SERVICE DATA SHEET

Gas Range with ES 510 Electronic Oven Control with Bake-n-Warm Double Oven (some models)

NOTICE - This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The manufacturer cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

SAFE SERVICING PRACTICES

To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. The following are examples, but without limitation, of such practices.

1. Before servicing or moving an appliance remove power cord from electrical outlet, trip circuit breaker to OFF, or remove fuse.
2. Never interfere with the proper installation of any safety device.
3. GROUNDING: The standard color coding for safety ground wires is *GREEN* or *GREEN WITH YELLOW STRIPES*. Ground leads are not to be used as current carrying conductors. **It is extremely important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a potential safety hazard.**
4. Prior to returning the product to service, ensure that:
   - All electric connections are correct and secure.
   - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.
   - All uninsulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
   - All safety grounds (both internal and external) are correctly and securely reassembled.

OVEN CALIBRATION

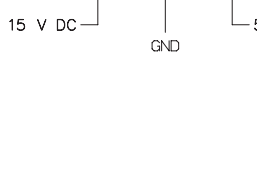
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **STOP/CLEAR** to end bake mode.

TEMPERATURE ADJUSTMENT

1. Set EOC to bake at 550°F.
2. Within 5 seconds of setting 550°F, press and hold the bake pad for approximately 15 seconds until a single beep is heard (longer may cause **F11** shorted keypad alarm).
3. Calibration offset should appear in the display.
4. Use the slew keys to adjust the oven temperature up or down 35°F in 5°F increments.
5. Once the desired (-35° to 35°) offset has been applied, press **CANCEL** or **STOP/CLEAR**.

Note: Changing calibration affects normal Bake mode. The adjustments made will not change the Self-Cleaning cycle temperature.

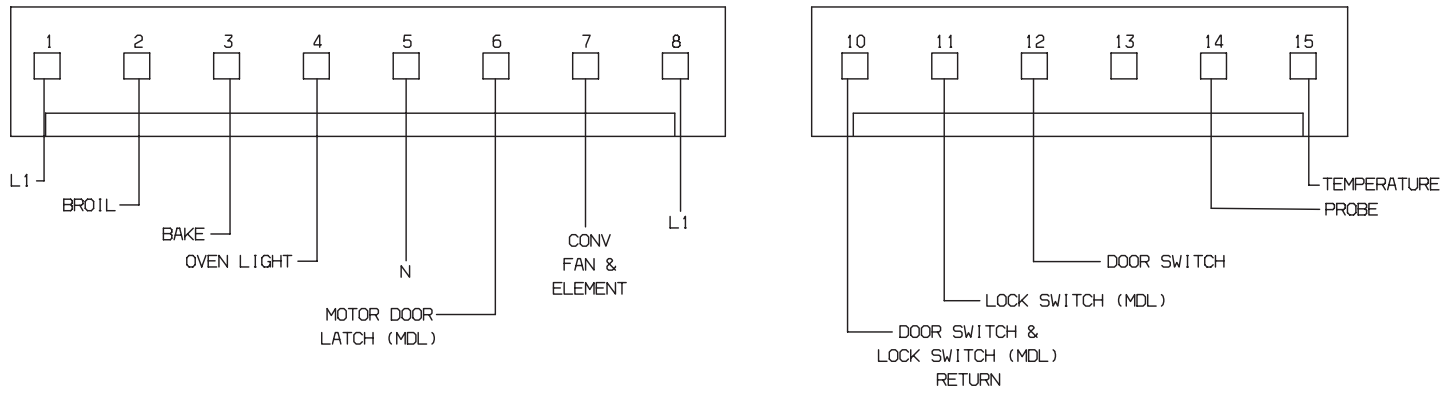
Resistance Temperature Detector



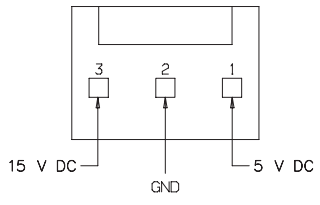
RTD SCALE	
Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 5.4	1654 ± 10.8
450 ± 6.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 9.6	2237 ± 18.5
900 ± 13.6	2697 ± 24.4

E.O.C. CONTROL CONNECTIONS

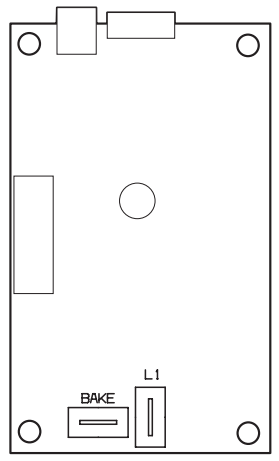
P5 Connection



P10 Bake-N-Warm™ Double Oven Connection (some models)



Bake-N-Warm™ Double Oven Control Board (Rear View-some models)



IMPORTANT

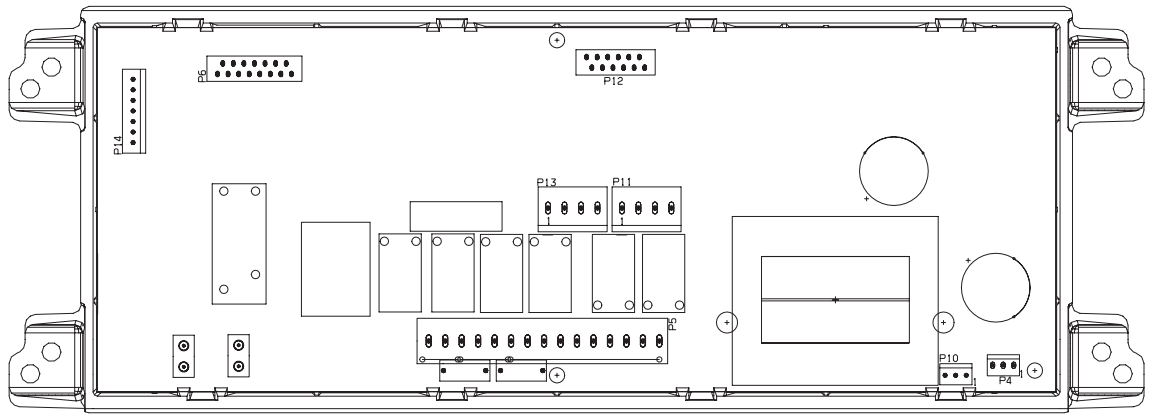
DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS

WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED

REPLACE CONTENTS IN BAG

p/n 316519809 Rev A (0808)

Electronic Oven Control (Rear View)



Electonic Oven Control Fault Code Descriptions

Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10 F11 F12 F13	Runaway Temperature. Shorted Keypad. Bad Micro Identification. Bad EEPROM Identification/Checksum error.	1. (F10 only) Check RTD Sensor Probe & replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when the power is reapplied, replace EOC. Severe overheating may require the entire oven to be replaced should damage be extensive. 2. (F11, 12 & 13) Disconnect power, wait 30 seconds and reapply power. 3. (F11, 12 & 13) If fault returns upon power-up, replace EOC.
F15	Internal Control or Power Supply failure between Power Supply Board & EOC.	1. Check harness connectors at P2 on (Power Supply Board) & J2 connectors on (EOC). 2. If harness and connections are good replace (Power Supply Board). 3. If Power Supply Board is good replace (EOC).
F20	Communication failure between EOC & ESEC system *(for electric range models ONLY)*	1. Test harness/connections P4 (EOC) & P7 (Surface Element Control Board) 2. If harness checks O.K. failure can be caused by faulty UIB, Surface Element Control Board or EOC.
F26	Communication failure with Mini Oven Control Board. *(for models equipped with Bake-n-Warm™ ONLY)*	1. Check harness & connectors from the EOC to Mini Oven Control Board. Check for 15VDC to Mini Oven Control Board (red & gray wires). If harness and voltage are good replace Mini Oven Control Board. If fault returns replace the EOC.
F30 F31	Open Probe or connection. Shorted Probe or connection.	1. (F30 or F31) Check resistance at room temperature & compare to RTD Sensor resistance chart. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connector. 2. (F30 or F31) Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector.
F90 F91 F92 F93 F94	Maximum oven door unlock time exceeded. Maximum oven door unlock attempts exceeded. Maximum oven door open time exceeded. Maximum oven door lock time exceeded. Maximum oven door lock attempts exceeded.	1. (F90, 91, 92, 93 & 94) Check the wiring between EOC & Lock Motor Micro Switch. 2. (F90, 91, 92, 93 & 94) Replace the Motor Door Latch assembly if necessary. 3. (F90, 91, 92, 93 & 94) Check for binding of the Latch Cam, Lock Motor Rod & Lock Motor Cam. 4. (F90, 91, 92, 93 & 94) Check to see if Lock Motor Coil is open. If open, repl;ace Lock Motor Assembly. 5. (F90, 91, 92, 93 & 94) Lock Motor continuosly runs - if Micro Switch is open, replace Lock Motor Assembly. 6. (F92, 93 & 94) Check oven door Light Switch - if open, replace Switch. 7. If all situations above do not solve probem, replace EOC.

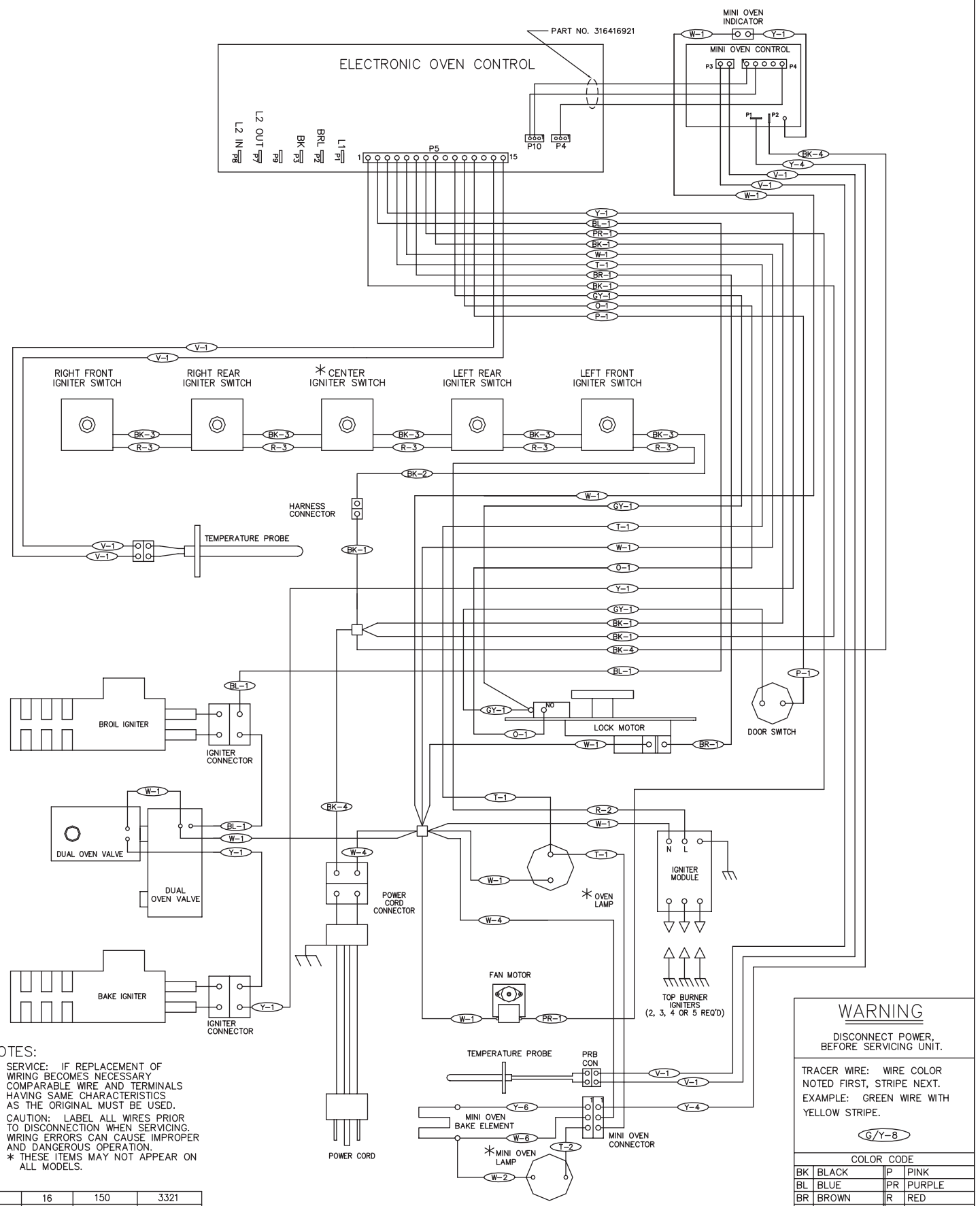
Circuit Analysis Matrix

	EOC Relays				
	L1 to Bake	L1 to Broil	L1 to Motor Door Latch	L1 to Convection Fan & Element	Door Switch COM-NO
Bake/Time Bake	X	X*			
Convection Bake	X	X*		X	
Broil		X			
Clean	X				
Unlocked					
Locking			X		
Locked					
Unlocking			X		
Door Open					
Door Closed					X

Note: X=Check listed circuits. *=Alternates with Bake element.

NOTE: **Convection Fan will activate within 6 minutes or sooner.

GENERAL TROUBLESHOOTING DIAGRAM



NOTES:

1. SERVICE: IF REPLACEMENT OF WIRING BECOMES NECESSARY COMPARABLE WIRE AND TERMINALS HAVING SAME CHARACTERISTICS AS THE ORIGINAL MUST BE USED.
2. CAUTION: LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.
3. * THESE ITEMS MAY NOT APPEAR ON ALL MODELS.

6	16	150	3321
5	20	105	1015
4	16	125	3173
3	18	125	3173
2	20	150	3321
1	20	125	3173
WIRE	AWG	TEMP °C	UL STYLE

WARNING

DISCONNECT POWER, BEFORE SERVICING UNIT.

TRACER WIRE: WIRE COLOR NOTED FIRST, STRIPE NEXT. EXAMPLE: GREEN WIRE WITH YELLOW STRIPE.

G/Y-8

COLOR CODE			
BK	BLACK	P	PINK
BL	BLUE	PR	PURPLE
BR	BROWN	R	RED
C	COPPER	T	TAN
G	GREEN	V	VIOLET
GY	GRAY	W	WHITE
O	ORANGE	Y	YELLOW

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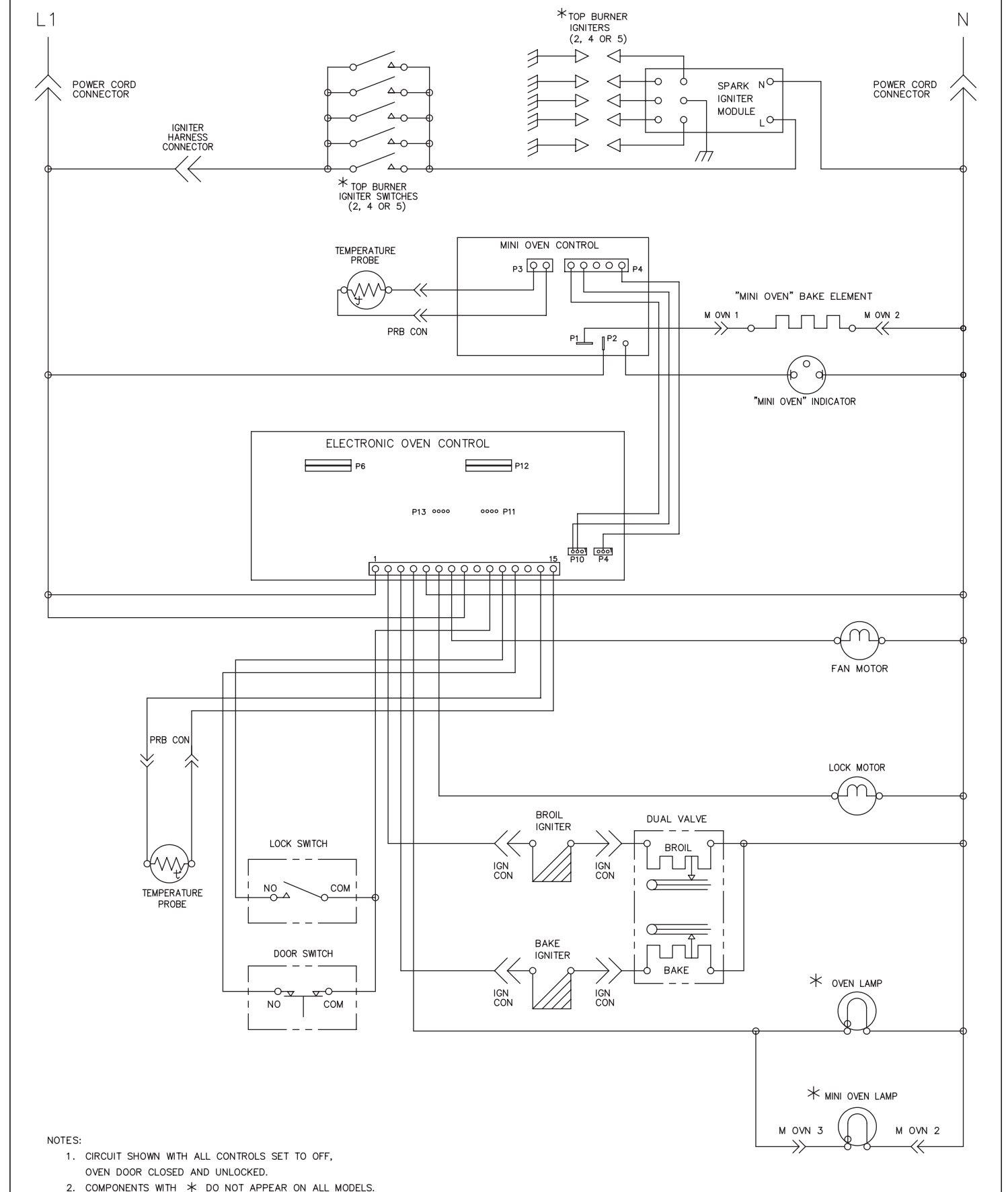
GENERAL TROUBLESHOOTING SCHEMATIC



NOTES:

1. CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF, OVEN DOOR CLOSED AND UNLOCKED.
2. COMPONENTS WITH * DO NOT APPEAR ON ALL MODELS.

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