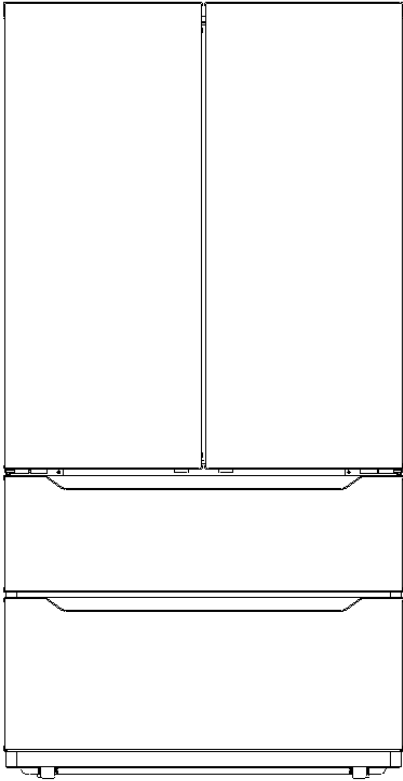


Service Manual

FDB SERIES



Applicable Models	Model Code
UL-BCD636WE-ST	22031040001001

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Reviewed by QA:Cheng Yi
SVC:Liu Jicheng


Approved by R&D:Chen Pingchuan
SVC:Guang Taoshuai

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



 **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.

Midea Refrigerators

Technical Maintenance Manual

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1. Safety Warning Code

1.1 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.

1.2 Safety instruction for refrigerant



WARNING



Explosion Hazard.

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

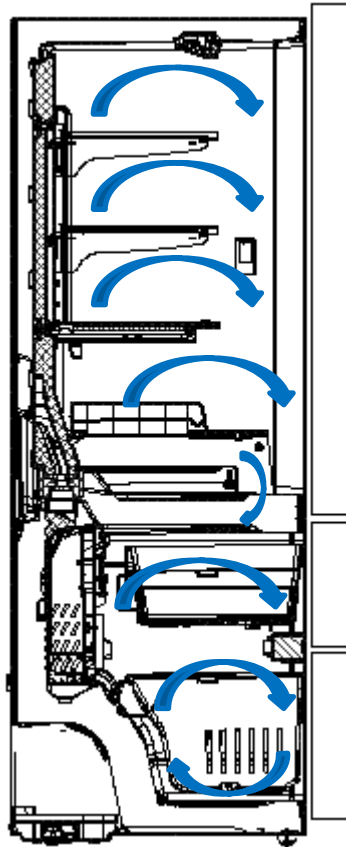


Safety instruction for refrigerant

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.

2. Description for product features

This product is provided with following features:



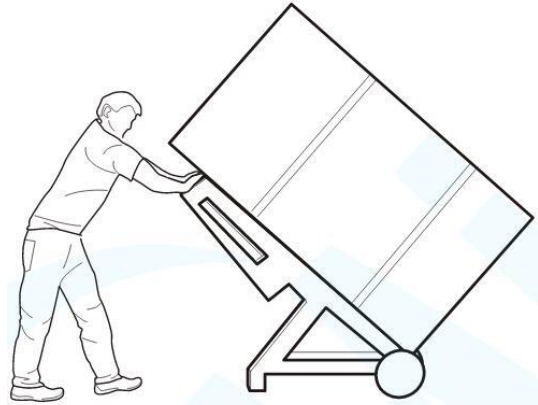
- 1) Full air-cooling and frost-free design
- 2) Electronic temperature control system with more accurate temperature control
- 3) The big freezer, may store a lot of frozen foods

3. Installation and commissioning

3.1 Handling

Handling

- 1) Protect the refrigerator in moving it, Same as shown as left photo, please move it by handcart with cushion;
- 2) Remove all packing materials and bottom cushion, the move into house for placement;
- 3) After moving it to appropriate location, wait for 2 hours before power on.



3.2 Door Disassembly and Assembly

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

Disassembly of Freezer door

Disassembly of Freezer door	None
-----------------------------	------

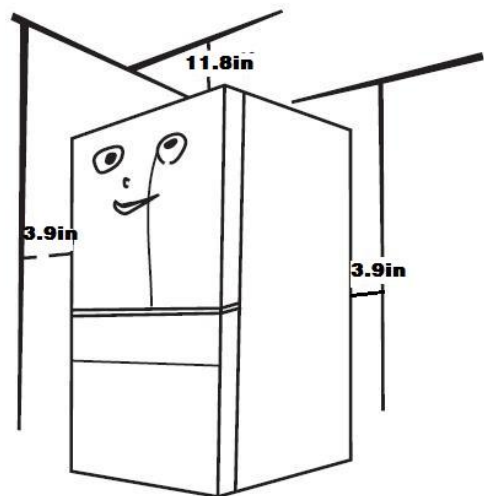
Disassembly of refrigerator door

Disassembly of refrigerator door	None
----------------------------------	------

3.3 Installation location

Installation location

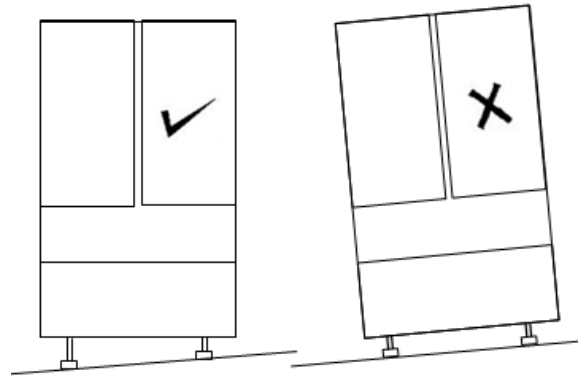
Location that is easy for ventilation shall be chosen to facilitate heat dissipation, enhance its performance and reduce the energy consumption.



3.4 Leveling of the refrigerator

Leveling of the refrigerator

If the refrigerator cannot be placed steadily, adjust the footing to level it.



3.5 Door reversal(None)

3.6 Installation of handle

Installation of handle

Installation of handle

None

3.7 Installation of door lock

Installation of door lock

Installation of door lock

None

3.8 Adjustment to level the door

Adjustment to level the door

Stuff the adjusting gasket in the hinge under the door to be adjusted, so that the height of the left and right doors can be consistent.



3.9 Adjustment to shelves

Adjustment to shelves

Adjustment to shelves

None

4. Terms


4.1 Definition of model(None)

4.2 Location of nameplate(None)

5. Product specification

5.1 Type specification(None)

5.2 Electrical parameters

Product Name			UL-BCD636WE-S	/
Product Code			22031040001001	/
Name	Item	Type	Specification	Specification
Compressor	Compressor	inverter compressor	EEI76CE13DCH	/
	Starter	PTC	/	/
	Overload protector	OLP	MM3-71CCX	/
	Winding resistance of compressor wiring terminal		20°C U-V 12.4Ω±5% 20°C V-W 12.4Ω±5% 20°C W-U 12.4Ω±5%	/
	Variable frequency driver board	/	ITRP04BX1.A 110V/50 or 60Hz	/
Motor	Fan motor of the freezing chamber	/	DC 12V/1600±100	/
	Ventilation door of the refrigerating chamber	/	/	/
	Electric switch valve	/	/	/
	refrigerator damper	/	DC 12V,1W	/
	Condensation fan	/	DC 12V/1150±150	/
Lights inside the refrigerator	Lights inside the freezing chamber	LED	12V/≤0.6W	/
	Lights inside	LED	12V/≤1.6W	/

	the refrigerating chamber			
	The side light of refrigerating chamber	LED	12V/≤1W	/
Switch	Switch of the refrigerating chamber door	Pillar switch	M7G7-505, VDE, CQC	/
	Switch of the freezing chamber Door	Sector-shaped switch	2027 VDE, CQC	/

5.3 Inside temperature

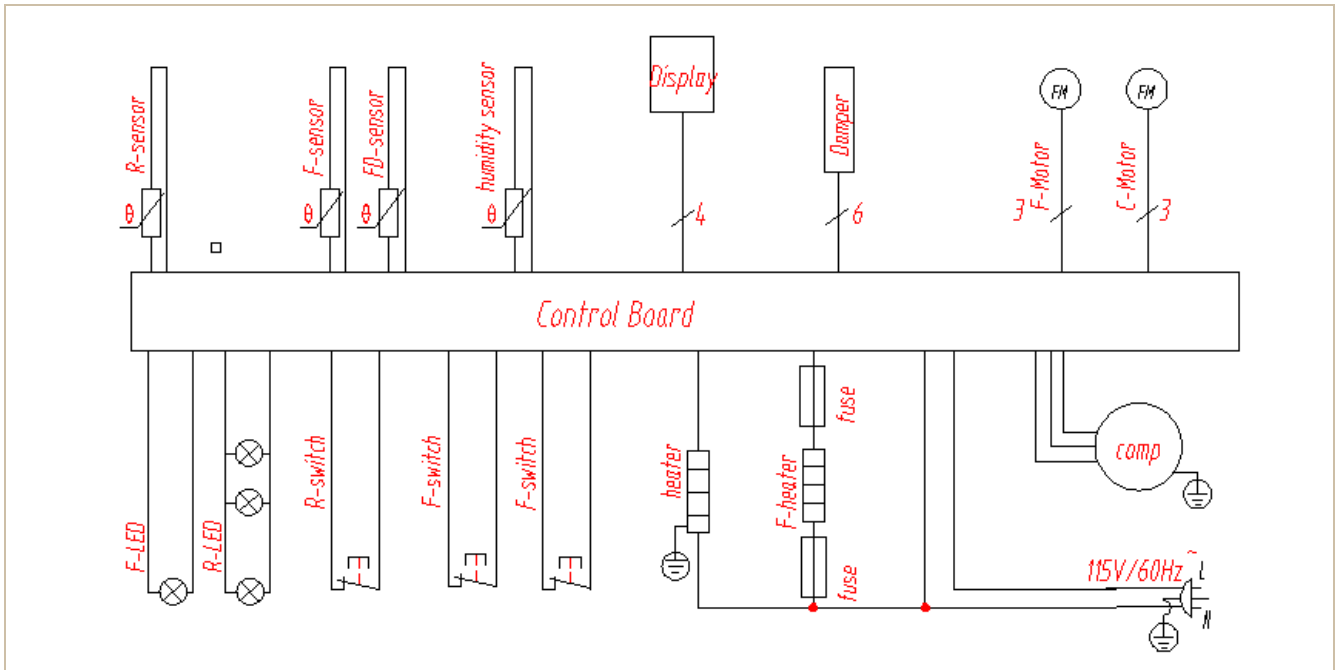
Temperature tolerance ≤ 2 °C

Compartment	The highest	Lowest
Freezing	-14 °C (6.8°F)	-22 °C (-7.6°F)
Refrigerating	7 °C (44.6°F)	1 °C (33.8°F)
Variable temperature	/	/

5.4 Defrosting parts

Item	Initial defrosting period	Normal defrosting period
Defrosting period	6hours	6-48 hours
Defrosting sensor	NTC	NTC
Defrosting temperature controller	None	None
Thermal fuse	Can't be restored	77°C (170.6°F)
Defrosting heater in freezing chamber	Steel pipe	Defrosting heater 115V/190W

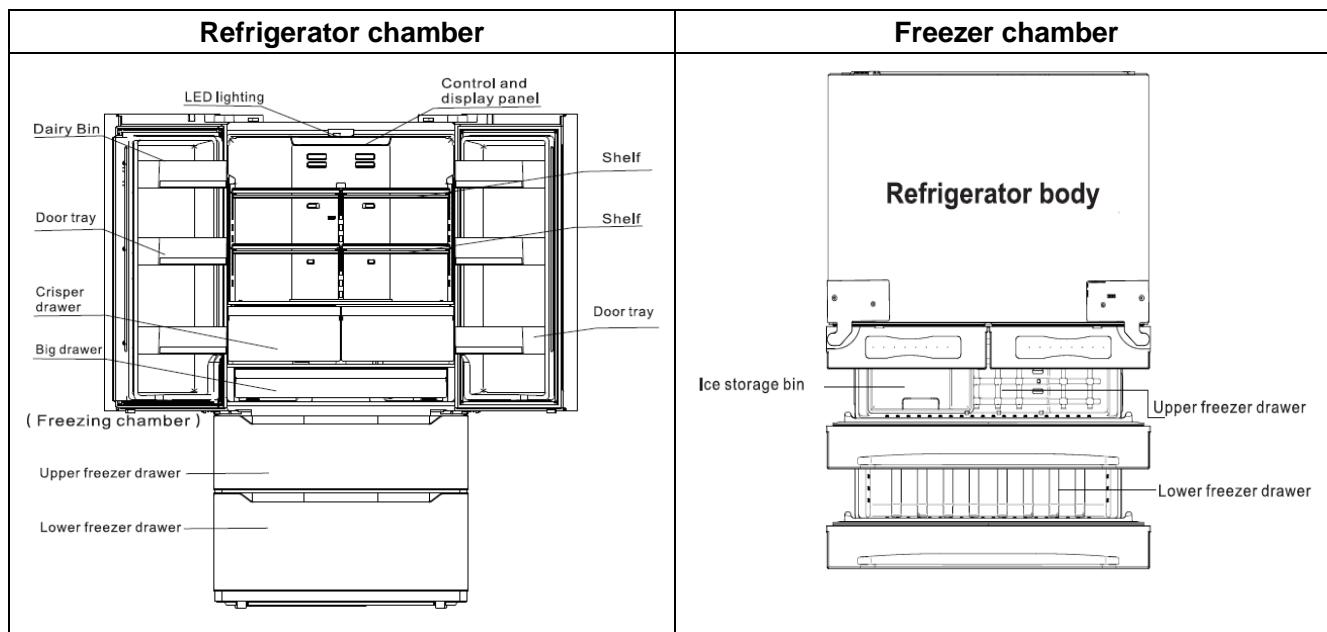
5.5 Circuit diagram



F: Freezer; R: Refrigerator; FD: Freezer Defrost; C: Condensation.

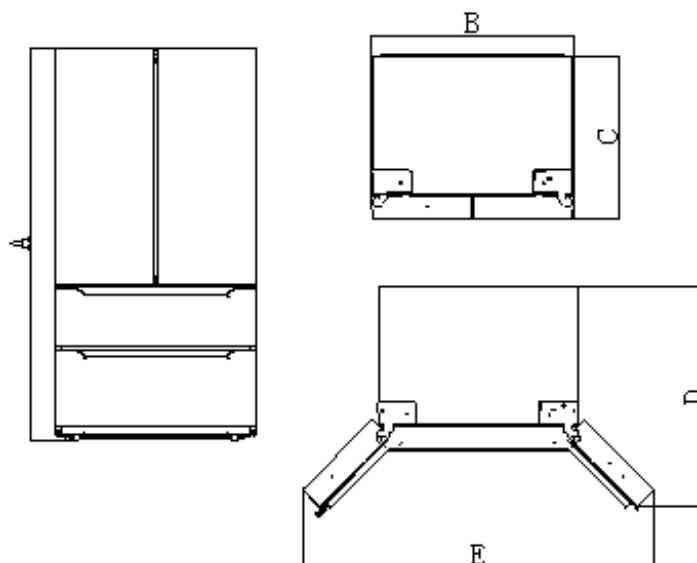
6. Internal view and dimension

6.1 Main parts and their names



6.2 External dimension

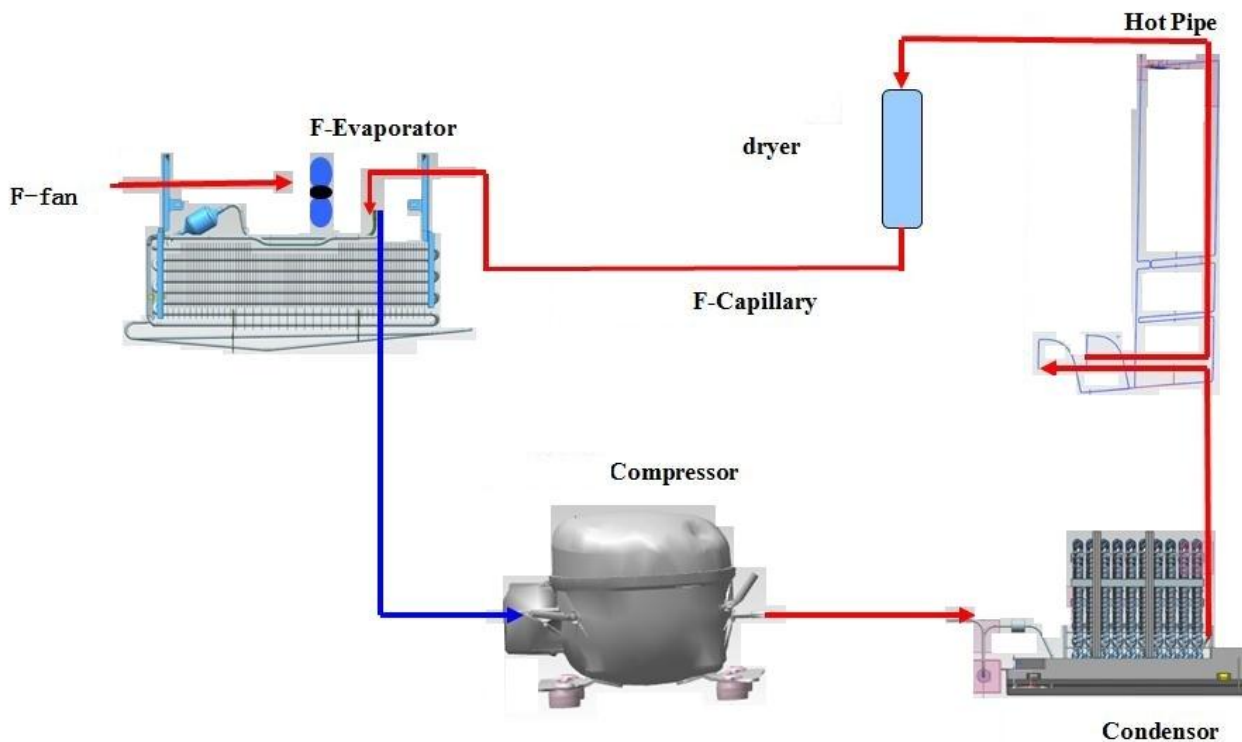
Description	Code	Size (mm)	Size (in)
Height to Top of Case	A	1775	70
Width	B	910	35.8
Depth	C	737	29.0
Depth (135deg. with Door Open)	D	993	39.1
Width (door open 135 deg.)	E	1593	62.7



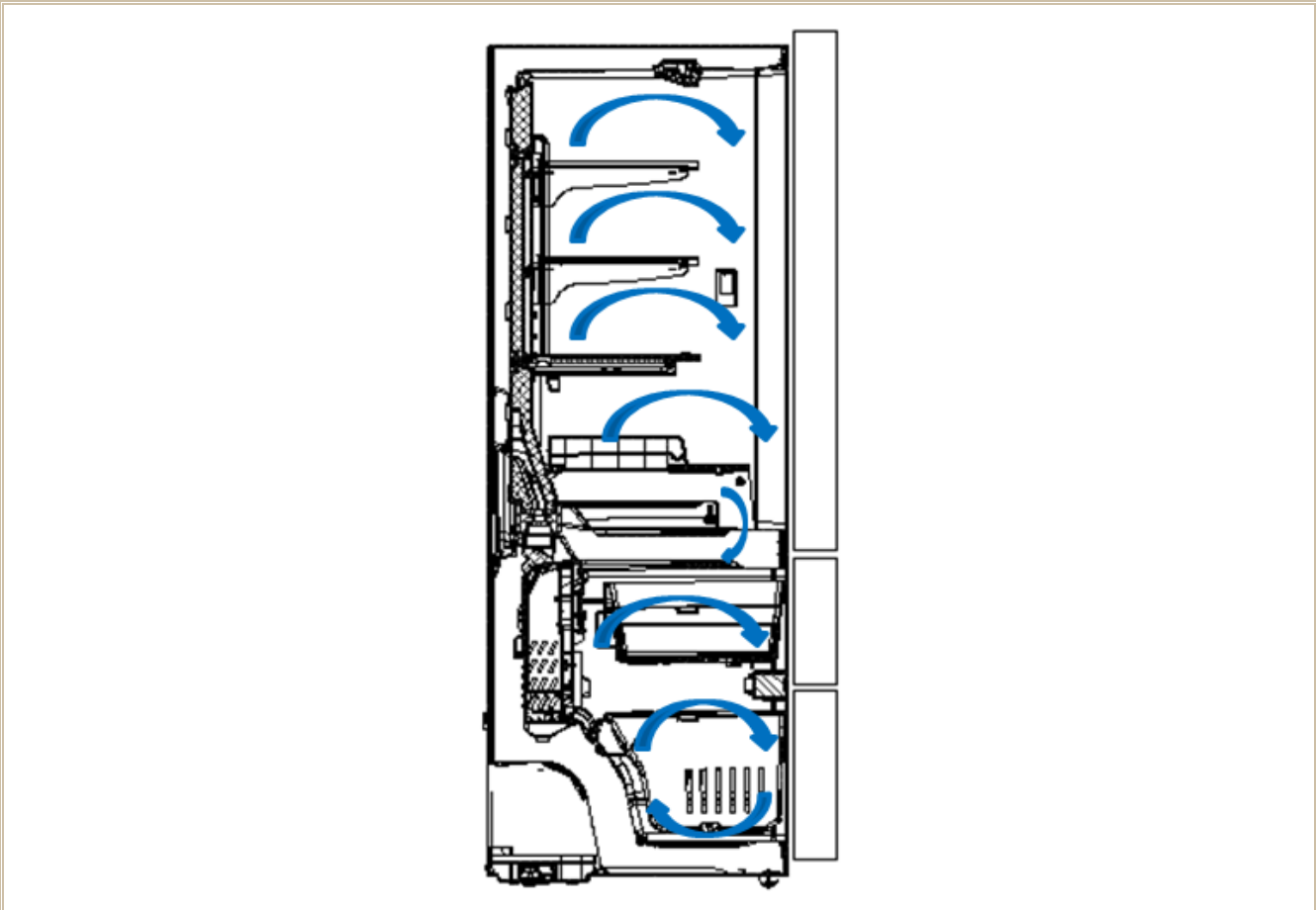
7.Refrigerating piping system and circulating route of cooling air

7.1 Refrigerating piping system

① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧ ① Compressor → ② Condenser → ③ Anti-condensation tube → ④ Dry filter → ⑤ Capillary tube → ⑥ Evaporator → ⑦ Suction tube → ⑧ Compressor



7.2 Circulating route of cooling air



8. Dismantling of parts

8.1 Parts on the door

Door seal

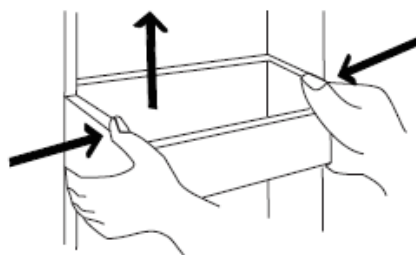
Door seal is installed into door liner groove.

- 1) Open the refrigerator door;
- 2) Take the door seal ① out of door liner.



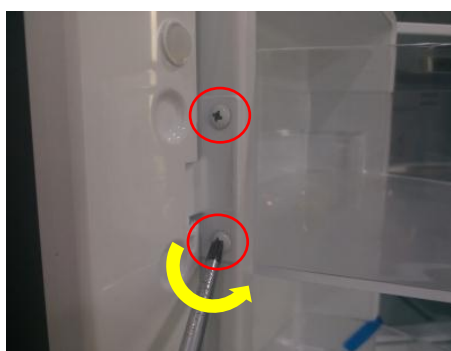
Door tray






While squeezing it inward, lift up the baffle and take it out from refrigerator liner.







rollover beam

Use a Philips screwdriver to remove the total of 2 screws;



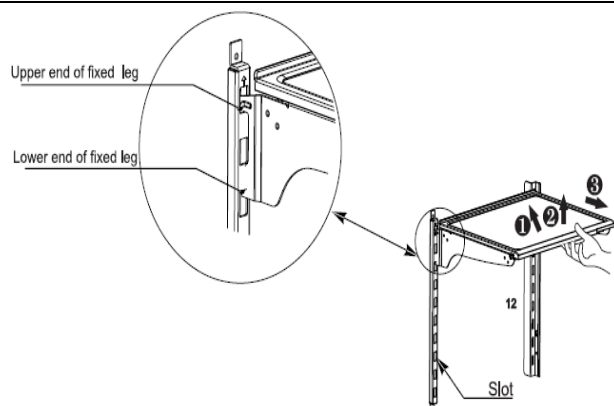
<p>1) pull out the upper part on the rollover beam to separate the upper part from the door;</p>	
<p>2) pull out the whole rollover beam to separate the lower part from the door;</p>	
<p>3) Unplug the wire terminal, remove the rollover beam, reverse the operation to complete the installation.</p>	
<p>Disassembly and assembly of freezer door and annex</p>	
<p>1) open the refrigerator doors, and pull the freezer drawer outwards to the end, then incline the inside drawer liner at an angle and take it out;</p>	
<p>2) With the assistive tooling, press down left and right bottom of bracket;</p>	



<p>3) Continue to pull drawer outwards so as to separate the metal guide rail;</p>	
<p>4) Place the upper freezer drawer on ground as the way shown in the right picture;</p>	
<p>5) Separate the metal connection lever by pull the guide rail to the opposite direction;</p>	
<p>6) Push the gear slantingly as shown in right picture, and separate the gear from the guide rail.</p>	

8.2 Parts inside the refrigerator



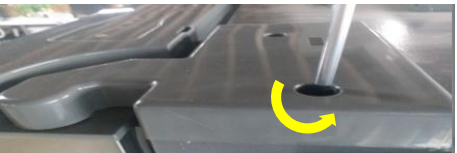
Shelves



- 1) Hold the front edge of glass shelf by uplift by certain angle;
- 2) Uplift the glass shelf ,and separate it from the shelf;
- 3) Take out the shelf horizontally.






<p>Vegetable Crisper</p>	
<p>1) Pull outwards the vegetable crisper to the most extent; 2) Hold the handle and upright the crisper,separate it from the guide rail.</p>	
<p>Big drawer</p>	
<p>1) Pull outwards the big drawer to the most extent; 2) Hold the handle and upright the crisper ,separate it from the guide rail.</p>	







8.3 Light system

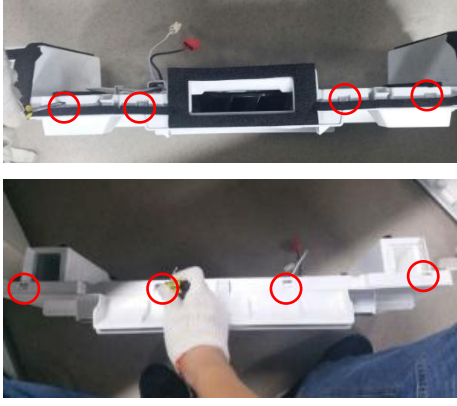
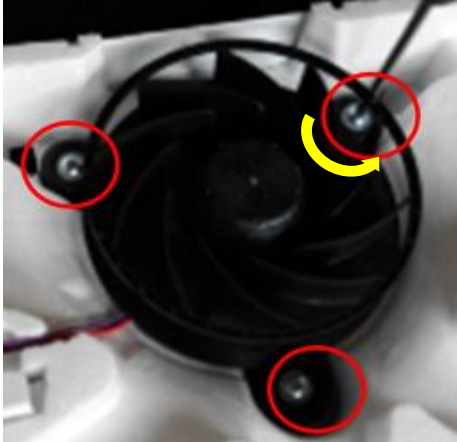
<p>Light</p>	
<p>The top light of refrigerator room is consolidated with the control panel, please refer to Chapter 8.7.</p>	<p>/</p>
<p>Side light of refrigerator room</p> <p>1) Use slotted screwdriver to pry up light cover; Disconnect the wiring connector, and dismantle LED.</p>	
<p>1) Remove lamp cover; 2) Disconnect the connector terminal and remove LED lamp.</p>	
<p>Light switch</p>	
<p>There is a pillar switch on each hinge cover of left and right doors of the refrigerator.</p> <p>1) Remove bolts of hinge cover with a cross screwdriver; 2) The pillar switch can be seen after removing of hinge cover.</p>	

	
<p>There is 2 light switch on the left side of freezer room</p> <p>1) Use slotted screwdriver pry up the light switch;</p> <p>2) Disconnect the wiring connector.</p>	
<p>Pilot light</p>	<p>None</p>
<p>Fresh light</p>	<p>None</p>

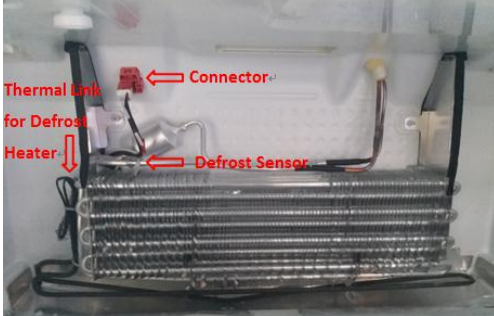
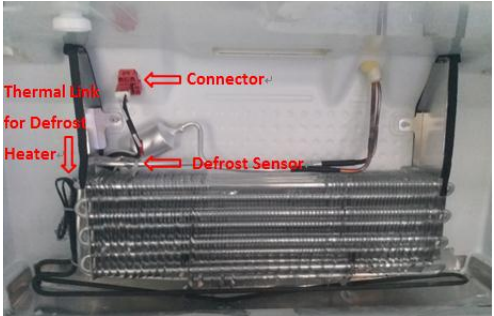
8.4 Air duct and fan motor

<p>Air duct components of refrigerating chamber</p>	
<p>All accessories in the refrigerating chamber should be removed before dismantling the air duct components.</p> <p>1) Remove 4 fixed screw with a cross screwdriver after removing the white decorative cap on the surface of the air duct;</p>	
<p>2) Dismantle the supporting iron bar in the middle of air duct cover of refrigerator room;</p>	
<p>3) disconnect the wiring connector;</p>	


<p>4) dismantle the air duct cover of refrigerator room.</p>	
<p>Air duct components in freezing chamber</p>	
<p>1) Use cross screwdriver to rotate anticlockwise, for remove the 4 pcs screws;</p>	
<p>2) Dismantle the air duct cover outwards;</p>	
<p>3) pull out the fan motor and temperature sensor plug-in terminal at the upper right corner.</p>	
<p>Fan motor</p>	
<p>1) Make air duct aluminum foil be away from the back cover of air duct, Use cross screwdriver to rotate anticlockwise, for remove the 1 pcs screw;</p>	
<p>2) Use slotted screwdriver to dismantle the clips of air duct cover;</p>	


	
<p>3) Use cross screwdriver to remove the 3 pcs screws of fan motor;</p>	
<p>4) replace the fan in reverse steps.</p>	<p>/</p>

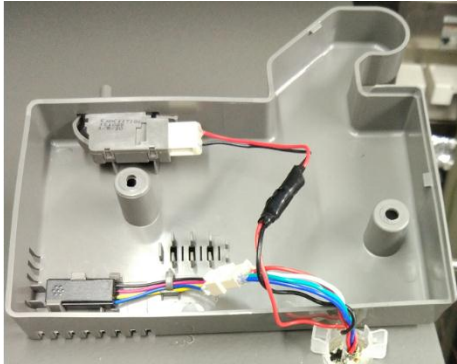
8.5 Evaporator and temperature sensing system

<p>Evaporator in refrigeration chamber(None)</p>	
<p>Evaporator in freezing chamber</p>	
<ol style="list-style-type: none"> 1) move the air duct components in freezing chamber. 2) sconnect all connectors. 3) move the welding on inlet and outlet tubes. 4) take down evaporator upward and outward. 	
<p>Components on the evaporator</p>	
<p>Defrost heater with defrost sensor and fuse *The defrost heater incorporates the defrost sensor and fuse in one, and failure of any component will result in replacement of the entire set of components</p> <ol style="list-style-type: none"> 1) Cut off wiring terminal; 2) Cut off the band which fixes the sensor; 3) Cut off the band which fixes the fuse; 	

<p>4) Separate the sensor and the evaporator; 5) Take off the defrost heater from the supporting plate of evaporator; 6) Take off the defrost heater from the evaporator; 7) *Don't break the welding of the evaporator in case that only the defrost heater needs to be replaced.</p>	
---	--







<p>Sensor in freezing chamber</p>	
<p>1)2)All air duct components in the freezing chamber should be dismantled before removing the temperature sensor in the freezing chamber. 1) Rip the adhesive tape which fixes the harness; 2) Remove the sensor.</p>	

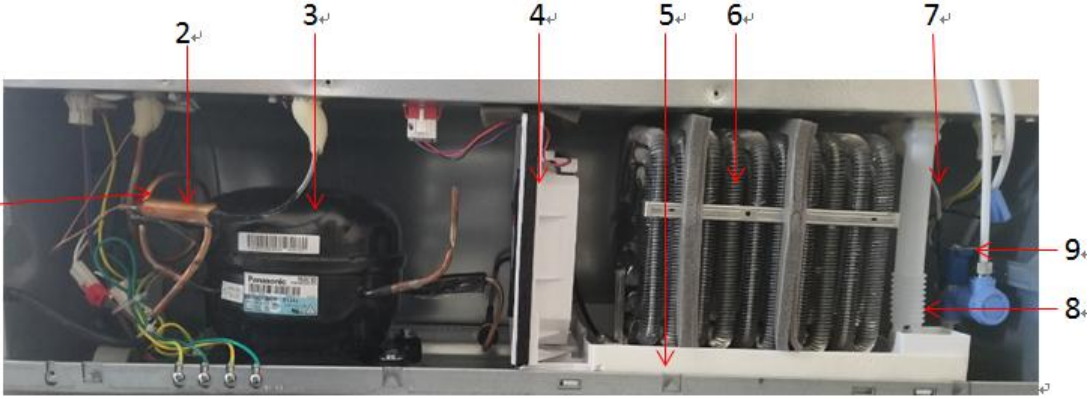
<p>Sensor in refrigerating chamber</p>	
<p>The air duct components in refrigerating chamber should be dismantled before removing the sensor. 1) Remove the air duct components in refrigerating chamber; 2) Remove the sensor.</p>	

<p>Ambient temperature and humidity sensor</p>	
<p>The sensors is located in the upper hinge cover of the refrigerator right door, it sends a temperature and humidity signal to the microprocessor.</p>	

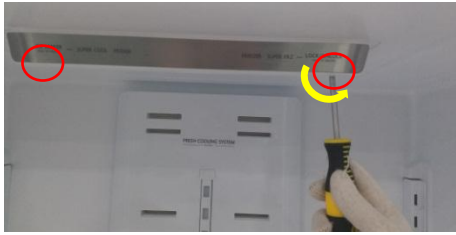


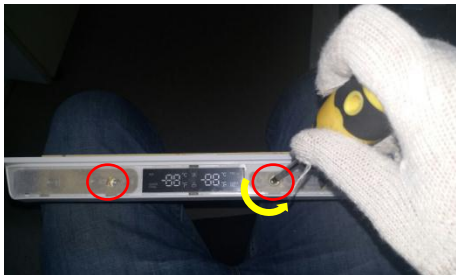
8.6 Compressor case




<p>Rear cover and compressor case</p>
--

<p>1) Remove by cross screwdriver the screws fixing back cover plate of compressor chamber anticlockwise; 2) Take the back cover plate of compressor chamber upward.</p>	
<p>Starter and protector of the compressor</p>	
<p>1) Prize up the protector cover from the red mark;</p>	
<p>2) Remove the clipping strip; Slowly pull it out;</p>	
<p>3) The reverse process can complete installation.</p>	<p>/</p>
<p>Condenser fan motor</p>	
<p>1) unplug the wiring connector of condenser fan motor;</p>	
<p>2) use screwdriver to pry up the bottom, meanwhile pull it outwards;</p>	
<p>3) dismantle the condenser fan motor from the base.</p>	
<p>Standby condenser</p>	<p>None</p>
<p>Piping system in the compressor case</p>	
<p> </p>	

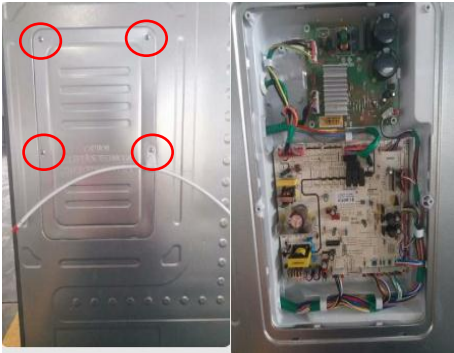
	
<p>1-Suction connection tube 2-Dry filter 3-Constant speed reciprocating compressors 4-Condenser fan</p>	<p>5-Water tray 6-Circumflex fin condenser 7-Anti-condensation tube 8-Drain 9-Water valve</p>

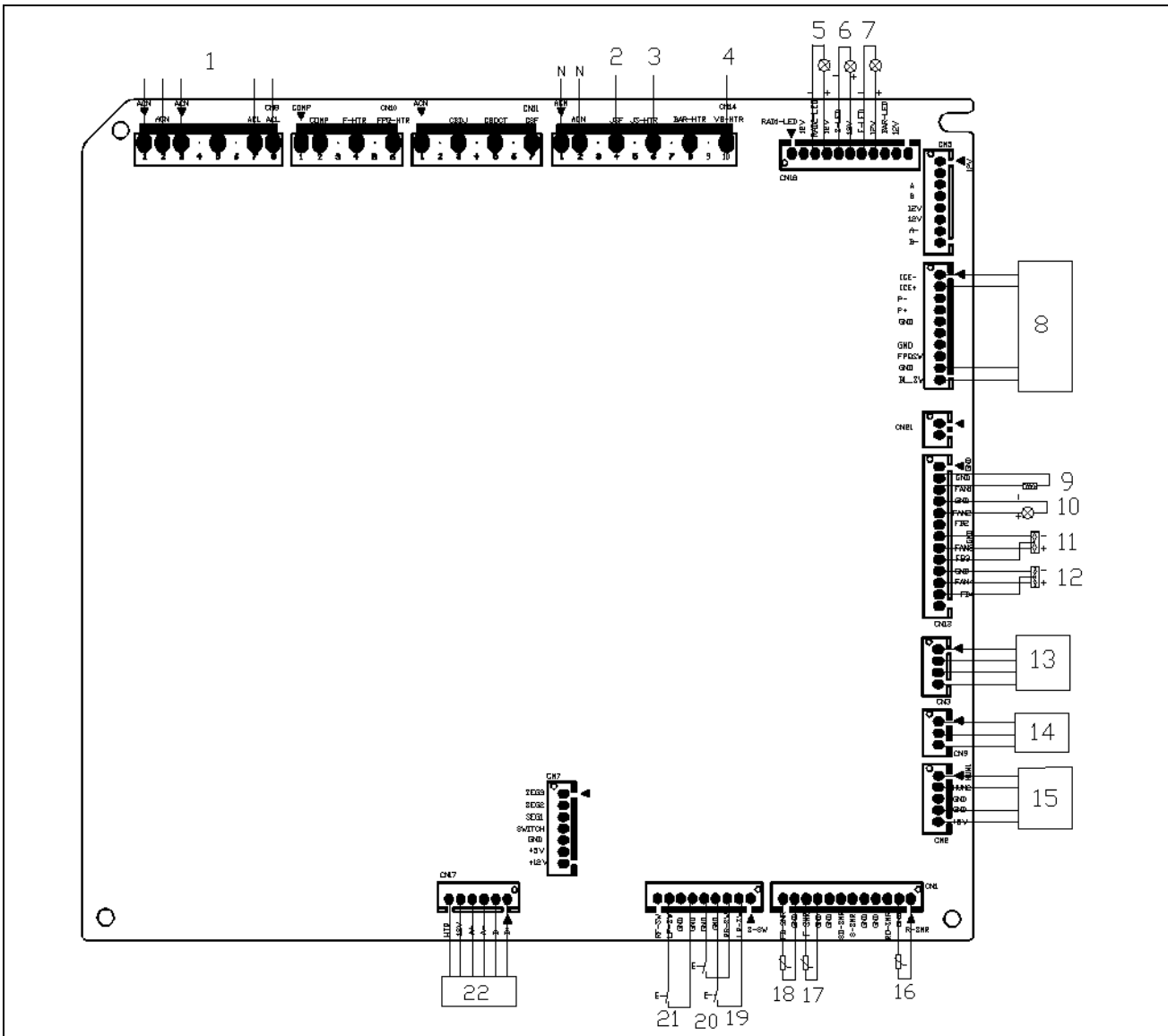
8.7 Display control board

<p>Display control board and refrigerator top light</p>	
<p>1. Control panel with cross screw driver;</p>	
<p>2. Detach the roof display and control panel to remove the ceiling lamp and display and control PCB board terminal;</p>	
<p>3. Push aside and take off the membrane outside the forepart of display and control panel with blade or other sheet;</p>	
<p>4. Remove two screws on both sides of display and control panel with cross screwdriver;</p>	

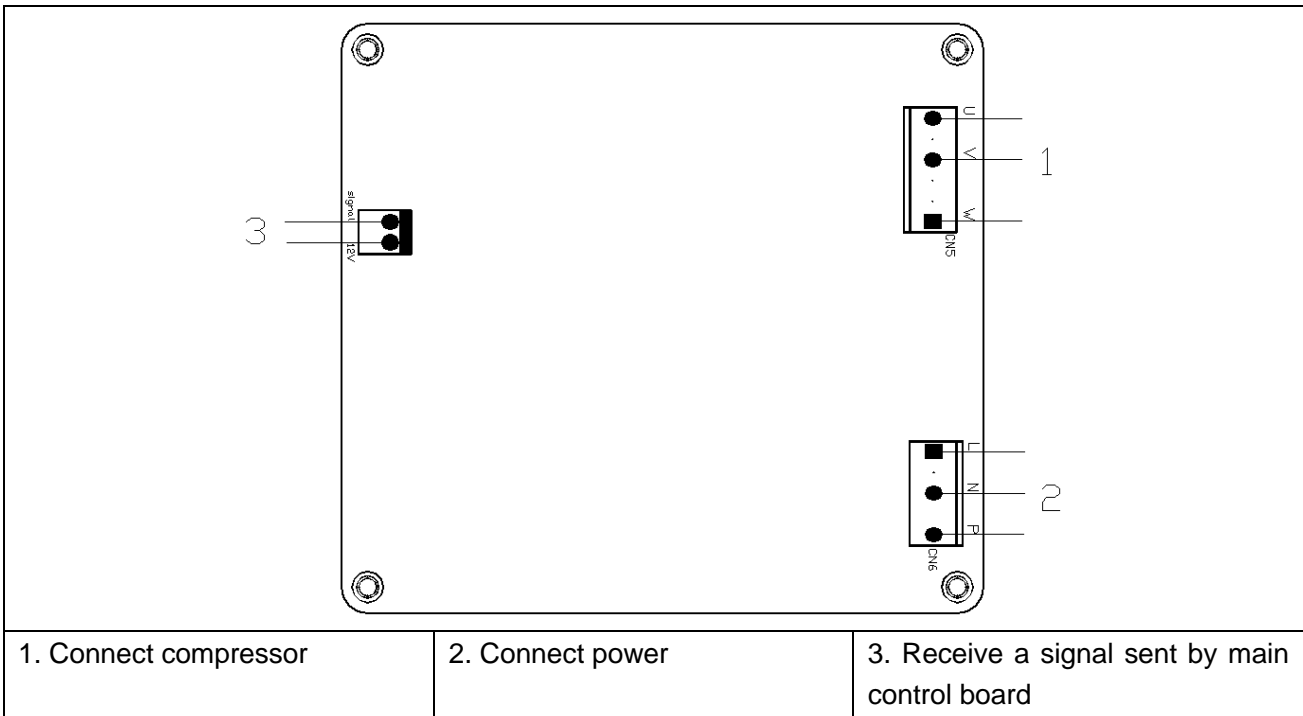
<p>5. Remove display control cover and detach display and control PCB board;</p>	
<p>6. Remove the fastener around the transparent cover of display and control panel with straight screwdriver and take off the transparent cover;</p>	
<p>7. Push aside the fastener around LED light panel and detach the LED light panel.</p>	

8.8 Main control board

<p>Main PCB and Inverter</p>	
<p>1) Use cross screwdriver to remove the 4 pcs screws;</p> <p>2) Dimantle the main PCB housing box cover,upplug all wiring connectors,and dismantle the main PCB and inverter;</p> <p>3) Change into new PCB and inverter, plug in all wiring connectors(there already be fool-proofing design for avoiding mis-plug),then assemble the PCB housing box cover.</p>	



- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Power 2. Freezing defrost heater 3. Water valve 4. Flipping beam heating wire 5. Refrigeration left side light 6. Top light of refrigeration chamber 7. Refrigeration right side light 8. Ice maker motor 9. Water pipe heating wire 10. Top light of freezing chamber | <ul style="list-style-type: none"> 12. Condensate fan 13. display control panel 14. Variable frequency driver board 15. Temperature sensor 16. refrigeration sensor 17. Freezing sensor 18. freezing defrost sensor 19. Left refrigeration door switch 20. Right refrigeration door switch 21. Freezing door switch 22. Electrical damper |
|--|--|



8.9 Bar counter


Bar counter	
Disassembly and installation of bar counter	None
Disassembly and installation bar doorseal	None

8.10 Water dispenser

Water dispenser	
Disassembly and installation of water valve	None
Disassembly and installation of water tank	None

8.11 Ice maker

Disassembly and installation of ice maker	
<p>1) the ice maker is fixed on the top liner of freezer room by means of hanging bottom, pull the ice maker outwards and along the horizontal direction, so as to separate it from the hanging bottom;</p>	

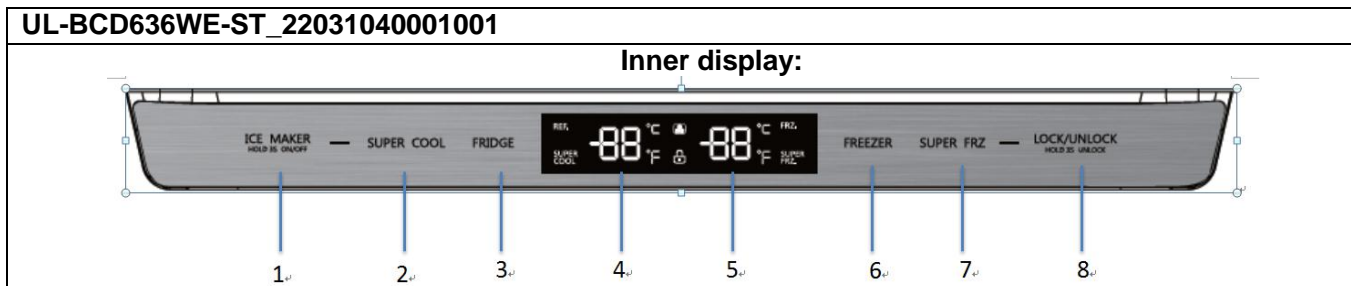
<p>2) disconnect the wiring connector;</p>	
<p>3) The reverse process can complete installation.</p>	<p>/</p>

8.12water filter

<p>Disassembly and installation of water filter component(None)</p>	
<p>Disassembly and installation of water filter cartridge(None)</p>	

9. Function and operation

9.1 Operation panel



1. Ice maker mode
2. Super cool mode bottom
3. Refrigeration attemperation bottom
4. Refrigeration Temp display area
5. Freezing Temp display area
6. Freezing up-attemperation bottom
7. Super freeze mode bottom
8. Lock bottom and unlock bottom

9.2 Display

1) Electricity for the first time, all show for 3 seconds, at the same time the bell boot ring, then enter the normal operation of the display. 2) Display control

In lock state, if there is no door-opening action or key operation on display panel, the light of display panel will go out after 30s; every time door opened or key operated on display panel, it will wake up the display panel. Note: Press the bottom once, the set mode of the refrigerator chamber's can be up-regulated. After attemperation, the newly set temperature will be in effect 30s later.

9.3 Temperature setting

9.3.1 Refrigeration attemperation

1、 Regulate the set temperature of refrigerating chamber, the setting range of refrigerating chamber temperature: 1°C ~ 7°C. The temperature can be set circularly, press the bottom once, the temperature is turned by 1°C (°F) .

7°C → 6°C → 5°C → → → 1°C
 44°F → 43°F → 42°F → → → 34°F
 1°C → 2°C → 3°C → → → 7°C
 34°F → 35°F → 36°F → → → 44°F

2、 **Operation instruction:** Press the “refrigeration” bottom once, the set temperature of the refrigerating chamber's temperature area can be regulated. After regulating, the newly set temperature will be in effect 30s later.

9.3.2 Freezing at temperation

1、 The available setting turn down temperature range of freezer compartment is -22°C ~ -14°C (-7°F ~ 7°F) ,

the temperature can be set circularly, every time press the key , the setting temperature turn 1℃ (°F) -14℃

→-15℃→→→→-22℃
 7°F→6°F→→→→7°F
 -22℃→-21℃→-20℃→→→→-14℃
 -7°F→-6°F→→→→7°F

2、 Operation instruction:

Press the “freezing” bottom once, the set temperature of the freezing chamber’s temperature area can be regulated. After regulating, the newly set temperature will be in effect 30s later.

9.4 Mode setting

9.4.1 Super freeze mode

Press the “SUPER FREEZE” bottom, set or cancel super freeze mode. The temperature of freezing is -22℃ (-7°F)

9.4.2 Super cool mode

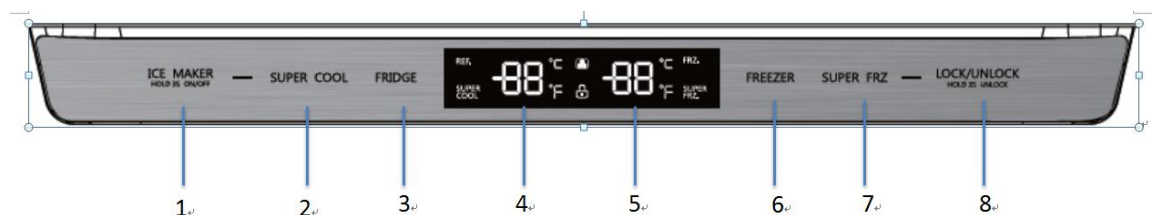
SUPER COOL

Press the “SUPER COOL” bottom, set or cancel the super cool mode. The temperature of cooling is 1℃(34°F).

9.4.3Ice maker mode

Press the “ICE MAKER ON/OFF”bottom, then bottom light will be lighten or darken, setting or cancel ice maker function

1、 Eye ice maker test



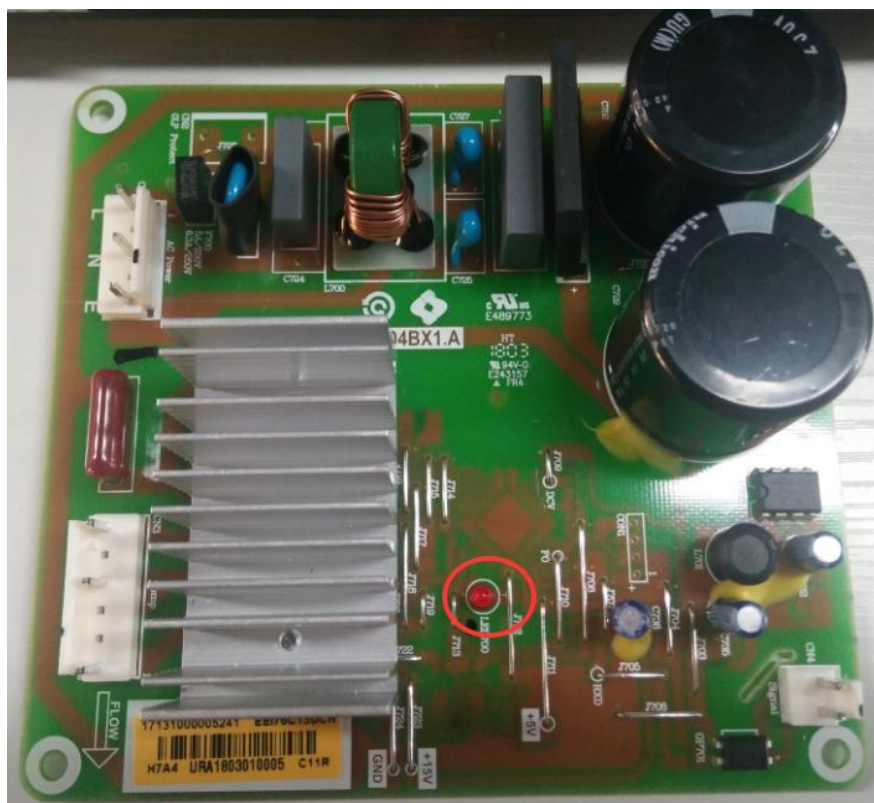
- 1) Test purpose: inspection the ice maker system whether working normal, include ice maker motor and water valve, inspection the water system whether unblocked on the through water state
- 2) Before enter to Ice maker test prepare: inspection whether there is ice in the ice maker and clean up
- 3) Enter: when the refrigerator and freezer door is open, long press the “ICE MAKER” and “FREEZER” bottom 3s (the upper photo 1&6) , buzzing sound, ice maker mode icon blink enter to check the ice maker motor and water valve
- 4) Load: Ice maker component check, after the ice maker turn over the ice once and until the Ice-probing rod move to level position, stop movement, water pump on 2s
 Water valve: water valve on 2s
- 5) Exit: load action finished exit Ice maker test mode, if check ice storage box is full with ice or ice making operation is fault, exit Ice maker test mode

9.5 Fault code and solutions

Fault code	Fault content	Code visible	Steps for maintenance methods
E1	Temperature sensor fault in refrigerating chamber	Yes	<p>Step 1: Check whether the terminal CN1 is well stuck, pull out the terminal and re-stick it in place</p> <p>Step 2: Check to see if there're foreign matters on the terminal. Pull out the refrigerating sensor according to the method in described in Article 8.4 and then inspect the sensor against the resistance value table in 10.6.</p> <p>Step 3: Replace main control board</p> <p>Step 4: Replace electrical wiring main harness</p>
E2	Temperature sensor fault in freezing chamber	Yes	<p>Step 1: Check whether the terminal CN1 is well stuck, pull out the terminal and re-stick it in place</p> <p>Step 2: Check to see if there're foreign matters on the terminal. Pull out the defrost sensor in freezing chamber according to the method in described in Article 8.5 and then inspect the sensor against the resistance value table in 10.6.</p> <p>Step 3: Replace main control board</p> <p>Step 4: Replace electrical wiring main harness</p>
E5	Defrost sensor fault in freezing chamber	Yes	<p>Step 1: Check whether the terminal CN1 is well stuck, pull out the terminal and re-stick it in place</p> <p>Step 2: Check to see if there're foreign matters on the terminal. Pull out the defrost sensor in freezing chamber according to the method in described in Article 8.6 and then inspect the sensor against the resistance value table in 10.6.</p> <p>Step 3: Replace main control board</p> <p>Step 4: Replace electrical wiring main harness</p>
E6	Communication fault	Yes	<p>Step 1: Check whether the terminal CN9 of the main control board is well stuck, pull out the terminal and re-stick it in place, and check if there is any foreign matter on the terminal.</p> <p>Step 2: Replace main control board.</p> <p>Step 3: Replace display control board.</p> <p>Step 4: Check whether the signal cables of the main display board are connected.</p>
E7	Ambient temperature sensor fault	Yes	<p>Step 1: Check whether the terminal CN2 of main control board is well stuck, pull out the terminal and re-stick it in place and check if there is any foreign matter on the terminal</p> <p>Step 2: Check whether the sensor wiring harness are connected.</p> <p>Step 3: Replace main control board.</p> <p>Step 4: Remove the temperature and humidity sensor at the hinge, and replace the temperature and humidity sensor.</p>
EH	Moisture sensor error	Yes	<p>Step 1: Check whether the terminal CN2 of main control board is well stuck, pull out the terminal and re-stick it in place and check if there is any foreign matter on the terminal</p> <p>Step 2: Check whether the sensor wiring harness are connected.</p> <p>Step 3: Replace main control board.</p> <p>Step 4: Remove the temperature and humidity sensor at the hinge, and replace the temperature and humidity</p>

			sensor.
E0	Ice maker fault	Yes	Step 1: Check whether the terminal CN12 of main control board is well stuck, pull out the terminal and re-stick it in place and check if there is any foreign matter on the terminal Step 2: Check whether the terminal of ice maker is well

Variable frequency driver board fault analysis



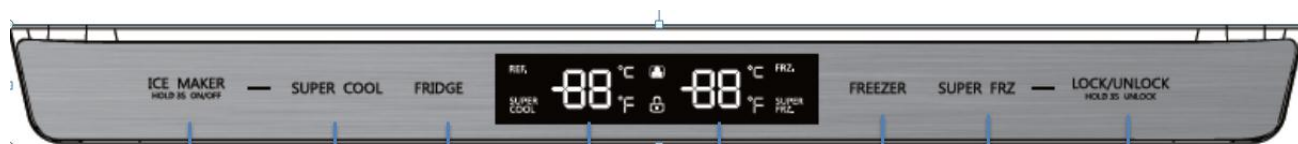
Variable frequency driver board LED	Fault cause
Light	Working
Blink once: light 1S, extinguish 1S	Standby
Blink once: light 0.5S, extinguish 1.5S	Overcurrent
Blink twice: light 0.5S, extinguish 0.5S, interval time(extinguish) is 1.5 second	Overvoltage
Blink four times: light 0.5S, extinguish 0.5S, interval time(extinguish) is 1.5 second	Undervoltage
Blink eight times: light 0.5S, extinguish 0.5S, interval time(extinguish) is 1.5 second	LOCK
Blink sixteen times: light 0.5S, extinguish 0.5S, interval time(extinguish) is 1.5 second	Overload protection

9.6 Defrosting function

- 1) Defrost the freezing chamber as per the accumulative operation time of the Compressor
- 2) After running 6 hours continuously, enter defrost mode, if defrost mode has been entered, it will not enter.

3) Compressor stopped twice continuously, after enter defrost mode, according to using condition and ambient temperature in a period from 6 to 48 hours as per the accumulative operation time of the Compressor.

9.7 Test mode



Test items	Testing Method	Expected result
Enter Test Mode	First, keep pressing the “LOCK” bottom for 3 seconds to unlock, than Keep pressing the “LOCK” and “SUPER COOL” bottom for 5 seconds and release	LED indicators display “0” , then the refrigerator enters into test mode
	After entering into test mode, if no bottom is pressed within 30 seconds	then the refrigerator will exit the test mode and return to normal operation mode
Select 1 to enter into forced cooling mode	Enter into test mode and press “FRIDGE” bottom one time	LED indicators display “1” , then the compressor and the fan will start working
	In forced cooling mode, if no bottom is pressed within 36 hours,	then the refrigerator will exit the test mode and return to normal operation mode
Select 3 to enter into forced defrosting mode	Enter into test mode and press “FRIDGE” bottom for the second time	LED indicators display “3” , then the compressor and the fan will stop working
	In forced defrosting mode, when the defrosting sensor reach a temperature of 8°C and the defrosting heater has been working for 2 minutes,	then the refrigerator will exit the test mode and return to normal operation mode
	In forced defrosting mode, if the temperature of defrosting sensor is always lower than 8°C and the defrosting heater has been working for 70 minutes,	then the refrigerator will exit the test mode and return to normal operation mode
Select 0 to exit the test mode	Enter into test mode and press bottom “FRIDGE” for the third time	LED indicators display “0” , then the refrigerator will exit the test mode and return to normal operation mode(except defrost)

10. Circuit description

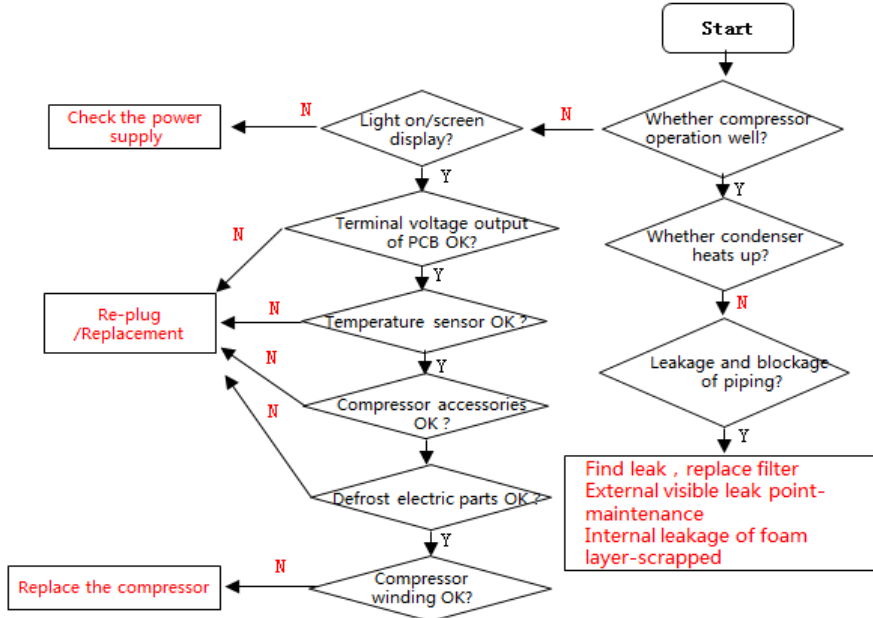
10.1 Sensor resistance(R/T)

Tx(°C)	Tx(°F)	R (KΩ)	Tx(°C)	Tx(°F)	R (KΩ)	Tx(°C)	Tx(°F)	R (KΩ)	Tx(°C)	Tx(°F)	R (KΩ)	Tx(°C)	Tx(°F)	R (KΩ)
-30	-22.00	33.81	-15	5.00	14.310	0	32.00	6.495	15	59.00	3.141	30	86.00	1.617
-29	-20.20	31.85	-14	6.80	13.550	1	33.80	6.175	16	60.80	2.999	31	87.80	1.550
-28	-18.40	30.01	-13	8.60	12.830	2	35.60	5.873	17	62.60	2.865	32	89.60	1.486
-27	-16.60	28.29	-12	10.40	12.160	3	37.40	5.587	18	64.40	2.737	33	91.40	1.426
-26	-14.80	26.68	-11	12.20	11.520	4	39.20	5.315	19	66.20	2.616	34	93.20	1.368
-25	-13.00	25.17	-10	14.00	10.920	5	41.00	5.060	20	68.00	2.501	35	95.00	1.312
-24	-11.20	23.76	-9	15.80	10.350	6	42.80	4.818	21	69.80	2.391	36	96.80	1.259
-23	-9.40	22.43	-8	17.60	9.820	7	44.60	4.589	22	71.60	2.287	37	98.60	1.209
-22	-7.60	21.18	-7	19.40	9.316	8	46.40	4.372	23	73.40	2.188	38	100.40	1.161
-21	-5.80	20.01	-6	21.20	8.841	9	48.20	4.167	24	75.20	2.094	39	102.20	1.115
-20	-4.00	18.90	-5	23.00	8.392	10	50.00	3.972	25	77.00	2.005	40	104.00	1.071
-19	-2.20	17.87	-4	24.80	7.968	11	51.80	3.788	26	78.80	1.919	41	105.80	1.029
-18	-0.40	16.90	-3	26.60	7.568	12	53.60	3.613	27	80.60	1.838	42	107.60	0.989
-17	1.40	15.98	-2	28.40	7.190	13	55.40	3.447	28	82.40	1.761	43	109.40	0.951
-16	3.20	15.12	-1	30.20	6.833	14	57.20	3.290	29	84.20	1.687	44	111.20	0.914

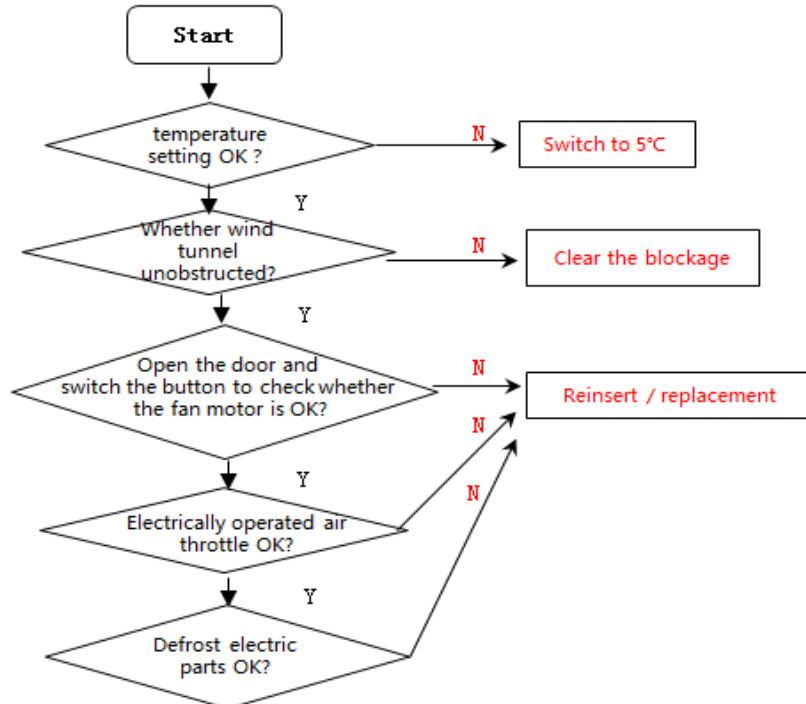
11. Troubleshooting Method

11.1 No cooling(Air cooling-Electronic)

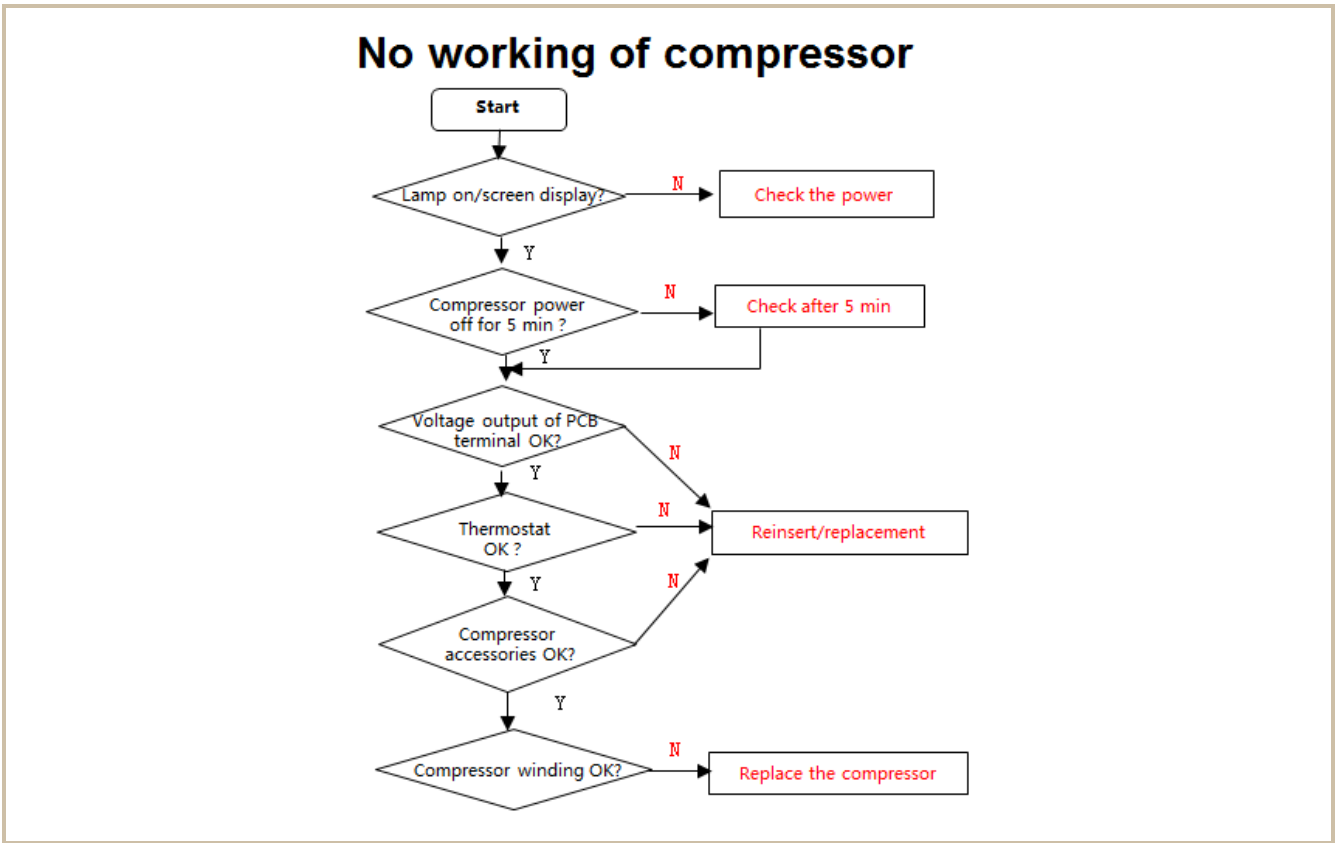
No cooling of F room and R room



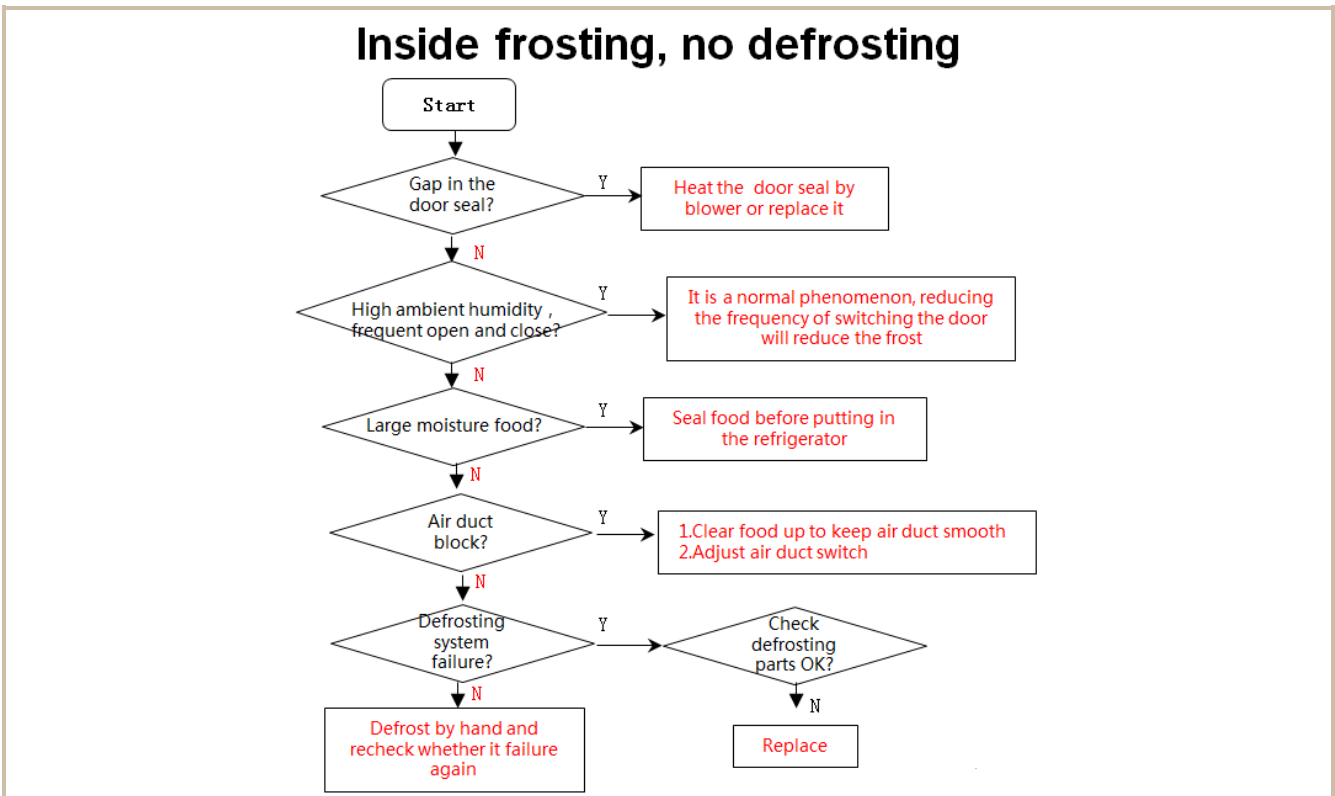
F room cooling, R room no cooling



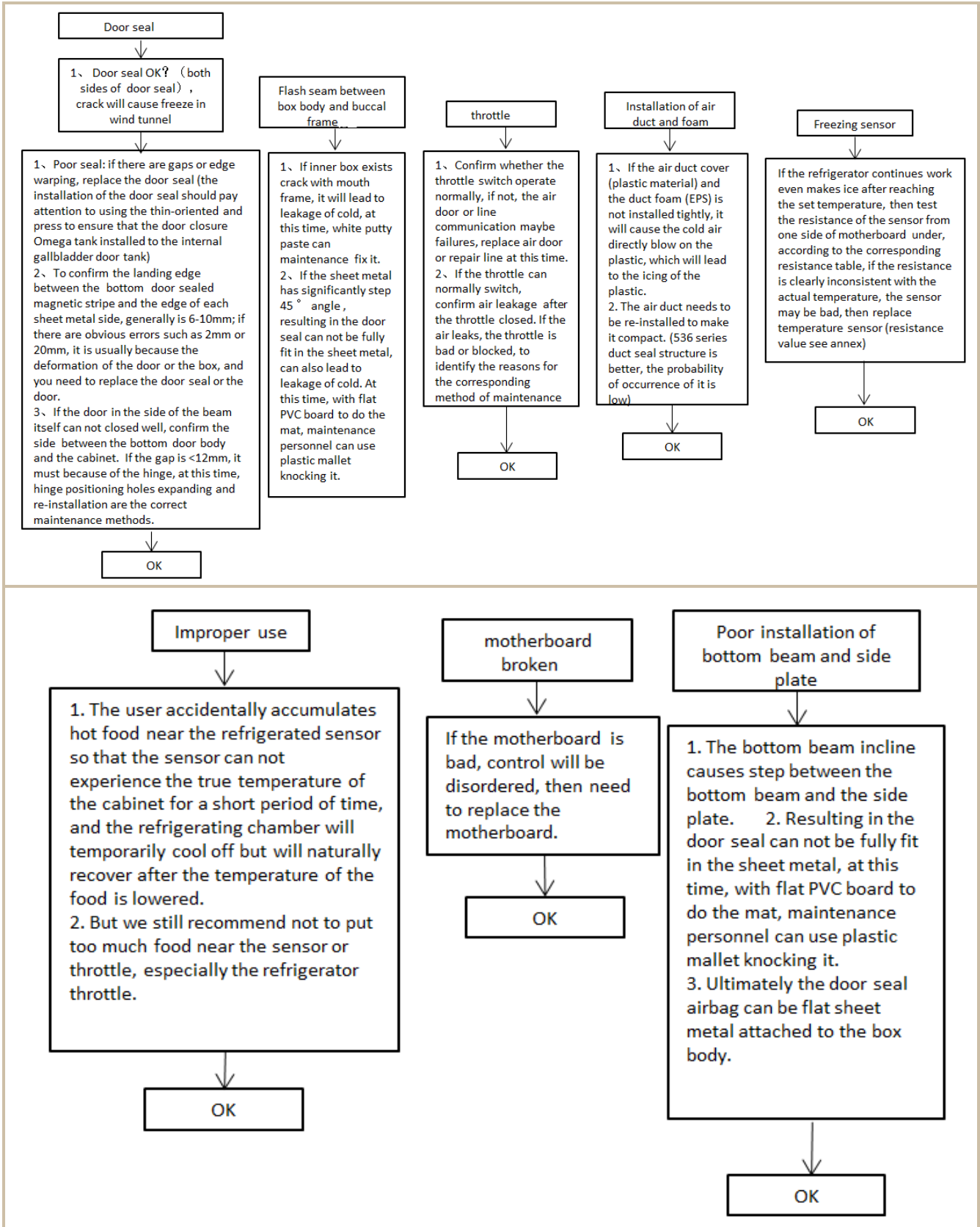
11.2 No working of compressor



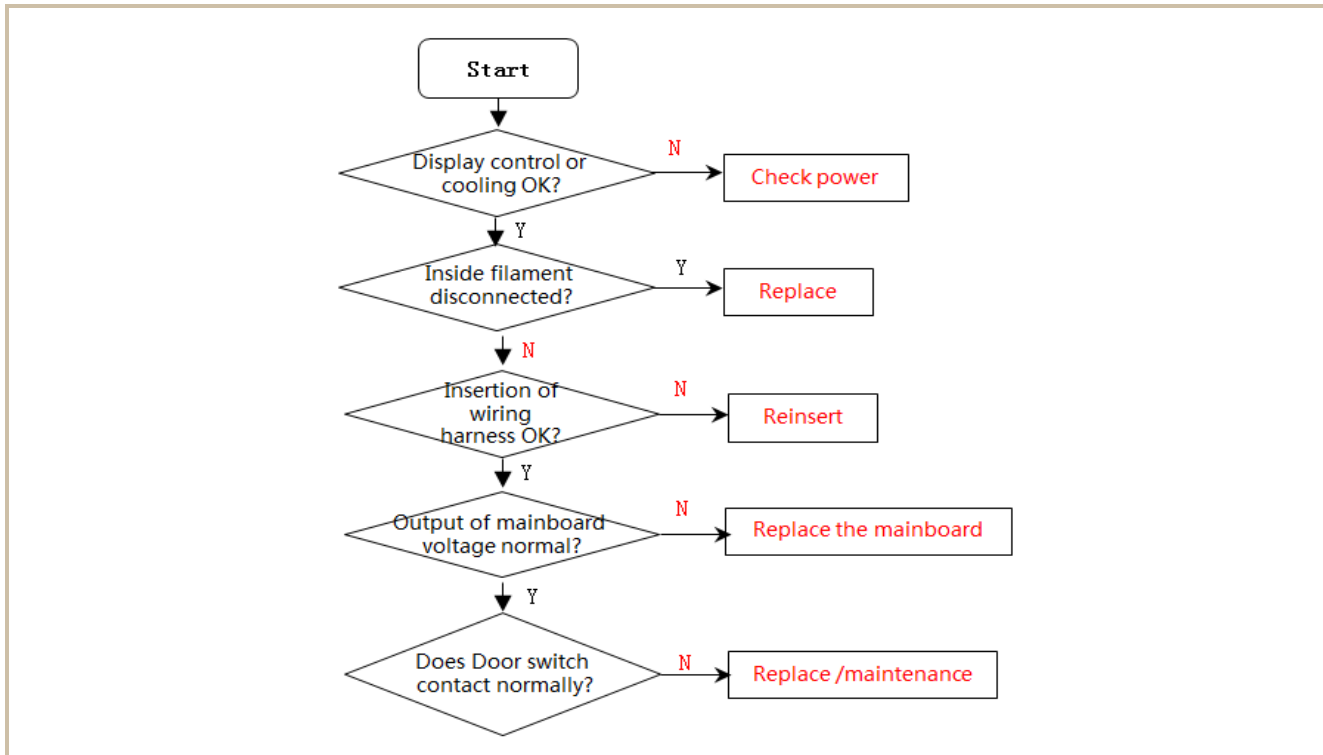
11.3 Inside frosting, no defrosting



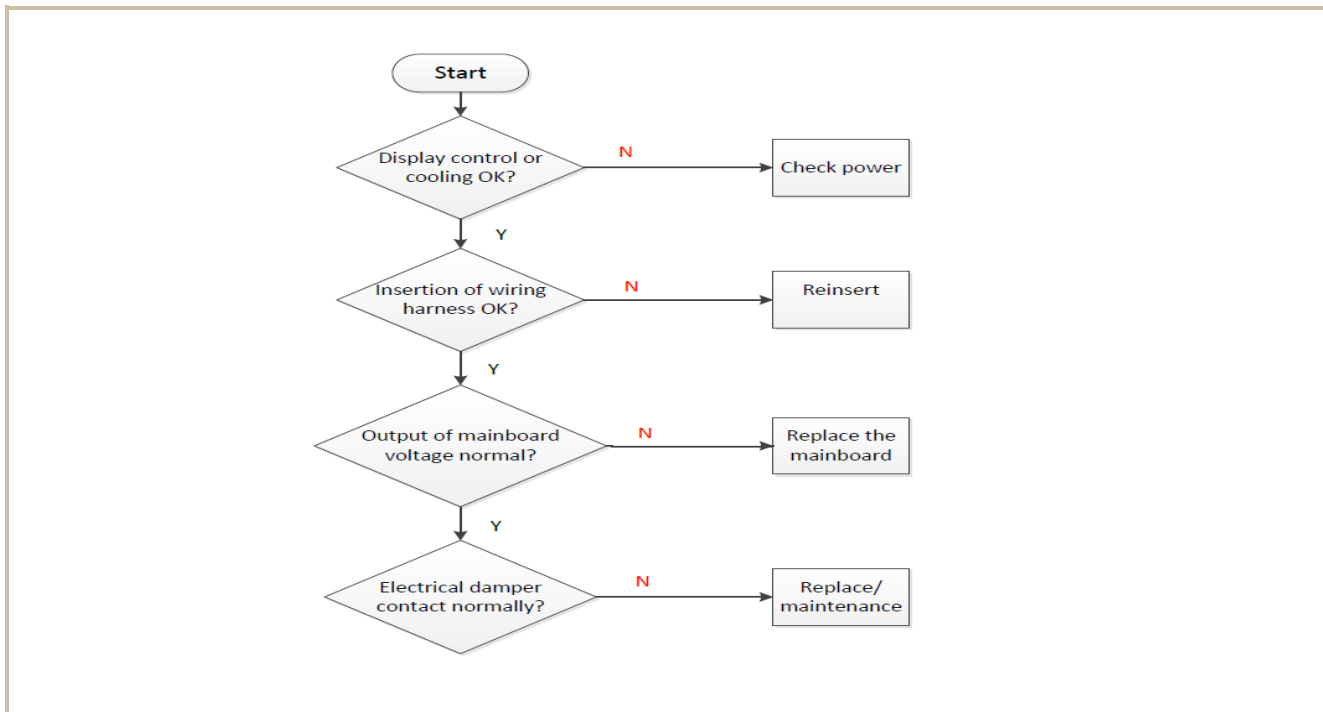
11.4 Inside frosting, no defrosting-Maintenance guidelines



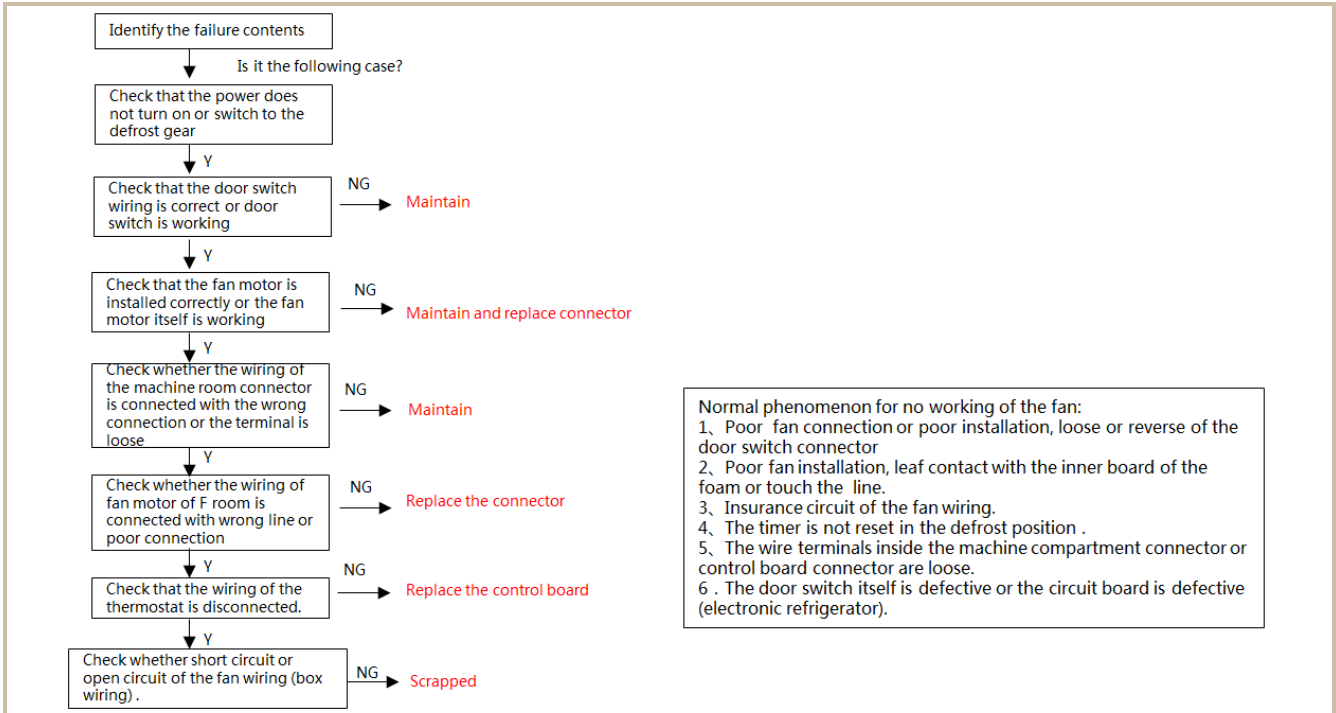
11.5 Light is not on



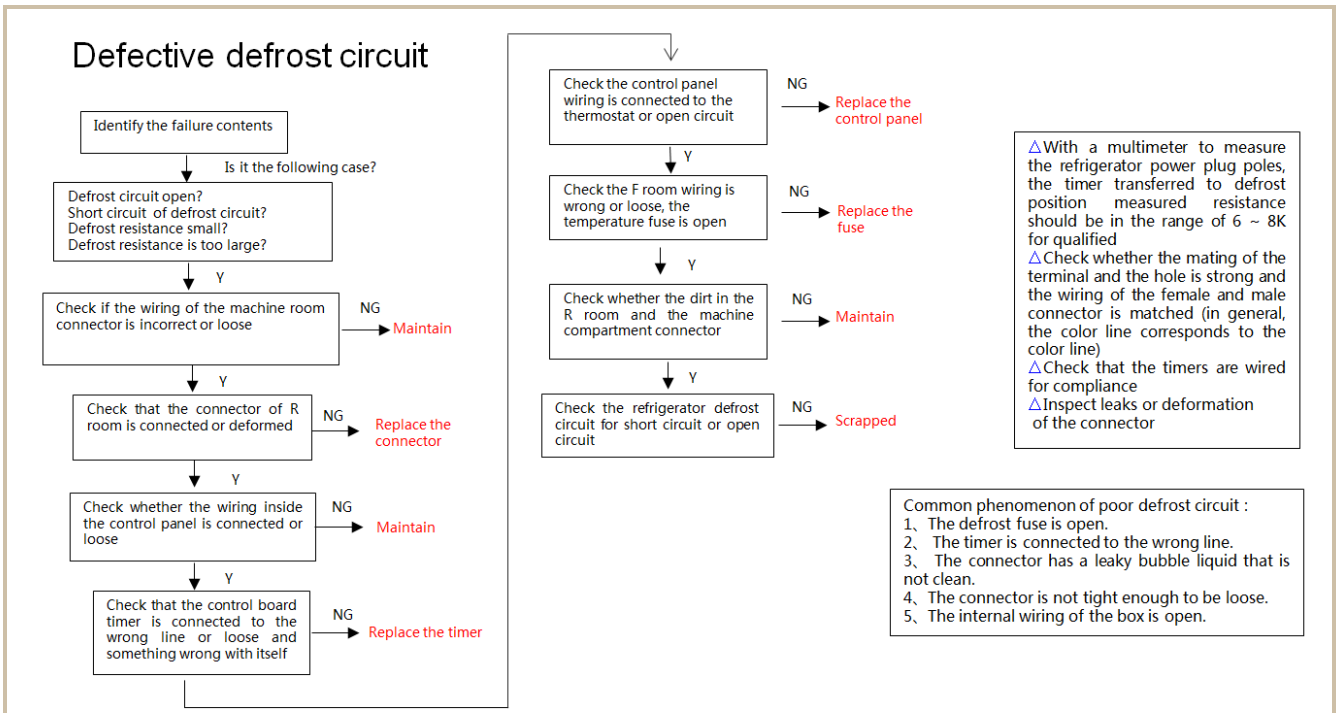
11.6 Air duct not operated(electronically)



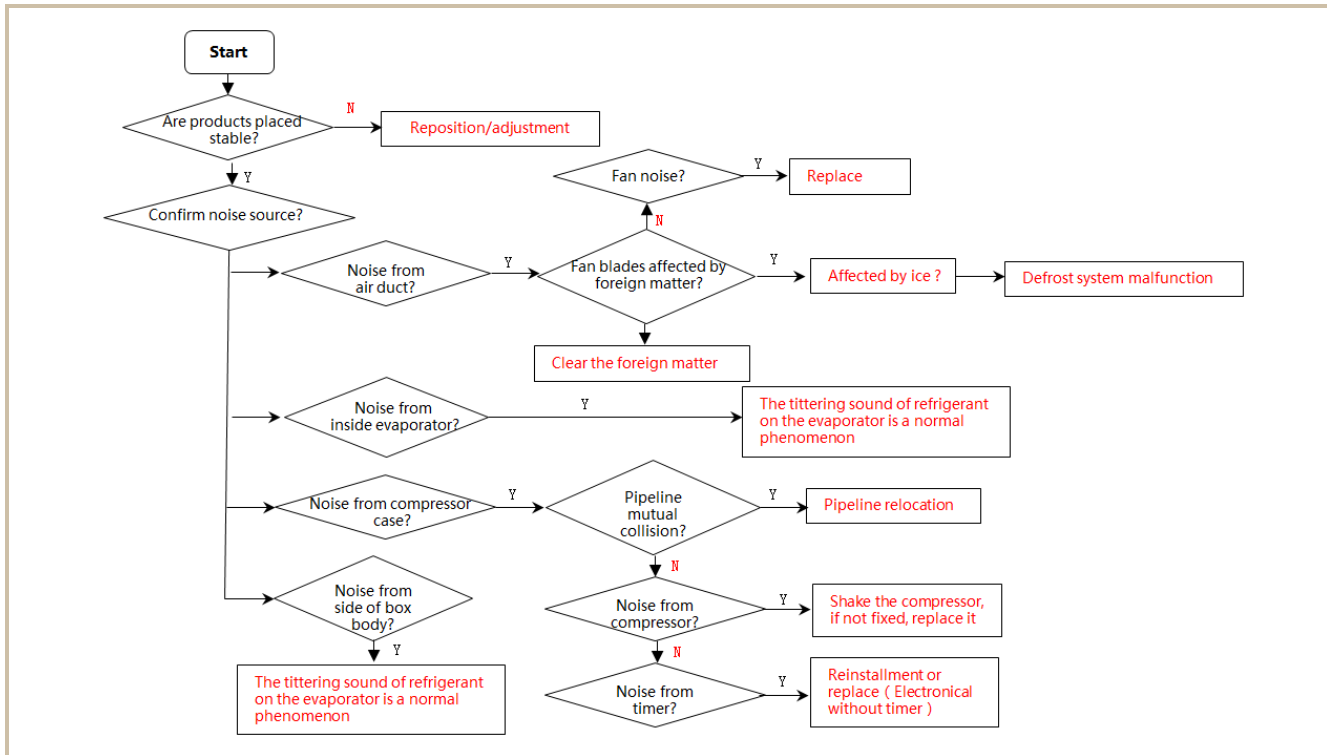
11.7 Fan failure



11.8 Defective defrost circuit



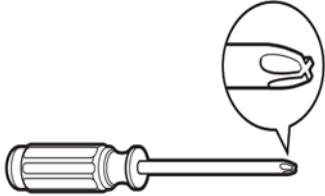
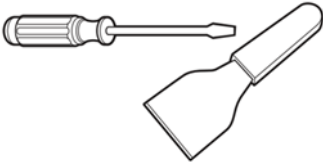
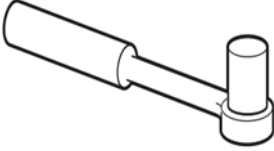




11.9 Noise



12. Figures and details of repair parts (Documents are provided in the TSP)




13. Appendix




13.1 Refrigerator maintenance tooling and equipment and material

Tooling			
No.	Name	Main Usage	Photo
1	Phillips screwdriver	screw assemble and disassemble	
2	slotted screwdriver/scrapper	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	Nipper pliers/diagonal pliers	Assistive tooling	







8	Capillary tube scissors	Shear capillary	
9	Knife	assistive tool	
10	Pipe cutter, Flaring device	Pipe cutting, flaring	
11	Electronic digital thermometer	Test temperature	
12	Multi meter	Measurement with resistance, voltage, current and so on.	


Equipment

No.	Name	Main Usage	Photo
1	Vacuum pump with gauge	vacuum pumping	
2	Electronic scale	weighing refrigerant/gas	
3	High pressure nitrogen with piezometer	pipe and cooling system(condenser, evaporator, etc) impurities clean	

4	Quick coupling	Connection process pipeline, vacuum or charge refrigerant will be used.	
5	Soldering gun	heating and welding	
6	hand leak detector	welding point leakage detect, if no, use soap-suds	

Material

No.	Name	Main Usage	Photo
1	Process pipeline	Charge the refrigerant	
2	Dry filter	Involving a system failure to be replaced	
3	Copper welding rod	Copper-Copper tubes welding	
4	Silver solder(> 25%Ag)	Not Copper-Copper tubes welding	
5	Refrigerant/gas	Add refrigerant to the system	
6	Adhesive tape	Door fixing for reversing door	

7	Transition copper pipe	Aluminium-Aluminium tubes welding, maintain lengthen tubes	
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The symbol on the product or its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste for recycling, please contact your local authority, or where you purchased your product.



MIDEA appliances after sales website

For more information about Midea appliances after sales, please visit the tsp.midea.com

For more information about the service manual, please visit the tsp.midea.com

For more information about the EV and SBOM, please visit the tsp.midea.com



How to login TSP system

Use Google browser visit the <https://tsp.midea.com/>

Internal User:

Use MIP account and Password.

Customer:

Access: Generated by TSP (provided by administrator).

Password: abcd1234 (please revise after login in).

Midea Refrigerators

If you need to get detailed technical information from the manufacturer, please contact:

xxx@midea.com

Refrigeration Division

Overseas Sales Company

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