



Model:
NX58H5650



Bulletins:

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 # Dr NX58H5650 Production Date 06/06/14

Support Information:

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

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

GSPN: <http://gspn3.samsungcsportal.com/main.jsp>

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

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

Diagnostic Mode — Will let you see the error codes

1. Press Clock pad.
2. Press the number pads 1,2,3 and 4. Make sure the Timer and Warming Drawer are both turned OFF.
3. Press the Start/Set pad.
4. Press the Favorite Cook and the 0 number pads at the same time for 2 seconds. Error codes are displayed.
5. Press the 0 number pad, to display the latest 5 error codes. But, if the power is interrupted and the oven turns off, the stored error codes are deleted.
6. Press the Off/Clear pad to return to normal display mode.



Failure code	CAUSE	SOLUTION
E-24	Oven over heating	1. Disconnect power. Open the back cover. Disconnect sensor harness from control. Measure sensor resistance : 1080Ω at 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. 3. Check whether DLB of Main PCB, Broil, Bake and Convection heater relay are working normally. 4. Check the wiring harness between the main PCB and the Assy Display. 5. Check the resistance of oven sensor connector on the main PCB (Normal : 2850Ω) 6. It will display "E-24" after beeping 10 times Bzlong, if temperature is more than 600°F(316°C) during oven is working excluding the case of self-cleaning. 7. Please make sure through the method of 4-1 , If those series of working for informing error take long time or not functioned.
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.
E-21	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. 3. Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
E-22	Oven sensor shorted. (Under 930Ω)	
E-83	Main PCB communication error	1. Check whether connector(CN201) of main PCB has been inserted. 2. Check whether connector(CN202) of Assy Display has been inserted. 3. If the connectors on the main PCB and Assy Display are in place, replace the main PCB.
E-84	Cooktop to Oven Communication error	1. Instantaneous electrical noise affects the micom signal when connecting the power plug. 2. Check the power cord to make sure it is tightly connected. 3. Check the resistance of the IGBT on the inverter board. If the IGBT is shorted or open, the inverter needs to be replaced. 4. LVT of oven PCB is damaged or LVT connector is disconnected. Reconnect the LVT connector or replace the oven main PCB.
-tE-	Assy Display communication error	1. Check whether connector(TE201) of Assy Display has been inserted. 2. If there is no problem with the connector on the Assy Display and touch glass, replace the control box.
-dE-	Partition switch error	1. Disconnect power. Open the back cover. Check the wire harness connection on the assy-partition switch for proper connection. 2. Confirm whether resistance value of assy-partition switch is to be normal one or not.
-E-2E-	Partition switch error	1. Disconnect power. Open the back cover. Disconnect Probe harness from control and measure probe resistance :50kΩ at room temperature → If there are any problem, replace meat probe. 2. If there is no problem with the meat probe, check for damage to the terminals on the wire harness. 3. Check the resistance of the meat probe connector on Main PCB (Normal : 10kΩ ~ 11kΩ)

SYMPTOM	DIAGNOSIS	REMEDY												
Oven not operating (No power, No display)	- Measure the input voltage at the plug. (120VAC) - Measure the input voltage at terminal T01 on the PCB .	- Check the circuit breaker or fuse for the range circuit. - Make sure all wires are connected to the PCB.												
	Measure the voltage at the CN01 connector on the PCB. (L1~N:120VAC)	Repair or replace the loose or disconnected harness.												
	- Make sure that the bake, broil, and source control relays on the PCB are working normally. - Make sure the harness connections at the PCB terminals (T02, T03) have not come loose or disconnected.	- Replace the PCB if a relay has been damaged; relay is not working properly; or if the PCB have a crack in it. - Tighten or reconnect the PCB harness connections. - After confirming the harness has been connected properly to the PCB, take the following action: - Repair or replace the harness. - Replace the PCB.												
	- Measure the resistance between both ends of the oven temperature sensor. (normal : 0 ohms) - Make sure the harness connections at the PCB connector CN04 has not come loose or disconnected.	- Replace the oven temperature sensor. - Repair or replace the harness. - If problem still exists after confirming the oven temperature sensor and harness are working and connected properly, replace the PCB.												
Oven temperature rises too slowly.	Make sure the harness connections at the PCB terminals (T02, T03) have not come loose or disconnected.	Repair or replace the harness.												
	- Make sure the broil and bake burners have been adjusted properly. - Make sure the oven burner orifices are sized properly for the type of gas being used.	- Open or close the air shutter at the base of the burners to optimize the flame pattern. - Replace with properly sized orifices:<table><tr><td>Burner</td><td>NG</td><td>LP</td></tr><tr><td>Orifice</td><td>mm</td><td>mm</td></tr><tr><td>Broil</td><td>1.64</td><td>1.02</td></tr><tr><td>Bake</td><td>1.90</td><td>1.15</td></tr></table>NOTE: High-altitude orifice kits are available.	Burner	NG	LP	Orifice	mm	mm	Broil	1.64	1.02	Bake	1.90	1.15
	Burner	NG	LP											
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Make sure that the bake, broil, and source control relays on the PCB are working normally.	- Repair or replace the faulty relay. - Make sure all harness connections are properly connected. - Replace the PCB.													

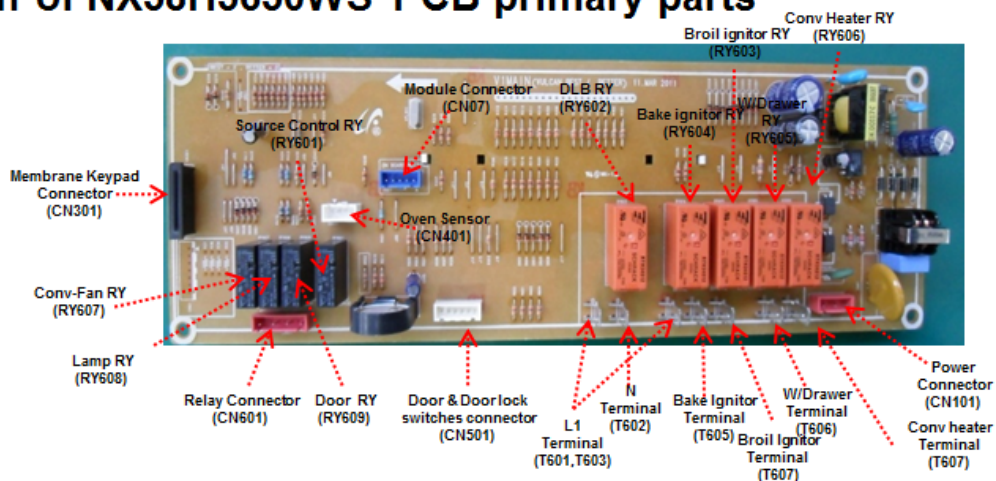
SYMPTOM	DIAGNOSIS	REMEDY											
Oven temperature rises too fast.	* The oven temperature exceeds 400°F (202°C) within 10 minutes of room temperature operation.	* Repair or replace the faulty broil or bake relay.											
	* Make sure the harness is wired correctly and does not have a short circuit in it.	* Repair or replace the harness.											
	* Make sure the oven burner orifices are sized properly for the type of gas being used.	* Replace with properly sized orifices: <table border="1"> <thead> <tr> <th>Burner</th><th>NG</th><th>LP</th></tr> <tr> <th>Orifice</th><th>mm</th><th>mm</th></tr> </thead> <tbody> <tr> <td>Broil</td><td>1.64</td><td>1.02</td></tr> <tr> <td>Bake</td><td>1.90</td><td>1.15</td></tr> </tbody> </table> NOTE: High-altitude orifice kits are available. * Replace the PCB.	Burner	NG	LP	Orifice	mm	mm	Broil	1.64	1.02	Bake	1.90
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Oven is overheating in all cooking modes.	* "E-0A" will show on the display if the oven temperature reaches 650°F (343°C) in any cooking function, except self clean.	* Check the source control relay (RY01) and replace if it is not working properly. * Make sure all harness wires are securely fastened. * Check the resistance of oven temperature sensor connector on the PCB. (Normal : 2850Ω) * Replace the PCB.											
The self-cleaning feature will not operate when the warming drawer is on.	* This is normal.	* The self-cleaning feature will not operate when the warming drawer is on.											
Membrane control keypads are not working properly.	* Make sure the door lock feature is not turned on.	* Unlock the controls by pressing and holding the lock key for 3 or more seconds.											
	* Check to see if the sabbath function has been turned on.	* Press and hold the Sabbath pad for at least 3 seconds. The display will show the time of day when the function is turned off.											
	* Check the membrane control harness and connectors (CN08) on the PCB and membrane control glass panel.	* Reconnect securely or replace damaged membrane control harness.											
	* Check connector (CN08) and/or the PCB for damage. * Check the membrane control panel for damage.	* Replace the PCB assembly. (PCB and membrane control glass panel.)											
Warming drawer heating is not working.	* Measure the resistance of the warming drawer heating element.	* Replace the warming drawer heating element.											
	* Check the warming drawer terminal (T04) on the PCB. * Check the warming drawer relay (RY04) on the PCB.	* Securely fasten wire to PCB terminal (T04). * Replace the warming drawer relay (RY04). * Replace the PCB.											

SYMPTOM	DIAGNOSIS	REMEDY
None of the cooktop burners will light.	* There is no electrical power to the range.	* Plug in the power cord and/or reset the circuit breaker for the range.
	* The gas supply valve to the range is closed.	* Open the gas supply valve.
	* Check the terminals on the spark module for voltage.	* Replace the faulty spark module.
	* Check for crimped or broken gas line between the pressure gas regulator and the surface burner control manifold.	* Replace the damaged gas line.
	* Gas pressure regulator switch is closed.	* Replace the gas pressure regulator.
One cooktop burner does not light.	* Check the harness connections at the spark module.	* Reconnect loose connection or replace damaged harness.
	* Check the spark module.	* Disconnect the spark module terminal for the nonworking burner. If no voltage is measured, replace the spark module.
	* Check the electrode for that burner.	* Disconnect the electrode and check whether electrode wire or tip is broken. Replace the faulty electrode.
	* Check for a dirty surface burner orifice.	* Clean and/or replace the surface burner orifice. NOTE: Replacement orifice should always be the same size as removed.
	* Check for crimped or broken gas lines.	* Replace damaged gas lines.
	* Faulty surface burner control	* Each surface burner control is an integral part of the surface burner control manifold. Replace the manifold.
All surface burners will light, but don't stay lit.	* Check for crimped gas line between the pressure gas regulator and the surface burner control manifold.	* Replace the damaged gas line.
	* Faulty gas pressure regulator.	* Replace the gas pressure regulator.
One cooktop burner lights, but doesn't stay lit.	* Check for a dirty surface burner orifice.	* Clean and/or replace the surface burner orifice. NOTE: Replacement orifice should always be the same size as removed.
	* Check for a crimped gas line.	* Replace the crimped gas line.
	* Faulty surface burner control.	* Each surface burner control is an integral part of the surface burner control manifold. Replace the manifold.

Oven lamp is not working.	* Make sure the door lock feature is not turned on.	* Unlock the controls by pressing and holding the lock key for 3 or more seconds.
	* Check for a burned out bulb.	* Replace with a 40 watt appliance bulb.
	* Check the harness connections, the oven lamp relay (RY06), and the source control relay (RY01).	* Repair or replace loose or disconnected harness. * Replace any malfunctioning relays.
	* Measure the resistance across the light ballast/socket terminals. (Normal : ∞)	* Replace the light ballast/socket. * Replace the PCB.
Convection fan is not rotated.	* Check the harness and harness connector (CN02) on the PCB and at the terminals at each convection motor).	* Reconnect a loose or disconnected harness or replace a damaged harness.
	* Check the membrane control harness and connectors (CN08) on the PCB and touch control panel.	* Reconnect securely or replace a damaged membrane control harness.
	* Check the convection fan relay (RY05) and the connector (CN02) on the PCB.	* Replace the malfunctioning relay. * Replace the PCB.
	* Measure the resistance across the fan motor terminals.	* Replace the burned out fan motor.
The oven smells and/or smokes when it is initially started.	* This is normal.	* The insulation around the oven will give off a slight odor until the adhesive has cured. This should go away after the first couple of oven uses. * The oven is designed to burn off dirt and/or foreign substances. * If the oven is dirty, run a self-cleaning cycle. (See page 69 in the "User Manual".) A ventilation system should be used while the oven is self cleaning.
The LED display is dim or not visible.	* Check the membrane control harness and connectors (CN08) on the PCB and membrane control panel. * LED display is inferior.	* Reconnect securely or replace a damaged membrane control harness. * Replace the PCB assembly. (PCB and membrane control glass panel.)
The buzzer does not beep when a keypad is touched.	* Check to see if the sabbath function has been turned on. * The buzzer does not work on the PCB.	* Press and hold the Sabbath pad for at least 3 seconds. The display will show the time of day when the function is turned off. * Replace the PCB.

SYMPTOM	DIAGNOSIS	REMEDY																																																								
Cooktop burner flames are soft blue or have yellow tips.	* This is normal.	* Soft blue flames are normal flames for NG operation. * Soft blue flames with yellowtips are normal flames for LP operation.																																																								
Cooktop burner flames are mostly yellow.	* Check for proper sized orifices: <table><tr><th colspan="4">FX710BGS</th></tr><tr><th colspan="2"></th><th>NG</th><th>LP</th></tr><tr><td>LT FR</td><td>RED</td><td>1.78</td><td>1.04</td></tr><tr><td>LT RR</td><td>GRN</td><td>1.40</td><td>0.83</td></tr><tr><td>CTR</td><td>BLU</td><td>1.38</td><td>0.83</td></tr><tr><td>RT RR</td><td>YEL</td><td>1.01</td><td>0.62</td></tr><tr><td>RT FR</td><td>ORG</td><td>1.92</td><td>1.12</td></tr><tr><th colspan="4">FX510BGS</th></tr><tr><th colspan="2"></th><th>NG</th><th>LP</th></tr><tr><td>LT FR</td><td>RED</td><td>1.78</td><td>0.98</td></tr><tr><td>LT RR</td><td>GRN</td><td>1.40</td><td>0.83</td></tr><tr><td>CTR</td><td>BLU</td><td>1.38</td><td>0.83</td></tr><tr><td>RT RR</td><td>YEL</td><td>1.01</td><td>0.62</td></tr><tr><td>RT FR</td><td>NONE</td><td>1.92</td><td>1.06</td></tr></table>	FX710BGS						NG	LP	LT FR	RED	1.78	1.04	LT RR	GRN	1.40	0.83	CTR	BLU	1.38	0.83	RT RR	YEL	1.01	0.62	RT FR	ORG	1.92	1.12	FX510BGS						NG	LP	LT FR	RED	1.78	0.98	LT RR	GRN	1.40	0.83	CTR	BLU	1.38	0.83	RT RR	YEL	1.01	0.62	RT FR	NONE	1.92	1.06	* Replace any wrong sized orifices.
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Explanation of NX58H5650WS PCB primary parts



PART NO.	PART NAME	FUNCTION AND RULE
CN101	Power Connector	This is the connector that supplies 120VAC(L1~N)
CN301	Membrane Keypad Connector	This is the connector that connects the Membrane tail to the PCB.
CN401	Oven Sensor	This is the connector that connects the oven temperature sensor to the PCB.
CN501	Door & Doorlock switches connector	This is the connector that connects the door switch with the door lock switch.
CN601	Relay Connector	This is the connector that connects the control relay with the oven lamp, and the door lock motor.
RY601	Source Control RY	This is the relay that is the control source of DLB, Bake, Broil, W/Drawer and Conv relays.
RY602	DLB RY	Circuit is designed to have bake, broil, W/Drawer and Conv relay worked after DLB relay is being worked by Double line break.
RY603	Broil RY	This is the relay that controls the broil ignitor operation.
RY604	Bake RY	This is the relay that controls the bake ignitor operation.
RY605	W/Drawer RY	This is the relay that controls the Warming drawer heater operation.
RY606	Conv Heater RY	This is the relay that controls the Conv heater operation.
RY607	Conv-Fan RY	This is the relay that controls the operation of the convection fan motors.
RY608	Lamp RY	This is the relay that controls the oven lamp operation
RY609	Door RY	This is the relay that controls the operation of door lock motor.
T601	L1 Terminal	This is terminal that supplies L1 Voltage(120VAC) to PCB
T602	N Terminal	This is terminal that supplies N Voltage to PCB
T603	L1 Terminal	This is terminal that supplies L1 Voltage(120VAC) to PCB
T604	Broil Ignitor Terminal	This is terminal connects the broil ignitor to the broil relay.
T605	Bake Ignitor Terminal	This is terminal connects the bake ignitor to the bake relay.
T606	W/Drawer Terminal	This is terminal connects the w/drawer heating element to w/drawer relay.
T607	Conv heater Terminal	This is terminal connects the Conv heating element to Conv relay.

Schematic Diagram (NX58H5650WS)

NOTE

MODEL : FG710BGS

1) INPUT POWER : AC120V 60Hz, 1440W, 12A

2) OVEN DOOR OPENED AND UNLOCKED

