

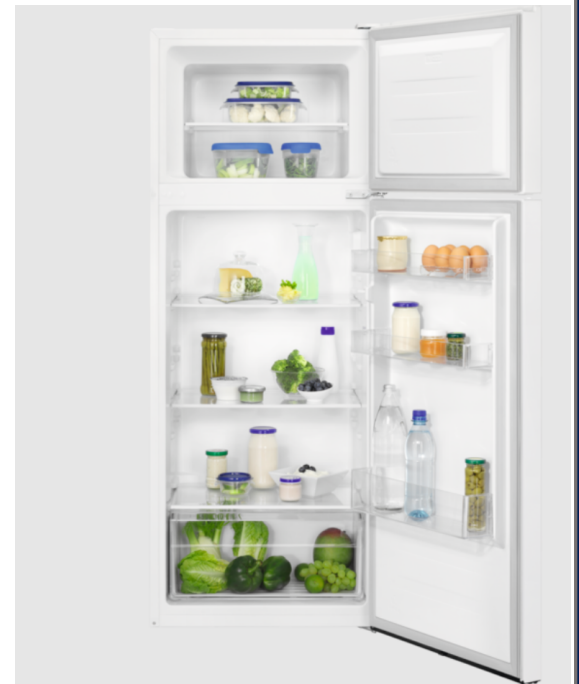


Electrolux

SERVICE MANUAL

Refrigeration

CT140
Freestanding
Static
Combi top



Document Revisions

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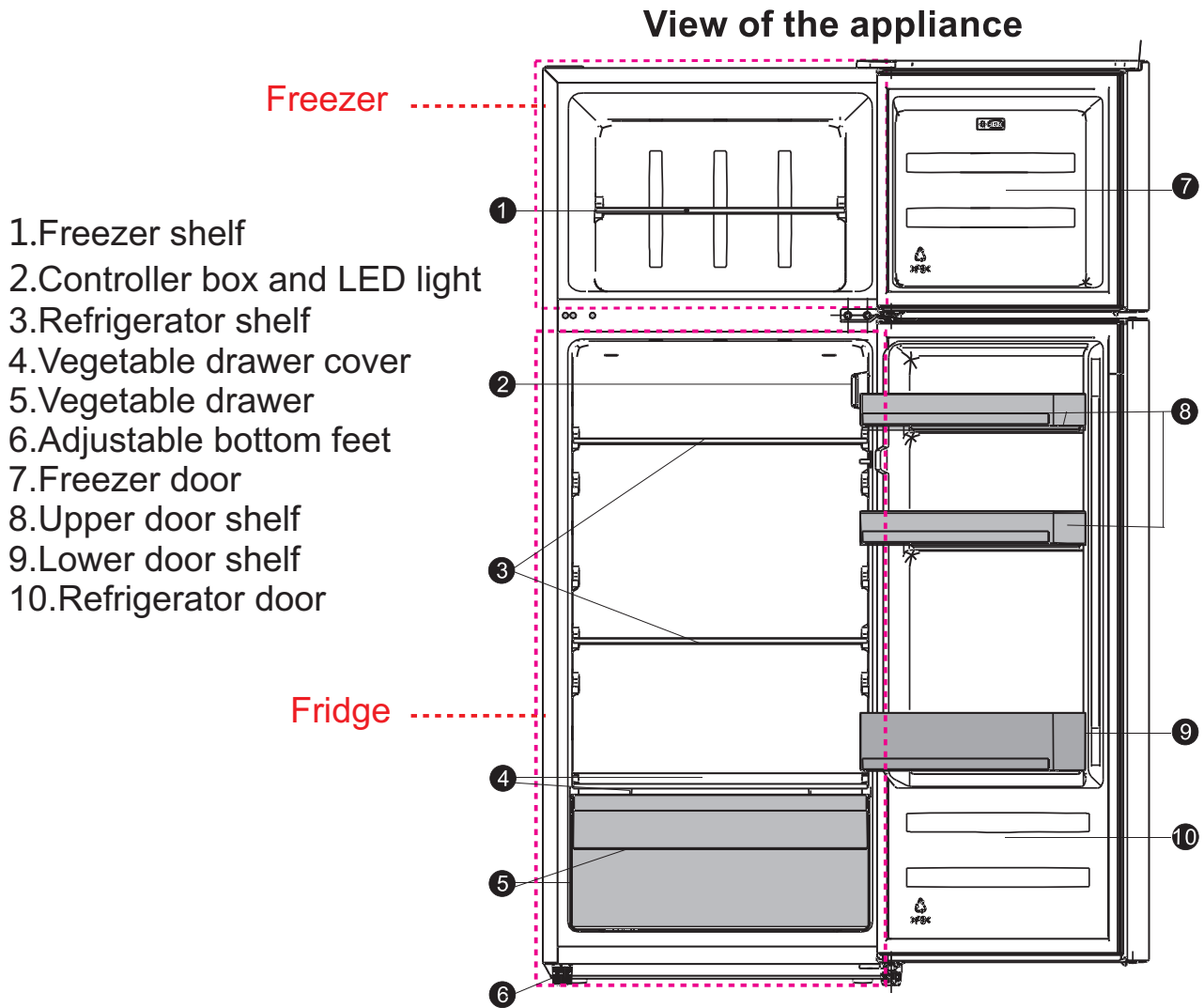
1 Warning and precautions for safety

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. 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.

2 Appearance and structure

2.1 View of the appliance



Note: Due to constant development of our products, your refrigerator may be slightly different from this instruction manual, but its functions and usage remain the same. To get more space in freezer, you can remove freezer shelf.

2.2 Compressor room structure



1

2

3

4

5

- 1.Junctionbox
- 2.Dry filter
- 3.Compressor
- 4.Evaporator dish
- 5.Power cord

3 Basic parameters

Content	Unit	BCD-205Y/HC4(C)	
Compressor		EYK60L	
Voltage/frequency	V/Hz	220-240V /50Hz	220-240V /50Hz
Rated input current	A	0.85	0.85
Rated input power	W	105	105
LED wattage	W	1.5	1.5
Net capacity	L	205	206
Energy efficiency class		Europe A+	Europe F
Climate class(SN=10~32℃,N=16~32℃, ST=16~38℃,T=16~43℃)		SN、N、ST	SN、N、ST
Freezer compartment star rating		★★★★	★★★★
Energy consumption / year	kWh	217	222
Energy consumption (EN153) per 24h	kWh	0.595	0.608
Freezing capacity		2Kg/24h	1Kg/12h
Max noise level	dB(A)	39	39
Certifications		CB; CE+GS	CB; CE+GS
Kind of coolant / Charge (R600a)/ grammes	R/g	R600a/50g	R600a/50g

Content	Unit	BCD-205YA/HC4(C)	
Compressor		PZ55H1V	
Voltage/frequency	V/Hz	220-240V /50Hz	220-240V /50Hz
Rated input current	A	0.85	0.85
Rated input power	W	95	95
LED wattage	W	1.5	1.5
Net capacity	L	205	206
Energy efficiency class		Europe A++	Europe E
Climate class(SN=10~32℃,N=16~32℃, ST=16~38℃,T=16~43℃)		SN、N、ST	SN、N、ST
Freezer compartment star rating		★★★★	★★★★
Energy consumption / year	kWh	170	177
Energy consumption /24h	kWh	0.466	0.485
Freezing capacity		2Kg/24h	1Kg/12h
Max noise level	dB(A)	39	39
Certifications		CB; CE+GS	CB; CE+GS
Kind of coolant / Charge (R600a)/ grammes	R/g	R600a/50g	R600a/50g

4.1 Display control panel

- Insert the plug of the connection lead into the plug socket with protective earth contact. When the refrigerator compartment door is opened, the internal lighting is switched on. After the fridge has been placed in position, wait for 5 minutes before electricity is supplied. Don't store anything until the temperature inside the fridge becomes low enough.
- The temperature selector knob is located on the right of the refrigerator compartment.

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 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 the middle part of button to set fridge temperature between 2 and

as needed, and control panel will display corresponding figures according to the following sequence.



2. Super Freeze

Super Freeze will quickly lower the temperature within the freezer so food will

freeze faster. This can lock in nutrients of food and keep food fresh for longer.



Press the middle part of button for 3 seconds to activate the super freeze function. ❄️

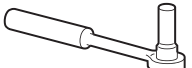
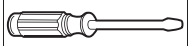
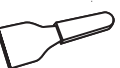
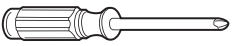


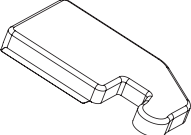
The light will be on. Press the middle part of button for 3 seconds to cancel the super freeze function.

4.2 Reversing the door

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

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

Tools you will need

Not provided		
		
8mm socket wrench	Thin-blade screwdriver	Putty knife
		
Cross-shaped screwdriver	Monkey wrench	8mm wrench
Additional parts (in the plastic bag)		
		
Left Hinge Cover		

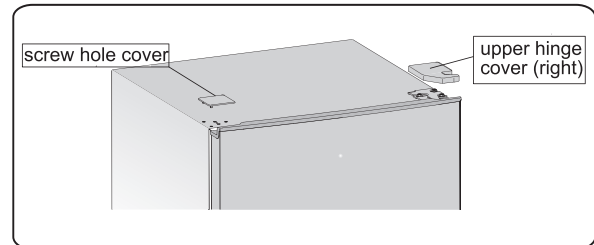
Note: If required you may lay the refrigerator on its back in order to gain access to the base, you should rest it on soft foam packaging or similar material to avoid damaging the backboard of the refrigerator. To reverse the door, the following steps are generally recommended.

1. Stand the refrigerator upright. Open the upper door to take out all door racks (to avoid damage) and then close the door.

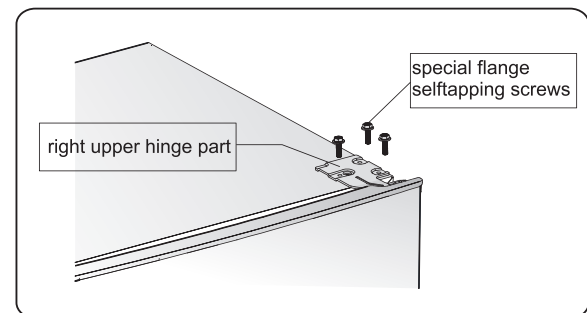
Remove the door shelf



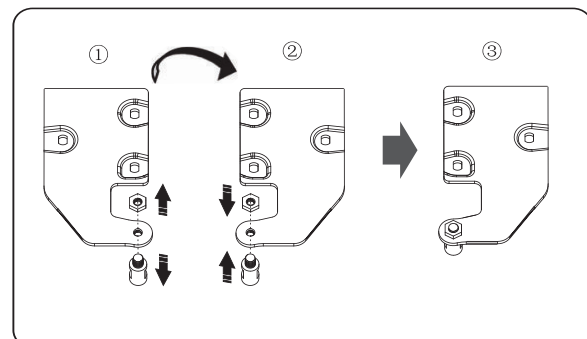
2. Use a putty knife or thin-blade screwdriver to prize the screw hole cover which is at the top left corner of the refrigerator, and the upper hinge cover which is at the top right corner of the refrigerator.



3. Unscrew the special flange self-tapping screws which are used for fixing the right upper hinge part by a 8mm socket driver or a spanner (please support the upper door with your hand when doing it).

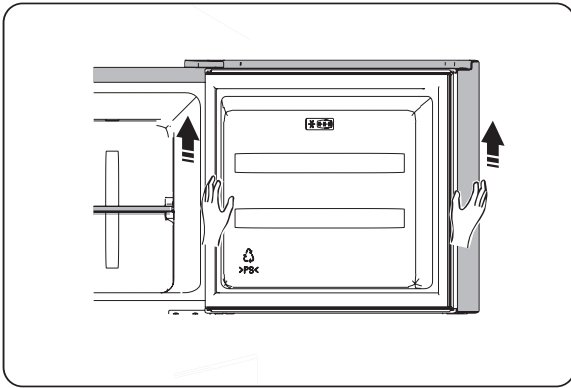


4. Remove the upper hinge axis, transfer it to reversed side and tighten securely, then put it in a safe place.

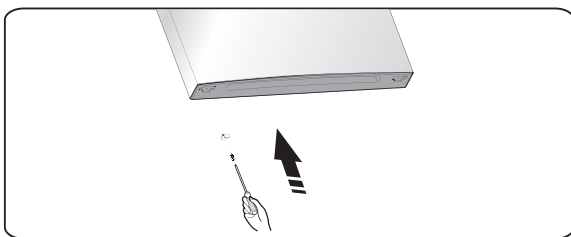
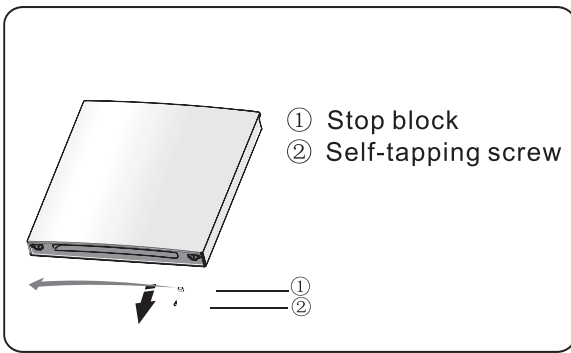


5. Remove the upper door from the middle hinge by carefully lifting the door straight up.

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

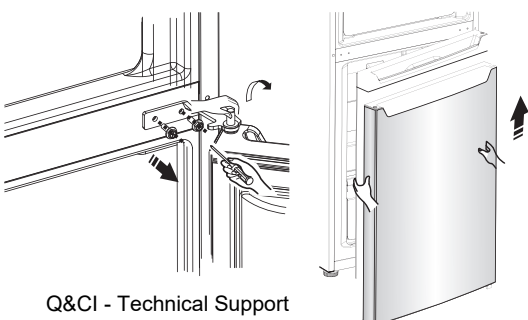


6. Place the upper door on a smooth surface with its panel upwards. Loose screw ② and part ①, then install them to the left side and tighten securely.

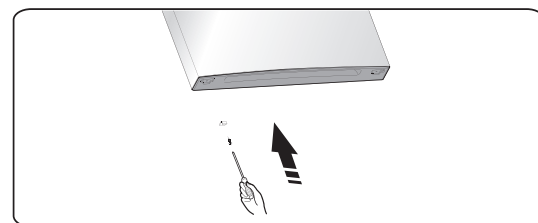
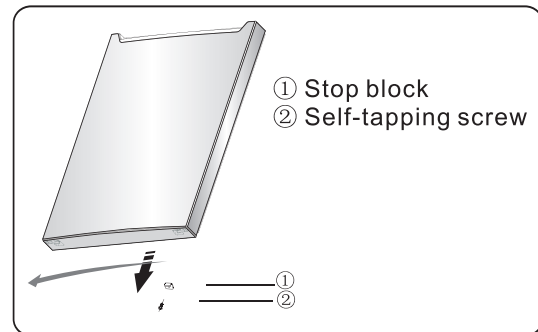


7. Unscrew the two special flange self-tapping screws which are used for fixing the middle hinge part, then remove the middle hinge part that holds the lower door in place.

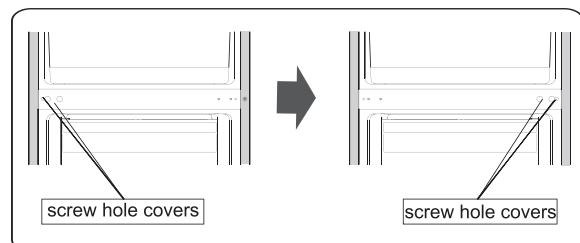
NOTE: When removing the door, watch for washer(s) between the lower hinge and the bottom of the lower door that may stick to the door. Do not lose.



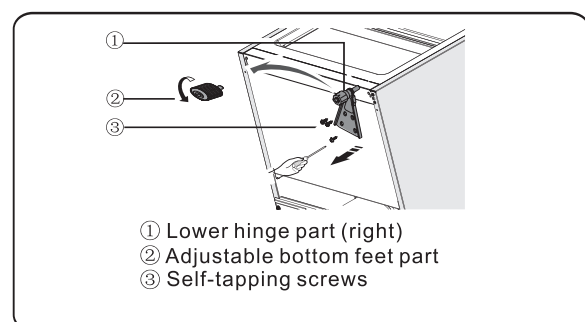
8. Place the lower door on a smooth surface with its panel upwards. Loose screw ② and part ①, then install them to the left side and tighten securely.



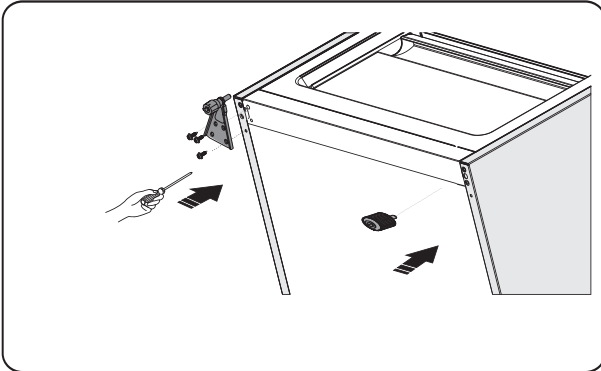
9. Change screw hole covers on middle cover plate from left to right (as shown in figure below).



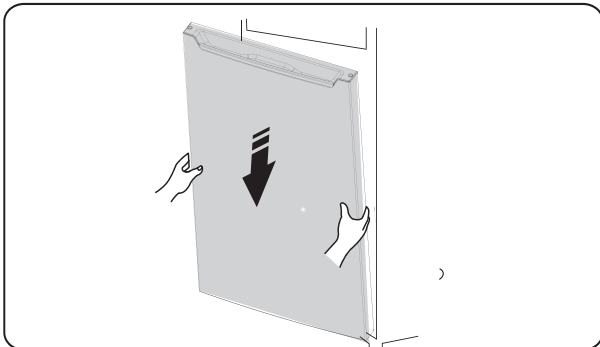
10. Lay the refrigerator on soft foam packaging or similar material. Remove both adjustable bottom feet parts, and the lower hinge part by unscrewing the special flange self-tapping screws.



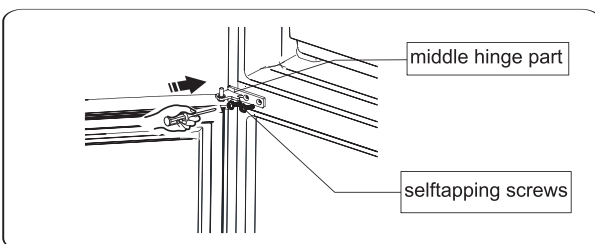
11. Replace the lower hinge part to the left side and fixing it with the special flange self-tapping screws. Replace the adjustable bottom feet parts to another side and fixing it .



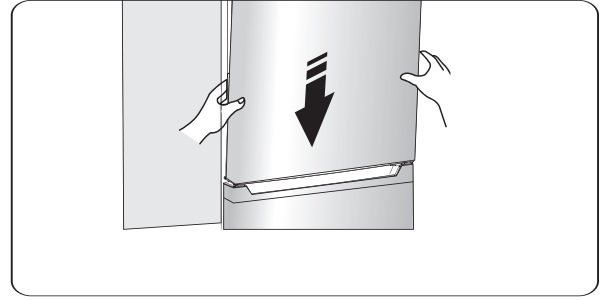
12. Transfer the lower door to the property position, adjust the lower hinge part, make the hinge axis into the lower hole of the lower door, then tight the bolts.



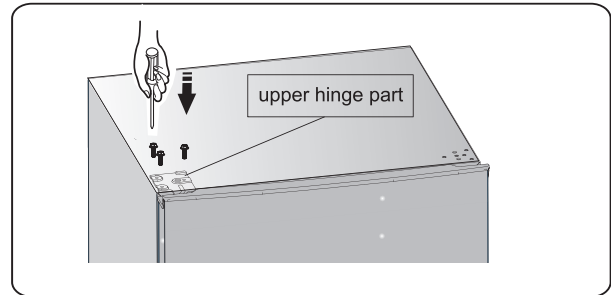
13. Upturn the middle hinge part the direction 180 degree, transfer it and adjust its position, make the middle hinge axis into the upper hole of the lower door, tight the bolts.



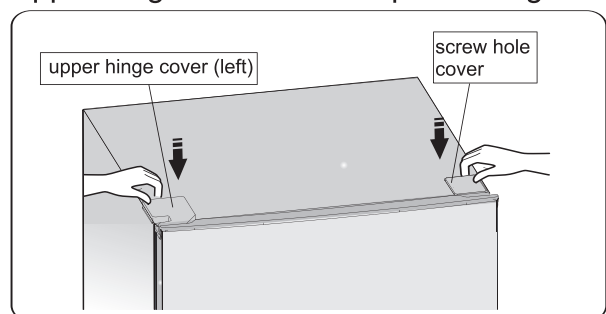
14. Transfer the upper door to the appropriate position. Secure the door's level, make the middle hinge axis into the lower hole of the upper door.



15. Transfer the upper hinge part and make the upper hinge axis into the upper hole of the upper door, and adjust the position of the upper door (please support the upper door with your hand when doing it), fixing the upper hinge part with the special flange self-tapping screws.



16. Install the screw hole cover on the top right corner of the refrigerator. Install the upper hinge cover (which is in the plastic bag) on the left corner. Put the other upper hinge cover into the plastic bag.



17. Open the upper door and install the door shelves, then close it.

Warning!

When changing the side at which the door opens, the appliance must not be connected to the mains. Remove plug from the mains beforehand.

4.3 Error display

The following fault alarm will be displayed within 4 hours after the refrigerator is powered on. The alarm will not be displayed after the refrigerator is powered on for more than 4 hours.

- 1、 When the refrigerator temperature sensor is out of order, the 8 th and 6 th indicator lights flash at the same time.
- 2、 When the environment sensor is out of order, the 8 th and 2 th indicator lights flash at the same time
- 3、 In case of communication reception failure, the 6th and 4th speed indicator lights flash simultaneously
- 4、 In case of communication transmission failure, the 6th and 4th indicator lights flash simultaneously
- 5、 When the door is opened for more than 1 minute, the door will be alerted, the refrigerator running gear indicator flashing

5 Troubleshooting

5.1 Common problem and checking

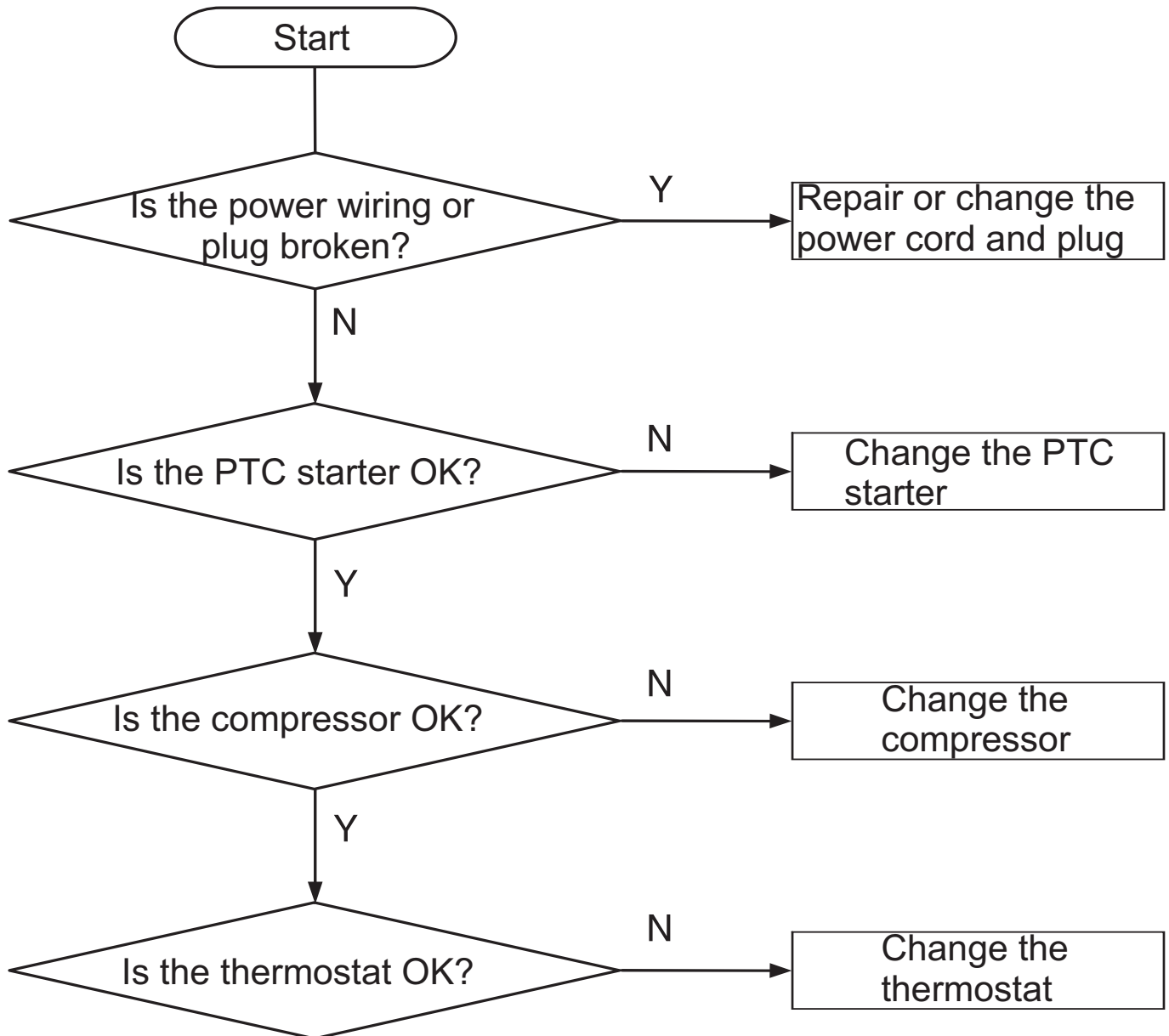
Problem	Possible cause & Solution
Appliance is not working correctly	Check whether the power cord is plugged into the power outlet properly.
	Check the fuse or circuit of your power supply, replace if necessary.
	The ambient temperature is too low. Try setting the chamber temperature to a colder level to solve this problem.
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: <ul style="list-style-type: none"> ● Compressor running noises. ● Clicking noise before the compressor starts.
	Other unusual noises are due to the reasons below and may need you to check and take action: <p>The cabinet is not level.</p> <p>The back of appliance touches the wall.</p> <p>Bottles or containers fallen or rolling.</p>
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: <ul style="list-style-type: none"> ● 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	Ensure food is placed within the appliance to allow sufficient ventilation. Ensure that door is fully closed. To remove the frost, please refer to cleaning and care chapter.
Temperature inside is too warm	You may have left the doors open too long or too frequently; or the doors are kept open by some obstacle; or the appliance is located with insufficient clearance at the sides, back and top.
Temperature inside is too cold	Increase the temperature by following the "Controller part." chapter.

5.1 Common problem and checking

Water drips on the floor	The water pan (located at the rear bottom of the cabinet) may not be properly leveled, or the draining spout (located underneath the top of the compressor depot) may not be properly positioned to direct water into this pan, or the water spout is blocked. You may need to pull the refrigerator away from the wall to check the pan and spout.
The light is not working	●The light may be damaged. Refer to replace lights in Circuit and checking chapter.

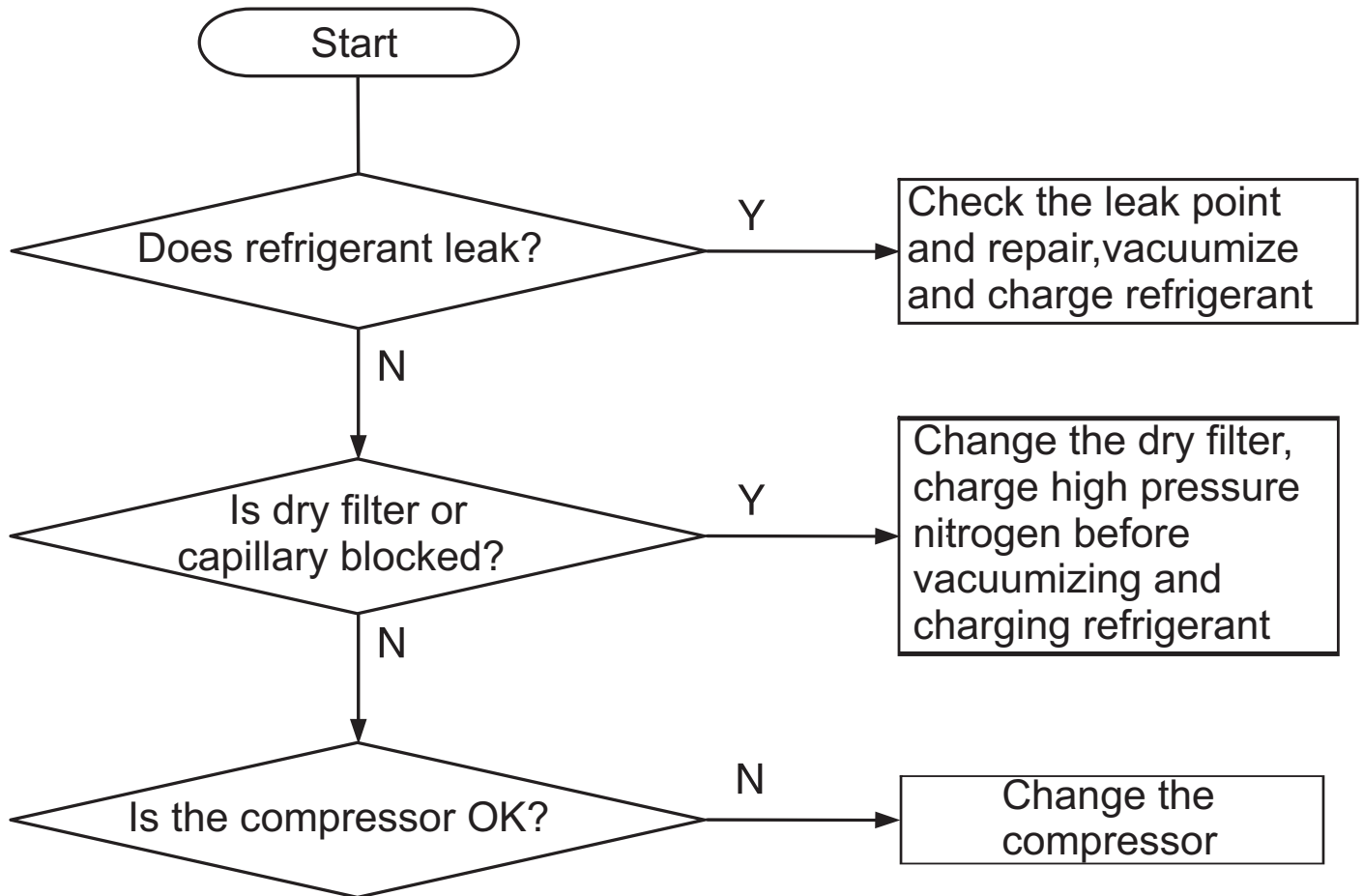
5.2 Refrigeration failure

5.2.1 Compressor doesn't work

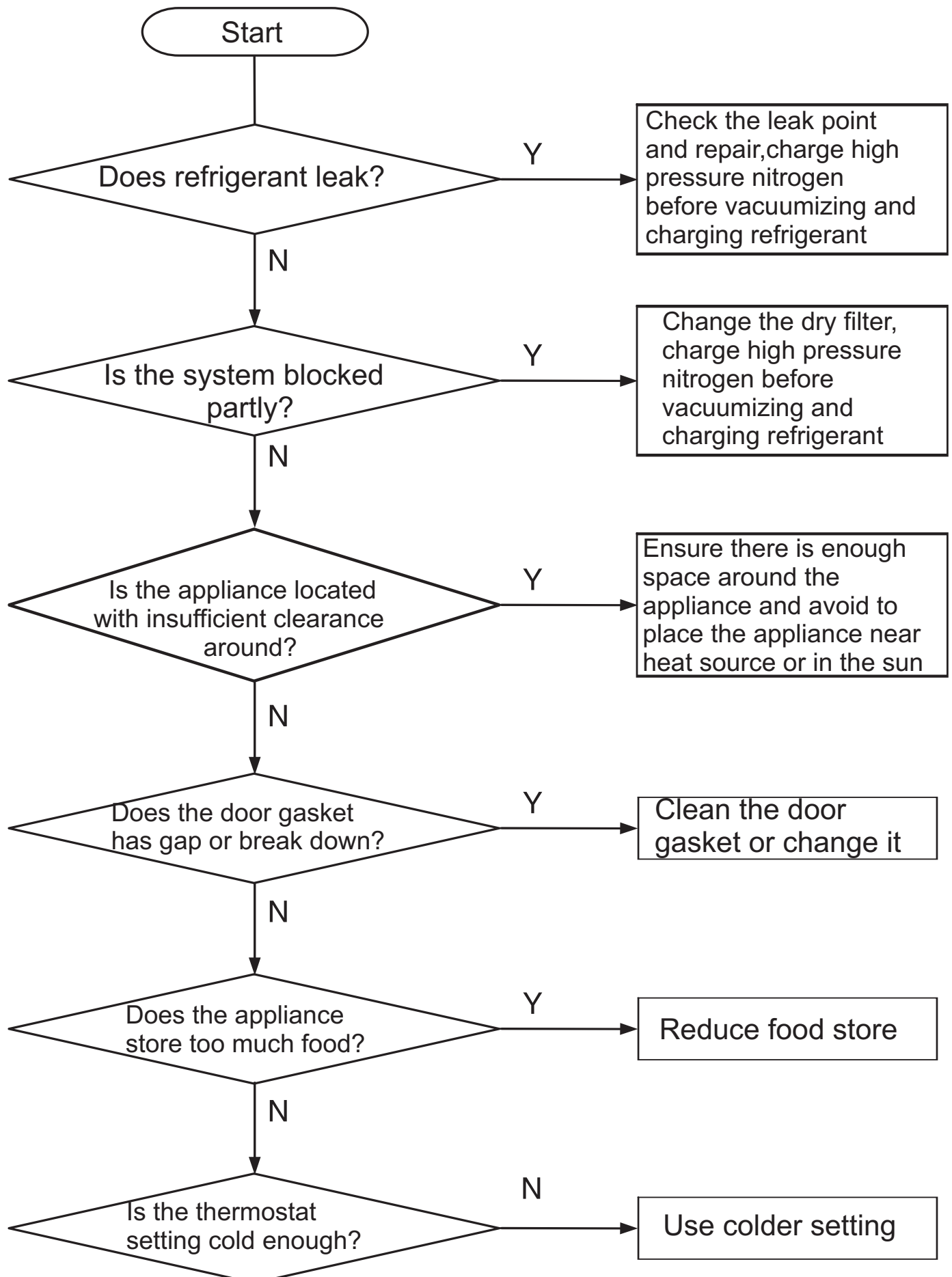


5.2 Refrigeration failure

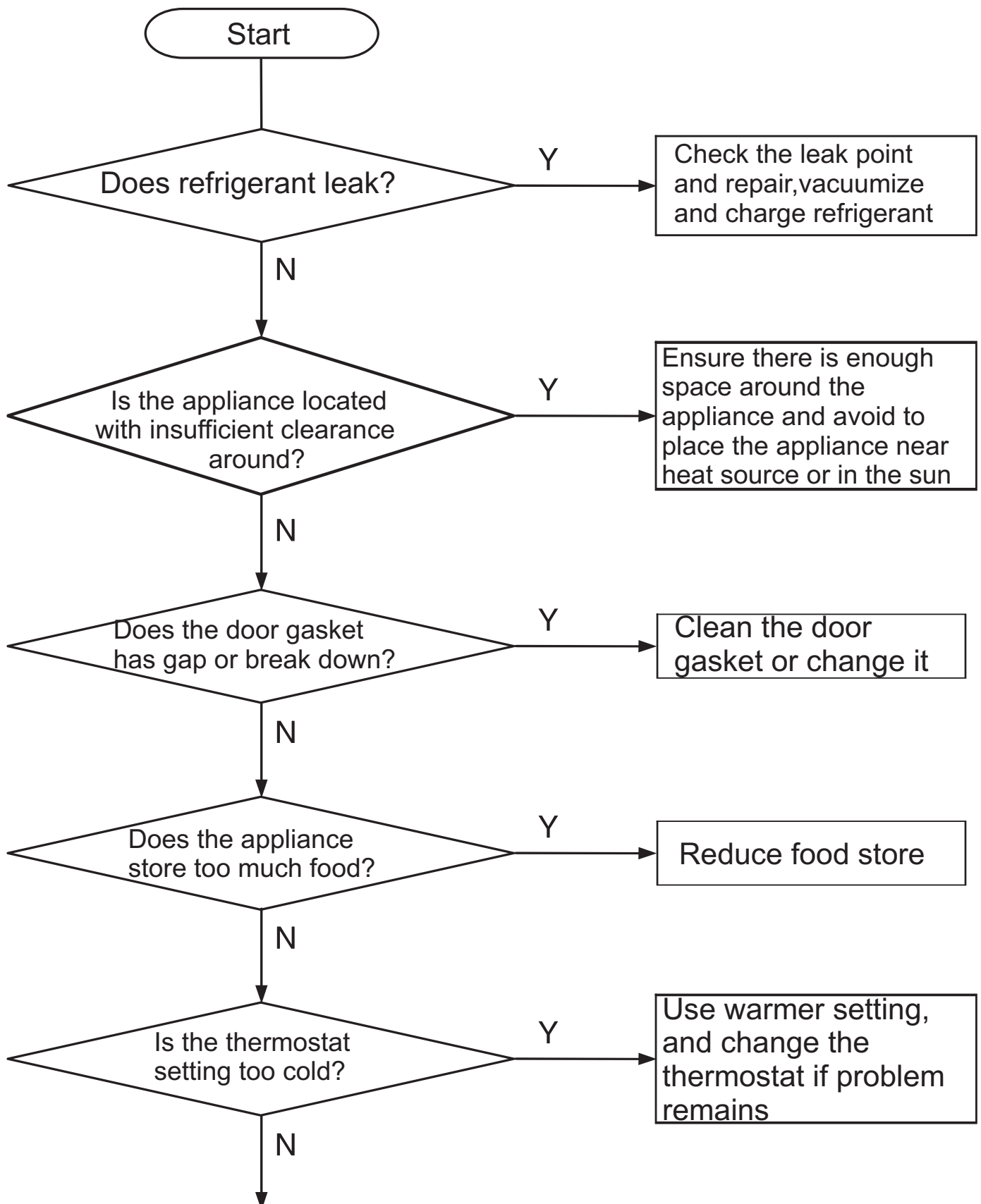
5.2.2 Compressor works



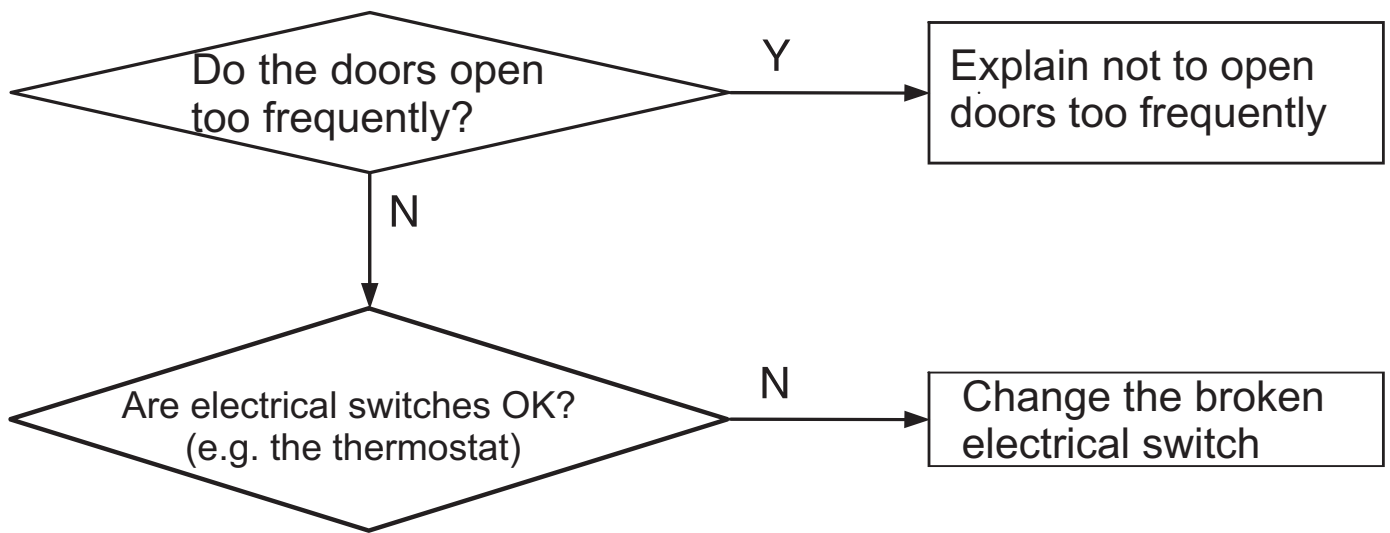
5.3 Bad refrigeration effect



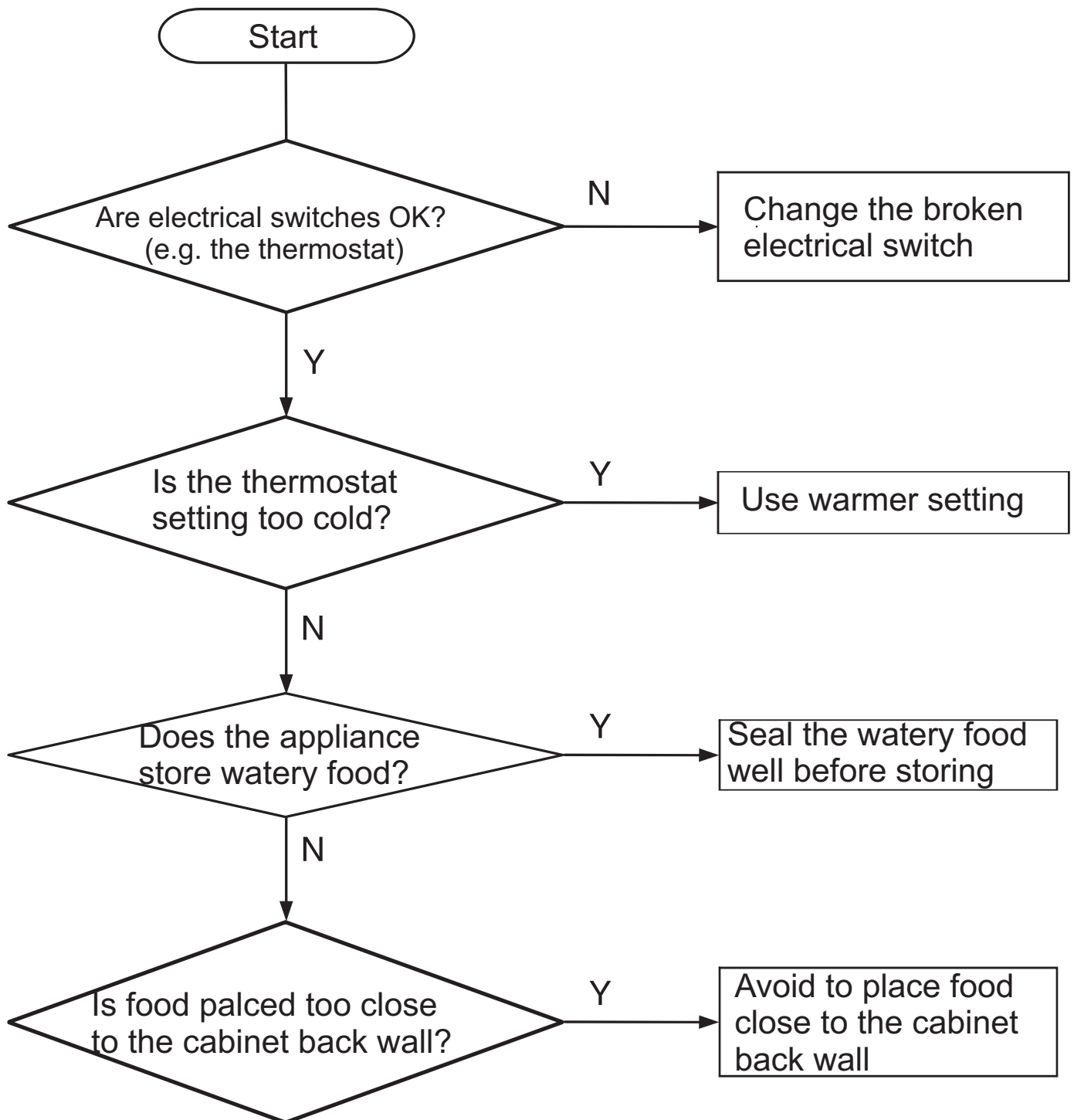
5.4 Non-stop or high running rate



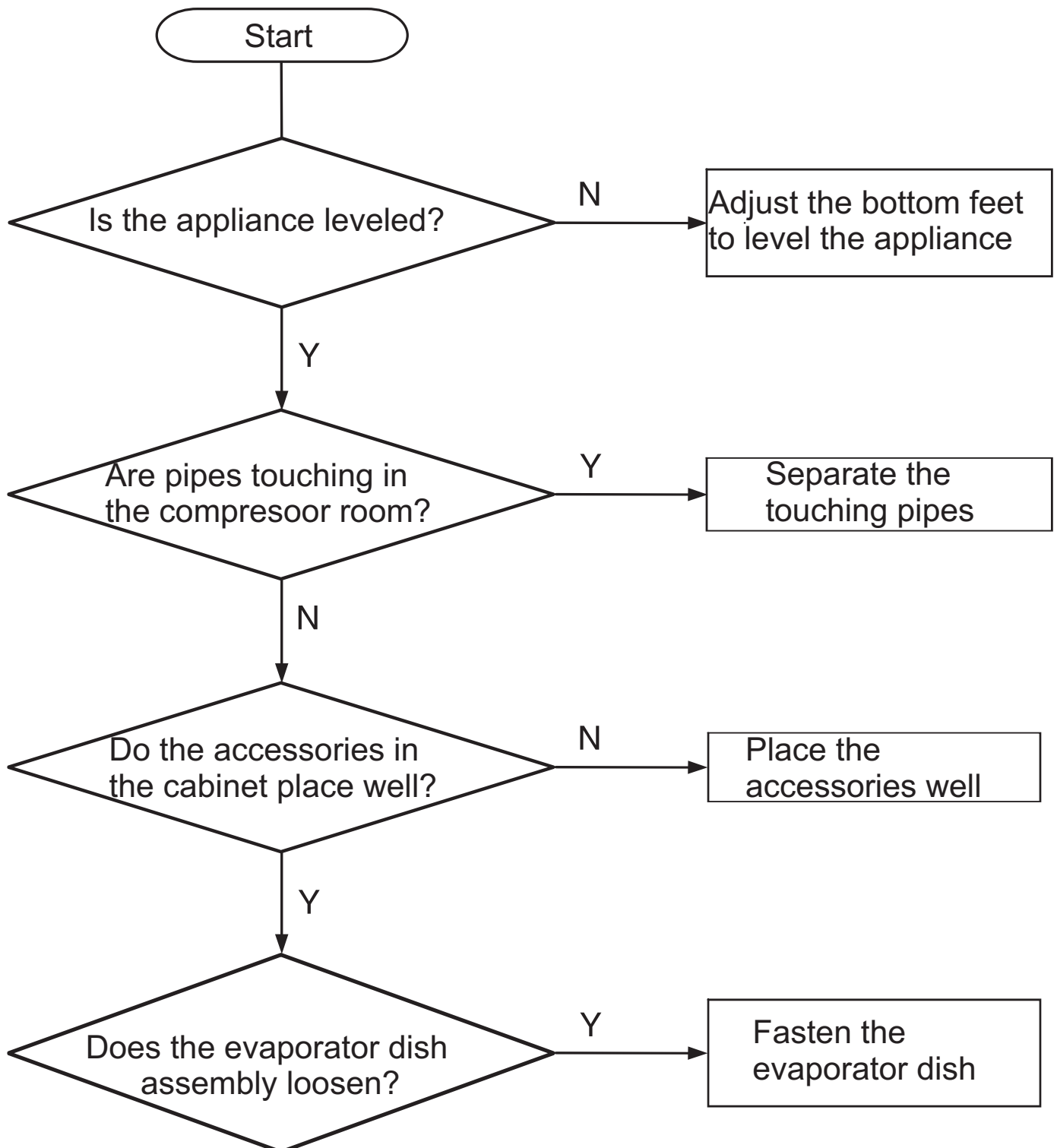
5.4 Non-stop or high running rate



5.5 Frozen food in refrigerator compartment

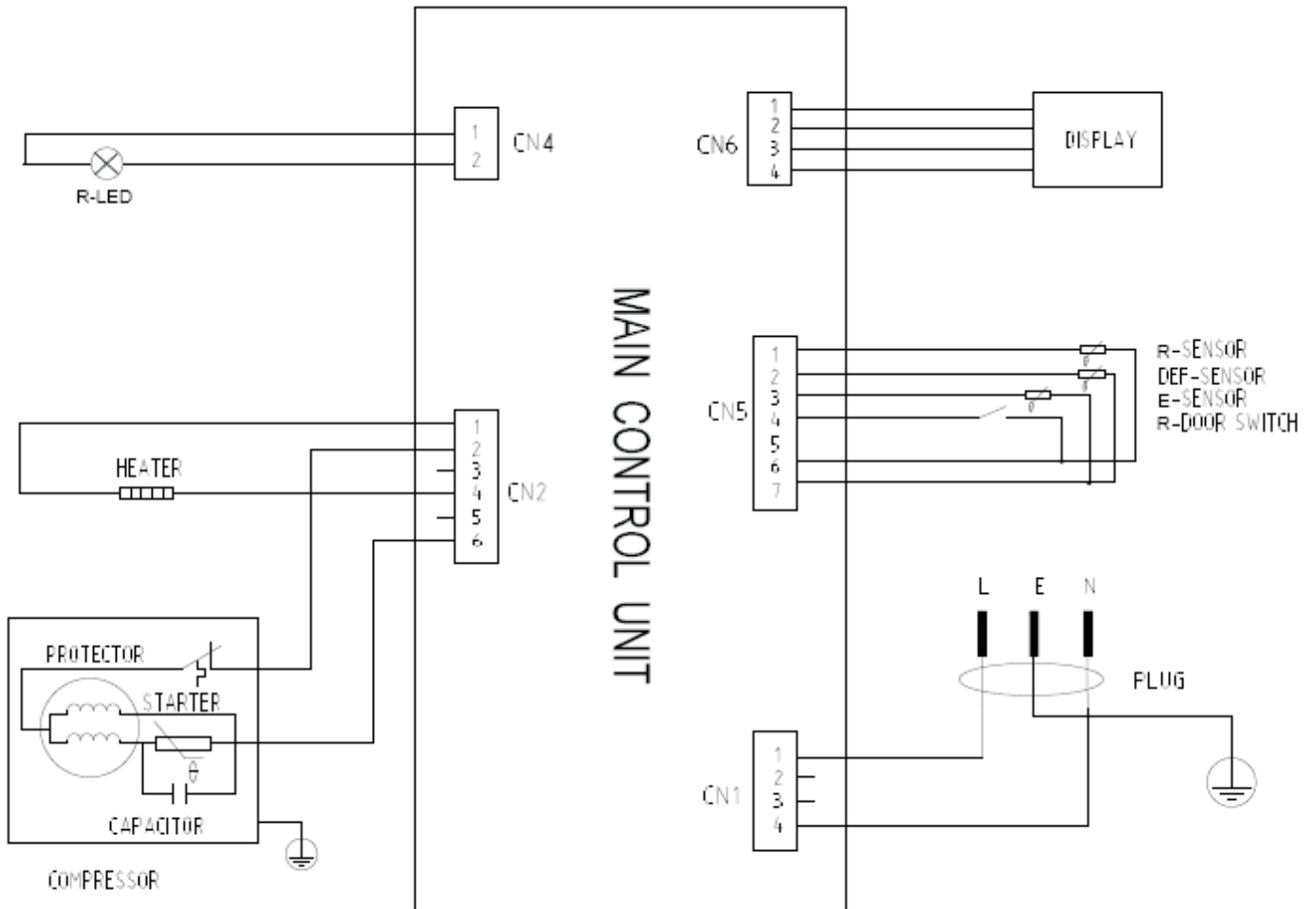


5.6 Noise



6 Circuit and checking

6.1 Circuit diagram



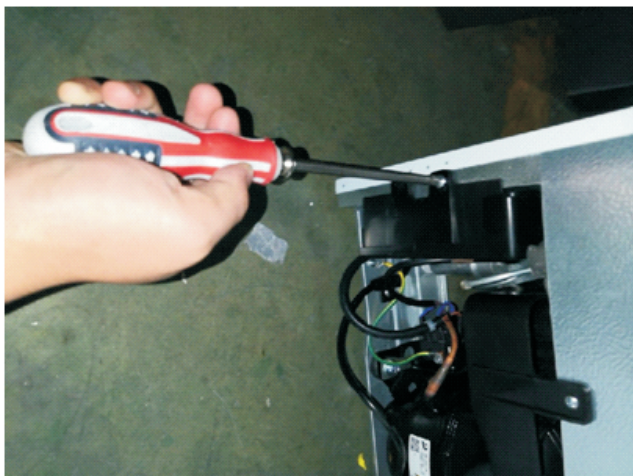
6.2 Main control board

6.2.1 Checking method

If the problem is probably caused by main control board, change it directly to confirm.

6.2.2 Removing the main control board

1. Unplug the appliance;
2. Remove the screws by screwdriver and remove the electric box cover, as picture 1 and picture 2.
3. Unplug the terminals on the main control board as picture 3.
4. Press the snap-fit and remove the main control board as picture 4.



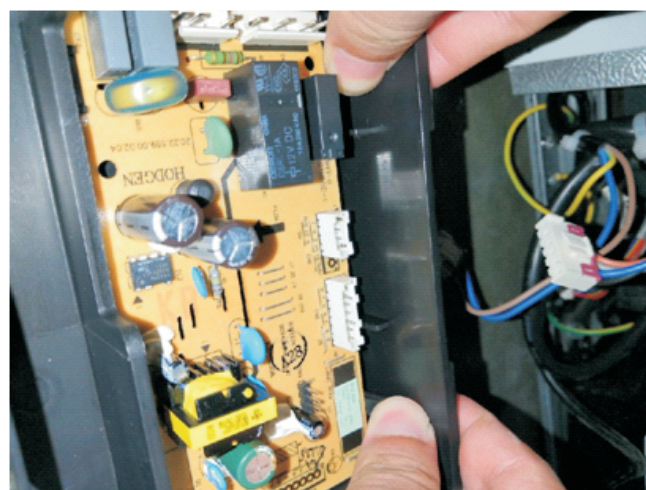
Picture 1



Picture 2



Picture 3



Picture 4

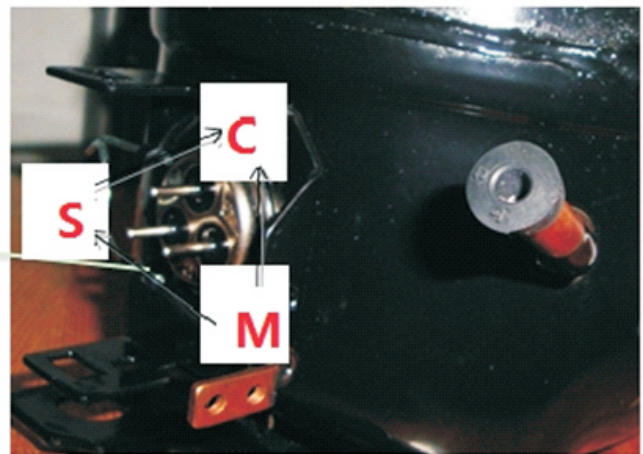
6.3 Compressor

6.3.1 Basic parameters

Input voltage/frequency:220-240V/50Hz

6.3.2 Checking method

1. Use a multimeter to measure the resistance between C & M, C&S and S&M of compressor, as the picture below:



Normal range of C&M : About 10-30 Ω

Normal range of C&S : About 10-32 Ω

Normal range of S&M : About 20-60 Ω

If the measure result is not in the range, it means the compressor has problem, change the compressor.

2. Use a multimeter to measure the resistance between the two ends of PTC starter, as the picture below:

If the result is between about 12-18 Ω at room temperature, it is OK. Otherwise, the PTC starter is broken, change it.



6.4 Light

6.4.1 Basic parameters

Rated voltage:DC12V; Rated power:1.5W

6.4.2 Checking method

- 1.Check the connecting wiring between light and main control board is well or not, repair if it is broken. Refrigerator light corresponding pin No.1 and No.2 on 2 pins connector of mainboard.
- 2.Check output voltage corresponding light of the main control board, if it is 12V,it means the mainboard is OK, change the light; If not, it means the main control board is broken, change it.

6.4.3 Removing the light

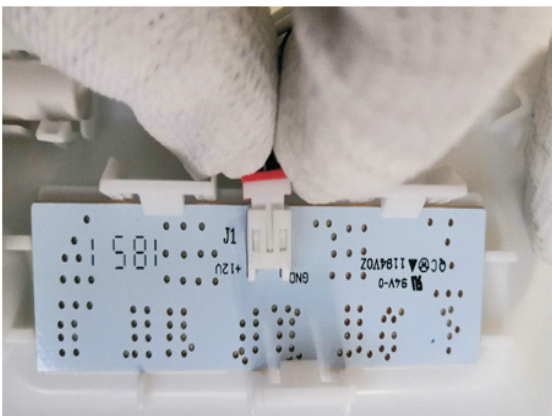
1. Unplug the appliance.
2. Catch the light cover and pull down it as picture 1.
3. Use a screwdriver to unscrew the thermostat screw, as shown in figure 2
4. Take the LED light out and unplug the terminal as picture 3 and 4



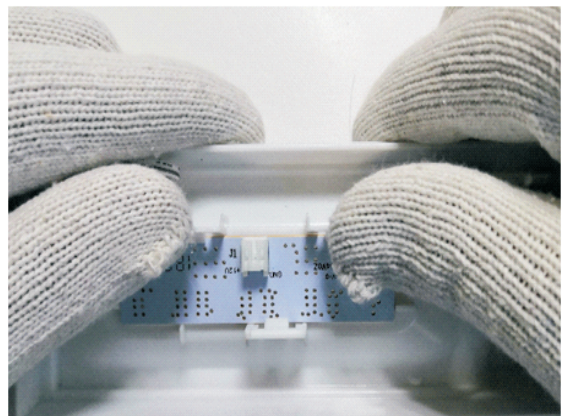
Picture 1



Picture 2



Picture3



Picture 4

6.5 Display panel

6.5.1 Basic parameters

Input voltage:5V

6.5.2 Checking method

1. Display panel will lighten as soon as power-on, if it light unsuccessful, remove the display panel box cover and check.
2. Check the connecting wiring between display panel and main control board and repair if it is broken.
3. Use a multimeter to measure voltage between pin No4 and No3 on 4 pins connector of main control board, If the voltage equal to 5V, it means the display panel is broken, change it; If not, change the main control board.

6.5.3 Removing the display panel

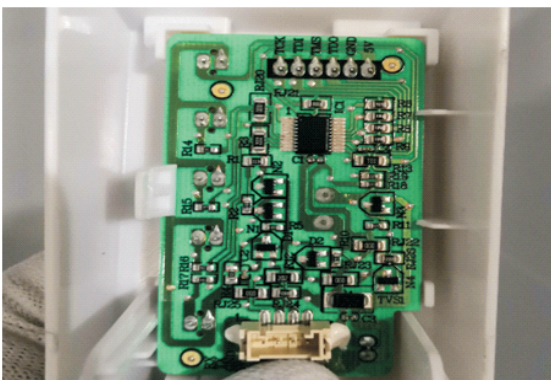
1. Unplug the appliance
2. Catch the light cover and pull down it as picture 1.
3. Use a screwdriver to unscrew the thermostat screw, as shown in figure 2
4. Take the display panel out and unplug the terminal as picture 3 and 4



Picture 1



Picture 2



Picture3

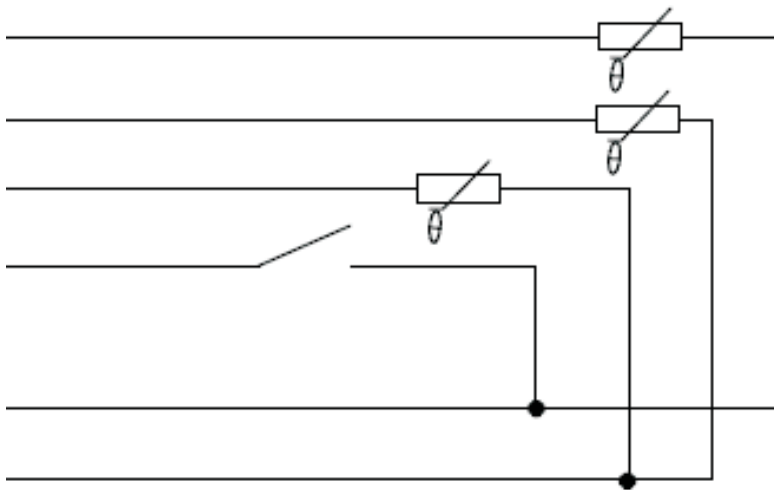


Picture 4

6.6 Sensor

Use a multimeter with the ohm switch to measure the resistance of sensor. Every with the temperature decreases 1°C the corresponding resistance value would increase about 100ohm. But it is not linear relationship between resistance and temperature, so it's just an estimation algorithm.

You'd better measure the following temperature resistance is more accurate, and more likely to get the temperature. Normally at surrounding -18°C , 5°C , 25°C , the corresponding resistance is about 17k ohm, 5k ohm, 2k ohm. If the measured value is not within the normal scope, the sensor is bad and needs to repair or change.

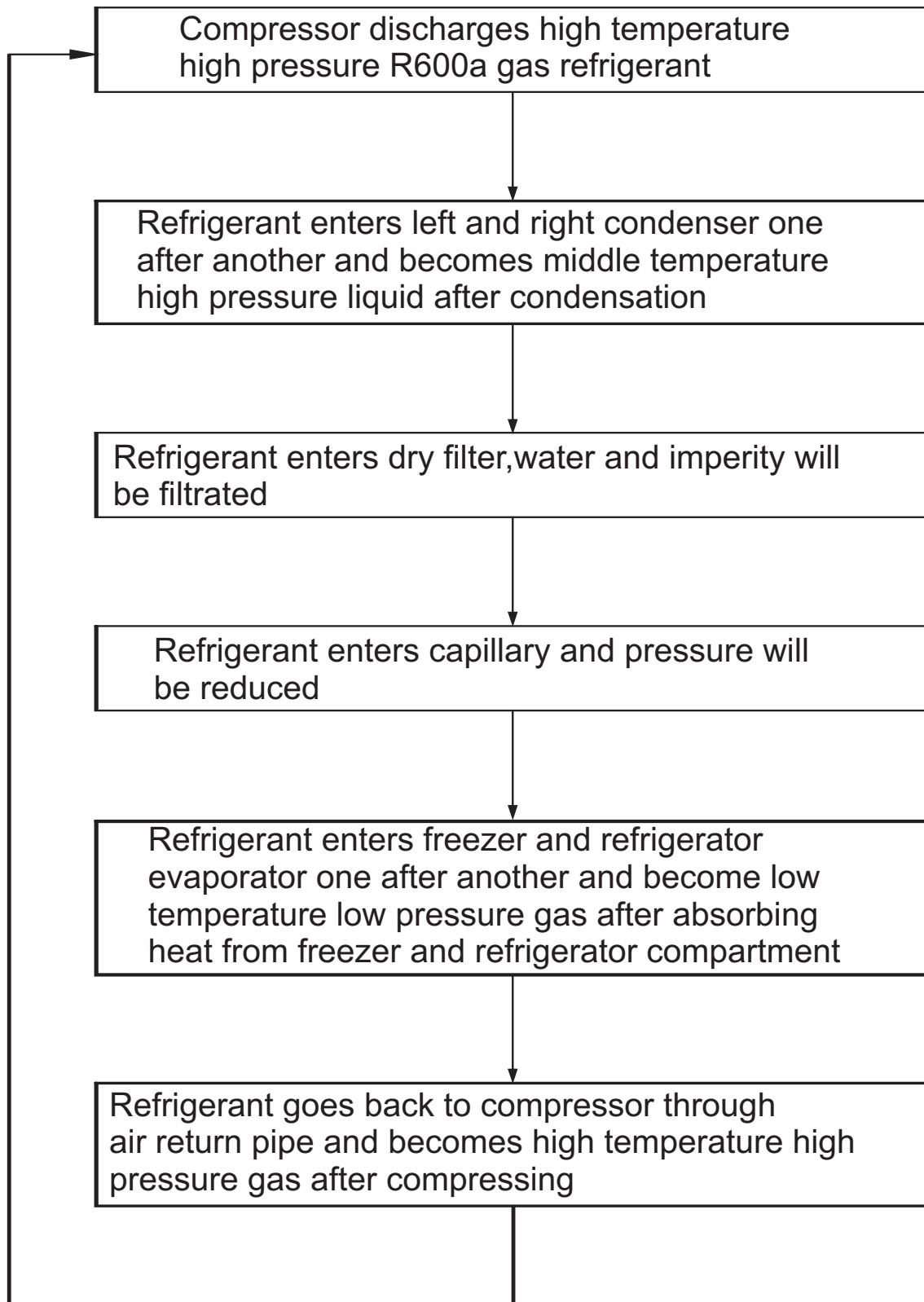


R-SENSOR
 DEF-SENSOR
 E-SENSOR
 R-DOOR SWITCH

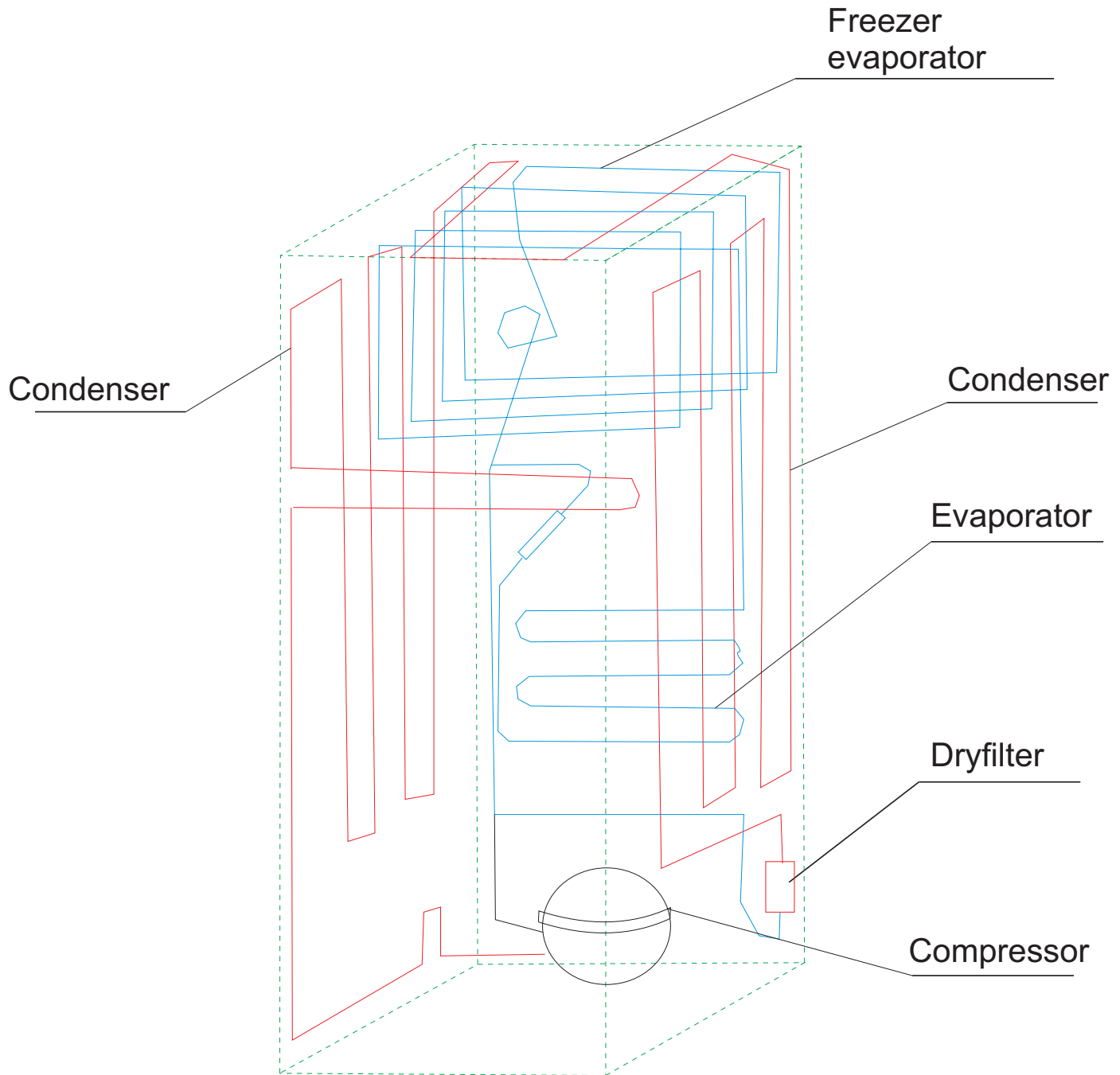
7 Refrigeration system repair

7.1 Refrigeration system

The refrigeration system is single cycle direct cooling system:



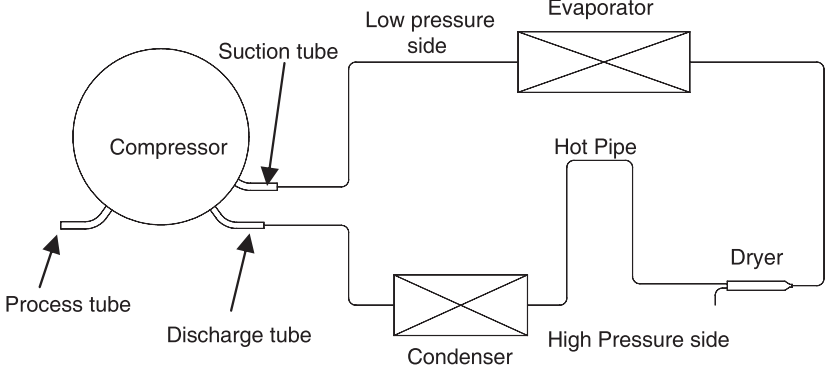
7.1 Refrigeration system



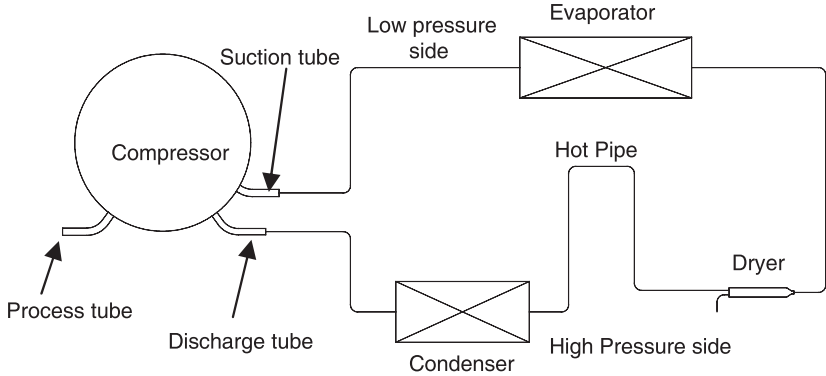
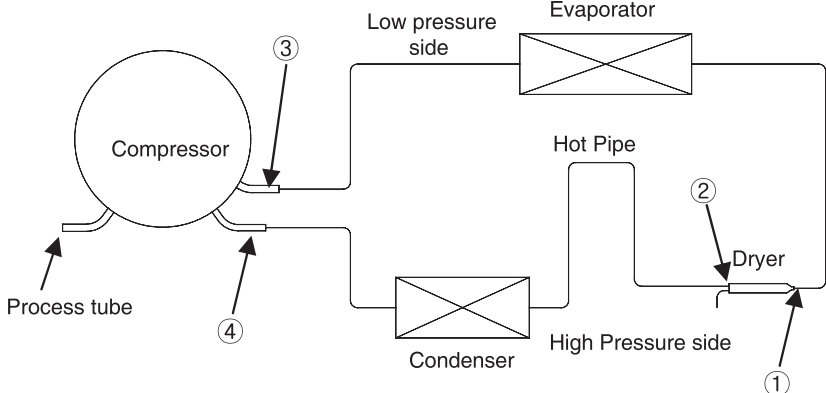
7.2 Summary of repair

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

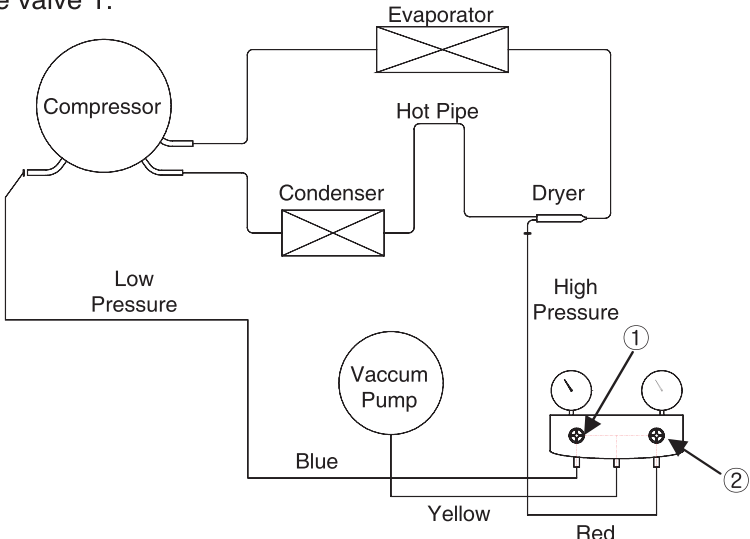
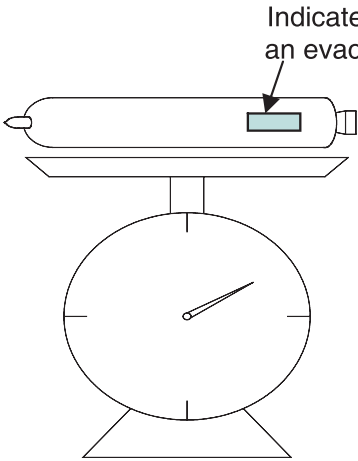
7.3 Regulation for repair

Items	Precautions
Use of tools.	1) Use special parts and tools for R-134a or R-600a
Removal of retained refrigerant.	<p>1) Remove retained refrigerant more than 5 minutes after turning off a refrigerator. (If not, oil will leak inside.)</p> <p>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.)</p>  <p>The diagram illustrates a refrigeration cycle. On the left is a circular compressor with a 'Suction tube' on top and a 'Discharge tube' on the bottom. A 'Process tube' is also shown on the left. The cycle is divided into a 'Low pressure side' and a 'High Pressure side'. The 'Low pressure side' contains the 'Evaporator'. The 'High Pressure side' contains the 'Condenser' and a 'Drier'. A 'Hot Pipe' connects the condenser to the evaporator. Arrows indicate the flow direction: from the evaporator to the condenser, through the drier, and back to the compressor.</p>
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.	<p>1) Nitrogen only should be used when cleaning inside of cycle pipes inside and sealing.</p> <p>2) Check leakage with an electronic leakage tester.</p> <p>3) Be sure to use a pipe cutter when cutting pipes.</p> <p>4) Be careful not the water let intrude into the inside of the cycle.</p>

7.4 Practical work for repair

Items	Precautions
<p>1. Removal of residual refrigerant.</p>	<p>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.</p> 
<p>2. Nitrogen blowing welding.</p>	 <p>* 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.</p> <p>* 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.</p> <p>- KEYPOINTING Welding without nitrogen blowing produces oxidized scales inside a pipe, Which affect on performance and reliability of a product.</p>

7.4 Practical work for repair

Items	Precautions
3.Vacuum degassing.	<p>* Pipe Connection Connect a red hose to the high pressure side and a blue hose to the low pressure side.</p> <p>* Vacuum Sequence Open 1,2 valves and evacuate for 40 minutes. Close valve 1.</p>  <p>※ KEYPOINTING</p> <ol style="list-style-type: none"> 1) If power is applied during vacuum degassing, vacuum degassing shall be more effective. 2) Operate compressor while charging refrigerant. (It is easier and more certain to do like this.)
4.Refrigerant charging.	<p>* Charging sequence</p> <ol style="list-style-type: none"> 1) Check the amount of refrigerant supplied to each model after completing vacuum degassing. 2) Evacuate bombe with a vacuum pump. 3) Measure the amount of refrigerant charged. <ul style="list-style-type: none"> - Measure the weight of an evacuated bombe with an electronic scale. - Charge refrigerant into a bombe and measure the weight. Calculate the weight of refrigerant charged into the bombe by subtracting the weight of an evacuated bombe.  <p>- KEYPOINTING</p> <ol style="list-style-type: none"> 1) Be sure to charge the refrigerant at around 25C. 2) Be sure to keep -5g in the winter and +5g in summer. <p>Calculation of amount of refrigerant charged</p> <p>the amount of refrigerant charged = a weight after charging - a weight before charging (a weight of an evacuated cylinder)</p>