FOR SERVICE TECHNICIAN'S USE ONLY

Tech Sheet **Do not discard**

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

Temperature Adjustment

Step	Function	Keypad Pressed	Notes
1	Temperature adjustment	Press BAKE for 5 seconds	The current offset, if any, is shown in the display U-00.
2	Temperature adjustment options	(Depending on model) Temp/Time or Temp/Hour Press "MORE" or "LESS" arrow keys or Press "+" (plus) or "-" (minus) arrow keys	Adjust temperature in 10°F (5°C) increments. Bake temperature adjustment cannot result in operating temperatures higher than 500°F (260°C) or lower than 170°F (75°C), as measured at the oven center. Once the bake temperature has been adjusted, broil temperatures are automatically offset to the same degree.
3	Activate temperature adjustment	Press START	Desired temperature adjustment is activated. If Start is not pressed within 1 minute, adjustment is ignored.

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Diagnostics Mode (All LCC Controls)

Enter Diagnostics Mode by pressing CANCEL>CANCEL>START within a 5-second period.

Step No.	Keypad Pressed	Setting	Control Display 3-Digit LCC 90/95	Control Display 4-Digit LCC 180/190	Diagnostics Mode Operation Descriptions
1	CANCEL>CANCEL> START	1st	"tSt"	tESt	Initial display. Perform Diagnostics Test mode relay checks. See "Diagnostics Test Mode (All LCC Controls)" section.
2	Press the Up arrow or "+" (plus) key to scroll through the diagnostic settings.	2nd	### °F or °C	### °F or °C	Oven sensor temperature
		3rd	00 through 30 or 00 through -30 °F or °C	U 00 through U 30 or U 00 through U -30 °F or °C	User cooking offset. "-" (minus) indicates a negative number.
		4th	S ##	S ###	Software version
		5th	###	####	Memory checksum
		6th	CLr	GOOd	Displayed if there is no error code.
		6a	F#	F#E#	Displayed if an error code is present. Press START to clear error code.
		6b	##	####	Accumulated days of operation before error code. Displayed only if an error code is present.
		7th	##### (0 - 1999)	#### (0 - 1999)	Total accumulated days of operation
		8th	00 or 01	00 or 01	Latch and door switch state: 00 = open (unlocked) 01 = closed (unlocked)
3	If an error code is present, follow the suggested action procedure listed for the displayed code as listed in the "Failure/Error Display Codes (All LCC Control Displays)" section. If CLr or GOOd is displayed, do not continue the relay checks in Diagnostic Test Mode.				
4	While still in the Diagnostics Mode, press the keypads below as indicated to test individual control relays.				

Notes:

- Entering Diagnostics Mode will cancel any active oven operation.
- Enter the Diagnostics Mode only after the oven is cool.

Diagnostics Test Mode (All LCC Controls)

Function	Step	Description
Bake relay	Press BAKE	Turns bake element from Off to On or from On to Off.
Broil relay	Press BROIL	Turns broil element from Off to On or from On to Off.
Latch motor relay	Press SELF CLEAN	Cycles the latch motor; control is looking for the switch change. The door should be locked within 10 seconds of pressing the Self Clean keypad. Press SELF CLEAN a second time to cycle the latch motor again and return to Diagnostics Mode.
Oven light relay	Press OVEN LIGHT	Turns oven light On or Off; "OL" is displayed
LED display check	Press CLOCK	Turns on all LED display segments. Press CLOCK a second time to return to previous display.
Enunciator operation	Press START	Emits tone for validation
Exit diagnostic mode	Press CANCEL	Emits tone and exits Diagnostic Mode

Notes:

During Diagnostics:

- All elements may operate with the door open.
- Latch motor will not cycle with the door open.
- The DLB (Double Line Break) will engage on entry into Diagnostics Test Mode and disengage on exit from Diagnostics Test Mode (electric models only).

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Failure/Error Display Codes (All LCC Control Displays)

LCC 90/95 CODES	LCC 180/190 CODES	LIKELY FAILURE CONDITION	SUGGESTED CORRECTIVE ACTION PROCEDURE
No display	**No display**	Control not operational	Check for proper voltage input at CON 2-4 to CON 1-1 by completing the following steps: **1.** Unplug range or disconnect power. **2.** Connect voltage measurement equipment. **3.** Plug in range or reconnect power and confirm voltage reading is 120 volts. If it is, unplug range or disconnect power and go to Step 4. If it is not, unplug range or disconnect power and go to Step 5. **4.** Replace the control. Go to Step 6. **5.** Check wires and connectors between the control and terminal block and make sure connectors are fully seated. **6.** Replace all parts and panels before operating. **7.** Plug in range or reconnect power. **8.** Verify operation is normal. Press CANCEL>CANCEL>START to enter the Diagnostics Mode and verify that there are no error codes.
F1	**F1E0** **F1E1** **F1E2**	Internal board failure A/D Error(s)	**1.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and verify the failure code. If failure displayed does match, go to Step 2. **2.** Unplug range or disconnect power. **3.** Replace control. **4.** Replace all parts and panels before operating. **5.** Plug in range or reconnect power.
F2	**F2E0**	Shorted key	
F3	**F3E0** **F3E1** **F3E2** **F3E3**	Oven sensor opened Oven sensor shorted BAKE/BROIL range over temperature CLEAN range over temperature	**1.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode. Verify the sensor temperature reading is at room temperature (typically 50 to 90°F [10 to 32.2°C]) and verify failure code. If failure code does match, then continue. **2.** Unplug range or disconnect power. **3.** Check all sensor connections on harness and board. **4.** Disconnect sensor from harness. **5.** Measure sensor resistance between connector pins and confirm reading is between 1000Ω and 1200Ω at room temperature. Also measure from sensor connector to sensor casing for possible short. If measurement is not correct, or if short is found, replace sensor. **6.** Trace wires and connectors to sensor from control, then back to control. If wire or connection is damaged, replace the harness. If wire or connector is not damaged, replace oven temperature sensor. **7.** Reconnect the sensor to the harness. **8.** Replace all parts and panels before operating. **9.** Plug in range or reconnect power. **10.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and clear the error code. **11.** Press CANCEL to cancel the Diagnostics Mode. **12.** Press BAKE and START. Observe for longer than 1 minute. **13.** If failure does not reappear, stop. If failure remains, unplug range or disconnect power and check wire connections.
F5	**F5E0** **F5E2**	Door and switches do not agree (Clean mode)	**1.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and verify the failure code. If failure displayed does match, go to Step 2. **2.** Unplug range or disconnect power. **3.** Inspect door for warping or misalignment. Verify door switch continuity with switch fully depressed. **4.** Check wires and connectors from the control to the door switch then back to the control. If any wires or connectors are damaged, replace the wire harness. If no wires or connectors are damaged, replace the door switch. **5.** Replace all parts and panels before operating. **6.** Plug in range or reconnect power. **7.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and clear the error code. **8.** Program and start the clean cycle. Observe for longer than 1 minute. **9.** Verify operation is normal. Press CANCEL>CANCEL>START to enter the Diagnostics Mode and clear the error code.

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LCC 90/95 CODES	LCC 180/190 CODES	LIKELY FAILURE CONDITION	SUGGESTED CORRECTIVE ACTION PROCEDURE
F5	**F5E1**	Door latch not operating (Clean mode)	**1.** Press CANCEL>CANCEL>START to enter the Diagnostic Mode and verify the failure. If failure displayed does match, go to Step 2. **2.** While in Diagnostics mode, press the SELF CLEAN key to run the lock motor. If the door is not latched (locked) and the door locked icon is lit, go to Step a. If the door is latched (locked) and the door locked icon is not lit, go to Step b. If the door is not latched (locked) and the door locked icon is not lit, go to Step c. **a.** The control, latch motor and latch switch are operating properly. Check the locking mechanism. a1. Unplug range or disconnect power. a2. Check the integrity of the latch mechanism from cam, through the actuating rod, to the latch pawl and door slot. a3. Ensure that the pawl aligns with the door slot. Correct any mechanical malfunction and go to Step c. **b.** The latch switch is not indicating that the door is locked. b1. Unplug range or disconnect power. b2. Replace the motor assembly (one of the switches on the motor assembly is defective) and go to Step 3. **c.** The latch motor relay or latch motor is not working. c1. Check for proper voltage at CON 1-4 to CON 1-1 when the latch motor should be running (within 20 seconds of pressing SELF CLEAN key) by completing the following steps. c2. Unplug range or disconnect power. c3. Connect voltage measurement equipment. c4. Plug in range or reconnect power and confirm voltage reading is 120 volts. Unplug range or disconnect power. If voltage reading is 120 volts, go to Step c6. If the voltage reading is not 120 volts, go to Step c5. c5. Replace the control then go to Step 3. c6. Check continuity of the latch motor. - If continuity is present, check the electrical connections and inspect for damage to the harness. Make any repairs, then go to Step 3. - If continuity is not present, replace motor assembly. Go to Step 3. **3.** Replace all parts and panels before operating. **4.** Plug in range or reconnect power. **5.** Put range into Clean mode to verify proper operation. **6.** Verify normal operation.
F9	**F9E0**	Miswired house Miswired range	**1.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and verify the failure. If failure displayed does match, go to Step 2. **2.** Unplug range or disconnect power. **3.** Verify that the house power supply provides 240 VAC between L1 and L2, and 120 VAC between L1 and N and L2 and N. If house power supply is not correct, call a qualified electrician. If voltage measurements are correct, go to Step 4. **4.** Verify that the electric supply is wired correctly at the range terminal block. **5.** Replace all parts and panels before operating. **6.** Plug in range or reconnect power. **7.** Verify normal operation. **8.** Press CANCEL>CANCEL>START to enter the Diagnostics Mode and clear the error code(s).

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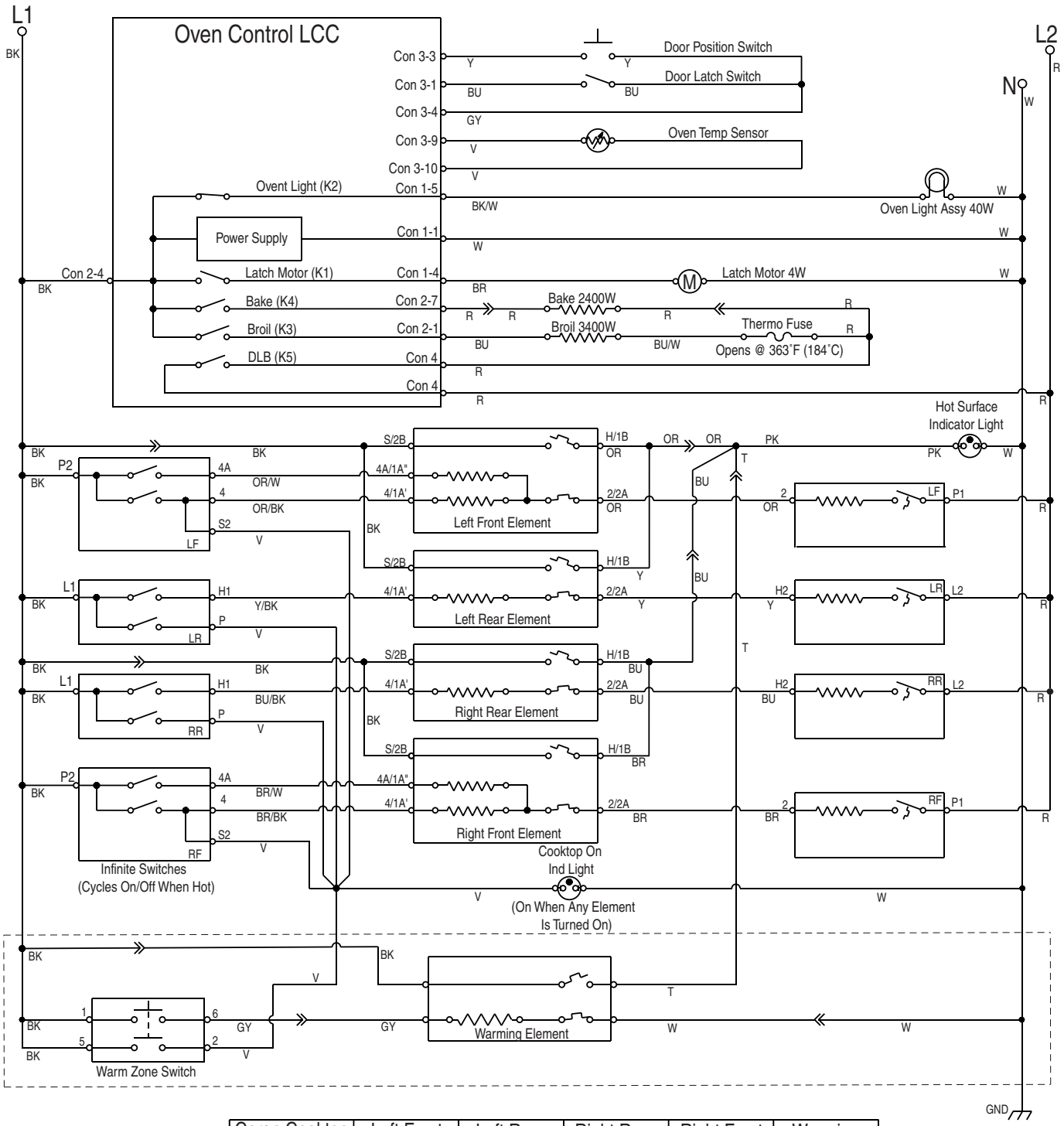
Wiring Diagram

NOTE: Schematic shows door latch switch in the cook position with oven door open and elements off. Cooktop element terminal designators may vary with the element supplier. Both options are shown (example: S/2B may be either S or 2B).



Ceran Cooktop Configuration	Left Front Element	Left Rear Element	Right Rear Element	Right Front Element	Warming Element
1	2500/1200W	1200W	1200W	2500/1200W	N/A
2	3000/1400W	1200W	1200W	3000/1400W	100W

LEGEND

Component Terminals	Connection	No Connection	On Some Models	In Line Connection	CON1-2 = Connector 1 CON1 Position 2	Multiple Functions / Circuitry Enclosed Within

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Component Testing Chart - Electric Models with LCC Control

NOTE: This Component Testing Chart covers different models. The range may have some or all of the components listed in the following chart.

Do not continue with the diagnosis of the appliance if a fuse is blown, a circuit breaker is tripped, or if there is less than 240+10%/-15% volt power supply at the wall outlet.

When checking for proper voltage, complete the following steps:

1. Unplug range or disconnect power.
2. Connect voltage measurement equipment.
3. Plug in range or reconnect power and confirm voltage reading.
4. Unplug range or disconnect power after performing voltage measurements.

Component	From	To	Resistance: measure without power applied	Notes	Nominal Voltage
Door switch	Con 3-3	Con 3-4	Door open = open circuit Door closed = closed circuit		2 VDC with door open 0 VDC with door closed
Latch motor	Con 1-4	Con 1-1 W (Neutral)	500 - 3000Ω	Latch motor locks door at start of clean cycle.	120 VAC
Oven light	Con 1-5	Con 1-1 W (Neutral)	0 - 40Ω nominal	Measure resistance with oven light switch Open/Off and door closed. Measure voltage with oven light switch Closed/On or door open.	N/A 120 VAC
Thermo fuse	Con 2-1	Con 2-7	Closed circuit	Thermo fuse will open if it exceeds temperature. Nominal voltage is measured when broil element is energized.	0 VAC - Closed (normal) 240 VAC - Open
Oven temperature sensor	Con 3-9	Con 3-10	1000 - 1200Ω at room temperature	Disconnect connector Con 3 from control before measuring sensor. Measure only resistance, not voltage.	N/A
Bake element	Con 2-7	Con 4	10 - 40Ω nominal. Check both Con 4 terminals - one open circuit and one closed circuit.	For voltage measurements in Bake mode, note that voltage will cycle between the Bake and Broil circuits.	240 VAC when energized
Broil element	Con 2-1	Con 4	10 - 40Ω nominal. Check both Con 4 terminals - one open circuit and one closed circuit.	For voltage measurements in Broil mode, only Broil element On when heating.	240 VAC when energized
Latch switch	Con 3-1	Con 3-4	Door unlocked = open circuit Door locked = closed circuit		5 VDC
Single and dual burner elements	Term 2B or S	Term 1B or H	Thermal switch closes/opens at 150°F (65.6°C) to turn on/off hot surface indicator light	Infinite switch cycles On/Off when hot. Cooktop On indicator light is on when any element is turned on.	0 VAC when hot surface light is On. 120 VAC when light is Off.
	Term 1A'/1A'' or 4/4A	Term 2A or 2	Thermal limiter opens at 1040° F (560° C)		240 VAC when energized

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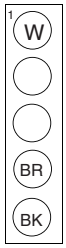
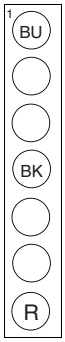
Quick Connect Plugs

For controls

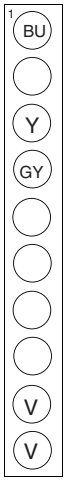
CON1



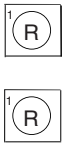
CON2



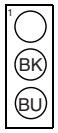
CON3



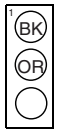
CON4



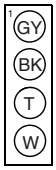
For cooktop



Right side cooktop



Left side cooktop



Warming element (on some models)

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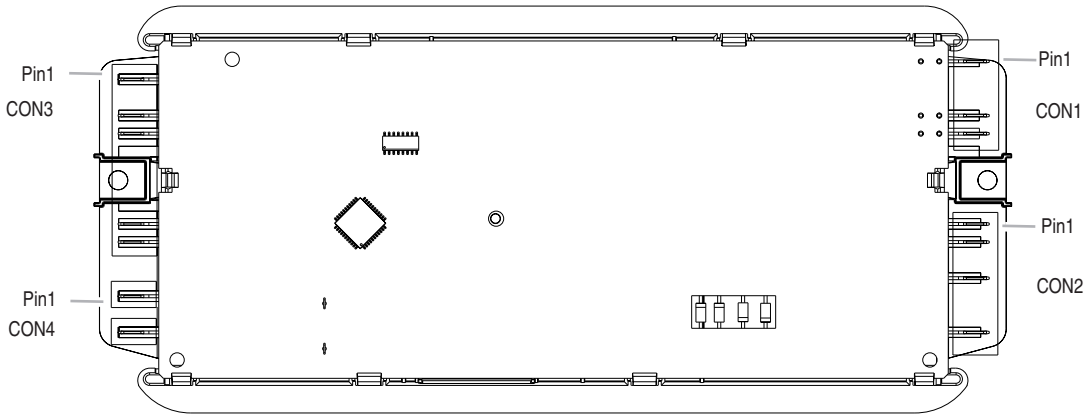
All LCC Controls (Electric Models)



Rear View

Control Connector	Pin	Function
CON1	1	Control neutral
	4	Latch motor (on self-clean models)
	5	Oven light
CON2	1	Broil
	4	L1 input
	7	Bake
CON3	1	Latch switch (on self-clean models)
	3	Door switch (closed circuit)
	4	Door switch (closed circuit)
	9	Oven temperature sensor
	10	Oven temperature sensor
CON4	N/A	Double line break (DLB)
		L2 input

Software copyrighted. This product is covered by one or more of the following patents U.S. Patent Nos.

4,852,544	5,321,229	5,491,314	5,808,278	5,924,857	6,035,848	6,201,222	6,394,081	6,663,009	6,734,403
4,974,804	5,349,162	5,571,433	5,810,576	5,928,543	6,043,461	6,232,584	6,403,929	6,666,676	6,784,404
5,008,516	5,378,874	5,571,434	5,813,320	5,961,311	6,079,756	6,263,782	6,437,294	6,693,262	6,841,761
5,064,998	5,382,552	5,620,623	5,841,112	5,967,634	6,087,944	6,349,717	6,509,551	6,698,417	6,870,138
5,138,137	5,422,460	5,694,916	5,856,654	5,983,888	6,097,000	6,363,971	6,545,251	6,698,923	6,904,969
5,142,125	5,424,512	5,749,388	5,881,710	6,008,478	6,111,231	6,375,150	6,570,136	6,700,101	6,930,287
5,175,413	5,438,180	5,756,970	5,910,265	6,017,211	6,163,017	6,392,204	6,614,006	6,722,356	6,935,330
5,185,047	5,441,036	5,767,488	5,918,589						

Other Patents Pending.

W10384450A

NOTE: This sheet contains important Technical Service Data.

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