



Model:
NE594**
NE595**



Fast Track Troubleshooting

IMPORTANT SAFETY NOTICE – “For Technicians Only” This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

Publication # DrNE58F9 Production date :6/24/13

Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)

1-866-894-0637 (Tech Sup. - FE/ME)

GSPN:

http://service.samsungportal.com/EP/web/portal/jsp/EP_Default1.jsp

PLUS ONE: <http://my.plus1solutions.net/clientPortals/samsung>

Diagnostics Mode

1. Press **CLOCK** pad.
2. Press a number **1, 2, 3, 4** pad.
3. Press the **Start/Set** pad.
4. Press **Custom Cook** 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.



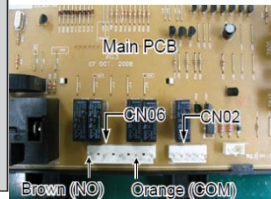
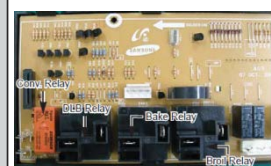
Oven sensor resistance (Temperature vs. Sensor resistance)

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

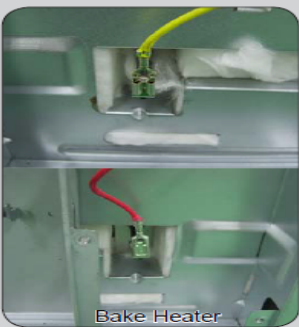
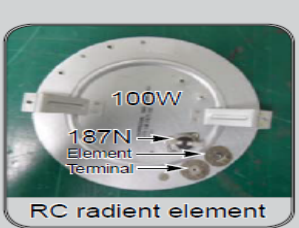
degree F	degree C	ohms	degree F	degree C	ohms
0	-17.8	932.12	113	45	1170.17
14	-10	961.86	122	50	1188.93
23	-5	980.95	212	100	1374.93
32	0	1000.00	302	150	1558.01
41	5	1019.02	392	200	1738.06
50	10	1038.02	482	250	1915.39
59	15	1056.99	572	300	2089.69
68	20	1075.92	662	350	2261.07
77	25	1094.83	752	400	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

Error Codes

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 terminal or wire on harness.
E-28	Oven sensor shorted. (Under 930Ω)	
		3. Check resistance of oven sensor connector on Main PCB (Normal:2850Ω)
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, bake and convection heater. Check the resistance of the each heater.
E-0A	Oven heating over	
		3. Check whether DLB of Sub PCB, Broil, Bake and Convection heater relay are being worked normally. 4. Check whether there is any disconnection of harness which is linked with Main PCB on Main PCB. 5. Check the resistance of oven sensor connector on Main PCB. (Normal : 2850Ω)
- 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 whether 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.



Troubleshooting

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 : 26 ~ 30Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness
	* 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 : 2500 ~ 2700Ω (at the room temperature) voltage : 120V * Micro switch COM-NO * Replace or repair if harness has been loosen or disconnected.
	* 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.
	* 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
	* Check whether harness is connected with terminal of element properly. element terminal : orange or red 2a : yellow 1b : black+brown 2b : yellow+yellow * 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 1b : black 2a : gray 2b : yellow+yellow or yellow * 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 terminal of element properly. - element terminal : violet, violet (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. (Please refer to schematic diagram)	Approx * Terminal resistance : 187 type TCO : ∞Ω element terminal : 560 ~ 600Ω (at t he room temperature) * Element terminal : 240V * Replace or repair harness

Troubleshooting

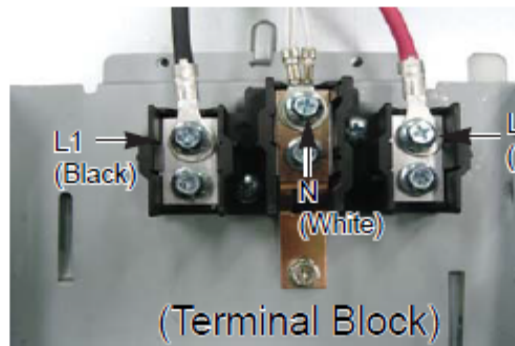
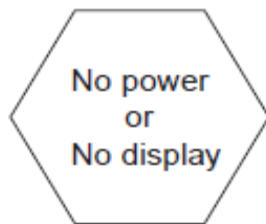
FIGURE	TESTS MEASURE	RESULTS
 Door plunger switch	* Check the state of working of switch. * Make sure whether wire, housing and terminal is connected with switch has been damaged or not.	Normal open : 0Ω Normal close $\infty\Omega$ * Replace or repair if wire or terminal has been damaged.
 Hot Surface & 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 : $\infty\Omega$ * Replace or repair if wire or terminal has been damaged.
 LR Infinite Switch (Single)	* Check whether harness is connected with switch properly. 1-H1 : orange 2-P : blue-blue 4-H2 : yellow 5-L2 : red 3-L1 : black+black * 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 : $\infty\Omega$ * When switch is on(HI) resistance H1-L1-P : 0Ω L2-H2 : 0Ω * When switch is on(HI) voltage L2=H2 $\leftrightarrow$ H1=L1:240V L1=P $\leftrightarrow$ LR surface Lamp : 120V * Replace or repair harness
 RR Infinite Switch (Single)	* Check whether harness is connected with switch properly. 1-H1 : orange 2-P : blue+blue 4-H2 : yellow 5-L2 : red 3-L1 : black+black * 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 : black+black S1 : brown+black P2 : red+red S2 : blue 4A : orange 4 : violet 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 : $\infty\Omega$ * 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 $\leftrightarrow$ P2=4 : 240V S1=S2 $\leftrightarrow$ LF surface lamp : 120V * Replace or repair harness.
 RF Infinite Switch	* Check whether harness is connected with switch properly. P1 : black+black S1 : brown+black P2 : red+red S2 : blue 4A : orange 4 : violet 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 : $\infty\Omega$ * 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 $\leftrightarrow$ RF surface lamp : 120V P1=2=4A $\leftrightarrow$ P2=4 : 240V

Troubleshooting

⚠ 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.



L1 ↔ L2 : 240V
L1 ↔ N : 120V
L2 ↔ N : 120V

*Check terminal block voltage.
AC 240V/120V or AC208V/120V

No

* Reset the circuit breaker
or check main power.

END

Yes

*Thermostat open check. (150°C / 0°C)

No

* replace Thermostat.

Yes

*Check the pin voltage of connector
(CN01) on Main PCB.
(Input voltage : 120V)

No

**Reconnect and replace or
repair harness is damaged

END

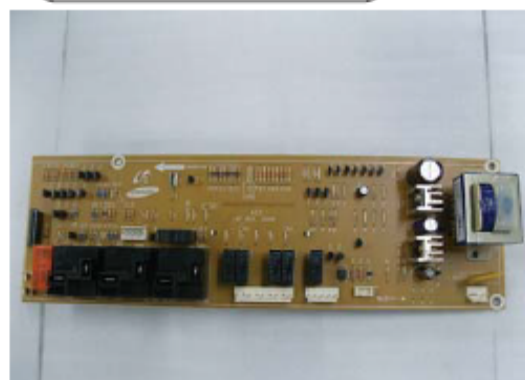
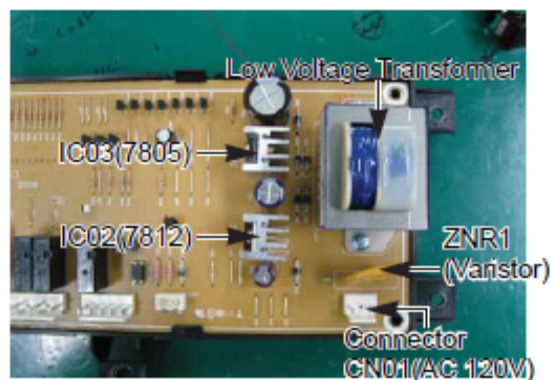
Yes

* Check the Low voltage Transformer

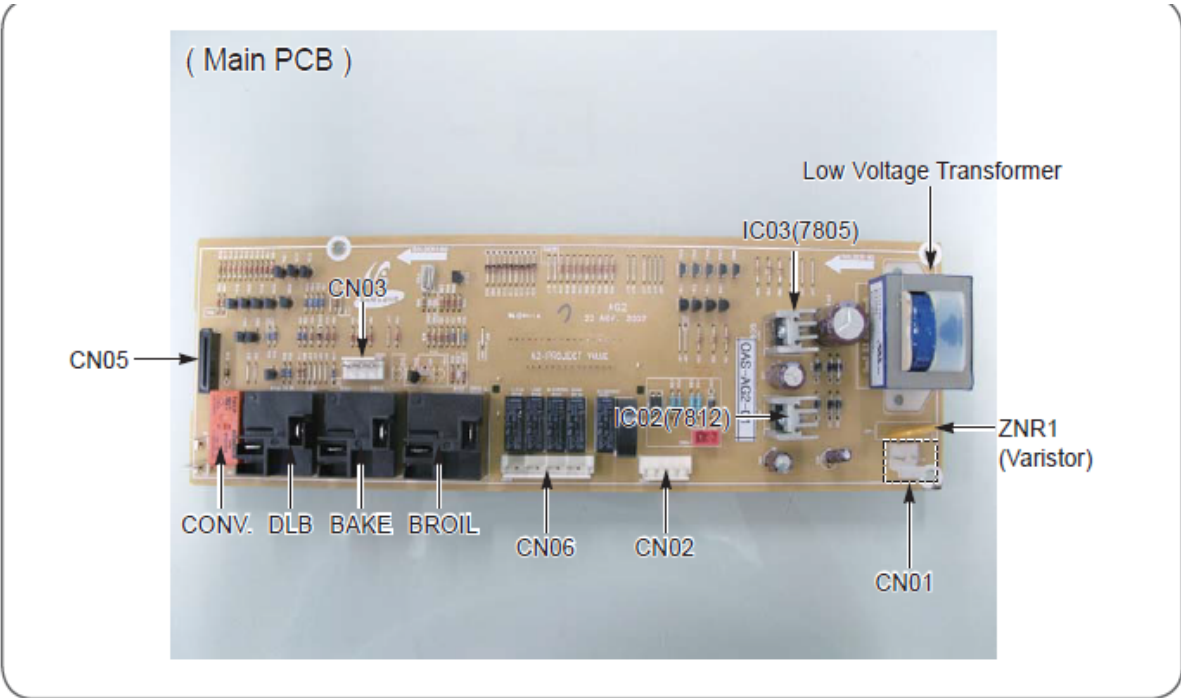
Check whether varistor(ZNR1) on
main PCB has been damaged.

Yes

* replace Main PCB.



Main PCB



Explain 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)
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, cooktop warming center, and relay of oven lamp connected.
Ry-source relay(Ry01)	Circuit is designed to all relay worked after Ry-source relay 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) Convection Relay (Ry06) and T02	Broil relay(Ry03), Bake relay(Ry04), convection relay(Ry05) 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 inserting Black and Brown) (Bake relay : It will not be problem with reversing the order in insering Yellow and Gray) (Convection Relay : It will not be problem with reversing the order in inserting Black and Gray+Blue)
Convection Relay	It will not be problem with reversing the order in inserting Black and Gray+Blue
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.
T01 terminal	This is the terminal to supply L1 voltage(120V) with warming drawer relay(Ry06), convection relay(Ry05) (some model)

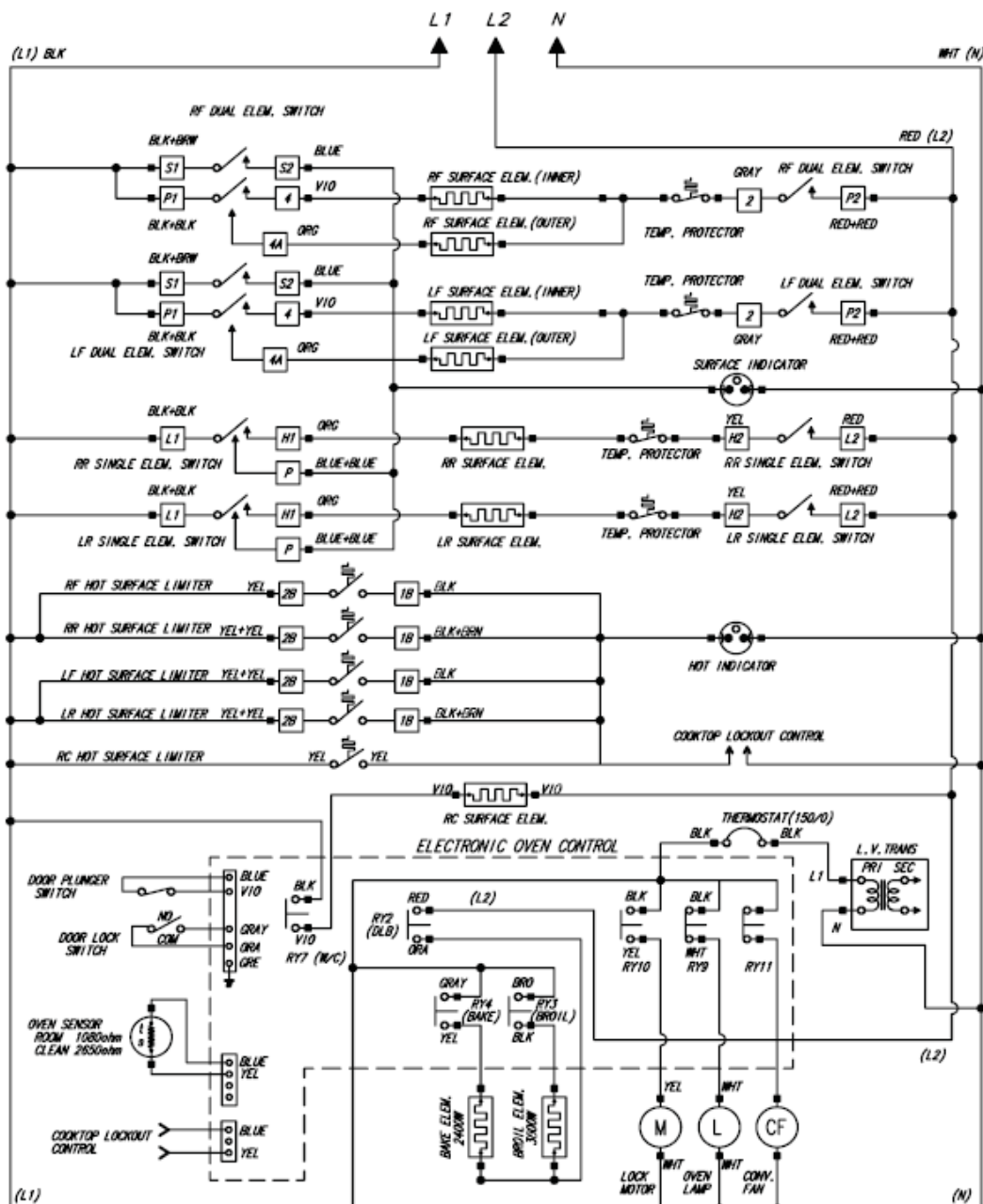
SCHEMATIC DIAGRAM

MODEL : NE594R0AB**

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

NOTE:

- INPUT POWER : AC240V 60Hz, 12300W, 51.3A
 - OVEN HEATER : MAX-3800W, 15.8A
 - COOKTOP : MAX-8500W, 35.4A
- OVEN DOOR OPENED AND UNLOCKED



COOKTOP ELEMENTS		
COMPONENTS	INPUT	WATTAGE
RF DUAL ELEMENT	240V	1400W / 3000W
LF DUAL ELEMENT	240V	1400W / 3000W
RR SINGLE ELEMENT	240V	1200W
LR SINGLE ELEMENT	240V	1200W
RC SINGLE ELEMENT	240V	100W

OVEN HEATING ELEMENTS		
COMPONENTS	INPUT	WATTAGE
BAKE	240V	2400W
BROIL	240V	3800W

Oven Door Removal



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.
		3. Firmly grasp both side of the door at the top. 4. Close door to the door removal position, which is approximately 5 degrees. Lift door up and 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.

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