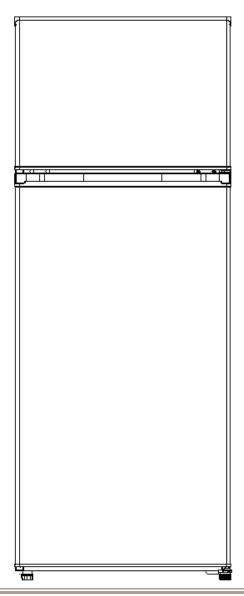


Service Manual

COMBI SERIES

Applicable Models	Model Code	Applicable Models
HD-273FN	CE-BCD210CM-ST	22031020003461
HD-273FN	CE-BCD210CM-SQ	22031020003462



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

This manual mainly teaches the method, the specific work skill needs engineer to accumulate through the daily work.





WARNING

Important Safety Notice

There are special components used in this equipment which are important for safety. These parts are marked by \triangle 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 Copyright @2017

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1. Significant update notes(None)



2. Safety Warning Code

2.1 Warning for operation safety

Important Safety Instructions



CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN





This symbol indicates that dangerous voltage constituting a risk of electric shock is present within your freezer.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying your freezer.

WARNING

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this appliance near water.
- 6) Clean only with a damp cloth.
- 7) Do not block any ventilation openings.
- 8) Install in accordance with the manufacturer's instructions.
- **9)** Do not install near any heat sources, such as radiators, heat registers, stoves, or other apparatus that produce heat.
- **10)** Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- **11)** Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the appliance.
 - **12)** Do not attempt to modify or extend the power cord of this appliance.
- **13)** Unplug this appliance during lightning storms or when it will not be used for long periods of time.
- **14)** Make sure that the available AC power matches the voltage requirements of this appliance.



CONNECTING ELECTRICITY

A WARNING Electrical Shock Hazard.

Plug into a grounded 3-prong outlet.

Do not remove the ground prong.

Do not use an adapter.

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



WARNING

Electric Shock Hazard

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

- **1) WARNING**–Keep ventilation openings, in both the freezer and the built-in structure, clear of obstruction.
- **2) WARNING**—Do not touch the interior of the freezer with wet hands. This could result in frost bite.
- **3) WARNING**—Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
 - 4) WARNING-Do not damage the refrigerant circuit.
- **5) WARNING**—Do not damage the refrigerant tubing when handling, moving, or using the freezer.
- **6) WARNING-DANGER**–Never allow children to play with, operate, or crawl inside the freezer. Risk of child entrapment. Before you throw away your old freezer:
 - 6-1) Take off the doors
 - 6-2) Leave the shelves in place so that children may not easily climb inside
 - 7) Unplug the freezer before carrying out user maintenance on it.
- 8) This freezer can be used by children age eight years and older and persons with reduced physical or mental capabilities or lack of experience and knowledge if they are given supervision or instruction concerning the use of the freezer in a safe way and understand the hazards involved. Children should not play with the freezer. Cleaning and maintenance should not be performed by children without supervision.
- **9)** If a component part is damaged, it must be replaced by the manufacturer, its service agent, or similar qualified persons in order to avoid a hazard.
- **10)** Please dispose of the freezer according to local regulations as the freezer contains flammable gas and refrigerant.
- **11)** Follow local regulations regarding disposal of the freezer due to flammable refrigerant and gas. All refrigeration products contain refrigerants, which under the guidelines of federal law must be removed before disposal. It is the consumer's responsibility to comply with federal and local regulations when disposing of this product.
 - **12)** This freezer is intended to be used in household and similar environments.



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

Grounding requirement

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

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

2.2 Safety instruction for refrigerant

A 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

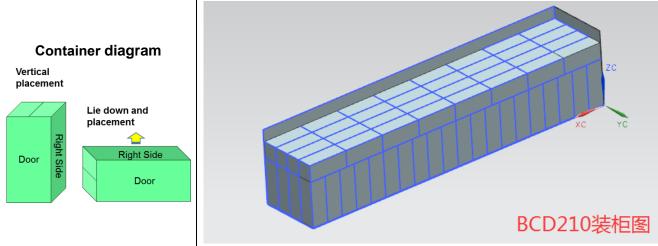
DANGER–Risk of Fire or Explosion. Flammable Refrigerant Used. To Be Repaired Only By Trained Service Personnel. Do Not Use Mechanical Devices. Do Not Puncture Refrigerant Tubing. CAUTION–Risk of Fire or Explosion. Flammable Refrigerant Used. Consult Repair Manual/Owner's Guide Before Attempting To Service 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.



3. Transport

3.1 Container transport

Packing Size(LWH):	585x585x1440			
Container specification(LWH):	40HQ(12.032*2.352*2.690)m			
	What floor	QTY	Door direction	Cabinet direction
Container scheme , and	1 st floor	<mark>64</mark>	Outside	/
Container OTV:	2 nd floor	<mark>80</mark>	Outside	/
Container QTY:	Total	<mark>144</mark>		



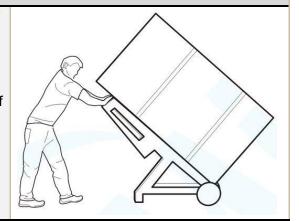
Notes: The goods on the top layer of the container may conflict with the position of the side corner of the container.



3.2 Handling

Handling

- 1)Protect the refrigerator in moving it,Same as shown as lef t 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 bef ore power on.





4. Installation and commissioning

4.1Door Disassembly and Assembly (None)

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	

4.2 Installation location

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

4.3 Leveling of the refrigerator

Leveling of the refrigerator	
If the refrigerator cannot be placed steadily, adjust the footing to level it.	
	(-90°

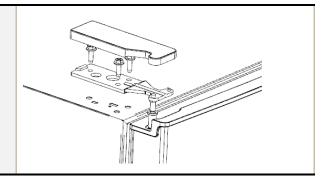


4.4 Left or right open door reversal

Door reversal 1) Unplug your refrigerator and remove all food from the door shelves. 2) Remove the left cover plate and the right top hinge cover, then unscrew and remove the right top hinge. Keep the screws to reuse 3) Lift the freezer door up and away from your refrigerator. 4) Unscrew the two screws holding the center hinge, Centre Hinge remove the hinge, then lift the refrigerator door up and away from your refrigerator. Save the screws to reuse. 5)Put on the cushion block, lie down the refrigerator, re move the 3 bolts fixed the lower hinge with the sleeve, re move the lower hinge and adjust the foot. 6) Remove the door block from the bottom, right side of the door and attach it to the other side. right side 7) fix the lower hinge on the left side of the refrigerator w ith the bolts and adjust the foot to the right side. 8) place the refrigerator door vertically on the lower hing e shaft in the open door state. 9)fix the middle hinge in the middle hinge position on the left side of the refrigerator by using the two bolts, and sc rew the middle hinge shaft through the middle hinge and into the door shaft hole of the cold compartment door.



10)Put the freezer door onto the center left hinge, then attach the top left hinge to the top of refrigerator. Cover the hinge with the top left hinge cover and cover the screw holes on the right side of the top with the cover plate you previously removed.



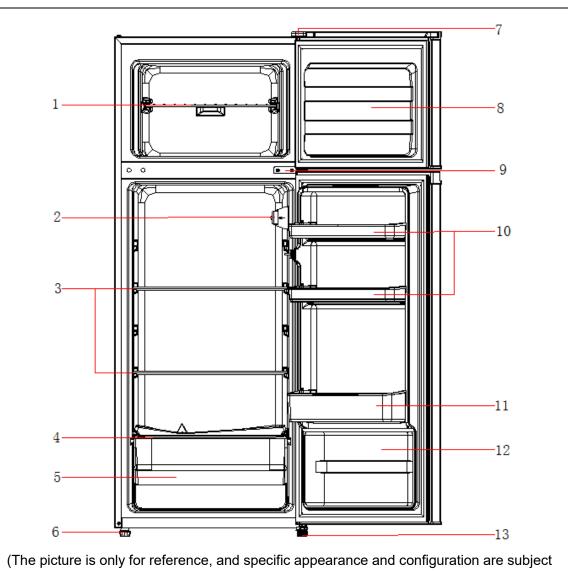
4.5 Installation of handle (None)

4.6 Installation of door lock (None)



5. Product configuration and dimension

5.1 Main parts and their names



to the real product)

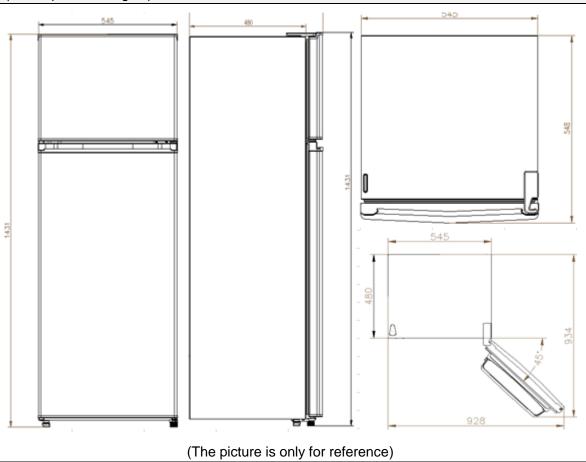
- 1.Steel wire shelf
- 2.Temperature-control box assembly
- 3. Glass shelf components of refrigerator
- 4. Glass shelf components of refrigerator
- 5.Fruits and vegetables box
- 6.Levelling feet
- 7. Hinge cover

- 8.Freezer door assembly
- 9. Middle hinge assemblies
- 10.Refrigerator door tray
- 11.Refrigerator door tray
- 12.Refrigerator door assembly
- 13.Lower hinge adjust feet assembly



5.2 External dimension

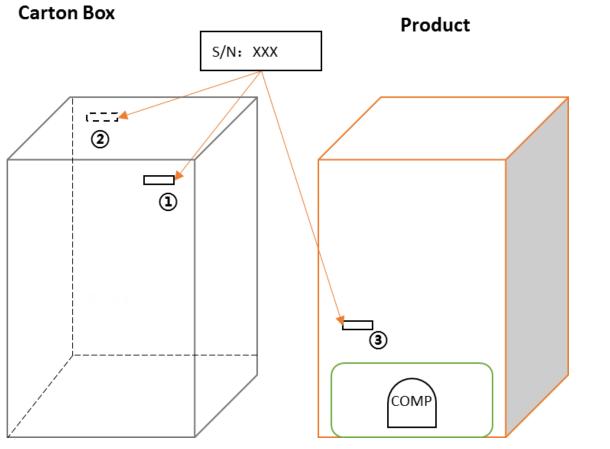
Description	Code	HD-273FNSize (mm)	
Height to Top of Case	А	1431	
Width	В	545	
Depth w/Cabinet	С	480	
Depth w/Door	D	548	
Depth w/Handle	Е	1	
Depth (Door open 90 deg. w)	F	1065	
Depth (Door open 145 deg. w)	G	934	
Width (Door open 145 deg. w)	Н	928	



Some



5.3 Location of S/N



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



6. Product specification

6.1 Electrical parameters

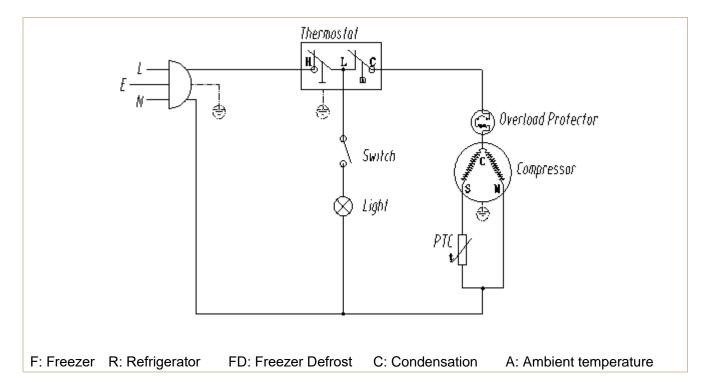
Applicable Models	HD-273FN	HD-273FN	
Product Name	CE-BCD210CM-ST	CE-BCD210CM-SQ	
Product Code	22031020003461	22031020003462	
Item	Specification	Specification	
Refrigerant	R600a	R600a	
Compressor	SZ59C1J	SZ59C1J	
Starter(PTC)	QP2-15	QP2-15	
Overload protector(OLP)	DRB12T61A1	DRB12T61A1	
Integrate PTC+OLP	None	None	
Variable frequency driver board	None	None	
Capacitor	None	None	
Power filter	None	None	
Winding resistance of compressor wiring terminal	Rmc: $38.26\pm7\%\Omega$ Rsc: $15.89\pm7\%\Omega$ Rms=Rmc+Rsc	Rmc: $38.26\pm7\%\Omega$ Rsc: $15.89\pm7\%\Omega$ Rms=Rmc+Rsc	
Winding resistance picture	R/M S	R/M S	
The input power of compressor	73.8W	73.8W	
Lights inside the refrigerator			
Lights inside the freezing chamber	None		
Lights inside the refrigerating chamber	白炽灯 220-240V/15W	LED 220-240V/2W	
Switch of the refrigerator door	■Mechanical switch □Magnetism control switch		

6.2 Cooling temperature setting range

Compartment	The highest (°C)	Lowest (°C)
Freezing	-12	-26
Refrigerating	10	-4
Variable temperature	1	1



6.3 Circuit diagram

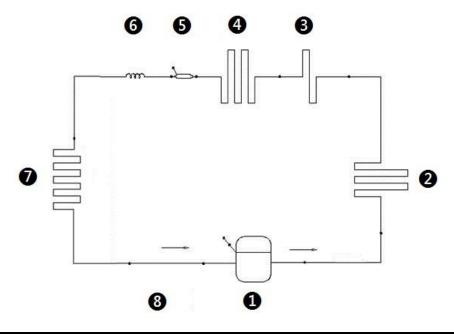




7. Refrigerating piping system and circulating route of cooling air

7.1 Refrigerating piping system

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





7.2 Special soldering position





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

As shown in the figure, pull it up.



8.2Parts inside the refrigerator

Refrigerator Fruit box cover

Remove the crisper cover of ref. compartement according to below steps:

- 1) Take out the crisper firstly.
- 2) Lift up the Fruit box cover, and then pull out it.



Shelves



- 1) Pull out the partition plate.
- 2) Lift it up and take it out from the refrigerator.



Freezer Drawer

Remove the freezer drawer according to below steps:

1) Pull out the drawer2) $_{\circ}$ Lift it up and take it out from the refrigerator.



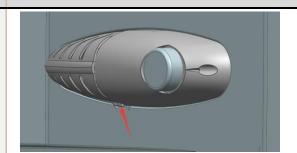
8.3 Light system

Light

Light of the refrigerating

Light of the refrigerating chamber is located upper chamber(inner display)

- 1) Remove tape, remove lamp shade clip by hand, remove lamp shade
- 2) Remove the two screws from the temperature control box with a phillips screwdriver3) Remove the fixed plate of the back plate of the temperature control box manually.4) Remove the LED light from the card slot of the temperature control box5) The reverse process can complete installation.



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.



8.4Compressor case

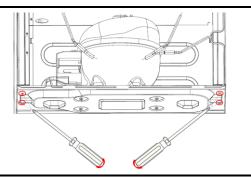
Rear cover (None) Compressor and the cooling system pipe 1) Cut off the power, remove the goods in the refrigerator, with the tape to make the door fixed firmly and prevent the door dropping when the refrigerator dumping. 2) Slowly tilt the refrigerator forward, relying on the wall Wall or a solid enough 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.-11 Cut off the process pipeline.- 2 Cut off the low-pressure muffler.-3 Cut off the high-pressure exhaust pipe.



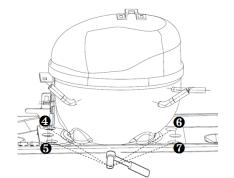
4-1) Remove the screws(for some models) -Two screws outside -One screw inside 4-2) Remove the metal clamp(for some models) -Disassembly the metal clamp that is fix the electric appliance shield 5) Remove the clipping strip Slowly pull it out 6) Remove the protective cover -Pry the protective cover slowly 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)



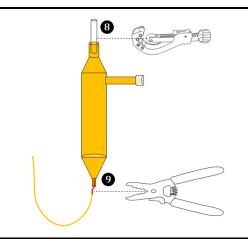
8) Loosen the screw of the compressor bottom plate, remove the floor together with the compressor from the box.

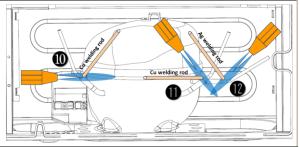


9) Use the wrench to remove the bolts bysteps 4 6 6 7, replace the compressor and reverse process can complete installation.



10) Use Pipe cutter cut off the condenser tube (8), then Shear off capillary (9) by the capillary tube scissors.

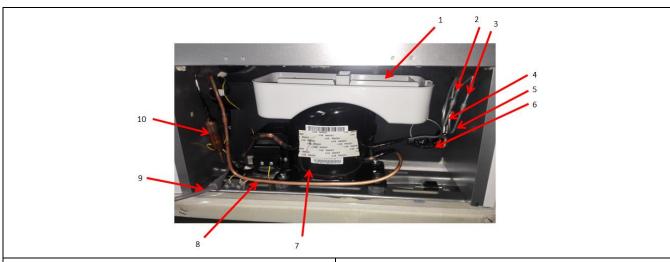






12) Replace the filter, Cu-Fe tubes welding 13 used Ag $\lceil \mathbf{B} \rceil$ welding rod, Cu-Cu tubes welding used Cu welding rod. 13) Vacuum system, The degree of vacuum below 6Pa. 14) Perfusion refrigerant. 15) Use the vise grip pliers clamp the middle of the process p ipe, then seal welding process tube 1516. Piping system in the compressor case





- 1.Drain tray
- 2.right condenser
- 3.left condenser(exit)
- 4.anti-dew tupe assembly(exit)
- 5.anti-dew tupe assembly(enter)

- 6.left condenser(enter)
- 7.compressor
- 8.suction transition tube
- 9.Power wire
- 10.dry filter



9. temperature sensing system

Thermostat

1.Remove the lamp cover and insert pin, remove the screw under insert pin, outward pulling the thermostat-control box at horizontal





10. Function and operation

10.1 Operation panel(None)

<u>10.2 Temperature setting</u>Turn the temperature control knob to MAX, the internal temperature of the refrigerator becomes lower.

Turn the temperature control knob to MIN, the internal temperature of the refrigerator becomes higher. NOTE: Please adjusting and using between "MAX" and "MIN"

10.3 Open door alarm(None)

When refrigerator door or freezer door is open, the display panel is light on there is no notification tone when open door; if refrigerator door or freezer door is open last for 120s, there will be buzzer alarm, afterwards give alarm one time per second, press any buttons on control panel can cancel this buzzer alarm.

Note: under the situation of the refrigerator compartment turn off, the door switch and internal lamp works properly.

Note: When open the door, the display panel is light on; when the door is closed, the display panel will be light off after 30s if there is no any operation on display panel

10.4 Defrosting function

Manual defrost

10.5 Test mode(None)

10.6Backup data for power fail(None)

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



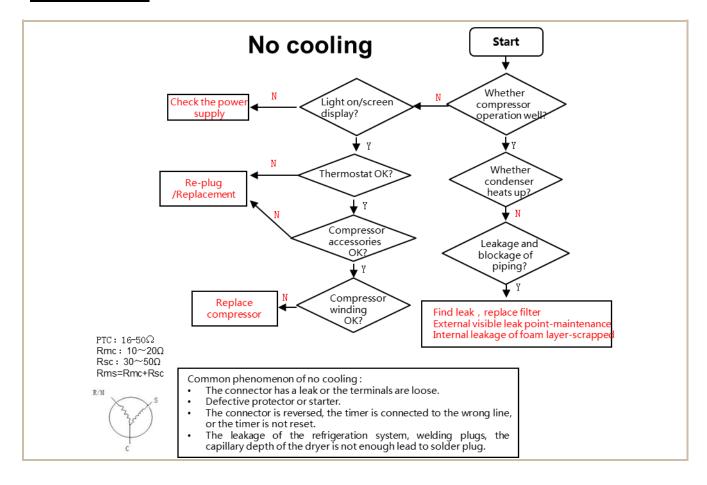
11. Compressor

- 1.1 <u>11.1Compressor on and off Control specifications</u>When one of the following conditions is met, the compressor stops:
 - 1) Tr ≤ Trt ;
 - 2) The compressor runs continuously for more than 3 hours (Stop 5 minutes);
- 1.2 When all the following conditions are met, the compressor starts up:
 - 1) Tr ≥Trk;
 - 2) Compressor downtime is more than 5min.
- ★When 1.1 and 1.2 are not satisfied, the compressor maintains the original state



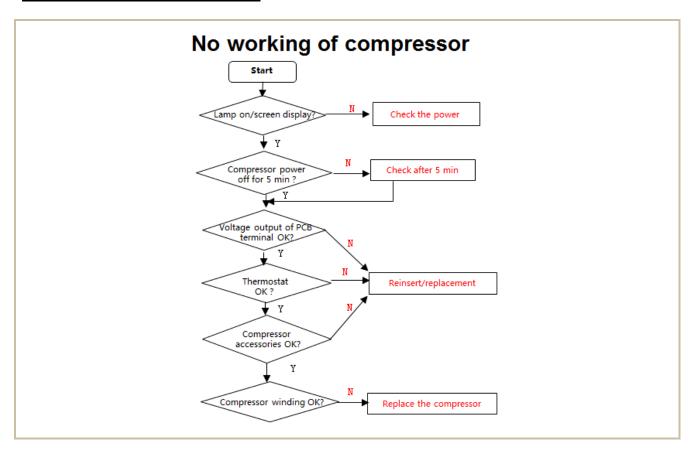
12. Troubleshooting Method

12.1Not cooling

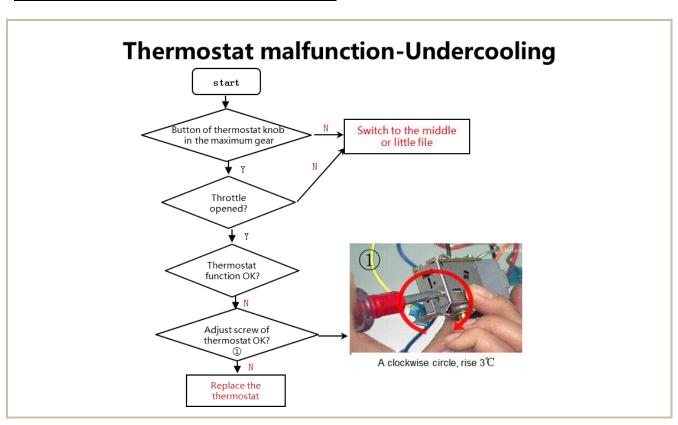




12.2 No working of compressor

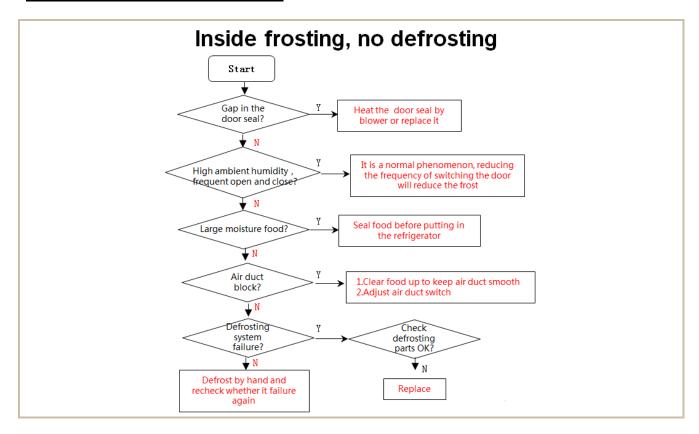


12.3Thermostat malfunction-Undercooling

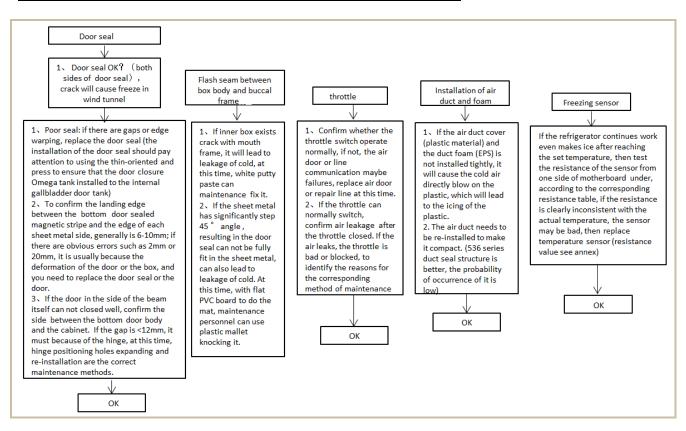




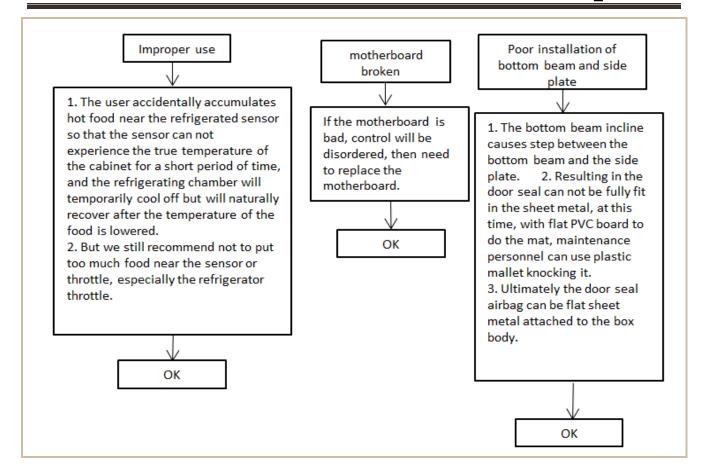
12.4 Inside frosting, no defrosting



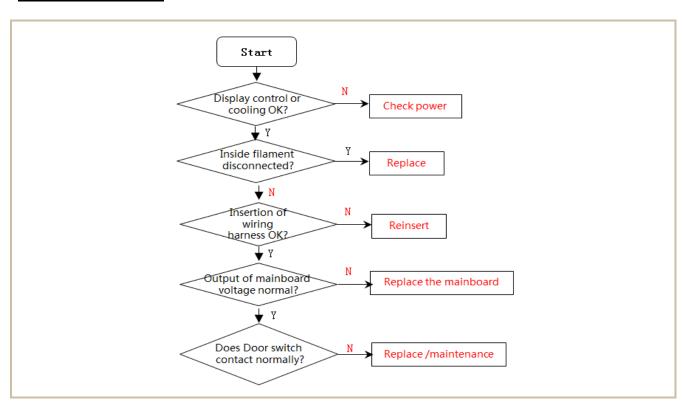
12.5 Inside frosting, no defrosting-Maintenance guidelines





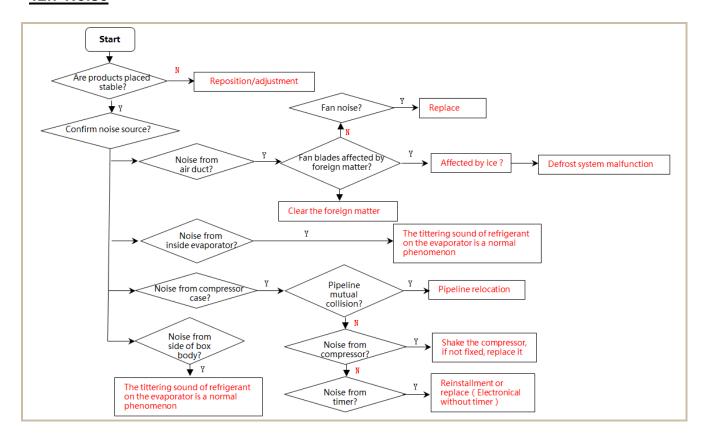


12.6 Light is not on





12.7 Noise





13. Figures and details of repair parts

See this section in the TSP.

Entry Guidelines (TSP System)



■ Where

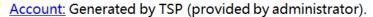
Chrome





■ How

- Midea user: Same as your MIP account & password.
- Overseas customer:



Each customer have a code in Midea Group, G/E + seven numbers.

If you buy different categories from Midea group, you can see all the product information by one account.

Password: abcd1234 (please revise after login in).

If the input error more than 5 times, account will be locked, need the administrator to unlock.

Admin team:



REF: Jamie Liu(liujc5@midea.com)

IT: Martin He(dingding.he@midea.com)







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 <u>tsp.midea.com</u>
For more information about the service manual, please visit the <u>tsp.midea.com</u>
For more information about the EV and SBOM, please visit the <u>tsp.midea.com</u>



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