

SERVICE DATA SHEET

Induction Smoothtop with ES575 T3 Electronic Oven Control

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.

IMPORTANT NOTE: This unit includes an Electronic Oven Control (EOC). This board is not field-repairable.

Oven Calibration

Set the electronic oven control for normal baking at 350°F. Allow oven to preheat to set temperature. Obtain an average oven temperature after a minimum of five cycles. Press the **STOP** key to end the Bake mode.

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 some, but not all, examples of safe practices.

- Do not attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.
- Before servicing or moving an appliance, remove power cord from electric outlet, trip circuit breaker to Off, or remove fuse.
- Never interfere with the proper installation of any safety device.
- Use only replacement parts specified for this appliance. Substitutions may not comply with safety standards set for home appliances.
- 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 hazard.
- 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.
 - All panels are properly and securely reassembled.

Temperature Adjustment

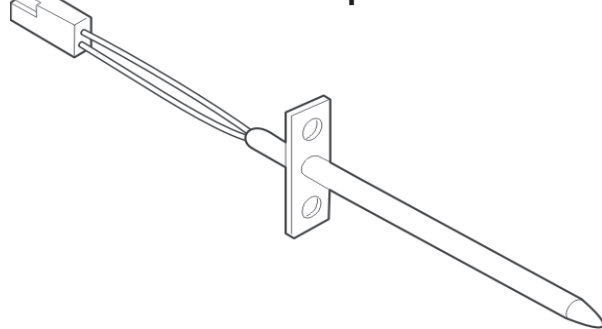
- While in a non-cooking mode, press and hold the **Bake** key for 6 seconds.
- The current calibration offset (temperature adjustment) should appear in the temperature display.
- Use the number keys (0-9) to enter the desired amount of adjustments (up to 35°F).
- Press the **Self Clean** key to change the sign of the adjustment to a (-), if necessary. A positive adjustment will not display a sign.
- Once the desired adjustment (-35° to 35° F) has been entered, press the **Start** key to accept the change or the **Cancel** key to reject the change.

Note: Changing calibration affects all baking modes. The adjustments made will not change the self-cleaning temperature.

2-Speed Cooling Fan

The EOC controls the speed of the cooling fan. The cooling fan is activated at low speed during any cooking function and will remain on until the oven is cooled down. The high speed is activated during the broil (with open door) and during clean cycles only when the temperature is above approximately 575°F/302°C.

Resistance Temperature Detector



RTD SCALE	
Temperature °F (°C)	Resistance (ohms)
32 ± 1.9 (0 ± 1.0)	1000 ± 4.0
75 ± 2.5 (24 ± 1.3)	1091 ± 5.3
250 ± 4.4 (121 ± 2.4)	1453 ± 8.9
350 ± 5.4 (177 ± 3.0)	1654 ± 10.8
450 ± 6.9 (232 ± 3.8)	1852 ± 13.5
550 ± 8.2 (288 ± 4.5)	2047 ± 15.8
650 ± 9.6 (343 ± 5.3)	2237 ± 18.5
900 ± 13.6 (482 ± 7.5)	2697 ± 24.4
Probe circuit to case ground	Open circuit/infinite resistance

Data Sheet Abbreviations and Terminology

DLB - Double Line Break
 EOC - Electronic Oven Control
 ESEC: Electronic Surface Element Control
 LED - Light-Emitting Diode
 MDL - Motor Door Latch
 PS - Power supply board (PS1, PS2, etc)
 RTD - Resistance Temperature Detector/Oven Probe
 TCO - Thermal cut out, also "thermo disc" or "thermal limiter"
 UIB - User Interface Board
 VSC - Variable Speed Control

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Electronic Oven Control (EOC) Fault Code Descriptions

Code	Condition / Cause	Suggested Corrective Action
F10	Cavity temperature has been detected in excess of the maximum safe operating temperature.	<ol style="list-style-type: none"> Check RTD sensor probe and replace, if necessary. If oven is overheating, disconnect power. If oven continues to overheat when power is re-applied, replace the Electronic Oven Control (EOC).
F11	A key closure has been detected continuously for 30 seconds or more.	<ol style="list-style-type: none"> Press STOP key. If the problem persists, replace the EOC.
F12 F13	Data written to the EEPROM memory has failed verification.	<ol style="list-style-type: none"> Press CLEAR key. - Disconnect power, wait 10 seconds, and reapply power. If fault returns upon power-up, replace EOC.
F14	Misconnected flat cables. No communication between oven and controls.	<ol style="list-style-type: none"> Disconnect power. Verify the flat cable connection between the touch panel or membrane and the EOC on P12 and P13. If the problem persist, replace the EOC.
F15 to F18	EOC Internal hardware error or failure	<ol style="list-style-type: none"> Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F20	Communication failure between EOC and ESEC systems.	<ol style="list-style-type: none"> Test all wiring harness and connections between EOC and ESEC components. Each generation of ESEC controls has specific test points and procedures. Consult product tech sheet for specific test points and component replacement recommendations.
F23 F24	Communication failure between VSC board and EOC.	<p>NOTE: F23 is for upper main oven. F24 is for lower oven if so equipped.</p> <ol style="list-style-type: none"> Check harness and connections between VSC board and EOC. Test for approximately 5 volts DC and VSC board at p6 connector pins 1 and 6. If voltage is correct replace VSC board. If voltage is incorrect replace EOC.
F30 or F31	Open RTD sensor probe/ wiring problem. Note: EOC may initially display an "F10," thinking a runaway condition exists. Shorted RTD sensor probe /wiring problem.	<ol style="list-style-type: none"> Check wiring in probe circuit for possible open or short condition. Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe. Let the oven cool down and restart the function. If the problem persists, replace the EOC.
F62	Missing zero-cross signal	<ol style="list-style-type: none"> Replace the EOC.
F90 to F95	Door motor mechanism failure.	<p>If clock motor runs:</p> <ol style="list-style-type: none"> Test continuity of wiring between EOC and lock switch on lock motor assembly. Repair if needed. Advance motor until cam depresses the plunger on lock motor switch. Test continuity of switch contacts. If switch is open replace lock motor assembly. If motor runs and switch contacts and wiring harness test good, replace the EOC. <p>If clock motor does not run:</p> <ol style="list-style-type: none"> Test continuity of lock motor windings. Replace lock motor assembly if windings are open. Test lock motor operation by using a test cord to apply voltage. If motor does not operate replace lock motor assembly. If motor runs with test cord, check continuity of wire harness to lock motor terminals. If harness is good, replace the EOC.

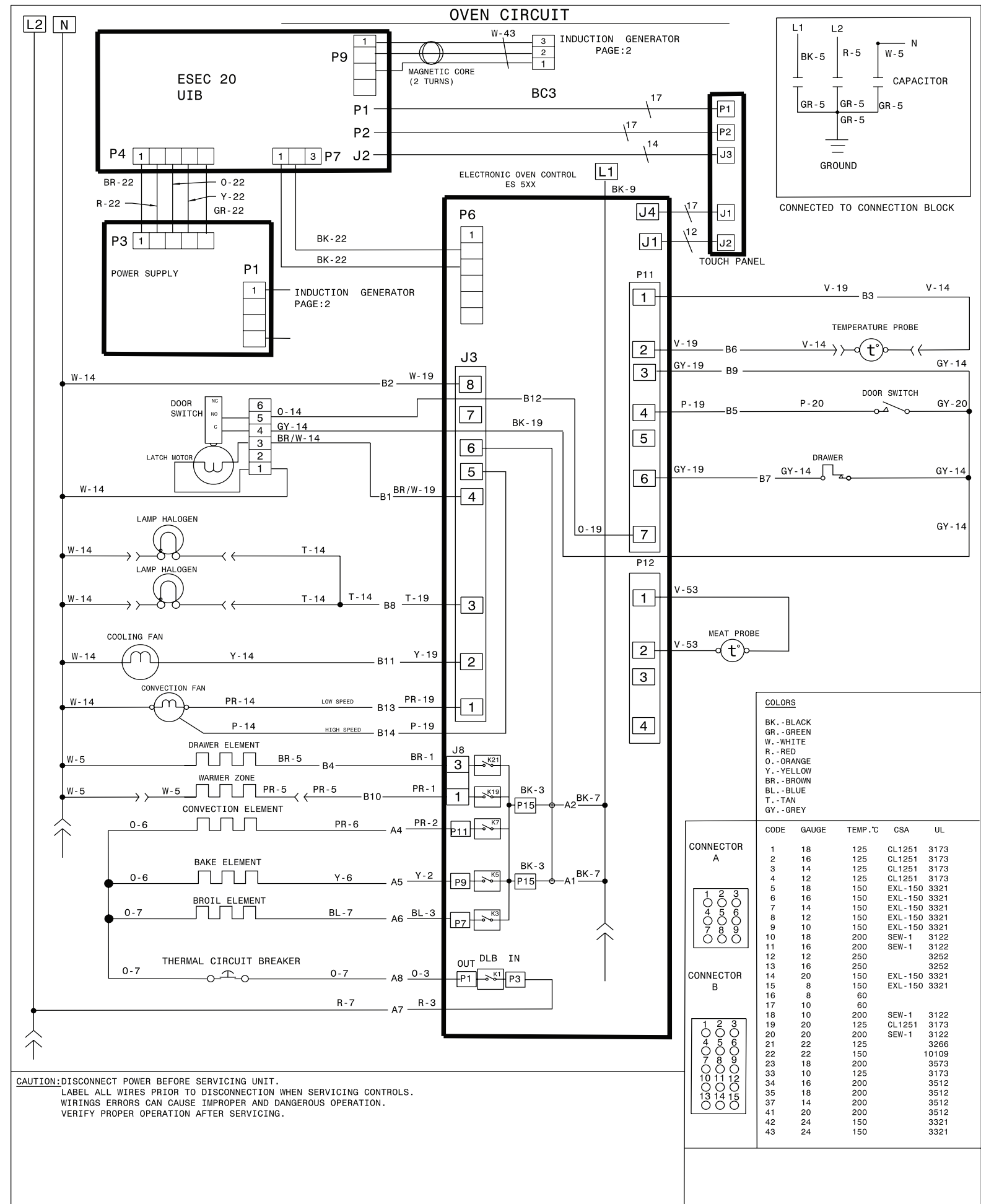
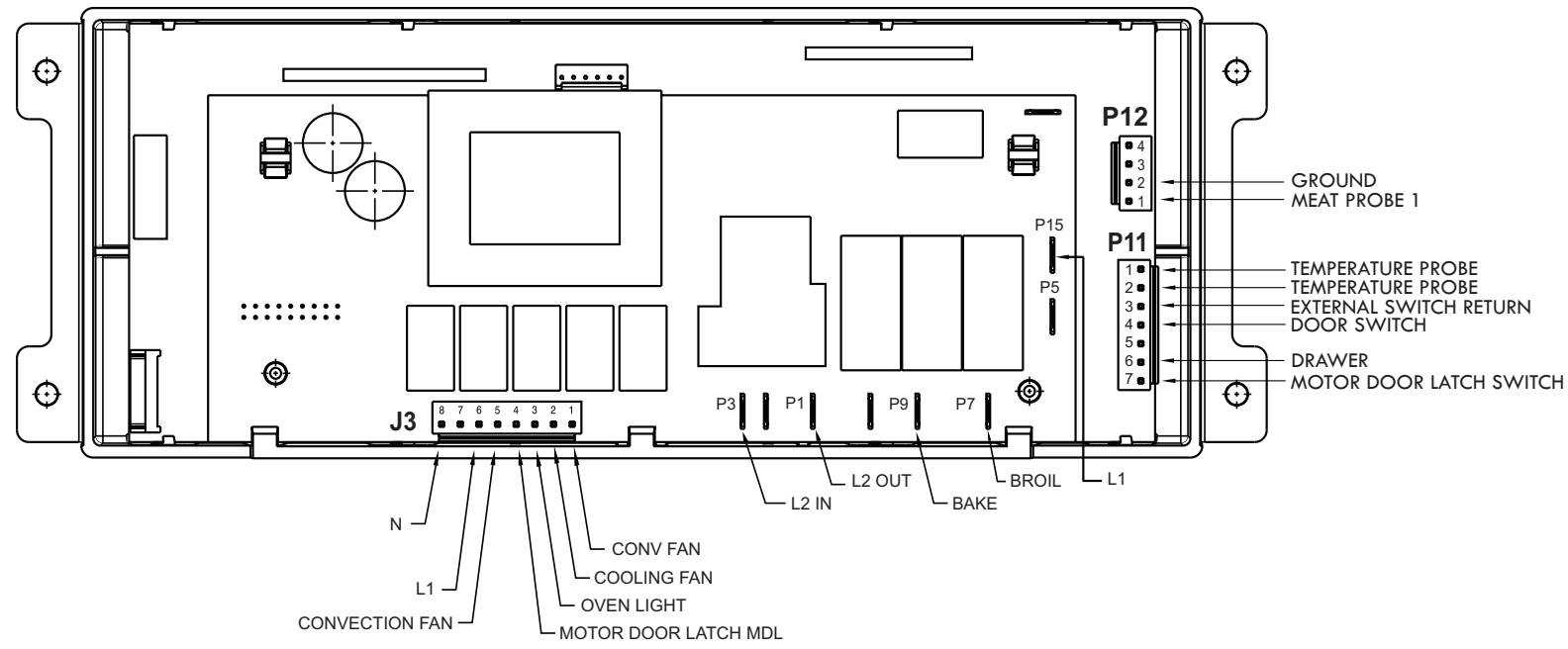
Note: Generally speaking, F1X implies a control failure, F3X an oven probe problem, and F9x a latch motor problem.

CIRCUIT ANALYSIS MATRIX

	On Relay Board									On Display Board Door Switch P11-3/P11-4
	ELEMENTS			Door Motor J3-4	Light J3-3	Hi Speed Convection Fan J3-5	Low Speed Convection Fan J3-5	DLB L2 out P1	Cooling Fan Relay 2 J3-2	
	Bake P9	Broil P7	Conv P11							
Bake/Time Bake	X	X	X*			X		X	X	
Broil		X						X	X	
Convection Bake	X	X	X			X	X	X	X	
Convection Roast	X	X	X			X	X	X	X	
Clean	X	X						X	X	
Locking				X						
Locked										
Unlocking				X						
Unlocked										
Light					X					
Door Open					X					X
Door Closed										

Note: ■ Relay will operate in this condition only. * Convection fan and element are used for the first rise of temperature.

General Troubleshooting Schematic



SERVICE DATA SHEET

Electric Ranges with ESEC20 and Induction Smoothtop

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- Before servicing or moving an appliance, remove power cord from electric outlet, trip circuit breaker to Off, or remove fuse.
- Never interfere with the proper installation of any safety device.
- 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.**
- 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.
 - All panels are properly and securely reassembled.

Electronic Surface Element Control (ESEC)

This range is equipped with an Electronic Surface Element Control (ESEC), which precisely controls the smoothtop elements at multiple settings. The warmer zone is not controlled by the ESEC. For the user, the elements are operated by pushing in and turning the knobs to the desired settings. The control settings are shown in 2-digit displays above each knob.

Hot Element display message (HE) - If any of the induction elements are hot, the hot surface message "HE" will display and remain ON until the cooktop cools.

ESEC lockout feature (--) - The electronic oven control's self-clean and Cooktop Lockout features will not operate when a surface element is ON. Conversely, the surface elements controlled by the ESEC will not operate when an oven control self-clean or Cooktop Lockout mode is active. When the oven control is in a self-clean or Cooktop Lockout mode, "--" will appear in the ESEC displays to signify that the surface heating elements are locked out.

ESEC system components

The ESEC system consists of the following components:

UIB or User Interface Board - this circuit board is mounted with screws and stand-offs in the backguard.

Potentiometer display boards - push-to-turn controls and cooktop displays for each element and connections to the UIB.

ESEC harness connects the ESEC system components and communicates with the EOC (Electronic Oven Control).

Induction control assembly - circuit boards in plastic housings mounted inside the cooktop assembly.

Notes on replacing parts

Replacing an induction control assembly*

When replacing an induction control assembly on the back of the range, do not over-tighten the screws that secure each Control Assembly to the range or the screws that secure the rear wire shield to the Control Assembly. Over-tightening the screws can damage the plastic housings holding the circuit boards.

Replacing an induction element

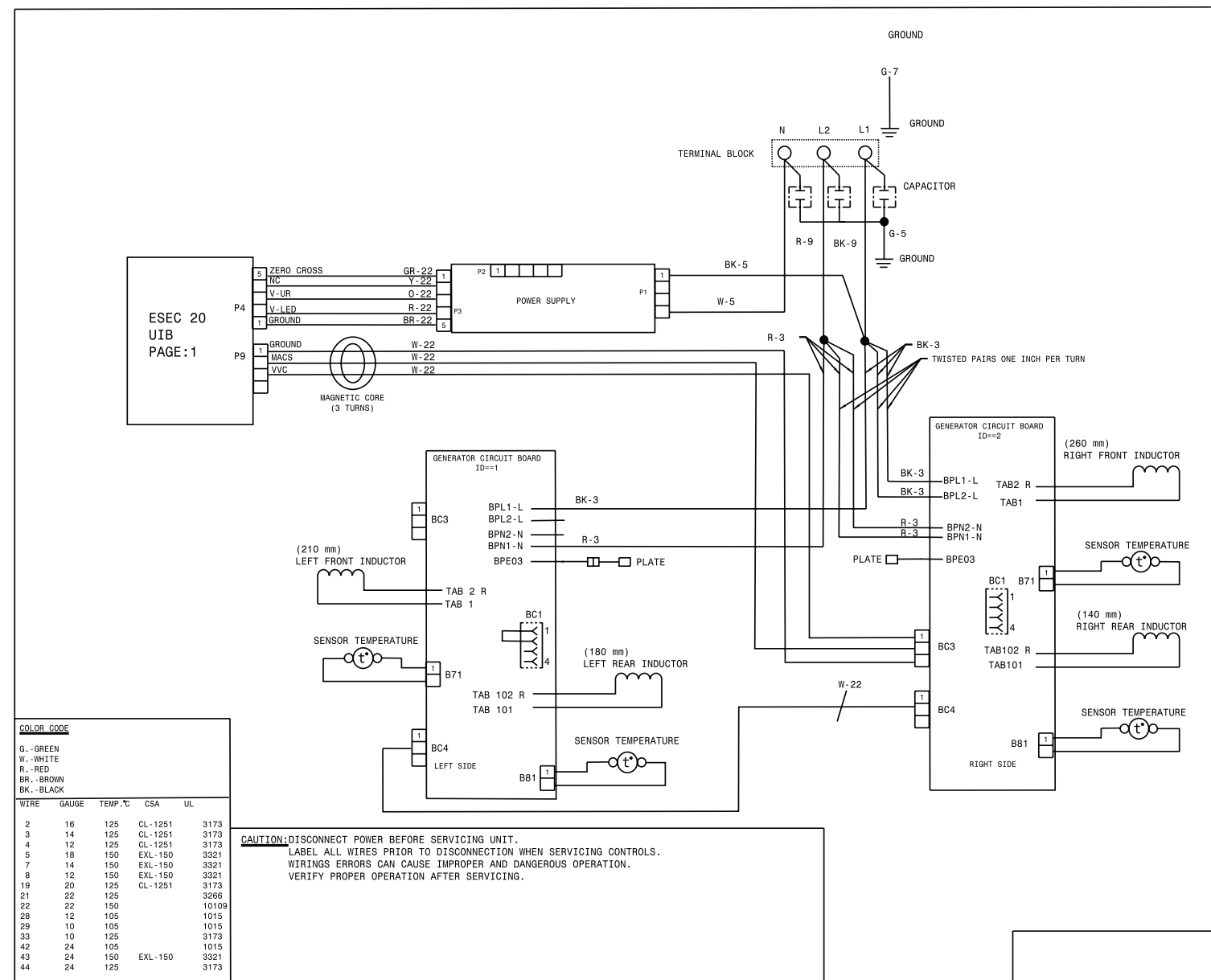
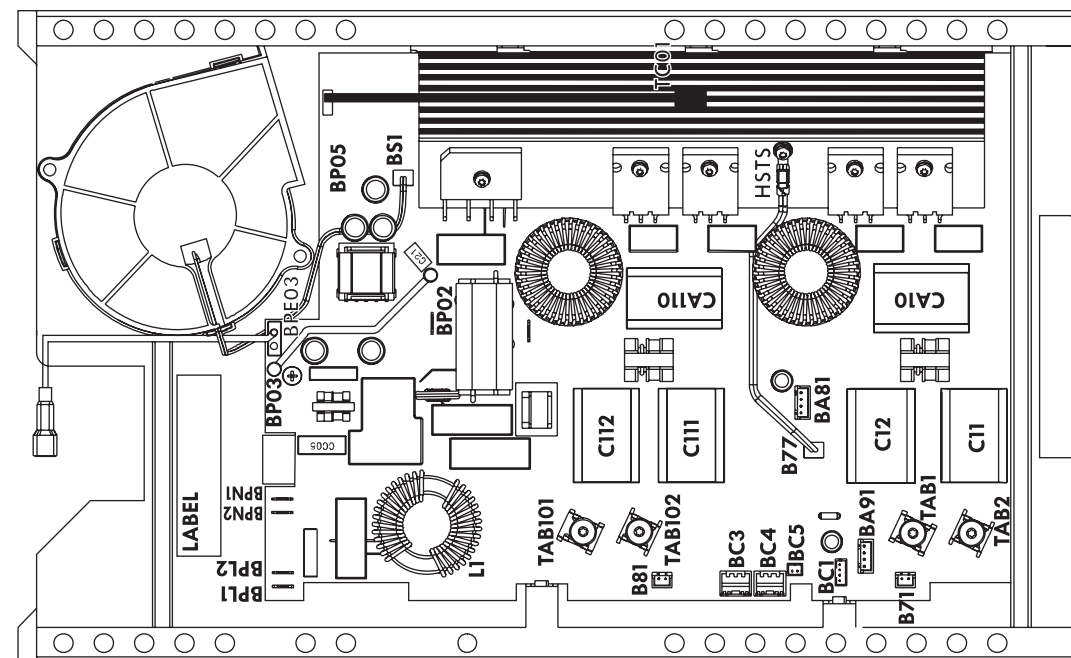
Whenever replacing any induction element, use only the screws supplied with the range to secure the element to the mounting panel. Never use any other type of screw to attach the induction element.

Replacing the UIB*

When replacing the UIB, use no more than 20 in/lb to tighten the screws that secure the UIB. Over tightening these screws can possibly damage the UIB board.

*** Please note:** Electronic boards are very sensitive to static electricity. Static electricity can permanently damage electronic boards. Before handling these parts, be sure to drain static electricity from your body by properly grounding yourself.

Displayed Power Level	Power Level %
Lo	3.0
1.2	3.5
1.4	4.0
1.6	4.5
1.8	5.0
2.0	5.5
2.2	6.0
2.4	7.0
2.6	8.0
2.8	9.0
3.0	10.5
3.5	13.0
4.0	15.5
4.5	18
5.0	21
5.5	25
6.0	31
6.5	38
7.0	45
7.5	50
8.0	54
8.5	59
9.0	64
9.5	81
HI	100
Pb	139-152



COLOR CODE

G. - GREEN
 W. - WHITE
 R. - RED
 BR. - BROWN
 BK. - BLACK

WIRE	GAUGE	TEMP. °C	CSA	UL
2	16	125	CL-1251	3173
3	14	125	CL-1251	3173
4	12	125	CL-1251	3173
5	18	150	EXL-150	3321
7	14	150	EXL-150	3321
8	12	150	EXL-150	3321
19	20	125	CL-1251	3173
21	22	125		3266
22	22	150		10109
28	12	105		1015
29	10	105		1015
33	10	125		3173
42	24	105		1015
43	24	150	EXL-150	3321
44	24	125		3173

CAUTION: DISCONNECT POWER BEFORE SERVICING UNIT.
 LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS.
 WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.
 VERIFY PROPER OPERATION AFTER SERVICING.

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Electronic Surface Element Control System (ESEC) Error Code Descriptions

When a specific error condition occurs in the ESEC system a code will be displayed in the electronic control panel. The error codes are displayed as “EO” in the left display followed by the code number in the right display. For each Error Code there is a listing of the likely cause or failure condition, as well as suggested corrective actions to be taken. Always reset the power by disconnecting or turning off the power supply for 30 seconds to see if the failure condition will clear. If the error code returns perform the steps one at a time in the order listed below to correct the specific failure condition. **NOTE: If multiple changing error codes are displayed check for disconnected wires or cables.**

Tech Sheet Abbreviations and Terminology

EOC = Electronic Oven Control	ESEC = Electronic Surface Element Control	TST = Touch Sensor Technology (touch control glass panel)
UIB = User Interface Board	TSEC = Touch Sensor Electronic Control	RTD = Resistance Temperature Device. (Temp Probe or Temp Sensor)
VSC = Variable Speed Control	PS = Power Supply board (PS1, PS2, etc.)	TCO = Thermal Cut Out also “Thermo Disc” or “Thermal Limiter”

Electronic Surface Element Control (ESEC) Fault Code Descriptions

Code	Condition / Cause	Suggested Corrective Action
11	Jammed key	<ol style="list-style-type: none"> Verify if there is no mechanical interference in the Touch Panel area (utensil, wire, etc.). Disconnect power, wait 30 seconds, and reapply power. <p>If fault returns:</p> <ol style="list-style-type: none"> Verify harnesses between ESEC-UIB and the Touch Panel. Replace the ESEC-UIB. Replace the Touch Panel
14	Touch Panel Tail missing	Disconnect power, wait 30 seconds, and reapply power. If fault returns: <ol style="list-style-type: none"> Verify harnesses between ESEC-UIB and the Touch Panel are connected properly. Replace the ESEC-UIB. Replace the Touch Panel.
15	ESEC Self Test fail	<ol style="list-style-type: none"> Verify cables and connections on the ESEC-UIB are not damaged and are well installed. Replace the ESEC-UIB Replace the ESEC Power Supply board.
20/27	Loss of communication with Left Zones Generator Circuit board.	<ol style="list-style-type: none"> Verify communication harness between left and right side generator circuit board is not damaged and is well installed. Verify AC power harness is not damaged and is well installed at BPL and BPN connectors of left side generator circuit board. Verify ID1 jumper is well installed at BC1 connector of the left side generator circuit board (BC5 not connected). Verify there is no jumper installed at BC1 and BC5 connectors of the right side generator circuit board. Replace the left side generator circuit board.
21/28	Loss of communication with Right Zones Generator Circuit Board.	<ol style="list-style-type: none"> Verify AC Power harness is not damaged and is well installed at BPL and BPN connectors of right side generator circuit board. Verify ID1 jumper is well installed at BC1 connector of the left side generator circuit board (BC5 not connected). Verify there is no jumper installed at BC1 and BC5 connectors of the right side generator circuit board. Replace the right side generator circuit board.
23	Loss of communication with both Generator Circuit Boards.	<ol style="list-style-type: none"> Verify AC Power Supply at the input of the appliance is 240VAC. Verify communication harness going from the ESEC20 UIB and the right side generator circuit board is not damaged and is well installed. Replace ESEC20 UIB. Replace the right side generator circuit board and both communication harnesses.
30/35	AC input voltage too high(30) AC input voltage too low(35)	<ol style="list-style-type: none"> Verify the house voltage at the main incoming connection, the voltage should be 240VAC. Verify cables and connections on the left side generator circuit board are not damaged and are well installed. Replace the left side generator circuit board.
31/ 32/ 34/ 36/ 37/ 40	Internal generator errors	<ol style="list-style-type: none"> Verify cables and connections on the Left Side Generator Circuit Board are not damaged and are well installed. Replace the left side generator circuit board.
33	Cooling fan blocked	<ol style="list-style-type: none"> Verify cables and connections on the left side generator circuit board are not damaged and are well installed. Verify there is no mechanical interference with the fan on the left side generator circuit board. Replace the left side generator circuit board.
38	Cooling fan not connected	<ol style="list-style-type: none"> Verify fan is correctly connected at BS1. Replace the left side generator circuit board.
39	Configuration error	<ol style="list-style-type: none"> Replace the ESEC20 UIB. Replace both generator circuit boards.
41	Induction sensor (coils) defect	<ol style="list-style-type: none"> Verify if the left side inductor (coils) are connected properly (measure approx. 0 Ohm). Replace left side generator circuit board if 0 ohm otherwise replace the inductor (coil).
42/43	General pot detection alarm (42) Pot detection sensor fail (43)	<ol style="list-style-type: none"> Verify pans are the proper type (magnet sticks to the bottom of pan). Verify pan is not warped or rusty, pan is proper size, pan is placed correctly. Replace left side generator circuit board.
44	Generator Circuit Board temperature warning	<ol style="list-style-type: none"> Ensure customer is not using the cooktop with a dry pan at a high temperature level. Ensure cooktop installation is as per installation instruction (check ventilation). Allow zone to cool down and then continue cooking.

45	Generator Circuit Board temperature alarm	<ol style="list-style-type: none"> Ensure customer is not using the cooktop with a dry pan at a high temperature level Ensure cooktop installation is as per installation instruction (check ventilation). Replace left side generator circuit board.
51 52/ 55 56	LF temperature sensor breaks LR temperature sensor breaks RF temperature sensor breaks RR temperature sensor breaks	<ol style="list-style-type: none"> Verify induction temperature sensor is connected properly at B71 or B81 as per wiring diagram. Verify the inductor temperature sensor is installed properly and not damaged (measure approx. 100K Ohms at room temperature). Replace associate generator circuit board (left or right) as per wiring diagram.
63/64/ 67/68	Element temperature sensor too hot (LF, LR, RF, RR)	<ol style="list-style-type: none"> Ensure customer does not use the cooktop with a dry pan at high temperature levels. Verify the inductor temperature sensor is installed properly and not damaged in the proper generator (measure approx. 100k Ohms at room temperature). Replace associate generator circuit bard (left or right) as per wiring diagram.
70 75	AC input voltage too high (70) AC input voltage too low (75)	<ol style="list-style-type: none"> Verify the house voltage at the main incoming connection, the voltage should be 240VAC. Verify cables and connections on the right side generator circuit board are not damaged and are well installed. Replace the right side generator circuit board.
71/72/ 74/76/ 77/80	Internal generator error.	<ol style="list-style-type: none"> Verify cables and connections on the right side generator circuit board are not damaged and are well installed. Replace the right side generator circuit board.
73	Cooling fan blocked	<ol style="list-style-type: none"> 1) Verify cables and connections on the right side generator circuit board are not damaged and are well installed. Verify there is no mechanical interference with the fan on the right side generator circuit board. Replace the right side generator circuit board.
78	Cooling fan not connected	<ol style="list-style-type: none"> Verify fan is correctly connected at BS1 of the right side generator circuit board. Replace the right side generator circuit board.
81	Induction sensor (coils) defect	<ol style="list-style-type: none"> Verify if the right side inductor (coils) are connected properly (measure approx. 0 Ohm). Replace right side generator circuit board if 0 ohm otherwise replace the inductor (coil).
82/83	General pot detection alarm (82) Pot detection sensor fail (83)	<ol style="list-style-type: none"> Verify pans are the proper type (magnet sticks to the bottom of pan). Verify pan is not warped or rusty, pan is proper size, pan is placed correctly. Replace right side generator circuit board.
84	Generator Circuit Board temperature warning	<ol style="list-style-type: none"> Ensure customer is not using the cooktop with a dry pan at a high temperature level. Ensure cooktop installation is as per installation instruction (check ventilation). Allow zone to cool down and then continue cooking.
85	Generator Circuit Board temperature alarm	<ol style="list-style-type: none"> Ensure customer is not using the cooktop with a dry pan at a high temperature level. Ensure cooktop installation is as per installation instruction (check ventilation). Replace right side generator circuit board.

ADDITIONAL ERROR (FAULT) CONDITIONS

SYMPTOM OR FAILURE	CONTROL DISPLAY	POSSIBLE CAUSE OR CONDITION	SUGGESTED CORRECTIVE ACTION
Pan does not heat up.	Normal operation	Pan too small fo proper pan detection and only works with low power.	Use larger pan or this pan on a smaller cooking zine. Refer to the owner's guide for proper pan selection.
	Flashing Power level display and pan does not heat	Pan not detected	Check whether the pots or pans are suitable for induction. Refer to owner's guide for proper pan selection.
		Inductor not correctly connected or Induction coil open.	Check the Inductor wire terminal connections. Ensure that they are properly connected and tightened. Test continuity of coil (should be less than 1 ohm).
		Distance between Inductor and glass ceramic too large.	Check whether the Inductor is properly positioned and touching the glass cooktop surface.
Individual buttons or controls cannot be used or cannot always be used.	None	<ol style="list-style-type: none"> Test cables and connections. Touch Panel defective. ESEC-UIB defective. 	<ol style="list-style-type: none"> Follow instructions for proper use of touch controls. Verify harness going between ESEC-UIB, J2 connector and Touch Panel, J3 connector (14 pins). Replace if defective or damaged. Verify there is no mechanical interference close to the Touch Panel (wires, utensils, etc.) Replace the Touch Panel. Replace the ESEC-UIB.
Steady “HE” in display when cooking zone is cold and switched off.	“HE”	Temperature sensor defect.	<ol style="list-style-type: none"> Test surface RTD approx. 1k ohms at room temperature. Replace surface unit if resistance is not correct. Replace induction control assembly.
Cooking power too low or shuts down prematurely.	None	Fluids spilled or object lying on control panel keypads.	Clean up spills or remove objects. Restart cooktop in normal manner.
		Ventilation slots obstructed.	Clear vent openings
		Unsuitable pots (bottom bent).	Follow owners guide for proper pan selection.
		Distance between Inductor and glass ceramic too large.	Check whether the glass ceramic was pushed down when being screwed in position and the Inductor has been correctly positioned.
		Fan does not start.	<ol style="list-style-type: none"> When setting a cooking phase greater than 0, the fan runs at a slow speed. If not, check the fan for foreign objects, remove these where appropriate. If necessary, replace the fan.