Service Manual

COMPACT SERIES

Applicable Models	Model Code
UR-PC140-DQ	22033210000081

Prepared by	R&D:Tian Song
Reviewed by	QA:Ke Bingfei SVC:Zhang Kun
Approved by	R&D: Zhang Huawei 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

Contents

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.

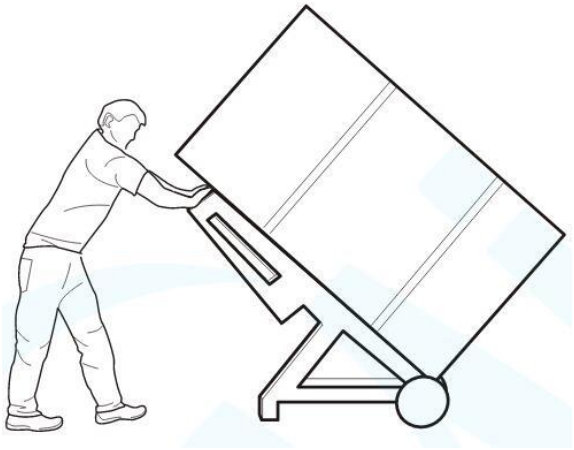
2. Description for product features

This product is provided with following features:

1）Integrative refrigeration chamber
2）Mechanical control
3）Polisher black tower with stainless steel trim
4）Holds most 1/2 and 1/4 size kegs

3. Installation and commissioning

3.1 Handling

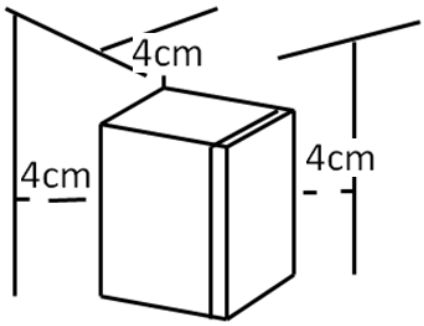
Handling	
1)Protect the refrigerator in moving it,Same as shown as left photo, please move it by handcart with cushion 2)Remove all packing materials and bottom cushion, the n move into house for placement 3)After moving it to appropriate location, wait for 2 hours before power on.	

3.2 Door Disassembly and Assembly

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

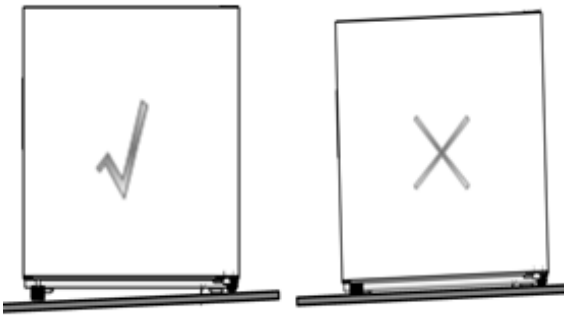
Disassembly of Freezer door	
Disassembly of Freezer door	None
Disassembly of refrigerator door	
Disassembly of refrigerator door	None

3.3 Installation location

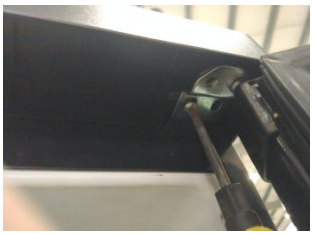
Installation location	
Location that is easy for ventilation shall be chosen to facilitate heat dissipation, enhance its performance and reduce the energy consumption.	

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

Door reversal	
1)Disassembly the top cover fix screw, remove the seal plate of top cover.	  
2)Disassembly the screw that is fix upper hinge and top cover, remove the top cover.	  
3)Disassembly the right upper hinge, remove the door, hinge fixed axis and axle sleeve.	

	 
4)Reversion the bottom hinge.	  
5)Disassembly left upper hinge, install fixed axis to upper hinge, install axle sleeve to the door.	 

6)Assembly the left upper hinge and right upper hinge.	
7)Assembly the screw that is fix top cover.	   

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	
Adjustment to level the door	None

3.9 Adjustment to shelves

Adjustment to shelves	
Adjustment to shelves	None

4. Terms

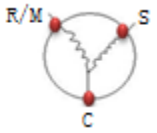
4.1 Definition of model (None)

4.2 Location of nameplate (None)

5. Product specification

5.1 Type specification(None)

5.2 Electrical parameters

Product Name	UR-PC140-DQ	None	None	None
Product Code	22033210000081	None	None	None
Item	**Specification**	**Specification**	**Specification**	**Specification**
Compressor				
Compressor	FZ59E1G	None	None	None
Starter(PTC)	QP2-4R7	None	None	None
Overload protector(OLP)	DRB29T61A1	None	None	None
Winding resistance of compressor wiring terminal	Rmc:7.55±7%Ω Rsc:9.77±7%Ω Rms=Rmc+Rsc (20˚C)	None	None	None
Winding resistance picture		None	None	None
Variable frequency driver board	None	None	None	None
The input power of compressor	74.7W	None	None	None
Motor				
Fan motor of the freezing chamber	None	None	None	None
Ventilation door of the refrigerating chamber	None	None	None	None
Condensation fan	None	None	None	None
separation the ice motor	None	None	None	None
ice output motor	None	None	None	None
Open door motor	None	None	None	None
Lights inside the refrigerator				
Lights inside the freezing chamber	None	None	None	None
Lights inside the refrigerating chamber	None	None	None	None
Switch of the	None	None	None	None

refrigerator door	

5.3 Inside temperature

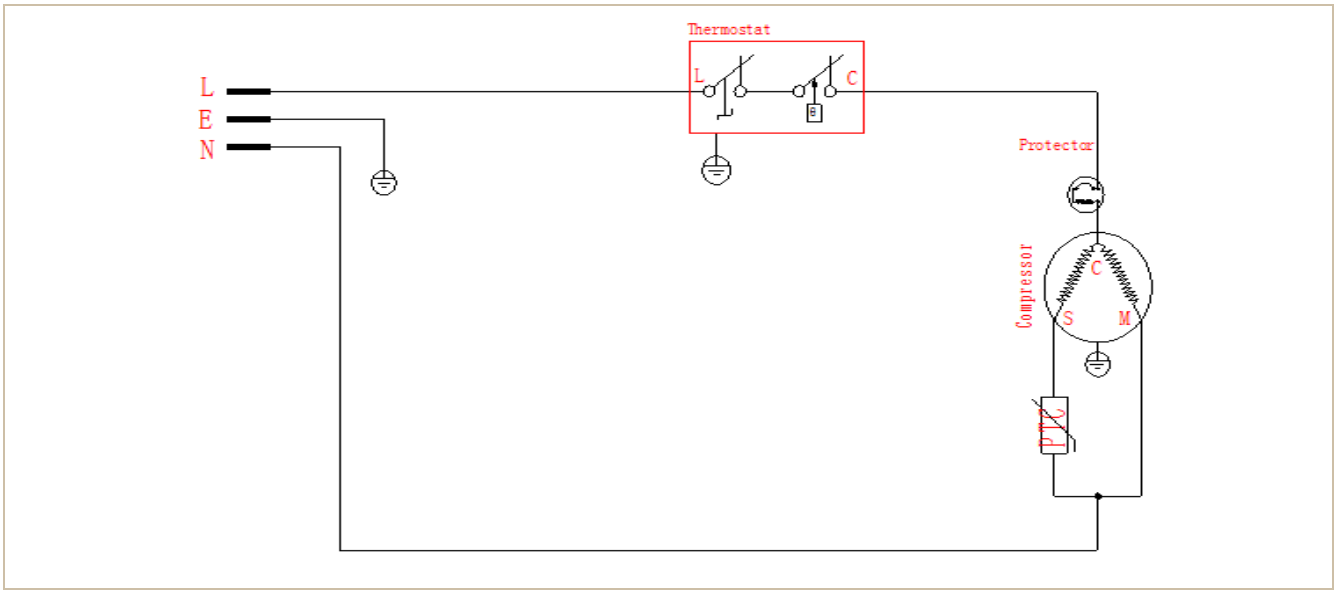
Temperature tolerance ≤ 2 °C

Compartment	The highest (°C)	Lowest (°C)
Freezing	None	None
Refrigerating	7	0
Variable temperature	None	None

5.4 Defrosting parts

Item	Initial defrosting period	Normal defrosting period
Defrosting period	None	None
Defrosting sensor	None	None
Defrosting temperature controller	None	None
Thermal fuse	None	None
Defrosting heater in freezing chamber	None	None

5.5 Circuit diagram



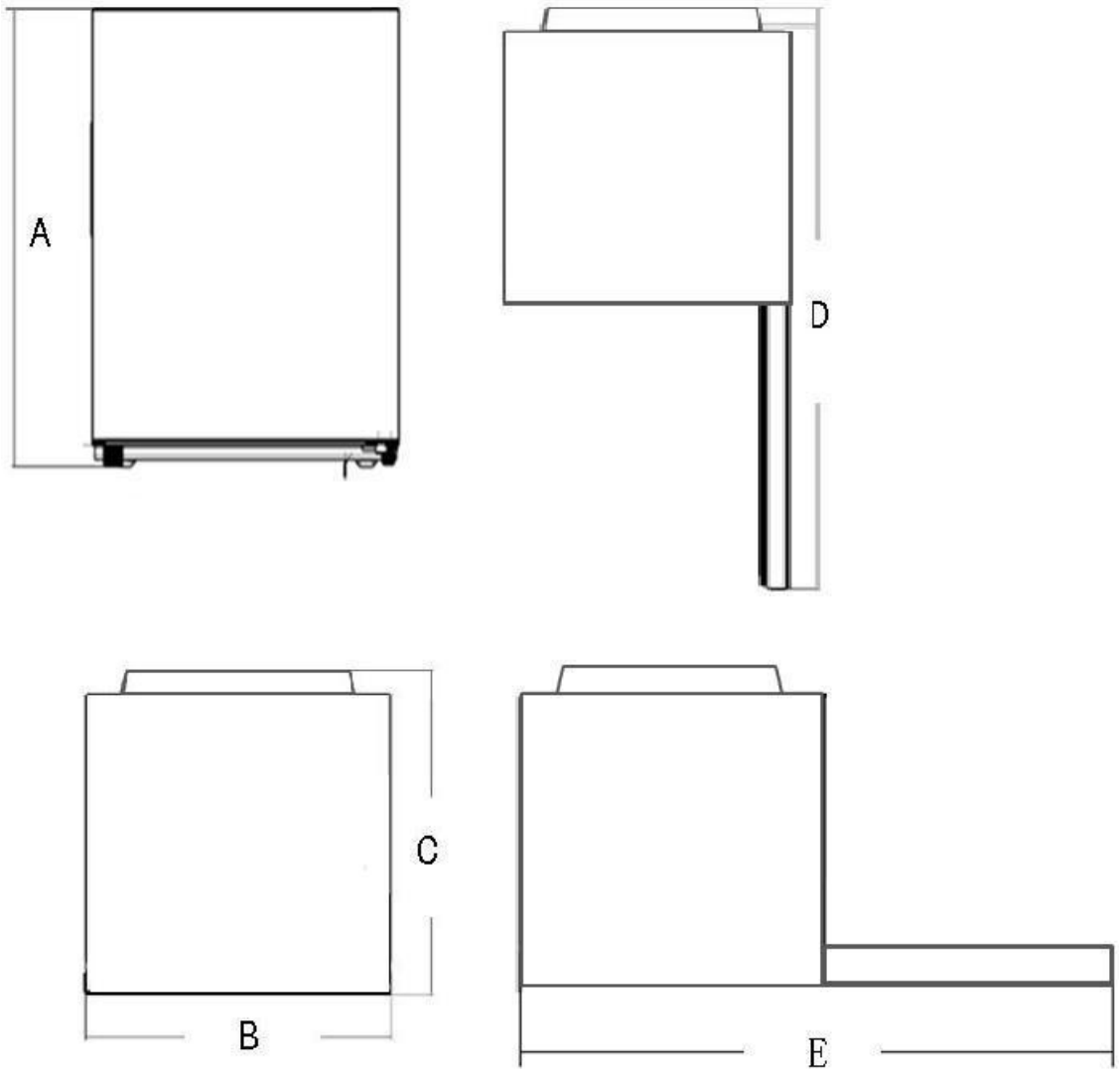
6. Internal view and dimension

6.1 Main parts and their names

Freezer chamber	Refrigerator chamber
None	❶ Thermostat ❷ Shelf ❸ Evaporator ❹ Beer can bottom pad

6.2 External dimension

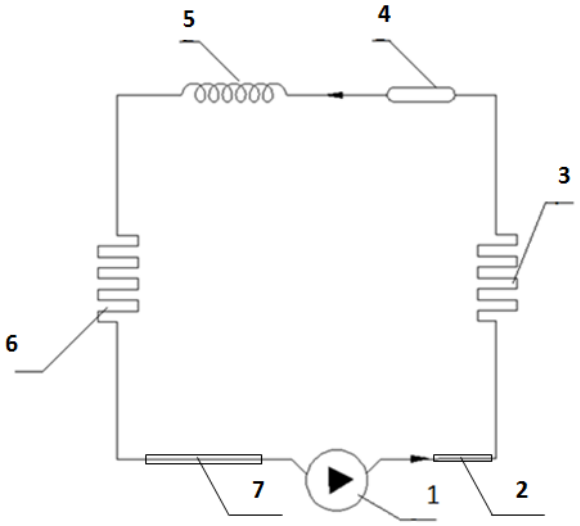
Description	Code	Size (mm)
Height to Top of Case	A	860
Width	B	510
Depth w/Handles	C	660
Depth (Total with Door Open)	D	1140
Width (door open 90 deg. w/ handle)	E	990



7. Refrigerating piping system and circulating route of cooling air

7.1 Refrigerating piping system

❶Compressor→❷ Exhaust transition pipe→❸ondenser→❹ Dry filter→❺ Capillary tube→❻ Evaporator→❼ Suction tube→ ❶Compressor



7.2 Circulating route of cooling air(None)

8. Dismantling of parts

8.1 Parts on the door

Door seal	
Open the wine cabinet door; Take the door seal ①out of door liner.	
Guardrail	
Guardrail	None
Door stopper	
Door stopper	None
rollover beam	
rollover beam	None

8.2 Parts inside the refrigerator

Shelf	
Lift up the shelf with a proper force and pull it out towards yourself.	
Refrigerator Fruit box cover	
Refrigerator Fruit box cover	None
Drawer	
Drawer	None
Beer can bottom pad	
Lossen the two screws on the beer can bottom pad.Push up the pad from the gap between the shell and the liner and take it out.	

8.3 Light system

Light	
Light	None
Light switch	
Light switch	None
Pilot light	
Pilot light	None
Fresh light	
Fresh light	None

8.4 Air duct components refrigerating chamber

Air duct components refrigeratingchamber	
Air duct components refrigeratingchamber	None

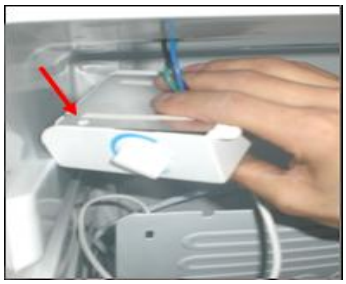
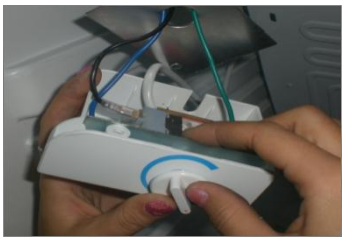
8.5 Air duct components in freezing chamber and fan motor

Disassembly and installation of Air duct	
Disassembly and installation of Air duct	None
Fan motor of air duct	
Fan motor of air duct	None
Damper assembly	
Damper assembly	None

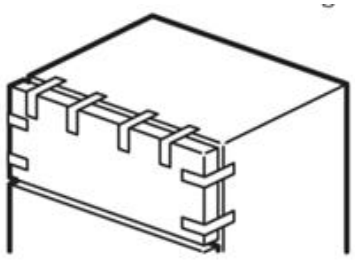
8.6 Evaporator and temperature sensing system

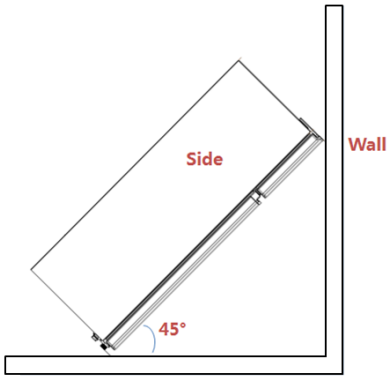
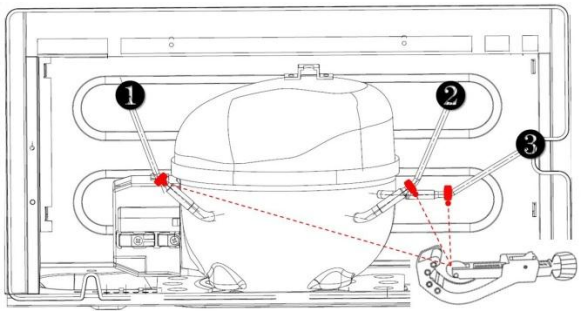
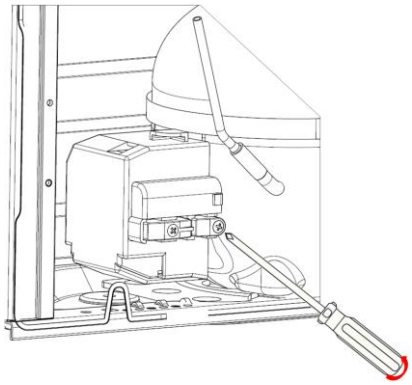
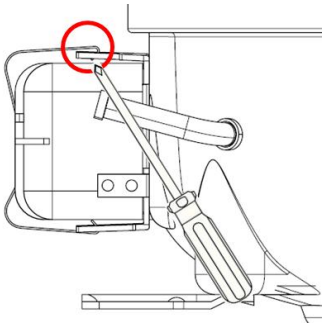
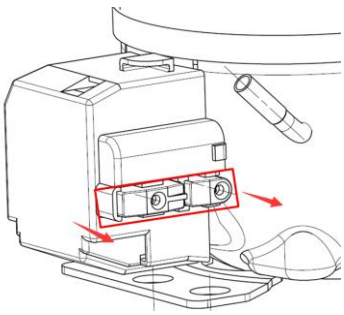
Evaporator in freezing chamber	
Evaporator in freezing chamber	None
Components on the evaporator	
Defrost thermostat	None
Fuse	None
Defrost sensor	None
Defrost heater	None
Evaporator in refrigerating chamber	

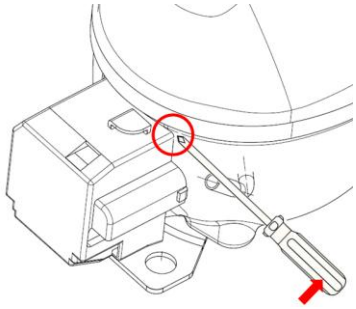
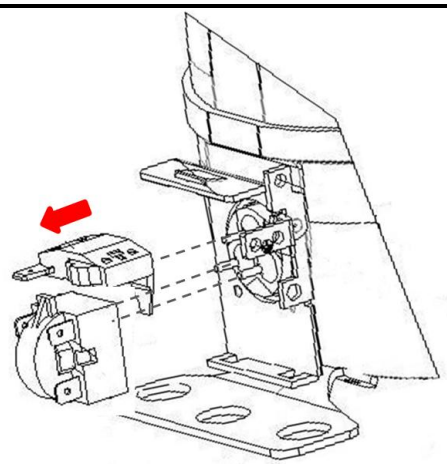
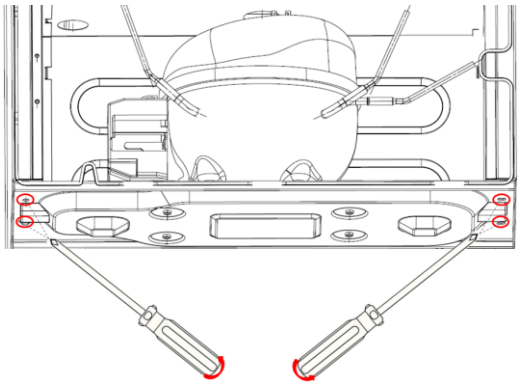
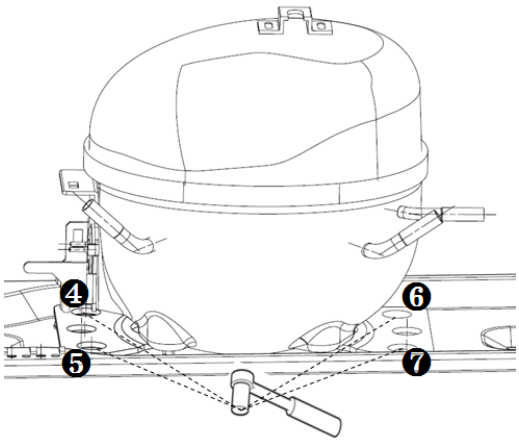
Take down screws and gaskets on the evaporator. Remove the welding on inlet and outlet tubes.	
Components on the evaporator	None
Sensor	
Sensor in freezing chamber	None
Sensor in refrigerating chamber	None
Ambient temperature sensor	None
Sensor in Variable temperature chamber	None
Thermostat	
1) Disassembly the screw that is fix the thermostat box.	

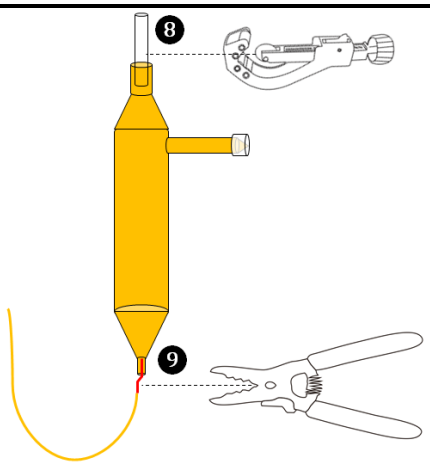
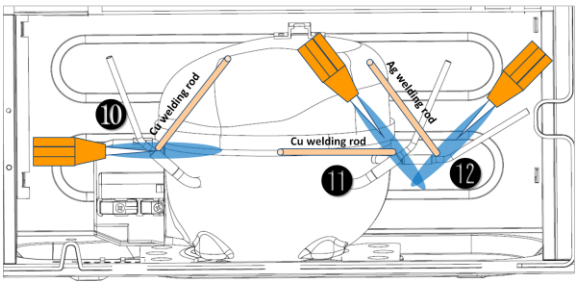
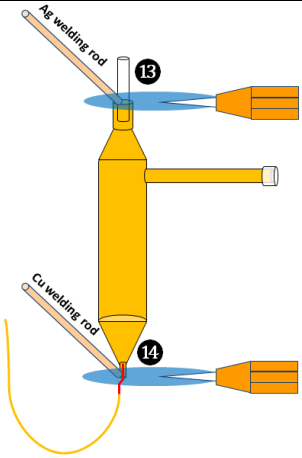
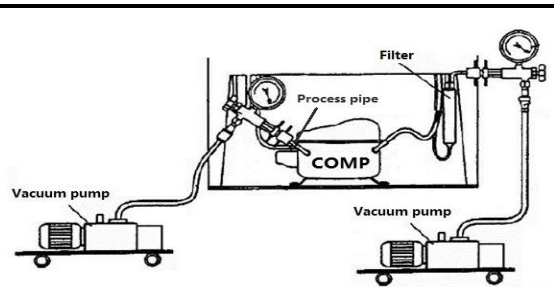
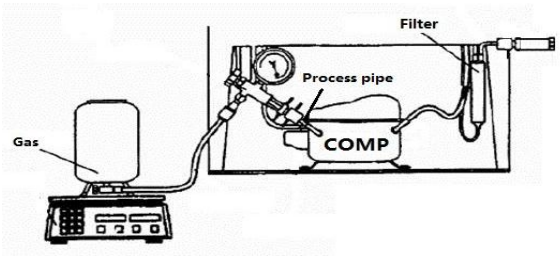
2）Pull out the thermostat fix plate and knob, remove the wiring and thermostat from the thermostat box.	  

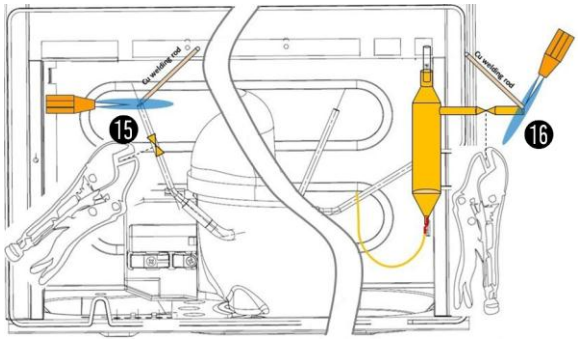
8.7 Compressor case

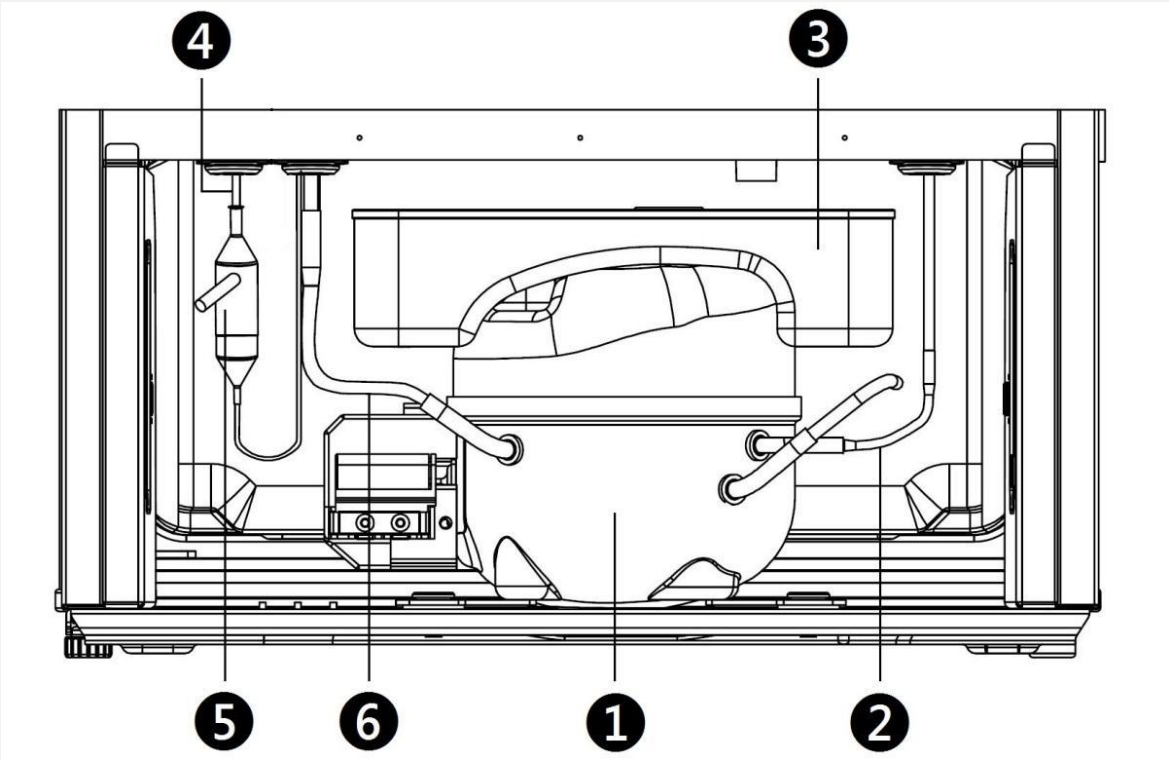
Rear cover and compressor case	
1）Remove by cross screwdriver the screws fixing back cover plate of compressor chamber anticlockwise. 2）Take the back cover plate of compressor chamber upward.	
Compressor and the cooling system pipe	
1）Cut off the power, remove the goods in the refrigerator, with the tape to make the door fixed firmly and prevent the door dropping when the refrigerator dumping.	

2）Slowly tilt the refrigerator forward, relying on the wall or a solid enough object, leaving space to facilitate the operation. For safety, it should be carried by someone to prevent its falling.	
3）Cut off the compressor pipeline.-❶Cut off the process pipeline.-❷Cut off the low-pressure muffler.-❸Cut off the high-pressure exhaust pipe.	
4-1）**Remove the screws(for some models)** -Two screws outside -One screw inside	
4-2）**Remove the metal clamp(for some models)** -Disassembly the metal clamp that is fix the electric appliance shield	
5）**Remove the clipping strip** Slowly pull it out	

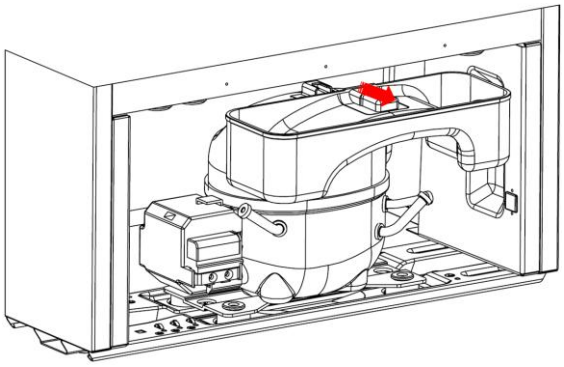
6）**Remove the protective cover** -Pry the protective cover slowly from the upper part, -Pull it out and remove it.	
7）**Remove the starter and protector** Unplug the starter and protector (you can use a screwdriver to pry it slowly)	
8）Loosen the screw of the compressor bottom plate, remove the floor together with the compressor from the box.	
9）Use the wrench to remove the bolts by steps❹❺❻❼, replace the compressor and reverse process can complete installation.	

10）Use Pipe cutter cut off the condenser tube❽, then Shear off capillary ❾ by the capillary tube scissors.	
11）Replace the compressorand welding the compressor pipeline.-❿Welding the process pipeline.-⓫Welding the low-pressure muffler.-⓬Welding the high-pressure exhaust pipe.	
12）Replace the filter, Cu-Fe tubes welding ⓭ used Ag welding rod, Cu-Cu tubes welding⓮ used Cu welding rod.	
13）Vacuum system,The degree of vacuum below 6Pa.	
14）Perfusion refrigerant.	

15）Use the vise grip pliers clamp the middle of the process pipe, then seal welding process tube❶❺❻.	
Condenser fan motor	
Condenser fan motor	None
Standby condenser	
Standby condenser	None
Piping system in the compressor case	
❶ Compressor ❷ Condenser（in） ❸ Drain tray ❹ Condenser（out）	❺ Dry filter ❻ Suction transition tube



Disassembly and assembly of the drain tray

1）Pull out the drain tray	
2）Replace the drain tray, the reverse process can complete installation.	/

8.8 Display control board

Display control board	
Display control board	None

8.9 Main control board

Main control board	
Main control board	None

8.10 Bar counter

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

8.11 Water dispenser

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

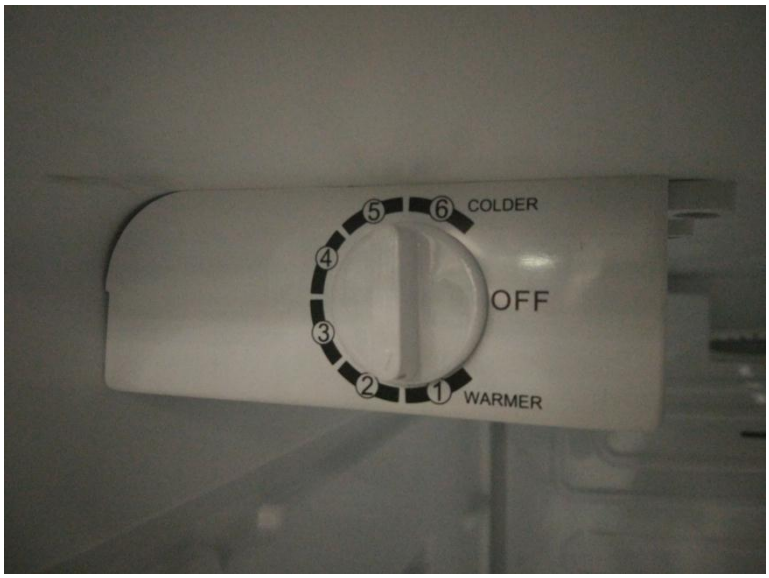
8.12Ice maker

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

9. Function and operation

9.1 Operation panel

Icons	Button
None	Temperature control knob



9.2 Temperature control

Direct cooling mechanical refrigerator, through the thermostat knob to adjust the stalls.
Turn the temperature control knob to 6gear, the internal temperature of the refrigerator becomes lower.
Turn the temperature control knob to 1gear, the internal temperature of the refrigerator becomes higher.
NOTE:Please adjusting and using between "6gear "and"1gear "

9.3 Give an alarm (None)

9.4 Failure code and solutions (None)

9.5 Defrost function

Manual defrost

9.6 Compressor fan control (None)

10. Circuit description

10.1 Power Supply(None)

10.2 Test circuit for door switch(None)

10.3 Temperature test circuit(None)

10.4 Freezer chamber fan motor circuit (None)

10.5 refrigerating chamber fan motor circuit (None)

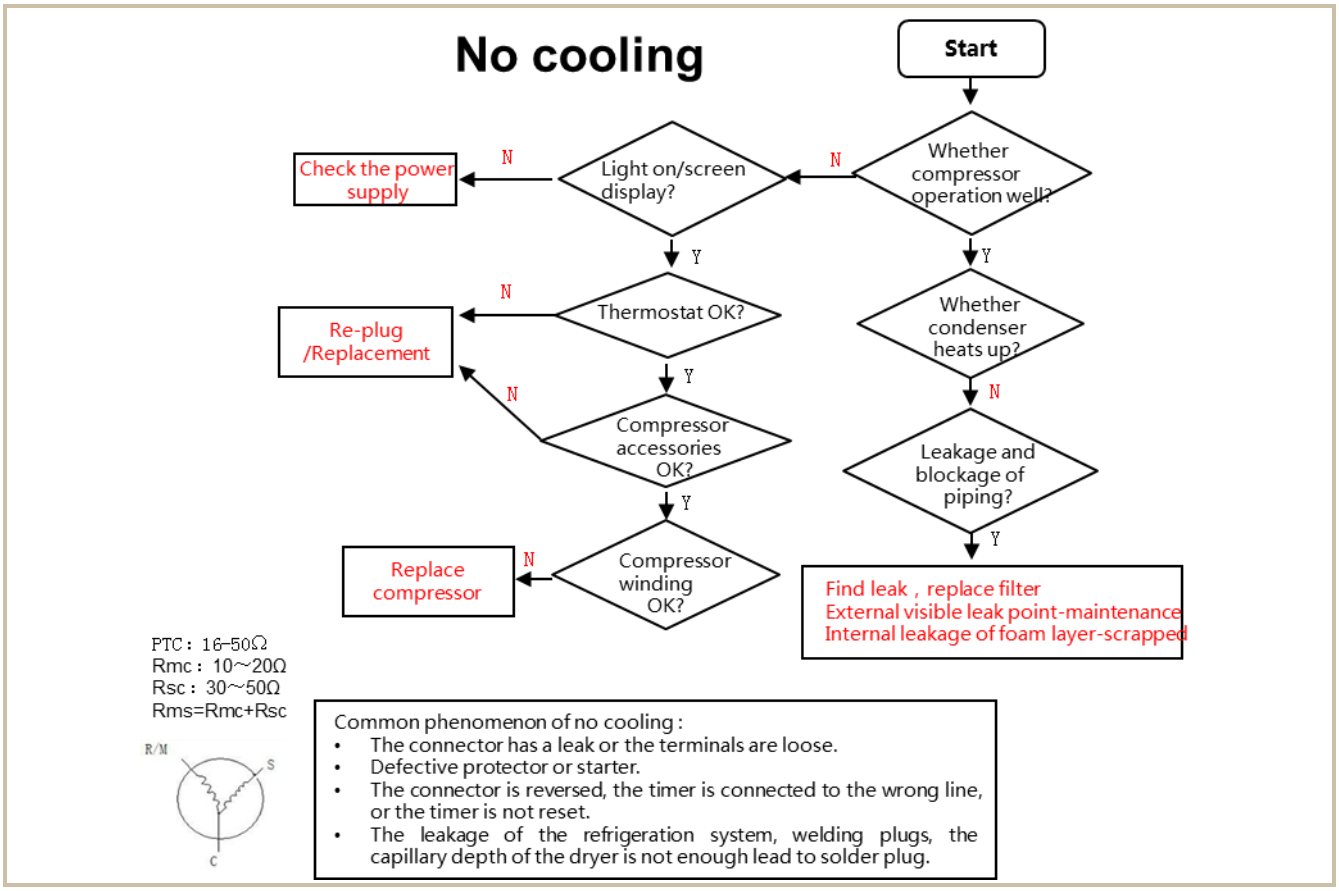
10.6 Condensation fan circuit (None)

10.7 Fan motor circuit of the ventilation door(None)

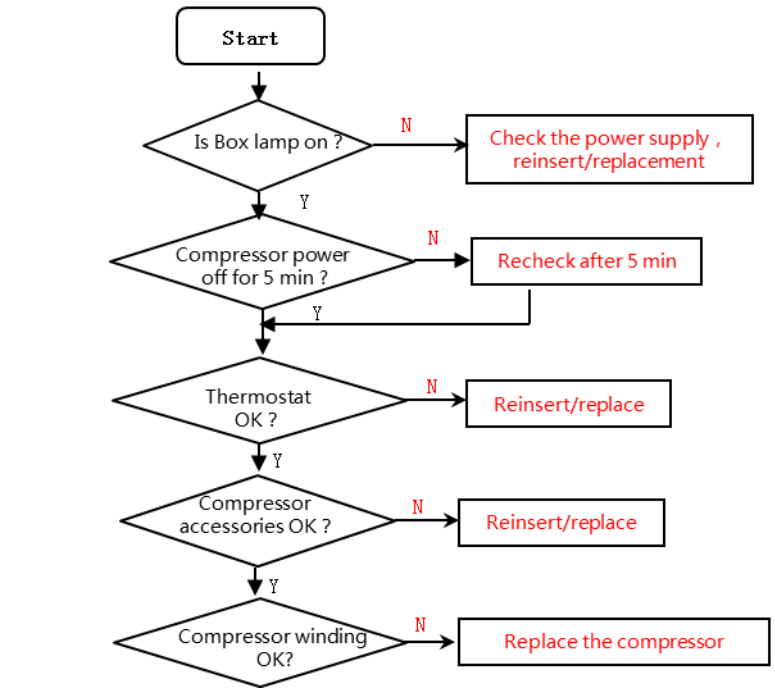
10.8 Resistance value of the sensor (R/T) (None)

11. Troubleshooting Method

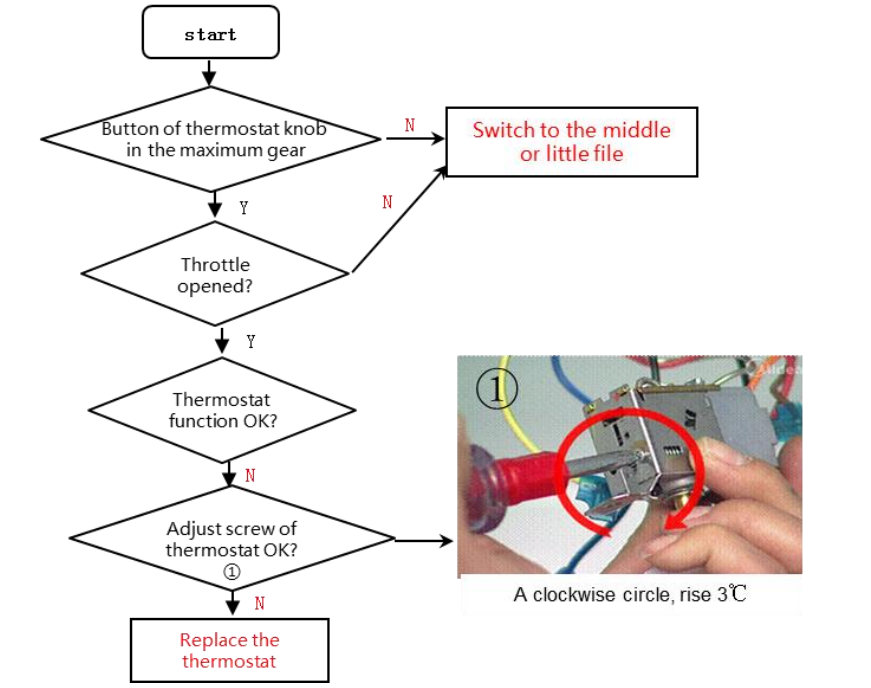
11.1 Not cooling



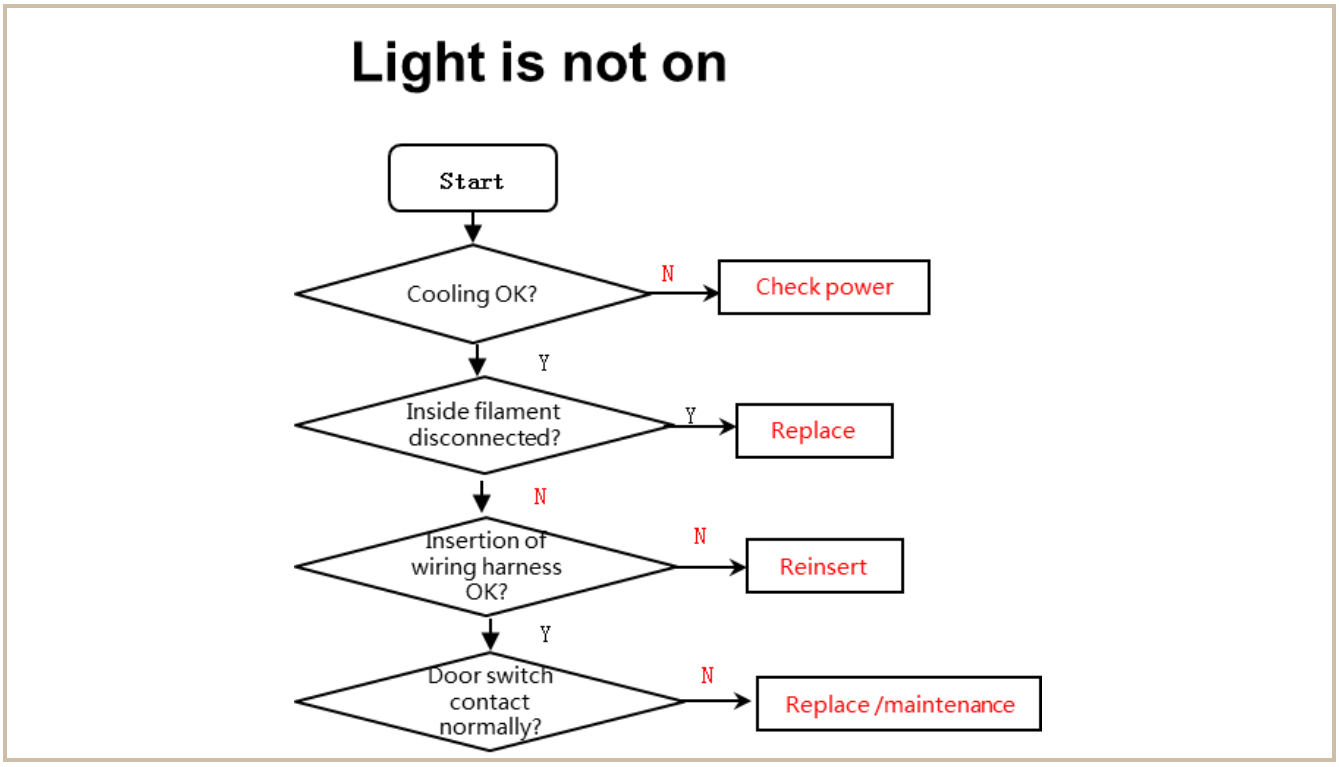
11.2 Not working of compressor



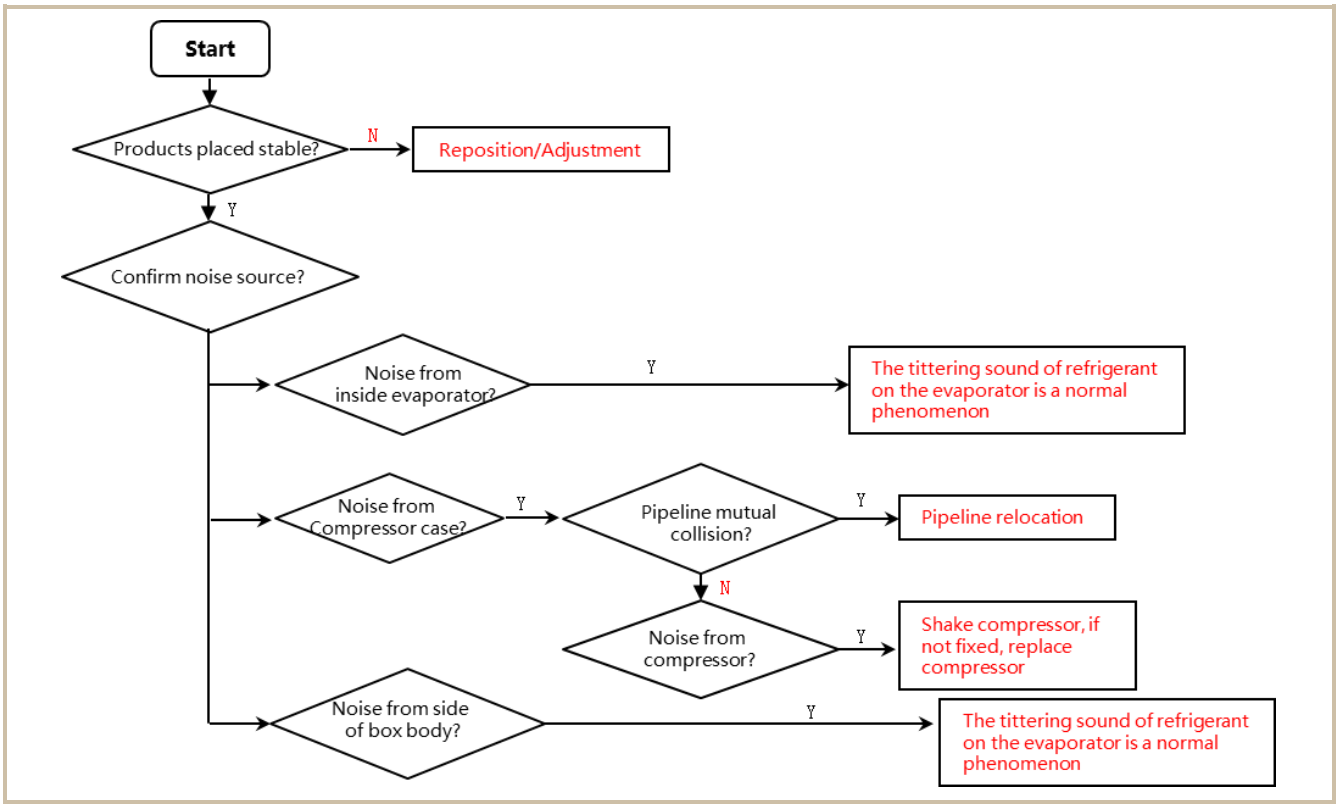
11.3 Thermostat malfunction-Undercooling



11.4 Light is not on



11.5 Noise



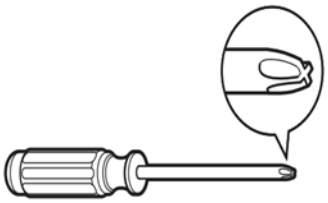
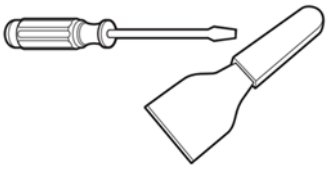
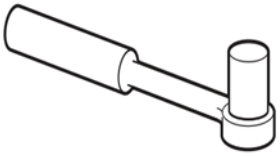
12. Figures and details of repair parts(Documents are provided separately)

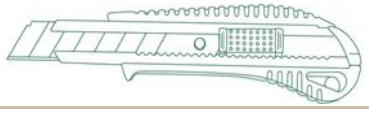
12.1 Figures

12.2 List of parts and components

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/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	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	

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
Address: No. 176, Jinxiu Avenue, Economic-Technological Development Area, Hefei, Anhui, China