SAMSUNG

FREE STANDING RANGE

BASIC: NE59J7650WS
MODEL: NE59N6650W*
MODEL CODE: NE59N6650W*/AC

SERVICE Manual

FREE STANDING RANGE

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1. Precaution

1-1 Forward

This SAMSUNG Service Manual, " 30" Freestanding Self-Cleaning Electric Range," provides the technician with information on the operation and service of the Freestanding Self-Cleaning Electric Range. 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 the electric range.

1-2 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 warming drawer.
- 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 Electronices assumes no responsibility for any repairs made on our products by anyone other than Authorized Service Technicians.

1-3 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 range. 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

- INJURIES CAN OCCUR IF THE RANGE TIPS

- INSTALL ANTI-TIP DEVICE PACKED WITH RANGE
- FOLLOW ALL INSTALLATION INSTRUCTIONS

To reduce the risk of tipping of the range, the range must be secured by properly installed anti-tip devices. To check if the bracket is installed properly,

- Warming drawer : grasp the top rear edge of the Range and carefully attempt to tilt it forward. verify that the anti-tip devices are engaged.
- Storage drawer : Remove drawer and verify leveling leg is inserted into and fully secured by the anti-tip devices.

Refer to the installation manual for proper anti-tip bracket installation.

- Do not step, lean or sit on the doors of the range -this can cause the range to tip, resulting in burns or serious injuries.

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.

CAUTION

Do not store items of interest to children in cabinets above a range or on the back guard of a range – children climbing on the range to reach items could be seriously injured.

- 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

SURFACES

- **DO NOT TOUCH SURFACE UNITS OR AREAS NEAR UNITS** – Surface units may be hot even though they are dark in color. Areas near surface units may become hot enough to cause burns. During and after use, do not touch, or let clothing or other flammable materials contact surface units or areas near units until they have had sufficient time to cool. Among these areas are the cook-top and surfaces close to the cook-top.

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.

1. Precaution

SURFACE COOKING UNITS

- **Use Proper Pan Size** – This appliance is equipped with one or more surface units of different sizes. Select utensils having flat bottoms large enough to cover the surface unit heating element. The use of undersized utensils will expose a portion of the heating element to direct contact and may result in ignition of clothing. Proper relationship of utensil to burner will also improve efficiency.
- **Never Leave Surface Units Unattended at High Heat Settings** – Boil overs may cause smoking and greasy spillovers may ignite.
- **Make Sure Reflector Pans or Drip Bowls Are in Place** – Absence of these pans or bowls during cooking may subject wiring or components underneath to damage.
- **Protective Liners** – Do not use aluminum foil to line surface unit drip bowls or oven bottoms, except as suggested in the manual. Improper installation of these liners may result in a risk of electric shock, or fire.
- **Glazed Cooking Utensils** – Only certain types of glass, glass/ceramic, ceramic, earthenware, or other glazed utensils are suitable for range-top service without breaking due to the sudden change in temperature.
- **Utensil Handles Should Be Turned Inward and Not Extend Over Adjacent Surface Units** – To reduce the risk of burns, ignition of flammable materials, and spillage due to unintentional contact with the utensil, the handle of a utensil should be positioned so that it is turned inward, and does not extend over adjacent surface units.
- **Do Not Soak Removable Heating Elements** – Heating elements should never be immersed in water.
- Be sure you know which control pads operate each surface unit. Make sure you turned on the correct surface unit.

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 selfclean 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 above the left rear surface unit. This area could become hot during oven use. Never block this vent and never place plastic or heat sensitive items on 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.

GLASS/CERAMIC COOKING SURFACES

- **Do Not Cook on Broken Cook-Top** – If cook-top should break, cleaning solutions and spillovers may penetrate the broken cooktop and create a risk of electric shock. Contact a qualified technician immediately.
- **Clean Cook-Top With Caution** – If a wet sponge or cloth is used to wipe spills on a hot cooking area, be careful to avoid steam burn. Some cleaners can produce noxious fumes if applied to a hot surface.

DEEP FAT FRYERS:

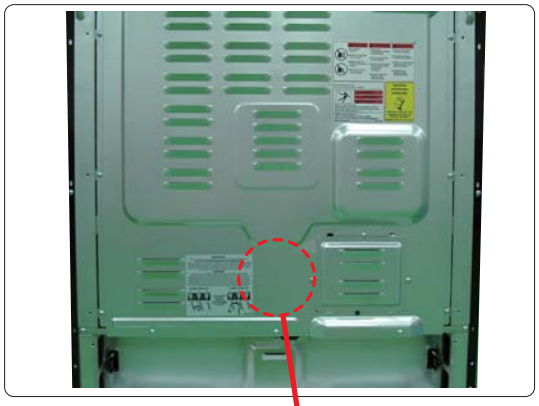
- Use extreme caution when moving the grease kettle or disposing of hot grease.

STEAM TRAY

- remove only after water and tray have cooled.

1-4 Model & Serial Number Label and Tech Sheet Locations

This Model / Serial Number label and Tech Sheet locations are shown below.
The rating plate is located above the drawer on the oven frame.

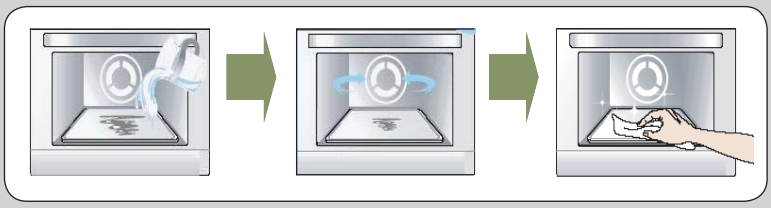


2. Specifications

2-1 Features

Features

Item	Steam Clean
How to Use	- Pour the water 10oz (+detergent) - Push the steam cleaning button - In around 20 minutes, the oven will stop automatically. - Wipe it out with a damp cloth.
Operating (Temperature)	About 158°F
Operating Time	20 Minutes
Used Heater	Bottom Baked Heater
Smell	No smell
Tool to clean	Wet cloths



Biggest Capacity

- The biggest capacity in current US market !!!
- It benefits consumers to cook for large family food in Thanksgiving & Christmas seasons
  (i.e Turkey 25 lbs = 4.4 cu ft, 20 lbs = 3.5 cu ft)

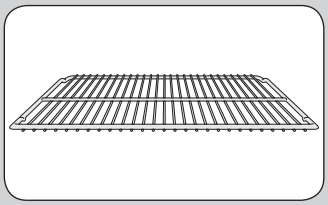
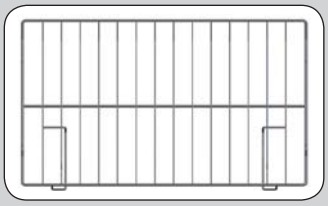
2. Specifications

2-2 Table of Specifications

Items		Model	
		BASIC MODEL	NEW MODEL
Model Name		NE59J7650WS	NE59N6650WS
Category		Convection	Convection
Overall	Width	30″	30"
	Installation type	Freestanding	Freestanding
	Color availability	STS	STS
Control	Oven	Touch	Touch
	Cooktop	Knob	Knob
	Display	LED	LED
	Electronic clock	Yes	Yes
	Control lock capability	Yes	Yes
	Audible preheat signal	Yes	Yes
	Wi-Fi Connection	No	Yes
Cooktop	Material	Ceramic glass	Ceramic glass
	# of element	5	5
Power	LR	7” - 1,800W	6” – 1200W
	RR	6" - 1,200W	6” – 1200W
	CR	Warming Center(100W)	Warming Center(100W)
	LF	7” - Bridge (7”/Bridge - 1,800W/2,600W)	9" - Dual(6"/9") 1,400W /3,600W
	RF	12” - Triple(6”/9”/12”) (1,100/2,200/3,000W)	12" - Triple(6"/9"/12") (1,100/2,200/3,000W)
Oven	Capacity(cu.ft)	5.9	5.9
	Broil element	4,200 watts	4,200 watts
	Bake element	3,000 watts	3,000 watts
	Convection System	Yes	Yes
	Convection Element	Yes(800W / 240V)	Yes(800W / 240V)
	# of Racks	2	3
	Interior oven light	120V, 40 watts	120V,40 watts
	Cleaning	Self Clean & Steam Clean	Self Clean & Steam Clean
Drawer	Type	Warming Drawer	Warming Drawer
	Element	600 watts	600 watts
	Warming rack	No	No
Dimensions (inch)	Oven Interior(W x H x D)	25 x 211 / 8 x 19	25 x 211 / 8 x 19
	Exterior - Width	29 4/5 (Cook top) : 759mm	29 4/5 (Cook top) : 759mm
		29 4/5 (Body) : 759mm	29 4/5(Body) : 759mm
	Exterior - Height	36 1/4 (cook top) : 921mm	36 1/4(Cook top) : 921mm
	Exterior - Depth	23 1/2 (Door), : 599.6mm	23 1/2 (Door) : 599.6mm
		26 (with handle) : 659.6mm	26(with handle) :659.6mm
	Net weight: Lbs (Kg)	170 lbs (77kg)	170 lbs(77kg)
Power	Rating(240V 60Hz)	Oven : 4,200W Cooktop : 8,700W	Oven : 4,200W Cooktop : 8,800W

2. Specifications

2-3 Accessory

Item	Description	Code No.	Q'ty
	Rack Flat	DG75-01001C	2
	Rack Wire	DG67-00183A	1
	Tray Steam	DG63-00595A	1

3. Disassembly and Reassembly

3-1 Removing the Assy-Frame Cooktop

Item	How to use	Pictures
Screw driver	Use for assembly and disassembly of all screws	
9mm Vox Driver	Use for assembly and disassembly of injector nozzles. (Convection Fan)	

3-2 Removing Cover-Back Main Wire, Cover-Back Guard Wire, PCB-Main, and PCB SUB

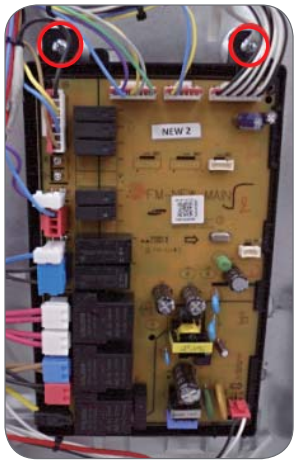
WARNING

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.

PRECAUTION

When you work on the electric range, 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
Cover-Back Main Wire, Cover Back Guard Wire, PCB-SUB, PCB-MAIN,		**1.** Turn off the electrical supply going to the range. **2.** Pull the range away from the wall so that you can access the rear panel. **3.** Remove the 6 screw from the Cover-Back Main Wire and remove the panel **4.** Remove 5 screws from the Cover-Back Guard Wire and remove the cover.
		**5.** Remove 1 screws of PCB SUB and separate PCB SUB.
		**6.** Remove 2 screws of PCB Main and separate PCB Main.

3-3 Removing Regulator-Energy, HOLDER LED and ASSY MODULE

WARNING

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

PRECAUTION

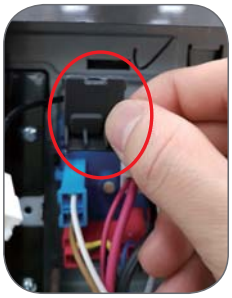
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Regulator-Energy		**1.** Turn off the electrical supply going to the range. **2.** Pull the range away from the wall so that you can access the rear panel. **3.** Remove Cover-Back Guard Wire. (See step 4 on page 11)
		**4.** Remove Regulator-Energy connectors.
		**5.** Pull out the Knob-Dial.
	 Screw	**6.** Remove 2 screws and replace Regulator-Energy.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

3-3 Removing Regulator-Energy, HOLDER LED and ASSY MODULE

Parts	Explanation Photo	Explanation
 HOLDER LED and ASSY MODULE		**1.** Unplug the connector of ASSY MODULE.
		**2.** Remove the RUBBER from the CONTROL BOX.
		**3.** Pull out the ASSY MODULE.
		**4.** Remove the HOLDER LED.

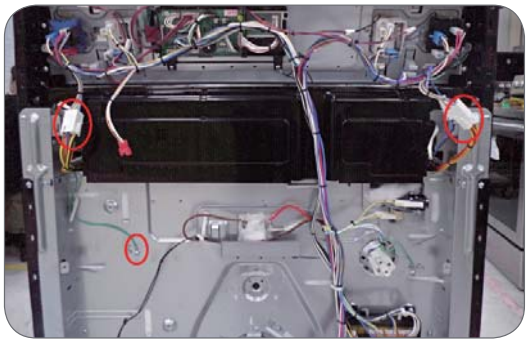
* Reassembly of All part is the reverse order of disassembly.

3-4 Removing Surface elements and The Ceramic Glass Cooktop

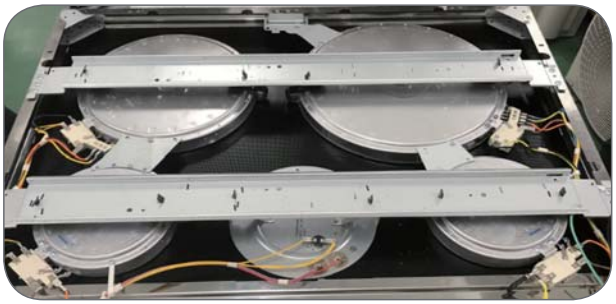
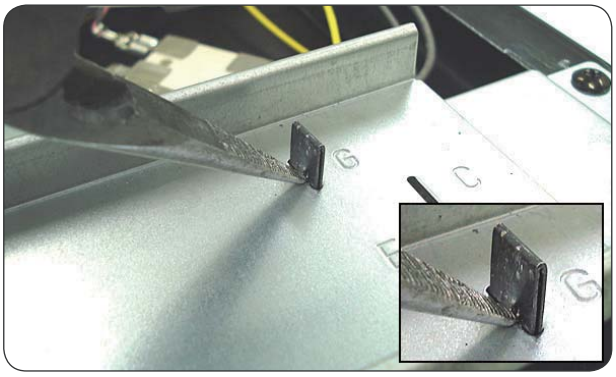
WARNING

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..

Parts	Explanation Photo	Explanation
 Surface elements and Ceramic Glass Cooktop		**1.** Unplug the cord or disconnect power **2.** Open oven door and remove the 3 screws located at the front of the cook-top, then close the door.
		**3.** Slightly lift up and pull up the cook-top and then unplug the 2 connectors wire at the back by squeezing side tabs and unscrew ground wire.
		

3-4 Removing Surface elements and The Ceramic Glass Cooktop

Parts	Explanation Photo	Explanation
Surface elements and Ceramic Glass Cooktop		**4.** Protect the cooktop surface and turn the assembly over.
		**5.** To remove the surface elements a) Remove the wires from the element and limiter terminals. b) Remove the element bracket screw (shown above) for the element you are servicing. c) Carefully lift the bottom of the bracket just far enough to remove the element. d) Use sharp tool to remove the heating element. **REASSEMBLY NOTE**: When you reinstall the element make sure that the wires are inserted onto the correct terminal then reinstall the bracket screw to secure it to the cooktop.

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

Screw
- Terminal Block Screw : M4 X 25
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

3-5 Removing The Latch-Door & Switch-Door Plunger

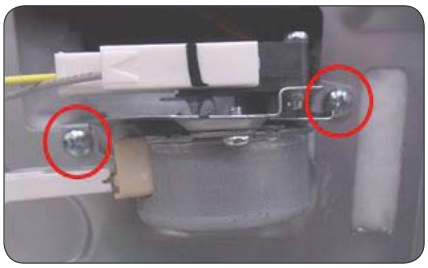
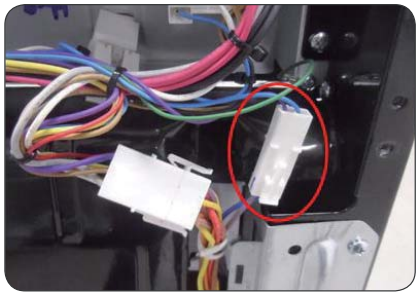
WARNING

ELECTRICAL SHOCK HAZARD

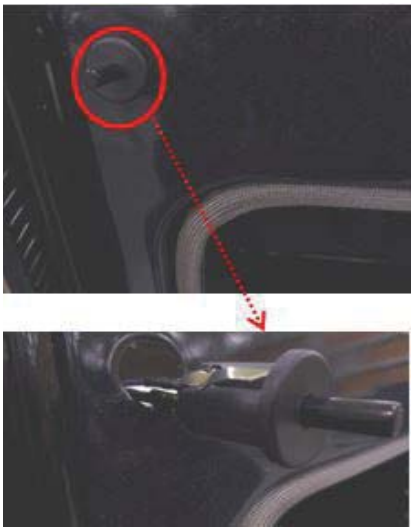
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

CAUTION

When you work on the electric range, 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		**1.** Turn off the electrical supply going to the range. **2.** Open the oven door. **3.** Raise the cooktop (see page 14 for the procedure). **4.** To remove the Latch-Door: a) Remove the 2 screws from the front of cavity.
		b) Remove two screw from Cover-Back Main and remove latch-door
		**5.** To remove the Switch-Door Plunger a) Remove the Cover-Back Guard Wire (see page 11 for the procedure). b) Release the wire from Cable Clamp.

3-5 Removing The Latch-Door & Switch-Door Plunger

Parts	Explanation Photo	Explanation
 Latch-Door & Switch-Door Plunger		c) Remove the Switch-Door Plunger from the range. carefully pull out the switch while moving it up and down using pliers

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

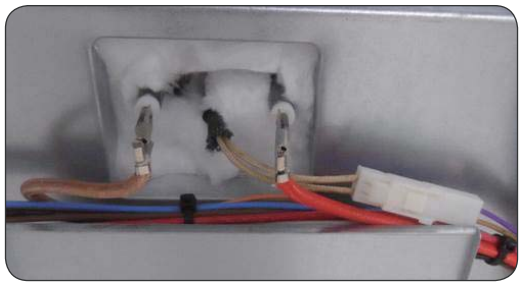
3-6 Removing Heater-Broil

WARNING

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

CAUTION

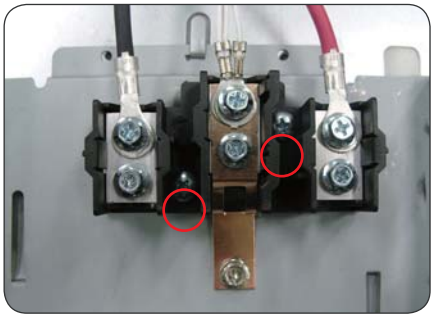
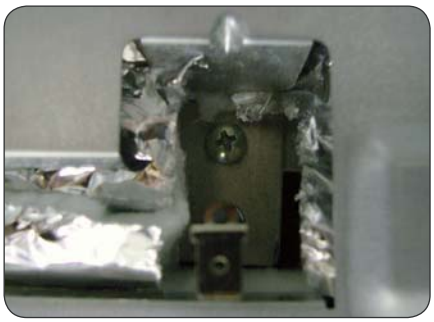
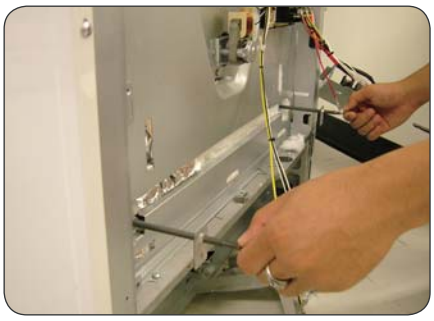
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Broil Heater	 	**1.** Turn off the electrical supply going to the range. **2.** Open the oven door and remove the racks from inside of the oven. **3.** To remove the broil element. a) Remove the Sensor-Thermistor and 4 screws from the front and rear brackets. b) Remove Cover-Back Main Wire and disconnect 2 wires from Heater-Broil and a wire from Sensor-Thermistor.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

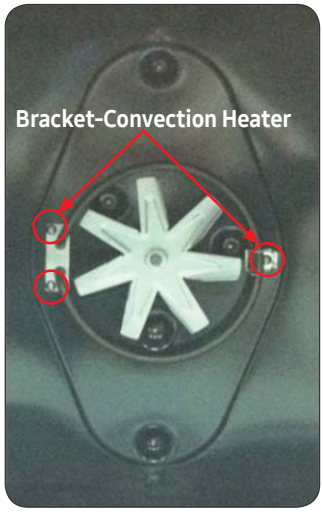
3-7 Removing Heater-Bake

Parts	Explanation Photo	Explanation
 Heater-Bake		**1.** Unplug range or disconnect power. **2.** Pull the range out of its mounting location so that you can access the rear of the unit. **3.** Remove Cover-Back Main Wire. (See step 3 on page 11 for procedure) **4.** Remove Terminal-Block and Bracket-Cover Access(with Adiabatic-Terminal) by unscrew 2 points.
		**5.** Unscrew 2 points of Heater-Bake.
		**6.** Cut the Adiabatic-Rear based on the lower side.
		**7.** Carefully pull out Heater-Bake and replace it.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

3-8 Removing Convection Element, Fan-Covnection and Motor-Convection

Parts	Explanation Photo	Explanation
 Convection Element, Fan-Convection , Motor-Convection	  	**1.** Disconnect power and remove oven racks. **2.** Pull the range 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 11 for procedure) **4.** Remove oven door. (See Page 24 on page for procedure) **5.** Remove Cover-casing **6.** Unscrew 2 screws and remove Bracket-Convection Heater to remove Heater-Convection. **7.** Unscrew nut of Fan-Convection Main. **8.** Unscrew 3 points and disconnect a Motor-Convection wire and disconnect Heater-Convection wire.

CAUTION

Be careful not to bend the Fan-Convection(Blade)

3-9 Removing Lamp

WARNING

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

CAUTION

When you work on the electric range, 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

1. Disconnect power.
2. Remove oven door.
3. Turn the glass bulb cover in the oven counterclockwise to remove.
4. Turn bulb counterclockwise to remove from socket.
5. Replace bulb and cover by turning clockwise.

Lamp

CAUTION

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

Explanation Photo	Explanation

To replace socket assembly:

6. Disconnect the wires from the socket terminals.

7. Use a screwdriver and bend the clips on the socket away from the edges of the liner hole(there are 6 clips on the socket), and pull the socket out of the liner. Push the socket out from the rear of the unit.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

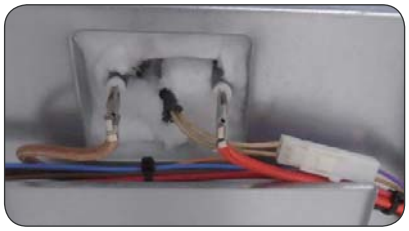
3-10 Removing Sensor-Thermistor

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.

PRECAUTION

When you work on the electric range, 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 range. **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.

3-11 Removing Assy-Drawer & Heater-Warming Drawer

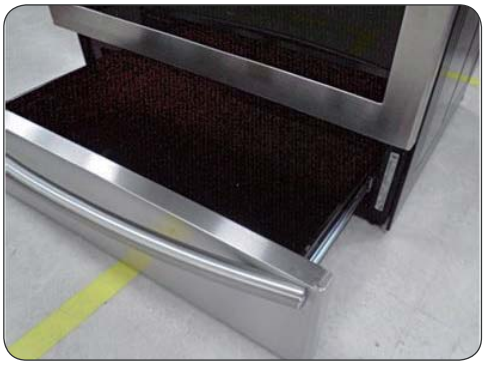
⚠ WARNING

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.

⚠ PRECAUTION

When you work on the electric range, 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
 Assy-Drawer & Heater-Warming Drawer	   

Explanation

To remove Assy-Drawer:

1. CAUTION -Turn power OFF before removing the Warming Drawer.
2. Open the drawer to the fully opened position.
3. Locate glide lever on each side of drawer, push down on the left glide lever and pull up on the right glide lever.
4. Pull out the warming drawer.

3-12 Removing and Replacing Oven Door

WARNING

The door is very heavy. Be careful when removing door Do not lift door up by the Handle-Door.

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

3-13 Removing Handle-Door and Glass-Inner

WARNING

ELECTRICAL SHOCK HAZARD

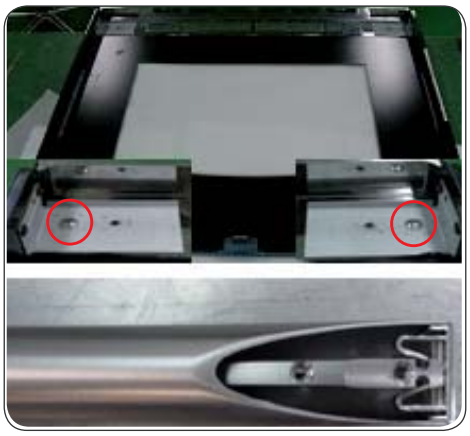
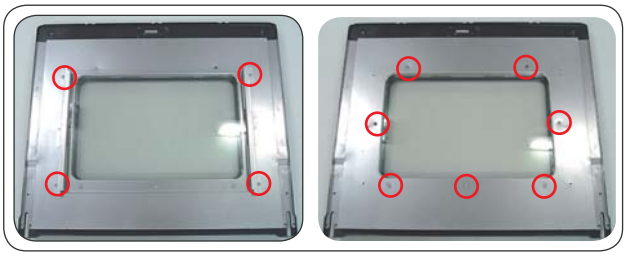
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

PRECAUTION

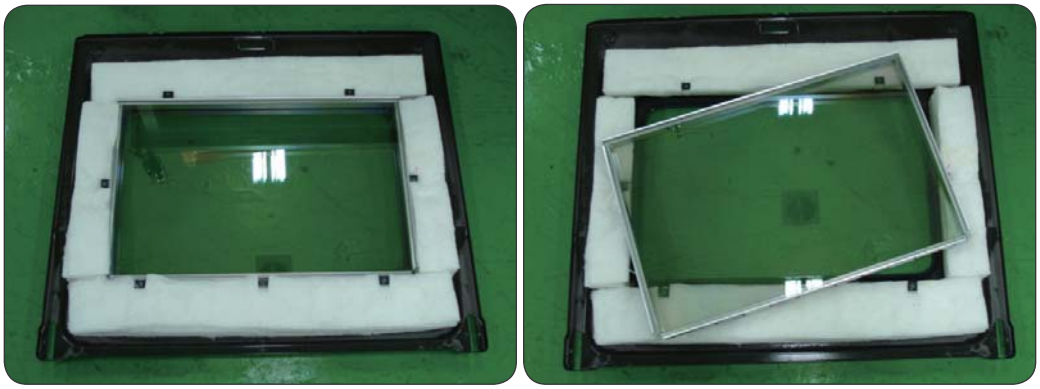
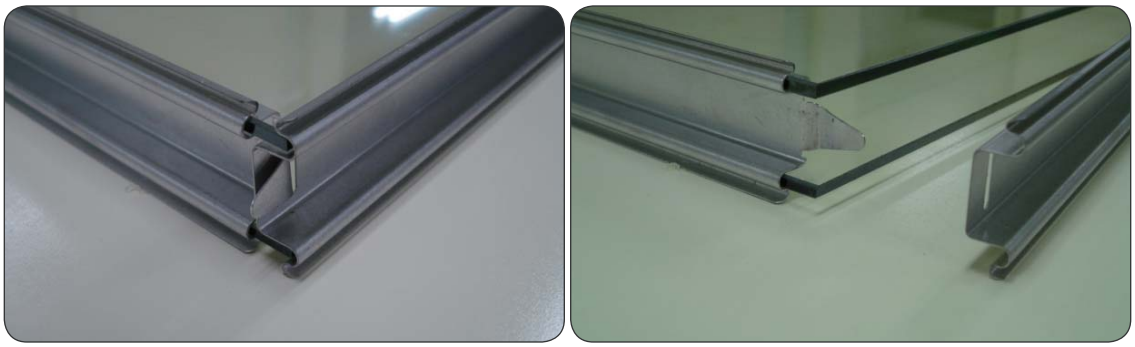
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
 Door		**1.** Remove the oven door from the range. (see page 24 for the procedure.) **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.** Remove 2 Handle-screws from the door.
		**5.** Lift the door rear assembly off the front assembly.
	 	**6.** Remove 2 spacers and 2 screws.

3-14 Removing Handle-Door and Glass-Inner

Parts	Explanation Photo	Explanation
Handle Door		**To remove Handle-Door** **1.** Remove 2 screws to remove Handle-Door
Glass-Inner	 	**To remove Glass-Inner** **1.** Remove 6screws from rear side of door to remove 2 Hinge-Door.
		**2.** Remove 4screws to remove Glass-Inner Sub Assembly. **3.** Remove 7screws to remove Baffle-Door.

3-15. Removing Handle-Door and Glass-Inner

<table>
<tr><th>Parts</th><th>Explanation Photo</th></tr>
<tr><td rowspan="5">Glass-Inner</td><td>  </td></tr>
<tr><td>Explanation</td></tr>
<tr><td>4. Remove Baffle-Door and take out the Glass-Inner assembly.</td></tr>
<tr><td>Explanation Photo</td></tr>
<tr><td>  </td></tr>
<tr><td>Explanation</td><td></td></tr>
<tr><td>5. Unfold 2 flanges of Cover-Frame Inner Glass to taking out Glass-Inner</td><td></td></tr>
</table>

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

3-15 Removing Gasket-Door

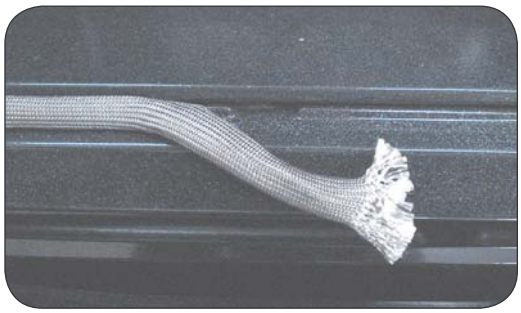
WARNING

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.

PRECAUTION

When you work on the electric range, 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
 Gasket door	 
	Explanation
	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.
	REASSEMBLY 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.

3-16 Removing The Panel-Side

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.

PRECAUTION

When you work on the electric range, 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
Panel Side		**1.** Turn off the electrical supply. **2.** Remove the oven door from the range (see page 23 for the procedure). **3.** Pull the range away from the wall so you can access the back of the unit. **4.** Remove the 6 screws from the rear of Panel-Side and remove Cooktop/ (see step 3~4 on page 3-3). **5.** Remove the 3screws from the top of each Panel-Side. **6.** Pull the back of the side panel out from the range approximately 10˚ **7.** Push forward and remove Panel-Side.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

3-17 WI-FI MODULE

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.

Parts	Explanation Photo	Explanation
WI-FI MODULE	   	**1.** Turn off the electrical supply. **2.** Remove the drawer from the range (see page 3-12 removing assy-drawer for the procedure). **3.** Remove the 2 screws from the drawer pedestal front and take off holder wi-fi. **4.** Remove the Cover Wi-Fi (rubber). **5.** Tilt the hook on holder and take off Wi-Fi module. **6.** Remove connector on Wi-Fi module.

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

Screw
- Terminal Block Screw : M4 X 25.
- Regulator Screw : M4 x 10 (STS, Machine)
- The others : M4 X 10.

4. Troubleshooting

4-1 Information Display Codes

Possible check codes during use can be checked before service.

1. Press **'Clock'** pad.

2. Press a number **'1,2,3,4'** pad.

3. Press the **'START/SET'** pad.

4. Press **'Clock'** and number **'1'** pads at the same time for 3 seconds. Check codes are displayed.

5. Press number **'0'** pad, the latest 4 check codes can be checked. But, if the oven turns off, the stored check codes are deleted.

6. Press **'Oven OFF'** pad to return to normal display mode.

Check code

Displayed code	CAUSE	SOLUTION
C-20	oven sensor opened (over 2950Ω)	**1.** Disconnect power. Open the back cover. Disconnect sensor harness from CN320 of Main PCB Measure sensor resistance :1080Ω at the room temperature → If there are any problems, replace oven sensor. **2.** If sensor temperature reading is normal check for damage to wire harness or terminals. **3.** Disconnect wire and Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
	Oven sensor shorted. (Under 930Ω)	

4. Troubleshooting

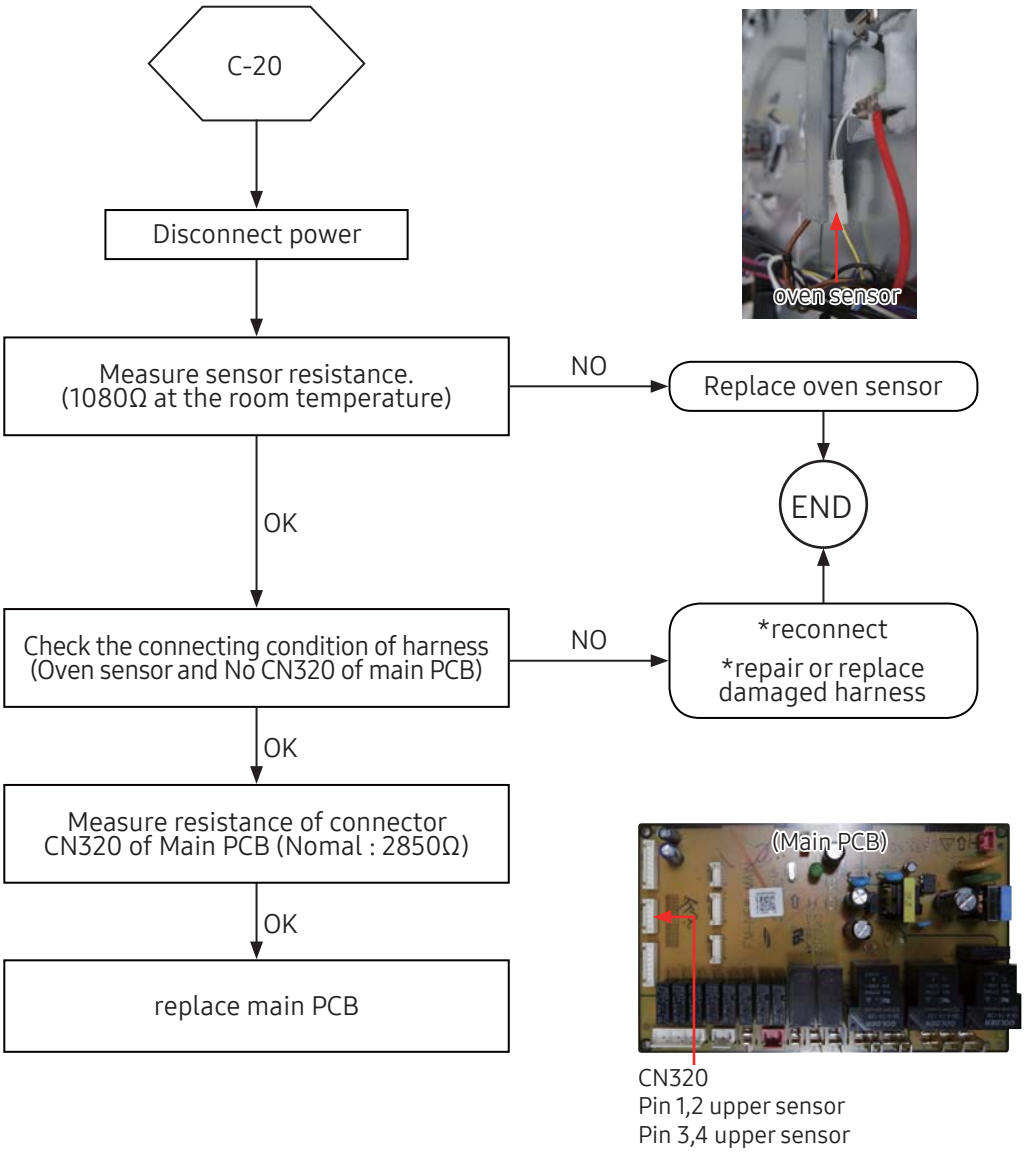
4-1 Information Display Codes

Check code

Displayed code	CAUSE	SOLUTION
C-21	Oven heating over	**1.** Disconnect power. Open the back cover. Disconnect sensor from the wire harness. Measure sensor resistance :1080Ω at the room temperature → If sensor resistance is abnormal, replace oven sensor. **2.** Check the broil, bake and convection heater. Check the resistance of the each heater. (Broil : 13~16Ω, Bake : 18~21Ω, Covection Heater : 69~73Ω) **3.** Check whether DLB of Sub PCB, Broil, Bake and Convection heater relay are working normally. **4.** Check the wiring connections on the main PCB. **5.** Disconnect wire and Check the resistance of oven sensor connector on Main PCB. (Normal : 2850Ω)
C-d0	Shorted key	**1.** Check whether the keypad cable has been inserted correctly into connector on Main PCB. **2.** Check for shorts between Main PCB and connector or keypad and cable. **3.** IIf there is no problem with the main PCB connector or keypad cable, replace the Main PCB.
C-d1	Door locking	**1.** Disconnect power. Open the back cover.Check whether harness has beenconnected with door lock switch and motor. **2.** Confirm whether resistance value of door lock motor is correct. (Normal resistance : 1830~2050Ω) **3.** Activate the door lock, measure the voltage at the wire connection on the door lock motor. (Normal Voltage : AC 120V) **4.** Check whether door locking switch is working normally.
C-F0	Main PCB communication	**1.** Check whether connector(CN470) of Main PCB has been inserted . **2.** Check whether connector(CN200) of Sub PCB has been inserted . **3.** If there is no problem with connector on Sub PCB and Main PCB, replace the Main PCB .
C-30	PCB temp sensor opened PCB temp sensor shorted	**1.** Disconnect power. Open the back cover. Remove PCB Main from holder PCB. Measure NTC sensor(Located on backside of PCB) resistance. : 3.8KΩ at the room temperature **2.** If there are any problems, replace PCB Main.
C-31	PCB temp over ; under 872Ω during 10 sec	If this code was displayed, need to replace PCB.

4. Troubleshooting

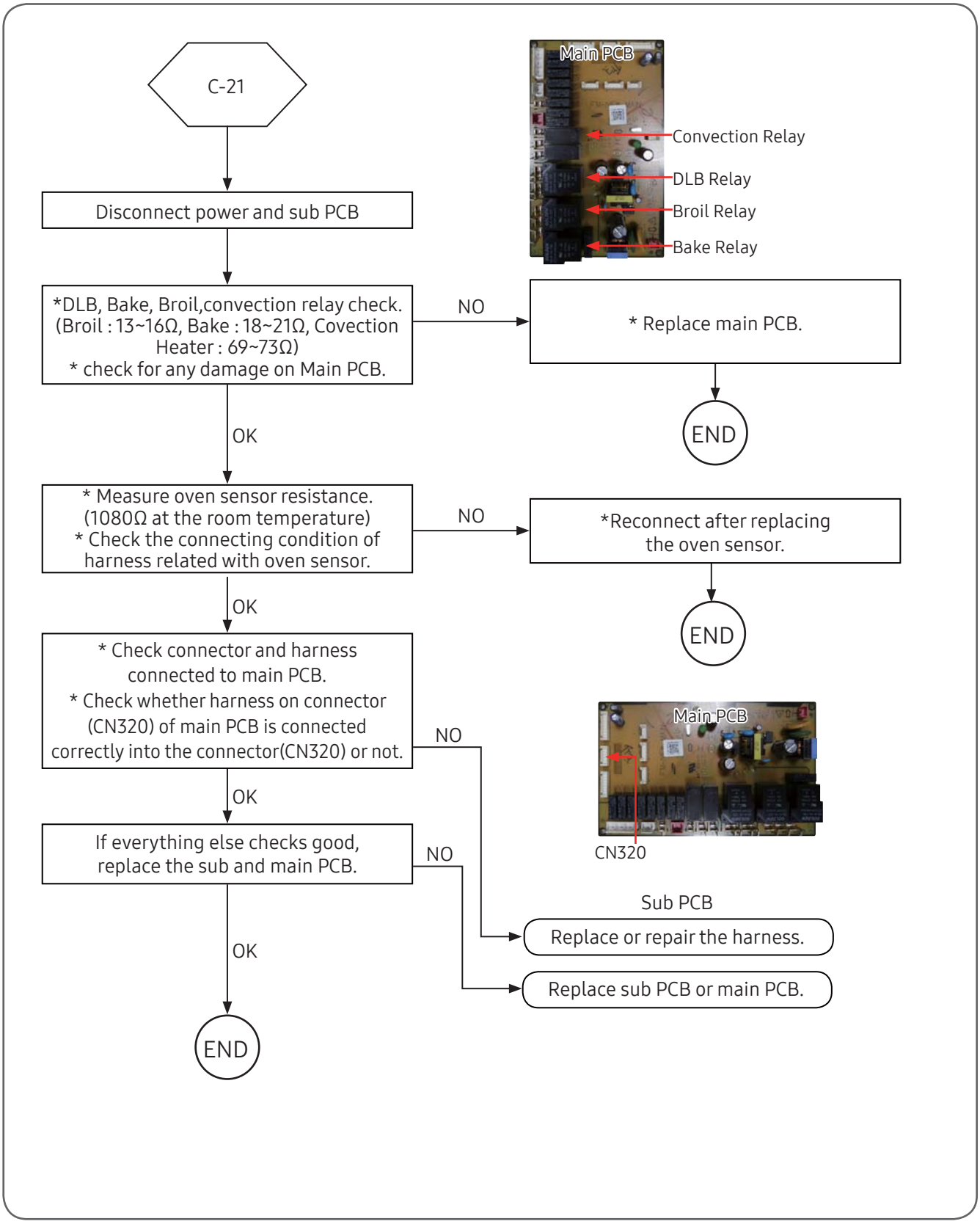
4-1 Information Display Codes



4. Troubleshooting

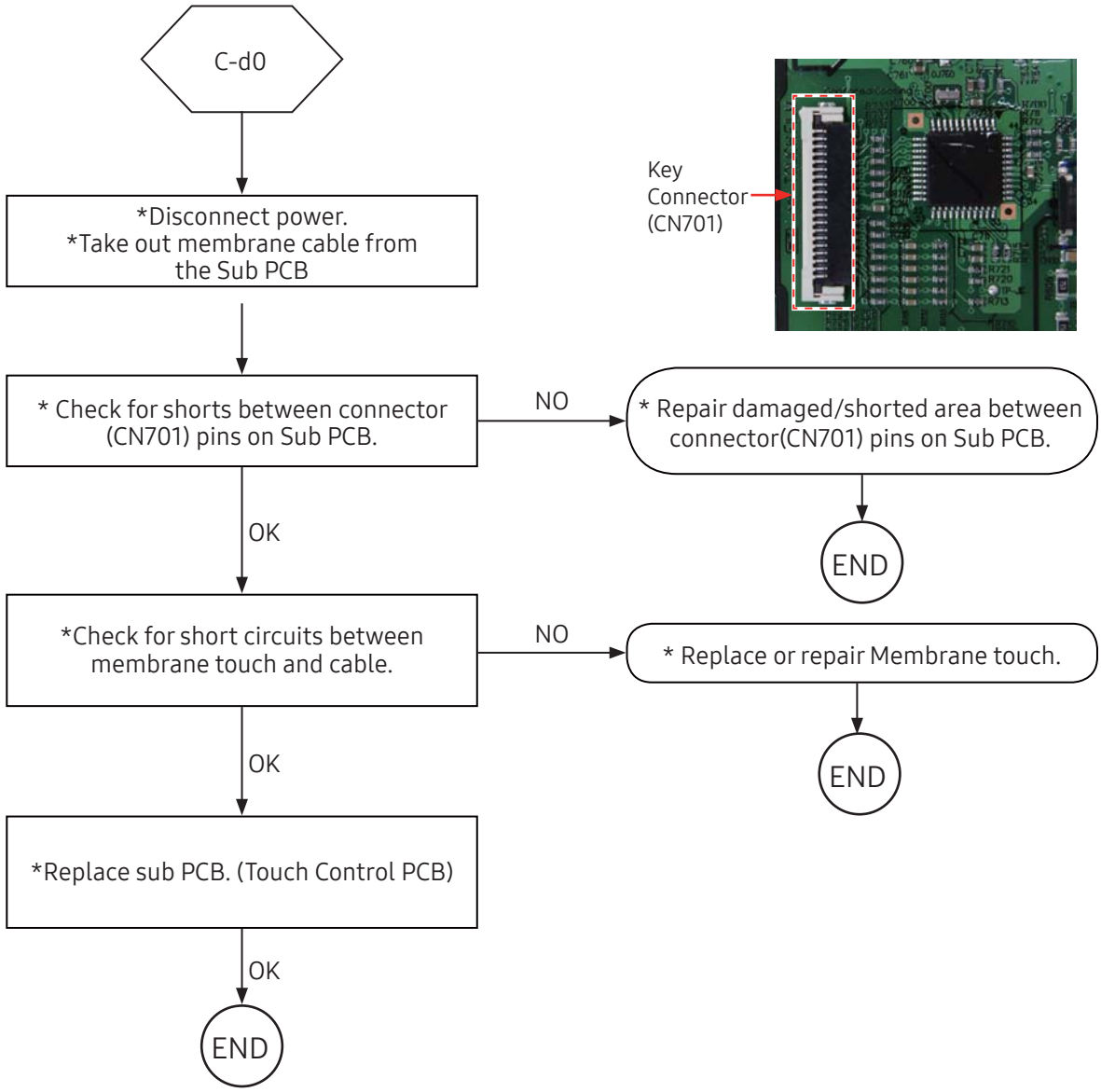
4-1 Information Display Codes

Check code



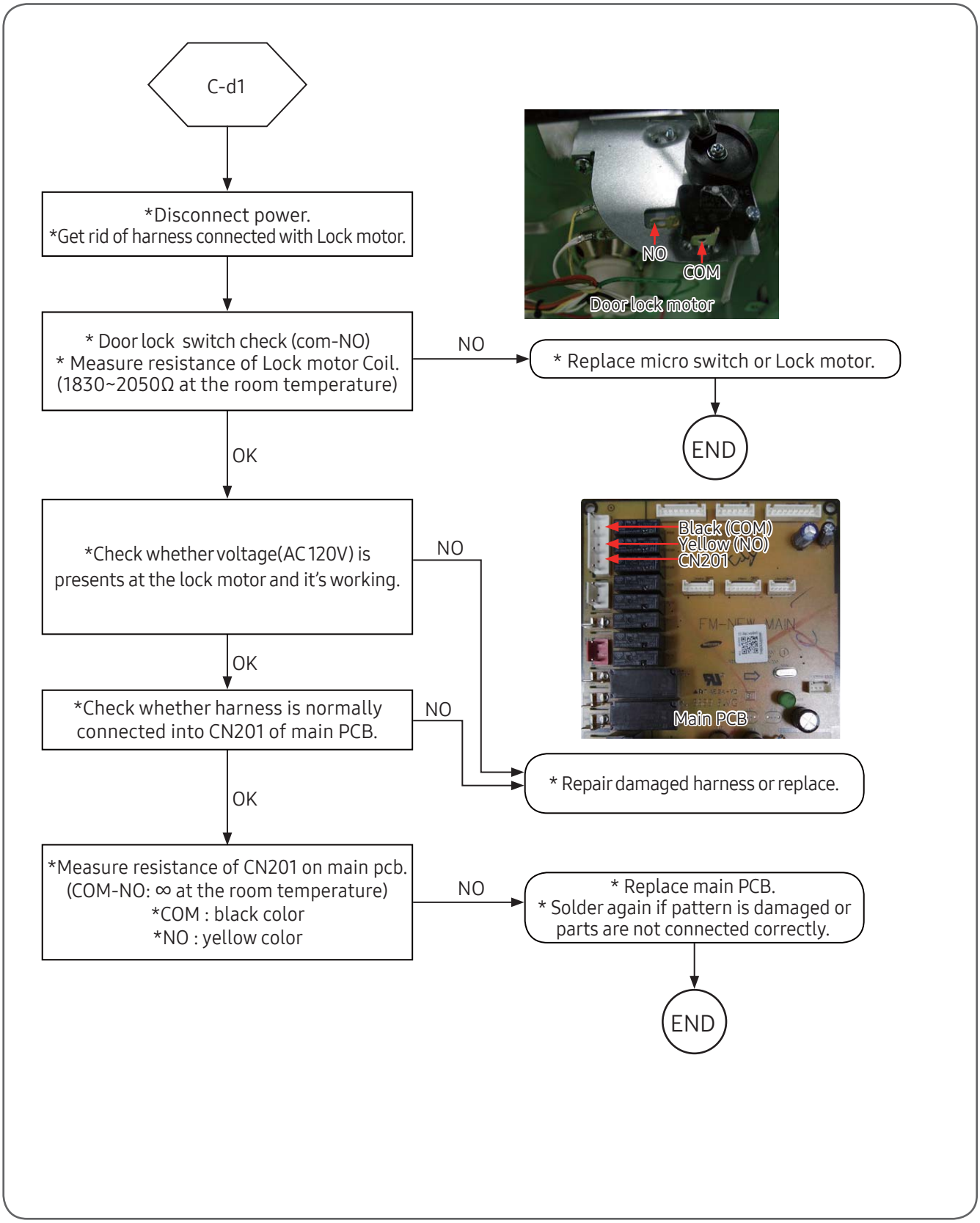
4. Troubleshooting

4-1 Information Display Codes

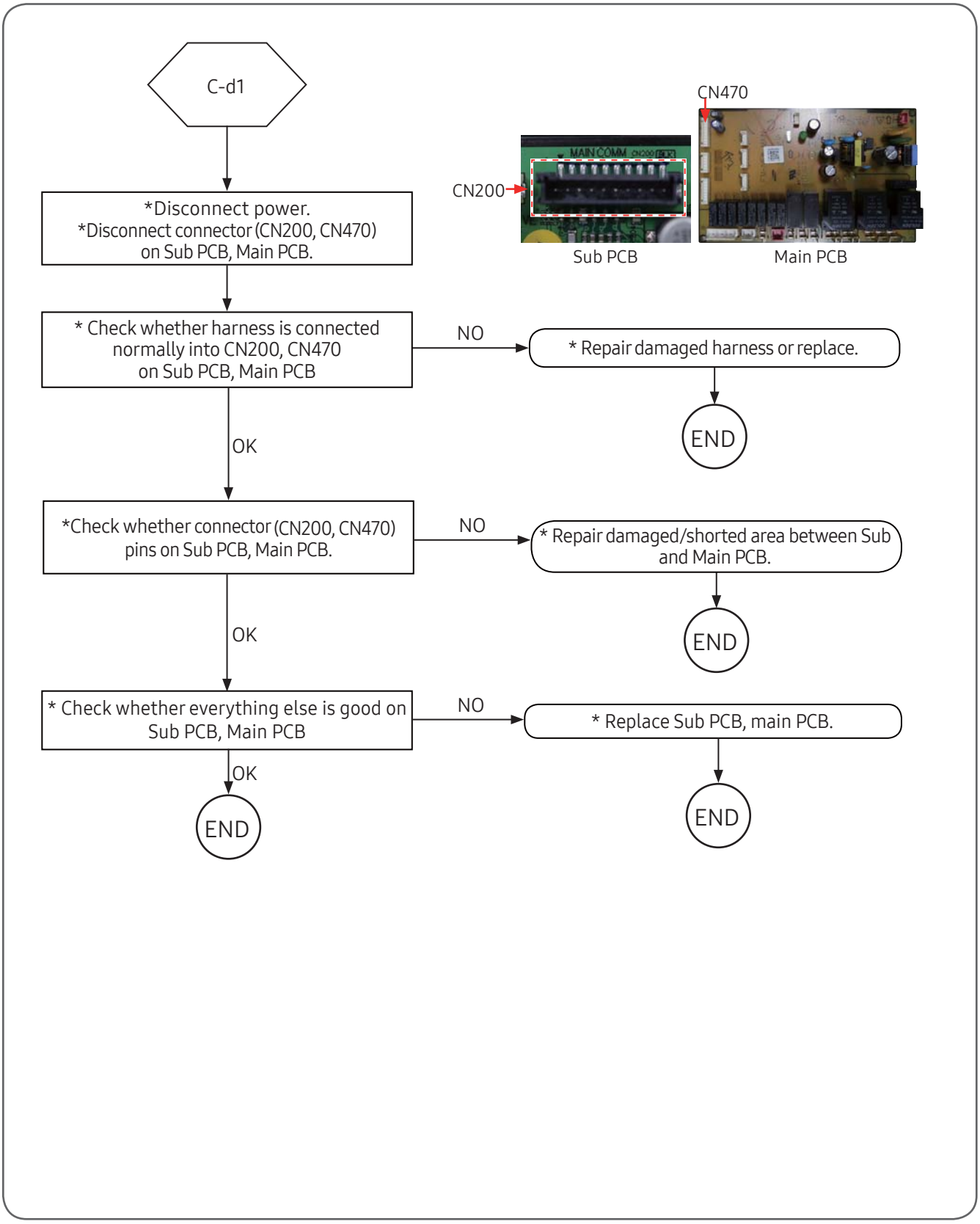


4. Troubleshooting

4-1 Information Display Codes



4-1 Information Display Codes



4. Troubleshooting

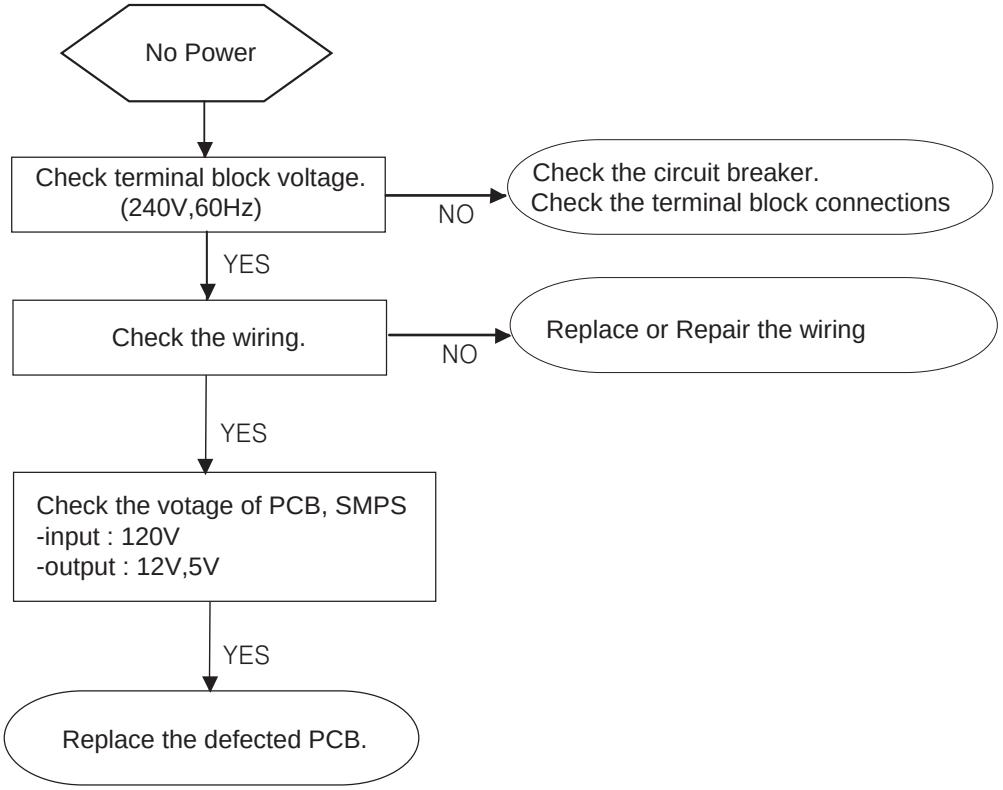
SYMPTOM	DIAGNOSIS	REMEDY
Oven not operating (No power, No display)	* Measure an input voltage. (240/120V or 208/120V) * Measure an input voltage of terminal block.	* Check circuit breaker. * Make sure power cable is connected correctly to terminal block.
	* Make sure whether harness between connector (CN701) on Sub PCB and connector (CN470) on Main PCB is not loose	* Repair harness connecting Main PCB with Sub PCB.
	* Measure resistance of both terminal of the thermostat (normal : 0 ohoms) * Check whether harness is connected and terminal on thermostat has not been loosen or disconnected. * Measure voltage regulator (IC102) on Main PCB. - IC102 : 7812 (DC 12V)	* Replace the thermostat. * Replace or repair harness. * Replace or repair after confirming the state of working of Main PCB.
Oven temperature is rises slowly.	* Make sure whether harness connected with Broil, Bake and convection heater has not been loosen or disconnected.	* Repair or replace harness.
	* Make sure whether Broil, Bake, and convection heater has not been disconnected.	* After disconnecting each heater, measure resistance replace if resistance is not within normal range.
	* Make sure that heater relay is working correctly and pattern on Main PCB is not defective.	* Replace or repair relay. * Replace or repair Main PCB.
Oven temperature is risen fast.	* Check whether temperature is rises over 400˚F (202˚C) within 10 minutes in a room temperature.	* Replace or repair it if relay on Main have a short circuit.
	* Check whether harness has been disconnected or have a short circuit.	* Replace or repair harness.
	* Measure if resistance values of each heater are within a normal range.	* Replace heater if resistance values are abnormal.
The self-cleaning feature will not operate when warming center or warming drawer is on.	* This is in normal state.	* The self-cleaning feature will not operate when warming center or warming drawer is on.

4. Troubleshooting

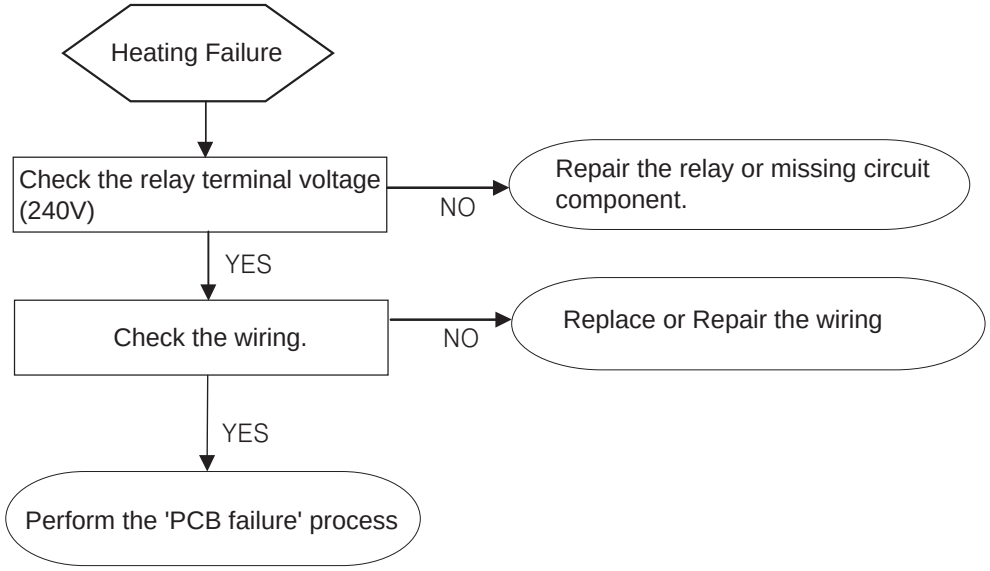
SYMPTOM	DIAGNOSIS	REMEDY
Keypad is not working partially or entirely correctly	* Make sure that keypad cable on sub PCB is connected correctly.	* Replace after confirming it has not been loosen or disconnected.
	* Make sure connector (CN701) on Sub PCB is not damaged.	* Replace or repair after confirming whether keypad cable has been loosen or disconnted.
	* Check whether sub PCB has not been damaged.	* Replace assembly of sub PCB
Oven lamp is not working.	* Check the oven lamp relay (RY209, RY212).	* Replace or repair if harness has been loosen or disconnected. * Replace oven lamp relay (RY209, RY212) or Ry-source relay.(RY201) * Replace Main PCB.
	* Measure the resistance value of both ends of lamp terminal.	* Replace lamp if bulb is faulty. (120V / 40W)
Convection fan is not turning.	* Check whether Convection fan relay (RY208, RY211) on Main PCB and connector (CN201, CN202) is connected normally.	* Replace or repair Relay. * Replace or repair connector.
	* Make sure whether harness between connector (CN701) on Sub PCB and connector (CN470) on Main PCB has been connected normally.	* Replace or repair harness. * Replace or repair connector. * Replace Sub PCB.
smell or smoke when oven has been started initially.	* This is in normal state.	* Smell or smoke during initial use comes from burning off oils and soils introduced during production process. Makes sure area is well ventilated during initial use.
LED display is dim or completely blank.	* LED display is defective.	* Replace Sub.
There is no beep sound when keypad buttons are pressed.	* Check the condition of the buzzer on Sub PCB and for shorted or opened areas.	* Replace or repair sub PCB.

4-2 Electrical Malfunction

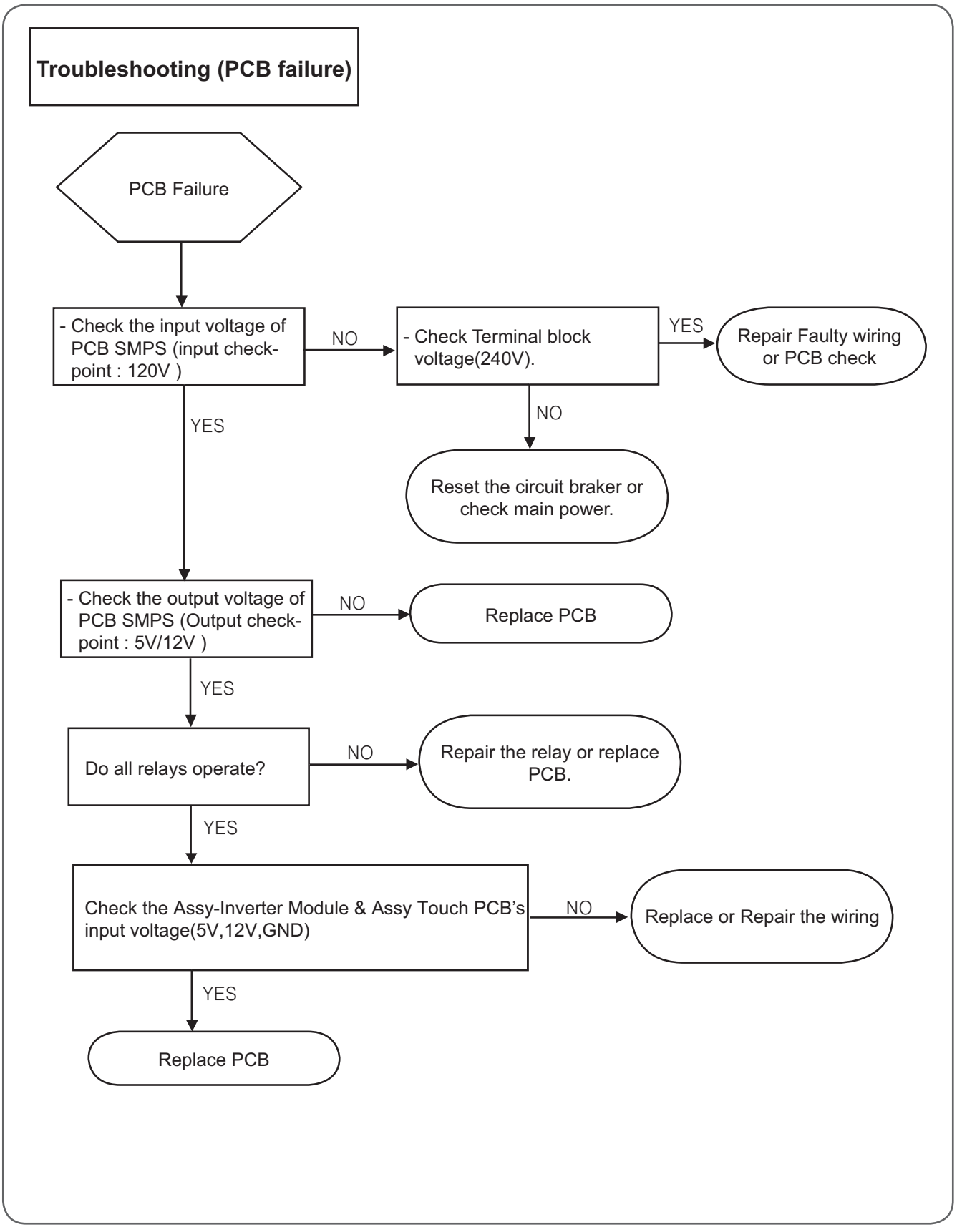
Troubleshooting (Power)



Troubleshooting (Heating)



4-2 Electrical Malfunction



4-2 Electrical Malfunction

Cooktop No heating or Abnormal working

***Single element Left Right(LR)**

LR radiant element (No heating or Abnormal working)

Disconnect power.

*Check the LR infinite switch

*Check condition of LR infinite switch and wire harness is normal.

NO

*Repair or replace damaged harness.

OK

END

OK

Infinite Switch

Fig 2. The Infinite Switch harness connections

Position	Color
3-L1	black+black
5-L2	red+red
4-H2	Gray
2-P	yellow
1-H1	White

OK

*Check if harness is connected with cooktop has been loosen or damaged.

OK

*Check LR cooktop radiant element.

Next Page

4-2 Electrical Malfunction

(Continued)

LR radiant element
(No heating or
working abnormally)

* Check LR cooktop radiant element.

*Check whether harness is connected normally to the element LR .

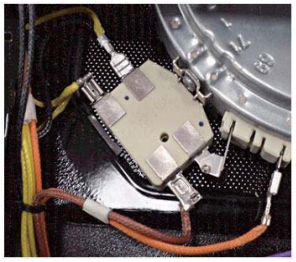
No

*Repair or replace damaged harness

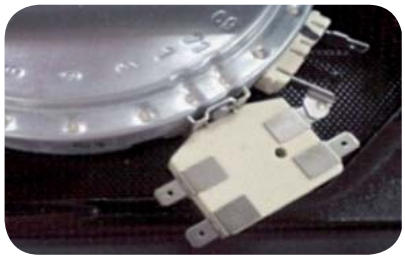
Ok

END

Ok



Assembly LR Cooktop



LR radiant element

Ok

*Check resistance on terminals of LR radiant element

END

WARNING

It is very dangerous to disconnect wire harness when heater element is in operation

Fig3. LR radiant element resistance values

Position	ohms
1b-2b	∞
2a-"A"	44~50Ω

Fig4. The radiant heater harness connections

Position	Color
"A"	orange
2a	brown
1b	yellow+black
2b	yellow+yellow

4-2 Electrical Malfunction

Dual element Right Front(LF)

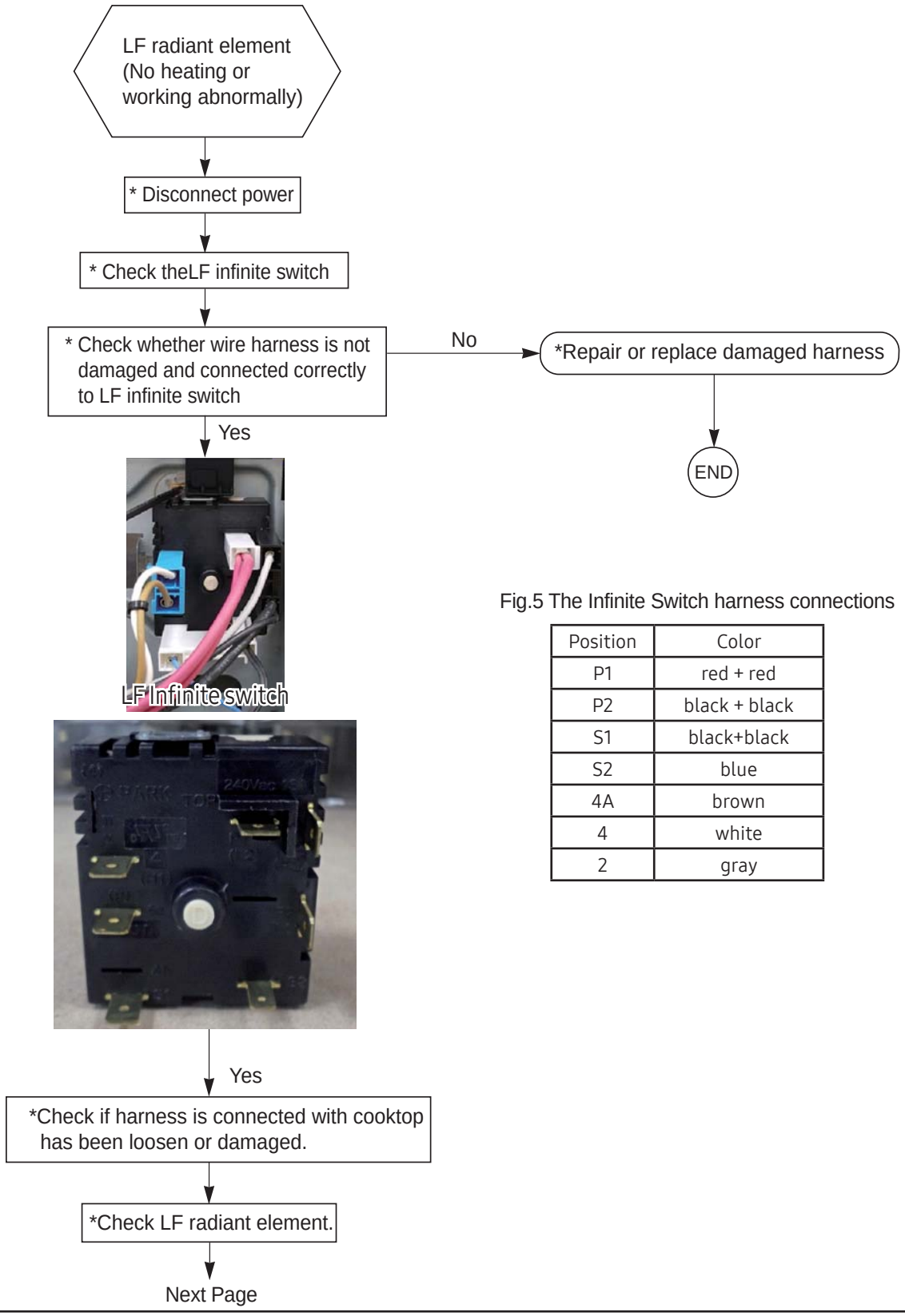
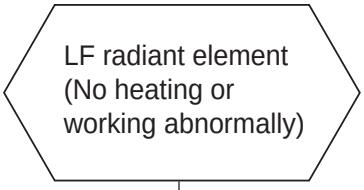


Fig.5 The Infinite Switch harness connections

Position	Color
P1	red + red
P2	black + black
S1	black+black
S2	blue
4A	brown
4	white
2	gray

4-2 Electrical Malfunction

(Continued)

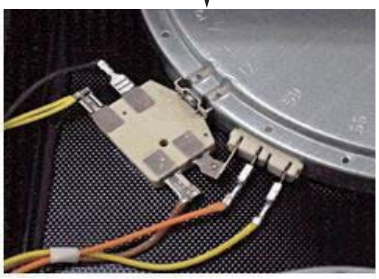


*Check LF radiant element.

* Check whether wire harness is not damaged and connected correctly to LF radiant element.

No → *Repair or replace damaged harness. → END

Ok



Ok

*Check resistance on terminals of LF radiant element.

END

WARNING

It is very dangerous to disconnect wire harness when heater element is in operation.

Fig.6 LF radiant element resistance values

Position	ohms
1b-2b	∞
2a-"A"	38~43 Ω
2a-"B"	24~27 Ω

Fig.7 The radiant heater harness connections

Position	Color
"A"	orange
"B"	yellow
2a	brown
1b	black
2b	yellow+ yellow

4-2 Electrical Malfunction

***Single element Right Rear(RR)**

RR radiant element
(No heating or
Working paranormally)

* Disconnect power

* Check the RR infinite switch

* Check whether wire harness is not damaged and connected correctly to RR infinite switch

No → * Repair or replace damaged harness → END

Ok

RR Infinite switch

Ok

*Check if harness is connected with cooktop has been damaged or disconnected.

* Check RR radiant element.

Next Page

Fig.8 The Infinite Switch harness connections

Position	Color
3-L1	black+black
5-L2	red
4-H2	Gray
2-P	yellow
1-H1	White

4-2 Electrical Malfunction

(Continued)

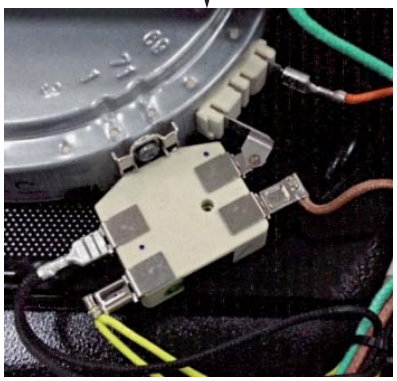
RR radiant element
(No heating or
working abnormally)

* Check RR radiant element.

* Check whether wire harness is not damaged and connected correctly to RR radiant element

No → * Repair or replace damaged harness → END

Ok



Assembly RR Cooktop

Ok

* Check resistance on terminals of RR radiant element

WARNING

It is very dangerous to disconnect wire harness when heater element is in operation.

Fig.9 RR radiant element resistance values

Position	ohms
1b-2b	∞
2a-"A"	44~50Ω

Fig.10 The radiant heater harness connections

Position	Color
"A"	orange
2a	brown
1b	black + black
2b	yellow + yellow

4-2 Electrical Malfunction

Triple element Right Front(RF)

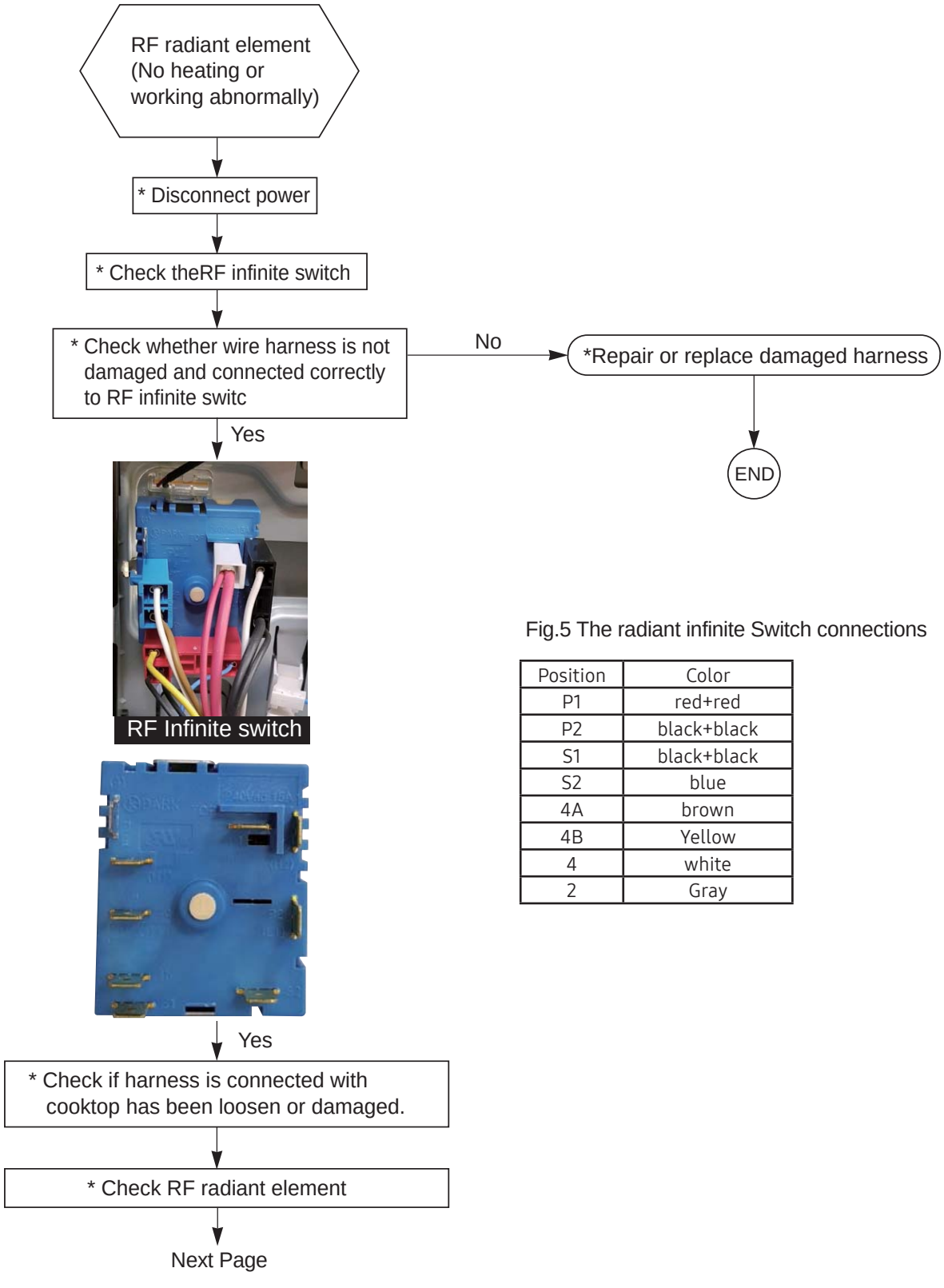


Fig.5 The radiant infinite Switch connections

Position	Color
P1	red+red
P2	black+black
S1	black+black
S2	blue
4A	brown
4B	Yellow
4	white
2	Gray

4-2 Electrical Malfunction

(Continued)

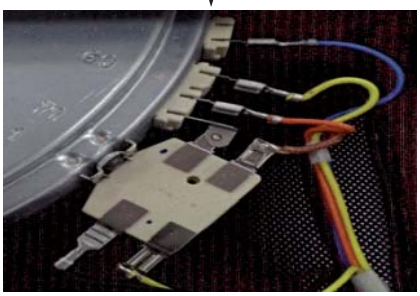
RF radiant element
(No heating or
Abnormal working)

* Check RF radiant element.

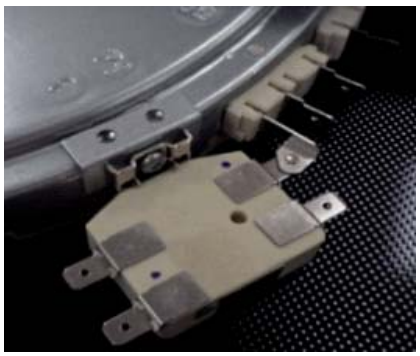
* Check whether wire harness is not damaged and connected correctly to RF radiant element.

No → * Repair or replace damaged harness. → END

Yes



Assembly RF Cooktop



Yes

* Check resistance on terminals of RF radiant element.

END

⚠ WARNING

It is very dangerous to disconnect wire harness when heater element is in operation.

Fig.6 RF radiant element resistance values

Position	ohms
1b-2b	∞
2a-"A"	48~55 Ω
2a-"B"	48~55 Ω
2a-"C"	66~73 Ω

Fig.7 The radiant heater harness connections

Position	Color
"A"	orange
"B"	yellow
"C"	blue
2a	brown
1b	black
2b	yellow

4-2 Electrical Malfunction

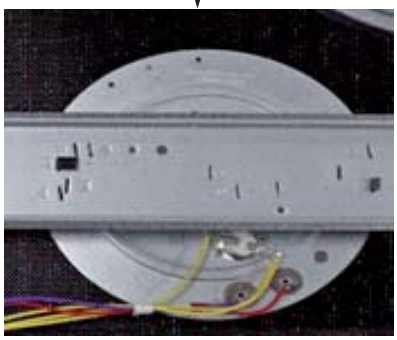
RC radiant element (No heating or working abnormal)

*Check RC radiant element.

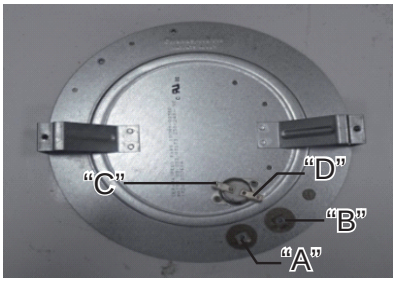
* Check whether wire harness is not damaged and connected correctly to RC radiant element

No → * Repair or replace damaged harness → END

Ok



Assembly RC cooktop



RC radiant element

Ok

* Check resistance of RC radiant element terminals. Make sure wire harness connector on Main PCB has not been damaged or disconnected.

Ok

END

WARNING

It is very dangerous to disconnect wire harness when heater element is in operation.

Fig.14 RC radiant element resistance values

Position	ohms
"A"-"B"	560~600Ω
"C"-"D"	∞Ω

(at the room temperature)

Fig.15 The Warming center of harness connections

Position	Color
"A"	violet (red)
"B"	red (violet)
"C"	yellow
"D"	yellow

4-2 Electrical Malfunction

RC radiant element (No heating or working abnormally)

* Disconnect power

*Check warming center relay on main PCB.

No

*Check PCB pattern and relay (RY207) for damage.

Ok

* Fix damaged area or replace Main PCB

Ok

END

Ok

*Check whether harness connector at terminal (T209) on Main PCB is loose or disconnected.

Ok

*Check whether harness connected with cooktop has been damaged or disconnected.

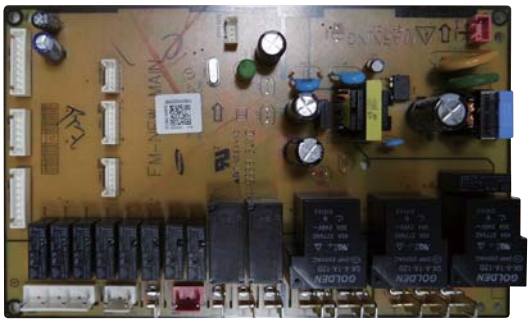
No

* Repair loose or disconnected connectors.

Ok

*Check RC Radiant element of cooktop.

Next page



4-2 Electrical Malfunction

Hot indicator Light failure (cooktop)

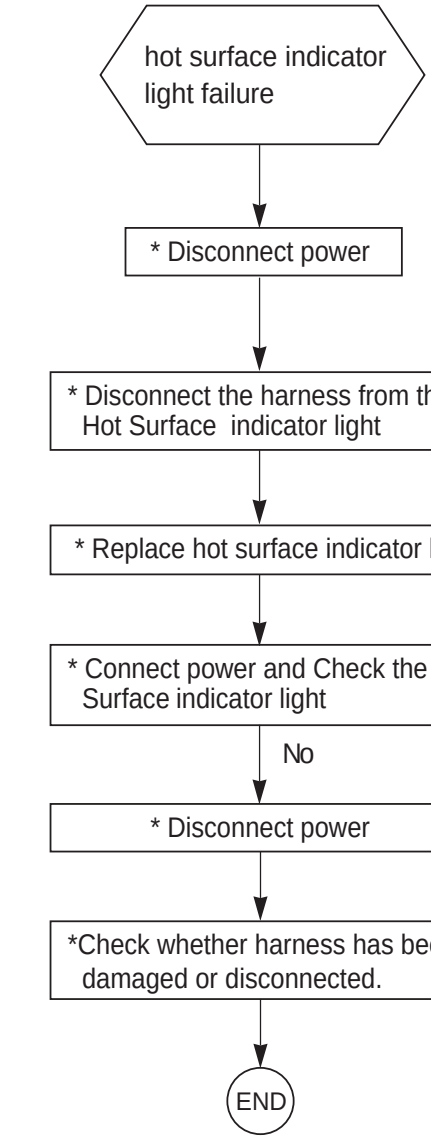
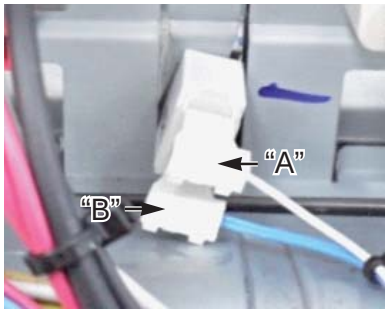


Fig.6 The hot surface indicator light harness connections

Position	Color
A	blue or white
B	white or blue



Hot Indicator Lamp

WARNING

It is very dangerous to disconnect wire harness when heater element is in operation.

(*Warning : Having a short circuit of harness Color to be turned "Yellow+White" might cause fire or damage of infinite switch.)

4-2 Electrical Malfunction

Troubleshooting (Wi-Fi connection)

Step 1.

- Check whether display showed 
  - If display showed icon, check to 'SmartThings' app. Delete and re-install the app. And then, try again (Follow manual instruction for SmartThings app).
  - If display is not show icon, check to home network.
  - If home network is ok, follow to step 2.
  - If home network have problem, contact home network service center.

Step 2.

- Check communication between wi-fi module and Sub pcb.

a) Press keepwarm and Num3 at the same time.
Display will show Main pcb Version, sub pcb Version and, Network Version.

- If network version is ordinarily showed, try to use Smart Control feature again.
- If network version is showed as like below, check to wi-fi module. (2-b)

LED DISPLAY

b) Remove the wi-fi module (see page 3-21 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 have problem, check to connector of wire and sub pcb. (2-c)

Pin 4 : GND
Pin 5 : 12VDC

c) Remove the cover back main wire
(see page 3-2 removing the Rear Cover Panel.)

- If connection of wire is ok, check to next step (2-d)
- If connection of wire have 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 whether connector of wire is fully and correctly inserted. (CN270)
And then, check input voltage on sub pcb. (5V)

- If input voltage is ok, replace wi-fi module.
- If input voltage have problem, replace sub pcb.

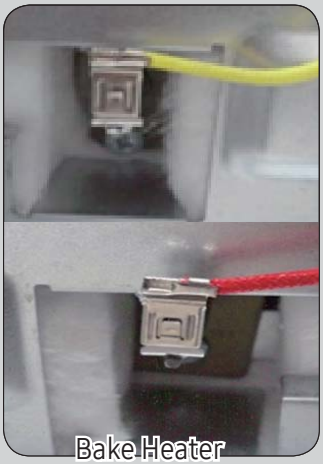
Pin 4 : GND
Pin 5 : 12VDC

4-2 Electrical Malfunction

Component testing procedures

WARNING

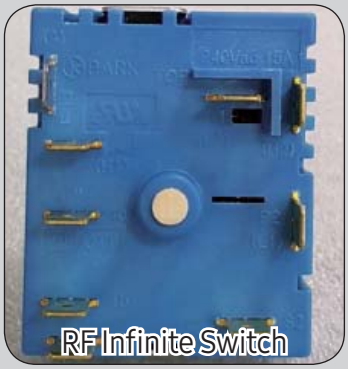
ELECTRICAL SHOCK HAZARD
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

FIGURE	TESTS MEASURE	RESULTS
	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing broil keypad.	* Approx : 13 ~ 16Ω (at the room temperature) * Terminal voltage of Broil heater : AC 240V * Replace or repair harness
	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off cycling work.)	* Approx : 18 ~ 21Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness
	* Measure resistance values of heater's terminal after taking off harness from heater . * Measure voltage of heater's terminal after having oven worked, by pressing convection bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off Cycling work .)	**Approx** * Convection Fan : 69 ~ 73Ω (at the room temperature) * Terminal Voltage of Convection Fan : 240V * Replace or repair harness. * Replace or repair main PCB .
	* Measure resistance value of Motor terminal after taking off harness from Motor. * Measure Voltage of Motor's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because Fan is supposed to on-off Cycling work.)	**Approx** * Convection Fan : 20 ~ 30Ω * Sub Fan : 85 ~ 100Ω* (Upper, Lower) * Terminal Voltage of Convection Fan and Sub Fan : 120V * Replace or repair harness

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 Oven Lamp Socket	* First of all, make sure that bulb is not broke or burned out. * Measure resistance socket's terminal after disconnecting the harness and removing the bulb. * Measure the voltage at the socket's terminal after selecting light button on the key pad.	* Approx : 24 ~ 27Ω * Terminal voltage of lamp socket : 120V * Replace or repair harness.
 Door Lock	* Measure the state of micro switch and motor after removing the harness. * Check whether lock work normally by pressing cooking time button and delay start keypad at the same time for 3 seconds.	* Lock motor Resistance : 1830~2050Ω (at the room temperature) voltage : 120V * Micro switch COM-NO * Replace or repair if harness has been loosen or disconnected.
 Door plunger switch	* Check the working condition of the switch. * Make sure whether wire, housing and terminal is connected with switch has been damaged or not.	Nomal open : 0Ω Nomal close : ∞Ω * Replace or repair if wire or terminal has been damaged.
 Hot Surface & Surface Lamp (Back Guard)	* Measure voltage which is supplied with lamp terminal. * Check whether harness has been loosen or disconnected.	**Approx.** * Lamp voltage :120V * resistance : ∞Ω * Replace or repair if wire or terminal has been damaged.
 Oven Sensor	* Check whether the resistance values of oven sensor iusing Temperature chart for reference. * Check whether wire or housing has been loosen or disconnected.	**Approx** * at the room temperature :1080Ω.

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 LR Infinite Switch (Single)	* Check whether harness is connected with switch properly. L1 : black + black L2 : red + red P : yellow H1 : white H2 : gray * Measure the voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making LR cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI) resistance H1-L1-P : 0Ω L2-H2 : 0Ω * When switch is on(HI) voltage L2=H2 ↔ H1=L1:240V L1=P ↔ LR surface Lamp :120V * Replace or repair harness
 RR Infinite Switch (Single)	* Check whether harness is connected with switch properly. L1 : black + black L2 : red P : yellow H1 : white H2 : gray * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making RR cooktop work.	
 LF Infinite Switch	* Check whether harness is connected with switch properly. P1 : red + red S1 : black + black P2 : black + black S2 : blue 4A : brown 4 : white 2 : gray * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making LF cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI, Max.) P1-2-4A : 0Ω S1-S2 : 0Ω P2-4 : 0Ω * When switch is on(HI, Max.) voltage P1=2=4A ↔ P2=4 : 240V S1=S2 ↔ LF suface lamp : 120V * Replace or repair harness.
 RF Infinite Switch	* Check whether harness is connected with switch properly. P1 : red + red S1 : black + black P2 : black + black S2 : blue 4A : brown 4B : yellow 4 : white 2 : gray * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making RF cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI, Max.) P1-2-4A : 0Ω S1-S2 : 0Ω P2-4 : 0Ω * When switch is on(HI, Max.) voltage S1=S2 ↔ RF surface lamp : 120V P1=2=4A ↔ P2=4 : 240V

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 LR Radient element	* Check whether harness is connected with terminal of element properly. A : orange 2a **:** brown 1b **:** yellow + black 2b **:** yellow+yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a- "A" : 44 ~ 50Ω (at the room temperature) * 2a - "A" : 240V * Replace or repair harness.
 LF Radiant element	* Check whether harness is connected with terminal of element properly. A : orange B : yellow 1b : black 2a : brown 2b : yellow+yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a - "A" : 38 ~ 43Ω 2a - "B" : 24 ~ 27Ω (at the room temperature) 2a - "A" : 240V * Replace or repair harness.
 RR Radient element	* Check whether harness is connected with termial of element properly. A : orange 1b : black + black 2a : brown 2b : yellow + yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b = ∞Ω 2a - "A": 44 ~ 50Ω (at the room temperature) 2a - "A" : 240V * Replace or repair harness.
 RF Radiant element	* Check whether harness is connected with terminal of element properly. A : orange B : yellow C : blue 1b : black 2a : brown 2b : yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a- "A" : 48 ~ 55Ω 2a- "B" : 48 ~ 55Ω 2a- "C" : 66 ~ 73Ω (at the room temperature) * Replace or repair harness.
 RC Radiant element	* Check whether harness is connected with terminal of element properly. - element terminal : violet(red) (It will not be problem with reversing the order in insering yellow and red.) 187 type TCO : yellow, yellow (It will not be problem with reversing the order in insering black and violet) * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 187 type TCO : ∞Ω element terminal : 560 ~ 600Ω (at t he room temperature) * Element terminal : 240V * Replace or repair harness

4-2 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

5. PCB Diagrams

5-1 PCB Diagrams (Main)

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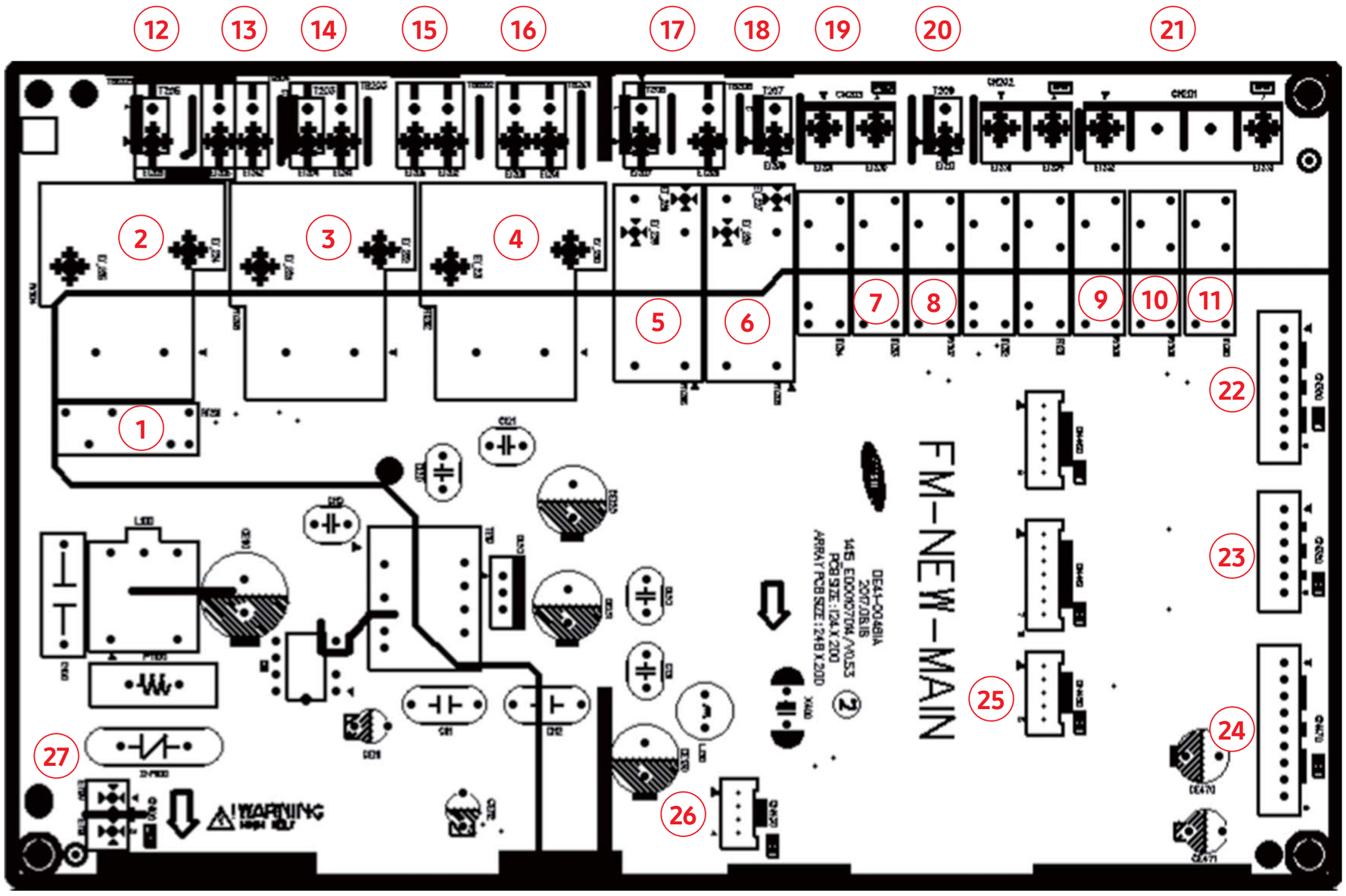

No.	Parts Number	Part Name	Function and Rule
1	RY201	RY-Source Relay	This is relay which control source of DLB, BAKE, BROIL, W/Drawer
2	RY204	Bake-Heater Relay	Broil relay(RY203), Bake relay(RY204), convection relay(RY205) is turned ON/OFF by MCU signal after DLB relay has been engaged . (Broil relay : 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(RY205) is turned ON/OFF by MCU signal after DLB relay 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	RY202	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	RY206	Warming Drawer Heater Relay	This is Relay to control Warming Drawer-Heater .
6	RY205	Convection Relay	Broil relay(RY203), Bake relay(RY204), convection relay(RY205) turned ON/OFF by MCU signal after DLB relay 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	RY213	Cooktop On LAMP Relay	This is relay which is connected with Cooktop On LAMP
8	RY207	WC Heater Relay	This is relay which is connected with WC Heater
9	RY208	Conv-Fan-U Relay	This is relay which is connected with Conv . Fan
10	RY209	Oven-Lamp-U Relay	This is relay which is connected with Conv-Lamp-Upper
11	RY210	Door Lock Relay	This is relay which is connected with door lock motor .
12	T205	Bake Terminal	This is terminal to connect harness with Bake relay .
13	TB204	Broil-Bake Terminal	This is terminal to connect harness with Broil-Bake relay
14	TB203	Broil-Heater Terminal	This is terminal to connect harness with Broil-Heater relay
15	TB202	DLB Terminal	This is terminal to connect harness with DLB relay .
16	TB201	DLB Terminal	This is terminal to connect harness with DLB relay .
17	TB206	WD Heater Terminal	This is terminal to connect harness with WD Heater relay
18	T207	Convection-Heater Terminal	This is terminal to connect harness with convection-heater relay
19	CN203	Relay Connector	Cooktop On LAMP
20	T209	WC Heater Terminal	This is terminal to connect harness with WC Heater relay
21	CN201	Relay Connector	CONV FAN U, OVEN LAMP U, DOOR LOCK, AC120V_LINE
22	CN300	Door Lock, Divider Connector	This is connector which is connected with Door plunger switch and Door lock switch, divider switch .
23	CN320	Oven Sensing Connector	This connector which is connected with oven sensor .
24	CN470	Sub Communication Connector	This is connector which is connected with Sub PCB to communicate .
25	CN450	HASS	This is to connect HASS .
26	CN430	On Board Writing Connector	When do MCU revision, connect to MCU writer . And this connector which is connected with Touch PCB to communicate
27	CN100	Power Connector	This is to supply power to SMPS .

5. PCB Diagrams

5-2 PCB Diagrams (SUB)

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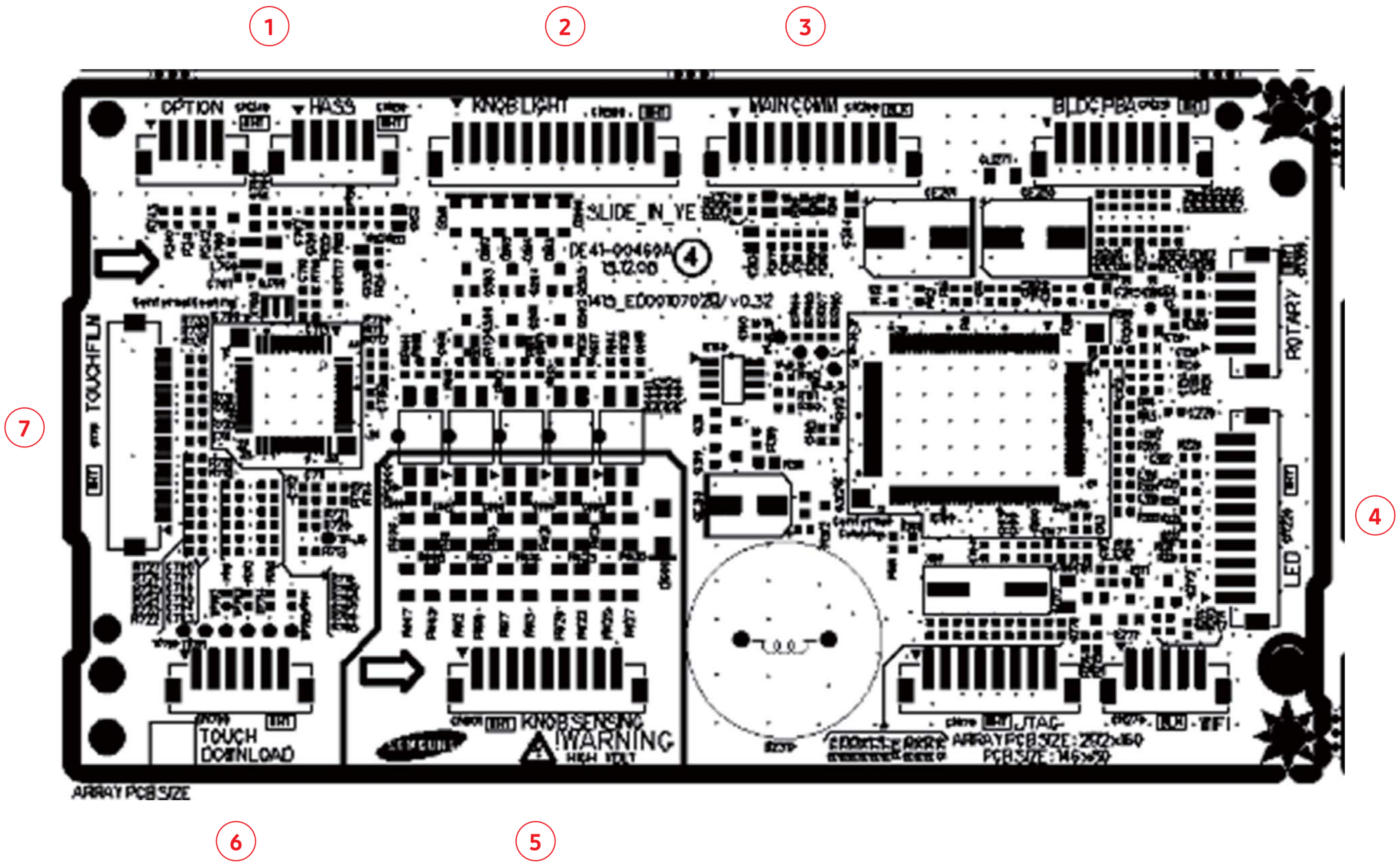

No.	Parts Number	Part Name	Function and Rule
1	CN180	HASS Connector	This is connector for HASS .
2	CN500	Knob Light 5Volt Power connector	This is connector to provide 5V power to knob light .
3	CN200	Main Communication Connector	This is connector which is connected with Main PCB to communicate .
4	CN220	LED Module Connector	This is connector for LED Display Module .
5	CN601	Knob sensing Connector	This is connector to check knob ON/OFF .
6	CN700	Touch Download Connector	This is connector to download program for touch IC .
7	CN701	Touch Film Connector	This is to connect Touch-Film .

5-3 PCB Diagrams (Main)

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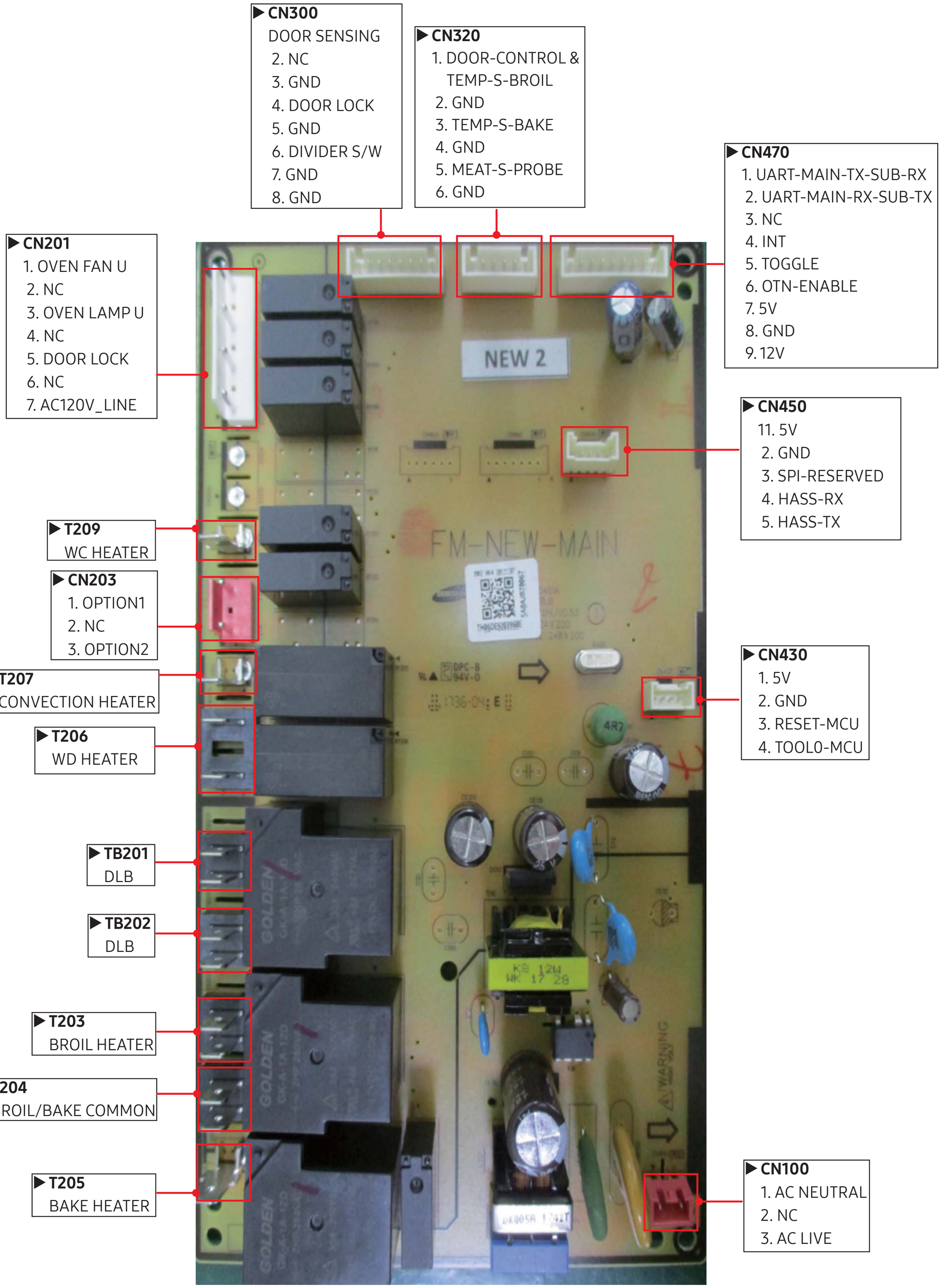

5. PCB Diagrams

5-4 PCB Diagrams (Sub)

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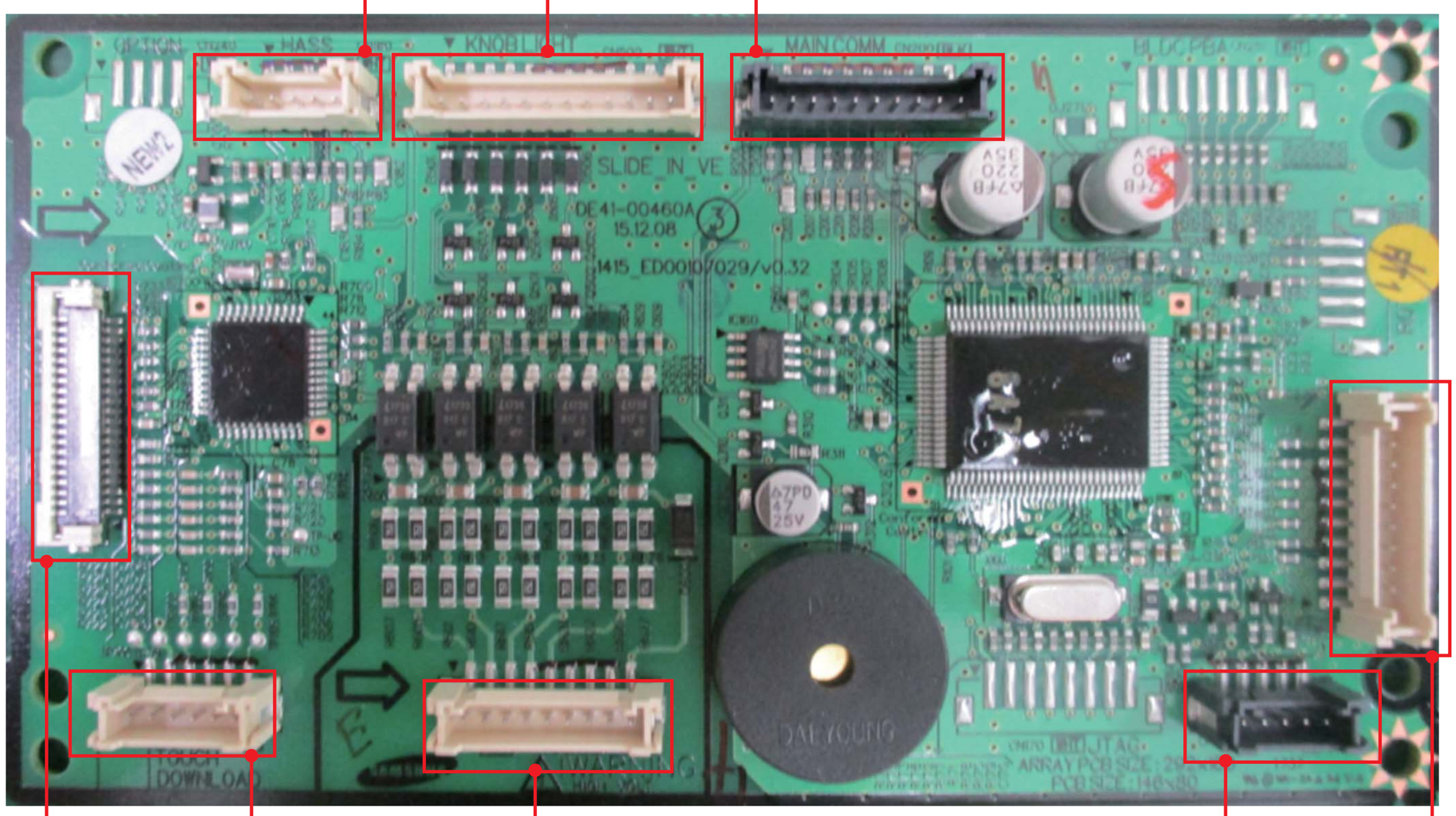

▶ CN180
1. 5V
2. GND
3. HASS-BOOT
4. HASS-MICOM-RX
5. HASS-MICOM-TX

▶ CN500
1. KNOB-1
2. GND
3. KNOB-2
4. GND
5. KNOB-3
6. GND
7. KNOB-4
8. GND
9. KNOB-5
10. GND
11. KNOB-6
12. GND

▶ CN200
1. UART-OVEN-TX-PANEL-RX
2. UART-OVEN-RX-PANEL-TX
3. NC
4. INT
5. TOGGLE
6. OTN-ENABLE
7. 5V - MAIN SMPS
8. GND
9. 12V - MAIN SMPS
10. GND

▶ CN701
1. TOUCH-Y5
2. TOUCH-Y4
3. TOUCH-Y3
4. TOUCH-Y2
5. TOUCH-Y1
6. TOUCH-Y0
7. MODEL-OPTION1
8. MODEL-OPTION0
9. NC
10. 5V
11. GND
12. TOUCH-X7
13. TOUCH-X6
14. TOUCH-X5
15. TOUCH-X4
16. TOUCH-X3
17. TOUCH-X2
18. TOUCH-X1
19. TOUCH-X0
20. GND

▶ CN700
1. 5V
2. GND
3. Touch-Reset
4. T-MOSI
5. T-MISO
6. T-SCK

▶ CN601
1. CTOP-SENSING-1
2. CTOP-SENSING-2
3. CTOP-SENSING-3
4. CTOP-SENSING-4
5. CTOP-SENSING-5
6. NC
7. NC
8. NC
9. NEUTRAL

▶ CN270
1. WIFI-TX-MICOM-RX
2. WIFI-RX-MICOM-TX
3. 5V
4. GND
5. 5V, WIFI-POWER

▶ CN220
1. 5V
2. GND
3. DIS-DIO
4. DIS-CLK
5. DIS-STB1
6. DIS-STB2
7. DIS-STB3
8. DIS-STB4
9. DIS-STB5
10. NC

6. Wiring Diagrams

6-1 Wiring Diagrams

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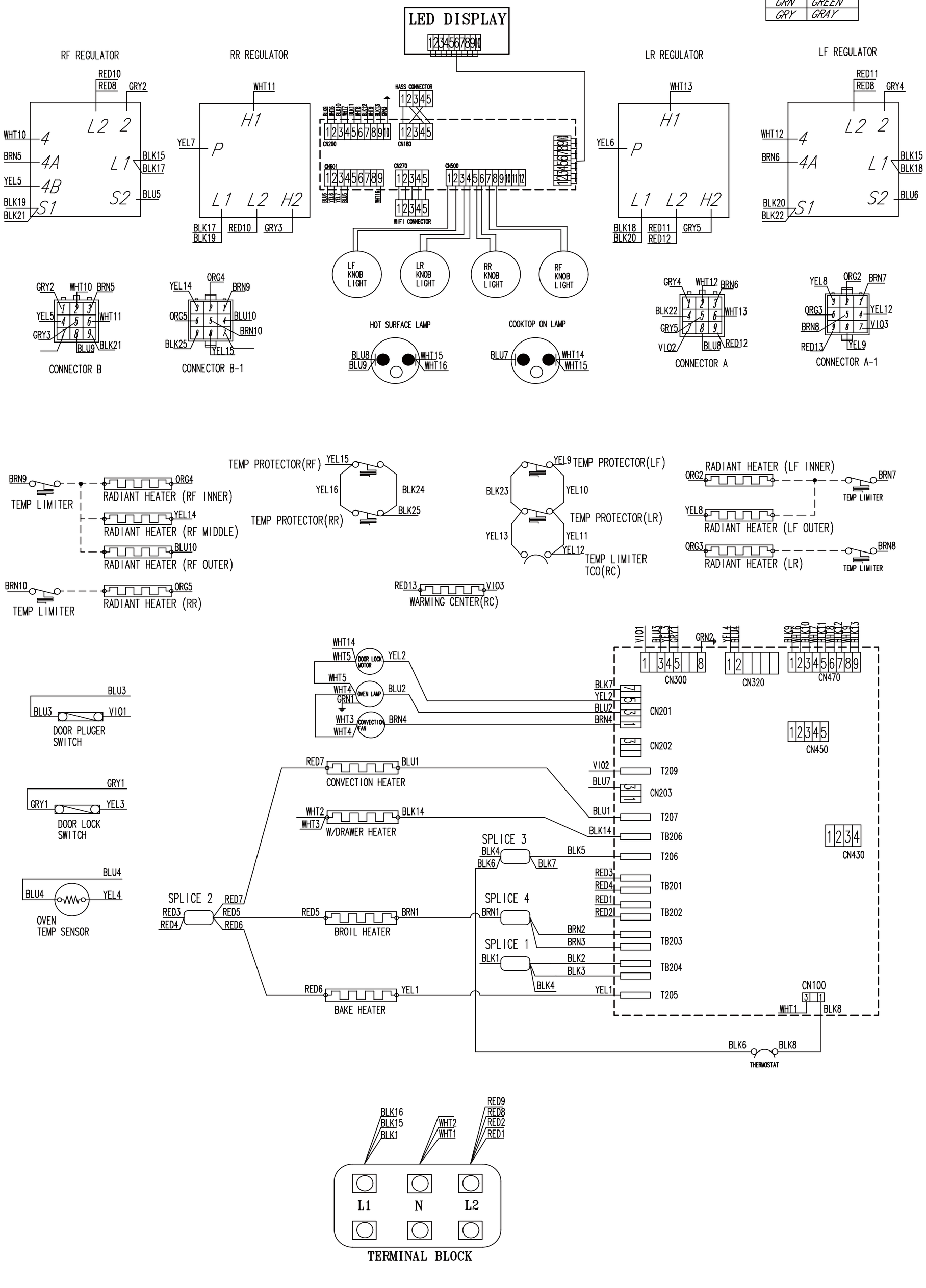
NOTE
1) CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF
2) OVEN DOOR OPENED AND UNLOCKED

WIRING DIAGRAM

MODEL : NE59N6650**

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



7. Schematic Diagrams

7-1 Schematic Diagrams

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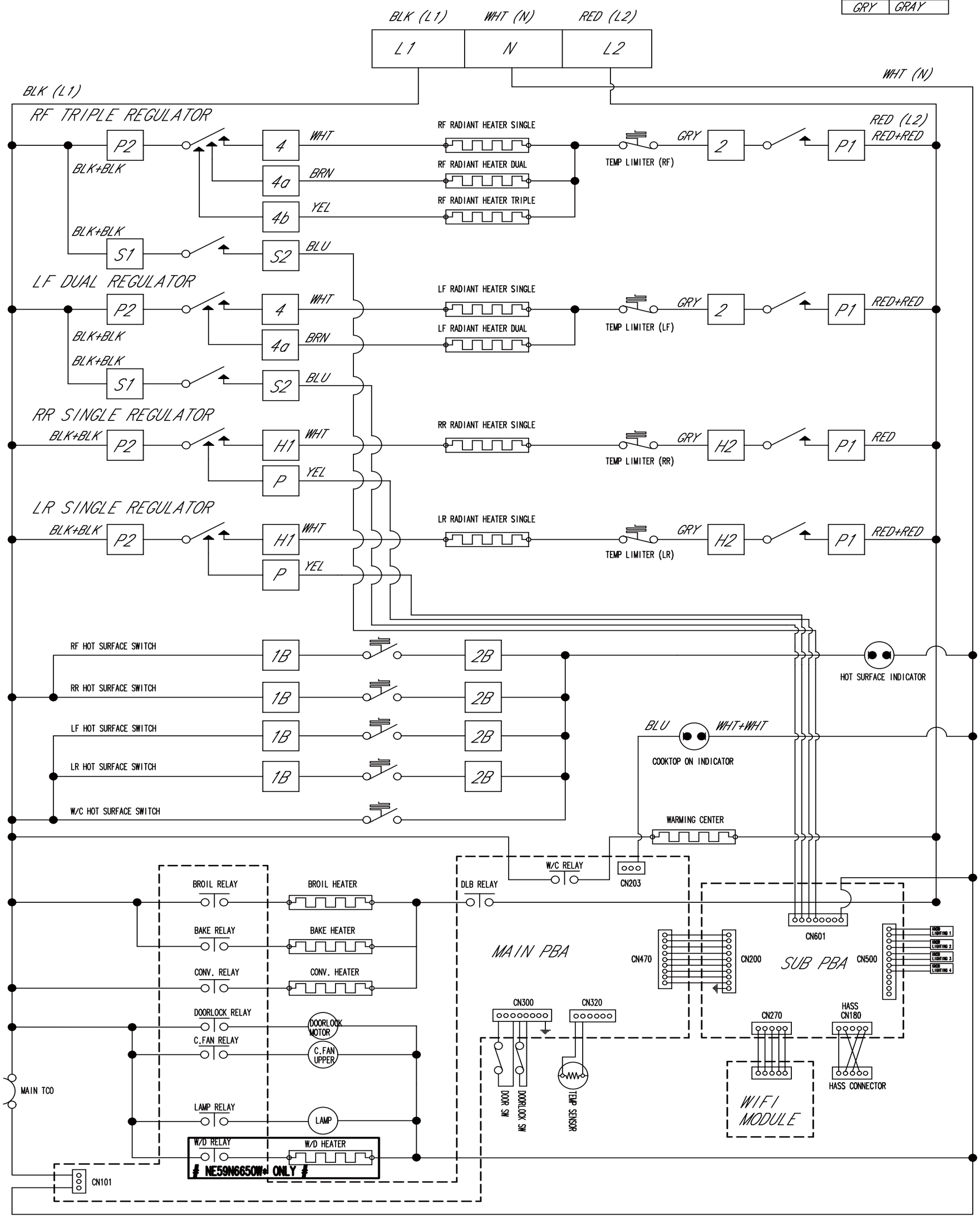
NOTE
1) CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF
2) OVEN DOOR OPENED AND UNLOCKED

SCHEMATIC DIAGRAM

MODEL : NE59N6650**

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



COOKTOP ELEMENT		
COMPONENTS	INPUT	WATTAGE
RF TRIPLE RADIANT HEATER	240V	1100W/2200W/3000W
LF DUAL RADIANT HEATER	240V	1400W/3600W
RR SINGLE RADIANT HEATER	240V	1200W
LR SINGLE RADIANT HEATER	240V	1200W
WARMING CENTER	240V	100W

OVEN HEATING ELEMENT		
COMPONENTS	INPUT	WATTAGE
BROIL HEATER	240V	4200W
BAKE HEATER	240V	3000W
CONVECTION HEATER	240V	800W
W/DRAWER HEATER	120V	600W

SAMSUNG

GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, CIS, Mideast & Africa	gspn1.samsungcsportal.com
Asia	gspn2.samsungcsportal.com
North & Latin America	gspn3.samsungcsportal.com
China	china.samsungportal.com