

⚠ WARNING**Electrical Shock Hazard**

Disconnect power before servicing.
Replace all panels before operating.
Failure to do so can result in death or electrical shock.

DIAGNOSTICS

Before servicing, 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 and defective terminals, or wires not pressed into connectors far enough.
- Voltage checks **must** be made with all connectors attached to the boards.
- Resistance checks **must** be made with power cord unplugged from outlet, and with wiring harness or connectors **disconnected**.
- Is oven in "Sabbath Mode"? If so "SAB" will appear in the digital display. Press and hold "6" key for 5 seconds to end Sabbath Mode.
- To check for last five Fault Codes: Press and hold "0" key to access previous codes. Numeric keys 0-4 indicate faults 1-5 respectively, with "0" being the most recent code.

PROBLEM: Bake Temperature Needs Adjustment

1. Press BAKE pad for 5 seconds. The default temp. 0° or a previously entered offset temp. will show in the Temp. Display.
 - Press the TEMP pad "up" arrow (⬆) to **increase** the temperature in 5° or 3°C increments.
 - Press the TEMP pad "down" arrow (⬇) to **decrease** the temperature in 5°F or 3°C increments.

Max. offset temperature adjustment is ±35°F or ±21°C.
2. Press the START pad to save the temp. adjustment.

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.

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

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

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.

1. Size is shown in display - "ID 24".
2. Press CLOCK SET/START until correct size is displayed.
3. Press CANCEL key (do not press the OVEN START key).
4. Press and hold "1" key for 5 seconds to verify programming.

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.

FAILURE/ERROR DISPLAY CODES

FAULT CODE	ERROR CODE	MEANING OF FAILURE CODE	RECOMMENDED REPAIR PROCEDURE
F0		Default F code — No failure	Will only be displayed if user presses and holds "0" key for 5 seconds and there are no pre-existing faults. 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	Cancel key drive line open	
F3	E0	Temperature sensor opened	1. Check sensor connection. 2. Measure sensor resistance (1080 Ω at 21°C [70°F]; add 2 Ω per degree). If resistance is not valid, replace sensor. 3. If sensor resistance and connections are good, then the oven cavity temperature must have exceeded a safe level. Check for welded-closed relays on the control.
	E1	Temperature sensor shorted	
	E2	Oven temp too high (over 301°C [575°F] in Cook mode)	
	E3	Oven temp too high (over 510°C [950°F] in Clean mode)	
F4	E1	Meat probe malfunction - shorted	1. Disconnect meat probe and measure probe resistance: (78k Ω at 15.6°C [60°F]; 37k Ω at 32.2°C [90°F]). If resistance is not valid, replace probe. 2. Insert probe and check for a firm connection between probe and jack (in oven cavity). 3. 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 closed indicating an open door, and latch switch is closed indicating a locked door)	1. Check the latch assembly: - Check latch arm pivot joint, arm/solenoid connection, solenoid spring, and spring washer. 2. Check the Latch Solenoid: - Check for firm electrical connections. - Disconnect the two wires from the solenoid and measure the resistance of the solenoid. A small resistance (approx. 175 Ω) is normal. If the solenoid is open (∞ Ω) or shorted (0 Ω) it should be replaced. 3. Check the Latch Switch: Disconnect it and use a continuity tester: - Door latched = switch closed, continuity should read 0 Ω . - Door unlatched = switch open, continuity should read ∞ Ω . 4. Check Door Open/Closed Switch. Disconnect it and use a continuity tester: - Door open = switch closed, continuity should read 0 Ω . - Door closed = switch open, continuity should read ∞ Ω . 5. Check power and element connections.
	E1	Self clean latch will not lock	
	E5	Self clean temperature (288°C [550°F]) not reached within 45 minutes	
	E7	Self clean latch will not unlock	
F6	E0	Return line not connected	If switch pulse return line is not connected, electronic control will display F6 within 60 seconds after power up. Replace control.

ELECTRONIC CONTROL PINOUTS

PIN	FUNCTION	COLOR
P1-1	L1 (INPUT)	BK
P1-2	NOT CONNECTED	
P1-3	N (INPUT)	W
P1-4	NOT CONNECTED	
P1-5	COOLING FAN	GY
P1-6	CONVECTION FAN	OR
P1-9	OVEN LIGHT	BK

PIN	FUNCTION	COLOR
P3-1	GROUND	GN
P3-2	TRANSFORMER SECONDARY	BU
P3-3	TRANSFORMER SECONDARY	BU
P3-4	NOT CONNECTED	
P3-5	TRANSFORMER PRIMARY (L1)	R
P3-6	NOT CONNECTED	
P3-7	TRANSFORMER PRIMARY (N)	R

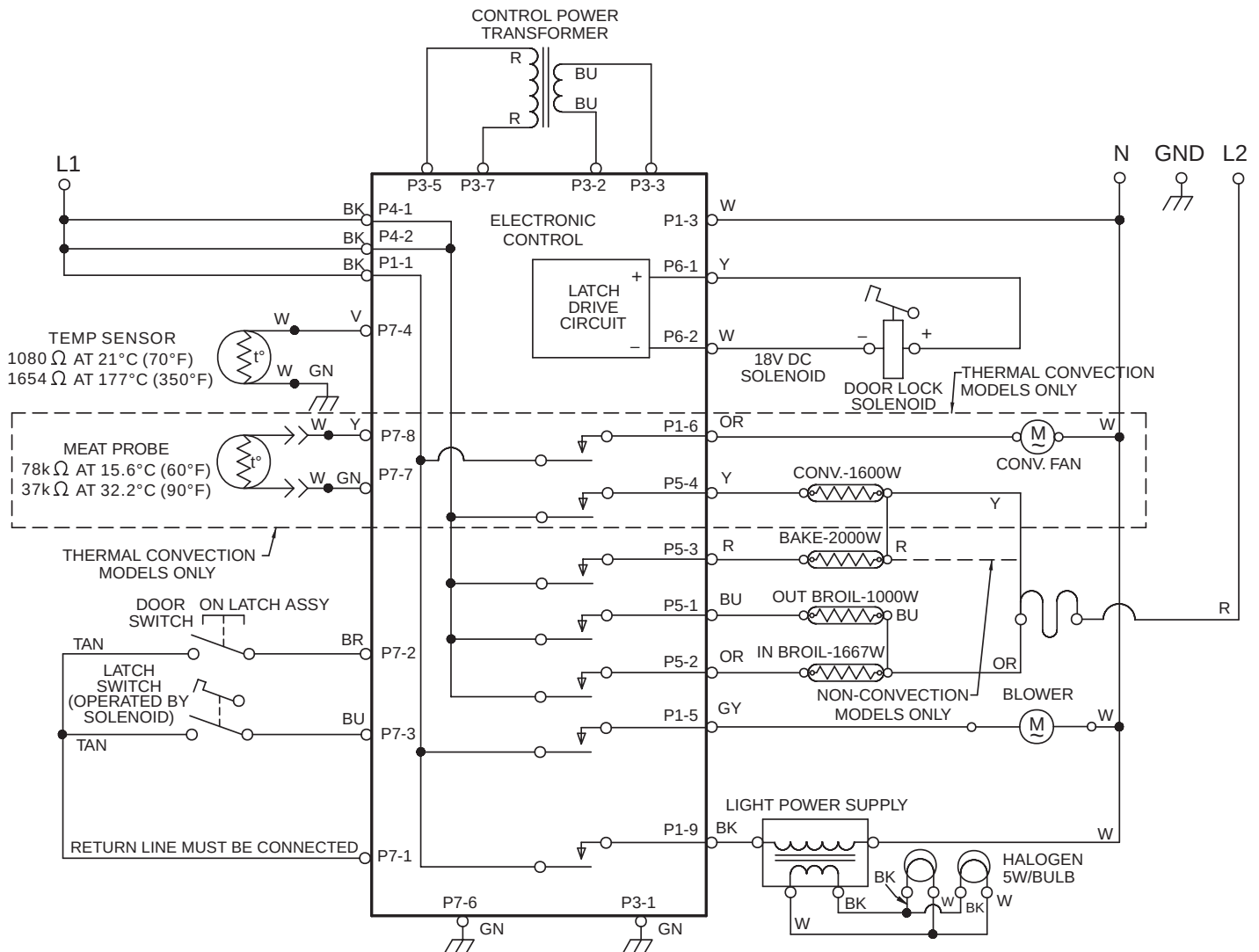
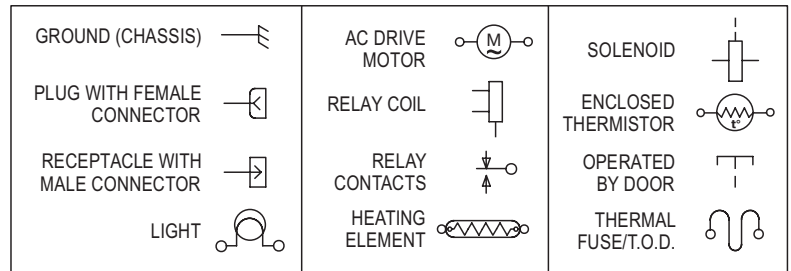
PIN	FUNCTION	COLOR
P4-1	L1	BK
P4-2	L1	BK

P5-1	OUTER BROIL	BU
P5-2	INNER BROIL	OR
P5-3	BAKE	R
P5-4	CONVECTION RING	Y

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



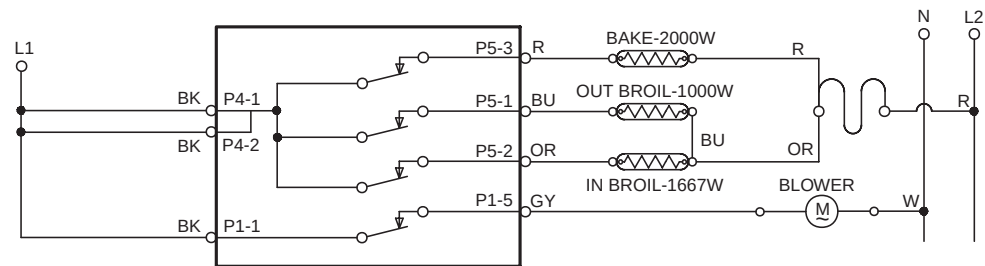
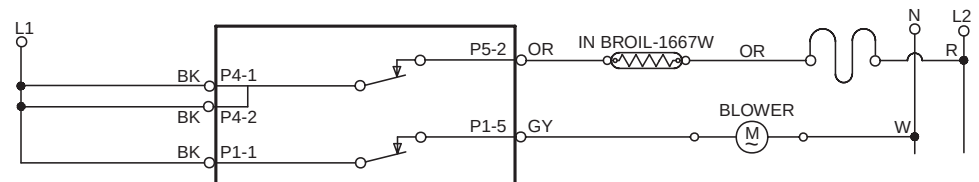
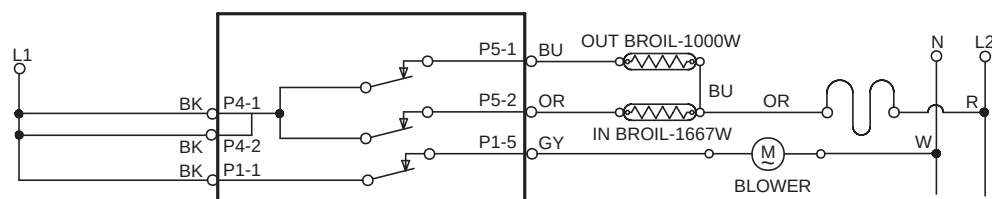
ELECTRONIC CONTROL PINOUTS

PIN	FUNCTION	COLOR
P6-1	LATCH SOLENOID (+)	Y
P6-2	LATCH SOLENOID (-)	W
P6-3	NOT CONNECTED	
P6-4	NOT CONNECTED	
P6-5	NOT CONNECTED	
P6-6	NOT CONNECTED	

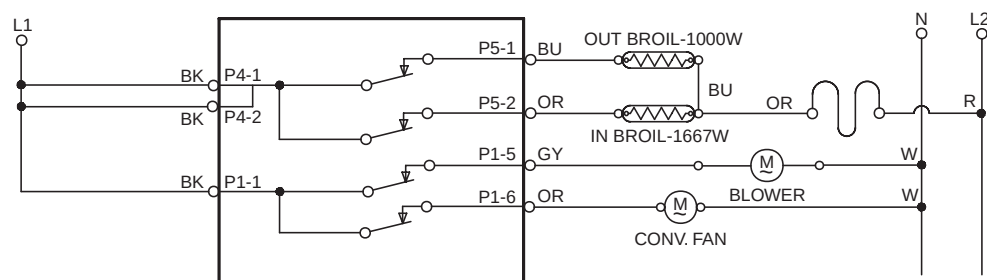
PIN	FUNCTION	COLOR
P7-1	SWITCH COMMON (STROBE)	TAN
P7-2	DOOR SWITCH	BR
P7-3	LATCH SWITCH	BU
P7-4	TEMP SENSOR	V
P7-5	NOT CONNECTED	
P7-6	GROUND	GN
P7-7	MEAT PROBE SENSOR (GRND)	GN
P7-8	MEAT PROBE SENSOR	Y

OVEN STRIP CIRCUITS

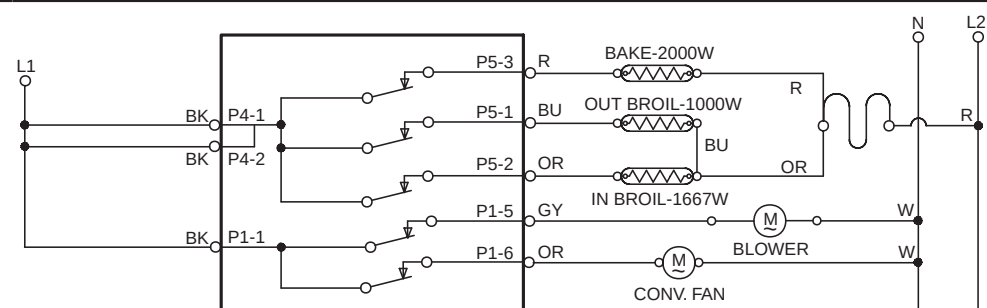
The following individual circuits are for use in diagnosis.

Before starting diagnosis, check the line voltage and for blown fuses.**PREHEAT-BAKE/BAKE****ECONO BROIL****MAXI BROIL****CONVECTION BROIL**

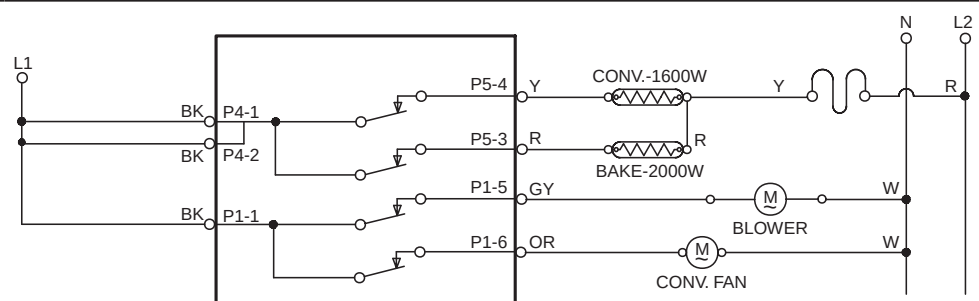
(THERMAL CONVECTION MODELS ONLY)

**CONVECTION ROAST AND PREHEAT-CONVECTION BAKE**

(THERMAL CONVECTION MODELS ONLY)

**CONVECTION BAKE**

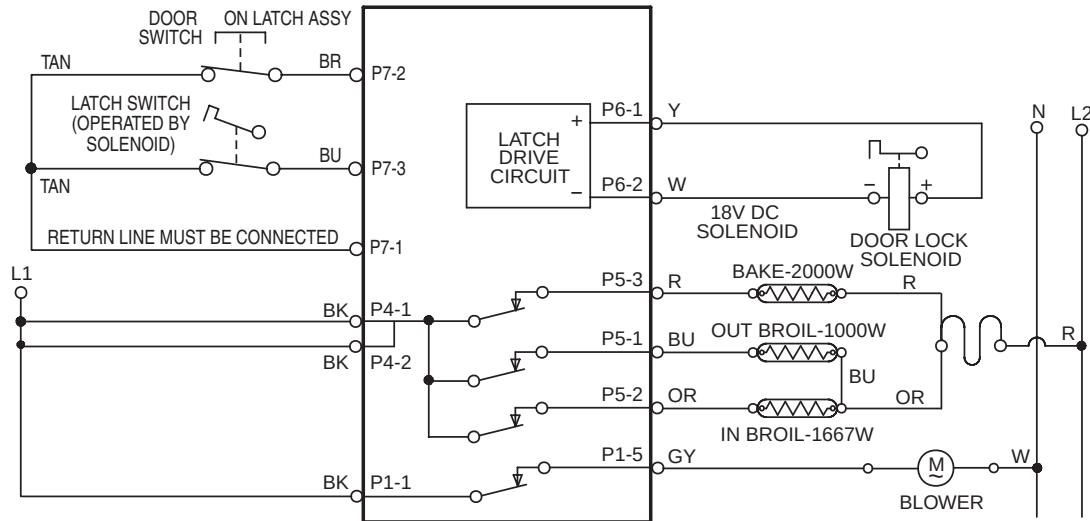
(THERMAL CONVECTION MODELS ONLY)



OVEN STRIP CIRCUITS

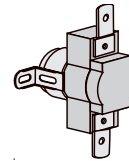
The following individual circuits are for use in diagnosis.

Before starting diagnosis, check the line voltage and for blown fuses.

CLEAN**OVEN SHUTDOWN THERMAL FUSE**

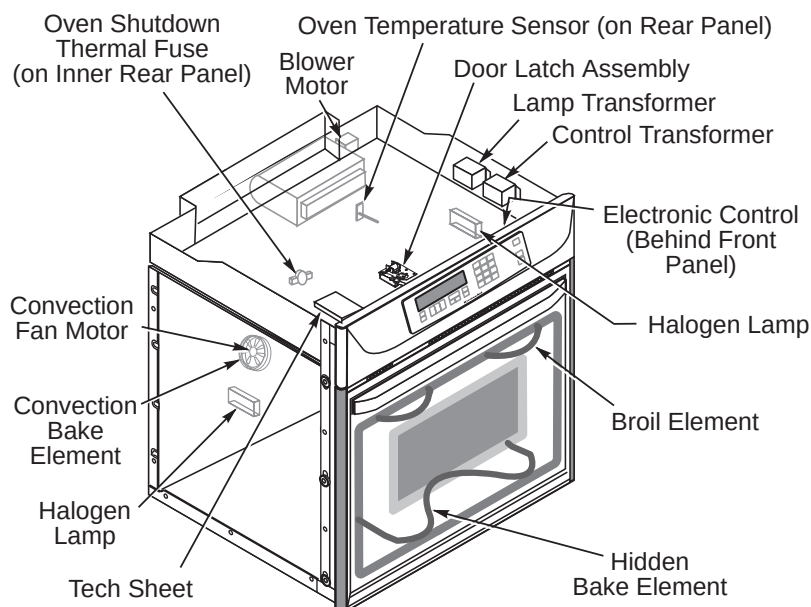
The oven shutdown thermal fuse is located at the back of the oven. It will shut down the elements if the temperature at the back of the oven exceeds component limits.

Verify that the oven shutdown thermal fuse is okay.

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

COMPONENTS	FRONT/REAR SERVICEABLE	CHECK POINTS	RESULTS
Door Switch	Front	P7-2 (BR) to P7-1 (TAN)	Door Open = Closed Circuit Door Closed = Open Circuit
Door Lock Solenoid (with Door Closed)	Front	P6-1 (Y) to P6-2 (W)	50 Ω
Oven Temperature Sensor	Front	P7-4 (V) to P7-6 (GN)	1080 Ω @ 21°C (70°F)
Blower	Rear	P1-5 (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	P5-2 (OR) or P5-3 (R) to Red Wire at Terminal Block	Closed Circuit
Bake Element	Rear	P5-3 (R) to Red Wire at Terminal Block	25 Ω to 30 Ω
Inner Broil Element	Front	P5-2 (OR) to Red wire at Terminal Block	45 Ω to 55 Ω
Outer Broil Element	Front	P5-1 (BU) to Red wire at Terminal Block	45 Ω to 55 Ω
Convection Ring Element	Front	P5-4 (Y) to Red Wire at Terminal Block	28 Ω to 35 Ω
Convection Fan Motor	Rear	P1-6 (OR) to Neutral (W)	8 Ω to 12 Ω
Meat Probe Jack	Rear	P7-7 (GN) to P7-8 (Y)	Probe into Jack - Check for 78k Ω @ Room Temperature
Latch Switch	Front	P7-3 (BU) to P7-1 (TAN)	Door Unlocked = Open Circuit Door Locked = Closed Circuit

OVEN COMPONENTS



ELECTRICAL COMPONENTS KEY

OVEN COMPONENT	FRONT / REAR SERVICEABLE
ELECTRONIC CONTROL	FRONT
MEMBRANE SWITCH	FRONT
DOOR SWITCH	FRONT
LATCH SWITCH	FRONT
LATCH SOLENOID	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
THERMAL FUSE/T.O.D.	REAR
BAKE ELEMENT	REAR
OUTER BROIL ELEMENT	FRONT
INNER BROIL ELEMENT	FRONT
CONVECTION RING ELEMENT	FRONT

RELAY LOGIC

MODES	RELAYS	BAKE	IN BR	OUT BR	** CONV ELEM	** CONV FAN	OV LT	BLOWER
OFF	O	O	O	O	O	⊗	⊗	
■ PREHEAT-BAKE	+	+	+	O	O	⊗	X	
BAKE 24",30" ■	+	+	+	O	O	⊗	X	
BAKE 27" ■	+	+	+	O	O	⊗	X	
ECONO BROIL	O	X	O	O	O	⊗	X	
MAXI BROIL	O	X	X	O	O	⊗	X	
CONV BROIL	O	X	X	O	X	⊗	X	
● PREHEAT-CONV	+	+	+	O	X	⊗	X	
CONV ROAST 24" ●	X	O	X	O	X	⊗	X	
CONV ROAST 27",30" ●	X	+	X	O	X	⊗	X	
CONV BAKE 24" ●	O	O	O	+	X	⊗	X	
CONV BAKE 27" ●	O	O	O	X	X	⊗	X	
CONV BAKE 30" ●	+	O	O	X	X	⊗	X	
▲ PREHEAT-CLEAN	+	+	+	O	O	O	X	
CLEAN ▲	X	+	+	O	O	O	X	
PREHEAT DEHYDRATE	O	O	O	+	X	⊗	X	
DEHYDRATE	O	O	O	X	X	⊗	X	
PREHEAT-BREAD	O	O	O	+	X	⊗	X	
RAISING BREAD	O	O	O	+	X	⊗	X	

** Thermal Convection Models Only

RELAY LOGIC KEY

O - OFF

X - ON

+ - CYCLING (MAX PERIOD = 60 SEC)

⊗ - ON OR OFF

PART NO. 4451876 REV. D

NOTE: This sheet contains important
Technical Service Data**FOR SERVICE TECHNICIAN ONLY**
DO NOT REMOVE OR DESTROYMANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING
UNITED STATES PATENTS:

4,102,322

4,364,589

4,467,184

OTHER PATENTS PENDING