Double Oven Electric Range—Technical Information

MER6875BA*

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- Refer to Service Manual 16023416 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.

⚠ CAUTION

All safety information must be followed as provided in Service Manual 16023416.

⚠ WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to range before servicing, unless testing requires power.

Sears Models	MER6875BA*
Power Source @ 240 V (208 V)	
Electrical rating	12.9 kW (9.7 kW)
Frequency	60 Hz
Element Wattage @ 240 V	
Ribbon element, 6 inch, warmer	100 W*
Ribbon element, 6"	1,200* (2)
Ribbon element, dual, 9"	2,400/1,100*
Ribbon element, triple, 12"	2,700/2,000/1,000*
Convection Element	1,850*
Oven Wattage @ 240 V	
Upper Bake 4 pass	1,800*
Lower Bake 4 pass	2,600*
Upper Broil 4 pass	2,200*
Lower Broil 4 pass	3,000*
Convection	1,850*
Oven Interior Dimensions in. (cm)	
Height	16 1/2 (42)
Width	23 (58)
Depth	17 1/2 (46)
Product Exterior Dimensions in. (cm)	
Height overall	46 3/4 (118)
Width	29 7/8 (76)
Depth oven door closed w/out handle	26 1/8 (66)
Features	
Frameless glass door w/window	Yes
Interior oven light	Yes
Three oven racks in lower oven	Yes
One oven rack in upper oven	Yes
Automatic oven door latch	Yes
Convection oven	Yes
Cooktop warmer/simmer element	Yes
Weight lbs. (kg)	
Crated	235 (107)

*** Rating of 208 VAC is approximately 80% of 240 VAC value.**

Component Testing Procedures

⚠ WARNING

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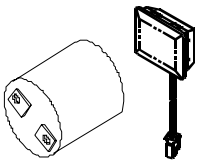
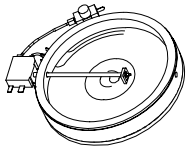
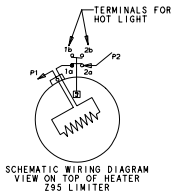
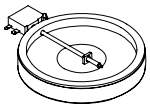
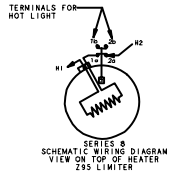
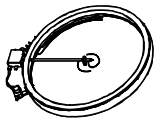
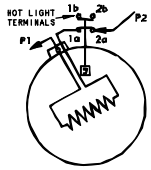
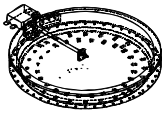
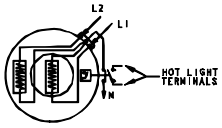
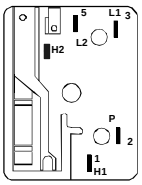
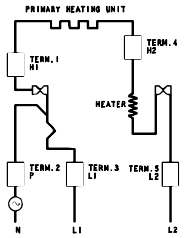
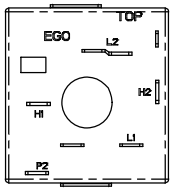
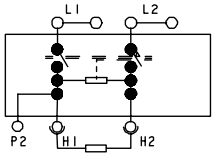
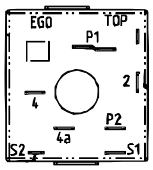
Illustration	Component	Test Procedure	Results
	Oven light socket	Remove one wire from receptacle and check continuity between terminals..... Measure voltage at oven light	Continuity with bulb inserted. 120 VAC, see wiring diagram for terminal identification. If voltage is not present at oven light, check wiring or light switches.
100W warmer element 		Disconnect wire leads to element and measure cold resistance of terminals..... Measure voltage at element	Approx. 130 to 145 Ω. 240 VAC. If voltage is not present, check wiring.
1200W ribbon element 		Disconnect wire leads to element and measure cold resistance of terminals..... Measure voltage at element	Approx. 44 to 49 Ω. 240 VAC. If voltage is not present, check wiring.
2700/1000/1000W triple 		Measure voltage at element ..... Disconnect wiring to element and measure cold resistance of terminals.....	240 VAC. **700 W (Outer):**..... Approx. 82 Ω. **1000 W (Middle):**.. Approx. 57 Ω. **1000 W (Inner):**..... Approx. 57 Ω.
1300/1100W dual 		Measure voltage at element ..... Disconnect wiring to element and measure cold resistance of terminals.....	240 VAC. **1300 W (Outer):**.... Approx. 43 Ω. **1100 W (Inner):**..... Approx. 51 Ω.
Snap action infinite switch 		Connect Volt-ohms meter to H1 and H2. Measure the following for voltages at LO, MED, HI: H1 to H2.....	**Approximate** **Time On** **Time Off** LO 5% 95% MED (4-5) 35% 65% HI 100% 0% 240 VAC. If not, replace switch.
Infinite switch 		Connect Volt-ohms meter to H1 and H2. Measure the following for voltages at LO, MED, HI: H1 to H2.....	**Approximate** **Time On** **Time Off** LO 5% 95% MED (4-5) 30% 70% HI 100% 0% 240 VAC. If not, replace switch.
	Infinite switch, dual element	Connect Volt-ohms meter to H1 and H2. Measure the following for voltages at LO, MED, HI: H1 to H2.....	**Approximate** **Time On** **Time Off** LO 5% 95% MED (4-5) 35% 65% HI 100% 0% 240 VAC. If not, replace switch.

Component Testing Procedures

⚠ WARNING

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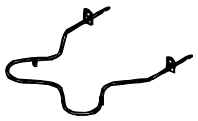
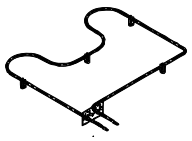
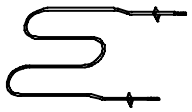
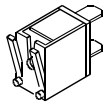
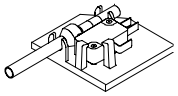
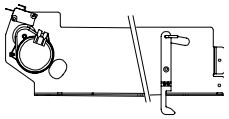
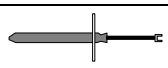
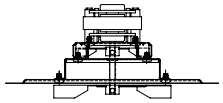
Illustration	Component	Test Procedure	Results
	Bake element, upper	Disconnect wire leads to element and measure resistance of terminals..... Measure voltage at bake element.....	Approximately 31.0 Ω. 240 VAC, see wiring diagram for terminal identification. If voltage is not present at bake element, check wiring.
	Bake element, lower	Disconnect wire leads to element and measure resistance of terminals..... Measure voltage at bake element.....	Approximately 21.3 Ω. 240 VAC, see wiring diagram for terminal identification. If voltage is not present at bake element, check wiring.
	Broil element, upper	Disconnect wire leads to element and measure resistance of terminals..... Measure voltage at broil element.....	Approximately 25.4 Ω. If not, replace. 240 VAC, see wiring diagram for terminal identification. If voltage is not present at broil element, check wiring.
	Broil element, lower	Disconnect wire leads to element and measure resistance of terminals..... Measure voltage at broil element.....	Approximately 18.6 Ω. 240 VAC, see wiring diagram for terminal identification. If voltage is not present at broil element, check wiring.
	Indicator lights	Measure voltage at indicator light.....	If voltage is present and light does not work, replace light. If voltage is not present at indicator light, check wiring.
	Rocker switch	Measure continuity of switch positions: Open..... Closed	 Infinite. Continuity.
	Door plunger switch	Measure continuity at the following points: C-NO	 **Plunger in:**.....Continuity. **Plunger out:**.....Infinite.
	Limiter	Normally closed. Verify proper operation. Open..... Approx. 216° F (102° C)..... Closed..... Approx. 176° F (80° C).....	 Infinite. Continuity.
	Autolatch assembly with switch	Disconnect wires and test for continuity per wiring diagram..... Refer to Parts Manual for correct autolatch switch associated with the correct manufacturing number.	See wiring diagram for schematic layout. Access assembly by removing left side panel.
	Temperature sensor	Measure resistances	Approximately 1000 Ω at room temperature (75° F).
	Convection element	Disconnect wiring to element and measure cold resistance of terminals..... Measure voltage at convect element.....	Approximately 30 Ω. 240 VAC.
	Convection motor, 2-speed	Measure voltage..... Remove wires, check resistance..... Check motor windings to ground ..... Motor, hi-speed..... Motor, low-speed	120 VAC. Approximately 30 Ω. No continuity. Approximately 1200 RPM. Approximately 900 RPM.

Control Testing Procedures

⚠ WARNING

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Control	Feature	Procedure	Results
H2.5	Oven Temperature Adjustment (Upper Oven)	Press ***Upper Bake*** pad. Enter ***550*** on the digit-pad. Immediately press and hold ***Upper Bake*** pad for 3 to 5 seconds. Oven can be adjusted from -35 to +35 degrees in 5-degree increments by pressing ***Autoset*** pad. To avoid over adjusting the oven, move temperature 5 degrees each time. Wait 4 seconds for the data entry timer to expire to accept the change. Temperature adjustment will be retained even through a power failure.	While increasing or decreasing oven temperature, oven self-cleaning temperature is not affected.
H2.5	Oven Temperature Adjustment (Lower Oven)	Press ***Lower Bake*** pad. Enter ***550*** on the digit-pad. Immediately press and hold ***Lower Bake*** pad for 3 to 5 seconds. Oven can be adjusted from -35 to +35 degrees in 5-degree increments by pressing ***Autoset*** pad. To avoid over adjusting the oven, move temperature 5 degrees each time. Wait 4 seconds for the data entry timer to expire to accept the change. Temperature adjustment will be retained even through a power failure.	While increasing or decreasing oven temperature, oven self-cleaning temperature is not affected.
H2.5	Temperature Display	Press and hold ***Upper Cancel*** and ***Upper Bake*** pads for 3 to 5 seconds.	Indicates °F or °C on the display.
H2.5	Clock Display	Press and hold ***Upper Cancel*** and ***Clock*** pads for 3 to 5 seconds.	Turns clock display on or off.
H2.5	24-Hour Clock	Press and hold ***Upper Cancel*** and ***Favorite*** pads for 3 to 5 seconds.	Displays either 12-hour or 24-hour time format.
H2.5	Factory Default	Press and hold ***Upper Cancel*** and ***Upper Keep Warm*** pads for 3 to 5 seconds.	Resets control to factory settings.
H2.5	12-Hour Off	Control automatically cancels cooking operation and removes all relay drives 12 hours after the last pad touch.	See Sabbath mode to disable.
H2.5	Sabbath Mode	Hold ***Clock*** pad for 3 to 5 seconds to activate Sabbath mode. Hold ***Clock*** pad for 3 to 5 seconds to disable Sabbath mode.	"SAbbAth" displays for 5 seconds, then changes to "SAb" (displays in Temp area). All pad inputs are disabled except ***CANCEL*** and ***CLOCK*** pads. This mode disables the normal 12-hour shutoff to allow operation of the bake mode for a maximum of 72 hours.

Control Testing Procedures

⚠ WARNING

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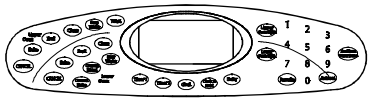
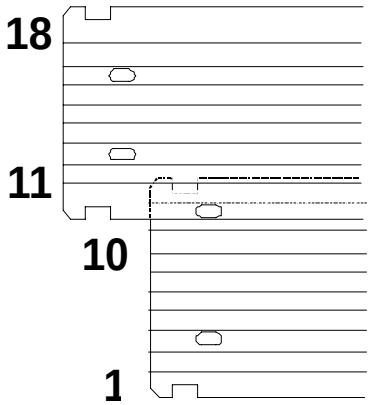
Control	Feature	Procedure	Results
H2.5	Beeper Volume	Press and hold ***Upper Cancel*** and ***Delay*** pads for 3 to 5 seconds to adjust beeper loudness level. Change setting by pressing the ***Autoset*** pad.	Volume settings are Low, Medium and High.
H2.5	Child lock out	Press and hold ***Upper Cancel*** and ***Cook & Hold*** pads for 3 to 5 seconds. **"OFF"** will display where the temperature normally appears. **"LOCK"** flashes while door is locking. To reactivate the control, press and hold ***Cancel*** and ***Cook & Hold*** pads for 3 seconds.	This disables the electronic oven control and prevents children from accidentally programming the oven. Child lockout features must be reset after a power failure.
H2.5	Diagnostic Code Display	Press and hold ***Upper Cancel*** and ***Autoset*** pads for 3 to 5 seconds. See "Quick Test Mode." Cycle through the codes using the number pads 1 through 5.	The last 5 diagnostic codes are stored in non-volatile memory. See **"Description of Error Codes"** for explanation.

Illustration/Component	Procedure	Results		
Control Panel Assembly 	Continuity is indicated as follows: **Cancel** and **Warming Zone** pads: 6600 Ω max. All other pads: 10000 Ω max. **NOTE:** Pins 6 & 9 are jumped together in control. **NOTE:** Pins 1 & 10 and 11 & 18 are loops in circuit. 	**Pad**	**Trace**	**Measurement**
		1	14 & 16	Continuity
		2	16 & 17	Continuity
		3	6 & 8	Continuity
		4	6 & 7	Continuity
		5	8 & 17	Continuity
		6	7 & 14	Continuity
		7	6 & 15	Continuity
		8	5 & 14	Continuity
		9	6 & 14	Continuity
		0	8 & 14	Continuity
		Lower Cancel	1 & 2	Continuity
		Lower Cancel	1 & 3	Continuity
		Upper Cancel	11 & 12	Continuity
		Upper Cancel	11 & 13	Continuity
		Convect Bake	4 & 15	Continuity
		Proofing	4 & 14	Continuity
		Delay	6 & 16	Continuity
		Clock	5 & 16	Continuity
		Favorite	5 & 7	Continuity
		Lower Clean	5 & 15	Continuity
		Upper Clean	7 & 16	Continuity
		Lower Bake	8 & 15	Continuity
		Lower Oven Light	7 & 15	Continuity
		Upper Keep Warm	7 & 17	Continuity
		Upper Oven Light	15 & 16	Continuity
		Autoset	14 & 17	Continuity
		Lower Keep Warm	4 & 8	Continuity
		Conv Roast	8 & 16	Continuity
		Lower Broil	4 & 5	Continuity
		Upper Bake	14 & 15	Continuity
		Timer 2	4 & 7	Continuity
		Cook & Hold	5 & 6	Continuity
		Upper Broil	5 & 17	Continuity
		Timer 1	4 & 16	Continuity
		Toast	7 & 8	Continuity
		Warm Zone	4 & 6	Continuity
		Warm Zone	4 & 17	Continuity
		Warm Zone	6 & 17	Continuity

Control Testing Procedures

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Relay Logic

Subsequent changes implemented after the release of this technical sheet may have altered the parameter identified in this chart.

COOKING MODE	BAKE	BROIL	CONVECT ELEMENT	CONVECT FAN	OVEN LIGHT
IDLE	✕	✕	✕	✕	◈
*BAKE PREHEAT	■	■	✕	✕	◈
BAKE	■	■	✕	✕	◈
BROIL PREHEAT	✕	■	✕	✕	◈
BROIL	✕	■	✕	✕	◈
CLEAN PREHEAT	✕	■	✕	✕	✕
CLEAN	■	✕	✕	✕	✕
KEEP WARM	■	✕	✕	✕	◈
CONVECT BAKE PREHEAT	■	■	■	■	◈
CONVECT BAKE	■	■	■	■	◈
CONVECT ROAST PREHEAT	■	■	■	■	◈
CONVECT ROAST	■	■	■	■	◈
PROOFING PREHEAT	■	✕	✕	✕	◈
PROOFING	■	✕	✕	✕	◈
DRYING PREHEAT	■	✕	✕	■	◈
DRYING	■	✕	✕	■	◈

*During preheat cycle, upper oven bake and broil elements are used at full power when lower oven is not active (provides a "quick preheat").

*During preheat cycle, broil element is used at 10% when lower oven is active.

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✕ - OFF

■ - CYCLING

◈ - ON OR OFF (DETERMINED BY USER INPUT)

Control Testing Procedures

⚠ WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to range before servicing, unless testing requires power.

"Quick Test" Mode for Electronic Range Control

Follow the procedure below to perform the Electronic Range Control (ERC) quick test. Instructions must be entered within 30 seconds of each other (via the touch pad) or the ERC will exit the quick test.

1. **Press and hold *CANCEL*** and ***BROIL*** pads for 3 to 5 seconds.
2. Once the control has entered the "Quick Test" mode, release both pads.
3. Press each of the following pads indicated in the table below.

NOTE: Press the applicable pad once to activate the associated response.
Press the applicable pad a second time to deactivate the associated response.

Display will indicate the following:

Pad	Response
BAKE	Bake DLB and Bake relay activated
BROIL	Broil DLB and Broil relay activated
KEEP WARM	Bake DLB and Broil DLB activated
CONVECT BAKE	Convection Fan on low speed
CONVECT ROAST	Convection Fan on high speed
CLEAN	MDL relay activated
COOK & HOLD	Displays last diagnostic code
FAVORITE	Displays EEPROM version number
TIMER	Displays main code version number
CLOCK	All display segments illuminated
OVEN LIGHT	Oven light activated
CANCEL	Exit Quick Test mode
1	Even segments on
2	Odd segments on
3	Convection Ring activated; Convection Ring DLB activated
4	N/A
5	N/A
6	N/A
7	N/A
8	N/A
9	N/A
AUTOSET	Steps through last 5 diagnostic codes
Warming Zone	Warming Zone Relays activated

Description of Error Codes

The Diagnostic Code Display Mode allows viewing of the error diagnostic codes.
Each error code consists of four digits. The following table describes the function of each digit.

Digit	Description	
1st	Primary System:	1 – Local to the control circuit board 3 – Sensor or meat probe 4 – Control input 9 – Door lock
2nd	Measurable:	d – Diagnostic: measurable parameter c – Control related, replace control
3rd	Secondary System:	Sequential numbering
4th	Oven Cavity:	1 – Upper oven (or single cavity oven) 2 – Lower oven c – Control specific

Diagnostic Code Display Mode may be activated at power-up by **pressing and holding** the ***AUTOSET*** pad for 3 to 5 seconds. **Diagnostic Code Display Mode may be accessed only when applying power to the control.**

Control Testing Procedures

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Diagnostic Code Checking

Code	Description	When Checked	Detection
1c1c	Shorted key	Always	1 minute
1c2c	Keyboard tail disconnected	Always	1 minute
1c31	Cancel key circuit problem	Always	20 seconds
1c32	Cancel key circuit problem	Always	20 seconds
1c6c	EEPROM error	When accessing EEPROM	3 tries
1c7c	Control not calibrated	Always	3 tries
1c8c	Cooking program error	Cook or clean programmed	3 tries
1d11	Runaway temp (650° F), door unlocked	Latch unlocked	1 minute
1d12	Runaway temp (650° F), door unlocked	Latch unlocked	1 minute
1d21	Runaway temp (950° F), door locked	Latch locked	1 minute
1d22	Runaway temp (950° F), door locked	Latch locked	1 minute
3d11	Sensor open	Cook or clean active	20 seconds
3d12	Sensor open	Cook or clean active	20 seconds
3d21	Sensor shorted	Cook or clean active	20 seconds
3d22	Sensor shorted	Cook or clean active	20 seconds
4d11	Door switch position failure	Clean or keyboard Lockout active	1 minute
4d12	Door switch position failure	Clean or keyboard Lockout active	1 minute
4d51	Door switch circuit failure	Convect, Clean or Keyboard Lockout programmed	1 minute
4d52	Door switch circuit failure	Convect, Clean or Keyboard Lockout programmed	1 minute
9d11	Latch will not lock	Latch should be locked	See Note [6]
9d12	Latch will not lock	Latch should be locked	See Note [6]
9d21	Latch will not unlock	Latch should be unlocked	See Note [6]
9d22	Latch will not unlock	Latch should be unlocked	See Note [6]
9d31	Latch state unknown, both locked and unlocked	Latch should be locked or when lock attempted	See Note [6]
9d32	Latch state unknown, both locked and unlocked	Latch should be locked or when lock attempted	See Note [6]

Diagnostic Code Handling

Code	Measurable	What is Displayed	Action Taken By Control
1c1c	Keypress	Nothing	Disables audible for affected key depression Disables all outputs [1, 2] Disables lights and timers
1c2c	Keyboard loop improper value	Nothing	Disables audible for key depression Disables all outputs [1] Disables lights and timers
1c31	Cancel key improper value	BAKE flashes [3]	Disables all outputs for cavity [1]
1c32	Cancel key improper value	BAKE flashes [3]	Disables all outputs for cavity [1]
1c6c	No response from EEPROM	Nothing	Disables all outputs [1]
1c7c	Calibration value out of range	"CAL" in the time digits	Completely disables oven [4]
1c8c	CRC invalid	Nothing	Cancels active cook functions
1d11	Door unlock sensor resistance > 2237 Ω	BAKE flashes [3]	Disables all cook functions for cavity
1d12	Door unlock sensor resistance > 2237 Ω	BAKE flashes [3]	Disables all cook functions for cavity
1d21	Door lock sensor resistance > 2787 Ω	BAKE flashes [3]	Disables all cook functions for cavity
1d22	Door lock sensor resistance > 2787 Ω	BAKE flashes [3]	Disables all cook functions for cavity
3d11	Sensor resistance > 3680 Ω	BAKE flashes [3]	Disables all cook functions for cavity
3d12	Sensor resistance > 3680 Ω	BAKE flashes [3]	Disables all cook functions for cavity
3d21	Sensor resistance < 15 Ω	BAKE flashes [3]	Disables all cook functions for cavity
3d22	Sensor resistance < 15 Ω	BAKE flashes [3]	Disables all cook functions for cavity
4d11	Door switch not closed when door is locked	Nothing	Disables Clean and Lockout functions [5]
4d12	Door switch not closed when door is locked	Nothing	Disables Clean and Lockout functions [5]
4d51	Door switch not open or closed	Nothing	Disables Convect, Clean, and Lockout functions [4, 5] Turn off light and disable light from door switch
4d52	Door switch not open or closed	Nothing	Disables Convect, Clean, and Lockout functions [4, 5] Turn off light and disable light from door switch
9d11	Lock switch not closed	LOCK flashes [3]	Disables Clean and Lockout functions [4]
9d12	Lock switch not closed	LOCK flashes [3]	Disables Clean and Lockout functions [4]
9d21	Unlock switch not closed	LOCK flashes [3]	Disables Clean and Lockout functions [4]
9d22	Unlock switch not closed	LOCK flashes [3]	Disables Clean and Lockout functions [4]
9d31	Latch both locked and unlocked	LOCK flashes [3]	Disables Clean and Lockout functions [4]
9d32	Latch both locked and unlocked	LOCK flashes [3]	Disables Clean and Lockout functions [4]

Control Testing Procedures

⚠ WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to range before servicing, unless testing requires power.

NOTES:

1 "Action Taken" applies as long as the condition exists. If the condition clears, the control recovers.

2 If there is a cook function or timer active, the function continues. The user cannot edit the function, and [Cancel] will cancel the cook mode.

3 Flash rate: 0.2 seconds on, 0.1 second off. Pressing any key will clear the display until the fault clears and is re-triggered.

4 "Action Taken" applies until there is a POR (Power On Reset ["hard reset"]).

5 If the control believes the door is locked, it will attempt to unlock it when the function cancels and the cavity temperature cools.

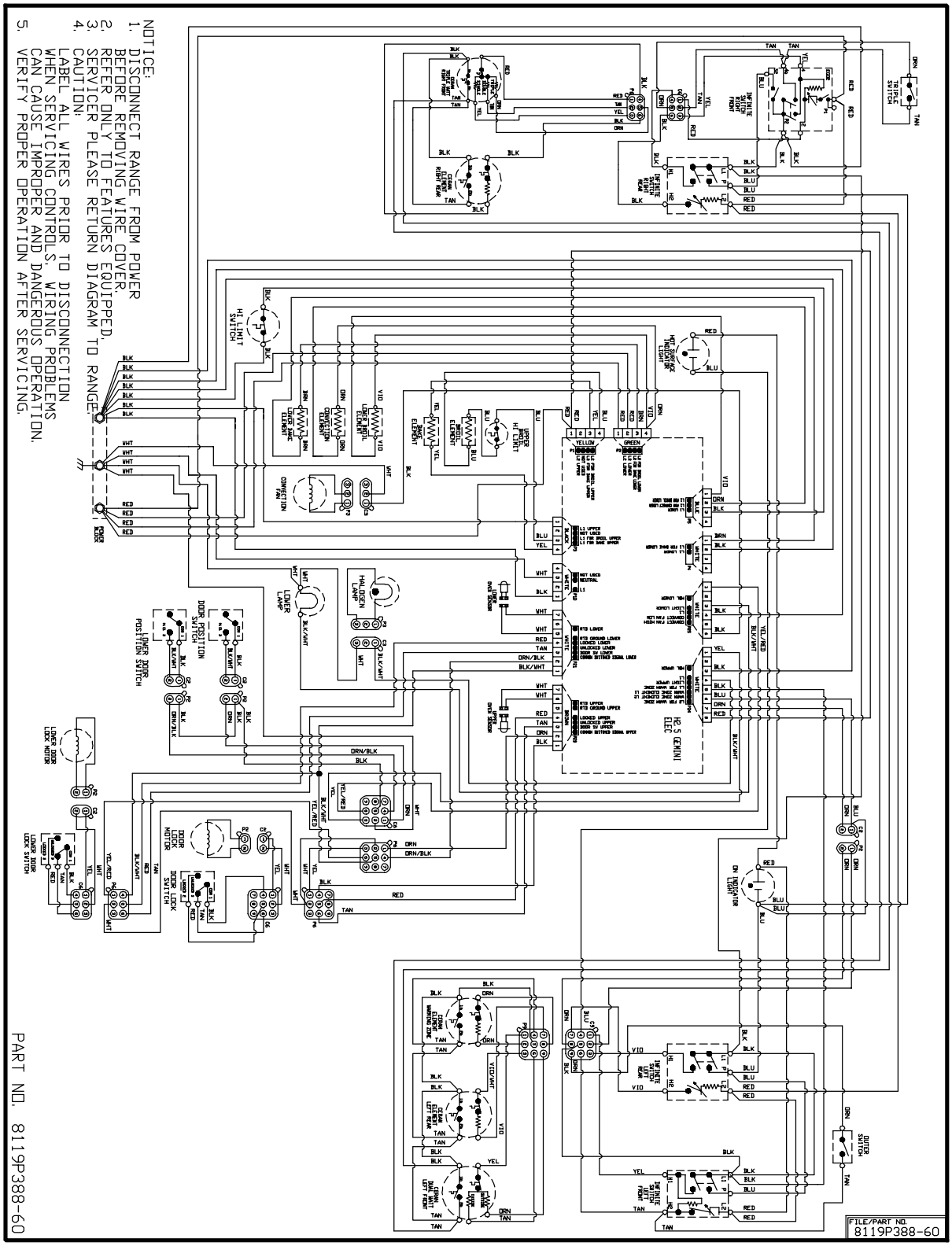
6 Special conditions for latch faults (9dxx):

- A known good **unlock** position is defined as when the unlock switch reads closed and lock switch reads open.
- A known good **lock** position is defined as when the unlock switch reads open and lock switch reads closed.
- A **faulted switch** means the switch input is reading an invalid state, neither open nor closed.
- Once a latch fault occurs, latch movement is disabled until there is a POR. An error tone will sound if a function requiring a faulted latch is attempted.
- If at POR, the latch is not at a known good unlock position:
    - If the latch is at a good lock position, it will attempt to unlock when the RTD (Resistance Temperature Device) temperature is below 400° F.
    - If the latch is not at a good lock position, the control will fault.
- If a latch fault occurs while the RTD is above the lock temperature, the latch will not try to move, but the fault is still logged to EEPROM after the first stage of detection.
- The Display column for latch faults applies 1) If the latch was moving when the fault occurred; 2) If the latch is already in a known locked state when the fault occurs.
    - LOCK flashes after a fault is detected and until the unlocked position is achieved. The unlock position may be identified by a successful unlock switch closure, or as the result of timing when the unlock switch is not functioning properly.
- If the last known good position was unlock (e.g. baking, or idle) and a latch fault occurs, the motor is never moved. The fault is logged to EEPROM and is not seen by the user.
- Latch fault detection is in two stages. The first stage is to allow the control to recover without moving the latch. After this:
    - If the latch was previously at a known good unlock position, the latch will not move and the control will fault.
    - If the control was previously in a known good lock position:
        - If the RTD is below 400° F, the latch will attempt to recover to it's proper position (up to three revolutions). If it cannot, the control will fault and the latch will move to a calculated unlock position.
        - If the RTD is at or above 400° F, the control will fault. When the RTD cools to below 400° F, the control will attempt to recover to a good unlock position (up to three revolutions). If it cannot, the control will fault and the latch will move to a calculated unlock position.
        - **NOTE:** If the unlock position cannot be found, this may result in a second fault, the first fault occurring when the latch request was locked, and the second when the latch request is unlocked.
    - If the latch is moving when the fault occurs, the control will bypass the first stage of detection and immediately attempt to find the proper position. If unsuccessful, the control will fault and the latch will move to a calculated unlock position.
- Affected DLBs (Double Line Breaks) and loads are disabled during detection.
- If the control is in a known good unlock position and the lock switch becomes faulted:
    - The control will not fault.
    - If a function requiring latch movement is attempted while the lock switch is faulted, the control will sound an error tone and the function will be disabled.
- If the control is in a known good lock position and the unlock switch becomes faulted:
    - The control will not fault.
    - After the function is canceled and unlock is attempted, the control will attempt to unlock the latch according to the procedures in these notes.

Wiring Diagram and Schematic

⚠ WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to range before servicing, unless testing requires power.



Wiring Diagram

Wiring Diagram and Schematic

WARNING

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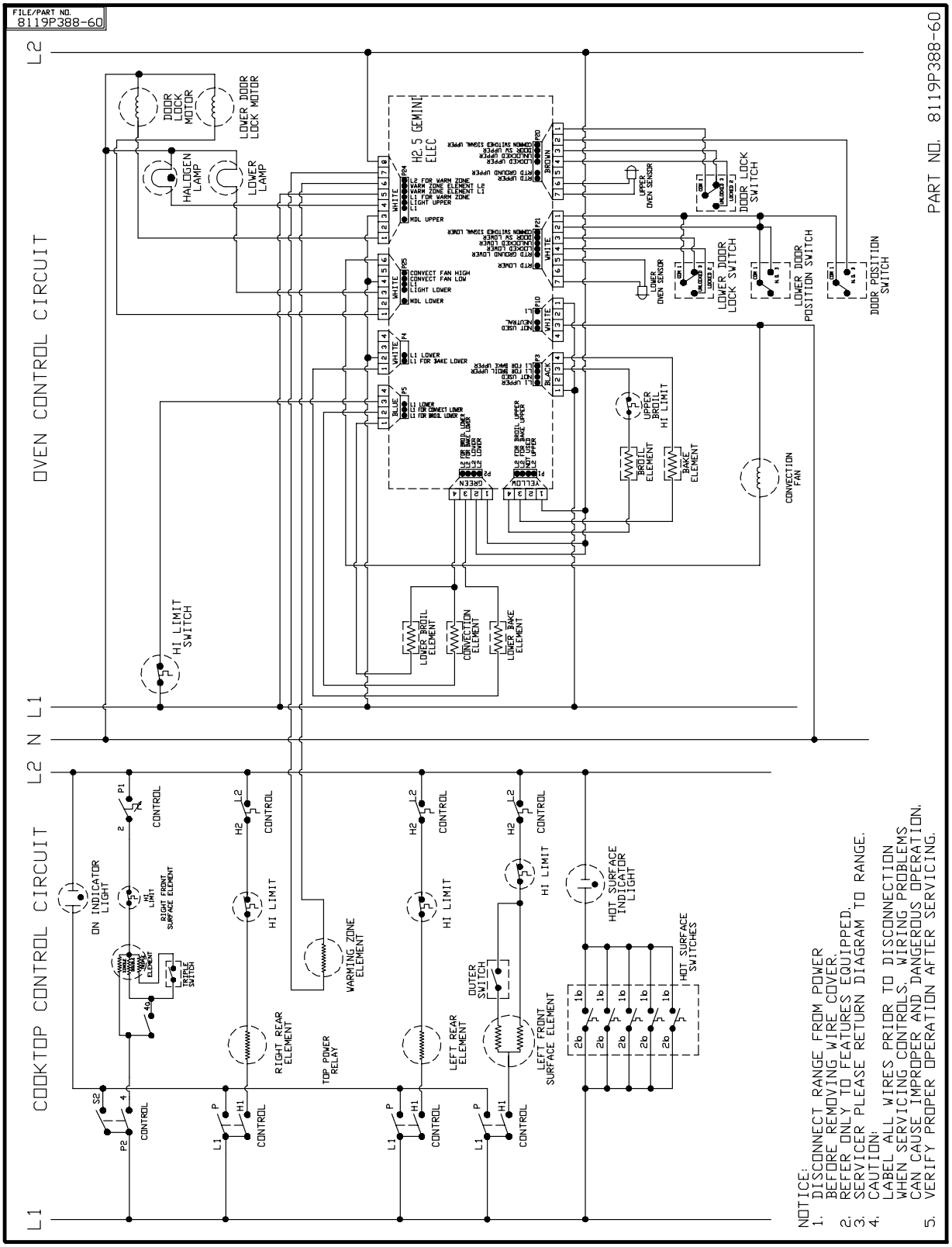

Schematic (Control Circuits)