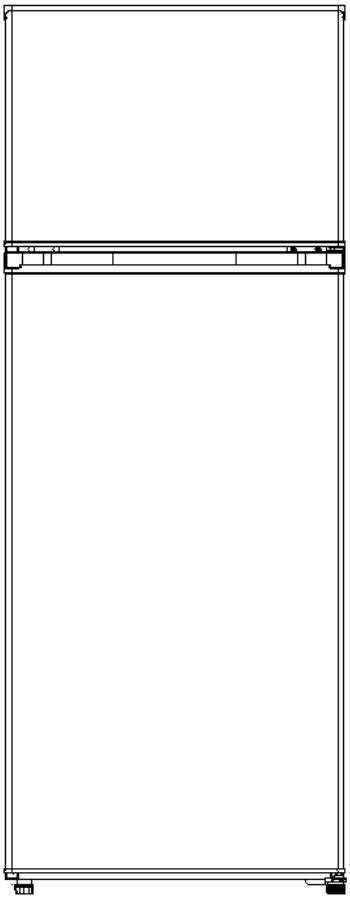
Service Manual

Applicable models	Model Code
CB-BCD210CM-FQ	22031020002081
CB-BCD210CM-FQ	22031020002082
CB-BCD210CM-FQ	22031020000115
UR-BCD210CM-FQ	22031020002061



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

Prepared by	R&D:Zhang Suqin
Reviewed by	QA:Wang Tao SVC:Zhang Kun
Approved by	R&D:Tang Tao SVC:Guang Taoshuai

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

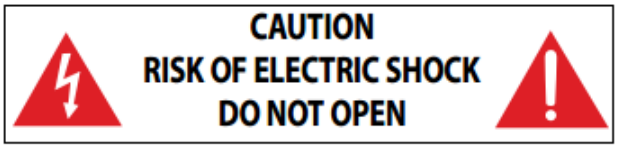
Technical Maintenance Manual

Contents

1.Safety Warning Code

1.1Warning for operation safety

Important Safety Instructions



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.

15 Do not handle the plug with wet hands. This could result in an electric shock.

16 Unplug the power cord by holding the plug, never by pulling the cord.

17 Do not turn the appliance on or off by plugging or unplugging the power cord.

18 Refer all servicing to qualified service personnel. Servicing is required when the appliance has been damaged in any way, such as the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the appliance, the appliance has been exposed to rain or moisture, does not operate normally, or has been dropped.

19 To reduce the risk of fire or electric shock, do not expose this appliance to rain, moisture, dripping, or splashing, and no objects filled with liquids should be placed on top of it.

20 Do not use extension cords or ungrounded (two prong) adapters.

21 This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

22 Children should be supervised to ensure that they do not play with the appliance.

23 If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified person, in order to avoid a hazard.

24 Take off the doors and leave the shelves in place so that children may not easily climb inside.

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:

1) Take off the doors

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.

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:

1) Take off the doors

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.

1.2Safety instruction for refrigerant

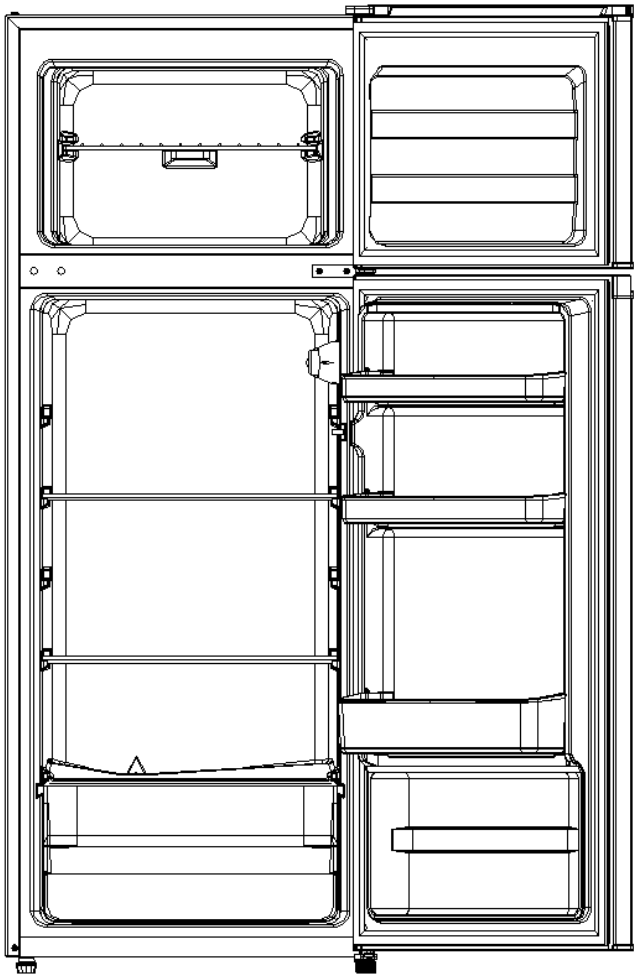
WARNING Explosion Hazard.

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

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:



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

1. The internal parts are concise and generous
2. Various colors are optional
3. Various kinds of grip handles and recessed handles are optional

3.Installation and commissioning

3.1**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, then move into house for placement 3) After moving it to appropriate location, wait for 2 hours before power on.	

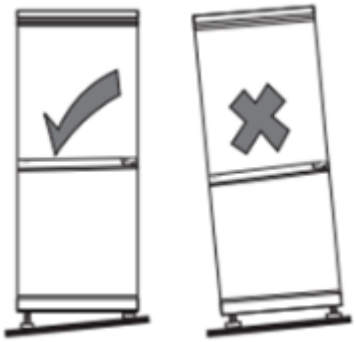
3.2**Disassembly (None)**

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

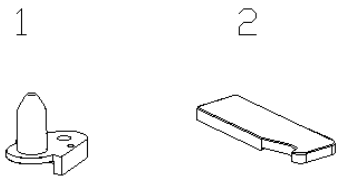
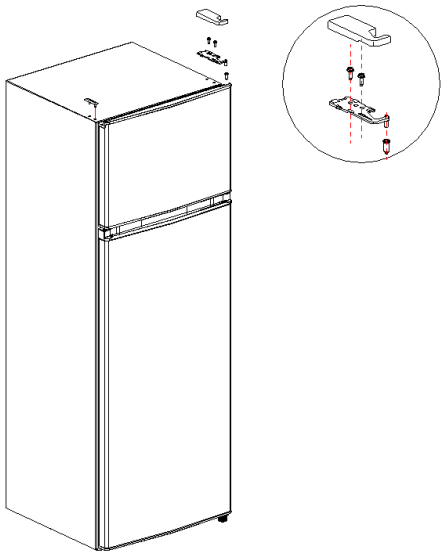
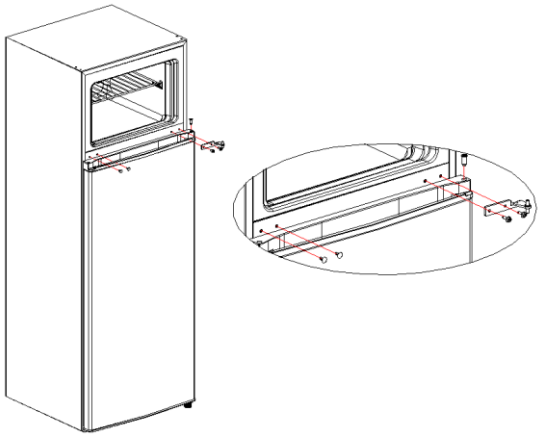
3.3 **Installation location**

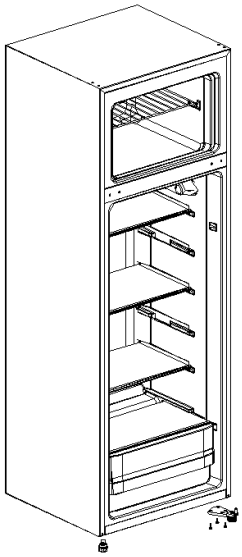
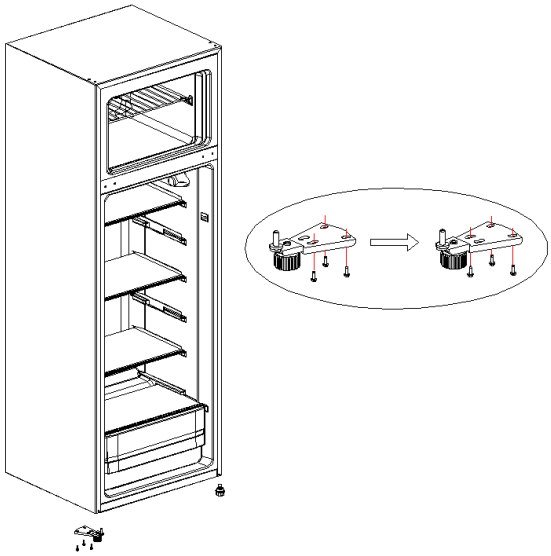
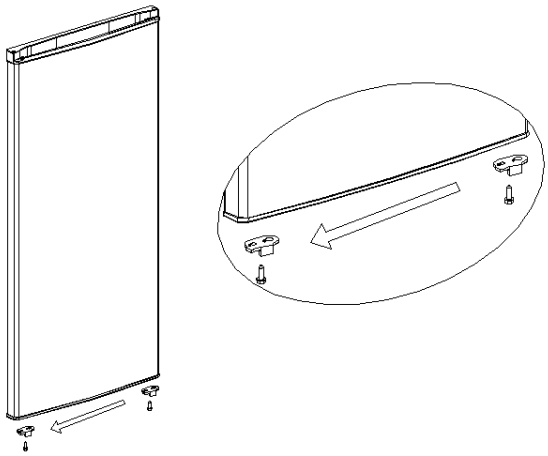
Location that is easy for ventilation shall be chosen to facilitate heat dissipation, enhance its performance and reduce the energy consumption.	

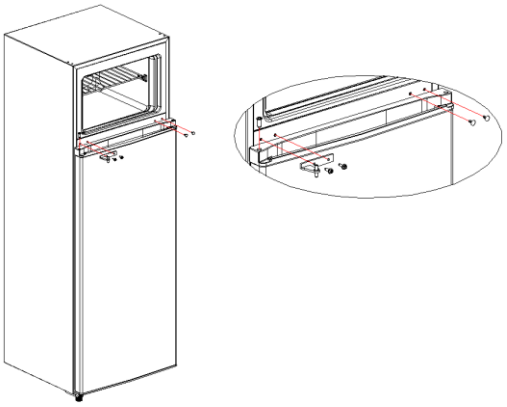
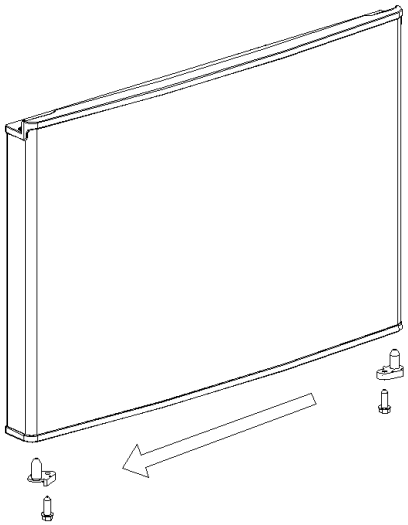
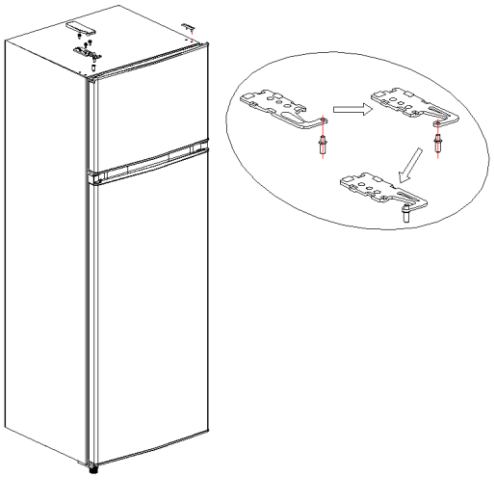
3.4 **Leveling of the refrigerator**

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

3.5**Change the door opening direction**

1) As shown in the picture, “1” is the door stopper for reversing door, “2” is the hinge cover for reversing door	
2) Dismantle the hinge cover, screws, top hinge and hinge axis sleeve firstly, then dismantle the screw hole cover from other side	
3) Uplift the freezer door upwards, then dismantle the screws, middle hinge, hinge axis sleeve and the screw hole cap from other side	

4) Uplift the refrigerator door upwards, then dismantle the screws, bottom hinge and the adjustable foot from other side	
5) Change the position of the bottom hinge and adjustable foot, then fix the bottom hinge, same as shown in the picture	
6) Change the position of refrigerator door stopper to other side, then fix it.	

7) Put the refrigerator door on the bottom hinge downwards, same as shown in the picture, insert the hinge axis sleeve into the sleeve hole of door end cap, and fix the middle hinge and screw hole caps.	
8) Get the door stopper from the accessory bag, and fix it on the other side of freezer door bottom end cap	
9) Put the freezer door on the middle hinge downwards, same as shown in the picture, dismantle the top hinge axis ,and reverse the top hinge by 180 ° , then assemble the hinge axis on the other side. Insert the hinge axis sleeve into the axis hole, then fix the top hinge, at last to assemble the hinge cover and screws cover on other side.	

10) the sketch after door reversed.	

3.6 **Installation of handle(None)**

3.7 **Installation of door lock(None)**

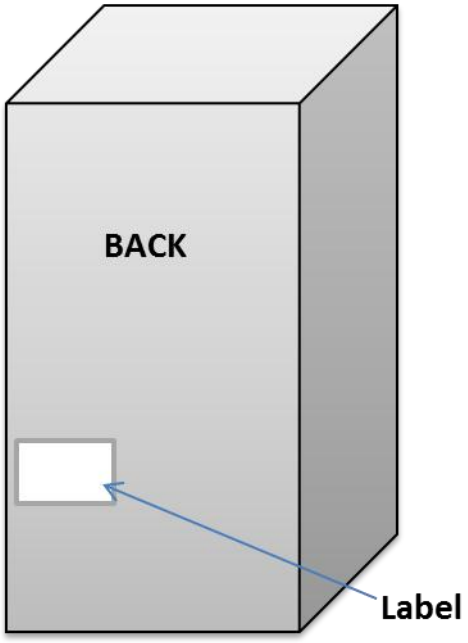
3.8 **Adjustment to level the door(None)**

3.9 **Adjustment to shelves(None)**

4.Terms

4.1 Definition of model(None)

4.2Location of nameplate



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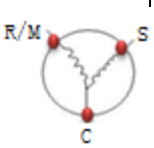
5.Product specification

5.1 Typespecification(None)

5.2 Electrical parameters

Product Name			CB-BCD210CM-FQ	CB-BCD210CM-FQ	CB-BCD210CM-FQ	UR-BCD210CM-FQ
Product Code			22031020002081	22031020002082	22031020000115	22031020002061
Name	**Item**	**Type**	**Specification**	**Specification**	**Specification**	**Specification**
Compressor	**Compressor**	/	PE40E1H-4	PE40E1H-4	KH51R40M ,220-240V-50Hz/60Hz	FZ59E1H
	Starter	**PTC**	QP2-15/QP2-15	QP2-15/QP2-15	QP2-22	QP2-4R7
	Overload protector	**OLP**	3TM158SF2/DRB17S61A1	3TM158SF2/DRB17S61A1	DRB19N61A1/BB55-125	DRB25T61A1

	Winding resistance of compressor wiring terminal		Rmc：10～20Ω Rsc：30～50Ω Rms=Rmc+Rsc	Rmc：10～20Ω Rsc：30～50Ω Rms=Rmc+Rsc	Rmc：10～20Ω Rsc：30～50Ω Rms=Rmc+Rsc	Rmc：10～20Ω Rsc：30～50Ω Rms=Rmc+Rsc
		/	/	/	/	/
Motor	**Fan motor of the freezing chamber**	/	/	/	/	/
	Ventilation door of the refrigerating chamber	/	/	/	/	/
	Condensation fan	/	/	/	/	/
Lights inside the refrigerator	**Lights inside the freezing chamber**	/	/	/	/	/
	Lights inside the refrigerating chamber	/	Incandescent lamp,240V/10W	Incandescent lamp,240V/10W	Incandescent lamp,240V/10W	Incandescent lamp,120V/10W
	Switch of the refrigerator door	Mechanical switch	sector	sector	sector	sector

5.3Refrigerating temperature

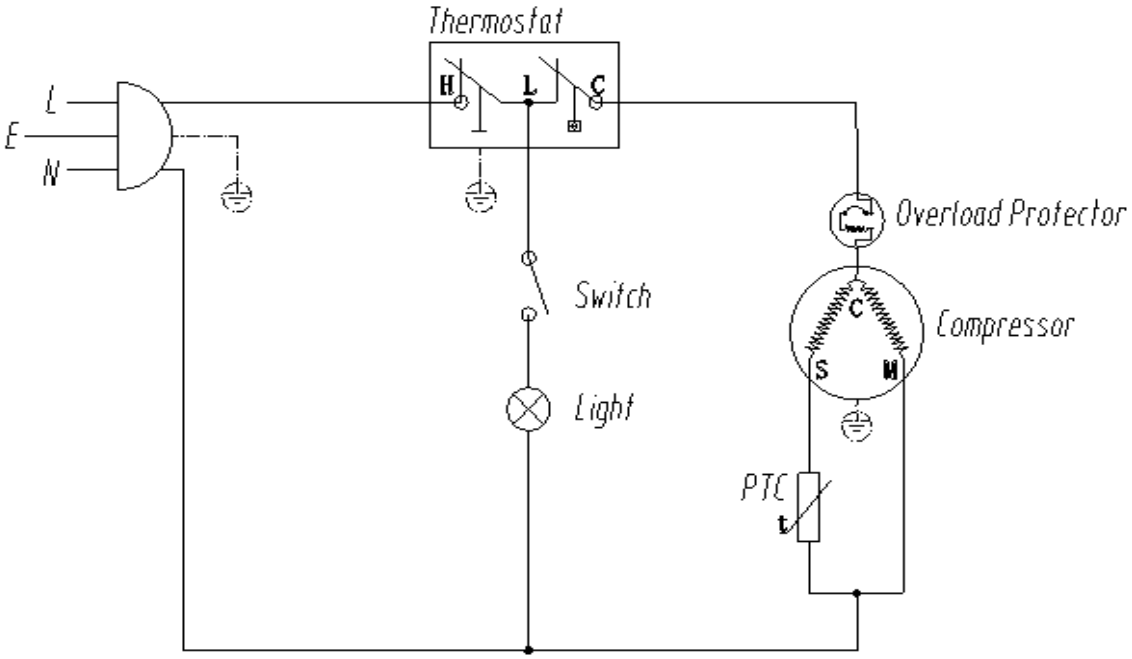
Temperature tolerance ≤ 2°C

Compartment	The highest (℃)	Lowest (℃)
Freezing	-14	-24
Refrigerating	9	1
Variable temperature	/	/

5.4Defrosting parts(None)

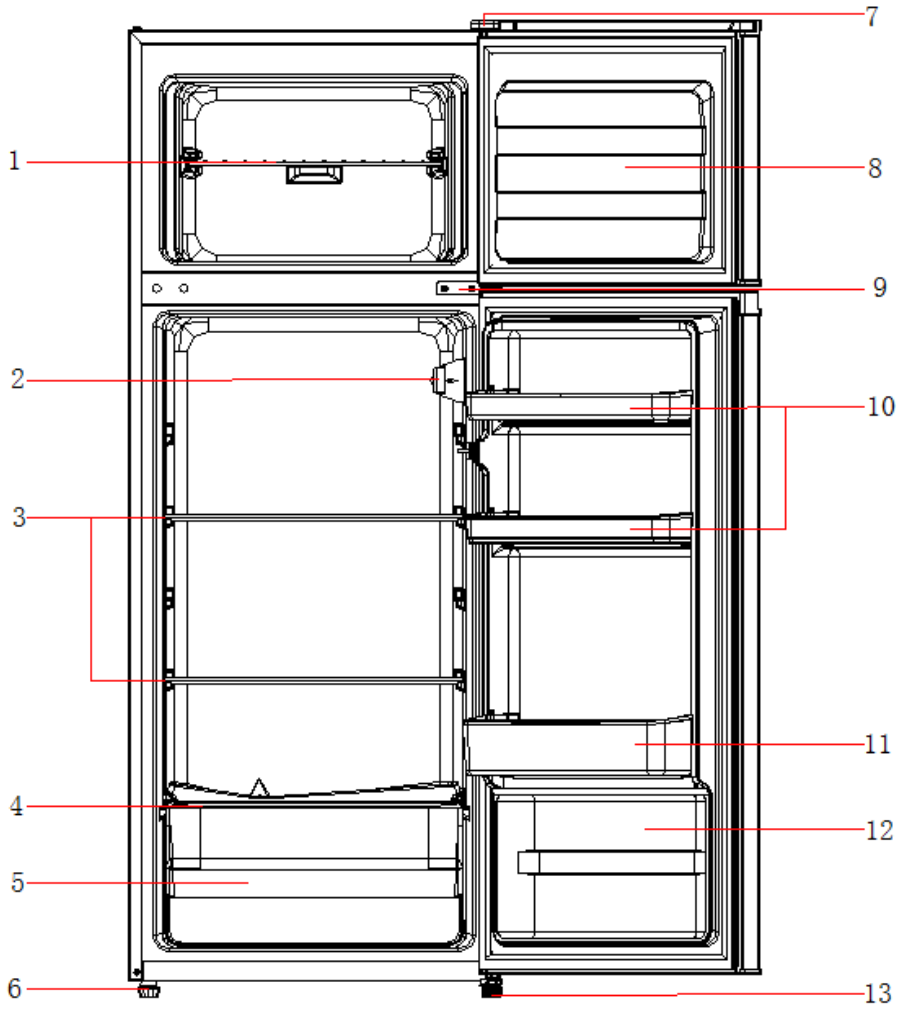
Defrosting period	**Initial defrosting period**	**Normal defrosting period**
	/	/
Defrosting sensor	/	/
Defrosting temperature controller	/	/
ermal fuse	/	/
Defrosting heater in freezing chamber	/	/

5.5Circuit diagram



6.Internal view and dimension

6.1**Main parts and their names**

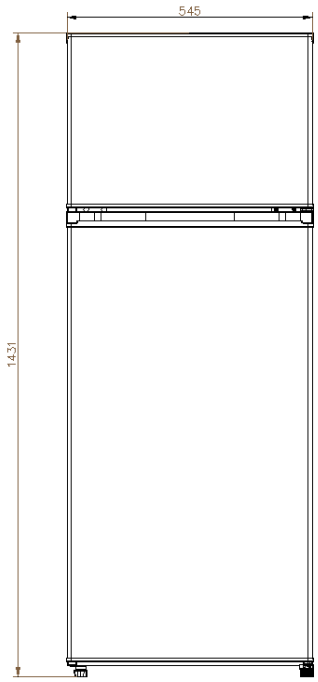


(The picture is only for reference, and specific appearance and configuration are subject to the real product)

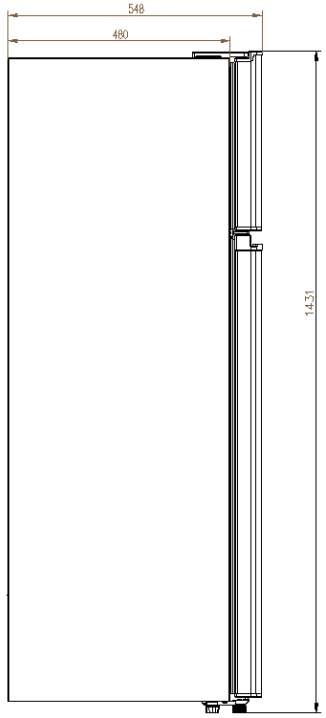
1.Steel wire shelf	8.Freezer door assembly
2.Temperature-control box assembly	9.Middle hinge assemblies
3.Glass shelf components of refrigerator	10.Refrigerator door tray
4.Glass shelf components of refrigerator	11.Refrigerator door tray
5.Fruits and vegetables box	12.Refrigerator door assembly
6.Levelling feet	13.Lower hinge adjust feet assembly
7.Hinge cover	

6.2**External dimension**

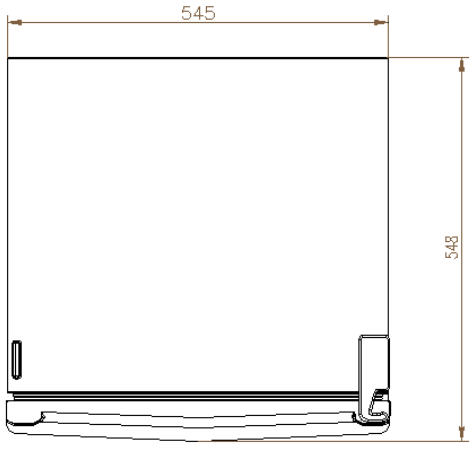
Front view	Side view



Down view

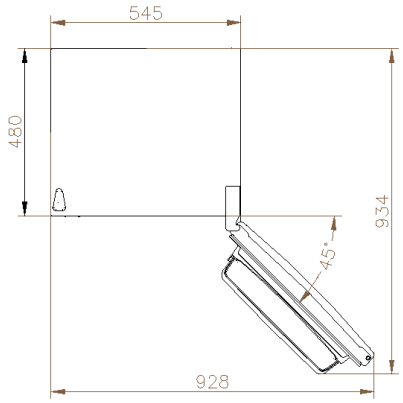


Open Door



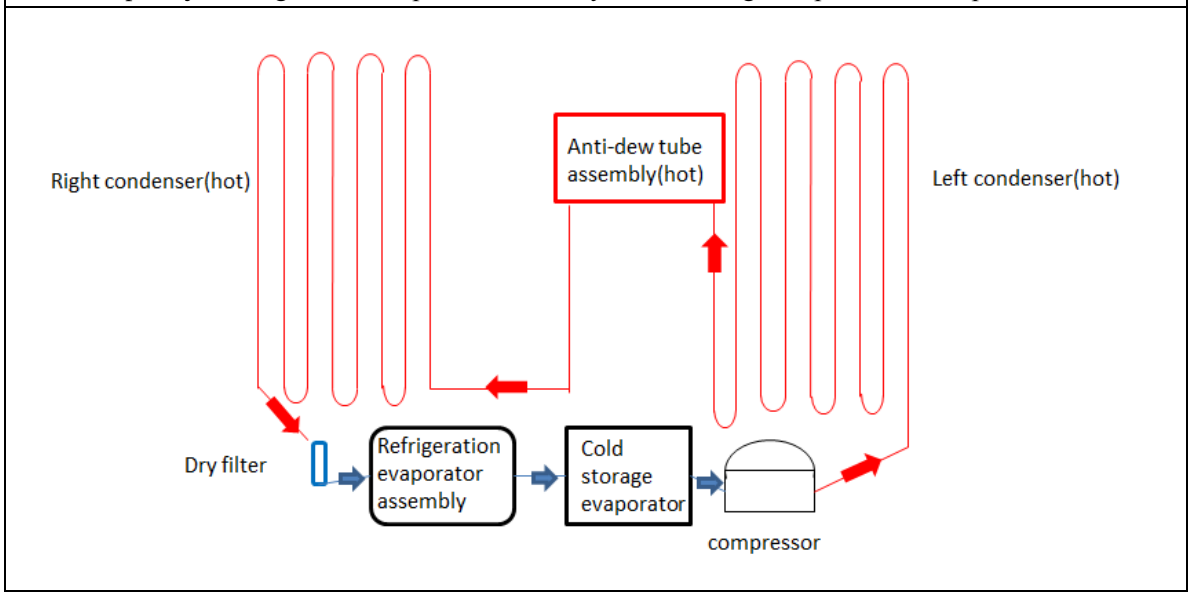
/

Maximum open angle of door（135 °）



7.Refrigerating piping system and circulating route of cooling air

7.1 **Refrigerating piping system**

compressor→left condenser→anti-dew tupe assembly→right condenser→dry filter→capillary→refrigeration evaporator assembly→cold storage evaporator→compressor


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

7.2**Circulating route of cooling air(None)**

8. Dismantling of parts

8.1 **Parts on the door**

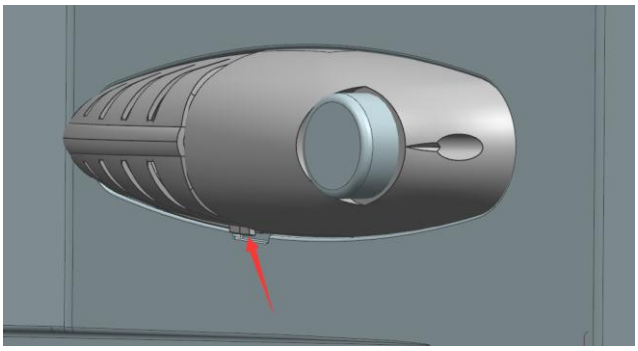
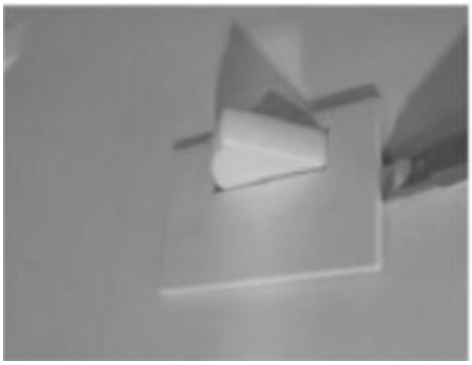
Door seal	
Door seal is installed into door liner groove. 1） Open the refrigerator door; 2） Take the door seal ①out of door liner;	
Door tray	
While squeezing it inward, lift up the baffle and take it out from refrigerator liner.	

8.2 **Parts inside the refrigerator**

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

The drawer is located at the bottom of freezing and refrigerating chambers; 1） Pull the drawer out completely; 2） Lift it up slightly and take it out from the refrigerator.	

8.3 **Light system**

Light	
The light at the left of refrigerator chamber 1） Remove the the light cover 2） Remove the light bulb	
Light switch	
There is a light switch on the side wall of the refrigerating chamber. 1） Loosen the hook with small normal screwdriver and pull out the switch until the wire connector reveals.	
Pilot light	None
Fresh light	None

8.4**Air duct components refrigeratingchamber(None)**

Air duct components refrigeratingchamber	None

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

Disassembly and installation of Air duct	None

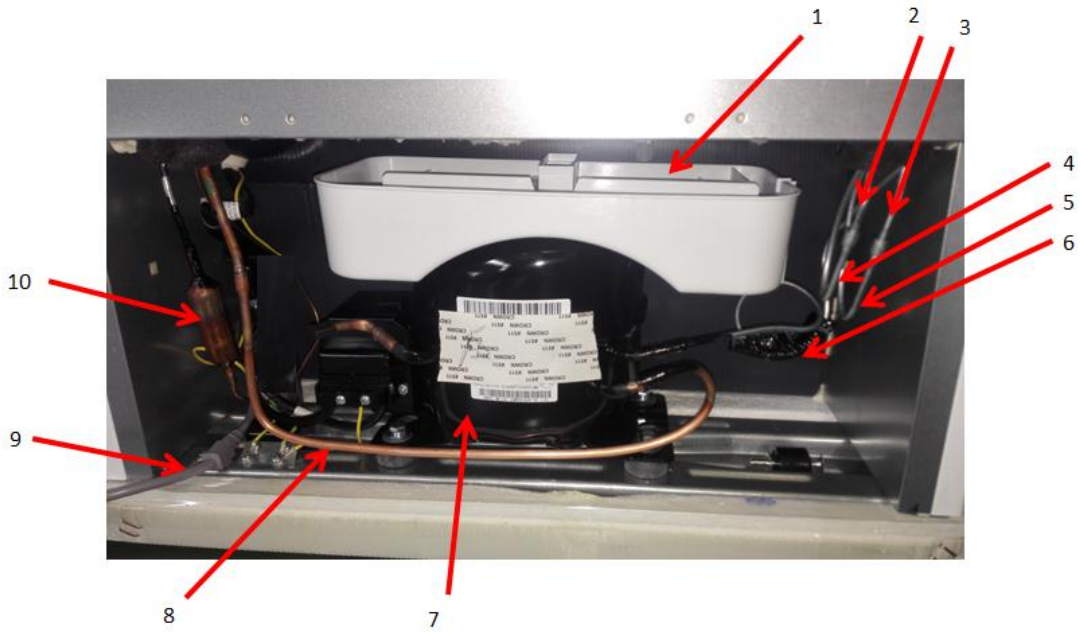
Fan motor of air duct	None

8.6Evaporator and temperature sensing system

Evaporator in freezing chamber	not replace
Components on the evaporator	
Defrost thermostat	None
Fuse	None
Defrost sensor	None
Defrost heater	None
Evaporator in refrigerating chamber	not replace
Components on the evaporator	None
Sensor	
Sensor in freezing chamber	None
Sensor in refrigerating chamber	None
Sensor in Variable temperature chamber	None
ambient temperature senser	None
Thermostat	
1.screw on the thermostat assembly ,move out and pull out the thermostat box assembly 2.Loosen the thermostat knob and fastening screw, and remove the thermostat box assembly 3.Remove the connector and replace the thermostat.	

8.7Compressor case

Rear cover and compressor case	None
Condenser fan motor	None
Standby condenser	None
Piping system in the compressor case	



1.Drain tray	6.left condenser(enter)
2.right condenser	7.compressor
3.left condenser(exit)	8.suction transition tube
4.anti-dew tupe assembly(exit)	9.Power wire
5.anti-dew tupe assembly(enter)	10.dry filter

Starter and protector of the compressor

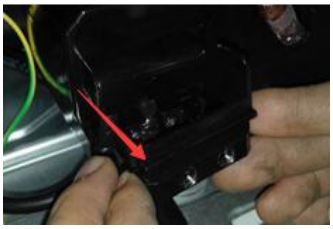
1. Remove the screws

1） Two screws outside

2） One screw inside

2. Remove the clipping strip

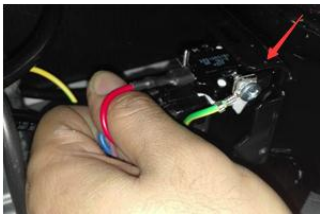
Slowly pull it out



3. Remove the protective cover

1）Pry the protective cover slowly from the upper part,

2）Pull it out and remove it.

	
4. Remove the starter and protector Unplug the starter and protector (you can use a screwdriver to pry it slowly)	
5. The reverse process can complete installation.	

8.8Display and main control panel(None)

Display control board	None
Main control board	None

8.9 Bar counter(None)

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

8.10 Water dispenser(None)

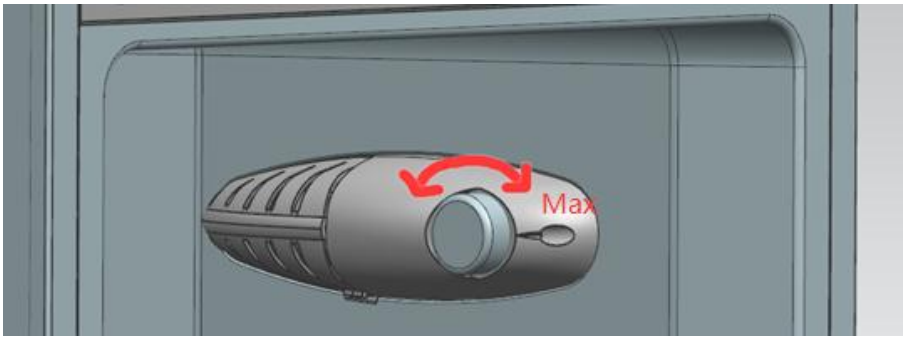
Disassembly and installation of water valve	None
Disassembly and installation of water tank	None

8.11Ice maker(None)

Disassembly and installation of ice maker	None
Disassembly and installation of water system	None
Disassembly and installation ice machine sensor	None

9. Function and operation9.1Operation panel

Direct cooling mechanical refrigerator, through the thermostat knob to adjust the stalls.



9.2Temperature control

If the ambient temperature is too high or the case of summer, according to actual needs, the thermostat adjusted to Min.
If the ambient temperature is too high or the case of summer, according to actual needs, the thermostat adjusted to Max.

9.3Give an alarm (None)

9.4Failure code and solutions (None)

9.5Defrost function

Manual defrost

9.6Compressor fan control (None)

9.7Self-diagnosis (None)

10.Circuit description

10.1 Power Supply(None)

10.2 Test circuit for door switch(None)

10.3 Temperature test circuit(None)

10.4Freezer chamber fan motor circuit (None)

10.5refrigerating chamber fan motor circuit (None)

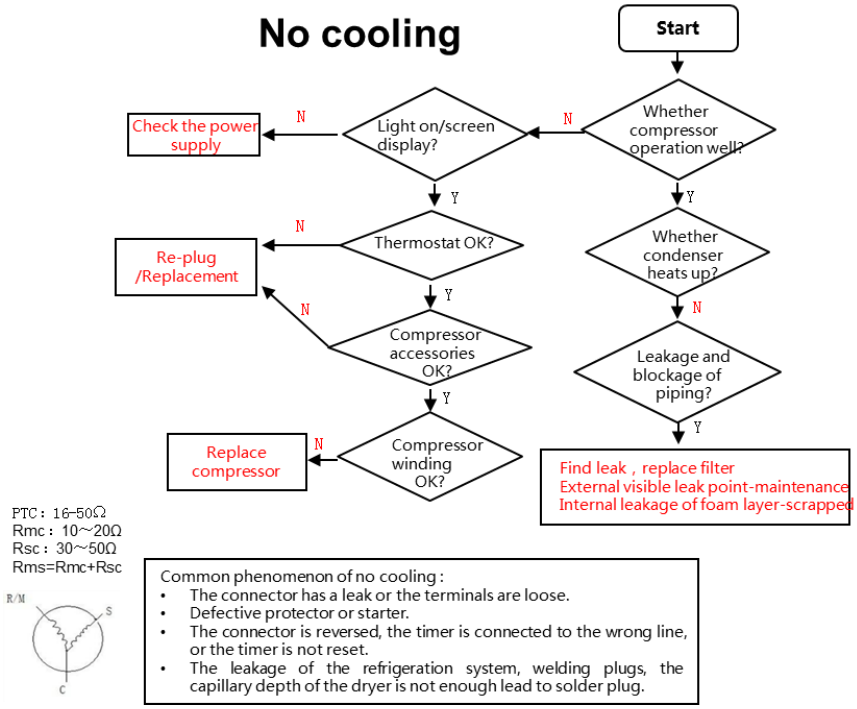
10.6Condensation fan circuit (None)

10.5 Fan motor circuit of the ventilation door(None)

10.6Resistance value of the sensor (R/T) (None)

11.Troubleshooting Method

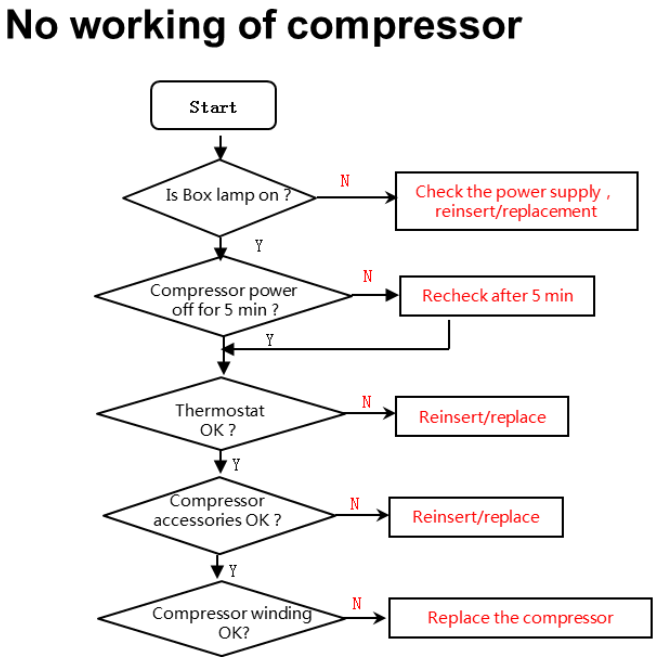
11.1 **Not cooling**



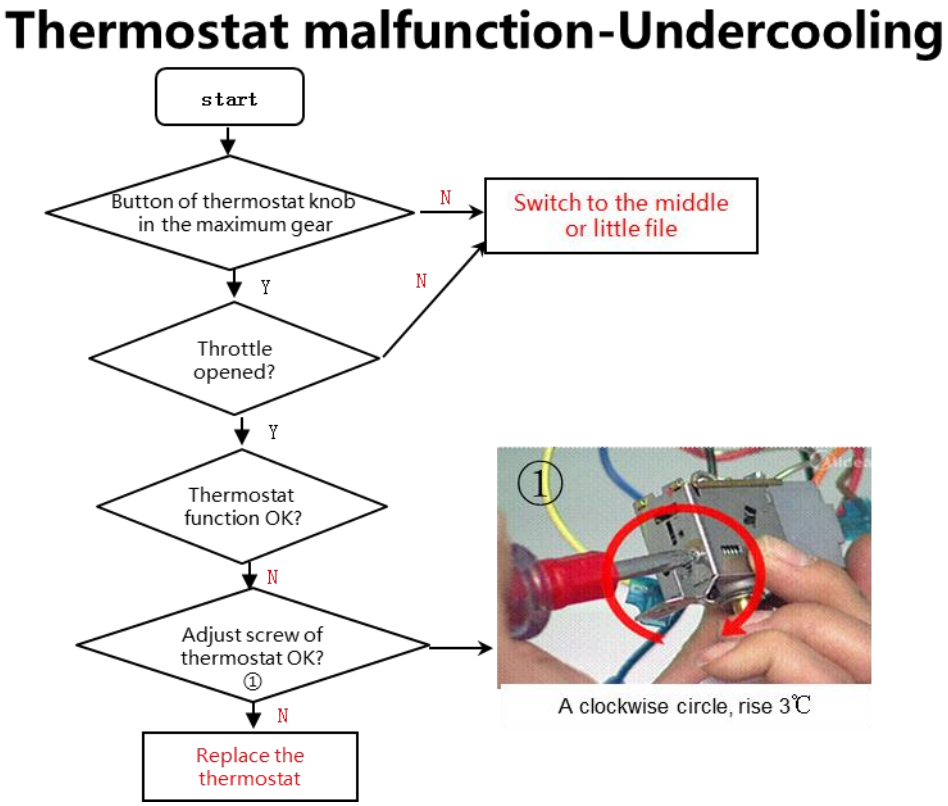
PTC：16-50Ω
Rmc：10～20Ω
Rsc：30～50Ω
Rms=Rmc+Rsc

Common phenomenon of no cooling :
- The connector has a leak or the terminals are loose.
- Defective protector or starter.
- The connector is reversed, the timer is connected to the wrong line, or the timer is not reset.
- The leakage of the refrigeration system, welding plugs, the capillary depth of the dryer is not enough lead to solder plug.

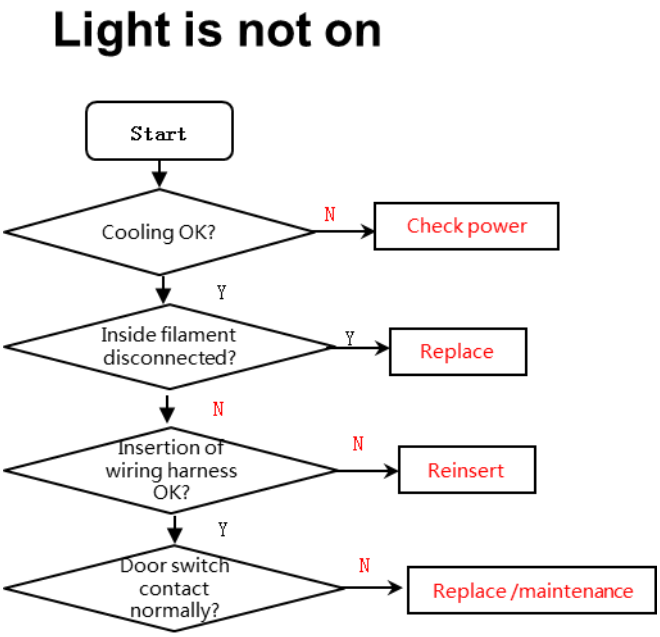
11.2 **Not working of compressor**



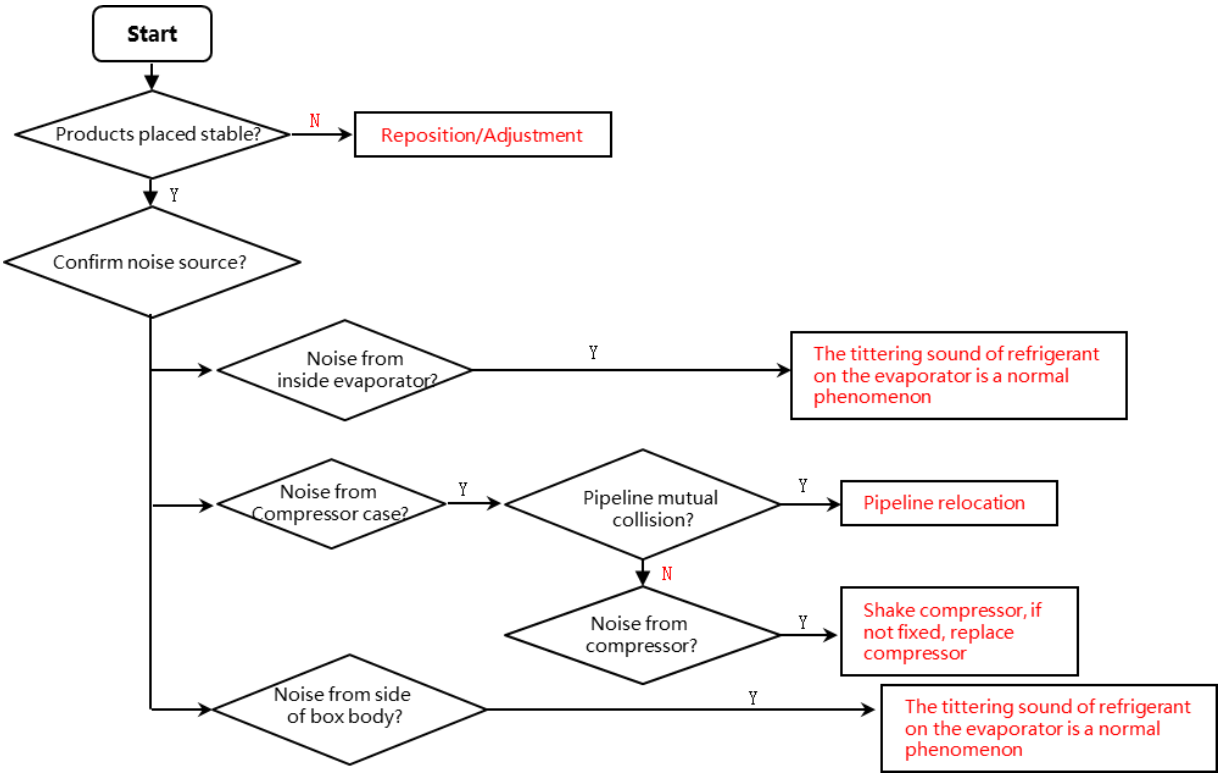
11.3 -**Thermostat malfunction-Undercooling**



11.4 **Light is not on**



11.5 **Noise**



12. Figures and details of repair parts(Documentsareprovidedseparately)

12.1**Figures**

12.2**List of parts and components**

13Appendix:

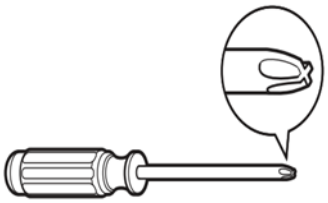
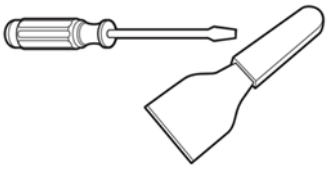
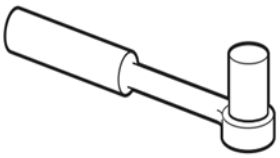
13.1Electrical Schematic Diagram(None)

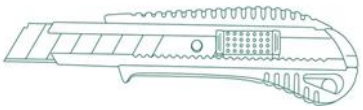
（Model：***）

13.2Refrigerator maintenance tooling and 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

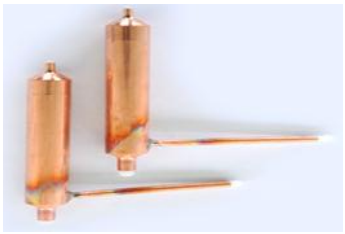
8	Knife		assistive tool
9	Nipper pliers		assistive tool
10	Capillary tube scissors		Shear capillary

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 pipelinevacuumorchargerefrigerantwillbeused.
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

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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