⚠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.

DIAGNOSTICS

- Is oven in “Sabbath Mode”? If so “SAB” will appear in digital display. Press and hold “6” key for 5 seconds to end Sabbath Mode.

Disconnect power and perform the following checks:

- The most common cause for control failure is corrosion on connectors. Therefore, disconnecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms per volt DC or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- Resistance checks **must** be made with power cord unplugged from outlet, and with wiring harness or connectors **disconnected**.

Fahrenheit (° F) to Celsius (° C) Conversion

The default is Fahrenheit (° F).

1. Press the BROIL pad for 5 seconds. The temperature will be displayed in degrees Celsius indicated by the “C” in the temperature display.
2. To return the display to degrees Fahrenheit press the BROIL pad again for 5 seconds. “F” will show in the temperature display.

Programming the Cavity Size

1. When replacing the electronic control, be sure to program the cavity size within 60 seconds of power up by pressing the following touchpads:

   BAKE (upper half of BAKE key),

   CONVECTION BROIL (lower half of BROIL key),

   STOP TIME, CONV FULL MEAL, digit #7, digit #9,

   TIMER SET/START, START.
2. Size is shown in display - “id 30”.
3. Press CLOCK SET/START pad until correct size is displayed.

IMPORTANT

Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

  -OR-

  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

4. Press CANCEL pad (do not press the OVEN START key).
5. Press and hold “1” pad for 5 seconds to verify programming.

PROBLEM: Bake Temperature Needs Adjustment

1. Press BAKE pad for 5 seconds. The default temp. 0° or a previously entered offset temperature will show in the temperature display.
2. Select which oven is to be adjusted by pressing the UPPER OVEN or LOWER OVEN pad.
3. Press the BAKE pad **to increase** the temperature in 5° F or 3° C increments.

   Press the BROIL pad **to decrease** the temperature in 5° F or 3° C increments.

   NOTE: Maximum offset temperature adjustment is ±35° F or ±21° C.
4. Press the START pad to save the temperature adjustment.

NOTES:

- Always disconnect power before touching internal parts of the oven!
- Upon replacement, immediately return old electronic oven control using the mailing label supplied with each new control.
- For double ovens, the failure code is displayed on the side of the display that corresponds to the oven with the faulty part (upper oven = left side of display).

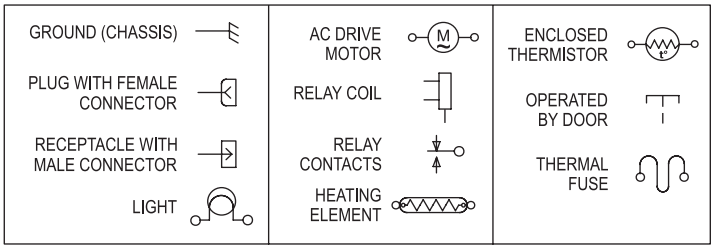
FAILURE/ERROR DISPLAY CODES

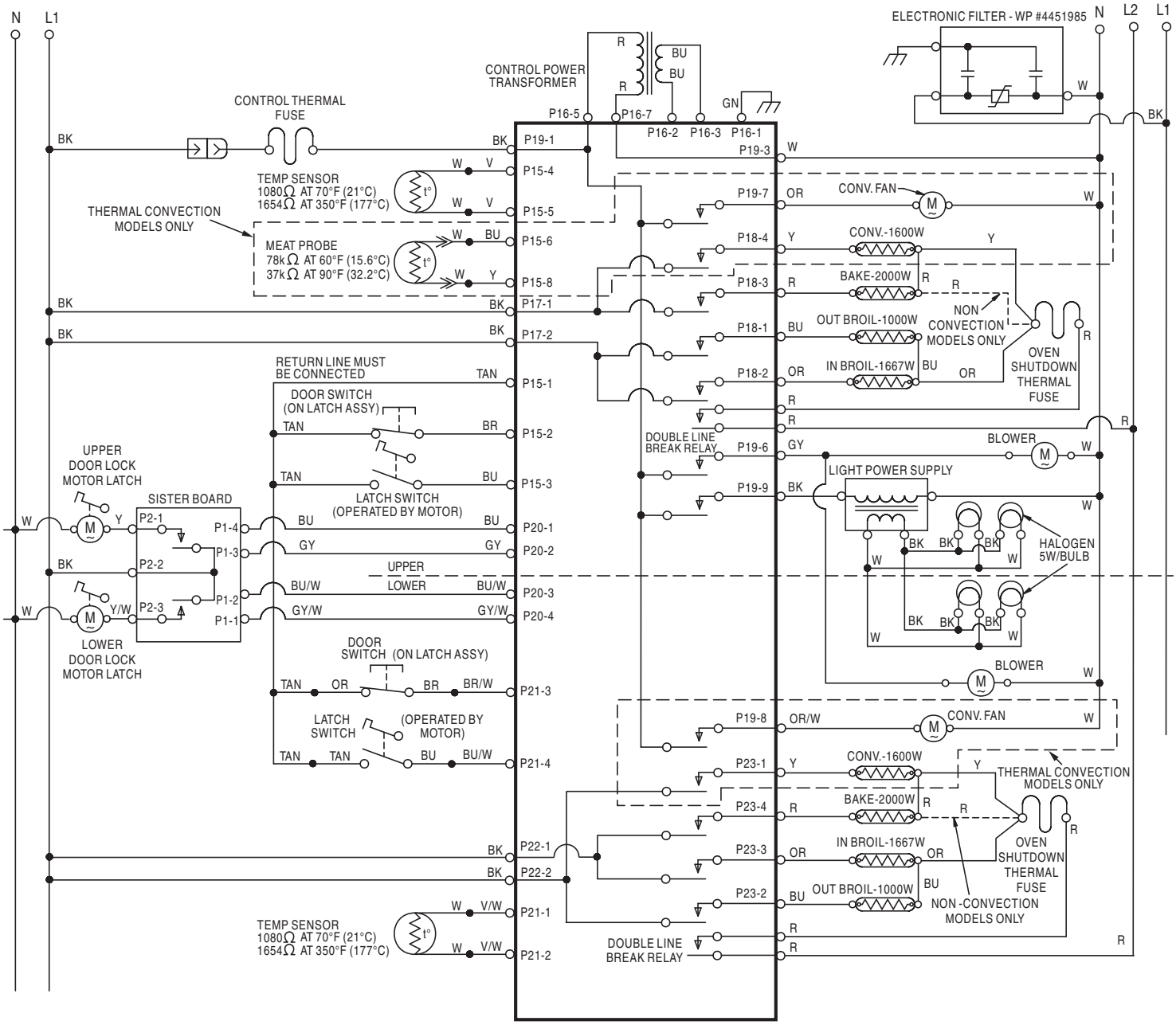
FAULT CODE	ERROR CODE	CODE EXPLANATION	RECOMMENDED REPAIR PROCEDURE
F0		Default F code - no failure	Will only be displayed if user presses and holds "CANCEL" key for 5 seconds and there is no pre-existing fault. Press CANCEL to clear display.
F1	**All E Codes**	Electronic control malfunction	Replace control.
F2	**E0**	Key held down too long, or key is shorted	1. Check keypad connector for firm connection. 2. Press CANCEL. If error code returns after 60 sec., replace keypad. 3. Replace control.
	E1	Keypad keytail not connected	
	E5 E6	CANCEL key drive line open	
F3	**E0**	Temperature sensor opened – R=2875 ohm (by spec)	1. Check sensor connection. 2. Measure sensor resistance: 1080Ω at 70° F (21° C). (Add 2Ω per degree F). 3. If resistance is not valid, replace sensor. 4. If sensor resistance and connections are good, then check for welded-closed relays on the control.
	E1	Temperature sensor shorted – R=825 ohm (by spec)	
	E2	Oven temp too high – over 575° F (302° C) in COOK mode	
	E3	Oven temp too high – over 950° F (510° C) in CLEAN mode	
F4	**E1**	Meat probe malfunction – shorted	1. Disconnect meat probe and measure probe resistance: 78kΩ at 60°F (16°C); 37kΩ at 90°F (32°C). 2. If resistance is not valid, replace probe. 3. Insert probe and check for a firm connection between probe and jack (in oven cavity). 4. Check connection between jack and harness (in rear of oven).
F5	**E0**	Door is open, but latch is locked (condition exists when door switch is open indicating an open door, and latch switch is closed indicating a locked door)	1. Check the latch assembly: latch arm pivot joint, arm/motor connection, plunger and hook springs. 2. Check the Latch Motor: - Check for firm electrical connections. - Disconnect the two wires from the motor and measure the resistance of the motor. The resistance should be approximately 2450Ω. If the motor is open (∞Ω) or shorted (0Ω), it should be replaced. 3. Check the Latch Switch. Disconnect it and use a continuity tester: - Door latched = switch closed, continuity should read 0Ω. - Door unlatched = switch open, continuity should read ∞Ω. 4. Check Door Open/Closed Switch. Disconnect it and use a continuity tester: - Door open = switch open, continuity should read ∞Ω. - Door closed = switch closed, continuity should read 0Ω. 5. Check Sister Board. - Check latch motor connections – sister board. - Replace sister board. 6. Check power and element connections. 7. Replace control.
	E1	Self-clean latch will not lock/unlock	

WIRE HARNESS SCHEMATIC

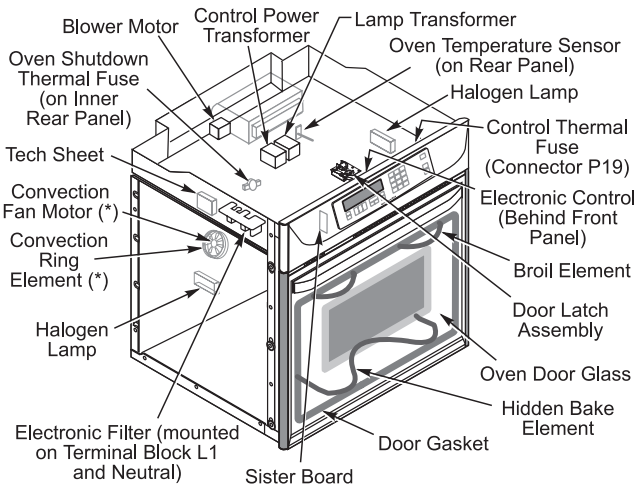
NOTES:

- When replacing the electronic control, be sure to program the cavity size. See “Programming the Cavity Size” on page 1.
- Dots indicate connections or splices.
- Circuit shown in STANDBY/OFF mode with oven door closed.



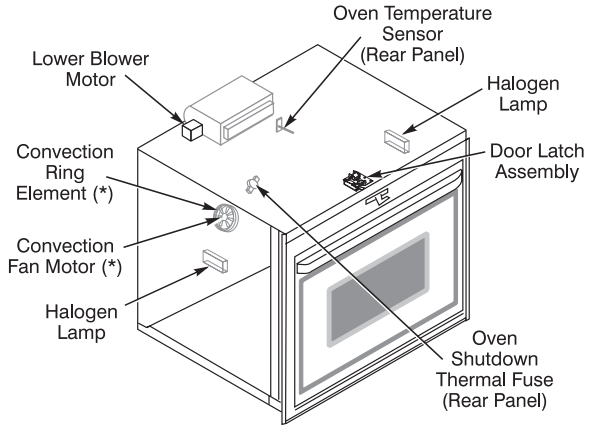


UPPER OVEN COMPONENTS



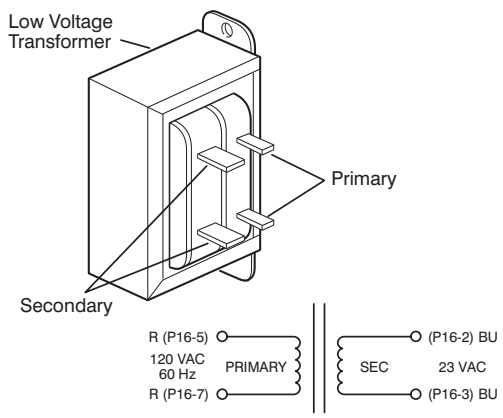
(*) Thermal Convection Models Only

LOWER OVEN COMPONENTS



(*) Thermal Convection Models Only

CONTROL POWER TRANSFORMER



ELECTRICAL COMPONENTS KEY

OVEN COMPONENT	FRONT / REAR SERVICEABLE
ELECTRONIC CONTROL	FRONT
MEMBRANE SWITCH	FRONT
DOOR SWITCH	FRONT
LATCH SWITCH	FRONT
LATCH MOTOR	FRONT
MEAT PROBE SENSOR	PROBE - FRONT JACK - REAR
OVEN TEMPERATURE SENSOR	FRONT
CONSOLE BLOWER	REAR
HALOGEN LIGHTS	LIGHT BULB - FRONT LIGHT ASSY. - REAR
CAVITY LIGHT TRANSFORMER	FRONT
CONVECTION FAN MOTOR	REAR
OVEN SHUTDOWN THERMAL FUSE	REAR
BAKE ELEMENT	REAR
OUTER BROIL ELEMENT	FRONT
INNER BROIL ELEMENT	FRONT
CONVECTION RING ELEMENT	FRONT
CONTROL POWER TRANSFORMER	FRONT
ELECTRONIC FILTER	FRONT
SISTER BOARD	FRONT
CONTROL THERMAL FUSE	FRONT

RELAY LOGIC UPPER AND LOWER OVEN

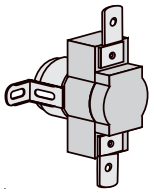
MODES / RELAYS	BAKE	IN BROIL	OUT BR	CONV ELEM	CONV FAN	DLB RELAY	OVEN LT	BLOWER
OFF	O	O	O	O	O	O	⊠	⊠
PREHEAT-BAKE	+	+	+	O	O	X	⊠	X
BAKE	+	+	+	O	O	X	⊠	X
ECONO BROIL	O	X	O	O	O	X	⊠	X
MAXI BROIL	O	X	X	O	O	X	⊠	X
CONV BROIL	O	X	X	O	X	X	⊠	X
PREHEAT-CONV	+	+	+	O	X	X	⊠	X
CONV ROAST	+	+	+	O	X	X	⊠	X
CONV BAKE 24″	O	O	O	+	X	X	⊠	X
CONV BAKE 27″	O	O	O	X	X	X	⊠	X
CONV BAKE 30″	+	O	O	X	X	X	⊠	X
PREHEAT-CLEAN 24″, 27″	+	O	+	O	O	X	O	X
PREHEAT-CLEAN 30″	+	+	O	O	O	X	O	X
CLEAN	+	+	X	O	O	X	O	X
PREHEAT DEHYDRATE	O	O	O	+	X	X	⊠	X
DEHYDRATE	O	O	O	X	X	X	⊠	X
PREHEAT BREAD	O	O	O	+	X	X	⊠	X
RAISING BREAD	O	O	O	+	X	X	⊠	X

RELAY LOGIC KEY

O – OFF
X – ON
\+ – CYCLING (MAX PERIOD: 60 SEC.)
⊠ – ON OR OFF

OVEN SHUTDOWN THERMAL FUSE

The oven shutdown thermal fuse is located at the back of the oven. It will shut down the elements if the temperature at the back of the oven exceeds component limits.



Verify that the oven shutdown thermal fuse is OK.

To replace this thermal fuse, refer to chart at right for correct part number.

Thermal Fuse Part No.	Opening Temp. °F	Reclose Temp. °F	Marking (with Black Letters)
4452223	266°F ± 10°F	–31°F MAX	Pink/Wht Stripe
4451442	248°F+18°F to 248°F – 0°F		Yellow/Wht Stripe
4450934	338°F ± 11.7°F		Red
4450334	275°F ± 11.7°F		Orange/Wht Stripe
4450250	320°F ± 11.7°F		Blue
4450249	302°F ± 11.7°F		Green/Wht Stripe
8300802	230°F+18°F to 230°F – 0°F		Blue/Wht Stripe

THE FOLLOWING COMPONENTS CAN BE TESTED AT THE CONTROL PANEL*:

LOWER OVEN

COMPONENTS	FRONT/REAR SERVICEABLE	CHECK POINTS	RESULTS
Door Switch	Front	P21-3 (BR/W) to P15-1 (TAN)	Door Open = Open Circuit Door Closed = Closed Circuit
Door Lock Motor (with Door Closed)	Front	On Sister Board P2-3 (Y/W) to Neutral (W)	2500 Ω
Oven Temperature Sensor	Front	Sensor P21-2 (V/W) to P21-1 (V/W)	1080 Ω @ 70°F
Blower	Rear	P19-6 (GY) to Neutral (W)	14 Ω to 18 Ω
Oven Light Transformer	Front	Primary Winding Secondary Winding	40 Ω to 45 Ω Less than 1 Ω
Oven Shutdown Thermal Fuse	Rear	P23-3 (OR) to (R) Wire at Double Line Break Relay	Closed Circuit
Bake Element	Rear	P23-4 (R) to (R) Wire at Double Line Break Relay	25 Ω to 30 Ω
Inner Broil Element	Front	P23-3 (OR) to (R) Wire at Double Line Break Relay	31 Ω to 36 Ω
Outer Broil Element	Front	P23-2 (BU) to (R) Wire at Double Line Break Relay	53 Ω to 59 Ω
Convection Ring Element	Front	P23-1 (Y) to (R) Wire at Double Line Break Relay	33 Ω to 37 Ω
Convection Fan Motor	Rear	P19-8 (OR/W) to Neutral (W)	8 Ω to 12 Ω
Latch Switch	Front	P21-4 (BU/W) to P15-1 (TAN)	Door Unlocked = Open Circuit Door Locked = Closed Circuit
Sister Board	Front	P20-3 (BU/W) to P1-2 (BU/W) and P20-4 (GY/W) to P1-1 (GY/W)	Closed Circuit

* Short double line break relay red wire terminals fastons

UPPER OVEN

COMPONENTS	FRONT/REAR SERVICEABLE	CHECK POINTS	RESULTS
Door Switch	Front	P15-2 (BR) to P15-1 (TAN)	Door Open = Open Circuit Door Closed = Closed Circuit
Door Lock Motor (with Door Closed)	Front	On Sister Board P2-1 (Y) to Neutral (W)	2500 Ω
Oven Temperature Sensor	Front	Sensor P15-4 (V) to P15-5 (V)	1080 Ω @ 70°F
Blower	Rear	P19-6 (GY) to Neutral (W)	14 Ω to 18 Ω
Oven Light Transformer	Front	Primary Winding Secondary Winding	40 Ω to 45 Ω Less than 1 Ω
Oven Shutdown Thermal Fuse	Rear	P18-2 (OR) to (R) Wire at Double Line Break Relay	Closed Circuit
Bake Element	Rear	P18-3 (R) to (R) Wire at Double Line Break Relay	25 Ω to 30 Ω
Inner Broil Element	Front	P18-2 (OR) to (R) Wire at Double Line Break Relay	31 Ω to 36 Ω
Outer Broil Element	Front	P18-1 (BU) to (R) Wire at Double Line Break Relay	53 Ω to 59 Ω
Convection Ring Element	Front	P18-4 (Y) to (R) Wire at Double Line Break Relay	33 Ω to 37 Ω
Convection Fan Motor	Rear	P19-7 (OR) to Neutral (W)	8 Ω to 12 Ω
Meat Probe Jack	Rear	P15-6 (BU) to P15-8 (Y)	Probe into Jack-Check for 78 kΩ @ Room Temp.
Control Panel Thermal Fuse	Front	P19-1 (BK) to L1 (BK) Across Fuse	Closed Circuit
Latch Switch	Front	P15-3 (BU) to P15-1 (TAN)	Door Unlocked = Open Circuit Door Locked = Closed Circuit
Sister Board	Front	P20-1 (BU) to P1-4 (BU) and P20-2 (GY) to P1-3 (GY)	Closed Circuit

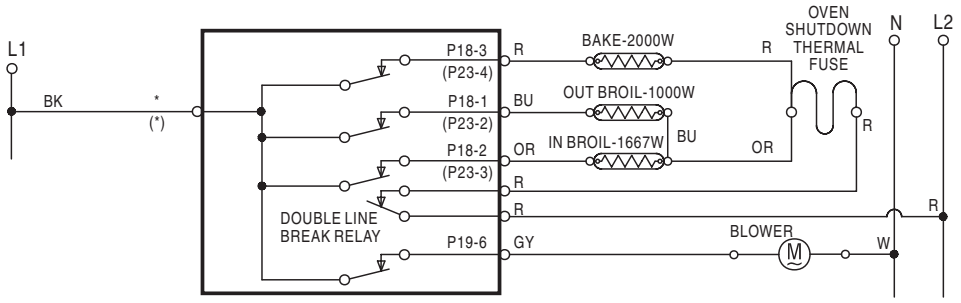
OVEN STRIP CIRCUITS

The following individual circuits are for use in diagnosis. **Before starting diagnosis, check the line voltage and for blown fuses.**

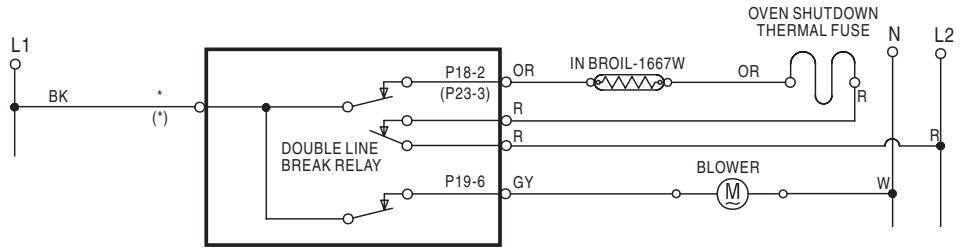
NOTES:

- Pin numbers and wire colors shown in parentheses ( ) denote lower oven connections.
- Pins denoted as * see wire harness schematic on page 3 for routing configuration from relays to L1.

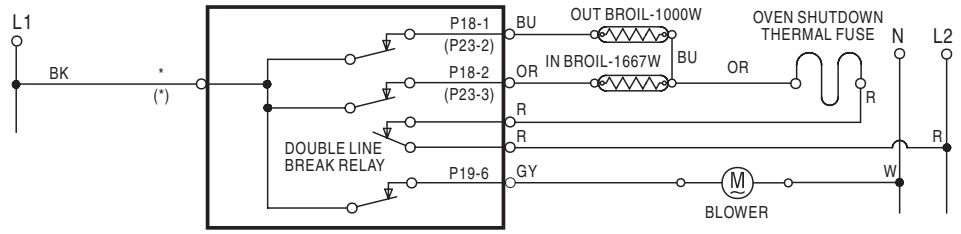
BAKE AND PREHEAT-BAKE



ECONO BROIL

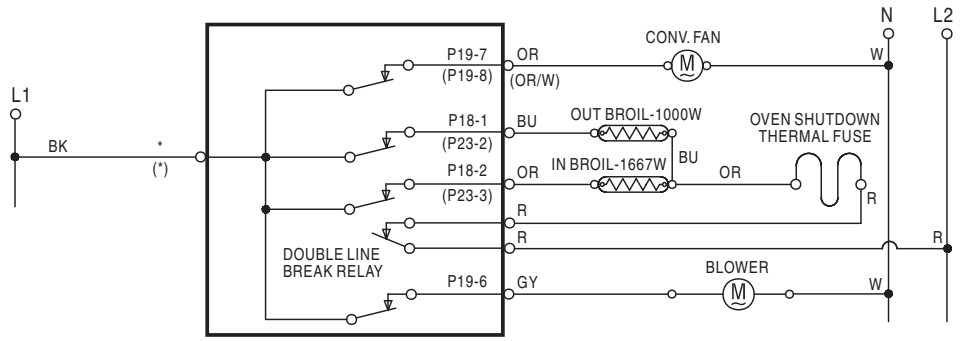


MAXI BROIL



CONVECTION BROIL

(THERMAL CONVECTION MODELS, ONLY)



OVEN STRIP CIRCUITS

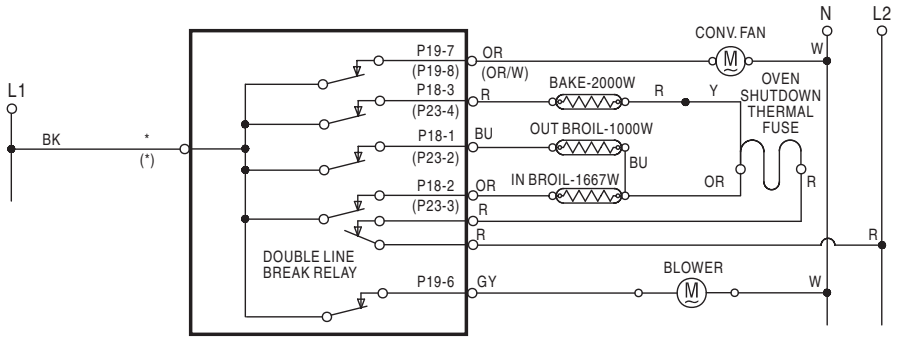
The following individual circuits are for use in diagnosis. **Before starting diagnosis, check the line voltage and for blown fuses.**

NOTES:

- Pin numbers and wire colors shown in parentheses ( ) denote lower oven connections.
- Pins denoted as * see wire harness schematic on page 3 for routing configuration from relays to L1.

CONVECTION ROAST AND PREHEAT-CONVECTION

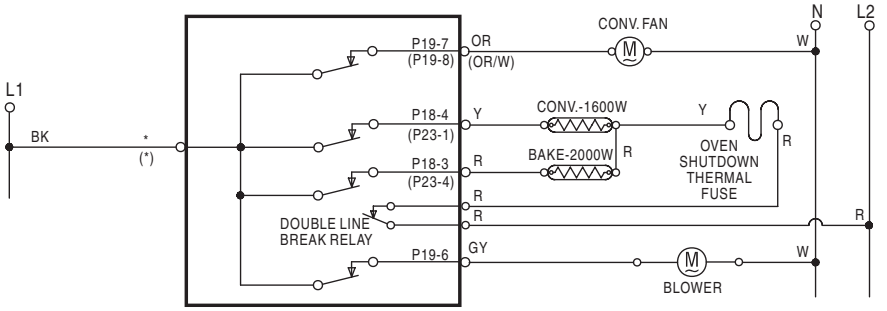
(THERMAL CONVECTION MODELS, ONLY)



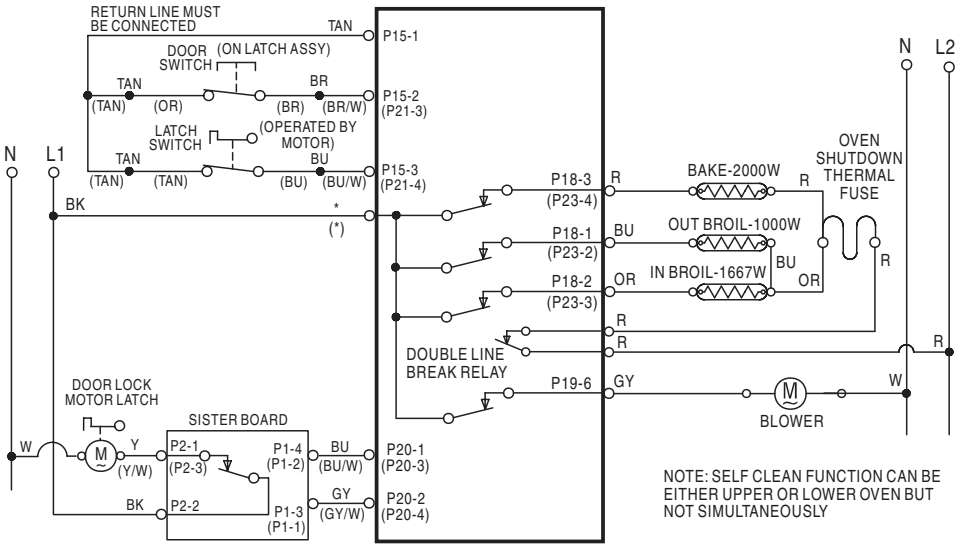
CONVECTION BAKE

(THERMAL CONVECTION MODELS, ONLY)

(BAKE ELEMENT USED 30” MODELS ONLY)



CLEAN AND PREHEAT CLEAN



NOTE: SELF CLEAN FUNCTION CAN BE EITHER UPPER OR LOWER OVEN BUT NOT SIMULTANEOUSLY

MANUFACTURED UNDER ONE OR MORE OF THE
FOLLOWING UNITED STATES PATENTS:

4,102,322 4,364,589 4,467,184

OTHER PATENTS PENDING