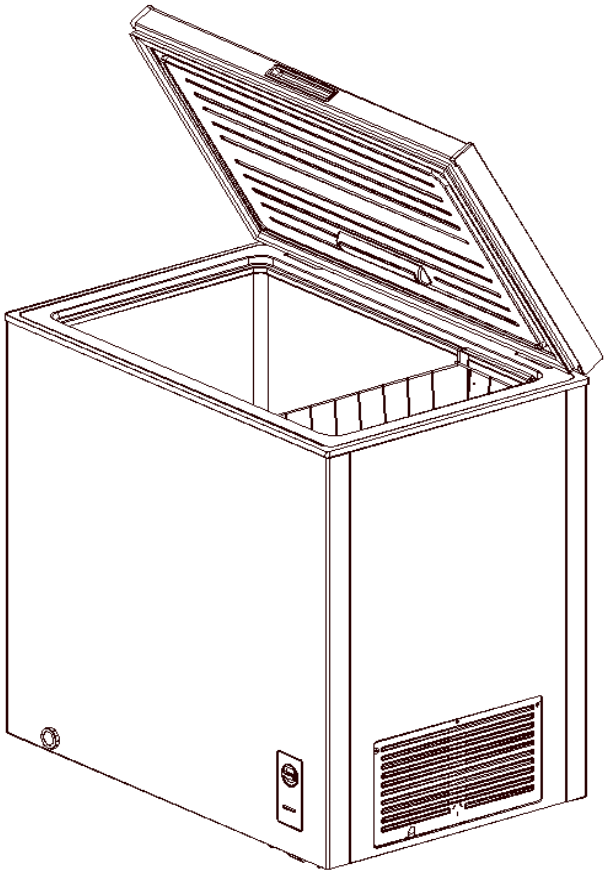
Service Manual

CHEST FREEZER SERIES

Applicable Models	Model Code	Applicable Models
HS-186CN	UR-BD143-DQ	22032010004022
HS-259CN	UR-BD199-DQ	22032010004021



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

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

⚠ WARNING

Important Safety Notice

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

⚠ WARNING

Important Safety Notice

The Maintenance Manual is only for the use of maintenance personnel with certain experience and background in electrical, electronic and mechanical field.

Any attempt to repair main devices may lead to personal injury and property loss.

Manufacturers or distributors are not responsible for the content of the Manual and interpretation thereof.

Midea Refrigerators

Technical Maintenance Manual

Copyright @2017

All rights reserved. Replication of all or part of the Manual in any forms shall not be allowed without written approval by the Overseas Sales Corporation of Midea Refrigerators.

Contents

1. SIGNIFICANT UPDATE NOTES(NONE) 5

2. SAFETY WARNING CODE 6

2.1 WARNING FOR OPERATION SAFETY 6
2.2 SAFETY INSTRUCTION FOR REFRIGERANT 8

3. TRANSPORT 9

3.1 HANDLING 9

4. INSTALLATION AND COMMISSIONING 10

4.1DOOR DISASSEMBLY AND ASSEMBLY(NONE) 10
4.2 INSTALLATION LOCATION 10
4.3 LEVELING OF THE REFRIGERATOR 10
4.4 INSTALLATION OF HANDLE 10
4.5 INSTALLATION OF DOOR LOCK（NONE） 11

5. PRODUCT CONFIGURATION AND DIMENSION 12

5.1 MAIN PARTS AND THEIR NAMES 12
5.2 EXTERNAL DIMENSION 13
5.3 LOCATION OF S/N 14

6. PRODUCT SPECIFICATION 15

6.1 ELECTRICAL PARAMETERS 15
6.2 COOLING TEMPERATURE SETTING RANGE 15
6.3 CIRCUIT DIAGRAM 15

7.REFRIGERATING PIPING SYSTEM AND CIRCULATING ROUTE OF COOLING AIR 17

7.1 REFRIGERATING PIPING SYSTEM 17
7.2 SPECIAL SOLDERING POSITION 17

8. DISMANTLING OF PARTS 18

8.1 PARTS ON THE DOOR 18
8.2PARTS INSIDE THE REFRIGERATOR 20
8.3 LIGHT SYSTEM 20
8.4 COMPRESSOR CASE 21
8.5TEMPERATURE-CONTROL BOX ASSEMBLY 25

9. FUNCTION AND OPERATION 28

9.1 OPERATION PANEL 28
9.2TEMPERATURE CONTROL 28
9.3HIGH TEMPERATURE AN ALARM (NONE) 29
9.4DEFROSTING FUNCTION 29

10. COMPRESSOR 30

10.1COMPRESSOR ON AND OFF CONTROL SPECIFICATIONS 30

11. TROUBLESHOOTING METHOD 31

11.1NOT COOLING 31
11.2 NO WORKING OF COMPRESSOR 32
11.3THERMOSTAT MALFUNCTION-UNDERCOOLING 32
11.4 LIGHT IS NOT ON 33
11.5 NOISE 33

13. FIGURES AND DETAILS OF REPAIR PARTS 34

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

WARNING Electrical Shock Hazard.

Plug into a grounded 3-prong outlet.
Do not remove the ground prong.
Do not use an adapter.

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

WARNING

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

1) WARNING–Keep ventilation openings, in both the freezer and the built-in structure, clear of obstruction.

2) WARNING–Do not touch the interior of the freezer with wet hands. This could result in frost bite.

3) WARNING–Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

4) WARNING–Do not damage the refrigerant circuit.

5) WARNING–Do not damage the refrigerant tubing when handling, moving, or using the freezer.

6) WARNING–DANGER–Never allow children to play with, operate, or crawl inside the freezer. Risk of child entrapment. Before you throw away your old freezer:

6-1) Take off the doors

6-2) Leave the shelves in place so that children may not easily climb inside

7) Unplug the freezer before carrying out user maintenance on it.

8) This freezer can be used by children age eight years and older and persons with reduced physical or mental capabilities or lack of experience and knowledge if they are given supervision or instruction concerning the use of the freezer in a safe way and understand the hazards involved. Children should not play with the freezer. Cleaning and maintenance should not be performed by children without supervision.

9) If a component part is damaged, it must be replaced by the manufacturer, its service agent, or similar qualified persons in order to avoid a hazard.

10) Please dispose of the freezer according to local regulations as the freezer contains flammable gas and refrigerant.

11) Follow local regulations regarding disposal of the freezer due to flammable refrigerant and gas. All refrigeration products contain refrigerants, which under the guidelines of federal law must be removed before disposal. It is the consumer's responsibility to comply with federal and local regulations when disposing of this product.

12) This freezer is intended to be used in household and similar environments.

13) Do not store or use gasoline or any flammable liquids inside or in the vicinity of this freezer.

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

Grounding requirement

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

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

2.2 Safety instruction for refrigerant

Explosion Hazard.

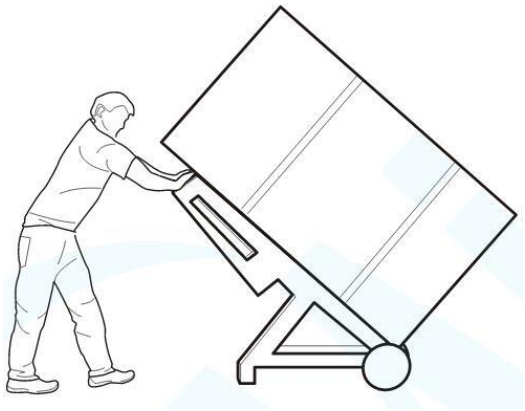
Keep flammable materials and vapors, such as gasoline, away from freezer. Failure to do so can result in fire, explosion, or death.

Safety instruction for refrigerant

DANGER–Risk of Fire or Explosion. Flammable Refrigerant Used. To Be Repaired Only By Trained Service Personnel. Do Not Use Mechanical Devices. Do Not Puncture Refrigerant Tubing. CAUTION–Risk of Fire or Explosion. Flammable Refrigerant Used. Consult Repair Manual/Owner's Guide Before Attempting To Service This Product. All Safety Precautions Must be Followed. CAUTION–Risk of Fire or Explosion. Dispose of Properly In Accordance With Federal Or Local Regulations. Flammable Refrigerant Used. CAUTION–Risk of Fire or Explosion Due To Puncture Of Refrigerant Tubing; Follow Handling Instructions Carefully. Flammable Refrigerant Used.

3. Transport

3.1 Handling

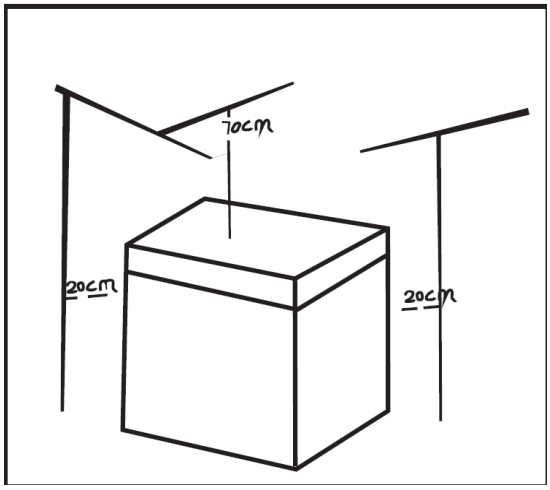
Handling	
1)Protect the refrigerator in moving it,Same as shown as lef t photo, please move it by handcart with cushion 2)Remove all packing materials and bottom cushion, the m ove into house for placement 3)After moving it to appropriate location, wait for 2 hours bef ore power on.	

4. Installation and commissioning

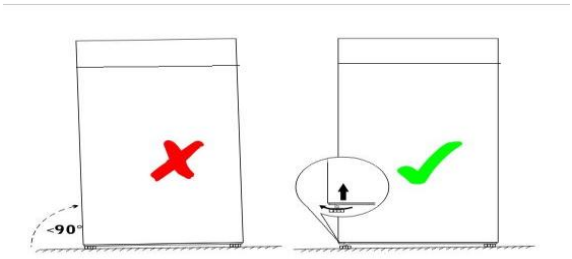
4.1Door Disassembly and Assembly(None)

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

4.2 Installation location

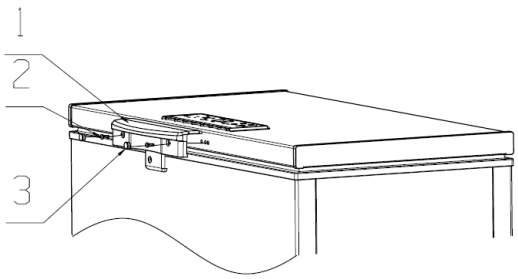
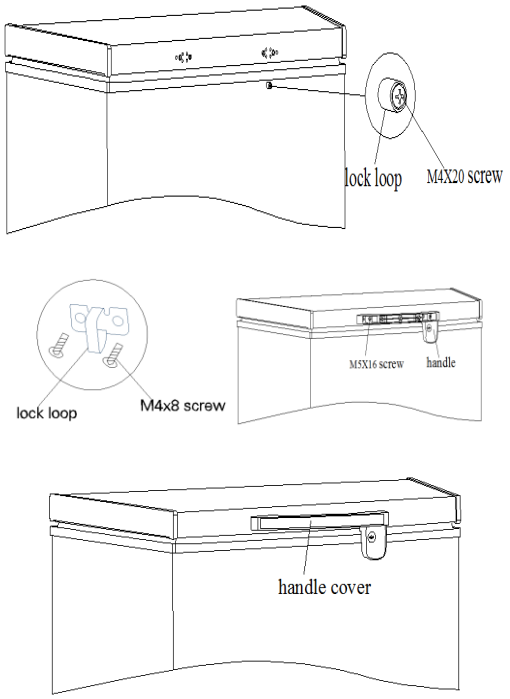
Installation location	
Location that is easy for ventilation shall be chosen to facilitate heat dissipation, enhance its performance and reduce the energy consumption.	

4.3 Leveling of the refrigerator

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

4.4 Installation of handle

Installation of handle

1- Handle 2- M5*14 screw(two) 3- Screw hole cover (two) 1) The handle is inserted below the display control board of door, aligning with the screw hole. 2) Fixing the handle by using the screw. 3) Assemble the screw hole cover onto the screw hole.	
1.Fix the lock loop to its mounting hole near the frame in the front side plate of the box with a M4x20 or M4x8 screw. Pay attention to the direction of the lock loop with its countersunk side facing outwards. 2.Hold the handle with the left hand, and aim its mounting hole at the mounting hole of the door. Insert the key into the keyhole with the right hand, and then turn the key clockwise to drive the rotation of the lock hook. Meanwhile, adjust the position of the handle from side to side in a proper manner to ensure the lock hook can hook the lock loop in locked state. Afterwards, fix the handle to the door with four M5X16 screws. 3.Install the handle cover	

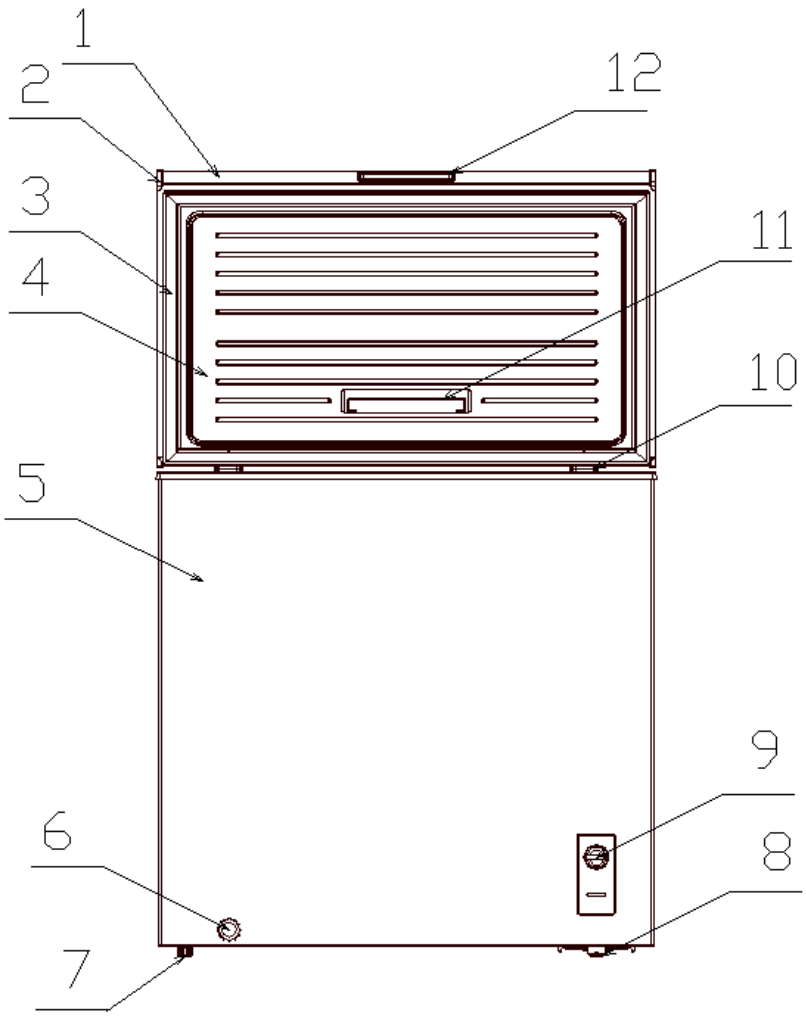
4.5 Installation of door lock（None）

Installation of door lock	
Installation of door lock	With the door handle together

5. Product configuration and dimension

5.1 Main parts and their names

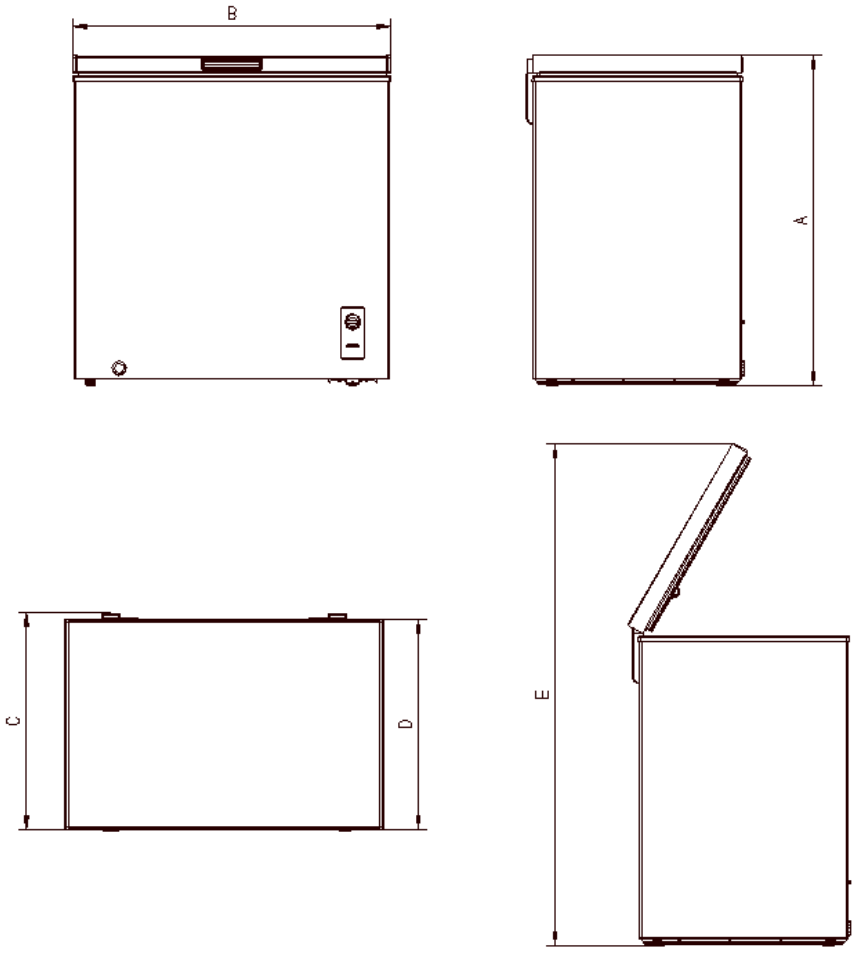
(The picture is only for reference, and specific appearance and configuration are subject to the real product)



Freezer chamber	Refrigerator chamber
❶ Door shell	❼ Levelling feet
❷ The door end cover	❽ Compressor mounting panel
❸ Door gasket	❾ Temperature-control panel
❹ Door liner	❿ Hinge
❺ Cabinet assembly	⓫ Lamp cover
❻ Drain-pipe cover	⓬ Door handle

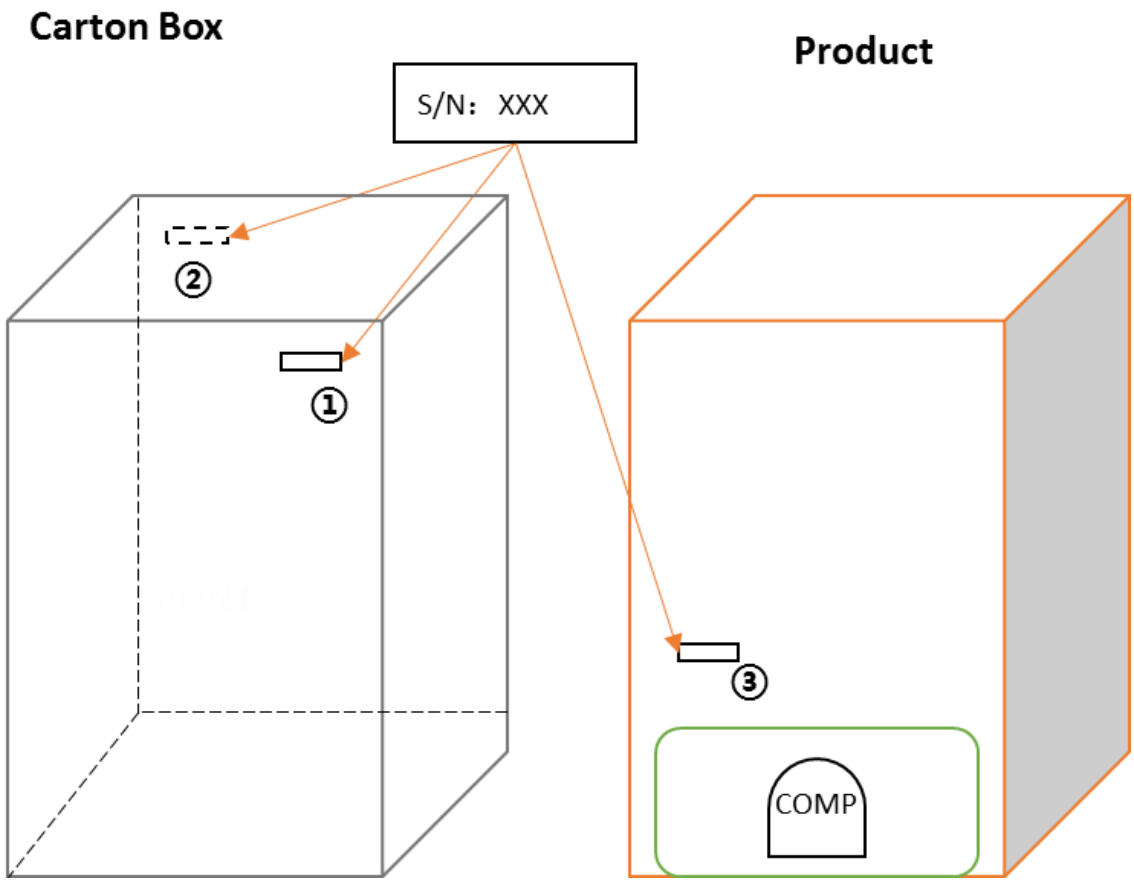
5.2 External dimension

Description	Code	Size (mm)（BD143）	Size (mm)（BD199）
Height to Top of Case	A	845	845
Width	B	635	818
Depth/Hinge	C	555	555
Depth	D	540	540
Height (Door open)	E	1330	1330



(The picture is only for reference)

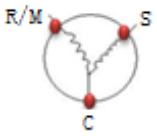
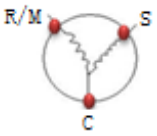
5.3 Location of S/N



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

6. Product specification

6.1 Electrical parameters

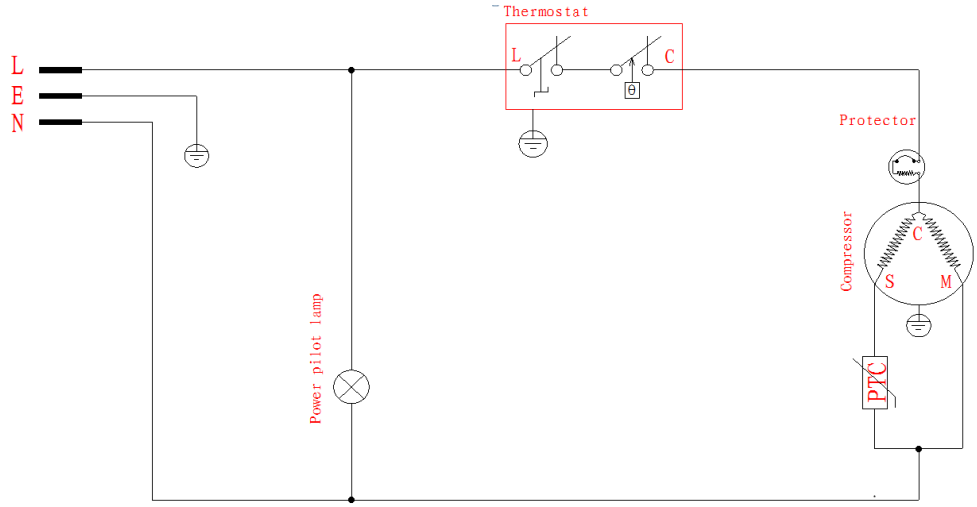
Applicable Models	HS-186CN	HS-259CN
Product Name	UR-BD143-DQ	UR-BD199-DQ
Product Code	22032010004022	22032010004021
Item	**Specification**	
Refrigerant	R600a	R600a
Compressor	HYB60MHU42a	HYB60MHU42a
Starter(PTC)	QP2-4R7	QP2-4R7
Overload protector(OLP)	DRB24P61A1	DRB24P61A1
Integrate PTC+OLP	None	None
Variable frequency driver board	None	None
Capacitor	None	None
Winding resistance of compressor wiring terminal	Rmc:8.2±10%Ω Rsc:6.8±10%Ω Rms=Rmc+Rsc	Rmc:8.2±10%Ω Rsc:6.8±10%Ω Rms=Rmc+Rsc
Winding resistance picture		
The input power of compressor	80W	80W
Door lamp	<10W	<10W
Indicator lamp	Power	Power
Switch of the refrigerator door	■Mechanical switch □Magnetism control switch	■Mechanical switch □Magnetism control switch

6.2 Cooling temperature setting range

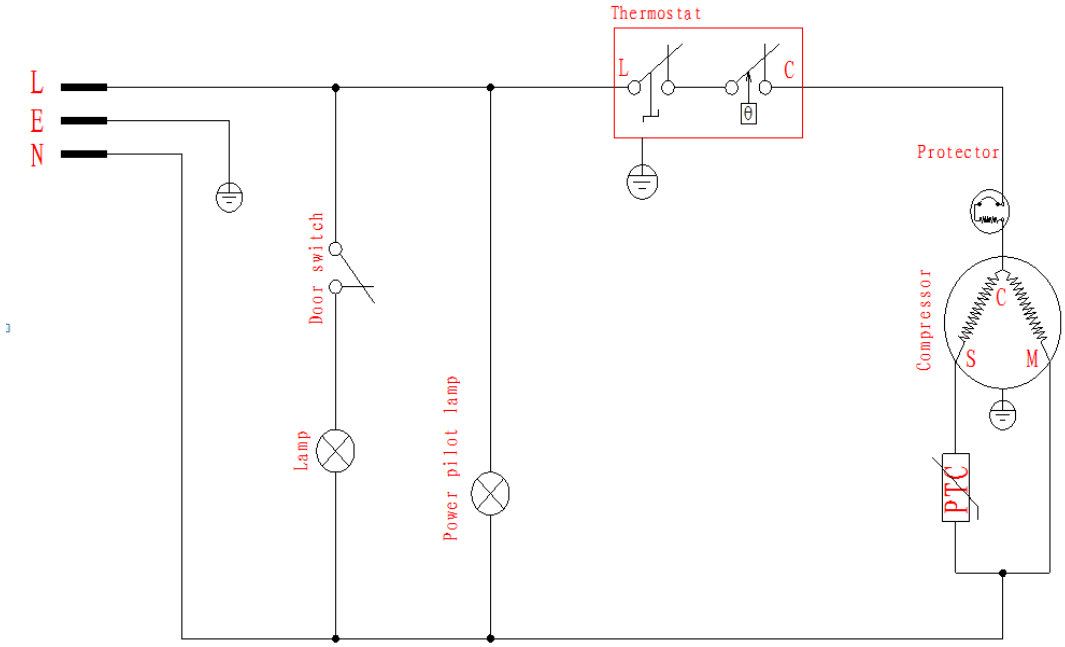
Compartment	The highest (^{o}C)	Lowest (^{o}C)
Freezing	-12	-24
Refrigerating	/	/

6.3 Circuit diagram

UR-BD143-DQ（include power lamp）



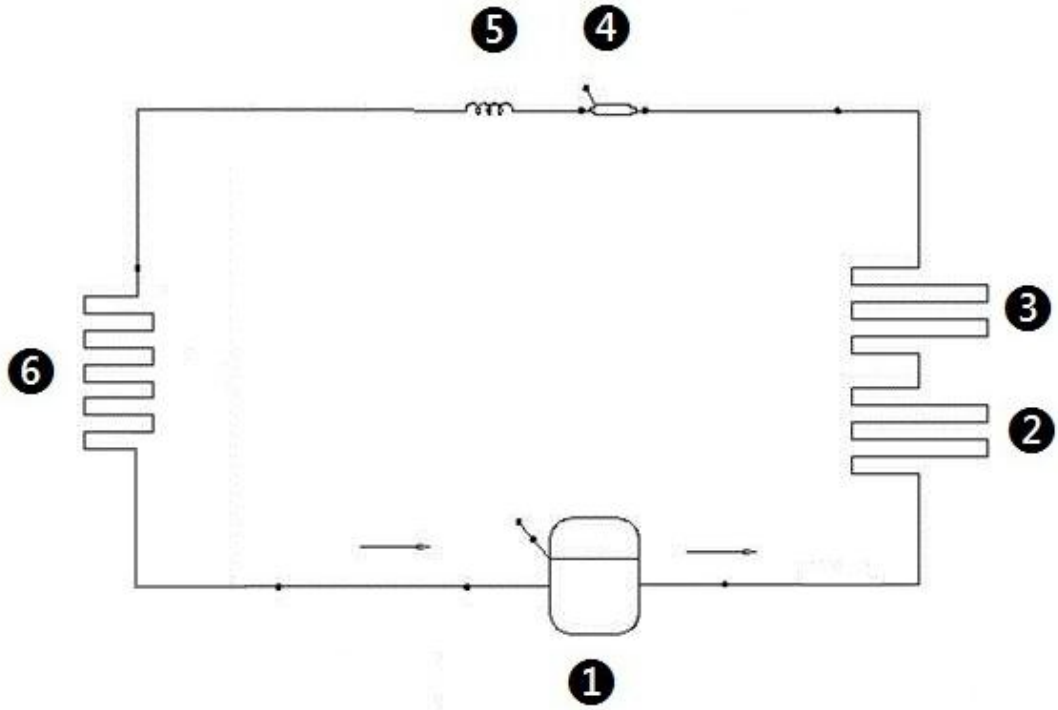
UR-BD199-DQ（include door lamp and power lamp）



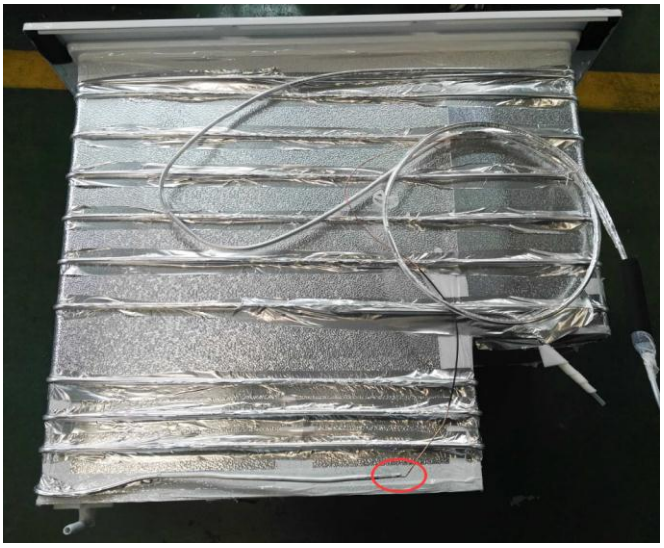
7.Refrigerating piping system and circulating route of cooling air

7.1 Refrigerating piping system

❶Compressor→❷Back hanging wire tube condensor→❸ Front condenser→❹Dry filter→❺Capillary tube→❻Evaporator

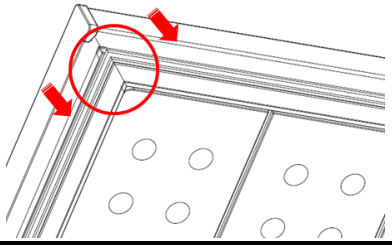
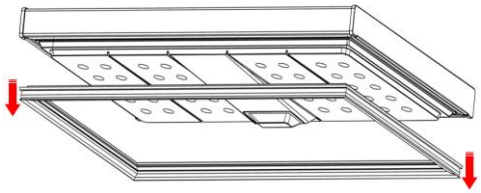
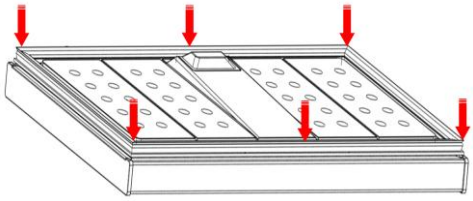
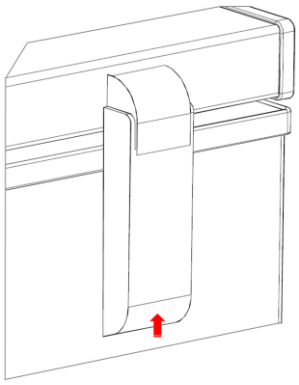


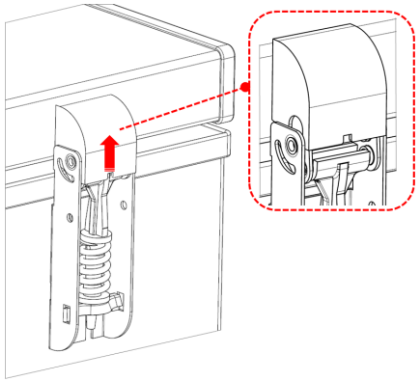
7.2 Special soldering position

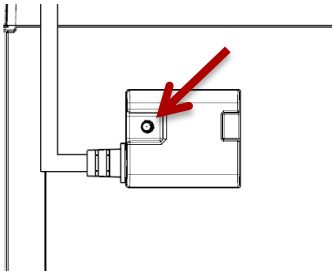
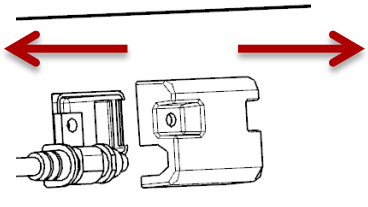


8. Dismantling of parts

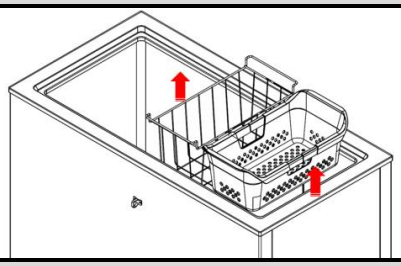
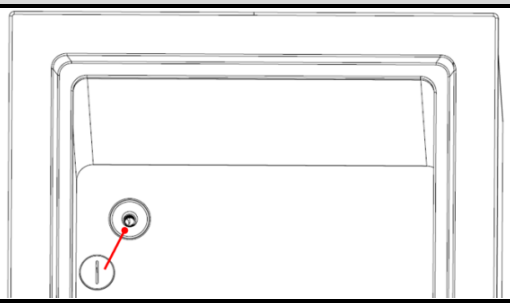
8.1 Parts on the door

Door seal	
1)Pull the door seal from the corner	
2)Take efforts until door seal totally detaches from door inner liner groove, remove the door seal	
3)Fixing the four corners and pressing smoothly.	
The hinge cover	
The hinge cover teardown 1)Push the hinge cover from the bottom to the top and appear displacement for the hinge cover. ❶❷Note: ❶ represents the upper hinge cover, and ❷ represents the lower hinge cover.	

Open the slanted upward of hinge cover to a certain angle by a screwdriver and remove the hinge cover. Wear safety gloves for fear of cutting the hand.	
The hinge cover install When the door is closed, open the lower hinge cover along the side wall to a suitable angle and push forwards into the side wall of the hinge until the hinge cover boss completely falls into the hinge hole.	
Hold the side of upper hinge cover with both hands, align the opening with the side wall of the hinge, and push down until the hinge cover protrusion completely falls into the hinge hole. Then the upper and lower hinge covers are all in place.	
Door lamp line	
Door light wire disassembly and assembly	

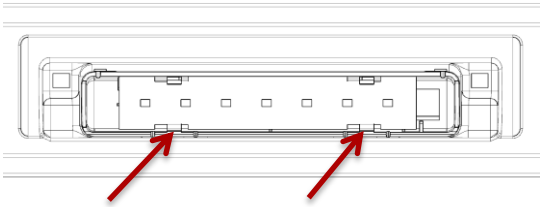
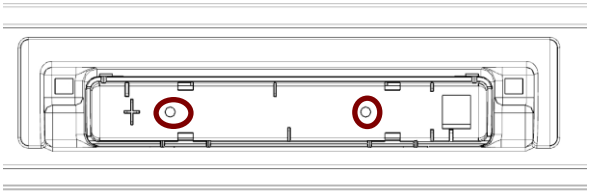
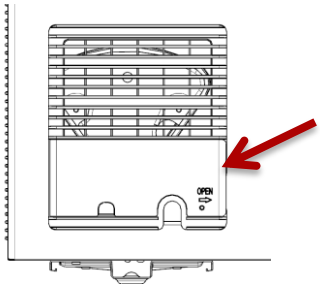
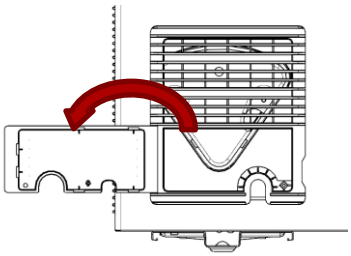
1）2）Remove a set screw	
2）2）Separate stationary seat and lamp harness	

8.2Parts inside the refrigerator

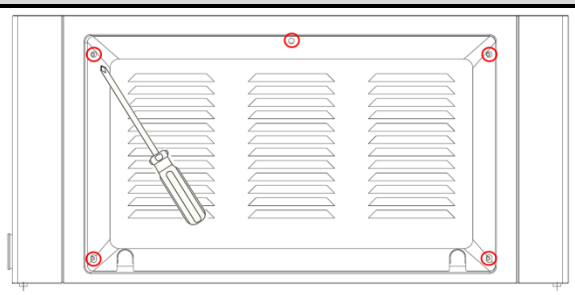
Basket	
Open the door and upwardly lift the basket Note: There are plastic baskets and wire baskets, and the basket we offer you is subject to the real product you received.	
Inside water pipe cover	
Counterclockwise to remove the pipe cover	

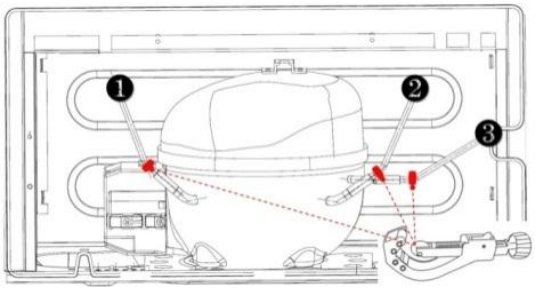
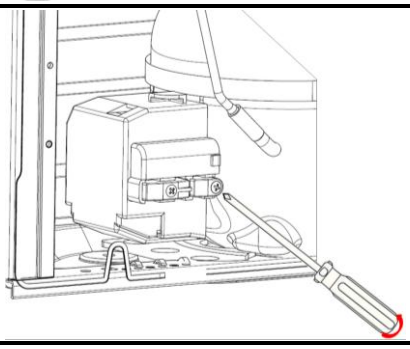
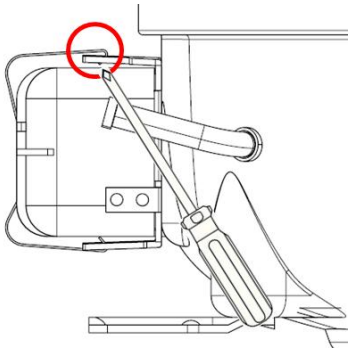
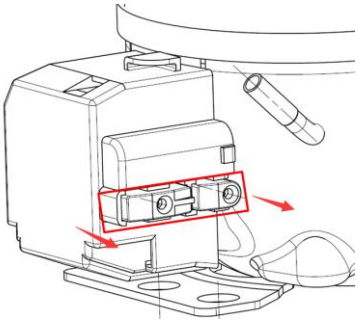
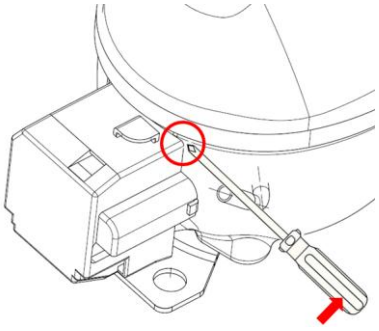
8.3 Light system

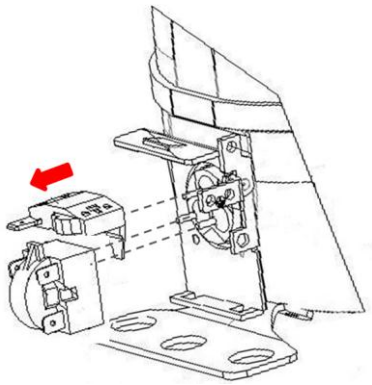
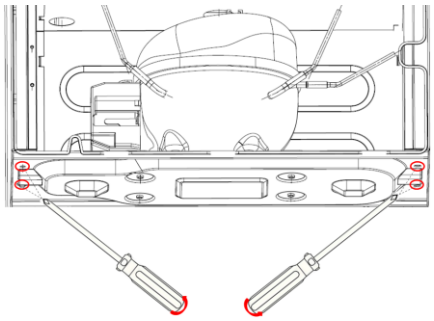
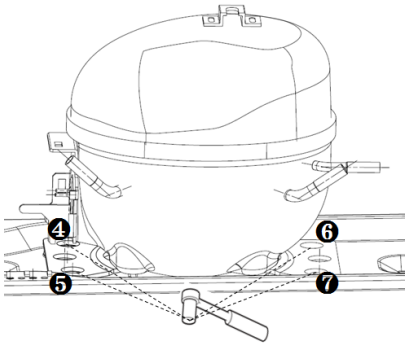
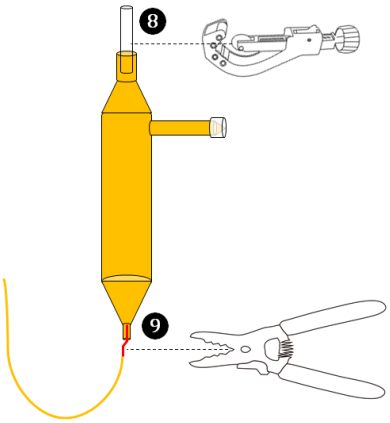
Door lamp	
Door light disassembly and assembly	
1）Remove the screws	

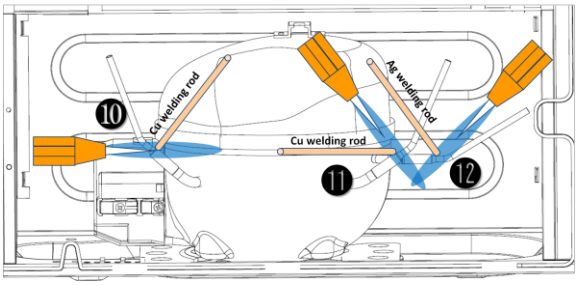
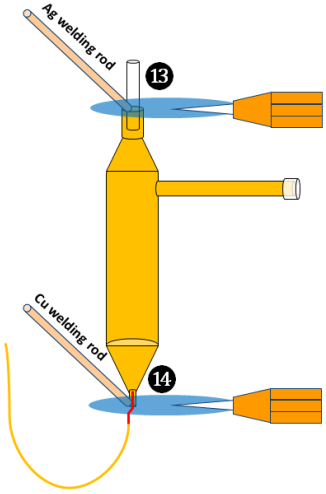
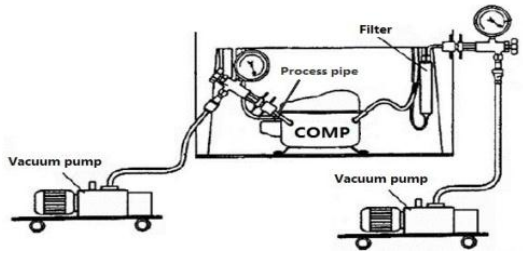
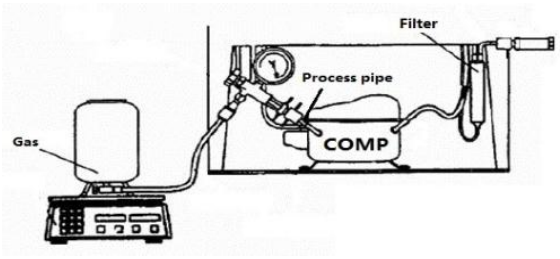
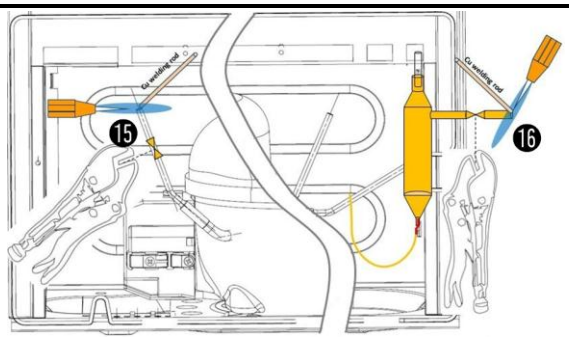
2）2) Remove the lamp plate from the retaining clasp	
3）3) Remove the screws of the two fixing seats and remove the fixing seats	
Power cord	
1）Open the cover plate from the side with the tool	
2）Open the cover plate, take out the power cord, and then cover the cover plate	

8.4 Compressor case

shutter	
Pull down the screw, open the shutter.	
Compressor and the cooling system pipe	

1）Cut off the compressor pipeline.-❶Cut off the process pipeline.-❷Cut off the low-pressure muffler.-❸Cut off the high-pressure exhaust pipe.	
2-1）**Remove the screws(for some models)** -Two screws outside -One screw inside	
2-2）**Remove the metal clamp(for some models)** -Disassembly the metal clamp that is fix the electric appliance shield	
3）**Remove the clipping strip** Slowly pull it out	
4）**Remove the protective cover** -Pry the protective cover slowly from the upper part, -Pull it out and remove it.	

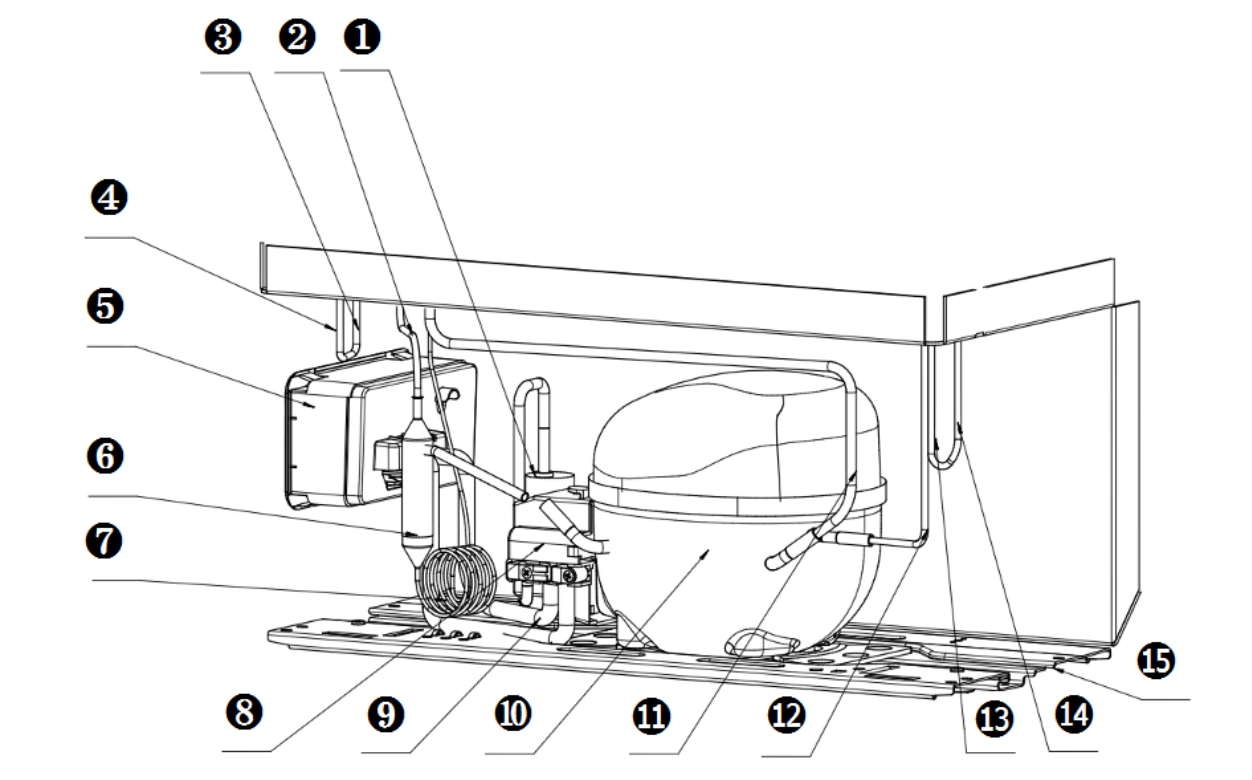
5）**Remove the starter and protector** Unplug the starter and protector (you can use a screwdriver to pry it slowly)	
6）Loosen the screw of the compressor bottom plate, remove the floor together with the compressor from the box.	
7）Use the wrench to remove the bolts by steps❹❺❻❼, replace the compressor and reverse process can complete installation.	
8）Use Pipe cutter cut off the condenser tube❽, then Shear off capillary ❾ by the capillary tube scissors.	

9）Replace the compressorand welding the compressor pipeline.-❿Welding the process pipeline.-⓫Welding the low-pressure muffler.-⓬Welding the high-pressure exhaust pipe.	
10）Replace the filter, Cu-Fe tubes welding ⓭ used Ag welding rod, Cu-Cu tubes welding⓮ used Cu welding rod.	
11）Vacuum system,The degree of vacuum below 6Pa.	
12）Perfusion refrigerant.	
13）Use the vise grip pliers clamp the middle of the process pipe, then seal welding process tube⓯⓰.	

Piping system in the compressor case

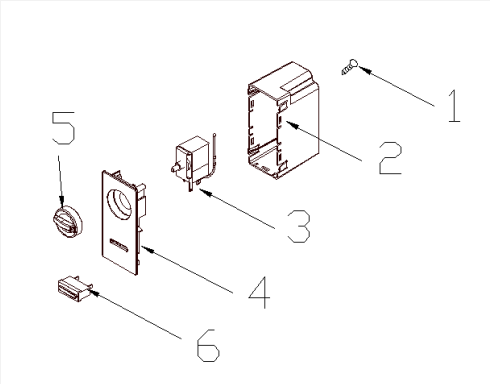
❶ Capacitor	❿ Compressor

❷ -1 Front condenser pipeline-1	⓫ Suction Pipe
❸ -2 Hanging wire condenser pipeline-2	⓬ -1 Hanging wire condenser pipeline-1
❹ -1Anti-dew pipe-1	⓭ -2 Front condenser pipeline-2
❺ Temperature-control box assembly	⓮ -2Anti-dew pipe-2
❻ Drying filter	⓯ Compressor Assembly Board
❼ Capillary	
❽ Protective cover	
❾ Wires	

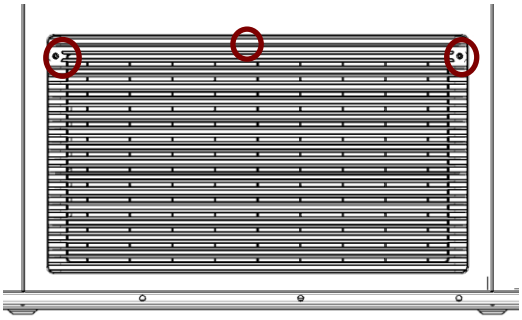
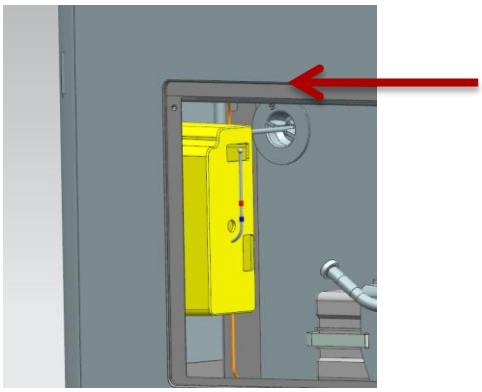
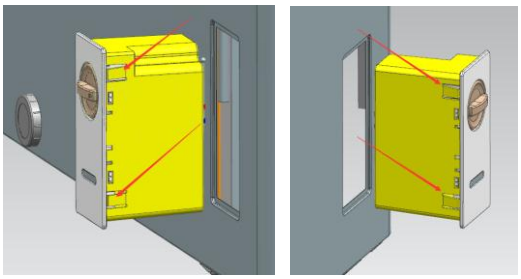
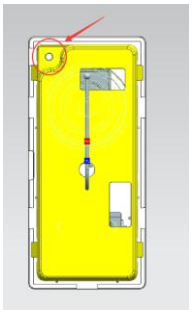
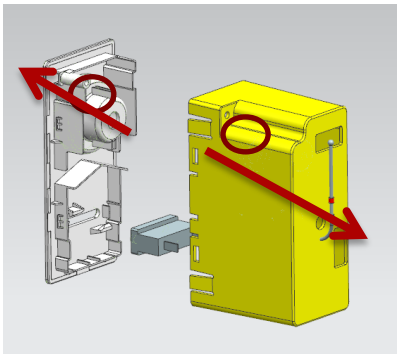


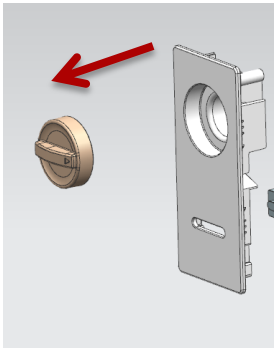
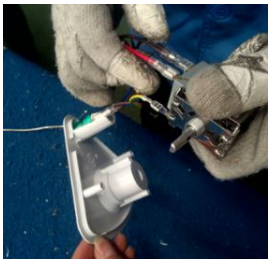
8.5Temperature-control box assembly

Temperature-control box assembly	
❶ screw	❹ Temperature-control panel
❷ Temperature-control box	❺ TEMP. control knob
❸ Thermostat	❻ Indicator light



Destuffing

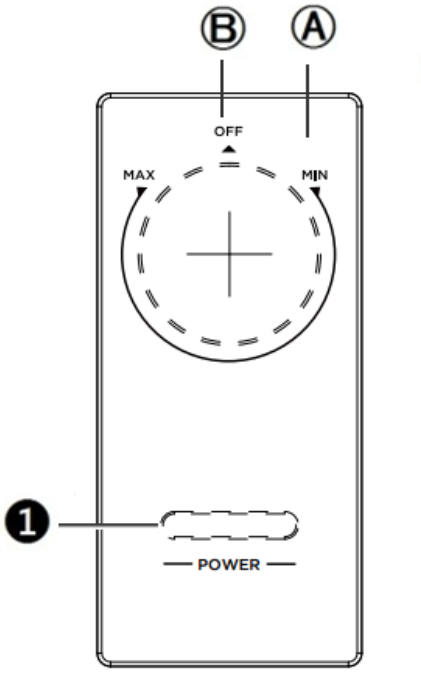
1） Pull down the screw, open the shutter.	
2） Pull out the temperature probe from the temperature tub	
3）Hold two tabs on the back cover of temperature-control box to remove the components	
4）Use screwdriver to remove the screw	
5）Separate the temperature-control box from the panel	

6）Pull out the control knob	
7）Pull out the fixed nut of the thermostat	
8) Pull out the wiring harness and indicator light。remove the indicator light and thermostat, the reverse operation is for assembly	

9. Function and operation

9.1 Operation panel

Icons	Button
❶ Indicator hole cover/Power indicator	Ⓐ freezer gear Ⓑ “OFF”



9.2Temperature control

Control panel without indicator light

1. Connect the freezer to power supply;
2. The interior temperature of the freezer is adjusted through the thermostat knob. Clock wisely rotate the thermostat knob and the interior temperature will drop.“MIN”is the warmest setting, “MAX”is the coldest setting.
3.“OFF”stands for stopping working.

Control panel with indicator light

1. Connect the freezer to power supply and “Power” indicator(the green or blue light) will shine;
2. The interior temperature of the freezer is adjusted through the thermostat knob. Clock wisely rotate the thermostat knob and the interior temperature will drop.“MIN”is the warmest setting, “MAX”is the coldest setting.
3.“OFF”stands for stopping working.

9.3High temperature an alarm (None)

9.4Defrosting function

Unplug the freezer and open the freezer door, remove foods and drawers before defrosting; Open the outflow holes and drainage holes(and place water container at the outflow holes); indoor frost will naturally melt, wipe the defrost water with a dry, soft cloth. When the frost softens, an ice scraper might be used to the accelerate de-icing process.

- Please remove the food and put in a cool place when defrosting before removing accessories.

10. Compressor

10.1Compressor on and off Control specifications

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

1) Tr ≤ Trt；
2) The compressor runs continuously for more than 3 hours (Stop 5 minutes);

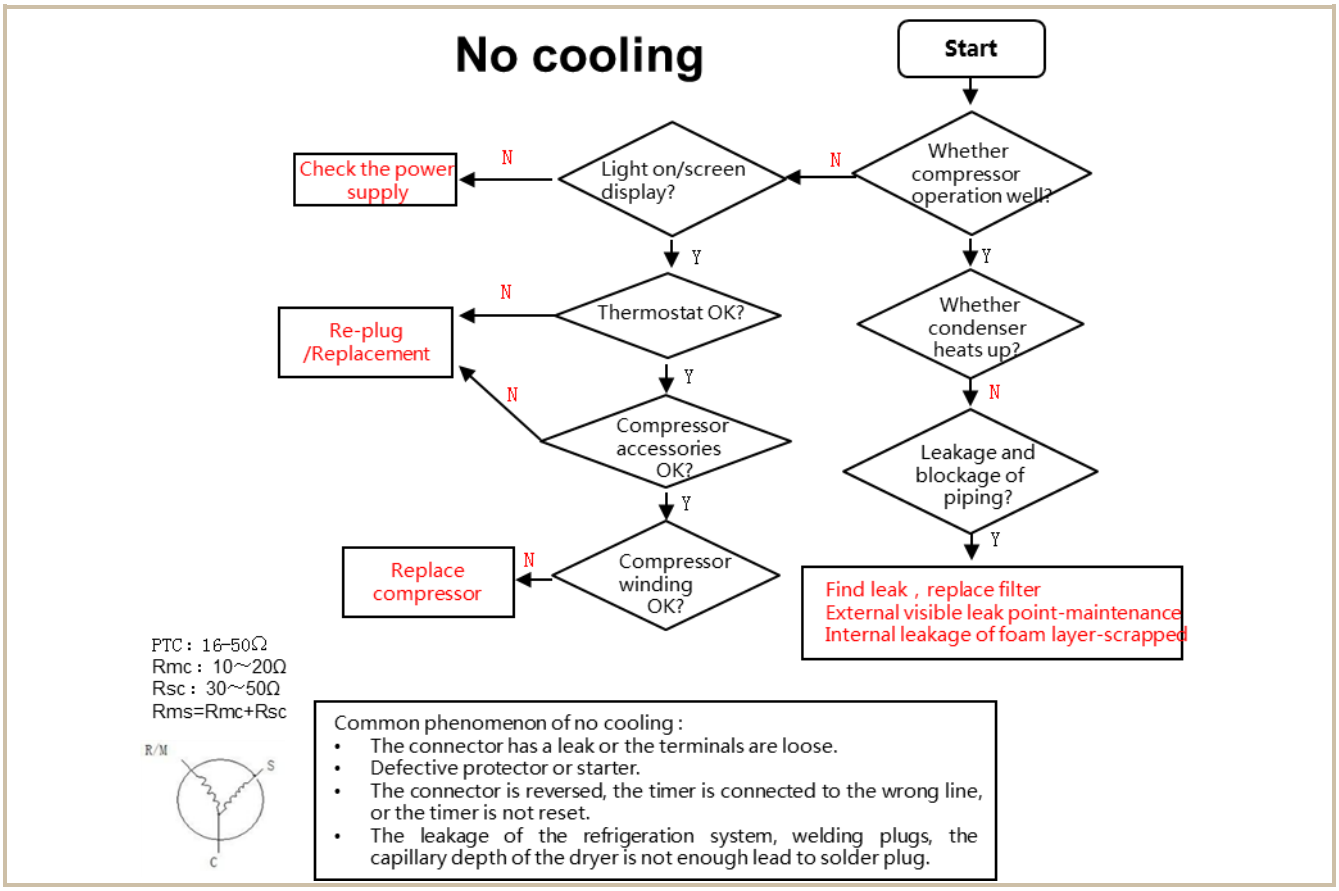
1.2 When all the following conditions are met, the compressor starts up:

1) Tr ≥Trk;
2) Compressor downtime is more than 5min.

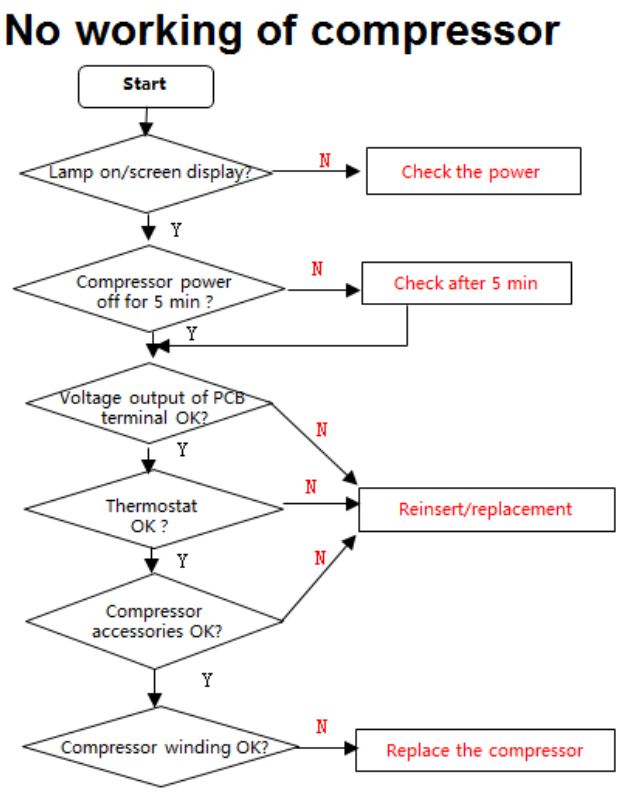
★When 1.1 and 1.2 are not satisfied, the compressor maintains the original state

11. Troubleshooting Method

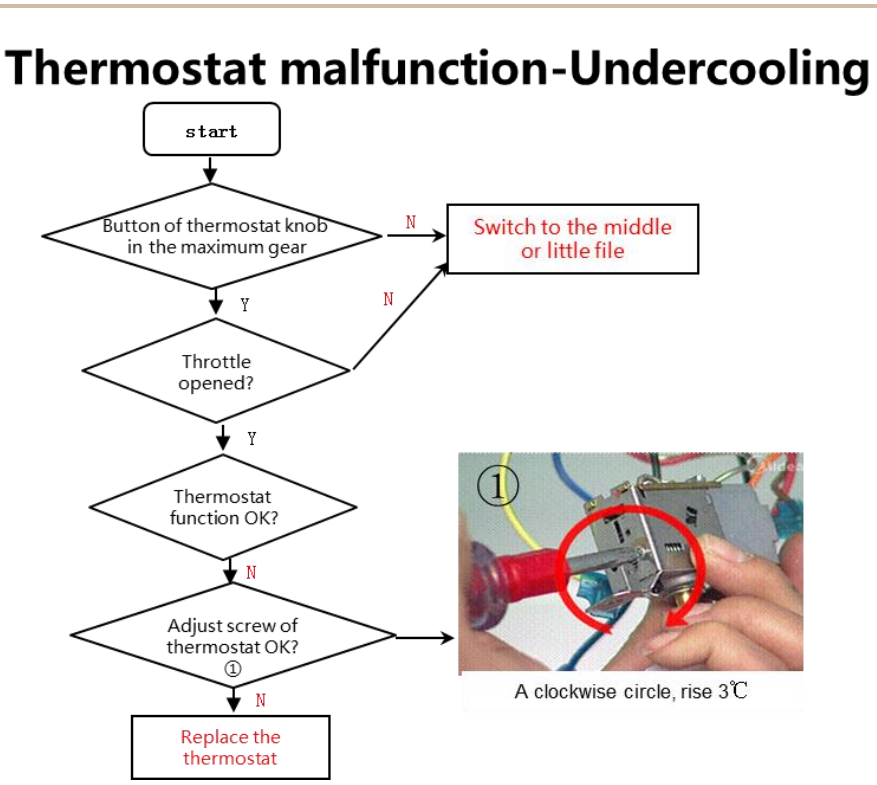
11.1Not cooling



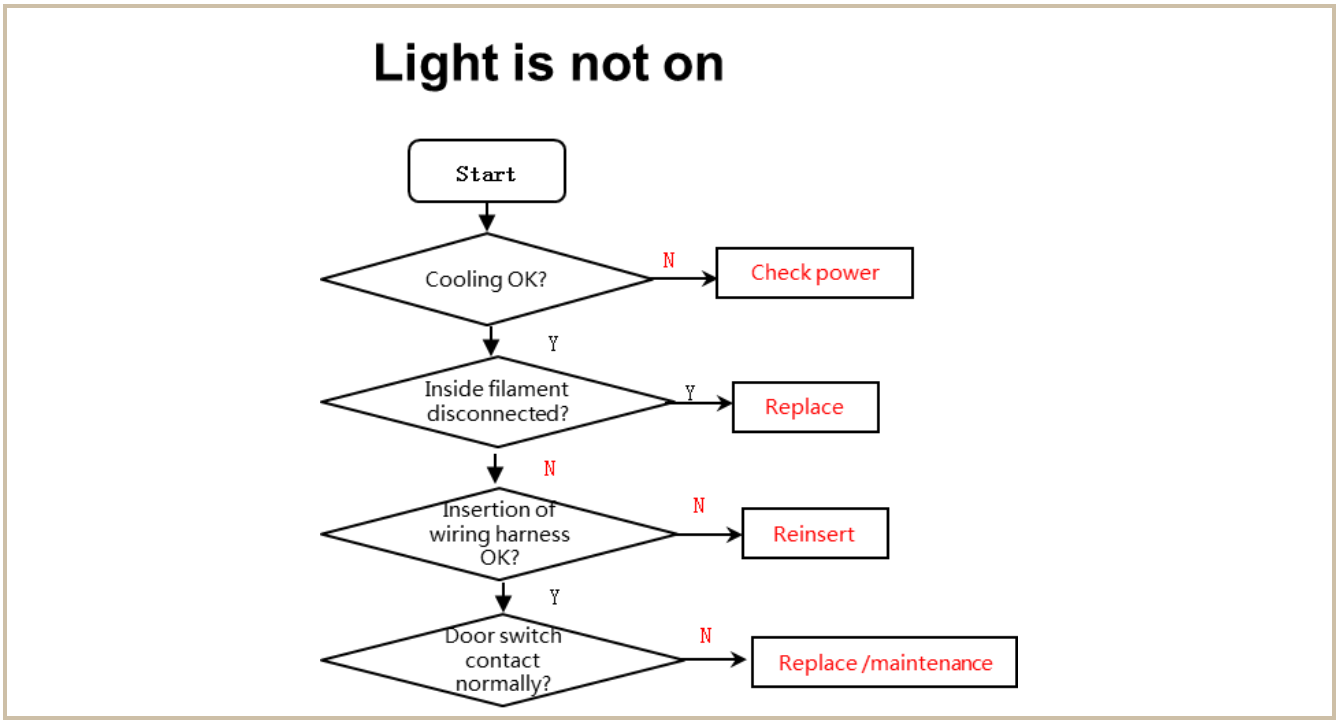
11.2 No working of compressor



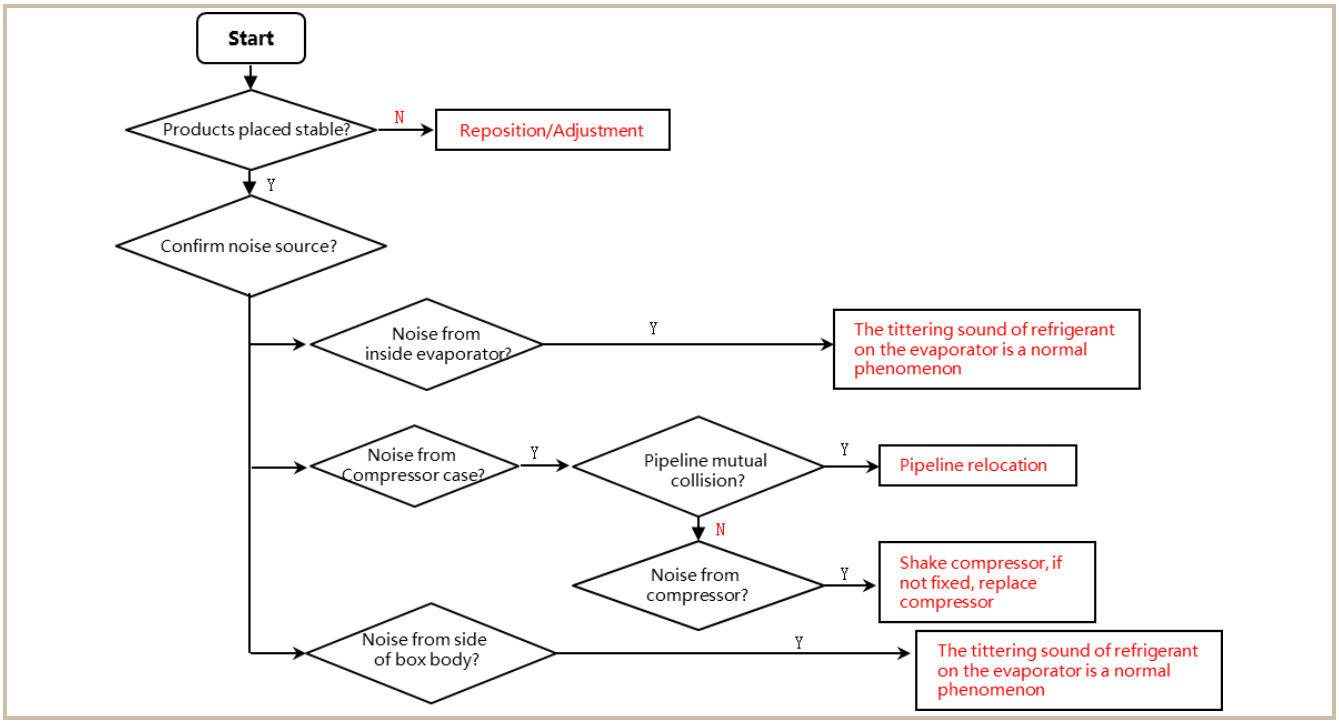
11.3Thermostat malfunction-Undercooling



11.4 Light is not on

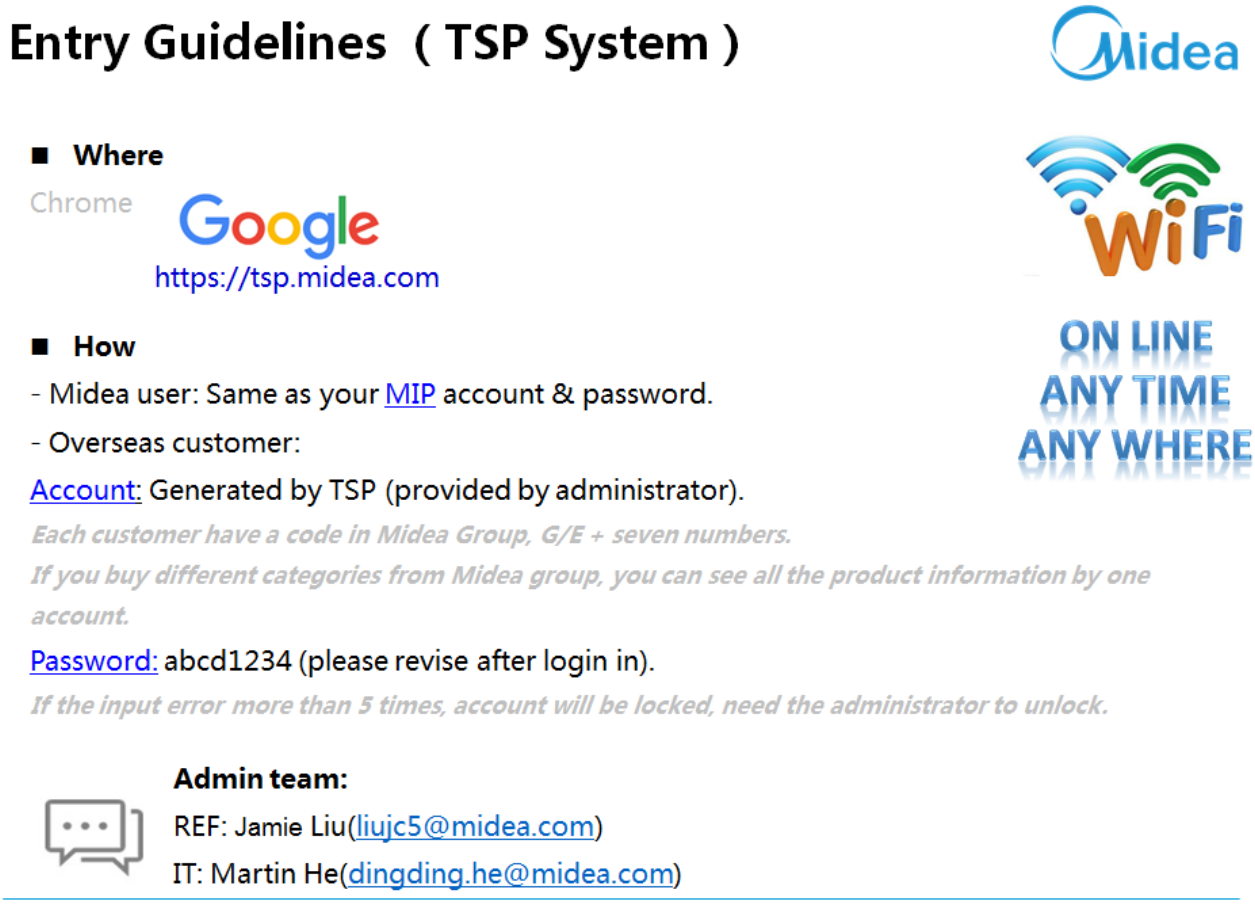


11.5 Noise



13. Figures and details of repair parts

See this section in the TSP.



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***

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