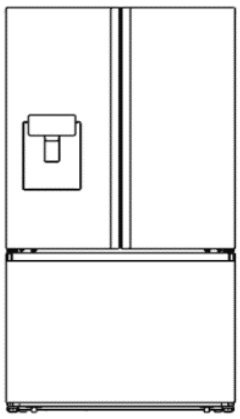
			重 要 度	

		产 品 名称:	冷藏冷冻箱
		产 品 型号：	BCD-720WP1BF1Z9/HC1(H)
		文 件 名称：	售后服务技术资料
		文 件 编号：	BSSJ00004644
		编 制 日期：	2022 年 1 月 3 日
借(通)用件登记			

						冰箱开发中心
旧底图总号						
底图总号	B					售后服务技术资料
	版本	更改单编号	签字	日期	重 量	比例
出图审查	设计		审核			
	标准化				共 张	第 张
日 期	批准					BSSJ00004644

Hisense



MODEL： BCD-720WP1BF1Z9/HC1(H)

Refrigerator

Service Manual

BSSJ00004644 0
1. Warning and precautions for safety 1
2. Appearance and structure 2
2.1 View of the appliance 2
2.2 Wind channel structure 3
2.3 Evaporator structure 3
2.4 Compressor room structure 4
3. Basic parameters 5
4. Operation and functions 6
4.1 Display controls 6
4.2 Using your Appliance 9
4.3 Defrost mode 28
4.3.1 Start condition 28
4.3.2 Defrost flow 28
4.4 Error display 29
4.4.1 Error Code 29
4.4.2 Checking method 32
5. Troubleshooting 36
5.1 Common problem and checking 36
5.2 Faulty start 38
5.3 Refrigeration failure 39
5.3.1 Freezer compartment 39
5.3.2 Refrigerator compartment 40
5.4 Thick frost in freezer compartment 41
5.5 Dew in refrigerator compartment 42
5.6 Breaking of light 43
5.7 Pipe noise 44
5.8 PANEL PBA operates abnormally 45
6. Circuit and checking 46
6.1 Circuit diagram 46
6.2 Mainboard 46
6.2.1 Checking method 46
6.2.2 Removing the mainboard 46
6.3 Compressor 47
6.3.1 Basic parameters 47
6.3.2 Checking method 47
6.3.3 Removing the drive board 48
6.4 Fan motor 48
6.4.1 Basic parameters 48
6.4.2 Checking method 48
6.4.3 Removing the freezer fan motor 49
6.4.4 Removing the condenser fan motor 50
6.5 Damper 51

6.5.1 Basic parameters 51
6.5.2 Checking method 51
6.5.3 Removing the damper 51
6.6 Light 52
6.6.1 Basic parameters 52
6.6.2 Checking method 52
6.6.2.1 Check the connecting wiring between light and mainboard is well or not. Repair if it is broken. 52
6.6.2.2 Checking method 52
6.6.3 LED light removal 53
6.6.3.1 Removing the refrigerator top light 53
6.6.3.12 Removing the refrigerator side light 53
6.7 Door switch 53
6.7.1 Basic parameters 53
6.7.2 Checking method 54
6.8 Defrost heater 54
6.8.1 Basic parameters 54
6.8.2 Checking method 55
6.9 Removing the Display Component 55
6.9.1 Basic parameters 55
6.9.2 Checking method 55
6.9.3 Removing the Display Component 56
6.10 Dispenser motor 56
6.10.1 Basic parameters 56
6.10. 2 Checking method 56
6.11 Lever switch 58
6.11.1 Basic parameters 58
6.11.2 Checking method 58
6.11.3 Removing the lever switch 58
6.12 Water system 59
6.12.1 Schematic diagram of water system 59
6.12.2 Water system out of the freezer room 60
6.12.3 Water system in the fridge room 61
6.13 Ice maker & Ice crusher motor assembly 64
6.13.1 Checking method 64
6.13.2 Ice crusher motor assembly checking method 64
6.13.2 Remove the ice maker part 66
6.13.3 Remove the ice crusher motor 67
6.13.4 Remove the water nozzle 68
6.14 Checking the electromagnetic valve 70
6.15 Maintenance mode 71
6.16 Sensor 72
7. Cooling system repairing 75
7.1 Refrigeration system 75

7.2 Summary of repair 76
7.3 Regulation of repair 77
7.4 Practical work of repair 78
7.5 Brazing reference drawing 79
8. Ice maker& Water dispenser 80
8.1 Ice maker 80
8.2 Water dispenser 82
9 Fault table 84
9.1 Fault table 84

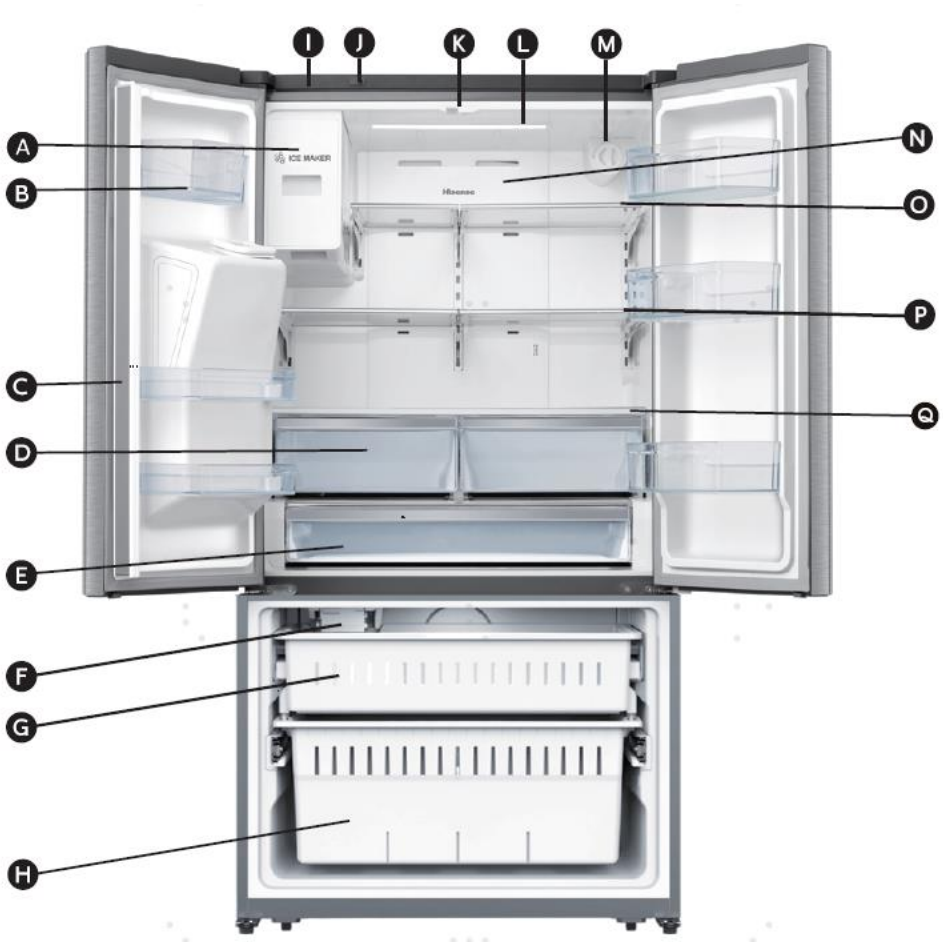
1. Warning and precautions for safety

Please observe the following safety precautions in order to use safely and correctly the refrigerator and to prevent accident and danger during repair.

1. Be care of an electric shock. Disconnect power cord from wall outlet and 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 five minutes after power cord was disconnected from the wall outlet.
3. Please check if the power plug is pressed down by the refrigerator against the wall. If the power plug was damaged, it may cause fire or electric shock.
4. If the wall outlet is over loaded, it may cause fire. Please use its own individual electrical outlet for the refrigerator.
5. Please make sure the outlet is properly earthed, particularly in wet or damp area.
6. Use standard electrical components when replacing them.
7. Make sure the hook is correctly engaged. Remove dust and foreign materials from the housing and connecting parts.
8. Do not fray, damage, machine, heavily bend, pull out or twist the power cord.
9. Please check the evidence of moisture intrusion in the electrical components. Replace the parts or mask it with insulation tapes if moisture intrusion was confirmed.
10. Do not let the customers repair, disassemble and reconstruct the refrigerator for themselves. It may cause accident, electric shock, or fire.
11. Do not store flammable materials such as ether, benzene, alcohol, chemicals, gas, or medicine in the refrigerator.
12. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.
13. Do not put glass bottles with full of water into the freezer. The contents shall freeze and break the glass bottles.
14. When you scrap the refrigerator, please disconnect the door gasket first and scrap it.

2. Appearance and structure

2.1 View of the appliance



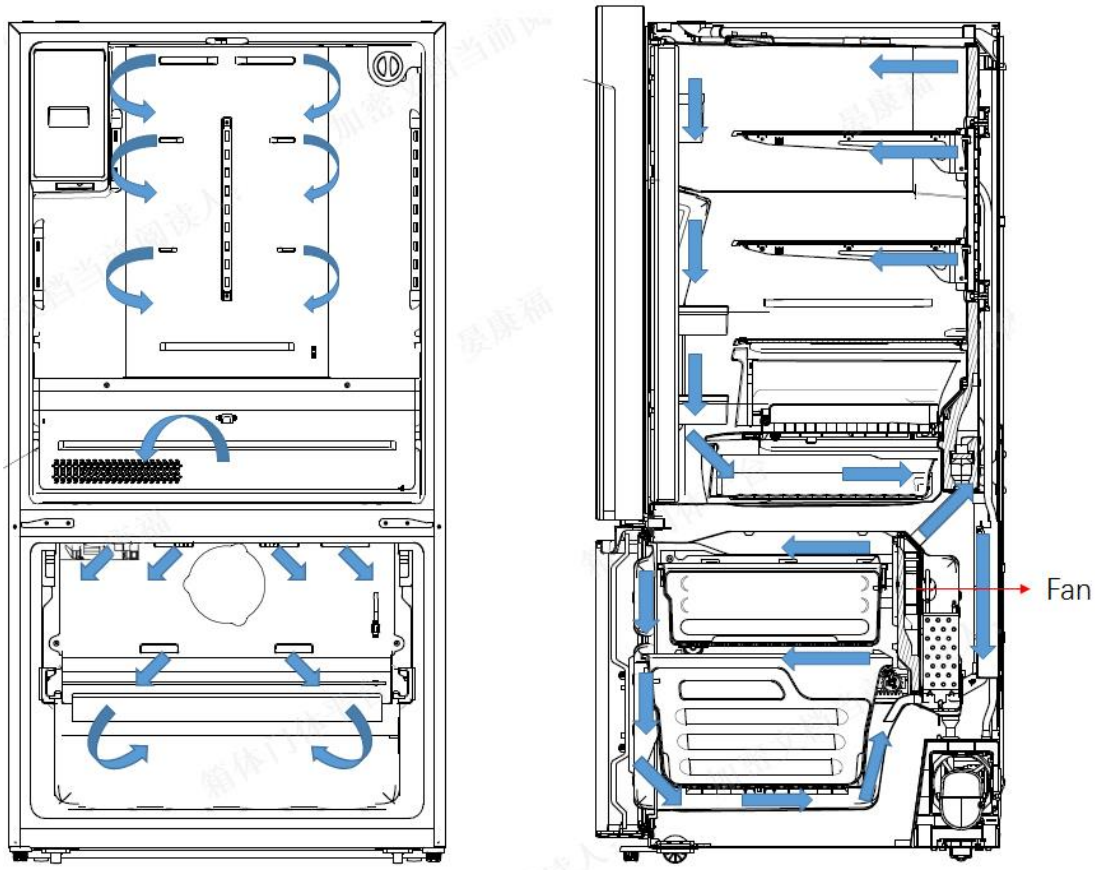
- A Automatic Ice Maker
- B Door Bin
- C Mullion
- D Crisper Drawer
- E Full-width Pantry
- F Ice Maker (inside)
- G Freezer Upper Drawer
  Ice storage box (inside)
- H Freezer Lower Drawer
- I Hinge Cover
- J Door Switch
- K Mullion Guide Block
- L Refrigerator LED Light
- M Water Filter
- N Air Channel
- O Glass Shelf
- P Foldable-Shelf
- Q Crisper Cover

Note!

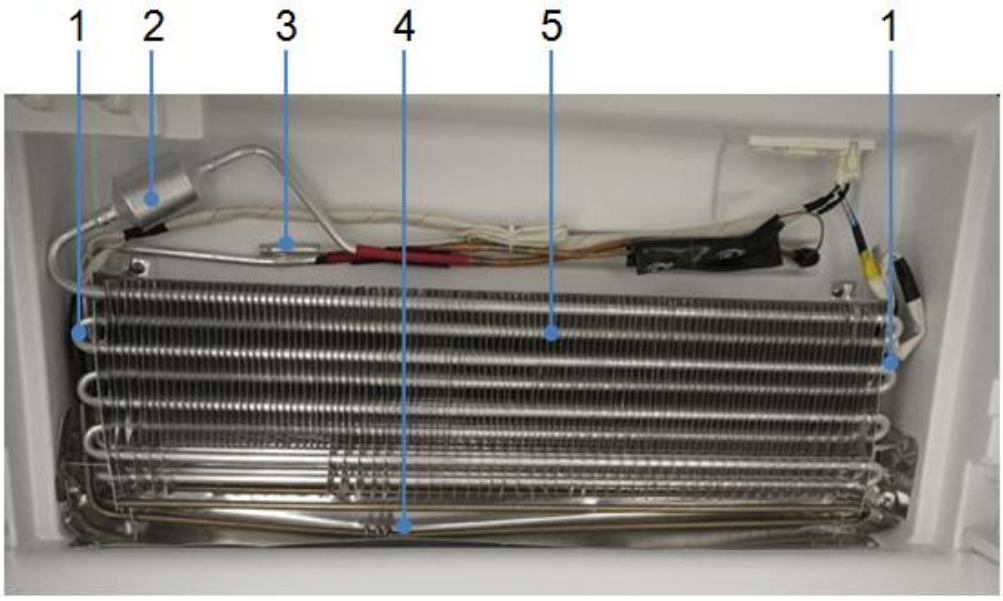
•Due to unceasing modification of our products, your refrigerator may be slightly different from this instruction manual, but its functions and using methods remain the same.

•To get the best energy efficiency of this product, please place all shelves, drawers and baskets on their original position as the illustration above.

2.2 Wind channel structure



2.3 Evaporator structure

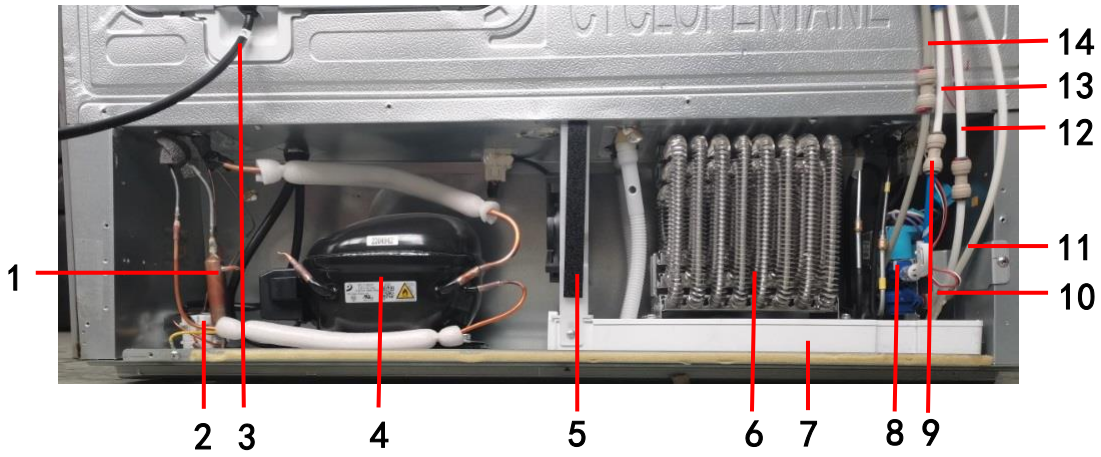


1—Fuse

2—Accumulator

3—Sensor
4—Heater
5—Evaporator

2.4 Compressor room structure



1—Dry filter
2—Motorized valve
3—Power cord
4—Compressor
5—Fan Motor
6—Bottom condenser
7—Evaporation dish
8—Motorized valve
9—Connector(180°)
10—Connector(90°)
11—Water tube (white, flow to the icemaker in fridge room)
12—Water tube (white, flow to the dispenser on fridge door)
13—Water tube (white, flow to the icemaker in freezer)
14—Water tube(grey, connect with the water filter)

3. Basic parameters

SPECIFICATIONS	
DESIGN PRESSURE	
HIGH SIDE / LOW SIDE	250 psig / 88 psig
REFRIGERANT / AMOUNT	R600a (62g)
VOLUME (Refrigerator / Freezer)	25.4 (17.6 / 7.8) cu.ft
RATED VOLTAGE	AC115V
RATED FREQUENCY	60Hz
RATED CURRENT	3.0A
DEFROST POWER	220W
FOAMING AGENT	Cyclopentane
NET WEIGHT	131kg
GROSS WEIGHT	142kg
W×D×H (with hinges)	91.4×85.4×177.8cm
W×D×H (without hinges)	91.4×85.4×177.8cm

4. Operation and functions

4.1 Display controls

Your product has one control panel which is installed on the top cover, it may be different depending on the model. Use your appliance according to the following control guidelines.

When the appliance is powered on for the first time, the backlighting of the icons on the display panel will light up immediately. If no buttons have been touched or the doors are closed, the backlighting will turn off after 60seconds.

The control panel consists of two areas about temperature, and one area about different modes.

Caution!

When you set a temperature, you set an average temperature for the whole refrigerator cabinet. Temperatures inside each compartment may vary from the temperatures displayed on the panel, depending on how much food you store and where you place it. High or low room temperature may also affect the actual temperature inside the appliance.

⚠Child Lock and Door Alarm

This button serves two purposes:

1. Child Lock

Press and hold “Alarm” for 3 seconds to lock the all the control panel including dispenser function. If control panel is locked, the icon "🔒" will be on, and none of the buttons on the control panel work. To unlock the control panel, please press and hold “Alarm” for 3 seconds again.

2 .Door Alarm

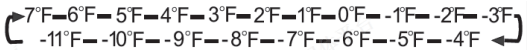
When door opening alarm occurs, the alarm icon will be fashing , a buzzing sound will be heard and the control panel will display" dr ". Touch the “A larm” key, the alarm icon will change from flashing normally on and the buzzing will stop. When the door is closed or opened for a long time, the alarm icon will turn off.

Ice Control

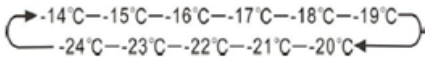
This button controls the ice maker. You can touch the "Ice Off" button to control the ice maker. When the "Ice Off" function light is off, the ice maker is working. If you want to close the ice maker, please touch the "Ice Off" button again until the button light is on.

Freezer Temperature Control

You can touch the “Freezer” button to activate the mode to control the freezer temperature. When you press the button continuously, the temperature will be set in the following sequence.



If the temperature is switched to Celsius, it will be displayed circularly from - 14°C to - 24°C as shown in the figure below.



If you want to decrease the time needed to freeze products in the freezer, please press and hold the “Freezer” button for 3 seconds, the Super Freeze icon “ ” will be illuminated, the freezer temperature setting displays -11°F. Super Freeze can quickly lower the temperature and freeze your food faster than usual. This can retain more of the vitamins and nutrients in fresh food and keep your food longer.

The Super Freeze mode allows you to freeze items inside with maximum speed.

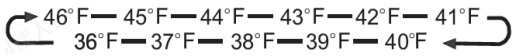
We recommend that you let the appliance operate for 6 hours first.

Super Freeze automatically switches off after 52 hours, and the freezer temperature setting will revert back to the previous setting.

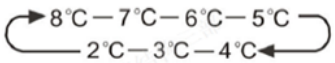
When the Super Freeze function is on, you can touch the freezing temperature regulating or press “Freezer” button more than 3 seconds, " Super Freezer" will be off and the temperature setting will revert back to the previous.

Fridge Temperature Control

You can touch the “Fridge” icon to activate the mode to control the fridge temperature. When you touch the button continuously, the temperature will be set in the following sequence.



If the temperature is switched to Celsius, it will be displayed circularly from 8°C to 2°C as shown in the figure below.



If you want to decrease the time needed to cool products in the Fridge, please touch and hold this button for 3 seconds.
The Super Cool icon “” will be illuminated, and the fridge temperature setting displays at 36°F(2°C).
Super cool automatically switches off after 3 hours, and the refrigerator temperature setting will revert back to the previous setting.
When Super Cool function is on, you can touch the “Fridge” button again to switch it off. The fridge will not retain the Super Cool function when powered off.
When the Super Freeze function is on, you can touch the refrigerator temperature regulating or press “Fridge” button more than 3 seconds, " Super Cool" will be off and the temperature setting will revert back to the previous

Note:

- If you want to exchange the "℉" to "℃", please press and hold the "Super Cool" and "Energy Saving” buttons for 3 seconds.

Energy Saving

You can touch this button to turn Energy Saver mode on and off. When you turn Energy Saver on, the Energy Saver icon “” lights up.
The temperature of the fridge is automatically switched to 43°F(6°C) and the freezer to 1°F(-17°C). When enter Energy Saver mode, " Super Cool" and " Super Frezeer" mode will be off.
Energy Saving

Water Filter

In general, you should change the water filter every 6 months to ensure the highest possible water quality.
After the refrigerator has dispensed about 300 gallons of water, the filter icon "" will blink, reminding you to replace the water filter.
First of all, you need to purchase a new water filer. You can purchase the new filter from the retailer where you purchased your refrigerator or the Hisense after-sales service system.
Before that, please check that the new filter is the same filter type that came with your fridge and can be correctly used in your refrigerator.

After you change the water filter, touch and hold the “Eco” buttons for 3 seconds to make the blinking stop. When you replace the water filter, some water may leak from the filter and lines. Please let the water flow into a pan and wipe up any leakage that may have occurred.

℉/℃

When the Child Lock is off, you can touch the "**℉/℃**" icon to switch between Celsius and Fahrenheit units. The default state is Fahrenheit display. When it is switched to Fahrenheit, the icon "" will be on.

Dispenser Control

When the Child Lock is on, the dispenser will not work. The Ice Type button includes “Cubed” and “Crushed” options.

You can press the " Cubed" or " Crushed" option to choose the type of Ice to be dispensed. You can touch the " Water" button to activate the water mode.

When you touch the Ice Type button, the cubed or crushed ice mode which you choose will be activated, and the Cubed “” or Crushed “” ice icon lights up.

If you don’t need ice, turn the function off to save on water and energy consumption(See Ice Off above). If you need water, please touch the“Water” button, and the water icon “” will light up. The mode is then set.

Demo mode

Demo mode is for store display, and it prevents the refrigerator from generating cool air. In this of Cooling off Mode, the refrigerator may seem like it is working but it will not make cool air. The indicators on the control panel will show double " 0F" . To cancel this mode, press and hold “Alarm” and “Eco" keys at the same time for 3 seconds until the buzzer beep three times and the display panel will light for 3 seconds.

4.2 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. It may be different depending on the model

For proper installation, this refrigerator must be placed on a level surface of hard material that is the same height as the rest of the flooring. This surface should be strong enough to support a fully loaded refrigerator.

Ventilation of appliance

In order to improve efficiency of the cooling system and save energy, it is necessary to maintain good ventilation around the appliance for the dissipation of heat. For this reason, sufficient clear space should be available around the refrigerator.

1. Leveling of appliance

●For sufficient leveling and air circulating in the lower rear section of the appliance, the bottom feet may need to be adjusted. You can adjust them manually by hand or by using a suitable tool.

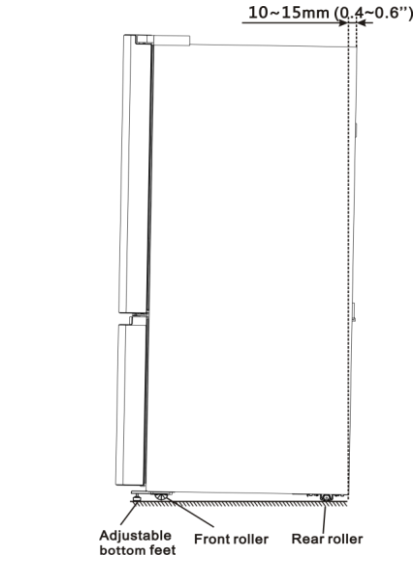
●To allow the doors to self-close, tilt the top backwards by 10~15mm.

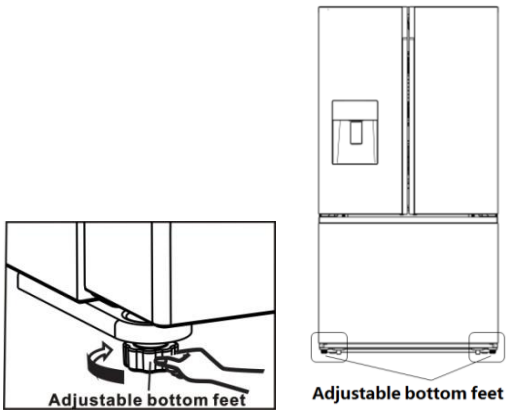
Caution!

●Let your refrigerator stand upright for approximately 4 hours before connecting it to power. This reduces the possibility of a malfunction in the cooling system from improper handling during transportation.

●Wait for approximately 2 hours after moving your appliance or plugging it in for the first time so that the coolant fluid settles.

●If you do not level your refrigerator during installation, the doors may not close or seal correctly which can cause cooling, frost, or moisture problems.





2. Door removal

In case your home access door is too narrow for the refrigerator to pass through, remove

the refrigerator doors and drawers by the following instructions.

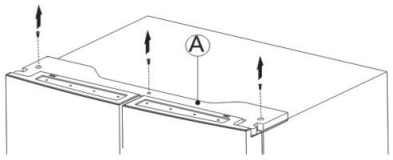
Tools you will need (Not provided):

	
Allen Wrench (4mm)	Wrench (8mm)
	
Philips Screwdriver	

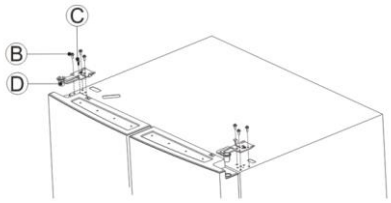
2.1 Disassembling the fridge door

Some models may be slightly different from pictures. If some parts shown in the picture cannot be found in your appliance, please ignore the relevant description.

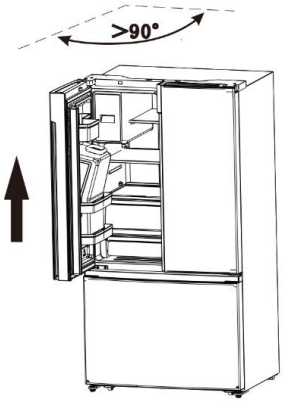
1. With the door closed, remove the 3 screws holding the top cover (A) with Philips (+) screwdriver, and then remove the top cover with the entire-harness attached.



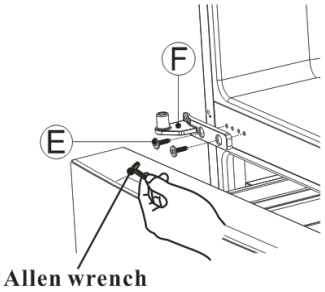
2. Remove the 3 screws (B) fixed on the hinges with a wrench (8mm) and 1 ground screws (C) attached to the hinge with Philips (+) screwdriver. Remove the upper left and right door hinges (D).



3.Use your both hands to open the door more than 90°.Lift it up and take it off.



4. Remove the 4 hex head bolts hinges (E) with an Allen wrench (4 mm).Remove the lower left and right door hinges (F).



Re-attaching the fridge doors

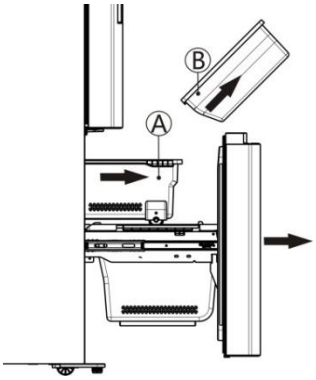
To reattach the fridge doors after you have moved the appliance to its final location, assemble the parts in reverse order.

Caution!

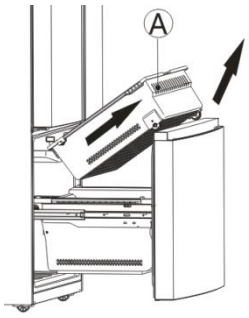
In case the fridge doors can’t be self-closed, please make sure the door opened more than 90°when you remove or re-attaching the fridge doors.

2.2 Disassembling the freezer door

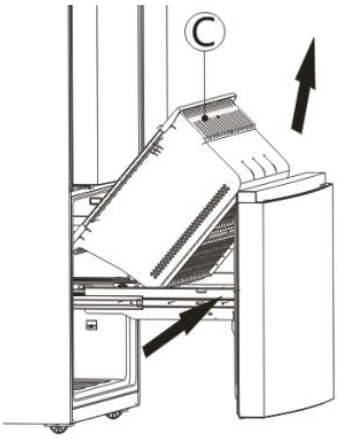
1. Pull out the freezer door and the upper freezer drawer (A) to the final position.
Then take out the ice box (B) by lifting it up in the direction of the arrow.



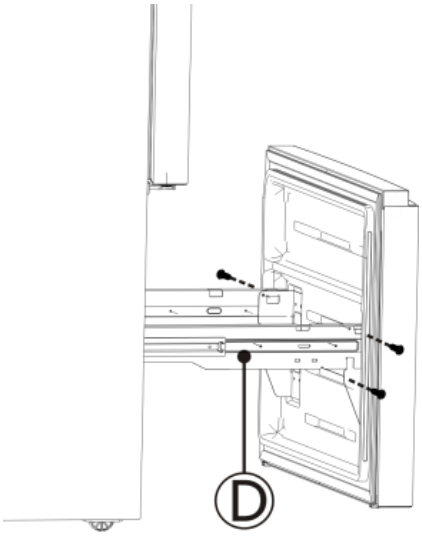
2. Take out the upper freezer drawer (A) by lifting it up from the rail system.



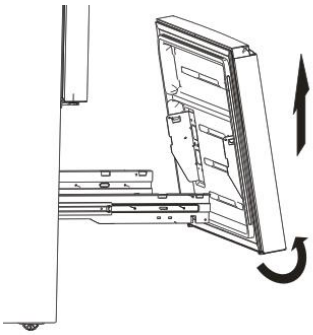
3. Remove the lower freezer drawer (C) by lifting it up.



4. Remove the 4 screws attached to the supporting frame (D).



5. Pull out the freezer door and lift it up in the direction of the arrow.

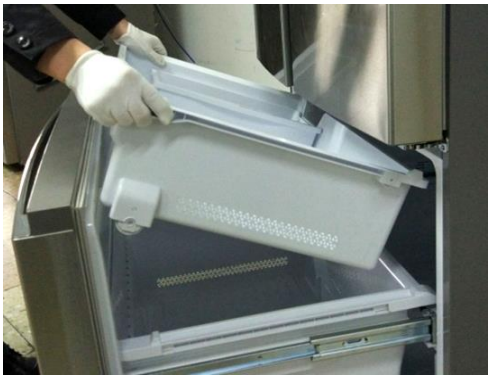


Re-assembling the freezer door

To reattach the drawer after you moved the appliance to its final location, assemble the parts in reverse order.

Remove the ice maker part

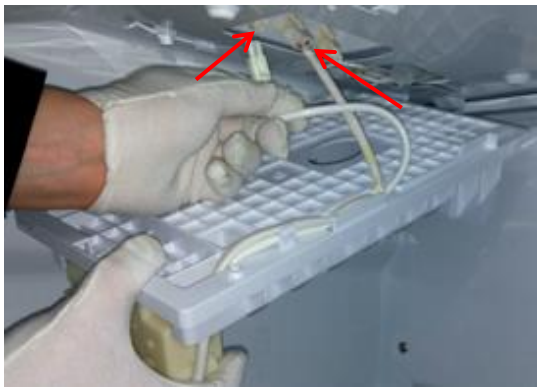
1. Open freezer door, take upper drawer out.



2. Disassemble two fixed screws with a cross screwdriver (+).

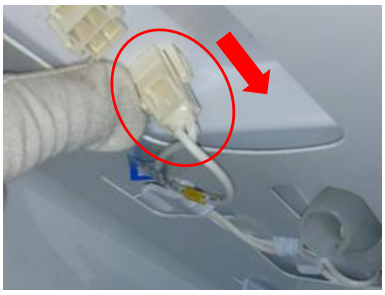
3. Pull out the ice maker part.

4. Unplug two terminals, then take out the ice maker part.

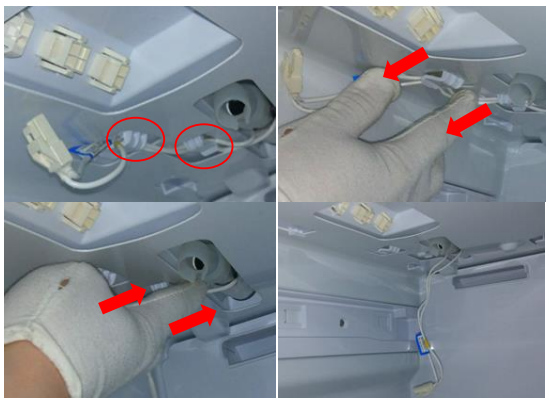


Remove the water pipe connector part

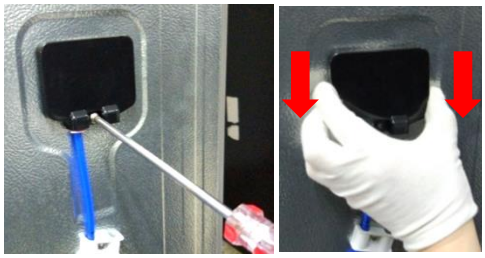
1. Remove the ice maker part.
2. Unplug the terminal.



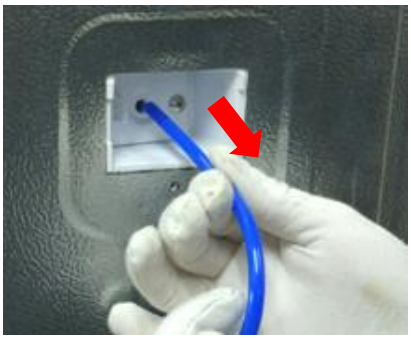
3. Remove wire line from two buckles in the direction of arrow one by one.



4. Disassemble the fixed screw with a cross screwdriver (+), then pull the ice maker inlet cover down.

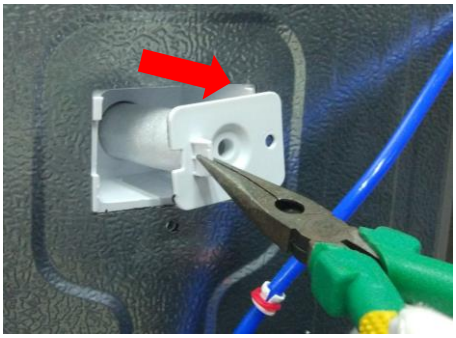


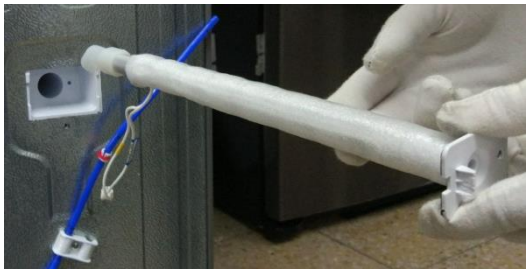
5. Pull the blue water tube out in the direction of arrow.



6. Disassemble the fixed screw with a cross screwdriver (+).

7. Pull the water pipe connector part out with pliers.





Warning!

Switch off the appliance and disconnect it from the main power before removing or re-assembling the door.

3. Installing the water lines

A water dispenser with a filter is one of the helpful features on your new appliance. To help promote better health, the water filter removes unwanted particles from your water. However, it does not sterilize or destroy microorganisms. You may need to purchase a water purifying system to do that.

In order for the ice maker to operate properly, a water line is required.

-the maximum inlet water pressure is 896kPa;

-the minimum inlet water pressure is 207kPa.

Warning:

The water connection must be made by a qualified plumber. Operation outside the water pressure range may cause malfunction, severe and damaging water leaks.

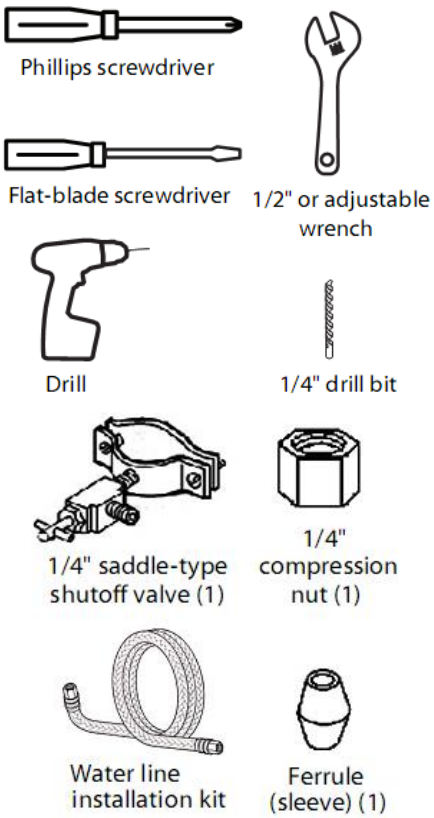
Under normal conditions, a200cc (5.75 oz.) cup can be filled in about 10 seconds.

If the refrigerator is installed in an area with low water pressure (below 30 psi), you can install a booster pump to compensate for the low pressure.

3.1 Connecting the water supply

You will need the following tools and parts (not included):

You need to purchase several items to complete this connection. You may find these items sold as a kit at your local hardware store.



CAUTIONS:

Make sure that you:

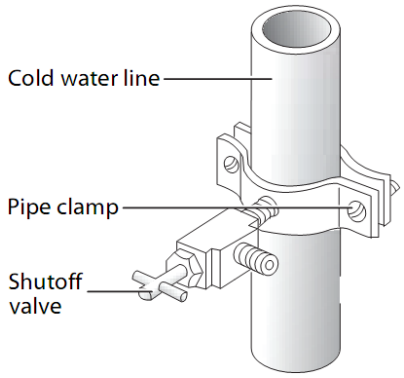
- Use the tubing that came with your refrigerator and the water supply installation kit. Do not use old tubing.
- Connect to the cold-water pipe. If you connect to the hot water pipe, the purifier may

malfunction.

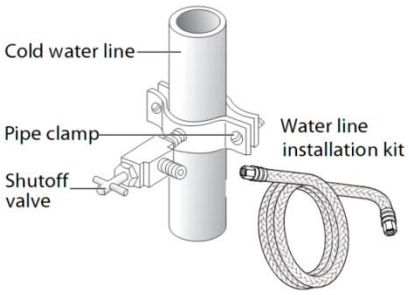
- Connect with the potable water only.
- Do not contaminate the water pipes during installation.

1. Shut off the main water supply.

2. Using a 1/4" drill bit, drill a hole into the cold water line, then install the saddle-type shutoff valve.



3. Connect the water line installation kit (not included) to the shutoff valve.



4.Turn the main water supply back on, then turn on the shutoff valve and flush out the tubing until the water runs clear.

Note:

- The initial dark discoloration of water is normal.

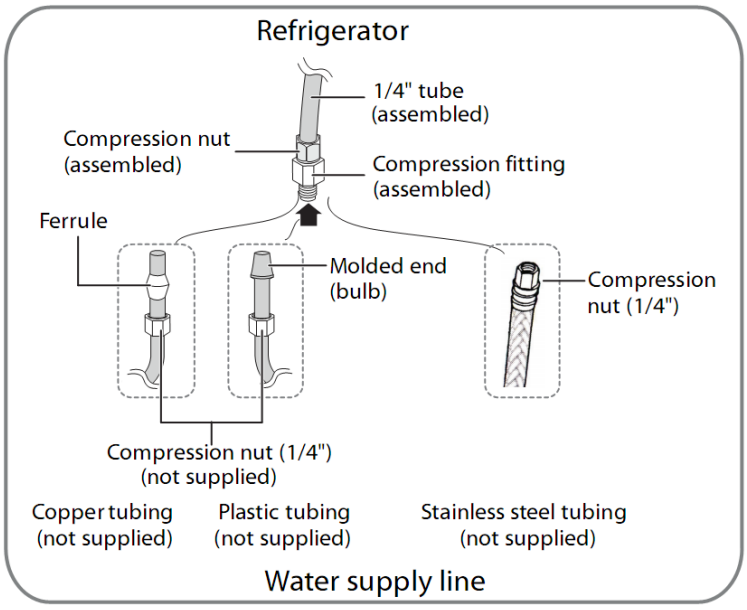
5. Turn off the shutoff valve.

3.2 Connecting the water supply line to the refrigerator

You need to purchase several items to complete this connection. You may find these items sold as a kit at your local hardware store.

You can use plastic tubing, copper tubing, or stainless steel tubing as the water line installation kit.

PLASTIC TUBING	COPPER TUBING	STAINLESS STEEL TUBING
•1/4" plastic tubing →molded end (bulb)	•1/4" copper tubing	•1/4" stainless steel tubing
•1/4" compression nut (1)	•1/4" compression nut (1) Ferrule (2)	•1/4" compression nut (1)



1. Connect the water supply line to the compression fitting (assembled with a 1/4" tube, at the back of refrigerator).

•If you are using copper tubing, slip the compression nut (not supplied) and ferrule (not supplied) on the copper tubing(not supplied).

•If you are using plastic tubing, insert the molded end (bulb) of the plastic tubing into the compression fitting.

Important:

Do not use without the molded end (bulb) of the plastic tubing.

•If you are using stainless steel tubing, slip the compression nut on the copper tubing (not supplied).

2. Tighten the compression nut onto the compression fitting. Do not over-tighten the compression nut.

3. Turn water on and check for any leakage. If you find water drops or leakage in the connection areas, turn off the main water supply. Check the connections and, tighten, if necessary.

4. Flush one gallon of water (approximately five minutes)through the filter before drinking or using the water from your refrigerator. To flush, press a large glass or cup against the water dispenser lever. Fill the glass, then empty it into the kitchen sink. Repeat until you dispense about one gallon of water.

5. After you turn on the refrigerator, let the ice maker make ice for one to two days. Over that period of time, throw out the first one or two buckets of ice the freezer makes to ensure all impurities have been removed from the waterlines.

Note:

•Make sure that you connect the water line to a drinkable water source.

•You can test the water line quickly using a paper cup.

•The first time you use the water dispenser, you may hear the sound of water pushing air out of the water dispenser. This is normal.

•If you have to repair or disassemble the water line, cut off 1/4'' of the plastic tubing to make sure you get a snug, leak-free connection.

3.3 Reverse osmosis water supply:

The pressure of the water supply coming out of a reverse osmosis system going to the water inlet valve of the refrigerator needs to be between 30 and 100psi (207and 700kPa). If a reverse osmosis water system is connected to your cold water supply, the water pressure to the reverse osmosis system needs to be a minimum of 40 to 60 psi (276 to 414 kPa). If the water pressure to the reverse osmosis system is less than 40 to 60 psi (276 to 414 kPa):

- Check to see whether the sediment filter in the reverse osmosis system is blocked. Replace the filter if necessary.
- Allow the storage tank on the reverse osmosis system to refill after heavy usage.
- If your refrigerator has a water filter, it may further reduce the water pressure when used in conjunction with a reverse osmosis system. To resolve it, remove the water filter.

4. Using your refrigerator compartment

The refrigerator compartment is suitable for storage of vegetables and fruit. Food inside should be packed to store in order to avoid losing moisture or flavor permeating into other foods.

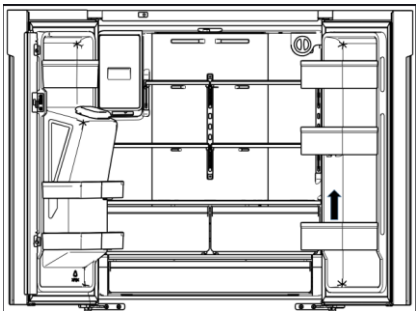
Caution!

Never close the refrigerator door while the shelves, crisper and/or telescopic slides are extended. It may damage both them and the refrigerator.

4.1 Door shelf

The refrigerator compartment is provided with six door baskets, which are suitable for the storage of canned liquid, bottled drinks and packaged food.

1. To remove the Door shelf, simply lift the racks up and pull straight out.
2. To relocate the Door shelf, slide it in above the desired location and push down until it stops.

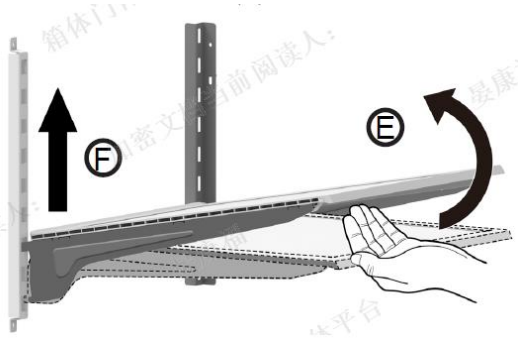


Warning!

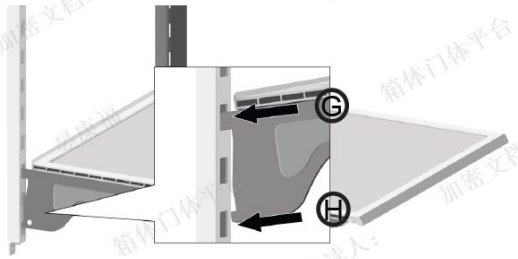
- Do not place too many heavy things in the Door shelf.
- Before you lift up the door shelf vertically, please take the food out.

4.2 Glass shelves

To remove the glass shelves, tilt up the front
of the shelf in the direction shown (E) and
lift it up vertically (F).Pull the shelf out.



To re-install the glass shelves, tilt the front of the shelf up and guide the shelf hooks into the slots at a desired height (G). Then lower the front of the shelf so that the hooks can drop into the slots (H).



The refrigerator compartment is also provided with a foldable shelf. It can be folded as required. To fold the shelf, hold the removable glass(I) and lift it up slightly, then push it slightly in the direction of the arrow.

To unfold the shelf, hold the removable glass(I) and pull it out slightly in the direction of the arrow until it can’t move.

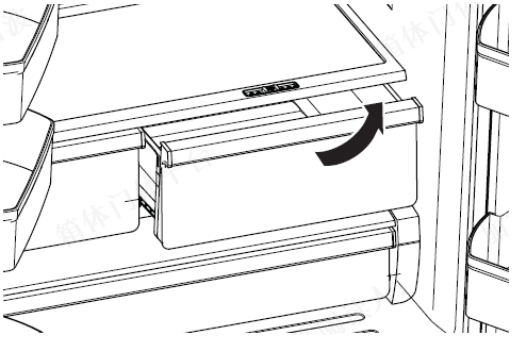
4.2 Drawers

The fruit and vegetable crisper drawers are designed to store fruits and vegetables. Putting fruits and vegetables inside the drawers helps avoid losing moisture and prevents flavor from getting into other foods.

To remove a drawer:

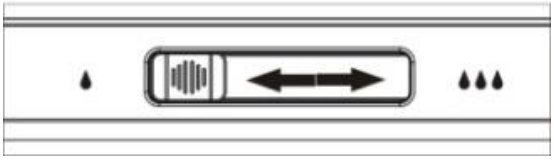
1 Open the refrigerator door all the way.

2 Pull the drawer completely open and move it slightly toward the compartment wall, then lift the drawer up and pull it out of your refrigerator.



Note:

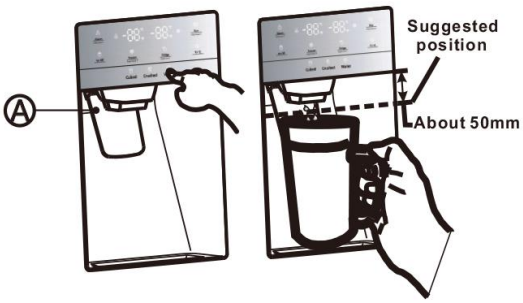
You can move the slider on the crisper box cover part to control the humidity in drawers, in order to prevent water desorption of food in the fruit and vegetable crisper.



4.3 Using the dispenser to get cold water and Ice

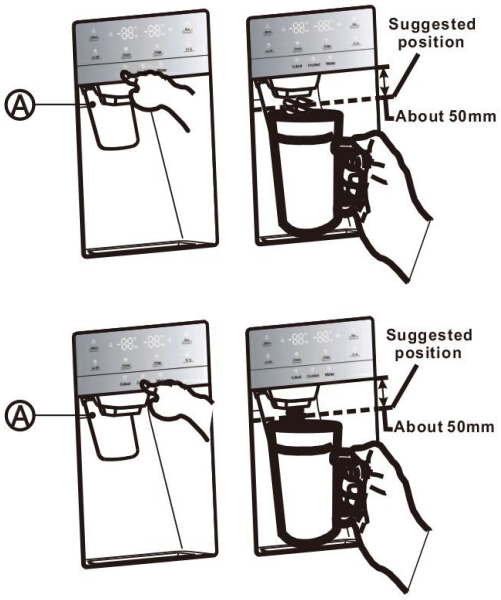
Getting Cold Water

The water dispenser is located in the fridge door. To get water, push the water button. Then move your glass down the dispenser lever (A) in the suggested position and press it.



Getting Ice

To get ice, push the cubed or crushed ice button as req uired. Then move your glass down the dispenser lever in the suggested position and press it.



Water clouding phenomenon

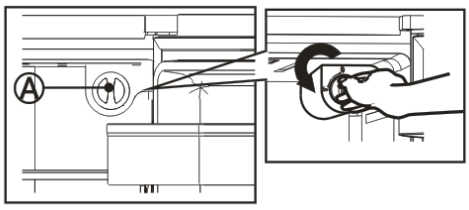
All water provided to the refrigerator flows through the filter which is an alkaline water filter. In the filtering process, the pressure of the water that has flowed out of the filter is increased, and the water becomes saturated with oxygen and nitrogen. When this water flows out into the air, the pressure plummets and the oxygen and nitrogen get supersaturated, which results in gas bubbles. The water may temporarily look misty or cloudy due to these oxygen bubbles. After a few seconds, the water will look clear.

4.4 Changing the water filter

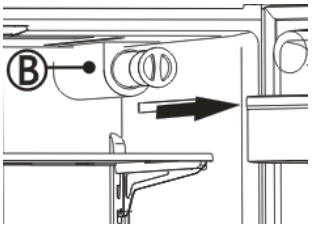
To drink the freshest and cleanest water from your refrigerator, change the filter on time.

To change the water filter, follow these steps:

1. Shut off the water supply. Then turn the water filter (A) about a 1/4 turn, counter-clockwise.



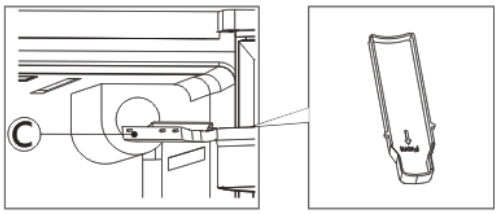
2. Pull the water filter (A) from the filter holder (B).



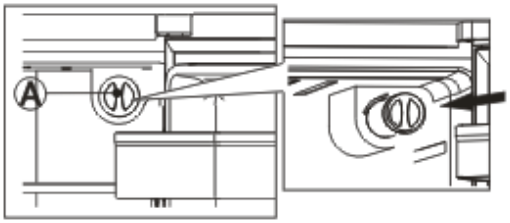
Note:

- To change the water filter easily, shut off the water supply valve.
- Sometimes, it is hard to disassemble the water filter because impurities in the water cause it to stick. If you are having difficulties, grip the water filter firmly and pull it out.

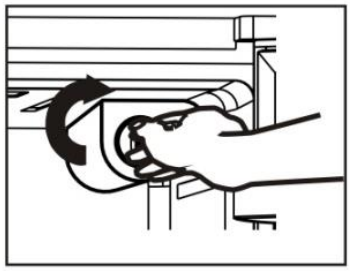
•When you pull the water filter, a little water can leak from the opening. This is normal. To minimize the water leaks, keep the filter cartridge horizontal when pulling it.
•To prevent overflow, empty the water filter tray(C) and dry around the filter case.
•To insert the new water filter, follow the directions below.



3. Insert the new filter into the filter holder.



4. Push the filter, and then turn it clockwise until it locks.



•If you have trouble inserting the water filter because of high water pressure, shut off the water supply valve.
5. If you turned off the water supply, turn it back on.

Note:

After turning on the water supply, you should check the leaks. If leaks occurs, repeat the step 1,2,3,4,5. If leaks persist, discontinue use and call you supporting dealer.

Removing any residual matter inside the water supply line after installing the water filter

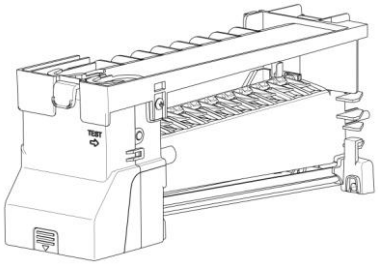
1.After the water filter is replaced, dispense 2.5 gallons of water (flush for approximately 5minutes)to remove trapped air and contaminants from the system.
2. Additional flushing may be required in some households.
3. Open the refrigerator door and make sure there are no water leaks coming from the water filter.

Note:

•Be sure to flush the dispenser thoroughly, otherwise water may drip from the dispenser. This means that there is still air in the line.
• Do not dispense the entire 2.5 gallon amount continuously. Depress and release the dispenser pad for cycles of 30 seconds ON and 60 seconds OFF.

5.Using the automatic ice maker

Press ICE Off to turn the icemaker on and Off. The Ice Maker icon "" is off when the ice maker is functioning.



Caution:

•The ice made by the ice maker first batches cannot be used for eating or drinking cause it is unhealthiness.

•When the ice maker dumps ice into the ice box, any sounds you hear are part of normal operation.

•Do not store ice cubes in ice box for a long time, they may stick to each other and may not be separated well. If this occurs, please remove all the ice and empty the box.

•If you are going on a long vacation or business trip and won't be using the water dispenser or ice maker part for period of time, please close the water supply to prevent leaks.

5.1 Maintaining the ice bucket

•To clean the ice bin/bucket, wash with a mild detergent, rinse well, and dry thoroughly it. Do not use harsh or abrasive cleaners or solvents.

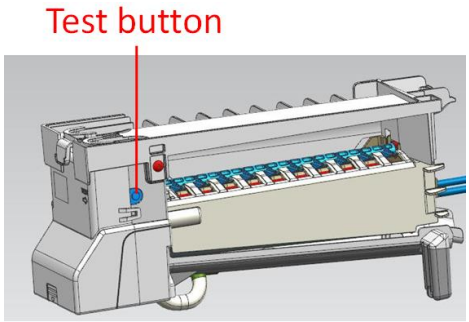
•Ice is made in cubes. When you select 'Crushed', the ice maker grinds the ice cubes into crushed ice.

•When you select Cubed ice, a small amount of crushed ice might be produced.

• When you select Crushed ice, a small amount of cube ice might be produced.

•The ice cubes generated by the rapid ice making process will look white, which indicates they were generated normally.

• If ice doesn't come out, pull out the ice bucket and press the test button located on the right side of ice maker. To test the ice maker, after power-on 1 minute and before 10 minutes, stay pressing the test button on the ice maker for at least 1 second before released it. See the illustration blow.



•Do not press the test button continuously when the tray is filled with ice or water. Water may overflow or ice may jam the bucket.

5.2 Making ice

•To fill the ice bucket to maximum capacity after installation, follow these steps:

1. Allow your refrigerator to operate and cool down for 24 hours (or 1 full day).Waiting 24 hours will allow your ice maker to cool properly.

2. Dispense 4 to 6 ice cubes into the glass.

3. After 8, and then 16 hours, dispense a full glass of ice.

Warning!

•Do not put food in the ice bucket. If you store food in the ice bucket, the food can strike the ice maker when you open or close the door, causing damage to the ice maker.

•Note that the ice cubes in the ice bucket may spill out over the drawer. If this occurs, be sure to clear the ice cubes that spilled out of the drawer.

•If a power failure occurs, ice cubes may melt, and then freeze together when the power comes back on, causing the dispenser to stop working.

To prevent this problem, after a power failure, pull out the ice bucket and residual ice or water.

Note:

•Don't push the water dispenser lever forward without a cup below since it may cause water spilling.

•To avoid cold air leaking out from cabinet, keep the water dispenser parts still be installed even if the water dispenser was out of use.

5.3 Using the ice off function

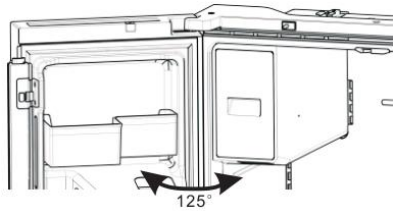
When you select the ice off mode, remove all ice cubes from the bucket.

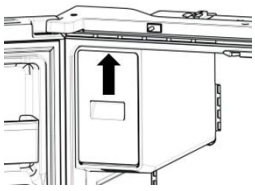
If you leave the ice cubes in the bucket, the ice cubes may clump together, making it difficult to remove them.

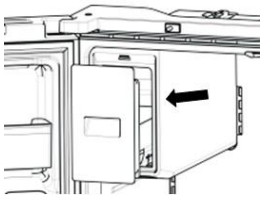
To remove the ice bucket safely and avoid injury, open and keep the door at the maximum angle.

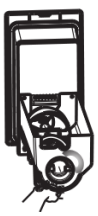
Then, lift up the ice bucket, and pull it straight out in the direction of the arrow.

To put the ice bucket in, push it firmly straight back. If the bucket does not fit, turn the helix 90 degree (see the last illustration on the right, below) and try again.









Note:

- The inside of the ice bucket is very cold when the refrigerator is operating. Don't reach deep inside the ice bucket.
- Use only the ice maker provided with the refrigerator. The water supply to this refrigerator must only be installed by a suitably qualified person.

Warning!

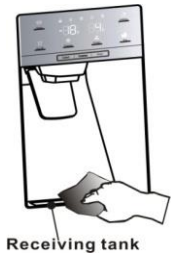
- Do not put your fingers, hands or any other unsuitable objects in the chute or ice-maker bucket. It may result in personal injury or material damage.
- Never put your fingers or any other objects in the dispenser opening. It may cause injury.
- Do not try to disassemble the ice maker.
- Do not wash or spray the ice bucket with water while it is in the refrigerator. Remove it to clean it.

5.5 Water clouding phenomenon

All water provided to the refrigerator flows through the filter which is an alkaline water filter. In the filtering process, the pressure of the water that has flowed out of the filter is increased, and the water becomes saturated with oxygen and nitrogen. When this water flows out into the air, the pressure plummets and the oxygen and nitrogen get supersaturated, which results in gas bubbles. The water may temporarily look misty or cloudy due to these oxygen bubbles. After a few seconds, the water will look clear.

Cleaning

After using for a period, water accumulated in receiving tank might overflow, thus you should clean it with dry towel regularly to avoid water spilling out onto the floor.



Note:

In case of stained by dust or other pollutant, dispensing water with unpleasant smell, *etc*., water dispenser parts should be cleaned thoroughly.

6. Frost removal

Although this appliance automatically defrosts, a layer of frost may occur on the freezer compartment’s interior walls if the freezer door is opened frequently or kept open too long. If the frost is too thick, choose a time when the freezer is nearly empty and proceed as follow:

1. Remove existing food and accessories baskets, unplug the appliance from the mains power and leave the doors open. Ventilate the room thoroughly to accelerate the process.
2. When defrosting is completed, clean your freezer as described above.

Warning!

Do not use sharp objects to remove frost from the freezer compartment. Only after the interior is completely dry should the appliance be switched back on and plugged back into the mains socke.

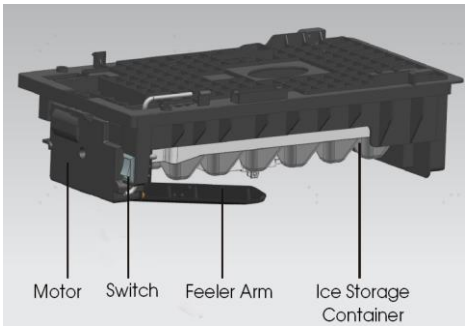
7.Ice Maker in Freezer

If the water line is connected, set the ice maker power switch to the ON position. •The ice maker will not begin to the operate until it reaches its operating temperature of 15°F(-9°C) or below. It will then begin operation automatically if the ice maker power switch is at the ON position.

•Following installation, allow 24 hours to produce the first batch of ice. Discard the first three batches of ice produced. Allow 2 to 3 days to fill the ice storage container.

If the ice in the ice container clumps, break up ice using a plastic utensil and discard. Do not use a sharp tool to break up the ice. This can cause damage to the ice container.

•Do not store any items other than ice in the ice storage container.



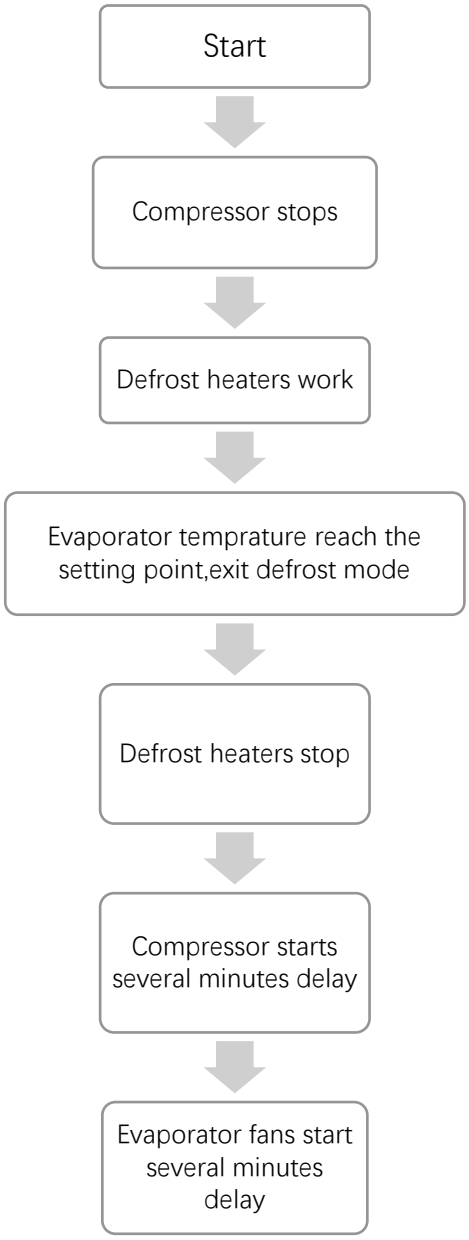
4.3 Defrost mode

4.3.1 Start condition

When compressor accumulated running time reach the setting point (depends on the environment temperature), it will enter defrost mode automatically.

Forced defrost mode: Touch and hold “Alarm“ button +“Freezer” button for 3 seconds in 10 minutes after power-on, the defroster heaters (Freezer heater/ Ice maker heater) turn on at the same time.

4.3.2 Defrost flow

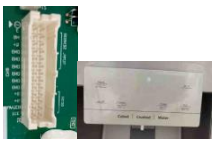
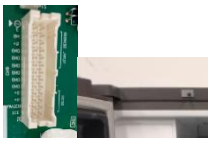


4.4 Error display

4.4.1 Error Code

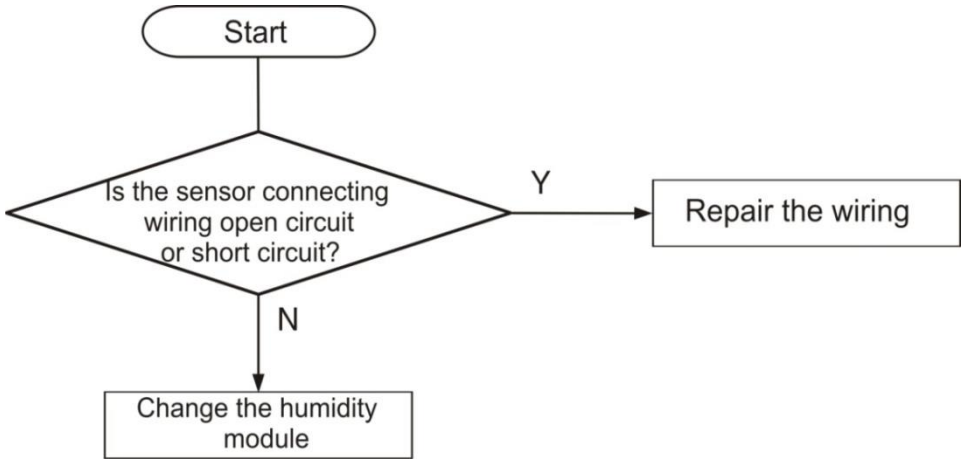
Code	Description	Trouble contents	Diagnostic method	Detection value	image

E0	Environment sensor Error	Display error: separation of sensor housing part, contact error, disconnection, short circuit. Display error of detecting temperature of sensor : more than 40°C or less than -40°C	Measuring the voltage between the Main PCB CN8 PIN No.1- No.7	0.5V~4.3V	 
E1	Refrigerator sensor Error		Measuring the voltage between the Main PCB CN8 PIN No.2- No.9	0.8V~4.6V	 
E3	Freezer sensor Error		Measuring the voltage between the Main PCB CN8 PIN No.4- No.9	0.5V~4.3V	 
E4	Freezer defrost sensor Error		Measuring the voltage between the Main PCB CN8 PIN No.6- No.9	0.8V~4.6V	 
E8	Humidity sensor Error		Measuring the voltage between the Main PCB CN8 PIN No.3- No.7	1.235-3.53V	 
E9	Ice maker sensor Error		Measuring the voltage between the Main PCB CN7 PIN No.2- No.7	0.8V~4.6V	
EA	Ice room sensor Error		Measuring the voltage between the Main PCB CN8 PIN No.11-No.12	0.8V~4.6V	 
Code	Description	Trouble contents	Diagnostic method	Detection value	image
F0	Condenser fan Error	separation of fan housing part, contact error, disconnection,	1.Checking the connecting is well or not. 2. Replace the condenser fan.	9V-12V	 

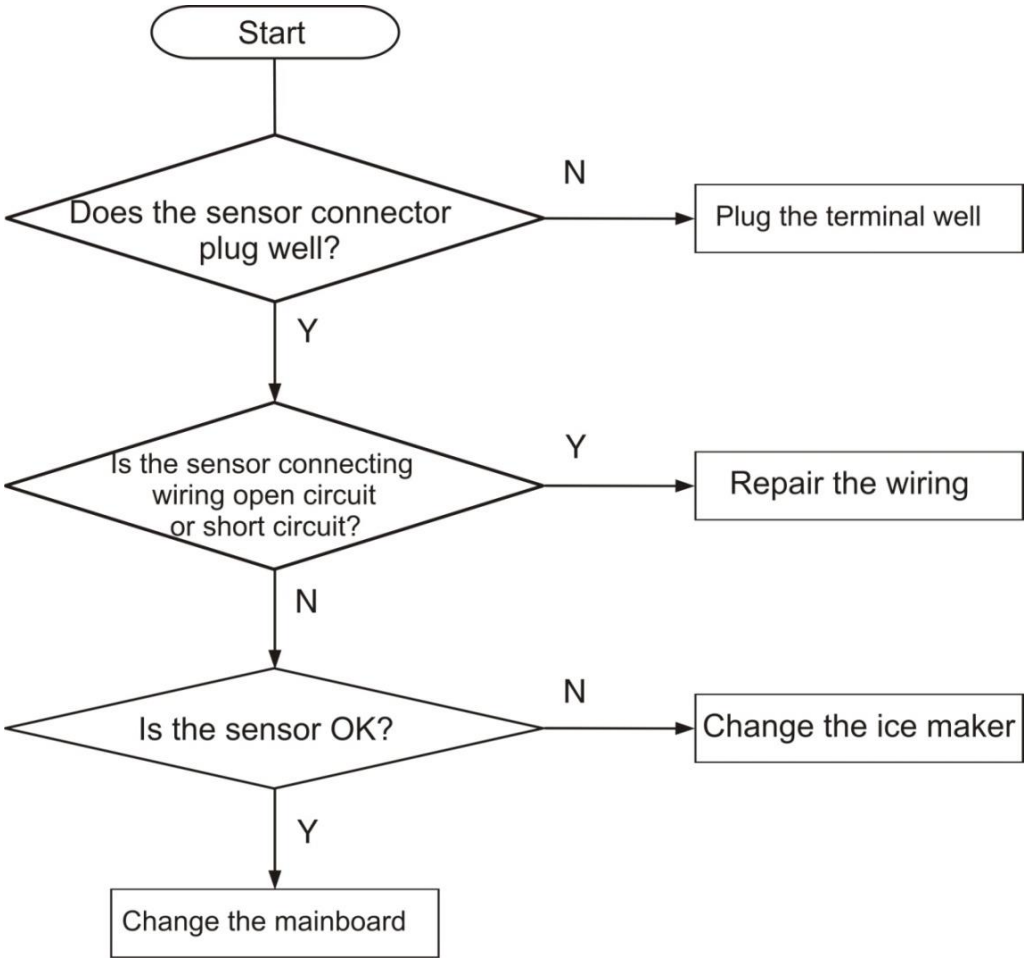
		short circuit.	3. Replace the control PCB.		
F1	Freezer fan Error		1. Checking the connecting is well or not. 2. Replace the freezer fan. 3. Replace the control PCB.	9V-12V	
Ec	Communication sending Error	Display board cannot send signal to main control board	1. Checking the connecting is well or not. 2. Replace the display board. 3. Replace the control PCB.	/	
Er	Communication receiving Error	Display board cannot receive signal from main control board	1. Checking the connecting is well or not. 2. Replace the display board. 3. Replace the control PCB.	/	
Eb	Ice maker Error	Ice maker motor initialization failure	1. Checking the connecting is well or not. 2. Replace the control PCB. 3. Replace the ice maker.	/	
dr	Door /Door switch Error	1. Door is not closed properly. 2. Door switch contact error, disconnection, short/open circuit.	1. Checking the connecting is well or not. 2. Check the magnet on the door is dropped out or not. 3. Replace the door switch. 4. Replace the control PCB.	/	  

4.4.2 Checking method

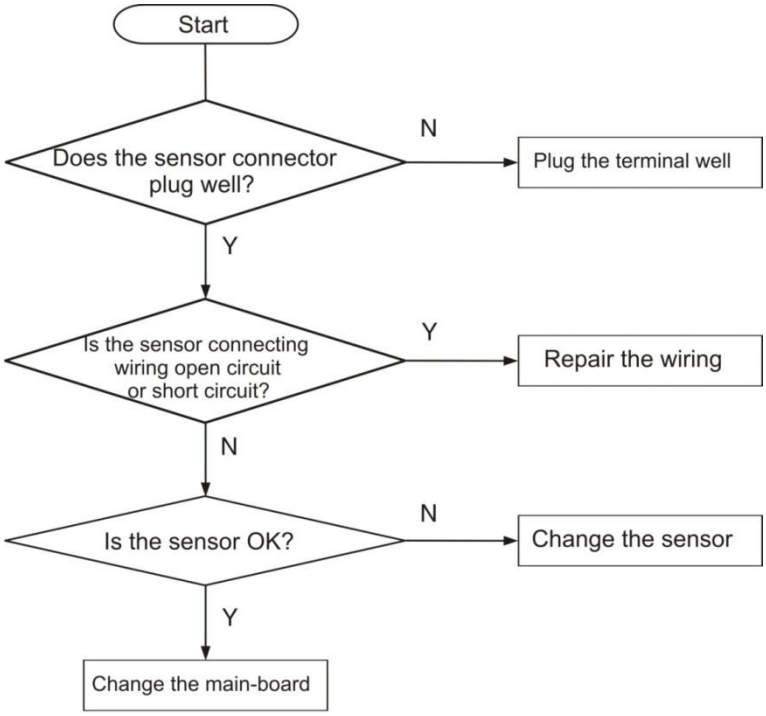
4.4.2.1 Environment sensor or Humidity sensor error



4.4.2.2 Ice maker sensor error



4.4.2.3 Other sensors error



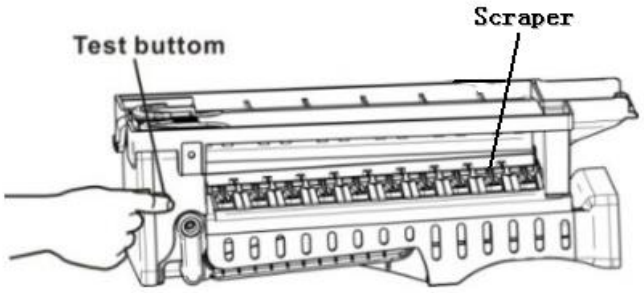
Note:

1. Refrigerator sensor corresponding pin No. 2 and No. 9 on CN8 connector of main-board.
2. Freezer sensor corresponding pin No. 4 and No. 9 on CN8 connector of main-board.
4. Ice room sensor corresponding pin No. 12 and No. 9 on CN8 connector of main-board.
5. Freezer defrost sensor corresponding pin No. 6 and No. 13 on CN8 connector of main-board.
7. Environment sensor corresponding pin No. 1 and No. 7 on CN8 connector of main-board.
8. Humidity sensor corresponding pin No. 3 and No. 7 on CN8 connector of main-board.
9. Ice maker sensor corresponding pin No. 2 and No. 7 on CN7 connector of main-board.

4.4.2.4 Ice maker error

Eb error :

1. Check the connecting wiring between main-board and ice maker (corresponding pin No. 2~10 on CN7 & CN5 connector of main-board, as the drawing below) and repair if it is broken.

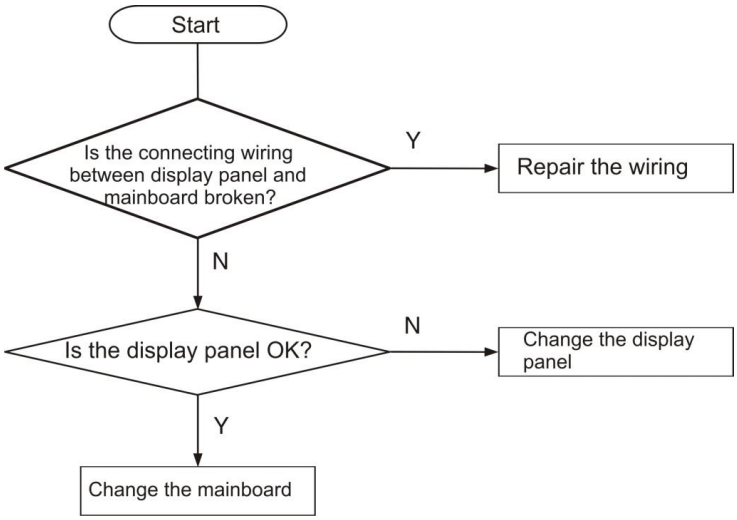


4.4.2.5 Full ice sensor error:

If the ice maker doesn't make ice, or it make ice all the time although the ice box is full, check the ice full switch is normal or not. Test the voltage between pin No.4 and No.2 on CN7 connector of main-board. If the ice box is full, the normal voltage will be 5V. If the ice box is not full, the normal voltage will be 0V.If not, it means the ice full switch is broken. Please replace the ice maker.

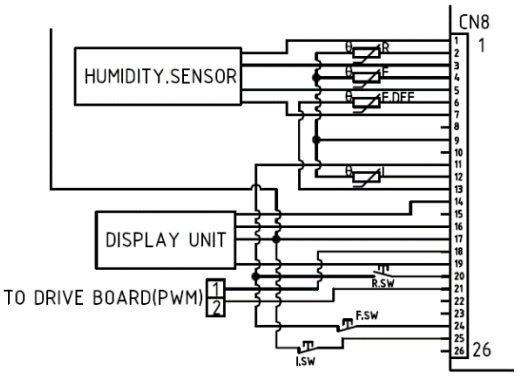
4.4.2.6. Communication error

Ec or Er error:



Note:

The display panel corresponding pin No.14、No.16、No.17and No.19 on CN8 connector of the main-board as the drawing below.


CN8
1
26
HUMIDITY.SENSOR
R
F
F.DEF
I
DISPLAY UNIT
TO DRIVE BOARD(PWM)
1
2
R.SW
F.SW
I.SW

5. Troubleshooting

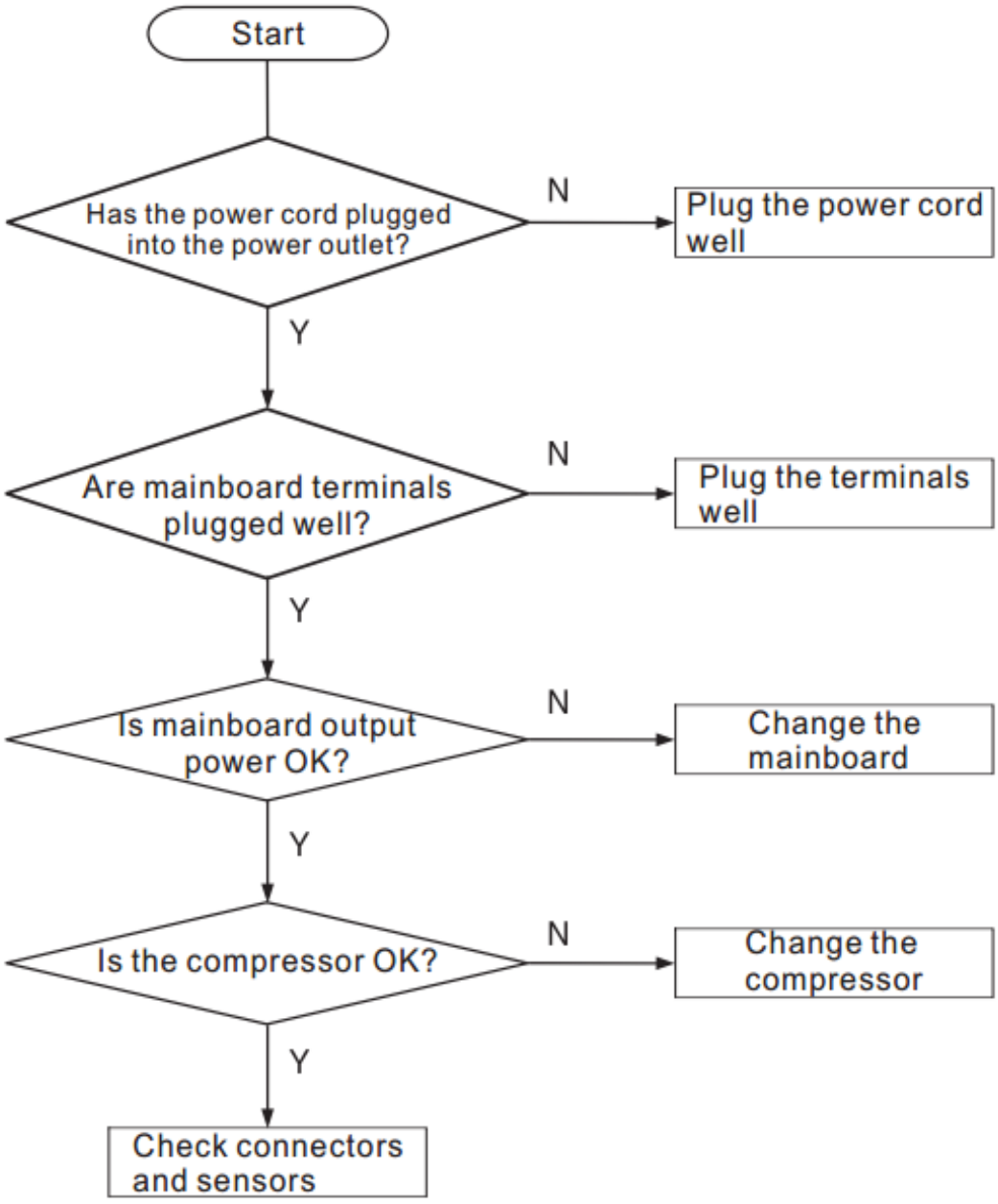
5.1 Common problem and checking

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 of your power supply, 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 freezer is not operating during the defrost cycle, or for a short time after the appliance is switched on to protect the compressor.
	If the power supply is removed forcibly ,the compressor will not work immediately .It takes about 20 minutes to make the compressor work again.
Odours from the compartments	The interior may need to be cleaned
	Some food, containers or wrapping cause odours.
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. • Clicking noise when you get the water. •The motor running noises when you get the ice.
	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 appliance touches the wall. Bottles or containers fallen or rolling.
The motor runs continuously	It is normal to frequently hear the sound of the motor, it will need to run more when in following circumstances: •Temperature setting is set colder than necessary •Large quantity of warm food has recently been stored within the appliance. •The 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 food and ensure food is placed within the appliance to allow sufficient ventilation. Ensure that door is fully closed. To remove the frost, please refer to "Frost removal" part.
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.
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.
The light is not working	•The LED light may be damaged. Refer to "LED light removal" part. •The control systems has disabled the lights due to the door being kept open too long, close and reopen the door to reactivate the lights.
Ice is not dispensing	•Did you wait for 12 hours after installation of the water supply line before making ice? If it is not sufficiently cool, it may take longer to make ice, such as when first installed. •Is the water line connected and the water valve open? •Did you manually stop the ice making function? Make sure you do not set the ice off mode. •Is there any ice blocked within the ice maker bucket or ice chute? • Is the water pressure less than 30 psi? Install a booster pump to compensate for the low pressure. •Is the freezer temperature too warm? Try setting the freezer temperature lower. •Whether the quantity supplied is larger than the quantity supplied? Please wait for at least 90 minutes.
Water dispenser is not functioning	•Is the water line connected and the water valve open? •Has the water line been crushed or kinked? Make sure the water line is free and clear of any obstruction. •Is the water tank frozen because the refrigerator temperature is too low? Try selecting a warmer setting on the display panel. •Check if the filter is properly installed. If it is not properly installed, the water dispenser may not work. •Is the Child Lock on?

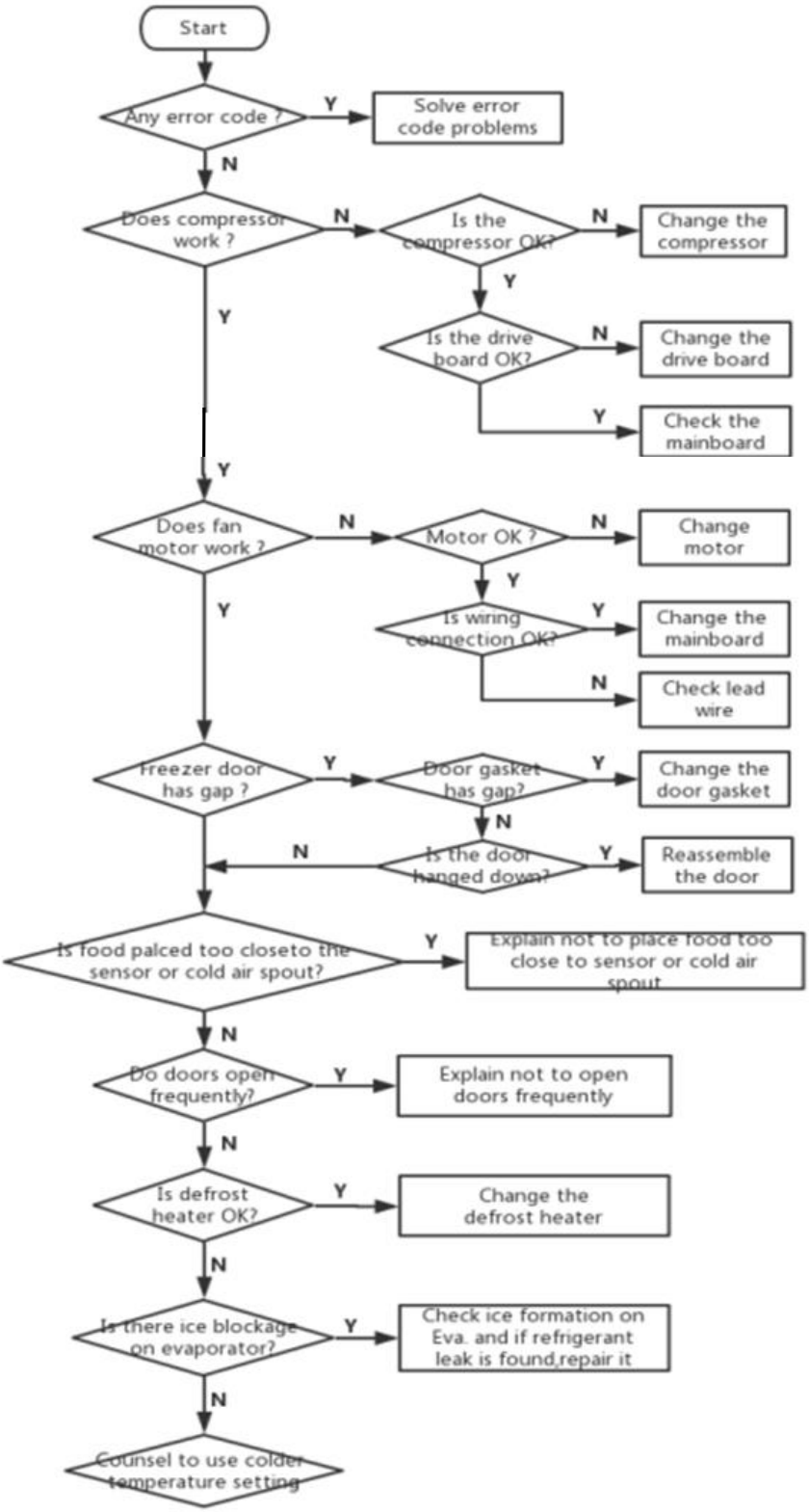
Hear water bubbling in the refrigerator	This is normal. The bubbling comes from the refrigerant coolant liquid circulating through the refrigerator.

5.2 Faulty start

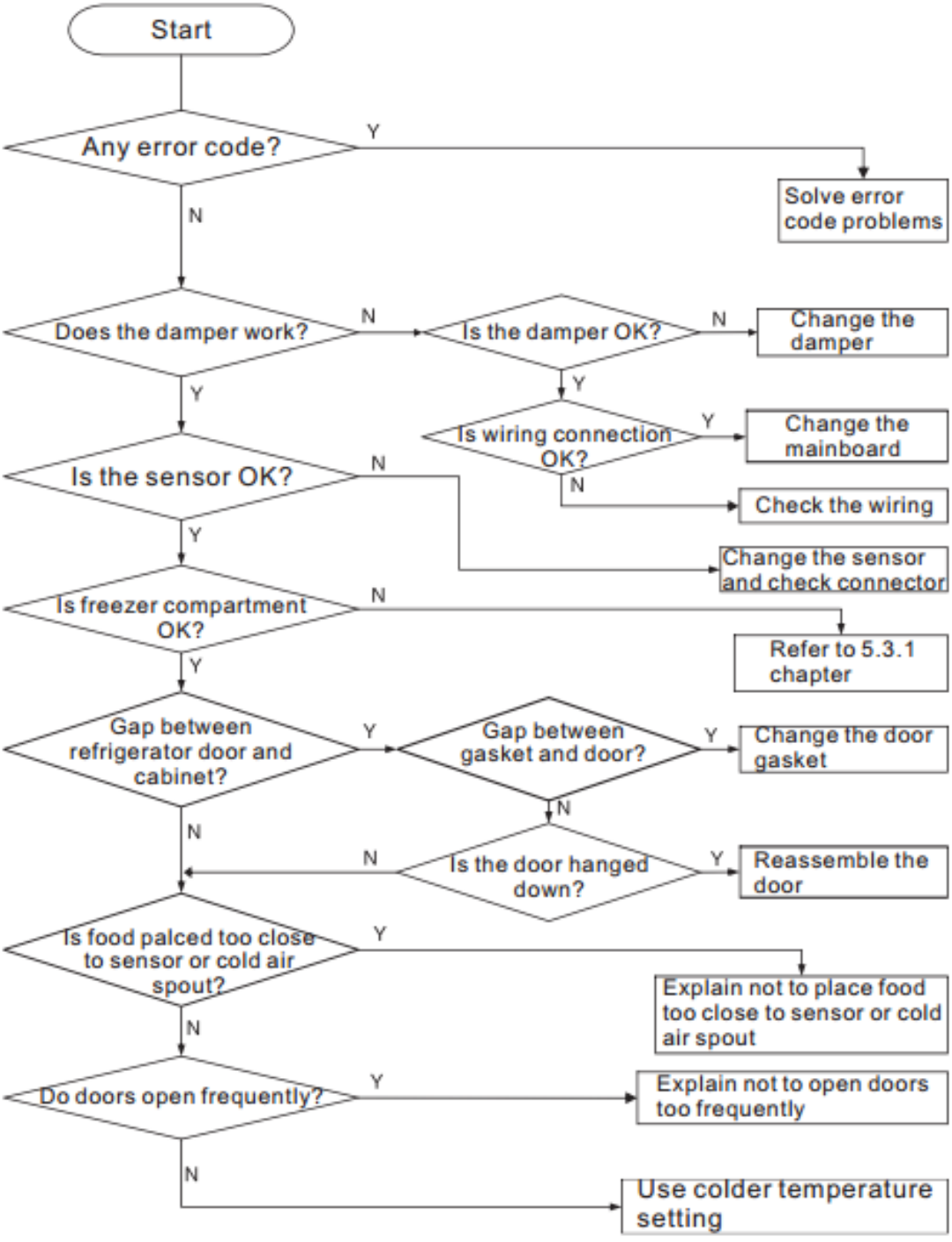


5.3 Refrigeration failure

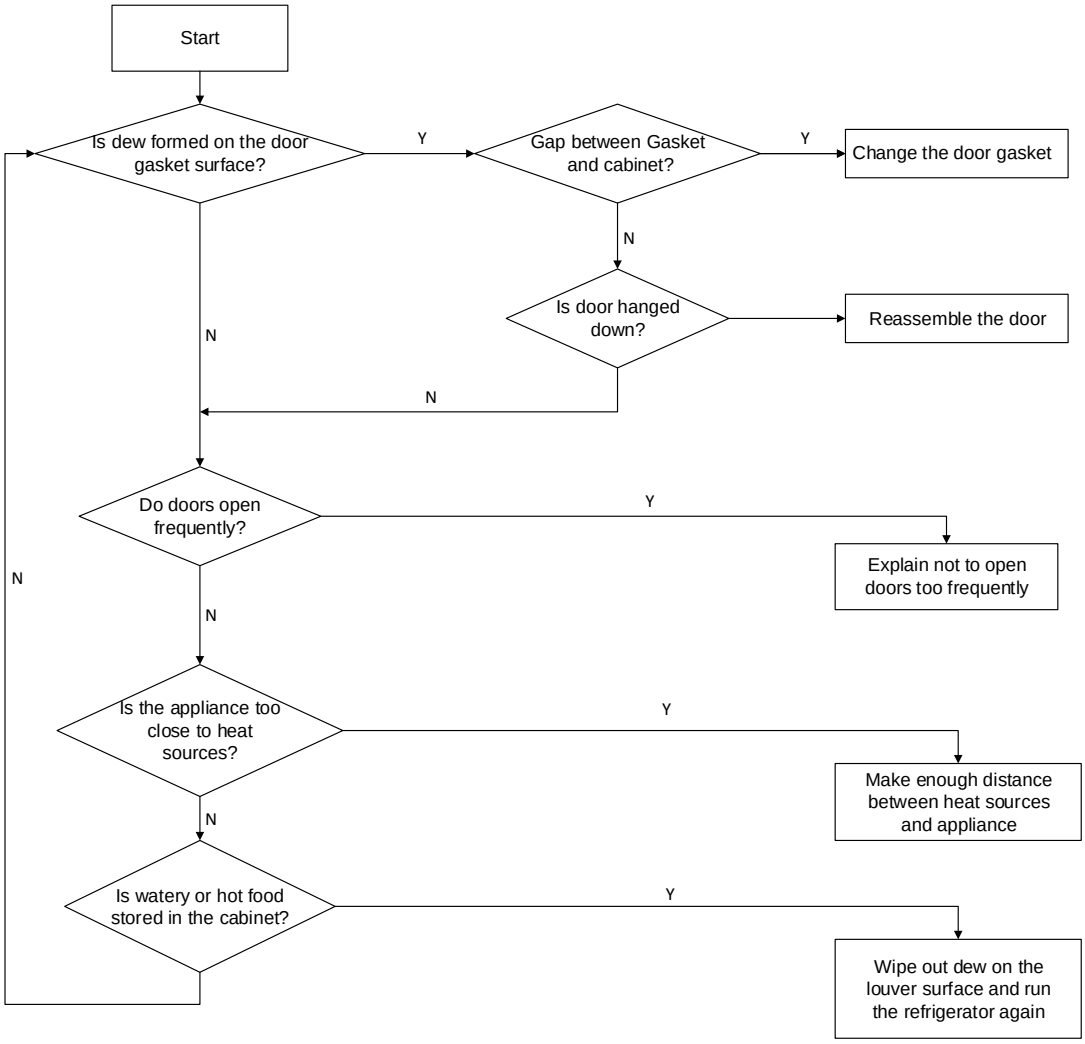
5.3.1 Freezer compartment



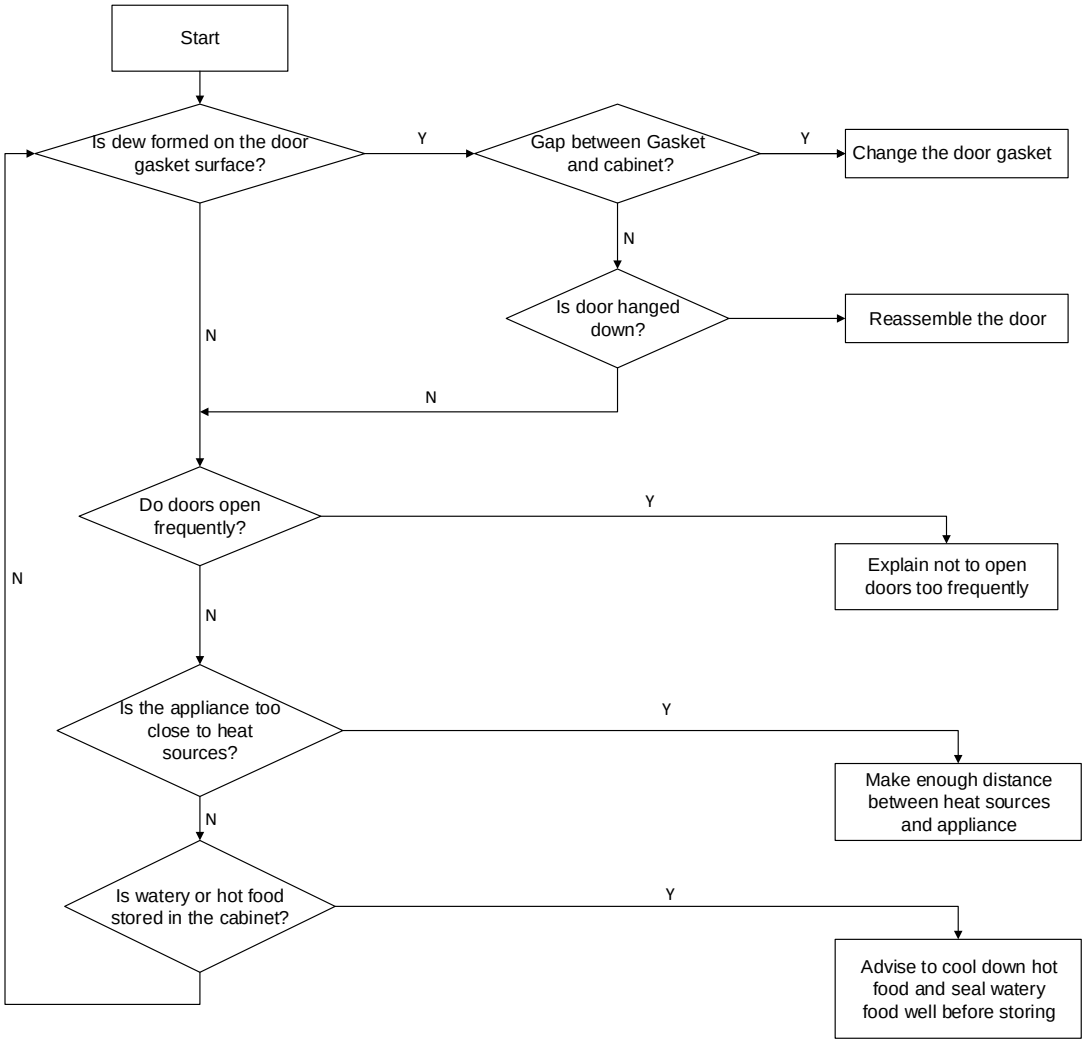
5.3.2 Refrigerator compartment



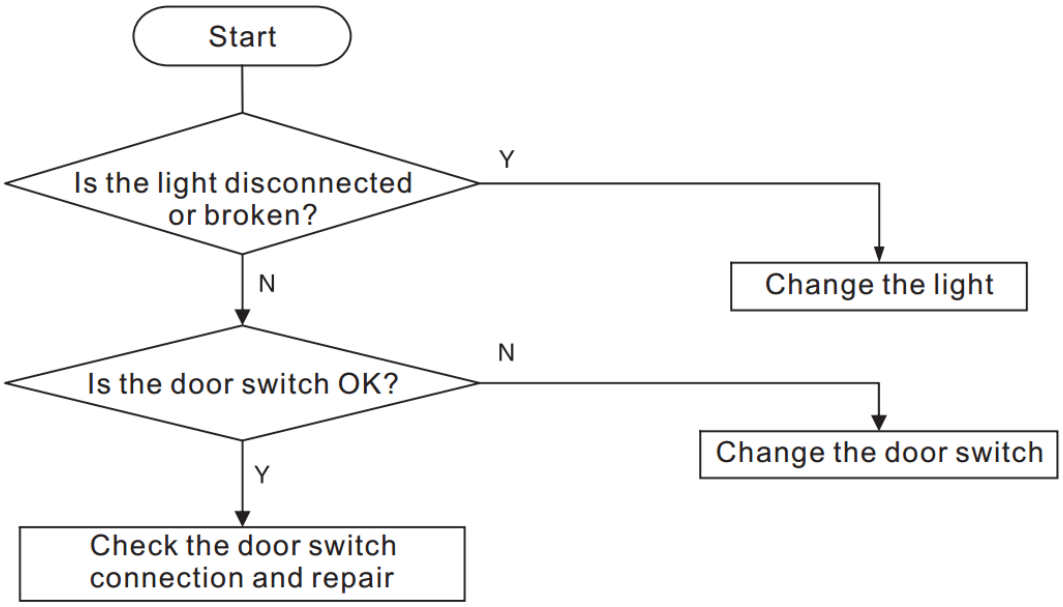
5.4 Thick frost in freezer compartment



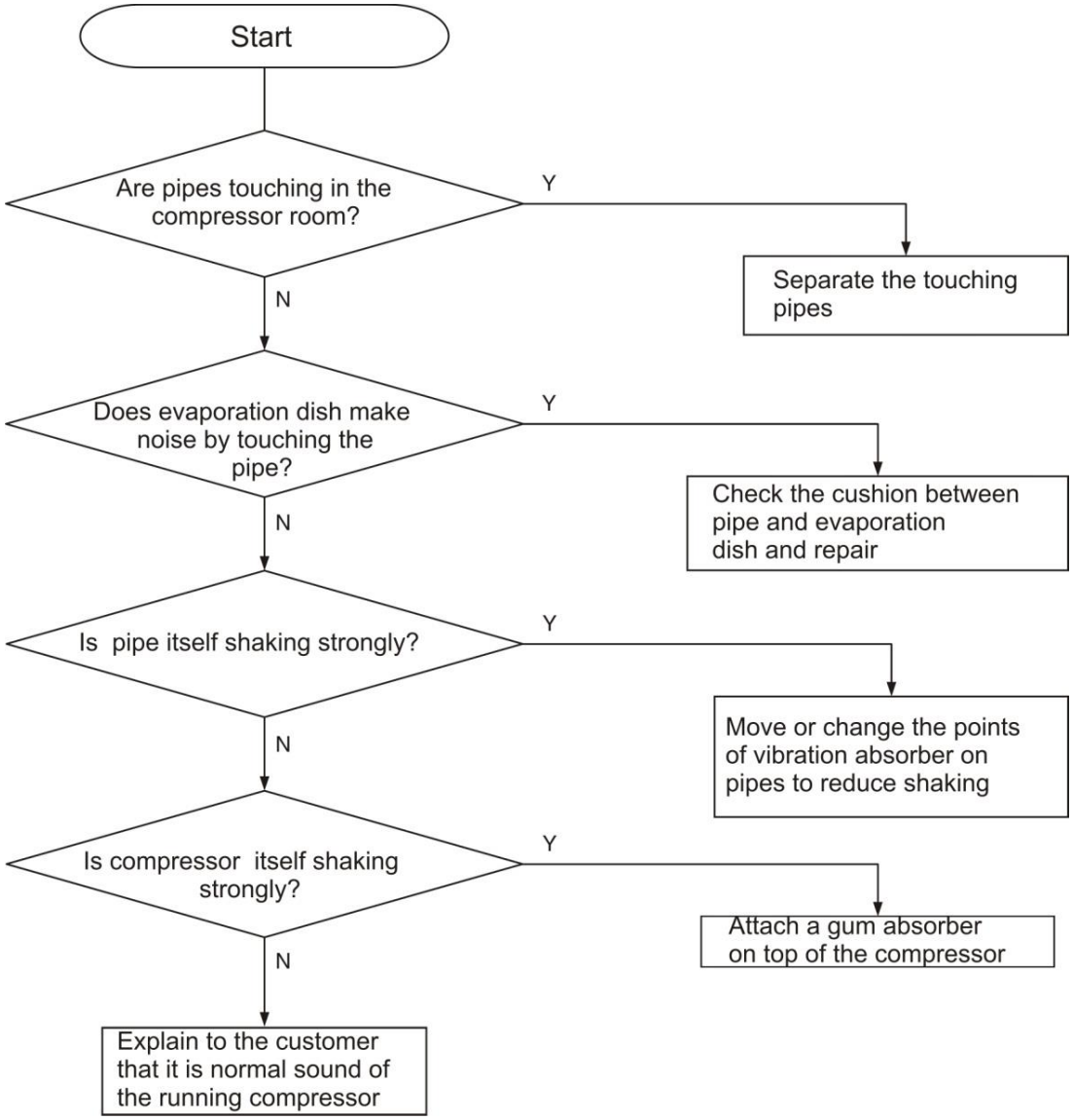
5.5 Dew in refrigerator compartment



5.6 Breaking of light

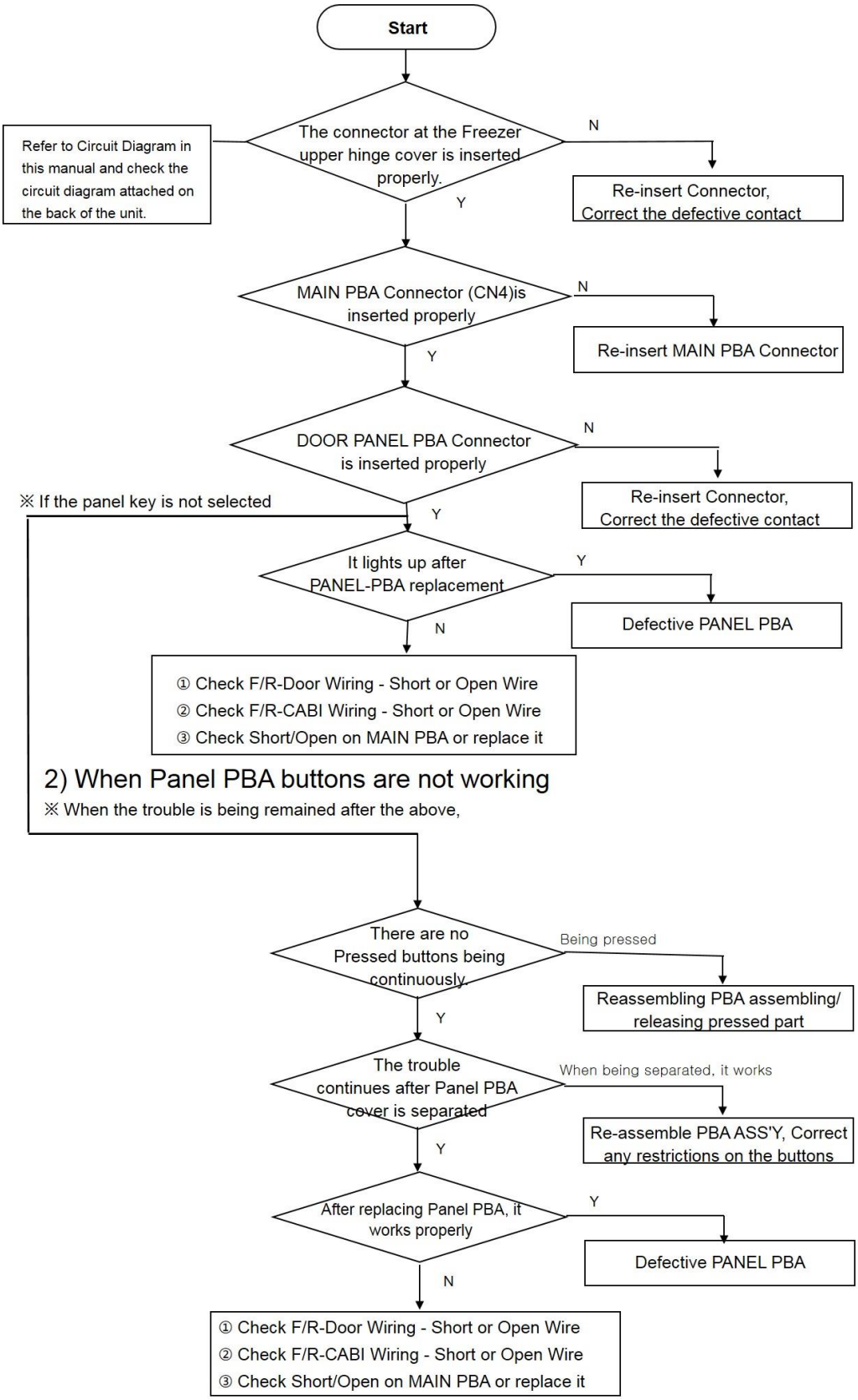


5.7 Pipe noise



5.8 PANEL PBA operates abnormally

1) When PANEL PBA does not light up or partially does

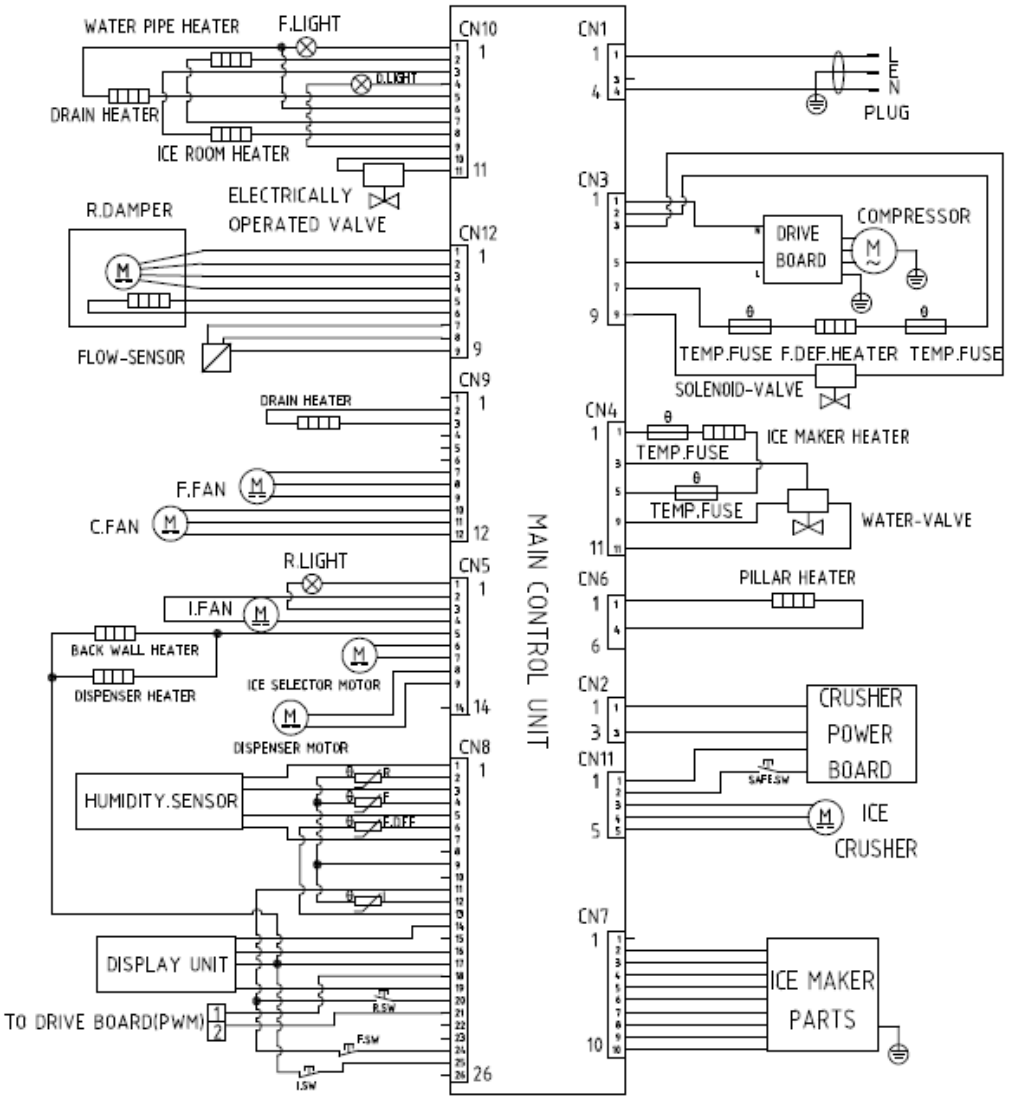


2) When Panel PBA buttons are not working

※ When the trouble is being remained after the above,

6. Circuit and checking

6.1 Circuit diagram



6.2 Mainboard

6.2.1 Checking method

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

6.2.2 Removing the mainboard

1. Unplug the appliance
2. Remove the screws by screwdriver and remove the electric box cover, as picture 1.
3. Remove the screw, then remove the mainboard, as picture 2.

	
Picture1	**Picture2**

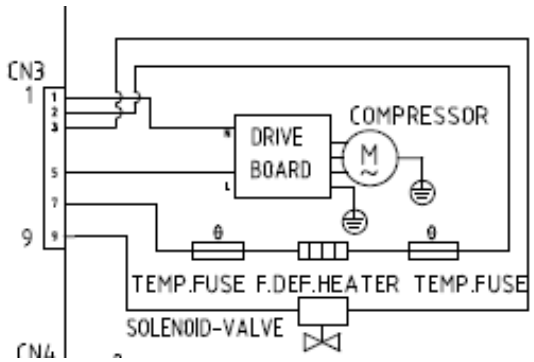
6.3 Compressor

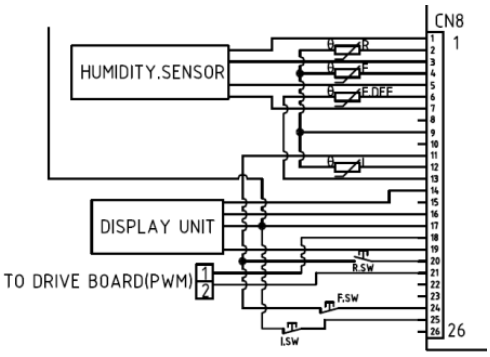
6.3.1 Basic parameters

Input voltage/frequency: 115V/60Hz
Input power:≤300W

6.3.2 Checking method

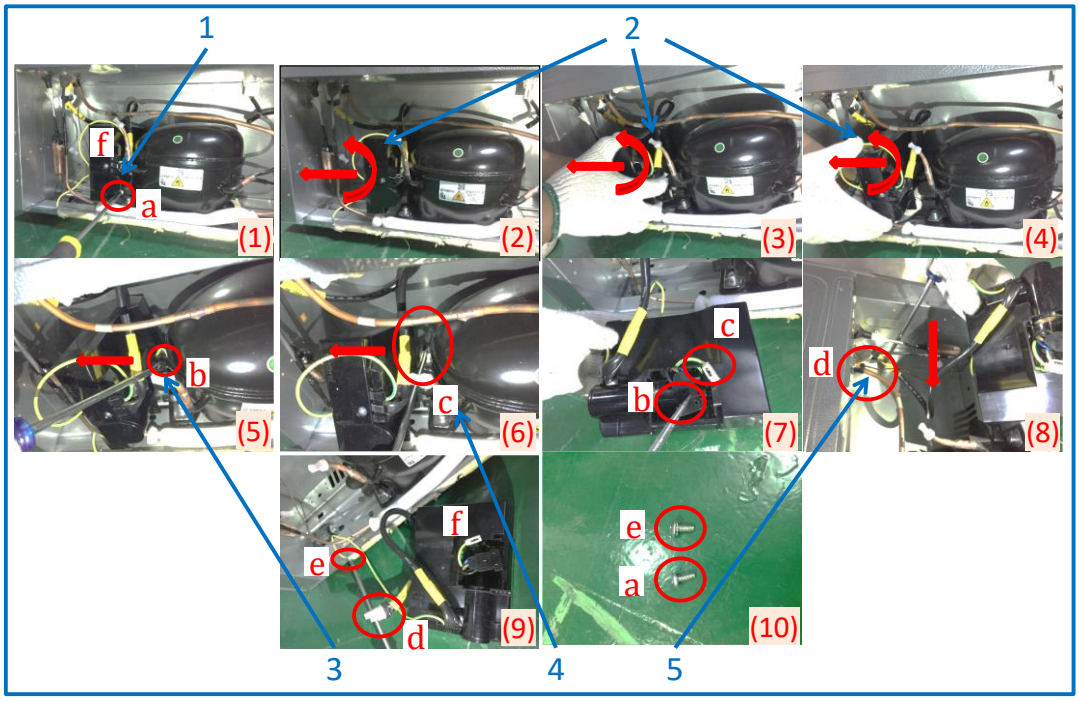
1. Power on the Refrigerator, when the cooling fan is working, Check if the compressor is working .If not, remove the electric box cover and check.
2. Check the connecting wiring between compressor and mainboard and repair if it is broken.
3. Use a multimeter to measure voltage between No.1 and No.5 on CN3 connector of mainboard, then measure frequency between No.18 and No.20 on CN5 connector of mainboard. If the voltage equal to electric supply power and there is stabilized frequency, it means the compressor or drive board is broken, change the drive board or compressor; If not, change the mainboard.





6.3.3 Removing the drive board

Attention: Before you removing the drive board, please unplug the appliance.
Step 1. Remove the (a) screw of the drive board box by screwdriver.(pic.(1))
Step 2.Remove the drive board box following the picture (2~4).
Step 3.Remove the black installation clip (b) by screwdriver following the picture (5)
Step 4.Remove the white installation clip (c) by screwdriver following the picture (6)
Step 5. Unplug the installation clip (d). (pic.(8))
Step 6.Unplug the connector (f)connected with the compressor and remove the screw (e)(pic.(9)).



6.4 Fan motor

6.4.1 Basic parameters

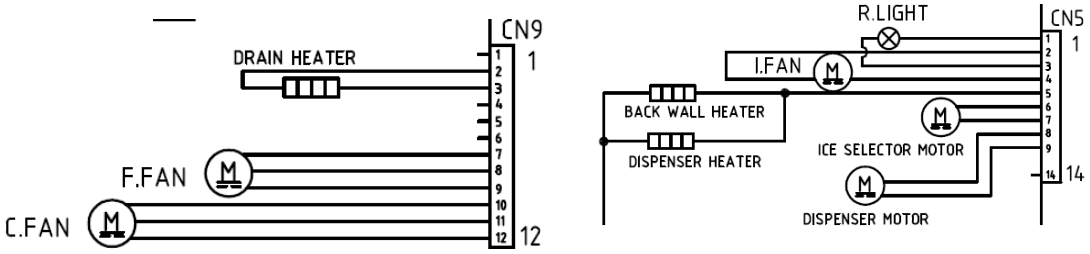
Rated voltage:
F.FAN: DC12V
C.FAN: DC12V

6.4.2 Checking method

1. Check the connecting wiring of fan motor is well or not, repair if it's broken.
   - The freezer fan motor corresponding pin No.7~No.9 on CN9 connector of main-board, pin No. 8 connect 12V power and pin No. 9 connect GND, as the drawing below.
   - The condenser fan motor corresponding pin No. 10~ No.12 on CN9 connector of main-board, pin No.11 connect 12V power and pin No.12 connect GND, as the drawing

below.

➢ The ice maker fan motor corresponding pin No.2 and No.4 on CN5 connector of main-board, pin No. 4 connect 12V power and pin No. 2 connect GND as the drawing below.



2.Freezer fan motor

Check output voltage corresponding freezer fan motor, if the voltage range between DC 9V and 12V when working conditions are met, it means the mainboard is OK, change the freezer fan motor. If not, change the mainboard.

The convertible fan motor

3.Condenser fan motor

Check output voltage corresponding condenser fan motor, if the voltage range between DC 9V and 12V when working conditions are met, it means the mainboard is OK, change the condenser fan motor. If not, change the mainboard.

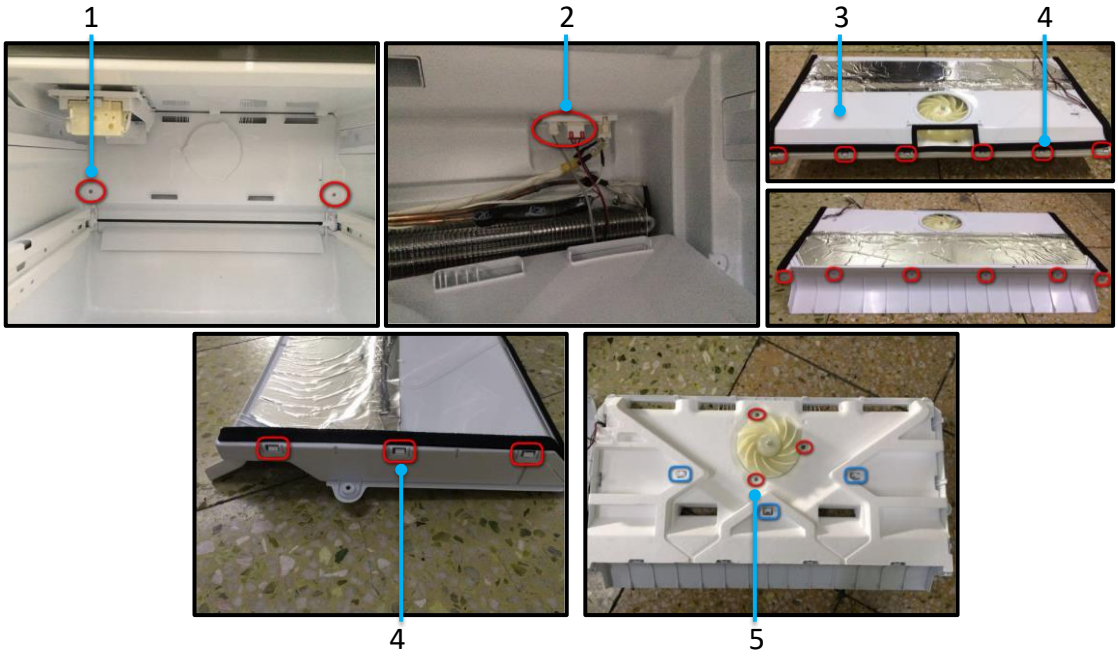
6.4.3 Removing the freezer fan motor

Step 1: Remove the freezer door (refer to "Door removal" part).

Step 2: Remove the two screws (1) holding the freezer air duct with a Philips screwdriver, and then remove the wire connectors(2) and freezer air duct.

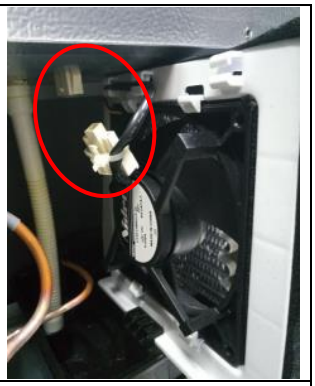
Step 3:Remove the clasp(4) of the cover(3) with your both hands.

Step 4:Remove the fan motors after removed the three screws (5) holding the fan motors with a Philips screwdriver.



6.4.4 Removing the condenser fan motor

Step 1. Unplug the appliance.
Step 2. Remove the 6 screws by screwdriver then remove the cover as picture 1.
Step 3. Remove the 1 screws by screwdriver as picture 2.
Step 4. Unplug the terminal as picture 3.
Step 5. Pull out the fan motor as the picture 4, then remove the fan motor as picture 5.

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

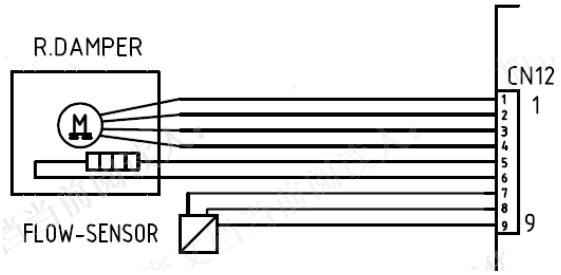
6.5 Damper

6.5.1 Basic parameters

Rated voltage: DC12V
Rated current: 60mA

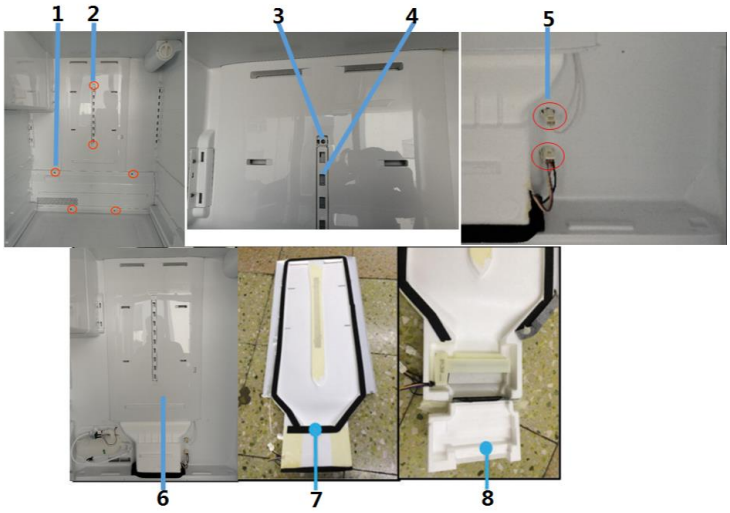
6.5.2 Checking method

1. Check the connecting wiring of the damper is well or not, repair if it is broken. The damper corresponding pin No.1~6 on CN6 connector of mainboard, as the drawing below.
2. The damper will turn on and off for one time after power-on, if not, change the mainboard first and change the damper if problem remains.



6.5.3 Removing the damper

Step 1:Remove the four screws (1) with a Philips screw driver.
Step 2:Remove the bracket cover(2).
Step 3:Remove the two screws (3) holding the fridge air duct with a Philips screwdriver, and then remove the fixed board (4).
Step 4:Remove the two wire connectors(5).
Step 5: Remove the fridge air duct(6) with your both hands.
Step 6: Rive off the foam strip (7) ,and then remove the wind gate foam(8).
Step 7: Remove the fridge electric wind gate.



6.6 Light

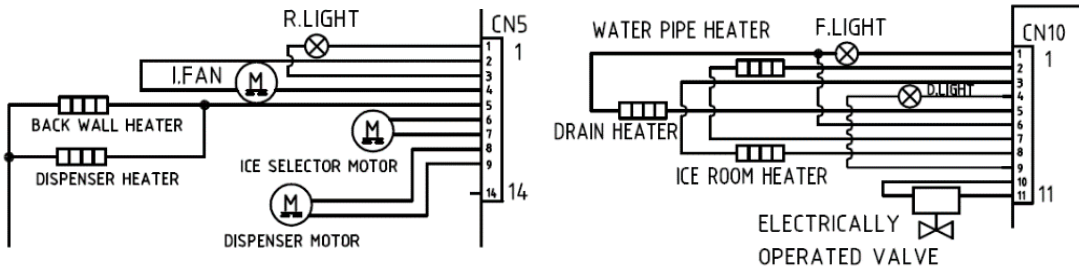
6.6.1 Basic parameters

Rated voltage: DC12V

6.6.2 Checking method

6.6.2.1 Check the connecting wiring between light and mainboard is well or not. Repair if it is broken.

- Refrigerator light corresponding pin No.1 and No.3 on CN5 connector of the mainboard.
- Freezer light corresponding pin No.1 and No.6 on CN10 connector of the mainboard.
- Dispenser light corresponding pin No.4 and No.9 on CN10 connector of the mainboard, as the drawing below.



6.6.2.2 Checking method

Check output voltage corresponding light of the mainboard, if it is 12V when working conditions are met, it means the mainboard is OK, change the light; If not, it means the

mainboard is not OK, change it.

6.6.3 LED light removal

6.6.3.1 Removing the refrigerator top light

1. Unplug the appliance.
2. Remove the light cover, as picture 1.
3. Remove the light, as picture 2.

	
Picture1	Picture2

6.6.3.12 Removing the refrigerator side light

1. Remove the light cover by prying open the light cover with a screwdriver, as picture 1;
2. Remove the light and remove the wire connector by pressing the top of them, as picture 2;

	
Picture1	Picture2

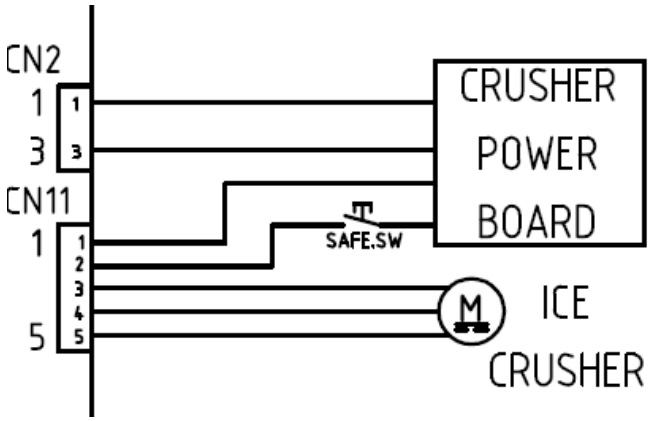
6.7 Door switch

6.7.1 Basic parameters

Load voltage: DC5V
Load current: 0.05A

6.7.2 Checking method

Fridge door switch
1.Check the connecting wiring of door switch is well or not, repair if it is broken. Refrigerator freezer door switch corresponding pins as the drawing below.
2.The fridge doors switch is corresponding pin No.11 and No.20 on CN8 connector of mainboard, as the drawing below.
3.Check the magnet on the fridge doors is dropped out or not.
4. Normally, when the door is closed, the two pins of door switch should be short circuit; When the door is open, the two pins should be open circuit. If the result is not abnormal, change the door switch.
If all above is OK ,change the mainboard.
Freezer door switch
1. The freezer Door switch corresponding pin No.11 and No.24 on CN8 connector of mainboard, as the drawing below.
2. Normally, when the door is closed, the two pins of door switch should be open circuit ;When the door is opening ,the two pins should be short circuit. If the result is abnormal, change the door switch.
3. If all above is OK, change the mainboard.
Ice crusher motor switch (safe switch)
1、Check the connecting wiring of door switch is well or not, repair if it is broken.
2、the corresponding pin No.2 on CN11 connector to crusher power board.
3、Normally, when the door is closed, the two pins of switch should be short circuit; When the door is open, the two pins of switch should be open circuit. If the result is not abnormal, change the switch. If all above is OK, change the mainboard.



6.8 Defrost heater

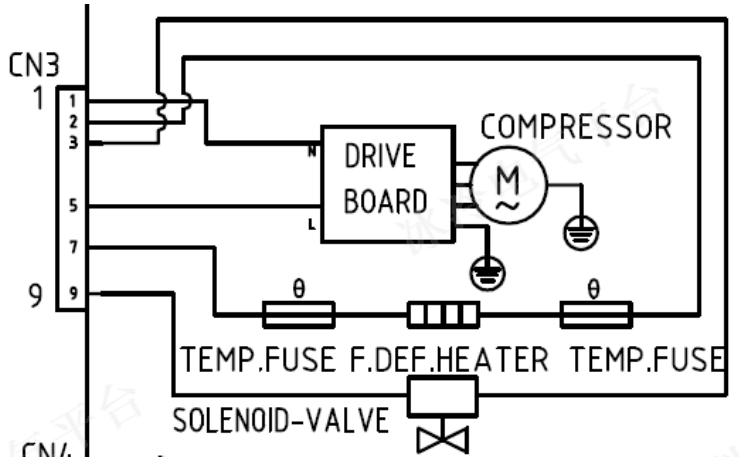
6.8.1 Basic parameters

Freezer:

Rated voltage: AC115V; Rated power: 220W

6.8.2 Checking method

1.Check the connecting wiring of the defrost heaters are well or not, repair it if it is broken. Feezer defrost heaters corresponding pins as the drawing below.
2. Within 10 min after power on , press the button “Alarm”+“Freezer” more than 3 second. After the display illumine all the leds for 1 second and occur a long sound, it means have entered compulsory defrost mode.
During compulsory defrost mode, the display board will display “dF”, use a multimeter to measure the voltage between pin No.2 and No.7 on CN3 connectors of the mainboard, if the voltage doesn’t equal to electric supply power, it means the mainboard is broken, change it.
3.Use a multimeter to measure resistance of the heaters, if the value isn’t 60.1Ω±10%, it is broken, change the heater.



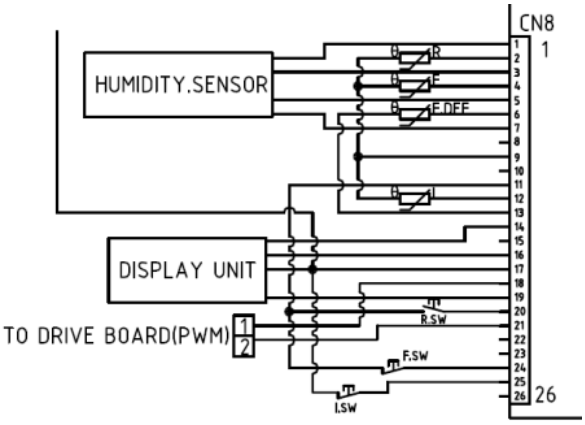
6.9 Removing the Display Component

6.9.1 Basic parameters

Rated voltage: DC5V

6.9.2 Checking method

1. Check the connecting wiring of the display component and the connecting on top of refrigerator, is well or not, repair if it is broken.
2.The display panel corresponding pin No.14、No.16、No.17 and No.19 on CN8 connector of the main-board as the drawing below.
3. Check output voltage corresponding display between No.17 and No.19 on CN8 connector of mainboard. if the voltage equal to DC 5V, it means the mainboard is OK, change display component; If not, it means the main control board is broken, change it.



6.9.3 Removing the Display Component

Step 1: Remove the display component by digging the bottom edge with fingers as the picture below.

Step 2: Remove the wire connector by pressing the top of them.

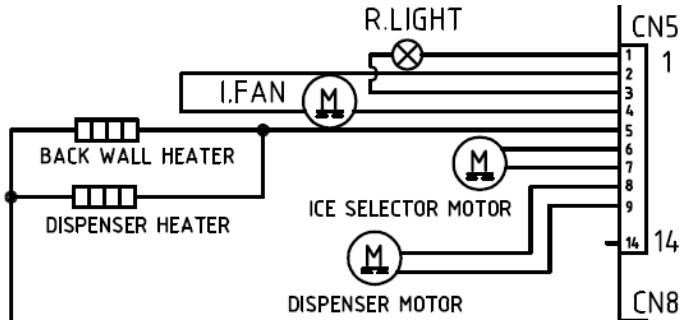
6.10 Dispenser motor

6.10.1 Basic parameters

Rated voltage: DC 12V

6.10. 2 Checking method

1. Check the connecting wiring of the motor is well or not, repair if it is broken. The **motor** corresponding pin No.8 and No. 9 on CN5 connector of the main-board as the drawing below.
2. Check output voltage corresponding pin No.8 and No.9 on CN5 connector of mainboard, if the voltage equal to DC 12V when working conditions are met, it means the mainboard is OK, change dispenser motor; If not, it means the main control board is broken, change it.



Removing the dispenser motor

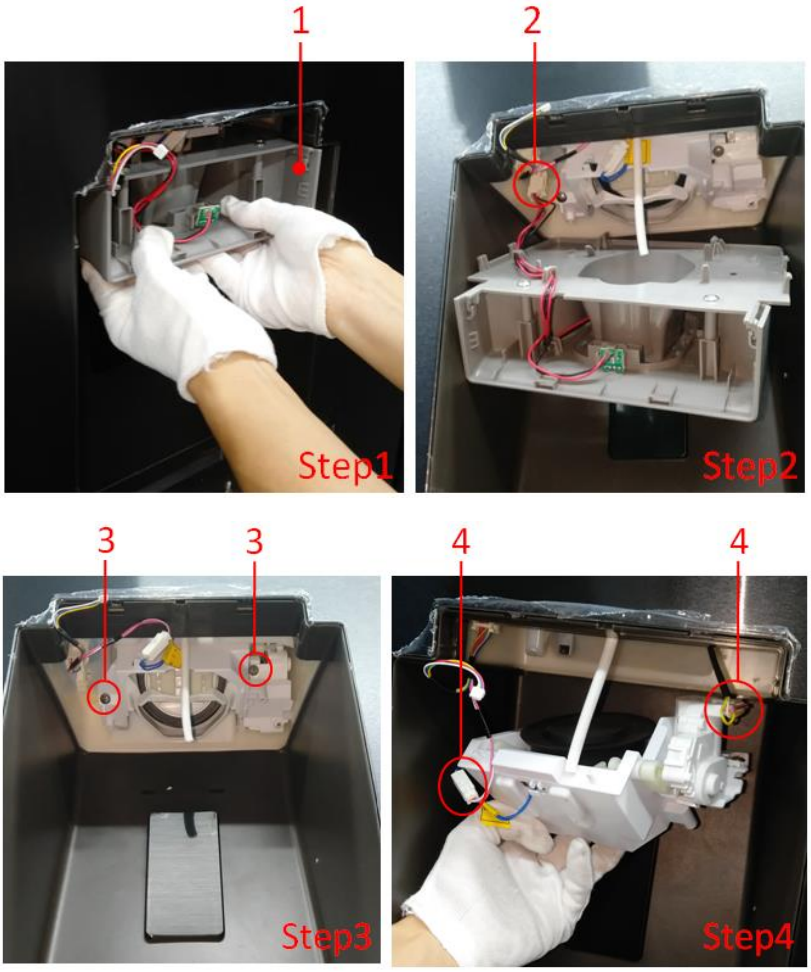
After you have removed the display component, you can remove the dispenser in the following steps:

Step 1: Remove the function part(1) by pulling down with your hands as the picture below.

Step 2: Remove the wire connector (2) by pressing the top of them.(After you have removed the function part, you can change the led light of the function part)

Step 3: Remove the two screws (3) with a Philips screwdriver.

Step 4: Remove the dispenser and remove the two wire connector (4) by pressing the top of them.



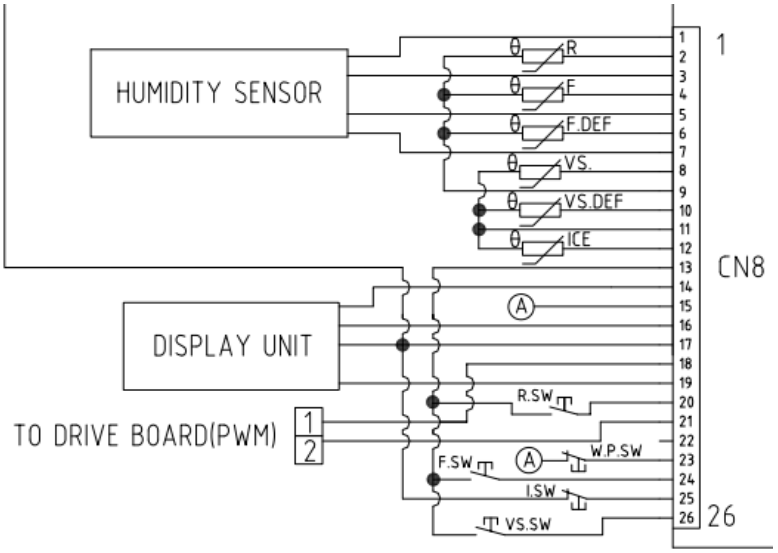
6.11 Lever switch

6.11.1 Basic parameters

Rated voltage: DC 5V

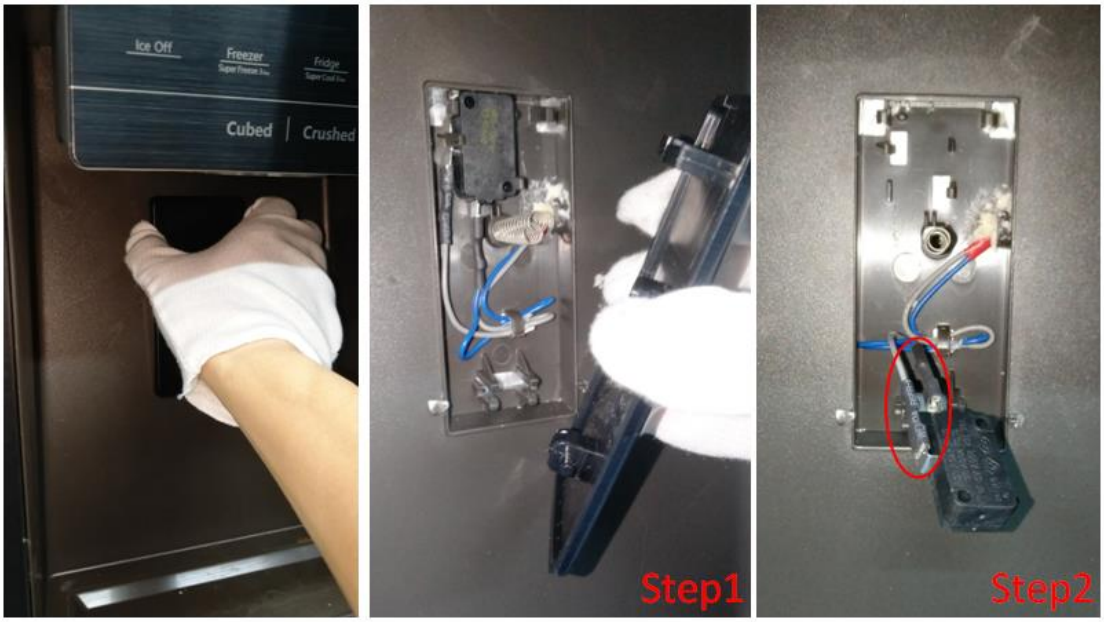
6.11.2 Checking method

1. Check the connecting wiring of the switch is well or not, repair if it is broken. The switch corresponding pin No.17 and No.25 on CN8 connector of the main-board as the drawing below.
2. Under normal condition, the two pins of switch is open circuit; Under press condition, the two pins of switch is short circuit. If the result is abnormal, change the switch.



6.11.3 Removing the lever switch

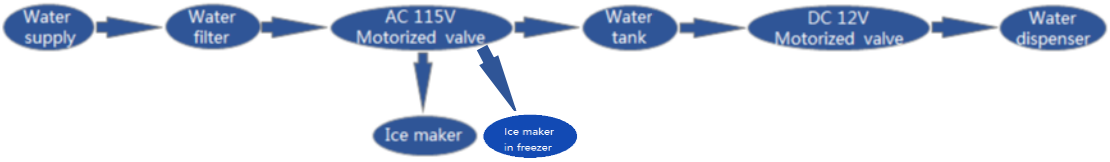
Step 1: Remove the lever by pulling the upper part of the lever with your hand as the picture below.
Step 2: Remove the dispenser switch and pull out wire terminal.

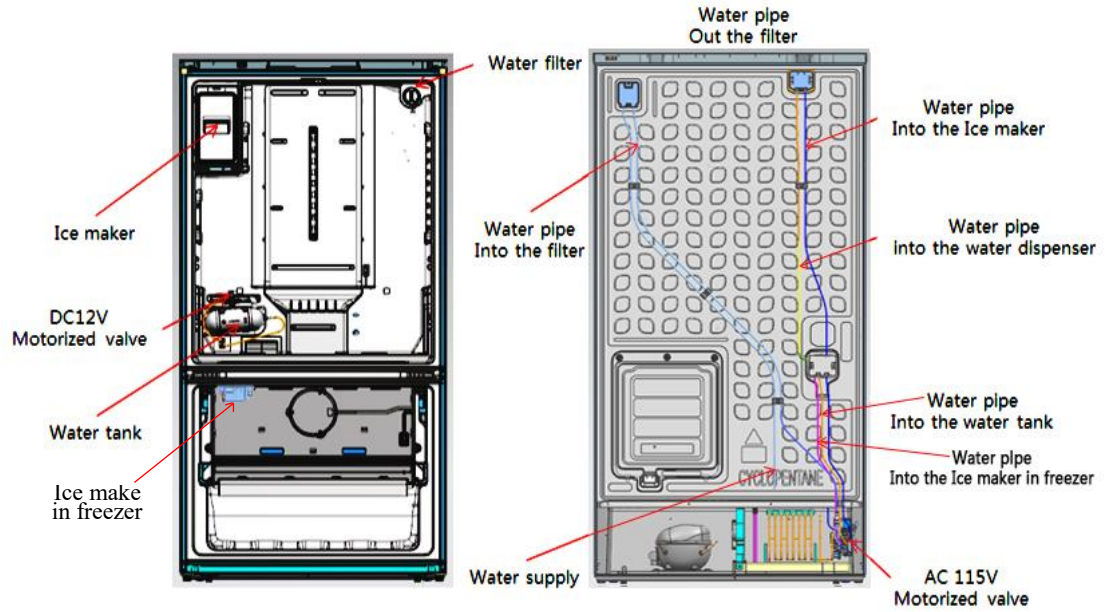


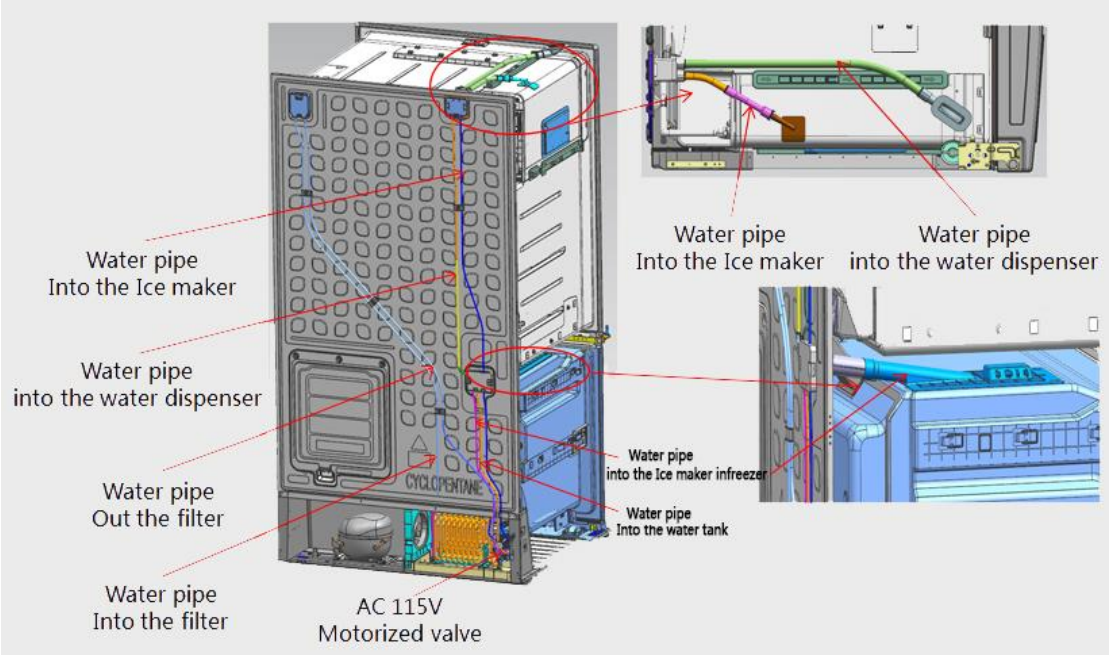
6.12 Water system

6.12.1 Schematic diagram of water system

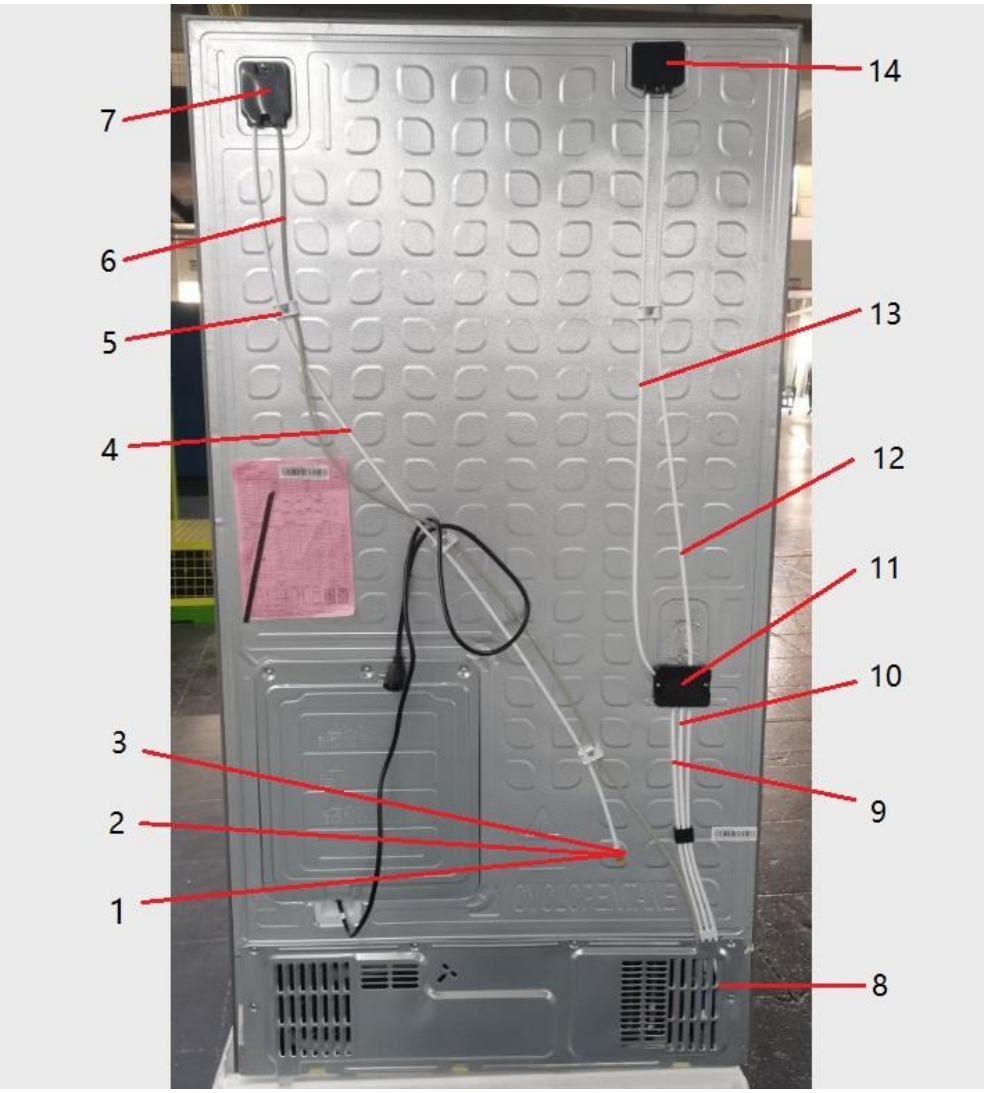
Waterway design scheme





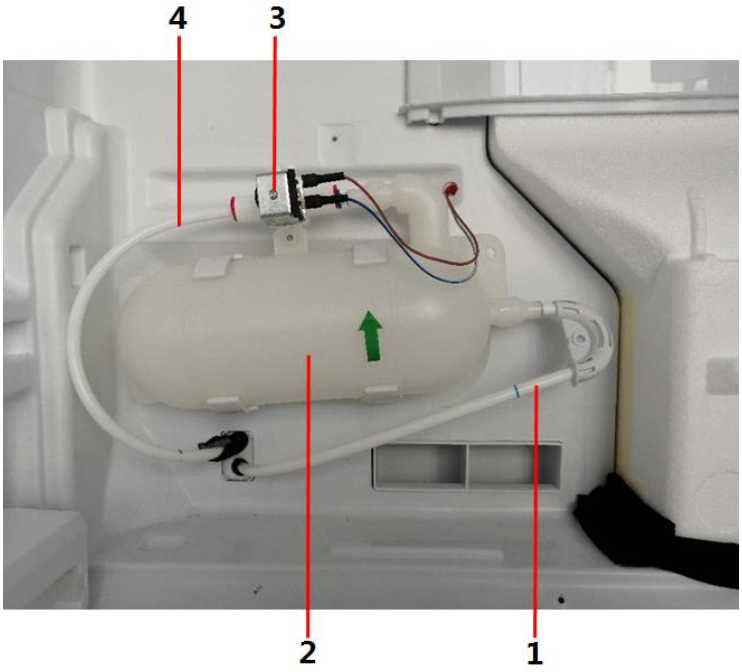


6.12.2 Water system out of the freezer room



1—Pipe cover
2—Connector Nut
3—Tap Water Joint Connector
4—Water pipe (white, flow into the water filter)
5—Installation clip
6—Water pipe (grey, flow out the water filter, flow into motorized valve)
7—Water filter inlet cover
8—Motorized valve
9—Water pipe (white, flow into the icemaker in freezer)
10—Water tube (white, flow into the water tank in fridge room)
11—Water tank inlet cover
12—Water pipe (white, flow into the icemaker room)
13—Water pipe (white, flow into the water dispenser in fridge door)
14—Icemaker inlet cover

6.12.3 Water system in the fridge room



1—Water tube (white, flow into the water tank in fridge room)
2—Water tank
3—Electrically operated valve (DC12V)
4—Water pipe (white, flow from water tank to the dispenser on fridge door)

6.12.4 Electrically operated valve

6.12.4.1 Basic parameters

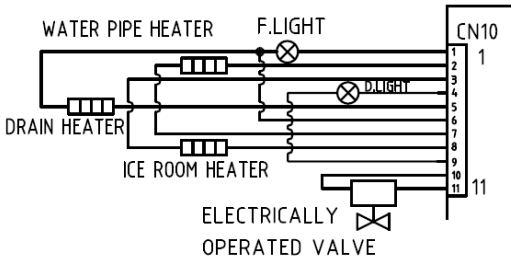
Rated voltage: DC12V

6.12.4.2 Checking method

1. Check the connecting wiring between Electrically operated valve and mainboard is well or not. Repair if it is broken.
2. Electrically operated valve corresponding pin No.10 and No.11 on CN10 connector of the mainboard. Use a multimeter to measure coil resistance，the resistance value is

32Ω±5Ω(at 20℃)

3. Check output voltage corresponding Electrically operated valve of the mainboard, if it is 12V when working conditions are met, it means the mainboard is OK, change the water pump; If not, it means the mainboard is not OK, change it.



6.12.5 Water valve

6.12.5.1 Basic parameters

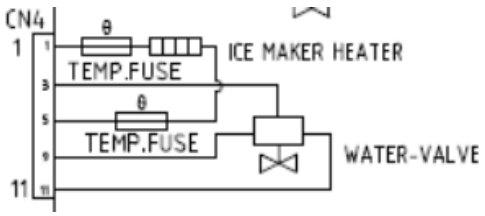
Rated voltage: 110-127V,50-60Hz,20W

6.12.5.2 Checking method

1. Check the connecting wiring between water **valve** and mainboard is well or not. Repair if it is broken.Water valve corresponding pin No.3,No.9 and No.11 on CN4 connector of the mainboard.
2. Check water line connected well.
3. Touch and hold “Alarm”button+“Crushed” button for 3 seconds in 10 minutes after power-on, the ice valve will opened for 180S, the water and ice valve will opened for 180S, if not, please replace the water valve. It can be stopped in the process by touch and hold “Alarm”button+“Crushed” button for 3 seconds.

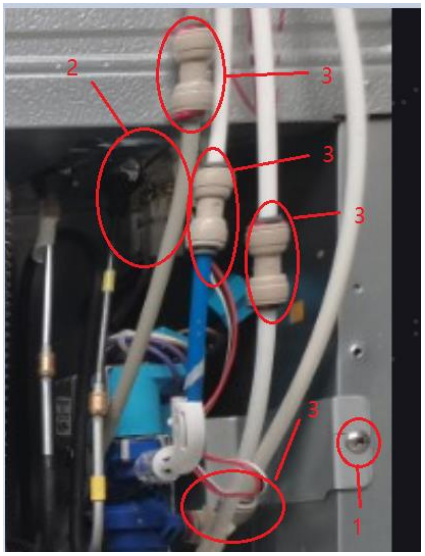
Meanwhile, the icon starts flashing on display board, observe the icon flicker frequency. If it flashes once a second, it indicates that the flow-sensor is ok; if it flashes once in two seconds, it indicates that the flow-sensor is abnormal. It is necessary to check the wiring or replace the water valve.

In the icon flicker process, hold and press “Alarm” button+ “Crushed” button for 3 seconds or power off can end testing.



6.12.5.3 Removing the water valve

1. Remove the screw (1) with a Philips screwdriver.
2. Remove the wire connector (2) by pressing the top of them.
3. Disconnect the water line at the check valves (3) and quick connector (4).



6.13 Ice maker & Ice crusher motor assembly

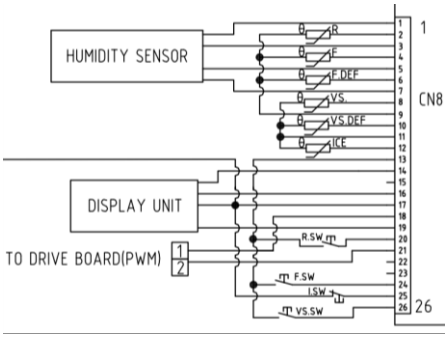
6.13.1 Checking method

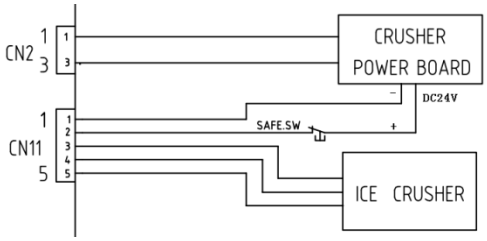
When the ice maker can not work, please check according to the following steps
Step 1.Check water line connection
Step 2.Check the connecting wiring between icemaker and mainboard is well or not. Repair if it is broken.
Step 3. After power-on about 1 minute, touch and hold “Alarm” button+ “Ice Off” button for 3 seconds in 10 minutes after power on, the ice maker will be operated and the ice bar will turn slowly, this process takes a few minutes. If not, please change ice maker part.

6.13.2 Ice crusher motor assembly checking method

1. Close the refrigerator doors, select “Crushed” button on control panel on the fridge door, the icon is illuminated, move your glass down the dispenser lever, hold and press the dispenser lever, put your ear close to the side of the ice making room, and hear the buzzing sound of the motor running, which proves that the ice crusher motor assembly is good. If it is not, checked according to the following steps.
2. Check the connecting wiring between the display board, mainboard and door switches are well or not. Repair if it is broken. Repeat step 1 to make sure the ice crusher motor assembly is working normally. If it is not, continue with the following steps.
3. Check the connecting wiring between ice crusher、crusher power board and mainboard are well or not. Repair if it is broken. Repeat step 1 to make sure the ice crusher motor assembly is working normally. If it is not, continue with the following steps.
4. Make sure that the refrigerator doors switches (left & right) 、safety switch and lever switch are working normally. If not, repair it first. ***Refer to Chapter 6.7 Door switch &***

Chapter 6.11 Lever switch. Repeat step 1 to make sure the ice crusher motor assembly is working normally. If it is not, continue with the following steps.





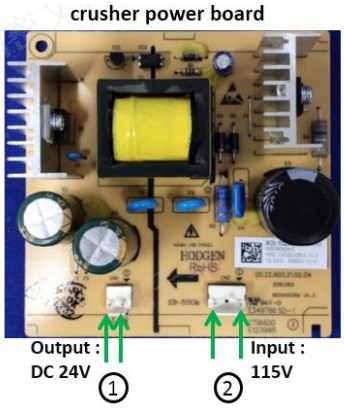
5. Check crusher power board

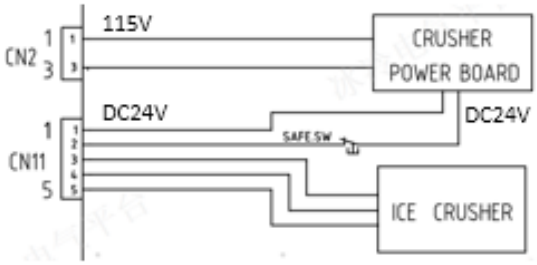
The corresponding pin No.1 and No.3 on CN2 connector of the mainboard.

The input voltage of crusher power board is equal to the power supply voltage. The output voltage of crusher power board is equal to DC 24V.

Test points ①、⑤, if the test result of ①、⑤ are satisfied, it means that the crusher power board is OK. If not, check points②、③and ④ , if the test result of points ②、③ and ④ are satisfied, it means that the crusher power board is bad, change the crusher power board. Otherwise, replaced the main control board. Then repeat to check again step 5 and step 1 to make sure the ice crusher motor assembly is working normally.

If it doesn't work properly, continue with the following steps.





6. Check ice crusher

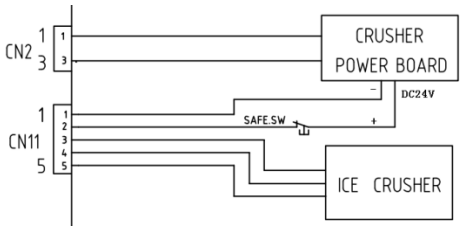
The corresponding pin No.3、No.4 and No.5 on CN11 connector of the mainboard.

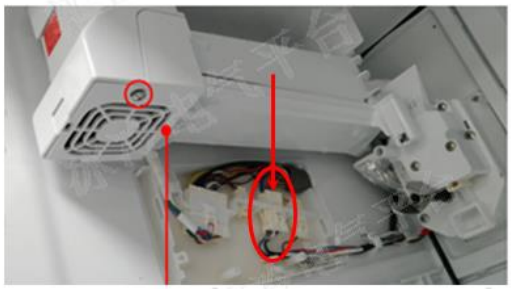
Check the pin No.3 and No.4 on mainboard connector, the resistance value is 2.55Ω ± 0.18Ω (at 20℃).

Check the pin No.3 and No.5 on mainboard connector, the resistance value is 2.55Ω ± 0.18Ω (at 20℃).

Check the pin No.4 and No.5 on mainboard connector, the resistance value is 2.55Ω ±

0.18Ω(at 20℃).
If the ice crusher's resistance value are much larger than 2.55Ω±0.18Ω, check the wire connection on the side of the ice-making room and the ice crusher connection. If wire connection are well, change ice crusher motor assembly. If not, repaired the connection, then repeat step 1 to make sure the ice crusher motor assembly is working normally. If it doesn't work normally, change ice crusher motor assembly.





6.13.2 Remove the ice maker part

Before removing all parts in the ice-making room, you must do forced defrosting for your appliance. After thoroughly defrosting, unplug the appliance.

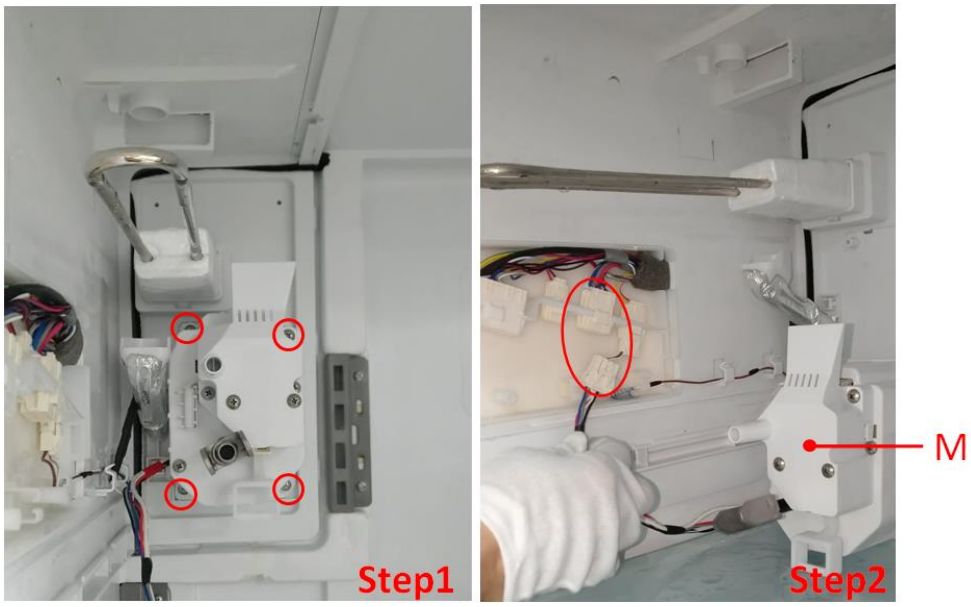
Step1: Remove the ice storage box (A)with your hand in the direction of the arrow.
Step 2: Remove the screw holding the wire harness cover (B) with a Philips screwdriver.
Step 3:Remove the wire harness cover(B) by sliding out.
Step 4: Remove the second wire connector by pressing the top of it as picture shown.
Step 5: Pull the Ice making chamber (C) downward and pull the upper part of the Ice making chamber (C) outward to make the Ice making chamber (C) come out of the cabinet inner.
Step 6: Remove the Ice making chamber (C) with your band in the direction of the arrow.
Step 7: Remove the screw holding the ice maker fan cover (D) with a Philips screwdriver.
Step 8: Remove the ice make fan cover (D) by pressing the buckle and remove the wire connector by pressing the top of them.
Step 9: Remove the screw holding the fix block (E).
Step 10: Pry the evaporation tube (F) out the ice maker with a Philips screwdriver.
Step 11: Remove the first wire connector by pressing the top of it as picture shown.
Step 12: Remove the ice maker (G) by pressing the buckle as picture shown.

6.13.3 Remove the ice crusher motor

After you have removed the ice maker, you can remove the ice crusher motor in the following steps:

Step 1: Remove the four screws holding the motor part (M) with a Philips screwdriver.

Step 2: Remove the third wire connector by pressing the top of it.



6.13.4 Remove the water nozzle

After you have removed the ice maker and the ice crusher motor, you can remove the water nozzle in the following steps:
Step 1: Remove the water nozzle by pressing the hook with a Philips screwdriver.
Step 2: Remove the fourth wire connector by pressing the top of it.

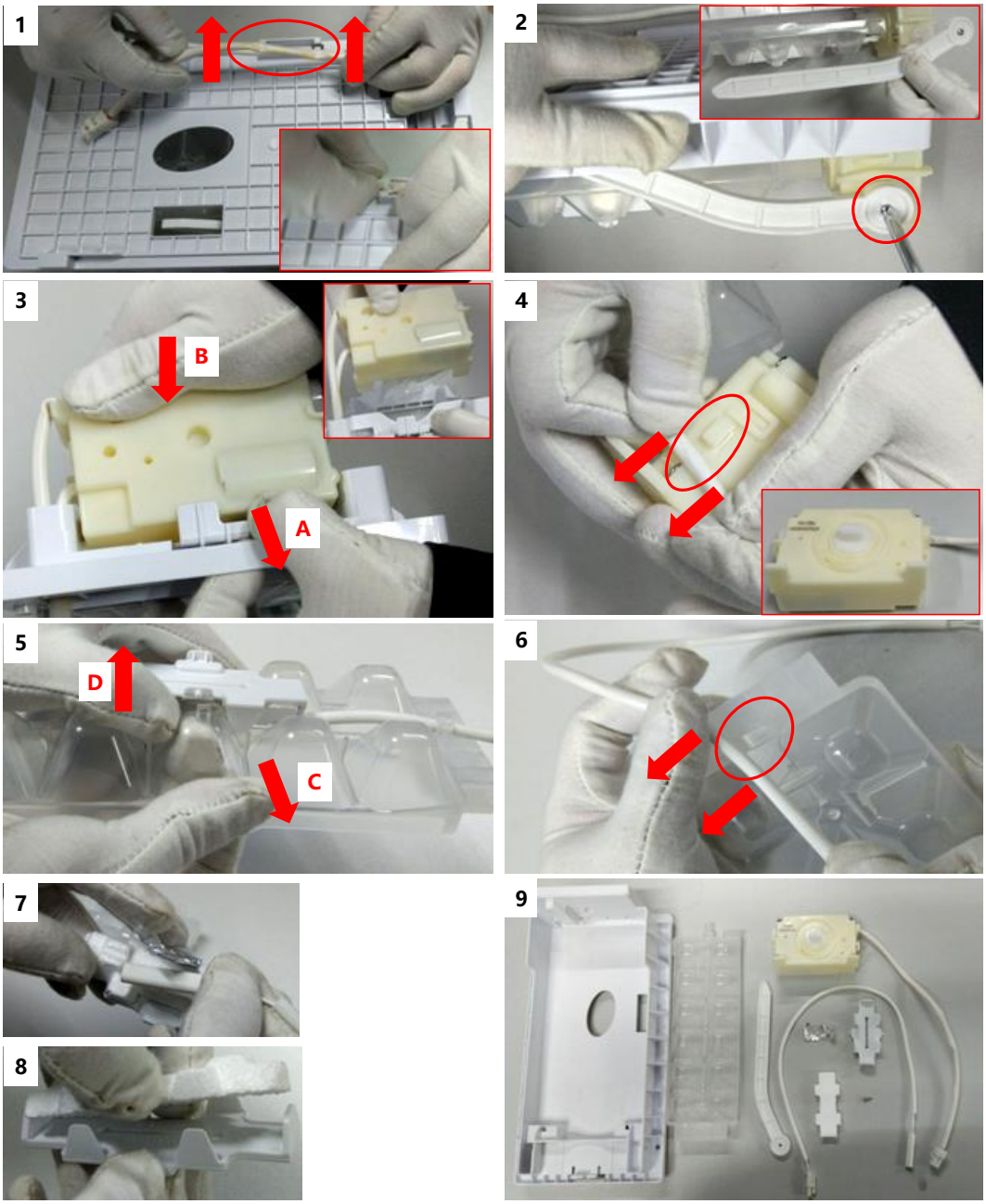
6.13.5 Ice maker in freezer

6.13.5.1 Checking method

Step 1.Check water line connection well.
Step 2.Touch and hold “℉/℃” button and “Ice off” button at the same time for 3 seconds in 15 minutes after power-on, ice tray will be turned, if not, please replace the ice maker part.
Step 3.Touch and hold “℉/℃” button and “Cubed” button at the same time for 3 seconds in 15 minutes after power-on, the water valve will opened for 180S, if not, please replace the motorized valve.

6.13.5.2 Disassemble the ice maker part

1. Remove two lines from buckle in the direction of arrow one by one.
2. Remove the screw holding the ice checking pole with a cross screwdriver (+).
3. Pull out in the direction of arrow A, and push down in the direction of arrow B; then take the electronic motor out.
4. Remove the white line from buckle in the direction of arrow.
5. Push out in the direction of arrow C, and pull up in the direction of arrow D; then take the combine part out.
6. Remove the white line from buckle of ice tray in the direction of arrow.
7. Peel off the aluminum foil then take the temperature head out.
8. Take the insulation foam out.
9. All parts of the ice maker part show in picture 9.



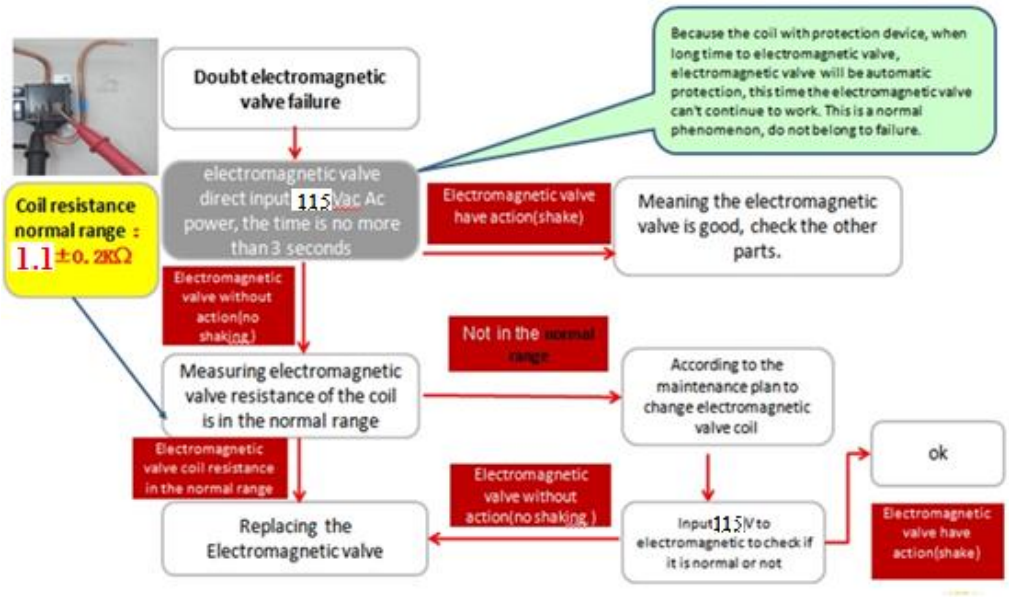
6.14 Checking the electromagnetic valve

Fault phenomenon 1：Leak
Detection method ： Use soap water coating on the welding place of the electromagnetic valve, pour the refrigerants into the system, to see if having the bubble, If yes, meaning the electromagnetic valve itself has the leakage.
Fault phenomenon 2：Not reversing
Detection method ： With the hand to touch the electromagnetic valve, and power on it ,the voltage is 100－120V, then to fell if the electromagnetic valve has reversing action or hear if the electromagnetic valve has the sound of reversing action, If yes, meaning the electromagnetic valve is good.
Fault phenomenon 3：Reversing not reliable.
Detection method ：

Touch and hold “Alarm” button +”℉/℃” button for 3 seconds in 10 minutes after power-on, it will enter maintenance model. The display will show “00” on freezer temperature display area and “0” on fridge compartment temperature display area.

- Press “ Eco” button until the display show “06” on freezer temperature display area. Then press “℉/℃”button, when the display show “0” fridge compartment temperature display area. It is forced order fridge compartment cooling at this moment. If the temperature of fridge compartment does no drop, it means the fridge compartment cooling system is abnormal.

Press “Eco” button until the display show “06” on freezer temperature display area. Then press“ ℉/℃” button, when the display show “1” fridge compartment temperature display area. It is forced order freezer compartment cooling this moment. If the temperature of freezer compartment does no drop, it means the freezer compartment cooling system is abnormal.



Note：

When assembly the electromagnetic valve, pay attention to mark the pipeline, avoid connection error;

Due to the electromagnetic valve internal seal uses rubber material , so when welding the electromagnetic valve , the time should be not more than 5S. Long time to weld will lead to high temperature and will be transfer to electromagnetic valve internal rubber, causes the change of rubber, and may lead to electromagnetic valve abnormal work. (when welding, winding some wet cloth on pipe and drench it at the same time).

6.15 Maintenance mode

When it is necessary to judge whether the components are working normally, maintenance Engineer can refer to the table below for forced on-off of parts, so as to assist in fault diagnosis.

Touch and hold ”Alarm” button +”Eco” button for 3 seconds in 10 minutes after power on, it will enter maintenance model. The display will show “00” on fridge temperature display area and “0” on convertible compartment temperature display area.

Press” °F/°C ” button to select the part code, then press “Eco” button to select the command.

Part code	component	Command	State	Command	State
0	damper	0	OFF	1	ON
02	freezer fan	0	OFF	1	ON
03	compressor	0	OFF	1	ON
04	freezer heater	0	OFF	1	ON
05	motorized valve	0	forced cooling-convertible	1	forced cooling- ice maker compartment

			compartment		
06	Motorized valve）	0	forced cooling-convertible compartment	1	forced cooling-freezer compartment
08	condenser fan	0	OFF	1	ON
10	Convertible fan	0	OFF	1	ON
11	Convertible heater	0	OFF	1	ON
15	ice maker heater	0	OFF	1	ON
20	ice maker fan	0	OFF	1	ON

6.16 Sensor

When the sensor is faulty, display panel will show error code. When the faulty occurs at the initial of powering on, display panel keeps blinking its relevant 7-SEG tube and the refrigerator go into the emergency operation mode.

When any sensor error occurs, you can also follow the Diagnostic method column in the Error code table and pull off the connector of the sensor on the main board. Then you should use a multimeter, which is set to resistance gear, to measure the resistance of the sensor according to the Error code table.

At last you can judge whether the sensor is faulty according to the sensor R-T table below. If the sensor is broken, you should change the senor. If not, you should change the Main Board.

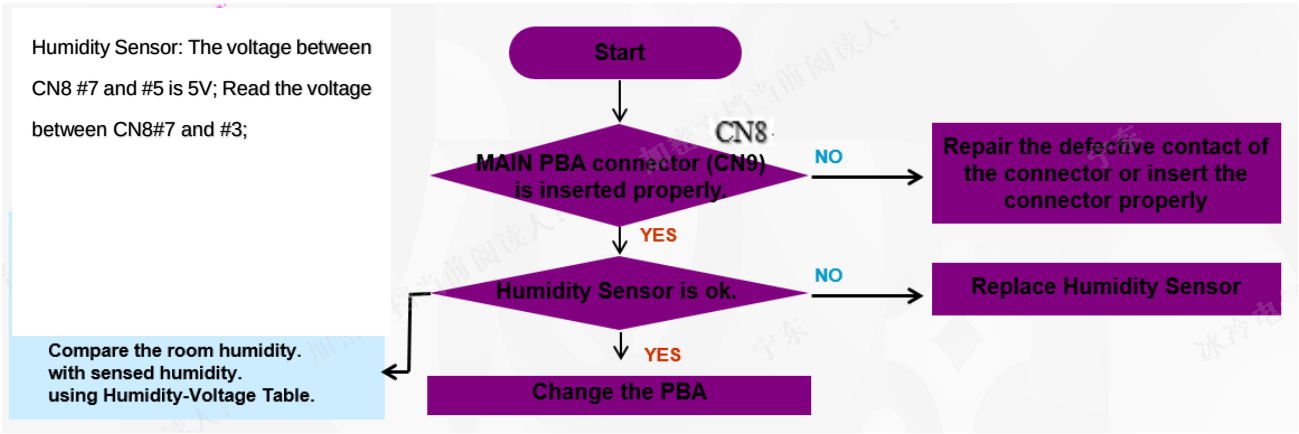
R-T table

T(℃)	T(℉)	RT(kΩ)
0	32	6.5
1	34	6.2
2	36	5.9
3	37	5.6
4	39	5.3
5	41	5.1
6	43	4.8
7	45	4.6
8	46	4.4
9	48	4.2
10	50	4.0
11	52	3.8
12	54	3.6
13	55	3.4
14	57	3.3
15	59	3.1
16	61	3.0
17	63	2.9
18	64	2.7
19	66	2.6
20	68	2.5
21	70	2.4
22	72	2.3
23	73	2.2
24	75	2.1
25	77	2.0
26	79	1.9
27	81	1.8
28	82	1.8
29	84	1.7
30	86	1.6

T(℃)	T(℉)	RT(kΩ)
-1	30	6.8
-2	28	7.2
-3	27	7.6
-4	25	8.0
-5	23	8.4
-6	21	8.8
-7	19	9.3
-8	18	9.8
-9	16	10.4
-10	14	10.9
-11	12	11.5
-12	10	12.2
-13	9	12.8
-14	7	13.6
-15	5	14.3
-16	3	15.1
-17	1	16.0
-18	0	16.9
-19	-2	17.9
-20	-4	18.9
-21	-6	20.0
-22	-8	21.2
-23	-9	22.4
-24	-11	23.8
-25	-13	25.2
-26	-15	26.7
-27	-17	28.3
-28	-18	30.0
-29	-20	31.9
-30	-22	33.8

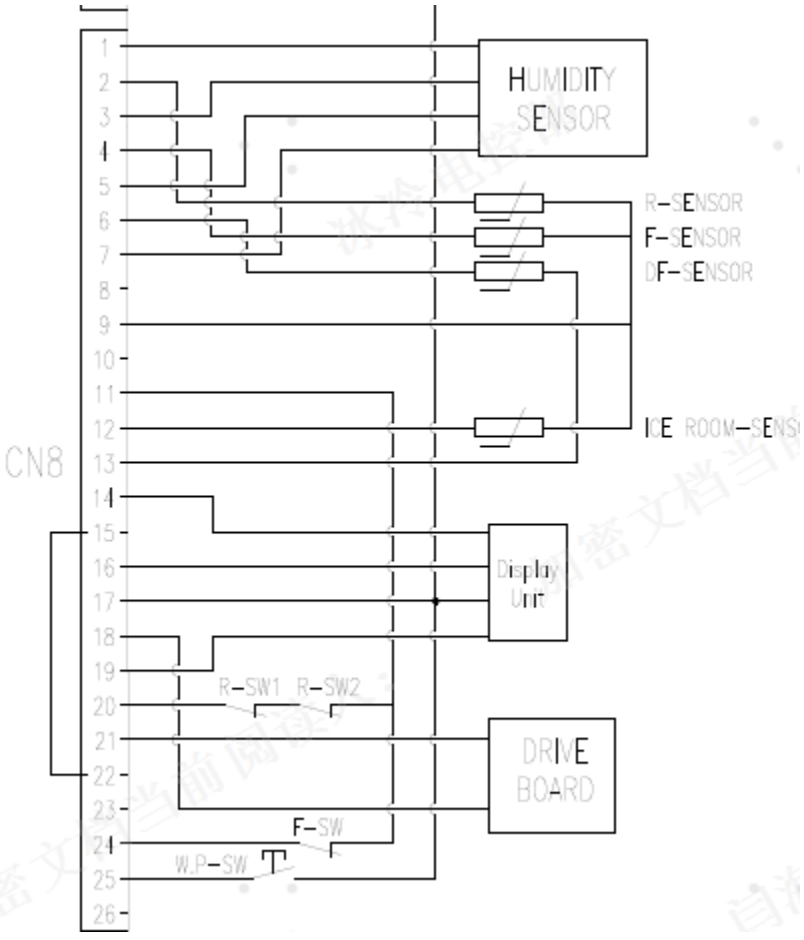
The Humidity Sensor

Humidity Sensor: The voltage between CN8 #7 and #5 is 5V; Read the voltage between CN8#7 and #3;



Humidity-Voltage Table

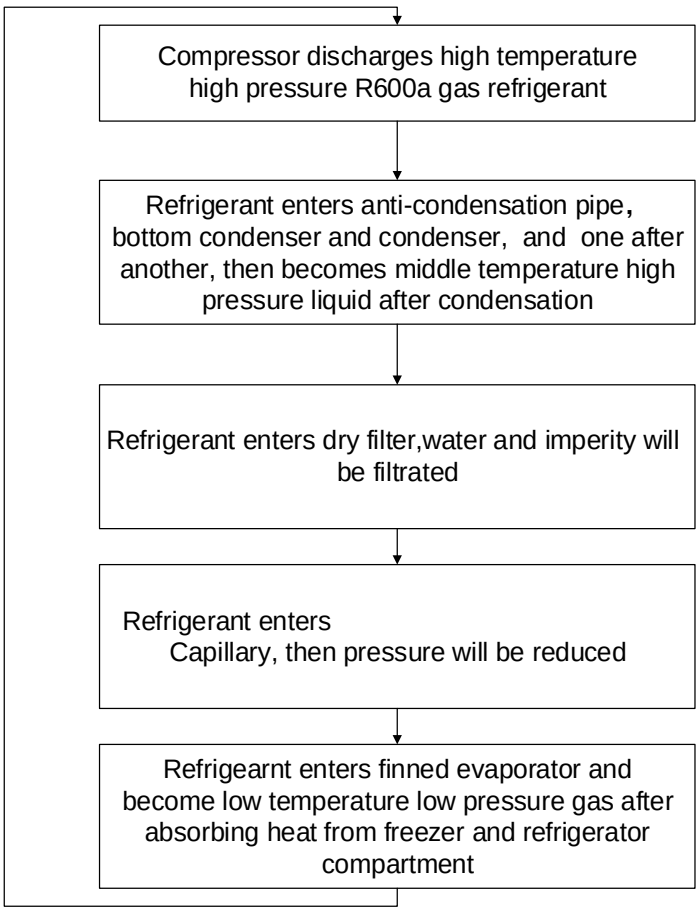
%RH	10%	15%	20%	25%	30%	35%	40%	45%	50%
输出（V）	1.235	1.390	1.540	1.685	1.825	1.960	2.090	2.220	2.350
%RH	55%	60%	65%	70%	75%	80%	85%	90%	95%
输出（V）	2.480	2.605	2.730	2.860	2.990	3.125	3.260	3.400	3.530

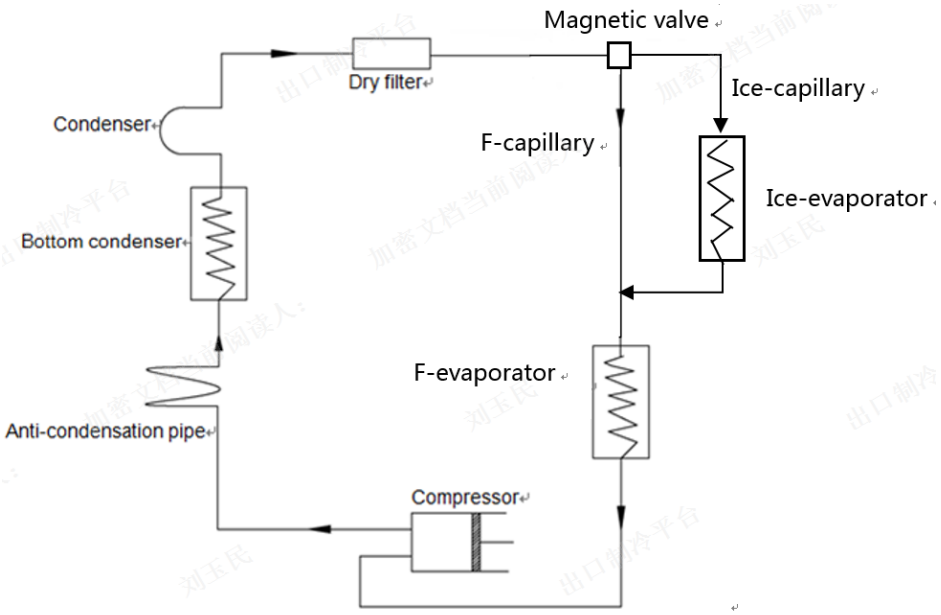


7. Cooling system repairing

7.1 Refrigeration system

The refrigerator system is Single cooling system:

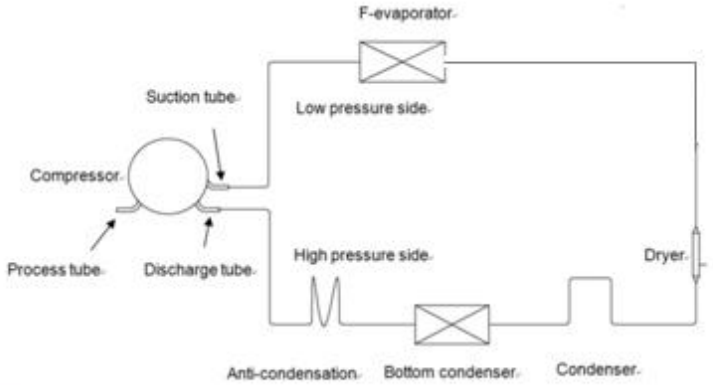




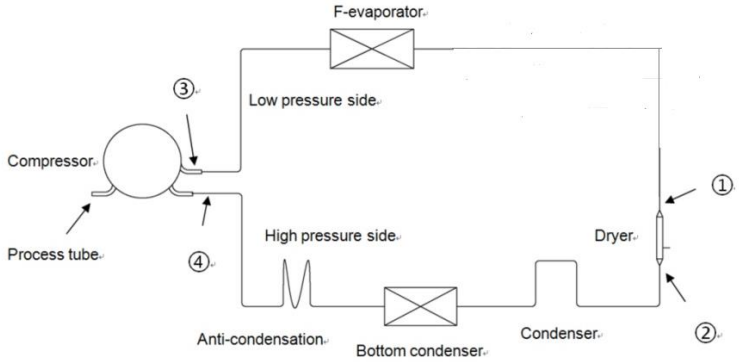
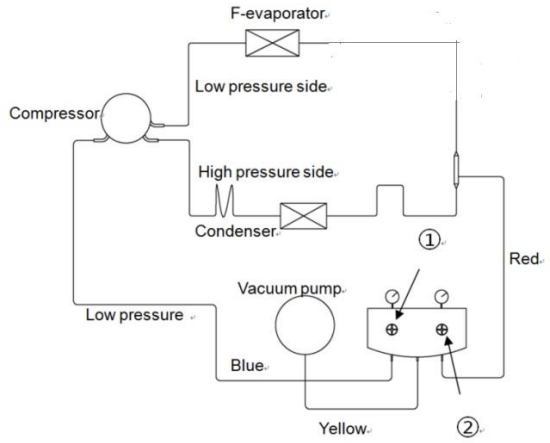
7.2 Summary of repair

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.

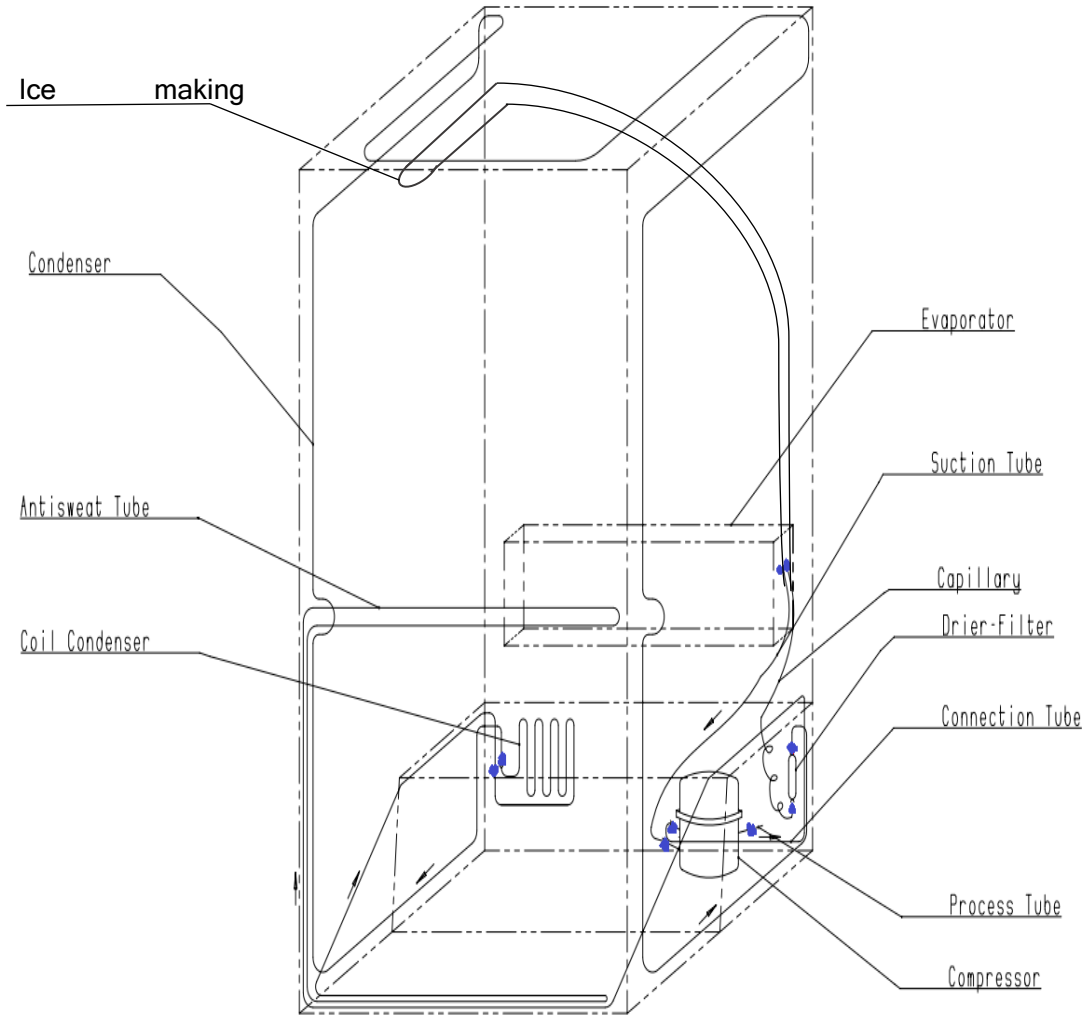
7.4 Practical work of repair

<table>
<tr><th>Items</th><th>Precautions</th></tr>
<tr><td>1. Removal of residual refrigerant.</td><td>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.
 
</td></tr>
<tr><td>2. Nitrogen blowing welding.</td><td> 

* 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.</td></tr>
</table>

7.5 Brazing reference drawing



Refrigerant flowing direction

- Welding point

8. Ice maker& Water dispenser

8.1 Ice maker

8.1 .1 Common problem and checking

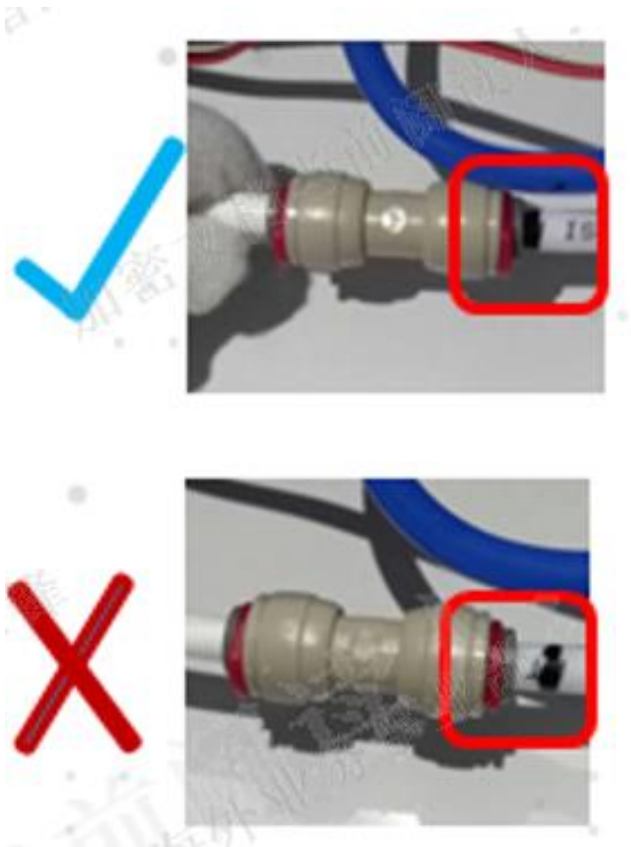
Problem	Possible cause & Solution
Not making ice	Check whether you had selected and turned on “Ice off”. Please turn it off and it will take at least 8 hours to make ice.
	If the temperature of freezer is higher than -5°C, please follow the checking steps below: <1> Check whether the insulated door close well. <2> If the freezer compartment is not freezing, refer to the “5.3 Refrigeration failure\5.3.1 Freezer compartment” for further maintenance checks.
	Check water supply system: <1> Check whether the water pipe is installed correctly, it should be level with the aluminum tube. The plastic water pipe should not be 5mm longer than the aluminum tube <2> Check whether the resistence value of the heater is 72±3Ω. <3> Check whether there is ice clog in the water tube inside the freezer door. If ice clog is there, have to change the insulated door.(Refer to the next step)

Not Dispensing Ice	If there are more than 5 pieces of ice in the ice box, check that the frequency of taking ice is higher than the speed of ice making. The ice making capacity is 12 kg/24 h.
	Check whether activate “Child Lock”.
	Check whether Error Code“ER” is displayed and follow the Error Code table to fix the issue.
	If the fault is not rectified, please ensure the doors are closing normally, and then to check whether there is an abnormality in the door switch, to check whether the top of the door or cabinet is deformed. If yes, repair or change these components. <1> Open the Freezer door(at the same time the led light will be activated).
	<2> Check the magnetic switch of the Freezer insulated door.
	Check whether you can hear a clicking sound when press the handle to get the ice.
	Check whether the ice crushing motor and ice skates are installed well and running smoothly. Check whether the connection is correct. Check the resistance of the ice crushing motor: 1. The resistance of white and black wires is 118±5Ω 2. The resistance of brown and black wires is 148±5Ω.

8.2 Water dispenser

8.2.1 Common problem and checking

Problem	Possible cause & Solution
Not dispensing water	Check whether activate “Child Lock”.
	Check whether activate “Ice off” function.
	Refer to the “4 Operation and functions” to check if the refrigerator is working normally.
	Check whether the end of the water filter is properly inserted to the water supply system properly.
	Check whether you can hear a clicking sound when press the handle to get the water. If not, proceed to the next step.
	Check if the water valve terminal is properly connected . If not ,readjust connections. If yes ,replace the water valve.
	Check whether the water tank is frozen, if it is frozen, clear the storage tank from ice, and proceed to the next step.
	Check whether the direction of the one way valve connected on the top of the cabinet is correct. If not ,adjust to the correct direction, and if it is , proceed to the next step.
	Use a magnetic bar to simulate closing the insulated door and take water. If water is coming out of the valve, we have to replace the door. Note: Please use a container to holder the water, in case it flows to the customer’s floor.

Dispenser Water leakage	Check whether the tank is installed to the correct position.	
	Inspect if water pipe and one-way valve are installed to the correct position. If not, adjust to the correct position.	
	Check whether water tube connect with one-way-valve correctly and the red lock in right place. (refer to below picyure). 	

9 Fault table

9.1 Fault table

9.1.1 Common problems

No.	Customers' complains /Phenomena	Fault	Cause or remedy	Process (service technician)
1	Odours; Smell bad	Odours from the compartments	• Some food, containers or wrapping cause odours. # The interior need to be cleaned.	/
2	Odours; Smell bad	Foul-smelling interior	• An unpleasant smell is not a consequence of the lowering of the refrigerant. # Clean with lukewarm water and with liquid non-aggressive detergent to which you can add some vinegar.	/
3	Noise; Slight noise; Regular noise	When the compressor is turned ON, it sounds like a drone and a click.	• This is not a sign of failure and does not affect the lifetime of the appliance. • When it is running, it is also less audible and even more uniform.	•Installation of the appliance. •Touching the pipes. •Rubber buffer (56372). •compressor.

4	Noise; Slight noise; Regular noise	Noisy - it sounds like gurgling, rustle, bubbling…	• This is not a sign of failure and does not affect the lifetime of the appliance. • A refrigerant circulating through the cooling system of the appliance changes its physical state. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	•Refilling the cooling system.
5	Noise; Slight noise; Regular noise	Noisy squeaky, …	• This is not a sign of failure and does not affect the lifetime of the appliance. • A refrigerant circulating through the cooling system of the appliance changes its physical state. It moves from thinner to thicker pipes and opposite. It all sounds like mentioned sounds. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Installation of the appliance. • Touching the pipes. • Fan. • Rubber buffer (56372). • compressor. • Refilling the cooling system.
6	Noise; Regular noise; Unpleasant noise	Noisy appliance. When I lean against it or press it with my hand, it stops.	• This is not a sign of failure and does not affect the lifetime of the appliance. • Most likely the refrigerator is not balanced, or it touches some part of the furniture. # It is recommended that you balance the appliance	•Installation of the appliance. •Touching the pipes. •Rubber buffer (56372).

			with the water balance, and adjust the adjustable feet to ensure that the appliance is firmly standing on a level and hard surface.	•compressor.
7	Noise; Unregular noise; Unnormal noise; Sudden heavy noise	Sometimes the bang is heard in the appliance.	• This is not a sign of failure and does not affect the lifetime of the appliance. • The materials in the refrigerators are exposed to high temperature changes, so they stretch and shrink. The phenomenon sounds like cracking, which is not time consuming and occurs at certain time intervals. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	/
8	Noise; Slight noise; Regular noise; Windmill noise	Noisy fan	• Sound like windmill, it is normal sound of the fan. • The fan will stop if the door is opened.	•Installing the fan. •Fan.
9	Noise; Unnormal noise	Noisy fan	• Repair is carried out by authorized Servis.	•Installing the fan. •Fan.
10	Noise; Slight noise; Regular noise	Noisy compressor	• Most likely the refrigerator is not balanced, or it touches some part of the furniture. # It is recommended that balance the appliance with water balance, and adjust	•Installation of the appliance. •Touching the pipes. •Rubber

			the adjustable feet to ensure the appliance is in stable status.	buffer (56372). •compressor.
11	Compressor never stop for a rest	The cooling system has been operating continuously for a long time.	• Surrounding temperature too high. • Door opened too often or for too long time. • Door not closed correctly (possible impurities on door). • Too much foodstuffs in the appliance. • Temperature setting is too colder. • Temperature sensor is broken or blocked with food. • Insufficient refrigerant. # Check if you switched off the appliance for a long time. # Check the air circulation and clean the condenser. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	•Temperature sensor. •Temperature setting. •Door and gasket. •Refrigerant
12	Compressor never stop for a rest	It operates NON-STOP.	# Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Supply cord and connector. • Thermostat. • compressor.

			• Repair is carried out by authorized Servis.	• The operation of cooling system elements (leakage).
13	Ice/Icing; Ice formed in Fridge room	Excessive ice accumulation on the rear wall of the interior of the refrigerator.	• This is not a sign of failure and does not affect the lifetime of the appliance. • With every opening of the door, the humidity in the air enters the interior and accumulates on the coldest part of the appliance. Initially, this moisture is visible in the form of water droplets, and then froze, finally will be thawed and slip past the rear wall into the condensate drain and evaporated. • Door opened too often or for too long. • Insertion of hot food in the refrigerator. • The rear interior wall touch the food or container. • Door was not sealed well. # Check if the seal is dirty or damaged. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Gasket. • The door. • Installation of the appliance.

14	Ice/Icing; Ice formed in Freezer room	Ice or frost build up in the interior of the freezer compartment.	• Door opened too often or for too long. • Door not closed correctly (possible impurities on door). • Door wasn't sealed well. • PCB or Heater broken. # Check if the seal is dirty or damaged. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Gasket. • The door. • Installation of the appliance. • PCB board and Heater.
15	Seems work, but not cold; Not work; Not cooling in whole unit; Not cooling in fridge	The compressor works, it does not cool down.	# Check connections to Mainboard and Power. # Check the fuse or circuit of your supply. # Check if the ambient temperature is too low. • Check if the gas is enough or leaked. • And it's normal when in automatic defrost cycle, or for stopping a short to protect the compressor.	•Supply cord and connector. •Thermostat. •Connecting clamps. •compressor. •The operation of cooling system elements (leakage).
16	Not cold; Not work; Not cooling in whole unit; Not cooling in Freezer	It does not cool down, it does not freeze.	# Check if the ambient temperature is too low. • Repair is carried out by authorized Servis.	•Supply cord and connector. •Thermostat. •Connecting clamps.

				•compressor. •The operation of cooling system elements (leakage).
17	Not freeze; Not work; Not cooling in whole unit; Not cooling in Freezer	The freezer compartment does not freeze.	# Check if the ambient temperature is too low. • Repair is carried out by authorized Servis.	•Supply cord and connector. •Thermostat. •Connecting clamps. •compressor. •The operation of cooling system elements (leakage).
18	Seems work, but not cold enough; Not cooling in fridge; Insufficient cooling	Do not cool enough.	• Setting the appliance to the warmest. # Set to a medium temperature setting. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Thermostat. • Compressor. • The operation of cooling system elements (leakage).
19	Seems work, but not cold; Not work; Not cooling in whole unit; Not cooling in fridge	It does not cool, the lighting works.	# Check if the appliance is switch ON (ON/OFF button). # Disconnect the appliance from the power supply for 3 minutes. # Check if the ambient temperature is too low.	•Supply cord and connector. •Thermostat. •Connecting clamps. •compressor.

				•The operation of cooling system elements (leakage).
20	Seems work, but not cold; Not work; Not cooling in whole unit; Not cooling in fridge; Not cooling in Freezer	The compressor does not work, the lighting works.	# Check if the appliance is switch ON (ON/OFF button). # Disconnect the appliance from the power supply for 3 minutes.	•Supply cord and connector. •Thermostat. •Connecting clamps. •compressor. •The operation of cooling system elements (leakage).
21	Not work absolutely; Seems not work, but it's cold.	After being plugged in, the appliance fails to work correctly.	# Check if the appliance is switched ON. # Check if the ambient temperature is too low. • And it's normal when in automatic defrost cycle, or for stopping a short to protect the compressor.	•Supply cord and connector. •Connecting clamps. •Power board. •Logic board.
22	Not cool; Not work; Not cooling in whole unit; Not cooling in fridge; Not cooling in Freezer; Not operating	The appliance does not work.	# Check if the appliance is switch ON (ON/OFF button). # Check if the ambient temperature is too low. • Repair is carried out by authorized Servis.	•Supply cord and connector. •Thermostat. •Connecting clamps. •Compressor. •The operation of cooling

				system elements (leakage).
23	Feel too cold; Icing	It's too cold.	• Setting the appliance to the coldest. # Set to a medium temperature setting.	• Temperature in the appliance.
24	Ice in fridge room; Ice in vegetables drawer; Food damaged; Ice/Icing	Frozen in vegetables drawer.	• Fridge temperature sensor is blocked with fresh food. • Setting the appliance to the coldest. # Set to a medium temperature setting. • Repair is carried out by authorized Servis.	•Check the installation of air duct in refrigerator compartment. •Temperature sensor.
25	Ice on the gasket; Ice on the door side; Ice/Icing	Ice on the gasket.	• Drawer not closed properly. # Mash gasket. # Check if the seal is dirty or damaged. # Make sure the appliance stand flat or inclined slightly back, stable, on a sufficiently solid basis.	•Gasket. •Hinge. •The door. •Installation of the appliance.
26	Ice in fridge room; Food damaged; Ice/Icing	The cooling compartment freezes.	• Fridge temperature sensor is blocked with fresh food. • Setting the appliance to the coldest. # Set to a medium temperature setting.	•Check the installation of air duct in refrigerator compartment. •Temperature sensor.

			• Repair is carried out by authorized Servis.	
27	Ice in fridge room; Food damaged; Ice/Icing	Inside, droplets are collected and frozen.	• This is not a sign of failure and does not affect the lifetime of the appliance. • Door opened too often or for too long. • Insertion of hot food in the refrigerator. • The rear interior wall touch the food or container. • Door was not sealed well. # Check if the seal is dirty or damaged. # Manually defrost the appliance (turn OFF the appliance for 24 hours and open the both doors).	• Gasket. • The door. • Installation of the appliance.
28	Feel too cold; Food damaged; Ice/Icing	Too frozen	• Setting the appliance to the coldest. # Set to a medium temperature setting.	•Temperature in the appliance. •Thermostat.
29	Hard to open the door	Difficulties opening the door.	• When opening the door, some cool air from the appliance is replaced with warm from the surrounding area. When cooling this air a negative pressure is created, which is the reason why the recently closed door is difficult to open. • After a few minutes, the situation returns to normal	/

			and the door can be easily opened.	
30	Door cannot be closed; Door broken	The door itself opens.	• Drawer not closed properly. # Mash gasket. # Check if the seal is dirty or damaged. # Make sure the appliance stand flat or inclined slightly back, stable, on a sufficiently solid basis.	•Gasket. •The door. •Installation of the appliance.
31	Door cannot be closed; Door broken	Doors do not close.	• Drawer not closed properly. # Mash gasket. # Check if the seal is dirty or damaged. # Make sure the appliance stand flat or inclined slightly back, stable, on a sufficiently solid basis.	•Gasket. •The door. •Installation of the appliance.
32	Condensation in fridge; Condensation on shelves Less water in fridge	Condensation on the shelves above the drawers.	• It is a transient phenomenon that cannot be completely avoided in high temperature in the humidity of the environment. The phenomenon disappears when the temperature and humidity are normalized. # Clean the drawers more often, wipe water drops	/

			occasionally. # Open the humidity controller if it has. # Place foods into bags or other airtight packaging.	
33	Condensation on fridge wall	Condensation builds up on the interior of the rear wall.	• This is not a sign of failure and does not affect the lifetime of the appliance. • With every opening of the door, the humidity in the air enters the interior and accumulates on the coldest part of the appliance. Initially, this moisture is visible in the form of water droplets, and then froze, finally will be thawed and slip past the rear wall into the condensate drain and evaporated. • Door opened too often or for too long. • Insertion of hot food in the refrigerator. • The rear interior wall touch the food or container. • Door was not sealed well. # Check if the seal is dirty or damaged. # Manually defrost the appliance (turn OFF the	/

			appliance for 24 hours and open the both doors).	
34	Water in Fridge	Water runs out of the refrigerator.	• Water drain hole clogged. • The food or container is too closed to the refrigerator rear inner wall, resulting the defrost water drops collected.	•Drain hole. •Cabinet.
35	Water in Fridge	Water at the bottom of the refrigerator.	• Water drain hole clogged. • The food or container is too closed to the refrigerator rear inner wall, resulting the defrost water drops collected.	•Drain hole. •Cabinet.
36	Condensation on surface; Water on surface	Condensation builds up on the outside of the appliance.	• The ambient temperature and humidity are too high. The appliance operates normally up to the humidity level of 75%. • Since we are unable to detect humidity it is recommended to perform a humidity measurement. # Set the temperature to a minimum.	• Humidity measurement .

			# Enable better circulation of air around the appliance.	
37	Water overflow	Water under the appliance.	• Overflow of the condensate tank. • Door opened too often or for too long. • Door not closed correctly. • The ambient temperature and humidity are too high. The appliance operates normally up to the humidity level of 75%. • Since we are unable to detect humidity it is recommended to perform a humidity measurement. # Set the temperature to a minimum.	•Sealing (the door, gasket). •Condensate container layouts. •Condensate container.
38	Dirty on the door	There are traces of sticky substances on the door.	# Clean the appliance using a soft cloth. # Clean the exterior of the appliance with water or a mild soap solution. # Clean the appliance interior with lukewarm water, and you can add some vinegar.	/
39	Light not work; Light broken	Lighting does not work.	• Repair is carried out by authorized Servis.	•Lamp holder. •Door switch.

				•Supply cord and connector.
40	Protective switch closed; The fuse is closed	The fuse is switch OFF.	• Too many appliances are connected to one fuse. • Improper electrical installation. • The appliance is in short circuit. # Re-switch ON the appliance. # Turn on the fuse and connect another appliance.	•Supply cord and connector. •Measurements of the electrical parts of the appliance.
41	Spot/Dirty on surface; Corroded.	The phenomenon of spot/corrosion.	# Clean with aggressive cleaners. • The ambient temperature and humidity are too high. The appliance operates normally up to the humidity level of 75%. • Since we are unable to detect humidity it is recommended to perform a humidity measurement.	/
42	Ice in Fridge; Door not closed well	The door does not seal, Inside, ice accumulates.	• Drawer not closed properly. • Check if the seal is dirty or damaged. # Change the direction of opening the door. # Rotate the seal 180 degrees. # Make sure the appliance	•Gasket. •The door. •Hinge. •Installation of the appliance.

			stand flat or inclined slightly back, stable, on a sufficiently solid basis.	
43	Door gasket broken	Gasket fluted, deformed, jammed, poorly positioned.	# Clean or replace it. # Changed the direction of opening the door. # Rotate the seal 180 degrees.	•Gasket. •Hinge. •The door.
44	Door gasket broken	The gasket is torn, damaged, broken.	# Clean or replace it. # Changed the direction of opening the door. # Rotate the seal 180 degrees.	•Gasket. •Hinge. •The door.
45	Door broken; Door installation bad	The door is damaged, curled, poorly installed.	# Clean or replace it. # Change the direction of opening the door. # Rotate the seal 180 degrees.	•Hinge. •The door.
46	Door hinge broken; Door hinge installation bad	The hinge is damaged, curled, bent, poorly installed.	• Repair is carried out by authorized Servis.	•Hinge. •The door.
47	Drawer broken; Drawer installation bad	The drawer is damaged, curled, poorly installed.	# Clean or install it.	•The drawer.

48	Uneven temperature; Some area too cold, while some area hot	Uneven temperature in the appliance.	• The appliance keeps the set temperature which, depending on the condition in which the appliance is altering (cooling, defrosting). • On the shelves of the door and in the upper part of the appliance is 1 to 2 °C warmer. • In vegetable drawer is 2 to 3 °C warmer. • Above the vegetables drawer in some appliances fresh drawer is 1 to 2 °C colder. # Set to a medium temperature setting. # Make sure don't block the compartment and air outlet with too much food.	/
49	Will not be use for a long time; For longer Holiday	The appliance will not be in use for a longer time.	# Switch OFF the appliance and disconnect the power supply. # Empty the contents, defrost the appliance, clean it and leave the door slightly open and place it in a dry and regularly ventilated room.	/
50	What "*" means?	The meaning of the star * on the door.	• The number of stars indicates the temperature in the freezer compartment. • * -6°C. • ** -12°C.	/

			• *** -18°C. • **** -18°C and the ability to freeze fresh foods.	
51	Freezer compartment failure; Seems work, but not cold	The freezer compartment is not cold enough.	• Compressor not work; • Inverter board broken; • Fan motor not work; • Freezer door not close well; • Put too many foods into the compartment and block the sensor or cool air vent. • Door opened too often or for too long; • The heater not work.	•Compressor. •Inverter board. •Fan motor. •Door. •The sensor. •Cool air outlet •The heater.
52	Fridge compartment failure; Not cooling in fridge	The Fridge compartment does not Freeze.	• The Damper not work; • The sensor not work; • Gap between refrigerator door and cabinet is too large; • Food placed too close to sensor or cold air outlet; • Door opened too often or for too long; • Temperature setting too warm; # Set the thermostat to a lower position.	•Damper. •Sensor. •Door and Cabinet. •Cold air outlet. •Thermostat.

53	Thick frost in freezer compartment	Thick frost in freezer compartment.	• Gap between Freezer door and cabinet is too large (light leakage test); • Door opened too often or for too long; • There are/ever were Wet or hot food.	•Door and Cabinet. •Stored food
54	Dew in refrigerator compartment	Condensation in fridge compartment.	• Gap between Freezer door and cabinet is too large; • Door opened too often or for too long; • There are/ever were Wet or hot food.	•Door and Cabinet. •Stored food
55	Food in the refrigerator compartment is frozen out	Food in the refrigerator compartment is frozen out.	• Hot food is too close to the sensor; • Door opened too often or for too long; • Gap between refrigerator door and cabinet is too large.	•Door and Cabinet. •Stored food

9.1.2 Special for Circuit related parts

No.	Customers' complains /Phenomena	Fault	Cause or remedy	Process(service technician)
1	Compressor not work; Compressor broken; Not cooling in whole unit; Not cooling in Freezer; Not operating	Compressor or its related parts failure	# Check if the appliance is switched ON. # Check if the ambient temperature is too low. • And it's normal when in automatic defrost cycle, or for stopping a short to protect the compressor. • Repair is carried out by authorized Servis.	•Supply cord and connector. •Connecting clamps. •PTC starter and protector •Mainboard . •Compressor
2	Fan not work; Not cool in Fridge; Not cool enough in Fridge	Fan motor failure	• Repair is carried out by authorized Servis.	•Connecting wires. •Fan motor. •Mainboard
3	Not cool in Fridge; The appliance seems work good, except for Fridge room	Damper failure	• Repair is carried out by authorized Servis.	•Connecting wires. •Damper. •Mainboard
4	Light broken; Light blinking	LED light failure	# Check the LED light; # Check the Door switch.	•Connecting wires. •Door switch. •Mainboard •LED light.

			• Repair is carried out by authorized Servis.	
5	Light broken; Ice maker not work; Fan motor not work. Alarm sound continues	Door switch failure	# Check the LED light; # Check the Door switch. • Repair is carried out by authorized Servis.	•Connecting wires. •Door switch. •Mainboard •LED light.
6	Cannot defrost; Not cooling in whole unit; Not cooling in fridge; Not cooling in freezer	Defrost heater failure	• Repair is carried out by authorized Servis.	•Connecting wires. •Defrost heater. •Mainboard

9.1.3 Ice maker &Water Dispenser

No.	Customers' complains /Phenomena	Fault	Cause or remedy	Process(service technician)
1	Not making ice; No ice dispensing	The ice making function is abnormal, or the appliance does not make ice.	# Check if Ice function is turn on more for 8 hours; # Check if all doors are closed tightly; # Check if the freezer compartment is freezing; # Check if the water pipe is frozen; # Check if the heater is normal;	•Doors. •Water pipe. •Heater. •Water tube, filter, valve, tank and terminals. •Water valve .

			# Check the water tube, filter, valve, tank and terminals are installed & connected correctly. # Check if the water valve is normal. • Repair is carried out by authorized Servis.	
2	Not making ice; No ice dispensing	The ice making function is normal, but do not dispense ice.	# Make sure that if the frequency of taking ice is higher than the ice making speed. • If the frequency is normal, please wait 120min before taking ice. # Check if at the "Child Lock" function. # Check if the display shows an "ERR" fault, tell the "ERR" code. • If there is a "ERR" code, check and repair the related part. # Ensure the doors are closing normally and confirm if there is an abnormality in the door switch. # Check whether the	• The frequency of take the ice. • "Child Lock". • Display panel. • The top of the door and cabinet. • The maintenance distributor. • The linkage block. • The ice crushing motor and ice knife. • The freezer Door Magnetic Switch.

			top of the door and or cabinet is deformed. # Check the freezer Door Magnetic Switch. # Check if the dispenser lever is operational. # Check if the ice crushing motor and ice knife are installed in good condition and running smoothly.	
3	No water dispensing	The appliance does not dispense water.	# Check if at the "Child Lock" function. # Check if the door assembly is normal. # Check if the water filter correct assembled to the water distribution system. # Check if the dispenser lever is operational. # Check whether the water valve is functioning well and connected right. # Check whether the water tank is frozen. # Check whether the	• "Child Lock". • Door. • Filter. • Water intake switch. • Motor valve. • Water tank. • Water pipe valve direction. • Water pipe in the freezer door.

			one-way valve is assembled right. • To simulate the functionality of the door and the water distribution system. If the valve is running out of water, you need to replace the freezer door.	
4	Leaking water; Water Dispenser Leakage; Water dropping	The Water Dispenser leak water.	• The first time to take water needs to discharge air. # Check whether the water tank is installed correct. # Check if water pipe and one-way valve are installed correct. # Check if the connector between water pipe and one way valve is reliable and the red collars are correctly connected .	• Water tank. • The box at the top of the tank. • The valve. • Water pipe fittings.

Mark:

1. "Customers' complains/Phenomena" means the "Key Words" or "Phrase" which may feedback from our customers, it's for your reference.

2. "#" - mark instructions to the costumer.
3. "•" - mark facts.