SERVICE MANUAL

Refrigeration

Mechanical refrigerator and 4S built in 1225 and 880

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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 overloaded, it may cause fire. The refrigerator must be plugged into its own dedicated electric outlet

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 damage, bend heavily, 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 customer repair, disassemble and reconstruct the refrigerator by them.

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.

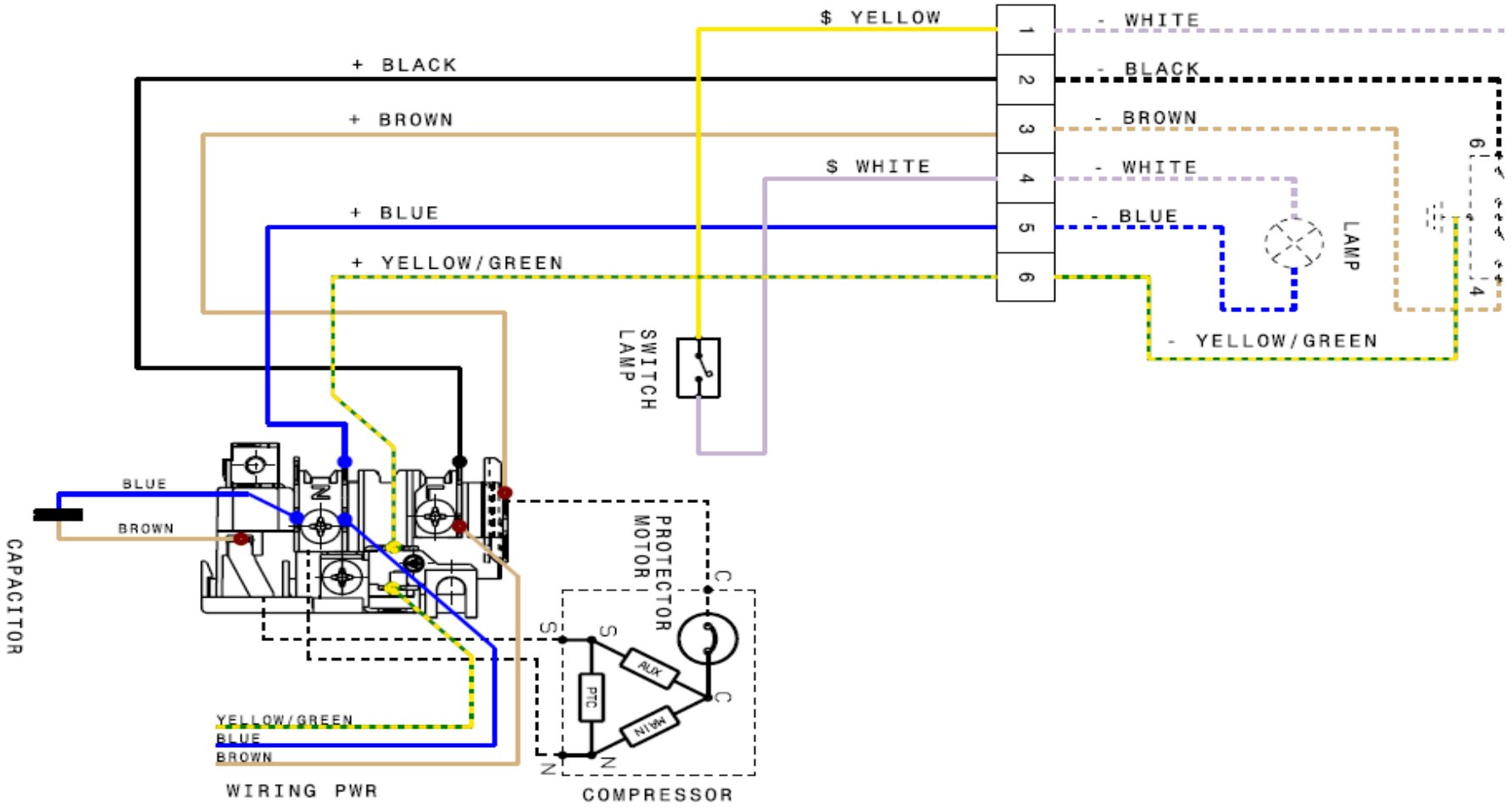
13. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.

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

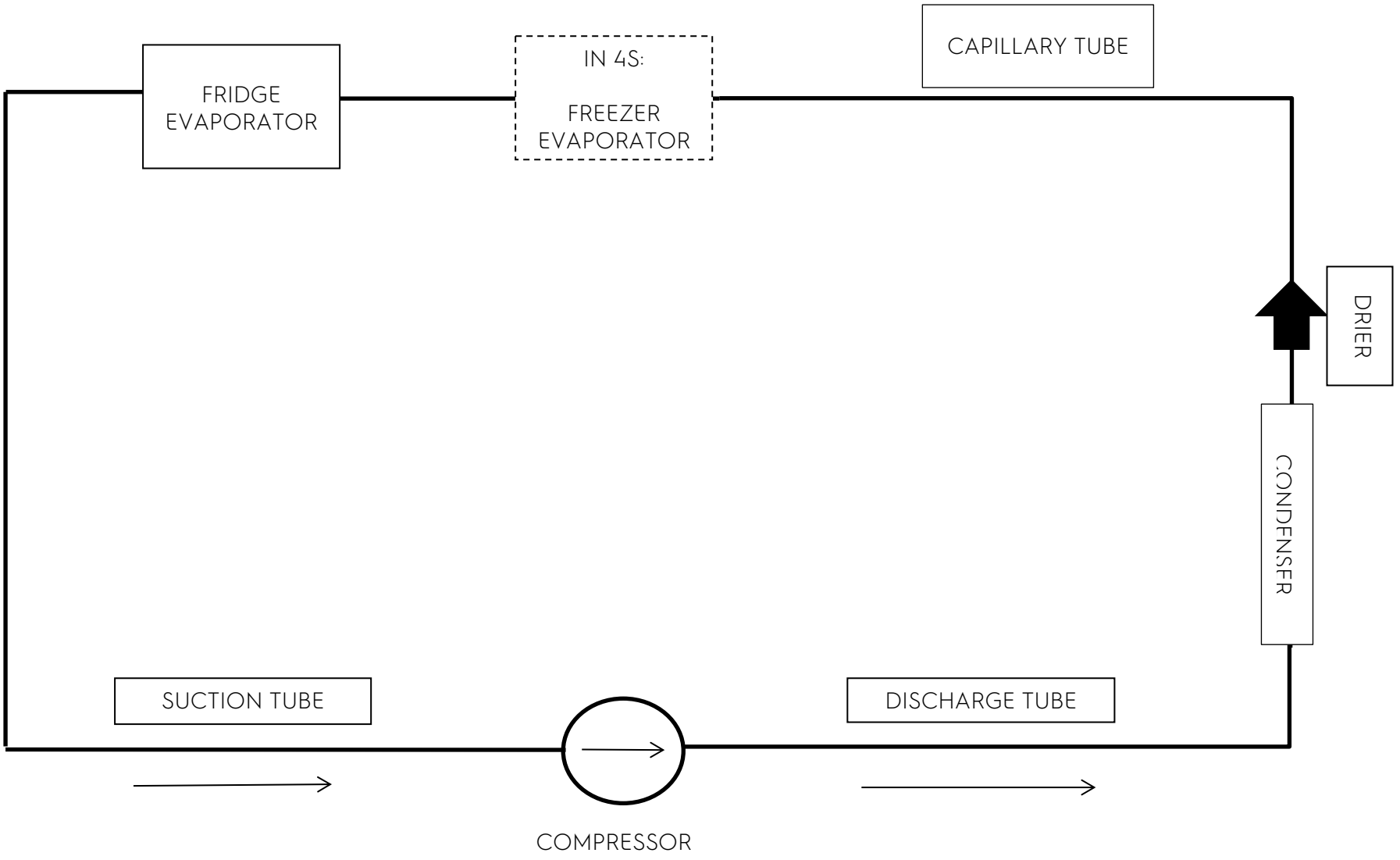
The contents shall freeze and break the glass bottles.

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

Wiring Diagram



Cooling Diagram



Guide for disassembling the common parts of the refrigerator

Instructions for replacing the thermostat

The location of the control assembly is in the refrigerator chamber		
Remove the cover of the lamp and take out the thermostat		
Unplug the connecting wire then replace the thermostat		

Instructions for replacing the lamp

The location of the lamp	
Remove the light cover and replace the lamp	

Instruction for replacing the door switch

Location of the door switch		
Take out the door switch with a screwdriver		

Troubleshooting

The common problem judging 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 ambient temperature too low? 1.4 Is the circuit on power? 1.5 Is there some default in compressor 1.6 Is the refrigeration system blocked by ice or dirt? 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 heat rejection? 2.3 Is the temperature setting appropriate? 2.4 Is there too much food or overheated food in it? 2.5 Have you opened the door frequently? 2.6 Is the door completely closed? 2.7 Is the gasket destroyed or distorted? 2.8 Does the refrigeration gas leak?
The unit cannot stop running	3.1 Is there any heat source around the refrigerator? 3.2 Is there enough space around the refrigerator for heat rejection? 3.3 Is the temperature setting appropriate? 3.4 Is there too much food or overheated food in it? 3.5 Have you opened the door frequently? 3.6 Is the door completely closed? 3.7 Is the gasket destroyed or distorted? 3.8 Is the thermostat operating well? 3.9 Does the refrigeration gas leak?

There is too much ice in the appliance	4.1 Is the temperature setting appropriate? 4.2 Is there high-moisture food or is the food too close to the back wall of the refrigerator? 4.3 Is the ambient temperature too low? 4.4 Are the electric parts in good condition, especially the thermostat which is in case of failure will be out of control and the appliance will work continuously?

Abnormal noise	5.1 Is the refrigerator placed stably? 5.2 Does the refrigerator bump other objects? 5.3 Is the internal accessory of the refrigerator is in the right place? 5.4 Is the water plate of the compressor is fallen out from the unit? 5.5 Does the tube of the refrigeration system bump each other? 5.6 The noise sounds like water flows inside the refrigerator, in fact, it is normal. This is caused when the refrigerator starts and shuts-down. Frost-dissolving can cause this sound as well, which is a normal phenomenon. 5.7 When the cabinet or cabinet accessories are contracting or expanding there will be a cracking sound—that is a normal phenomenon. 5.8 The operational sound in the compressor seems to be louder at night or when the appliance starts running—that is a normal phenomenon. Uneven placing can cause too much noise as well.

Solution for common problems

1. Cooling is not good enough (Many reasons might cause that cooling not good enough— see below)		
Reason	analysis	Solutions
1) Leakage of the gas	If some gas leaked, the unit will not work well. Phenomenon of failure: a) lower pressure of liquid in the cycle system b) high temperature of copper tube because of discharging gas— hands feel very hot c) Noise- that sounds like "ZZZZZ" is coming from the outlet of the capillary d) the temperature decreases very slowly	First find out the point of leakage on the tube, seal it, vacuum it and finally recharge with gas. Note: If you find oil somewhere, it is possible that the 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 from the evaporator so the area of heat exchange becomes less —the unit will not work well. Phenomenon of failure: a) higher pressure of liquid in the cycle system than normal b) higher temperature of condenser c) bigger electric current of the compressor d) there may be ice on the suction tube e) when the gas is too much, some gas liquid might go back into the compressor—the compressor will be damaged by the liquid	First, stop unit for several minutes then open the charging tube and discharge all the gas. Change to a new filter then recharge the gas and finally seal the system.

3) There is air in the liquid cycle system	The air in the system will cause lower efficiency of cooling Phenomenon of failure: a) higher pressure of liquid cycle system than normal but the pressure is not over the limit b) higher temperature of discharging tube c) much noise	First stop the unit for several minutes then open the charging tube and discharge all of the gas. Change to a new filter then recharge the gas and finally seal the system.

4)Low working efficiency of the compressor	Generally when a compressor works for many years, some parts of the compressor were outworn so that the compressor discharges less gas out---the 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 to a new compressor.
5) There is something that blocked the liquid cycle system	Sometimes there is something that blocks the filter of the liquid cycle system so the unit is not cooling. Phenomenon of failure: a) lower pressure of discharging b) lower temperature of discharging	Change to a new filter.

2.NO COOLING		
Reason	analysis	Solutions:
1) Leakage of gas	Phenomenon of failure: a) leaking fast b) leaking slowly c) no sound of liquid flow d) cut off charging tube, no gas goes out	First, find out the point of leakage on the tube, seal it, vacuum it and in the end recharge with gas. Note: If you find oil somewhere, it is possible that the leakage point is there.
2)There is something that blocked the liquid cycle system	A. Ice blocking Sometimes because of unknown reason water comes into liquid cycle system, the capillary will be blocked by water after the unit runs for a certain period of time. Phenomenon of failure: At the beginning the unit works well. After a certain period of time more ice appears in the capillary until it blocks the whole capillary completely. You can find the ice on the evaporator. The noise of the liquid flow disappears. The pressure of absorbance becomes negative. The above phenomenon appears again and again. The way to check ice blocking: Warm the capillary with a hot towel, after a while the ice melts in the capillary. You can hear a sound of gas flow coming from the capillary. The pressure of absorbing becomes higher. It is ice blocking.	First, stop the unit for several minutes. Open the charging tube, discharge all of the gas. Blow the cycle system with gas of nitrogen, recharge the gas and finally seal the system.

2)There is something that blocked the liquid cycle system	B. There is offal that blocks the capillary Phenomenon of failure: If the capillary is blocked by something such as offal etc., the sound of liquid flow disappears. The ice defrosts on the evaporator. The pressure of absorbance becomes negative. The temperature of the discharging tube is higher. Check offal blocking in the following way: Warm the capillary the same way as in the case of ice blocking. If you cannot see any changes then it must be offal blocking.	First, stop the unit for several minutes. Open the charging tube and discharge all of the gas. Blow the cycle system with gas of nitrogen. Change to a new capillary and filter, recharge the gas and finally seal the system.

COMPRESSOR NEVER STOPS:	
Reason	Solutions
1) The temperature setting 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 the wind door
6) Fan motor is broken	Replace the fan motor

Note:

- Unplug the appliance before carrying out any maintenance operation; disconnect the mains from the power supply. Failure to do so could result in electric shock or personal injury.
- For further technical information please check the technical specifications.