dacor

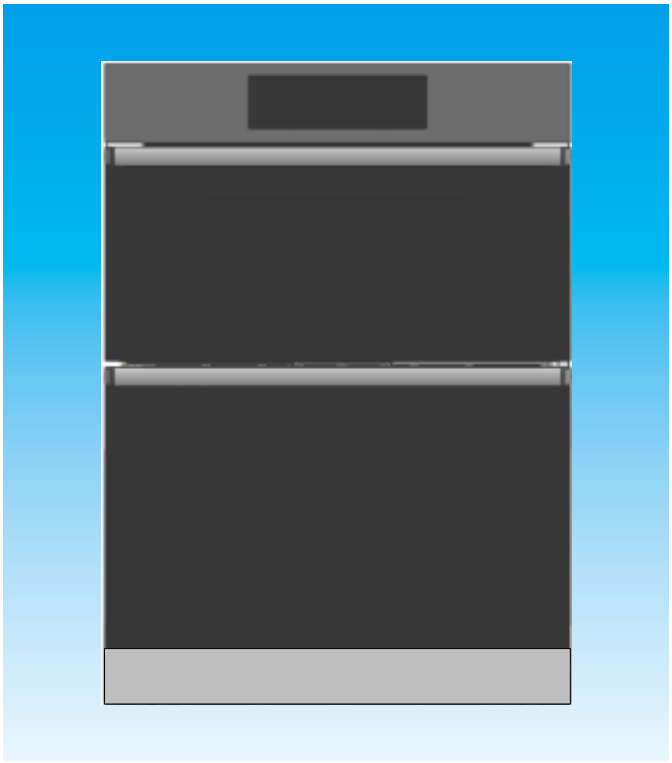
OVEN

COMBI OVEN

BASIC: NQ70M7770D*
MODEL: DOC30M977D*
MODEL CODE: DOC30M977D*

SERVICE Manual

OVEN



CONTENTS

WARNING

IMPORTANT SAFETY NOTICE

The service guide is for service men with adequate backgrounds of electrical, electronic, and mechanical experience.
Any attempt to repair a major appliance may result in personal injury and property damage.
The manufacturer or dealer cannot be responsible for the interpretation of this information.

Dacor
Technical Service Guide

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PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:

(1) Interlock operation,

(2) Proper door closing

(3) Seal and sealing surfaces (arcing, wear, and other damage),

(4) Damage to or loosening of hinges and latches,

(5) Evidence of dropping or abuse.

(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

(e) A Microwave leakage check to verify compliance with the Federal performance standard should be performed on each oven prior to release to the owner.

1. Precaution

Follow these special safety precautions. Although the microwave oven is completely safe during ordinary use, repair work can be extremely hazardous due to possible exposure to microwave radiation, as well as potentially lethal high voltages and currents.

1-1 Safety precautions (⚠)

1. All repairs should be done in accordance with the procedures described in this manual. This product complies with Federal Performance Standard 21 CFR

2. Microwave emission check should be performed to prior to servicing if the oven is operative.

3. If the oven operates with the door open :Instruct the user not to operate the oven and contact the manufacturer and the center for devices and radiological health immediately.

4. Notify the Central Service Center if the microwave leakage exceeds 5 mW/cm2.

5. Check all grounds.

6. Do not power the MWO from a "2-prong" AC cord. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

7. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.

8. Make sure that there are no cabinet openings through which people --particularly children--might insert objects and contact dangerous voltages. Examples: Lamp hole,ventilation slots.

9. Inform the manufacturer of any oven foundto have emission in excess of 5 mW/cm2 ,Make repairs to bring the unit into compliance at no cost to owner and try to determine cause. Instruct owner not to use oven until it has been brought into compliance.

   CENTRAL SERVICE CENTER

10. Service technicians should remove their watches while repairing an MWO.

11. To avoid any possible radiation hazard,replace parts in accordance with the wiring diagram. Also, use only the exact replacements for the following parts: Primary and secondary interlock switches, interlock monitor switch.

12. If the fuse is blown by the Interlock Monitor Switch: Replace all of the following at the same time: Primary, door sensing switch and power relay, as well as the Interlock Monitor Switch. The correct adjustment of these switches is described elsewhere in this manual. Make sure that the fuse has the correct rating for the particular model being repaired.

13. Design Alteration Warning: Use exact replacement parts only, i.e.,only those that are specified in thedrawings and parts lists of this manual. This is especially important for the Interlock switches, described above. Never alter or add to the mechanical or electrical design of the MWO. Any design changes or additions will void the manufacturer's warranty. Always unplug the unit's AC power cord from the AC power source before attempting to remove or reinstall any component or assembly.

14. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

15. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs). Examples include integrated circuits and field-effect transistors. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground.

16. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

17. When checking the continuity of the witches or transformer, always make sure that the power is OFF, and one of the lead wires is disconnected.

18. Components that are critical for safety are indicated in the circuit diagram by shading, ⚠ or ⚠.

19. Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

    NOTE : Connect the oven to a 40A circuit breaker.

1-2 Special High Voltage Precautions

1. High Voltage Warning
Do not attempt to measure any of the high voltages -this includes the filament voltage of the magnetron. High voltage is present during any cook cycle. Before touching any components or wiring, always unplug the oven and discharge the high voltage capacitor (See Figure 1-1)

2. The high-voltage capacitor remains charged about 30 seconds after disconnection. Short the negative terminal of the high-voltage capacitor to the oven chassis

3. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.

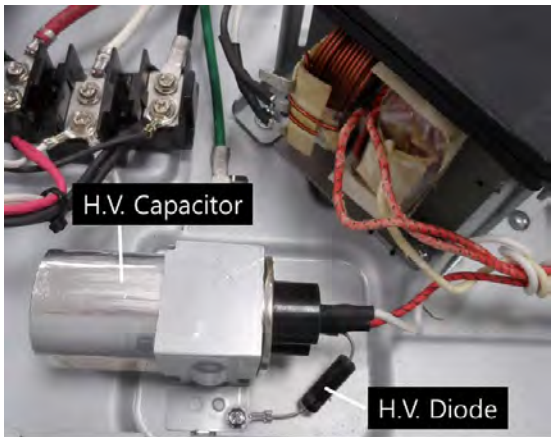


Fig. 1-1 Discharging High Voltage Capacitor

PRECAUTION

There exists HIGH VOLTAGE ELECTRICITY with high current capabilities in the circuits of the HIGH VOLTAGE TRANSFORMER secondary and filament terminals. It is extremely dangerous to work on or near these circuits with the oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

PRECAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1-3 Forward

This SAMSUNG Service Manual, "Built in electric wall oven" provides the technician with information on the operation and service of the built in electric wall oven.. It is to be used as a training Service Manual. For specific information on the model being serviced, refer to the "Owner's Manual" or "Tech Sheet" provided with electric wall oven.

1-4 Safety Precautions

- Repairs of the appliance should be carried out by a licensed technician only. Incorrect repairs may result in dangerous situations. If you need repairs, contact a SAMSUNG Service Center or your dealer.
- If the power cord is defective, it must be replaced by a qualified service agent with a UL listed range cord.
- Electrical leads and cables should not be allowed to touch the oven.
- Rating plate is located on the left side of trim door.
- The power supply of the appliance should be turned off when it is being repaired.

WARNING

- To avoid risk of severe personal injury or death, disconnect power before working/servicing on appliance to avoid electrical shock.
- When the oven operates, the interior parts will be very hot.

SAMSUNG Electronics assumes no responsibility for any repairs made on our products by anyone other than Authorized Service Technicians.

1-5 Important Safety Instructions

Read and follow all instructions before using your oven to prevent the risk of fire, electric shock, injury to person, or damage when using the oven. This guide doesn't cover all possible conditions that may occur.
For further assistance contact your service agent or manufacturer.

WARNING

This symbol will help alert you to hazards or unsafe practices which could cause serious bodily harm or death.

- Be sure your appliance is properly installed and grounded by a qualified technician.
- Do not repair or replace any part of the appliance unless specifically recommended in the manual. All other servicing should be referred to a qualified technician.
- Always disconnect power to appliance before servicing by removing the fuse or switching off the circuit breaker

WARNING

- **DO NOT TOUCH HEATING ELEMENTS OR INTERIOR SURFACES OF OVEN** – Heating elements may be hot even though they are dark in color. Interior surfaces of an oven become hot enough to cause burns. During and after use, do not touch, or let clothing or other flammable materials contact heating elements or interior surfaces of oven until they have had sufficient time to cool. Other surfaces of the appliance may become hot enough to cause burns – among these surfaces are oven vent openings and surfaces near these openings, oven doors, and windows of oven doors.

- Do Not Leave Children Alone - Children should not be left alone or unattended in area where appliance is in use. They should never be allowed to sit or stand on any part of the appliance.
- Never Use Your Appliance for Warming or Heating the Room.
- Storage in or on Appliance – Flammable materials should not be stored in an oven or near surface units. Be sure all packing materials are removed from the appliance before operating it. Keep plastics, clothes and paper away from parts of the appliance that may become hot
- Wear Proper Apparel – Loose-fitting or hanging garments should never be worn while using the appliance.
- Do Not Use Water on Grease Fires – Turn off oven to avoid spreading the flame. Smother the fire or flame by closing the door or use dry chemical, baking soda or foam- type extinguisher.
- Use Only Dry Potholders – Moist or damp potholders on hot surfaces may result in burns from steam. Do not let potholder touch hot heating elements. Do not use a towel or other bulky cloth.

WARNING

To avoid risk of electrical shock, personal injury, or death, make sure your range has been properly grounded and always disconnect it from main power supply before any servicing.

SELF-CLEAN OVENS

- **Do Not Clean Door Gasket** – The door gasket is essential for a good seal. Care should be taken not to rub, damage, or move the gasket.
- **Do Not Use Oven Cleaners** – No commercial oven cleaner or oven liner protective coating of any kind should be used in or around any part of the oven.
- **Clean in the self-clean cycle only parts listed in this manual**. Before self-cleaning the oven, remove the broiler pan and any utensils from the oven.
- **Never keep pet birds in the kitchen** – the health of birds is extremely sensitive to the fumes released during an oven self-clean cycle. Fumes may be harmful or fatal to birds. Move birds to well-ventilated room.
- **Important Instruction** – In the event the self-clean mode "F" code goes on, or three long beeps sound, oven is malfunctioning in the self-clean mode. Turn off or disconnect appliance from power supply and have serviced by a qualified technician.

VENTILATING HOODS:

- **Clean Ventilating Hoods Frequently** – Grease should not be allowed to accumulate on hood or filter.
- **When flaming foods under the hood, turn the fan on.**

OVEN

- **Use Care When Opening Door** – Let hot air or steam escape before you remove or replace food in the oven
- **Do Not Heat Unopened Food Containers** – Build-up of pressure may cause container to burst and result in injury.
- **Keep Oven Vent Ducts Unobstructed** – the oven vent is located in the front above the oven door and under the cook top. This area could become hot during oven use. Never block this vent and never place plastic or heat sensitive items near the vent
- **Placement of Oven Racks** – Always place oven racks in desired location while oven is cool. If rack must be moved while oven is hot, do not let potholder contact hot heating element in oven.
- **Do Not** allow aluminum foil or meat probe to contact heating elements.

DEEP FAT FRYERS:

- Use extreme caution when moving the grease kettle or disposing of hot grease.

2. Specifications

2-1 Table of Specifications

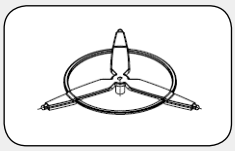
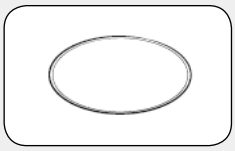
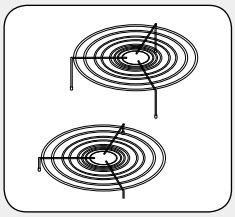
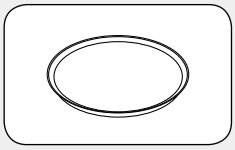
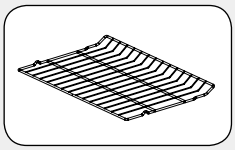
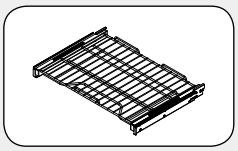
ITEMS		BASIC MODEL	NEW MODEL
Model Name		NQ70M7770DG	DOC30M977DS
Category		Combi oven	Combi oven
Overall	Width	30"	30"
	Installation type	Built-In	Built-In
	Color availability	BLK/STS	STSS/BSS
Control	Oven	KNOB+LCD	LCD
	Display	LCD	LCD
	Electronic clock	Yes	Yes
	Control lock capability	Yes	Yes
	Audible preheat signal	Yes	Yes
Upper Oven	Capacity (cu.ft)	1.9	1.9
	MWO output	950 watt	950 watt
	MWO consumption	1,750 watt	1,750 watt
	Power source (Microwave)	120V/60Hz	120V/60Hz
	Power source (Broil,Conv)	240V/60Hz	240V/60Hz
	Operating frequency	2450 MHz	2450 MHz
	Broil element	1,650 watt	1,650 watt
	Bake element	-	-
	Convection system	Yes	Yes
	Convection element	3,250 watt	3,250 watt
	Steam element	-	-
	# of Racks	2	2
	Interior oven light	2 led	2 led
	Cleaning	-	-
Lower Oven	Capacity (cu.ft)	5.1	5.1
	Broil element	4,400 watt	4,400 watt
	Bake element	3,000 watt	3,000 watt
	Convection system	Yes	Yes
	Convection element	1,300 watt	2,600 watt
	Steam element	500 watt / 120V	500 watt / 120V
	# of Racks	3	3
	Divider	1	-
	Interior oven light	2 halogen, 2 door led	2 halogen, 2 door led
	Cleaning	Self-clean & Hybrid-clean	Self-clean & Hybrid-clean

2. Specifications

ITEMS		BASIC MODEL	NEW MODEL
Model Name		NQ70M7770DG	DOC30M977DS
Category		Combi oven	Combi oven
Dimensions	Outside	28 1/5 * 23 1/6 * 42 1/5 (720 * 588.2 * 1072)	29 3/4 * 24 7/16 * 43 3/8 (756 * 620.3 * 1102)
	Cut out	28 1/2 *23 1/2 * 43 1/4 (720 * 597 * 1099)	28 1/2 * 23 1/2 * 42 1/5 (724 * 597 *1072)
	Shipping	33 3/5 * 29 4/5 * 48 1/5 (854 * 757 * 1224)	33 3/5 * 29 4/5 * 48 1/5 (854 * 757 * 1224)
	Net weight	123	137.4
	Gross weight	136.5	151
	Volume	29761.6 (0.488)	29761.6 (0.488)
Power	Rating (240V 60Hz)	9,500W	8,900W

2. Specifications

2-2 Accessory

Item	Description	Code No.	Q'ty
	Assy Guide Roller	DE94-04028A	1
	Tray-cooking	DE63-00878A	1
	Assy Wire Rack Assy Wire Rack	DE97-00456B DE94-04037A	1 1
	Hot Plate	DE63-00809A	1
	Rack Wire	DG67-00149A	1
	Sensor-Probe	DG32-00013A	1
	Assy Wire Rack	DG94-01747A	2

3. Disassembly and Reassembly

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

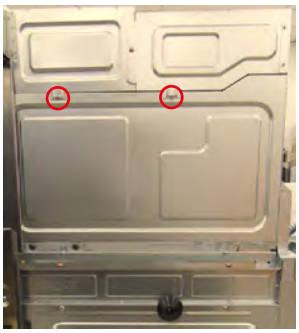
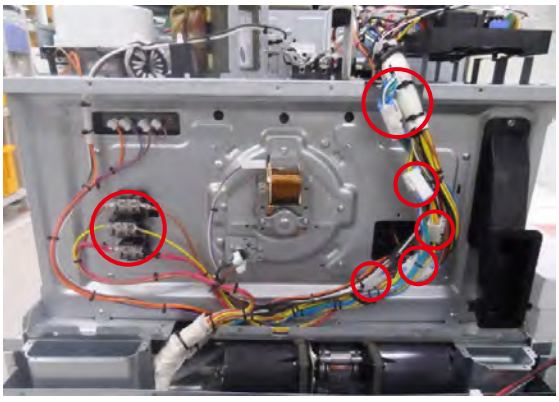
3-1 Preparing remove the Assy-Frame Wall oven

Item	How to use	Pictures
Screw driver	Use for assembly and disassembly of all screws	
Tubing Wrench	Use for assembly and disassembly of tubing to the burner cup	
7mm Vox Driver	Use for assembly and disassembly of injector nozzles. (Cooktop/Broil/Bake burner)	
9mm Vox Driver	Use for assembly and disassembly of injector nozzles. (Convection Fan)	
8mm Vox Driver	Use for assembly and disassembly of injector nozzles. (MGT)	

3-2 Seperate Upper assy wire and Lower assy wire

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Upper assy wire Lower assy wire	  	1. Turn off the electrical supply going to the oven. 2. Pull the oven away from the wall so that you can access the rear panel. 3. Remove 25 (upper back 17, both side 4, top upper 4) screws from the Coverback & Upper case and remove the parts. 4. Unplug 5 connectors (Wire harness) & 3 wires at terminal block (Back side).

3-3 Removing PCB-Main

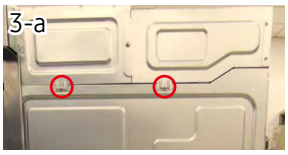
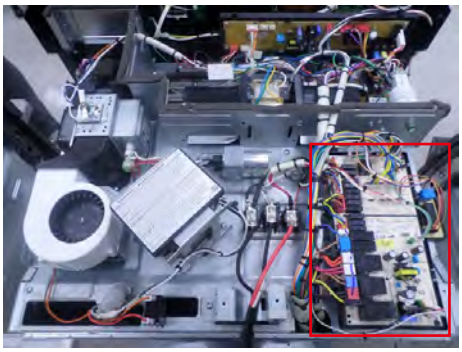
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
PCB Main PCB Relay	   	**1.** Turn off the electrical supply going to the oven. **2.** Pull the oven away from the wall so that you can access the upper panel. **3.** To remove upper cover a) Remove each 2 screws from Upper cover left & right. b) Remove 4 screws from Cover upper back side. c) Remove 4 screws from Cover upper middel top. **4.** There are a Main PCB(Printed circuit board) and a Relay PCB on the top of the oven..

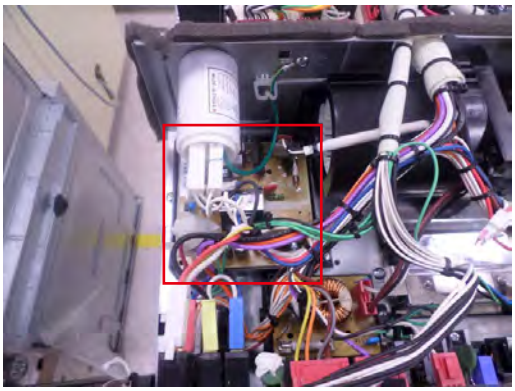
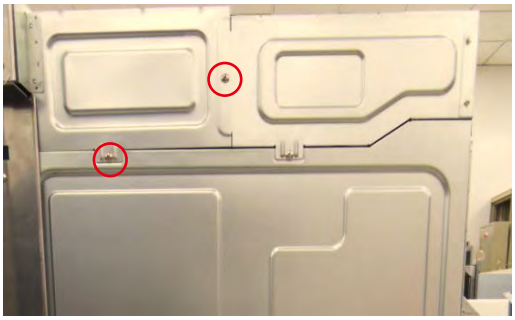
3-4 Removing SMPS PCB

WARNING

Disconnect power before servicing the oven Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing SMPS PCB	 	**1.** Turn off the electrical supply going to the oven. **2.** Pull the oven away from the wall so that you can access the upper panel. **3.** To remove front upper cover a) Remove 4 screws from the left and right side of the Front upper cover. b) Remove 8 screws from top side of Front upper cover. **4.** There is 1 main PCB(Printed circuit board) on the top of the oven.

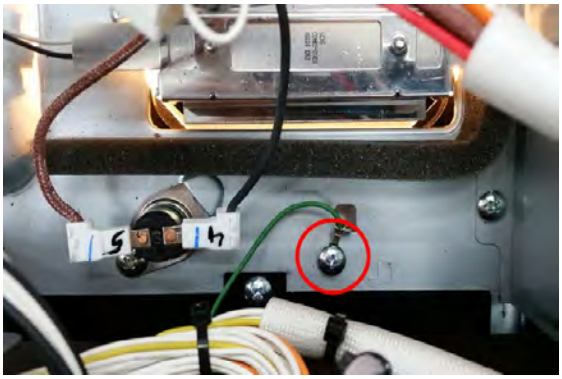
3-5 Removing control box

WARNING

Disconnect power before servicing the oven Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing control box	 	1. Unplug the cord or disconnect power. 2. Open the oven door. 3. Remove 4 screws under the control panel. 4. Disconnect all of the wire harness connectors. 5. To remove front upper cover, see step 3-4 6. Unscrew the ground screw to remove the ground wire.

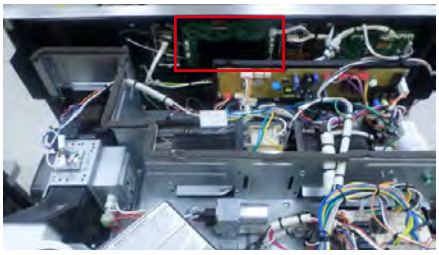
3-6 Removing Sub PCB and MW8000J PCB

WARNING

Disconnect power before servicing the oven Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

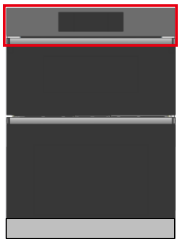
Parts	Explanation Photo	Explanation
Display Wire	 	1. Turn off the electrical supply going to the oven. 2. Remove 4 screws under the control panel. (See step 3 on 3-5) 3. Remove connector on SUB PCB
MW8000J PCB		1. Turn off the electrical supply going to the oven 2. Open Front upper cover. 3. Remove 3 screws behind of the Holder PCB 4. Remove connector on MW8000J PCB
LCD Wire		1. Turn off the electrical power going to the oven. 2. Remove 4 screws under the control box. (See step 3 on 3-5) 3. Remove connector on Display Wire. 4. Remove 2 screws on Display Wire. 5. Remove connector on LCD Wire.

3-7 Removing the Wi-Fi module

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
 Wi-Fi module		**1.** Turn off the electrical supply. **2.** Remove Cover-top-front. (See step 3 on 3-3). **3.** Disconnect wire harness and remove a screw.

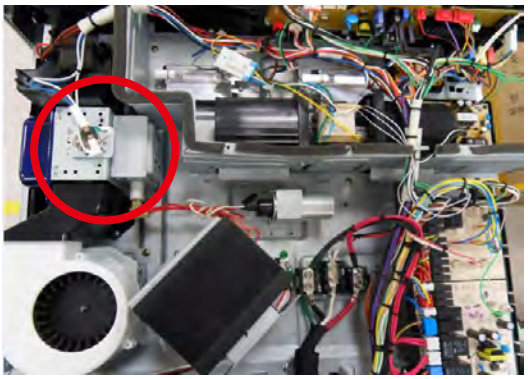
3-8 Removing Magnetron (MGT)

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing Magnetron (MGT)	 	1. Remove upper case.(Follow step 3-3) 2. Unplug wire harness housing connected to MGT. 3. Remove 4 hexagonal nuts. ***Note**: If removal is hard, you can cut the bracket as shown in the pircure and then, bend wire stopper and pull out the bracket to the left.

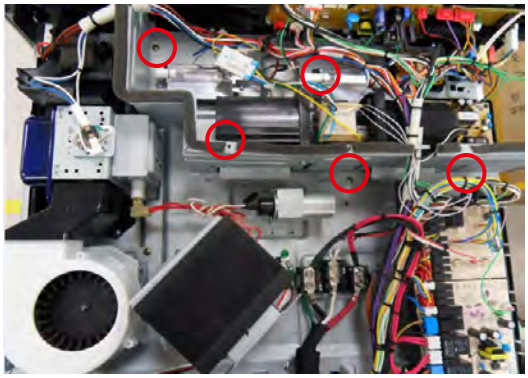
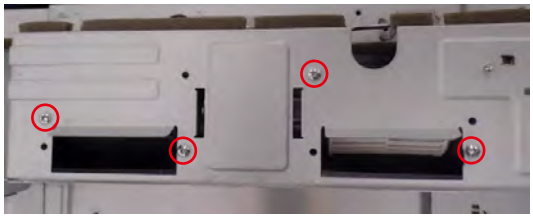
3-9 Removing Ventilation fan (Upper oven)

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing Ventilation fan (Upper oven)	  	**1.** Remove upper case.(Follow step 3-3) **2.** Unplug wire harness housings. **3.** Unscrew 1 earth screw and 4 screws. **4.** Take out the bracket. **5.** Unscrew 4 screws. ***Note**: If removal is hard, you can cut the bracket as shown in the pircure and then, bend wire stopper and pull out the bracket to the left.

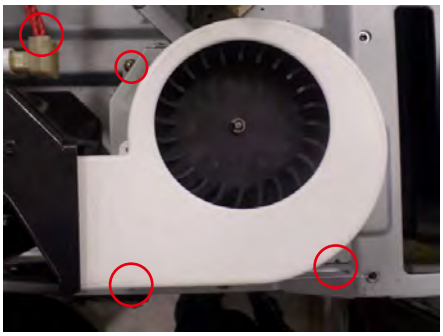
3-10 Removing MGT cooling fan

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing MGT cooling fan	  	1. Remove upper case.(Follow step 3-3) 2. Unplug every wire harness housing connected to the cooling fan. 3. Unscrew 3 screws assembled with bracket upper. 4. Unscrew 3 screws assembled with motor.

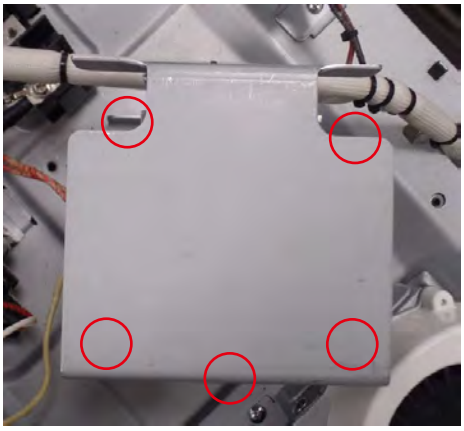
3-11 Removing HVT

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing HVT	 	**1.** Remove upper case.(Follow step 3-3) **2.** Unplug wire harness housing connected to HVT. **3.** Remove 5 Screws. ***Note**: You need a long driver to remove 1 HVT screw as shown in the picture.

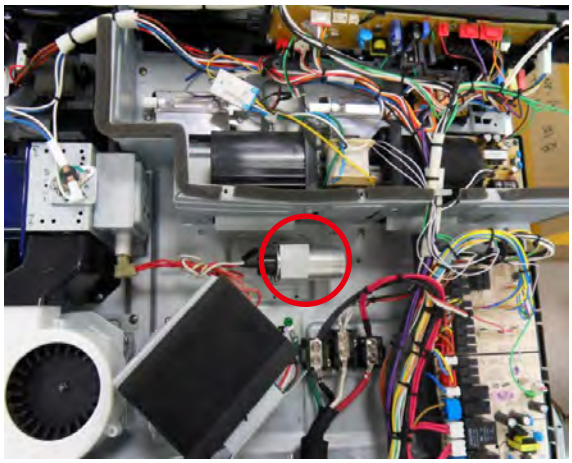
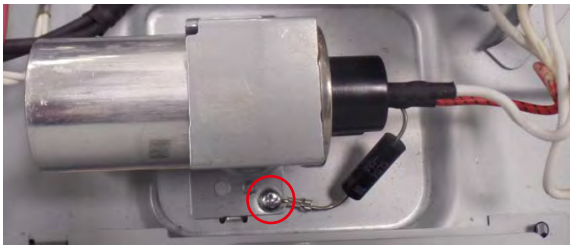
3-12 Removing HVC

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Removing HVC	 	**1.** Remove upper case.(Follow step 3-3) **2.** Unplug wire harness housing connected to HVC. **3.** Remove 1 screw.

3-13 Removing Grill Heater (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

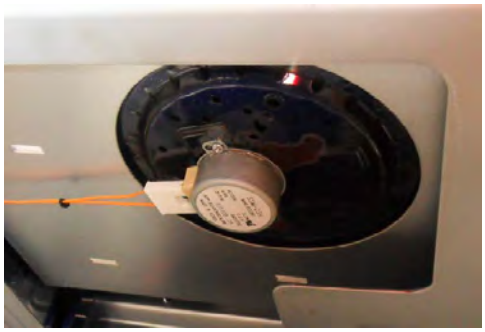
Parts	Explanation Photo	Explanation
Removing Grill Heater	 	**1.** Turn off the electrical supply. **2.** Pull the oven away from the wall so that you can access the behind of the oven. **3.** Remove upper cover. (Follow Step 3-3) Then remove 17 screws from the back of upper oven where it's connected to lower oven. **4.** Remove right and left side covers and cover back. (Follow Step 3-2) **5.** Unplug 5 connectors (wire harness) & 3 wires at therminal block. (Back side) **6.** Remove MGT. (Follow Step 3-29) **7.** Remove the brackets near MGT. **8.** Disconnect wire harness connected to the grill heater. **9.** Remove whole bracket upper and adiabatic. **10.** Remove 3 bolts in the back of the upper oven. **11.** Remove 2 nuts on the cavity. **12.** Remove 2 screws in the cavity.

3-14 Removing Drive motor (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

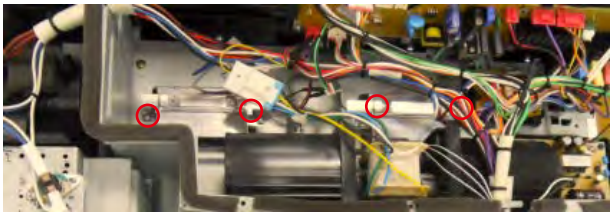
Parts	Explanation Photo	Explanation
Removing Drive motor	   	**1.** Turn off the electrical supply. **2.** Pull the oven away from the wall so that you can access the upper oven. **3.** To remove upper oven a) On right and left side remove 2 screws from the bottom of the upper oven and 1 screw from staleness trim. b) remove 11 screws of back side of upper oven where are connected to lower oven **4.** Disconnect wire harnees connection between lower and upper cavity. **5.** Move microwave to appropiate place to change drive motor located at the bottom of the cavity. **6.** Disconnect wire harness. **7.** Remove 1screw from drive motor.

3-15 Removing Lamp(Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

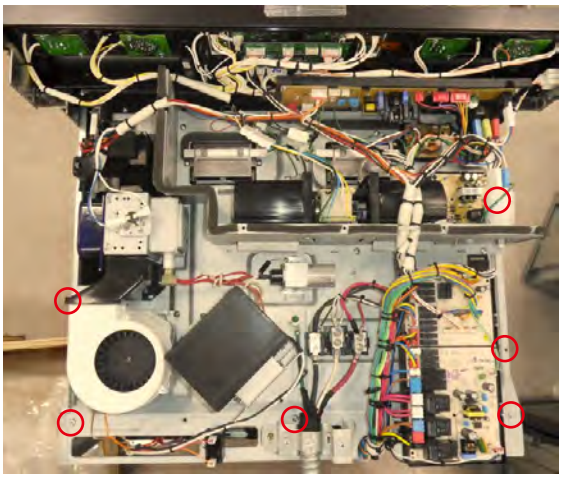
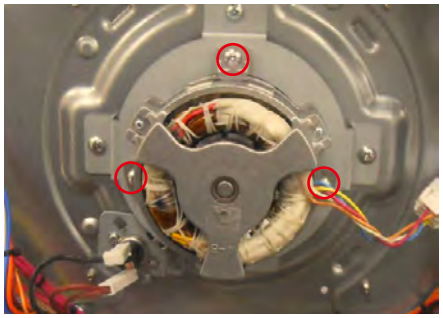
Parts	Explanation Photo	Explanation
Removing Lamp	 	**1.** Turn off the electrical supply. **2.** Pull the oven away from the wall so that you can access the upper oven. **3.** Remove 4 screws and then remove Cover case-TOP. **4.** Disconnect wire harness. **5.** Remove 4 screws from each Assy cover lamp.

3-16 Convection motor (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

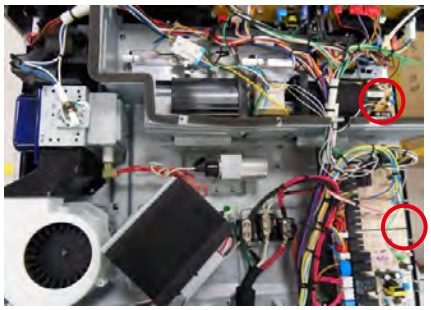
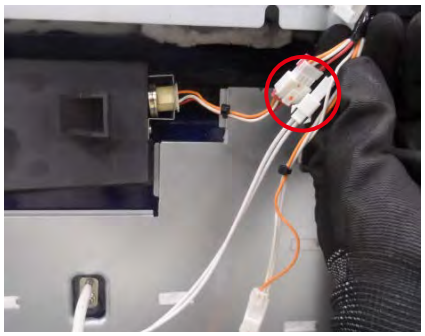
Parts	Explanation Photo	Explanation
Convection motor	  	**1.** Turn off the electrical supply. **2.** Pull the oven away from the wall so that you can access the upper oven. **3.** To remove upper oven's case back, remove 12 screws of back side of upper oven where are connected to lower oven. **4.** Disconnect wire harnees connection lower and upper. **5.** Disconnect wire for Convection motor. **6.** Remove 6 screws from Bracket Upper. **7.** Remove MGT. **8.** Remove 7 screws of panel back where connected to cavity main. **9.** Pick Assy panel back out from the set. **10.** Unscrew bolt on Motor shaft. **11.** Unscrew 3 screws on Bracket motor.

3-17 Removing Gas sensor

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
Removing Gas sensor	   	1. Remove upper cover. (Follow Step 3-3.) 2. Remove screw on center of left side cover. 3. Remove cover back. (Follow Step 3-2) 4. Remove 1 screw from left trim. 5. Remove 2 screws to assemble bracket upper and case left. 6. Disconnect wire harness connected to gas sensor. 7. Remove each 1 screw from gas duct and gas sensor bracket. 8. Remove gas sensor from gas sensor bracket.

3-18 Oven Door (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
Assy Door		**To remove Upper oven Door** **1.** Fully Open the door with pressing the level. **2.** Pull the hinge locks downward (To pull the locks, Use screwdriver as in the). **3.** Firmly grasp both side of the door at the top. **4.** Close door to the door removal position, which is approximately 5 degrees. Lift door up and until the hinge arm are clear of the slot

3-19 Handle-Door, Assy Hinge (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
Handle-Door, Assy Hinge	  	**To remove the Handle door and Assy Hinge (Prepare Step)** **1.** Remove the Upper oven door from the oven. **2.** Place the oven door on a padded work surface with the front glass facing down. **3.** Remove 7 screws at bottom side of door. **4.** Remove 2 screw at handle. **5.** Remove Door-C. **6.** Remove 4 screw from the Door E.

3-19 Handle-Door, Assy Hinge (Upper Oven)

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
Handle-Door, Assy Hinge	    	**To remove Handle Door** **6.** Remove screws from cap door left & right. **7.** Remove 2 Screw from cap handle Left/Right **8.** Remove 4 Screw from Handle door(Each side) **9.** Remove 2 screws from Support Handle(Each side) **10.** Remove 6 Screw from handle holder tops **To remove Assy Hinge** **1.** Remove pin for pop up key door and remove key door. **2.** Remove 2 screws (each side) at bottom of assy hinge. **3.** Unscrew 2 screws (each side) at upper side of assy hinge to remove it. Slide to remove.

3-20 Removing The Latch-Door & Switch-Door Plunger

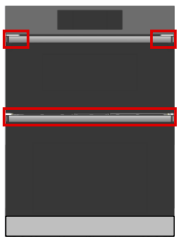
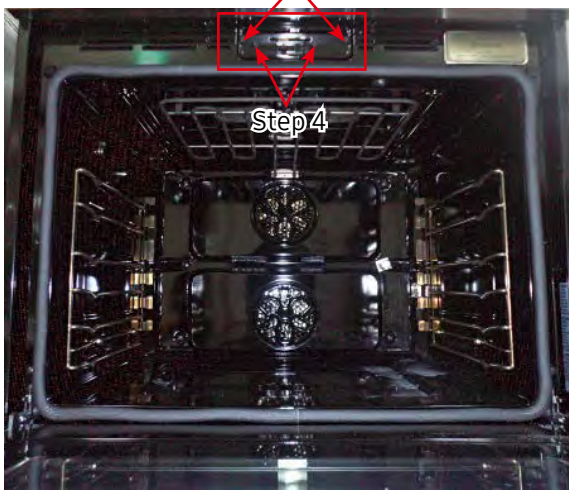
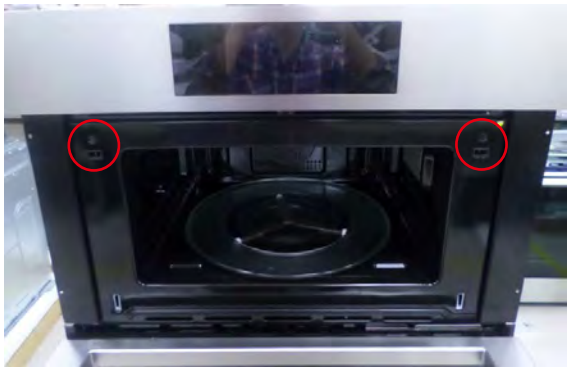
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

CAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Latch-Door & Switch-Door Plunger	Step 3  	1. Turn off the electrical supply going to the oven. 2. Open the oven door. 3. Remove 2 screws from the front of cavity and remove the latch door & bracket. 4. Remove 2 screws from the bracket and remove the latch door: **Upper oven** 1. Turn off the electrical supply going to the oven. 2. To remove front upper cover, see step 3-4. 3. Remove connector on latches. 4. Open the oven door. 5. Remove 2 screw from the cavity front and remove the latches.

* Reassembly of All part is the reverse order of disassembly.

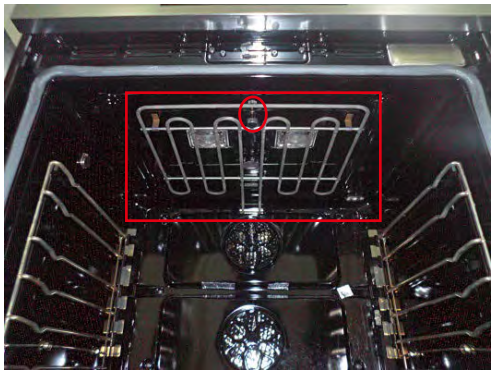
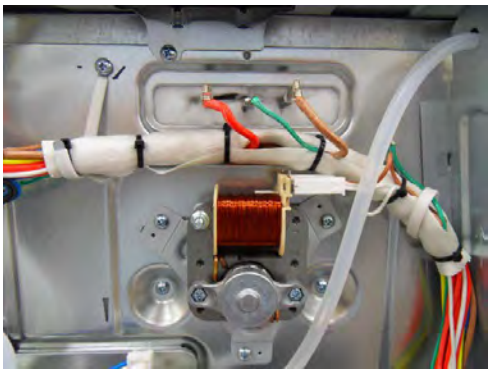
3-21 Removing Heater-Broil

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

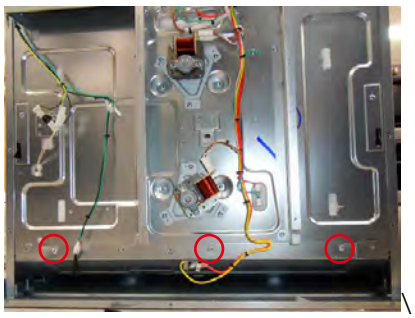
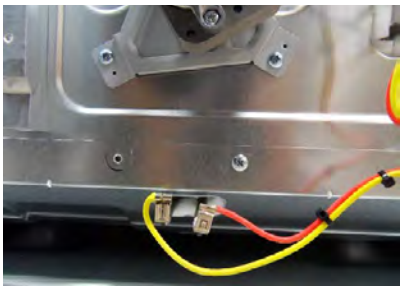
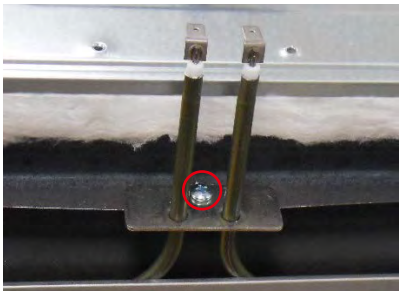
CAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

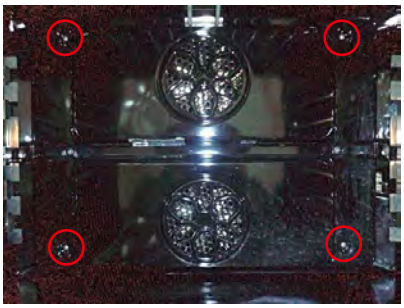
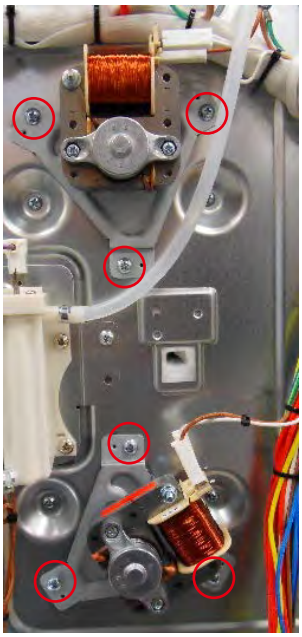
Parts	Explanation Photo	Explanation
 Broil	  	1. Turn off the electrical supply going to the oven. 2. Open the oven door and remove the racks from inside the oven. 3. Remove oven from its mounting location and remove the rear cover. 4. Remove 3 wires from the broil element and 2 nut with cutting insulation. 5. Remove 1 screw that are securing the broil element to the cavity. 6. Remove the broil element.

* Reassembly of All part is the reverse order of disassembly.

3-22 Removing Heater-Bake

Parts	Explanation Photo	Explanation
 Heater-Bake	  	**1.** Unplug oven or disconnect power. **2.** Pull the oven out of its mounting location so that you can access the rear of the unit. **3.** Remove 3 screws and cover adiabatic lower sub **4.** Disconnect the 2 wires from the heater bake element. **5.** Remove the 1 screw securing the heater-bake. **6.** Cut the insulation on the lower side along entire with of an unit. **7.** Carefully pull out Heater-bake and replace it.

3-23 Removing Convection Element, Fan-Convection and Motor-Convection

Parts	Explanation Photo	Explanation
 Convection Element, Fan-Convection, Motor-Convection	  	**1.** Disconnect power and remove oven racks. **2.** Pull the oven out of its mounting location so that you can access the rear of the unit. **3.** Remove Cover-Back Main Wire from the unit. (See step 3 on page 9 for procedure) **4.** Remove oven door. (See Page 20 on page for procedure) **5.** Unscrew 4 screws and remove Cover Casing. **6.** Unscrew 2 screws and remove Bracket-Convection Heater to remove Heater-Convection. **7.** Unscrew nut of Fan-Convection. **8.** Unscrew 3 points and disconnect a Motor-Convection wire and disconnect Heater-Convection wire.

* Reassembly of All part is the reverse order of disassembly.

CAUTION

Be careful not to scratch or chip the oven liner paint when to remove the oven light socket in the next step.

3-24 Removing Lamp

WARNING

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

CAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Lamp	  	**1.** Disconnect power. **2.** Remove oven door. **3.** Remove Heater broil. (See step 5 on page 15) **4.** Pull-out the glass cover in the oven. **5.** Unscrew cover lamp. **6.** Pull-out the bulb.

* Reassembly of All part is the reverse order of disassembly.

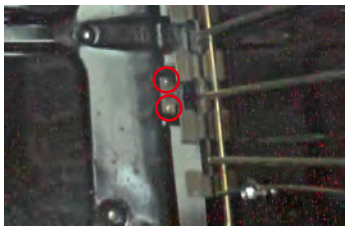
3-25 Removing Sensor-Thermistor

WARNING

ELECTRICAL SHOCK HAZARD
Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Sensor-Thermistor	 	1. Turn off the electrical supply going to the oven and remove the oven from its mounting location. 2. Remove oven door and racks from inside the oven. 3. Unscrew Sensor-Thermistor. 4. Remove Cover-Back Main Wire and disconnect a wire from Sensor-Thermistor. 5. Replace the Sensor-Thermistor.

* Reassembly of All part is the reverse order of disassembly.

3-26 Oven Door

WARNING

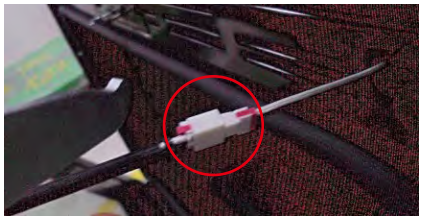
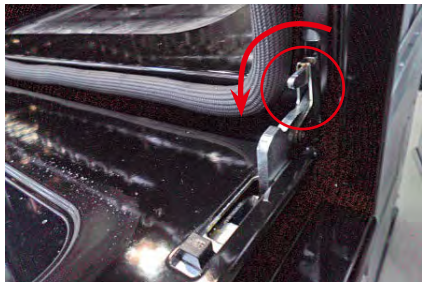
Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

WARNING

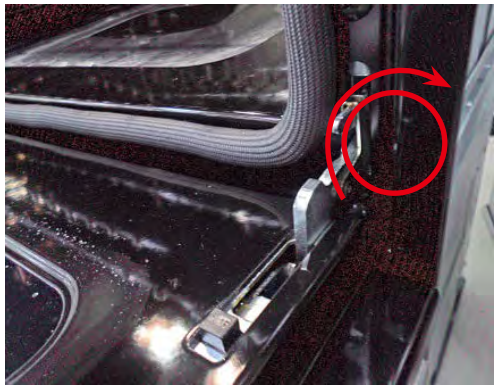
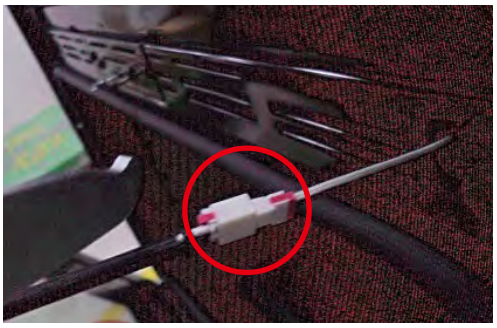
The door is very heavy. Be careful when removing door. Do not lift door by the door handle.

CAUTION

When you work on the oven, be careful when handling sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful

Parts	Explanation Photo	Explanation
Oven Door	  	**To remove Oven Door** **1.** Disonnect wire harness **2.** Fully open the door **3.** Pull the hinge locks downward **4.** Firmly grasp both side of the door at the top. **5.** Close door to the door removal position, which is approximately 5 degrees. Lift the door up and out until the hinge arm are clear of the slot.

3-27 Oven Door

Parts	Explanation Photo	Explanation
Oven Door	  	**To replace door** **1.** Firmly grasp both sides of the door at the top. **2.** Fully open the door. Note. If the door will not fully open, it means that the indentation is not seated correctly in the bottom edge of the slot. Push the hinge locks up to the locked position.) **3.** Close the oven door. **4.** Connect wire harness.

3-28 Glass Inner

WARNING

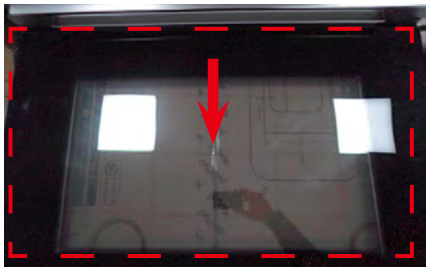
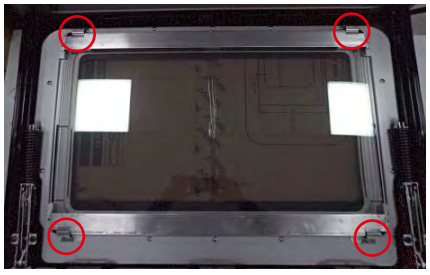
Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

WARNING

The door is very heavy. Be careful when removing door. Do not lift door by the door handle.

CAUTION

When you work on the oven, be careful when handling sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful

Parts	Explanation Photo	Explanation
GLASS INNER	   	**To remove the GLASS INNER (Prepare Step)** **1.** Remove the oven door from the oven. **2.** Place the oven door on a padded work surface with the front glass facing down. **3.** Remove 3 bottom screws from the door. **4.** Slide-down Glass outer for removing Ass'y holder glass. **5.** Lift-up Ass'y Holder glass for separating the door. **6.** Remove 4 screws and bracket for removing Glass middle.

3. Disassembly and Reassembly

Parts	Explanation Photo	Explanation
HANDLE-DOOR, GLASS INNER	    	**To remove Handle-door** **7.** Remove each 1 screw from under support handle (L/R). **8.** Remove each 2 screws indside of support handle. (L/R) **To remove Glass-Inner** **1.** Remove 4 screws to remove Ass'y Hinge. **2.** Remove 10 screws to remove baffle door. **3.** Remove baffle door and take out Glass inner.

3-29 Removing Gasket-Door

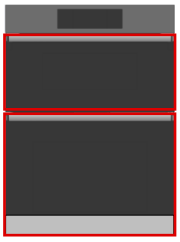
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric oven, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Gasket door	  	1. Open the oven door to its fully down position. 2. Pull the ends of the gasket out of the liner holes. 3. Pull the oven door gasket clips out of the holes until all of the clips are removed. Note. When you install the new gasket, make sure that all of the clips are seated in their liner holes, and that the ends of the gasket are pushed fully into their holes. Use the pointed end of a pencil to push the gasket ends into the holes.

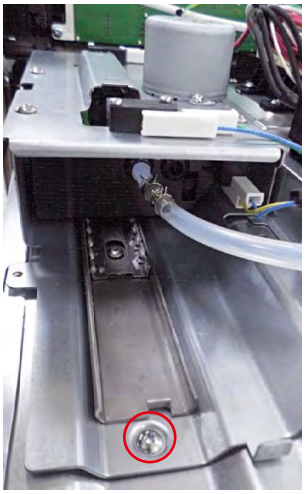
* Reassembly of All part is the reverse order of disassembly.

3-30 Removing the steam set

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

Parts	Explanation Photo	Explanation
Remove the steam set	    	1. Turn off the electrical supply. 2. Pull the oven away from the wall so that you can access the upper oven. 3. To remove upper oven a) On right and left side remove 2 screws from the bottom of the upper oven and 1 screw from staleness trim. b) remove 10 screws of back side of upper oven where are connected to lower oven 4. Disconnect wire harnees connection lower and upper. 5. Remove upper oven 6. Disconnect wire harness. 7. Remove 3 screws and hose connections.

3. Disassembly and Reassembly

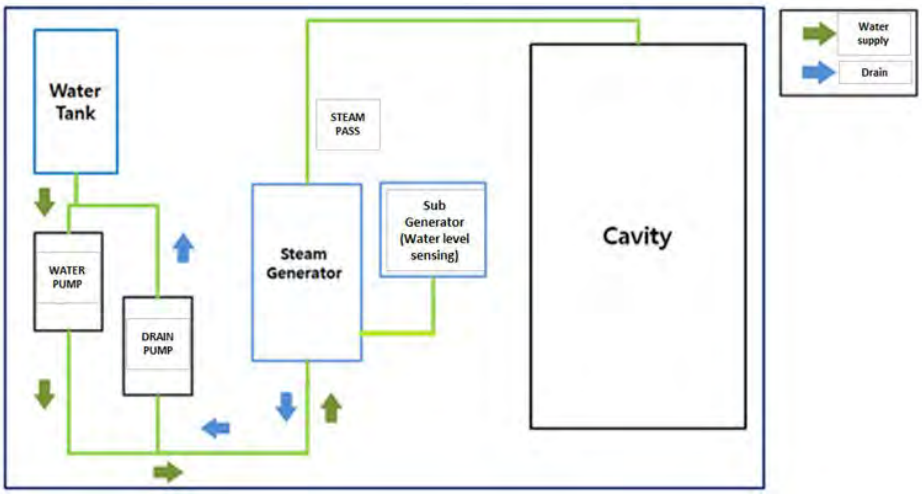
3-31 Assy Steamer

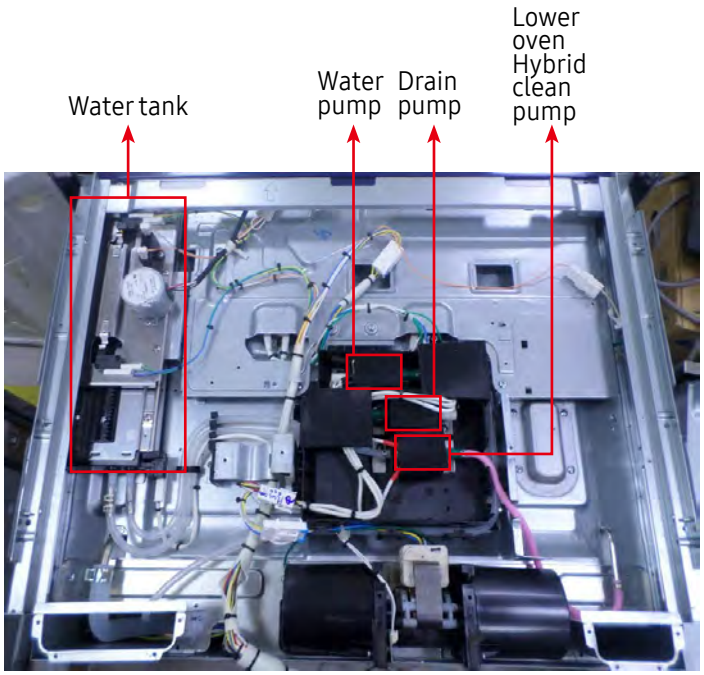
WARNING

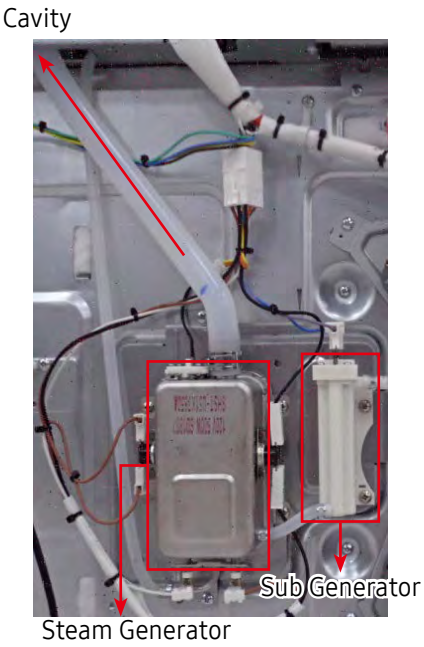
ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

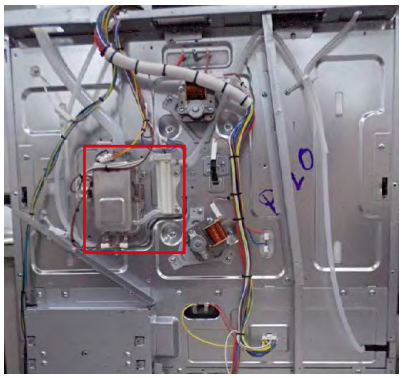
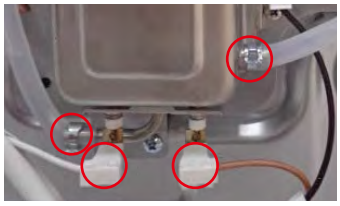
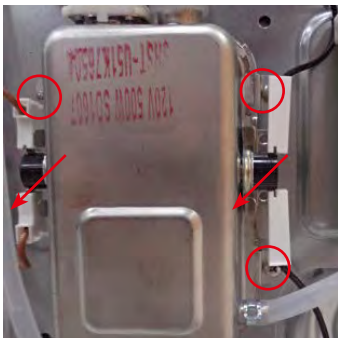
Schematic Diagram & Structure







3. Disassembly and Reassembly

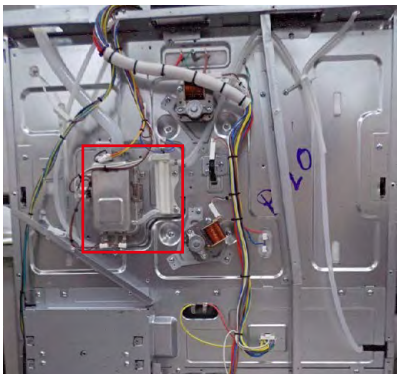
Parts	Explanation Photo	Explanation
Assy Steamer	   	**1.** Remove clamp steam tube. 2. Remove 2 connectors and 2 tube clamps. **3.** Remove 3 screws. **4.** Pull 2 TCO forward to separate.

3-32 Assy Generator Sub

WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

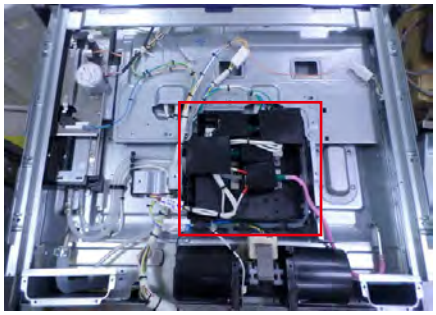
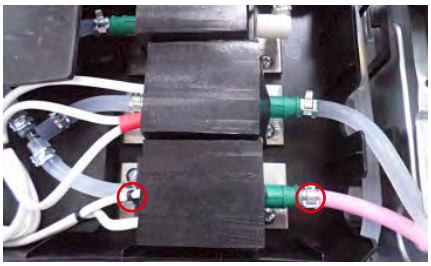
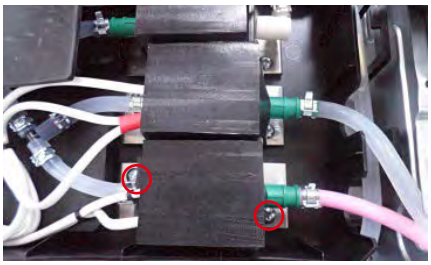
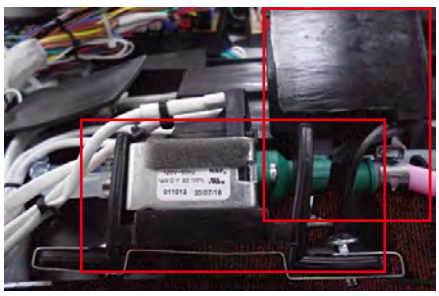
Parts	Explanation Photo	Explanation
Assy Generator Sub	  	**1.** Remove Connector. 2. Remove 2 Holder tube and 2 screws.

3-33 Motor AC Pump

WARNING

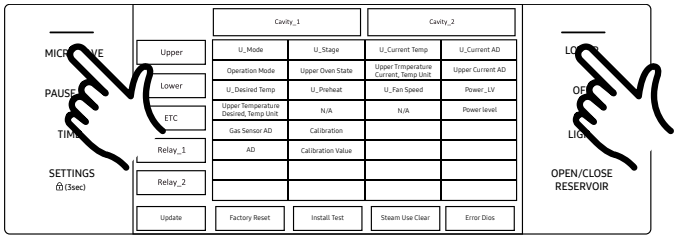
ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the oven. Replace all panels before operating oven. Failure to do so can result in death or electrical shock.

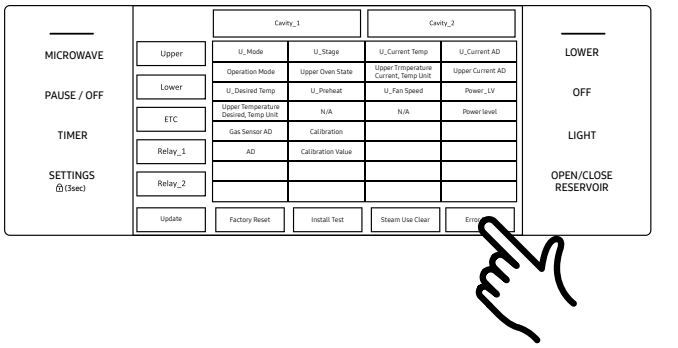
Parts	Explanation Photo	Explanation
Motor AC Pump	   	**1.** Remove 2 holder tube. **2.** Remove 2 screws. **3.** Remove 2 rubber covers. **4.** Remove the other side in the same way.

4. Troubleshooting

4-1 Failure Display Codes



1. Touch **MICROWAVE** and **LOWER** for 5 seconds.
   Information is displayed on screen.



2. Touch **Error_Disp**.
   The latest 5 check codes can be checked on display.
3. Touch **MICROWAVE** and **LOWER** for 5 seconds to return to normal display mode.

Check code

Failure code	CAUSE	SOLUTION
C-d0	This code occurs if the keys are shorted.	1. Check whether keypad cable is inserted into connector on sub pcb. 2. Check for shorts between Sub PCB and the connector, or the keypad and the cable. 3. if no faults are found with Sub PCB connector and the keypad cable replace the Sub PCB.
C-d1	This code occurs if the door lock is mispositioned.	1. Disconnect power. Check whether harness has been connected with door lock switch and motor. 2. Confirm whether resistance value of door lock motor is correct. Normal value should be 1600 ~ 2200 Ω at the room temperature. 3. Operate door lock, measure voltage at the plug supplying power to the door lock motor. (normal voltage : AC 120V) 4. Check whether door locking switch is working normally.
C-F0	This code occurs if communication between the Main and Sub PCB is interrupted.	1. Check whether connector on main pcb has been inserted correctly. 2. Check whether connector on sub pcb has been inserte dcorrectly. 3. If no issue with connector on Main and Sub PCBs has been detected replace Main PCB.

4. Troubleshooting

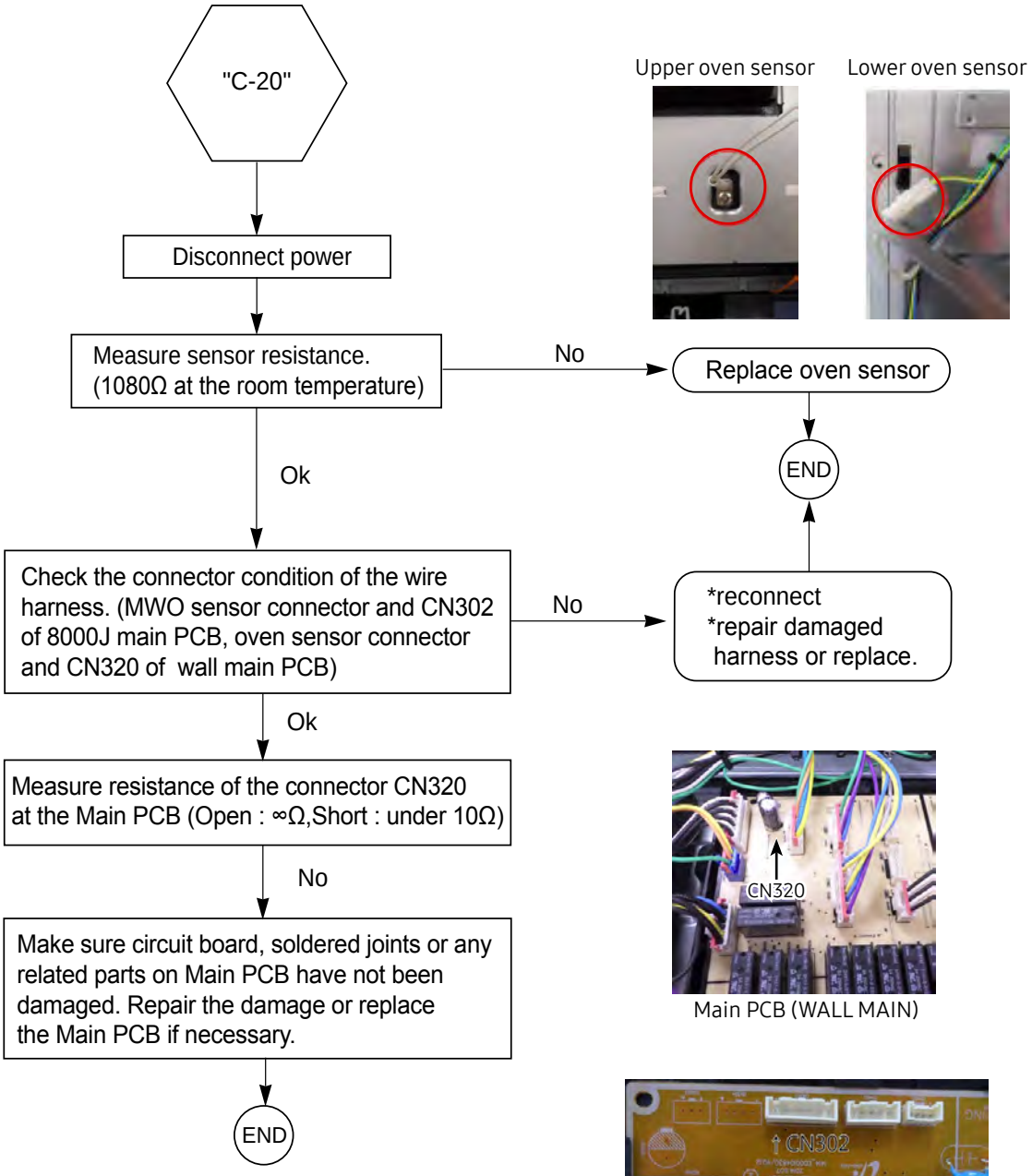
4-1 Failure Display Codes

Failure code	CAUSE	SOLUTION
C-F2	This code occurs if communication between the Main and Touch PCB is interrupted.	1. Check whether connector of sub pcb has been inserted. 2. If no issue with connector on Sub PCB has been detected replace Sub PCB 3. If the problem has not been solved after replacing Sub PCB replace control PCB.
C-20	The oven sensor is open when the oven is operating. The oven sensor is short when the oven is operating.	1. check whether connector at the main pcb has been inserted. 2. Check whether connector at the sensor has been inserted. 3. If connectors at the Main PCB and the sensor are inserted correctly,replace the temperature sensor. 4. If the problem is still not solved, replace the Main PCB.
C-21	This code occurs if the internal temperature rises abnormally high.	1. Disconnect power. Disconnect sensor harness from sensor. Measure sensor resistance : 1080Ω at the room temperature. -> If there are any problems, replace oven sensor. 2. Check the resistance of broil, bake and convection heater. 3. Check whether DLB, broil, bake and convection relays on the Main PCB are working normally. 4. Check whether any part of a wire harness on Main PCB is disconnected. 5. Check the resistance of oven sensor connector on main pcb. (Normal : 2850Ω) 6. Unit will display "C-21" after beeping 10 times if temperature is higher then the specified during operation. 7. Please follow diagnostics steps 4-1 on page 30.
C-23	The temp probe sensor is shorted when oven is operating.	1. Disconnect power. Disconnect Probe harness from control board. Measure probe resistance : 50kΩ at the room temperature -> If there are any problems, replace meat probe. 2. If there are problems found with the meat probe, please check wire harness and connector terminals for damage. 3. Check resistance of meat probe connector on main PCB (Normal:10kΩ ~ 11kΩ)

4. Troubleshooting

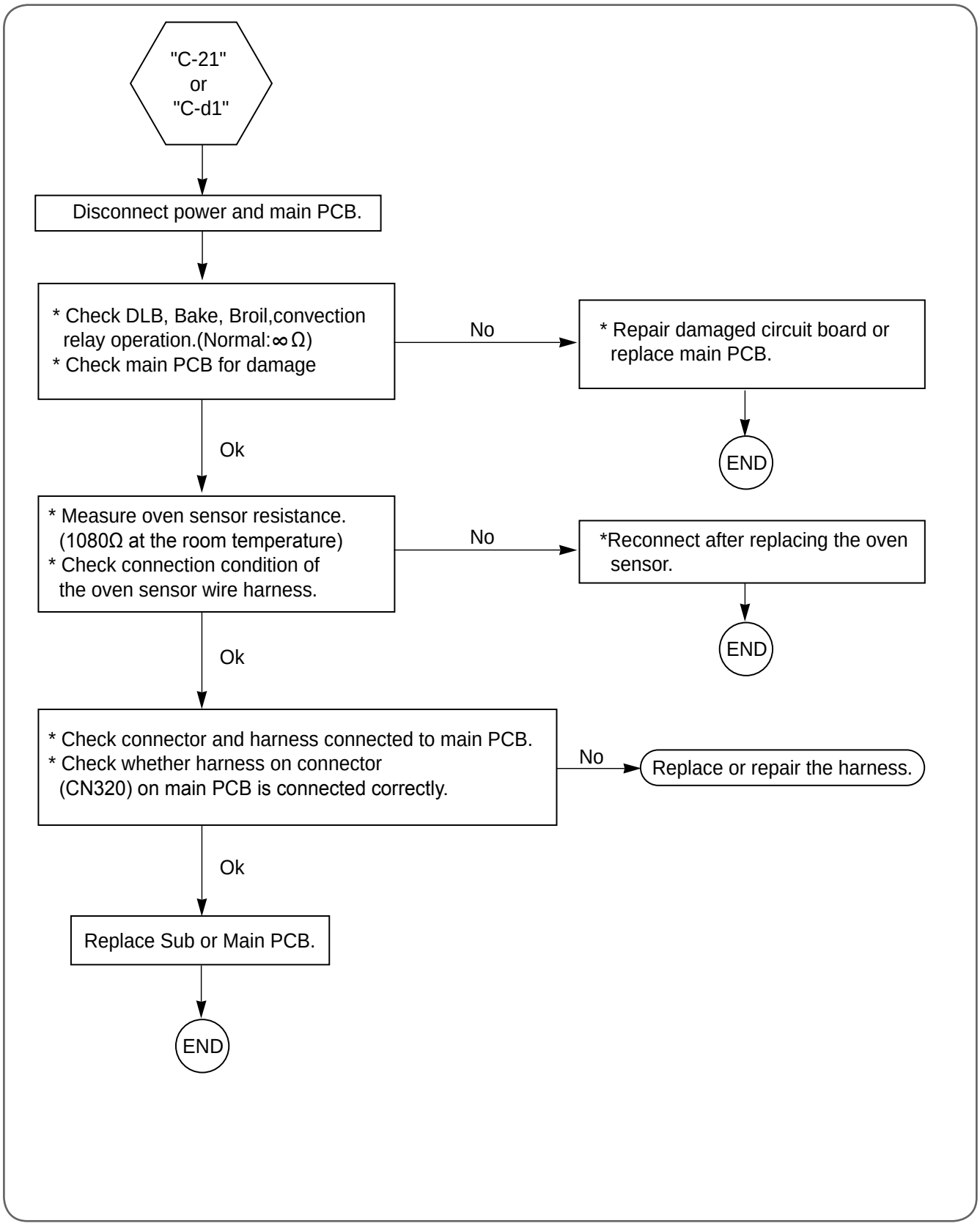
Failure code	CAUSE	SOLUTION
C-30	The PCB temp sensor is open when the oven is operating.	1. Disconnect power. Open back cover. 2. Replace the main pcb.
C-30	The PCB temp sensor is shorted when the oven is operating.	
C-31	This code occurs if the PCB temperature rises abnormally high.	
C-70	The steam sensor is open when the steam mode is on.	1. Check whether connector at the main pcb has been inserted. 2. Check whether connector at the sensor has been inserted. 3. If connector at the Main PCB and the sensor are inserted correctly, replace the temperature sensor. 4. If the problem is still not solved, replace the Main PCB
	The steam sensor is shorted when the steam mode is on.	
C-72	The drain system-related problem. Occurs when water level sensor senses water remaining after maximum draining time.	1. Check the ground wire on the steam generator. 2. Check the pump motor operation and wire connection. 3. If the problem is still not solved, replace the Main PCB.
C-A2	Cooling motor is operating abnormally.	1. check whether conenctor at the main pcb has been inserted. 2. Check whether connector at the motor has been inserted. 3. If the problem is still not solved, replace the cooling motor.

4-1 Failure Display Codes



4-1 Failure Display Codes

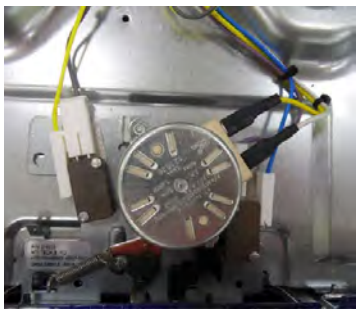
Safety error



4-1 Failure Display Codes

"C-d1"

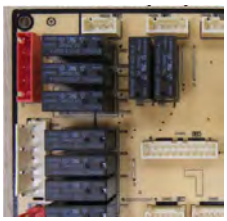
*Disconnect power.
*Disconnect harness connected to Lock motor



* Check micro switch
(com-NC=>closed, when door is unlocked.)
* Measure resistance of Lock motor
Coil.(1750~1850Ω at the room temperature)

No → * Replace micro switch or Lock motor. → END

* Check oven sensor
(See page 24)


Wall Main PCB

Ok

*Check if voltage is present at the lock motor terminals allowing it to operate.

No → * Repair damaged harness or replace

Ok

*Check whether harness connected normally into CN201 of main PCB.

No → * Repair damaged harness or replace

*Measure resistance of Cn201 on Main PCB.
(COM-NO: ∞ at the room temperature)
*COM : black color
*NO : yellow color

No → * Replace main PCB.
* re-solder damaged paths or broken contacts.
→ END

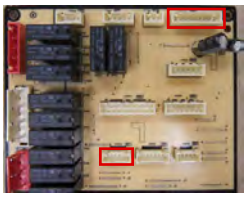
4. Troubleshooting

4-1 Failure Display Codes

"C-F0"

* Disconnect power.
* Unplug connectors from Sub PCB, Wall Main PCB and 8000J main PCB.


Sub PCB


Wall Main PCB


8000J Main PCB

* Check wire harness between Wall main, 8000J main and Sub PCBs.

No → * Repair damaged harness or replace. → END

Ok

* Check connector pins on Sub Wall main and 8000J main pcb for short circuits.

No → * Repair shorted pins or damaged part of the circuit. → END

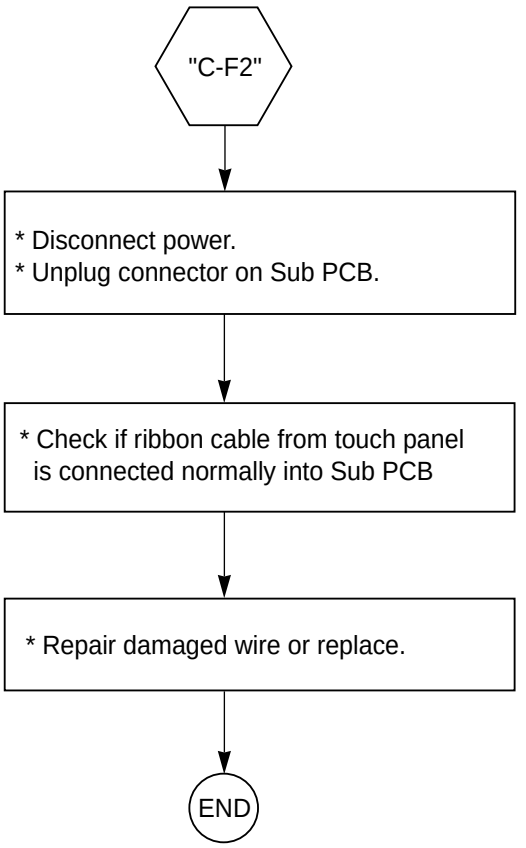
Ok

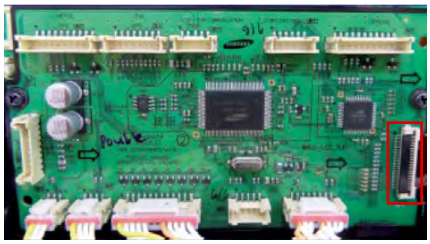
* Replace Sub PCB and make sure it works

Ok

END

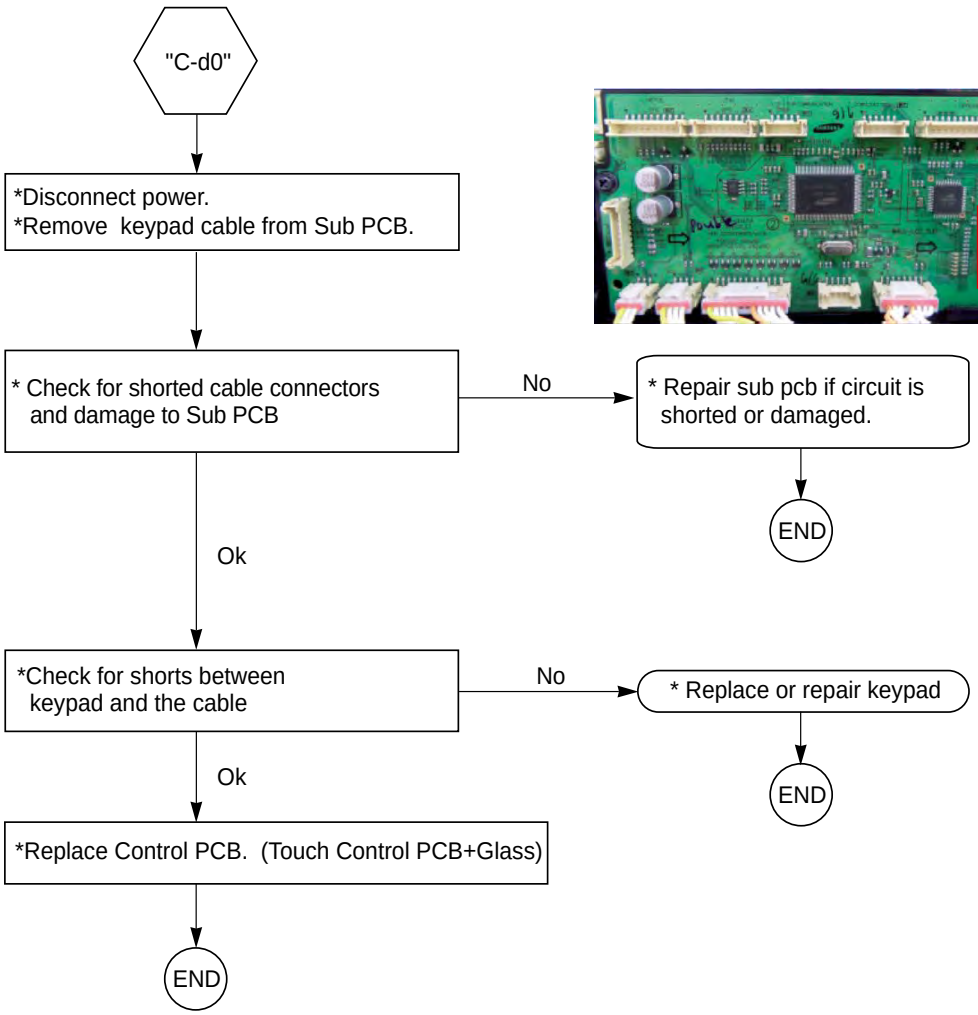
4-1 Failure Display Codes



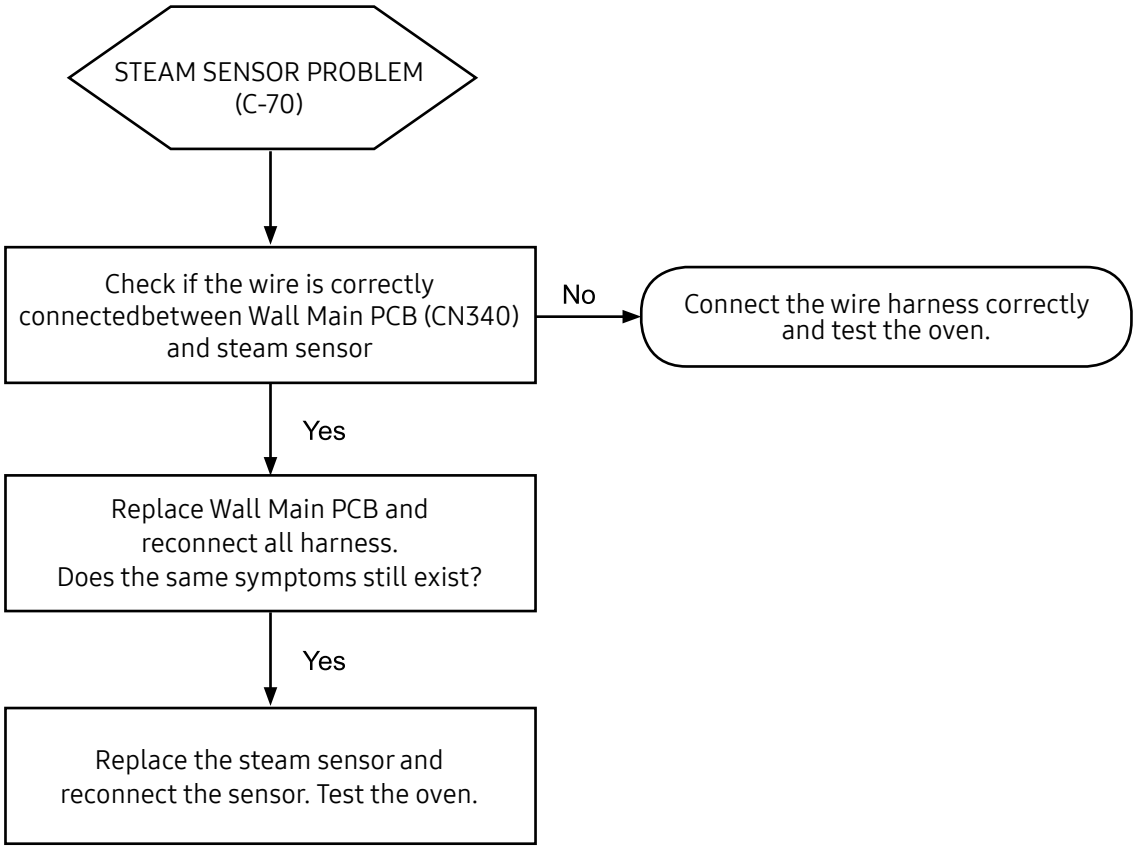


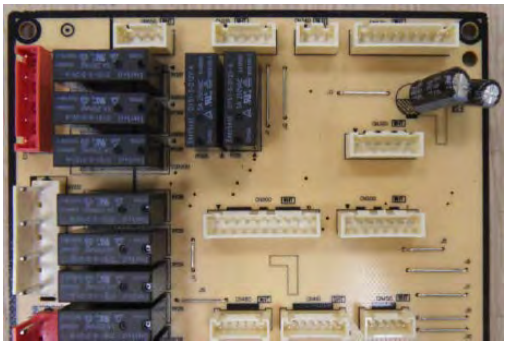
4. Troubleshooting

4-1 Failure Display Codes

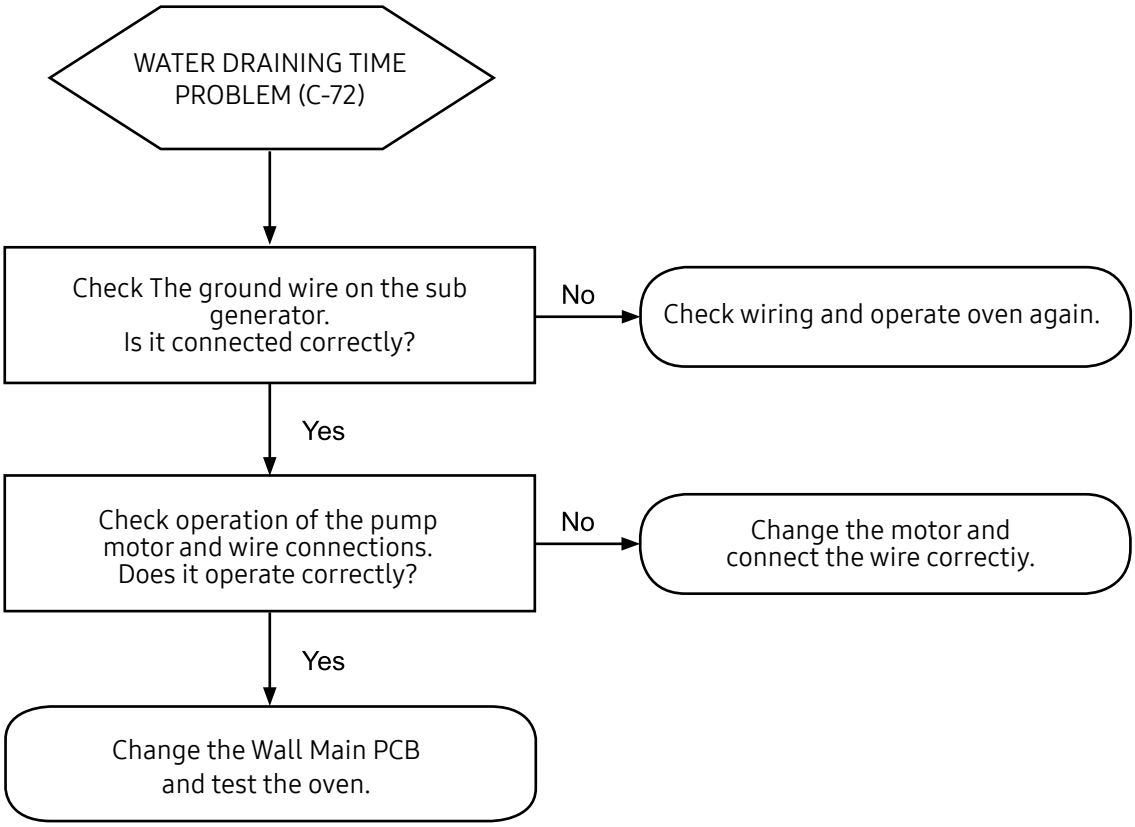


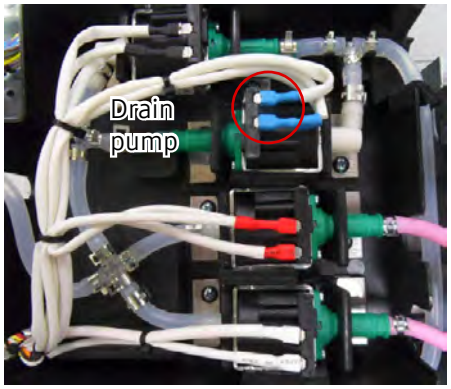
4-1 Failure Display Codes





4-1 Failure Display Codes





4-2 Adjustment of Primary interlock switch, Door sensing switch (Secondary interlock switch), and Monitor interlock switch

PRECAUTION

For continued protection against radiation hazard, replace parts in accordance with the wiring diagram and be sure to use the correct part number for the following switches: Primary and secondary interlock switches, and the monitor interlock switch (replace all together). Then follow the adjustment procedures below. After repair and adjustment, be sure to check the continuity of all interlock switches and the monitor interlock switch.

1. When mounting Primary interlock switch and Monitor interlock switch to Latch Body, consult the figure.
2. No specific adjustment during installation of Primary interlock switch and Monitor interlock switch to the latch body is necessary.
3. When mounting the Latch Body to the oven assembly, adjust the Latch Body by moving it so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the Latch Body to the oven assembly.
4. Reconnect to Monitor switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.
5. Confirm that the gap between the switch housing and the switch actuator is no more than 0.5mm when door is closed.
6. Interlock Switch Replacement - When replacing faulty switches, be sure switch mounting tabs are not bent, broken or otherwise deficient in their ability to secure the switches in place.

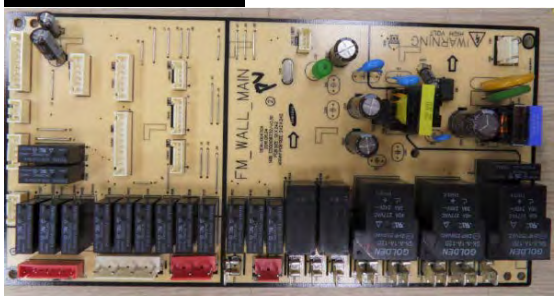
	Door Open	Door Closed
Primary Interlock switch	∞	0
Monitor interlock switch(COM-NC)	0	∞
Monitor interlock switch(COM-NO)	∞	0
Door Sensing switch (Secondary Interlock switch)	∞	0

Control PCB Operation

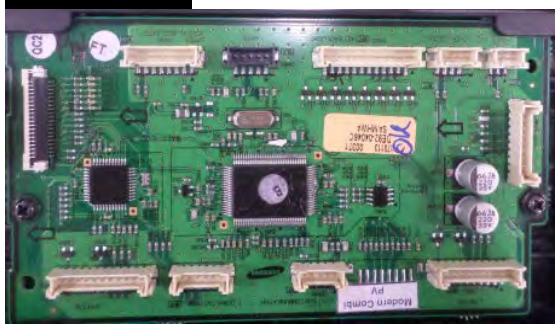
Sort of Control PCB

8000J Main PCB

Wall Main PCB



Sub PCB



LCD PCB

Relay PCB

4. Troubleshooting

SYMPTOM	DIAGNOSIS	REMEDY
Oven not working (No power, No display)	* Measure an input voltage. (240/120V or 208/120V) * Measure an input voltage of terminal block.	* Check circuit breaker. * Check state of a wire connected to Terminal Block
	* Measure supplied voltage at the connector on main PCB L1~N : 120V	* Replace or repair harness if loose or disconnected.
	* Make sure that the relay on Sub PCB is working normally * Check whether connector between sub , Wall Main PCB and 8000J Main PCB is not loose or disconnected.	* Replace sub PCB if relay has been damaged or Sub PCB has been cracked. * Repair harness connecting to Wall Main, 8000J Main and Sub PCBs * Make sure the wire harness is connected to the relay on Sub PCB
	* Measure resistance of thermostat terminals: (normal : 0 ohoms) * Check whether harness connected to terminal of a thermostat is not loose or disconnected. * Measure voltage regulator on main PCB. - IC02 : 7812(DC 12V) - IC03 : 7805(DC 5V)	* Replace the thermostat. * Replace or repair harness. * Replace or repair after check PCB.
Oven temperature rises slowly.	* Make sure wire harness connected to broil, bake and convection heaters is not loose or disconnected.	* Repair and replace harness. * Disconnect terminals for each heater and measure resistance, replace any heaters with abnormal resistance. .
	* Make sure relays are operating normally and PCB is not shorted.	* Replace or repair Wall Main PCB and 8000J Main PCB.
Oven temperature rises too fast	* Check if oven temperature rises over 400'F within 10 minutes in room temperature.	* Repair or replace shorted relays on Wall Main, 8000J Main or SUBs PCBs
	* Check whether harness has been connected incorrectly or is shorted	* Replace or repair harness.
	* Make sure resistance of each heater is within normal range.	* Replace heater with abnormal resistance range.

SYMPTOM	DIAGNOSIS	REMEDY
Keypad is not working correctly.	Make sure the keypad cable is connected correctly.	* Replace pcb if keypad cable is connected correctly.
	Check whether connector on pcb is shorted or damaged.	* Replace or repair after confirming that keypad cable has not been loose or disconnected.
	Check whether touch control PCB has been damaged.	* Replace touch control assembly. (PCB + Glass touch)
Oven lamp is not working.	* Check the oven lamp relay on Wall Main PCB, 8000J Main PCB and connector.	* Replace or repair if harness has been loose or disconnected. * Replace oven lamp relay or Ry-source relay. * Replace Wall Main PCB and 8000J Main PCB.
	Measure the resistance value of both ends of lamp terminal.	* Replace lamp.
Convection fan is not spinning	Check whether convection fan relay on Wall Main PCB, 8000J Main PCB and connector is working normally.	* Replace or repair Relay. * Replace or repair connector.
	Make sure harness between Sub PCB, Wall Main PCB and 8000J Main PCB has been connected correctly	* Replace or repair harness. * Replace or repair connector. * Replace Wall Main PCB and 8000J Main PCB.
Smell or smoke during initial use	This is in normal state.	* Smell or smoke from the oven during initial cycle is coming from dirt and grime from manufacturing process and is normal * Make sure the room is well ventilated during self-clean cycle
LED Display is partially or fully dim	* LED display is defective.	* Replace sub PCB
Touch tone not active when keypad buttons are selected	Check the state of buzzer on sub PCB and whether PCB pattern have a short circuit or has been open.	* Replace or repair main PCB.
Oven door is locked	Circuit breaker tripped or power failure during the door lock operating.	* Check the power source to the oven.

4-3 Electrical Malfunction

Left door switch

Right door switch

MWO does not operate.

Is Fuse OK?

NO

Is Primary interlock switch normal?

NO

Close the door and check if the Micro Switch is working properly.

YES

YES

Is the power part of PCB normal?

Replace ASSY PCB

Is CON1 TCO & MONITOR FUSE & MGT TCO OK?

NO

Replace appropriate parts

Check whether parts normally work after replaced.

YES

Is the power part of PCB normal?

NO

Replace ASSY PCB

Check whether it normally works after ASSY PCB is replacerd.

YES

Are high voltage circuits normal?

NO

Replace H.V DIODE, H.V.Capacitor, H.V. Trans and Magnetron.

Check whether it normally works after appropriate parts are replaced.

YES

Normal Operation

Caution

1. Be careful of high voltage circuits.
2. Discharge a high voltage capacitor.

resistance : PCB Input 230V is Normal

Make sure inspect the power relay after priry interlock switch, Secondary interlock switch and door sensing switch.

* Latch switch assemblies

4-3 Electrical Malfunction


Left door switch


Right door switch

Convection Mode does not work.

Is Fuse OK?
- NO → Is the primary interlock switch normal?
  - NO → Close the door and check if the Micro Switch is working properly.
  - YES → Is the power part of PCB normal?
    - → Replace ASSY PCB
- YES → Are CON1 TCO & MONITOR FUSE normal?
  - NO → Replace appropriate parts → Check whether parts normally work after replaced.
  - YES → Is each Control Relay normal?
    - NO → Replace Control Relay → Check whether it normally works after Control Relay is replaced.
    - YES → Are TCO and HEATER and MOTOR normal?
      - NO → Replace TCO / Replace HEATER / Replace MOTOR / Replace DAMPER → Check whether it normally works after appropriate parts are replaced.
      - YES → Normal Operation

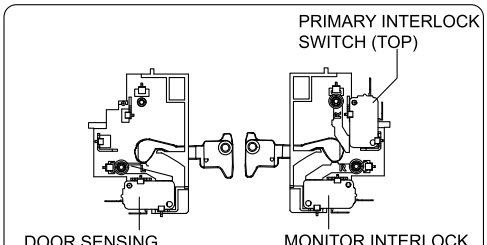
Caution

1. Be careful not to touch a heater because it is hot.
2. Do not touch the leads after repair because it is hot.

RY610, RY609 voltage : direct current 12V ~ 14V is normal

voltage : heater 230V is normal

Make sure inspect the power relay after replacing primary interlock switch, Secondary interlock switch and door sensing switch.



* Latch switch assemblies

4-3 Electrical Malfunction

Ass'y Display does not work.

Is Fuse OK?

NO

resistance : 0 ~ 25Ω is normal
MΩ over is abnormal

YES

Is Main PCB normal?

NO

YES

Are Ass'y Display and Main PCB securely connected?

NO

YES

Are buttons & a dial & display normal?

NO

YES

Normal Operation

Is the primary interlock switch normal?

NO

YES

Is the power part of PCB normal?

Replace ASSY PCB

Replace Main PCB

Check whether parts normally work after replaced.

Check connector

Check whether it normally works after Main & Display are replaced.

Replace Buttons
Replace Ass'y display
Replace a dial

Check whether it normally works after appropriate parts are replaced

Left door switch

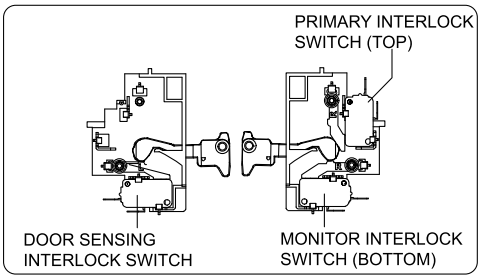
Right door switch

Close the door and check if the Micro Switch is working properly.

Flat wire No.1~7 :
5V is normal

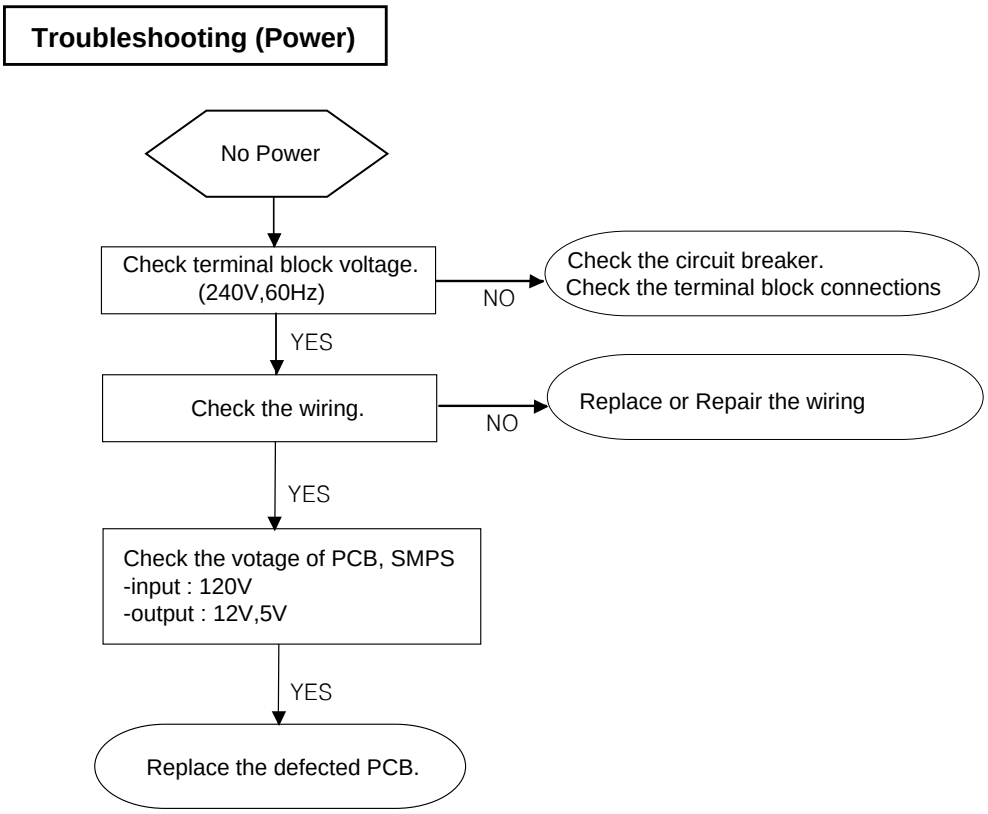
Flat wire No.1~7 :
5V is normal

Make sure inspect the power relay after replacing primary interlock switch, Secondary interlock switch and door sensing switch.

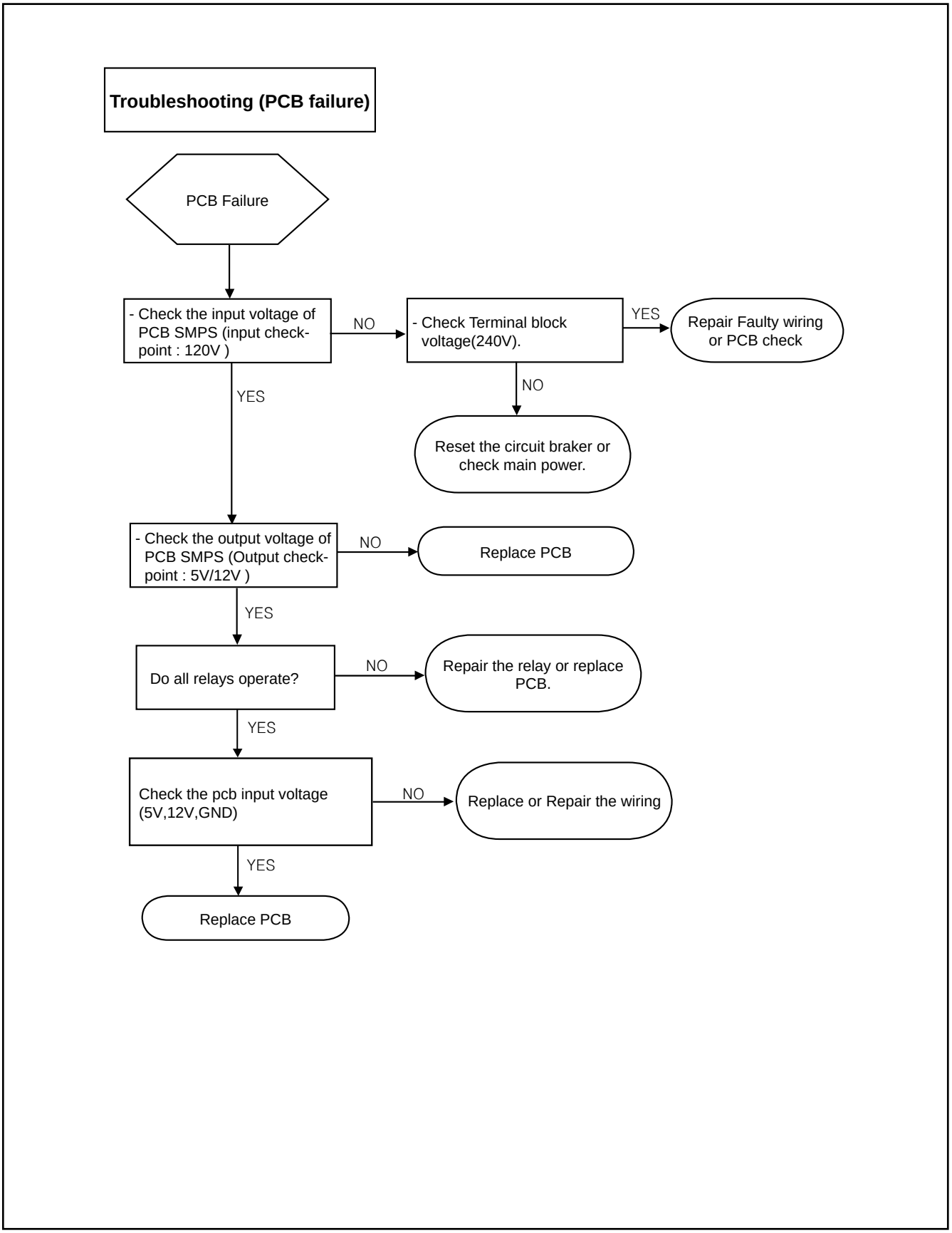


* Latch switch assemblies

4-3 Electrical Malfunction



4-3 Electrical Malfunction



4-3 Electrical Malfunction

Troubleshooting (Wi-Fi connection)

Step 1.

- Check whether display is showing 
  - If display is showing WiFi icon, check to 'Dacor iQ Kitchen' app.
    Delete and re-install the app. And then, try again
    (Follow manual instruction for Dacor iQ Kitchen app).
  - If display does not show icon, check home network.
  - If home network is ok, follow step 2.
  - If home network has a problem, contact home network service center.

Step 2.

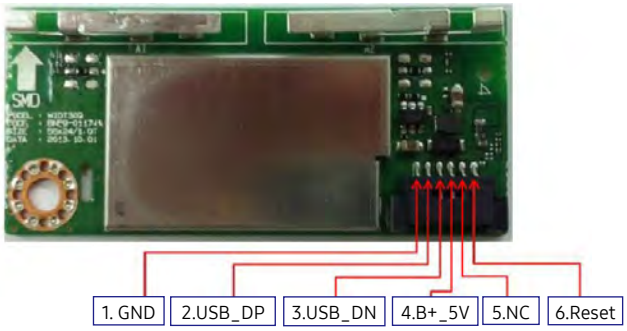
- Check communication between wi-fi module and sub pcb

a) Press Setting and Lamp at the same time.
Display will show pJt name, main pcb version, sub pcb version and network version.

- If network version is shown normally, try to use smart control feature again.
- If network version is missing, check the wi-fi module. (2-b)

b) Remove the wi-fi module (see page 3-17 removing the wi-fi module for the procedure).
Check input voltage on wi-fi module. (5V)

- If input voltage is ok, replace wi-fi module.
- If input voltage is not present, check the the wire harness, the connector and Sub PCB. (2-c)



c) Remove the top cover.
(see page 3-3 removing PCB MAIN for the procedure).

- If connection of wire is ok, check to next step (2-d)
- If wire connection is a problem, re-connect and try smart control feature again.

d) Remove the sub pcb (see page 3-4 removing sub pcb for the procedure).
Check if wire harness connector is fully and correctly inserted. (CN703)
Then, check input voltage on sub pcb. (5V)

- If input voltage is ok, replace wi-fi module.
- If input voltage is not present, replace sub pcb.

Pin 1 : GND Pin 4 : 5VDC

4-3 Electrical Malfunction

Parts	Photo	Good	No Good
Main Fuse		13.5 ~ 17 Ω	100 MΩ exceed
T.C.O		0.1 ~ 1 Ω	100 MΩ exceed
Damper Motor		13.5 ~ 15.5 kΩ	100 MΩ exceed
H.V Trans		Primary : 1 ~ 5 Ω Secondary : 110 ~ 200 Ω	100 MΩ exceed
Convection Motor		120 ~ 150 Ω	100 MΩ exceed
Convection Heater		120 ~ 150 Ω	100 MΩ exceed

4-3 Electrical Malfunction

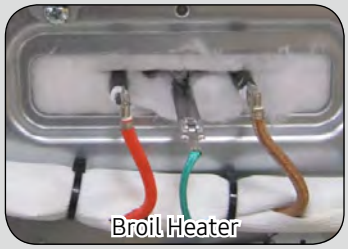
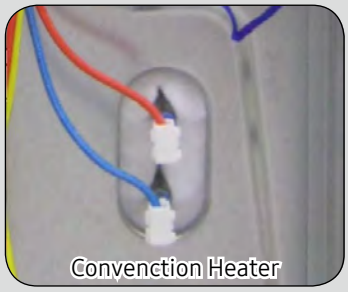
Parts	Photo	Good	No Good
T/T Motor		13.5 ~ 17 kΩ	100 MΩ exceed
Fan Motor		50 ~ 60 Ω	100 MΩ exceed
Grill Heater		60 ~ 80 Ω	100 MΩ exceed

4-3 Electrical Malfunction

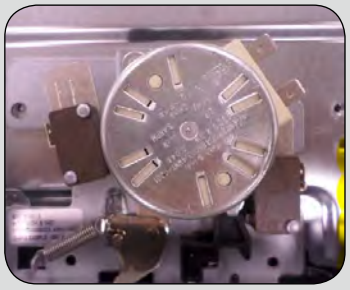
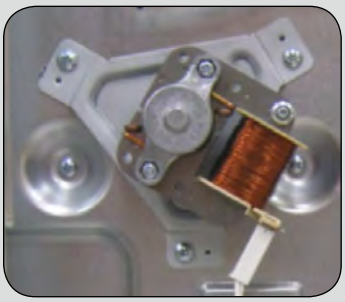
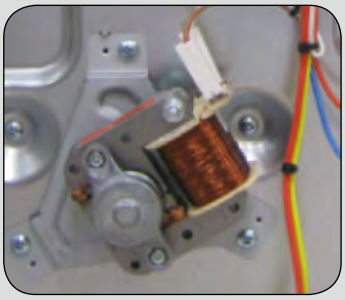
Component testing procedures

WARNING

ELECTRICAL SHOCK HAZARD
Disconnect power before servicing the range. Replace all panels before operating range.
Failure to do so can result in death or electrical shock.

FIGURE	TESTS MEASURE	RESULTS
 Broil Heater	* Measure resistance value of the heater terminals after removing connectors from the heater. * Measure voltage of heater terminals after selecting broil	* Approx : 11~15Ω (at the room temperature) * Terminal voltage of Broil heater : AC 240V * Replace or repair harness * Replace or repair main PCB of each oven. (Upper oven : Wall main PCB, Lower oven : 8000J Main PCB.)
 Bake Heater	* Measure resistance value of the heater terminals after removing connectors from the heater. * Measure voltage of heater terminals after selecting bake. (Make sure that voltage is measured for more than 1 minute because heater element will cycle On and Off.)	* Approx : 18~21Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness * Replace or repair main PCB of each oven. (Upper oven : Wall main PCB, Lower oven : 8000J Main PCB.)
 Convenction Heater	* Measure resistance value of the heater terminals after removing connectors from the heater. * Measure voltage of heater terminals after selecting convection bake. (Make sure that voltage is measured for more than 1 minute because heater element will cycle On and Off.	* Approx : 40~46Ω(at the room temperature) * Terminal voltage of convection heater : AC 240V * Replace or repair harness * Replace or repair main PCB of each oven. (Upper oven : Wall main PCB, Lower oven : 8000J Main PCB.)
 Steam Heater	* Measure resistance value of the heater terminals after removing connectors from the heater. * Measure voltage of heater terminals after selecting steam bake. (Make sure that voltage is measured for more than 1 minute because heater element will cycle On and Off.	* Approx : 26~30Ω (at the room temperature) * Terminal voltage of Drawer heater : AC 120V * Replace or repair harness * Replace or repair Wall Main PCB

4-3 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
	* Measure operation of the micro switch and the motor after removing wire harness from terminals. * Check if lock works normally by pressing Control lock for 3 seconds.	* Lock motor Resistance : 1600~2200Ω (at the room temperature) voltage : 120V * Micro switch com-NC=›closed, when door is unlocked * Replace or repair if harness is loose or disconnected.
 Lower Convection Fan 	* Measure resistance value of a motor after removing wire harness off the terminals. * Measure Input voltage to the motor after selecting convection bake on the key pad. (Make sure to measure voltage for more then one minute as fan will normally cycle on and off)	**Approx** * Convection Fan : 20 ~ 30Ω * Terminal Voltage of Convection Fan : 120V * Replace or repair harness * Replace or repair main PCB of each oven. (Upper oven : Wall main PCB, Lower oven : 8000J Main PCB.)

4-3 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 	* Measure resistance value of the oven temperature sensor. * Check if wire harness is loose or disconnected.	**Approx.** at the room temperature :1080Ω

4-3 Electrical Malfunction

Oven sensor resistance (Temperature vs. Sensor resistance)

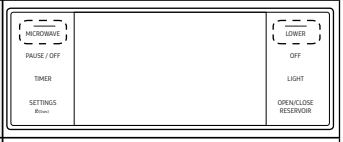
Ro = 1000 Ohms (0˚C), RP = 2757 Ohms, Up = 5V, a = 0.00375

degree F	degree C	ohms	degree F	degree C	ohms
0	-17.8	932.12	113	45	1170.17
14	-10	961.86	122	50	1188.93
23	-5	980.95	212	100	1374.93
32	0	1000.00	302	150	1558.01
41	5	1019.02	392	200	1738.06
50	10	1038.02	482	250	1915.39
59	15	1056.99	572	300	2089.69
68	20	1075.92	662	350	2261.07
77	25	1094.83	752	400	2429.52
86	30	1113.71	842	450	2595.05
95	35	1132.56	932	500	2757.65
104	40	1151.38	1000	538	2878.57

4-4 Self-diagnosis

Temp sensor & Heater check

1. After connecting the power, check if the display works properly.
2. Remove all accessories (Gliding Rack, Flat-Rack...etc.) from inside of the oven cavity.
3. You cannot proceed with self-diagnosis if the oven cavity is hot or the door is open.
4. -In this case, "Hot or door" message appears on the display.
   -To start self-diagnosis, press both Hidden Keys simultaneously for 5 seconds.
   -Refer to the table below for the hidden keys for each model.
   -Self-diagnosis takes approximately 4~5 minutes.

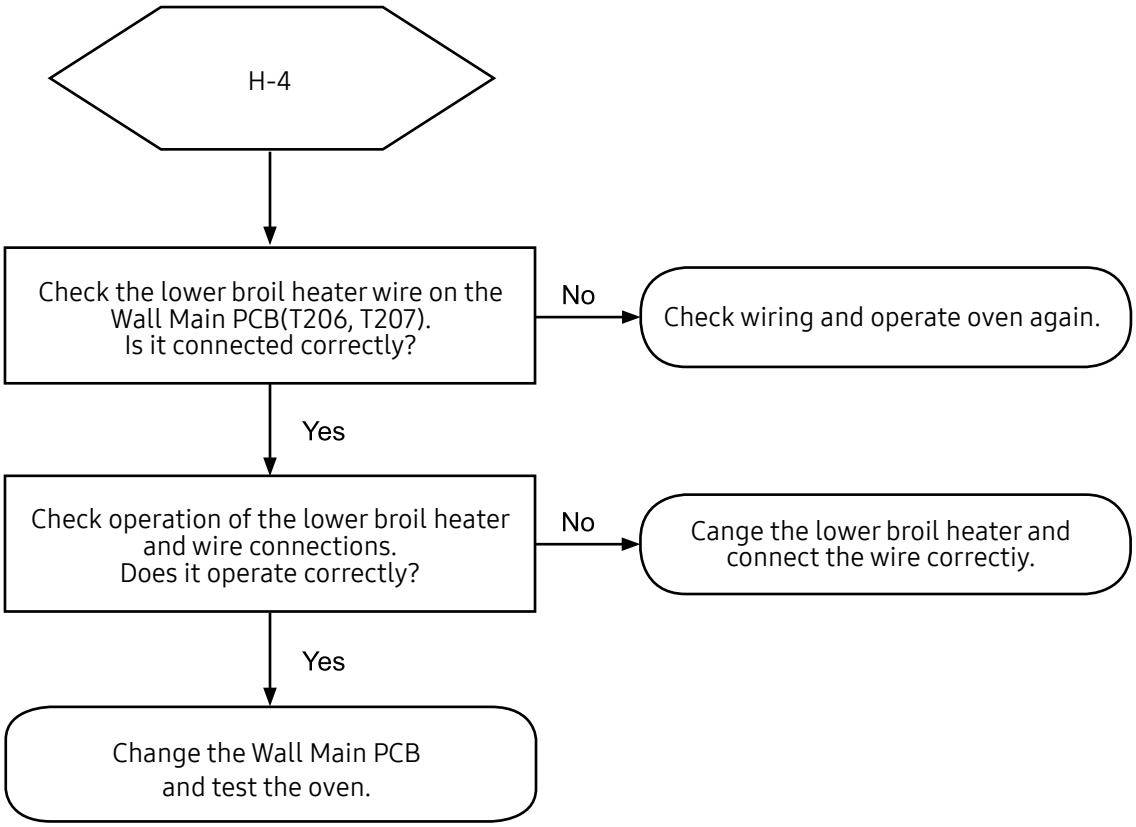
Model	DOC30M977D*
Control panel	
Hidden Key	MICROWAVE + LOWER

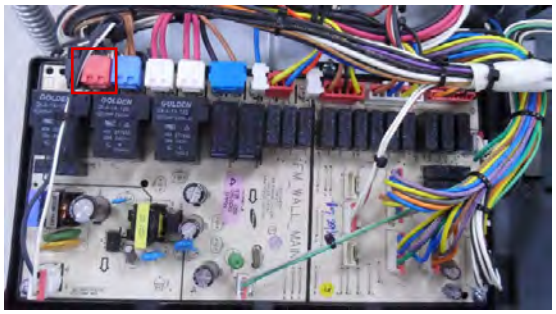
5. If there is no error, 'PASS' appears on the display with an alert sound.
6. If there is an error, following message appears on the display with an alert sound.

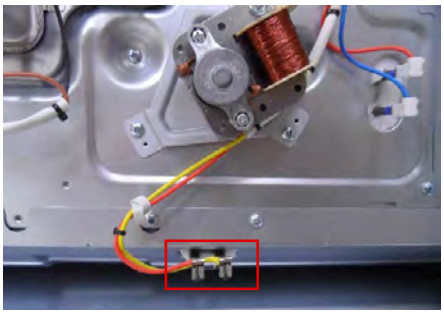
Model		DOC30M977D*	
		Error code	Remark
Feature	Lower Broil	H-4	Lower Oven Only
	Lower Bake	H-3	

7. f an error occurs, follow the following flow charts.

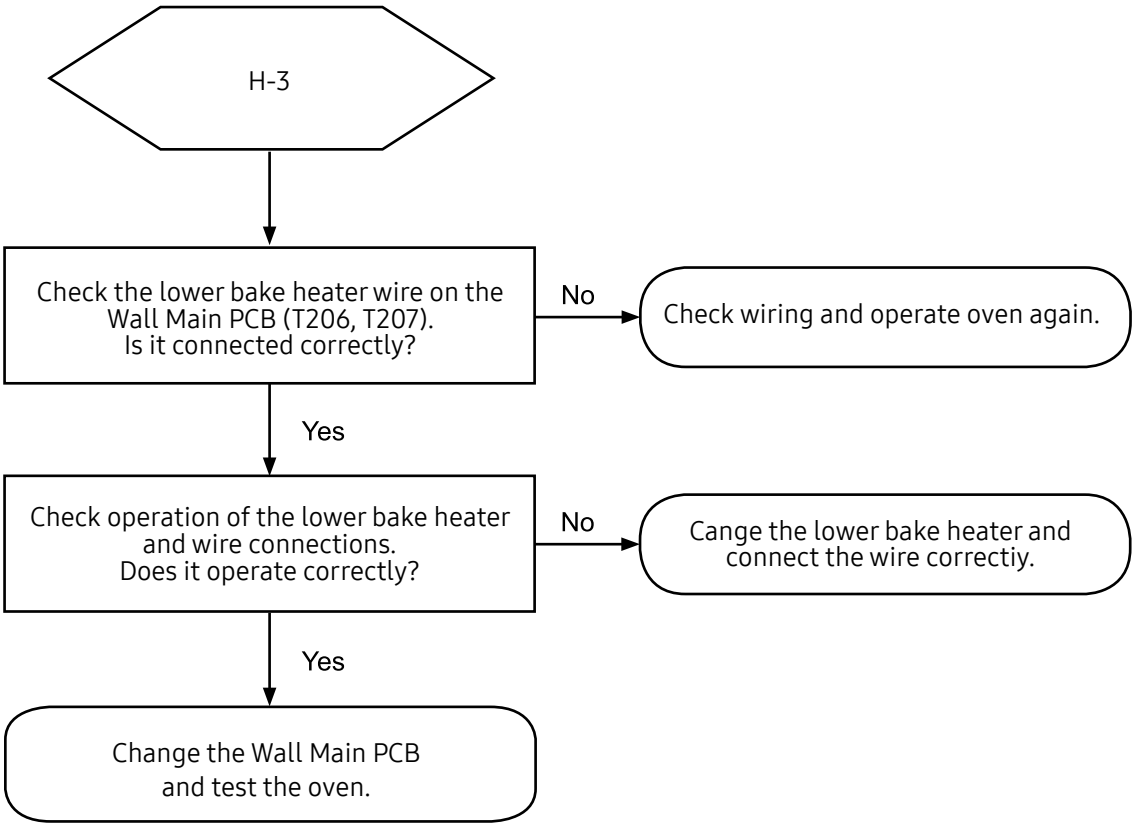
4-4 Self-diagnosis

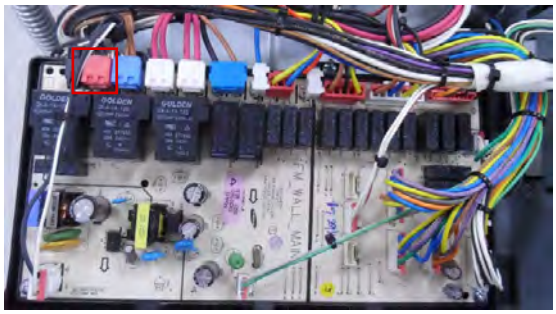


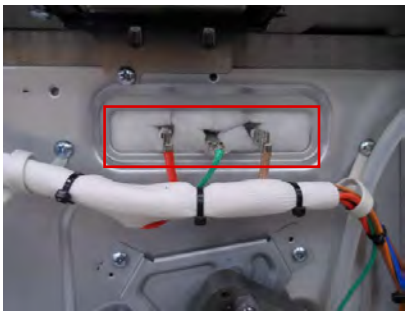




4-4 Self-diagnosis

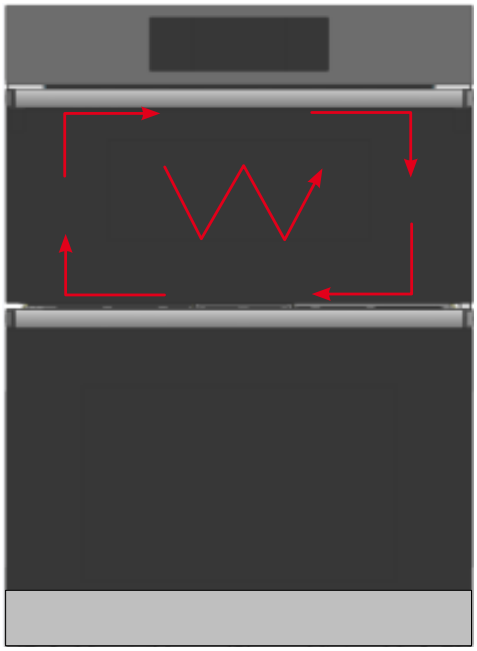






4-5 Procedure for Measurement of Microwave Energy Leakage

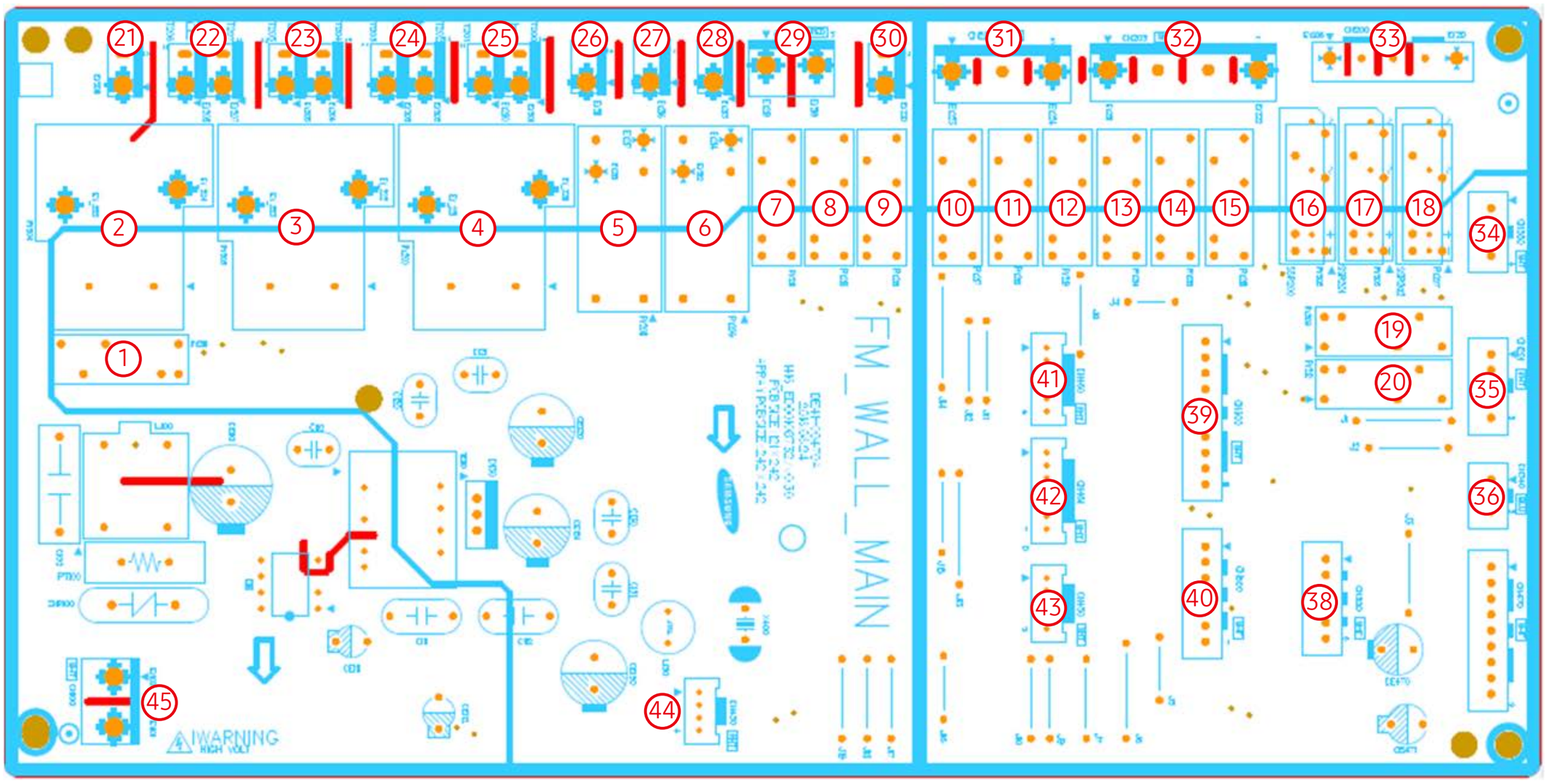
1. Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
2. Start to operate the oven and measure the leakage by using a microwave energy survey meter.
3. Set survey meter with dual ranges to 2,450MHz.
4. When measuring the leakage, always use the 2 inch spacer cone with the probe. Hold the probe perpendicular to the cabinet door. Place the spacer cone of the probe on the door and/or cabinet door seam and move along the seam, the door viewing window and the exhaust openings moving the probe in a clockwise direction at a rate of 1 inch/sec. If the leakage testing of the cabinet door seam is taken near a corner of the door, keep the probe perpendicular to the areas making sure that the probe end at the base of the cone does not get closer than 5cm to any metal. If it gets closer than 5cm, erroneous readings may result.
5. Measured leakage must be less than 4mW/cm^2 , after repair or adjustment.



Maximum allowable leakage is 5mW/cm^2 .
4mW/cm^2 is used to allow for measurement and meter accuracy

5. PCB Diagrams

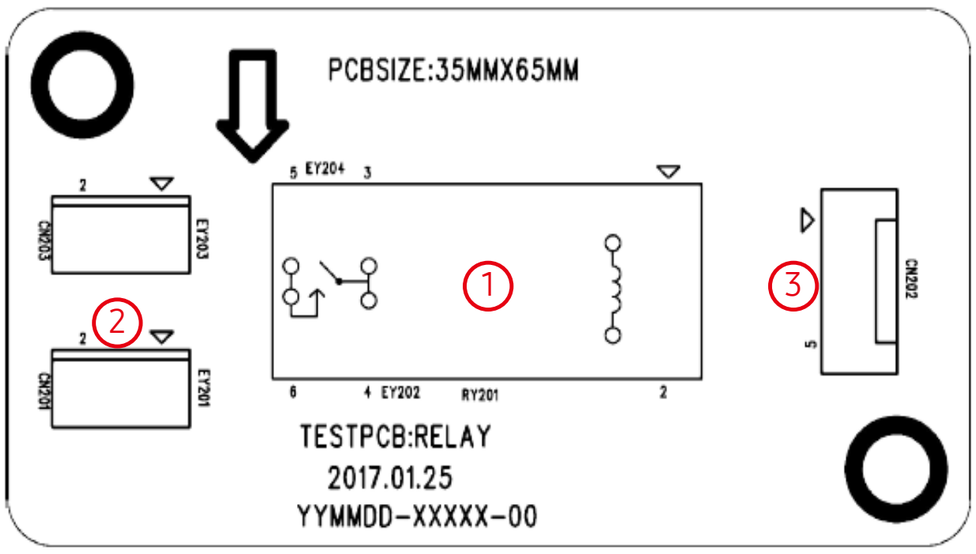
5-1 PCB Diagrams (Lower oven)



No.	Parts Number	Part Name	Function and Rule
1	RY201	RY-Source Relay	This is relay which control source of DLB, Bake, Broil, Warming Drawer relay.
2	RY204	Bake-Heater Relay	"Broil relay(RY203), Bake relay(RY204), convection relay(RY206) turned ON/OFF by mi-com signal after DLB relay is has been engaged. (Broil relay : Reversing position of the Brown wire will not cause a problem) (Bake relay : Reversing position of the Blue wire will not cause a problem)
3	RY203	Broil-Heater Relay	"Broil relay(RY203), Bake relay(RY204), convection relay(RY206) turned ON/OFF by mi-com signal after DLB relay is has been engaged. (Broil relay : Reversing position of the Brown wire will not cause a problem) (Bake relay : Reversing position of the Blue wire will not cause a problem)
4	RY200	DLB Relay	Circuit is designed to have broil relay or convection relay working after DLB relay is working by Double line break. (Reversing position of the Red wire will not cause a problem)
5	RY208	Steam-Heater Relay	This is relay to control steam heater.
6	RY206	Convection Relay	"Broil relay(RY203), Bake relay(RY204), convection relay(RY206) turned ON/OFF by mi-com signal after DLB relay is has been engaged. (Broil relay : Reversing position of the Brown wire will not cause a problem) (Bake relay : Reversing position of the Blue wire will not cause a problem)
7	RY211	Cooling Motor High Relay	This is relay to control Cooling Motor which is in upper cavity.
8	RY210	Cooling Motor Lower Relay	This is relay to control Cooling Motor which is in lower cavity.
9	RY213	Pyro-free Pump1 Relay	This is relay which is connected with Pyro-free pump upper side.
10	RY217	Conv-Fan-L Relay	This is relay which is connected with Conv-Fan-Low.
11	RY218	Water Pump Relay	This is relay which is connected with Water Pump.
12	RY219	Drain Pump Relay	This is relay which is connected with Drain Pump.
13	RY214	Conv-Fan-U Relay	This is relay which is connected with Conv-Fan-Upper.
14	RY215	Oven Lamp Relay	This is relay which is connected with Oven Lamp.
15	RY216	Door Lock Motor Relay	This is relay which is connected with Door Lock Motor.
16	RY202	Water Tank Motor-CW Relay	This is relay to control Water tank motor to turn in clockwise direction.
17	RY205	Water Tank Motor-CCW Relay	This is relay to control Water tank motor to turn in counter clockwise direction.

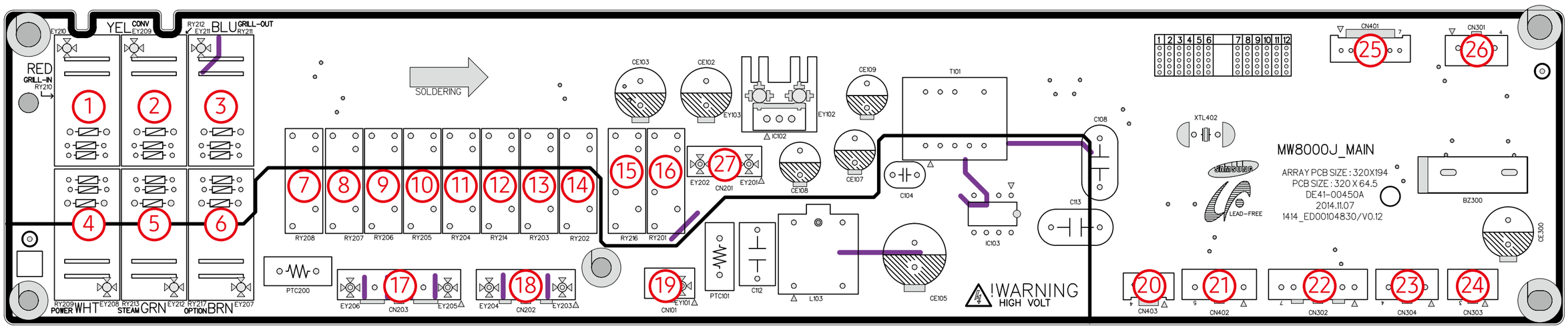
No.	Parts Number	Part Name	Function and Rule
18	RY207	Pyro-free Pump2 Relay	This is relay which is connected with Pyro-free pump lower side.
19	RY209	Door LED-U Relay	This is relay which is connected with Door LED-Upper.
20	RY212	Door LED-L Relay	This is relay which is connected with Door LED-Lower.
21	T208	Bake Terminal	This is terminal to connect harness with Bake relay.
22	T206	Bake Broil Common Terminal	This is terminal to common connect bake and broil heater.
	T207		
23	T205	Broil Terminal	This is terminal to connect harness with Broil relay.
	T204		
24	T203	DLB Terminal	This is terminal to connect harness with DLB relay.
	T202		
25	T201		
	T200		
26	T209	Common Terminal	This is terminal is a common connection for convection, steam, cooling motor.
27	T211	Steam Heater	This is connector which is connected with Steam Heater.
28	T210	Convection Heater	This is connector which is connected with Convection Heater.
29	CN202	COOK TOP UART	This is connector which is connected with Cooling Motor.
30	T212	Pyro-free Pump1	This is connector which is connected with Pyro-free Pump1.
31	CN204	Relay Connector	CONV FAN L, WATER PUMP, DRAIN PUMP
32	CN203	Relay Connector	CONV FAN U, OVEN LAMP U, DOOR LOCK, AC120V_LINE
33	CN200	Relay Connector	WATER TANK MOTOR-CW, WATER TANK MOTOR-CCW, PYROFREE-PUMP2, LIVE
34	CN550	Water Tank Sensing Connector	This connector which is connected with Water Tank sensor.
35	CN201	Relay Connector	DOOR LED-U, DOOR LED-L
36	CN340	Steam Temp	This connector which is connected with Steam temp sensor.
37	CN470	Sub Communication Connector	This is connector which is connected with Sub PCB to communicate.
38	CN320	Oven Sensing Connector	This connector which is connected with oven sensor.
39	CN300	Door Lock, Divider Connector	This is connector which is connected with Door plunger switch and Door lock switch, divider switch.
40	CN500	Water & Steam Sensing Connector	This connector which is connected with water&steam sensor.
41	CN460	Cooktop UART1	This connector is for communication with main PBA of lower oven for double oven. (N/A for single oven)
42	CN461	Cooktop UART 2	This connector is for communication with PBA of cooktop (N/A for this model)
43	CN450	HASS Connector	It is connector for HASS (Smart Test).
44	CN430	Micom Writing Connector	This is connector for writing Micom.
45	CN100	Power Connector	This is to supply power with SMPS.

5-2 Relay PCB



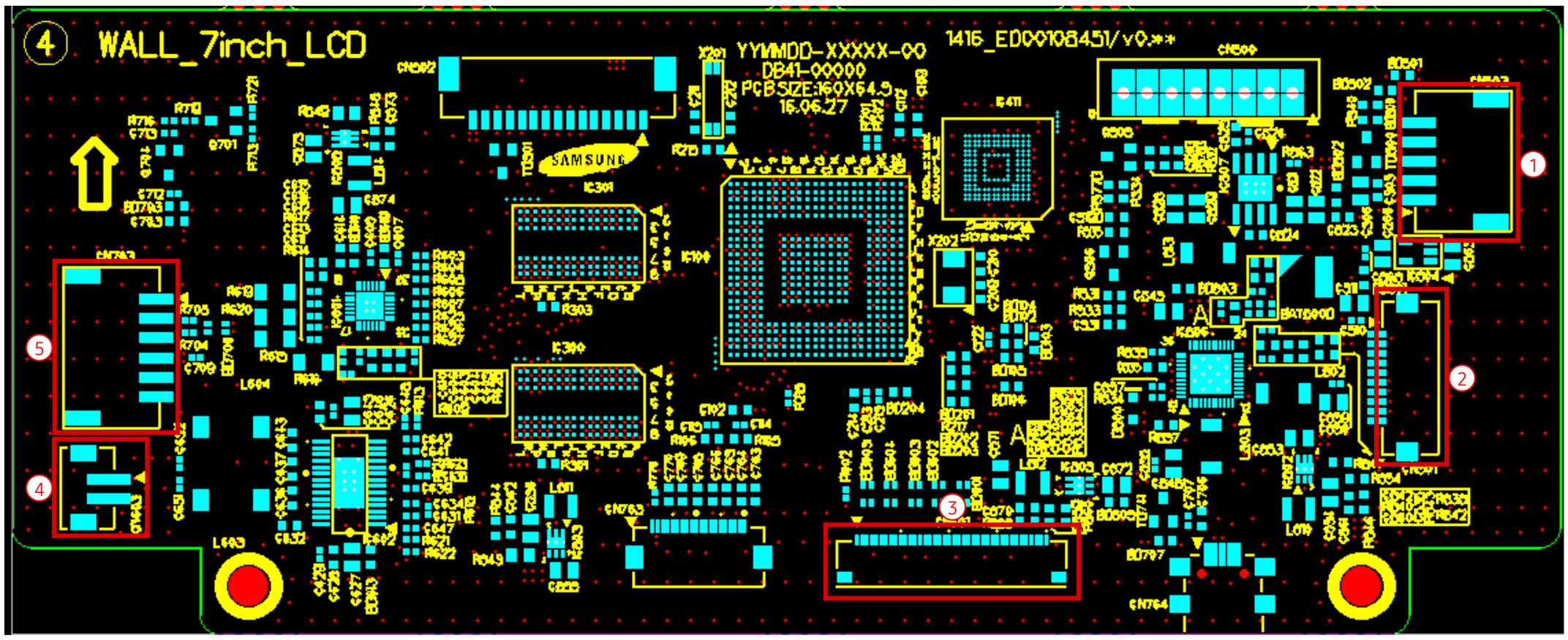
No.	Parts Number	Part Name	Function and Rule
1	RY201	Convection Relay	Convection relay(RY201), turned ON/OFF by mi-com signal after DLB relay is has been engaged.
2	CN201	Convection Heater	This is connector which is connected with Convection Heater.
	CN203		
3	CN202	Relay Connector	Convection Heater

5-3 PCB Diagrams (Upper oven)



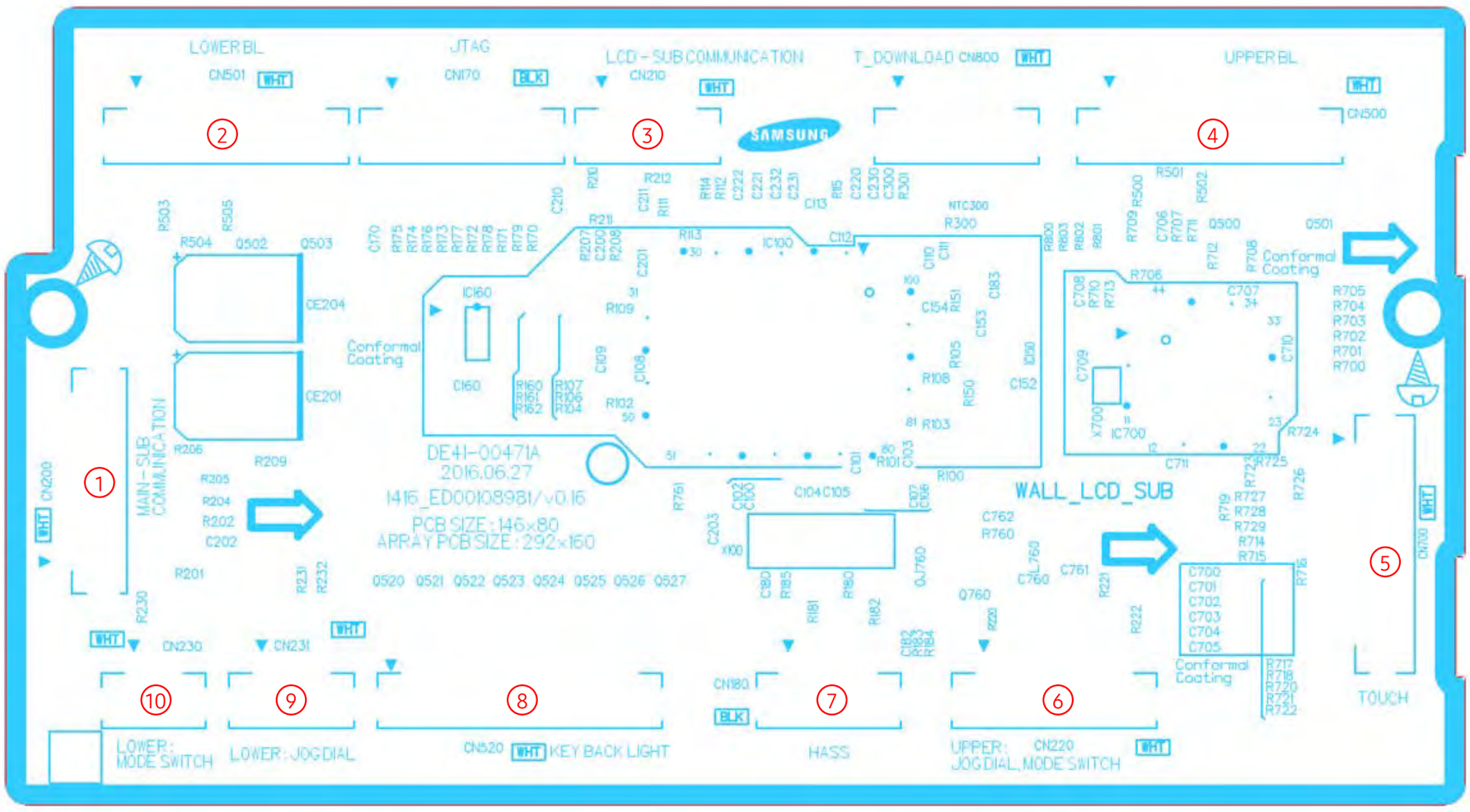
No	Part Name	Function and Role
1	RY210	GRILL-IN HEATER RELAY
2	RY212	CONVECTION HEATER RELAY
3	RY211	GRILL-OUT HEATER RELAY
4	RY209	POWER RELAY
5	RY213	STEAM HEATER RELAY
6	RY217	OPTION RELAY
7	RY208	INRUSH RELAY
8	RY207	MAIN(LAMP) RELAY
9	RY206	FAN MOTOR RELAY
10	RY205	STIRRER(TURN TABLE) MOTOR RELAY
11	RY204	DAMPER MOTOR RELAY
12	RY214	CONVECTION MOTOR LOW RELAY
13	RY203	CONVECTION MOTOR HIGH RELAY
14	RY202	LAMP RELAY
15	RY216	WATER PUMP 2 RELAY
16	RY201	WATER PUMP1 RELAY
17	CN203	MAIN(LAMP), FAN MOTOR, STIRRER(TURN TABLE) MOTOR, DAMPER MOTOR CONNECTOR
18	CN202	CONVECTION MOTOR LOW/HIGH, LAMP CONNECTOR
19	CN101	SMPS(PBA POWER) CONNECTOR
20	CN403	MICOM WRITING CONNECTOR
21	CN402	SMART DEBUG CONNECTOR
22	CN302	DOOR, TEMP, DAMPER SENSING CONNECTOR
23	CN304	WATER LEVEL SENSING CONNECTOR
24	CN303	STEAM HEATER SENSING CONNECTOR
25	CN401	DISPLAY MODULE CONNECTOR
26	CN301	GAS SENSOR CONNECTOR
27	CN201	WATER PUMP1,2 CONNECTOR

5-4 PCB Diagrams (LCD PBA)



No.	Parts Number	Part Name	Function and Rule
1	CN503	Sub Board Connector	This is connected with sub board.
2	CN501	Touch Connector	This is connected with touch pannel.
3	CN601	LCD Connector	This is connected with 7.0" LCD.
4	CN603	Speaker Connector	This is connected with speaker.
5	CN703	Wi-Fi Connector	This is connected with Wi-Fi module.

5-5 PCB Diagrams (Sub PBA)

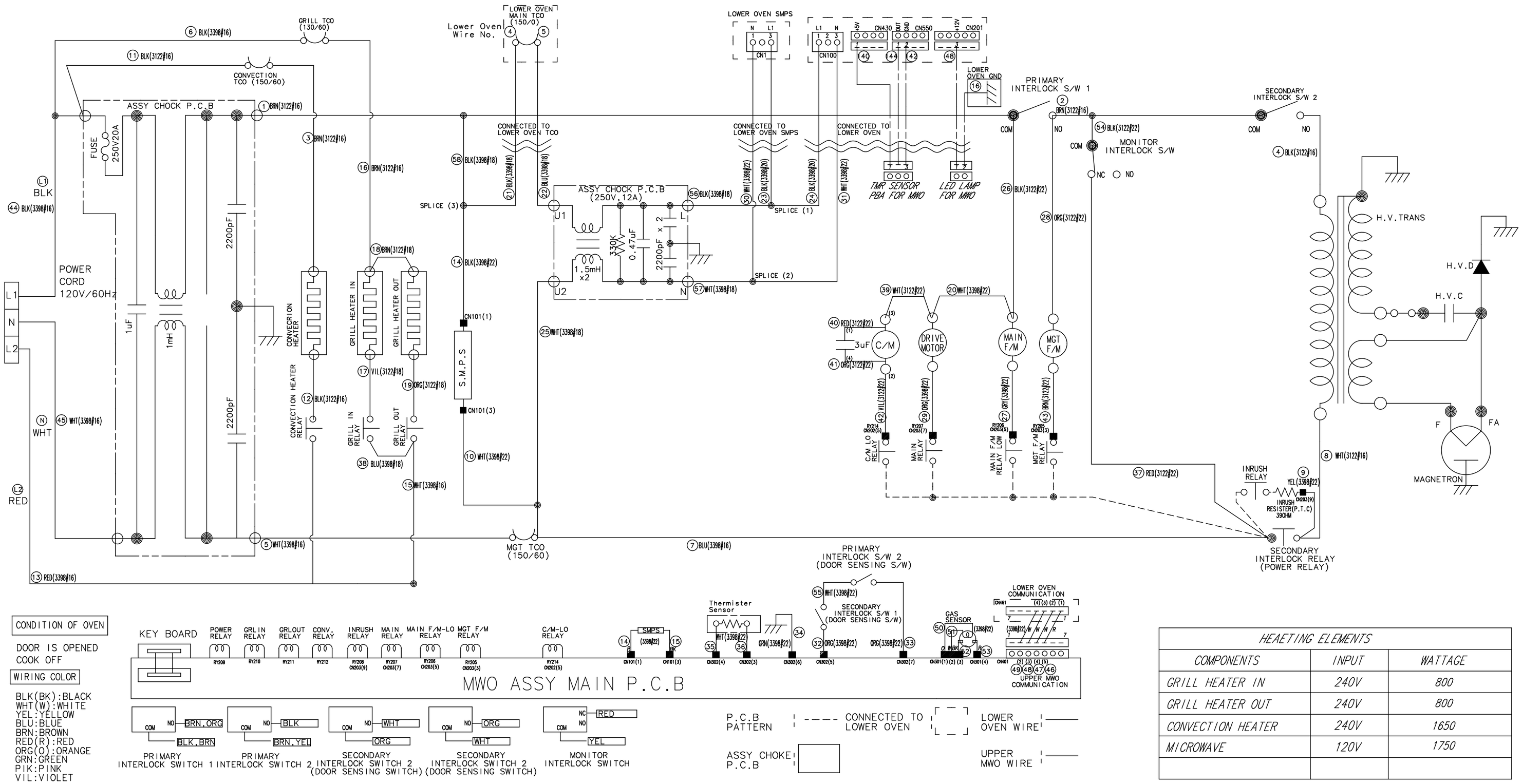


No.	Parts Number	Part Name	Function and Rule
1	CN200	Main Communication Connector	This is connector which is connected with Main PCB to communicate.
2	CN501	Lower Oven Knob Backlight Connector	This is connector which is connected with lower oven knob backlight circuit. (N/A for Single model)
3	CN210	LCD Communication Connector	This is connector which is connected with LCD PBA to communicate.
4	CN500	Upper Oven Knob Backlight Connector	This is connector which is connected with lower oven knob backlight circuit.
5	CN700	Touch Film Connector	This is connector which is connected touch film.
6	CN220	Upper Oven Dial Connector	This is connector which is connected upper oven dial(Jog Dial, Mode Dial).
7	CN180	HASS Connector	This is connector which is HASS.
8	CN520	Key Backlight Connector	This is connector which is connected with lower oven knob backlight circuit.
9	CN231	Lower Jog Dial Connector	This is connector which is connected lower oven jog dial
10	CN230	Lower Mode Dial Connector	This is connector which is connected lower oven mode dial

6-1 Schematic diagram (Upper oven)

SCHEMATIC DIAGRAM - COMBI OVEN - US
DOC30M977D* (MODERN)

2017.03.02
Designed by SJ CHO



CONDITION OF OVEN

DOOR IS OPENED
COOK OFF

WIRING COLOR

BLK(BK):BLACK
WHT(W):WHITE
YEL:YELLOW
BLU:BLUE
BRN:BROWN
RED(R):RED
ORG(O):ORANGE
GRN:GREEN
PIK:PINK
VIL:VIOLET

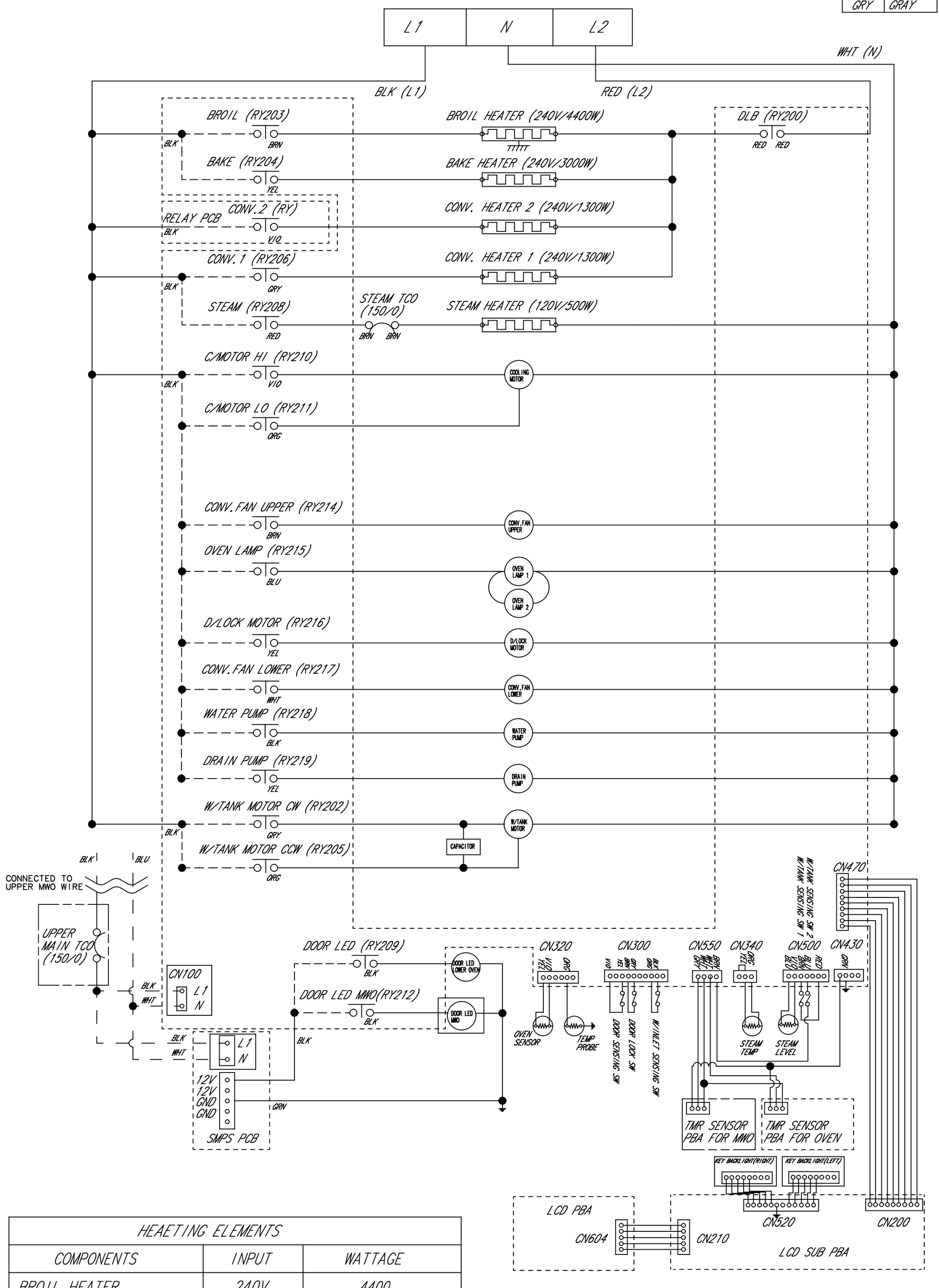
HEAETING ELEMENTS		
COMPONENTS	INPUT	WATTAGE
GRILL HEATER IN	240V	800
GRILL HEATER OUT	240V	800
CONVECTION HEATER	240V	1650
MICROWAVE	120V	1750

6-2 Schematic diagram (Lower oven)

NOTE
1) CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF
2) OVEN DOOR OPENED AND UNLOCKED
3) WATER RESERVOIR INPUTTED AND LOCATED INSIDE

SCHEMATIC DIAGRAM
MODEL : DOC30M977D*

COLOR	
RED	RED
BLK	BLACK
WHT	WHITE
BRN	BROWN
YEL	YELLOW
BLU	BLUE
ORG	ORANGE
VIO	VIOLET
GRN	GREEN
GRY	GRAY



HEAETING ELEMENTS		
COMPONENTS	INPUT	WATTAGE
BROIL HEATER	240V	4400
BAKE HEATER	240V	3000
CONVECTION HEATER 1	240V	1300
CONVECTION HEATER 2	240V	1300
STEAM HEATER	120V	500

P.C.B PATTERN
LOWER OVEN WIRE
UPPER MWO WIRE
CONNECTED TO UPPER MWO

dacor®

Printed in Korea