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LG LBC22520TT Owner's Manual

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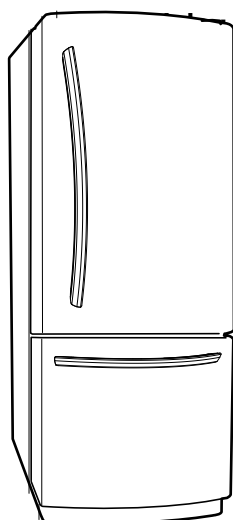
----- Manual continues below -----



REFRIGERATOR

SERVICE MANUAL

CAUTION
BEFORE SERVICING THE PRODUCT,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



MODELS:
LBC22520**

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SAFETY PRECAUTIONS

Please read the following instructions before servicing your refrigerator.

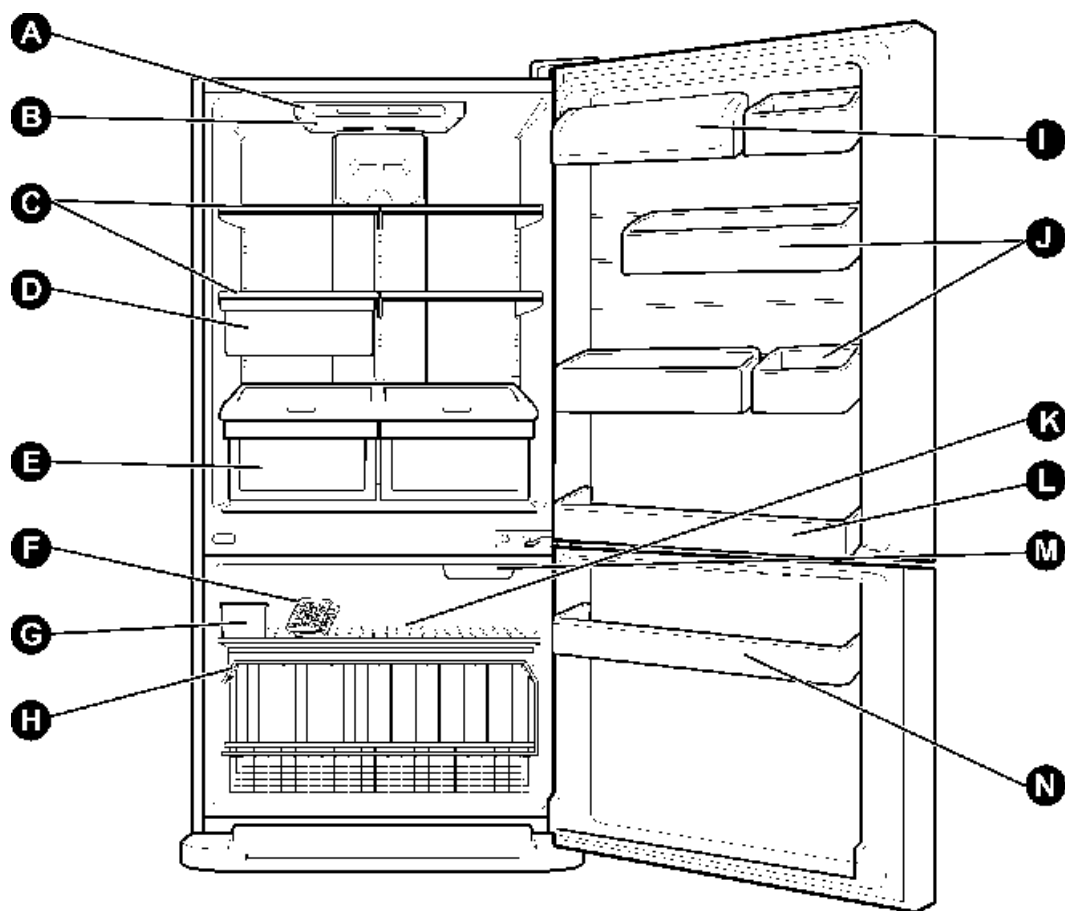
1. Check the refrigerator for current leakage.
2. To prevent electric shock, unplug before servicing.
3. Always check line voltage and amperage.
4. Use standard electrical components.
5. Don't touch metal products in the freezer with wet hands. This may cause frostbite.
6. Prevent water from spilling on to electrical elements or the machine parts.

7. Before tilting the refrigerator, remove all materials from on or in the refrigerator.
8. When servicing the evaporator, wear gloves to prevent injuries from the sharp evaporators fins.
9. Service on the refrigerator should be performed by a qualified technician. Sealed system repair must be performed by a CFC certified technician.

1. SPECIFICATIONS

<div> <div>MODELS</div> <div>SPECIFICATIONS</div> </div>		LBC22520**
GENERAL FEATURES	CAPACITY litre;(F/R/T)	195.98/438.97/634.95
	DIMENSIONS in;(W*H*D)	32 7/8* 68 1/2* 34
	WEIGHT kg	125
	HANDLE TYPE	VISTA-Handle
	REVERSIBLE DOOR	YES
	DOOR FINISH	STAINLESS
	REFRIGERANT/gr	R134a 120±3
FREEZER	ICE BANK	YES
	SHELF	WIRE
	BASKET DOOR	PLASTIC(1)
	LAMP	YES(1)/40w blue
REFRIGERATOR	TRAY MEAT	YES
	SHELF	4FIX
	MAGIC CRISPER	NO
	LAMP	YES(2)/40w blue
	GUIDE BOTTLE	NO
	DOOR COOOLING	NO
	TRAY VEGETABLE	YES (AUTO-CLOSE)
	BASKET DOOR	2 1/3 + 2 2/3 + 1full

2. PARTS IDENTIFICATIONS



Use this section to become more familiar with the parts and features.

NOTE: This guide covers several different models. The refrigerator you have purchased may have some or all of the items listed below. The locations of the features shown below may not match your model.

A Digital Sensor Control

B Refrigerator Light

C Shelves

D Snack Pan

E Optibin Crisper
Keeps fruits and vegetable fresh and crisp

F Ice Trays*

G Ice Bin

H Wire Durabase

I Dairy Bin

J Design-A-Door

K Wire Freezer Shelf

L Refrigerator Door Rack

M Freezer Light

N Freezer Door Rack

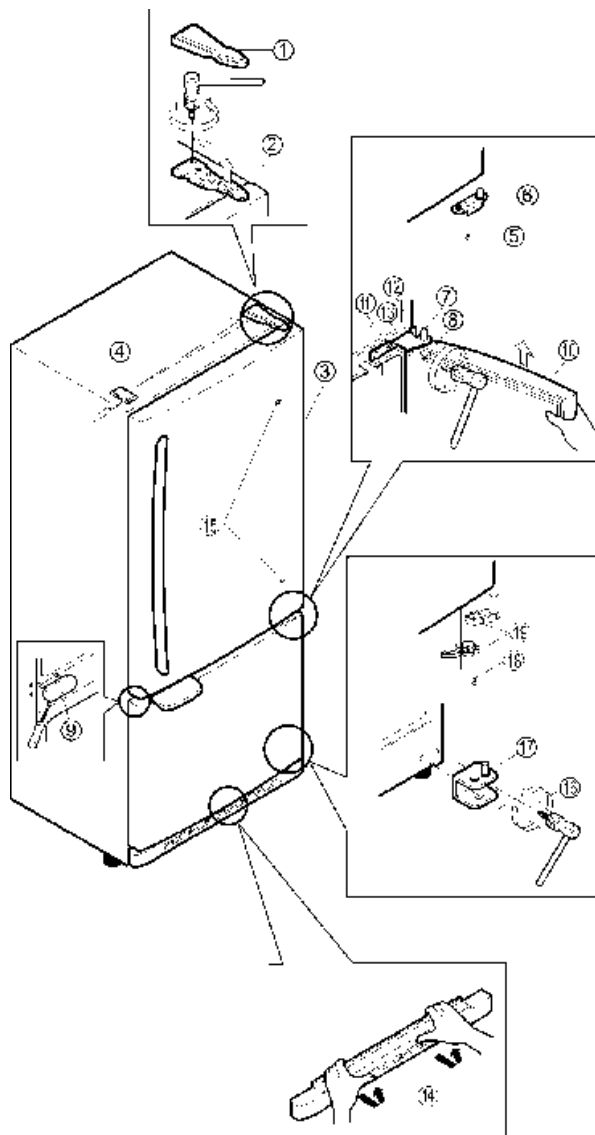
*on some models

3. DISASSEMBLY

3-1 DOOR

Refrigerator Door

- Remove the top hinge cover (1).
- Remove the 3 screws and lift off the top hinge (2).
- Lift the refrigerator door (3) slightly and remove it.
- Pry off the cover (4) using a slotted screwdriver and attach it on the right.
- Loosen the screw (5), remove the stoppers (6) and attach them on the left (on the opposite side).
- Loosen the pin (7) and remove it.
- Lift off the washer (8).
- Pry off the cover (9) using a slotted screwdriver and attach it on the right.

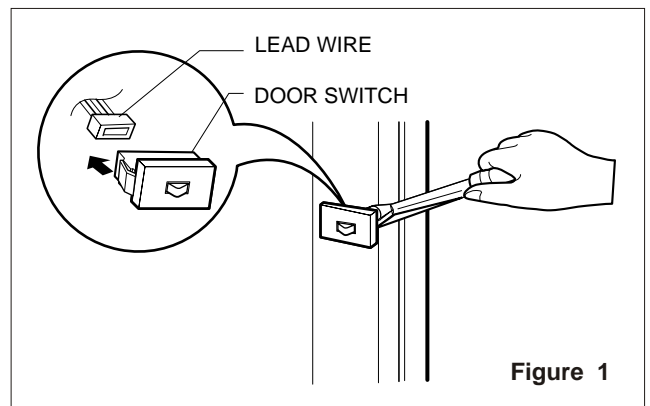


Freezer Door

- Lid the door (10) slightly and remove it.
- Loosen the 2 screws (11), the 2 screws (12), and lift off the middle hinge (13).
- Take off the base grille (14).
Remove the cap (15) and attach it on the right.
- Loosen the 2 screws (16), remove the bottom hinge (17), and attach on the left.
- Loosen the 2 screws (18) and attach the stopper (19) on the left side of the base.

3-2 DOOR SWITCH

1. To remove the door switch, pry it out with a slotted-type driver, as shown in (Figure 1).
2. Disconnect the lead wire from the switch.



3-3 FAN AND FAN MOTOR

1. Remove the freezer shelf. (If your refrigerator has an icemaker, remove the icemaker first)
2. Remove the plastic guide for slides on left side by unscrewing phillips head screws.
3. Remove the grille by removing one screw and pulling the grille forward.
4. Remove the Fan Motor assembly by loosening 2 screws and disassembling the shroud.
5. Pull out the fan and separate the Fan Motor and Bracket.

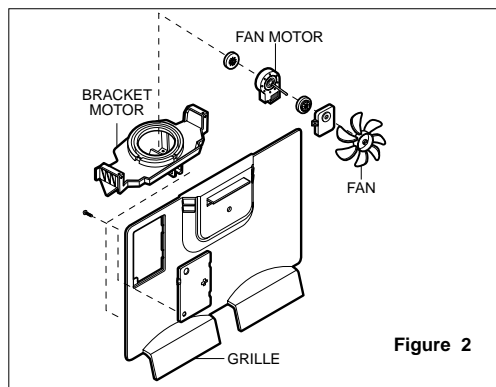


Figure 2

3-4 DEFROST CONTROL ASSEMBLY

Defrost Control assembly consists of Defrost Sensor and FUSE-M.

The Defrost Sensor works to defrost automatically. It is attached to the metal side of the Evaporator and senses its temperature. At 72°C, it turns the Defrost Heater off. Fuse-M is a safety device for preventing over-heating of the Heater when defrosting.

1. Pull out the grille assembly. (Figure 3)
2. Separate the connector with the Defrost Control assembly and replace the Defrost Control assembly after cutting the Tie Wrap. (Figure 4)

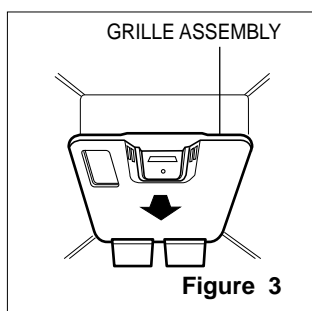


Figure 3

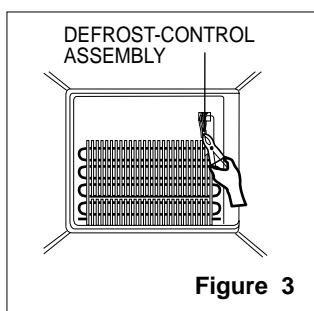


Figure 3

3-5 LAMP

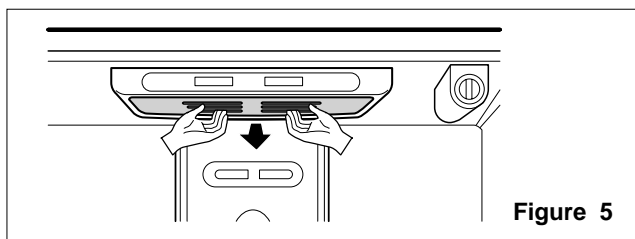


Figure 5

3-5-1 Refrigerator Compartment Lamp

1. Unplug the power cord from the outlet.
2. Remove refrigerator shelves.
3. Release the hooks on both ends of the lamp shield and pull the shield downward to remove it.
4. Turn the lamp counterclockwise.
5. Assemble in reverse order of disassembly. Replacement bulb must be the same specification as the original (Max. 40 W-2EA).

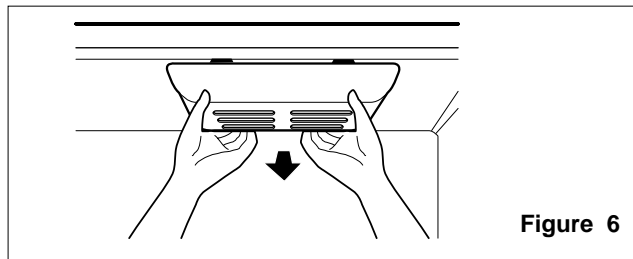


Figure 6

3-5-2 Freezer Compartment Lamp

1. Unplug refrigerator or disconnect power.
2. Reach behind light shield to remove bulb.
3. Replace bulb with a 40-watt appliance bulb.
4. Plug in refrigerator or reconnect power.

3-6 CONTROL BOX-REFRIGERATOR

1. First, remove all shelves in the refrigerator, then remove the Refrigerator control Box by loosening 2 screws.

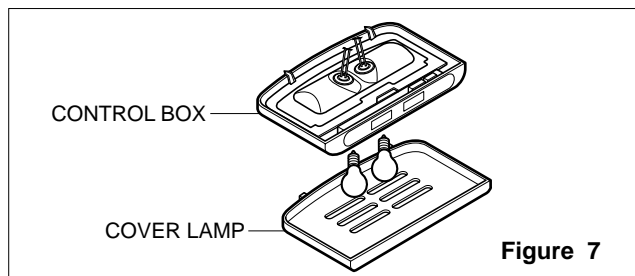


Figure 7

2. Remove the Refrigerator Control Box by pulling it downward.
3. Disconnect the lead wire on the right position and separate the lamp sockets.

3-7 MULTI DUCT

1. Remove an upper and lower Cap by using a flat screwdriver, and loosen 3 screws. (Figure 8)
2. Disconnect the lead wire on the bottom position.

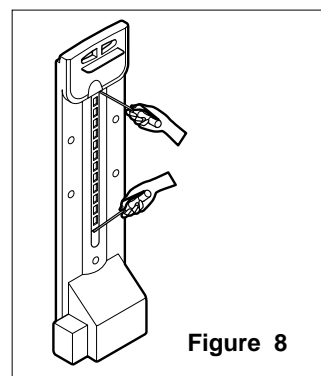


Figure 8

4. ADJUSTMENT

4-1 COMPRESSOR

4-1-1 Role

The compressor intakes low temperature and low pressure gas from the evaporator of the refrigerator and compresses this gas to high-temperature and high-pressure gas. It then delivers the condenser.

4-1-2 Composition

The compressor includes overload protection. The PTC started and OLP (overload protector) are attached to the outside of the compressor. Since the compressor is manufactured to tolerances of 1 micron and is hermetically sealed in a dust and moisture-free environment, use extreme caution when repairing it.

4-1-3 Note for Usage

- (1) Be careful not to allow over-voltage and over-current.
- (2) If compressor is dropped or handled carelessly, poor operation and noise may result.
- (3) Use proper electric components appropriate to the Particular Compressor in your product.
- (4) Keep Compressor dry.
If the Compressor gets wet (in the rain or a damp environment) and rust forms in the pin of the Hermetic Terminal, poor operation and contact may result.
- (5) When replacing the Compressor, be careful that dust, humidity, and soldering flux don't contaminate the inside of the compressor. Dust, humidity, and solder flux contaminate the cylinder and may cause noise, improper operation or even cause it to lock up.

4-2 PTC-STARTER

4-2-1 Composition of PTC-Starter

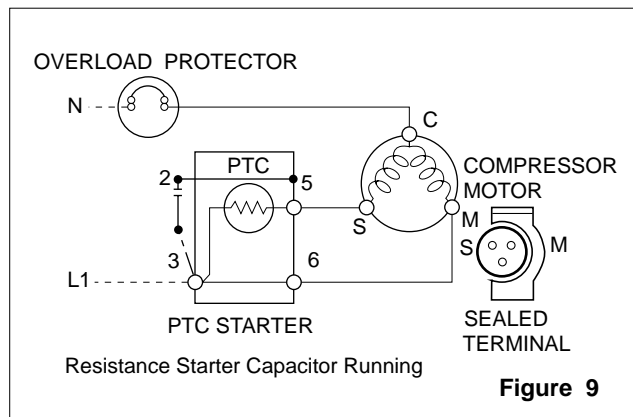
- (1) PTC (Positive Temperature Coefficient) is a no-contact semiconductor starting device which uses ceramic material consisting of BaTiO_3 .
- (2) The higher the temperature is, the higher the resistance value. These features are used as a starting device for the Motor.

4-2-2 Role of PTC-Starter

- (1) The PTC is attached to the Sealed Compressor and is used for starting the Motor.
- (2) The compressor is a single-phase induction motor. During the starting operation, the PTC allows current flow to both the start winding and main winding.

4-2-3 PTC-Applied Circuit Diagram

Starting Method for the Motor



4-2-4 Motor Restarting and PTC Cooling

- (1) It requires approximately 5 minutes for the pressure to equalize before the compressor can restart.
- (2) The PTC device generates heat during operation. Therefore, it must be allowed to cool before the compressor can restart.

4-2-5 Relation of PTC-Starter and OLP

- (1) If the compressor attempts to restart before the PTC device is cooled, the PTC device will allow current to flow only to the main winding.
 - (2) The OLP will open because of the over current condition. This same process will continue (3 to 5 times) when the compressor attempts to restart until the PTC device has cooled. The correct OLP must be properly attached to prevent damage to the compressor.
- Parts may appear identical but could have different electrical ratings. Replace parts by part number and model number. Using an incorrect part could result in damage to the product, fire, injury, or possibly death.

4-2-6 Note for using the PTC-Starter

- (1) Be careful not to allow over-current.
- (2) Do not drop or handle carelessly.
- (3) Keep away from any liquid.
If liquid such as oil or water enters to the PTC, PTC materials may fail due to breakdown of their insulating capabilities.
- (4) If the exterior of the PTC is damaged, the resistance value may be altered. This can cause damage to the compressor and result in a no-start or hard-to-start condition.
- (5) Always use the PTC designed for the compressor and make sure it is properly attached to the compressor. Parts may appear physically identical but could have different electrical ratings. Replace parts by part number and model number. Using an incorrect part could result in damage to the product, fire, injury, or possibly death.

4-3 OLP (OVERLOAD PROTECTOR)

4-3-1 Definition of OLP

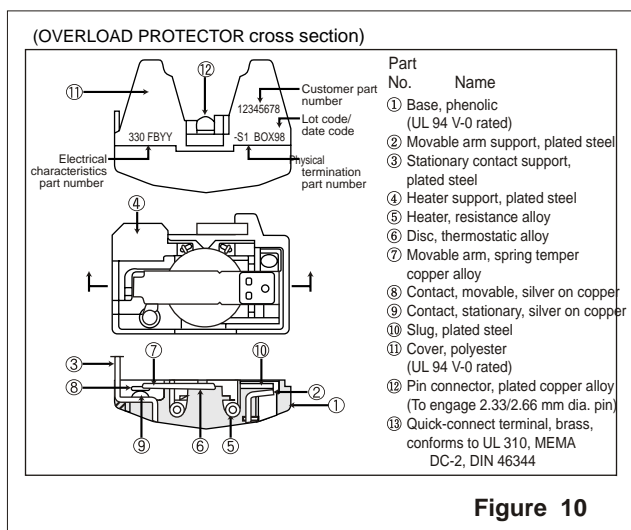
(1) OLP (OVERLOAD PROTECTOR) is attached to the Compressor and protects the Motor by opening the circuit to the Motor if the temperature rises and activating the bimetal spring in the OLP.

(2) When high current flows to the Compressor motor, the Bimetal works by heating the heater inside the OLP, and the OLP protects the Motor by cutting off the current flowing to the Compressor Motor.

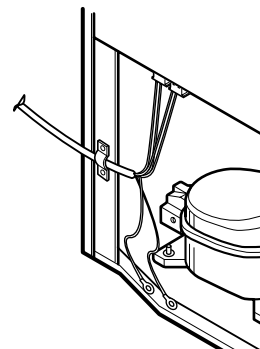
4-3-2 Role of the OLP

(1) The OLP is attached to the Sealed Compressor used for the Refrigerator. It prevents the Motor Coil from being started in the Compressor.

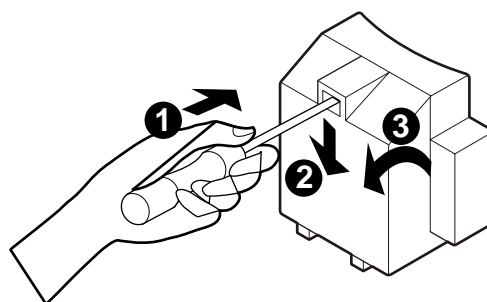
(2) For normal operation of the OLP, do not turn the Adjust Screw of the OLP in any way.



4-4 TO REMOVE THE COVER PTC

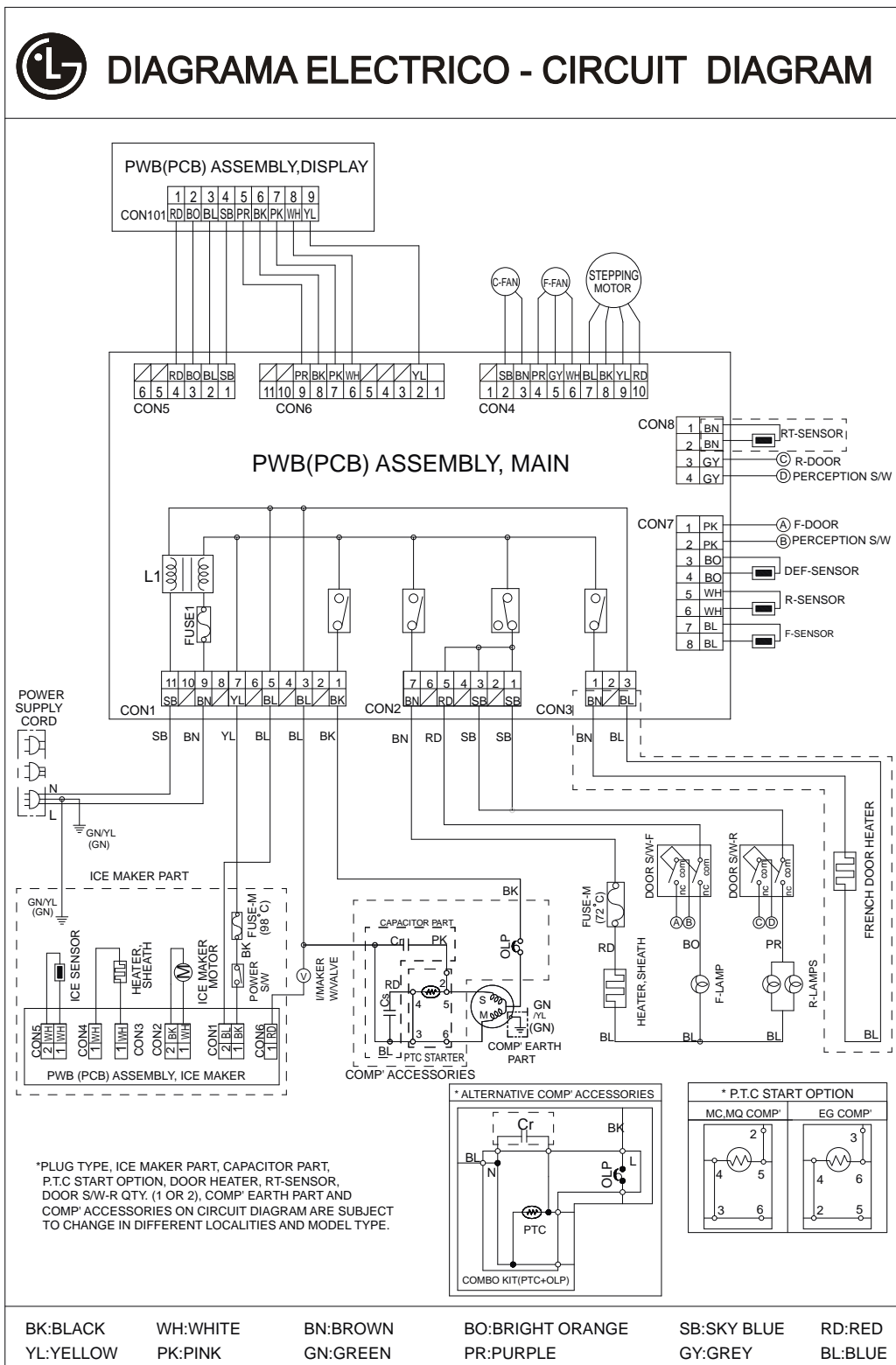


- (1) Remove the Cover Back M/C.
- (2) Disconnect two housing upper side of compressor connected in.
- (3) Loosen two screws on compressor base.



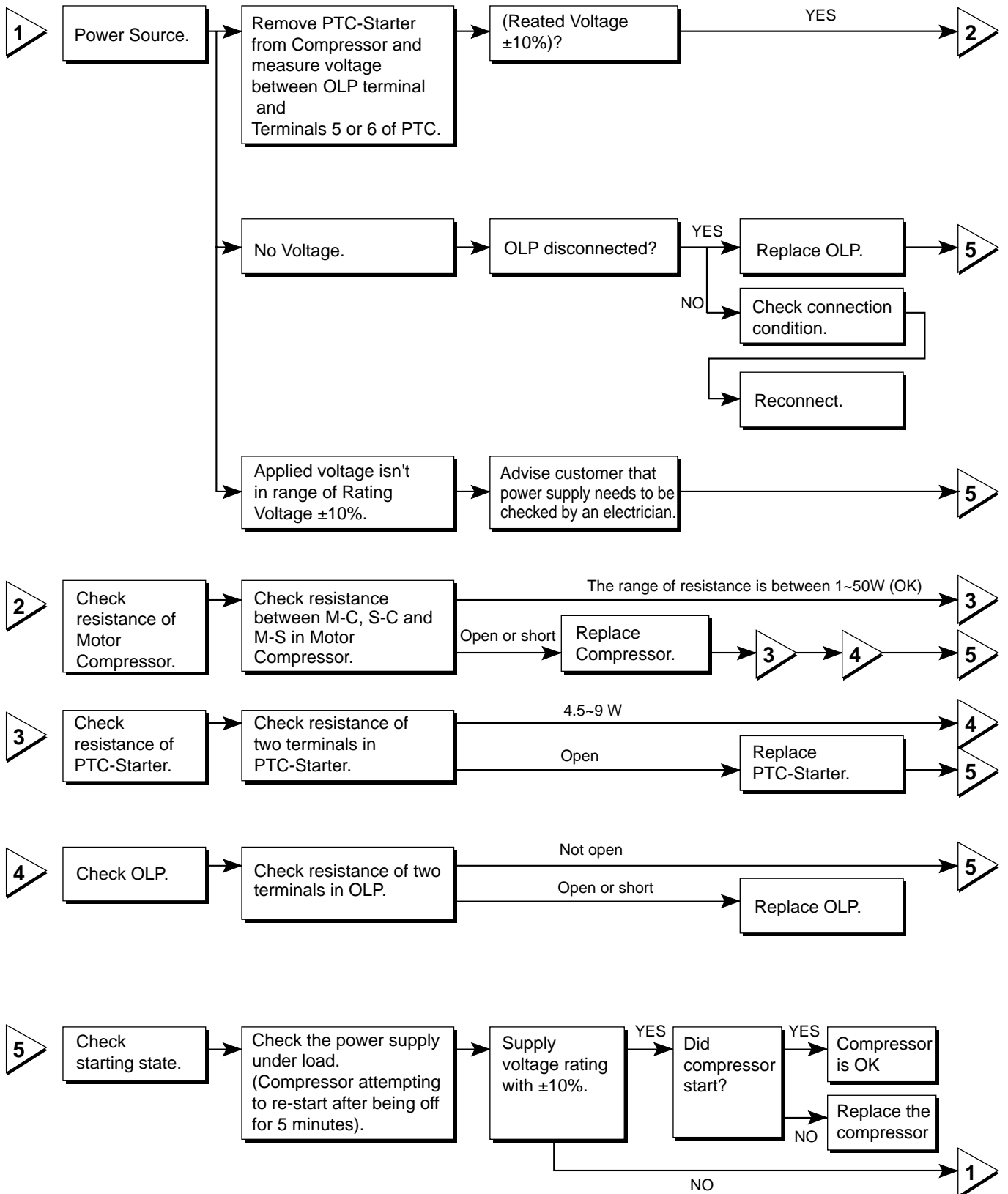
- (4) Use a L-shaped flap tool to pry off the cover.
- (5) Assembly in reverse order of disassembly.

5. CIRCUIT DIAGRAM

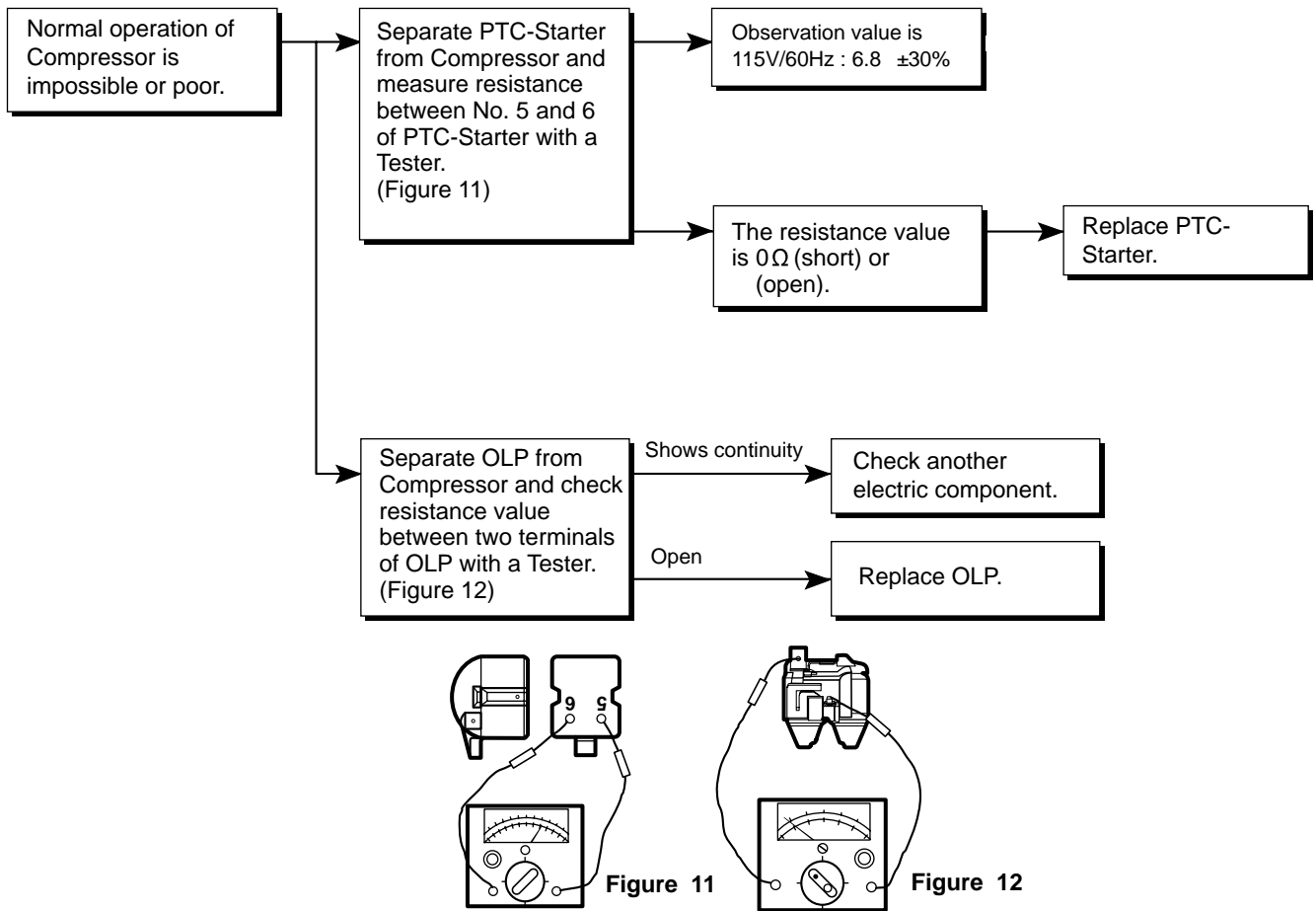


6. TROUBLESHOOTING

6-1 COMPRESSOR AND ELECTRIC COMPONENTS

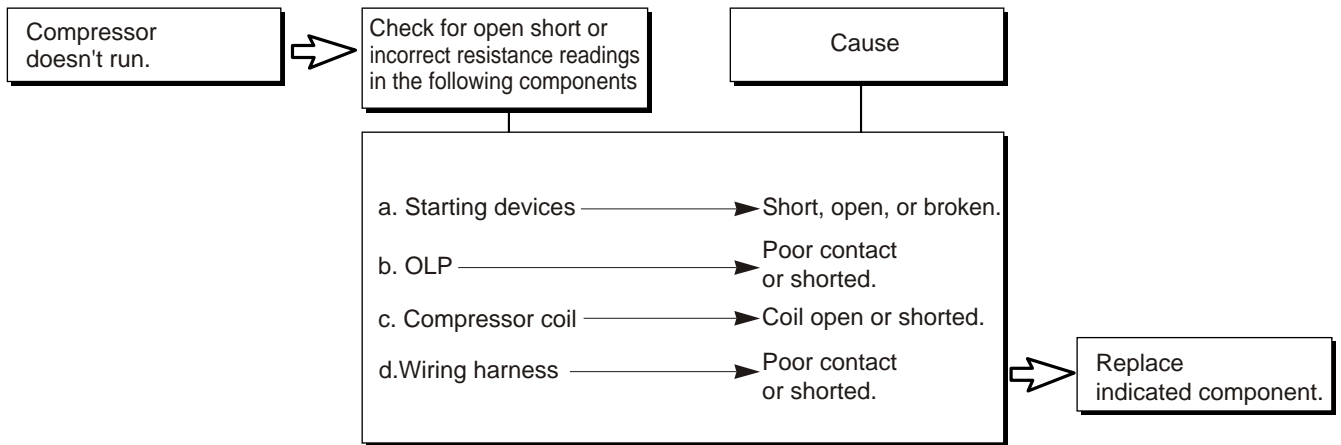


6-2 PTC AND OLP

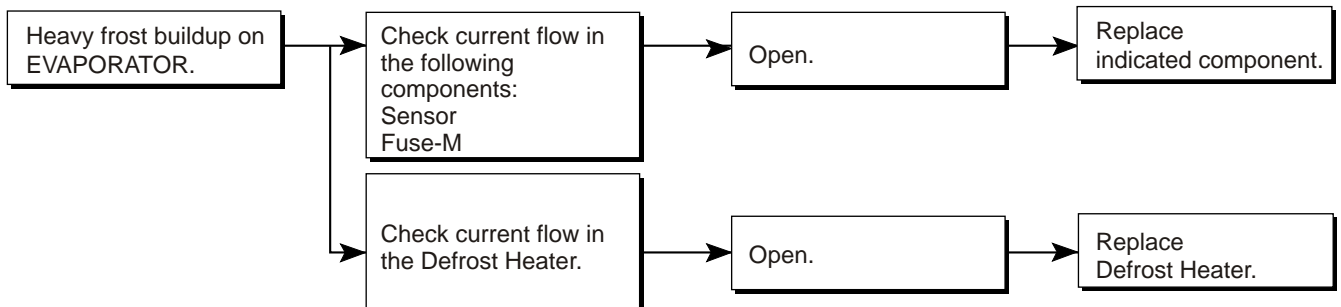
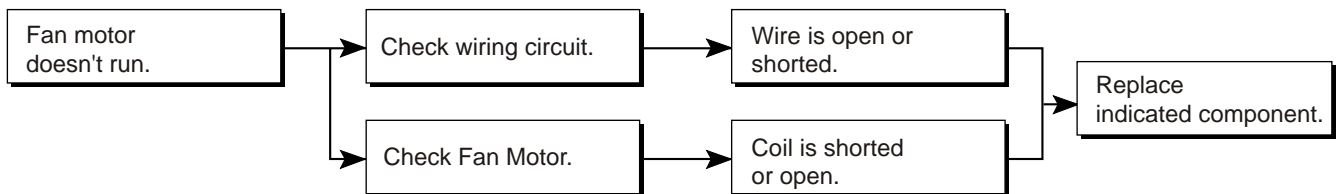
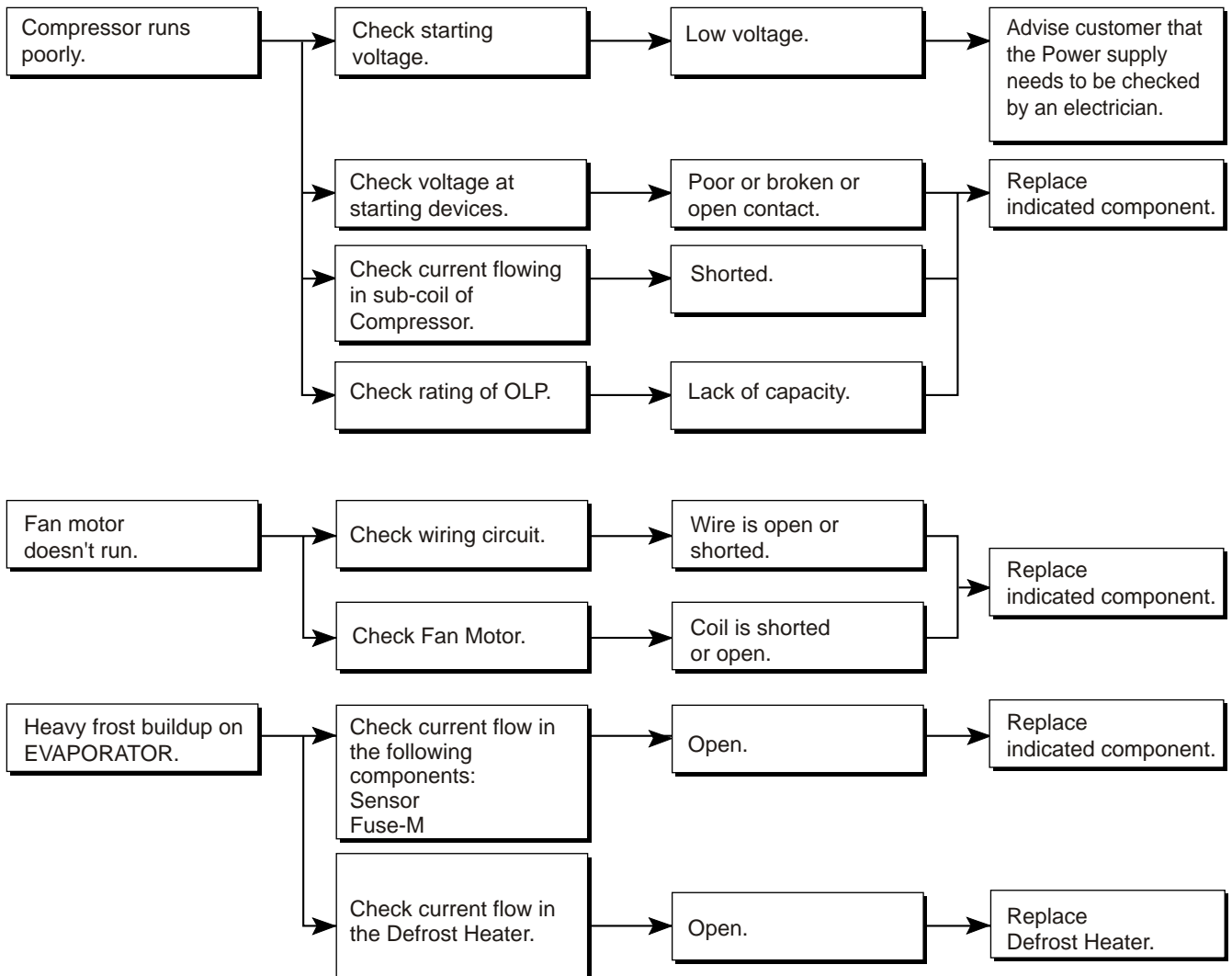


6-3 OTHER ELECTRICAL COMPONENTS

Not cooling at all



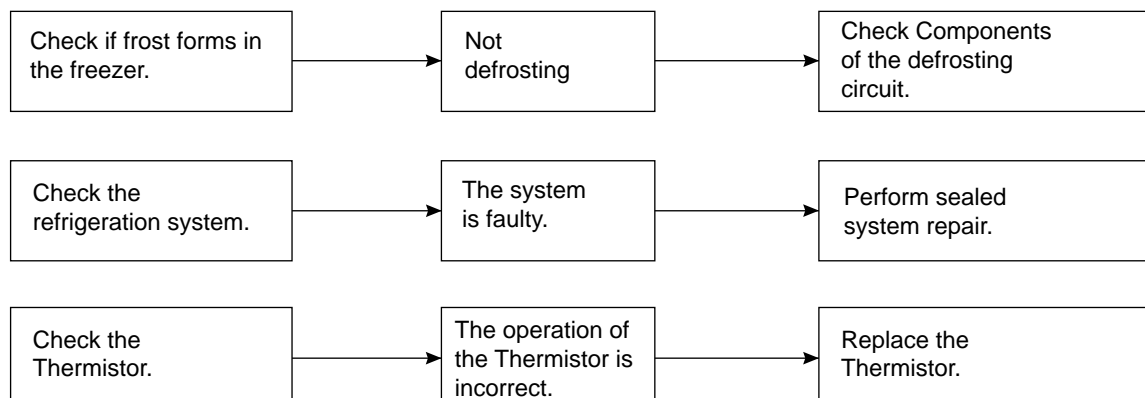
Poor cooling performance



6-4 SERVICE DIAGNOSIS CHART

COMPLAINT	POINTS TO BE CHECKED	REMEDY
No Cooling.	<ul style="list-style-type: none"> Is the power cord unplugged from the outlet? Check if the power switch is set to OFF. Check if the fuse of the power switch is shorted. Measure the voltage of the power outlet. 	<ul style="list-style-type: none"> Plug into the outlet. Set the switch to ON. Replace the fuse. If the voltage is low, correct the wiring.
Cools poorly.	<ul style="list-style-type: none"> Check if the unit is placed too close to the wall. Check if the unit is placed too close to the stove, gas cooker, or in direct sunlight. Is the ambient temperature too high or the room door closed? Check if food put in the refrigerator is hot. Did you open the door of the unit too often or check if the door is sealed properly? Check if the Control is set to Warm position. 	<ul style="list-style-type: none"> Place the unit about 4 inches (10 cm) from the wall. Place the unit away from these heat sources. Lower the ambient temperature. Put in foods after they have cooled down. Don't open the door too often and close it firmly. Set the control to Recommended position.
Foods in the Refrigerator are frozen.	<ul style="list-style-type: none"> Is food placed in the cooling air outlet? Check if the control is set to colder position. Is the ambient temperature below 41°F(5°C)? 	<ul style="list-style-type: none"> Place foods in the high-temperature section. (front part) Set the control to Recommended position. Set the control to Warm position.
Condensation or ice forms inside the unit.	<ul style="list-style-type: none"> Is liquid food sealed? Check if food put in the refrigerator is hot. Did you open the door of the unit too often or check if the door is sealed properly? 	<ul style="list-style-type: none"> Seal liquid foods with wrap. Put in foods after they have cooled down. Don't open the door too often and close it firmly.
Condensation forms in the Exterior Case.	<ul style="list-style-type: none"> Check if the ambient temperature and humidity of the surrounding air are high. Is there a gap in the door gasket? 	<ul style="list-style-type: none"> Wipe moisture with a dry cloth. It will disappear in low temperature and humidity. Fill up the gap.
There is abnormal noise.	<ul style="list-style-type: none"> Is the unit positioned in a firm and even place? Are any unnecessary objects placed in the back side of the unit? Check if the Tray Drip is not firmly fixed. Check if the cover of the compressor enclosure in the front lower side is taken out. 	<ul style="list-style-type: none"> Adjust the Leveling Screw, and position the refrigerator in a firm place. Remove the objects. Fix the Tray Drip firmly in the original position. Place the cover in its original position.
Door does not close well.	<ul style="list-style-type: none"> Check if the door gasket is dirty with an item like juice. Is the refrigerator level? Is there too much food in the refrigerator? 	<ul style="list-style-type: none"> Clean the door gasket. Position in the firm place and level the Leveling Screw. Make sure food stored in shelves does not prevent the door from closing.
Ice and foods smell unpleasant.	<ul style="list-style-type: none"> Check if the inside of the unit is dirty. Are foods with a strong odor unwrapped? The unit smells of plastic. 	<ul style="list-style-type: none"> Clean the inside of the unit. Wrap foods that have a strong odor. New products smell of plastic, but this will go away after 1-2 weeks.

Other possible problems:



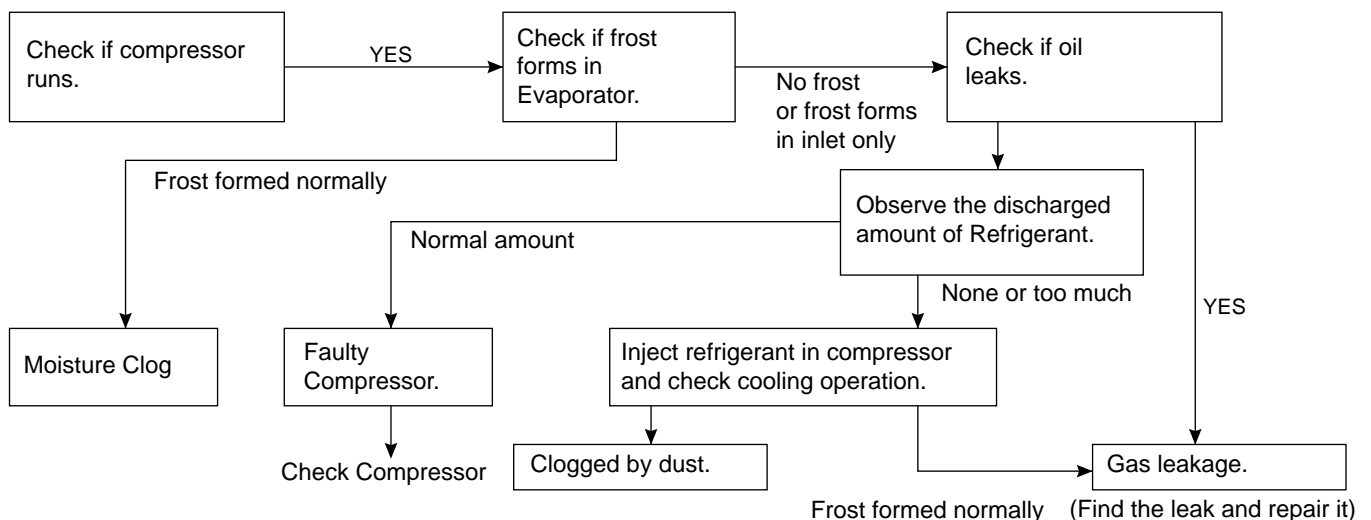
6-5 REFRIGERATION CYCLE

Troubleshooting Chart

CAUSE		STATE OF THE UNIT	STATE OF THE EVAPORATOR	TEMPERATURE OF THE COMPRESSOR	REMARKS
LEAKAGE	PARTIAL LEAKAGE	Freezer compartment and Refrigerator don't cool normally.	Low flowing sound of Refrigerant is heard and frost forms in inlet only.	A little higher than ambient temperature.	<ul style="list-style-type: none"> Refrigerant level is low due to a leak. Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.
	COMPLETE LEAKAGE	Freezer compartment and Refrigerator don't cool normally.	Flowing sound of refrigerant is not heard and frost isn't formed.	Equal to ambient temperature.	<ul style="list-style-type: none"> No discharging of Refrigerant. Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.
CLOGGED BY DUST	PARTIAL CLOG	Freezer compartment and Refrigerator don't cool normally.	Flowing sound of refrigerant is heard and frost forms in inlet only.	A little higher than ambient temperature.	<ul style="list-style-type: none"> Normal discharging of the refrigerant. The capillary tube is faulty.
	WHOLE CLOG	Freezer compartment and Refrigerator don't cool.	Flowing sound of refrigerant is not heard and frost isn't formed.	Equal to ambient temperature.	<ul style="list-style-type: none"> Normal discharging of the Refrigerant.
MOISTURE CLOG		Cooling operation stops periodically.	Flowing sound of refrigerant is not heard and frost melts.	Lower than ambient temperature.	<ul style="list-style-type: none"> Cooling operation restarts when heating the inlet of the capillary tube.
DEFECTIVE COMPRESSION	COMP-RESSION	Freezer and Refrigerator don't cool.	Low flowing sound of refrigerant is heard and frost forms in inlet only.	A little higher ambient temperature.	<ul style="list-style-type: none"> Low pressure at high side of compressor due to low refrigerant level.
	NO COMP-RESSION	No compressing operation.	Flowing sound of refrigerant is not heard and there is no frost.	Equal to ambient temperature.	<ul style="list-style-type: none"> No pressure in the high pressure part of the compressor.

Leakage Detection

Observe the discharging point of the refrigerant, which may be in the oil discharging part of the compressor and in a hole in the evaporator.



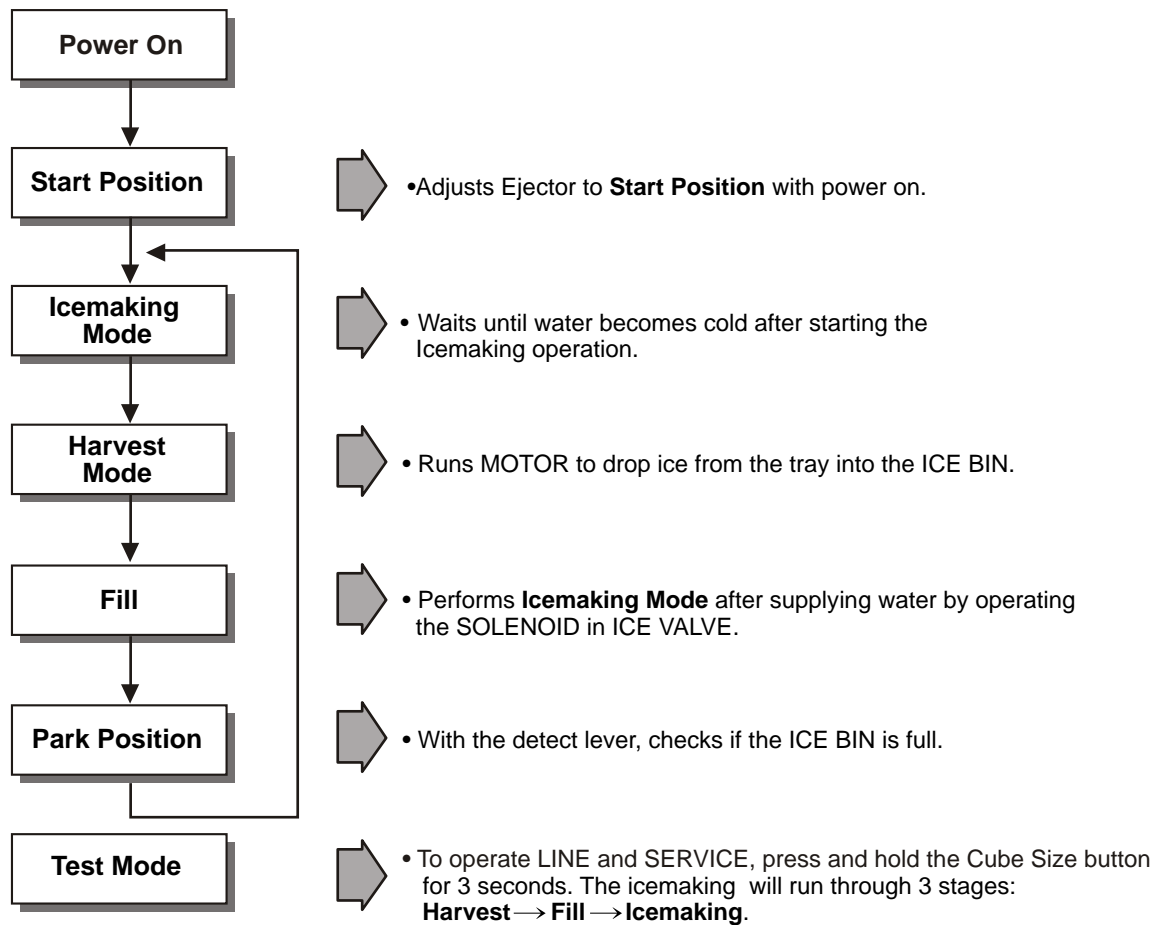
General Control of Refrigerating Cycle

NO.	ITEMS		UNIT	STANDARDS	PURPOSES	REMARKS
1	Pipe and piping system opening time		Min.	Pipe: within 1 hour. Comp: within 10 minutes. Drier: within 20 minutes.	To protect moisture penetration.	The opening time should be reduced to a half of the standards during rain and rainy seasons (the penetration of water into the pipe is dangerous).
2	Welding		Nitrogen pressure	Weld under Nitrogen atmosphere. (N ₂ pressure: 0.1~0.2 kg/cm ²)	To protect oxide scale formation.	<ul style="list-style-type: none"> - Refer to repair note in each part. - R-134a refrigerant is more susceptible to leaks than R-12 and requires more care during welding. - Do not apply force to pipes before and after welding to protect pipe from cracking.
3	N ₂ sealed parts		Confirm N ₂ leak	Confirm the sound of pressure relief when removing the rubber cap. Sound: usable No sound: not usable	To protect moisture penetration.	- In case of evaporator parts, if it doesn't make sound when removing rubber cap, blow dry air or N ₂ gas for more than 1 min. and then use the parts.
4	Refrigeration Cycle	Evacuation time	Min.	More than 40 minutes	To remove moisture.	
		Vacuum degree	Torr	Below 0.03 (ref)		Note: Only applicable to the model equipped with reverse flow protect plate.
		Vacuum	EA	High and low pressure sides are evacuated at the same time for models above 200 l.		Vacuum efficiency can be improved by operating compressor during evacuation.
		Vacuum piping	EA	Use R-134a manifold exclusively.	To protect mixing of mineral and ester oils.	The rubber pipes for R-12 refrigerant will be melted when they are used for R-134a refrigerant (causes of leak.)
		Pipe coupler	EA	Use R-134a manifold exclusively.	To protect R-12 refrigerant mixing.	
		Outlet (Socket)		R-134a manifold exclusively.	To protect R-12 refrigerant mixing.	
		Plug		R-134a manifold exclusively.	To protect R-12 refrigerant mixing.	
5	Refrigerant weighing		EA	Use R-134a exclusively. Weighing allowance: 5g Note: Winter: -5g Summer: +5g	Do not mix with R-12 refrigerant.	<ul style="list-style-type: none"> - Do not weigh the refrigerant at too hot or too cold an area. (77°F [25°C] is adequate.) - Make Copper charging canister (Device filling refrigerant) Socket: 2SV Plug: 2PV R-134a Note: Do not burn O-ring (bushing) during welding.
6	Drier replacement			<ul style="list-style-type: none"> - Use R-134a exclusively for R-134a refrigerator. - Replace drier whenever repairing refrigerator cycle piping. 	To remove the moisture from pipe inside.	
7	Leak check			- Do not use soapy water for check. It may be sucked into the pipe by a vacuum.	Defect in refrigerant leak area.	<ul style="list-style-type: none"> - Check for an oil leak at the refrigerant leak area. Use an electronic leak detector if an oil leak is not found. - The electronic leak detector is very sensitive to halogen gas in the air. It also can detect R-141b in urethane. Practice many times before using this type of detector to avoid false readings.

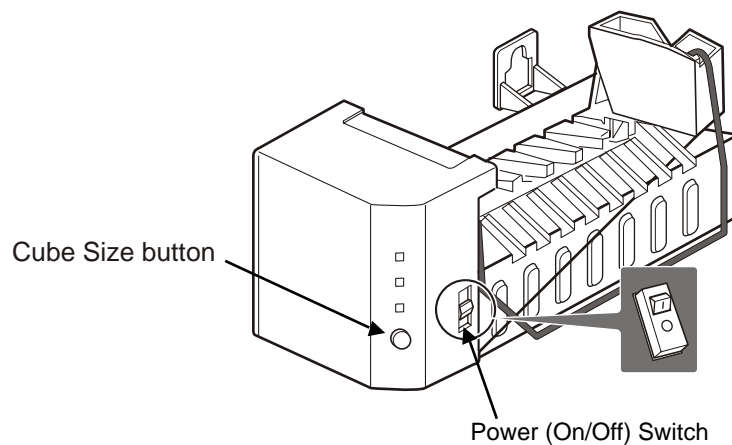
7. OPERATION PRINCIPLE AND REPAIR METHOD OF ICEMAKER

7-1 OPERATION PRINCIPLE

7-1-1 Operation Principle of Icemaker



1. Turning the Icemaker stop switch off (O) stops the icemaking function.
2. Setting the Icemaker switch to OFF and then turning it back on will reset the icemaker control.



7-2 ICE MAKER FUNCTIONS

7-2-1 Ice Making Mode

1. Icemaking refers to the freezing of supplied water in the ice trays. Complete freezing is assured by measuring the temperature of the Tray with icemaking SENSOR.
2. Icemaking starts after completion of the water fill operation.
3. The icemaking function is completed when the sensor reaches -7°C, 60 to 240 minutes after starting.

NOTE : After icemaker power is ON, the icemaker heater will be on for test for 9 sec.

7-2-2 Harvest Mode




1. Harvest (Ice removing) refers to the operation of dropping ices into the ice bin from the tray when icemaking has completed.
2. Harvest mode:
 - (1) The Heater is ON for 30 seconds, then the motor starts.
 - (2) Harvest mode is completed if it reaches start position again while Heater & Motor are on at the same time.
 - A. ice bin is full : The EJECTOR stops (heater off).
 - B. ice bin is not full : The EJECTOR rotates twice to open for ice.

NOTE : If the EJECTOR does not rotate once within 5 minutes in status (2), separate heater control mode starts operating to prevent the EJECTOR from being constrained. (It is recommended that the user open for ice to return to normal mode.)

7-2-3 Fill/Park Position

1. Once a normal harvest mode has been completed, the water solenoid will be activated.
2. The amount of water is adjusted by pressing the fill key repeatedly. This changes the time allowed for fill as illustrated in the table below.






Water supply amount table

STAGE	TIME TO SUPPLY	INDICATIONS	REMARKS
1	6 sec.		The water amount will vary depending on the water control switch setting, as well as the water pressure of the connected water line.
2	7 sec.		
3	8 sec.		

7-2-5 Function TEST



1. This is a compulsory operation for test, service, cleaning, etc. It is operated by pressing and holding the Cube Size button for 3 seconds.
2. The test works only in the Icemaking Mode. It cannot be entered from the Harvest or Fill mode. (If there is an ERROR, it can only be checked in the TEST mode.)
3. **Caution!** If the test is performed before water in the icemaker is frozen, the ejector will pass through the water. When the fill mode begins (Stage 4), unless the water supply has been shut off, added water will overflow into the ice bin. If the control Doesn't operate normally in the TEST mode, check and repair as needed.
4. After water is supplied, the normal CYCLE is followed: **icemaking** ⇌ **Harvest** ⇌ **Fill** ⇌ **Park Position**.
5. Five seconds after Stage 5 is completed, the icemaker returns to MICOM control. The time needed to supply water resets to the pre- test setting.

Diagnosis TABLE

STAGE	ITEMS	INDICATOR *	REMARKS
1	HEATER		Five seconds after heater starts, heater will go off if temperature recorded by sensor is 10°C (50°F) or lever is in up position.
2	MOTOR		Five seconds after heater starts, you can confirm that motor is moving.
3	HALL IC (TRAY)		You can confirm Hall IC detection of position.
4	SOLENOID VALVE		Two seconds after detection of initial position, you can confirm that valve is on.
5	HALL IC (LEVER)		You can check when the Hall IC is sensing a full ice condition. (If there is a water fill error, the fifth LED is not on.)
6	Reset	Return to Status prior to TEST MODE	Five seconds after fifth stage is completed, the icemaker resets to initial status.

7-3 DEFECT DIAGNOSIS FUNCTION

7-3-1 ERROR CODES shown on Ice Maker water supply control panel

NO	DIVISION	INDICATOR	PROBLEM	REMARKS
1	Normal	Note fill times (see previous page)	None	Display switch operates properly
2	Icemaking Sensor malfunction		Open or shorted wire or sensor	Make sure that the wire on each sensor is connected.
3	Icemaker Kit malfunction		Ejector blades have not reached the park position after 18 minutes from start of harvest mode	Check HALL IC/MOTOR/ HEATER/RELAY

* ERROR indicators in table can be checked only in TEST mode.

8. DESCRIPTION OF FUNCTION & CIRCUIT OF MICOM

8-1 FUNCTION

8-1-1 Function

1. When the appliance is plugged in, it is set to "4" for Refrigerator and "4" for freezer.
You can adjust the Refrigerator and the Freezer control temperature by pressing the ADJUST button.
2. When the power is initially applied or restored after a power failure, it is automatically set to "4" & "4".



8-1-2 Control of freezer fan motor

1. Freezer fan motor has high and standard RPMs.
2. High RPM is used when electricity is first on, for ICE PLUS, and when refrigerator is overloaded.
But standard RPM is used for general purposes.
3. To improve cooling speed and load corresponding speed, the RPM of freezer fan motor shall change from normal speed to high speed.
4. High speed (2600RPM): Initial power on or load corresponding operation, ICE PLUS.
Normal speed (2300RPM): general working conditions.
5. Fan motor stops when refrigerator door opens.
6. Fan motor stops when freezer door opens. (only if COMP is OFF)

8-1-3 ICE PLUS

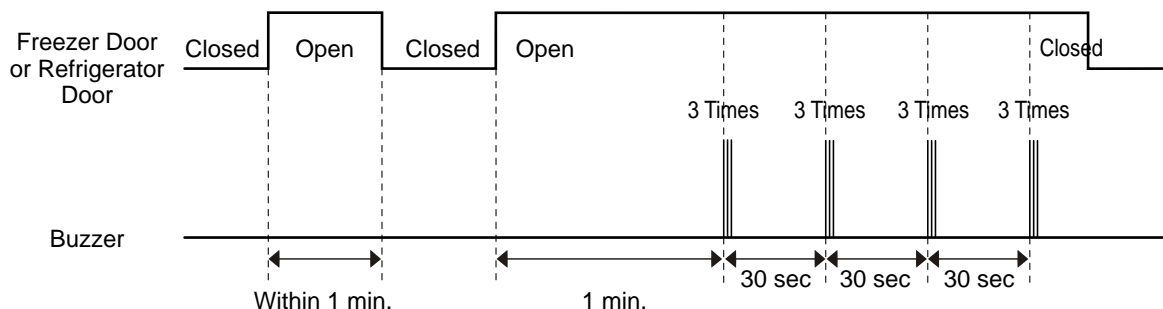
1. The purpose of this function is to intensify the cooling speed of freezer and to increase the amount of ice.
2. Whenever selection switch is pressed, selection/release, the LED will turn ON or OFF.
3. If there is a power cut and the refrigerator is power on again, ICE PLUS function will be canceled.
4. To activate this function you need to press the ICE PLUS key and the LED will turn ON. This function will remain activated for 24 hrs. The first three hours the compressor and ICE PLUS will be ON. The next 21 hours the freezer will be controlled at the lowest temperature. After 24 hours or if the ICE PLUS key is pressed again, the freezer will return to its previous temperature.
5. For the first three hours notice the following cases:
 - (1) Compressor and freezer fan(HIGH RPM) continuously operate for three hours.
 - (2) If defrost starts during ICE PLUS, ICE PLUS operates for the rest of time after defrost is completed, when ICE PLUS operation time is less than 90 minutes.
If ICE PLUS operates for more than 90 minutes, the ICE PLUS will operate for two hours after defrost is completed.
 - (3) If ICE PLUS is pressed during defrost, ICE PLUS is on but this function will start seven minutes after defrost is completed and it shall operate for three hours.
 - (4) If ICE PLUS is selected within seven minutes after compressor has stopped, the compressor (compressor delays seven minutes) shall start after the balance of the delay time.
 - (5) The fan motor in the freezer compartment rotates at high speed during ICE PLUS.
6. For the rest of 21 hours, the freezer will be controlled at the lowest temperature.

8-1-4. REFRIGERATOR LAMP AUTO OFF

1. To protect the risk of lamp heat, when Refrigerator door opens for 7 min., refrigerator lamp is auto off.

8-1-5 Alarm for Open Door

1. This feature sounds a buzzer when the freezer or refrigerator door is not closed within 1 minute after it is opened.
2. One minute after the door is opened, the buzzer sounds three times each for 1/2 seconds. These tones repeat every 30 seconds.
3. The alarm is cancelled when the freezer or the refrigerator is closed while the buzzer sounds.



8-1-6 Buzzer Sound

When the button on the front Display is pushed, a Ding~ Dong~ sound is produced.

8-1-7 Defrosting (removing frost)

1. Defrosting starts each time the accumulated COMPRESSOR running time is between 7:30 and 40 hours. This time is determined by how often and how long the doors are opened.
2. For initial power on or for restoring power, defrosting starts when the compressor running time reaches 4 hours.
3. Defrosting stops if the sensor temperature reaches 46.4°F(8°C) or more. If the sensor doesn't reach 46.4°F(8°C) in 1 hours, the defrost mode is malfunctioning.
4. Defrosting won't function if its sensor is defective (wires are cut or short circuited)

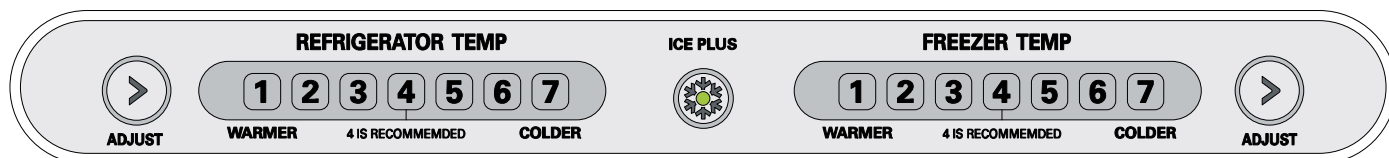
8-1-8 Electrical Parts Are Turned On Sequentially

Electrical parts such as COMP, defrosting heater, freezer FAN, etc. are turned on in the following order to prevent noise and parts damage. Several parts are started at the same time at initial power on and are turned off together when TEST is completed.

OPERATING		ORDERS			
Initial power on	Temperature of Defrosting Sensor is 45°C or more (when unit is newly purchased or when moved)	POWER ON	In ½ second →	COMP ON	In ½ second → Freezer FAN ON In ½ second → Cooling FAN ON
	Temperature of defrosting sensor is lower than 45°C (when power cuts, SERVICE)	POWER ON	In ½ second →	Defrosting heater ON	In 10 second → Defrosting heater OFF In ½ second → COMP ON In ½ second → Freezer FAN ON In ½ second → Cooling FAN ON
Reset to normal operation from TEST MODE		Total Load OFF	In 7 minute →	COMP ON	In ½ second → Freezer FAN ON In ½ second → Cooling FAN ON

8-1-9 Defect Diagnosis Function

1. Automatic diagnosis makes servicing the refrigerator easy.
2. When a defect occurs, the buttons will not operate; but the tones. such as ding. will sound.
3. When the defect CODE removes the sign, it returns to normal operation (RESET).
4. The defect CODE shows on the Refrigerator and Freezer Display.



ERROR CODE on display panel

● LED OFF LED ON ○

NO	ITEM	ERROR CODE		CONTENTS	REMARKS
1	Failure of freezer sensor	All off	● ○ ○ ○ ○ ○ ○	Cut or short circuit wire	Inspect Connecting wires on each sensor
2	Failure of Refrigerator sensor	All off	○ ● ○ ○ ○ ○ ○ ○	Cut or short circuit wire	
3	Failure of defrost sensor	All off	○ ○ ● ○ ○ ○ ○ ○	Cut or short circuit wire	
4	Poor of defrost	All off	● ● ● ● ○ ○ ○	1 hours later after starting defrost, If sensor doesn't be over 46°F (8°C)	Snapping of defrost heater or Temperature fuse, pull-out of Connector (indicated minimum 1 Hours after failure occurs)
5	Failure of BLDC fan motor at freezing compartment	All off	● ● ● ● ● ○ ○	If there is no fan motor signal for more than 115sec in operation	Poor motor, hocking to wires of fan, contact of structures to fan, snapping or short of lead

8-1-10 TEST Mode

1. The Test mode allows checking the PCB and the function of the product as well as finding out the defective part in case of an error.
2. The test mode is operated by pressing two buttons at Display panel.
3. While in the test mode, the function control button is not recognized, but the recognition tone (beep~) sounds.
4. After exiting the test mode, be sure to reset by unplugging and then plugging in the appliance.
5. If an error, such as a sensor failure, is detected while in the test mode, the test mode is cleared and the error code is displayed.
6. While an error code is displayed, the test mode will not be activated.

MODE	MANIPULATION	CONTENTS	REMARKS
TEST1	Push ICEPLUS key and ADJUST key of Freezer temperature at the same time over 3 seconds. Or press TEST S/W one time in the Main PCB board.	1.-Continuous operation of the COMPRESSOR 2.Continuous operation of the freezer fan 3.Stepping DAMPER OPEN 4.Defrosting Heater OFF 5.Every DISPLAY LED ON	Reset after 5 minutes
TEST2	Push ICEPLUS key and ADJUST key of Freezer temperature at the same time over 3 seconds being in TEST MODE1. Or press TEST S/W one time being in TEST MODE 1.	1.COMP OFF 2.Freezer FAN OFF 3.Stepping DAMPER CLOSE 4.Defrosting Heater ON 5.DISPLAY LED 1,3,5,7 ON	Reset if the temperature of the defrosting sensor is 46°F (8°C) or more
Reset	Push ICEPLUS key and ADJUST key of Freezer temperature at the same time over 3 seconds being in TEST MODE2. Or press TEST S/W one time being in TEST MODE 2.	Reset to the previously setting before TEST MODE	The Compressor will start after a 7-minute Delay

NOTE : LED CHECK MODE: When the refrigerator temperature control and the freezer temperature control button at the same time are hold for 1 second or longer, every LED on the display turns on at the same time. when the button are released, the previous mode is restored.

*** Freezer Fan RPM Variable Check:**

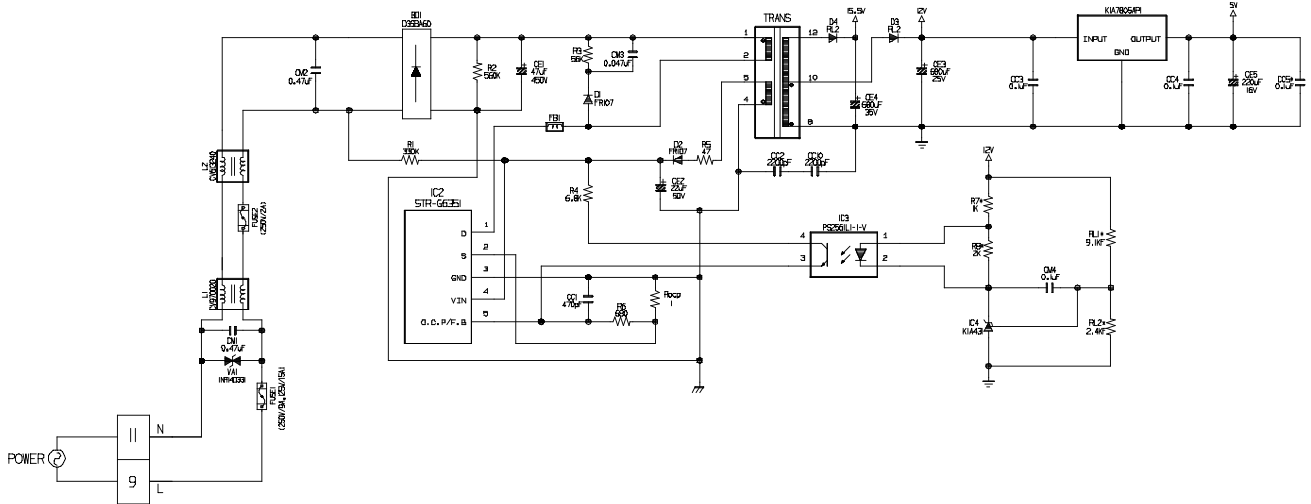
In case the freezer fan is in operation when the ADJUST key in Refrigerator and Freezer Temp. Control are pressed for more than one second at the same time freezer fan RPM changes. (for example if high speed, to normal speed or if normal speed, to high speed for 30 seconds)
After 30 seconds, it turns to its original RPM.

*** Demonstration MODE:**

1. When the ICE PLUS key and ADJUST key of refrigerator temperature control are pressed for more than 3 seconds at the same time temperature's it converts to demonstration mode.
2. In this status, each LED is rotated with 1 second interval.
3. In this status, all Loads are off (Compressor / Fan / Damper / Heater)
(Even is Demonstration Mode, the refrigerator Lamp automatic off function works normally and can be demonstrated)
4. It reset if you do again as clause.

8-2 PCB FUNCTION

8-2-1 Power Circuit



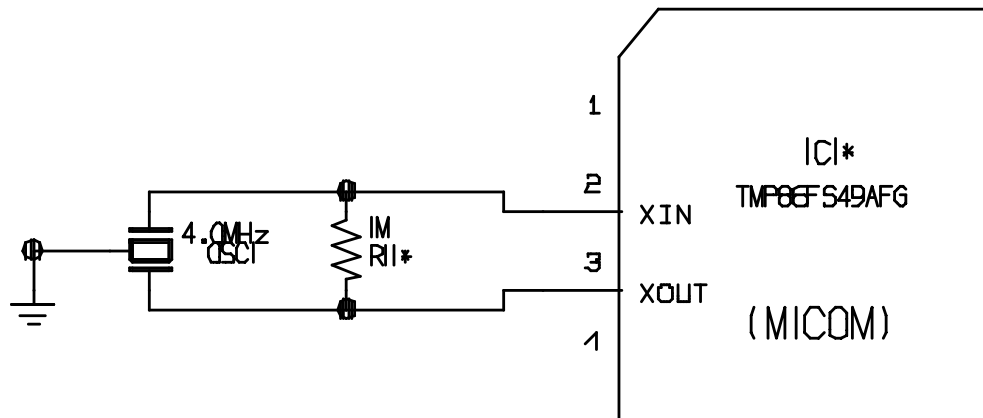
The secondary part of the TRANSFORMER is composed of the power supply for the display, the BLDC FAN Motor drive (15.5 V), the relay drive (12 Vdc) and the MICOM and IC (5 Vdc).

The voltage for each part is as follows:

PART	VA 1	CE 3	CE 4	CE 5
VOLTAGE	115 Vac	12 Vdc	15.5 Vdc	5 V

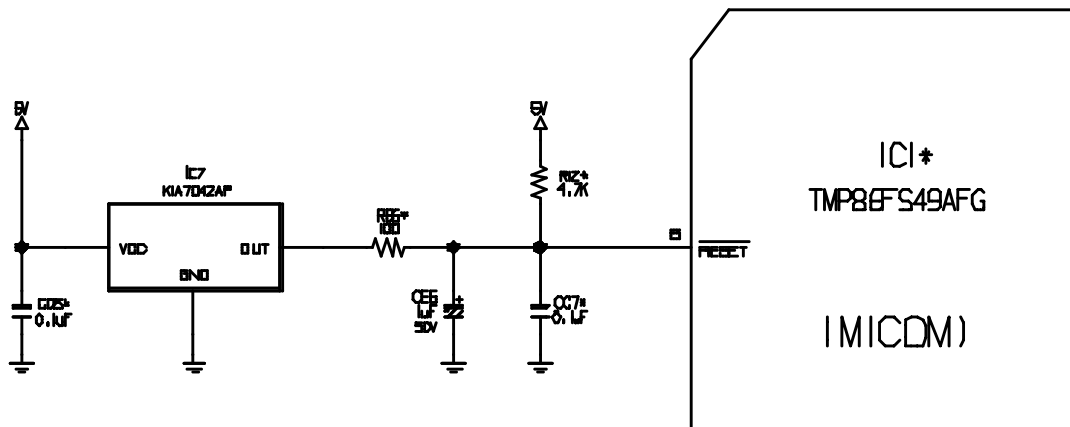
VA1 is a part for preventing over voltage and noise. When 385V or higher power is applied, the inside elements are short-circuited and broken, resulting in blowout of the fuse in order to protect the elements of the secondary part of the TRANSFORMER.

8-2-2 Oscillation Circuit



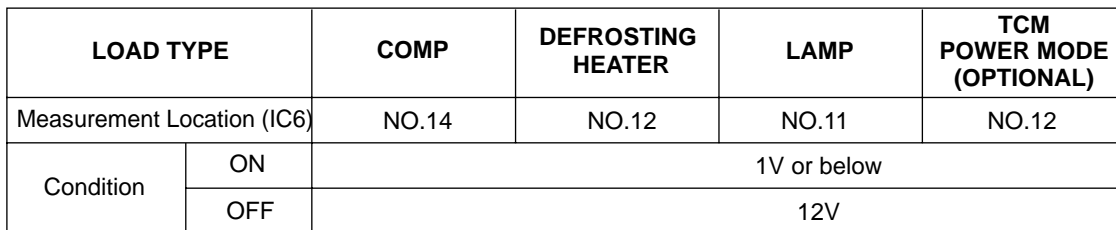
This circuit generates the base clock for calculating time and the synchro clock for transmitting data from and to the inside logic elements of the IC1 (MICOM). Be sure to use specific replacement parts, since calculating time by the IC1 may be changed. If changed, the OSC1 SPEC will not work.

8-2-3 Reset Circuit



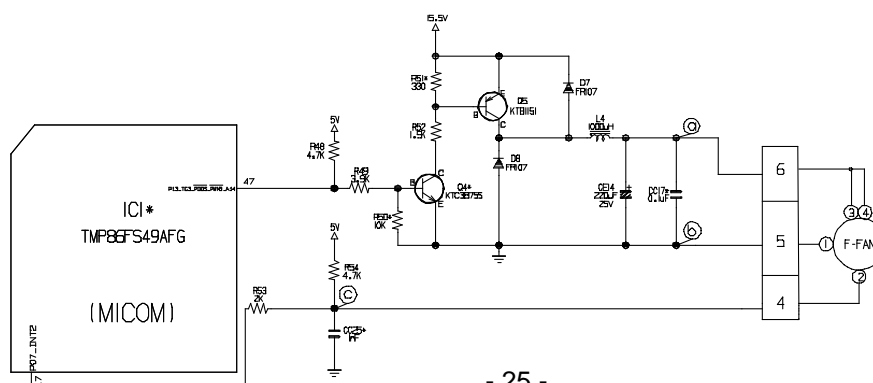
The RESET circuit allows all the functions to start at the initial conditions by initializing various parts, including the RAM inside the MICOM (IC1) when the power is initially supplied or the power supply to the MICOM is restored after a momentary power failure. For the initial 10ms of power supply, LOW voltage is applied to the MICOM RESET terminal. During a normal operation, 5V is applied to the RESET terminal. (If a malfunction occurs in the RESET IC, the MICOM will not operate.)

1. Load Drive Condition Check



1. This circuit makes standby power **0** by cutting off power supplied to ISs inside of the fan motor in the fan motor OFF.
2. This is a circuit to perform a temporary change of speed for the fan motor and applies DC voltage up to 7.5V ~ 16V to motor
3. This circuit prevents over-driving the fan motor by cutting off power applied to the fan motor in the lock of fan motor by sensing the operation RPM of the fan motor.

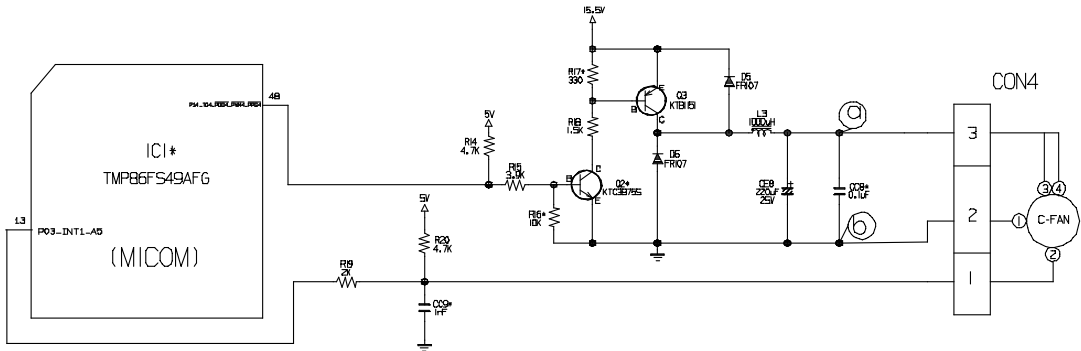
	㉑ part	㉒ part	㉓ part
MOTOR OFF	2V or less	0V	5V
MOTOR ON	13V~15V	0V	2V~3V



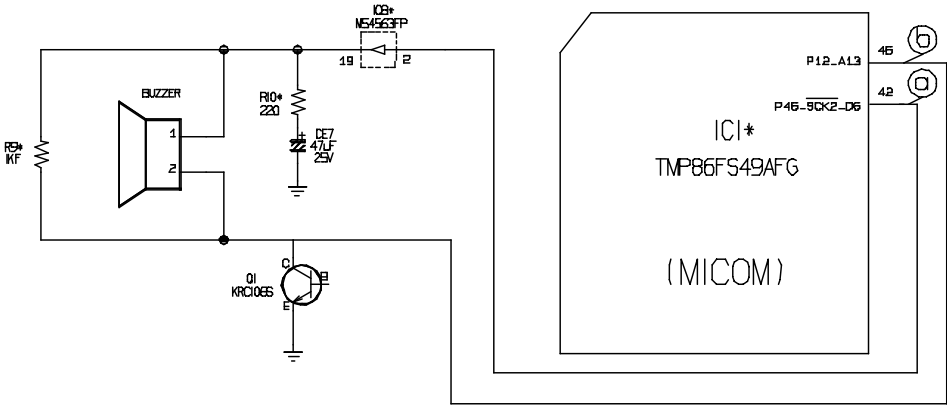
3. Cooling motor driving circuit (machine room)

1. This circuit makes standby power 0 by cutting off power supplied to Iss inside of the fan motor in the fan motor OFF.
2. This circuit prevents over-driving the fan motor by cutting off power applied to the fan motor in the lock of fan motor by sensing the operation RPM of the fan motor.

	a) Part	b) Part
MOTOR OFF	2V or less	0V
MOTOR ON	13V - 15V	0V

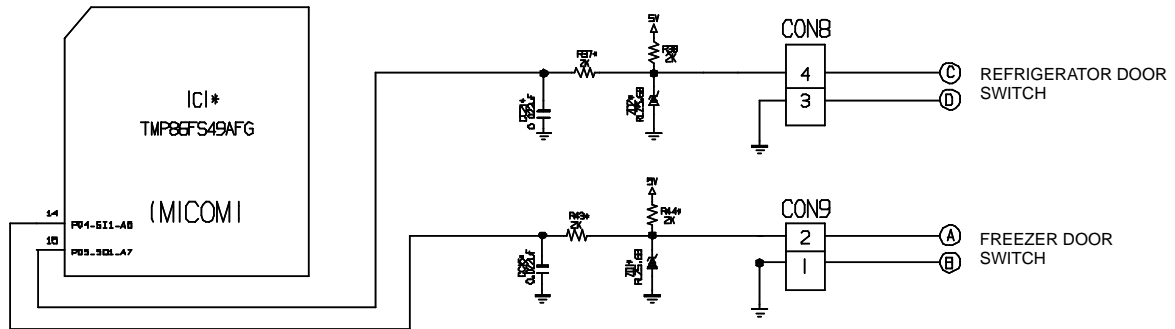


4. Buzzer Drive Condition Check



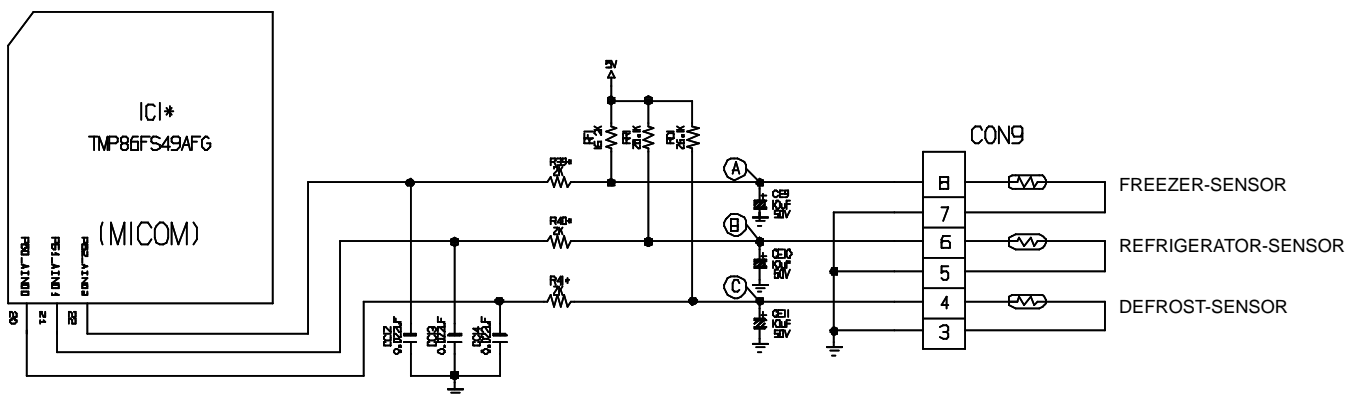
Condition Measurement Location	Tone (Ding~Dong~) when the button on the display is pushed.	Alarm for open door (beep-beep-beep)	OFF
IC1 (A)			0 V
IC1 (B)			0 V

5. Open Door Detection Circuit Check



Measurement Location Freezer/ Refrigerator Door	(PIN NO.15 & PIN NO.14)
Closed	5 V
Open	0 V

8-2-5 Temperature Sensor Circuit

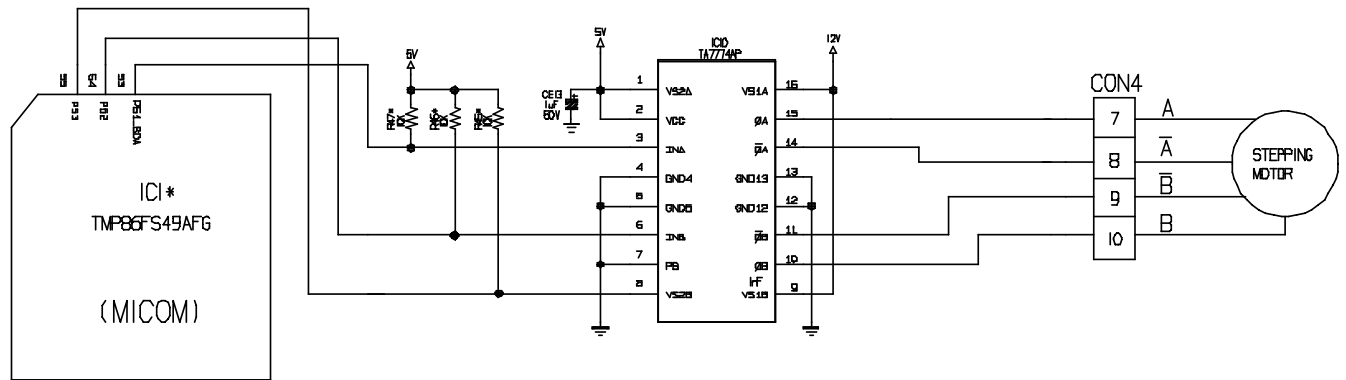


The upper CIRCUIT reads REFRIGERATOR temperature, FREEZER Temperature, and DEFROST-SENSOR temperature for defrosting and the indoor temperature for compensating for the surrounding temperature into MICOM. OPENING or SHORT state of each TEMPERATURE SENSOR are as follows:

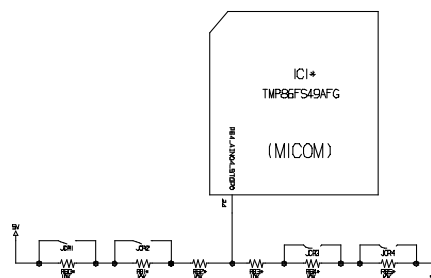
SENSOR	CHECK POINT	NORMAL (-30°C ~ 50°C)	SHORT-CIRCUITED	OPEN
Freezer Sensor	POINT (A) Voltage	0.5 V ~ 4.5 V	0 V	5 V
Refrigerator Sensor	POINT (B) Voltage			
Defrosting Sensor	POINT (C) Voltage			

8-2-6 Refrigeration Compartment Stepping Motor Damper Circuit







* The circuit shown below is the damper circuit to regulate the refrigerator temperature.



1. Refrigerator Temperature Compensation



? Table of Refrigerator temperature compensation.

OPTION	CUTTING	Remark
 JCR1	R +1.0 deg compensation	Warmer 
 JCR2	R +1.0 deg compensation	
 JCR3	R -1.0 deg compensation	Colder 
 JCR4	R -1.0 deg compensation	

? The circuit shown above determines whether a function control key on the operation display is pushed. It also turns on the corresponding function indication LED (LED Module) SEVEN SEGMENT DISPLAY (SEVEN SEGMENT DISPLAY MODULE). The drive type is the scan type



8-3 RESISTANCE SPECIFICATION OF SENSOR

TEMPERATURE DETECTED BY SENSOR	RESISTANCE OF FREEZER SENSOR	RESISTANCE OF REFRIGERATOR & DEFROST SENSOR & ROOM SENSOR
-20° C	22.3 K	77 K
-15° C	16.9 K	60 K
-10° C	13.0 K	47.3 K
- 5° C	10.1 K	38.4 K
0° C	7.8 K	30 K
+ 5° C	6.2 K	24.1 K
+ 10° C	4.9 K	19.5 K
+ 15° C	3.9 K	15.9 K
+ 20° C	3.1 K	13 K
+ 25° C	2.5 K	11 K
+ 30° C	2.0 K	8.9 K
+ 40° C	1.4 K	6.2 K
+ 50° C	0.8 K	4.3 K

- The resistance of the SENSOR has a $\pm 5\%$ common difference.
- Measure the resistance of the SENSOR after leaving it for over 3 minutes in the measuring temperature.
This delay is necessary due to sensor response speed.

8-4 TROUBLESHOOTING

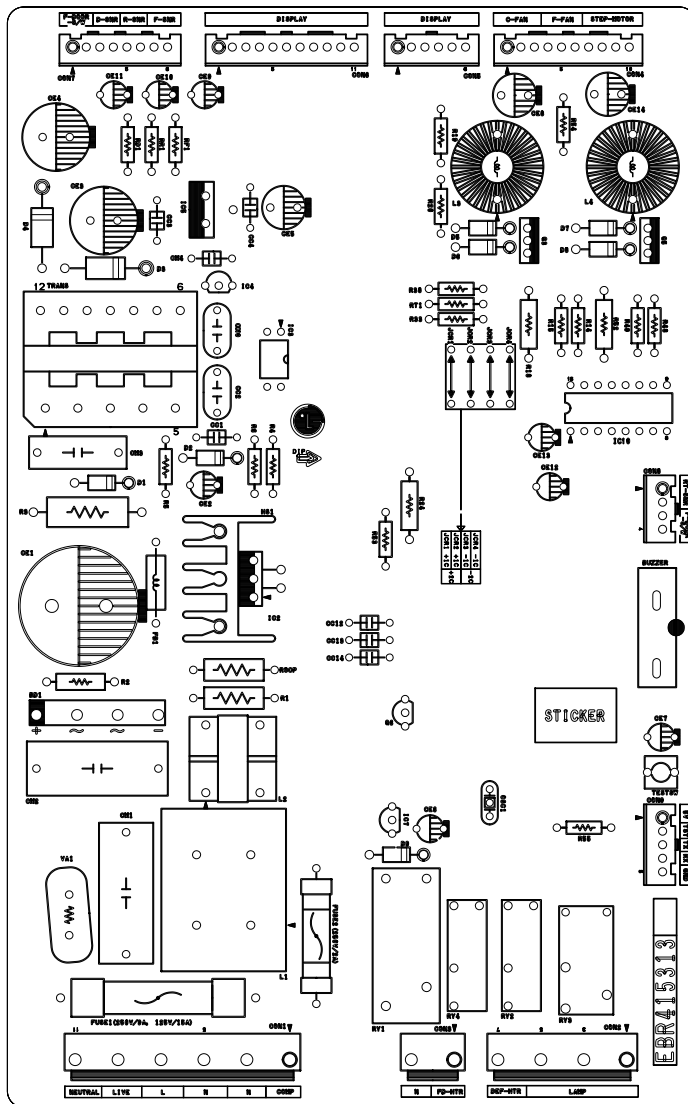
PROBLEM	INDICATED BY	CHECK	CHECKING METHOD	CAUSE	SOLUTION
POWER SOURCE is poor.	1. The whole DISPLAY LED/SEVEN SEGMENT DISPLAY is off. 2. DISPLAY LED/SEVEN SEGMENT DISPLAY operates abnormally	1. FREEZER/REFRIGERATOR.	Check if FREEZER/REFRIGERATOR DOOR IS OPEN and check display.	POWER SOURCE is poor.	Check outlet Voltage.
		2. If LAMP is dim.	Check visually.	Applied voltage error.	Use boosting TRANS.
		3. The connection of the MAIN PWB CONNECTOR.	Check connection of CONNECTOR.	CONNECTOR connection is poor.	Reconnect CONNECTOR.
				TRANS FUSE is open.	Replace TRANS.
COOLING is poor.	NO COOLING.	1. If the COMPRESSOR operate.	USE TEST MODE1 (forced COOLING). If less than 7 minutes pass after compressor shuts off, don't press the KEY and wait.	COMPRESSOR locked or blocked. OLP, PTC is poor. COMPRESSOR RELAY is poor.	Replace COMPRESSOR. Replace OLP, PTC. Replace MAIN PWB.
		2. If refrigerant is leaking.	Measure the amount of frost sticking on EVAPORATOR and the surface temperature of the condenser pipe.	Refrigerant leakage.	Replace the leaking part and replace any lost refrigerant.
	FREEZER TEMPERATURE is incorrect	1. If FANMOTOR operates.	USE TEST MODE1 (forced COOLING).	FAN MOTOR is poor.	Replace the FAN MOTOR.
				CONNECTING WIRE is poor.	Certify the MOTOR and the connection of the black wire of the MAIN PWB CONNECTOR (CON2).
		2. If DEFROSTING is normal.	Check the amount of frost sticking on the EVAPORATOR.	DEFROSTING is poor.	See DEFROSTING is poor.
		3. If SENSOR is normal.	Check the resistance of the Refrigerator SENSOR.	SENSOR RESISTANCE is poor.	Replace SENSOR.
		4. Door Line contact.	Check the seal when the door is closed.	Door liner damaged.	Replace door liner.

PROBLEM	INDICATED BY	CHECK	CHECKING METHOD	CAUSE	SOLUTION
COOLING is poor.	If REFRIGERATOR TEMPERATURE is too low.	1.If FREEZER TEMPERATURE Is normal.	Check is FREEZER TEMPERATURE too low.		Make sure the DOOR is attached.
		2. If amount of cool air from FAN MOTOR is sufficient.	Make sure that the amount and speed of cool air are sufficient by touching the check supplied on the REFRIGERATOR.	FAN MOTOR is poor. Passage of cool air is blocked. EVA frozen.	Replace FAN MOTOR. Remove impurities. See DEFROSTING is poor .
		3. Door Line contact.	Check door seal when door is closed.	Door liner damaged.	Replace Door liner.
DEFROSTING is poor.	NO DEFROSTING.	1. If HEATER emits heat.	USE TEST MODE2 (forced DEFROSTING).	HEATER disconnection.	Replace HEATER.
				TEMPERATURE FUSE disconnection.	Replace TEMPERATURE FUSE.
				Connection is poor.	Check EVAPORATOR connection and wire of MAIN PWB CONNECTOR.
				DEFROST-SENSOR is poor.	Replace DEFROST-SENSOR.
				HEATER RELAY is poor.	Replace RY2 of MAIN PWB.
				DRAIN PIPE is blocked.	Remove ice and impurities. Check HEATER PLATE resistance.
		2. If DRAIN PIPE is blocked.	Check DRAIN PIPE.		
		3. If ice remains after DEFROSTING.	Make sure that DEFROST SENSOR is connected.	Connection is poor.	Reassemble the DEFROST-SENSOR.
			Make sure that FREEZER / REFRIGERATOR DOOR is closed.	DOOR does not close properly.	Reassemble DOOR. Replace GASKET.

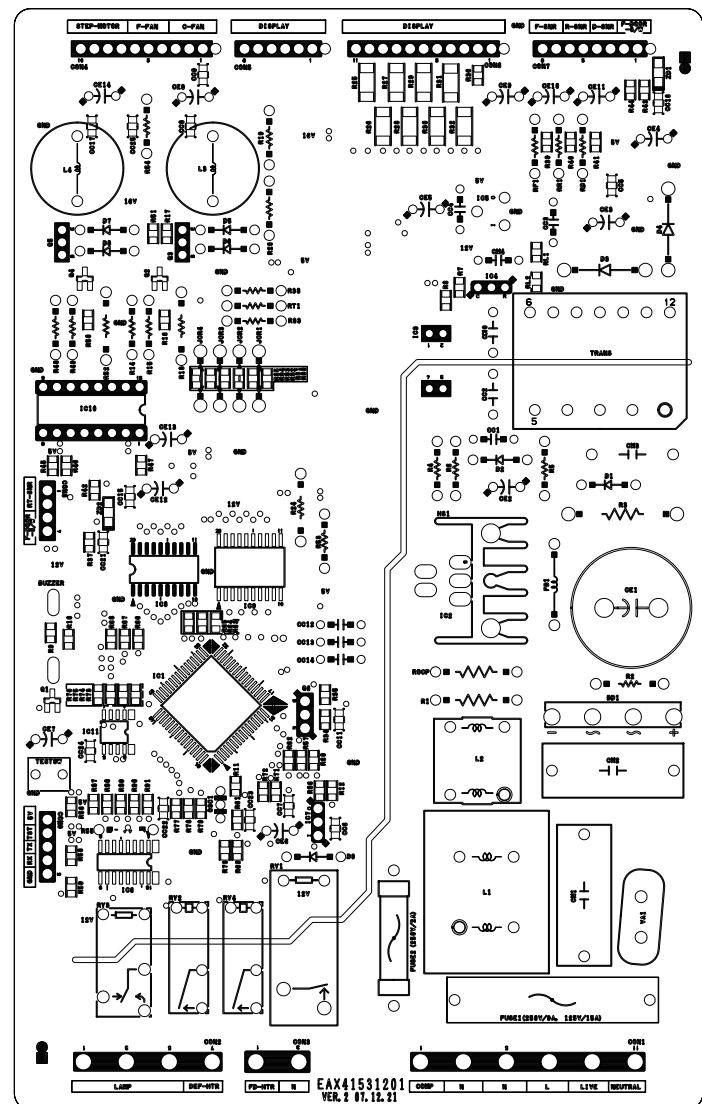
8-5 MAIN PWB ASSEMBLY AND PARTS LIST

8-5-1 Main PWB Assembly

TOP VIEW



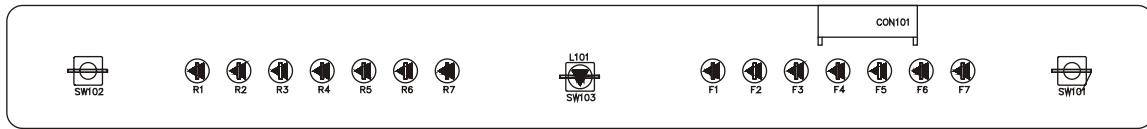
BOTTOM VIEW



8-5-2 Replacement Parts List

No	P/N	DESCRIPTION	SPEC	MAKER	REMARK
1	EAX4F53201	PMW(PCB)	BRAVO30 PJT, 2BLDC VER. 2	DOO SAN	T1,L6
2	6170.B2012A	TRANSFORMER,SMPS COIL 1	DL-PJT 2,9M+20W		TRANS
3	6170.B2012B	TRANSFORMER,SMPS COIL 1	GR-207,BLDC 100V-127V		TRANS
4	6170.B2012C				
5	EAF36638801	PROTECT DEVICE,FUSE	62NR GLASS 250V 5A KS AXIAL BK	ORISEL	FUSE1
6	EAF36638802	PROTECT DEVICE,FUSE	62NR GLASS 250V 15A KS AXIAL BK	ORISEL	FUSE1
7	6FZZJ63001A	PROTECT DEVICE,FUSE	250V 12A 55000H(SLOW BLOW) LITTELFUSE TRIAD	ORISEL	FUSE2
8					
9					
10	6630V00111	CONNECTOR (CIRC),WAFER	YH36 YEONHO 1P 3,95MM YH36-11AV (1P,2,4,6,8,10)	YEON HO	CON1
11	6630A09106C	CONNECTOR (CIRC),WAFER	YH36-07AV YEONHO 7PIN 3,95MM STRAIGHT SN	YEON HO	CON2
12	6630A09106A	CONNECTOR (CIRC),WAFER	YH36-03AV 3P 3,95MM IR STRAIGHT	YEON HO	CON3
13	6630.B8004J	CONNECTOR (CIRC),WAFER	SW250-02P 10P 2,50MM IR STRAIGHT	YEON HO	CON4
14	6630.B8004E	CONNECTOR (CIRC),WAFER	SW250-06P 6P 2,50MM IR STRAIGHT	YEON HO	CON5
15	6630.B8004K	CONNECTOR (CIRC),WAFER	SW250-11P 11P 2,50MM IR STRAIGHT	YEON HO	CON6
16	6630.B8004G	CONNECTOR (CIRC),WAFER	SW250-08P 8P 2,50MM IR STRAIGHT	YEON HO	CON7
17	6630.B8004C	CONNECTOR (CIRC),WAFER	SW250-04P 4P 2,50MM IR STRAIGHT	YEON HO	CON8
18	6630.B8004D	CONNECTOR (CIRC),WAFER	SW250-09P 9P 2,50MM IR STRAIGHT	YEON HO	CON9
19					
20	6102W5V007A	VARIATOR	NR14033IK 330V 10% UL/CSA-VDE BK ILJIN	IL JIN	VAI
21					
22	6102.B8001B	VARIATOR	SVC330-14A SAMHWA UL/VDE BK 620V	SAMHWA, IL JIN	
23	6920000001A	RELAY	ALEFBI2 MATSUSHITA 250VAC 16A 12VDC IA NO VENTING,1POLE	MATSUSHITA	RY1
24	6920.B2009B	RELAY	65B-14 OMRON 250VAC 5A 12VDC IC NO VENTING,1POLE	OMRON	RY3
25	6212B30041A	OSCILLATOR,RESONATOR,CERAMIC	CSTLSAM00653-A0 MURATA 4MHz +/-0.5% TA 15PF	MURATA	OSC1
26					
27	EAN4A005901	IC,MICROCONTROLLERS	TM86FS49AFG TOSHIBA 64P BULK FLASH BRAVO30 ENERGY STAR 10B	TOSHIBA	IC1
28	EAN4A005902	IC,MICROCONTROLLERS	TM86FS49AFG TOSHIBA 64P BULK FLASH BRAVO30 BETTER ENERGY STAR 10B	TOSHIBA	
29	EAN4A005903	IC,MICROCONTROLLERS	TM86FS49AFG TOSHIBA 64P BULK FLASH WINNER2 GOOD/BETTER ENERGY STAR 10B	TOSHIBA	
30	EAN4A005904	IC,MICROCONTROLLERS	TM86FS49AFG TOSHIBA 64P BULK FLASH WINNER2 BEST ENERGY STAR 10B	TOSHIBA	
31	EAN4A005905	IC,MICROCONTROLLERS	TM86FS49AFG TOSHIBA 64P BULK FLASH BRAVO30 BASIC	TOSHIBA	
32					
33	01PMGK5001A	IC,IC	STR-66351 15,810V,4V 9,110V,1V SWITCHING REGULATOR ZIP ST 5P	SANKEN	IC2
34	01PMGK5001A	PHOTO,COUPLER	PC26GL1-1-V NEP 4P DIP BK - TLP72IF	NEC	IC3
35	01K420000A	IC,VOLTAGE REGULATOR	K1A41 3P 250V 700NM 102P 2P 3P	KEC	IC4
36	01K420000W	IC,VOLTAGE REGULATOR	K1A780SAP1 T020V 5V 2M 1022015 ST 3P	KEC	IC5
37	01K6500030C	IC,LED DRIVER	K1D65003AF 16 50P BK 70H DRIVE	KEC	IC6
38	01K6704200A	IC,VOLTAGE DETECTOR	K1A7042P -0,37015V 4,2V 400NM T092 TP RESET 3P	KEC	IC7
39	01STLM0001A	IC,LOGIC IC	M54563FP MITSUBISHI 20 R/TP CONVERT	MITSUBISHI	IC8
40	01K6500030B	IC,LED DRIVER	K1D6503AF -0,51010V -0,51050V 350NM DIP ST 20P	KEC	IC9
41	EAN4A10001	IC,LED DRIVER	ULN8839AF DV 10 30V -0,5V TO 30V 480NM SOL R/TP 18P	TOSHIBA	
42	01T077400A	IC,MOTOR DRIVER	TA7774AP 16,SDIP BK DRIVE,IC STEPPING MOTOR	TOSHIBA	IC10
43	01R4934600D	IC,EEPROM	BR93LC46RF 16 BPIN 50P BK EEPROM,1KBIT	ROHM	IC11
44					
45	01STLC0005A	TRANSISTOR,BIPOLAR	KRC106S KEC 50T-73 TP TRANSISTOR	KEC	Q1
46	01R4930052A	TRANSISTOR,BIPOLAR	KTC3875S NPN 5V 60V 150MA 100NA 70T0700 150NM 50T23 R/TP 3P	KEC	Q2,Q4
47	01R4930009A	TRANSISTOR,BIPOLAR	KTB151 PNP -7V -60V -60V -5A -0,00004 160T0400 1,5W 10T26 ST 3P	KEC	Q3,Q5
48	01R319809AA	TRANSISTOR,BIPOLAR	KTC3198IKTC1951 NPN 5V 60V 50V 150MA 100NA 70T0700	KEC	Q6
49					
50	003630000AA	DIODE,BRIDGE	D36M40 600V 1,05V 10A 80A SIP ST 4P 4	SHINDENGEN	BD1
51	003630000A	DIODE,DIODE	RL25 60 5 5V 5 45T05 72V 130MM 500MM 1L34 R/TP 2P 1	ROHM	D2,D22
52	003107009AA	DIODE,RECTIFIER	FR107 TP RECTRON D041 1000V 1A 30A 500SEC 5A	DELTA	D1,D2,D5-D8
53	00PSA00070A	DIODE,RECTIFIER	RL2 BK SANKEN D041 400V 2,0A 0A 0,6SEC 10A	SANKEN	D3,D4
54	00D040409AC	DIODE,RECTIFIER	IN4004(58MM) TP D0204AL 400V 1A 30A 30UA	DELTA	D9
55					
56	6210.B8001A	FILTER,BEAD	BFS5610AL 1500HM 3,5X10MM AXIAL TP	SAM IHA	FBI
57	6200.B3004A	FILTER,LINE NOISE	CV97020 7A 2H	TNC	L1
58	EAM5020201D	FILTER,LINE NOISE	CV93240 TNC BK 1,3A 24H	TNC	L2
59	0LR00M4F0	INDUCTOR,WIRE WOUND,RADIAL	NH510400 1MH 20V 1,5KV 1A 10HM 60HZ 1 NON SHIELD 16,5MM x17MM 12MM TR	TNC	L3,L4
60	0004741867D	CAPACITOR,FILM BOX	0,47UF 20% 275V MPP -40T0+B5C NON-IND 26X11,5X1MM 22,5MM BK	PILKOR	OM,OM2
61	007431V17D	CAPACITOR,FILM BOX	0,047UF 0,105PF 630V PP -10T0+B5C IND 12,5X10X1MM 12,5MM BK	PILKOR	OM3
62	00X1040K949	CAPACITOR,CERAMIC,AXIAL	1000F -20T0+B0Z 50V Y5V -25T0+B5C 3,5X1,9MM 1,5MM TA52	SAM IHA	OM4
63					
64	00C4762V6E0	CAPACITOR,AL,RADIAL	47UF 20% 450V 550MA -25T0+105C W 2000HR 22X25MM 10MM SNAP IN BK	SAM IHA,SAM YOUNG	CE1
65	00C2298K638	CAPACITOR,AL,RADIAL	22UF 20% 50V 75MA -25T0+105C W 1000HR 5X11MM 5MM FORMING TP	SAM IHA,SAM YOUNG	CE2
66	00C687Y14E0	CAPACITOR,AL,RADIAL	680UF 20% 25V 75MA -25T0+B0Z RD 2000HR 10X12,5MM 10MM DIP BK	SAM IHA,SAM YOUNG	CE3
67	00C687Y14B1	CAPACITOR,AL,RADIAL	680UF 20% 35V 740MA -25T0+105C W 2000HR 12,5X16MM 5,08MM STRAIGHT TP	SAM IHA,SAM YOUNG	CE4
68	00C2278F638	CAPACITOR,AL,RADIAL	220UF 20% 16V 25MA -25T0+105C LP 1000HR 8X11,5MM 5MM FORMING TP	SAM IHA,SAM YOUNG	CE5
69	00C105K638	CAPACITOR,AL,RADIAL	10UF 20% 50V 13MA -25T0+105C W 5X11MM 5MM FORMING TP	SAM IHA,SAM YOUNG	CE6,CE13
70	00C4768K638	CAPACITOR,AL,RADIAL	47UF 20% 16V 25V 20% 15,15,15	SAM IHA,SAM YOUNG	CE7
71	00C2278K638	CAPACITOR,AL,RADIAL	220UF 20% 25V 177MA -25T0+105C LP 1000HR 8X11,5MM 5MM FORMING TP	SAM IHA,SAM YOUNG	CE8,CE14
72	00C105K638	CAPACITOR,AL,RADIAL	10UF 20% 50V 54MA -25T0+105C W 5X11MM 5MM FORMING TP	SAM IHA,SAM YOUNG	CE9,CE12
73					
74	EAC34823301	CAPACITOR,CERAMIC,RADIAL	2,2HF 20% 250V SD -25T0+B5C 9X7MM 5MM BK	SAM IHA	CC2,CC10
75	00X470K519	CAPACITOR,CERAMIC,AXIAL	4700F -20T0+B0Z 50V Y5P -20T0+B5C 2,3X2,0MM 10MM TA52	SAM IHA	CC1
76	00X1040K949	CAPACITOR,CERAMIC,AXIAL	0,1UF -20T0+B0Z 50V Y5V -25T0+B5C 3,5X1,9MM 1,5MM TA52	SAM IHA	CC3,CC4
77	00X2230K949	CAPACITOR,CERAMIC,AXIAL	22nF -20T0+B0Z 50V Y5V -25T0+B5C 3,5X1,9MM NONE TA52	SAM IHA	CC2,CC4
78					
79	00X1040K94A	CAPACITOR,CERAMIC,CHIP	0,1UF,2012,50V,B0Z-20%,F1Y5V1,R/TP	MURATA	CC5-CC7,CC23,CC24
80	00X2230K96A	CAPACITOR,CERAMIC,CHIP	22NF -20T0+B0Z 50V X7R -25T0+125C 2012 TP	MURATA	CC8,CC15-CC17,CC21,CC22
81	00X1020K96A	CAPACITOR,CERAMIC,CHIP	1nF 20% 50V X7R -25T0+125C 2012 TP	MURATA	CC9,CC11,CC25
82					
83	EB3C32066401	RESISTOR,SURGE	PRC-03 330K0HM 5% 1/8 12X4MM 0M AXIAL TA52	SMART	R1
84	EB3C3763101	RESISTOR,SURGE	PRC 560K0HM 5% 1/8 10X4MM 26MM AXIAL BK	SMART	R2
85	EB3C32066501	RESISTOR,SURGE	PRC-04 560K0HM 5% 2M 15,0X5,9MM 12,5MM AXIAL BK	SMART	R3
86	0R06901609	RESISTOR,CARBON FILM	6,8K0HM 5% 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R4
87	0R047006609	RESISTOR,CARBON FILM	47 04M 1/4W 15% TA52	SMART	R5
88	0R069006609	RESISTOR,CARBON FILM	6800HM 5% 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R6
89	0R5010L609	RESISTOR,METAL OXIDE FILM	10HM 5% 1/4W 9,0X3,0MM - AXIAL TA52	SMART	ROCP
90	0R5010L609	RESISTOR,METAL OXIDE FILM	1,20HM 5% 1/4W 9,0X3,0MM NONE AXIAL TA52	SMART	ROCP
91	0R03901609	RESISTOR,CARBON FILM	3,9K0HM 5% 1/4W 6,5X2,3MM - AXIAL TA52	SMART	R15,R49
92	0R05014609	RESISTOR,CARBON FILM	1,5K0HM 5% 1/2W 9,0X3,0MM - AXIAL TA52	SMART	R16,R52
93	0R03010609	RESISTOR,CARBON FILM	30HM 5% 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R17,R35,R53,R55
94	0R024004609	RESISTOR,CARBON FILM	240HM 5% 1/2W 9,0X3,0MM 26,0MM AXIAL TA52	SMART	R24
95	0R04701609	RESISTOR,CARBON FILM	4,7K0HM 5% 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R14,R20,R33,R48,R54
96	0R26126409	RESISTOR,METAL FILM	26,1K0HM 1/4W 1%,TA52	SMART	R10,R11
97	0R10026409	RESISTOR,METAL FILM	10K0HM 1/2 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R11
98	0R16G26409	RESISTOR,METAL FILM	16,2K0HM 1/2 1/4W 6,5X2,3MM NONE AXIAL TA52	SMART	R11
99					
100	0R1001E672	RESISTOR,CHIP	10K0HM 5% 1/8W 2012 R/TP	ROHM	R7,R9
101	0R1910E472	RESISTOR,CHIP	9,1K0HM 1% 1/8W 2012 R/TP	ROHM	RL1
102	0R1240E472	RESISTOR,CHIP	2,4K0HM 1% 1/8W 2012 R/TP	ROHM	RL2
103	0R0201E672	RESISTOR,CHIP	200HM 5% 1/8W 2012 R/TP	ROHM	R18,R35,R37,R39,R44
104	0R0202E672	RESISTOR,CHIP	10K0HM 5% 1/8W 2012 R/TP	ROHM	R16,R45,R47,R50,R63-R72,R77-R85
105	0R4701L622	RESISTOR,CHIP	4,7K0HM 1/8W 5%,2012,D	ROHM	R12,R34,R56,R59,R73-R76,R87-R91
106	0R1240H680	RESISTOR,CHIP	2400HM 5% 1/2W 5025 R/TP	ROHM	R25-R32
107	0R4220L622	RESISTOR,CHIP	2200HM 5% 1/8W 2012 R/TP	ROHM	R10
108	0R1004L622	RESISTOR,CHIP	10K0HM 1/8W 5%,2012,R/TP	ROHM	R11
109	0R1001L622	RESISTOR,CHIP	100HM 5% 1/8W 2012 R/TP	ROHM	R17,R51
110	0R1000L622	RESISTOR,CHIP	1000HM 5% 1/8W 5%,2012,R/TP	ROHM	R36,R36
111	0R1500E672	RESISTOR,CHIP	1500HM 5% 1/8W 2012 R/TP	ROHM	R60-R62
112					
113					
114	15P030241B	SCREW,TAPTITE	BH + 5 3MM 6MM NSHR FZY	HAENG SUNG	-
115	4920.B3007A	HEAT SINK	23,3X17,25 DRIVE IC STR R-954,65,73 2PIN I-SCREW 3MM	11C21	11C21
116	6908.B3002F	BUZZER,PIEZO	B50B 30V 24X26,5X7MM PIN	DAE YOUNG	BUZZER
117	68F4B50001A	JUMP WIRE	0,6MM 52MM TP TAPING SN	DAE A LEAD	JCR1-JCR4, FBI15MM1
118	6600R00000B	SWITCH,TACT	JPT122B JEIL 12VDC 50MA	NAME	TEST 5/V
119	5500000000A	SOLDER (TROSIN WIRE) RSD	SR-34 RB-FREE, LFM-4B		-
120	55MMJ1.L05A	SOLDER, SOLDERING	LFM-35 SN 3,0MG -0,50Z, 3,0MM	HUSUNG	-
121	7245Z80004A	FLUX	SV-PBF-06 KSK 12,5 WTX 0,8B5+ 0,003	KOKI	-

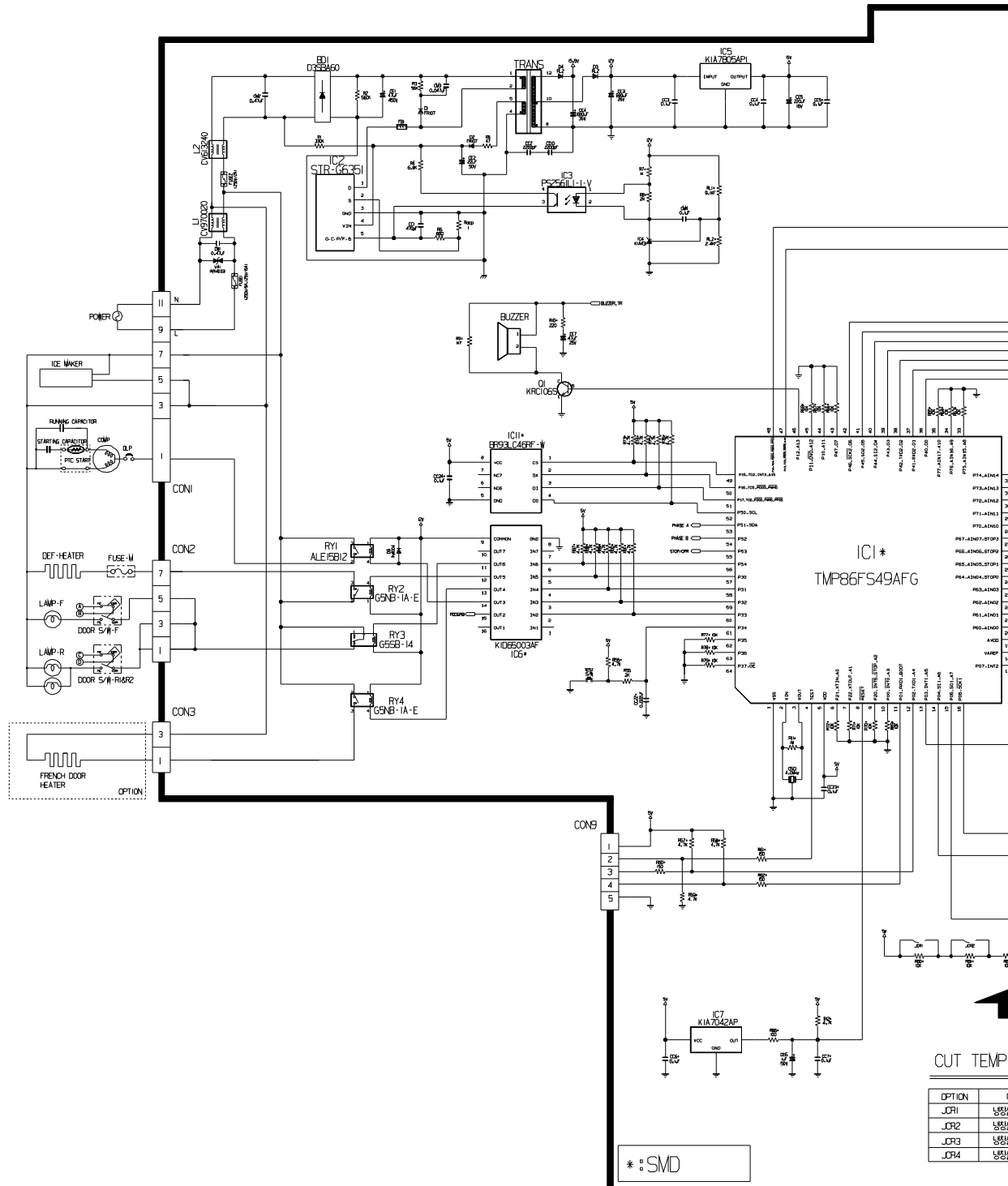
8-5-3 PWB Assembly, Display and Parts List

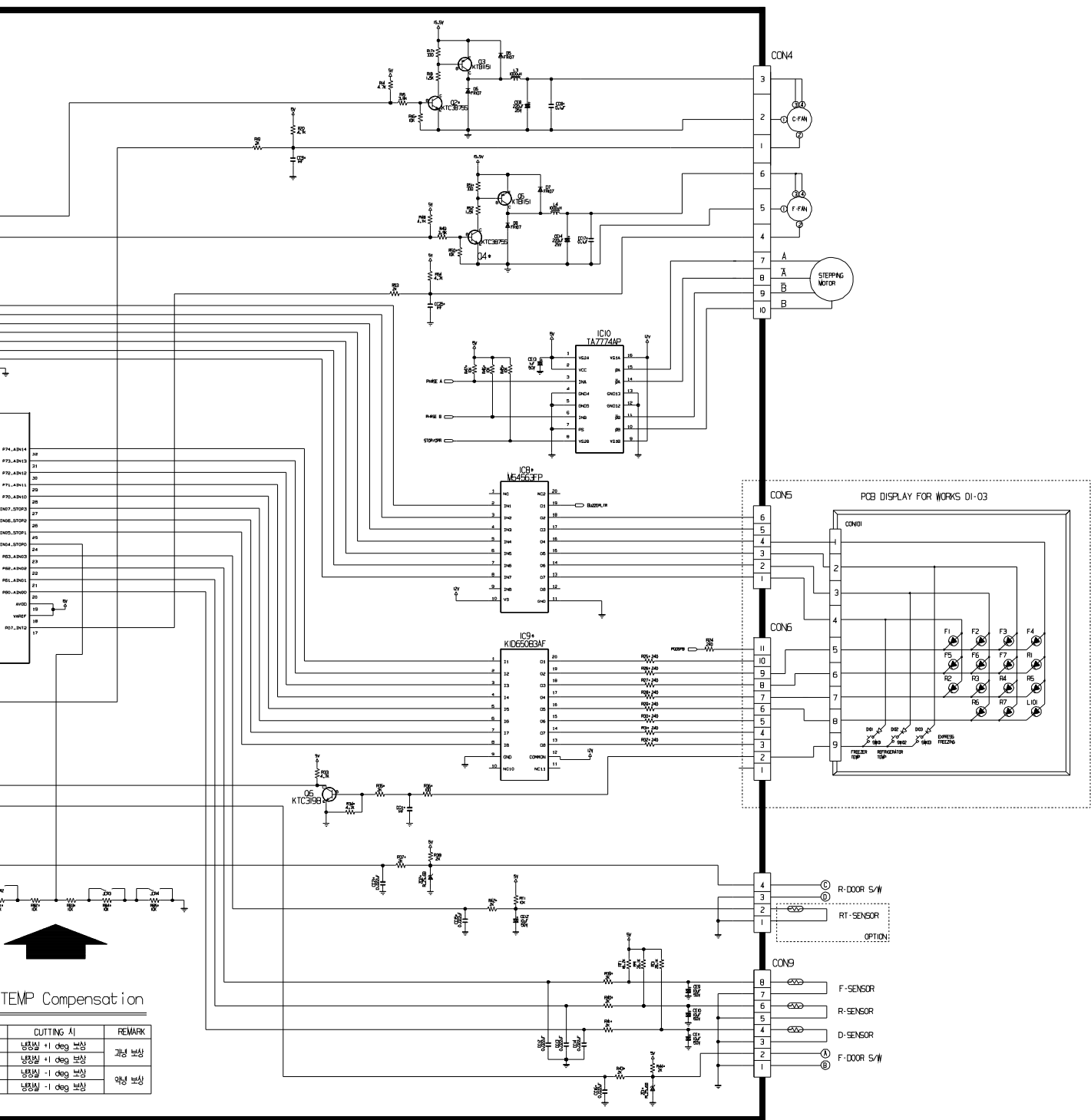


Qty	No	P/NO	DESCRIPTION	SPEC	MAKER	REMARK
1	1	6870JB8091A	PWB(PCB)	KS-PJT GOOD/BETTER DISPLAY	DOO SAN	t=1.6
	2					
1	3	6630AQ9159H	WAFER	SMAW250-09	YEON HO	CON101
	4					
2	5	6600RRT002K 6600JB8005A	SWITCH,TACT	JTP1230A JEIL 12V DC 50MA KPT-1105A	JEIL KYUNG IN	SW101,102
1	6	-	TACT S/W	KPT-1109G	KYUNG IN	SW103
14	7	0DLLE0019AA	LED	LT1824-81-BCM TP GREEN 2		R1~R7,F1~F7
3	8	0DD414809AA	DIODE,SWITCHING	1N4148 26MM	PYUNG CHANG DELTA	D101,102,103
12	10	6854B50001A	JUMP WIRE	0.6MM 52MM TP TAPING SN <10MM>	-	J101~J112
	11					
-	12	9VWF0120000	SOLDER(ROSN WIRE) RS0	D1.20	HEE SUNG	-
out	13	49111004	SOLDER,SOLDERING	H63A	-	-
0.0005	14	59333105	FLUX	SGJ0.825-0.830 KOREA F.H-206	KOKI	-

8-6 PWB DIAGRAM

8-6-1 PWB Main Assembly

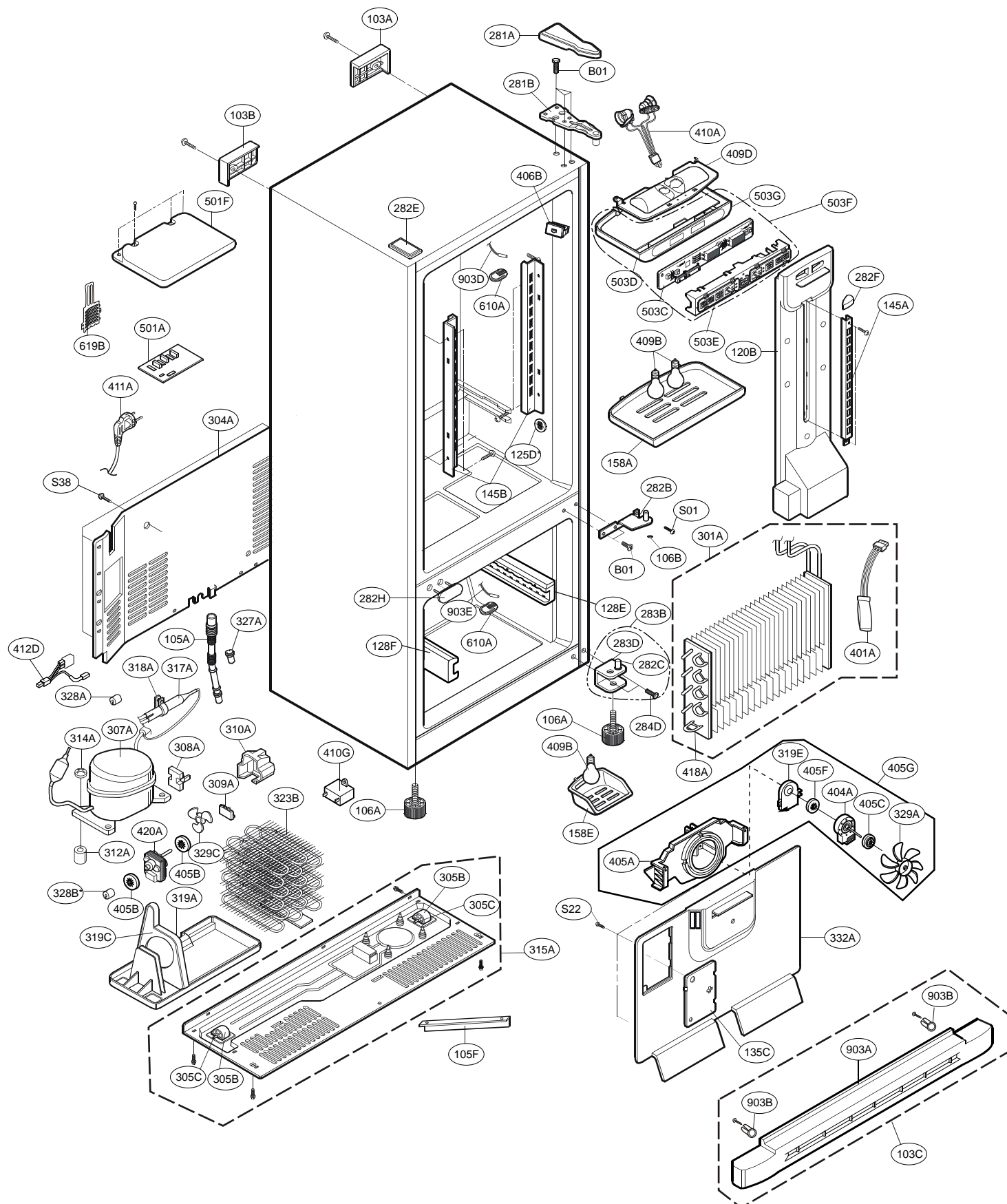




9. EXPLODED VIEW AND REPLACEMENT PARTS LIST

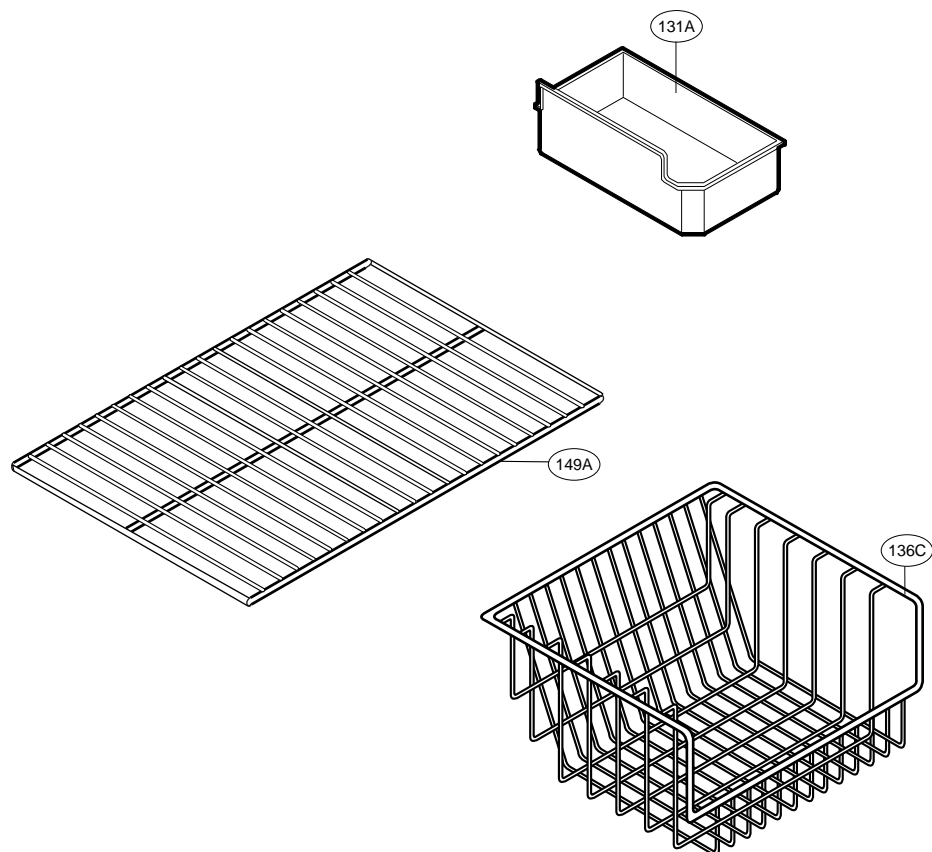
CASE PARTS

CAUTION: Use the part number to order part, not the position number



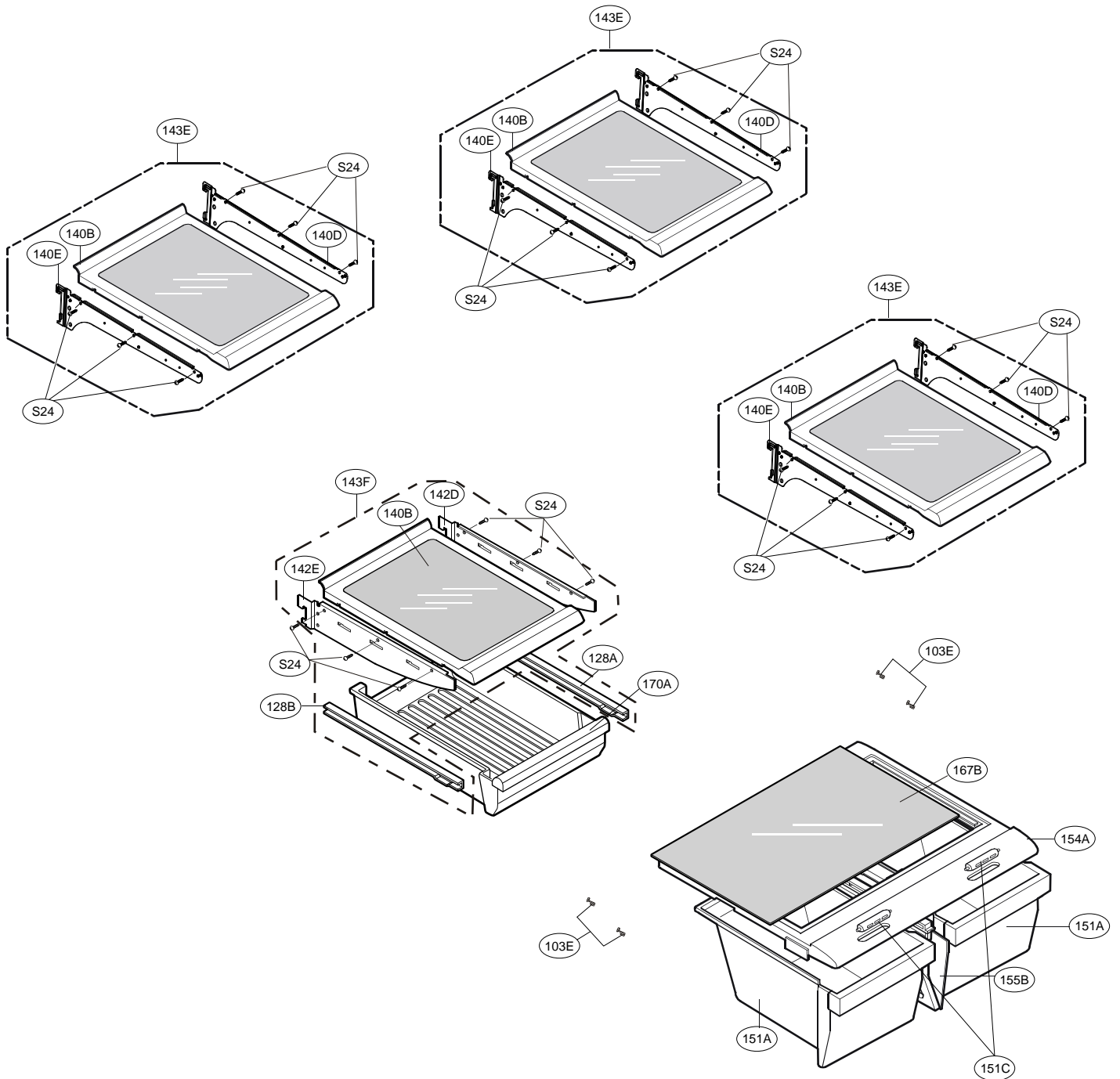
FREEZER PARTS

Caution: Use the part number to order part, not the position number



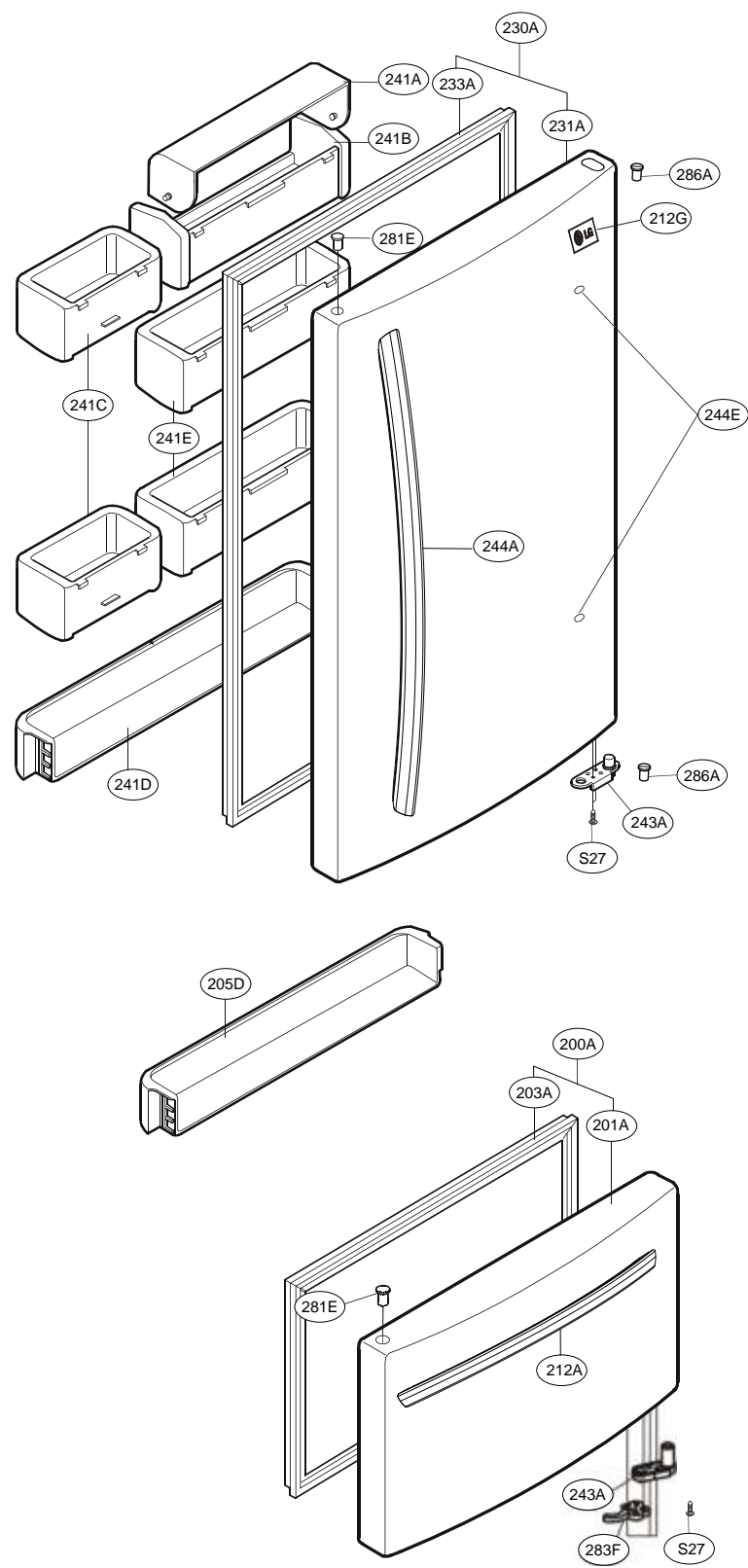
REFRIGERATOR PARTS

Caution: Use the part number to order part, not the position number.



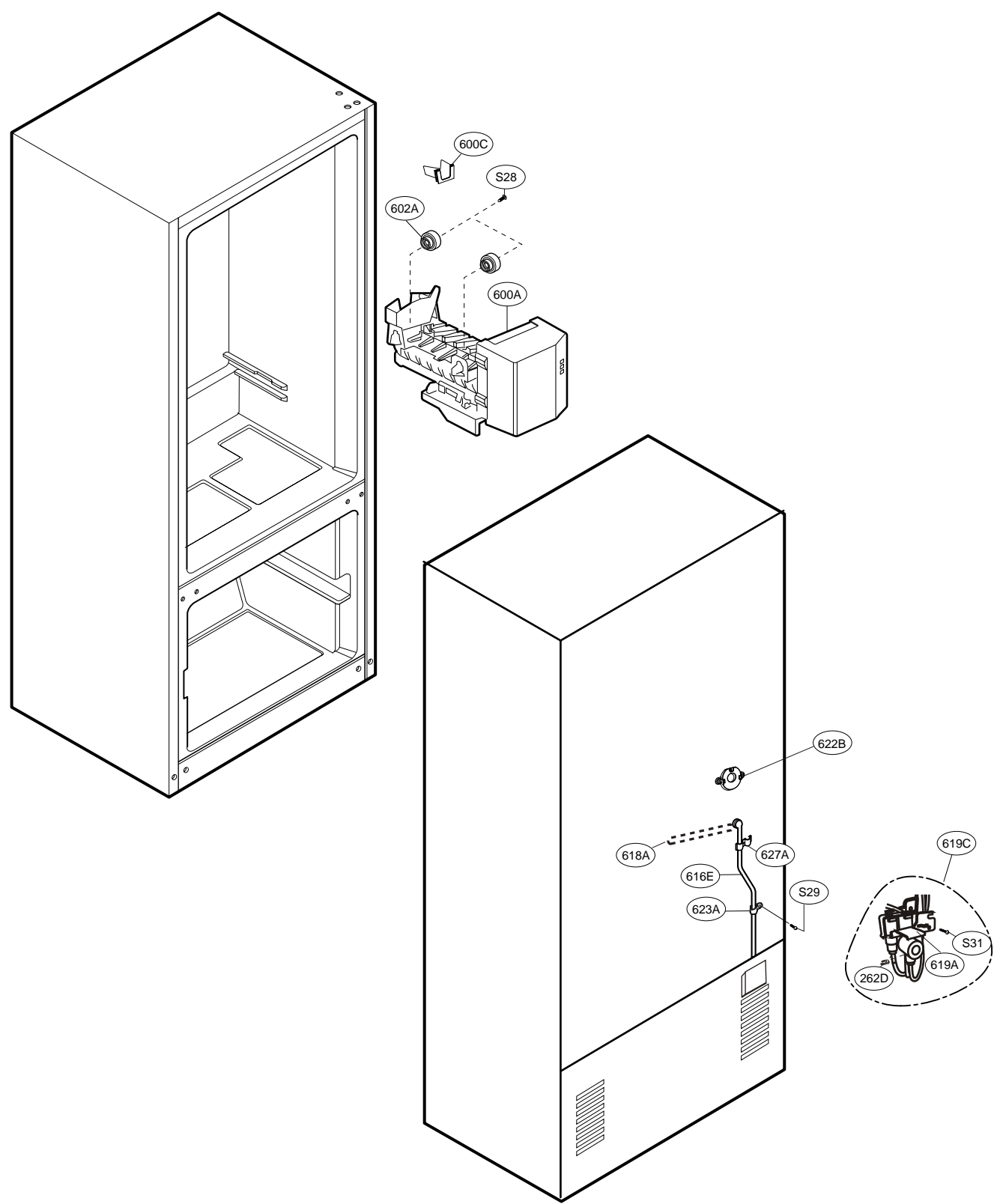
DOOR PARTS

CAUTION: Use the part number to order part, not the position number.



ICE AND WATER PARTS

CAUTION: Use the part number to order part, not the position number.



LBC22520TT

LOC NO	PART NO	DESCRIPTION	LOC NO	PART NO	DESCRIPTION
103A	3650JJ2003H	Handle,Rear	305C	4J04238A	Pin,Common
103B	3650JJ2003D	Handle,Rear	307A	2521JJ8008B	Compressor,Set Assembly
103C	3551JJ1015H	Cover Assembly,Lower	308A	6748JJ8005B	Thermistor,PTC
103E	5218JJ3001A	Rail,Slide	309A	6750JJ8004B	Overload Protect
105A	5250JA2009B	Tube,Drain	310A	3550JJ8003A	Cover,PTC
105F	5070JJ3002A	Skirt,Lower	312A	5040JA3031A	Damper,Compressor
106A	4779JA2003A	Leg Assembly,Adjust	314A	4620JA3009A	Stopper,Compressor
106B	4J00382C	Washer,Common	315A	3103JJ1001J	Base Assembly,Compressor
120B	5209JJ1002A	Duct Assembly,Multi	317A	5851JJ2002F	Drier Assembly
125D	4930JJ3007A	Holder,Bracket	318A	4930JA3034A	Holder,Drier
128A	4975JJ2002A	Guide Assembly,Rail	319A	3390JJ0004A	Tray,Drip
128B	4975JJ2002B	Guide Assembly,Rail	319C	MEA41997401	Guide,Fan
128E	4930JJ1012A	Holder,Rail	319E	4810JJ2005A	Bracket,Motor
128F	4930JJ1012B	Holder,Rail	323B	5403JJ1007A	Condenser Assembly,Wire
131A	5074JJ1017A	Bucket,Ice	327A	5006JA3034A	Cap,Drain Tube
135C	3550JJ2030A	Cover,Grille Fan	328A	4J03020A	Damper,Pipe
136C	3390JJ1057A	Tray,Drawer	329A	5901JJ1005A	Fan Assembly
140B	5027JJ2007B	Shelf Assembly,Refrigerator	329C	ADP36665702	Fan Assembly
140D	MHL38615403	Shelf,Net	332A	3531JJ1004A	Grille Assembly,Fan
140E	MHL38615404	Shelf,Net	401A	6615JB2005C	Controller Assembly
142D	5026JJ2001L	Shelf,Net	404A	4681JK1004A	AC Motor
142E	5026JJ2001M	Shelf,Net	405A	4811JJ2002A	Bracket Assembly,Motor
143E	5027JJ1008K	Shelf Assembly,Refrigerator	405B	5040JJ2001A	Damper,Motor Support
143F	5027JJ1008D	Shelf Assembly,Refrigerator	405C	5040JA2009B	Damper,Motor Support
145A	4930JJ2003A	Holder,Shelf	405F	5040JA2004B	Damper,Motor Support
145B	4930JJ2004A	Holder,Shelf	405G	4811JJ2002H	Bracket Assembly,Motor
149A	5026JJ1026A	SHELF,FREEZER	406B	6600JB1004A	Switch,Push Button
151A	3391JJ1038A	TRAY ASSEMBLY,VEGETABLE	409B	6912JB2004M	Lamp,Incandescent
154A	3550JJ1108A	Cover,TV	409D	3034JJ1002B	Reflector,Lamp
155B	4980JJ1016A	SUPPORTER,COVER TV	410A	6621JK2002D	Drawing,Assembly
158A	3550JJ1040A	Cover,Lamp	410G	0CZZJB2012J	Capacitor,Electric Appliance Film,Box
158E	MCK3006901	Cover,Lamp	411A	6411JK1006A	Power Cord Assembly
167B	4890JL1002H	Shelf,Glass	412D	6877JK2011B	Drawing,Assembly
170A	3391JJ2018A	Tray Assembly,Meat	418A	5300JB1100J	Heater,Sheath
200A	3581JJ8020X	Door Assembly,Freezer	420A	4681JB1029J	Motor,DC
201A	ADD55827503	Door Foam Assembly,Freezer	501A	EBR41531303	PCB Assembly,Main
203A	4987JJ1004Z	Gasket Assembly,Door	501F	3551JJ1020A	Cover Assembly,PCB
205D	5004JJ1040A	Basket,Door	503C	6871JB2047A	PCB Assembly,Display
212A	AED37133109	Handle Assembly,Freezer	503D	3110JJ1005A	Case,Display
212G	3846JD1007H	Name Plate	503E	3550JJ2031A	Cover,Display
230A	3581JJ8716K	Door Assembly,Refrigerator	503F	ABQ33905301	Case Assembly,Display
231A	ADD30931304	Door Foam Assembly,Refrigerator	503G	3806JL1049A	Decor,Control
233A	ADX52752603	Gasket Assembly,Door	600A	5989JA0002N	Ice Maker Assembly,Kit
241A	3550JL2003H	Cover,Tray	600C	MEA32865501	Guide,Tube
241B	5004JJ1021A	Basket,Door	602A	4931JA3005B	Holder Assembly,Bracket
241C	5005JJ2017A	Basket Assembly,Door	610A	3550JJ2020A	Cover,Sensor
241D	5005JJ2020A	Basket Assembly,Door	616E	5211JA2003B	Tube Assembly,Inject
241E	5005JJ2018A	Basket Assembly,Door	618A	5210JJ3006B	Tube,Inject
243A	4620JJ3006D	Stopper,Door	619A	5220JA2009D	Valve,Water
244A	AED37082901	Handle Assembly,Refrigerator	619B	3550JJ2024A	Cover,Valve
244E	5006JJ3016D	Cap,Handle	619C	AJU55759301	Valve Assembly,Water
262D	4004JA3002A	Clip	622B	MJH36429401	Supporter,Tube Guide
281A	3550JJ2013D	Cover,Hinge	623A	4770JA3001A	Band
281B	4775JJ2003B	Hinge Assembly,Upper	627A	4930JA3054A	Holder,Pipe
281E	5006JJ3014D	Cap,Hinge	903A	3550JJ0006D	Cover,Lower
282B	4775JJ8002H	Hinge Assembly,Center	903B	4930JJ2021A	Holder,Cover(Lower)
282C	1PZZJJ3002F	Pin,Common	903D	6500JK1003A	Sensor
282E	5006JJ2001G	Cap,Hinge	903E	6500JK1004A	Sensor
282F	3806JL2006F	Decor,Duct	B01	1STZJA3004F	Screw,Customized
282H	5006JJ3004F	Cap,Hinge	S01	1SZZJJ3010A	Screw,Customized
283B	4775JJ2007B	Hinge Assembly,Lower	S22	J47100001J	Screw,Customized
283D	4774JJ2002A	Hinge,Lower	S24	1SZZJA3011B	Screw,Customized
283F	MJB36873202	Stopper,Door	S27	4J01424C	Screw,Customized
284D	1STZJA3004K	Screw,Customized	S28	1SZZJJ3005E	Screw,Customized
286A	4984JJ3003A	BUSH	S29	4J00415D	Screw,Customized
301A	5421JJ1001B	Evaporator Assembly	S31	4000W4A003A	Screw,Customized
304A	3551JJ2008B	Cover Assembly,Machinery(Rear)	S38	4J00415D	Screw,Customized
305B	4580JJ3001A	Roller			

LBC22520ST

LOC NO	PART NO	DESCRIPTION	LOC NO	PART NO	DESCRIPTION
103A	3650JJ2003H	Handle,Rear	305C	4J04238A	Pin,Common
103B	3650JJ2003D	Handle,Rear	307A	2521JJ8008B	Compressor,Set Assembly
103C	3551JJ1015H	Cover Assembly,Lower	308A	6748JJ8005B	Thermistor,PTC
103E	5218JJ3001A	Rail,Slide	309A	6750JJ8004B	Overload Protect
105A	5250JA2009B	Tube,Drain	310A	3550JJ8003A	Cover,PTC
105F	5070JJ3002A	Skirt,Lower	312A	5040JA3031A	Damper,Compressor
106A	4779JA2003A	Leg Assembly,Adjust	314A	4620JA3009A	Stopper,Compressor
106B	4J00382C	Washer,Common	315A	3103JJ1001J	Base Assembly,Compressor
120B	5209JJ1002A	Duct Assembly,Multi	317A	5851JJ2002F	Drier Assembly
125D	4930JJ3007A	Holder,Bracket	318A	4930JA3034A	Holder,Drier
128A	4975JJ2002A	Guide Assembly,Rail	319A	3390JJ0004A	Tray,Drip
128B	4975JJ2002B	Guide Assembly,Rail	319C	MEA41997401	Guide,Fan
128E	4930JJ1012A	Holder,Rail	319E	4810JJ2005A	Bracket,Motor
128F	4930JJ1012B	Holder,Rail	323B	5403JJ1007A	Condenser Assembly,Wire
131A	5074JJ1017A	Bucket,Ice	327A	5006JA3034A	Cap,Drain Tube
135C	3550JJ2030A	Cover,Grille Fan	328A	4J03020A	Damper,Pipe
136C	3390JJ1057A	Tray,Drawer	329A	5901JJ1005A	Fan Assembly
140B	5027JJ2007B	Shelf Assembly,Refrigerator	329C	ADP36665702	Fan Assembly
140D	MHL38615403	Shelf,Net	332A	3531JJ1004A	Grille Assembly,Fan
140E	MHL38615404	Shelf,Net	401A	6615JB2005C	Controller Assembly
142D	5026JJ2001L	Shelf,Net	404A	4681JK1004A	AC Motor
142E	5026JJ2001M	Shelf,Net	405A	4811JJ2002A	Bracket Assembly,Motor
143E	5027JJ1008K	Shelf Assembly,Refrigerator	405B	5040JJ2001A	Damper,Motor Support
143F	5027JJ1008D	Shelf Assembly,Refrigerator	405C	5040JA2009B	Damper,Motor Support
145A	4930JJ2003A	Holder,Shelf	405F	5040JA2004B	Damper,Motor Support
145B	4930JJ2004A	Holder,Shelf	405G	4811JJ2002H	Bracket Assembly,Motor
149A	5026JJ1026A	SHELF,FREEZER	406B	6600JB1004A	Switch,Push Button
151A	3391JJ1038A	TRAY ASSEMBLY,VEGETABLE	409B	6912JB2004M	Lamp,Incandescent
154A	3550JJ1108A	Cover,TV	409D	3034JJ1002B	Reflector,Lamp
155B	4980JJ1016A	SUPPORTER,COVER TV	410A	6621JK2002D	Drawing,Assembly
158A	3550JJ1040A	Cover,Lamp	410G	0CZZJB2012J	Capacitor,Electric Appliance Film,Box
158E	MCK30060901	Cover,Lamp	411A	6411JK1006A	Power Cord Assembly
167B	4890JL1002H	Shelf,Glass	412D	6877JK2011B	Drawing,Assembly
170A	3391JJ2018A	Tray Assembly,Meat	418A	5300JB1100J	Heater,Sheath
200A	3581JJ8020W	Door Assembly,Freezer	420A	4681JB1029J	Motor,DC
201A	ADD55827502	Door Foam Assembly,Freezer	501A	EBR41531303	PCB Assembly,Main
203A	4987JJ1004Z	Gasket Assembly,Door	501F	3551JJ1020A	Cover Assembly,PCB
205D	5004JJ1040A	Basket,Door	503C	6871JB2047A	PCB Assembly,Display
212A	AED37133109	Handle Assembly,Freezer	503D	3110JJ1005A	Case,Display
212G	3846JD1007H	Name Plate	503E	3550JJ2031A	Cover,Display
230A	3581JJ8716J	Door Assembly,Refrigerator	503F	ABQ33905301	Case Assembly,Display
231A	ADD30931303	Door Foam Assembly,Refrigerator	503G	3806JL1049A	Decor,Control
233A	ADX52752603	Gasket Assembly,Door	600A	5989JA0002N	Ice Maker Assembly,Kit
241A	3550JL2003H	Cover,Tray	600C	MEA32865501	Guide,Tube
241B	5004JJ1021A	Basket,Door	602A	4931JA3005B	Holder Assembly,Bracket
241C	5005JJ2017A	Basket Assembly,Door	610A	3550JJ2020A	Cover,Sensor
241D	5005JJ2020A	Basket Assembly,Door	616E	5211JA2003B	Tube Assembly,Inject
241E	5005JJ2018A	Basket Assembly,Door	618A	5210JJ3006B	Tube,Inject
243A	4620JJ3006D	Stopper,Door	619A	5220JA2009D	Valve,Water
244A	AED37082901	Handle Assembly,Refrigerator	619B	3550JJ2024A	Cover,Valve
244E	5006JJ3016D	Cap,Handle	619C	AJU55759301	Valve Assembly,Water
262D	4004JA3002A	Clip	622B	MJH36429401	Supporter,Tube Guide
281A	3550JJ2013D	Cover,Hinge	623A	4770JA3001A	Band
281B	4775JJ2003B	Hinge Assembly,Upper	627A	4930JA3054A	Holder,Pipe
281E	5006JJ3014D	Cap,Hinge	903A	3550JJ0006D	Cover,Lower
282B	4775JJ8002H	Hinge Assembly,Center	903B	4930JJ2021A	Holder,Cover(Lower)
282C	1PZZJJ3002F	Pin,Common	903D	6500JK1003A	Sensor
282E	5006JJ2001G	Cap,Hinge	903E	6500JK1004A	Sensor
282F	3806JL2006F	Decor,Duct	B01	1STZJA3004F	Screw,Customized
282H	5006JJ3004F	Cap,Hinge	S01	1SZZJJ3010A	Screw,Customized
283B	4775JJ2007B	Hinge Assembly,Lower	S22	J47100001J	Screw,Customized
283D	4774JJ2002A	Hinge,Lower	S24	1SZZJA3011B	Screw,Customized
283F	MJB36873202	Stopper,Door	S27	4J01424C	Screw,Customized
284D	1STZJA3004K	Screw,Customized	S28	1SZZJJ3005E	Screw,Customized
286A	4984JJ3003A	BUSH	S29	4J00415D	Screw,Customized
301A	5421JJ1001B	Evaporator Assembly	S31	4000W4A003A	Screw,Customized
304A	3551JJ2008B	Cover Assembly,Machinery(Rear)	S38	4J00415D	Screw,Customized
305B	4580JJ3001A	Roller			

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LOC NO	PART NO	DESCRIPTION	LOC NO	PART NO	DESCRIPTION
103A	3650JJ2003E	Handle,Rear	305B	4580JJ3001A	Roller
103B	3650JJ2003A	Handle,Rear	305C	4J04238A	Pin,Common
103C	3551JJ1015B	Cover Assembly,Lower	307A	2521JJ8008B	Compressor,Set Assembly
103E	5218JJ3001A	Rail,Slide	308A	6748JJ8005B	Thermistor,PTC
105A	5250JA2009B	Tube,Drain	309A	6750JJ8004B	Overload Protect
105F	5070JJ3002A	Skirt,Lower	310A	3550JJ8003A	Cover,PTC
106A	4779JA2003A	Leg Assembly,Adjust	312A	5040JA3031A	Damper,Compressor
106B	4J00382C	Washer,Common	314A	4620JA3009A	Stopper,Compressor
120B	5209JJ1002A	Duct Assembly,Multi	315A	3103JJ1001J	Base Assembly,Compressor
125D	4930JJ3007A	Holder,Bracket	317A	5851JJ2002F	Drier Assembly
128A	4975JJ2002A	Guide Assembly,Rail	318A	4930JA3034A	Holder,Drier
128B	4975JJ2002B	Guide Assembly,Rail	319A	3390JJ0004A	Tray,Drip
128E	4930JJ1012A	Holder,Rail	319C	MEA41997401	Guide,Fan
128F	4930JJ1012B	Holder,Rail	319E	4810JJ2005A	Bracket,Motor
131A	5074JJ1017A	Bucket,Ice	323B	5403JJ1007A	Condenser Assembly,Wire
135C	3550JJ2030A	Cover,Grille Fan	327A	5006JA3034A	Cap,Drain Tube
136C	3390JJ1057A	Tray,Drawer	328A	4J03020A	Damper,Pipe
140B	5027JJ2007B	Shelf Assembly,Refrigerator	329A	5901JJ1005A	Fan Assembly
140D	MHL38615403	Shelf,Net	329C	ADP36665702	Fan Assembly
140E	MHL38615404	Shelf,Net	332A	3531JJ1004A	Grille Assembly,Fan
142D	5026JJ2001L	Shelf,Net	401A	6615JB2005C	Controller Assembly
142E	5026JJ2001M	Shelf,Net	404A	4681JK1004A	AC Motor
143E	5027JJ1008K	Shelf Assembly,Refrigerator	405A	4811JJ2002A	Bracket Assembly,Motor
143F	5027JJ1008D	Shelf Assembly,Refrigerator	405B	5040JJ2001A	Damper,Motor Support
145A	4930JJ2003A	Holder,Shelf	405C	5040JA2009B	Damper,Motor Support
145B	4930JJ2004A	Holder,Shelf	405F	5040JA2004B	Damper,Motor Support
149A	5026JJ1026A	SHELF,FREEZER	405G	4811JJ2002H	Bracket Assembly,Motor
151A	3391JJ1020C	Tray Assembly,Vegetable	406B	6600JB1004A	Switch,Push Button
151C	4940JJ2003C	KNOB,SHUTTER	409B	6912JB2004M	Lamp,Incandescent
154A	3550JL1006C	Cover,TV	409D	3034JJ1002B	Reflector,Lamp
155B	4981JJ2001B	Supporter Assembly,Cover TV	410A	6621JK2002D	Drawing,Assembly
158A	3550JJ1040A	Cover,Lamp	410G	0CZZJB2012J	Capacitor,Electric Appliance Film,Box
158E	MCK30060901	Cover,Lamp	411A	6411JK1006A	Power Cord Assembly
167B	4890JL1002H	Shelf,Glass	412D	6877JK2011B	Drawing,Assembly
170A	3391JJ2004H	Tray Assembly,Meat	418A	5300JB1100J	Heater,Sheath
200A	3581JJ8020V	Door Assembly,Freezer	420A	4681JB1029J	Motor,DC
201A	ADD55827501	Door Foam Assembly,Freezer	501A	EBR41531303	PCB Assembly,Main
203A	4987JJ1004A	Gasket Assembly,Door	501F	3551JJ1020A	Cover Assembly,PCB
205D	5004JJ1040A	Basket,Door	503C	6871JB2047A	PCB Assembly,Display
212A	AED37133111	Handle Assembly,Freezer	503D	3110JJ1005A	Case,Display
212G	3846JD1007F	Name Plate	503E	3550JJ2031A	Cover,Display
230A	3581JJ8047G	Door Assembly,Refrigerator	503F	ABQ33905301	Case Assembly,Display
231A	ADD30931302	Door Foam Assembly,Refrigerator	503G	3806JL1049A	Decor,Control
233A	4987JJ1004B	Gasket Assembly,Door	600A	5989JA0002N	Ice Maker Assembly,Kit
241A	3550JL2003H	Cover,Tray	600C	MEA32865501	Guide,Tube
241B	5004JJ1021A	Basket,Door	602A	4931JA3005B	Holder Assembly,Bracket
241C	5005JJ2017A	Basket Assembly,Door	610A	3550JJ2020A	Cover,Sensor
241D	5005JJ2020A	Basket Assembly,Door	616E	5211JA2003B	Tube Assembly,Inject
241E	5005JJ2018A	Basket Assembly,Door	618A	5210JJ3006B	Tube,Inject
243A	4620JJ3006A	Stopper,Door	619A	5220JA2009D	Valve,Water
244A	AED37082903	Handle Assembly,Refrigerator	619B	3550JJ2024A	Cover,Valve
244E	5006JJ3016A	Cap,Handle	619C	AJU55759301	Valve Assembly,Water
262D	4004JA3002A	Clip	622B	MJH36429401	Supporter,Tube Guide
281A	3550JJ2013A	Cover,Hinge	623A	4770JA3001A	Band
281B	4775JJ2003B	Hinge Assembly,Upper	627A	4930JA3054A	Holder,Pipe
281E	5006JJ3014A	Cap,Hinge	903A	3550JJ0006A	Cover,Lower
282B	4775JJ8002F	Hinge Assembly,Center	903B	4930JJ2021A	Holder,Cover(Lower)
282C	1PZZJJ3002F	Pin,Common	903D	6500JK1003A	Sensor
282E	5006JJ2001A	Cap,Hinge	903E	6500JK1004A	Sensor
282F	3806JL2006F	Decor,Duct	B01	1STZJA3004F	Screw,Customized
282H	5006JJ3004A	Cap,Hinge	S01	1SZZJJ3010A	Screw,Customized
283B	4775JJ2007B	Hinge Assembly,Lower	S22	J47100001J	Screw,Customized
283D	4774JJ2002A	Hinge,Lower	S24	1SZZJA3011B	Screw,Customized
283F	MJB36873201	Stopper,Door	S27	4J01424C	Screw,Customized
284D	1STZJA3004K	Screw,Customized	S28	1SZZJJ3005E	Screw,Customized
286A	4984JJ3003A	BUSH	S29	4J00415D	Screw,Customized
301A	5421JJ1001B	Evaporator Assembly	S31	4000W4A003A	Screw,Customized
304A	3551JJ2008B	Cover Assembly,Machinery(Rear)	S38	4J00415D	Screw,Customized



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