FOR SERVICE TECHNICIAN'S USE ONLY

Tech Sheet **Do not discard**

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ 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.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

a. Do not operate or allow the oven to be operated with the door open.

b. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:

1. Interlock Operation
2. Proper Door Closing
3. Seal and Sealing Surfaces (Arcing, Wear and Other Damage)
4. Damage to or Loosening of Hinges and Latches
5. Evidence of Dropping or Abuse

c. Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.

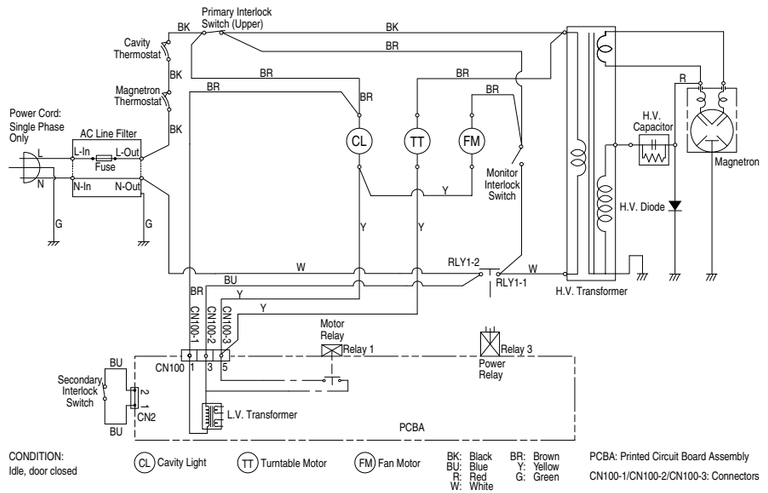
d. Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in service manual before the oven is released to the owner.

e. A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

f. Do not attempt to operate the oven if the door glass is broken.

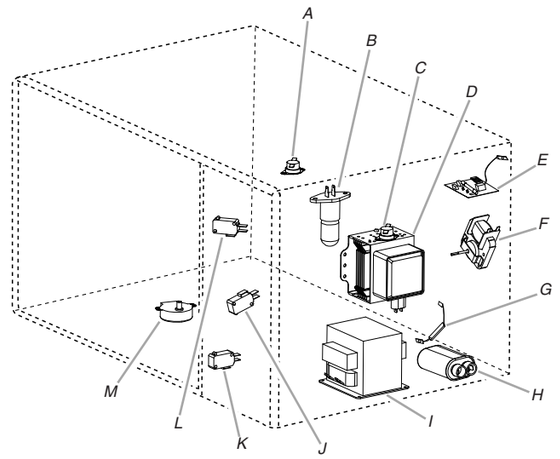
WIRING DIAGRAMS

Schematic Diagram



Parts Layout

(not to scale)



A. Cavity thermostat—opens at 160°F (71°C), closes at 95°F (35°C)
B. Cavity light
C. Magnetron thermostat—opens at 160°F (71°C), closes at 95°F (35°C)
D. Magnetron
E. AC line filter
F. Cooling fan motor
G. H.V. diode
H. H.V. capacitor
I. H.V. transformer
J. Monitor interlock switch
K. Primary interlock switch
L. Secondary interlock switch
M. Turntable motor

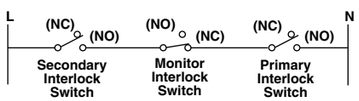
Primary, Secondary, and Monitor Interlock Switch Checkout Procedure

Switch	Check By	Door Open	Door Closed
Primary Interlock	**1.** Unplug microwave oven or disconnect power. **2.** Disconnect the wires at the Primary Interlock Switch. **3.** Check the terminals.	-	+
Secondary Interlock	**1.** Unplug microwave oven or disconnect power. **2.** Disconnect pin connector at the electronic control. **3.** Check from the blue wires.	-	+
Monitor Interlock	**1.** Unplug microwave oven or disconnect power. **2.** Disconnect the common terminal (brown/brown wire) and the normally closed terminal (yellow wire). **3.** Check the terminals.	+	-

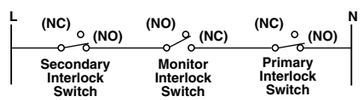
(+) Continuity (-) No Continuity

NOTE: These diagrams are not intended to show a complete circuit; they represent the position of switches during "DOOR OPEN" or "DOOR CLOSED" (continuity checks only).

Door Open



Door Closed



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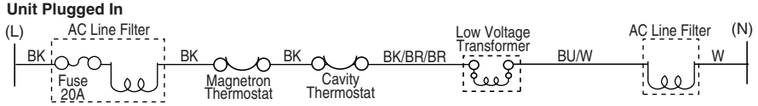
TROUBLESHOOTING

Do not continue with the diagnostics of appliance if the household fuse is blown, a circuit breaker is tripped or if there is less than 120-volt power supply at the wall outlet.

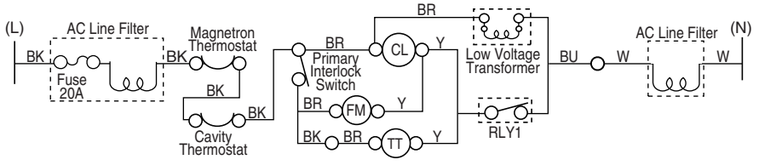
Complete the following steps before checking microwave oven circuitry:

1. Unplug microwave oven or disconnect power.
2. Discharge high-voltage capacitor and disconnect white wire from power transformer.
3. Check for loose wiring or incorrect wiring within microwave oven.
4. All testing must be done with an ohmmeter having a sensitivity of 20,000 ohms per volt DC or greater, and powered by at least a 9-volt battery.
5. All operational checks using microwave energy must be done with the microwave oven loaded with a minimum of 8 oz (250 mL) of water in a microwave-safe container.

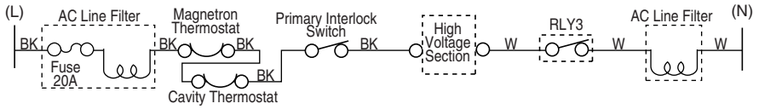
Unit Plugged In



RLY1: Cavity Light (CL) On, Fan Motor (FM) On, Turntable Motor (TT) On



High Voltage Section



PCBA Pin Voltage Matrix

Check for proper voltage by completing the following steps:

1. Unplug microwave oven or disconnect power.
2. Connect voltage measurement equipment.
3. Plug in microwave oven or reconnect power, and confirm voltage reading.
4. Unplug microwave oven or disconnect power.

NOTE: For 50V and over, the tolerance is +/-15V. For 0V, the tolerance is +/-3V.

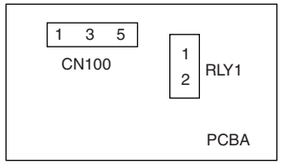
Abbreviations

CL–Cavity Light N–Neutral FM–Fan Motor L–Line Voltage TT–Turntable Motor

NOTE: When checking voltage readings on PCBA, connect the neutral test lead of voltmeter to connector CN100-2. Use the positive test lead probe connectors designated below.

		MW Oven Powered Up–Sitting Idle–ACV Readings						MW Oven Running–ACV Readings	
Pin Name	**Wire Color**	**Power On, Door Closed**	**Power On, Door Open**	**Fan Motor–Open**	**Fan Motor–Medium**	**Fan Motor–Closed**	**Cavity Light–Open**	**Cavity Light–Closed**	**Microwave Oven Start**
CN100-1 (L)	Brown	120	120	0	N/A	0	0	0	120
CN100-2 (N)	Blue	120	120	0	N/A	0	0	0	120
CN100-3 (CL/FM/TT)	Yellow	0	120	0	N/A	0	120	0	120
RLY1-1	Yellow & White	0	0	0	N/A	0	0	0	120
RLY1-2	Blue & White	0	0	0	N/A	0	0	0	120

Connectors On PCBA



Touch Panel

Touch Panel Continuity Diagram

	5	6	7	8	9	10	11	12
4	7	8	9	Timer	Cancel	Start add 30 sec	Cook Time	
3	0	1	2	3	4	5	6	
2	Frozen Entree	Popcorn	Power Level	Favorite	Weight Defrost	Timed Defrost	Clock	
1	Dinner Plate	Pizza Reheat	Beverage	Soup	Fresh Vegetable	Frozen Vegetable	Potato	

Microwave Oven Power Output Test

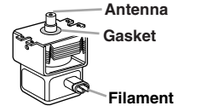
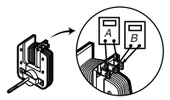
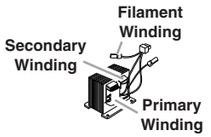
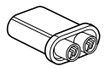
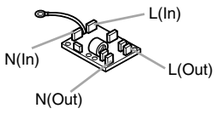
1. Place 8 oz (250 mL) of lukewarm water in the center of the microwave oven.
2. Operate on HIGH power level for 2 minutes. Water should be hot.

NOTE: If the water takes longer than 2 minutes to heat, this may indicate either the operating voltage is lower than 110 volts or there is a problem with the microwave oven.

Component Tests

IMPORTANT:

- Unplug microwave oven or disconnect power.
- Discharge the high-voltage capacitor and remove the lead wires from the primary winding of the high-voltage transformer before conducting any of the following tests.
- Remove the lead wires from the related component before conducting any of the following tests.
- All operational checks using microwave energy must be done with the microwave oven loaded with a minimum of 8 oz (250 mL) of water in a microwave-safe container.
- Conduct a microwave energy test after performing any tests or repairs to the microwave oven.
- Check that all wire leads are in the correct positions before operating the microwave oven.
- Grasp wire connectors when removing the wire leads from microwave oven parts.
- All testing must be done with an ohmmeter having a sensitivity of 20,000 ohms per volt DC or greater, and powered by at least a 9-volt battery.

Components	Test/Results
Magnetron 	1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Filament terminal: Normal: Less than 1 ohm ■ Filament to chassis: Normal: Infinite
Turntable Motor 	1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Normal: 3,200 to 3,600 ohms (approximate) ■ Abnormal: Infinite
Fan Motor 	1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Normal: A to B: 100 to 120 ohms (approximate) ■ Abnormal: Infinite
H.V. Transformer 	**NOTE:** The bottom lead wire is red. The top lead wire is white. Do not reverse leads. 1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Primary winding: 0.2 to 0.5 ohm (approximate) ■ Secondary winding: 80 to 160 ohms (approximate) ■ Filament winding: Less than 1 ohm ■ Primary winding to grounding: Normal: Infinite ■ Filament winding to grounding: Normal: Infinite
H.V. Capacitor 	1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Terminal to terminal: Normal: Momentarily indicates several ohms, and then gradually returns to infinite. ■ Terminal to case: Infinite
H.V. Diode 	**NOTE:** Some inexpensive ohmmeters may indicate infinite resistance in both directions. 1. Unplug microwave oven or disconnect power. 2. Measure continuity: ■ Forward direction: Normal: Continuity; Abnormal: Infinite ■ Reverse direction: Normal: Infinite; Abnormal: Continuity
AC Line Filter 	1. Unplug microwave oven or disconnect power. 2. Remove wire leads. 3. Measure resistance: ■ Normal: L(In) to L(Out) (coil): Less than 1 ohm; N(In) to N(Out) (coil): Less than 1 ohm; Abnormal: Infinite ■ Normal: L(In) or L(Out) to N(In) or N(Out) (resistor): 0.5M ohms; Abnormal: 0 ohms

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