FREE STANDING RANGE

BASIC: FCQ321HTUX
MODEL: FE-R300SW
MODEL CODE: FE-R300SW/XAA

SERVICE Manual

ELECTRIC RANGE

CONTENTS

Refer to the service manual in the GSPN(see rear cover) for the more information.

• Contents

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 an 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 don'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 heatsensitive 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

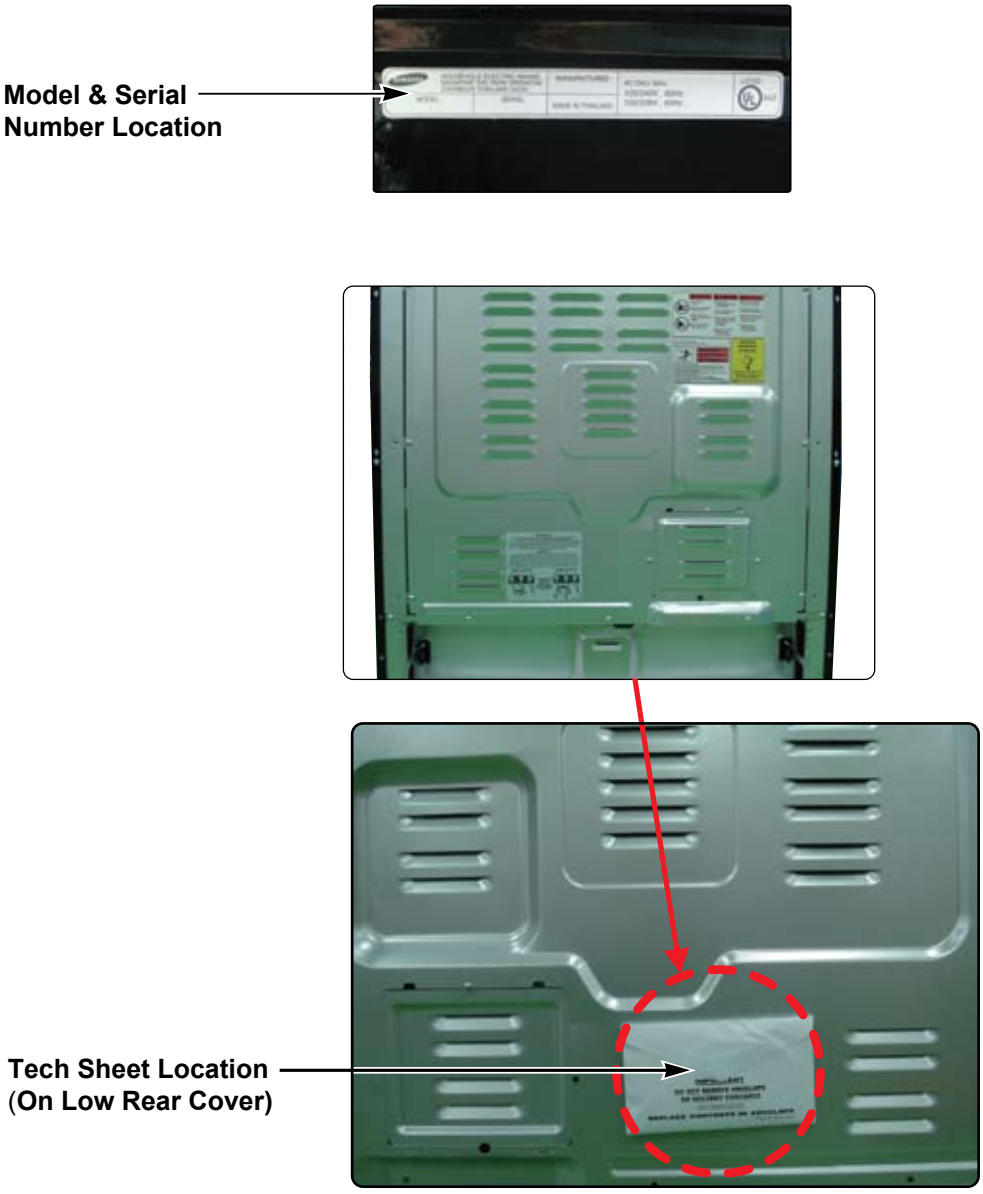
- **Do Not Cook on Broken Cook-Top** – If cook-top should break, cleaning solutions and spillovers may penetrate the broken cooktop and create a risk of electric shock. Contact a qualified technician immediately.
- **Clean Cook-Top With Caution** – If a wet sponge or cloth is used to wipe spills on a 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.

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

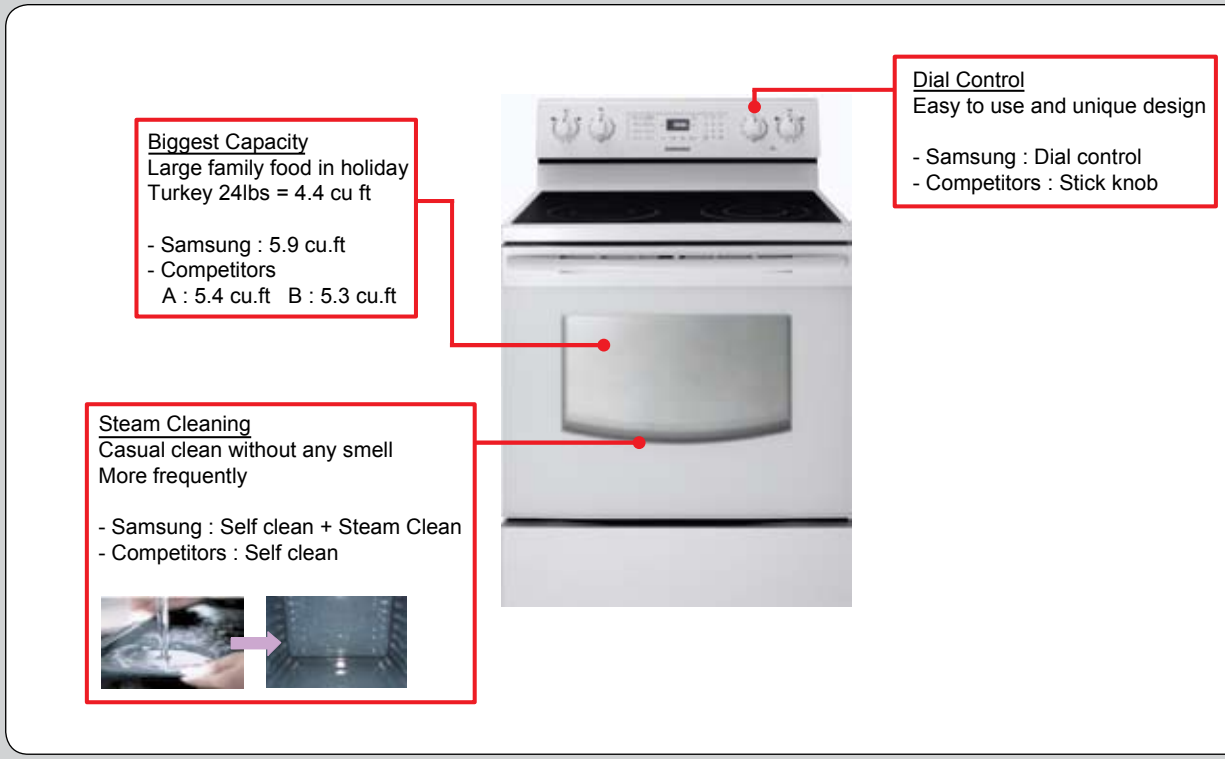
This Model / Serial Number label and Tech Sheet locations are shown below.
The rating plate is located above the drawer on the oven frame.



2. Specifications

2-1 Features

Features



Item	Steam Clean
How to Use	- Pour the water 10oz (+detergent) - Push the steam cleaning button - In around half min, the oven will stop automatically. - Wipe it out with wet cloths.
Operating (Temperature)	About 70 ºC
Operating Time	20 Minutes
Used Heater	Bottom Baked Heater
Smell	No smell
Tool to clean	Wet cloths

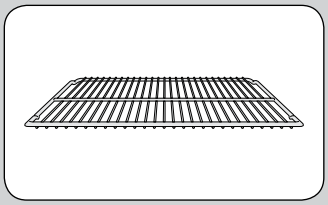
Biggest Capacity

- 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)

2-2 Table of Specifications

Items		Model	
		BASIC MODEL	NEW MODEL
Model Name		FCQ321HTUX	FE-R300SW
Category		Traditional	Traditional
Overall	Width	30”	30”
	Installation type	Freestanding	Freestanding
	Color availability	STS, WH, BK	STS, WH, BK
Control	Oven	Keypad	Keypad
	Cooktop	Knob	Knob
	Display	LED	LED
	Electronic clock	Yes	Yes
	Control lock capability	Yes	Yes
	Audible preheat signal	Yes	Yes
Cooktop	Material	Ceramic glass	Ceramic glass
	# of element	5	4
Power	LR	6”-1,200W	6”-1,200W
	RR	6”-1,200W	6”-1,200W
	CR	Warming Center (100W)	-
	LF	9”-2,500W)	Dual(6/9”-1,200/2,500W)
	RF	Dual(6”/9”-1,200/2,500W)	Dual(6”/9”-1,400/3,000W)
Oven	Capacity(cu.ft)	5.9	5.9
	Broil element	3400 watts	3400 watts
	Bake element	2400 watts	2400 watts
	Convection System	No	No
	# of Racks	2	2
	Interior oven light	120V, 40 watts	120V, 40 watts
	Cleaning	Self clean & Steam clean	Self clean & Steam clean
Drawer	Type	Storage drawer	Storage drawer
Dimensions (inch)	Oven Interior(W x H x D)	24 1/2 x 20 1/4 x 19 3/8	24 1/2 x 20 1/4 x 19 3/8
	Exterior - Width	29 7/8	29 7/8
	Exterior - Height	38 (cooktop), 47 5/8 (backguard top)	38 (cooktop), 47 5/8 (backguard top)
	Exterior - Depth	25 11/16 (Door), 28 (with handle)	25 11/16 (Door), 28 (with handle)
	Net weight: Lbs (Kg)	165 lbs (75kg)	150 lbs (69kg)
Power	Rating(240V 60Hz)	13.3kW(120/240V) 9.9kW(120/208V)	13.7kW(120/240V) 10.3kW(120/208V)

2-3 Accessory

Item	Description	Code No.	Q'ty
	Rack Flat	DG75-01001A	2

3-1 Removing Cover-Back Main Wire, Cover-Back Guard Wire and PCB-Main

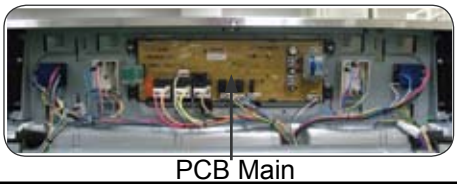
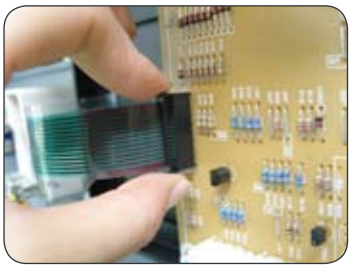
WARNING

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.

<table>
<tr><th>Parts</th><th>Explanation Photo</th><th>Explanation</th></tr>
<tr><td rowspan="3">Cover-Back Main Wire, Cover-Back Guard Wire and PCB-Main</td><td> 
</td><td>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 11 screws from the Cover-Back Main Wire and remove the panel.</td></tr>
<tr><td> 
</td><td>4. Remove 3 screws from the Cover-Back Guard Wire and remove the cover.
5. Remove 4 screws of PCB Main and separate PCB Main.</td></tr>
<tr><td>  </td><td>REASSEMBLY NOTE:
When you remove(replace) membrane tail from the connector, pull the actuator fully</td></tr>
</table>

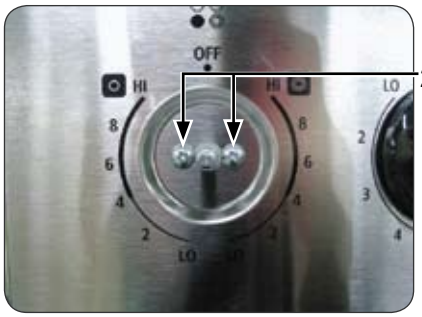
3-2 Removing Regulator-Energy

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.

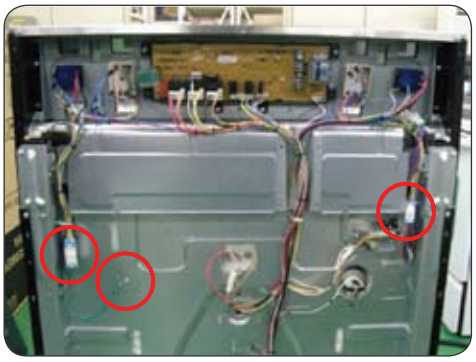
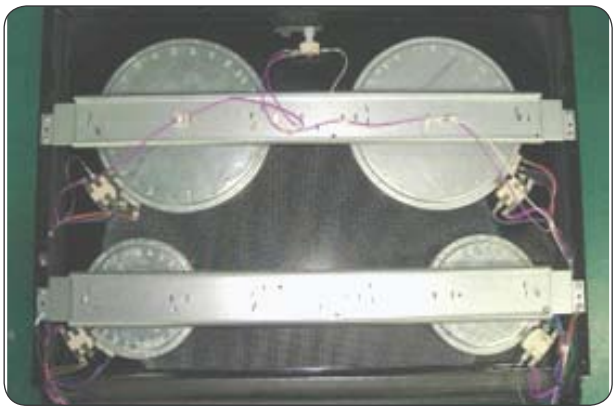
Parts	Explaination Photo	Explaination
Regulator-Energy		**1.** Turn off the electrical supply going to the range. **2.** Pull the range away from the wall so that you can access the rear panel. **3.** Remove Cover-Back Guard Wire
		**4.** Remove Regulator-Energy connectors which be replaced.
		**5.** Pull out the Knob-Dial.
		**6.** Remove 2 screws and replace Regulator-Energy.

3-3 Removing Surface elements and The Ceramic Glass Cooktop

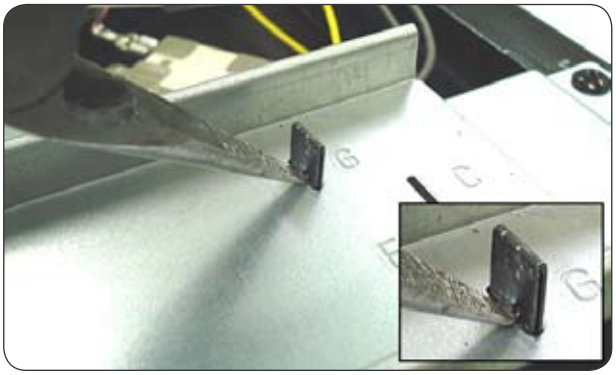
WARNING

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..

<table>
<tr><th>Parts</th><th>Explanation Photo</th><th>Explanation</th></tr>
<tr><td rowspan="4">Surface elements and Ceramic Glass Cooktop</td><td>  </td><td>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.</td></tr>
<tr><td>   </td><td></td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>  </td><td>4. Protect the cooktop surface and turn the assembly over.</td></tr>
</table>

3-3 Removing Surface elements and The Ceramic Glass Cooktop

Parts	Explanation Photo	Explanation
Surface elements and Ceramic Glass Cooktop		**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 into the correct tap then reinstall the bracket screw to secure it to the cooktop.

3-4 Removing The Latch-Door & Switch-Door Plunger

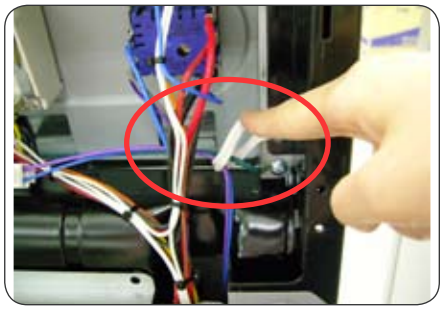
WARNING

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.

<table>
<tr><th>Parts</th><th>Explanation Photo</th><th>Explanation</th></tr>
<tr><td rowspan="3">Latch-Door & Switch-Door Plunger</td><td>  </td><td rowspan="2">1. Turn off the electrical supply going to the range.
2. Open the oven door.
3. Raise the cooktop.
4. To remove the Latch-Door:
a) Remove the 2 screws from the front of cavity.
b) Remove a screw from Cover-Back Main Guard and remove latch-door</td></tr>
<tr><td>  </td></tr>
<tr><td>  </td><td rowspan="2">5. To remove the Switch-Door Plunger
a) Remove the Cover-Back Guard Wire. (see page 10.)
b) Release the wire from Cable Clamp.
c) Remove the Switch-Door Plunger from the range. take out carefully with shaking up and down by using tool.</td></tr>
<tr><td>  </td></tr>
</table>

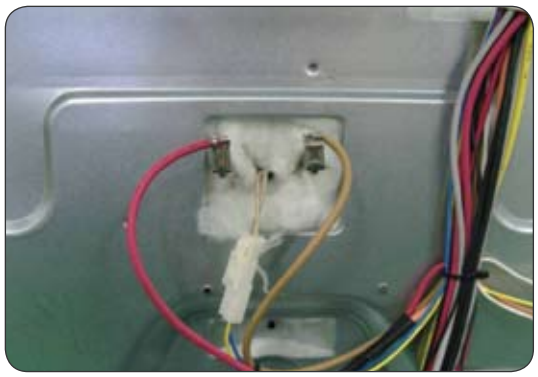
3-5 Removing Heater-Broil

WARNING

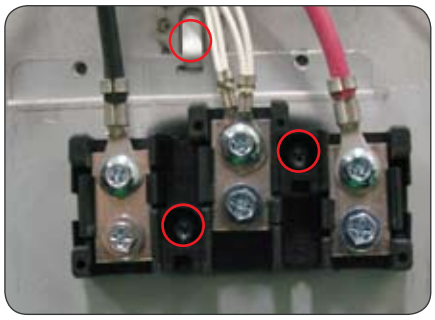
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

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	Explaination Photo	Explaination
Broil	 	**1.** Turn off the electrical supply going to the range. **2.** Open the oven door and remove the racks from inside 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.

3-6 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. **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.

3-7 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

Lamp

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.

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 th e socket), and pull the socket out of the liner. Push the socket out from the rear of the unit.

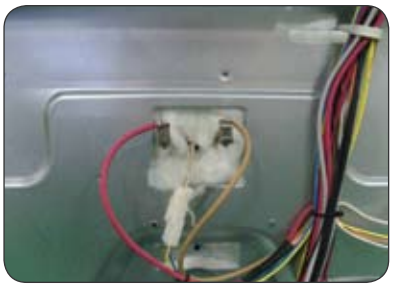
3-8 Removing Sensor-Thermistor

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.

3-9 Removing Assy-Drawer

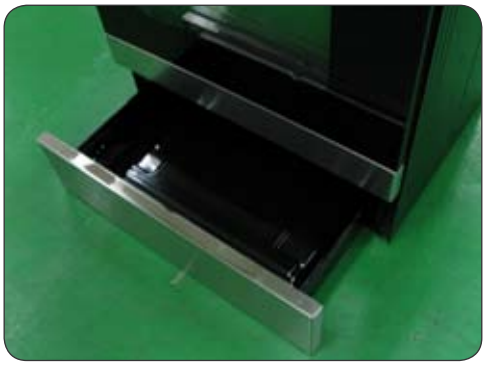
WARNING

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	Explaination Photo
Assy-Drawer	 
	Explaination
	1. Pull the drawer out until it stops. **2.** Lean the front of the drawer and pull out it until it stops. **3.** Lift and pull the drawer out. **replace** **1.** Put on the drawer side over both hook. **2.** Push the drawer until it stops. **3.** Lean and lift the drawer. **4.** Natually push the drawer.

3-10 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	Explaination Photo	Explaination
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.** With the door at the same angle as the removal position, slide the indentation of the hinge arm into the bottom edge of the hinge slot. The notch in the hinge arm must be fully inserted into the bottom of the slot.
		**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.

3-11 Removing Handle-Door and Glass-Inner

WARNING

ELECTRICAL SHOCK HAZARD

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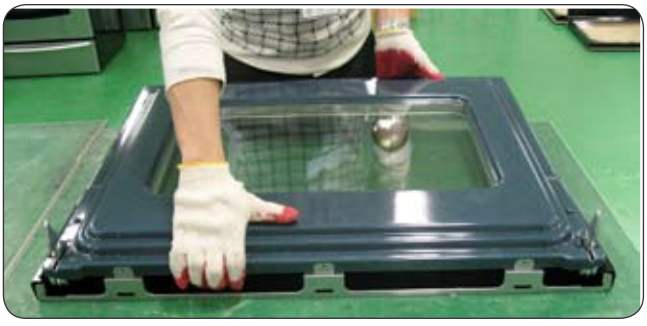
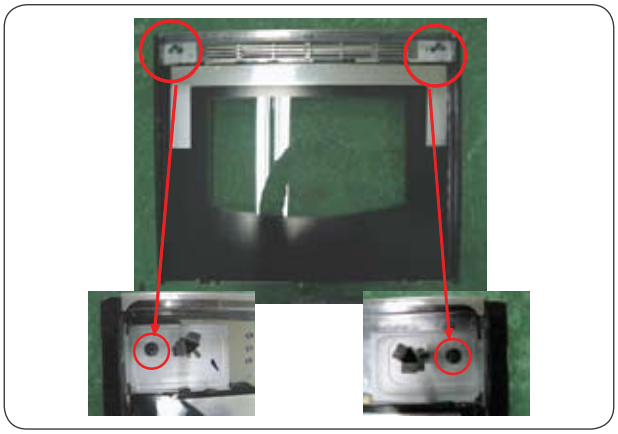
PRECAUTION

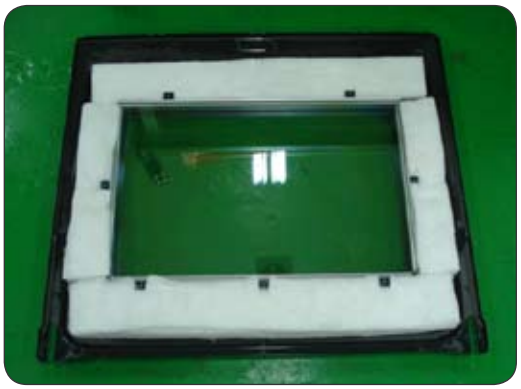
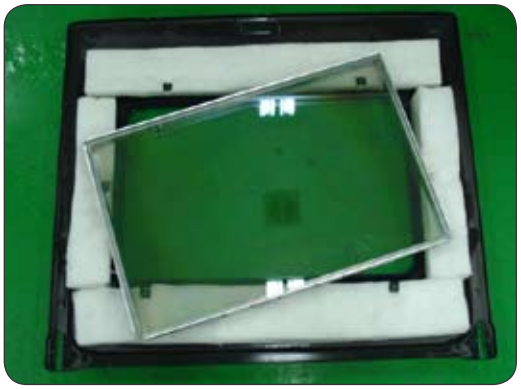
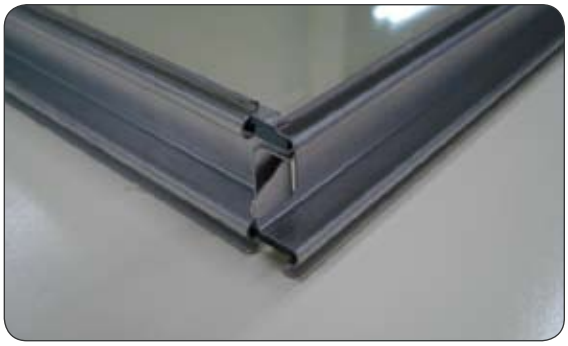
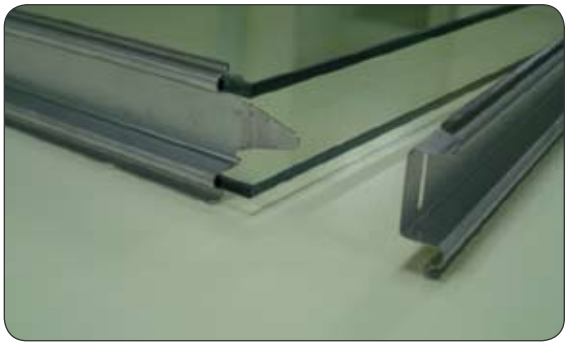
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explaination Photo	Explaination
Door		**1.** Remove the oven door from the range (see page 25 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 and set it aside
	 	**6. Remove 2 spacers and 2** screws.

3-11 Removing Handle-Door and Glass-Inner (Continued)

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 2screws to remove Glass-Inner Sub Assembly **3.** Remove 7screws to remove Baffle-Door

3-12 Removing Handle-Door and Glass-Inner

<table>
<tr><th>Parts</th><th>Explanation Photo</th></tr>
<tr><td rowspan="5">Handle
Door</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></tr>
<tr><td>5. Unfold 2 flanges of Cover-Frame Inner Glass to taking out Glass-Inner
(cf. When you reassemble the Glass-Inner, don't change it you check Glass-Inner's coating side.)</td></tr>
</table>

3-13 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.

3-14 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	Explaination Photo	Explaination
Panel Side		**1.** Turn off the electrical supply. **2.** Remove the oven door from the range **3.** Pull the range away from the wall so you can access the back of the unit. **4.** Remove the 8 screws from the rear of Panel-Side and remove Cooktop **5.** Remove the (each) 3screws from the top the Panel-Side. **6.** Pull the back of the side panel out from the range approximately 10˚ **7.** Push forward and remove Panel-Side.

4. Troubleshooting

4-1 Failure Display Codes

There is a error code and two kinds of error codes.
Possible error codes during use can be checked before service.

1. Press Clock pad.

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

3. Press the Set/Start pad.

4. Press Delay start and number 0 pads at the same time for 2 seconds.
   Error codes are displayed.

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

6. Press Clear/Off pad to return to normal display mode.

Oven sensor error

Failure code	CAUSE	SOLUTION
E-27	oven sensor opened (over 2950Ω)	**1.** Disconnect power. Open the back cover. Disconnect sensor harness from control Measure sensor resistance :1080Ω at the room temperature → If there are any problems, replace oven sensor. **2.** If there is not any problem with oven sensor, Please check whether there is a damaged therminal or wire on harness. **3.** Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
E-28	Oven sensor shorted. (Under 930Ω)	

4-1 Failure Display Codes

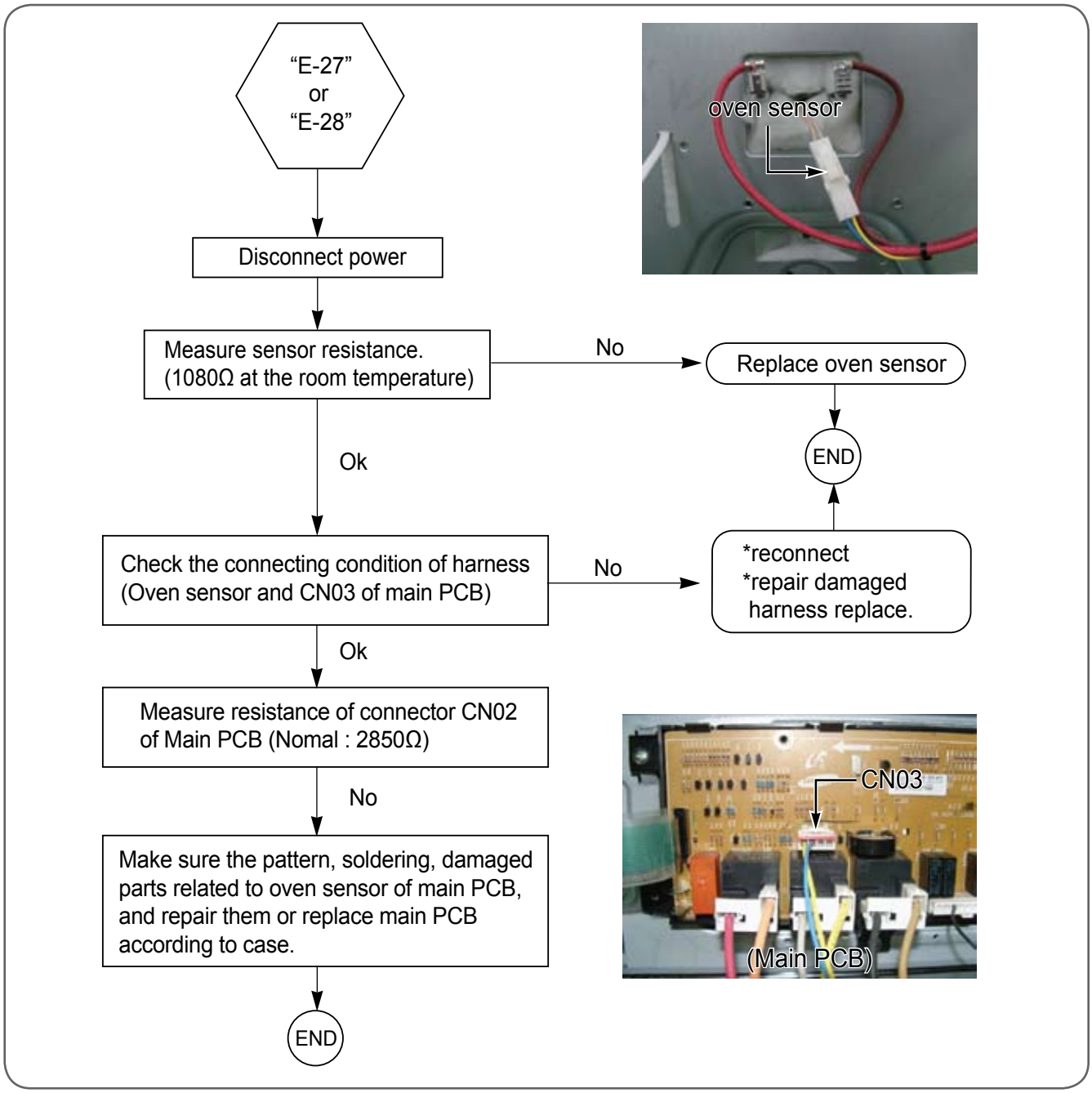
Safety error

Failure code	CAUSE	SOLUTION
E-08	Oven heating error	**1.** Disconnect power. Open the back cover. Disconnect sensor harness from control. Measure sensor resistance :1080Ω at the room temperature → If there are any problems, replace oven sensor. **2.** Check the broil and bake heater. Check the resistance of the each heater. **3.** Check whether DLB, Broil and Bake Convection heater relay are being worked normally. **4.** Check whether there is any disconnection of harness. **5.** Check the resistance of oven sensor connector on main PCB. (Normal : 2850Ω)
E-0A	Oven heating over	
- SE -	Shorted key	**1.** Check whether cable of keypad has been inserted into connector of main PCB. **2.** Check whether between main PCB and connector or keypad and cable have a short circuit. **3.** If there is not a problem occurred with connector on main PCB and cable of keypad, replace the main PCB.
E-0E	Door locking error	**1.** Disconnect power. Open the back cover. Check wether harness has been connected with door lock switch and motor. **2.** Confirm whether resistance value of door lock motor is to be normal one or not. **3.** With operating door lockout, measure a voltage of connector on harness which is linked with door lock motor. (Normal Voltage : AC 120V) **4.** Check whether door locking switch is being worked normally.

4-1 Failure Display Codes

Safety error

Failure code	CAUSE	SOLUTION
E-27	oven sensor opened (over 2950Ω)	**1)** After 20 seconds from starting to work of oven, buzzer is beeping 10 times long and then finally it displays “E-27” or “E-28” as Error message. **2)** If a series of function for error is not performed at all, please make sure through the method of 4-1 on 30 page.
E-28	Oven sensor shorted. (Under 940Ω)	



4. Troubleshooting

4-1 Failure Display Codes

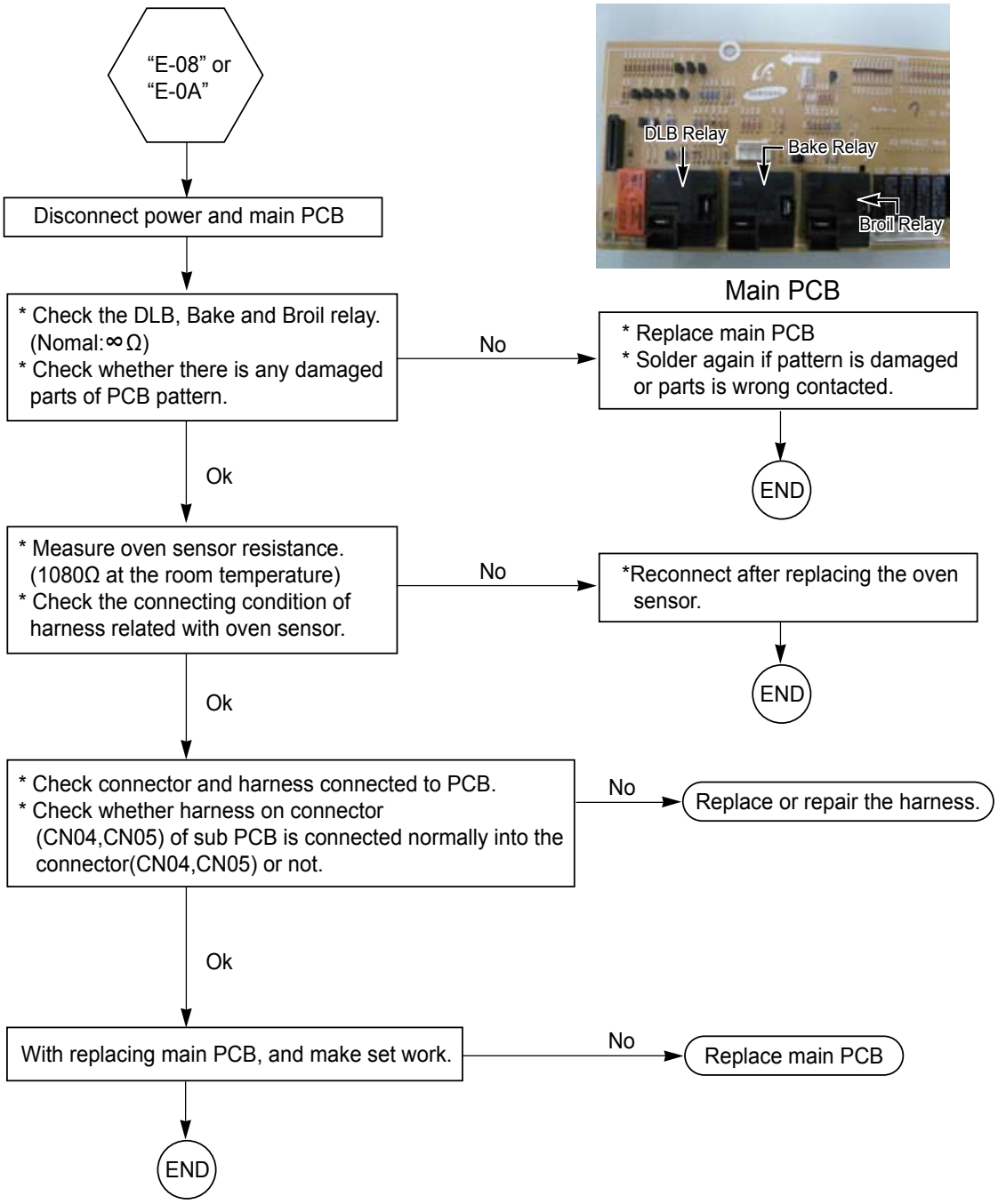
Safety error

Failure code	CAUSE	SOLUTION
E-08	oven heating error	**1)** It will display “E-08” after buzzer is beeping 10 times long if it could not reach 100˚F(38˚c) within 10 minutes during oven is working. **2)** Please make sure through the method of 4-1 on 30 page, if those series of working for informing error take long time or not functioned.
E-0A	Oven heating over	**1)** It will display “E-0A” after beeping 10 times Bz long, if temperature is more than 650˚F(343˚c) during oven is working excluding the case of self-cleaning. **2)** Please make sure through the method of 4-1 on 30 page, if those series of working for informing error take long time or not functioned.

4-1 Failure Display Codes

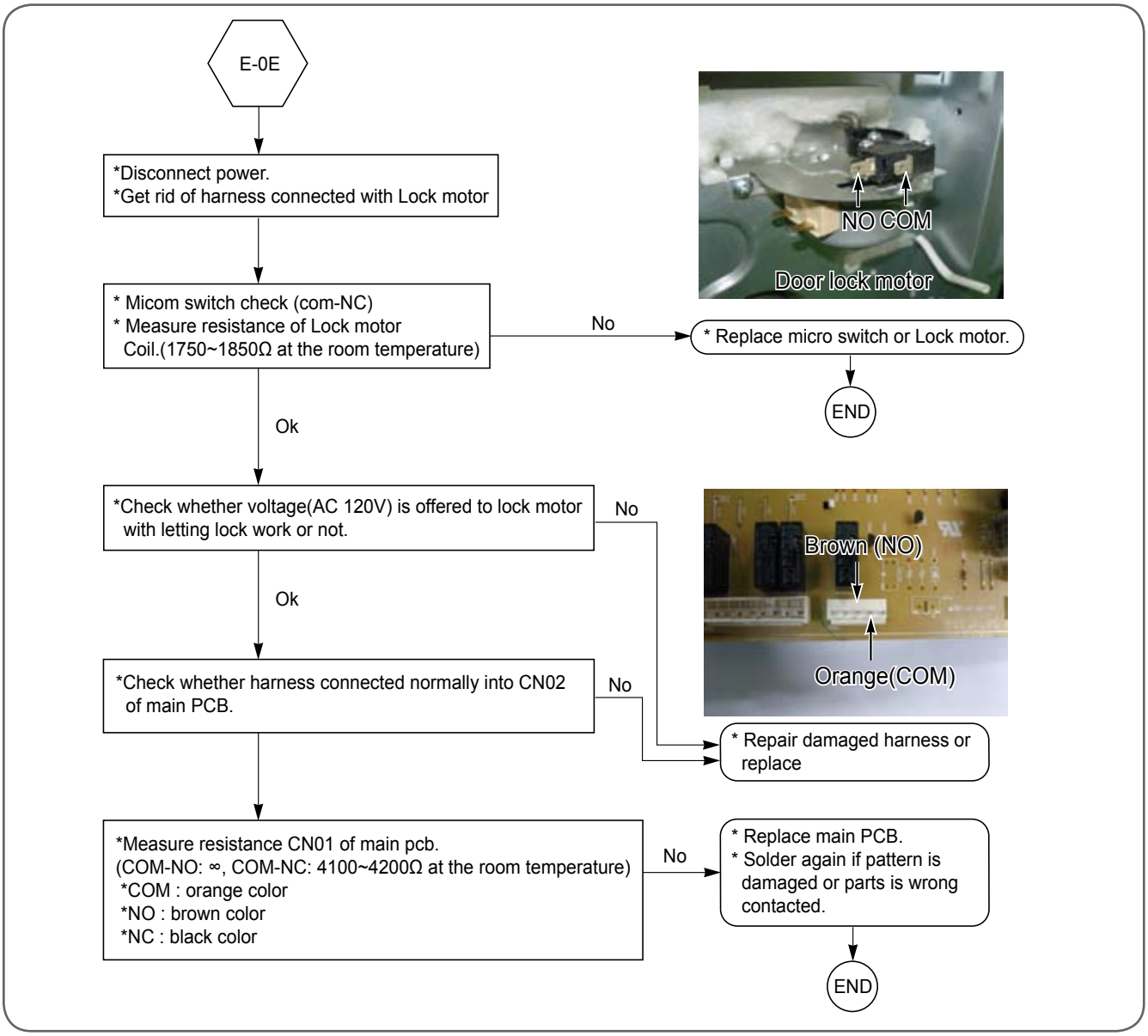
Safety error

Main PCB



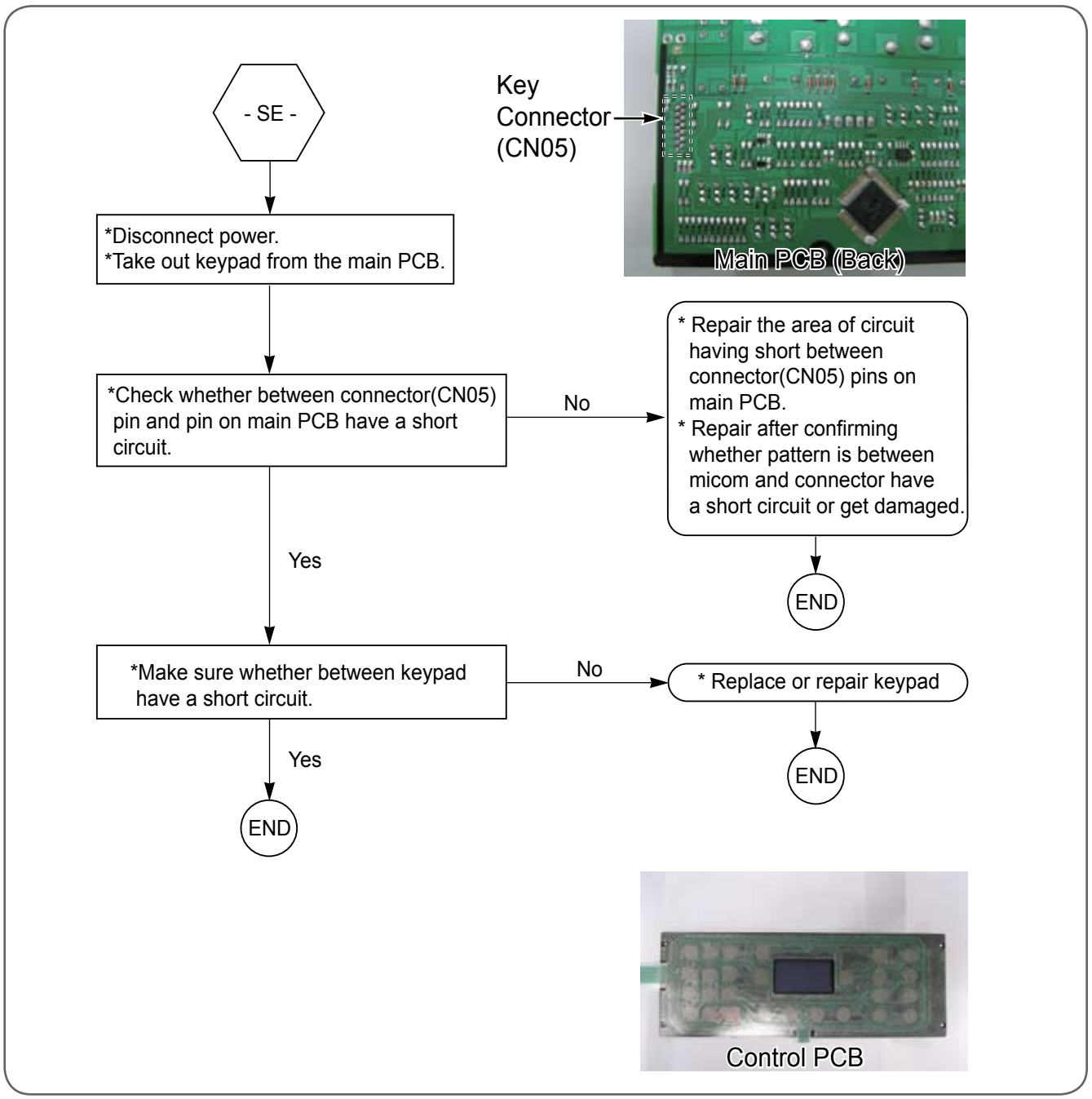
4-1 Failure Display Codes

Failure code	CAUSE	SOLUTION
E-0E	Door locking error	*Control lockout(press cooking time and Delay start pads at the same time for 3 seconds.) When 1 minute elapsed, It will display “E-0E” after buzzer is beeping 10 times long, if locking is occurred continually, or door locking is not working during self-cleaning or steam is being operated. Please make sure through the method of 4-1 on 30 page if those series of working for informing error take long time or not functioned.



4-1 Failure Display Codes

Failure code	CAUSE	SOLUTION
-SE-	short key	When 10 seconds elapses, It will display "-SE-" after buzzer is beeping 10 times long if between main PCB and cable connector or keypad and cable have a short circuit. Please make sure through the method of 4-1 on 30 page if those series of working for informing error take long time or not functioned.

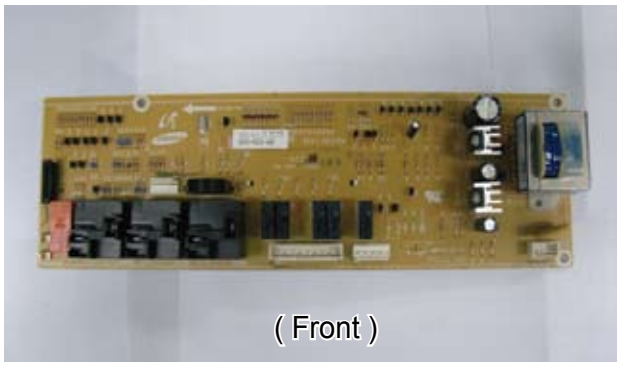


4-1 Failure Display Codes

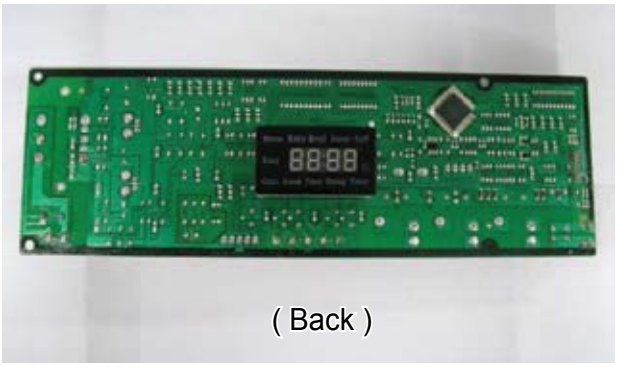
Control PCB Operation

Sort of Control PCB

Main PCB



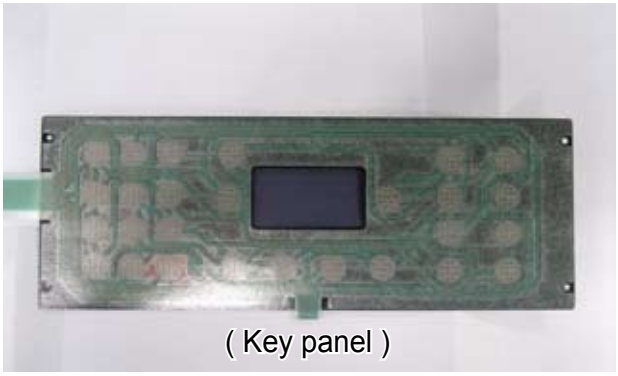
(Front)



(Back)

Touch control (membrane)

(Front)

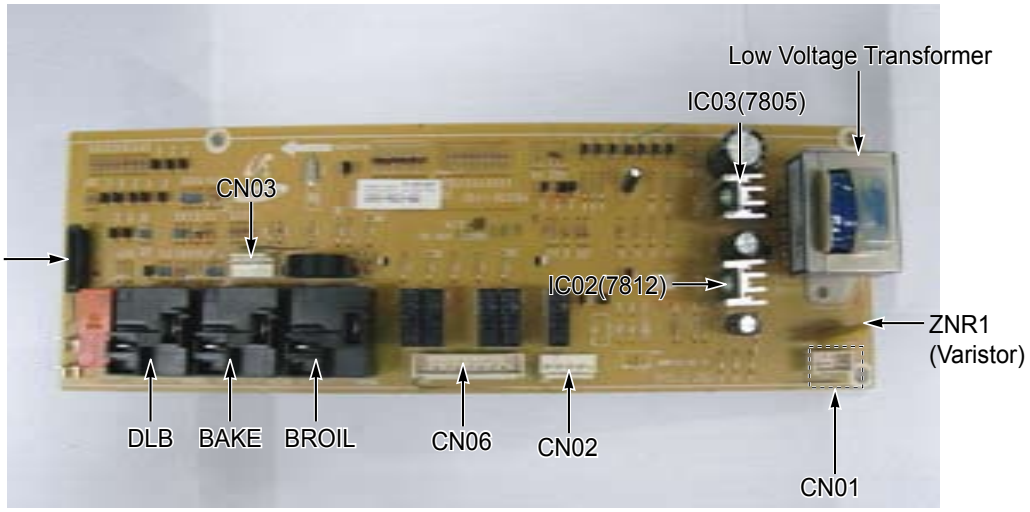


(Key panel)

4-1 Failure Display Codes

* Explain of primary parts of Main PCB

(Main PCB)



Explatin of the function of primary parts.

CN01	This is to supply power with primary on Low voltage transformer, and AC120V with main PCB through harness.
CN02	This is connector which is connected with Door plunger switch and Door lock switch. (COM-NO, COM-NC)
CN03	This is connector which is connected with oven sensor.
CN04	This is to stop operating self-cleaning and steam mode if hot indicator lamp on cooktop is lighted with being supplied with AC120V(L1, N).
CN05	This is consisted of 15 pin and take a role of getting a cable on keypad to connect with touch PCB.
CN06	This is connector which have door lock motor, and relay of oven lamp connected.
Ry-source relay(Ry01)	Circuit is designed to all relay worked after Ry-source ralay is being worked. (For safety)
DLB relay(Ry02)	Circuit is designed to have broil relay or worked after DLB relay is being worked by Double line break.
Broil relay(Ry03), Bake relay(Ry04)	Broil relay(Ry03), Bake relay(Ry04), will be on-off working by micom signal after DLB relay is worked. (Broil relay : It will not be problem with reversing the order in insering Black and Brown) (Bake relay : It will not be problem with reversing the order in insering Yellow and Gray)
ZNR1	This is the element to protect main PCB, if over voltage is supplied with PCB.
IC02	This is to supply DC12V with main PCB by voltage regulator.
IC03	This is to supply DC5V with main PCB by voltage regulator.
W/Drawer Relay(Ry06) and T02	This is terminal to connect harness with relay to get heater on warming drawer work (some model)

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 that the state of wire is connected with Terminal block.
	* Measure voltage of connector(CN01) on main PCB L1~N : 120V * Measure secondary voltage of Low Voltage Transformer. 13.5V and 7V	* Replace of repair if harness has been loosen or disconnected. * Replace if resistance of Low voltage transformer primary coil is over MΩ. (Thermal Fuse out)
	* Make sure that the relay on main PCB is being worked normally.	* Replace sub PCB if relay has been damaged or there is any cracking on the main PCB. * Repair harness is connected main PCB with sub PCB. * After confirming whether harness has been inserted into relay on main PCB or not, take action follow as; - Replace or repair harness. - Replace or repair main PCB.
	* Measure resistance both ends of terminal on thermostat. (normal : 0 ohoms) * Check whether harness is connected terminal on thermostat has been loosen or disconnected. * Measure voltage regulator (IC02,IC03) on main PCB. - IC02 : 7812(DC 12V) - IC03 : 7805(DC 5V)	* Replace the thermostat. * Replace or repair harness. * Replace or repair after confirming the state of working of main PCB.
Oven temperature is risen slowly.	* It will display “E-08” if it fail to reach 100˚F(38˚C) within 10 minute in a state of room temperature.	* Replace after checking whether there is any problem with oven sensor. (1080Ω at the Room temperature)
	* Make sure whether harness is connected with Broil and Bake heater has been loosen or disconnected.	* Repair and replace harness.
	* Make sure whether Broil and Bake, heater has been disconnected.	* After taking out terminal from each heater, measure resistance of heater and then replace that if it is not a normal resistance value.
	* Make sure that heater relay and pattern on main PCB.	* Replace or repair relay. * Replace or repair main PCB.

4. Troubleshooting

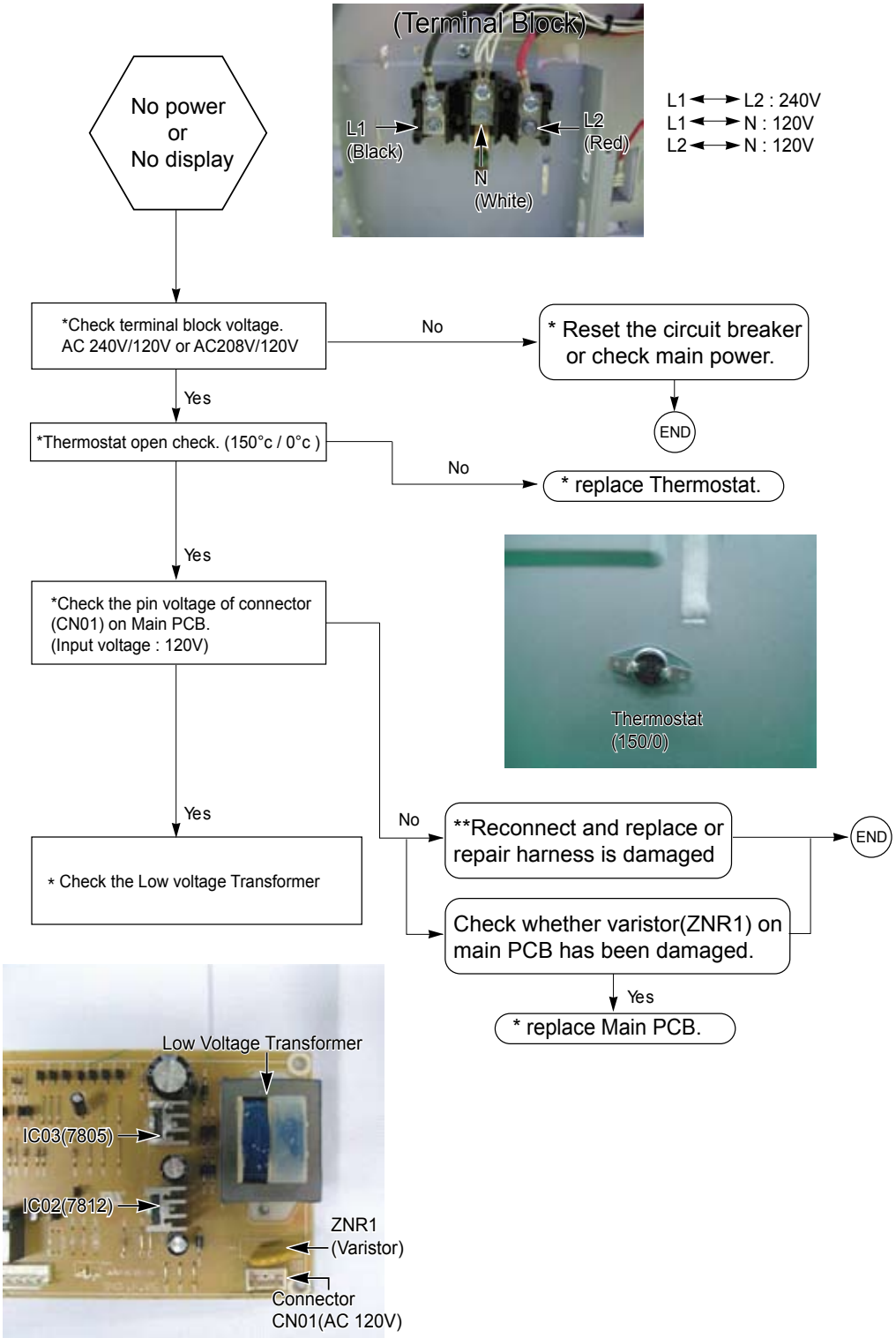
SYMPTOM	DIAGNOSIS	REMEDY
Oven temperature is risen fast.	* Check whtether temperature is risen over 400˚F(202˚C) within 10 minutes in a state of room temperature.	* Replace or repair it if relay on main PCB have a short circuit.
	* Check whether harness has been misconnected or have a short circuit.	* Replace or repair harness.
	* Measure resistance values of each heater are within a normal extent or not.	* Replace heater is in a abnormal state.
The self-cleaning feature will not operate when warming center is on	* This is in normal state.	* The self-cleaning feature will not operate when warming center or warming drawer is on.
Keypad is not worked normally in partially or entirely.	* Make sure that keypad cable on main PCB is in normal state.	* Replace after confirming whether it has been loosen or disconnected.
	* Make sure connector (CN05) on main PCB or PCB pattern.	* Replace or repair after confirming whether keypad cable has been loosen or disconnted.
Oven lamp is not working.	* Check the oven lamp relay (Ry09) on sub PCB and connector (CN06).	* Replace or repair if harness has been loosen or disconnected. * Replace oven lamp relay(Ry09) or Ry-source relay.(Ry01) * Replace main PCB.
	* Measure the resistance value of both ends of lamp terminal.	* Replace lamp if it has been disconnected.(120V / 40W)

4. Troubleshooting

SYMPTOM	DIAGNOSIS	REMEDY
Cooktop is not working or being occurred a abnormal working.	* Make sure that Radiant element or Infinite switch corresponded RR(Right Rear), RF(Right Front), LR(Left Rear), LF(Left Front).	* Replace Infinite switch or Radiant element.
	* Check whether harness is connected with radiant element or Infinite switch has been loosen or disconnected.	* Replace or repair harness
	* Check whether there is any crack or the area of being disconnected of harness.	
	* Measure whether RC(Rear Center) Heater has been connected with warming center relay(Ry07) on main PCB normally or not.	* Replace or repair Warming Center. relay(Ry07) * Replace or repair Warming Ry-source relay. * Replace main PCB. * Replace or repair if harness has been loosen or disconnected.
It has smell or smoke when oven has been started initially.	* This is in normal state.	* It has smell or smoke with burning dirt in oven or a foreign substance when oven has been working initially. * Ventilate after getting self cleaning mode to work.
LED display is a little bit dim partially or invisible entirely.	* LED display is inferior.	* Replace main PCB.
There is not buzzer beep sound when keypad is being worked.	* Check the state of sound feature. (Hidden key is oven Light and 0) * Check the state of buzzer on main PCB and whether PCB pattern have a short circuit or has been open.	* Change the sound feature "off" to "on" * Replace or repair main PCB.

4-2 Electrical Malfunction

Safety error



4-2 Electrical Malfunction

* Measure resistance and voltage of Low voltage Transformer (please refer to Fig.1)

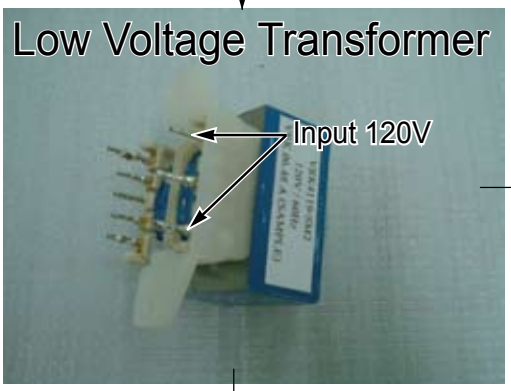


Fig.1 : Low voltage Transformer

No	voltage	resistance
Primary	120V (input)	110 ~ 120Ω
Secondary 1	13.5V	1.5 ~ 2.5
Secondary 2	7V	1.7 ~ 2.0

*Check whether primary resistance of Low voltage Transformer is in normal.

No → *Thermal Fuse with built-in Low voltage Transformer will be open if resistance is more than MΩ.

Yes → * Replace Low Voltage Transformer → END

Yes → *Measure voltage of voltage Regulator on main PCB.
IC02(7812) : DC 12V
IC03(7805) : DC 5V

Yes → * replace Main PCB. → END

4-2 Electrical Malfunction

Cooktop No heating or Abnormal working

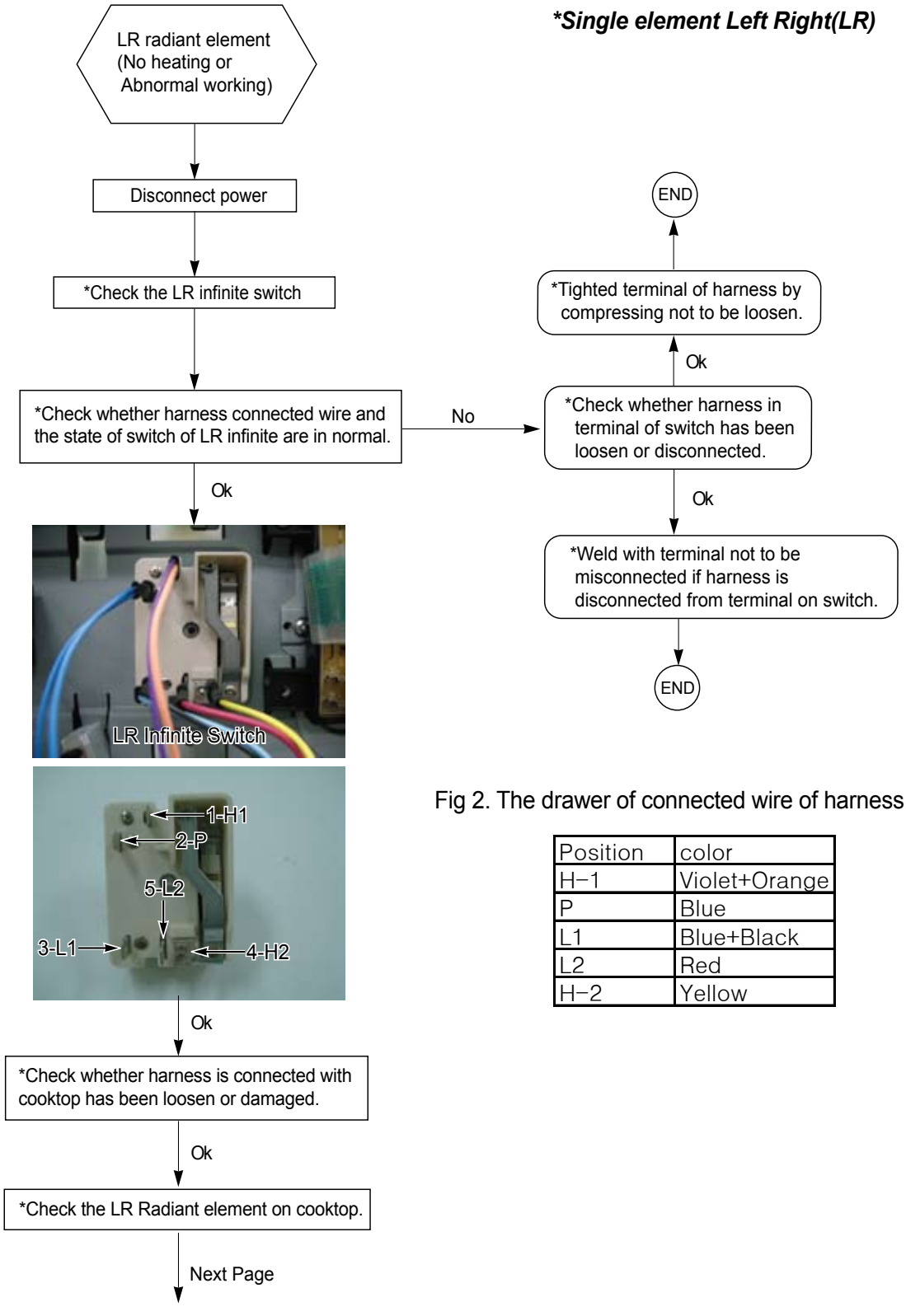


Fig 2. The drawer of connected wire of harness

Position	color
H-1	Violet+Orange
P	Blue
L1	Blue+Black
L2	Red
H-2	Yellow

4-2 Electrical Malfunction

(Continued)

LR radiant element
(No heating or
Abnormal working)

* Check the element of LR Radiant

*Check whether harness connected wire and the state of element of LR radiant are in normal.

No

*Check whether harness in terminal of radiant has been loosen or disconnected.

Ok

*Tighted terminal of harness by compressing not to be loosen.

Ok

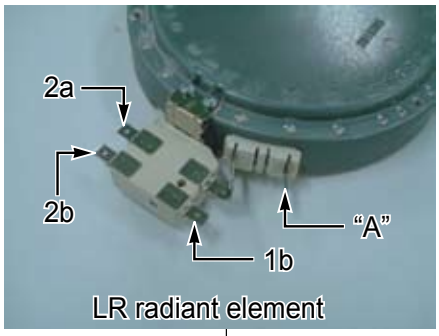
END

Ok

*Weld with terminal not to be misconnected if harness is disconnected from terminal on radiant.

END

Ok



Ok

*Check whether harness is connected with LR infinite switch has been damaged or disconnected.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected

Fig3. LR radiant element

Position	ohms
1b-2b	∞
2a-"A"	45~50Ω

(at the room temperature)

Fig4. The drawer of connected wire of Harness

Position	color	remark
"A"	Blue + Violet	240V, 1200W
2a	Black	165N8-L6871R
2b	Violet + Violet	single element
1b	Brown + Brown	Ceramaspeed

4-2 Electrical Malfunction

(Continued)

Dual element Right Front(RF)

RF radiant element (No heating or abnomal working)

* Disconnect power

* Check theRF infinite switch

*Check whether harness connected wire and the state of RF infinite switch are in normal

No

*Check whether harness in terminal of switch has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

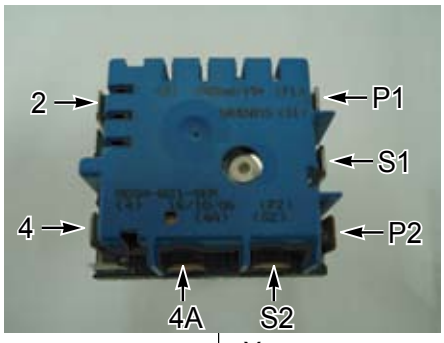
Yes

END

Yes

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END



Yes

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

*Check the element of RF Radiant on cooktop.

Next Page

Fig.5 The drawer of connected wire of Harness

Position	Color
P1	Red + Red
S1	Sky + Brown
P2	Black + Black
S2	Blue + Blue
4A	Yellow
4	Gray + Violet
2	Blue

4-2 Electrical Malfunction

(Continued)

RF radiant element
(No heating or
Abnormal working)

*check the element of RF Radiant

*Check whether harness connected wire and the state of RF infinite switch are in normal.

No

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

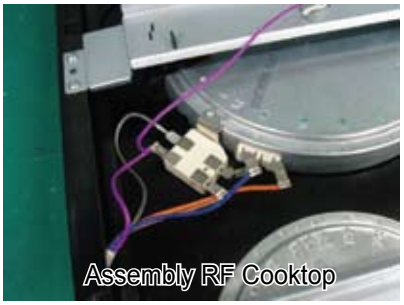
END

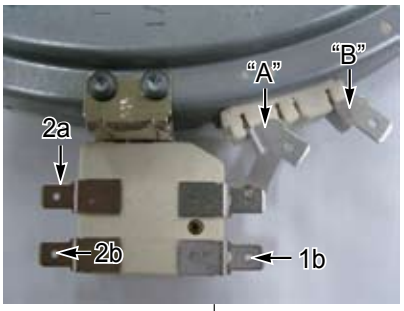
Yes

*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

END

Yes





Yes

*Check whether harness is connected with RF infinite switch has been damaged or disconnected.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.6 LR radiant element

Position	ohms
1b-2b	∞
2a-"A"	45~55Ω
2a-"B"	42~48Ω

(at the room temperature)

Fig.7 The drawer of connected wire of harness

Position	Color
"A"	Blue
"B"	Orange
1b	Brown
2a	Black
2b	Violet + Violet

4-2 Electrical Malfunction

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

RR radiant element (No heating or abnomal working)

* Disconnect power

* Check the RR infinite switch

*Check whether harness connected wire and the state of switch of RR Radiant are in normal.

No

*Check whether harness in terminal on switch has been loosen or disconnected.

Ok

*Tighted terminal of harness by compressing not to be loosen.

Ok

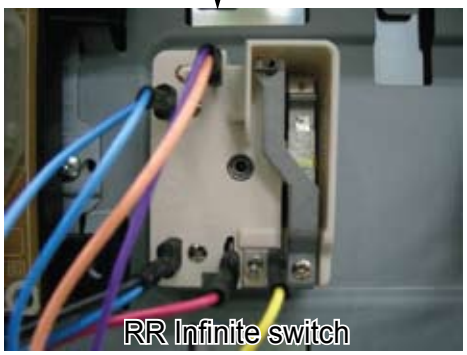
END

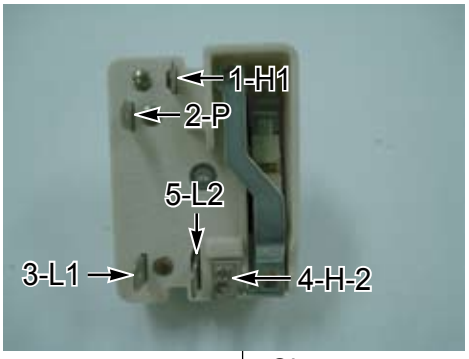
Ok

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Ok





Ok

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

*Check the element of RR Radiant on Cooktop.

Next Page

Fig.8 The drawer of connected wire of Harness

Position	Color	Remark
H-1	Violet+Orange	240V,1250W single switch Invensys Co.
P	Blue	
L1	Blue+Black	
L2	Red	
H-2	Yellow	

4-2 Electrical Malfunction

(Continued)

RR radiant element
(No heating or
Abnormal working)

*Check the element of RR Radiant

*Check whether harness connected wire and the state of element of RR Radiant are in normal.

No

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Ok

*Tighted terminal of harness by compressing not to be loosen.

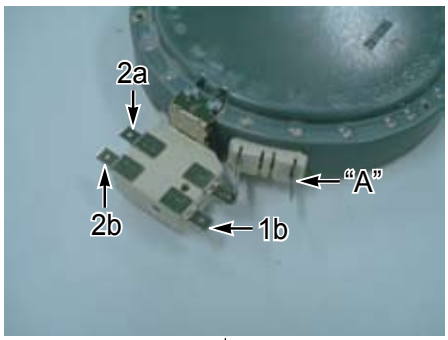
Ok

END

Ok

*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

END



Ok

*Check whether harness is connected with LR infinite switch has been damaged or disconnected.

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.9 LR radiant element

Position	ohms
1b-2b	∞
2a-"A"	45~50Ω

(at the room temperature)

Fig.10 The drawer of connected wire of harness

Position	Color
"A"	Blue + Violet
2a	Black
2b	Violet + Violet
1b	Brown + Brown

4-2 Electrical Malfunction

(Continued)

Dual element Right Front(RF)

RF radiant element (No heating or abnomal working)

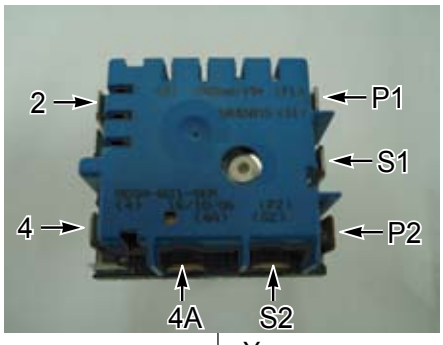
* Disconnect power

* Check theRF infinite switch

*Check whether harness connected wire and the state of RF infinite switch are in normal

No

Yes



Yes

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

*Check the element of RF Radiant on cooktop.

Next Page

*Check whether harness in terminal of switch has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

Yes

END

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Fig.5 The drawer of connected wire of Harness

Position	Color
P1	Red + Red
S1	Sky + Brown
P2	Black + Black
S2	Blue + Blue
4A	Yellow
4	Gray + Violet
2	Blue

4-2 Electrical Malfunction

(Continued)

RF radiant element
(No heating or
Abnormal working)

*check the element of RF Radiant

*Check whether harness connected wire and the state of RF infinite switch are in normal.

No

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

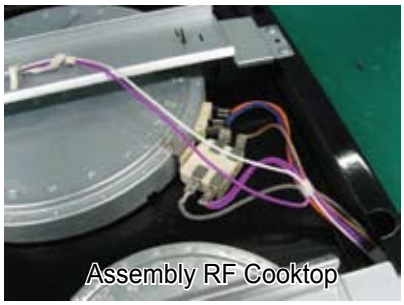
END

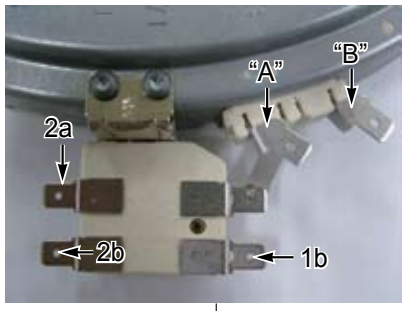
Yes

*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

END

Yes





Yes

*Check whether harness is connected with RF infinite switch has been damaged or disconnected.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.6 LR radiant element

Position	ohms
1b-2b	∞
2a-"A"	45~55Ω
2a-"B"	42~48Ω

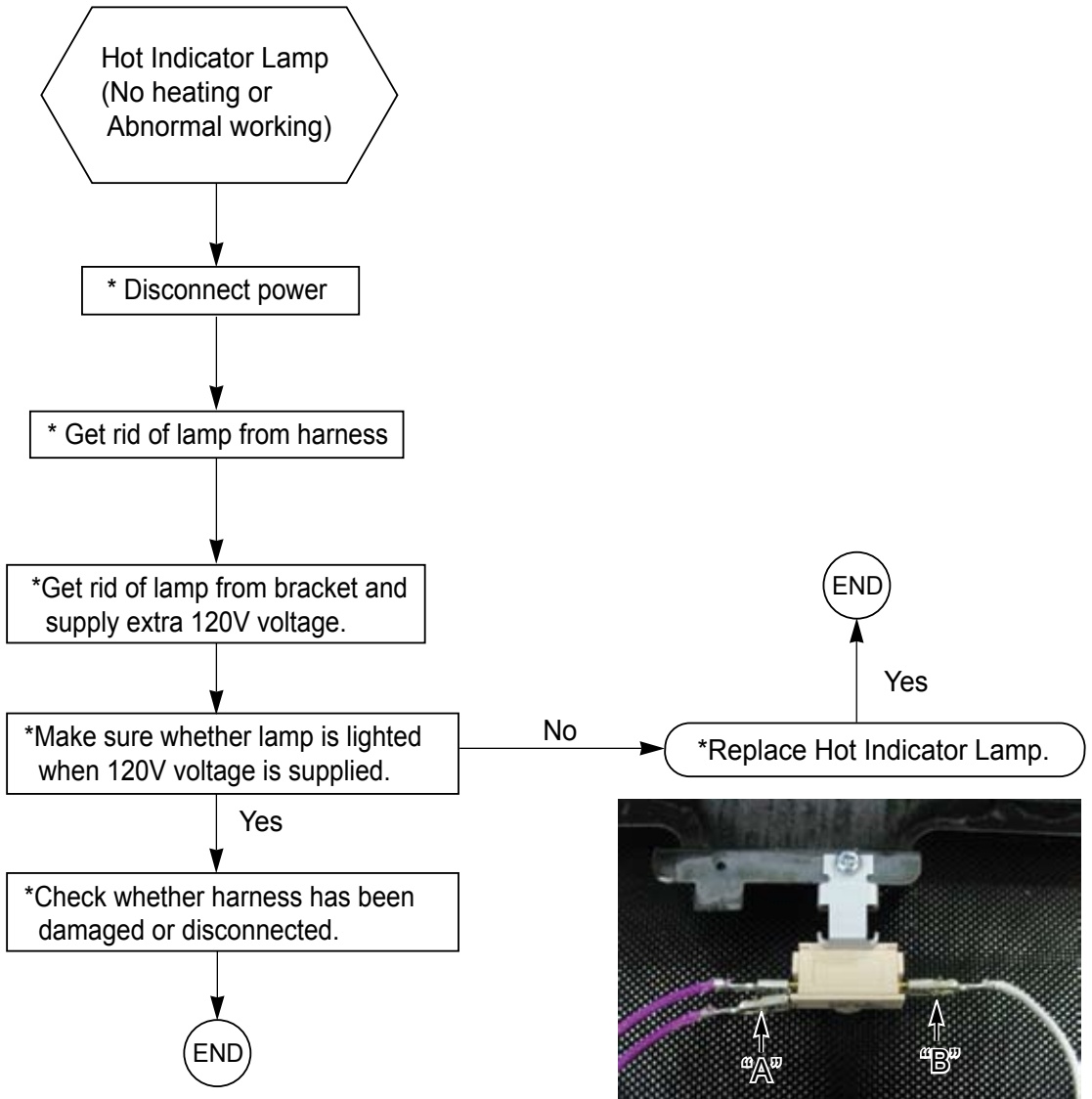
(at the room temperature)

Fig.7 The drawer of connected wire of harness

Position	Color
"A"	Blue
"B"	Orange
1b	Brown
2a	Black
2b	Violet + Violet

4-2 Electrical Malfunction

Hot indicator Lamp failure (cooktop)



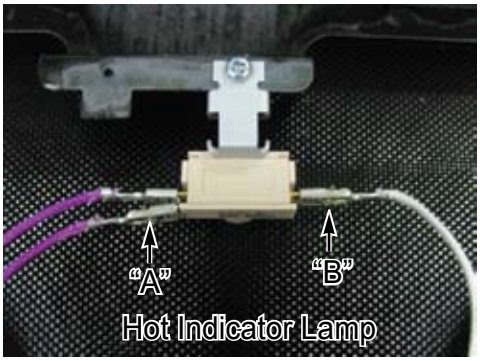


Fig. 16 The drawer of connected wire of harness

Position	Color
A	Violet + Violet
B	White

WARNING

Having a short circuit might cause fire or damage of infinite switch if harness is misconnected during cooktop is being worked.

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

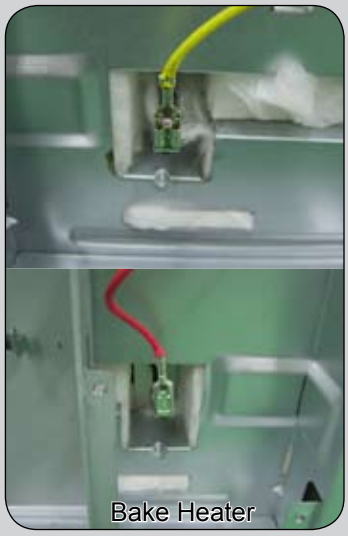
4-2 Electrical Malfunction

Component testing procedures

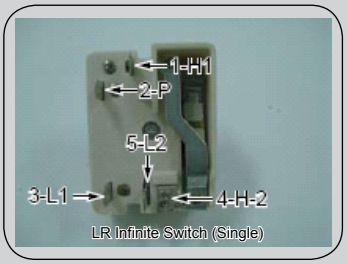
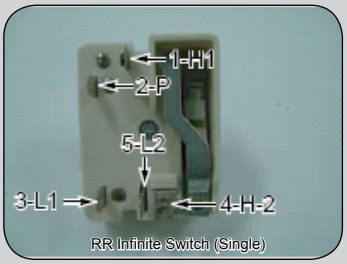
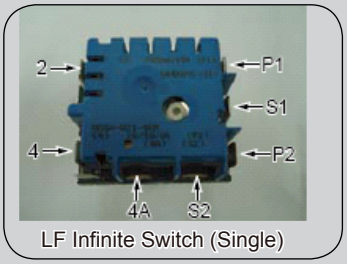
WARNING

ELECTRICAL SHOCK HAZARD

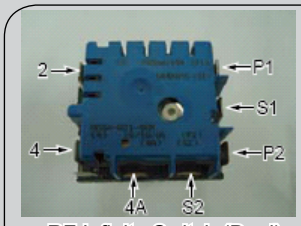
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

FIGURE	TESTS MEASURE	RESULTS
 Broil Heater	* Measure resistance 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 : 15 ~ 20Ω (at the room temperature) * Terminal voltage of Broil heater : AC 240V * Replace or repair harness * Replace or repair sub PCB
 Bake Heater	* 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 : 22 ~ 26Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness * Replace or repair sub PCB
 Door Lock	* Measure the state of micro switch and motor after taking off harness from the heater. * Check whether lock work normally by pressing cooking time button and delay start keypad at the same time for 3 seconds.	* Lock motor Resistance : 1750 ~ 1850Ω (at the room temperature) voltage : 120V * Micro switch COM-NO , COM-NC * Replace or repair if harness has been loosen or disconnected.
 Oven Lamp Socket	* First of all, make sure that lamp filament is disconnected or not. * Measure resistance socket's terminal after separating harness from heater and removing lamp. * Measure the voltage of socket's terminal after having lamp worked by pressing oven light keypad.	* Approx : ∞ Ω * Terminal voltage of lamp socket : 120V * Replace or repair harness. * Replace or repair sub PCB

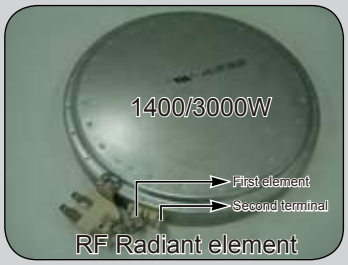
4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 LR Infinite Switch (Single)	* Check whether harness is connected with switch properly. H-1 Violet+Orange P Blue L1 Blue+Black L2 Red H-2 Yellow * 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. H-1 Violet+Orange P Blue L1 Blue+Black L2 Red H-2 Yellow * 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 (Single)	* Check whether harness is connected with switch properly. P1 Red + Red S1 Sky + Brown P2 Black + Black S2 Blue + Blue 4A Yellow 4 Gray + Violet 2 Blue * 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 : 0 Ω S1-S2 : 0 Ω P2-4 : 0 Ω * When switch is on(HI, Max.) voltage P1=2=4A ↔ P2=4 : 240V S1=S2 ↔ LF suface lamp : 120V * Replace or repair harness.

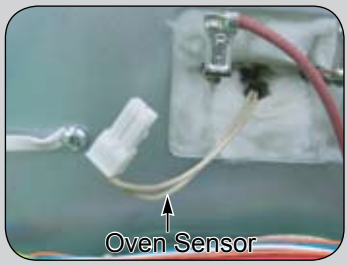
4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 RF Infinite Switch (Dual)	* Check whether harness is connected with switch properly. P1 Red + Red S1 Sky + Brown P2 Black + Black S2 Blue + Blue 4A Yellow 4 Gray + Violet 2 Blue * 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 : 0 Ω S1-S2 : 0 Ω P2-4 : 0 Ω * 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
	* Check whether harness is connected with terminal of element properly. element terminal : Blue + Violet “A” Blue + Violet 2a Black 2b Violet + Violet 1b Brown + Brown * Measure voltage and resistance between terminals. (Please refer to schematic diagram)	**Approx** * Terminal resistance : 1b-2b= ∞ Ω 2a- element terminal : 45 ~ 50Ω (at the room temperature) * Voltage which supply radiant element 2a - element terminal:240V * Replace or repair harness.
	* Check whether harness is connected with terminal of element properly. First element terminal : Blue Second element terminal : Orange “A” Blue “B” Orange 1b Brown 2a Black 2b Violet + Violet * Measure voltage and resistance between terminals. (Please refer to schematic diagram)	**Approx** * Terminal resistance : 1b-2b= ∞ Ω 2a-First element terminal: 45 ~ 50Ω 2a-second element terminal: 42 ~ 48Ω (at the room temperature) 2a - first or second terminal : 240V * Replace or repair harness.
	* Check whether harness is connected with termial of element properly. First element terminal : Blue Second element terminal : Orange “A” Blue “B” Orange 1b Brown 2a Black 2b Violet + Violet * Measure voltage and resistance between terminals. (Please refer to schematic diagram)	**Approx** * Terminal resistance : 1b-2b= ∞ Ω 2a-First element terminal: 45 ~ 50Ω 2a-second element terminal: 42 ~ 48Ω (at the room temperature) 2a - first or second terminal : 240V * Replace or repair harness.

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
 Door plunger switch	* Check the state of working of 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.
 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 is same with a chart's one. * Check whether wire or housing has been loosen or disconnected.	**Approx.** at the room temperature :1080Ω

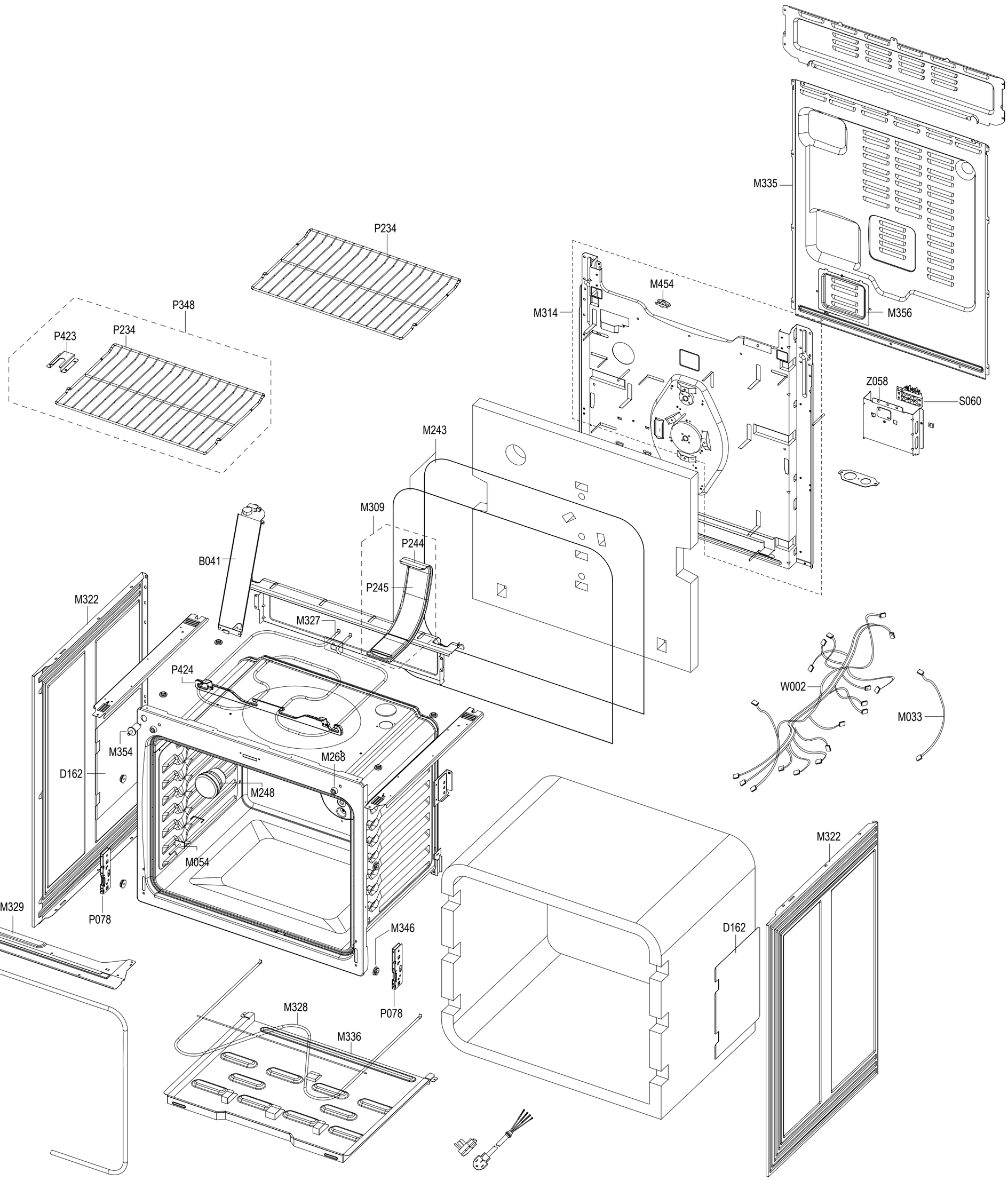
4-2 Electrical Malfunction

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

5-1 Exploded Views

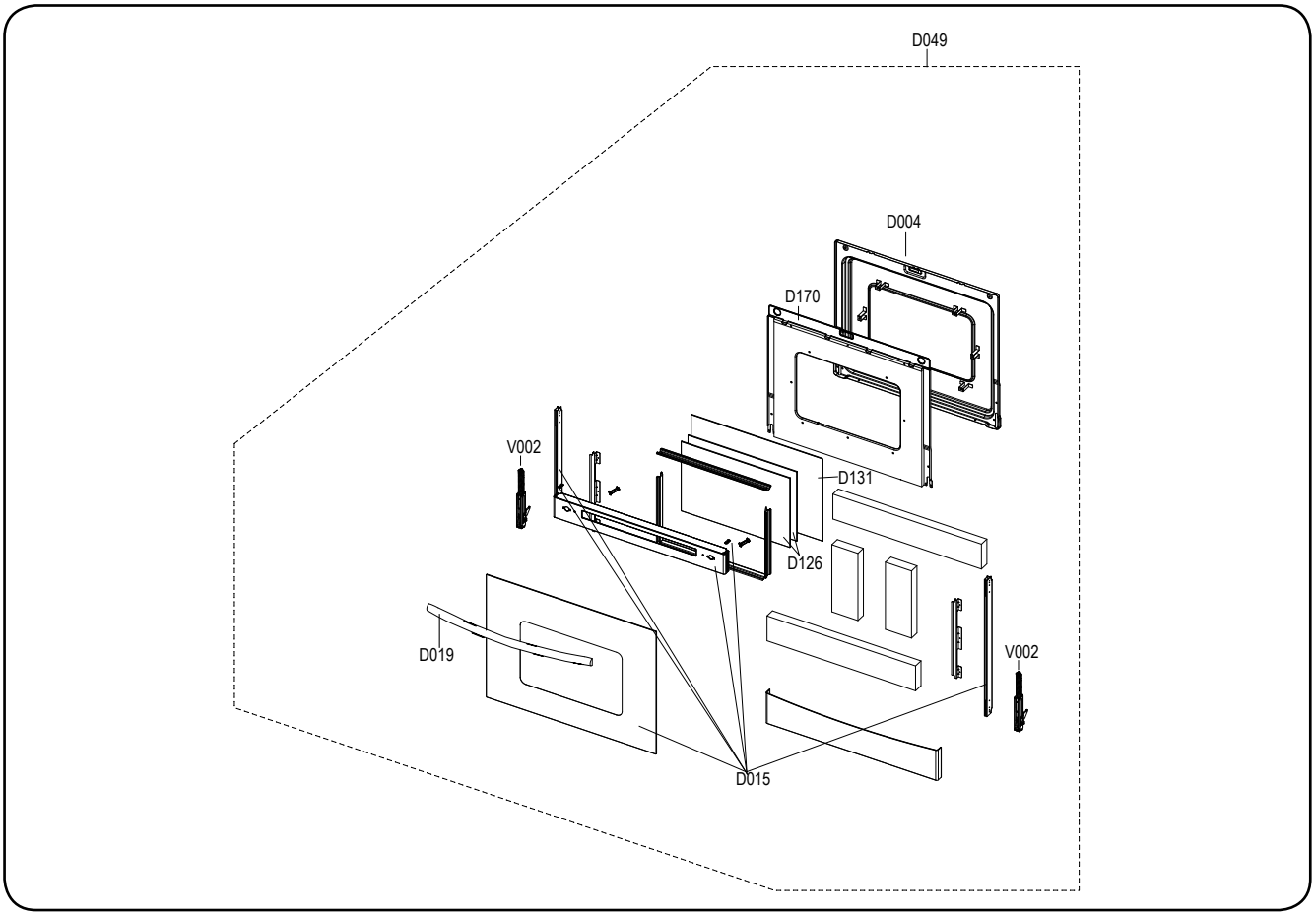


5-2 Main Parts List

(S.N.A : SERVICE NOT AVAILABLE)

No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
B041	DG66-00017C	LATCH-DOOR	FER300**,GI-SGCC,T0.6,W325.88	1	SA	-
D162	DG62-00020C	BAFFLE-DOOR SHEET	FER300**,GI-SGCC,W318,	2	SNA	-
M033	DG39-00019A	WIRE HARNESS-SUB	FTQ386, FTQ352,BEST, BE	1	SA	-
M054	DG32-00002B	SENSOR-THERMISTOR	FTQ386LWUX,Platium Sen	1	SA	-
M243	DG70-00004A	STEEL WIRE	A-1 PROJECT,MSWR,1.2,2,800,FA	2	SNA	-
M248	DG97-00083A	ASSY LAMP BULB	-,LH-01,120V,40W,-,422-89	1	SA	-
M268	DG73-00003A	RUBBER-CUSHION	FTQ386LWUX,SILICON,-,50,-	1	SA	-
M309	DG97-00058D	ASSY-VENT	FER300**, FER400**,SGCC T0.4,N	1	SA	-
M314	DG97-00123E	ASSY COVER BACK-MAIN	FCQ321**,SGCC,T0.6,	1	SA	-
M322	DG64-00142B	PANEL-SIDE COATING	FTQ386LWUX,SECC,0.6,6	2	SNA	-
M327	DG47-00037A	HEATER-BROIL	FCQ321HSUX/B/W,Incoly840,34	1	SA	-
M328	DG47-00038A	HEATER-BAKE	FCQ321HSUX/B/W,Incoly840,240	1	SA	-
M329	DG61-00145C	BRACKET-MAIN TOP	FER300**,GI-SGCC,T0.5,W	1	SNA	-
M335	DG63-00062B	COVER-BACK MAIN WIRE	FCQ321HSUX,SGCC,0.5	1	SA	-
M336	DG63-00065D	COVER-BAKE HEATER	FER300**,FER400**,SGCC	1	SNA	-
M346	DG60-00007B	SPACER-SIDE PANEL	FTQ386**, FTQ352**, FC	4	SA	-
M354	DG34-00006A	SWITCH-DOOR PLUNGER	120/240 VAC,BLACK,FT	1	SA	-
M356	DG63-00061B	COVER-ACCESS	FCQ321HSUX,SGCC,0.5,127,173	1	SNA	-
M370	DG63-00093A	GASKET-DOOR	FTQ386LWUX,STSS WOVEN WOOL,0	1	SA	-
M454	DE47-20037A	THERMOSTAT	-,NT-101,250V 10A/125V 15A,-,	1	SA	-
P078	DG61-00188A	SUPPORT-HINGE	FTQ386LWUX,ALCOT,1.4,-,209	2	SA	-
P234	DG75-01001A	RACK-FLAT	FTQ386LWUX,MSWR, Ni-Cr,-,630,4	1	SA	-
P234	DG75-01001A	RACK-FLAT	FTQ386LWUX,MSWR, Ni-Cr,-,630,4	1	SA	-
P244	DG61-00153C	BRACKET-VENT UPPER	FER300**,GI-SGCC,T0.4	1	SNA	-
P245	DG61-00154C	BRACKET-VENT LOWER	FER300**,GI-SGCC,T0.4	1	SNA	-
P348	DG97-00118C	ASSY ACCESSORY-A	FCQ321HSUX/XAA,-,A-2 W/	1	SA	-
P423	DG97-00120A	ASSY BRACKET-ANTI TIP	FTQ386LWUX,-,-,A-1	1	SA	-
P424	DG94-00218B	ASSY BRACKET-BROIL HEATER	FER300**/FER40	1	SA	-
S060	DG65-00003A	TERMINAL-BLOCK	C-8500018,Polycarbonate,B	1	SA	-
W002	DG96-00150A	ASSY WIRE HARNESS-A	FE-R300,240V60Hz,USA	1	SA	-
Z058	DG61-00168B	BRACKET-COVER ACCESS	FCQ321HSUX,SECC,0.6	1	SA	-

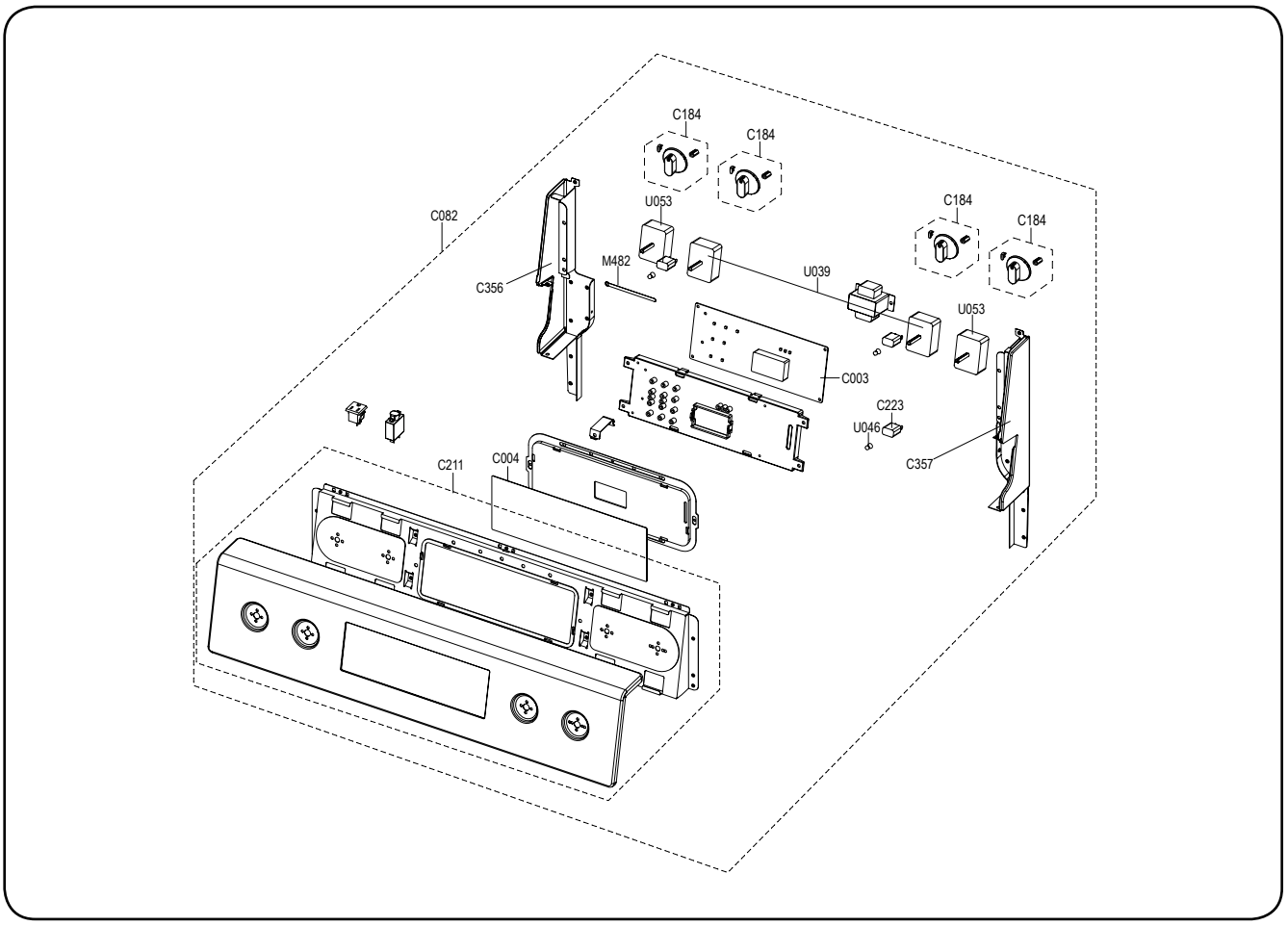
5-3 Door Parts List



(S.N.A : SERVICE NOT AVAILABLE)

No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
D004	DG94-00063A	ASSY DOOR E	FTQ386LWUX,-,-,CERAMIC ENAME	1	SA	-
D015	DG94-00224B	ASSY DOOR SUB	FTQ353IWUW,SECC, GLASS,WHI	1	SNA	-
D019	DG64-00242B	HANDLE DOOR	FTQ353IWUB,FTQ353IWUW,STEEL,	1	SNA	-
D049	DG94-00223E	ASSY DOOR	FER300SW,SECC,GLASS,WHITE	1	SNA	-
D126	DG64-00092A	GLASS-INNER	FTQ386LWUX/XAA,HEAT REFLECTI	2	SA	-
D131	DG64-00133A	GLASS-INNER SUB	FTQ386LWUX,Tempered GLAS	1	SA	-
D170	DG97-00113C	ASSY BAFFLE DOOR	FER300**,SGCC,A-4 PJT	1	SA	-
V002	DG97-00080B	ASSY HINGE	FTQ352*,-,-,30inch, Better	2	SA	-

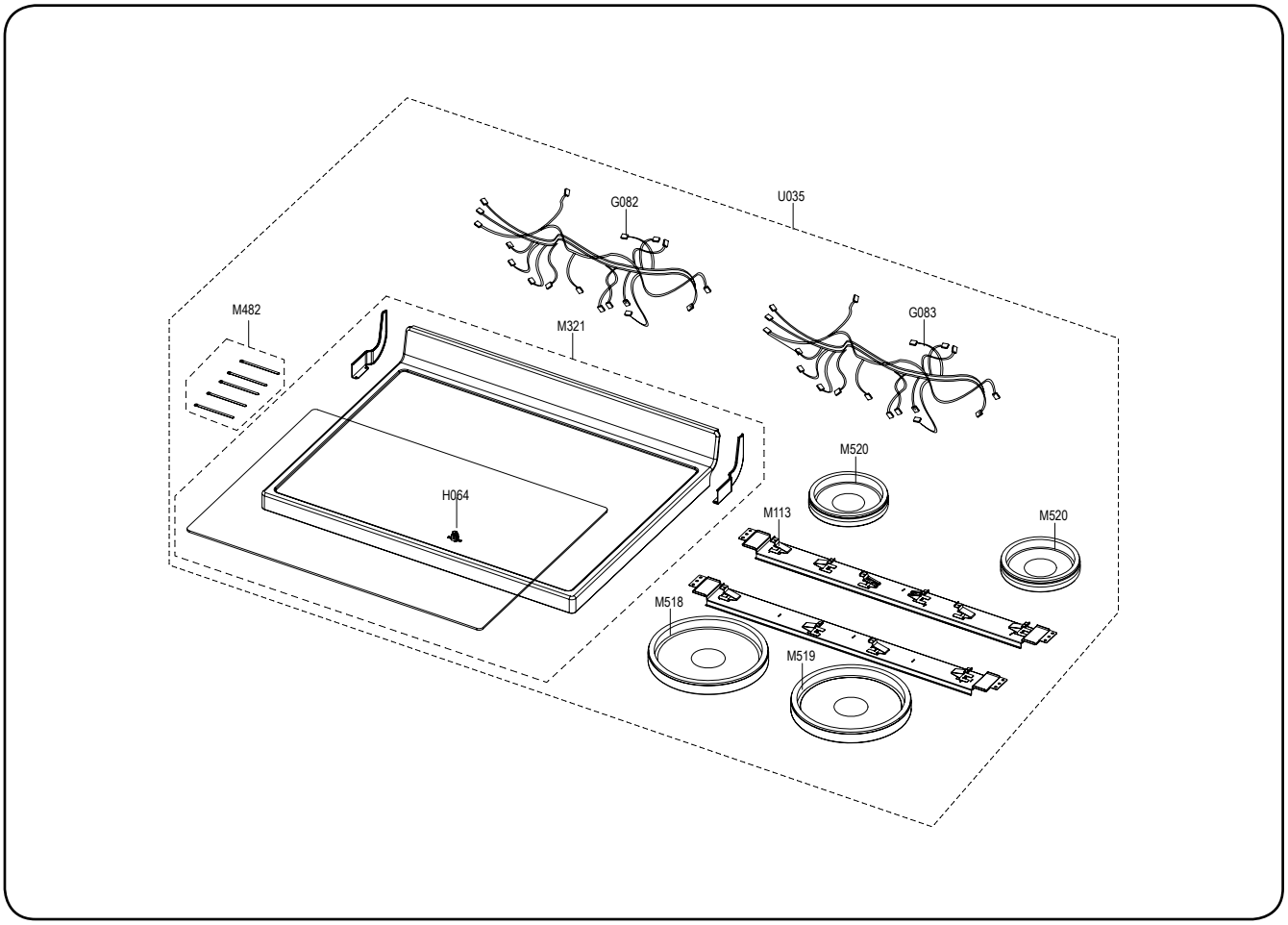
5-4 Control Parts List



(S.N.A : SERVICE NOT AVAILABLE)

No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
C003	OAS-AG3-01	ASSY PCB PARTS	FE-R300SX-XAA,A4-FIGHTING	1		-
C004	DG34-00014B	SWITCH MEMBRANE	FE-R300,289 x 104,PC,200	1	SA	-
C082	DG97-00112X	ASSY CONTROL BOX	FER300SW,WHITE COLOR,SE	1	SA	-
C184	DG94-00221B	ASSY KNOB DIAL	FTQ353IWUW**,PBT,WHITE,-	4	SA	-
C211	DG97-00114W	ASSY CONTROL SUB	FER300SW/XAA,WHITE,SECC	1	SA	-
C223	DG64-00131A	INDICATOR-LIGHT	FTQ386LWUX,SP-1834-A / L	1	SA	-
C356	DG94-00123D	ASSY SUPPORT-BACK GUARD LT	FTQ353IWUW,WH	1	SA	-
C357	DG94-00124D	ASSY SUPPORT-BACK GUARD RT	FTQ353**, FCQ	1	SA	-
M482	6502-001117	CABLE CLAMP	DALF-94-2,EGI STEEL, SILICON	2	SA	-
U039	DG44-01001A	REGULATOR-ENERGY	NL811226,FTQ386LWUX,Sin	2	SA	-
U046	DG67-00022A	LENS-LIGHT	FTQ386LWUX	1	SA	-
U053	DG44-01002A	REGULATOR-ENERGY	MDSA-W21-SKM,Dual	2	SA	-

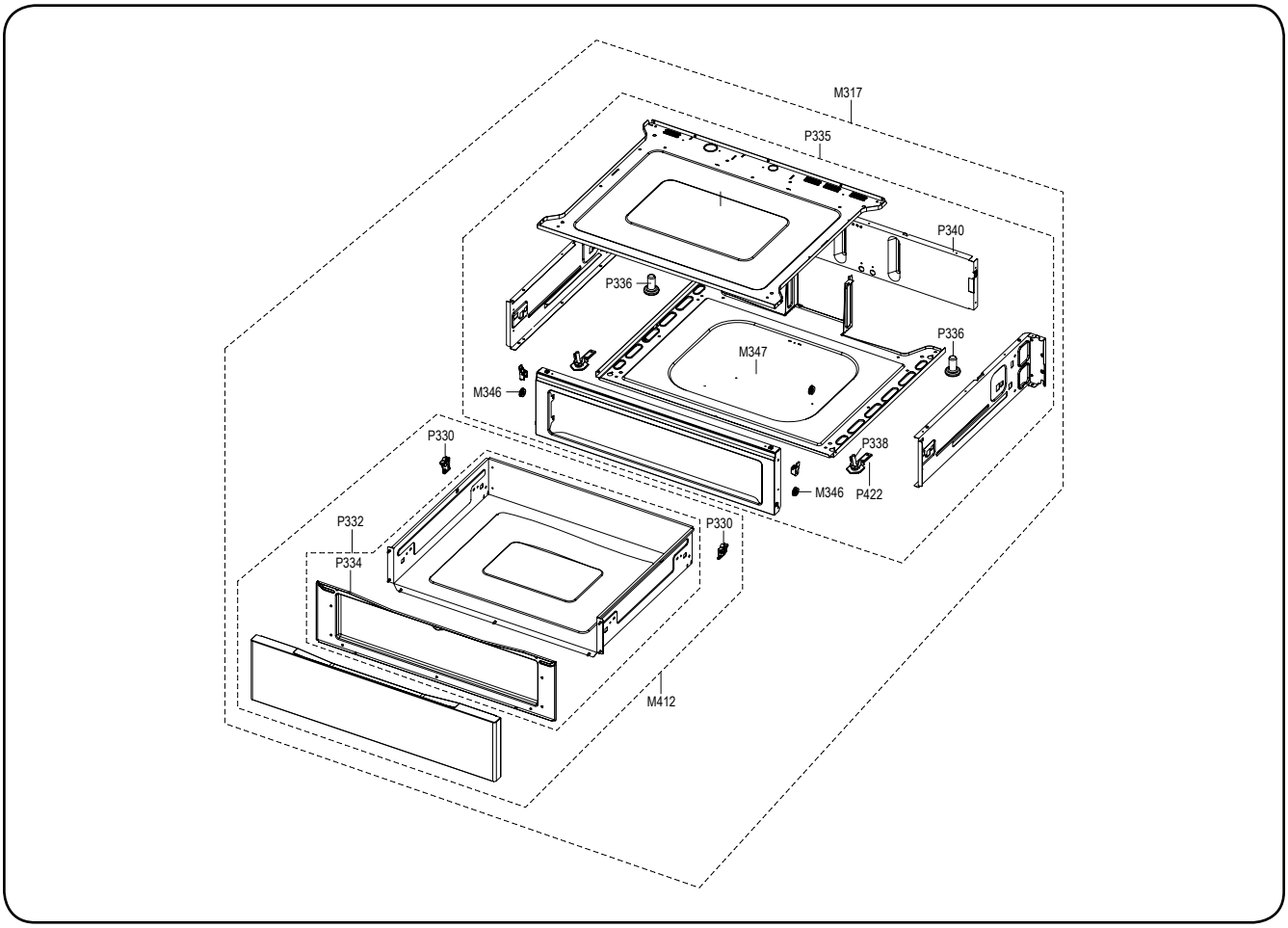
5-5 Cooktop Parts List



(S.N.A : SERVICE NOT AVAILABLE)

No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
G082	DG96-00152A	ASSY WIRE HARNESS-COOKTOP A	FE-R300,240V	1	SA	-
G083	DG96-00151A	ASSY WIRE HARNESS-COOKTOP B	FE-R300,240V	1	SA	-
H064	DG64-00241A	INDICATOR-HOT SURFACE	FTQ387**,FTQ353**,	1	SA	-
M113	DG61-00286A	SUPPORT-HEATER	FCQ321HSUX,SK-5,0.5,-,-,-	8	SA	-
M321	DG97-00074L	ASSY-FRAME COOKTOP	FER300SW,SEALING	1	SA	-
M482	6502-001117	CABLE CLAMP	DALF-94-2,EGI STEEL, SILICON	5	SA	-
M518	DG47-00022A	HEATER-RADIANT-DUAL	250T8L8737RC25140,FT	1	SA	-
M519	DG47-00043A	HEATER-RADIANT-DUAL(3000W)	FTQ387**,3000	1	SA	-
M520	DG47-00023A	HEATER-RADIANT-SINGLE	165N8L8735RC25136,	2	SA	-
U035	DG97-00073T	ASSY COOKTOP	FER300SW,WHITE	1	SA	-

5-6 Drawer Parts List



(S.N.A : SERVICE NOT AVAILABLE)

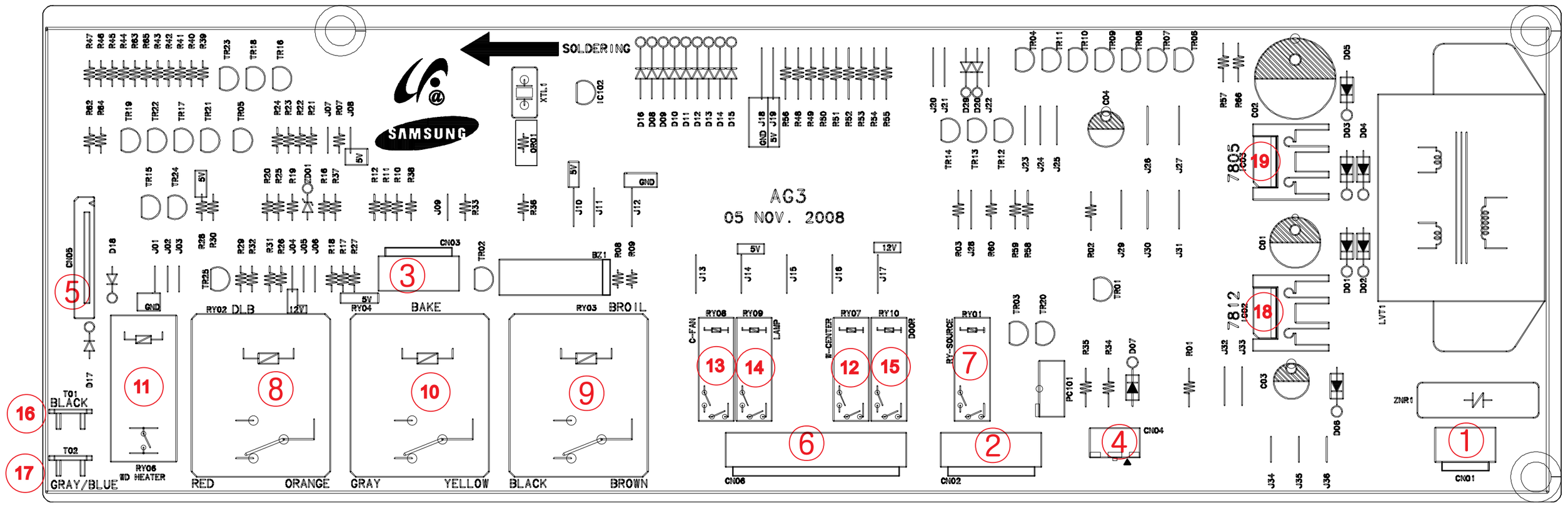
No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
M317	DG97-00117S	ASSY DRAWER-MAIN	FER300SW,WHITE,A4 PJT	1	SA	-
M346	DG60-00007B	SPACER-SIDE PANEL	FTQ386**, FTQ352**, FC	2	SA	-
M347	DG61-00125A	BASE-WARMER DRAWER	FTQ386**, FTQ352**, F	1	SNA	-
M412	DG97-00053V	ASSY DRAWER	FER300SW,WHITE,A4 PJT	1	SA	-
P330	DG61-00279A	SLIDER-INNER	FCQ321HTUX,PBT,-,-,-,BLACK,	2	SNA	-
P332	DG97-00129F	ASSY CAVITY-DRAWER	FER300**,1.4cu.ft,A-4	1	SNA	-
P334	DG64-00096B	PANEL-DRAWER	FTQ387**, FTQ353**,ALCOAT,T	1	SNA	-
P335	DG97-00071F	ASSY PEDESTAL	FER300**,A-4 PJT	1	SA	-
P336	DG61-00432A	LEG-LEVELING	FER300**,PA66,HB,BLK,58,M19	2	SA	-
P338	DG61-00294A	LEG-LEVELING A2	FCQ321HSUX,PBT,V0,BLACK,	2	SA	-
P340	DG63-00054B	COVER-BACK WARMER	FER300**,GI-SGCC,T0.6,	1	SNA	-
P341	DG63-00055D	SHIELD-UPPER DRAWER	FER300**,GI-SGCC,T0.	1	SNA	-
P422	DG61-00430A	BRACKET-LEG LEVELING	FER300**, FER400**,	2	SA	-

5-7 Standard Parts List

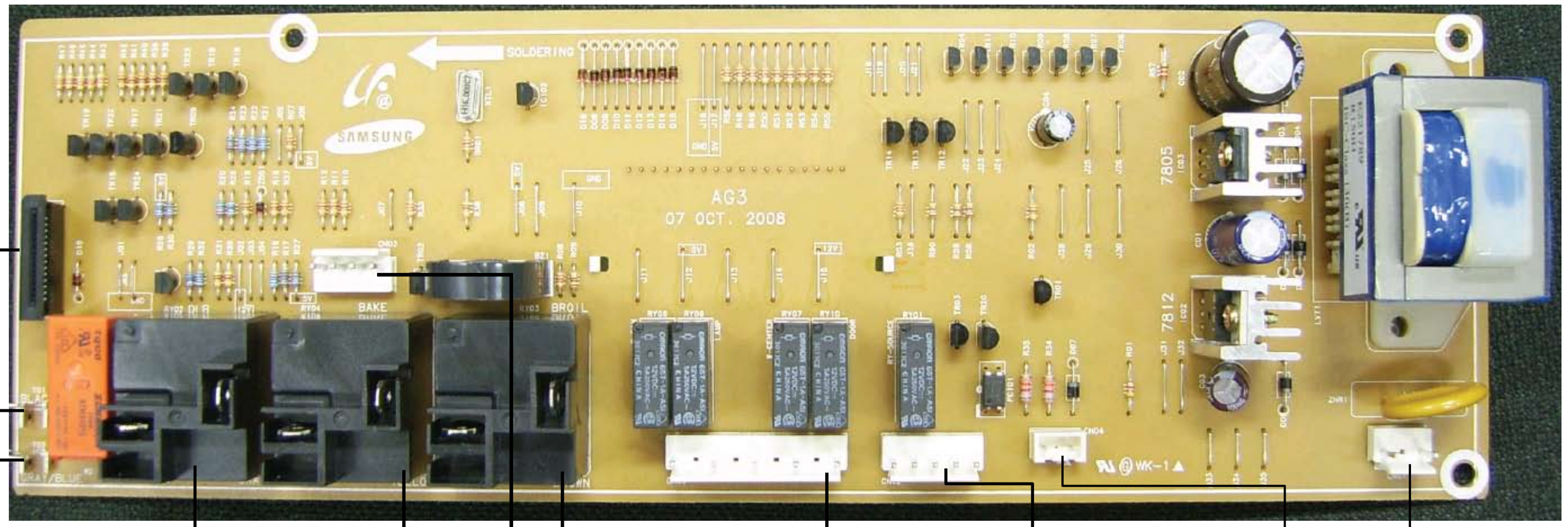
(S.N.A : SERVICE NOT AVAILABLE)

Level	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
1-1	6001-000033	SCREW-MACHINE	TH,+,-,M4,L10,PASS,STS304,	1	SNA	-
1-1	6003-001622	SCREW-TAPTYPE	HEX,+,TH,S,M5,L10,ZPC(WHT)	1	SNA	-
1-1	6006-001170	SCREW-TAPPING	TH,+,WT,TC,M4,L10,ZPC(WHT)	2	SA	-
1-1	6006-001174	SCREW-TAPPING	TH,+,WE,2S,M4,L12,ZPC(WHT)	48	SA	-
1-1	6009-001395	SCREW-SPECIAL	TH,+,WP,M5,L10,PASS,STS XM	4	SNA	-
1-1	DE60-10059A	SCREW-TAPPING	TH,+,2,M4,L8,NI PLT,SUS410	5	SNA	-
1-1	DE60-10189A	SCREW MACHINE	+,WS(FIBER),M4,L10,ZPC(BLK	2	SNA	-
1-1	DE60-10193A	SCREW-TAPPING	TH,M4,FEFZY,ZPC(WHT),MSWR1	2	SA	-
1-1	DE60-10199A	SCREW-MACHINE	HEX,+,WT,M5,L10,CR PLT,SWR	6	SNA	-
1-2	6001-002267	SCREW-MACHINE	TH,+,WP,M5,L60,ZPC(BLK),SW	2	SNA	-
1-2	6006-001174	SCREW-TAPPING	TH,+,WE,2S,M4,L12,ZPC(WHT)	14	SA	-
1-2	6009-001395	SCREW-SPECIAL	TH,+,WP,M5,L10,PASS,STS XM	8	SNA	-
1-2	6006-001174	SCREW-TAPPING	TH,+,WE,2S,M4,L12,ZPC(WHT)	2	SA	-
1-2	DE60-10059A	SCREW-TAPPING	TH,+,2,M4,L8,NI PLT,SUS410	1	SNA	-
1-2	6002-000643	SCREW-TAPPING	TH,+,NO,2S,M4,L10,ZPC(WHT)	8	SNA	-
1-2	6006-001170	SCREW-TAPPING	TH,+,WT,TC,M4,L10,ZPC(WHT)	1	SA	-
1-2	DE60-00003A	SCREW-TAPPING	TH,+,Tapping 1,M3.5,L9,ZPC	4	SNA	-
1-2	6002-000217	SCREW-TAPPING	TH,+,-,1,M4,L8,ZPC(WHT),SW	4	SNA	-
1-2	6002-001237	SCREW-TAPPING	PWH,+,2,M3,L12,ZPC(WHT),SW	2	SNA	-
1-2	6006-001174	SCREW-TAPPING	TH,+,WE,2S,M4,L12,ZPC(WHT)	13	SA	-
1-2	DE60-00001A	SCREW MACHINE	TH,+,M4,L6,NI PLT,STS430	8	SNA	-
1-3	DE60-10062A	SCREW-TAPPING	TH,M4,FEFZB	6	SNA	-
1-3	6002-000630	SCREW-TAPPING	PH,+,-,2S,M3,L8,ZPC(WHT),S	2	SNA	-
1-3	DE60-10059A	SCREW-TAPPING	TH,+,2,M4,L8,NI PLT,SUS410	7	SNA	-
1-3	DE60-10062A	SCREW-TAPPING	TH,M4,FEFZB	2	SNA	-
1-3	6006-001174	SCREW-TAPPING	TH,+,WE,2S,M4,L12,ZPC(WHT)	24	SA	-
1-3	DE60-10062A	SCREW-TAPPING	TH,M4,FEFZB	16	SNA	-
1-3	6002-001309	SCREW-TAPPING	TH,+,-,1,M5,L25,ZPC(WHT),S	2	SA	-
1-4	DE60-10059A	SCREW-TAPPING	TH,+,2,M4,L8,NI PLT,SUS410	5	SNA	-

6-1 PCB Diagrams (Main)



No.	Parts Number	Part Name	Function and Rule
1	CN01	Power Connector	This is connector which supply AC 120V(L1~N).
2	CN02	Door s/w , Door Lock s/w Connector	This is connector which connect door switch with door lock switch.
3	CN03	Oven Sensor Connector	This is connector which is connected with oven sensor..
4	CN04	Cook Top Sensing Connector	This is connector which connect regulator-energy with sense cook-top operate.
5	CN05	Key Pad Connector	This consist of 15 pin and take a role of getting a cable on keypad to connect with touch PCB.
6	CN06	Relay Connector	This is connector which connect control relay with warming center, oven lamp,convection fan, door lock switch.
7	RY01	RY-Source Control Relay	This is relay which control source of DLB,BAKE,BROIL, W/Drawer relay.
8	RY02	DLB Relay	Circuit is designed to have broil relay or convection relay worked after DLB relay is being worked by Double line break.
9	RY03	BROIL Relay	Broil relay(Ry03), Bake relay(Ry04) will be on-off working by micom signal after DLB relay is worked.
10	RY04	BAKE Relay	(Broil relay : It will not be problem with reversing the order in insering Black and Brown)(Bake relay : It will not be problem with reversing the order in insering Yellow and Gray)
11	RY06	W/Drawer Relay	This is relay which is connected with W/Drawer.
12	RY07	Warming Center Relay	This is relay which is connected with Warming Center.
13	RY08	Conv. Fan Relay	This is relay which is connected with Conv. Fan.
14	RY09	Lamp Relay	This is relay which is connected with Lamp.
15	RY10	Door Relay	This is relay which is connected with door lock motor.
16	T01	W/Drawer Relay Terminal	This is the terminal to connect W/Drawer heater with W/Drawer relay.
17	T02	Live1 Terminal	This is the terminal to supply L1 voltage(120V) with warming drawer relay(Ry06)
18	IC02	DC 12V Regulator IC	This is to supply DC12V with main PCB by voltage regulator.
19	IC03	DC 5V Regulator IC	This is to supply DC5V with main PCB by voltage regulator.



RY02
1) DLB Relay Terminal1
2) DLB Relay Terminal2

T01
1) W/Drawer Relay Terminal1

T02
1) W/Drawer Relay Terminal2

CN05
Key Pad Connector

RY04
1) BAKE Relay Terminal1
2) BAKE Relay Terminal2

CN03
1) No Use
2) GND
3) Oven Temp. Sensor
4) GND

RY03
1) BROIL Relay Terminal1
2) BROIL Relay Terminal1

CN06
1) Warming Center Relay
2) No Pin
3) Oven Lamp Relay
4) No Pin
5) W-Cook top Relay
6) No Pin
7) Door Lock Relay

CN02
1) Door Sensing 1
2) GND
3) Door Lock
4) GND
5) Door Sensing 1

CN04
1) C-TOP Sensing 1
2) No Pin
3) C-TOP Sensing 2

CN02
1) AC POWER NEUTRAL (AC120V)
2) No Pin
3) AC POWER L1 (AC120V)

7-1 Wiring Diagrams

(This Document can not be used without Samsung's authorization)

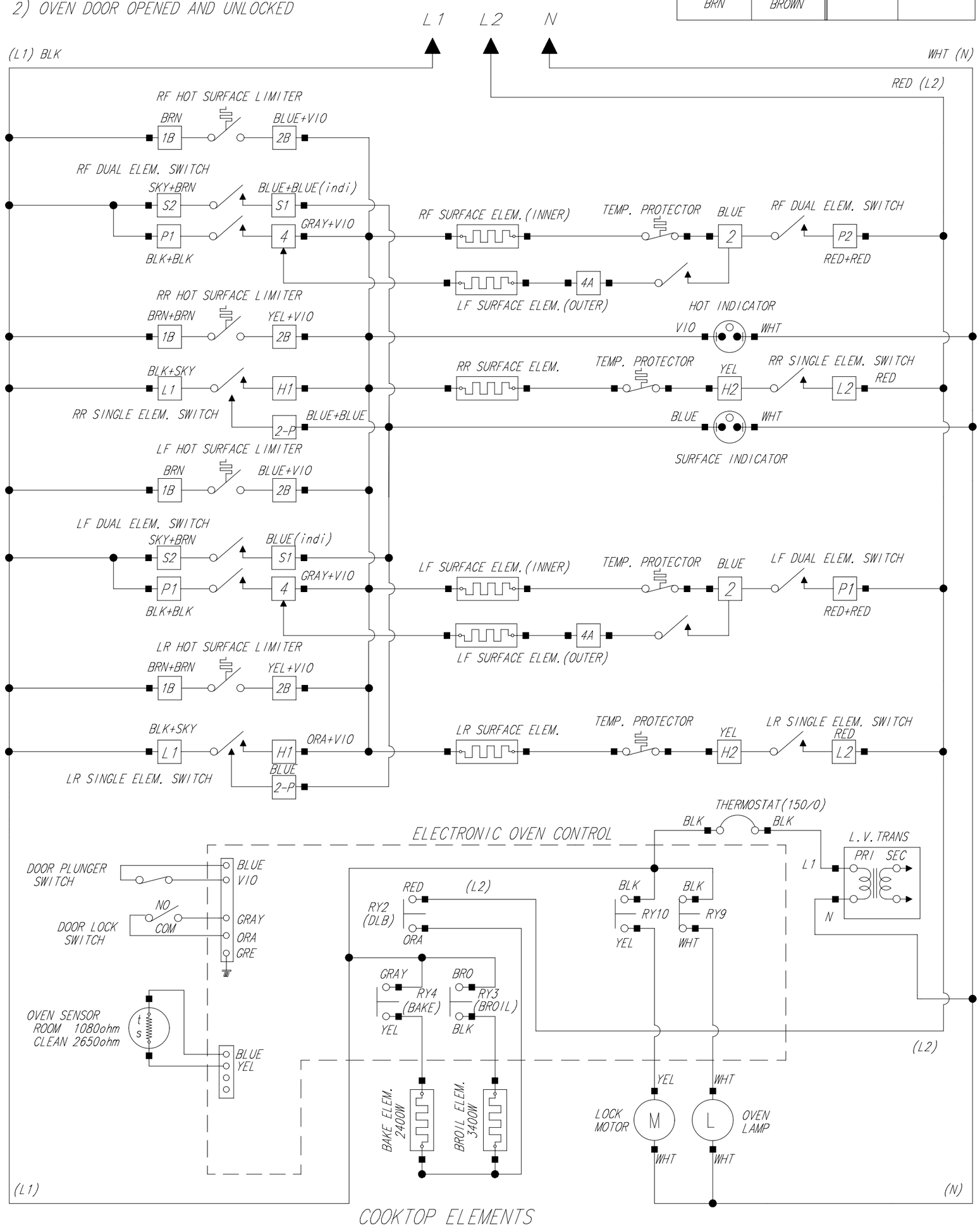
[INVENSYS] SCHEMATIC DIAGRAM

MODEL : FE-R300/XAA

COLOR		COLOR	
RED	RED	ORA	ORANGE
WHT	WHITE	VIO	VIOLET
BLUE	BLUE	BLK	BLACK
YEL	YELLOW	GRAY	GRAY
SKY	SKY	GRE	GREEN
BRN	BROWN		

NOTE

1) INPUT POWER : AC240V 60Hz, 13800W, 58A
   1-1) OVEN HEATER. : MAX 5800W, 24.2A
   1-2) COOKTOP ELEMENTS : MAX. 8000W, 33.3A
2) OVEN DOOR OPENED AND UNLOCKED



COOKTOP ELEMENTS

COOKTOP ELEMENTS		
COMPONENTS	INPUT	WATTAGE
RF DUAL ELEMENT	240V	1400W / 3000W
LF SINGLE ELEMENT	240V	1200W / 2500W
RR SINGLE ELEMENT	240V	1200W
LR SIGLE ELEMENT	240V	1200W

OVEN HEATING ELECMENTS		
COMPONENTS	INPUT	WATTAGE
BAKE	240V	2400W
BROIL	240V	3400W

8-1 Schematic Diagrams

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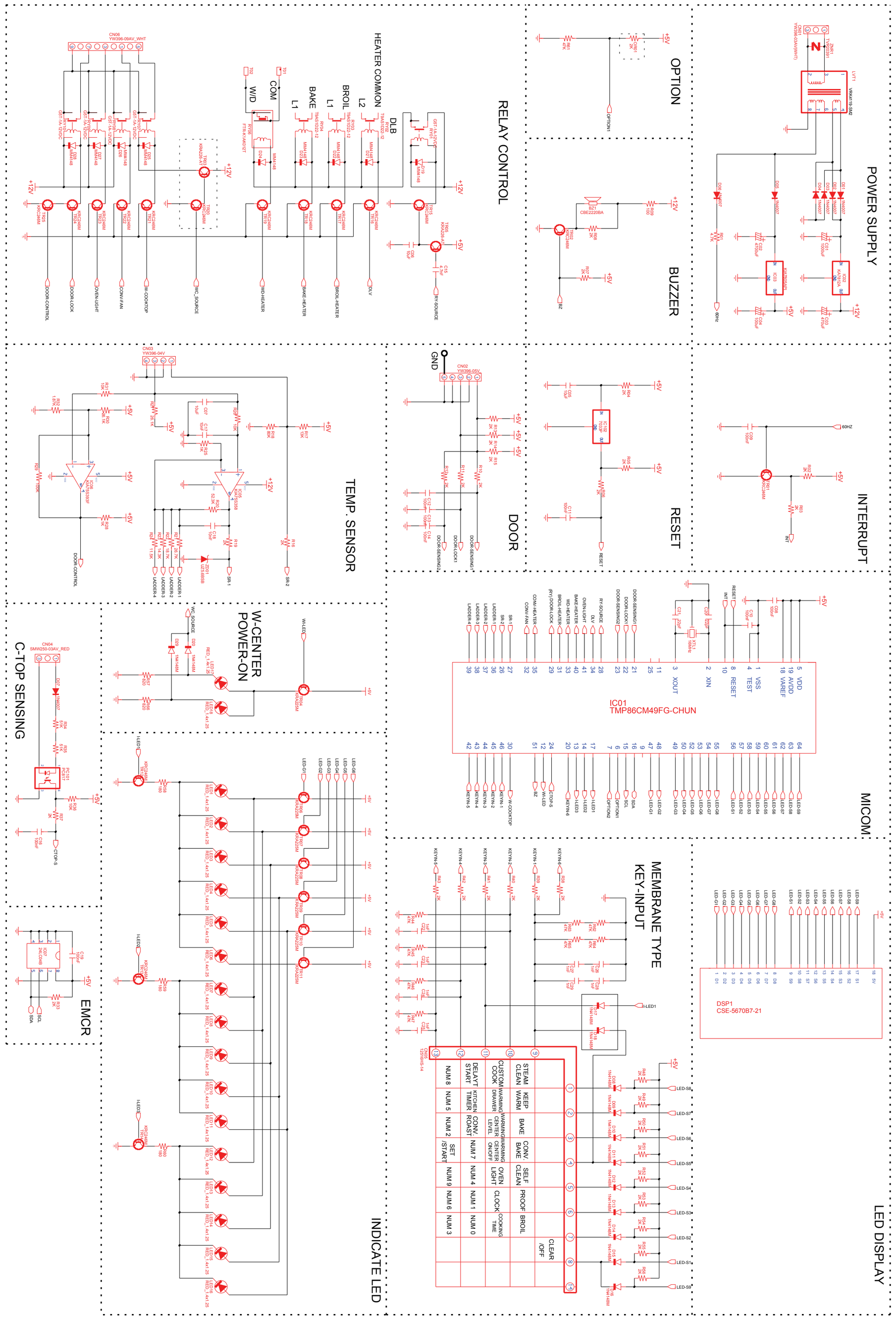

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