Hisense

Refrigerator

Service manual

NO FROST

Model: RL475N# BC-365WY

NOTE: product specifications are subject to change.

Contents

Warnings 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.

Shut off 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 touch the icemaker with hands or tools to confirm the operation of geared motor.

11. Do not let the customers repair, disassemble and reconstruct the refrigerator for themselves.

It may cause accident, electric shock, or fire.

12. Do not store flammable materials such as ether, benzene, alcohol, chemicals, gas, or medicine in the refrigerator.

13. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.

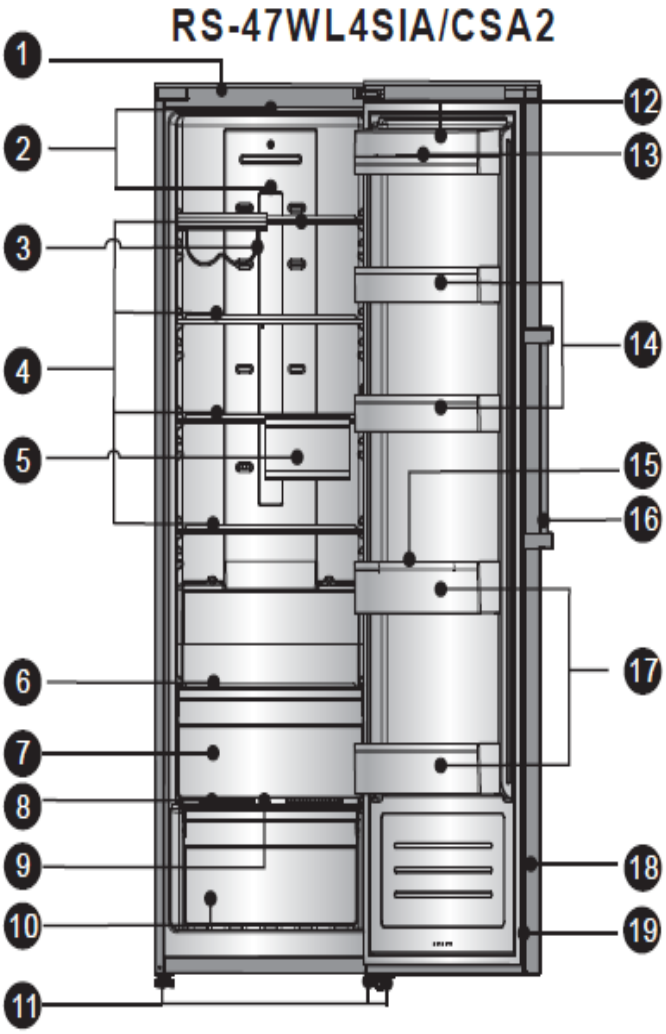
14. Do not put glass bottles with full of water into the freezer.

The contents shall freeze and break the glass bottles.

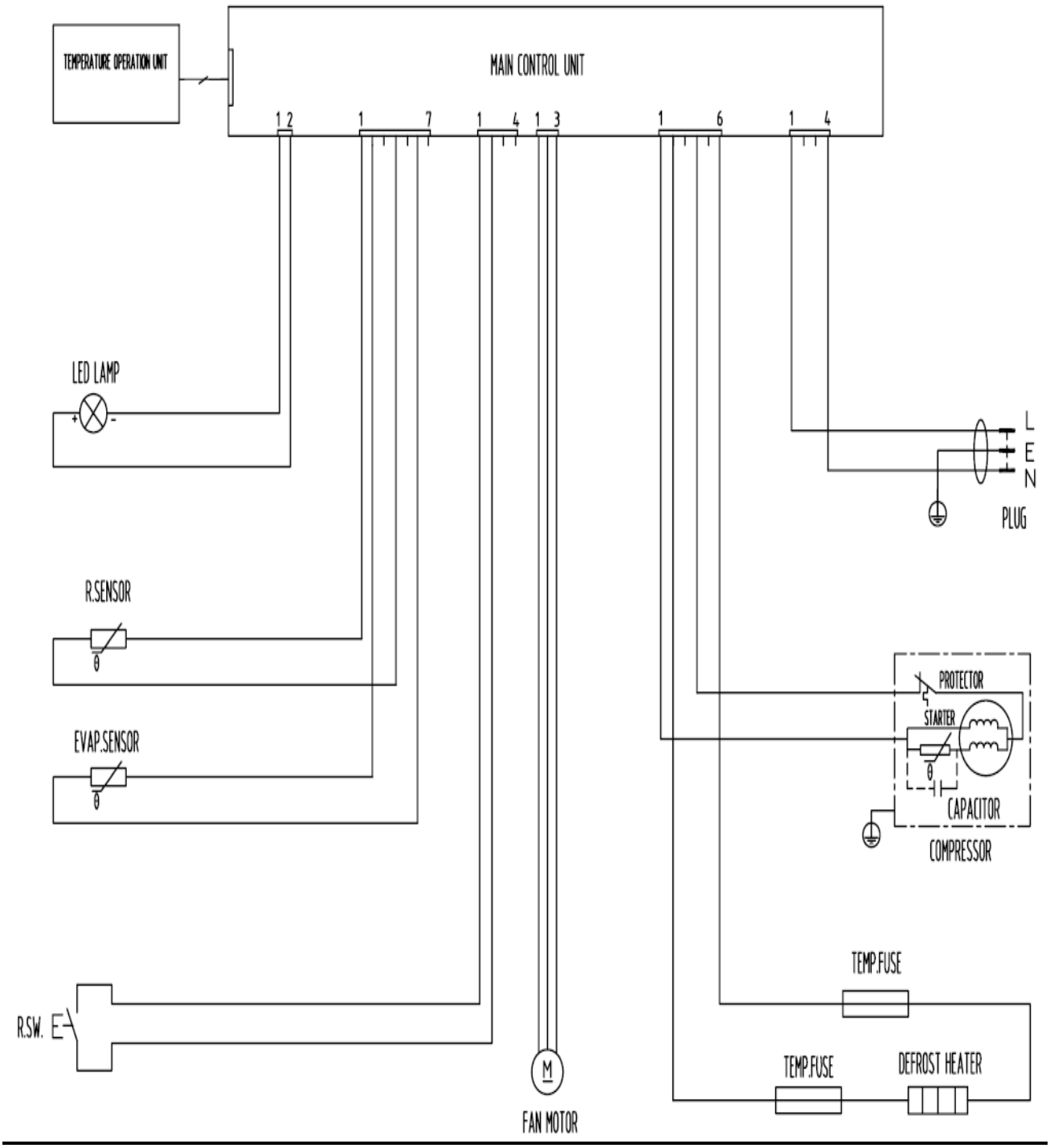
15. When you scrap the refrigerator, please disconnect the door gasket first and scrap it

Parts Description

1. Compartimento
2. Luz LED
3. Botellero flexible
4. Estantes de cristal
5. Fiambrera
6. Estante pequeño de cristal
7. 0°C cool plus
8. Tapa del cajón para verduras
9. Control de humedad
10. Cajón para verduras antihumedad
11. Patas regulables
12. Estante cubierto para la leche
13. Bandeja para huevos (dentro)
14. Estante intermedio
15. Botellero (dentro)
16. Tirador
17. Estante para botellas
18. Puerta del frigorífico
19. Junta de goma del frigorífico



Circuit diagram



Compulsory defrost

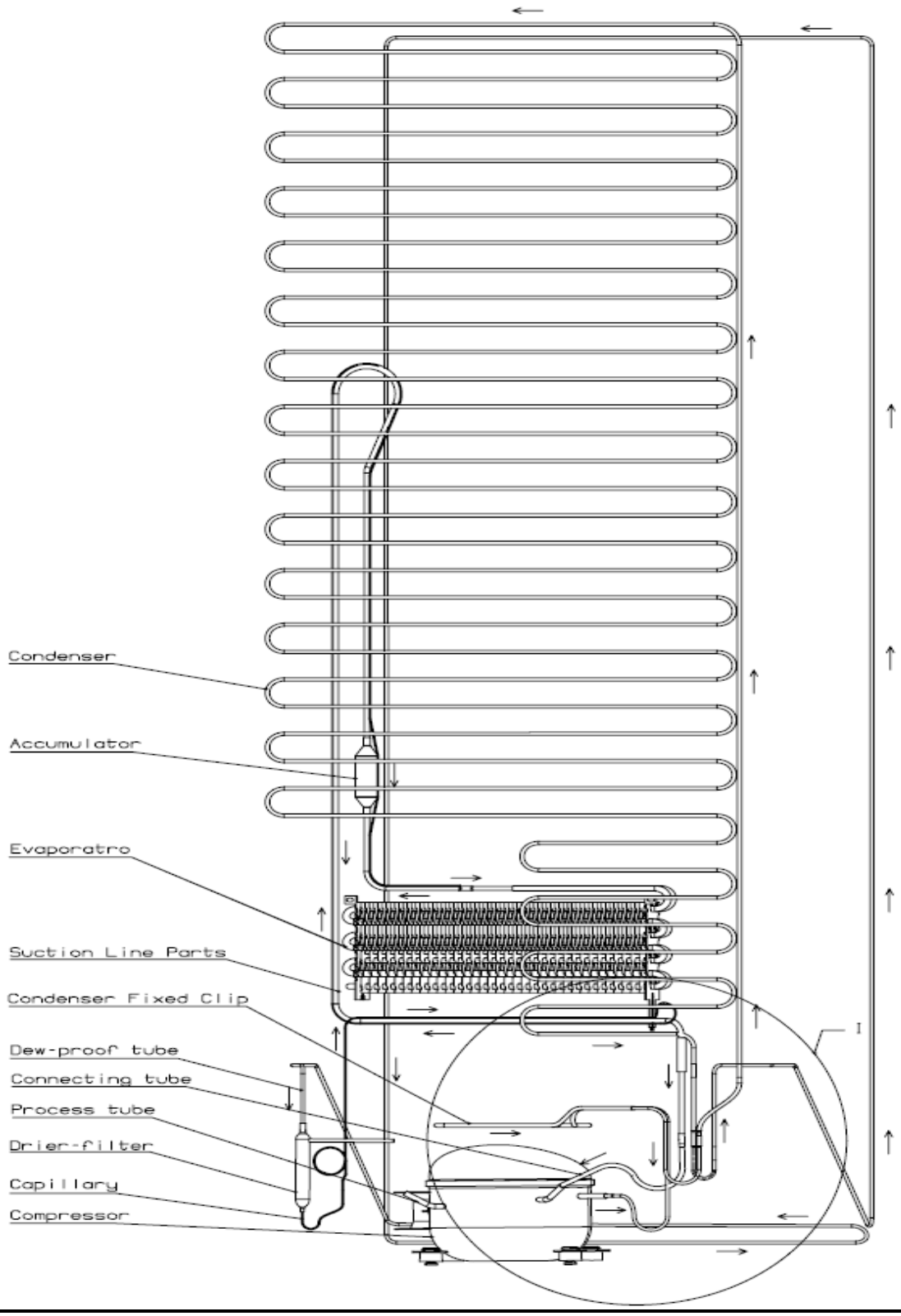
Connecting power within 1 minute, refrigerater or freezer door open situation, press Fridge and super cool 3 seconds, enter the compulsory defrosting process:

——--After entering the compulsory defrosting, we can run the defrosting same as the normal automatic defrosting process.

——Under compulsory defrosting process, displaying b area displays from 99 to 00.

After exiting the entire compulsory defrosting process, it reverts to normal operation and display.

Cooling diagram



Display controls

Use your appliance according to the following control regulations, your appliance has the corresponding functions and modes as the control panels showed in the pictures below. When the appliance is powered on for the first time, the backlighting of the icons on display panel starts working. If no buttons have been pressed and the doors are closed, the backlighting will turn off.

Controlling the temperature

We recommend that when you start your refrigerator for the first time, the temperature for the refrigerator is set to 4°C. If you want to change the temperature, follow the instructions below.

Caution! When you set a temperature, you set an average temperature for the whole refrigerator cabinet. Temperatures inside each compartment may vary from the temperature values displayed on the panel, depending on how much food you store and where you place them. Ambient temperature may also affect the actual temperature inside the appliance.

1. Fridge

Press "Fridge" to set fridge temperature between 2°C and 8°C as needed, and control panel will display corresponding values according to the following sequence.

8°C — 7°C — 6°C — 5°C
2°C — 3°C — 4°C

2. Super Cool

Super Cool can refrigerate your food much faster, keeping food fresh for a longer period.

- Press" Super Cool" button to activate this function. The light will be illuminated.

Super cool automatically switches off after 6 hours and the refrigerator temperature setting displays 2°C.

- When super cool function is on you can switch it off by pressing "Super Cool" or "Refrigerator" button and the refrigerator temperature setting will revert back to the previous setting.

3. Holiday

If you are going to be away for a long period of time, you can activate this function by pressing "Holiday" button for 3 seconds until the light comes on.

- When the holiday function is activated, the temperature of the refrigerator is automatically switched to"-" to minimize the energy consumption and in this mode its temperature is 15°C.

Important! Do not store any food in the fridge during this time.

When the holiday function is on, you can switch it off by pressing any button of "Holiday", "Fridge" and "Super Cool" button. The fridge temperature setting will revert back to the previous setting.

4. Alarm

In case of alarm, "Alarm" icon will be on and there will be buzzing sound. Press "Alarm" key to clear alarm and then "Alarm" icon will turn off and stop buzzing.

Door Alarm

- When the door is open for over 2 minutes, the door alarm will sound. In case of door alarm, buzzer will sound 3 times every 1 min and will stop alarming automatically after 10 minutes.
- To save energy, please avoid keeping the door open for a long time when using the appliance. The door alarm can also be cleared by closing the door.

5. Power

If you want to clean the appliance or stop using it, you can turn the appliance off by pressing "Power" button.

- When the refrigerator is working, you can switch the appliance off by pressing "Power" button for 5 seconds, meanwhile the display panel will be turned off.

Important! Do not store any food in the fridge during this time.

- When the appliance is power off, you can switch the appliance on by pressing "Power" button for 1 second, and the refrigerator returns to the previous temperature setting.

6. Child Lock

You can press the "Child Lock" button in case children touch the buttons, to avoid wrong set. When the Child Lock function is activated, pressing the other buttons would not work except "Alarm" button.

- When the appliance is unlocked, you can activate the child lock function by pressing "Child Lock" button for 3 seconds, meanwhile "Child Lock" icon will be illuminated.
- When the child lock function is activated, you can switch off this function by pressing "Child Lock" button for 3 seconds, meanwhile "Child Lock" icon will be turned off.

Compulsory defrost

Connecting power within 1 minute, refrigerater or freezer door open situation, press Fridge and Quick frozen 3 seconds, enter the compulsory defrosting process:

——--After entering the compulsory defrosting, we can run the defrosting same as the normal automatic defrosting process.

——Under compulsory defrosting process, displaying b area displays from 99 to 00.

After exiting the entire compulsory defrosting process, it reverts to normal operation and display.

Checking the Compressor

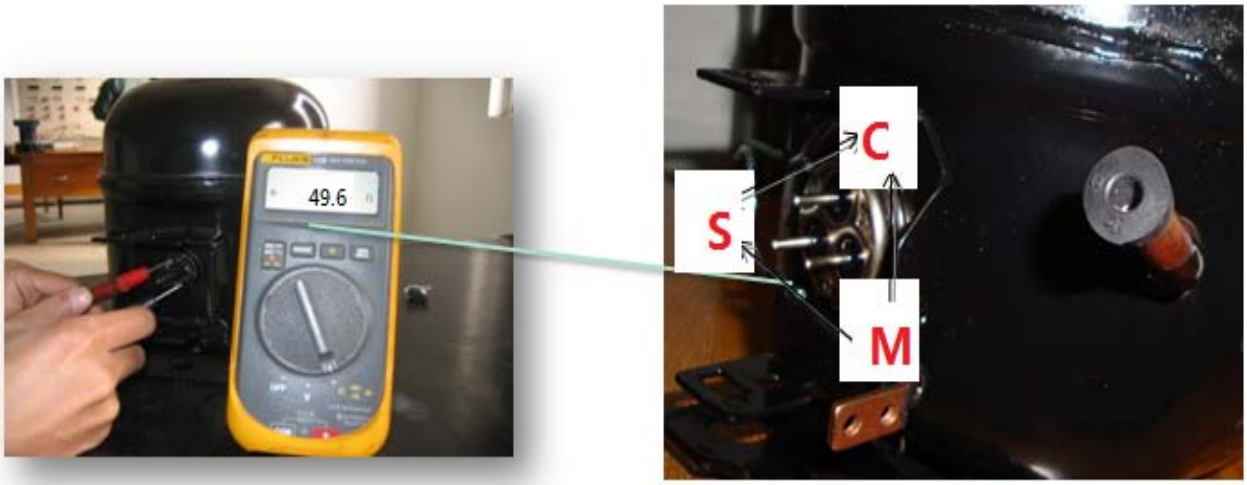
Use a multi-meter to test the resistance between C & M, C&S and S&M :

Normal range of C&M : About 49.6 Ω

Normal range of C&S : About 35.9 Ω

Normal range of S&M : About 85.5 Ω

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

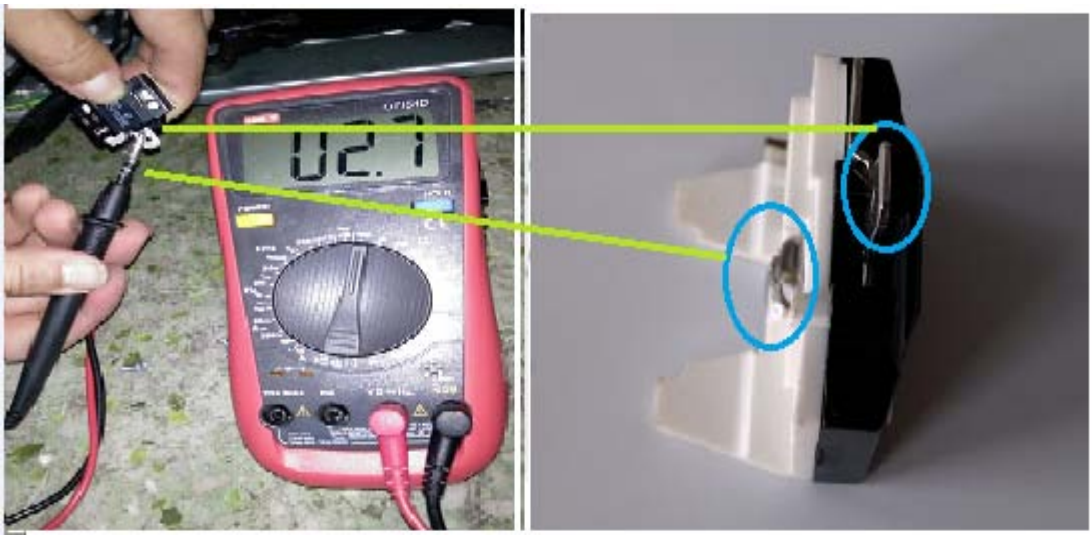


Compressor Protector test ——

Use a multi-meter to test the resistance between the two end as the pic show :

If there show 000 or almost 0 then it is OK.

If there is no response then it is broken.



Compressor PTC starter test ——

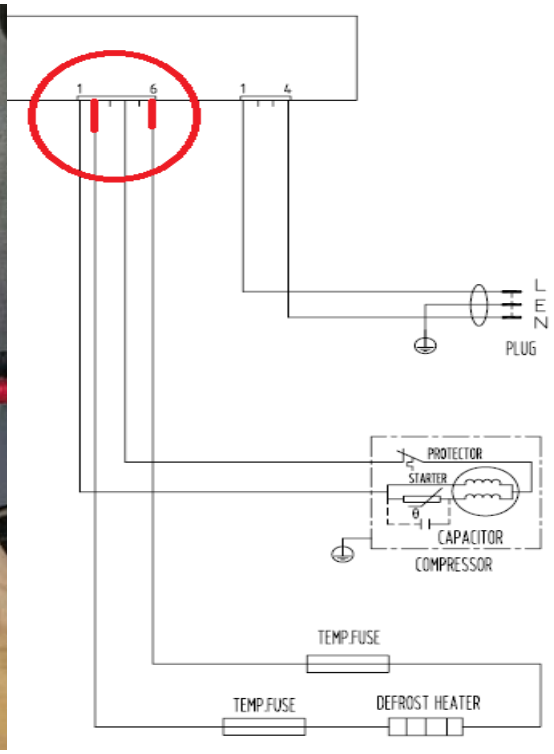
Use a multi-meter to test the resistance between the two end as the pic show :

If there show the number is between About 9-25 Ω then it is OK.

If there show 000 or no response then it is broken.

Checking the heater

If defrost system failure， check the heater and the temperature fuse as well as wires.
Measuring temperature fuse and heater resistance about 304Ω then it is OK.(gray and Blue)



Checking the defrost fuse

Fuse is a high temperature protector of defrost system, when defrosting, if it feel the temperature is more than 73℃, it will cut off the defrost heater, stopping defrost, so that it can protect the parts. The common problems are evaporator defrost incomplete:

Checking method as following:

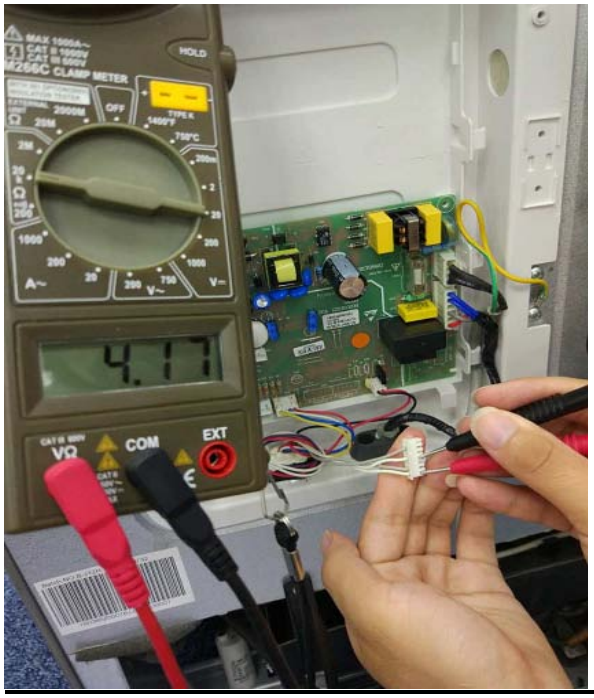
Picture 1 Picture 2

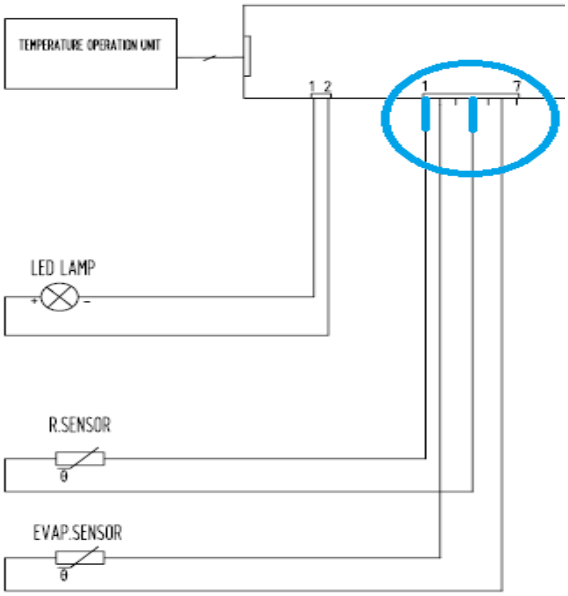
As picture 1， it is the defrost fuse.

As picture 2 , using the multimeter measure two foots of fuse, if the value of resistance is 0000, it means normal.

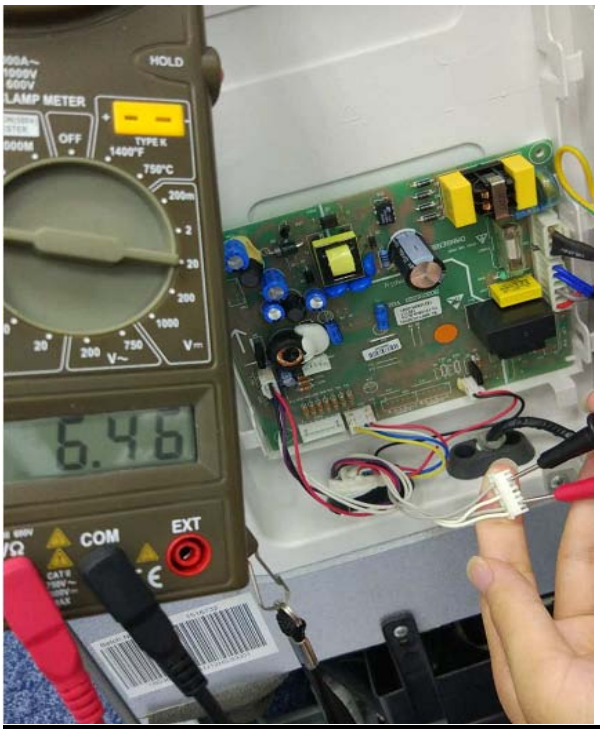
Measuring the sensor resistance

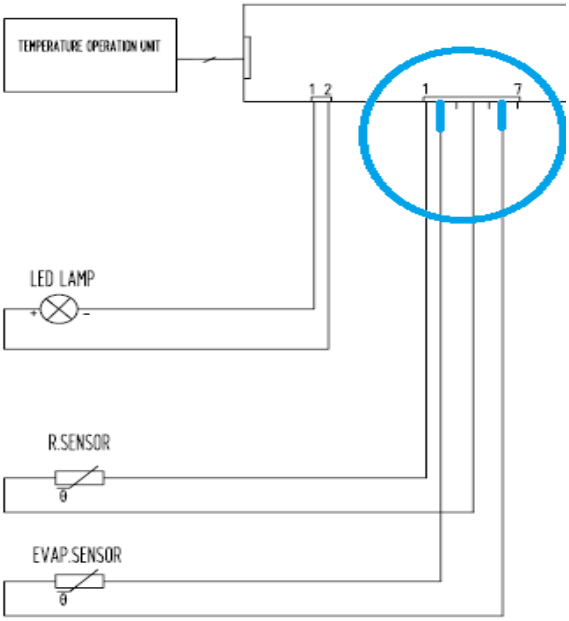
Rr sensor White line





Rv sensor Gray line





Using a multimeter with the ohm switch to measure the resistor of sensor, normally at surrounding 25℃ the resistor should be about 2kohm and every with the temperature decreases 1℃ the corresponding resistor value would increase about 45ohm. If the measured value is not within the normal scope, the sensor is bad and needs to repair or change.

The guide for Disassembly Common parts of Refrigerator

◆The instruction of replacing the main board and display board.

Unscrew the back cover screws		

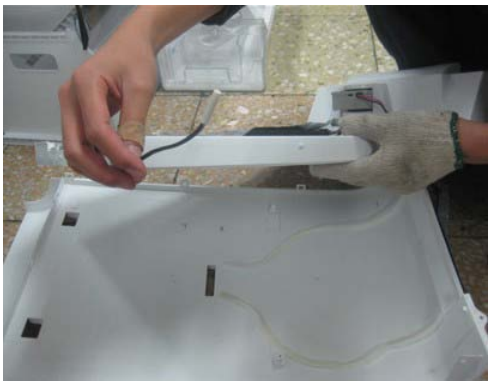
Remove the electron box cover and replace the main board.		

◆The instruction of of replacing fan motor

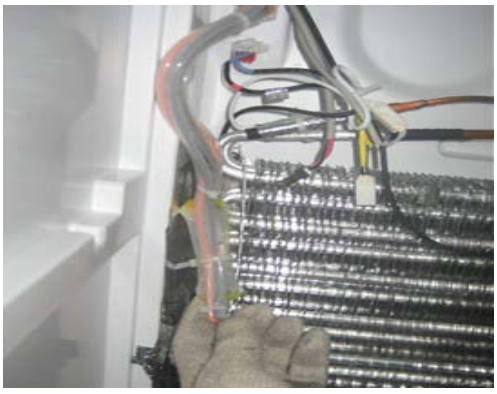
Remove the wind channel plate in freezer chamber.		
Remove the air duct Board		
Open air duct Board		

Unscrew the fan motor screws And take out fan motor		 

◆The instruction of replacing temperature sensor.

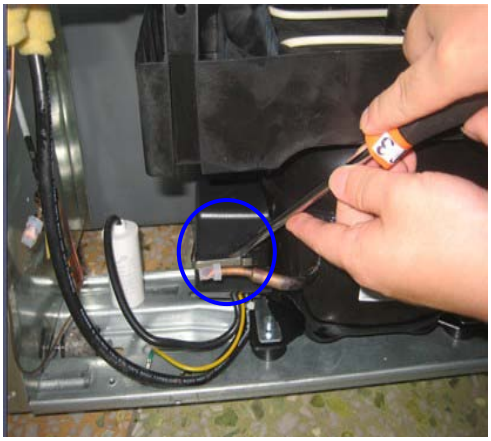
Open air duct Board And take out sensor		

◆The instruction of replacing evaporator temperature sensor and temperature fuse and heater

The instruction of replacing evaporator temperature sensor and temperature fuse		

The instruction of replacing heater		

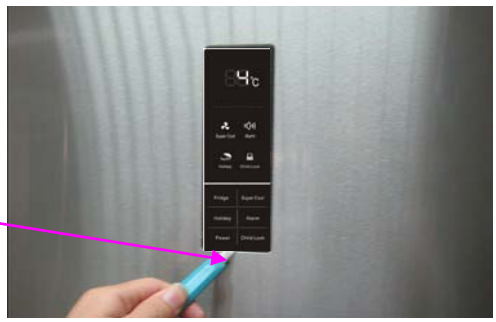
◆The instruction of replacing PTC Starting relay and Overload protector.

1. The location of the PTC Starting relay and Overload protector.		
2. Disconnect the connecting wire of the PTC Starting relay and Overload protector.		

◆The instruction of replacing Door switch.

Using a screwdriver to pry the upper cover plate And take out switch		

◆The instruction of replacing Display board.

1. The location of the display board .		
2. Unplug the display board wires and remove the screws fixing .		

◆The instruction of of replacing LED Light.

1. The location of the LED light.		

2. Unplug the electrical wires and remove the screws fixing the LED light board.		

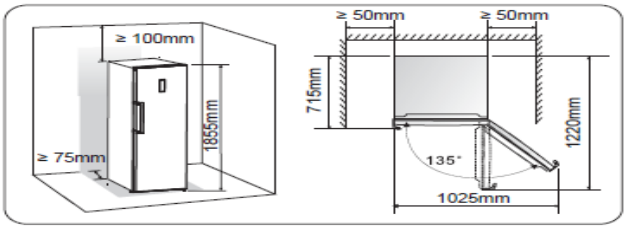
Installing your new appliance

Antes de usar el electrodoméstico por primera vez, conviene que conozca los siguientes consejos.

Ventilación del electrodoméstico

Para aumentar la eficacia del sistema de refrigeración y ahorrar energía, es necesario mantener una buena ventilación en la zona del electrodoméstico para que se disipe el calor. Por esta razón, se debe dejar una holgura adecuada alrededor del frigorífico.

Le sugerimos que deje al menos una distancia de 75 mm desde la parte trasera hasta la pared, al menos 100 mm para la parte superior, 50 mm para el lateral de la pared y suficiente espacio delante para que las puertas se abran 135°. Siga las indicaciones de los diagramas.



Nota:

El electrodoméstico ofrece un buen rendimiento para la clase de clima que se muestra en la siguiente tabla.

Podría no funcionar correctamente si se deja durante demasiado tiempo por encima o por debajo del intervalo de temperatura indicado.

Clase de clima	Temperatura ambiente
SN	+ 10°C a +32°C
N	+ 16°C a +32°C
ST	+ 16°C a +38°C
T	+ 16°C a +43°C

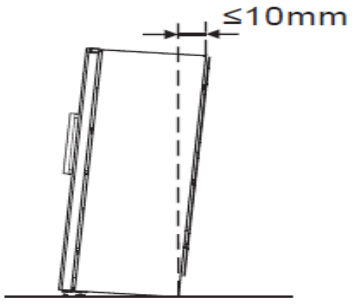
• Coloque el electrodoméstico en un lugar seco para evitar la humedad.

• Mantenga el electrodoméstico lejos de la luz solar, lluvia o rocío. Coloque el electrodoméstico lejos de fuentes de calor, como estufas, hogueras o calentadores.

Nivelación del electrodoméstico

• Para nivelar correctamente el electrodoméstico y que el aire circule adecuadamente, deberá ajustar las patas de la parte trasera del frigorífico. Se pueden ajustar a mano o utilizando la llave adecuada.

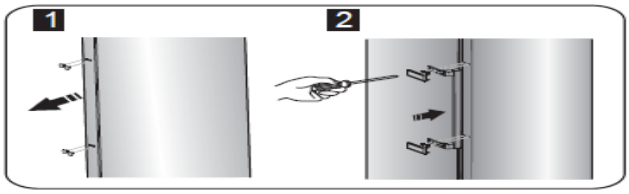
• Para que las puertas se cierren solas, incline hacia atrás la parte superior del electrodoméstico unos 10 mm.



Montaje de los tiradores

Para facilitar el transporte, los tiradores de las puertas se suministran por separado dentro de una bolsa de plástico. Los tiradores se colocan de la siguiente manera.

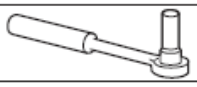
1. Quite las tapas de los orificios del lado izquierdo de la puerta y, a continuación, colóquelas en la bolsa de plástico.
2. Encare el tirador con el lado izquierdo de la puerta, de manera que el centro de los orificios del tirador queden alineados con los de la puerta, como se muestra en la imagen.
3. Fije el tirador con los tornillos que se suministran dentro de la bolsa de plástico. A continuación, coloque las tapas de los tiradores.



Cambio del lado de apertura

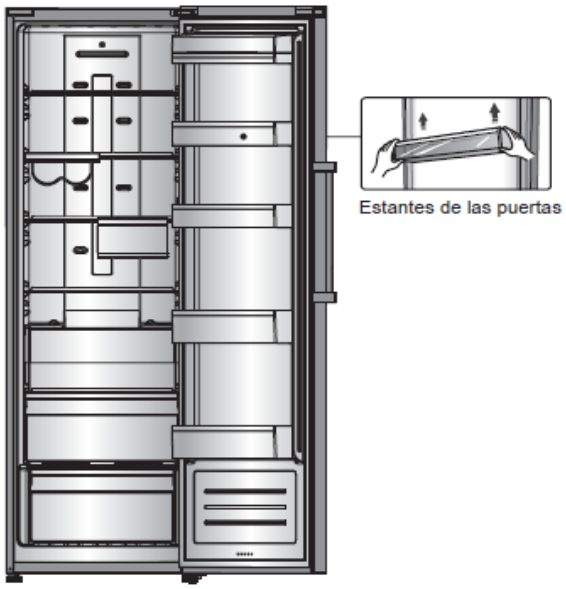
El lado de apertura de la puerta de puede cambiar del lado derecho (como sale de fábrica) al lado izquierdo, si lo exigiese en lugar de montaje.

¡Advertencia! Cuando cambie el lado de apertura, el electrodoméstico deberá estar desconectado de la red eléctrica. Asegúrese de que el enchufe no está dentro de la toma. Se necesitan las siguientes herramientas:

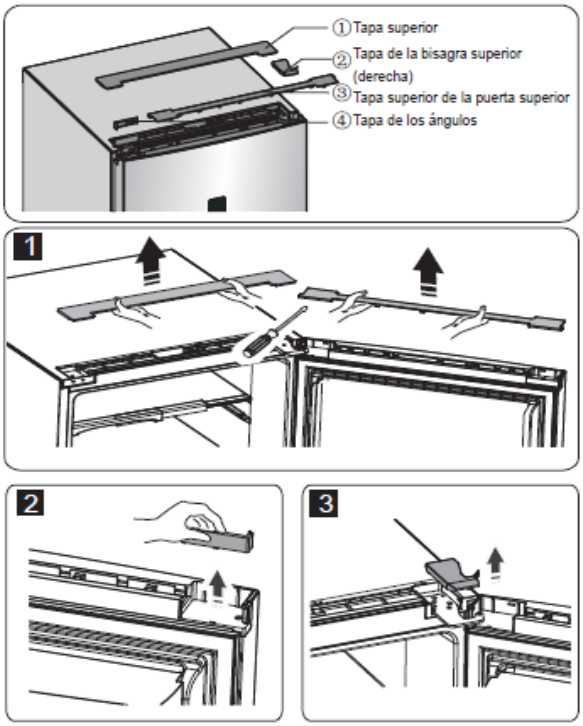
	
Llave de carraca de 8mm	Destornillador de estrella
	
Destornillado de punta plana	Llave de 8mm

Nota: Le recomendamos que antes de apoyar el frigorífico sobre la parte trasera para acceder a la base, lo proteja con espuma de embalaje o material similar, para evitar daños en el panel trasero. Le recomendamos que siga los siguientes pasos pasos cambiar el lado de apertura.

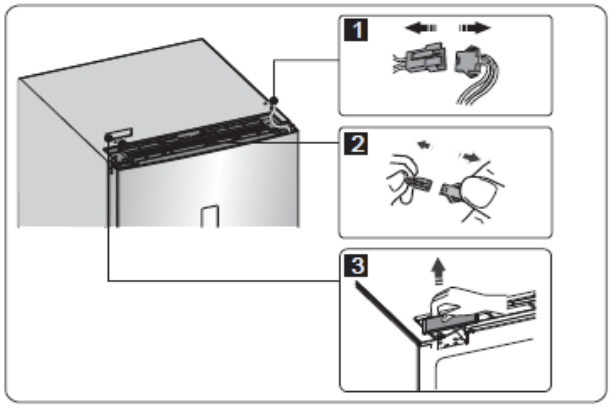
1. Coloque el frigorífico de pie. Abra la puerta y saque todos los estantes (procure no dañarlos) y, a continuación, cierre la puerta.



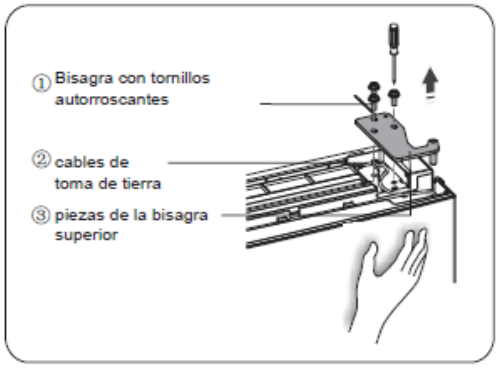
2. Abra la pieza ① situada en la parte superior de la estructura del frigorífico del lado derecho. A continuación, baje la pieza ③ y ④ de la puerta de la misma manera. Quite la pieza ② y colóquela en la bolsa de plástico.



3. Desconecte los conectores eléctricos ① y ②. A continuación, quite la pieza ③.

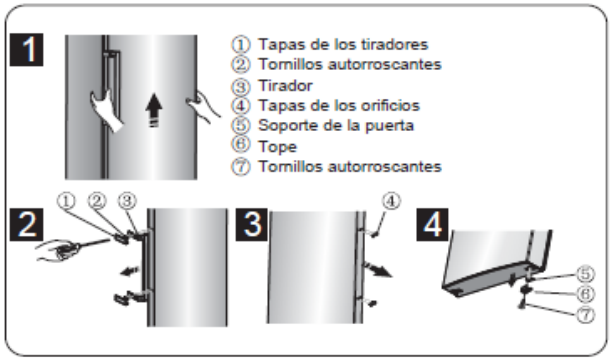


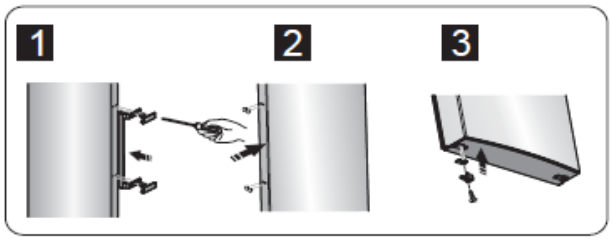
4. Desenrosque el tornillo ①, afloje el cable ② y quite la pieza ③.



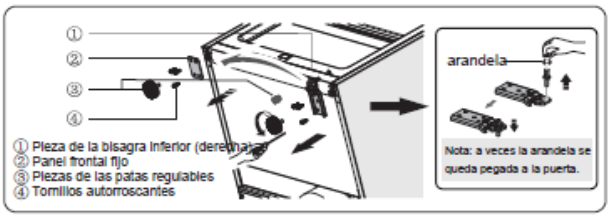
Nota: Le recomendamos que sujete la puerta durante el paso 4, para evitar que se caiga.

5. Quite la puerta y colóquela en una superficie blanda con el panel hacia arriba. Quites las piezas ① y ④. A continuación ②, afloje los tornillos como se muestra en la imagen. Cambie el tirador ③ al lado derecho. A continuación, coloque los tornillos ②, la pieza ① y ④. Afloje el tornillo ⑦, saque la pieza ⑥ y ⑤, gire la pieza ⑥ y, a continuación, monte la pieza ⑤ y ⑥ en el lado izquierdo con el tornillo ⑦.



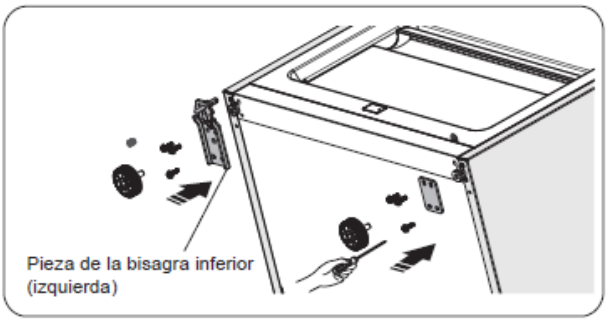


6. Coloque el frigorífico sobre una superficie plana y quite la pieza ③. A continuación, extraiga el tornillo ④. Quite las piezas ② y ①.

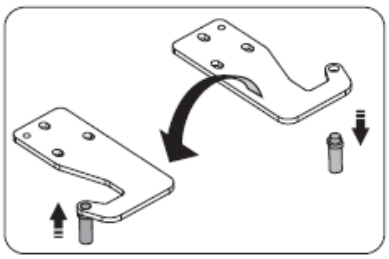


7. Atornille la bisagra inferior, cámbiela al orificio contiguo y, a continuación, atorníllela con la arandela.

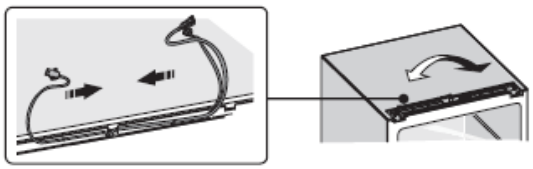
8. Regrese al paso 6, cambie la pieza ① a la izquierda y la pieza ② a la derecha. A continuación, sujételas con el tornillo ④. Por último, monte la pieza ③.



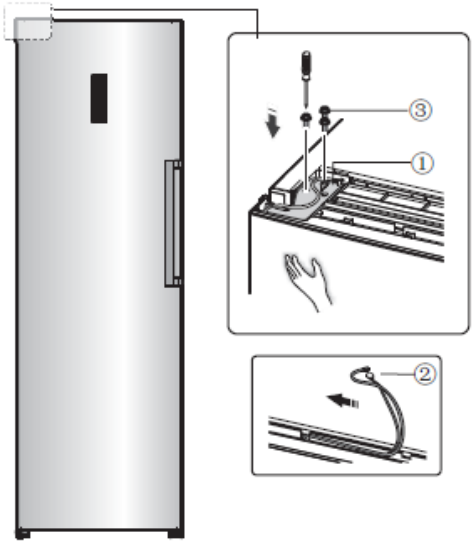
9. Afloje el eje de la bisagra superior, dele la vuelta a la tapa de la bisagra superior y sujétele el eje. A continuación, colóquela en el lado de uso.



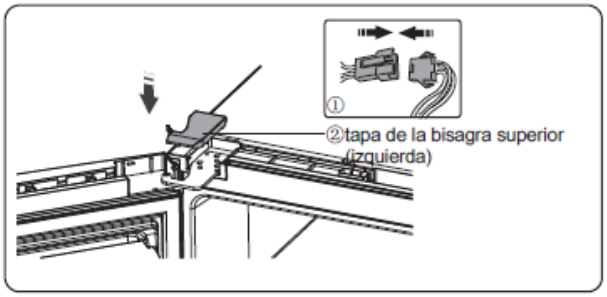
10. Intercambie los cables de las tomas izquierda y derecha de la estructura del frigorífico.



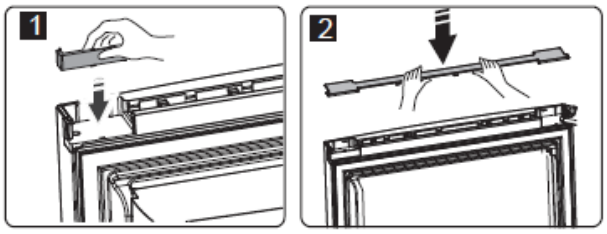
11. Mueva la puerta hasta la posición adecuada. Ajuste la pieza ① y la puerta. Coloque el cable de conexión ② en la toma de la puerta de derecha a izquierda. A continuación, sujete la pieza ① y el cableado ② con el tornillo ③. (Sujete la puerta con la mano durante el montaje)



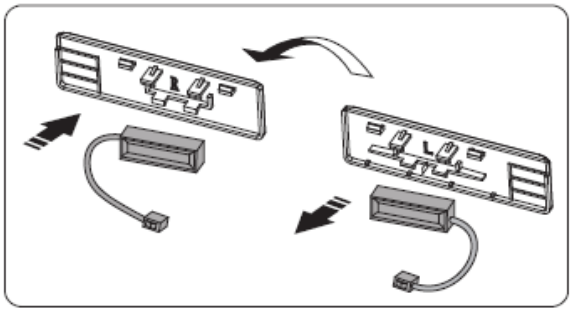
12. Conecte el conector eléctrico ① según lo indicado en el paso 3. A continuación, monte la pieza ② (está en la bolsa de plástico).



13. Gire la pieza ① 180° y móntela en la esquina izquierda de la puerta. A continuación, monte la pieza ② (las dos que se han quitado en el paso 2)

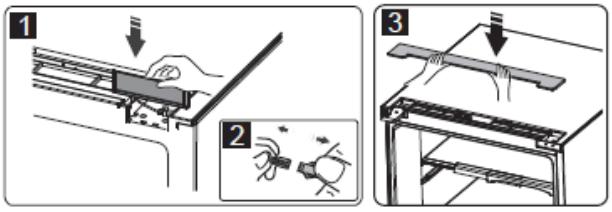


14. Saque el interruptor de láminas del bloque de contacto (pieza ③ del paso 3) y móntelo en el otro bloque (está marcado con una "R" en la bolsa de plástico). Meta en la bolsa de plástico el bloque de contacto que acaba de quitar.



Nota: Asegúrese de que el interruptor de láminas encaja bien en el bloque de contacto.

15. Monte la pieza ①, conecte el conector del cable ② y, a continuación, monte la pieza ③.

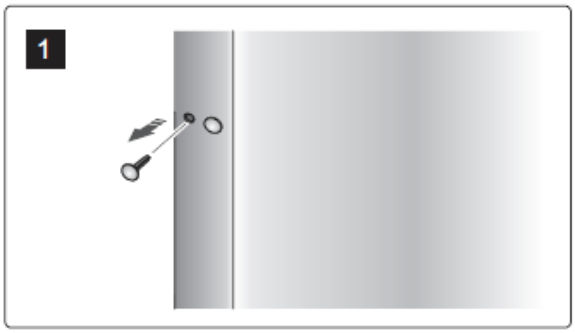


16. Abra la puerta, coloque los estantes y, a continuación, ciérrela.

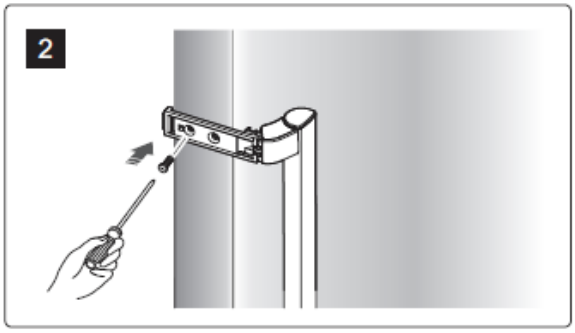
Installation Guide of The Booster Handle

1 Firstly, bring out a handle part, two handle covers and four screws from the refrigerator attachment.

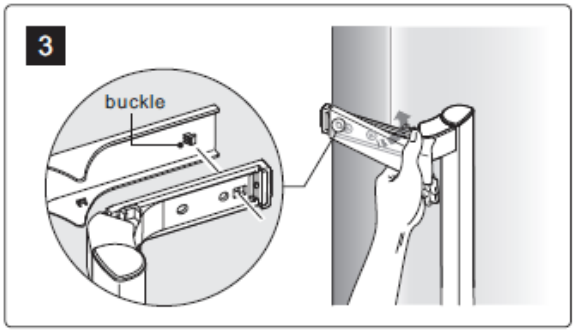
2 Take out four screw-hole covers from the side of the door as Figure 1.



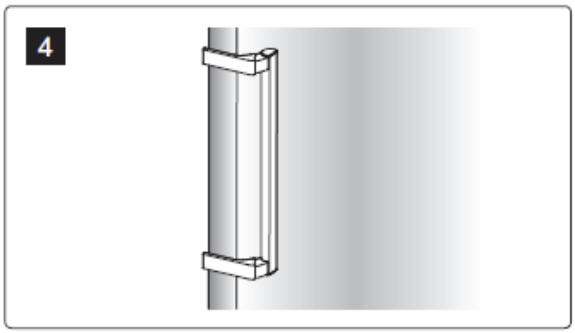
3 Fix the handle on the door with four screws as Figure 2.



4 Install the handle cover as Figure 3: button the buckle firstly , and then close the cover from the inside until you hear the sound of "popping" , which means that you have installed the cover perfectly.



5 As Figure 4, the handle has been installed correctly.



6 The method of removing the handle is opposite to the method of installing the handle .

Troubleshooting

◆ The solution for digital display code problem:

1	The digital display window show "E1"	1. The Refrigerator chamber Tem. Sensor is open circuit or short circuit. 2. The Refrigerator chamber Tem. Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
2	The digital display window show "E2"	1. The Evaporator Defrost Sensor is open circuit or short circuit. 2. The Evaporator Defrost Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
3	The digital display window show "EC"	1. The receive communication fault between the main electrical PCB and the display PCB. 2. The control PCB is bad. 3. The display PCB is bad.	1. Check the wire terminal is well or not between the main electrical PCB and display PCB. 2. Change the main electrical PCB. 3. Change the display PCB.
4	The freezer digital display window show "EF"	1. The Fan motor is open circuit or short circuit. 2. The Fan motor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of Fan motor or checking the connecting is well or not. 2. Change the Fan motor 3. Change the control PCB
The testing method of sensor:			
Using the multimeter with the ohm switch to measure the resistor of sensor, normally at surrounding 25℃ the resistor should be about 2kohm and every with the temperature decreases 1℃ the corresponding resistor value would increase about 45ohm.If the measured value is not within the normal scope, the sensor is bad and needs to repair or change.			

◆ The common problem judgement method

Problem	Cause
Refrigerator can't start	1.1 Is the power cord connecting well? 1.2 Is the power voltage too low? 1.3 Is the sensor irrational setting? 1.4 Is the ambient temperature too low? 1.5 Is the circuit on power? 1.6 Is there some default in compressor 1.7 Is the refrigeration system blocked by ice or dirty, please stop the unit and restart after 10 minutes to see if the compressor can start.
Weak cooling effects	2.1 Is there any heat source around the refrigerator? 2.2 Is there enough space around the refrigerator for rejection of heat? 2.3 Is the setting of the temperature appropriate? 2.4 Is there too much food or overheating food in it?

	2.5 Does there open the door frequently? 2.6 Is the door completely closed? 2.7 Does the gasket destroyed or distort? 2.8 Does the gas leak?
The unit can not stop running	3.1 Is there any heat source around the refrigerator? 3.2 Is there enough space around the refrigerator for rejection of heat? 3.3 Is the setting of the temperature appropriate? 3.4 Is there too much food or overheating food in it? 3.5 Does there open the door frequently? 3.6 Is the door completely closed? 3.7 Does the gasket destroyed or distort? 3.8 Is the thermostat good operation? 3.9 Does the gas leak?
Ice up in the freezing chamber	4.1 Is the setting of the temperature appropriate? 4.2 Is there multi-moisture food and too close to the back wall of the refrigerator? 4.3 Is the ambient temperature too low? 4.4 Is the electric parts on good condition, specially the thermostat wich will cause the unit non-stopping .
Abnormal noise	5.1 Is the refrigerator stably placed? 5.2 Does the refrigerator bump other objects? 5.3 Whether the internal accessory of the refrigerator is in the right place. 5.4 Whether the water plate of compressor is fall from the unit. 5.5 Does the tube of the refrigeration system bump each other? 5.6 The noise sound likes Water flow inside the refrigerator ,in fact ,it is normal, which is caused both when refrigerator start and shut-down; in addition, frost-dissolving causes this sound, too, which is a normal phenomenon. 5.7 There will be a cracking sound in the cabinet ,when the cabinet or cabinet accessory contracting or expanding, this sound will be made, which is normal. 5.8 The motor operation sound in the compressor is appears to be louder at night or begin starting. which is a normal phenomenon; also the uneven placing would lead to too much running noise.
There is a peculiar smell in the units	6.1 Is the food with special smell sealed tight? 6.2 Does it have long time storing food or degenerated food? 6.3 Whether the internal cabinet needs cleaning.
the forefront or the middle cabinet heats	7.1 As fridge Anti-condensation tube is placed here and caused the above phenomenon, which is normal.
Refrigerator's two sides or the back heat	8.1 As condensation tube is placed here and caused the above phenomenon, which is normal.
the cabinet surface condensation	9.1 Air humidity is too large.

◆ The solution for the common problem.

1.Cooling is not enough good (Many reasons might cause that cooling not enough good, as blow :)		
Reason	analysis	Solutions
1) Leakage of Gas	If some gas leaked unit will work not well.	First find out the point of leaking on

	Phenomenon of failure: a. lower pressure of liquid cycle system b. high temperature of copper tube of discharging gas, hand feels very hot. C. much noise, sounds like "ZZZZZ", comes from outlet of capillary. d. the temperature fell down very slowly.	tube, and then sealed it, vacuuming it, finally recharge with Gas. Note: If you find oil on somewhere, it is possible that leakage point is there.
2)The quantity of Gas is too much	If too much Gas was charged into the cycle system, the extra gas will occupy some space of evaporator, so that the area of heat exchange becomes less, unit will work not well. Phenomenon of failure: a, higher pressure of liquid cycle system than norm. b, higher temperature of condenser. c, larger electric current of compressor d, there maybe ice on the suction tube. e, when gas is too much, some gas liquid might goes back into compressor, compressor will be damaged by liquid.	First stop unit for several minutes, and then open charging tube, discharge all of gas. Change a new filter, and then recharge gas, finally sealed the system.
3) There is air in the liquid cycle system	The air in system will cause lower efficiency of cooling. Phenomenon of failure: a, higher pressure of liquid cycle system than norm, but the pressure is not over the limit. b, higher temperature of discharging tube. C, much noise	First stop unit for several minutes, and then open charging tube, discharge all of gas. Change a new filter, and then recharge gas, finally sealed the system.
4)Low working efficiency of compressor	General when a compressor works for many years, some parts of compressor were wear, so that compressor discharge less gas out, unit does not work strongly. Phenomenon of failure: a, lower pressure of discharging, check the pressure of system with pressure meter to see if it is normal. b, higher temperature of compressor surface. C, cut off the discharging tube, to see if you can block the gas coming out of the tube when compressor is working.	Change a new compressor.
5) There is something that blocked the liquid cycle system	Some time there is something blocked the filter of liquid cycle system, so that unit is not cold. Phenomenon of failure: a, lower pressure of discharging b, lower temperature of discharging.	Change a new filter
2.NO COOL (Popular failure reasons are below):		

Reason	analysis	Solutions:
1) Leakage of gas	Phenomenon of failure: a, leaking fast b, leaking slowly c, no voice of liquid flowing d, cut off charging tube, no gas goes out.	First find out the point of leaking on tube, and then sealed it, vacuuming it, finally recharge with gas. Note： If you find oil on somewhere, it is possible that leakage point is there.
2)There is some thing that blocked the liquid cycle system	A,Ice blocking Sometime because unknown reason water comes into liquid cycle system, the capillary will be blocked by water after unit runs for period of time. Phenomenon of failure: The unit works well in the inception, after period of time the ice appears in the capillary and becomes more and more, till blocks the hole of capillary completely. In the moment you can find the ice on the evaporator defrosts. The noise of liquid flow disappears. The pressure of absorbing becomes negative. The phenomenon above will appear again and again. The way to check ice blocking: Warm the capillary with a hot towel, after a while the ice in the capillary melt, you can hear a sound of gas flow comes from the capillary abruptly. The pressure of absorbing becomes higher. It is Ice blocking.	First stop unit for several minutes, and then open charging tube, discharge all of gas. Blow the cycle system with gas of nitrogen, and then recharge Gas, finally sealed the system.
	B, there is offal block the capillary Phenomenon of failure: If the capillary is blocked by something such as offal etc., the sound of liquid flow disappears. The ice on the evaporator defrosts The pressure of absorbing becomes negative. Higher temperature of discharging tube The way to check offal blocking: If you warm capillary with the way of checking ice blocking, there is no change. It must be offal blocking.	First stop unit for several minutes, and then open charging tube, discharge all of gas. Blow the cycle system with gas of nitrogen. Change a new capillary and filter, and then recharge Gas, finally sealed the system.
COMPRESSOR NEVER STOPS：		

Reason	Solutions
1)The setting temperature is not reasonable.	Readjust the temperature setting.
2) the sensor is bad.	Replace the sensor.
3)Seal of door is damaged.	Replace the gasket
4)Too much food in the refrigerator	Please put the food properly.
5)Wind door is broken.	Replace wind door.
6)Fan motor is broken.	Replace fan motor

■ NOTE:

- Before doing these operations above, disconnect the main power supply. Failure to do so could result in electrical shock or personal injury.
- In case of any detailed technical information please check with the technical specifications.