

SERVICE DATA SHEET

Electric Ranges with ES 335/345 Electronic Oven Controls

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

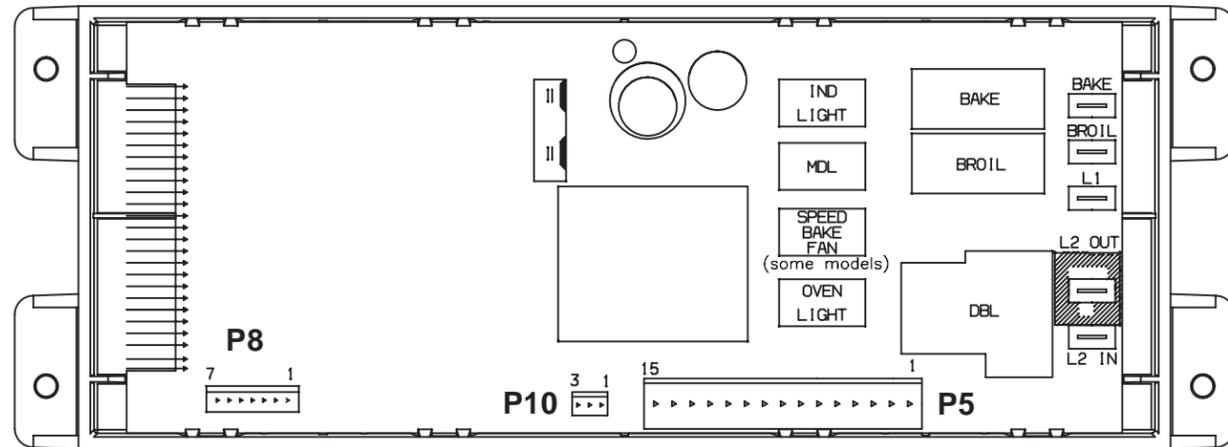
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **STOP/CLEAR** to end bake mode.

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 **STOP/CLEAR**.

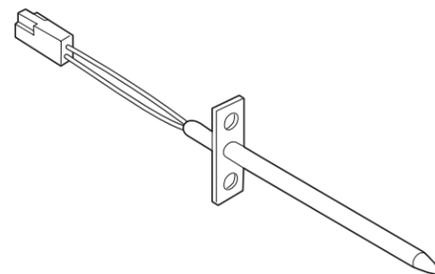
Note: Changing calibration affects normal Bake mode. The adjustments made will not change the Self-Cleaning cycle temperature.

ELECTRONIC OVEN CONTROL (REAR VIEW)

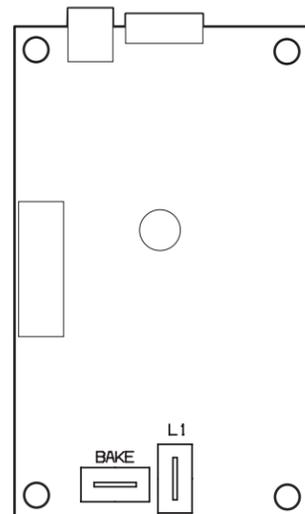


RTD SCALE	
Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 5.4	1654 ± 10.8
450 ± 6.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 9.6	2237 ± 18.5
900 ± 13.6	2697 ± 24.4

RESISTANCE TEMPERATURE DETECTOR



BAKE-N-WARM™ DOUBLE OVEN CONTROL BOARD (REAR VIEW)



IMPORTANT
DO NOT REMOVE THIS BAG
OR DESTROY THE CONTENTS
 WIRING DIAGRAMS AND SERVICE
 INFORMATION ENCLOSED
REPLACE CONTENTS IN BAG

ELECTRONIC OVEN CONTROL FAULT CODE DESCRIPTIONS

Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10	Runaway Temperature.	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.
F11	Shorted Keypad.	
F12	Bad Micro Identification.	
F13	Bad EEPROM Identification/Checksum error.	
F30	Open probe 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.
F31	Shorted Probe connection	
F90	Maximum oven door unlock time 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, replace Lock Motor Assembly. 5. (F90, 91, 92, 93 & 94) Lock Motor continuously 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 problem, replace EOC.
F91	Maximum oven door unlock attempts exceeded.	
F92	Maximum oven door open time exceeded.	
F93	Maximum oven door lock time exceeded.	
F94	Maximum oven door lock attempts exceeded.	

REMOVING & REPLACING THE BAKE-N-WARM™ DOUBLE OVEN DRAWER

CAUTION Be sure the range is unplugged and all parts are COOL before replacing oven light. Wear a leather-faced glove for protection against possible broken glass.

TO REMOVE THE BAKE-N-WARM™ DOUBLE OVEN DRAWER:

1. Before drawer removal, be sure to turn OFF the Bake-n-Warm™ Double Oven and let the drawer area cool completely.
2. Pull the drawer away from the oven. Using a phillips-head screwdriver remove the two drawer screws from the insides of the oven drawer (See Fig. 1).
3. With one hand hold the drawer front in place. Use your other hand to pull the glide away from the oven (See Fig. 2) until the glide hook disengages (See Fig. 3).
4. Repeat from step 3 above for the other side of the drawer.
5. With BOTH glide hooks disengaged, carefully lift the drawer up and away from the oven. Push both drawer glides into lower oven cavity.

TO REPLACE THE BAKE-N-WARM™ DOUBLE OVEN DRAWER:

1. Pull both drawer glides and fully extend outward from lower oven cavity.
2. Carefully rest the drawer on top of both glides.
3. Adjust the drawer position on top of the rails until both of the drawer side slots are correctly engaged with the glide hooks (See Fig. 4).
4. Pull the drawer forward to line up the drawer with both screw holes in the glides. Using a phillips-head screwdriver replace the two screws removed from the inner drawer sides.
5. Replace drawer rack if removed.
6. Close lower oven drawer.

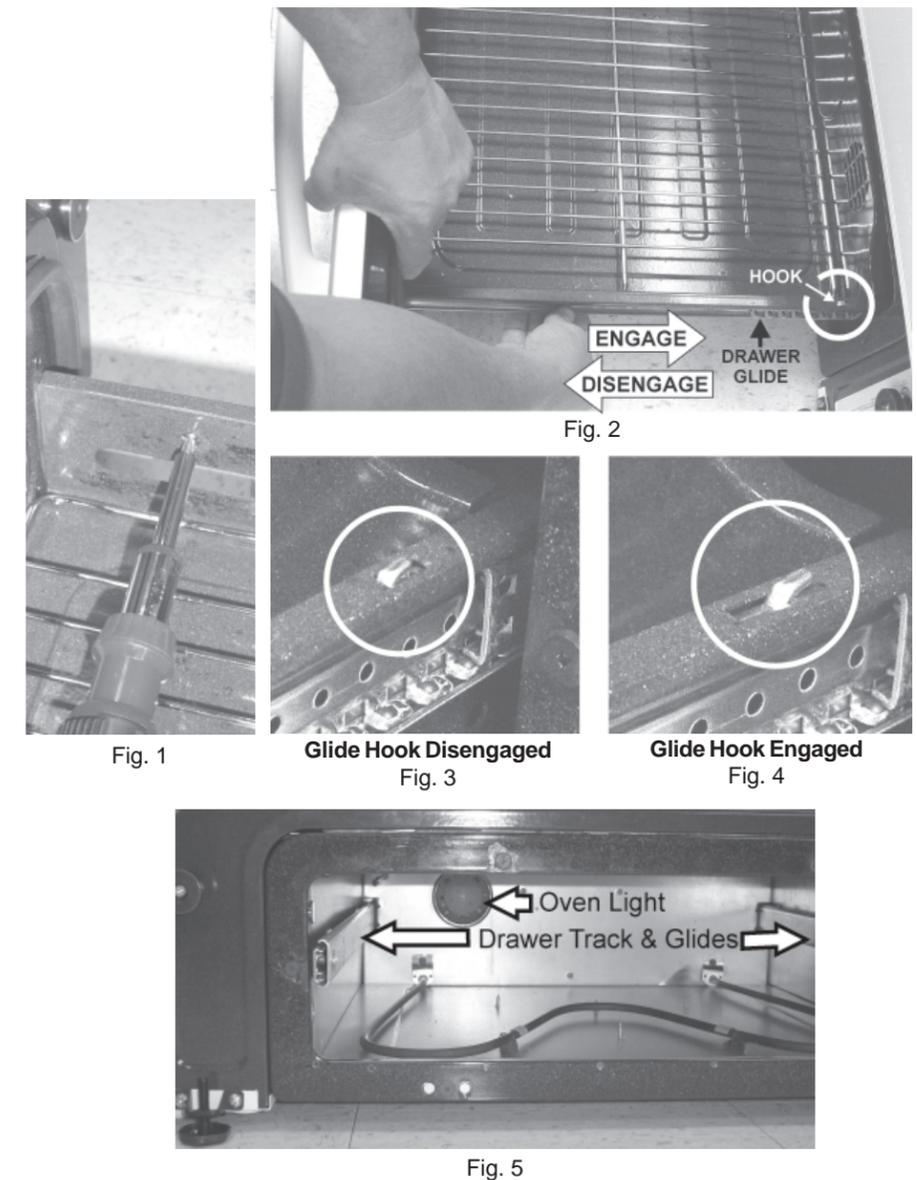


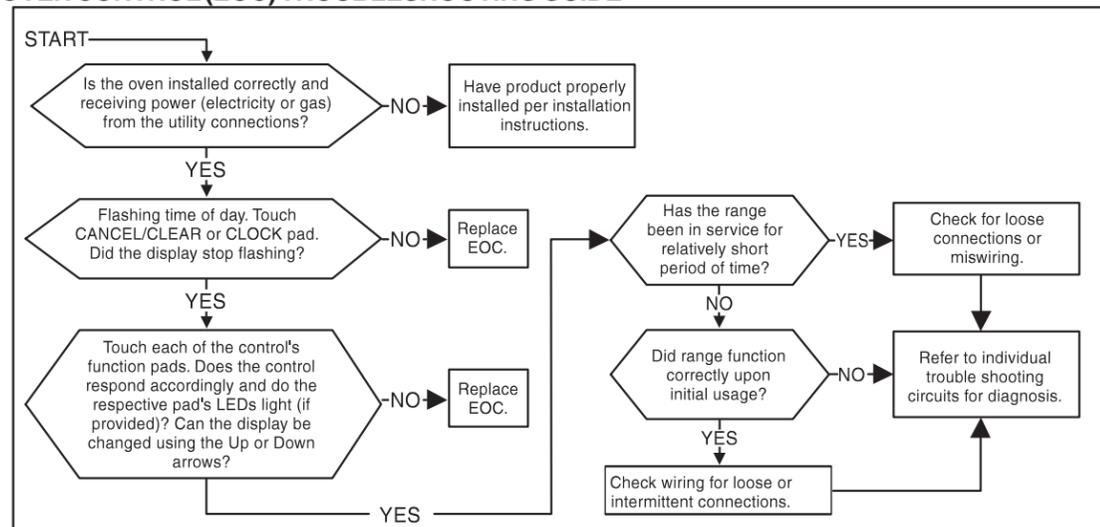
Fig. 5

CIRCUIT ANALYSIS MATRIX

	EOC Relays				
	L1 to Bake	L1 to Broil	L1 to Motor Door Latch	L1 to Conv/Speed Bake Fan	Door Switch COM-NO
Bake/Time Bake	X	X*			
Conv/Speed Bake	X	X*		X	
Broil		X			
Clean	X				
Unlocked					
Locking			X		
Locked					
Unlocking			X		
Door Open					
Door Closed					X
Cooktop Active					

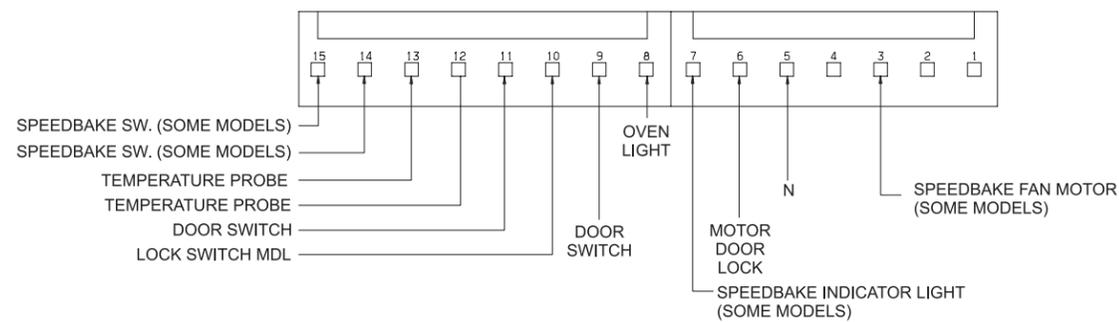
Note: X=Check listed circuits. *=Alternates with Bake element.

ELECTRONIC OVEN CONTROL (EOC) TROUBLESHOOTING GUIDE

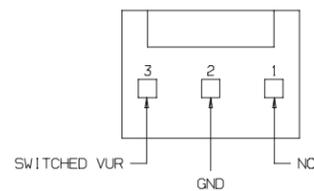


E.O.C. CONTROL CONNECTIONS

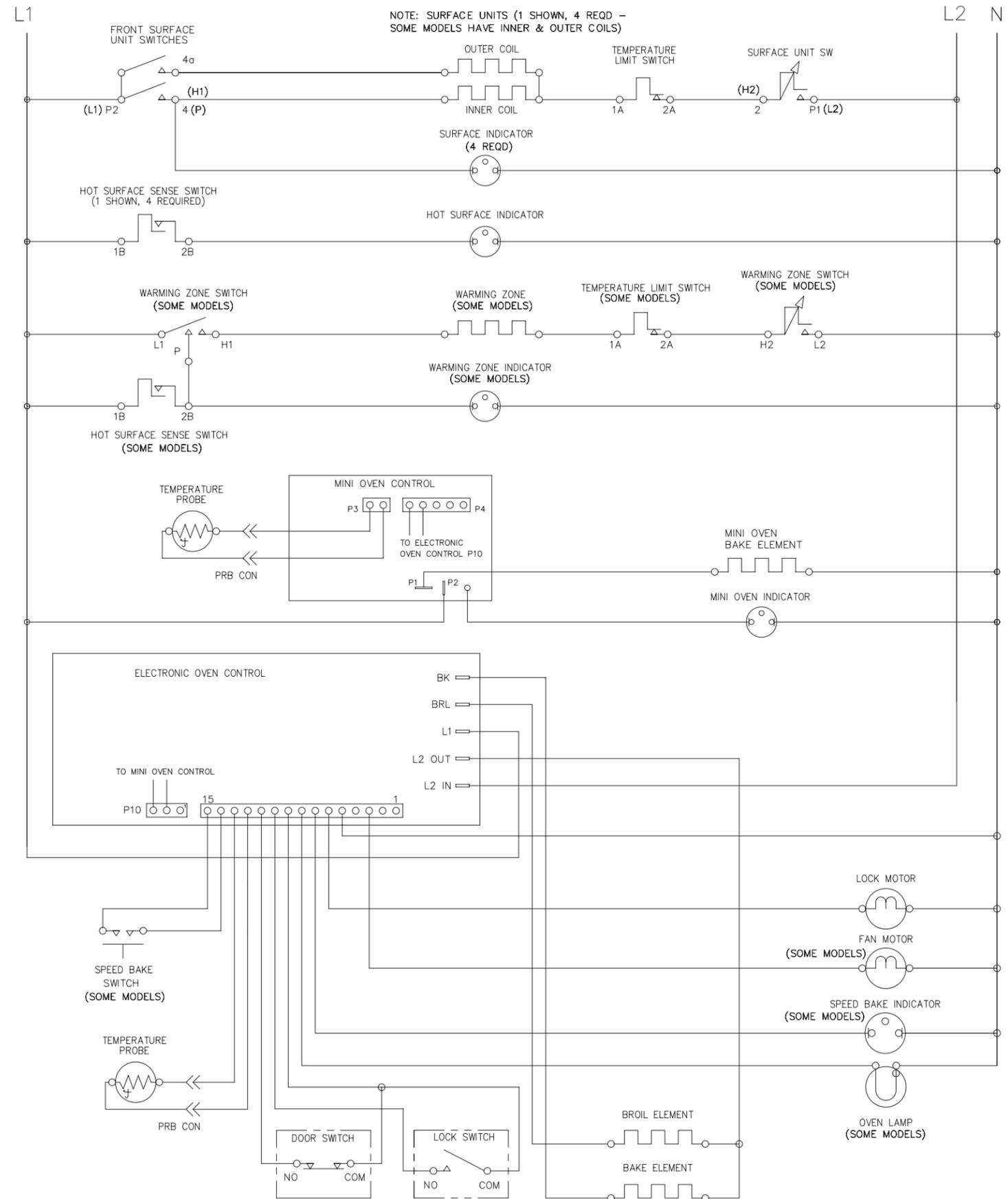
P5 CONNECTIONS



P10 BAKE-N-WARM™ CONNECTIONS



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.