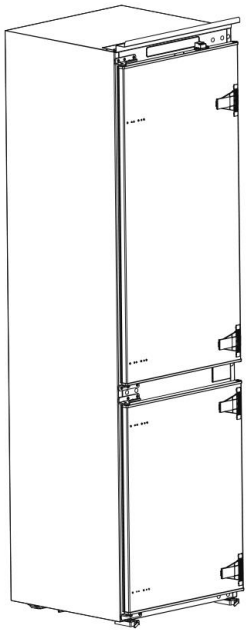
4. Exchange the bottom hinge and upper hinge, then assemble them with the refrigerator door.



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.



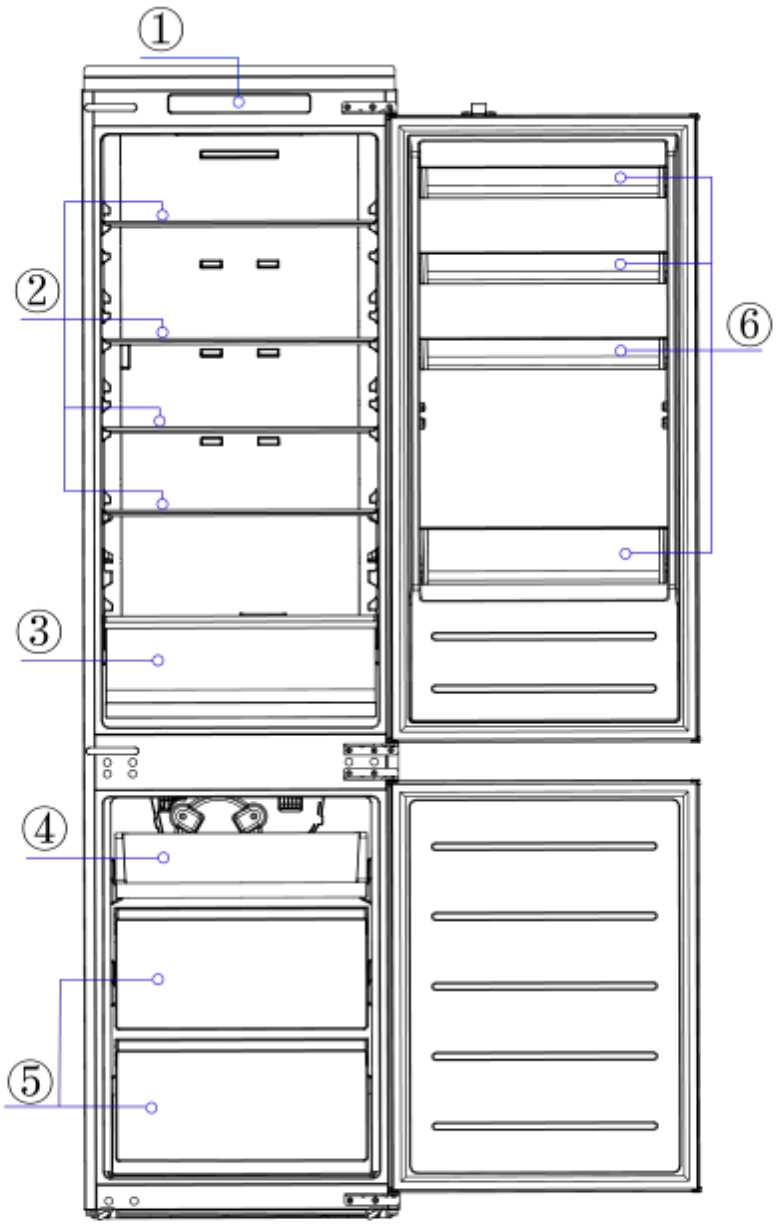
6. Remove the upper hinge and hole caps of the freeze door.	
7. Remove the freeze door, the bottom hinge and the hole cap.	

8. Exchange the bottom hinge and upper hinge, then assemble them with the freeze door.	
9. Assemble the hole caps，remove the fixed block of fridge door and rotate it for 180°, assemble it on the other side of the freeze door.	
10. Finished	

4. Main parts and external dimension

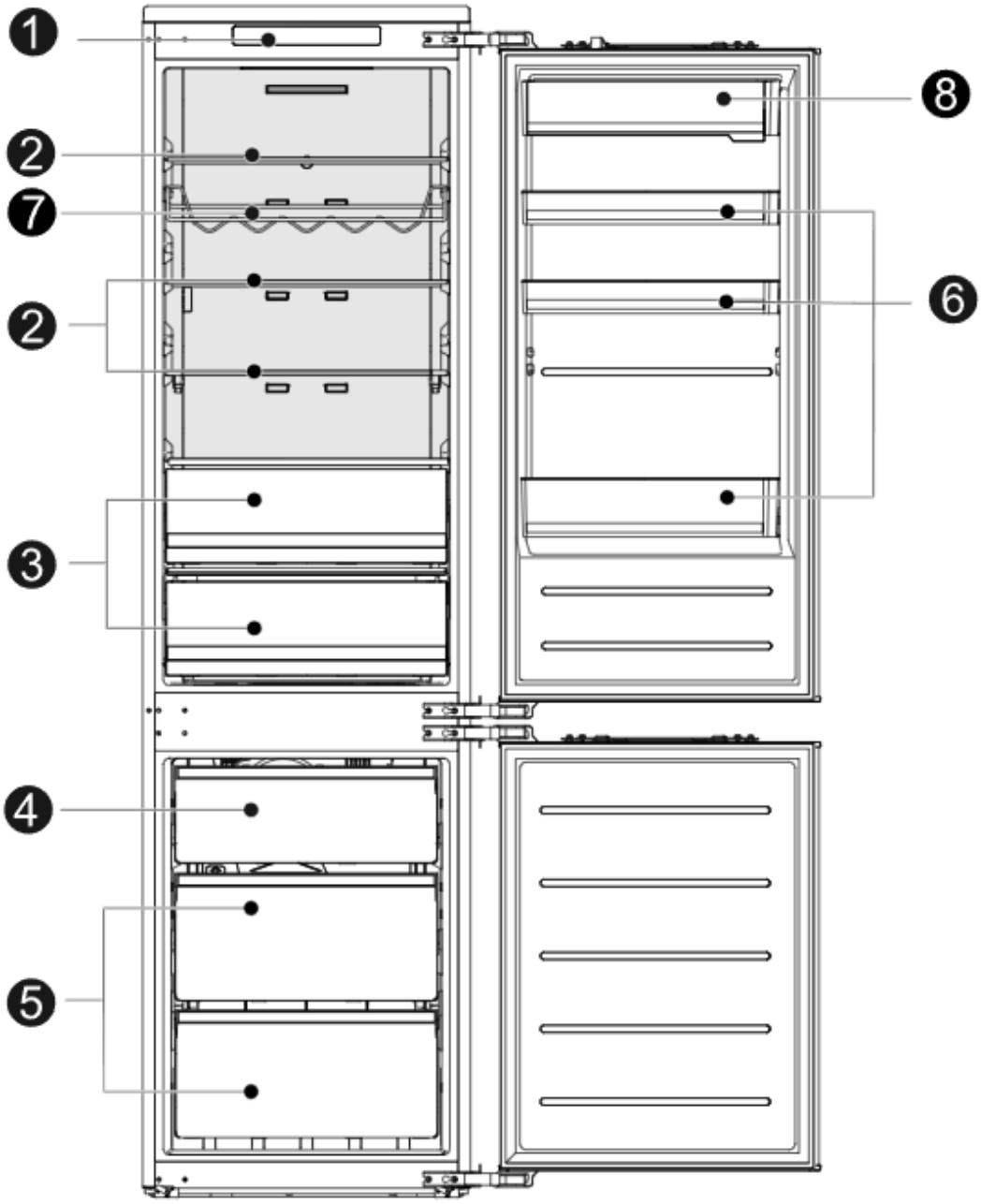
4.1 Main parts

Common sliders and hinges



1	Temperatre control	5	Big Drawer
2	Glass shelf	6	Door tray
3	Fruits and vegetables box		
4	Small Drawer		

DOD hinges

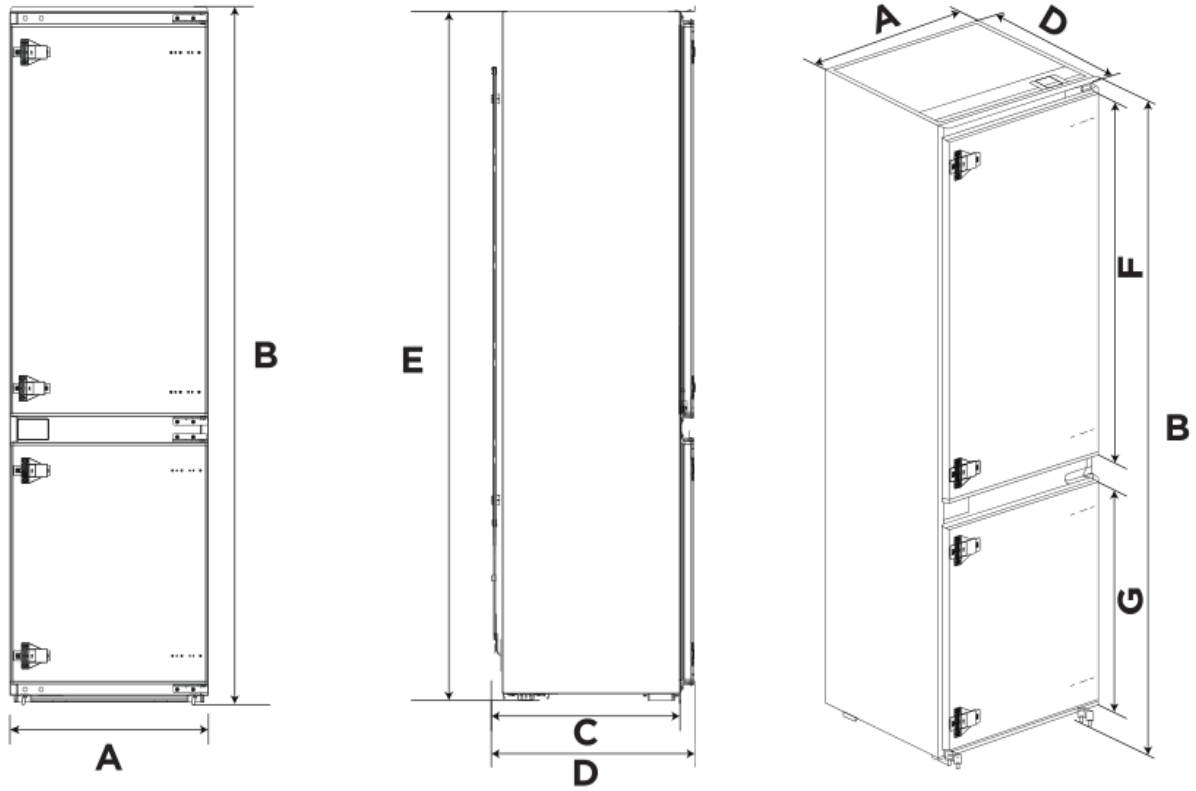


1	Temperatre control	5	Big Drawer
2	Glass shelf	6	Door tray
3	Fruits and vegetables box	7	Steel wire wine rack
4	Small Drawer	8	Flip bottle frame

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

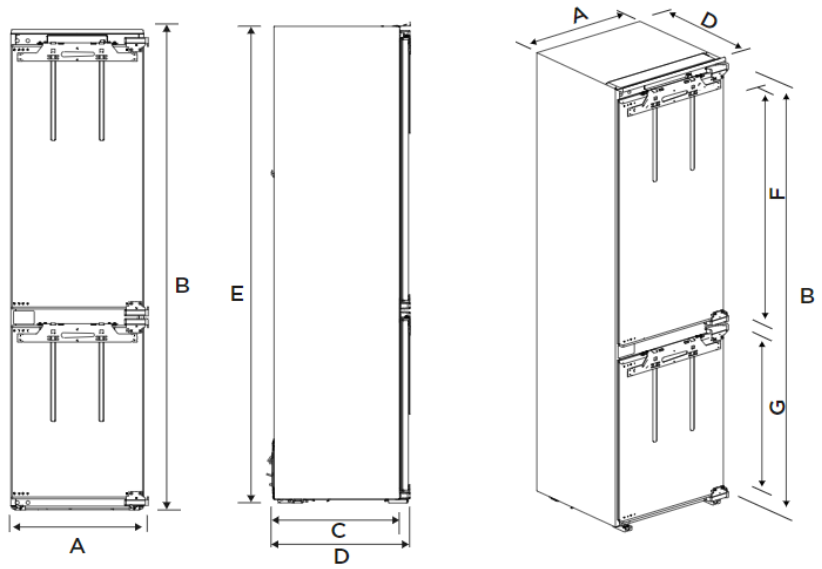
4.2 External dimension

Common sliders and hinges		
Description	**Code**	**Size** (mm)
Width	A	**540**
Overall Height	B	**1955**
Depth to match the cabinet	C	**515**
Overall Depth	D	**550**
Height to match the cabinet	E	**1940**
refrigerator door height	F	**1076**
freezer door height	G	**706**



(The picture is only for reference)

DOD hinges



Width	Overall Height	Depth to match the cabinet	Overall Depth	Height to match the cabinet	Refrigeration door height	Freezer door height
A	B	C	D	E	F	G
558	1955	515	558	1940	1076	706

(The picture is only for reference)

4.3 Product serial number and location

1） **Product factory serial number** — Include the product's order number, production date and other information. When the product occur problems, it needs to be recorded or photographed.

1st 2 3 4~11 12~15 16~22nd

S/N: 5 4 1 – 3200008P – 8512 – 11 6 0011

Production date

Year	Code
2015	15
2016	16
2017	17
▲ **2018**	**8**
2019	9
2020	0
2021	1
2022	2
2023	3
2024	4

Factory code

Production date

Year+Month(Oct./A; Nov./B; Dec./C) +day

(For example: 8512 means May.12th,2018;

8A12 means Oct.12th,2018)

▲Before 2018, have two codes for YEAR.

(For example: 16A12 means Oct.12th,2016;

Factory code

06—Jingzhou COMMERCIAL FREEZER factory

07—Egypt factory

08—Hefei BIOMEDICAL factory

09—Thailand TOSHIBA factory (TPT)

10—Hefei LENGGUI factory

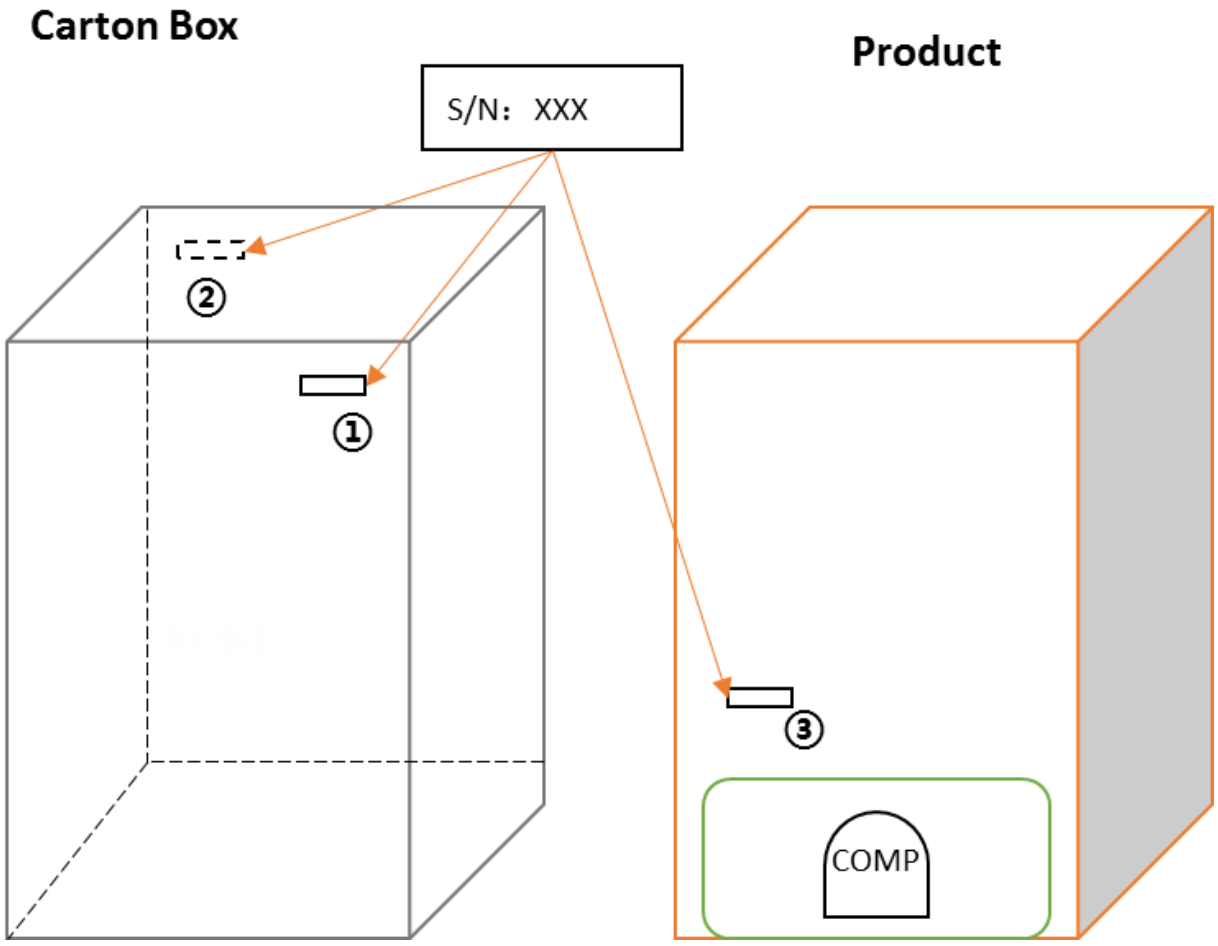
11—Hefei JINKAI factory

12—Jingzhou factory

13—Guangzhou NANSHA factory

14—Foshan NANHAI Toshiba factory

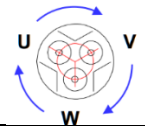
2）Paste location



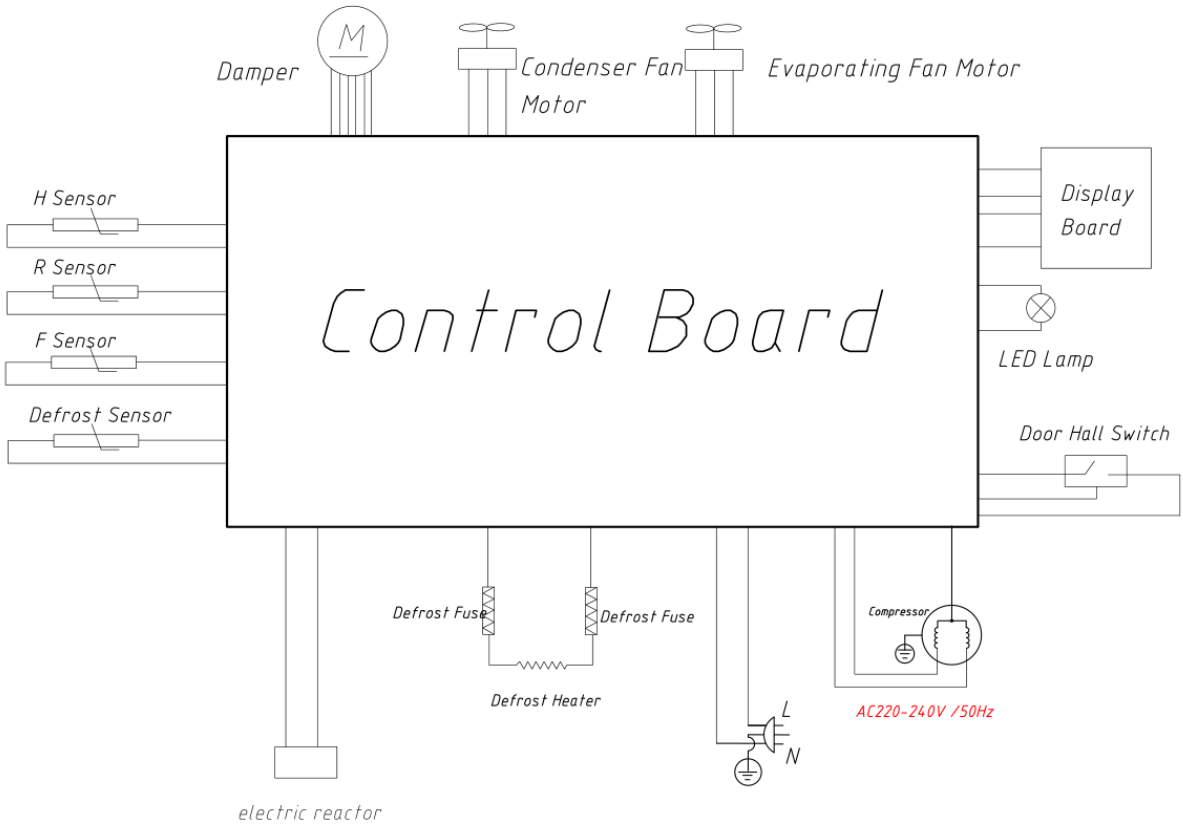
Some products also have S/N on the lower part of the right side of the Cabinet.

5. Electric control system

5.1 Electrical parameters

Applicable Model	HD-390RWEN BI	
Product Model	CE-BCD300WX-JT	
Rated Voltage	200-240V, 50Hz	
Item	**Specification**	
Refrigerant	R600a	
Compressor	DZ75Z1X (Part code : **11101020007665**)	
Starting device type	Inverter	
The COP of compressor	1.65~1.80(W/W)	
The max cooling capacity of compressor	173W	
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	
Motor		
Fan motor of the freezing chamber	DC12V, 2.8W, 1600r/min	
Fan motor of the refrigerating chamber	None	
Electric damper	DC12V, 0.12A, 500PPS,1W	
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	Cannot be restored 77℃	
Defrost heater in freezing chamber	230V/185W	

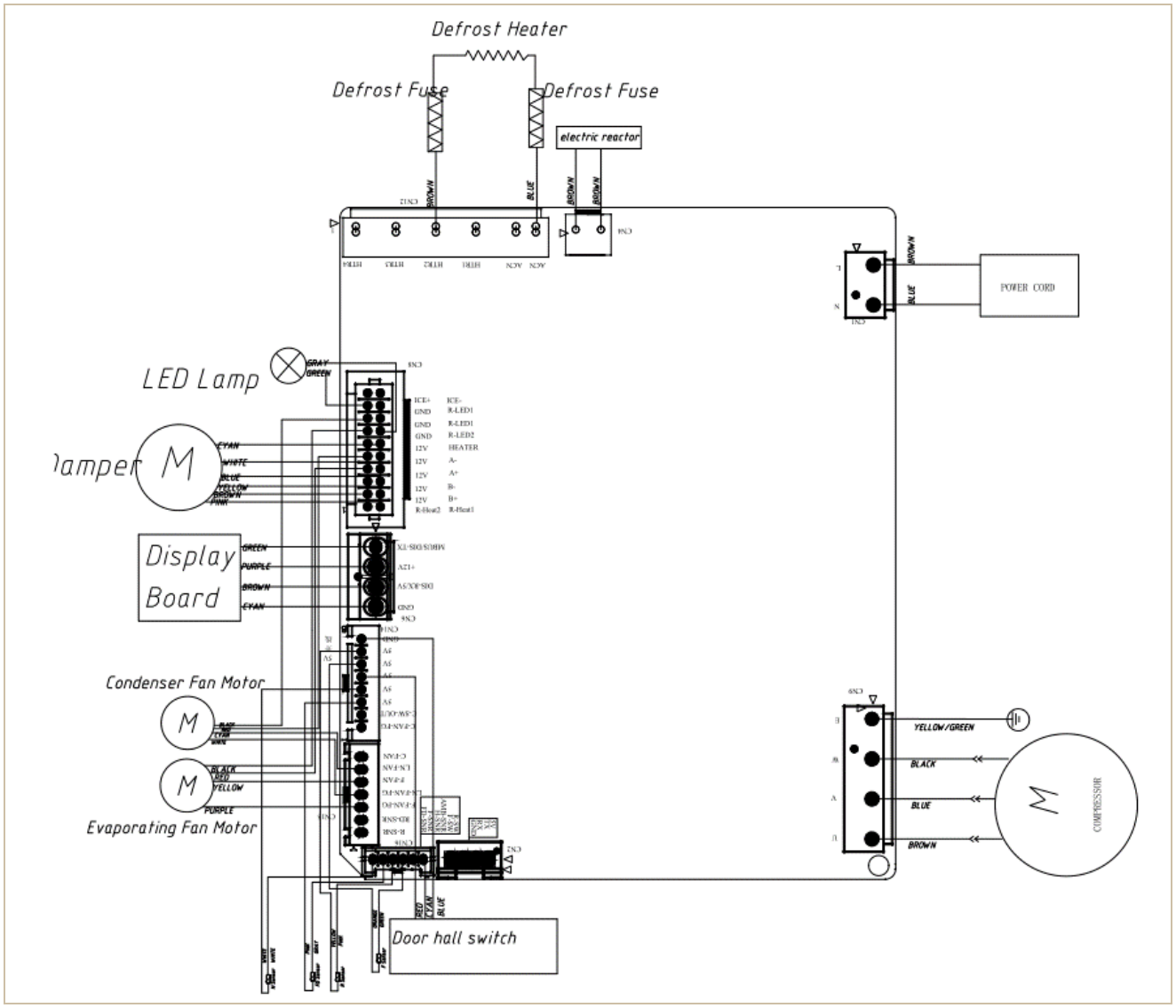
5.2 Circuit diagram



F:freezer R：refrigerator H：ambient temperature

5.3 Wiring diagram

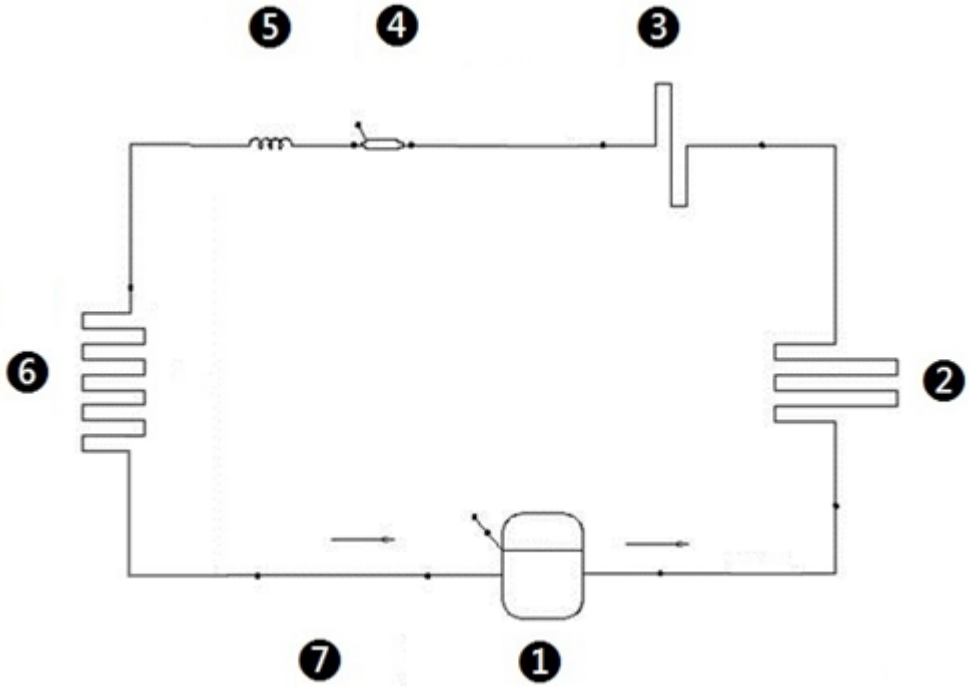
REF_Wiring diagram_2203102


Defrost Heater
Defrost Fuse
Defrost Fuse
electric reactor
POWER CORD
LED Lamp
Display Board
Condenser Fan Motor
Evaporating Fan Motor
Door hall switch
COMPRESSOR
YELLOW/GREEN
BLACK
BLUE
BROWN

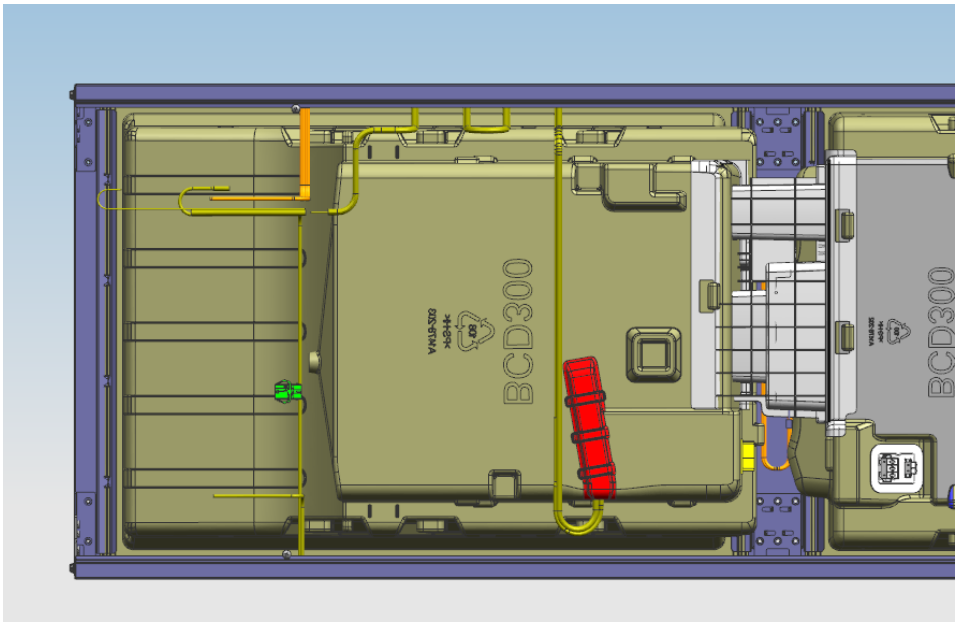
6.Refrigeration system

6.1 Refrigerating piping system

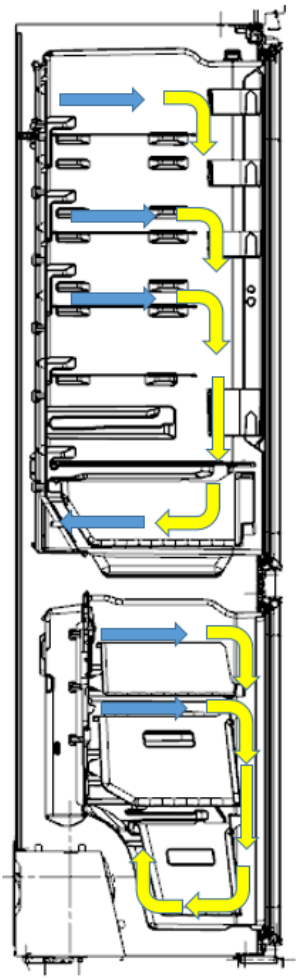
❶Compressor→❷ condenser→❸Anti-condensation tube→❹ Dry filter→❺ Capillary tube→❻ Evaporator→❼ Suction tube→❶Compressor



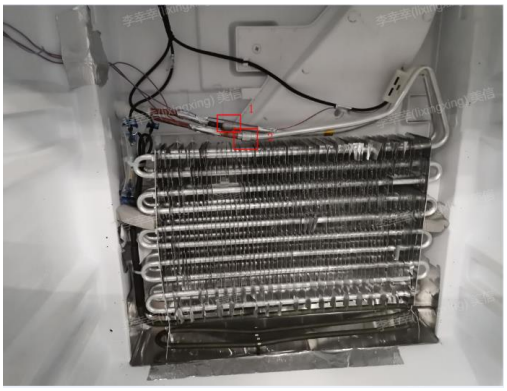
6.2 Cooling pipeline and drain pipe inside the cabinet



6.3 Circulating route of cooling air



6.4 Welding points in chambers or foam layer

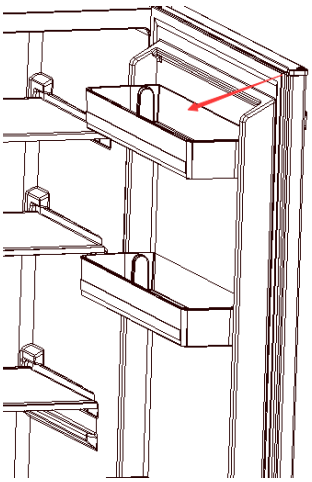
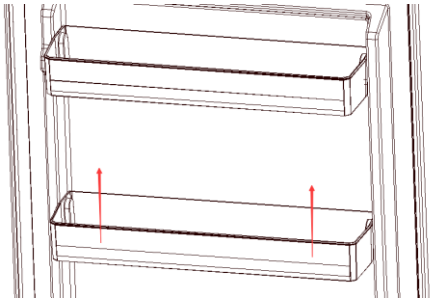
1) Welding points on freezer evaporator		
Welding point	**Pipe outer diameter (mm)**	
1-Freezer capillary and inlet of evaporator	Copper pipe: Φ6	Aluminum pipe: Φ6.35
2-Heat transition tube and outlet of evaporator	Copper pipe: Φ6	Aluminum pipe: Φ6.35

6.5 Pipe welding point in the compressor case

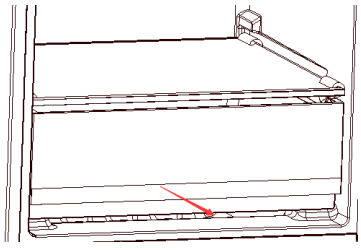
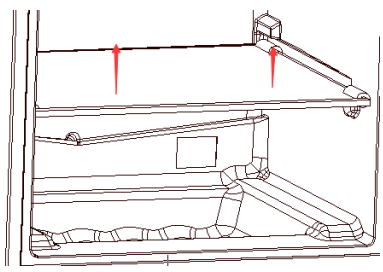
Pipe welding point	Pipe outer diameter (mm)	
1-Outlet of anti-condensation tube and inlet of dry filter	Steel pipe: Φ4.0	Copper pipe: Φ5.0
2-Outlet of dry filter and inlet of freezer capillary	Copper pipe: Φ2.8	Copper pipe: Φ1.8
3-Out of heat transition tube and inlet of suction connection pipe	Copper pipe: Φ6.0	Copper pipe: Φ6.0
4-inlet of suction tube of compressor and outlet of process tube	Copper pipe: Φ8.17	Copper pipe: Φ6.0
5-Outlet of suction connection pipe and compressor intake tube	Copper pipe: Φ6.0	Copper pipe: Φ8.17
6-Outlet of venting tube of compressor and inlet of condenser	Steel pipe: Φ6.17	Steel pipe: Φ4.0
7-Outlet of condenser and inlet of anti-condensation tube	Steel pipe: Φ4.0	Steel pipe: Φ4.0

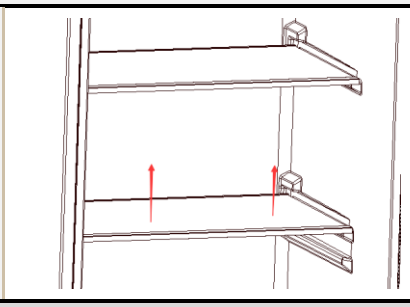
7. Dismantling of parts

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 ① 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 according 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.	
Drawer	
Remove the drawer cover of ref. compartement according to below steps: 1）Take out the drawer firstly. 2）Pull out the drawer cover completely.	

7.3 Light system

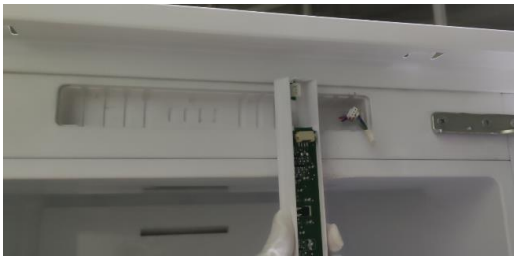
Light	
Light of the refrigerating chamber is located upper chamber 1） Remove the lamp cover 2） Remove the LED lamp 3） Remove the LED lamp terminal 4） The reverse process can complete installation.	  

Light switch

There is a light switch on the upper beam assembly.

1) Use a small knife to pry open and remove the display and control surface sticker, and then use a screwdriver to pry open the display and control installation box Remove the terminal，Remove the light switch.
2) The reverse process can complete installation.



7.4 Air duct of refrigerating chamber and electric damper

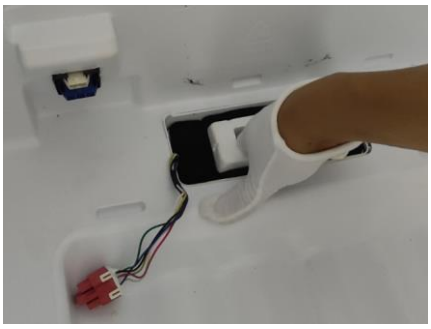
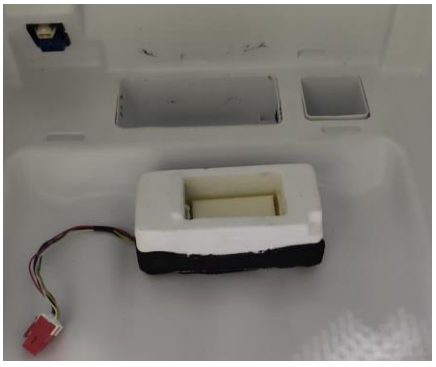
Air duct components in the refrigerating chamber

All accessories in the refrigerating chamber should be dismantled before removing the air duct components.

1) Remove 1 screw on the cover plate of the refrigerating air duct using a cross screwdriver.




2) Pull out the connector terminal of the sensor.


Electric damper	
Before disassembling the electric damper, the refrigeration room air duct should be removed. Unplug the damper terminal. Simply remove the damper assembly from the box by hand.	  

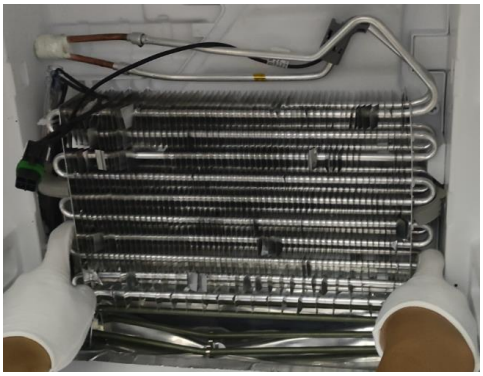
7.5 Air duct components in freezing chamber and fan motor

Air duct components in freezing chamber	
All accessories in the freezing chamber should be dismantled before removing the air duct components. 1）Remove 2 screws on the cover plate of the freezing air duct using a cross screwdriver.	 

2） Pull out the connector terminal of the fan motor and the sensor.	 
Fan	
1) Remove the aluminum foil and sponge from the rear panel of the air duct, and then manually remove the rear panel of the air duct outward to expose the fan.	 
2) The fan is fastened with three screws, removing screws and removed	 

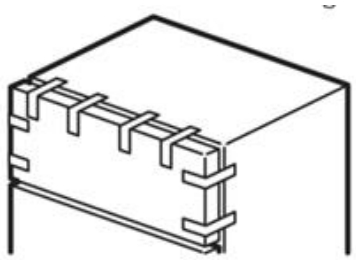
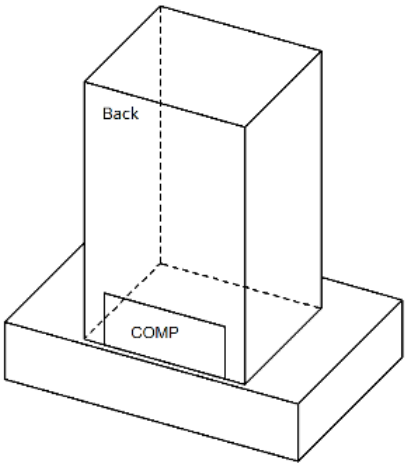
3) Change the fan, the reverse operation for assembly.	

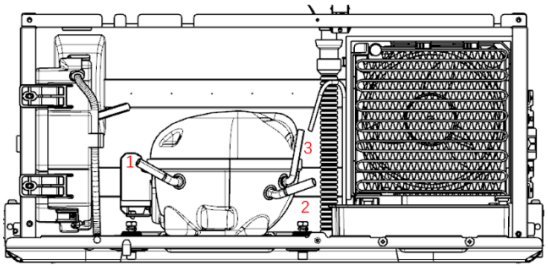
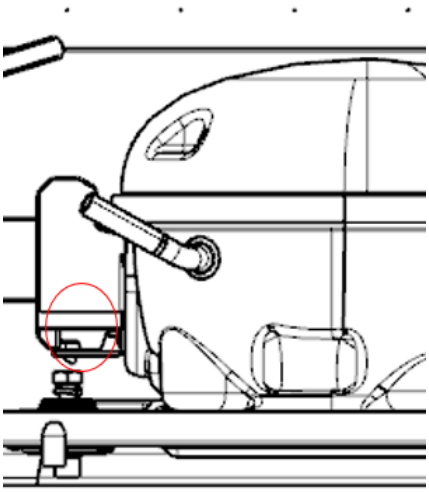
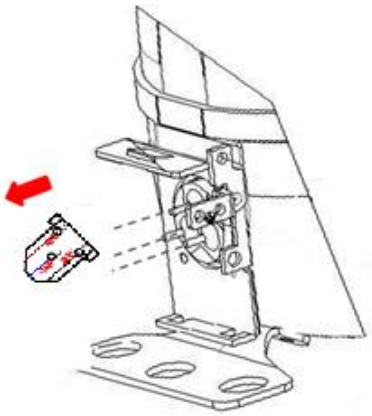
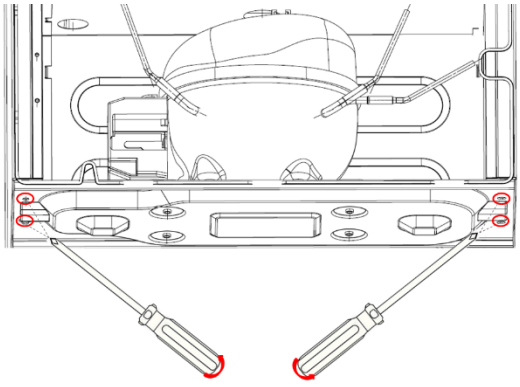
7.6 Evaporator and Defrost system

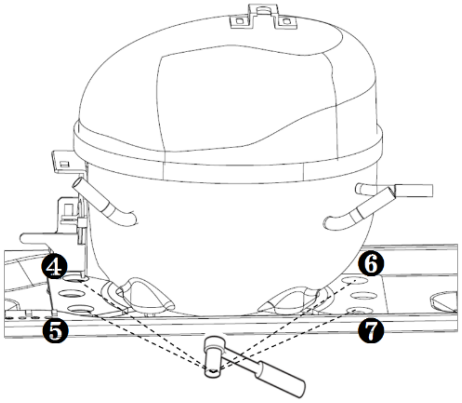
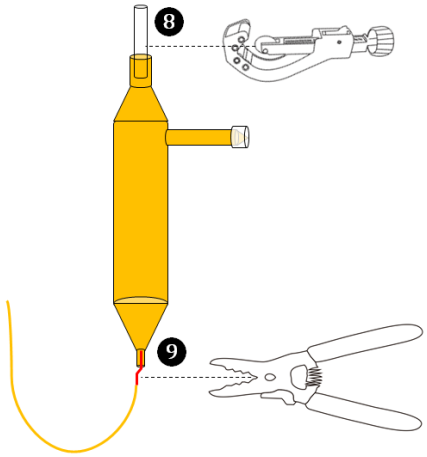
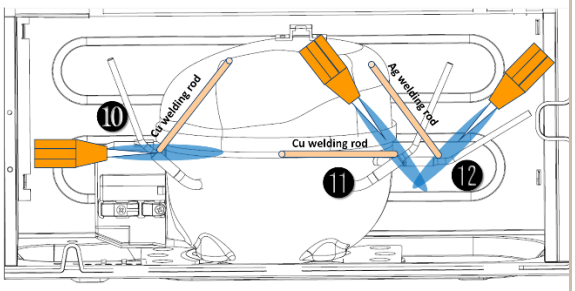
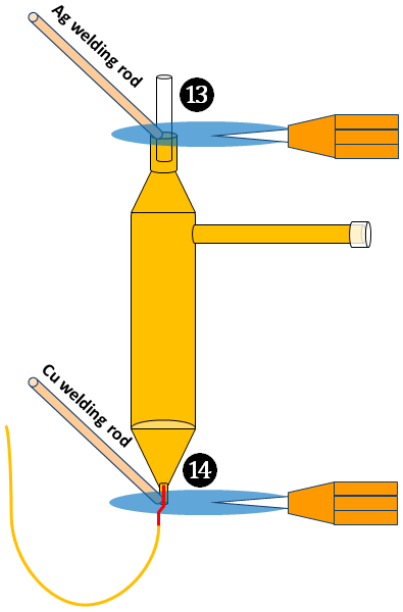
Evaporator in freezing chamber	
1） Remove the air duct components in freezing chamber. 2） Disconnect all connectors. 3） Remove the welding on inlet and outlet tubes. 4） Hold both sides of the evaporator with your hands and pull it out with force to remove it.	 
Components on the evaporator	
Fuse The fuse is located on top of the evaporator 1） connect the fuse connector. 2） Cut off the band which fixes the fuse. 3） Separate the fuse and the evaporator.	

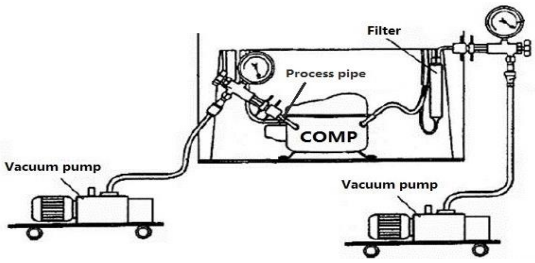
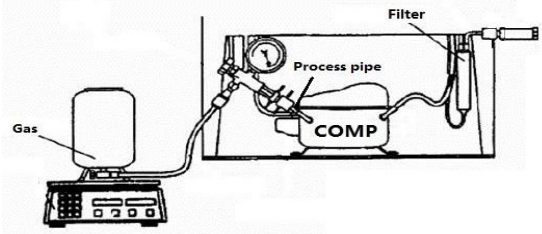
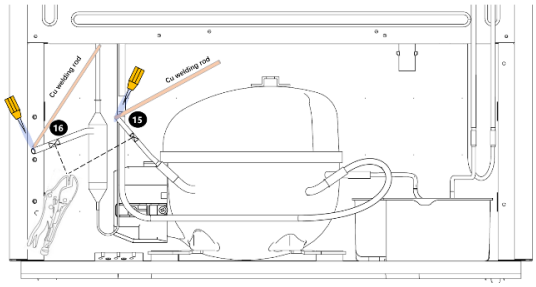
Defrost heater The defrost heater is located at bottom of the evaporator. 1） Disconnect the connector of defrost heater. 2） Cut off the band which fixes the defrost heater. 3） Take off the defrost heater from the evaporator.	

7.7 Compressor case

Rear cover and compressor case	
1） Use a screwdriver to remove the screws from the compressor rear cover plate 2） Remove the compressor cover to fully view the compressor compartment	
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** -Pry the protective cover slowly from the upper part, -Pull it out and remove it.	
7）**Remove the connecting terminals** Unplug the connection terminals of a compressor. (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.	

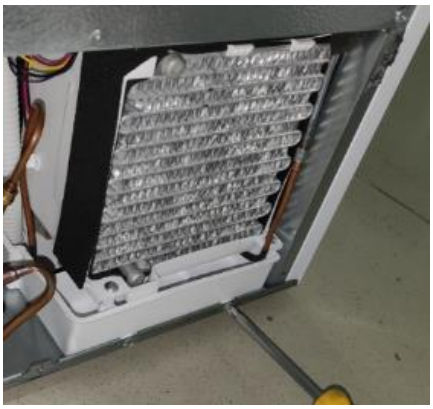
11）Vacuum system,The degree of vacuum below 3Pa.	
12）Perfusion refrigerant.	
13）Use the vise grip pliers clamp the middle of the process pipe, then seal welding process tube⓯⓰.	

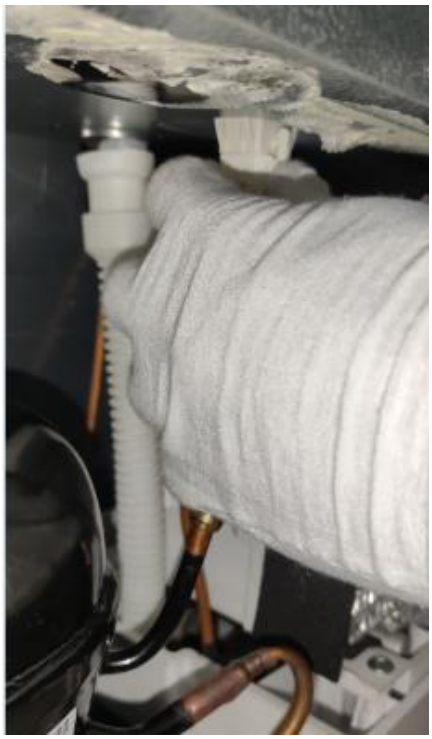
Piping system in the compressor case

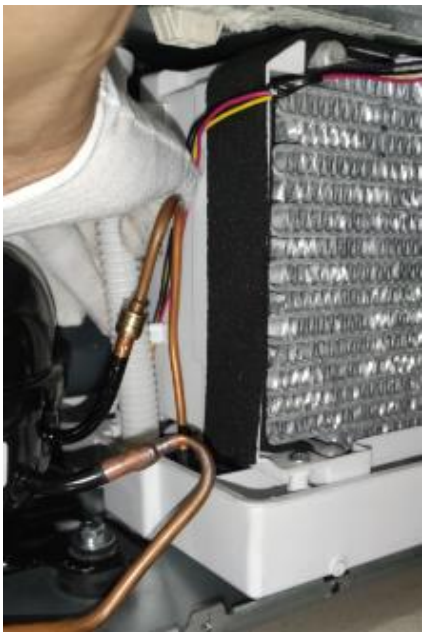
❶ main control board box assembly	❻condenser(enter)
❷anti-dew tupe assembly(exit)	❼ condenser(exit)
❸ dry filter	❽.anti-dew tupe assembly(enter)
❹ suction transition tube	❾.Power wire
❺ compressor	

Parallel flow condenser assembly

1) Remove the fixing screws of the side water tray, unplug the fan terminals and drainage pipes, cut off the pipes, and manually remove the entire parallel flow component for replacement
2) Replace the parallel flow condenser assembly, the reverse process can complete installation.







7.8 Display control board

Display control board	
1） Use a small knife to pry open and remove the display and control surface sticker, and then use a screwdriver to pry open the display and control installation box 2） Release the terminal and remove the display and control board 3） Replace the master control board in reverse steps;	   

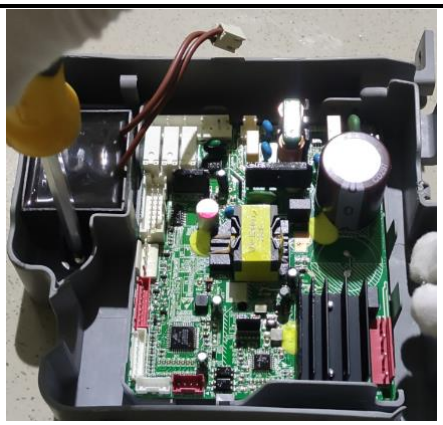
7.9 Main control and Inverter Driver board

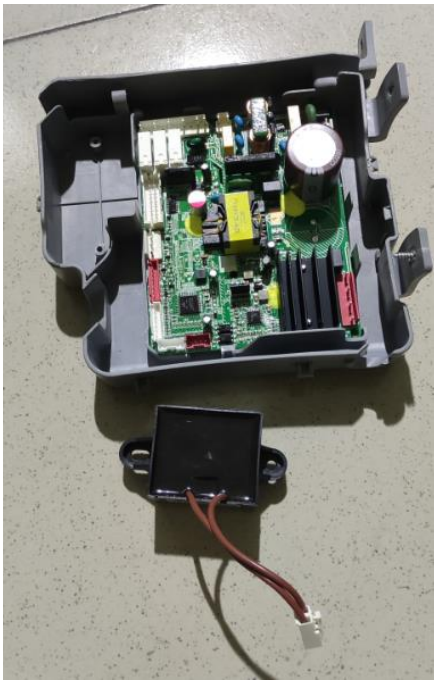
Main control board	
1） The main control board box is located compressor case.	

2） Using a cross screwdriver to remove 3 screws which secure the main control board installation box, then use hand to remove it.	 
3） Pry open the buckle of the main control board installation box with a straight screwdriver or by hand.	
4） using a cross screwdriver to remove 2 screws which secure the reactance，removing it.	

5） Pull all connector terminals out and then remove the main control board.

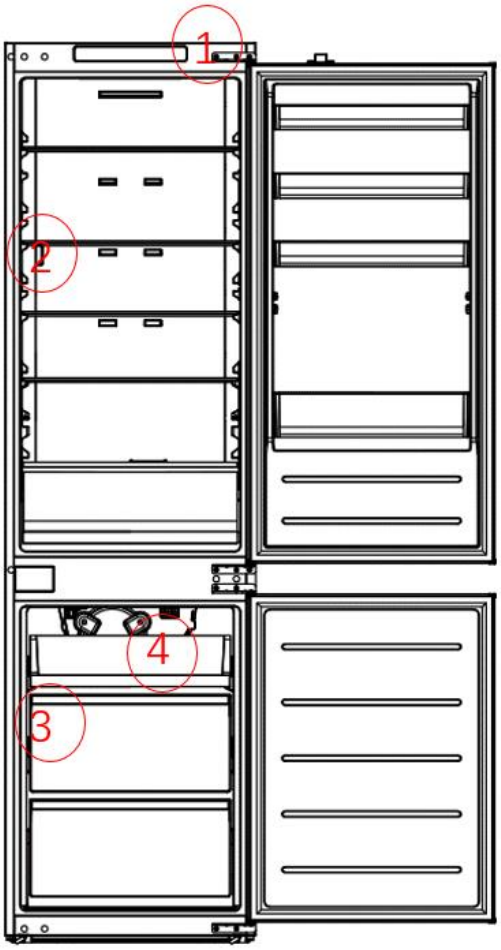
6） Replace the master control board in reverse steps.





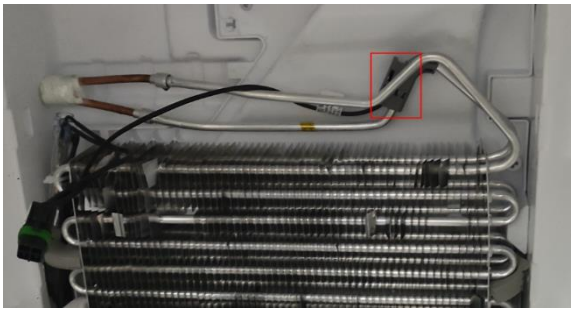
8. Temperature sensing system

8.1 Position of sensors

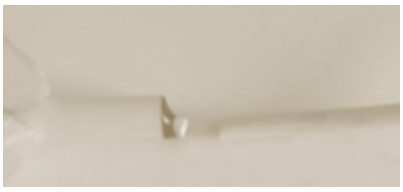
Position of sensors	
Have 4 sensors ① Ambient temperature sensor ② Sensor in refrigerating chamber ③ Sensor in freezing chamber ④ Defrost sensor of freezing chamber	

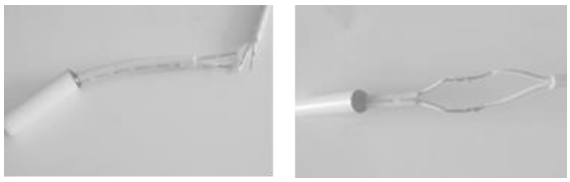
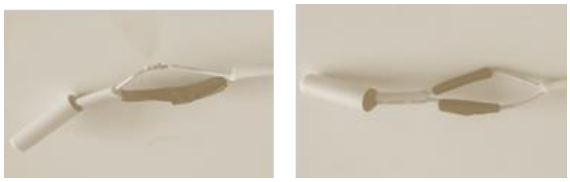
8.2 Replacement of sensors

Sensor in refrigerator/freezing chamber	
1） Before remove the sensor, the refrigerator/freezing duct assembly should be removed first. 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	
The defrost sensor is located on top of the evaporator. 1） Disconnect the connector of defrost sensor 2） Cut off the band which fixes the sensor. 3） Separate the sensor and the evaporator.	

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.	

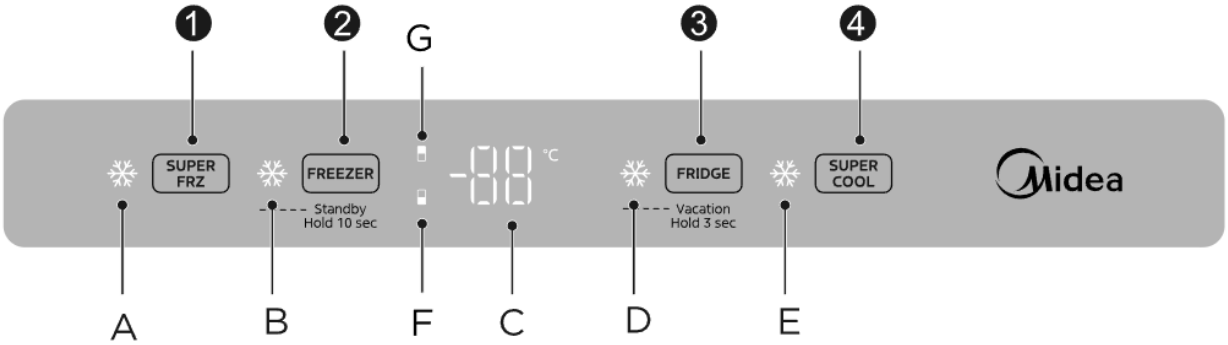
8.4 Sensor resistance (R/T)

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

Icons	Button
A — Super freezer mode light **B** — Standby mode light **C** —Temperature display area **D** — Vacation mode light **E** — Super cool mode light **F** — Fridge indicator light **G** — Freezer indicator light	❶ Super freezer ❷ Freezer temperature setting ❸ Fridge temperature setting ❹ Super cool



9.2 Display

1) When the power is first turned on, all the LEDs on the display panel light up together for 3 seconds, and the power-on bell rings at the same time. Then it enters the freezing mode, **Light ON FRZ. TEMP** indicator lights up, **COLDER** temperature indicator lights up, and the temperature is set to -20˚C.
2) Error code displays when there is a fault. Display the set temperature of the cooling chamber when there is no fault.
3) The LED light on the display panel is on when the door is opened, and the LED light is off after the door is closed for 30 seconds. When the display panel is off, press any button, the LED light on the display panel will be on, and you can press the button without unlocking the panel.

9.3 Setting of the gear

9.3.1 Temperature setting of refrigerating chamber

Press the button **'FRIDGE'** and the fridge indicator lights up. Press the button **'FRIDGE'** once, the temperature is adjusted by 1˚C. The fridge temperature setting range is from 2˚C to 8˚C.

9.2.3 Temperature setting of freezing chamber

Press the button **'FREEZER'** and the freezer indicator lights up. Press the button **'FREEZER'** once, the temperature is adjusted by 1˚C. The freezer temperature setting range is from -24˚C to -16˚C.

9.4 Mode setting

9.3.1 Super cool mode

Press the button **SUPER COOL**, the indicator light is on. The temperature of refrigerating chamber is set to 2℃. Automatically exit for up to 6 hours.

9.3.2 Super freeze mode

Press the button **SUPER FRZ**, the indicator light is on. The temperature of freezing chamber is set to -24℃. Automatically exit for up to 40 hours.

9.3.3 Standby mode

Long press the button **'FREEZER'** for 10 seconds to enter the mode, the refrigerator stops working, the display screen and the light inside the unit all go out. Press and hold the button **' FREEZER '** again for 10 seconds to exit this mode.

9.3.4 Vacation mode

Press and hold the button **'FRIDGE'** for 3 seconds to enter the mode, the refrigerating chamber stops cooling and the freezer chamber temperature is set to **COLDER** gear (-20°C). Press the button **'FRIDGE'** for 3 seconds again to exit this mode.

9.5 Lock and unlock

No lock and unlock function button.

The setting takes effect 15 seconds after no button operation.

9.6 Door open tone and Door not closed alarm

If the door keeps unclosed for 120 seconds, the alarm beep will sound. Close the door or press any button to cancel this alarm beep.

9.7 Error code and solutions

Error codes will display within the first 30 minutes of each power-on, after that you will have to enter the **ERROR CODE DISPLAY MODE** to view them.

1) **Error Mode Entry:** Keep pressing the **'SUPER COOL'** and **'SUPER FRZ'** button for 7 seconds, after display **“0**”; press the “**FREEZER**” button to select the mode **"A6".** Then it will take effect after locking.
2) **Error Mode Exit:** Keep pressing the **'SUPER COOL'** and **'SUPER FRZ'** button for 7 seconds, and then press the “**FREEZER**” button to select the mode **"0".** Then it will take effect after locking.

Note: Midea full common fault code, combined with the actual product display reference.

Error code	Fault Type	Troubleshooting and Solutions
E0	fault of ice maker	**Step 1**: Check whether the connection terminals on the ice maker and the main PCB are plugged in place and whether there are foreign matters in them; after cleaning the terminals, plug them in again. **Step 2**: Enter the forced ice making mode and check whether the ice maker works normally.

		Step 3: If the ice maker does not work, replace the ice motor. **Step 4**: If the fault still occurs, replace the main PCB.
E1	Temperature sensor fault in refrigerating chamber	**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.
E2	Temperature sensor fault in freezing chamber	
E3	Temperature sensor fault in variable chamber	
E4	Defrost sensor fault in refrigerating chamber	**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.
E5	Defrost sensor fault in freezing chamber	
E6	Communication failure	**Step 1**: Check whether the connection terminal on the display control panel, hinge cover and main PCB 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 all connection terminals, use a multimeter to check the resistance value of the wire between the display control board and the main PCB to see if it is broken. If test value is ∞Ω, the wire is broken.(If the wire in the door is broken, replace the door. Other conditions cannot be repaired.) **Step 3**: If the wire is OK, replace the display control board. **Step 4**: If the fault still occurs, replace the main PCB.
E7	Ambient temperature sensor fault	**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.
E8	Defrost sensor fault in variable chamber	
E9	High temperature alarm in freezing chamber	**Step 1**: Check whether the door is not closed, or whether there is leakage between the door gasket and the cabinet. **Step 2**: Check whether the door gasket is deformed and causes leakage, reshape or replaced with a new one. **Step 3**: Check whether the freezing frost is OK, if there is ice on the evaporator and the fan motor is frozen, replace a new defroster

		heater. **Step 4**: Check whether the light switch is damaged, replace new one. **Step 5**: Check whether the freezer fan stops working, plug and unplug connection terminals, replace a new fan motor. **Step 6**: Check if the pipeline is leaking or blocked. After maintenance, vacuum and refill the refrigerant.
EE	Circuit fault of ice maker sensor	**Step 1**: Check whether the connection terminal s on the ice maker and the main PCB 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 connection terminal on ice maker, 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.
EH	Circuit fault of ambient humidity sensor	**Step 1**: Check whether the connection terminal s in the hinge cover and the main PCB 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 connection terminal on the hinge cover, use a multimeter to check the voltage value of the sensor, and confirm whether it is normal. **Step 3**: If the voltage value is wrong, replace the sensor. **Step 4**: If the fault still occurs, replace the main PCB.
EF	Water tank installation failure	**Step 1**: Check whether the water tank is installed in place, pull out the water tank and install it again; **Step 2**: Check whether the connection terminals behind the water tank seat is plugged in place and whether there are foreign matters in it; after cleaning the terminal, plug it in again. **Step 3**: Check whether the switch in the water tank seat is damaged, replace a new switch.

9.8 Defrosting function

◆ **Defrosting theory:**

The defrosting of evaporator is realized by the heating of heater, following the temperature rise, the frost on evaporator becomes water, and the water flow into the evaporating pan via the draining system, the water in evaporating pan evaporates away finally

◆ **Refrigeration compartment defrosting steps:**

The pipeline from the electric valve to the refrigeration chamber is closed - the motor of the refrigeration fan is closed - the electric damper is closed - the defrosting heater of the refrigeration is opened - the defrosting heating stops when the conditions are met - the electric damper is reset once after a delay of 7 minutes - the electric valve is opened and the fan motor is started.

◆ **Freezer compartment defrosting steps:**

Compressor shutdown - the fan motor of the freezing chamber is closed 10 minutes later - the defrosting

heater is turned on - defrosting heating exits when the conditions are met - after a delay of 7 minutes, the fan motor of the freezing chamber is started for 15 s - if the starting conditions are met, the compressor is started - after another delay of 2 minutes, the fan motor works normally.

◆ **Meet one of the following conditions, defrost heating exit:**

1) When the refrigeration defrosting sensor has no fault, the measured temperature Trd ≥ the set temperature 10℃ which defrost heating exit, or the heater works continuously for 90min
2) When the frozen defrosting sensor has no fault, the measured temperature Tfd ≥ the set temperature 10℃ which defrost heating exit, or the heater works continuously for 90min

9.9 Test mode

All below functions are only for diagnosis and test purpose, we advise to restart the refrigerator by power on/off if have used these functions.

Test items	Setting Method	Setting result
Enter Test Mode	Press and hold the button **'SUPER COOL'** and **'SUPER FRZ'** for 7 seconds	Temperature display area show **"0"**, then the refrigerator enters into test mode
Forced cooling mode	Press the "**FREEZER**" button to select display **"1"**	After lock, the air damper opens and the compressor and fan will work all the time. You can check whether there are wind at the air outlet of the air duct and whether the compressor is shaking to determine whether they are damaged.
	In this mode, if no button is pressed within 72hours	The refrigerator will exit this mode and return to normal operation.
Forced defrosting mode	Press the "**FREEZER**" button to select display **"3"**	After lock, the compressor and the fan motor will stop working, the refrigerating air damper close, the freezing defrost heater starts to work.
	In forced defrosting mode, when the freezing defrosting sensor reach the temperature of 8°C and the defrosting heater has been working for at least 3 minutes.	The refrigerator will exit this mode and return to normal operation
	In forced defrosting mode, if the temperature of freezing defrosting sensor is always lower than 3°C and the defrosting heater has been working for 60 minutes	The refrigerator will exit this mode and return to normal operation
Exit the test mode	Press the "**FREEZER**" button to adjust until the **LED1, LED2, LED3** and **LED4** are on	After lock, the refrigerator will exit the test mode and return to normal operation.

9.10 Demo mode

1）**Entry:**：Press and hold the button **'SUPER COOL'** and **'SUPER FRZ'** for 7 seconds, the temperature

display area show **“0”.** Then press the “**FREEZER**” button to select display **“7”2）State：** The display panel does not go off, the light will be on normally. The compressor, fan motor and defrost heater etc. stop working.

3）Exit

Press and hold the button **'SUPER COOL'** and **'SUPER FRZ'** for 7 seconds. Then press the “**FREEZER**” button to select display **“0”**, and then exit this mode.

9.11 Backup data for power fail

1) The running state of the refrigerator is remembered after compressor running for 1 hour continuously.
2) The running state of the refrigerator is remembered after change function settings and lock.
3) When the refrigerator is out of power and recharged, the running state of the refrigerator is same as before.

10. Compressor

10.1 Compressor on and off Control specifications

1.1 When one of the following conditions is met, the compressor stops:

1) Tr ≤ Trt；
2) The compressor runs continuously for more than 6 hours (Stop 10 minutes);

1.2 When all the following conditions are met, the compressor starts up:

1) Tr ≥Trk;
2) Compressor downtime is more than 7 min.

★When 1.1 and 1.2 are not satisfied, the compressor maintains the original state

10.2 Inverter board fault analysis

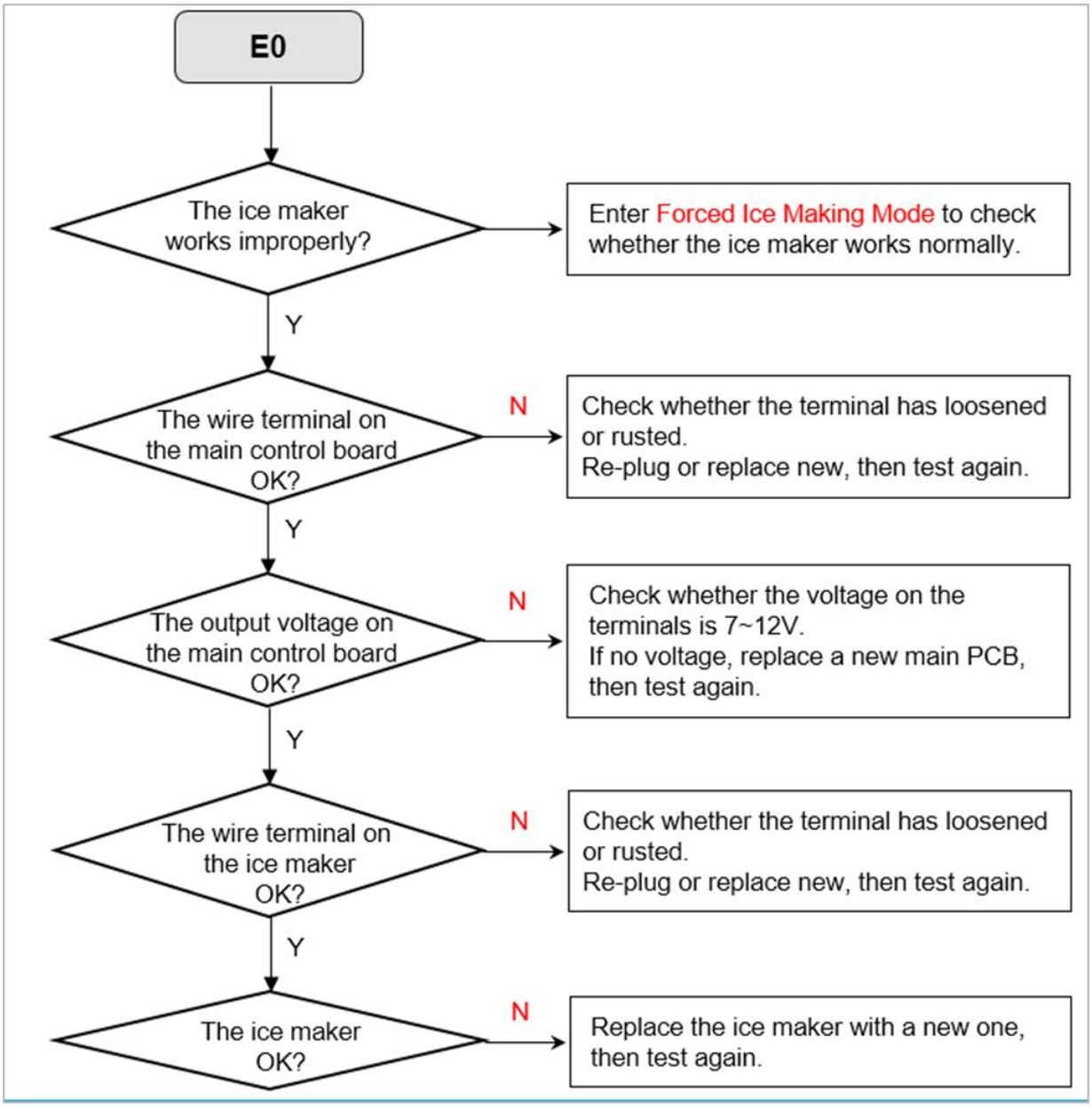
Running status of LED	Fault Type	Troubleshooting and Solutions
Not light	Standby	No repair needed
The light is always on when the power is turned on for the first time, and it is always off after the compressor is turned on and off	Normal working	No repair needed
Blink once: light 0.5 second, extinguish 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,	Hardware over current protection	Step 1: Disconnect the U-V-W wiring harness, measure the resistance between

interval time(extinguish) is 2 second		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,	Running block protection	Step 1: After powering on, touch the compressor and wait for the indicator light

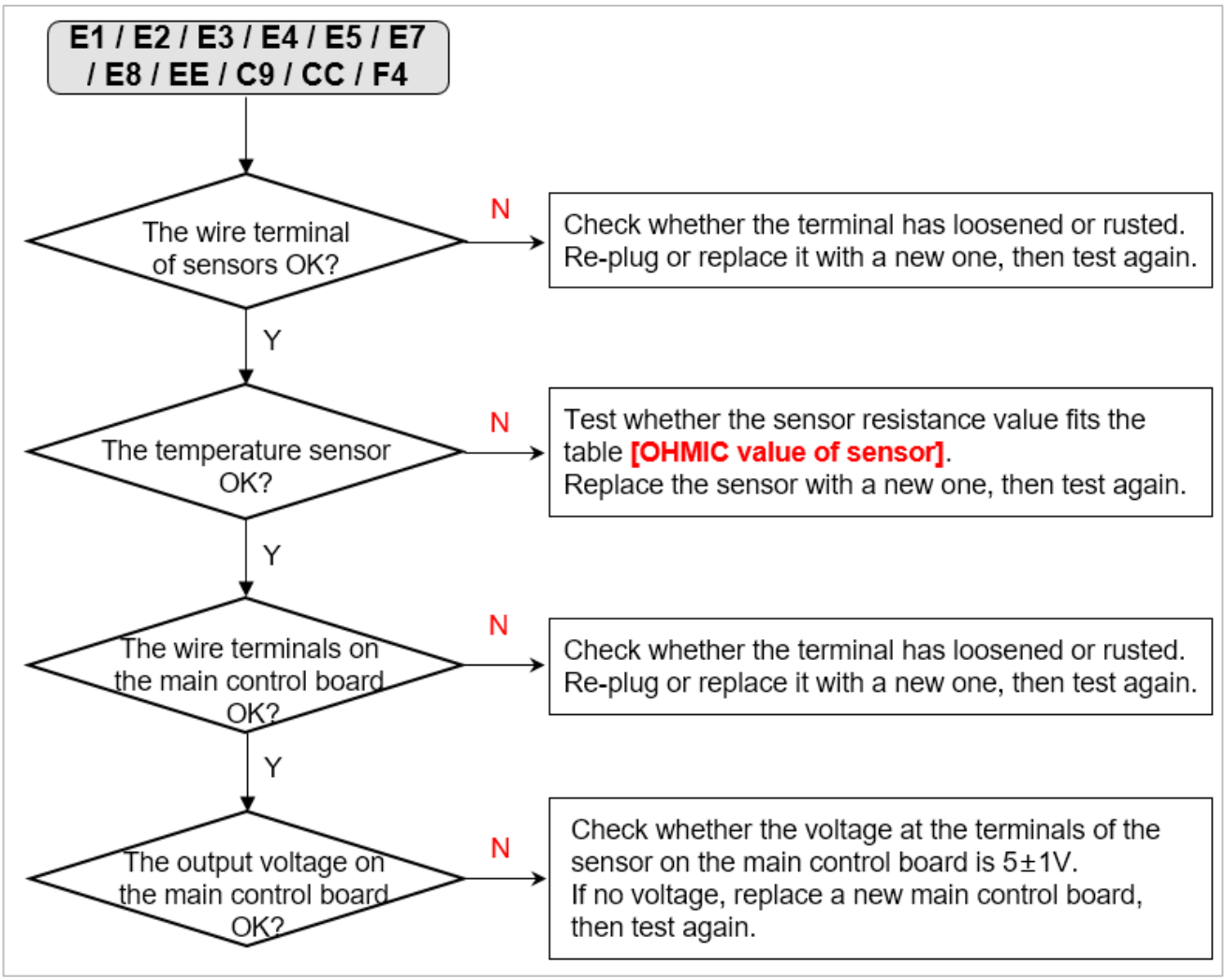
interval time(extinguish) is 2 second		on the inverter board to light up.
		Step 2: If the compressor does not respond and the indicator light is flashing, it means the compressor is damaged, replace a new compressor.
		Step 3: If the compressor shakes when starting and then protects, replace a new inverter 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

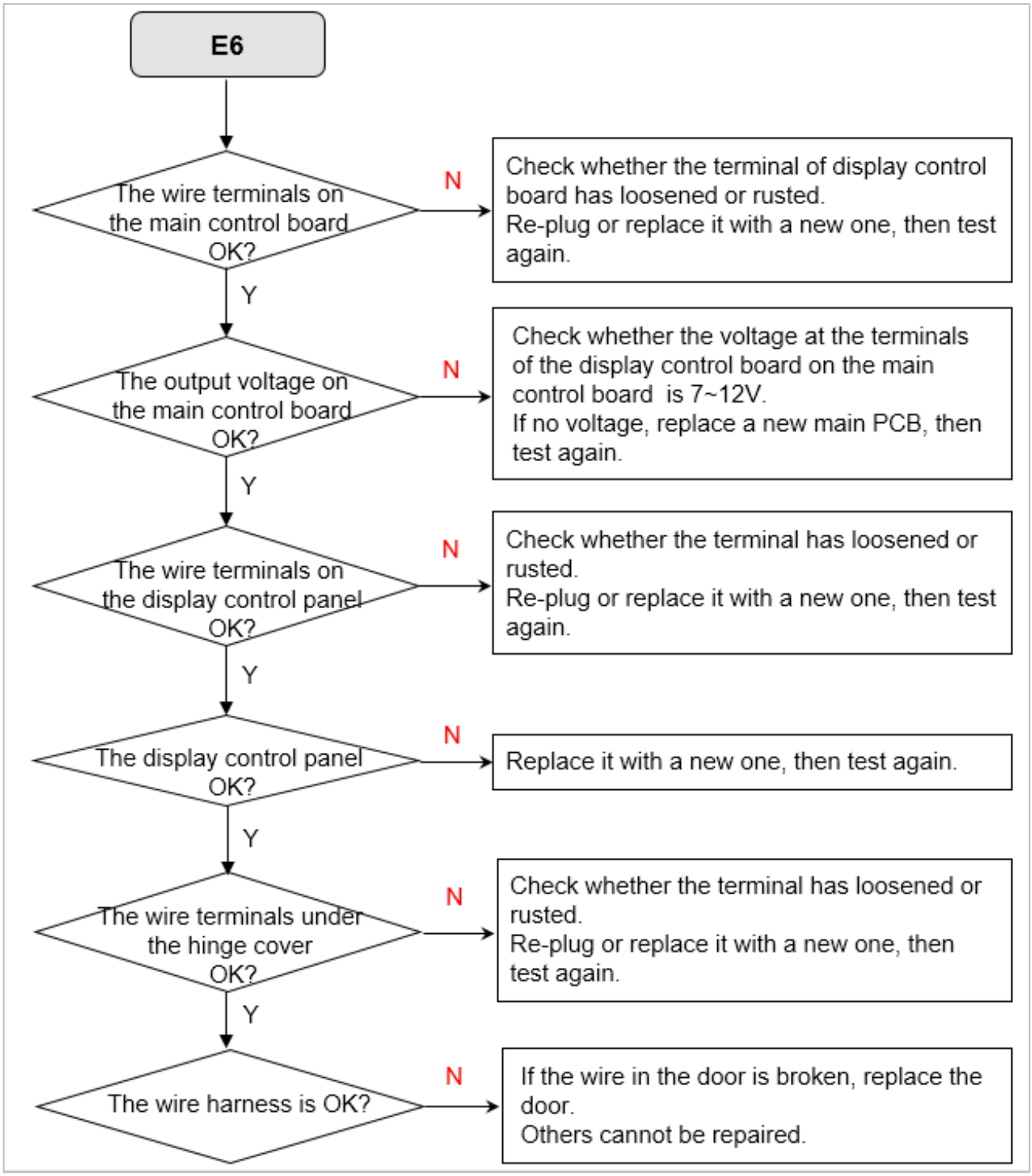
11.1 Error code E0



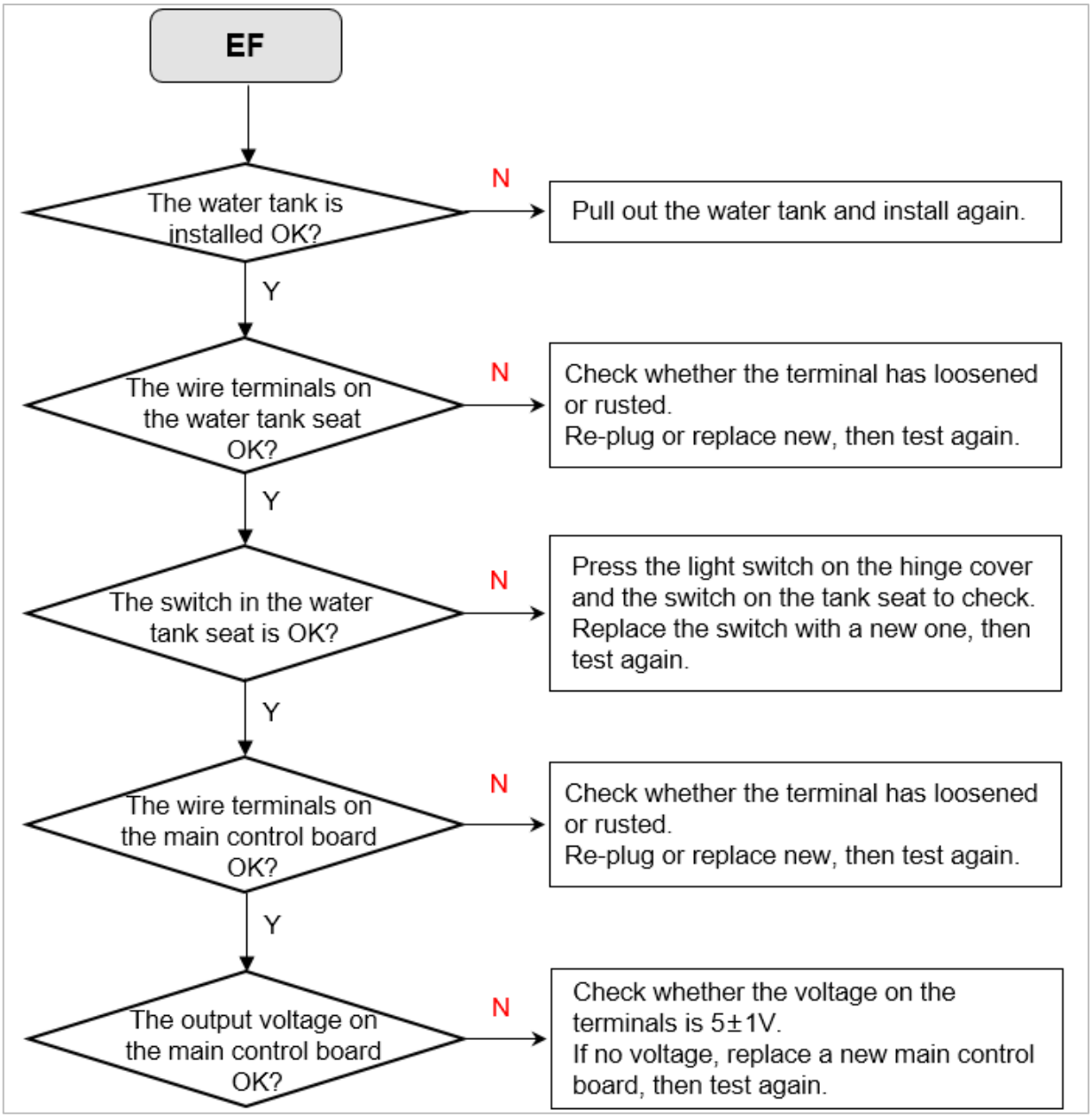
11.2 Error code E1 / E2 / E3 / E4 / E5 / E7 / E8 / EE / C9 / CC / F4



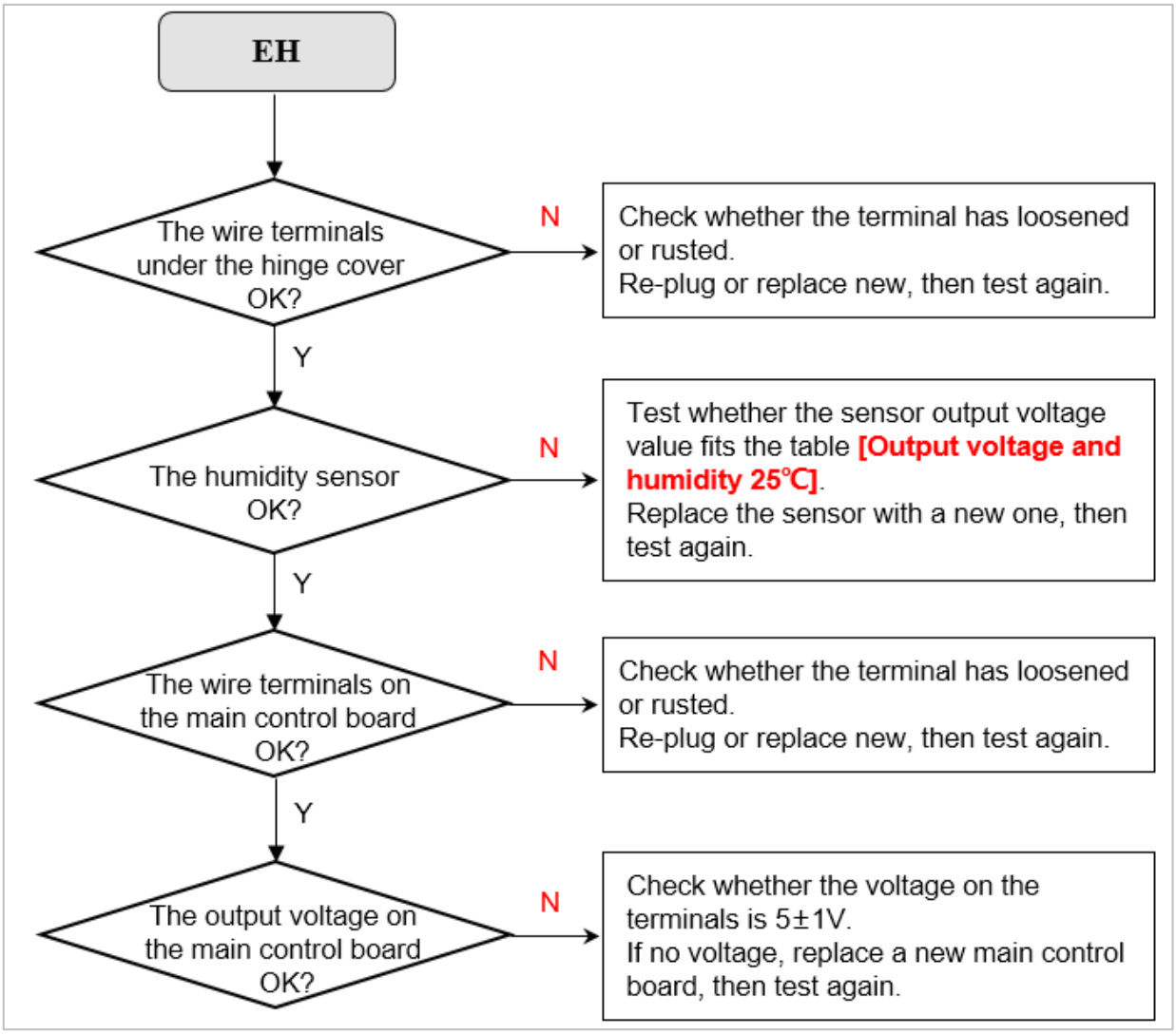
11.3 Error code E6



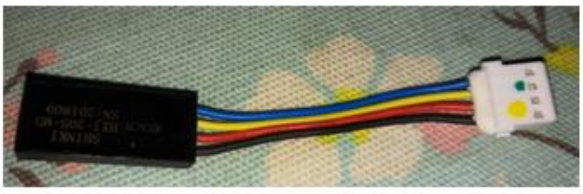
11.4 Error code EF



11.5 Error code EH



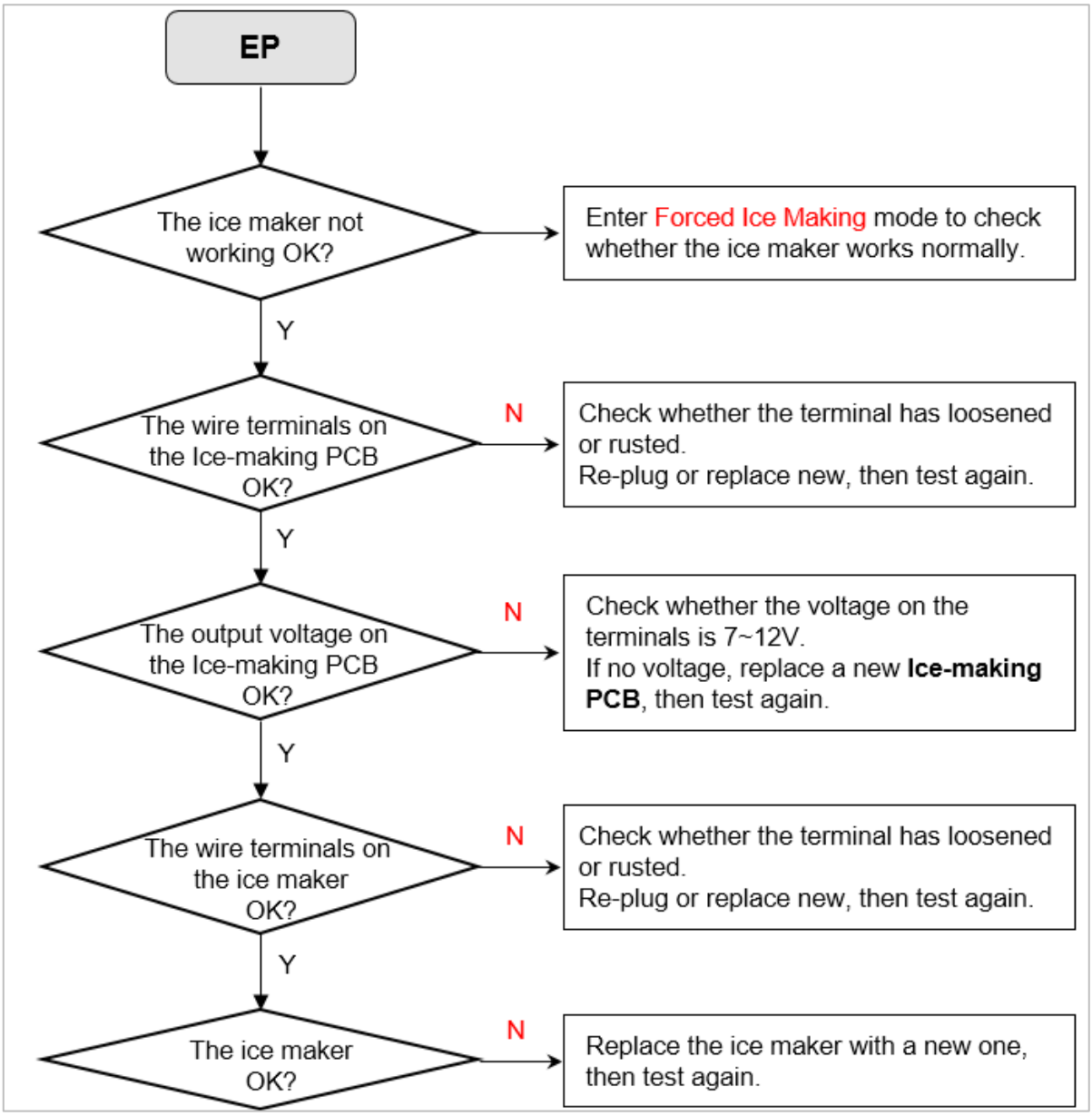
The meaning of different color wires:
Blue: Ambient temperature
Yellow: Humidity
Red: +5V
Black: GND



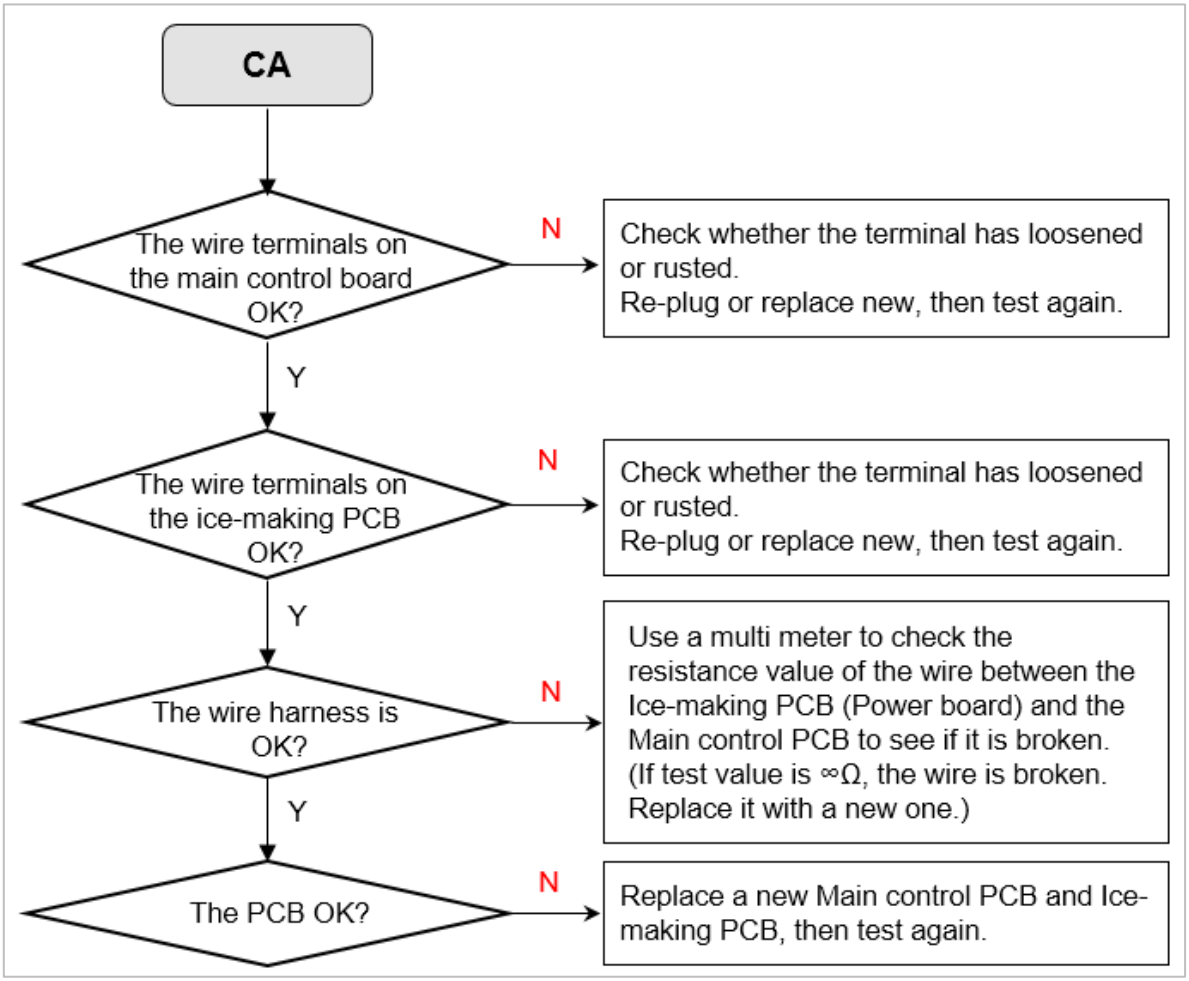
Comparison table of output voltage and humidity at 25℃	
Humidity（%）	Output (V)
20	1.528
40	2.067
60	2.779
80	3.400

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.

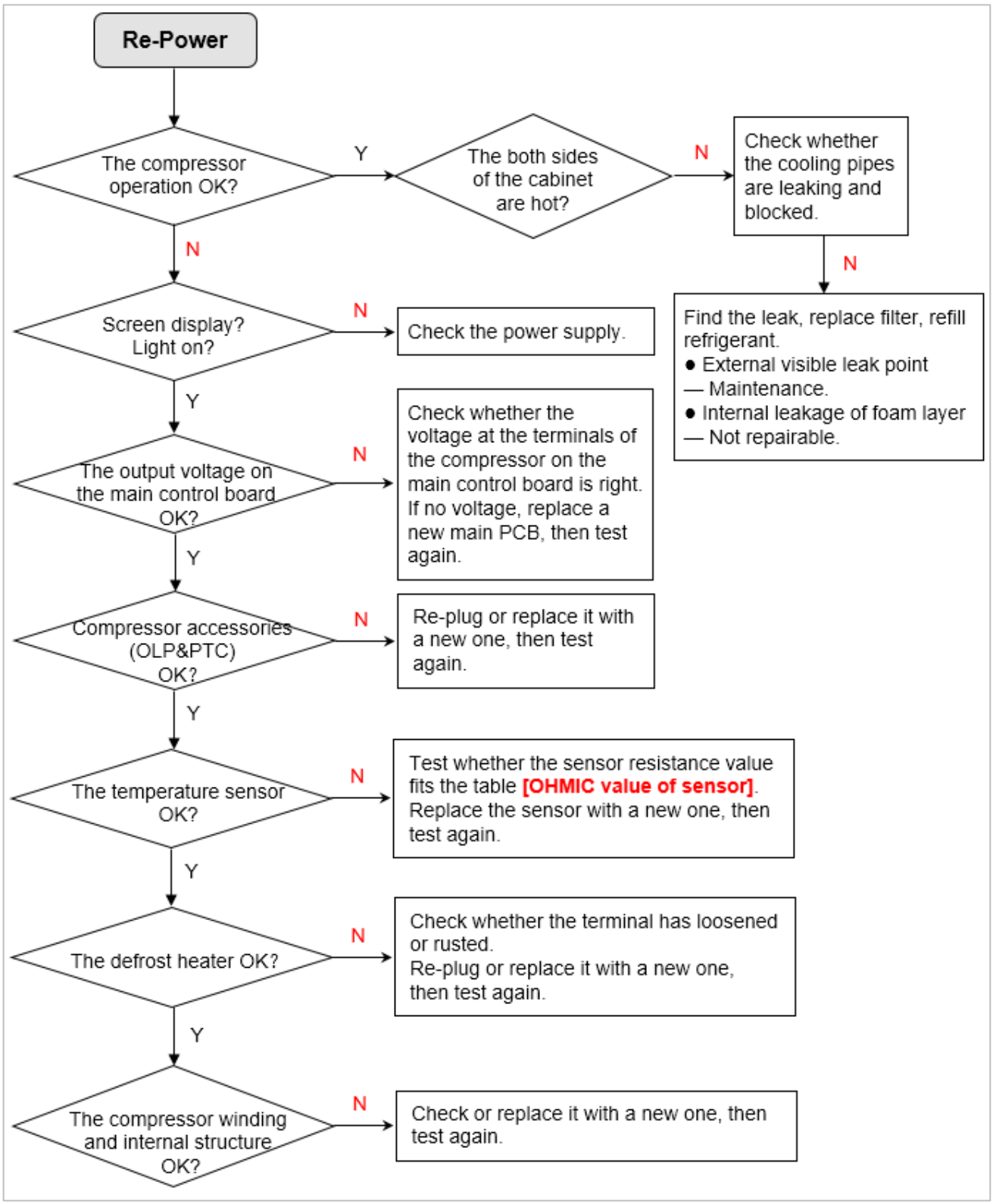
11.6 Error code EP



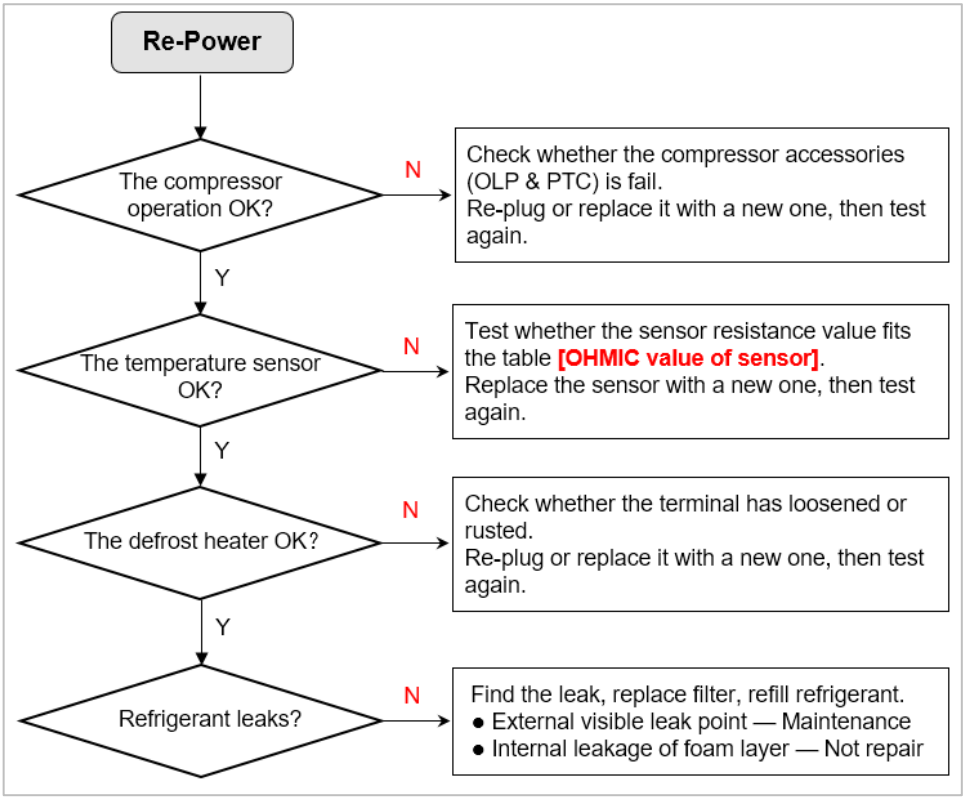
11.7 Error code CA



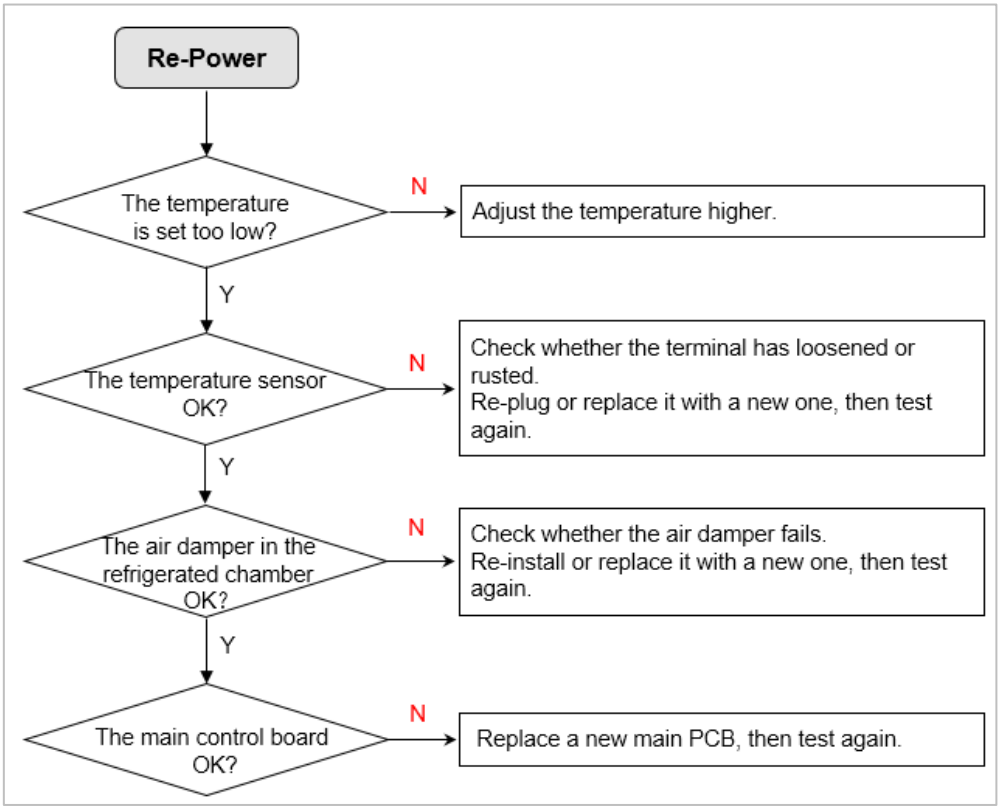
11.8 Not cooling in all the chambers



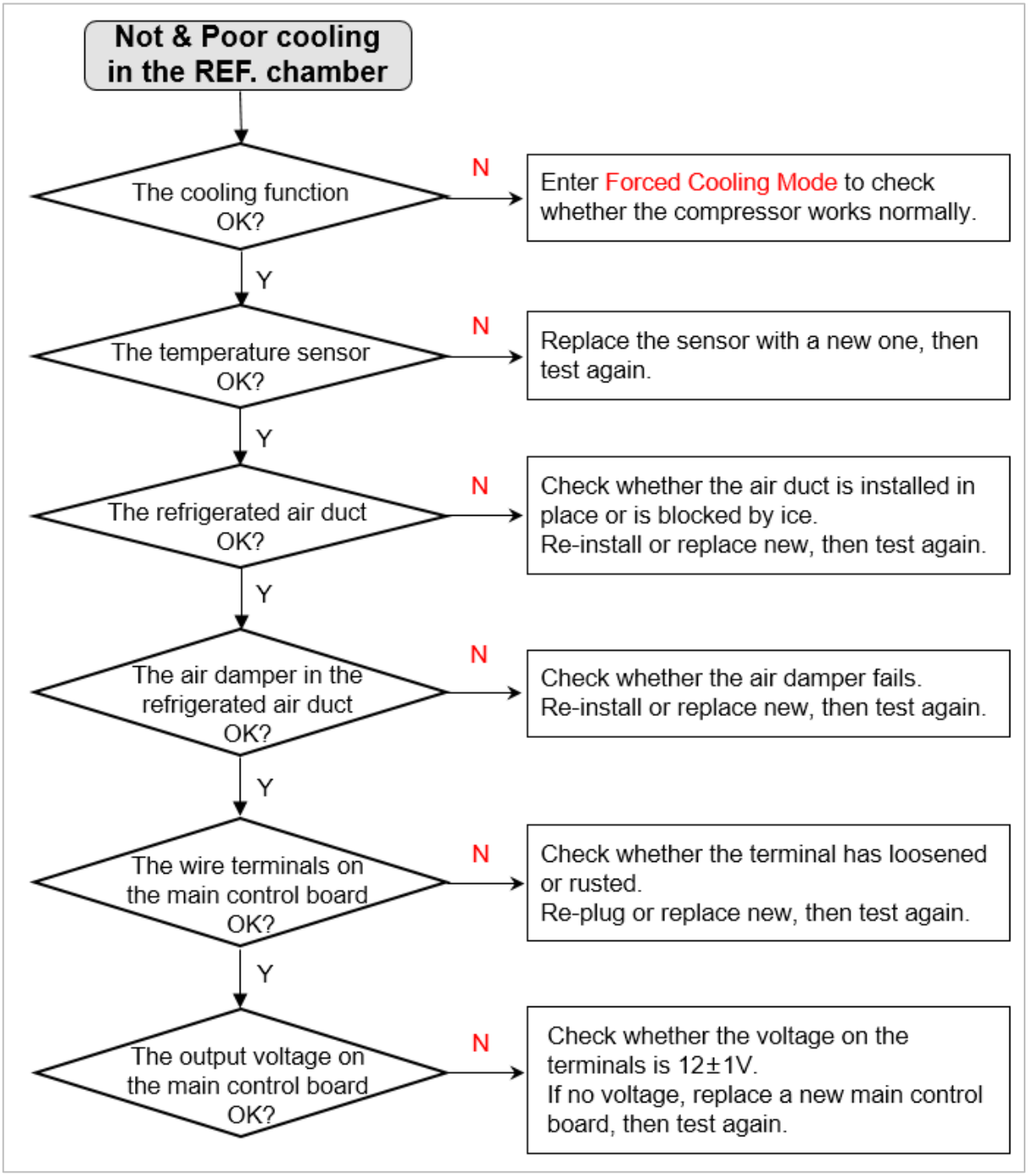
11.9 Poor Cooling in all the chambers



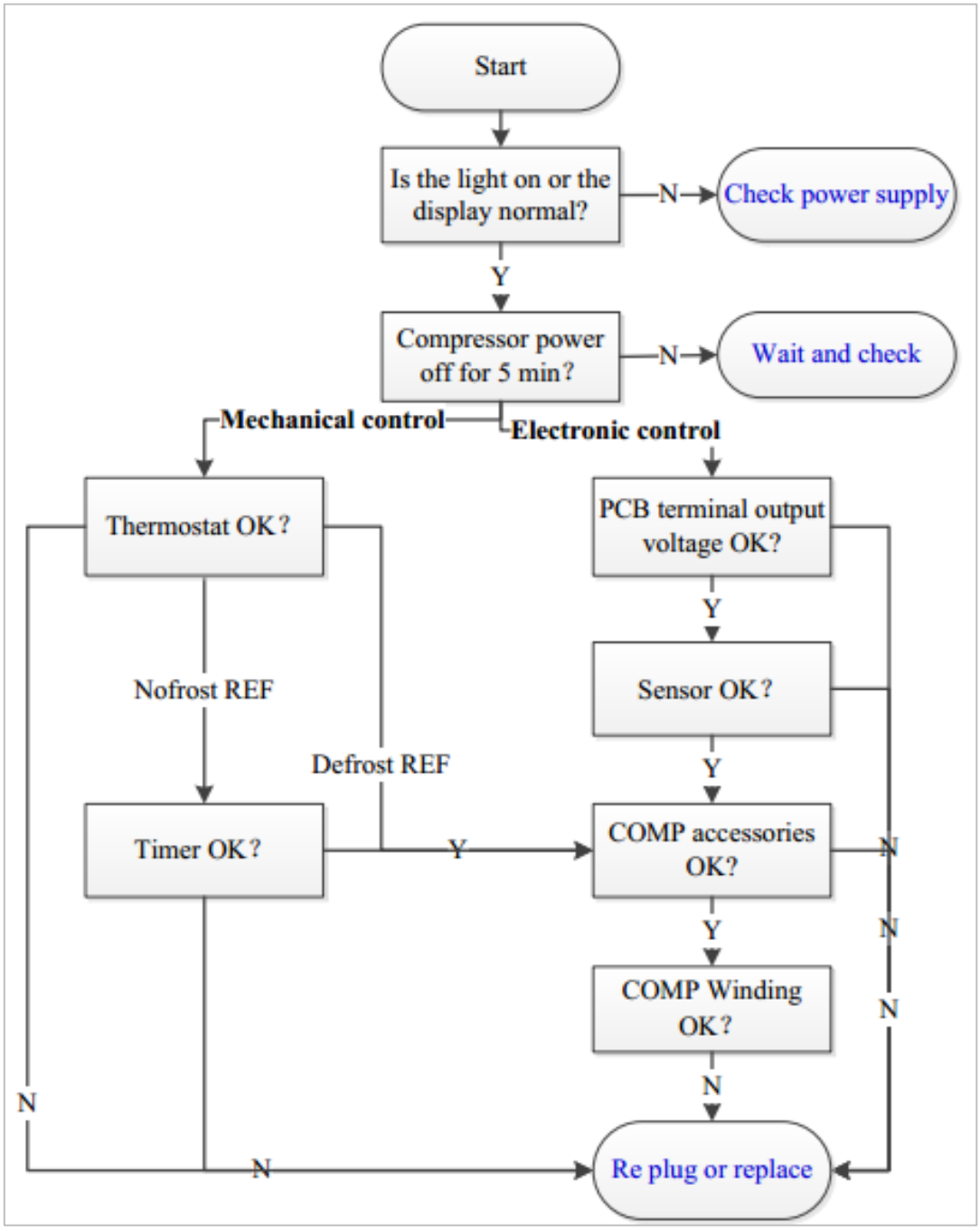
11.10 Overcooling in the refrigerated chamber



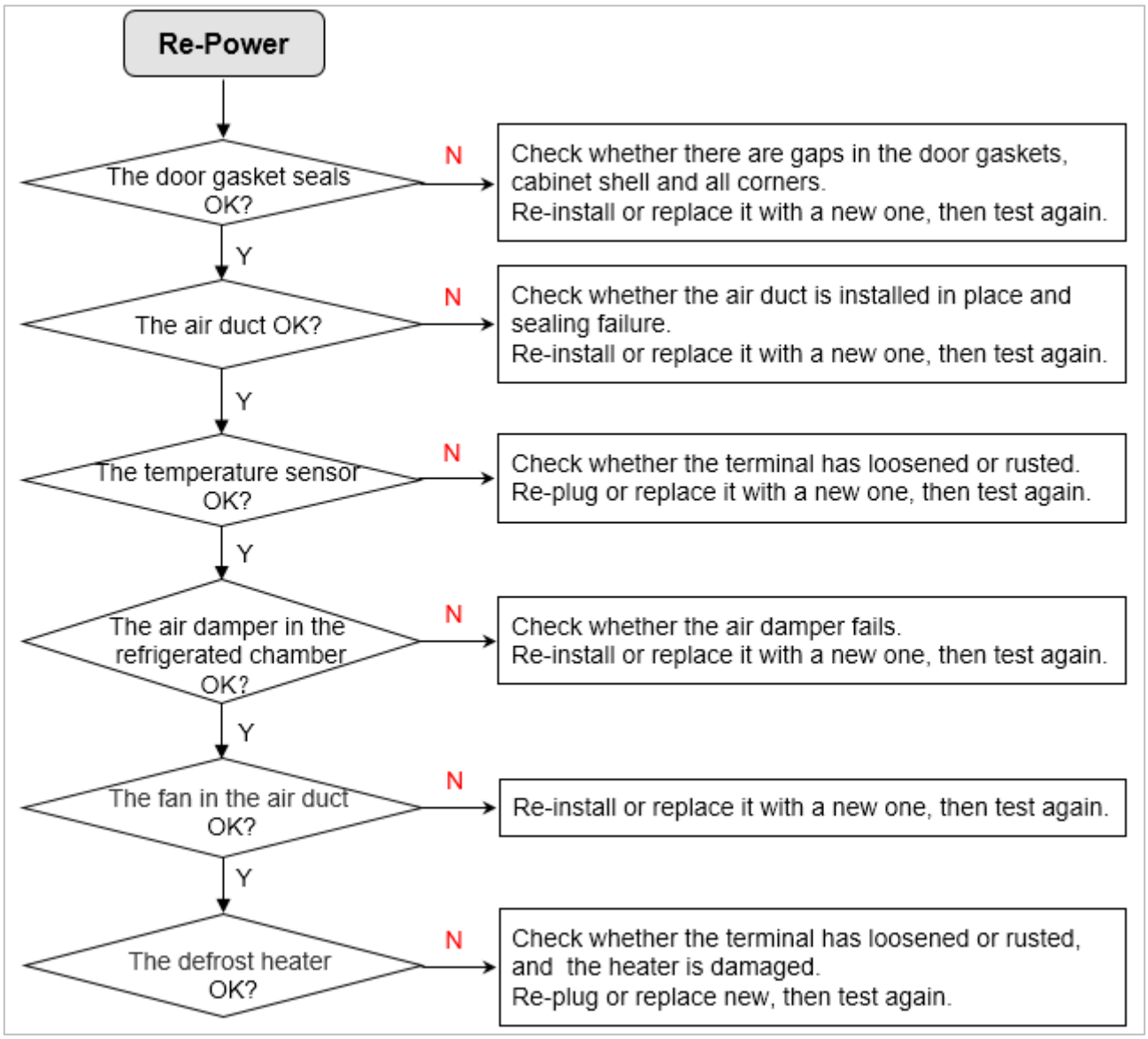
11.11 Not & Poor cooling in the refrigerated chamber



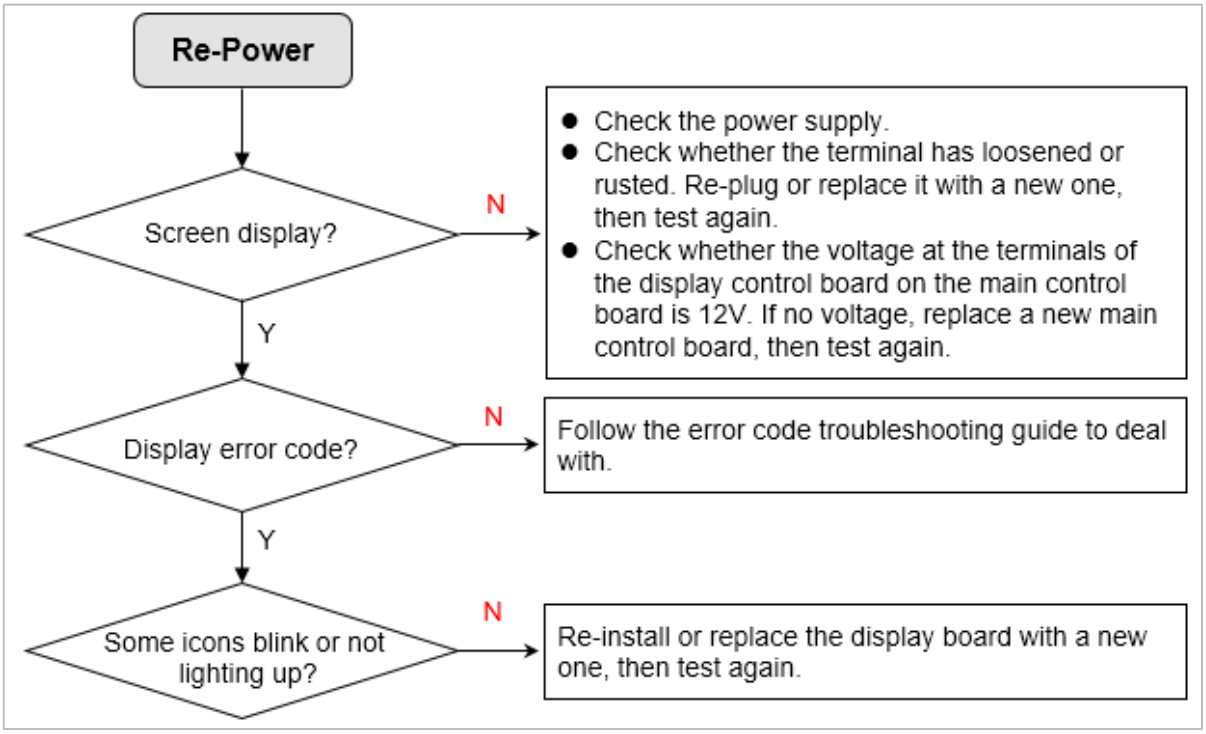
11.12 No working of compressor



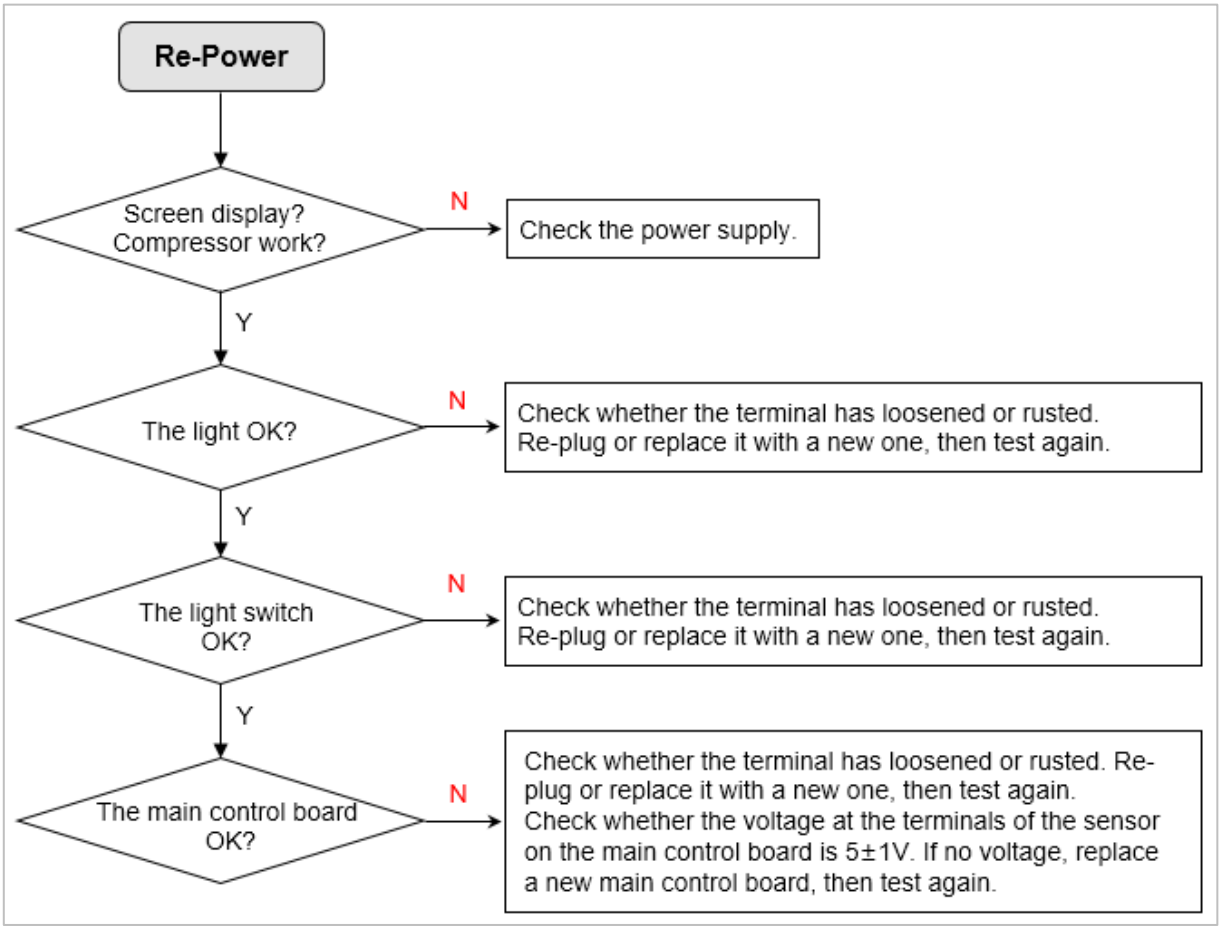
11.13 Condensation & Frost



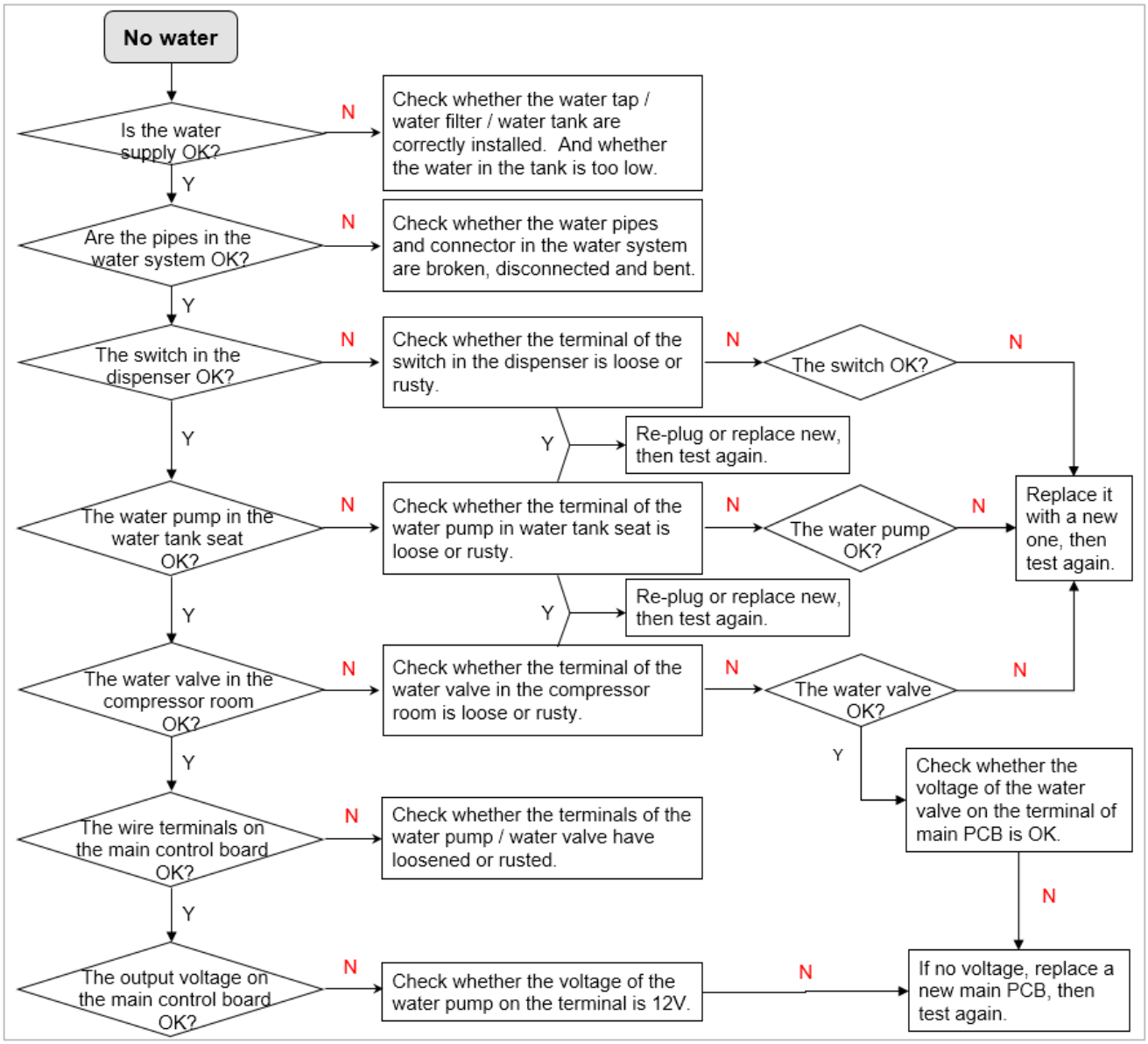
11.14 Display panel failure



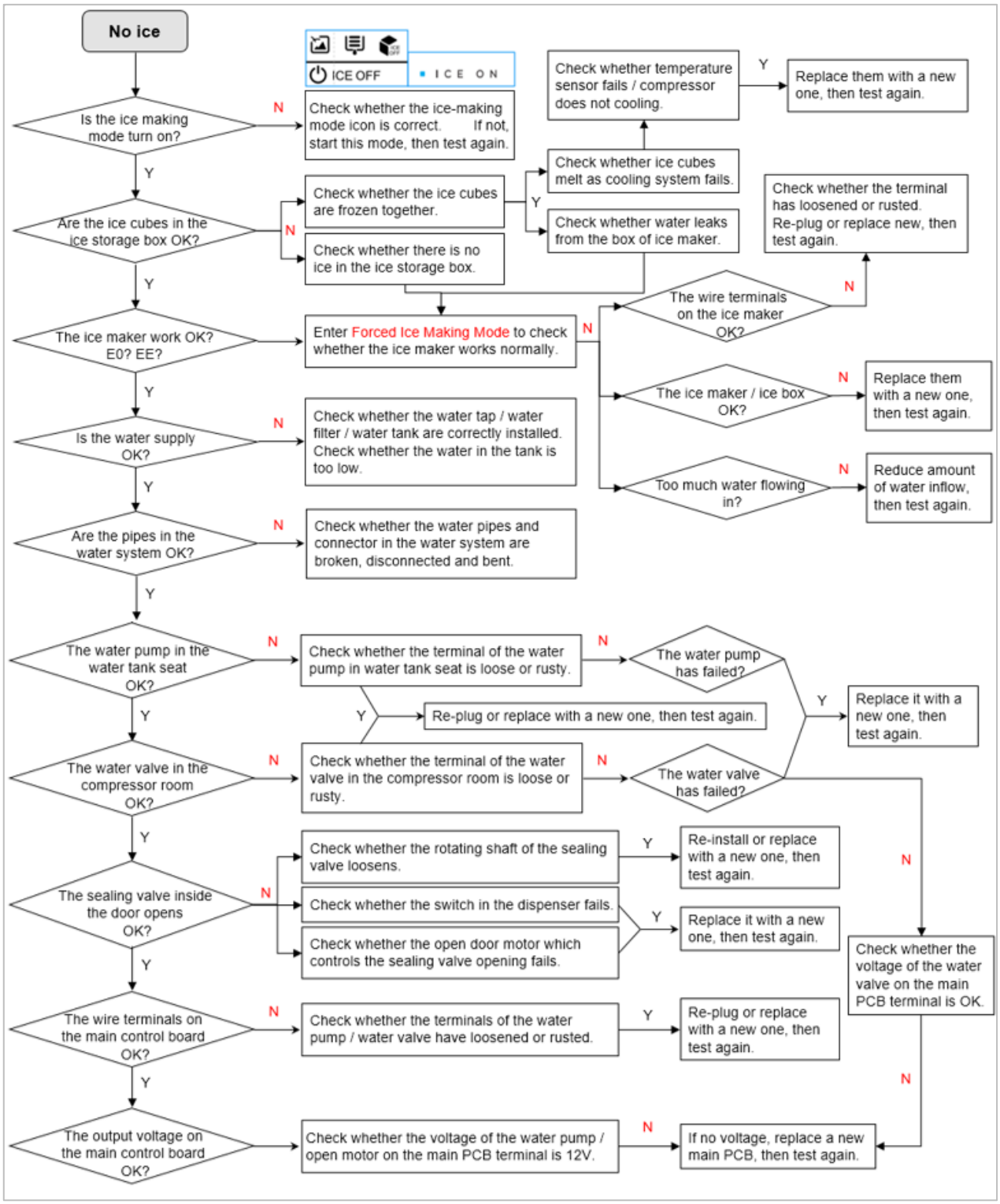
11.15 Light failure



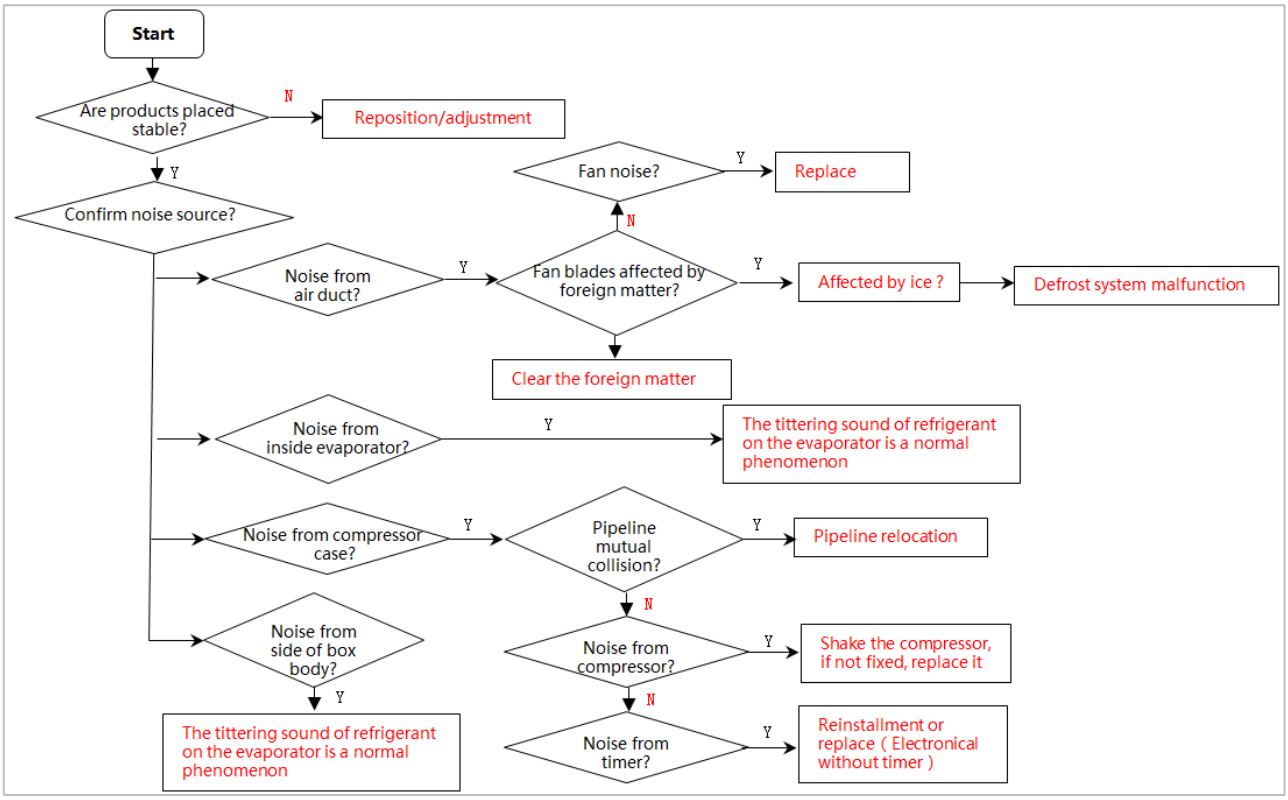
11.16 No water from the ice & water dispenser



11.17 No ice from the ice & water dispenser

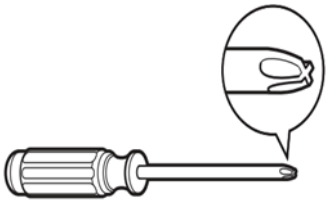
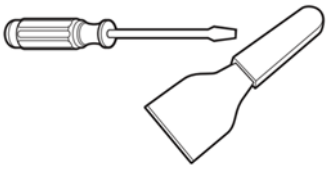
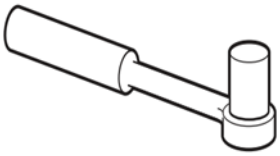


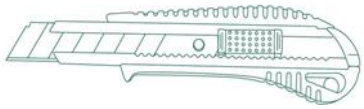
11.18 Noise


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?
Noise from compressor?
Y
Shake the compressor, if not fixed, replace it
N
Y
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

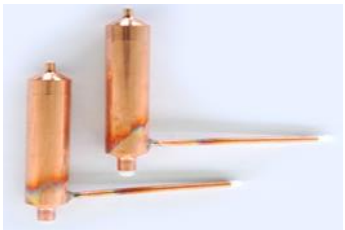
7	Pipe cutter		pipe cutting
8	Knife		assistive tool
9	Nipper pliers		assistive tool
10	Capillary tube scissors		Shear capillary

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

Please log in to I-Service system to view and download these contents.
URL: https://ics.midea.com

APAC: https://ics.midea.com
EMEA: https://ics-eu.midea.com
Americas： https://ics-amer.midea.com