			重要度	

	产品名称:	饮料柜
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	文件名称:	售后服务技术资料
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出图审查	设计		审核			
	标准化				共 张	第张
日期	批准					BSSJ000001594

Hisense

Beverage Cooler

Service Manual

Model：RS-13DJ1SCA/UGE-003
(JC-138WYB/HC1(H))

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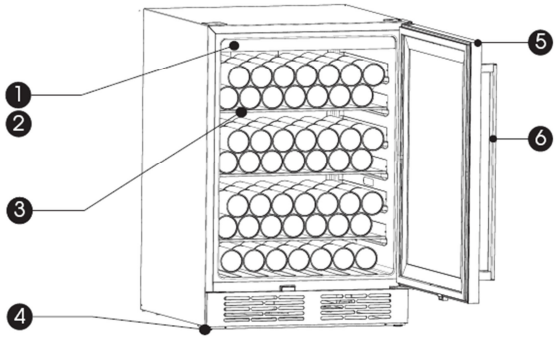
1.Warning and precautions for safety

Please observe the following safety precautions in order to use this applicationsafelyand correctly and to prevent accidentsor dangerduring service.

1. Be care of an electric shock. Disconnect power cord from wall outletand wait for more than three minutes before replacing PCB parts. Shutoff the power whenever replacing and repairing electric components.
2. When connecting power cord, please wait for more than fiveminutes after power cordis disconnected from the wall outlet.
3. Please check if the power plug is pressed down by the applianceagainst the wall. If the power plug was damaged, it may cause fire orelectric shock.
4. If the wall outlet is over loaded, it may cause fire. Please use its ownindividual electrical outlet for the appliance.
5. Please make sure the outlet is properly grounded, particularly ina wetor damp area.
6. Use standard electrical components when replacingthem.
7. Do not fray, damage, machine, heavily bend, pull out or twist thepower cord.
8. Please check forevidence of moisture in the electricalcomponents. Replace the parts or mask it with insulation tape ifmoisture is confirmed.
9. Do not let the customers repair, disassemble and reconstruct theappliance for themselves. That may cause accidental, electrical shock, orfire.
10. Do not store flammable materials such as ether, benzene, alcohol,chemicals, gas, or medicine in the appliance.
11. Do not put flower vase, cup, cosmetics, chemicals, etc., orcontainer filledwith any liquid on the top of the appliance.
12. When you scrap the appliance, please disconnect the doorgasket first then scrap it.

2. Appearance and structure

2.1 View of the appliance

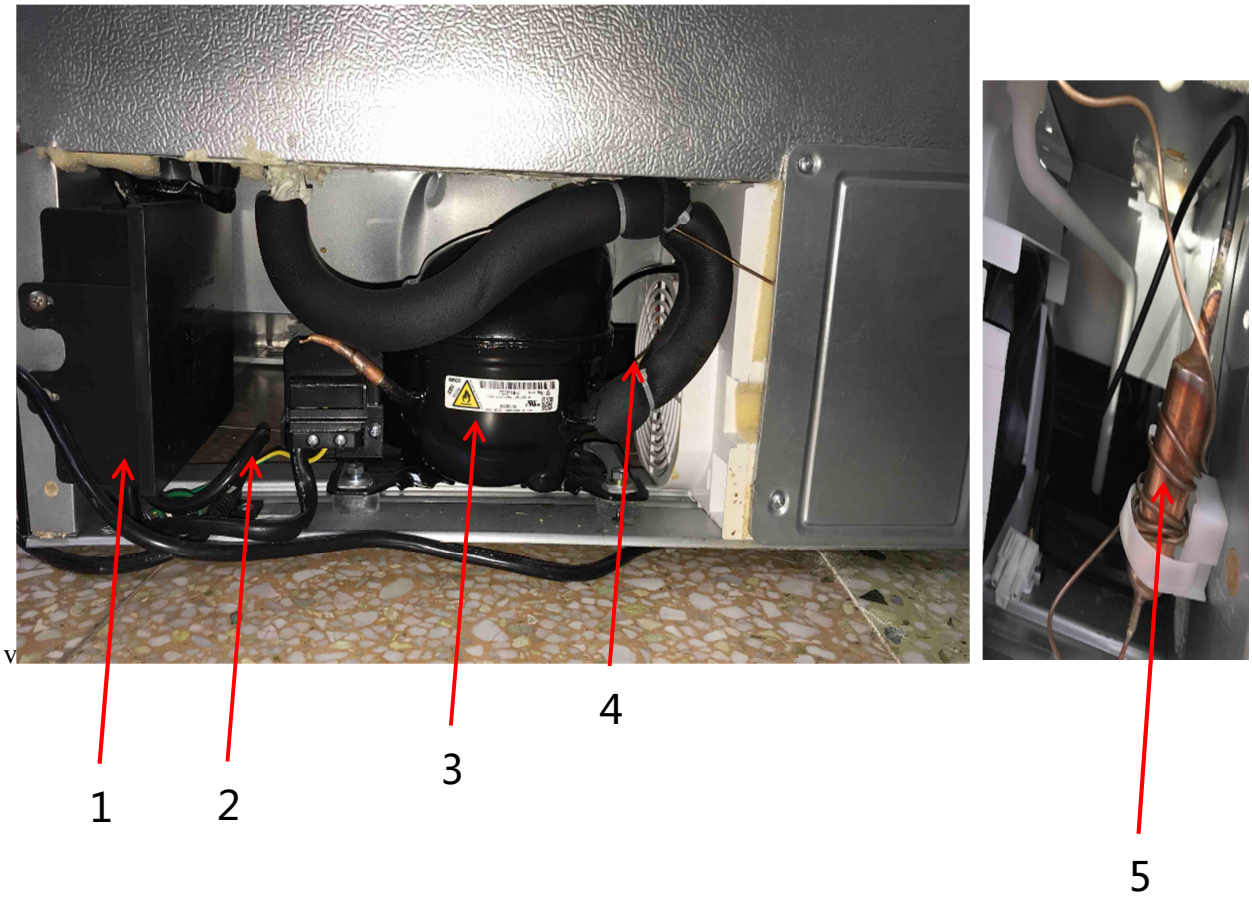


1 Control panel
2 LED light
3 Shelves
4 Cabinet leg
5 Door
6 Handle

Note:
•The appliance can keep 140 cans of beverage at the same time, please place the beverage cans as shown above.
•Can capacities, mentioned in this manual are based on standard 12ounces cans and standard shelving.
•When the beverage cabinet is put in too many drinks once, and the internal temperature alarm is normal. Don't worry.
•For the whole drink to cool more quickly and homogeneous , suggest not to accumulate too much beverage in the fan n outlet.

Note: Due to constant modifications of our products, your appliance may be slightly different from this instruction manual, but its functions and operational methods remain the same.

2.2 Compressor Compartment



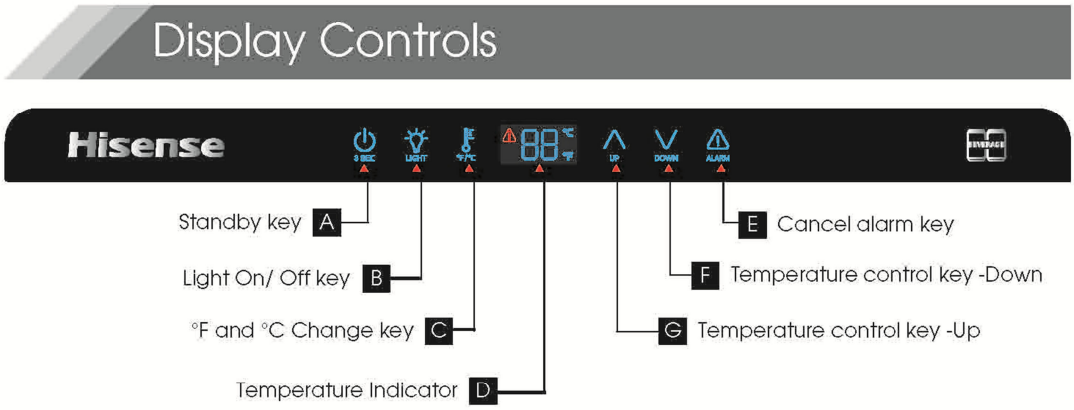
1.Junction box
2.Powercord
3.Compressor
4.Evaporator dish
5.Dry filter

3. Basic parameters

Content	Unit	Value
Voltage/frequency	V/Hz	115V /60Hz
Gross capacity (fridge/freezer)	l	153
Climate class	/	32℃
Energy consumption / year	kWh/year	/
Energy consumption (EN153) per 24 h (A/A+)	kWh/24 h	DOE
Typeof coolant /Charge (134 /R600a) / grams	R / g	R600a/24
Foam components (R141b/C-P）	PU/	C-P
Certifications (CE / ISO 9001/2 / LGA etc.)	/	CSA

4. Operation and functions

4.1Display Controls



Display
The control panel, shown above, is at the top of the Refrigerator Chamber.
•Each time the power turns on, the display panel will light everything for 3 seconds, beep for 1 second, and then enter the normal display status.
•Icons are always lit (until the screen activates).
•The display will activate the screen saver if no button and no action is taken to open or close the door for 60 seconds with the display on.
•Any button press or open door action will exit the screen saver.
•Press the key in the screen saver state. Activate the screen saver only. Do not change the settings.
•Each valid button press emits a short sound.
•The corresponding temperature setting is reflected in the display, and the setting takes effect and is stored after 10 seconds of operation without pressing the key.

Standby Mode
When you do not plan to use this appliance for a period of time, you can save energy by entering the standby state.
•To enter standby mode, press and hold the standby key for more than 3 seconds. The buzzer will beep and the display board will show "OF". The display is "OF" only one minute, and the display will be out in after one minute。
•To exit standby mode, press and hold the standby key for more than 3 seconds. The buzzer rings will beep.
NOTE: In standby mode, cooling will stop. If you do not to use the appliance for a long time, take out the beverage, and unplug the unit.

"Light On/Off key"
You can turn the interior light on or off by pressing this button. After closing the door for 10 seconds, the light will turn off automatically, so beverage is not exposed to light for too long.

Temperature Measure Change (°F / °C)
You can change the temperature display setting from Fahrenheit to Celsius degrees by pressing the marked ,and vice versa.

Temperature regulation
You can set the temperature you desire by pressing the buttons "▲" or "▼". When you press the button for the first time, the LED readout will show the previously set temperature. The temperature will increase 1°C or 1°F each time you press the UP button and will decrease 1°C or 1°F each time you press the DOWN button.
NOTE:
•The appliance doesn't work properly if the set temperature is higher than the ambient temperature.
•The temperature range is from 1°C(34°F) to 10°C (50°F).
•The temperature preset at the factory is 4°C(39°F).
•When you set a temperature, you set an average temperature for the whole cabinet. There may be a 2°C to 3°C variance between the top and bottom shelves of the appliance.
•The first time the product is filled with anaverages, the temperature of the anaverages will need a longer time to set the temperature, which is about 20 hours, please wait patiently.

Over Temperature Alarm

In order to avoid a the temperature problem that could affect the quality of the wine, the appliance has an overtemperature alarm function. When an over temperature alarm occurs, cancel the alarm by pressing the Cancel Alarm Key and take out the wine, and contact customer service.

NOTE:

In the over temperature alarm state, press the Cancel Alarm Key to exit the over temperature alarm, the alarm tone stops, and the light "⚠" will change from blinking to constant, once the appliance cools to the required temperature.

⚠ WARNING

If the LED light is broken, please DO NOT CHANGE IT YOURSELF! Changing the light yourself may cause injury or serious malfunctioning. It must be replaced by a qualified service technician in order to avoid a hazard. Contact your local Service Center for help. Before changing the LED light, switch off the appliance and unplug it, or pull the fuse or the circuit breaker.

Door Alarm

The door alarm will sound once the fridge door is open over 2 minutes. In case of door alarm, the buzzer will sound 3 times per minute and will stop automatically 8 minutes later. Closing the door will also clear the door alarm.

To save energy, don't keep the door open for a long time when using refrigerator.

4.2Usingappliance

Using your appliance

This section tells you how to use most of the useful features. We recommend that you read through them carefully before using the appliance.

Installation The Handle

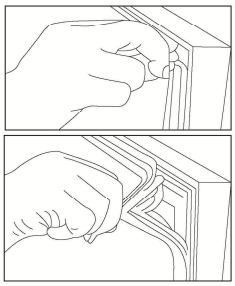
The tools you will need:

Philips Screwdriver
(Not provided)

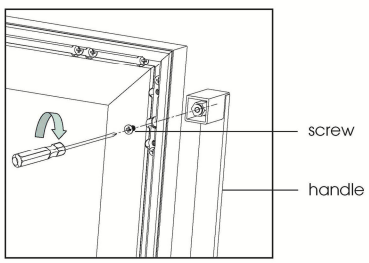
The parts you will need:

	
Handle (Provided)	Screw (Provided)
1	2

Before using the device, install the handle as follows:
1.First open the door and take the door gasket out on one side of the nonhinged side.



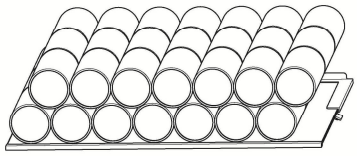
2.Find the handle and screws in the accessory pack.
3.Attach the screw with a magnetic screwdriver so that it passes through the screw hole in the door body until the bottom. Keep a certain amount of pressure and don’ t let go.
4.One hand holds the handle so that the handle hole is aligned with the screw, and the other hand turns the screwdriver.



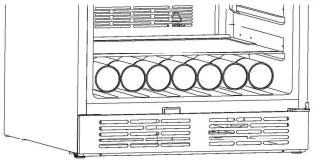
5.Install another screw in the same way.

Placement Of Cans

The appliance is equipped with 3 shelves with 42 slots each. The cans should be placed on the shelves as shown below.



You can also place cans in the bottom of the cabinet.



⚠ WARNING

- To prevent the cans from rolling down and being broken, there should not be more than 14 cans placed at the bottom of the refrigerate room as showed above.
- The maximum loading of each type of shelf is 33lb.

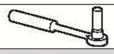
Reversing The Door

The side at which the door opens can be changed, from the right side (as supplied) to the left side, if required.

⚠ WARNING

When reversing the door, the appliance must not be connected to power.
Ensure that the plug is removed from the power socket.

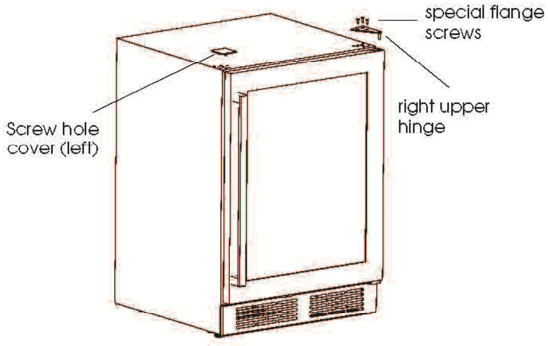
The tools you will need (Not provided):

Not provided		
		
8mm socket wrench	Thin-blade Screwdriver	Putty knife
		
Phillips head screwdriver	Adjustable Wrench	8mm wrench

The parts you will need (provided)		
		
Bottom left hinge	Screw hole cover (right)	Top left axle hole part
1	1	1

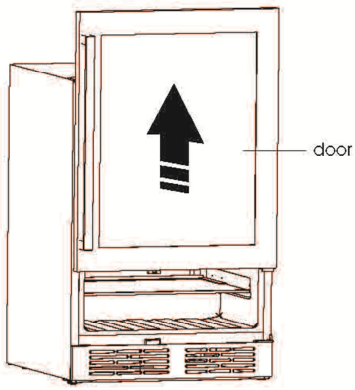
Note: If required you may lay the refrigerator on its back in order to gain access to the base, you should rest it on soft foam packaging or similar material to avoid damaging the backboard of the refrigerator. To reverse the door, the following steps are generally recommended.

1.Stand the beverage cooler upright, close the door, use a putty knife or thin-blade screwdriver to pry off the screw hole cover which is at the top left corner of the cooler, and unscrew the special flange screws which are used for fixing the right upper hinge part by a 8mm socket driver or a spanner (please support the upper door with your hand when doing it).



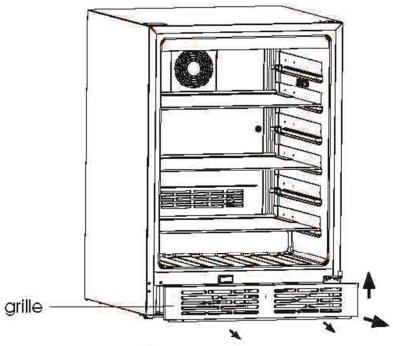
2. Move the door from the hinge by carefully lifting the door straight up.

Note: When removing the door, watch for washer(s) between the hinge and the bottom of the upper door that may stick to the door. Do not lose these washers.



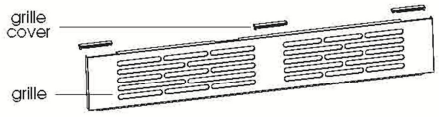
3. Unscrew the grille cover fixing screws then lifting up and pulling backwards, take the grille cover off the cabinet.

Note: Take care of the screws. Record the screw's place of use and quantity.

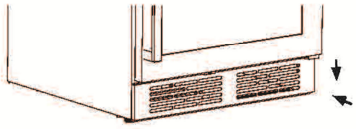


4.Unscrew the bottom right hinge screws as the bottom left hinge screws.
Note: Keep the hinge for the future use.

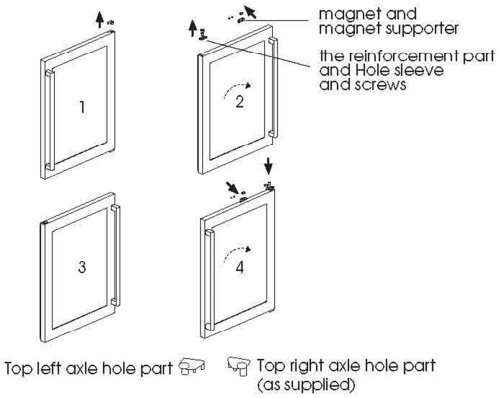
5.Flip the grille cover from left to right as following:
1. Pull it out from the left side slot.
2. Turn it 180 degree.
3. Put it into the right side slot.



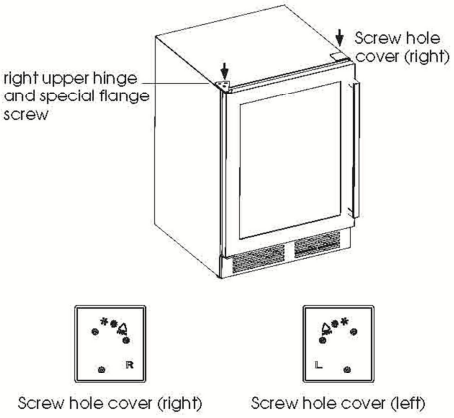
6.Reattach the grille cover to the beverage cabinet as shown below.



7.Change the axle hole parts of as follows:
1. Pull out top right axle hole part by knife or thin blade screwdriver.
2. Turn the door 180 degrees, face to the bottom of the door and remove the reinforcement part and magnet supporter with the screwdriver.
3. Put the top left axle hole part into the door hole.
4. Turn the door 180 degrees, Reattach the reinforcement part and magnet supporter using the same screws.
Note: Handle the door carefully. It is fragile.



8.Turn the door 180 degrees, put the door on the cabinet using the hinge and screws, on the top left side. Use screw hole cover (right) to hide the holes on the top right side of the beverage cabinet.



⚠ WARNING

When disposing of your appliance, use an approved disposal site. Remove the plug and ensure that any locks or catches are removed, to prevent young children being trapped inside.

4.4 Error display

The solution for digital display code problem:
If a malfunction occurs, a-code will be displayed on the panel after 30 seconds without any button operation. The fault code is shown in the following table.

No.	Fault Code	Problems	Analysis	Solutions
1	E3	R.Sensor failure	1.Therefrigerator compartmentTemp-Sensor is open or has ashort circuit. 2.The refrigerator compartment Temp-Sensor is defective. 3.The control PCB is defective.	1.Use a Multimeter with the ohm switch setto measure the resistanceof thesensor or check the connectionis valid. 2.Replace the sensor. 3.Replace the control PCB.
2	E4	Evap.Sensorfailure	1.The Evaporator Defrost Sensor is open or shorted. 2.The Evaporator Defrost Sensor isdefective. 3.The control PCB is defective.	1.Use a Multimeter with the ohm switch set to measure the resistance of the sensor and check the connection is valid. 2.Replace the sensor. 3.Replace the control PCB.
3	Er/Ec	Display Panel failure	1.Thecableor connector between display Panel and mainboard is bad. 2.Display Panel is bad. 3.The control PCB is bad.	1.Check thatthecableor connecter is complet. 2.Replace the Display Panel. 3.Replace the control PCB.
4	dr	Door swtichfailure	1.The door has been left open too long. 2、The door is weighted down. 3. the magnet on the door is missing. 4.The door switch is fitting mis-aligned.. 5.Thedoor switch is bad.	1. Colse the door. 2.Regulate the door. 3.Re-iInstall the magnet. 4.Re-align the door switch. 5. Replace the door switch.

5. Troubleshooting

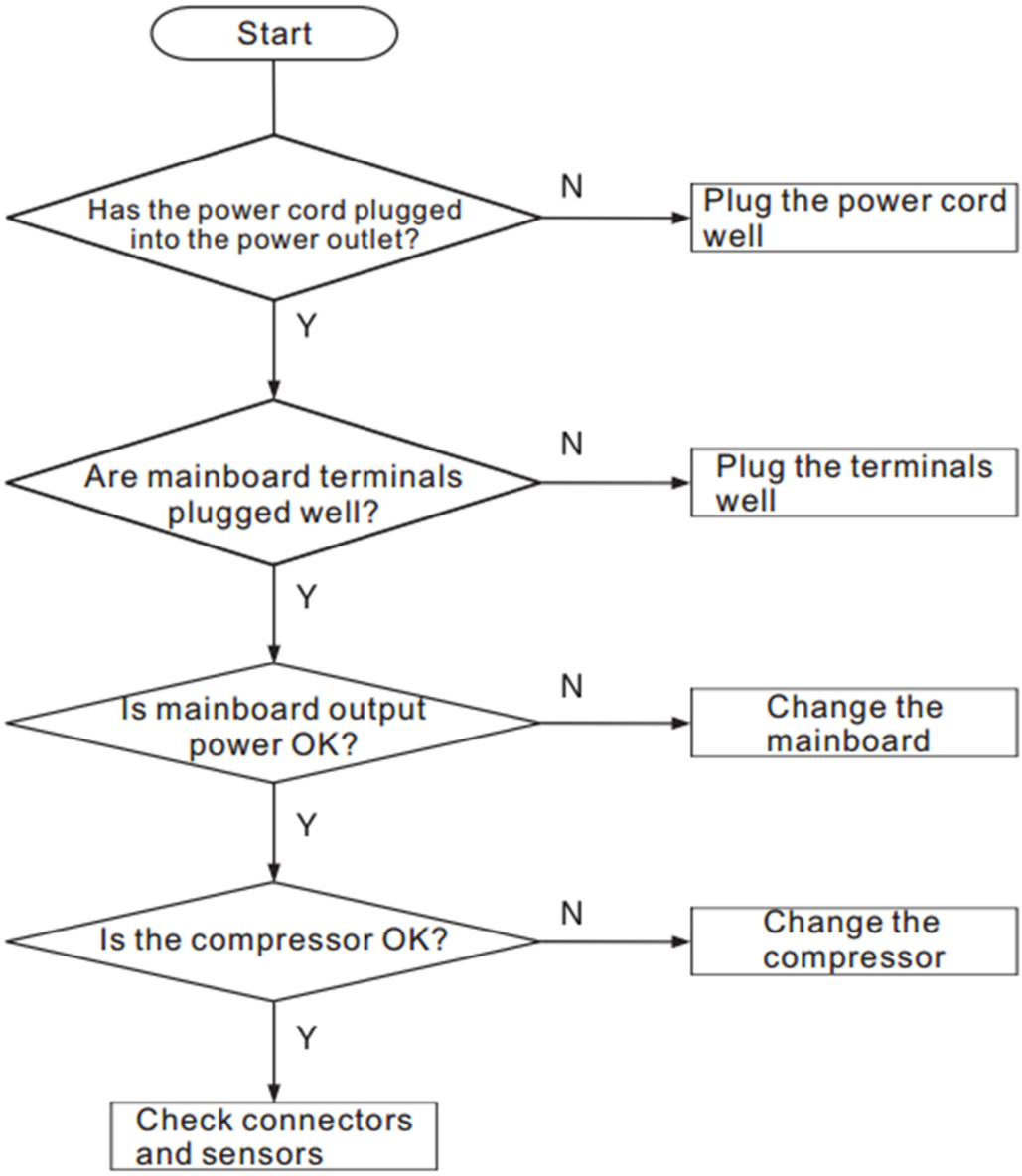
5.1 Common problem and checking

Problem	Possible cause & Solution
Appliance is not working correctly	Check whether the power cord is plugged into the power outlet properly.
	Check the fuse or circuit for your power source, replace if necessary.
	The ambient temperature is too low. Try setting the chamber temperature to a colder level to solve this problem.
	It is normal that the appliance is not operating during the automatic defrost cycle, or for a short time after the appliance is switched on to protect the compressor.
Odors from the compartments	The interior may need to be cleaned
	Some containers or wrapping cause odors.
Noise from the appliance	The sounds below are quite normal: •Compressor running noises. •Air movement noise from the small fan motor in the freezer compartment or other compartments. •Gurgling sound similar to water boiling. •Popping noise during automatic defrosting. •Clicking noise before the compressor starts.
	Other unusual noises are due to the reasons below and may need you to check and take action: •The cabinet is not level. •The back of theappliance touches the wall. •Bottles or containershavefallen or rolling.
The motor runs continuously	It is normal to frequently hear the sound of the motor, it will need to run more under the in following circumstances: • Temperature setting is set colder than necessary •Theambient temperature outside the appliance is too high. •Doors are kept open too long or too often. •After your installing the appliance or it has been switched off for a long time.
A layer of frost occurs in the compartment	Check that the air outlets are not blocked by bottle and ensure bottle is placed within the appliance to allow sufficient ventilation. Ensure that door is fully closed. To remove the frost, please refer to cleaning and care chapter.
Temperature inside is too warm	You may have left the doors open too long or too frequently; or the doors are kept open by some obstacle; or the appliance is located with insufficient clearance at the sides, back and top
Temperature inside is too cold	Increase the temperature by following the “Display controls” chapter.

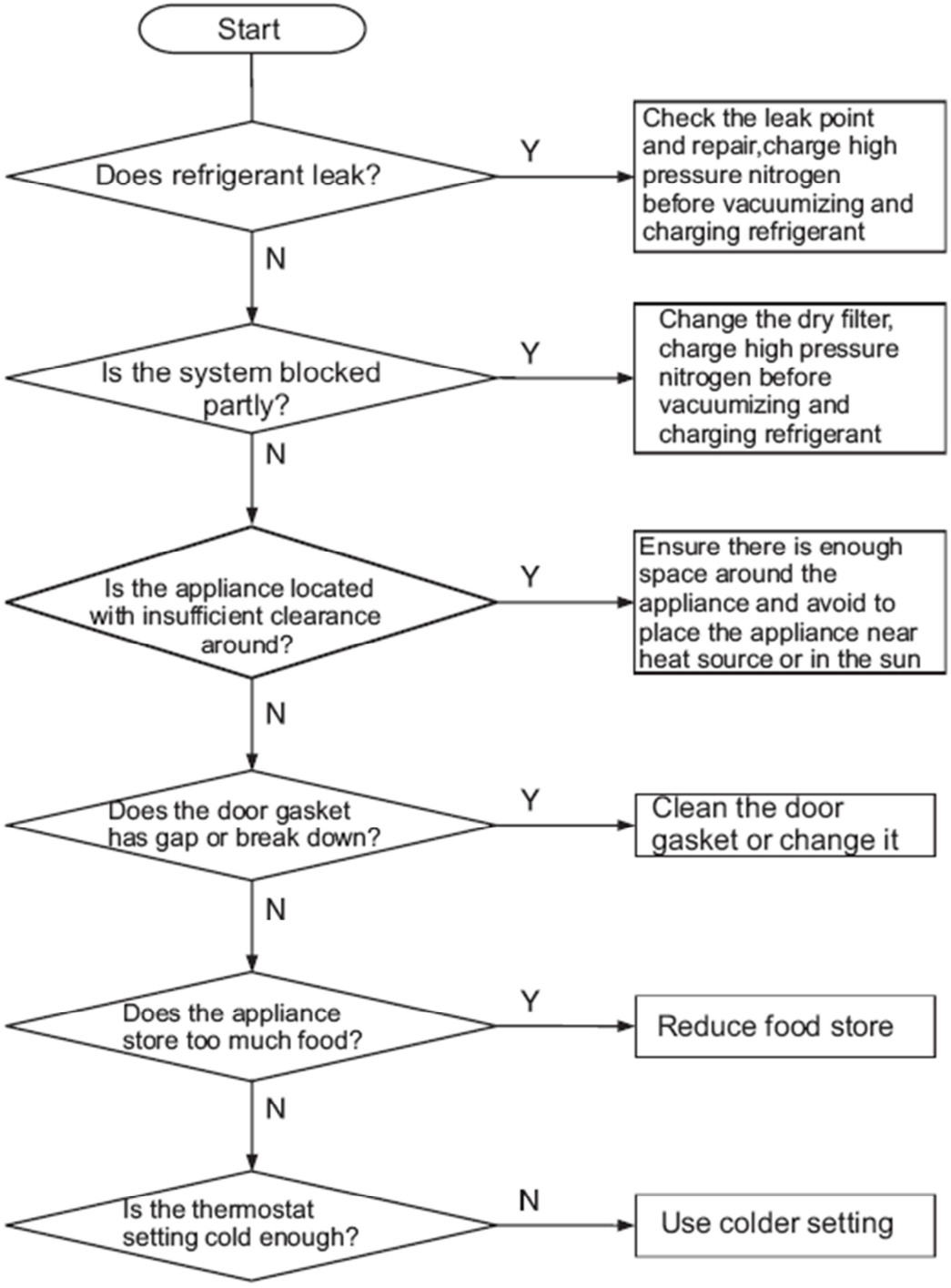
5.1 Common problem and checking

Problem	Possible cause & Solution
Doors can't be closed easily	Check whether the top of the refrigerator is tilted back by 10-15mm to allow the doors to self-close, or if something inside is preventing the doors from closing.
Water drips on the floor	The water pan (located at the rear bottom of the cabinet) may not be properly leveled, or the draining spout （located underneath the top of the compressor depot） may not be properly positioned to direct water into this pan, or the water spout is blocked. You may need to pull the wine cooler away from the wall to check the pan and spout.
The light is not working	•The LED light may be damaged. Refer to replace LED lights in cleaning and care chapter. •The control system has disabled the lights due to the door being kept open too long, close and reopen the door to reactivate the lights.

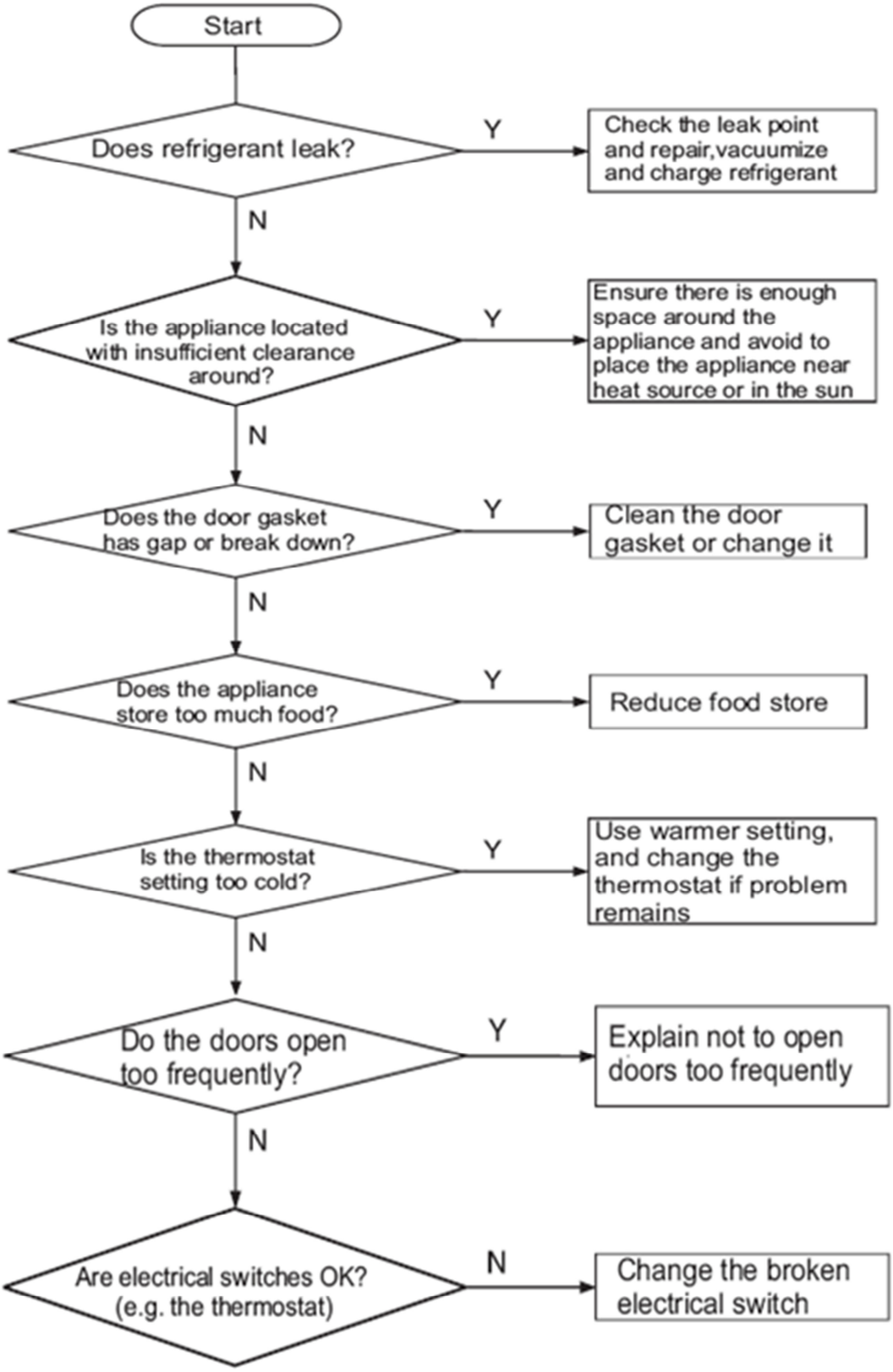
5.2 Faulty start



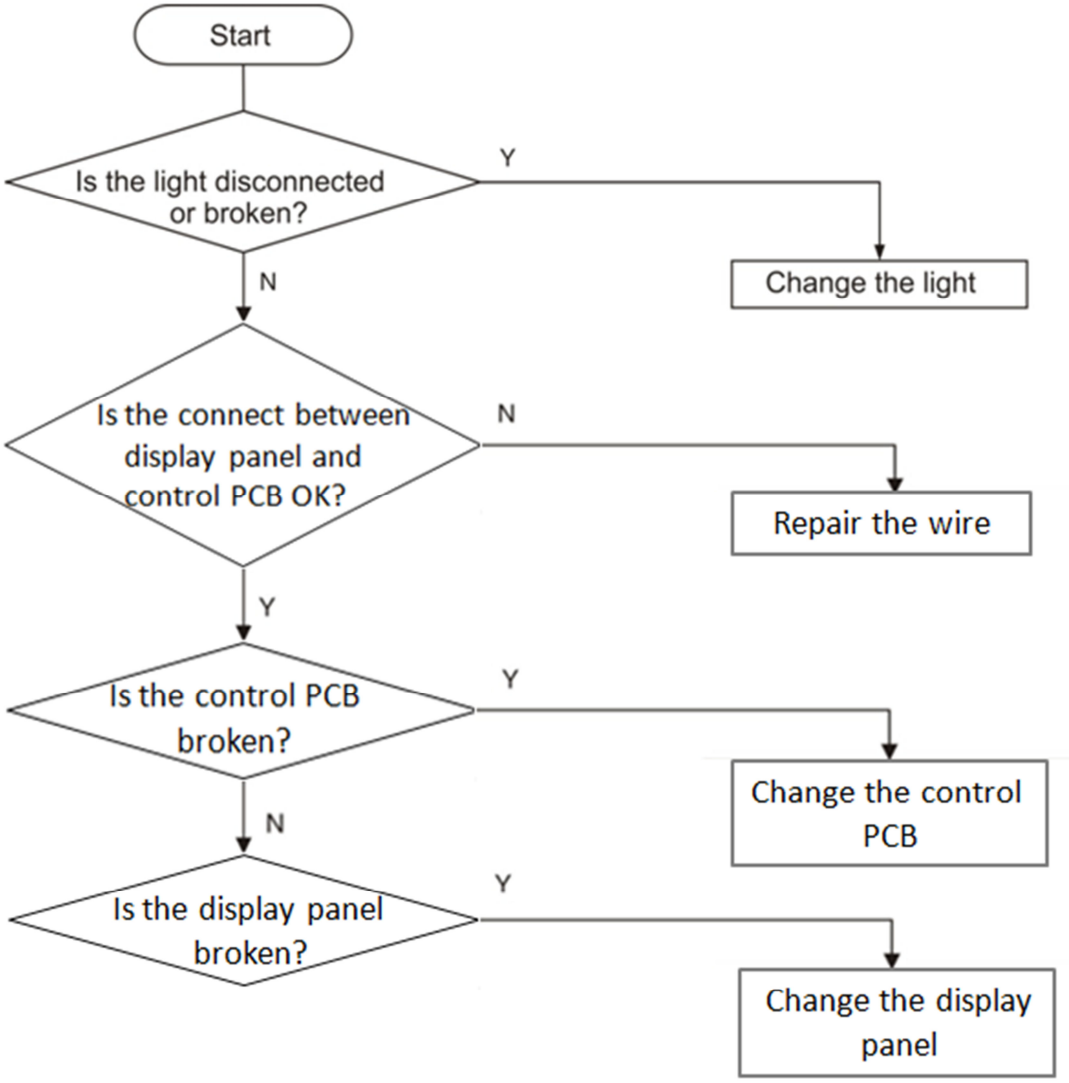
5.3 PoorRefrigeration



5.4Non-stop or high running rate

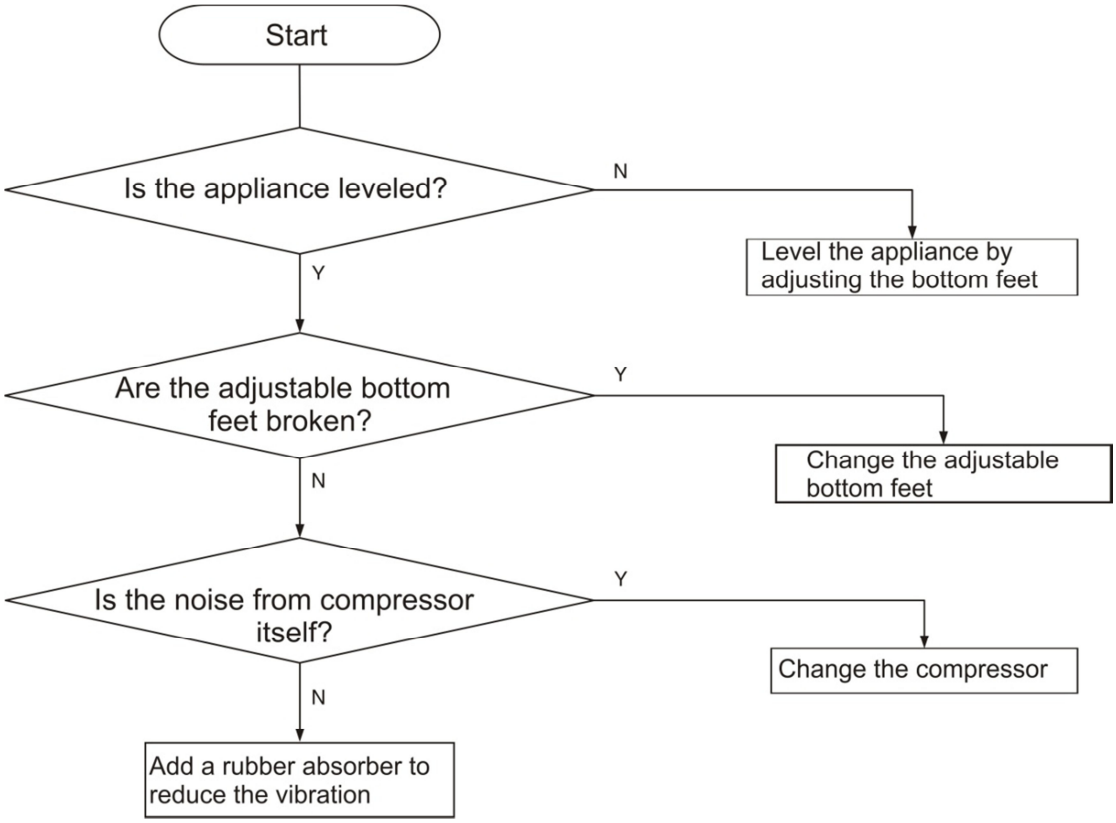


5.5Lamp Failure

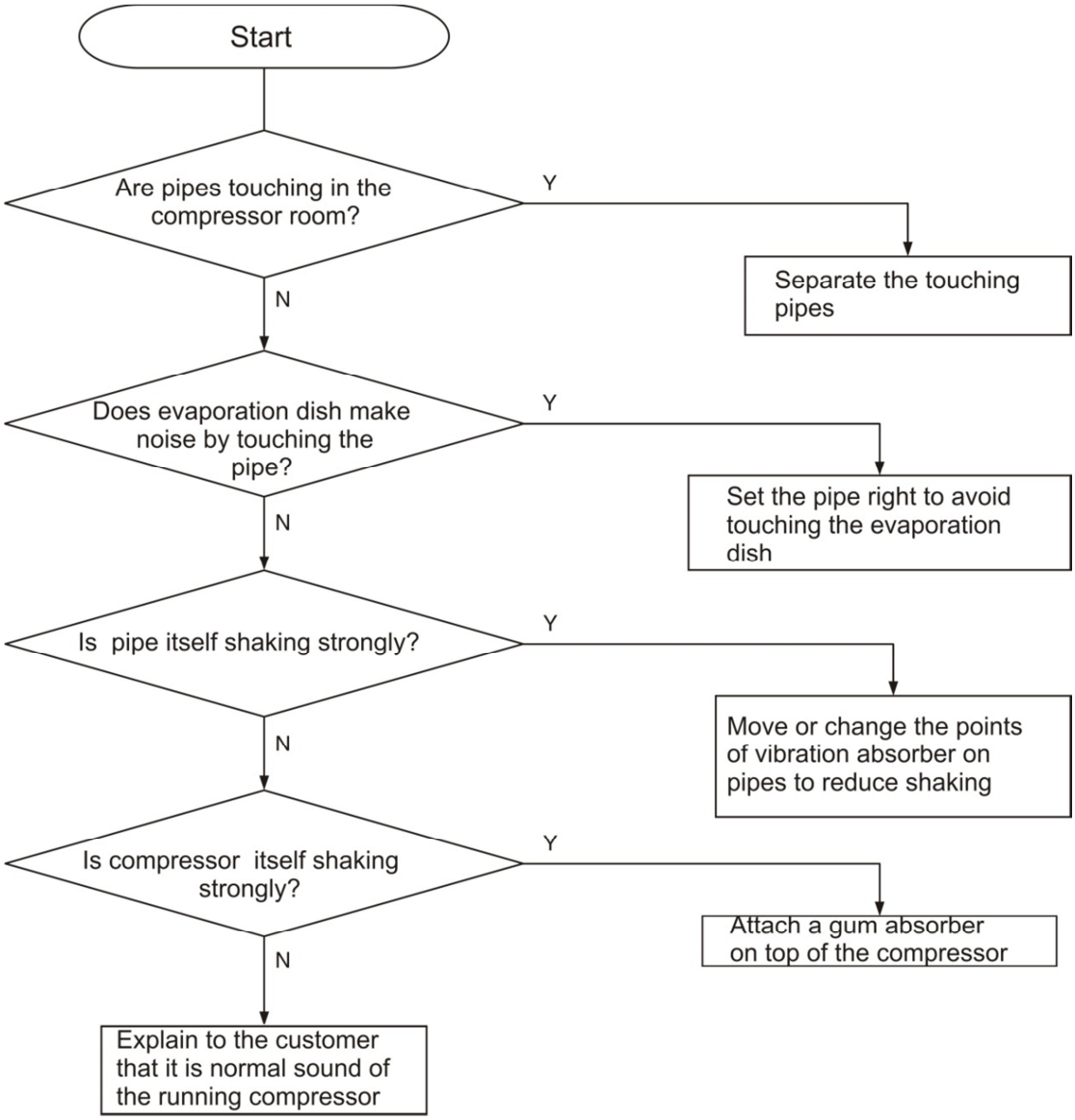


5.6ExcessiveNoise

5.6.1 Compressor noise

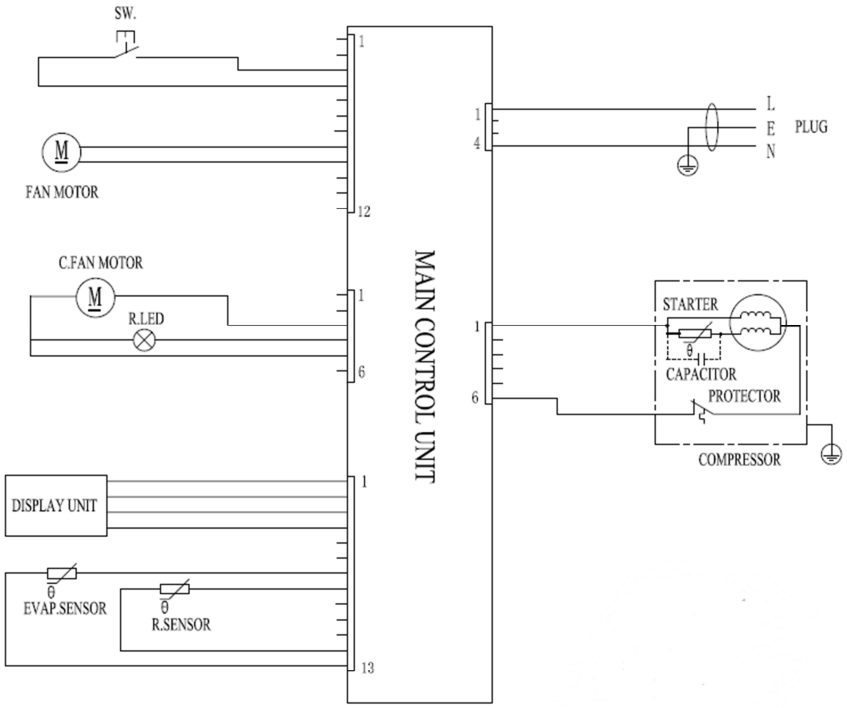


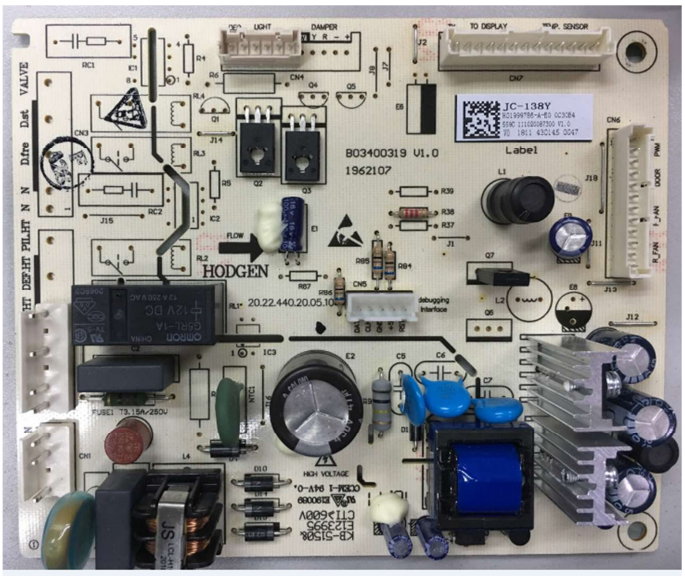
5.6.2 Pipe noise



6. Circuit and checking

6.1 Circuit diagram





6.2 Mainboard

6.2.1 Checking method

If the problem is probably caused by mainboard,change it directly to confirm.

6.2.2 Removing the mainboard

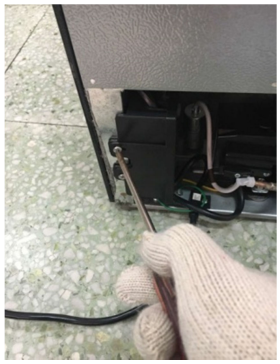
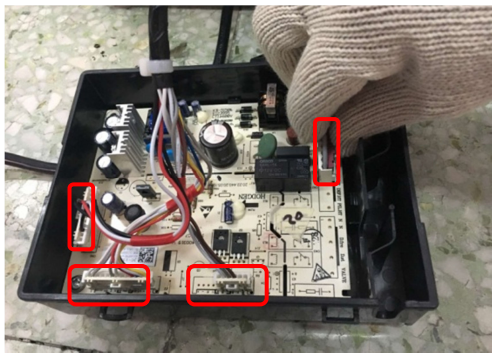
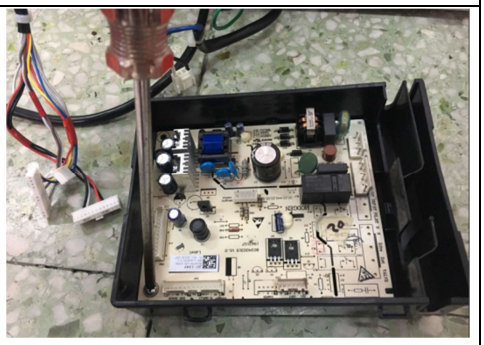
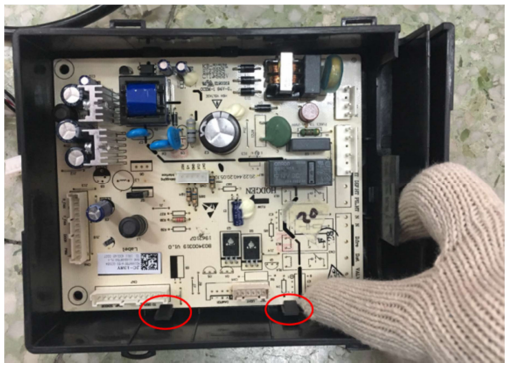
1. Unplug the appliance

2.Remove the two Philipsscrews and remove the junction box cover, as picture 1and picture 2.

3. Unplug theterminals on the mainboardas picture 3.

4.Remove the Philipsscrew, as picture 4.

5. Remove the mainboardas picture 5.

	
Picture1	**Picture2**
	
Picture3	**Picture4**
	
Picture5	

6.3 Compressor

6.3.1 Basic parameters

Input voltage:115V

Input frequency:60Hz

6.3.2 Checking method

1.About 3 minutes after the last power outage, the compressor will start in 10 seconds.If it startsunsuccessfully,cut off the refrigerator power at first, then remove the electric box cover and check.

2.Check the cable between compressor and mainboardand repair if it isbroken.

3.Use a multimeter to measure voltage between pin No.1 and No.4on CN1connector of mainboard,if the voltage equal to electric supplypower,it means the compressor is broken,change it;If not,change themainboard.

6.3.2.1 Compressor checking

Use a multi-meter to test the resistance between C & S, M&S and M&C :

Normal range of C&S : About6.42±7%Ω

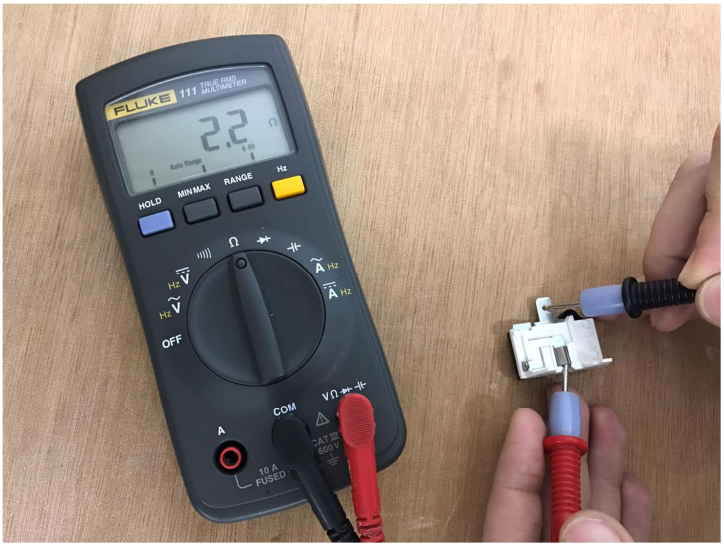
Normal range of M&S : About 13.03±7%Ω

Normal range of M&C : About16.61±7%Ω

If the test result is not in this range then it means the inner coil has some problem and the compressor cannot work properly.

6.3.2.1 Compressor protector test

Use a multi-meter to test the resistance between the two end as the picture show :
If there show 000 or almost 0 then it is OK.
If there is no response then it is broken.



6.3.2.1 Compressor PTC starter test

Use a multi-meter to test the resistance between the two end as the pic show :
If the meter displays is between 15±5Ω then it is OK.
If themeter displays 000 or noresponse, then it is broken.

6.3.3Removing the PTC starter and overload protector

1.Unplug the appliance

2.Use a flat bladescrewdriver to pry up the jump ring on protector cover as picture 1.

3.Remove the protector cover as picture 2.

4.Hold the overload protector and pull it out as picture 3.

5.Hold the PTC starter and pull it out as picture 4.

	
Picture1	**Picture2**
	
Picture3	**Picture4**

6.4 Light

6.4.1 Basic parameters

Rated voltage:DC12V

Rated power:3W

6.4.2 Checking method

1.Check the connecting wiring between light and mainboard then, repair if it is broken. Refrigerator light corresponds to pin No.4 and No.5 on CN4connector of mainboard.

2.Check output voltage corresponding light of the mainboard, if it is 12V,it means the mainboard is OK, change the light; If not, it means the mainboard isdefective, change it.

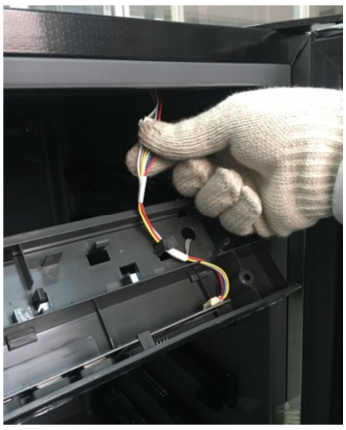
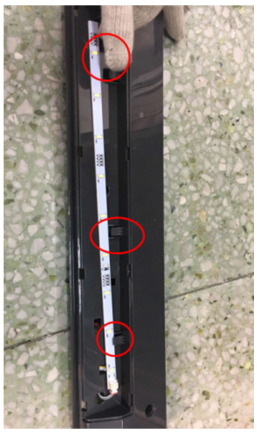
6.4.3 Removing the light

1.Unplug the appliance

2.Remove the light coveras picture 1.

3.Remove the threescrews, as picture 2.

4.Unplug the connection terminal, as picture 3.
5.Take the LED light outas picture 4.
6.Unplug theconnector to the lightas shown in picture 5.

	
Picture1	**Picture2**
	
Picture3	**Picture4**
	
Picture5	

6.5 Display panel

6.5.1 Basic parameters

Input voltage:5V

6.5.2 TestingProcedure

1.Display panel willbe lit up as soon as power-on, if it is unsuccessful, remove the display panel box cover and test.

2.Check the cable between display panel and mainboard and repair if it is broken.

3.Use a multimeter to measure voltage between pin No.3 and No.4 on CN7 connector of mainboard, If the voltage equal to 5V,it means the display panel is defective, change it; If not, change the mainboard.

6.5.3 Removing the display panel

1.Unplug the appliance.

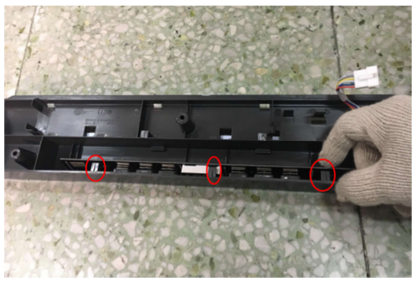
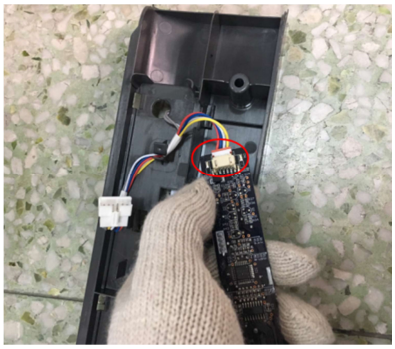
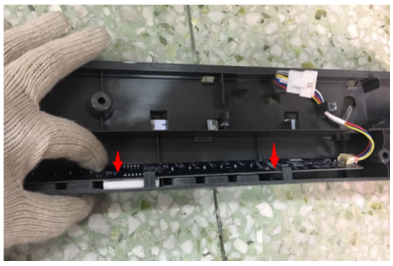
2.Remove the display panelassemblyas removing the light.

3.Pull the buckle and take out the display panelas picture 1.

3.Unplug the terminal of the display panelas picture 2.

4.When you replace the new dashboard,tilt the display board and put it into the buckleas picture 3.

5.Press from the bottom of the display panel until it is in placeas picture 4.

	
Picture1	**Picture2**
	
Picture3	**Picture4**

6.6Sensor

6.6.1 Basic parameters

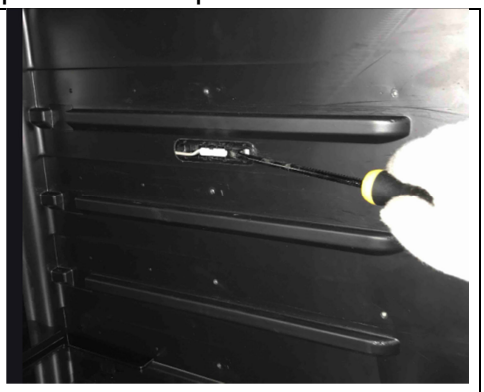
R(5℃)=5K06±2%

6.6.2 Testing method

1.Checkthatthe cable to thechamber Temp-Sensorismaking contact, repair if it isbroken.
The chamber Temp-Sensorcorresponding pin No.8 and No.12areconnected on CN7 connector of mainboard.
2. Using a Multimeter with the ohm switch to measure the resistance of the sensor,if it is open circuit or short circuit,it means the sensor is broken,change the sensor;If not,change the mainboard.

6.6.3 Removing the Sensor

1. Unplug the appliance.
2. Remove the cover by screwdriver as picture 1.
3. Remove the sensor by screwdriver as picture 2 and picture 3.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Picture1</td><td>Picture2</td></tr>
<tr><td>  </td><td></td></tr>
<tr><td>Picture3</td><td></td></tr>
</table>

6.7EvaporatorSensor

6.7.1 Basic parameters

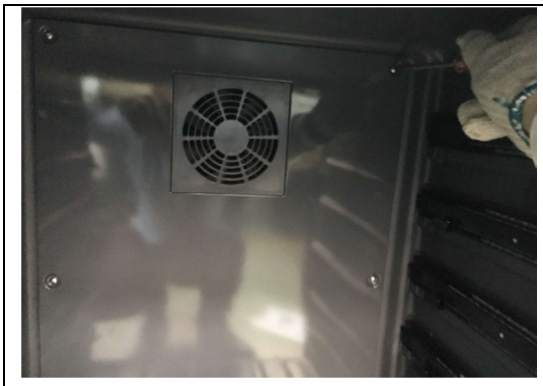
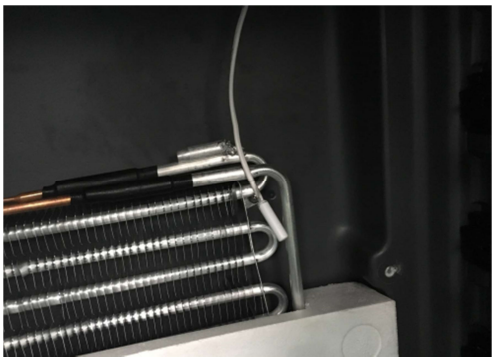
R(5℃)=5K06±2%

6.7.2 Checking method

1.Check the connecting wiring of Defrost.Sensor is well or not, repair if it isbroken.
The Defrost.Sensor corresponding pin No.7 and No.13 areconnectingon CN7 connector of mainboard.
2. Using a Multimeter with the ohm switch to measure the resistor of sensor,if it is open circuit or short circuit,it means the sensor is broken, change the sensor;If not,change the mainboard.

6.7.3 Removing the Sensor

1. Unplug the appliance.
2.Remove the four screws by screwdriver, as picture 1.
3. Unplug the terminal of the fan as picture 2.
4.Pry the holder open with pliersas picture 3.
5. remove the evaporatorsensor, as picture 4.

	
Picture1	**Picture2**
	
Picture3	**Picture4**

6.8Air ductfan motor

6.8.1 Basic parameters

Rated voltage:DC12V
Rated input power:2W

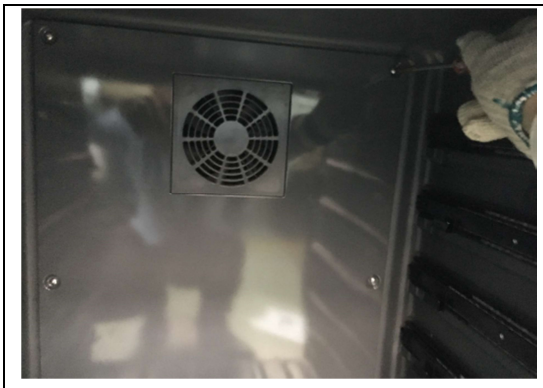
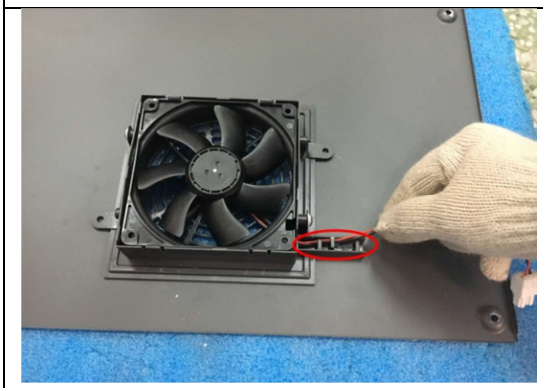
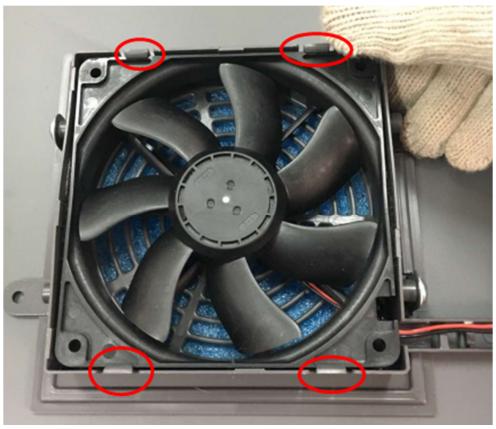
6.8.2 Testing method

1.Check the cable to the fan motor, replace or repair if it isbroken. The fan motor corresponding pin No.8~9 onCN6connector of mainboard，Pin No.8 connect 12V power and pin No.9 connect GND,if the freezer fan motor works normally,change the mainboard;If not,change thefan motor.

6.8.3 Removing the fan motor

6.8.3.1 Removing the fridge fan motor

1. Unplug the appliance
2. Remove the four screws by screwdriver as picture 1.
3.Unplug the terminal as picture2.
4.Remove the connection cable from the claspas picture 3.
5.Pull the buckle and take out the fan motor as picture 4.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Picture1</td><td>Picture2</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Picture3</td><td>Picture4</td></tr>
</table>

6.9Condenserfan motor

6.9.1 Basic parameters

Rated voltage:DC12V
Rated input power:1W

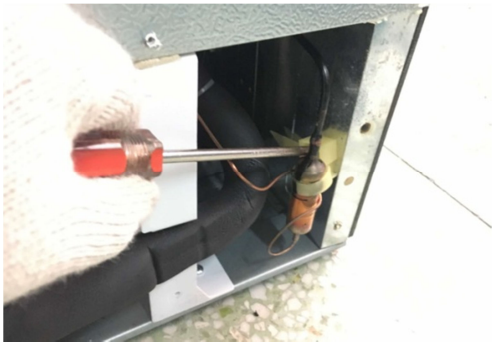
6.9.2 Testing method

1.Check the connecting wiring of fan motor is well or not, repair if it isbroken. The condenserfan motor corresponding pin No.3 and pin No.5 on CN4connector of mainboard.
2. Pin No.3connect 12V power and pin No.5connect GND,if thecondenserfan motor works normally,change the mainboard;If not,change thefan motor.

6.9.3 Removing the fan motor

6.9.3.1 Removing the condenser fan motor

1. Unplug the appliance
2. Remove the four screws by screwdriver as picture 1.
2.Remove the screw by screwdriver as picture 2.
3.Unplug the terminal as picture3.
4.Remove the connection cable from the claspas picture 3.
5.Pull the buckle and take out the fan motor as picture 4 and picture 5.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Picture1</td><td>Picture2</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Picture3</td><td>Picture4</td></tr>
</table>

	
Picture5	

6.10Door switchbasic parameters

Rated input power:1W

6.10.2 Testing method

1.Check the connecting wiring of door switch is well or not, repair if it isbroken.
2.Check the door switch is assembled on box well or not, repair if it isnot well.
3.Checkthe magnet on the door is wellor not, replace another one if it is not well.
4.Using a magnet close to/or leave the door switch ,check the door switch is on or off, if the door switchworks abnormally,change thedoor switch.
5.thedoor switchcorresponding pin No.3 and pin No.4 on CN6 connector of mainboard.Pin No.4connect 5V power and pin No.3connect GND,if the output voltage is not equal to 5V ,change the mainboard.

6.10. Removing the door switch

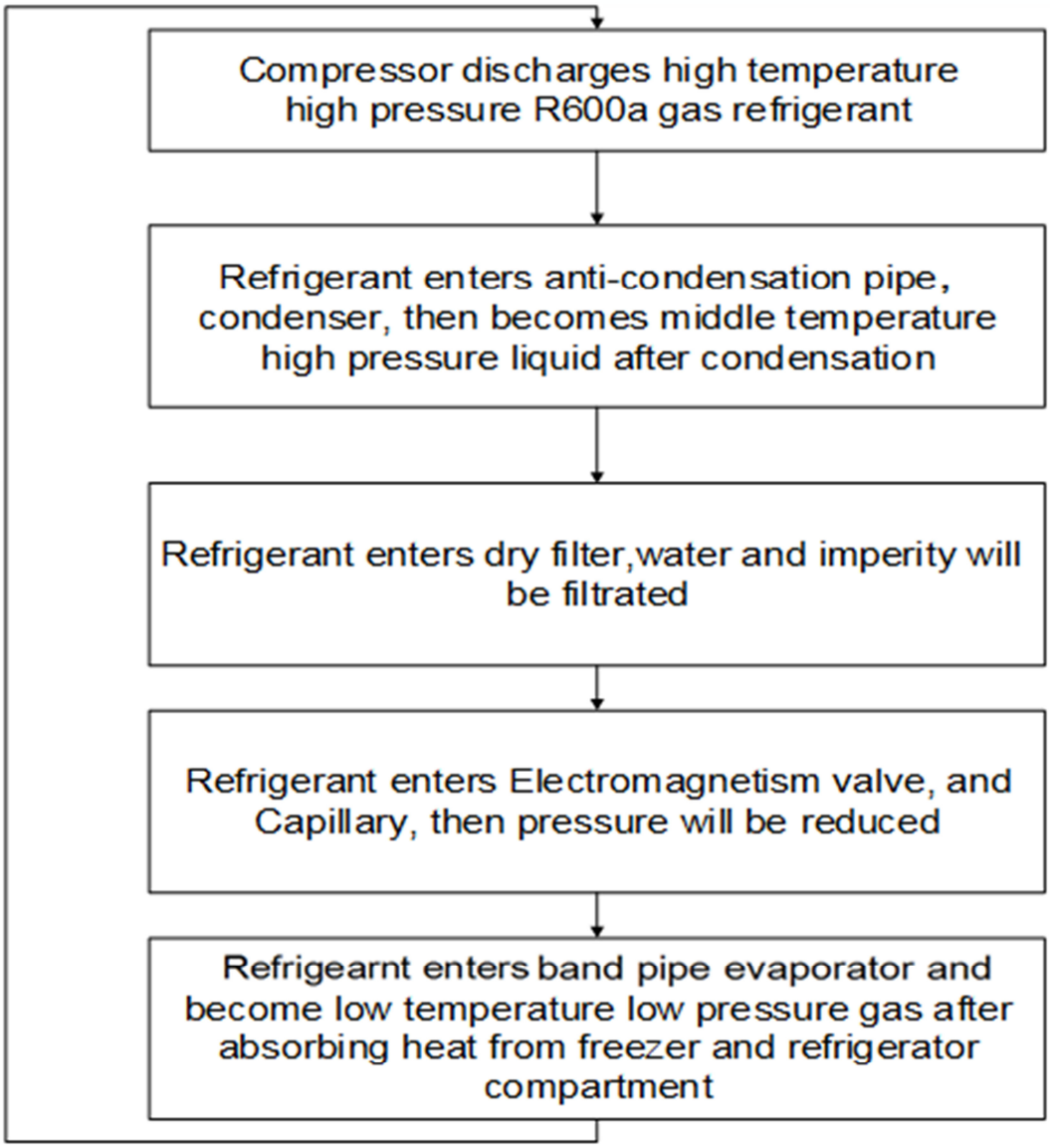
1. Unplug the appliance.
2. Insert the screwdriver into the gap between the door switch and cabinet from upside and pry up the door switch by the screwdriver,as picture 1.
3. Unplug the terminals,as picture 2.
4. Take out the door switch,as picture 3.

	
Picture1	**Picture2**

	
Picture3	

7. Cooling system service

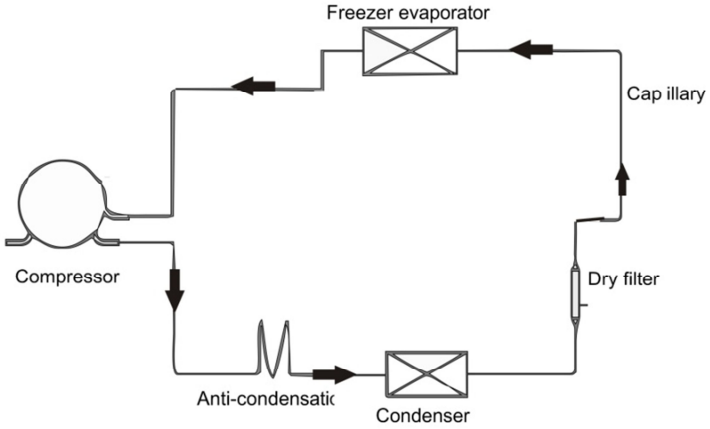
7.1 Refrigeration system



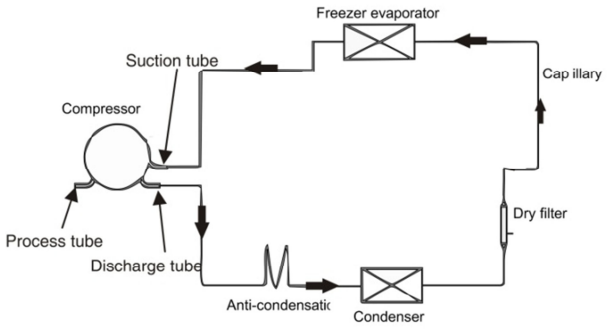
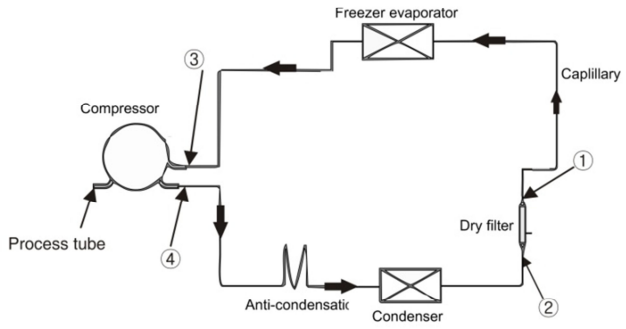
7.2 Summary of repair

Process	Contents	Tools
Remove refrigerant Residuals	* Cut charging pipe ends (Comp. & Dryer) and discharge refrigerant from drier and compressor.	* Nipper, side cutters
Parts replacement and welding	* Confirm refrigerant (R-134a or R-600a) and oil for compressor and drier. * Confirm N2 sealing and packing conditions before use. Use good one for welding and assembly. * Repair in a clean and dry place.	* Pipe Cutter, Gas welder, N2 gas
Vacuum	* Evacuate for more than forty minutes after connecting manifold gauge hose and vacuum pump to high (drier) and low (compressor) pressure sides.	* Vacuum pump , Manifold gauge.
Refrigerant charging and charging inlet welding	* Weigh and control the bombe in a vacuum conditions with electronic scales and charge through compressor inlet (Process tube). * Charge while refrigerator operates). * Weld carefully after inlet pinching.	* Bombe (mass cylinder), refrigerant manifold gauge, electronic scales, punching off flier, gas welding machine
Check refrigerant leak and cooling capacity	* Check leak at weld joints. Note :Do not use soapy water for check. * Check cooling capacity → Check condenser manually to see if warm. → Check hot pipe manually to see if warm. → Check frost formation on the whole surface of the evaporator.	* Electronic Leak Detector, Driver.
Compressor compartment and tools arrangement	* Remove flux from the silver weld joints with soft brusher wet rag. (Flux may be the cause of corrosion and leaks.) *Clean tools and store them in a clean tool box or in their place.	* Copper brush, Rag, Tool box
Transportation and installation	* Installation should be conducted in accordance with the standard installation procedure. (Leave space of more than 5 cm from the wall for compressor compartment cooling fan mounted model.)	

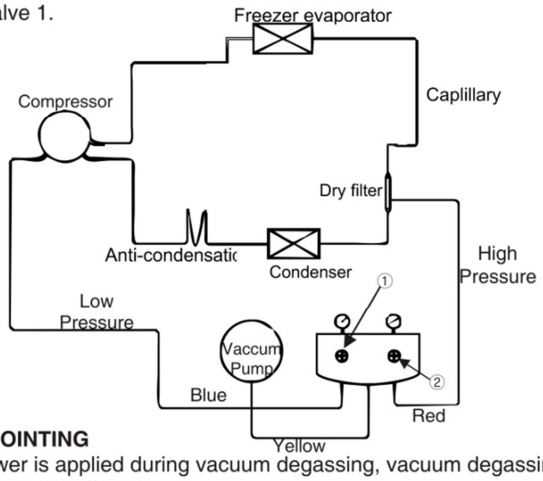
7.3 Regulation of repair

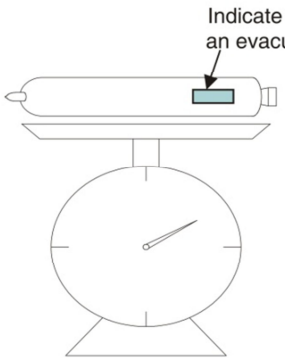
Items	Precautions
Use of tools.	1) Use special parts and tools for R-134a or R-600a
Removal of retained refrigerant.	1) Remove retained refrigerant more than 5 minutes after turning off a refrigerator. (If not, oil will leak inside.) 2) Remove retained refrigerant by cutting first high pressure side (drier part) with a nipper and then cut low pressure side. (If the order is not observed, oil leak will happen.) 
Replacement of drier.	1) Be sure to replace drier when repairing pipes and injecting refrigerant.
Nitrogen blowing welding.	1) Weld under nitrogen atmosphere in order to prevent oxidation inside a pipe. (Nitrogen pressure : 0.1~0.2 kg/cm2.)
Others.	1) Nitrogen only should be used when cleaning inside of cycle pipes inside and sealing. 2) Check leakage with an electronic leakage tester. 3) Be sure to use a pipe cutter when cutting pipes. 4) Be careful not the water let intrude into the inside of the cycle.

7.4 Practical work of repair

Items	Precautions
1. Removal of residual refrigerant.	1) Remove residual refrigerant more than 5 minutes later after turning off the refrigerator. (If not, compressor oil may leak inside.) 2) Remove retained refrigerant slowly by cutting first high pressure side (drier part) with a nipper and then cut low pressure side. 
2. Nitrogen blowing welding.	 *** When replacing a drier:** Weld 1 and 2 parts by blowing nitrogen (0.1~0.2kg/cm2) to high pressure side after assembling a drier. *** When replacing a compressor:** Weld 3 and 4 parts by blowing nitrogen to the low pressure side. Note) For other parts, nitrogen blowing is not necessary because it does not produce oxidized scales inside pipe because of its short welding time. **- KEYPOINTING** Welding without nitrogen blowing produces oxidized scales inside a pipe, Which affect on performance and reliability of a product.

7.4 Practical work of repair

<table>
<tr><th>Items</th><th>Precautions</th></tr>
<tr><td>3.Vacuum degassing.</td><td>
* Pipe Connection
Connect a red hose to the high pressure side and a blue hose to the low pressure side.
* Vacuum Sequence
Open 1,2 valves and evacuate for 40 minutes.
Close valve 1.


※ KEYPOINTING
1) If power is applied during vacuum degassing, vacuum degassing shall be more effective.
2) Operate compressor while charging refrigerant. (It is easier and more certain to do like this.)
</td></tr>
<tr><td>4.Refrigerant charging.</td><td>
* Charging sequence
1) Check the amount of refrigerant supplied to each model after completing vacuum degassing.
2) Evacuate bombe with a vacuum pump.
3) Measure the amount of refrigerant charged.
- Measure the weight of an evacuated bombe with an electronic scale.
- Charge refrigerant into a bombe and measure the weight. Calculate the weight of refrigerant charged into the bombe by subtracting the weight of an evacuated bombe.


- KEYPOINTING
1) Be sure to charge the refrigerant at around 25C.
2) Be sure to keep -5g in the winter and +5g in summer.
Calculation of amount of refrigerant charged
the amount of refrigerant charged
= a weight after charging
- a weight before charging
(a weight of an evacuated cylinder)
</td></tr>
</table>

7.5 Brazing reference drawing