⚠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.

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.

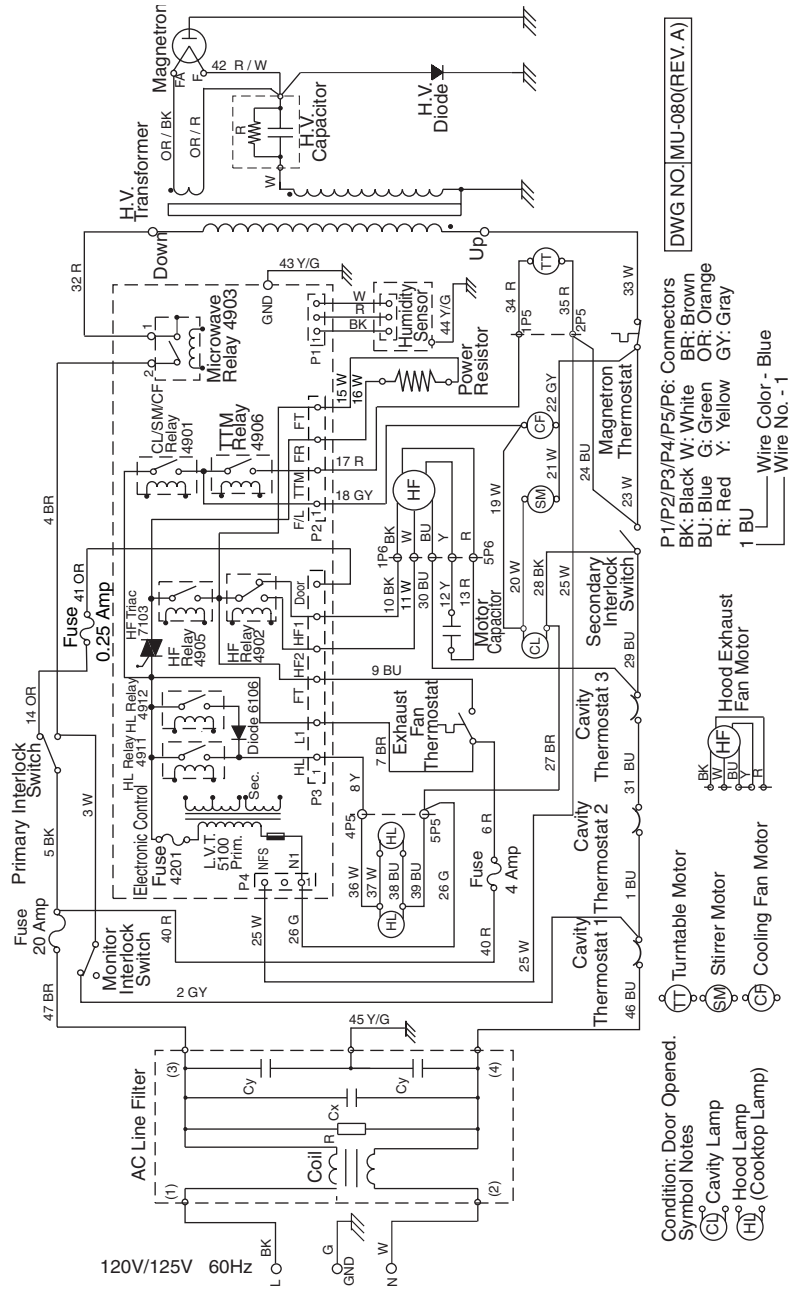
d. Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in service manual before the oven is released to the owner.

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.

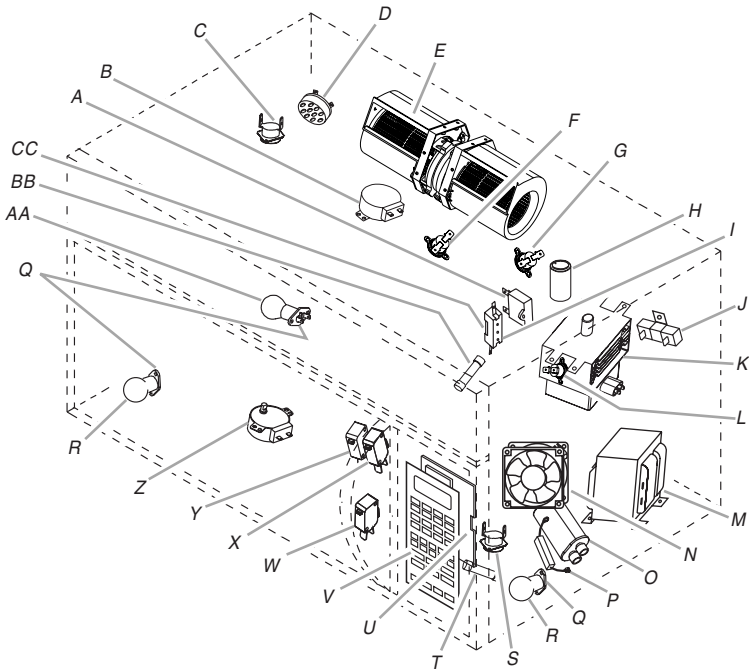
f. Do not attempt to operate the oven if the door glass is broken.

WIRING DIAGRAMS

Schematic Diagram



Parts Layout
(not to scale)



A. Motor capacitor
B. Stirrer motor
C. Cavity thermostat 3 assembly—opens at 329ºF (165ºC), closes at -31ºF (-35ºC)
D. Humidity sensor
E. Hood exhaust fan motor
F. Cavity thermostat 2 assembly—opens at 257ºF (125ºC), closes at -31ºF (-35ºC)
G. Cavity thermostat 1 assembly—opens at 257ºF (125ºC), closes at -31ºF (-35ºC)
H. AC line filter
I. Fuse holder
J. Power resistor
K. Magnetron
L. Magnetron thermostat—opens at 257ºF (125ºC), closes at 185ºF (85ºC)
M. H.V. transformer
N. Cooling fan motor
O. H.V. capacitor
P. H.V. diode
Q. Lamp holder
R. Hood (cooktop) lamp
S. Exhaust fan thermostat—opens at 113ºF (45ºC), closes at 140ºF (60ºC)
T. Fuse (0.25 amp)
U. Electronic control
V. Touch panel (membrane switch)
W. Secondary interlock switch
X. Monitor interlock switch
Y. Primary interlock switch
Z. Turntable motor
AA. Cavity lamp
BB. Fuse (4 amp)
CC. Line fuse (20 amp)

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 from the common terminal (black wire) to the normally open terminal (brown/white wires).	-	+
	1. Unplug microwave oven or disconnect power. **2.** Disconnect the wires at the Primary Interlock Switch. **3.** Check from the common terminal (black wire) to the normally closed terminal (orange wire).	+	-

(+) Continuity (-) No Continuity

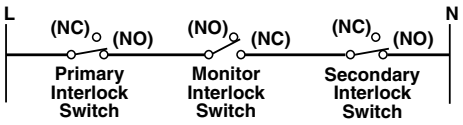
PRIMARY, SECONDARY, AND MONITOR INTERLOCK SWITCH CHECKOUT PROCEDURE

Switch	Check By	Door Open	Door Closed
Secondary Interlock	**1.** Unplug microwave oven or disconnect power. **2.** Disconnect the wires at the Secondary Interlock Switch. **3.** Check from the common terminal (blue/black wires) to the normally open terminal (white/blue wires).	-	+
Monitor Interlock	**1.** Unplug microwave oven or disconnect power. **2.** Disconnect the wires at the Monitor Interlock Switch. **3.** Check from the common terminal (white wire) to the normally closed terminal (gray wire).	+	-

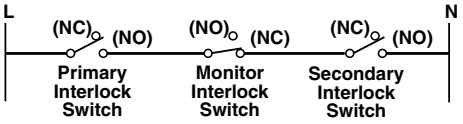
(+) Continuity (-) No Continuity

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 Closed



Door Open



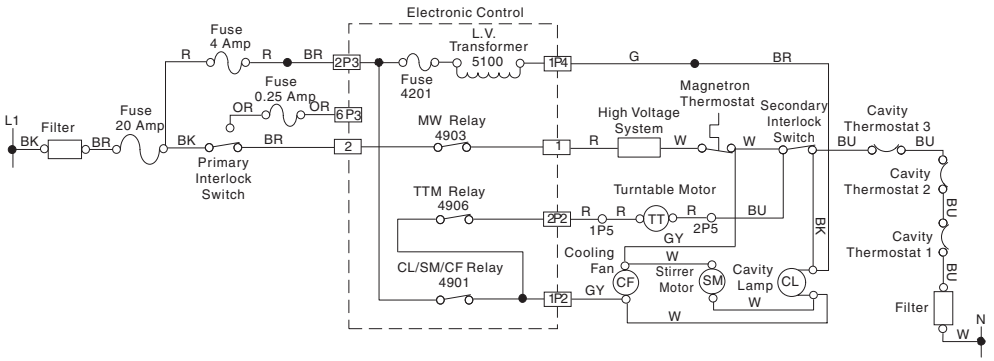
TROUBLESHOOTING

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.

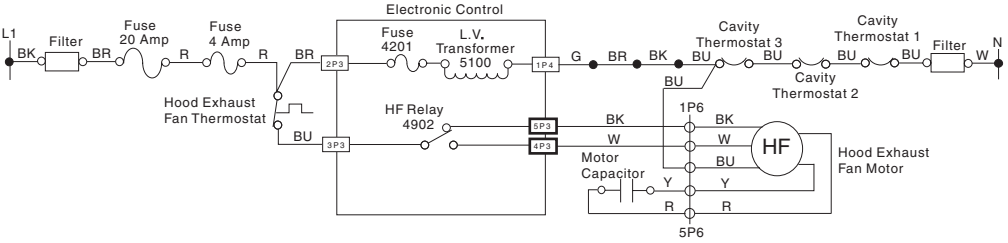
Complete the following steps before checking microwave oven circuitry:

1. Unplug microwave oven or disconnect power.
2. Check for loose wiring or incorrect wiring within microwave oven.
3. Disconnect white wire from power transformer and discharge high-voltage capacitor.
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 10 oz (300 mL) of water in a microwave safe container.

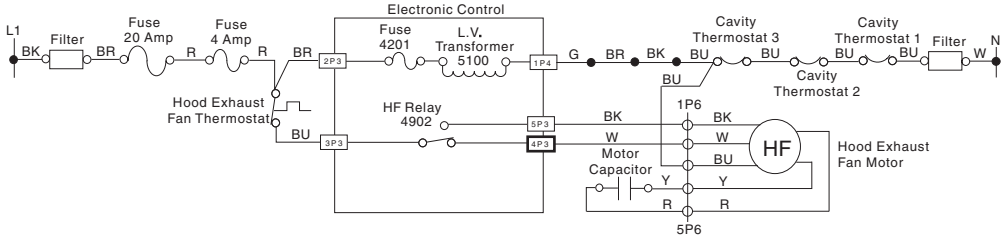
Microwave Cooking



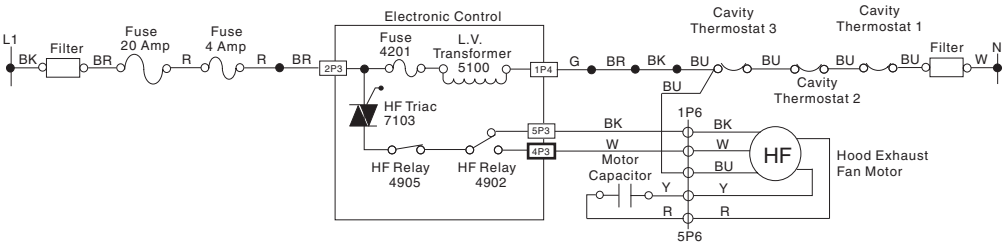
Hood Exhaust Fan Turns on High Automatically While at Off or Speeds 4 or 3



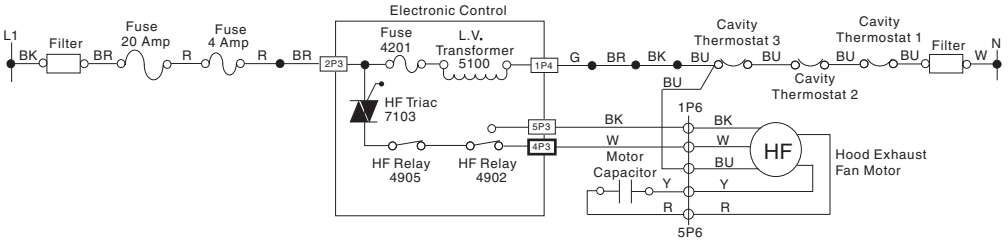
Hood Exhaust Fan Turns on Low Automatically While at Speeds 2 or 1



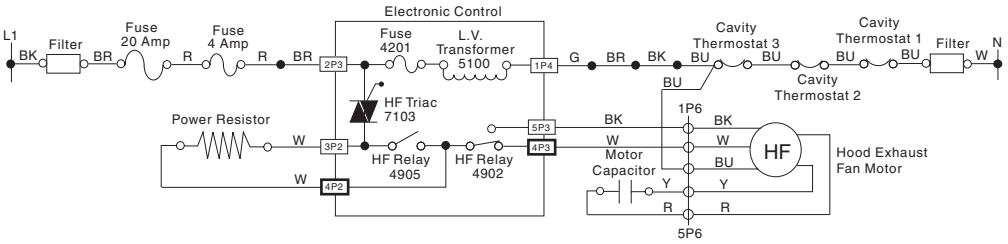
Hood Exhaust Fan On (Speeds 4 & 3 Manually)



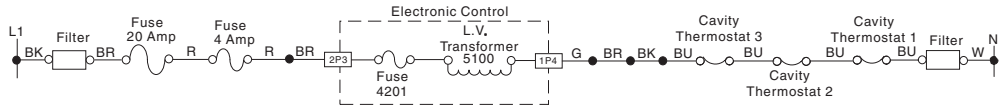
Hood Exhaust Fan On (Speed 2 Manually)



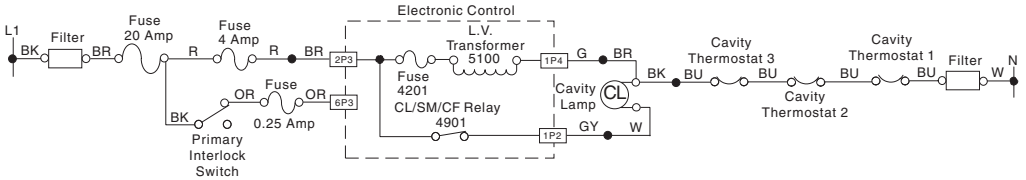
Hood Exhaust Fan On (Speed 1 Manually)



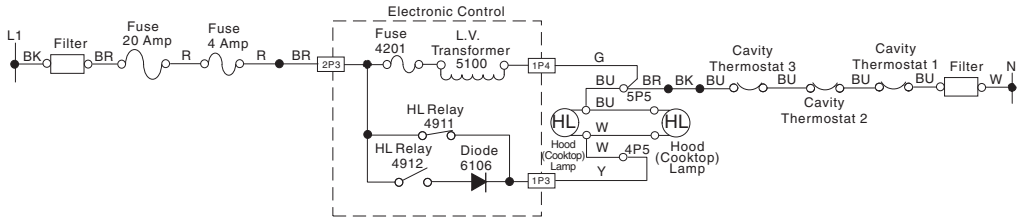
Microwave Plugged In—Time of Day Displayed



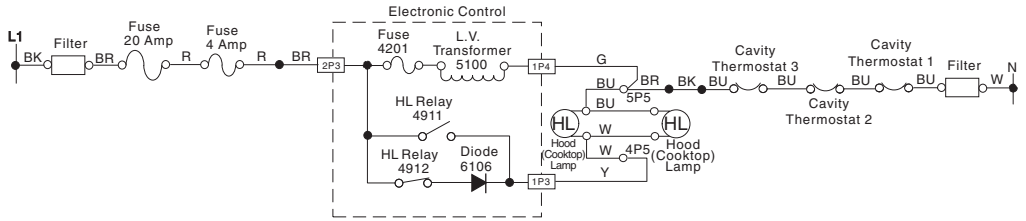
Door Open—Oven Cavity Light Is On



Cooktop Light on High



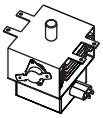
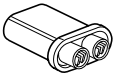
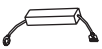
Cooktop Light on Low (Night Light)

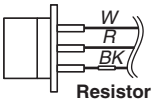
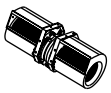
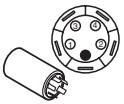


Component Tests

IMPORTANT:

- Unplug microwave oven or disconnect power.
- 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 10 oz (300 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
H.V. Transformer  **Filament (orange/red wires)** **Primary (black wire)** **Primary (blue wire)** **Secondary (yellow/white wires - ground to transformer case)**	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1): ■ Primary winding: Less than 0.5 ohm (approximate) ■ Secondary winding: 60 ohms (approximate) ■ Filament winding: 0 ohm **4.** Measure resistance (ohmmeter scale: Rx1k): ■ Primary winding to grounding: Normal: Infinite ■ Filament winding to grounding: Normal: Infinite
Magnetron 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. Check that the seal is in good condition. **3.** Measure resistance (ohmmeter scale: Rx1): ■ Filament terminal: Normal: Less than 1 ohm **4.** Measure resistance (ohmmeter scale: Rx1k): ■ Filament to chassis: Normal: Infinite
H.V. Capacitor 	**1.** Unplug microwave oven or disconnect power. **2.** Discharge capacitor. **3.** Measure resistance (ohmmeter scale: Rx1k): ■ Terminal to terminal: Normal: Momentarily indicates several ohms, gradually returns to Infinite. ■ Terminal to case: Normal: Infinite
H.V. Diode 	**1.** Unplug microwave oven or disconnect power. **2.** Measure resistance (ohmmeter scale: Rx1k): ■ Forward: Normal: Continuity; Abnormal: Infinite ■ Reverse: Normal: Infinite; Abnormal: Continuity
Turntable Motor/Stirrer Motor 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1k): ■ Turntable Motor: Normal: 2.7k-3.8k ohms (approximate); Abnormal: Infinite ■ Stirrer Motor: Normal: 2.7k-4.2k ohms (approximate)

Components	Test/Results
Humidity Sensor  **Resistor**	**1.** Unplug microwave oven or disconnect power. **2.** Remove the 3-pin connector from electronic control (P5). **NOTE:** Do not remove the attached resistor, which is used for internal resistance calibration. **3.** Measure resistance across pins 1 & 3, and across pins 2 & 3 (ohmmeter scale: Rx1k): ■ Normal: 2.8k ohms (approximate) at 77ºF (25ºC) +/- 18ºF (-10ºC) ■ Abnormal: Infinite
Cooling Fan Motor 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1): ■ Normal: 90-135 ohms ■ Abnormal: Infinite
Power Resistor 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1): ■ Normal: 37-45 ohms ■ Abnormal: Infinite
Hood Exhaust Fan Motor 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1): ■ High Speed—Normal: Red (R) and Blue (BU) wires: 79-119 ohms (approximate); Blue (BU) and Black (BK) wires: 22-43 ohms (approximate) ■ Abnormal: Infinite ■ Low Speed—Normal: Red (R) and Blue (BU) wires: 79-119 ohms (approximate); Blue (BU) and White (W) wires: 43-62 ohms (approximate) ■ Abnormal: Infinite
AC Line Filter 	**1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure resistance (ohmmeter scale: Rx1): ■ Normal: 1-3 (coil): Less than 1 ohm; 2-4 (coil): Less than 1 ohm; 3-4 (resistor): 660k-700k ohms ■ Abnormal: Infinite
Thermostats **Cavity Thermostat** **Magnetron Thermostat** **Exhaust Fan Thermostat** 	**NOTE:** Refer to "Parts Layout" for opening and closing temperatures. **1.** Unplug microwave oven or disconnect power. **2.** Remove wire leads. **3.** Measure continuity (ohmmeter scale: Rx1): ■ Cavity and Magnetron Thermostats: Normal: Continuity; Abnormal: Infinite ■ Exhaust Fan Thermostat: Normal: Infinite; Abnormal: Continuity

Touch Panel and Electronic Control Test

The microwave hood combination is provided with a self-diagnostic routine that can be accessed through the touch keypad.

To initiate this routine:

1. Press and hold CANCEL while opening the door. While still holding the CANCEL button, unplug the microwave oven for 2 seconds, then plug it back in.
2. Release the CANCEL button and close the door.
3. After pressing each button on the control panel, "8" will appear in the display to indicate that the circuits are complete and all relays are working. Refer to Key Table for Test Mode.

NOTE: If the CANCEL button is pressed during this diagnostic routine, you will exit the test mode.

Key Table for Test Mode

NOTE: Display position 1 is farthest to the left. Display position 5 is farthest to the right.

Key Name	Function	Display Position*
Popcorn	-	1
Baked Potato	-	2
Dinner Plate	-	3
Beverage	-	4
Reheat	-	1
Cook	Humidity Sensor	Sxxxx
Defrost	-	5
Cook Time	-	1
Cook Power	-	3
Warm Hold	-	5
1	Relay 4901	1
2	Relay 4911	3
3	Relay 4903	5
4	-	1
5	-	3
6	Relay 4906 & Relay 4901	5
7	-	1
8	Relay 4912	3
9	Hood Fan Triac— Relay 4902 & Relay 4905	5
0	-	3
Clock	Buzzer	5
Timer Set•Off	-	1
Start	-	4
Cancel	Exit Test Mode	-
On•Night•Off	-	1
Vent Fan 4 Speeds	-	3
Turntable On•Off	-	5

*"8" will appear in the display position indicated in the table.

Microwave Oven Power Output Test

1. Place 1 cup (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.

Failure Codes Indications

Display	Likely Failure Condition	Recommended Repair Procedure
Flashing colon ":"	Power failure	After a power failure, the colon ":" will be flashing. Press any key to end this indication. The colon will then be steady when in standby.
F2	Membrane switch failure	**1.** Unplug microwave oven or disconnect power. **2.** Replace membrane switch. **3.** If problem persists, replace electronic control. **4.** Plug in microwave oven or reconnect power.
F3H	Humidity sensor out of range	**1.** Unplug microwave oven or disconnect power. **2.** Connect a new sensor to the electronic control (at P1). **3.** Plug in microwave oven or reconnect power. **4.** If problem persists, unplug microwave oven or disconnect power. ■ Replace electronic control. **5.** Plug in microwave oven or reconnect power.
F6	Microwave relay failure	**1.** Check wiring to Relay 4903 for short circuits. **2.** If wiring is OK, unplug microwave oven or disconnect power. ■ Replace electronic control. **3.** Plug in microwave oven or reconnect power.

Notes