SERVICE MANUAL

for the

OVER-THE-RANGE MICROWAVE OVEN HOOD COMBINATION

1997 “E” Models

March, 1997 Printed in U.S.A. LIT4322167

THIS MANUAL CONTAINS INFORMATION NECESSARY FOR SERVICING THE WHIRLPOOL MICROWAVE OVEN HOOD COMBINATION , MODELS:

MH7130XE
MH7135XE
MH9115XE

THE MANUAL IS DESIGNED TO BE USED ONLY BY QUALIFIED SERVICE PERSONNEL. THE SERVICE INFORMATION IS ORGANIZED TO HELP YOU EASILY FIND WHAT YOU NEED.

CHECK YOUR LOCAL BUILDING CODE FOR THE PROPER MODE OF INSTALLATION. IN THE ABSENCE OF LOCAL CODES, THIS UNIT SHOULD BE INSTALLED IN ACCORDANCE WITH THE *NATIONAL ELECTRICAL CODE, ANSI/NFPA NO. 70 - 1990, OR LATEST EDITION, OR C22.1 CANADIAN ELECTRICAL CODE, PART 1*.

This Microwave Service Manual is for authorized WHIRLPOOL℠ service technicians only.

Because of the high voltage and the critical nature of the door closure system for the microwave oven, Whirlpool recommends that customers DO NOT service their own microwave oven.

If you encounter problems with any Whirlpool range having a microwave feature, call your nearest authorized WHIRLPOOL℠ Service Company for service.

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IMPORTANT SAFETY INFORMATION

This service manual is intended for factory-service technicians only. We recommend that customers DO NOT service their own units, because of the complexity and risk of high-voltage electrical shock.

The following information is used throughout this manual, and should be read carefully.

NOTE

Helpful information that explains a more complicated step, prior to carrying it out.

⚠CAUTION

Information that will help you avoid actions that could cause product damage (scratches, dents, etc.) and damage to personal property.

⚠WARNING

Information that alerts you to potentially dangerous conditions. These conditions can cause serious personal injury (burns, fire and electrical shock, etc.) if the suggested procedures are not observed.

⚠WARNING

Fire Hazard

Do not obstruct the flow of ventilation air.

Electrical Shock Hazard

It is the customer's responsibility to:

- Contact a qualified electrical installer.
- Assure that electrical installation is adequate and in conformance with the National Electrical Code, ANSI/NFPA 70—latest edition*, and all local codes and ordinances.

Failure to do so could result in fire, electrical shock, or other personal injury.

Take special care when drilling holes into the wall for venting or electrical wiring. Electrical wires may be concealed behind the wall covering.

Failure to do so could result In fire, electrical shock, or other personal injury.

• National Fire Protection Association
Batterymarch Park
Quincy, Massachusetts 02269

WHIRLPOOL ASSUMES NO RESPONSIBILITY FOR ANY REPAIRS MADE ON OUR PRODUCTS BY ANYONE OTHER THAN AUTHORIZED WHIRLPOOL SERVICE TECHNICIANS.

⚠ CAUTION

⚠ WARNING TO SERVICE TECHNICIANS

To avoid possible exposure to microwave radiation or energy, visually check the oven for damage to the door and door seal before operating the oven. Use your microwave survey meter to check the amount of leakage before servicing. In the event that the R.F. leakage exceeds 4 mw/cm^2 at 5 cm, appropriate repair must be made before continuing to service the unit. Check interlock function by operating the door latch. The oven cook cycle should cut off before the door can be opened.

The door and latching assembly contains the radio frequency energy within the oven. The door is protected by three safety interlock switches. Do not attempt to defeat them. Under no circumstances should you try to operate the oven with the door open.

- Proper operation of the microwave ovens requires that the magnetron be properly assembled to the waveguide and cavity. Never operate the magnetron unless it is properly installed.
- Be sure the “RF” seal is not damaged, and assembled around the magnetron dome properly when installing the magnetron.
- Routine service safety procedures should be exercised at all times.
- Untrained personnel should not attempt service without a thorough review of the test procedures and safety information contained in this manual.

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

1. Do not operate or allow the oven to be operated with the door open.
2. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   a) Interlock Operation.
   b) Proper Door Closing.
   c) Seal and Sealing Surfaces (Arcing, Wear, and Other Damage).
   d) Damage to or Loosening of Hinges and Latches.
   e) Evidence of Dropping or Abuse.
3. Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
4. 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 this manual before the oven is released to the owner.
5. A microwave leakage check to verify compliance with the Federal performance standard should be performed on each oven prior to release to the owner.
6. Do not attempt to operate the oven if the door glass is broken.

⚠ CAUTION

Whirlpool microwave ovens have a monitoring system designed to assure proper operation of the safety interlock systems.

The interlock monitor switch will immediately cause the oven fuse to blow if the door is opened while the following combined failure exists:

Primary door interlock switch and/or secondary interlock switch contacts failed in a closed position.

⚠ CAUTION: REPLACE BLOWN FUSE WITH 15 AMPERE CLASS H FUSE ONLY.

Before replacing the blown oven fuse, test the upper and lower door interlock switches, cook relay or latch relay, and interlock monitor switch (middle switch) for proper operation as described in the component test procedures.

DO NOT ATTEMPT TO REPAIR STICKING CONTACTS OF ANY INTERLOCK SWITCH, SAFETY SWITCH, OR COOK (LATCH) RELAY (REPLACE SWITCHES).

Any indication of sticking contacts during component test requires replacement of that component to assure reliability of the safety interlock system.

IF THE FUSE IS BLOWN, THE MONITOR, PRIMARY INTERLOCK AND SECONDARY INTERLOCK SWITCHES MUST ALSO BE REPLACED. BE SURE THEY ARE PROPERLY CONNECTED.

NOTES:

- For proper repair and assembly of the oven door, refer to pages 2-4 and 2-5.
- Interlock switches are not adjustable individually.
- For proper repair and adjustment of the interlock switches, refer to page 2-8.

⚠ WARNING

DISCONNECT FROM POWER SUPPLY BEFORE SERVICING.

⚠ CAUTION: HIGH VOLTAGES ARE PRESENT DURING THE COOK CYCLE. EXTREME CAUTION SHOULD BE OBSERVED AT ALL TIMES.

⚠ CAUTION: DO NOT TOUCH OVEN COMPONENTS OR WIRING DURING OVEN OPERATION. ATTACH METER LEADS WITH ALLIGATOR CLIPS WHEN MAKING OPERATIONAL TESTS.

⚠ CAUTION: IT IS NEITHER NECESSARY NOR ADVISABLE TO ATTEMPT MEASUREMENT OF HIGH VOLTAGES.

⚠ CAUTION: BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING, ALWAYS UNPLUG THE OVEN FROM ITS POWER SOURCE AND DISCHARGE THE CAPACITOR BY USING A 20,000-OHM DISCHARGE RESISTOR.

OR

USE AN INSULATED PLASTIC-HANDLE SCREWDRIVER AND SHORT ACROSS THE CAPACITOR TERMINALS.

R.F. LEAKAGE TEST

⚠CAUTION

EQUIPMENT

- Electromagnetic energy leakage monitor (NARDA 8100B, HOLADAY H1501).
- 600 ml glass beaker.
- Glass thermometer 100°C or 212°F.

TEST

On every service call, checks for microwave energy emission must be made according to the following manner.

1. Remove the cooking rack from the oven cavity, if the microwave oven is so equipped.
2. Place a 250 ML (8.0 oz.) glass of water in the center of the oven bottom.
3. Select "HIGH" cook power, turn the microwave oven on, and test for R.F. leakage at the following locations using the pattern shown below:
   a) Around the cabinet at the front.
   b) Around the door.
   c) Across the console panel.
   d) Horizontally across the door.
   e) Vertically across the door.
   f) Diagonally across the door.
   g) Across the air vents.
   h) Across the rear air vent.
   i) All lockseams.
   j) Weld at bottom.
   k) Bottom plate.
   l) Oven feet.
4. The scan speed is one inch per second.

When checking for R.F. leakage, use an approved R.F. measuring device to assure less than 4 mw/cm^2 emission at 5 cm distance with a maximum scan rate of 2.5 cm/second, in compliance with U.S. Government Department of Health, Education and Welfare 21 CFR1030, performance Standard for Microwave Ovens.

A properly operating door and seal assembly will normally register small emissions, but they must be no greater than 4 mw/cm^2 to allow for measurement uncertainty.

NOTE: Enter leakage readings in space BEFORE and AFTER on the service document.

All microwave ovens exceeding the emission level of 4 mw/cm^2 must be reported to Dept. of Service for microwave ovens immediately and the owner should be told not to use the microwave oven until it has been repaired completely.

If a microwave oven is found to operate with the door open, report to Dept. of Service, the manufacturer and CDRH* immediately. Also tell the owner not to use the oven.

* CDRH: Center for Device and Radiological Health, Food and Drug Administration.

The interlock monitor switch acts as the final safety switch protecting the customer from microwave radiation. If the interlock monitor switch operated to blow the fuse when the interlocks failed you must replace all interlock switches—primary and secondary interlock switches and the monitor switch with new ones because the contacts of those interlock switches may be melted and welded together.

All repairs must be performed in such a manner that microwave energy emissions are minimal.

Address for CDRH is:

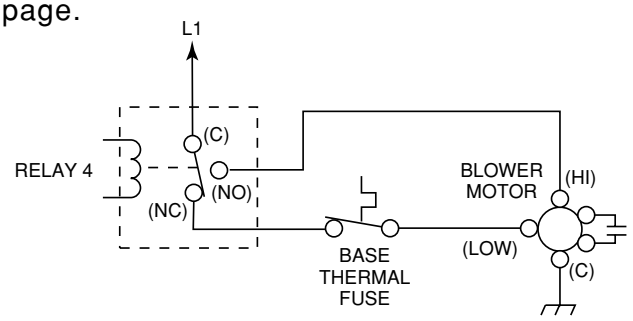
Office of Compliance (HFZ-312) Center for Devices and Radiological Health
1390 Piccard Drive
Rockville, Maryland 20850

THEORY OF OPERATION

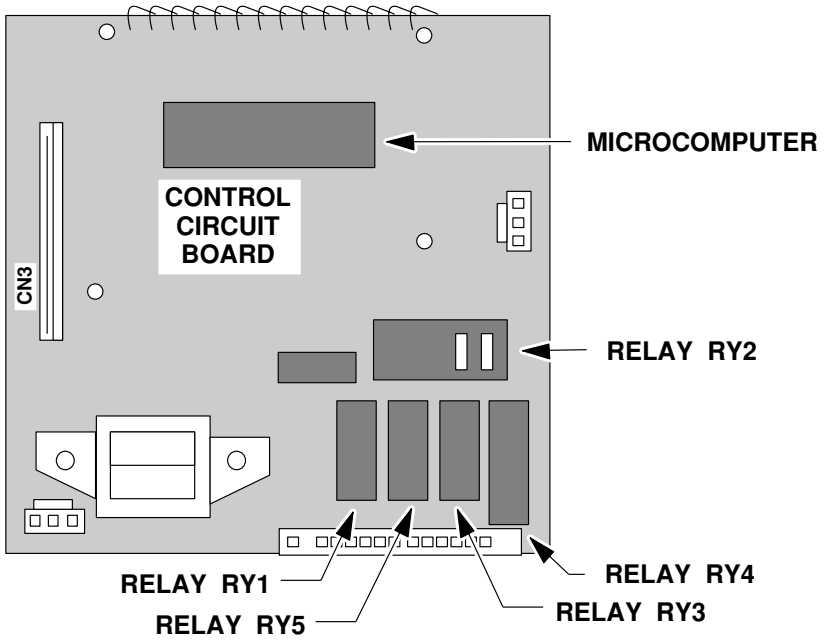
The microwave oven is powered by the 120-volt line. Whenever the door is closed and a cooking function is programmed through the control panel's keypad, relay contacts on the control board close, and complete a circuit from the L1 side to the neutral side of the line.

The control board uses five relays to operate the various functions of the microwave oven (see below). The relays are controlled by the microcomputer on the control board, and perform the functions shown below.

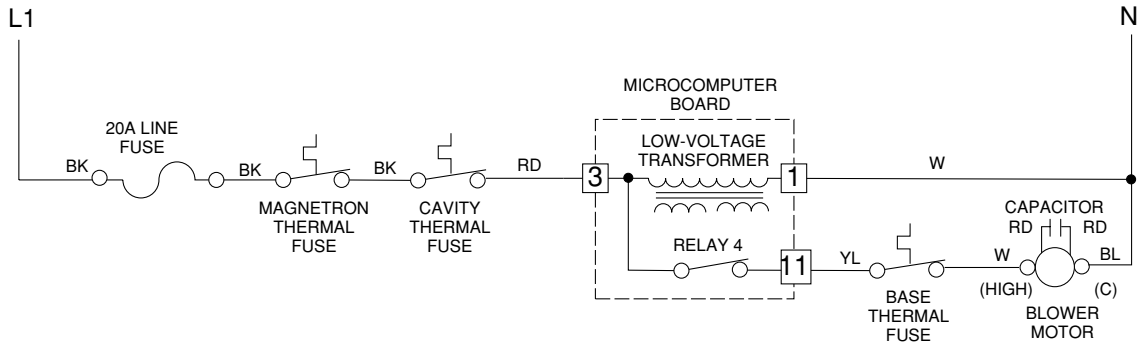
Relay 4 controls the speed of the blower motor through the contol panel. The base thermal fuse will also turn the blower motor on to its low speed if the temperature reaches 133˚F. The schematic configuration for relay 4 is shown in the following diagram. The relay is explained in further detail on the following page.



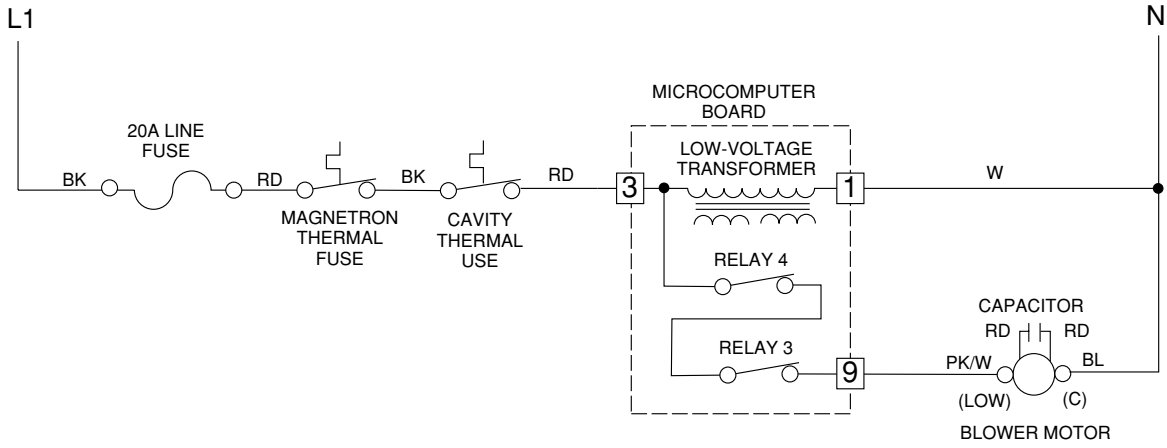
Relay 1 ..... Oven Light/Fan & Stirrer Motors
Relay 2 ..... High Voltage Section
Relay 3 ..... Low-Speed Blower Motor
Relay 4 (N.C. Contacts) ..... Auto Low-Speed Blower Motor
Relay 4 (N.O. Contacts) ..... High-Speed Blower Motor
Relay 5 ..... Turntable Motor



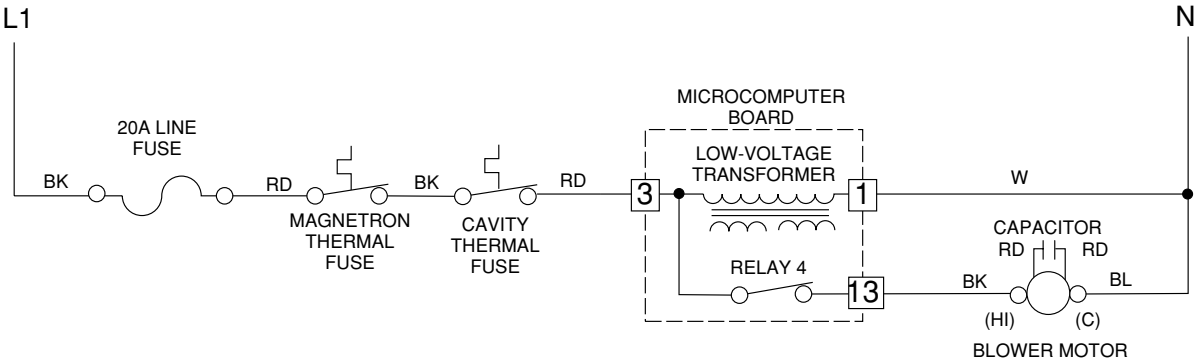
The normally-closed (N.C.) contacts of relay 4 provide a potential circuit for the Base Thermal Fuse. If the base of the oven exceeds 133˚F, the thermal fuse contacts close, and a circuit for the low-speed side of the blower motor is completed, which turns the motor on. The low-speed blower will operate until the base temperature drops below 104˚F and opens the thermal fuse contacts, and turns off.



When the low-speed fan is selected by the user at the control panel, relay 3 and the normally-closed (N.C.) contacts of relay 4, complete the circuit to the low-speed windings of the blower motor and turn it on.



When the high-speed fan is selected by the user at the control panel, the normally-open (N.O.) contacts of relay 4 complete the circuit to the high-speed windings of the blower motor and turn it on.



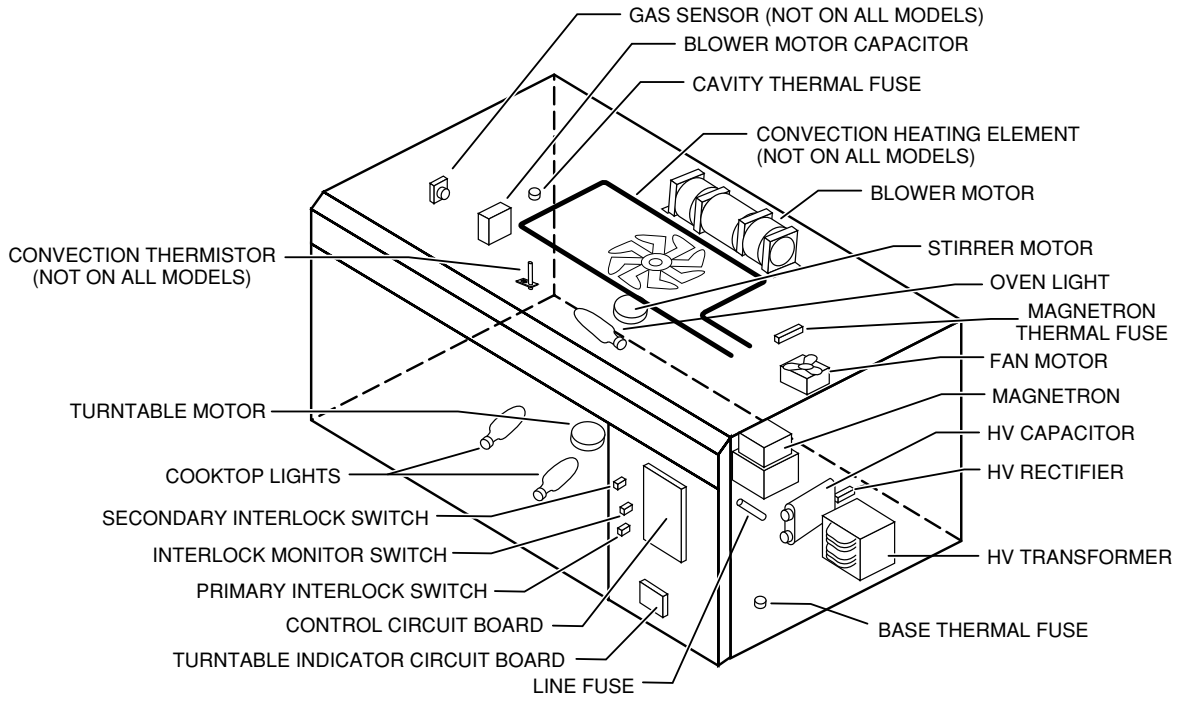
COMPONENT ACCESS

COMPONENT SECTIONS

This section instructs you on how to service the individual components in the Microwave Oven Hood Combination. These components (shown below) and their sections are as follows:

- General
  - Cabinet
- The Protection Control System
  - Oven Door
  - Oven Door Components
  - Control Panel
  - Line Fuse
  - Interlock Switches
  - Base Thermal Fuse
  - Magnetron Thermal Fuse
  - Convection Thermistor
  - Cavity Thermal Fuse
- The Operating Control System
  - Oven Light Socket
  - Control Circuit Board
  - Turntable Indicator Circuit Board
  - Fan Motor
  - Power Cord
  - Blower Motor Capacitor
  - Convection Heating Element
  - Gas Sensor
  - Stirrer Motor
  - Turntable Motor
  - Cooktop Light Socket
- The High Voltage Components
  - Magnetron
  - Rectifier
  - Capacitor
  - Transformer

Refer to the section on the following pages for the component you wish to service.



Base Thermal Fuse ..... Closes @ 133˚F/56˚C, resets @ 104˚F/40˚C.
Magnetron Thermal Fuse ..... Opens @ 228˚F/109˚C, resets @ 140˚F/60˚C.
Cavity Thermal Fuse ..... Opens @ 230˚F/110˚C, resets @ 140˚F/60˚C.

GENERAL
REMOVING THE MICROWAVE OVEN & CABINET

⚠WARNING

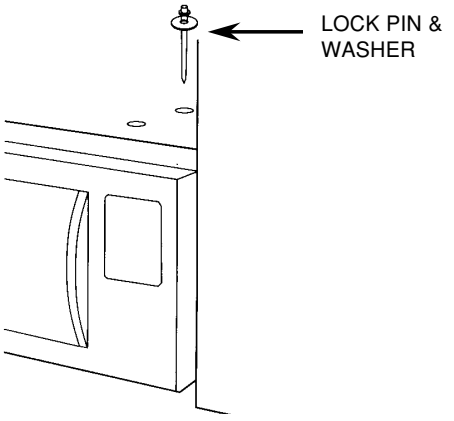
Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

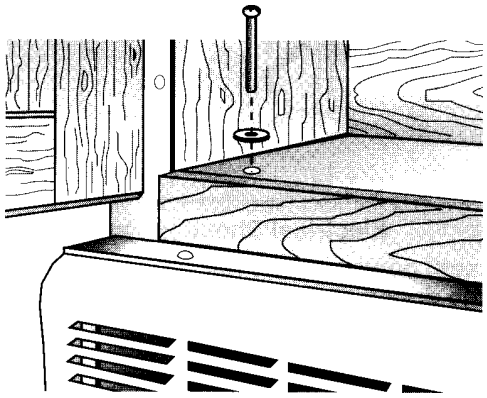
IMPORTANT NOTE: Most of the microwave components can be serviced without removing the unit or its cabinet. They can be accessed by removing the vent grille and the control panel. Before removing the unit or its cabinet, first check the procedure for the component you wish to service to see if it is necessary. If it is necessary to remove the unit and its cabinet to service a component, use the following procedure.

CAUTION: Because of the weight and size of the microwave oven, two people are required to safely move and install it. Failure to do so could result in personal injury.

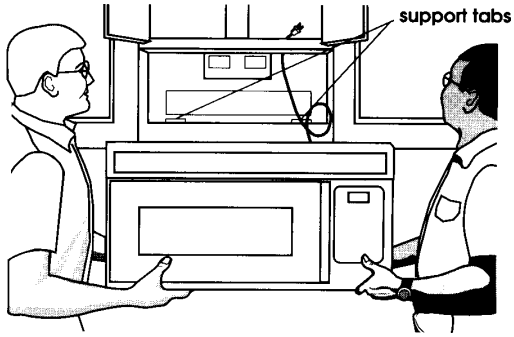
1. Disconnect the electrical supply to the microwave oven.
2. Remove the six screws from the base plate and lower it, (see the illustration on the next page), then disconnect the cooktop light connector, and set the base plate aside.
3. Remove the lock pin and washer from the top of the microwave oven.



4. Support the front of the microwave oven and remove the two bolts and washers from the top of the oven.

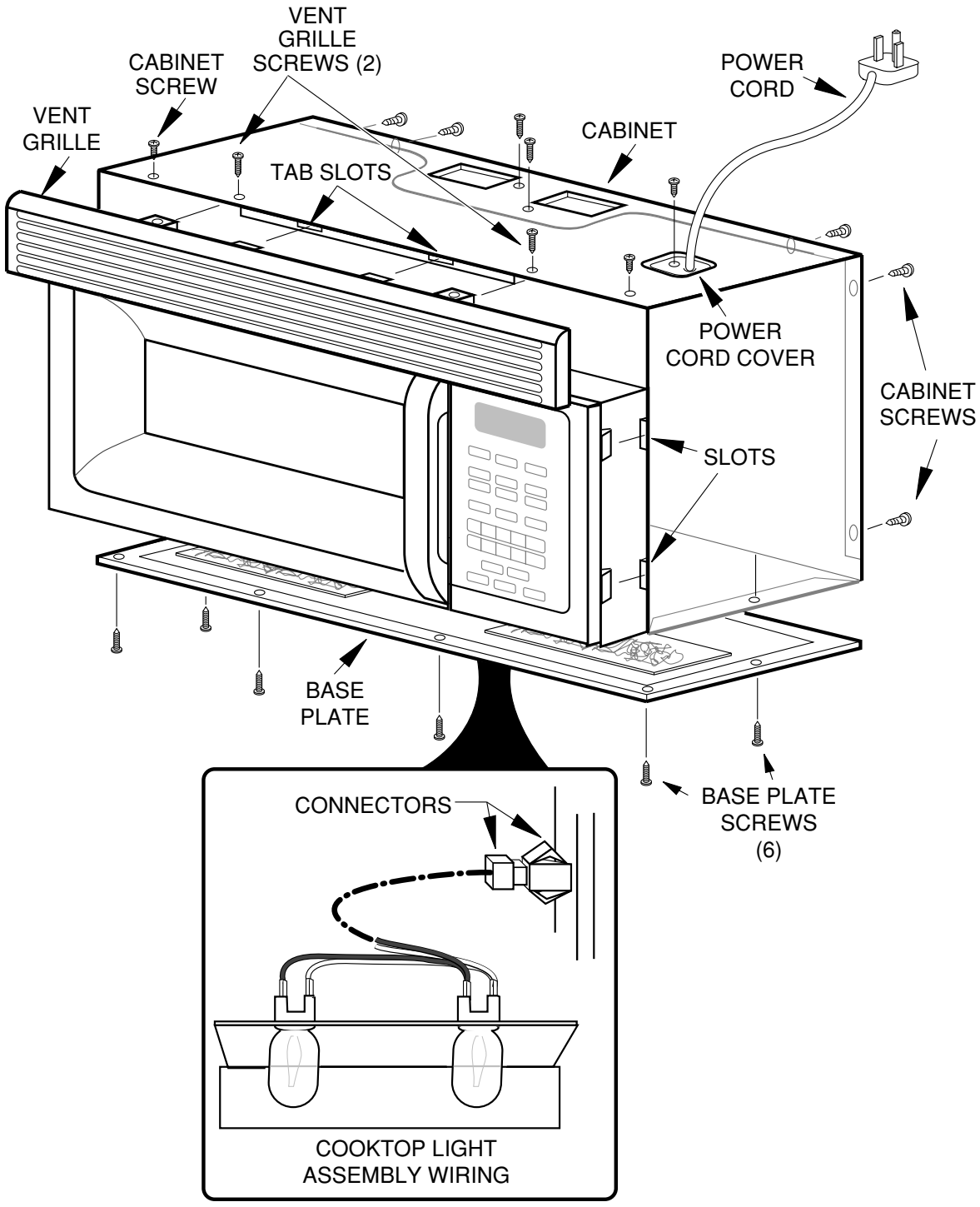


5. Using two people, remove the microwave oven from its mounting location and set it on a protected (padded) work surface.



6. To remove the vent grille from the microwave oven, remove the two inside screws from the top of the cabinet, then pull the top of the vent grille out so the two center tabs are free of their slots, and remove the grille.
7. Remove the screw from the power cord cover and remove the cover.
8. Remove the remaining screws from the top and rear of the cabinet.
9. Slide the cabinet back and unhook the sides from the tabs, then slide the power cord out of the cabinet, and remove the cabinet.

Proceed to the section for the component you wish to service.



Removing The Cabinet

THE PROTECTION CONTROL SYSTEM

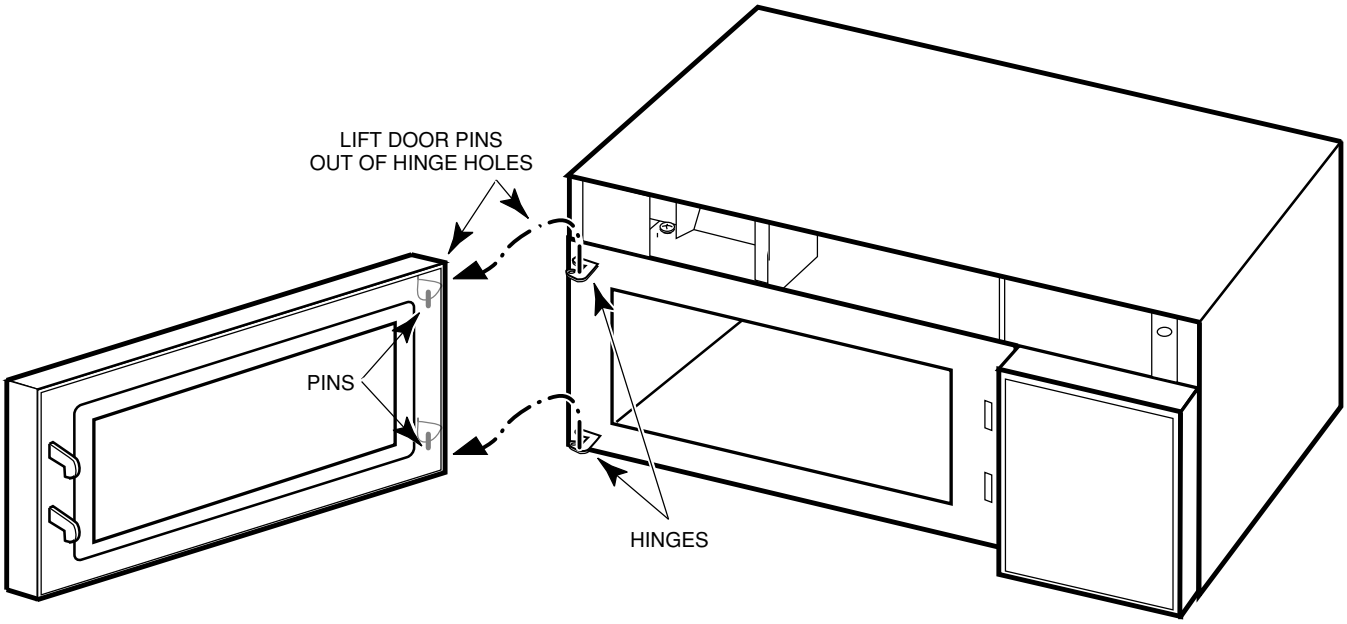
REMOVING THE OVEN DOOR

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Open the oven door all the way, then lift the door pins out of the hinge holes and remove it.
4. Install the new oven door and the vent grille on the microwave oven.



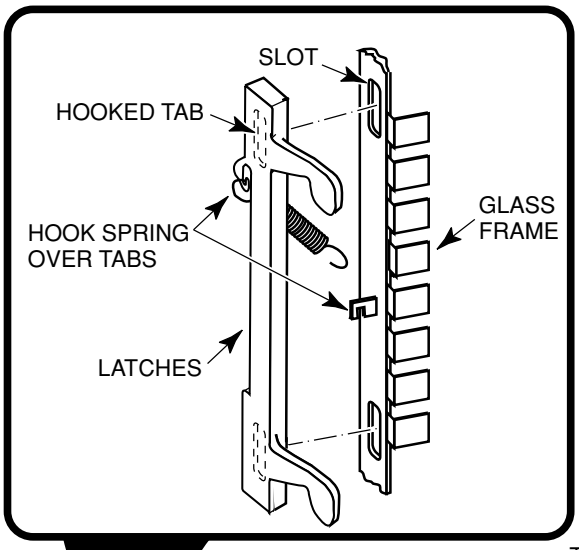
REMOVING THE OVEN DOOR COMPONENTS

⚠WARNING

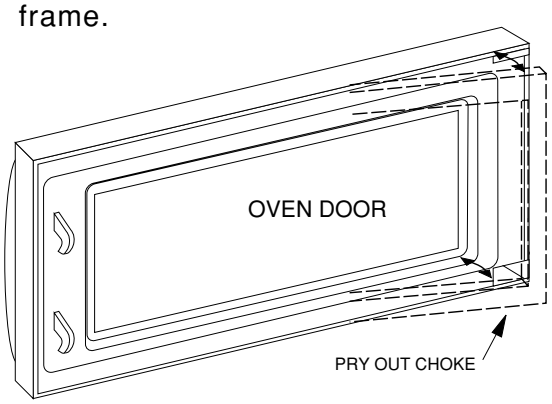
Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

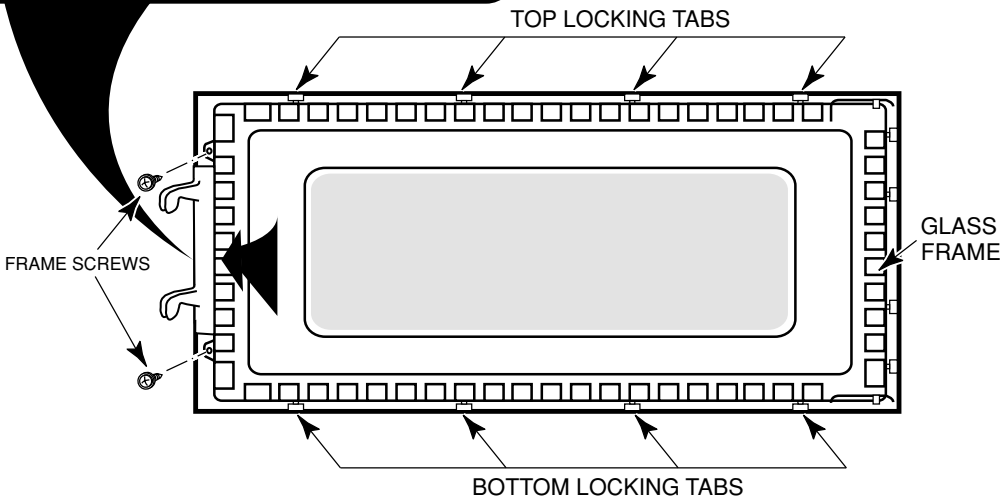
1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Open the oven door all the way, then lift the door pins out of the hinge holes and remove it (see the illustration on the previous page).



4. To remove the oven door choke, use a putty knife along the edges, and pry the choke out from around the inside window frame.



5. To replace the latches and door glass assembly, remove the two mounting screws from the end of the glass frame, then push the top and bottom edges of the door out and unsnap the locking tabs from the frame and remove the assembly.
6. Slide the latches down and remove the hooked tabs from the slots in the door frame, then unhook the ends of the spring from the door, and remove the latches.
7. Reassemble the oven door.
8. Reinstall the oven door and vent grille on the microwave oven.



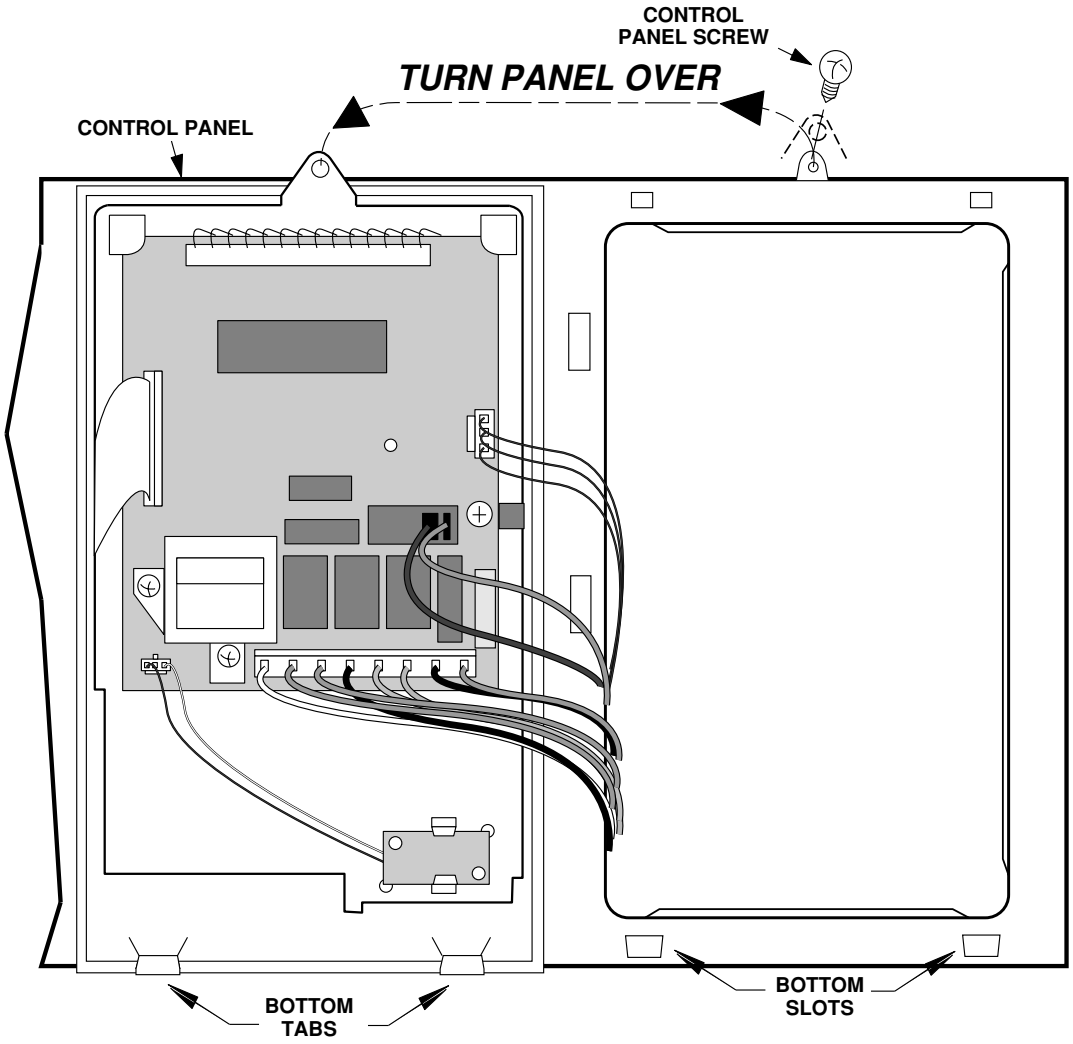
REMOVING THE CONTROL PANEL

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Remove the screw from the top center tab of the control panel, then lift the panel so that the bottom tabs are out of the slots and pull it forward.
4. Turn the panel over and disconnect the three harness connectors from the board, then set the control panel aside.



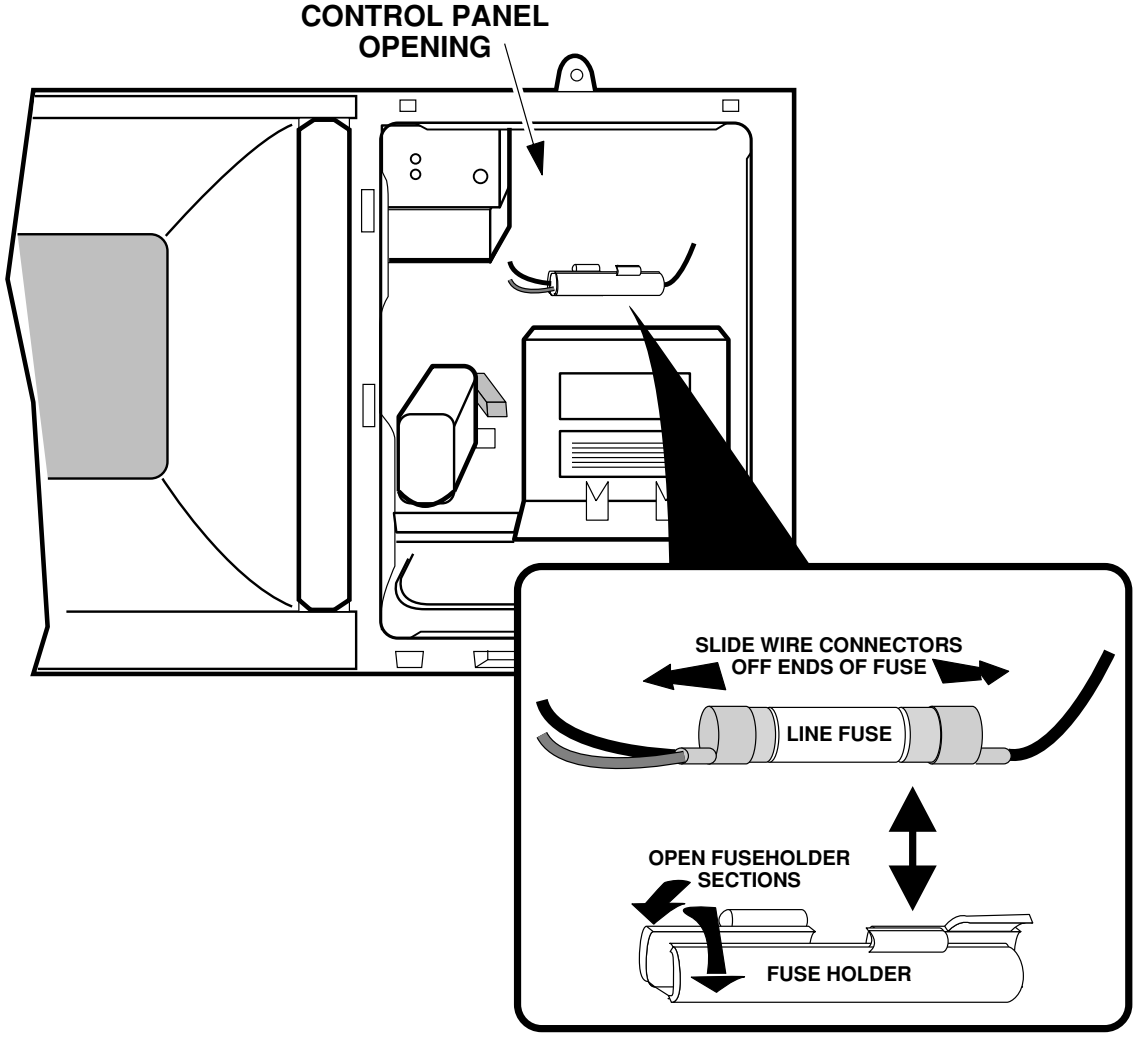
REMOVING THE LINE FUSE

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Remove the control panel from the microwave oven (see page 2-6).
4. From inside the control panel opening, unsnap and open the fuseholder halves.
5. Remove the line fuse from the fuseholder and pull the wire connectors off the ends.
6. Install the new line fuse and reassemble the microwave oven.



REMOVING/ADJUSTING THE INTERLOCK SWITCHES

⚠WARNING

Personal Injury Hazard

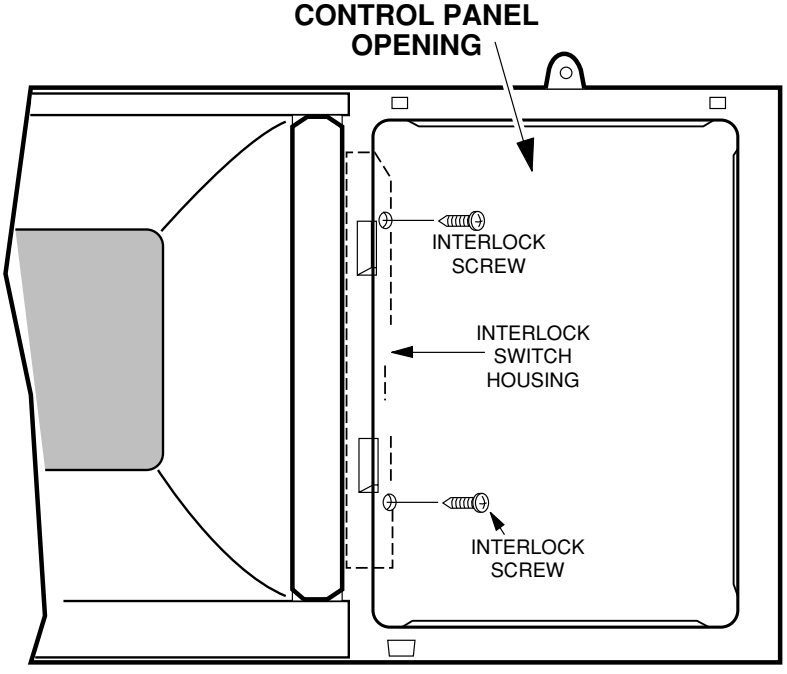
Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

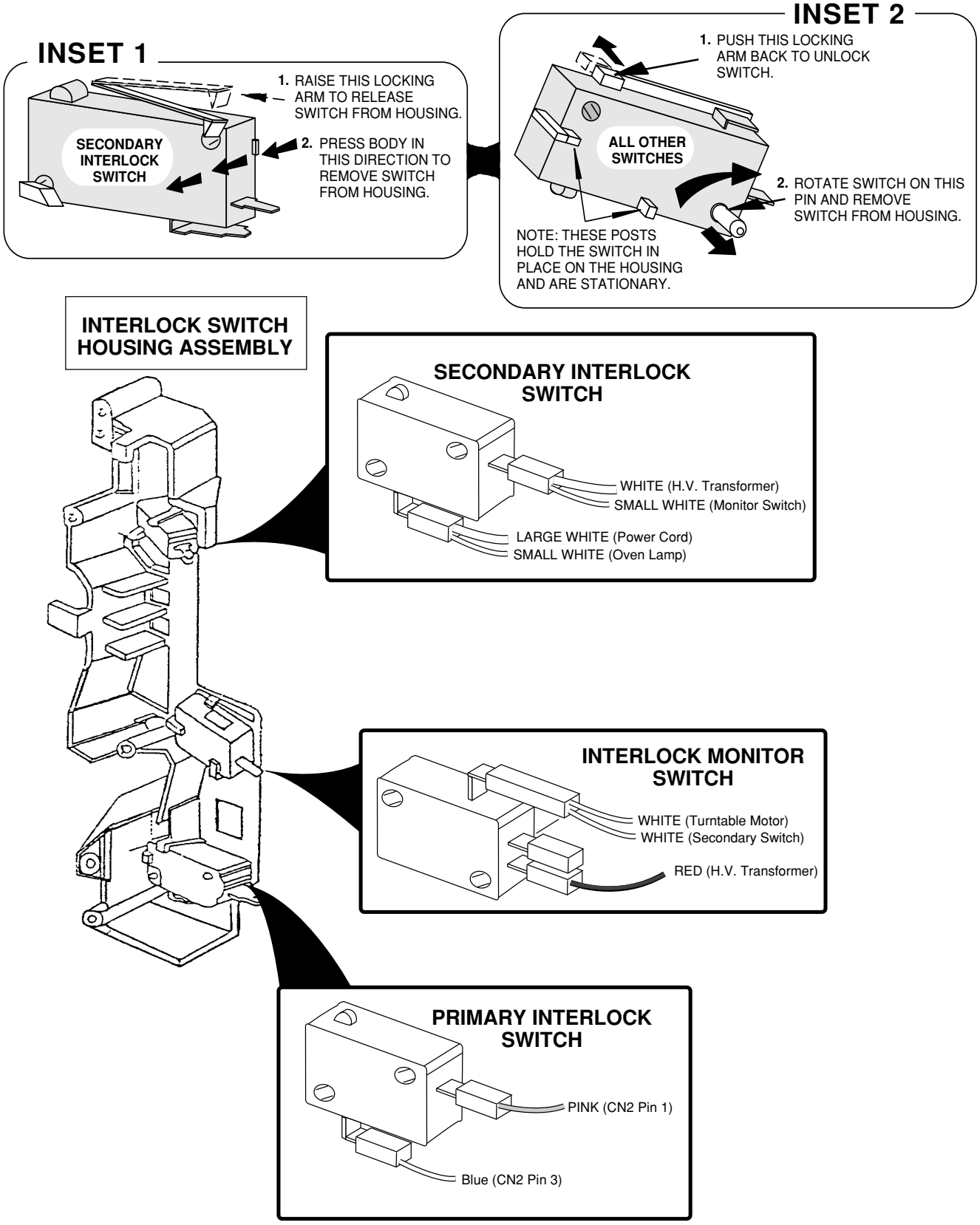
REMOVING A SWITCH

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Remove the control panel from the microwave oven (see page 2-6).
4. Remove the two mounting screws from the interlock switch assembly, and position the assembly so you can easily access the switches and wiring.
5. Refer to inset 1 on the next page for the secondary interlock switch, or inset 2 for any of the other switches mounted on the interlock switch housing assembly, and remove the switch from the housing as shown.
6. One at a time, pull the wire connectors off the defective switch, and reconnect them to the same terminals on the replacement switch.
7. Snap the new switch into place on the switch housing.
8. Mount the interlock switch assembly to the chassis flange with two screws.
9. Close the housing cover and secure it with its mounting screw.

MAKING ADJUSTMENTS

1. Plug in the microwave oven and check the operation of the switches. If necessary, loosen the two housing screws, and adjust the housing so that the switches operate properly. NOTE: The Interlock Monitor Switch provides an added safety check on the Primary and Secondary Interlock Switches. If the Primary and Secondary Interlock Switches allow the oven to operate with the door open, the Interlock Monitor Switch will blow the line fuse. Unplug the oven again when you have completed the checks.
2. Reassemble the microwave oven.





Interlock Switch Wiring

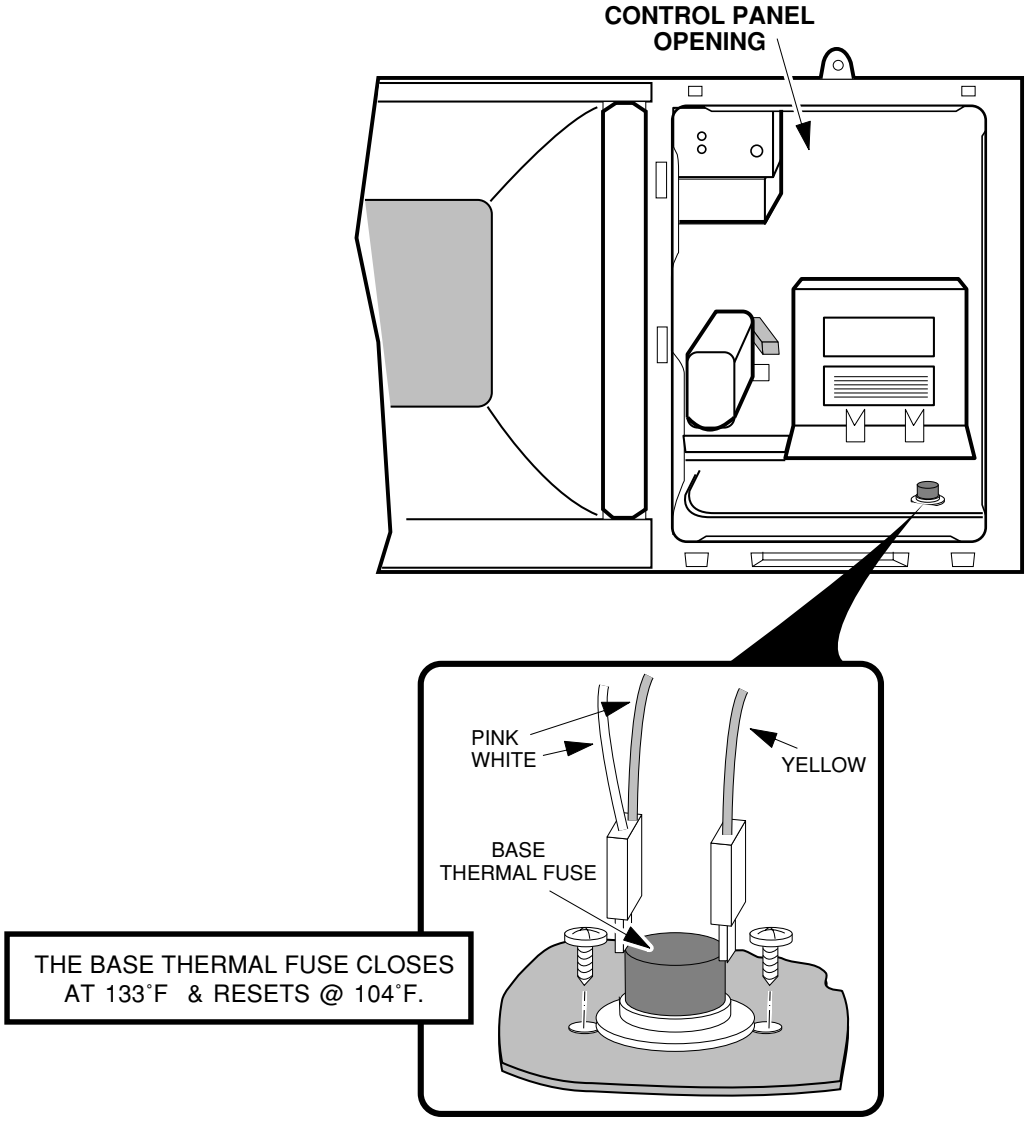
REMOVING THE BASE THERMAL FUSE

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Remove the control panel from the microwave oven (see page 2-6).
4. Remove the mounting screws from the base thermal fuse and remove it.
5. Unplug the connectors from the terminals of the base thermal fuse.
6. Install the new base thermal fuse and reassemble the microwave oven.



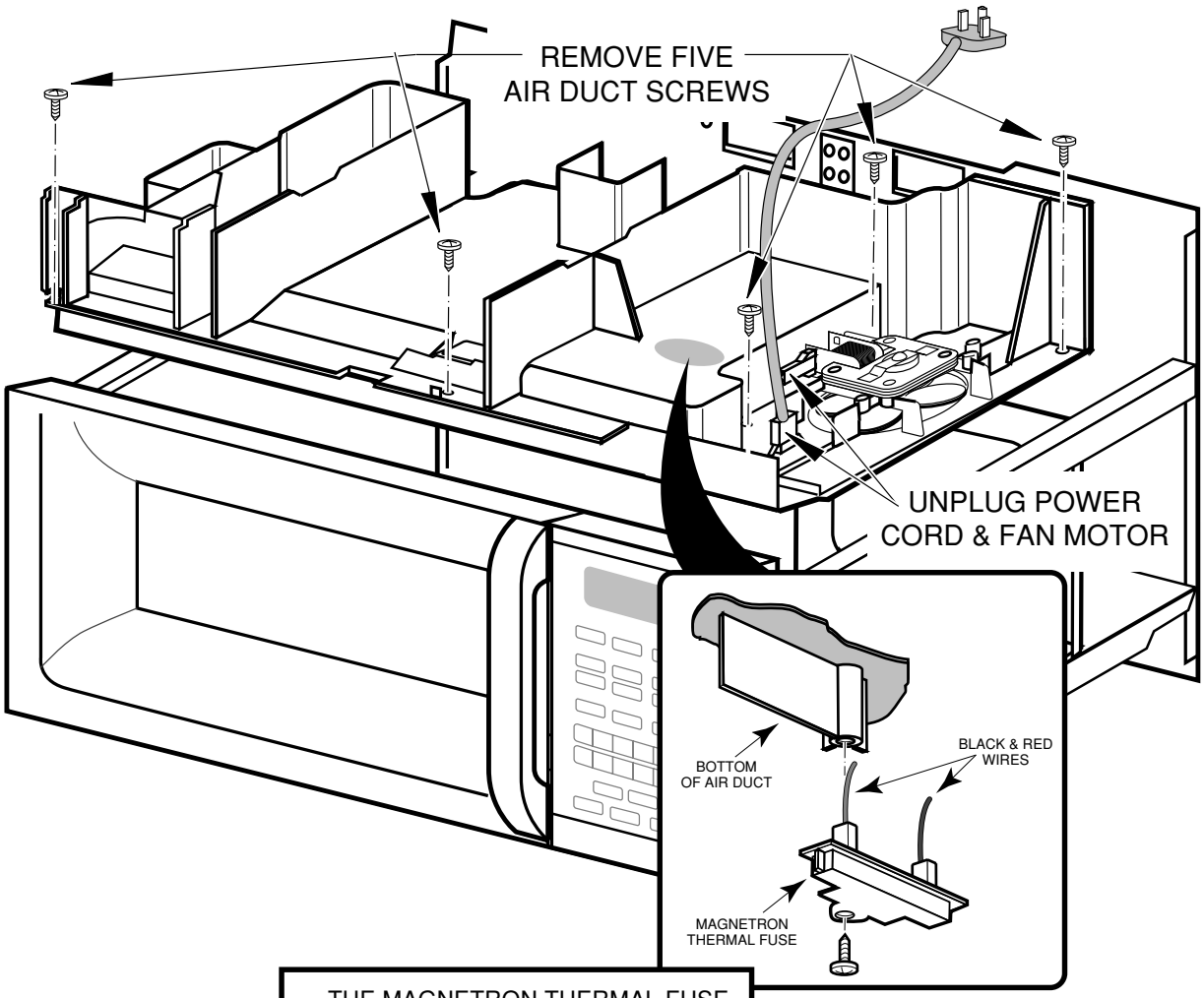
REMOVING THE MAGNETRON THERMAL FUSE

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Unplug the line cord connector and remove the line cord.
5. Unplug the connector from the terminals of the fan motor.
6. Remove the five screws from the air duct.
7. Lift the air duct and position it so that you can access the magnetron thermal fuse, then remove the mounting screw, and unplug the connectors from its terminals.
8. Install the new magnetron thermal fuse on the air duct, and reassemble the microwave oven.



THE MAGNETRON THERMAL FUSE OPENS AT 228˚F & RESETS @ 140˚F.

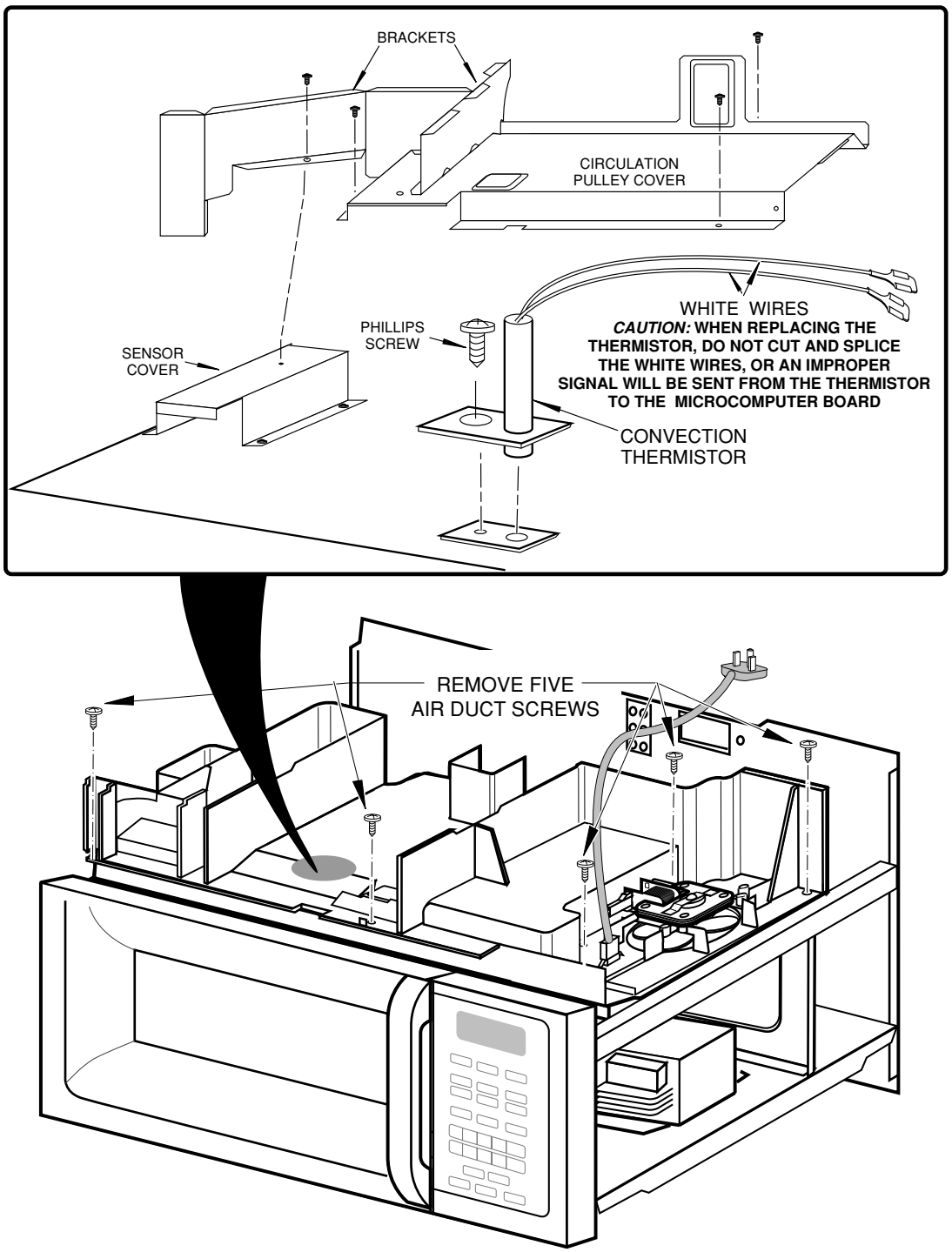
REMOVING THE CONVECTION THERMISTOR

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct and position it so that you can access the pulley cover underneath.
5. Remove the screws from the circulation pulley cover and the bracket, then remove the cover and the attached brackets from the top of the oven. Do not remove the brackets from the cover.
6. Remove the screw from the convection thermistor and remove the thermistor.
7. Cut the two white wires (not the thermistor wires) coming from the control board next to the splice.
8. Splice the white wires onto the ends of the new convection thermistor wires. Cover the spliced wire ends with electrical tape so that they cannot short to the oven.
9. Mount the new convection thermistor to the oven and reassemble the microwave oven.


BRACKETS
CIRCULATION
PULLEY COVER
WHITE WIRES
CAUTION: WHEN REPLACING THE THERMISTOR, DO NOT CUT AND SPLICE THE WHITE WIRES, OR AN IMPROPER SIGNAL WILL BE SENT FROM THE THERMISTOR TO THE MICROCOMPUTER BOARD
PHILLIPS
SCREW
SENSOR
COVER
CONVECTION
THERMISTOR
REMOVE FIVE
AIR DUCT SCREWS

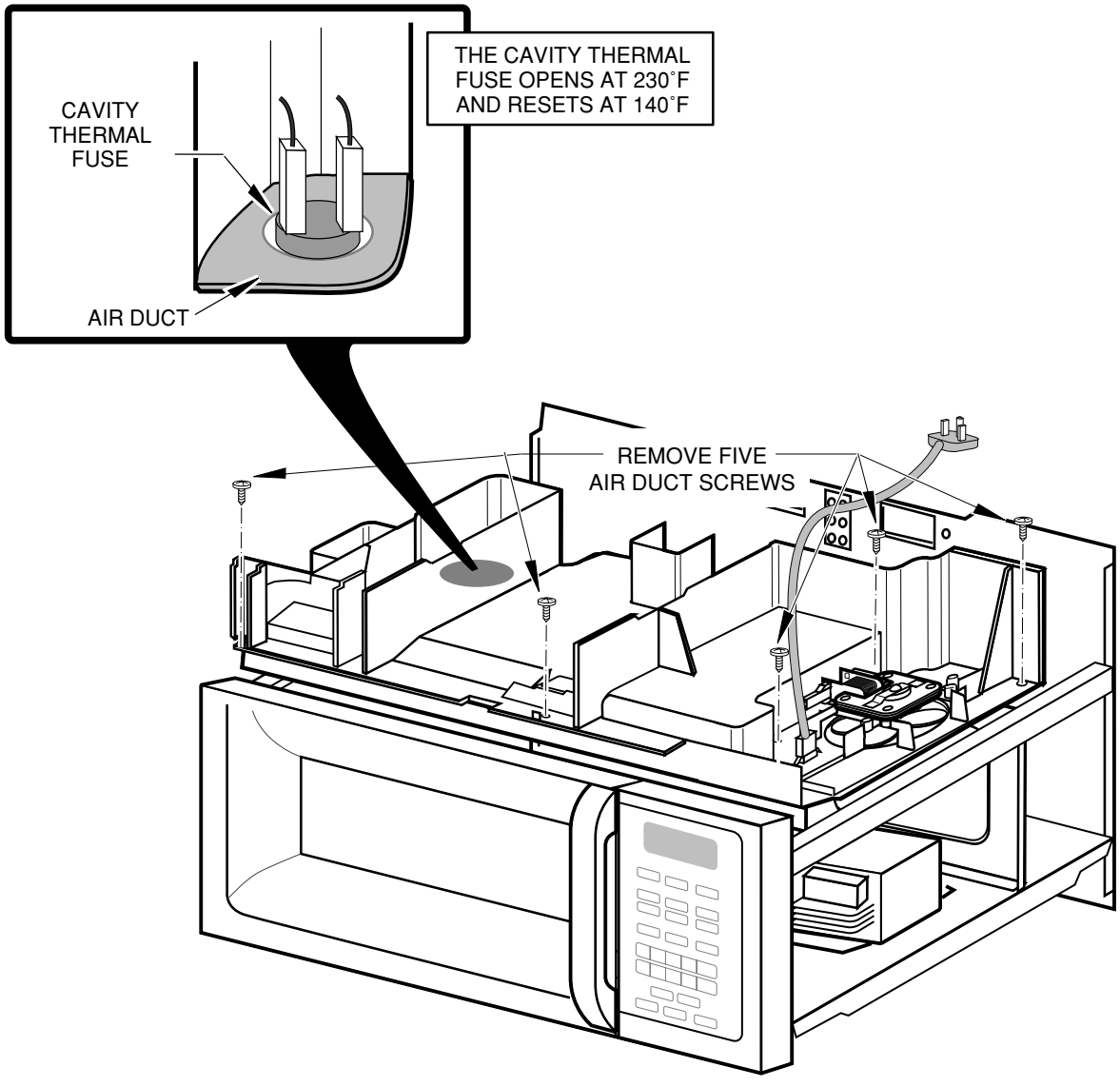
REMOVING THE CAVITY THERMAL FUSE

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct.
5. Unplug the connectors from the terminals of the cavity thermal fuse, then lift the left side of the air duct, and remove the cavity thermal fuse. NOTE: There are no mounting screws holding the cavity thermal fuse in place.
6. Install the new cavity thermal fuse in its mounting hole, and reassemble the microwave oven.



THE OPERATING CONTROL SYSTEM

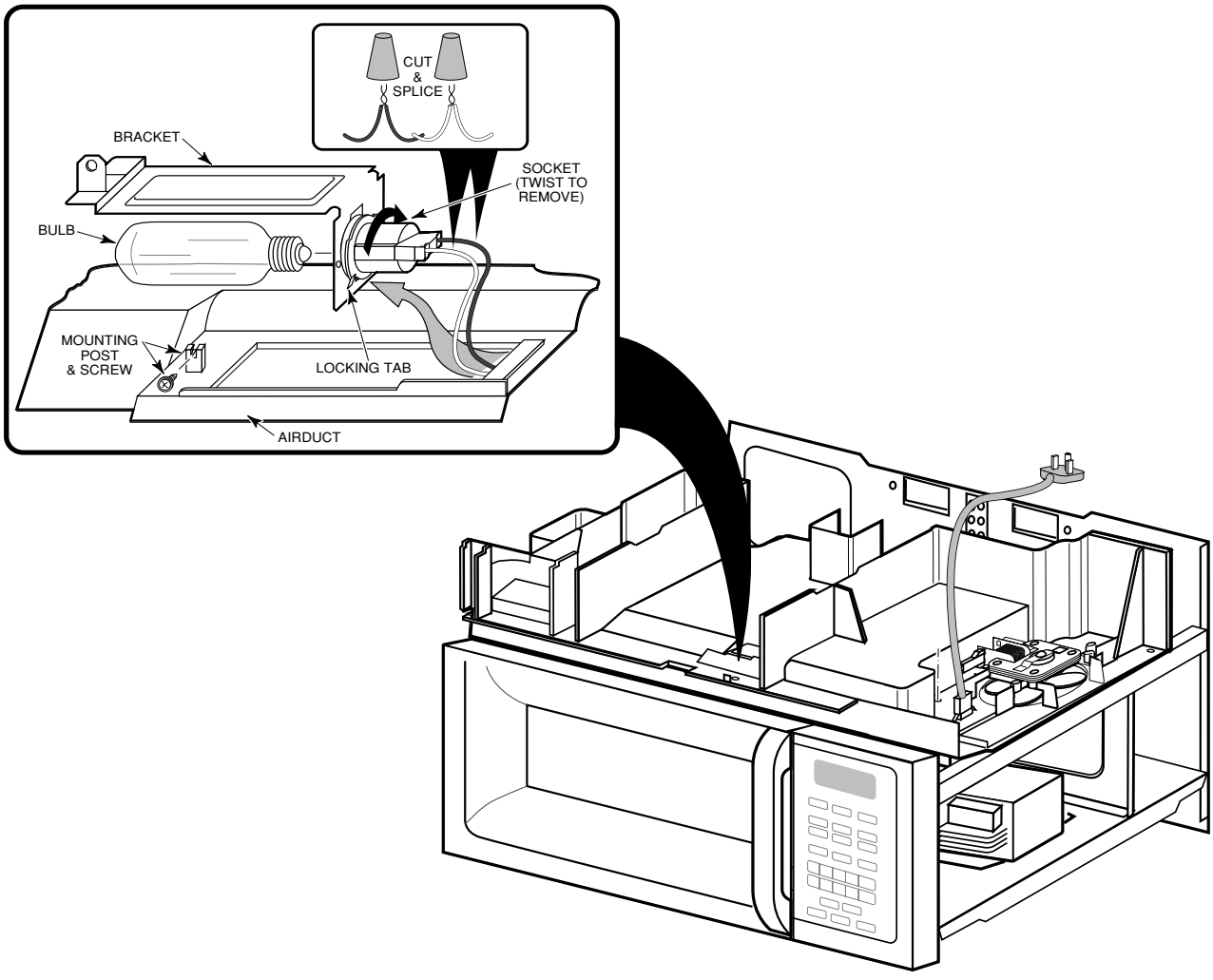
REMOVING THE OVEN LIGHT SOCKET

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the mounting screw from the light cover and remove the cover.
5. Remove the bulb from the oven light socket.
6. Cut the wires near the old light socket body.
7. Push the locking tab and turn the socket and remove it from the bracket.
8. Remove 1/2" of insulation from the cut wire ends of the black and white wires and then splice them to the wires of the new socket with two wire nuts.
9. Install the new light socket and its bulb, and reassemble the microwave oven.



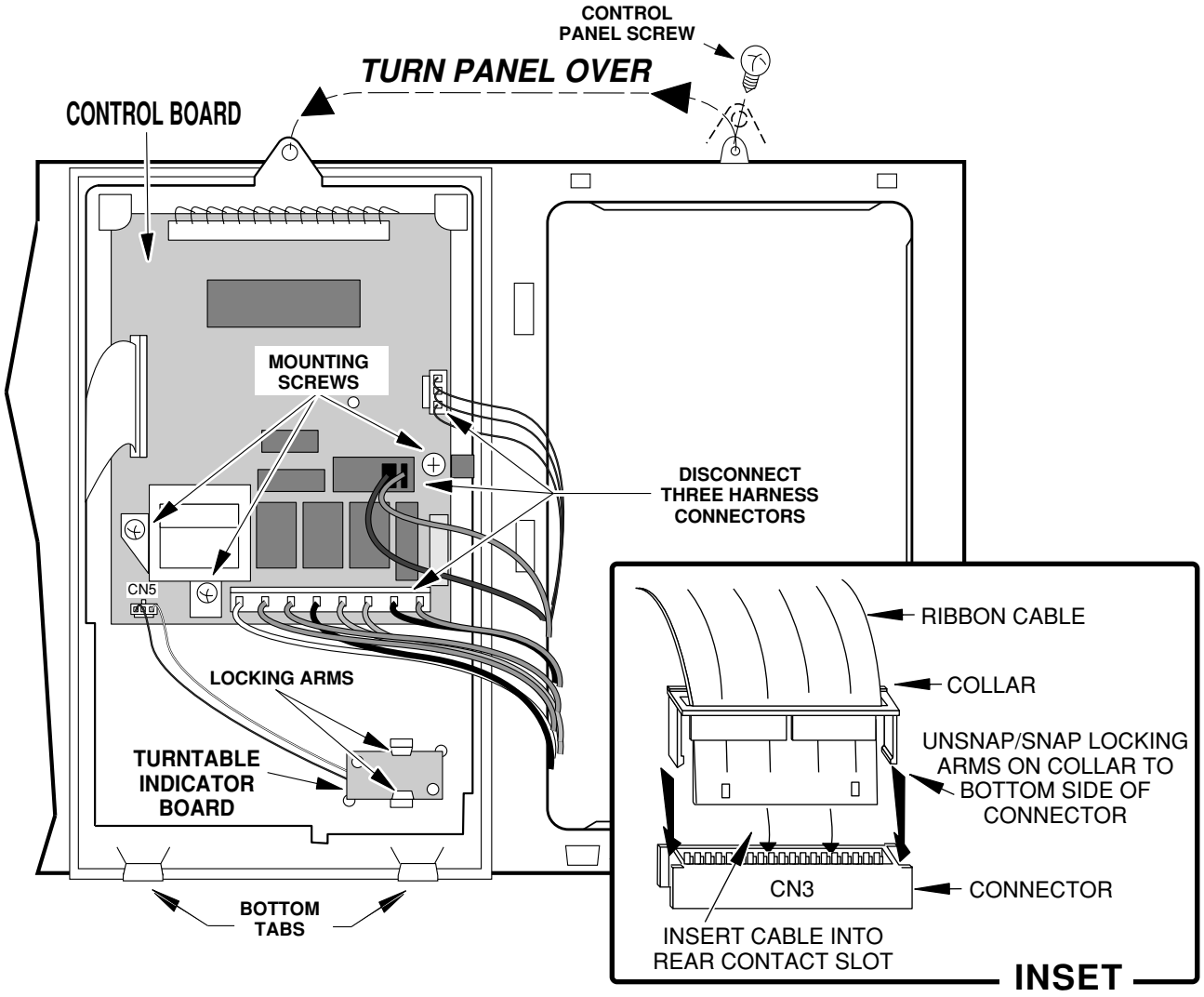
REMOVING THE CONTROL CIRCUIT BOARD & THE TURNTABLE INDICATOR CIRCUIT BOARD

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
3. Remove the screw from the top center tab of the control panel, then lift the panel so that the bottom tabs are out of the slots and turn it over.
4. **To remove the control circuit board,** disconnect the three harness connectors and the ribbon cable (see the inset), and remove the three mounting screws.
5. **To remove the turntable indicator circuit board**, unplug the connector at CN5, and unsnap it from the locking arms.
6. Install the new circuit board in its mounting location and reassemble the microwave oven.



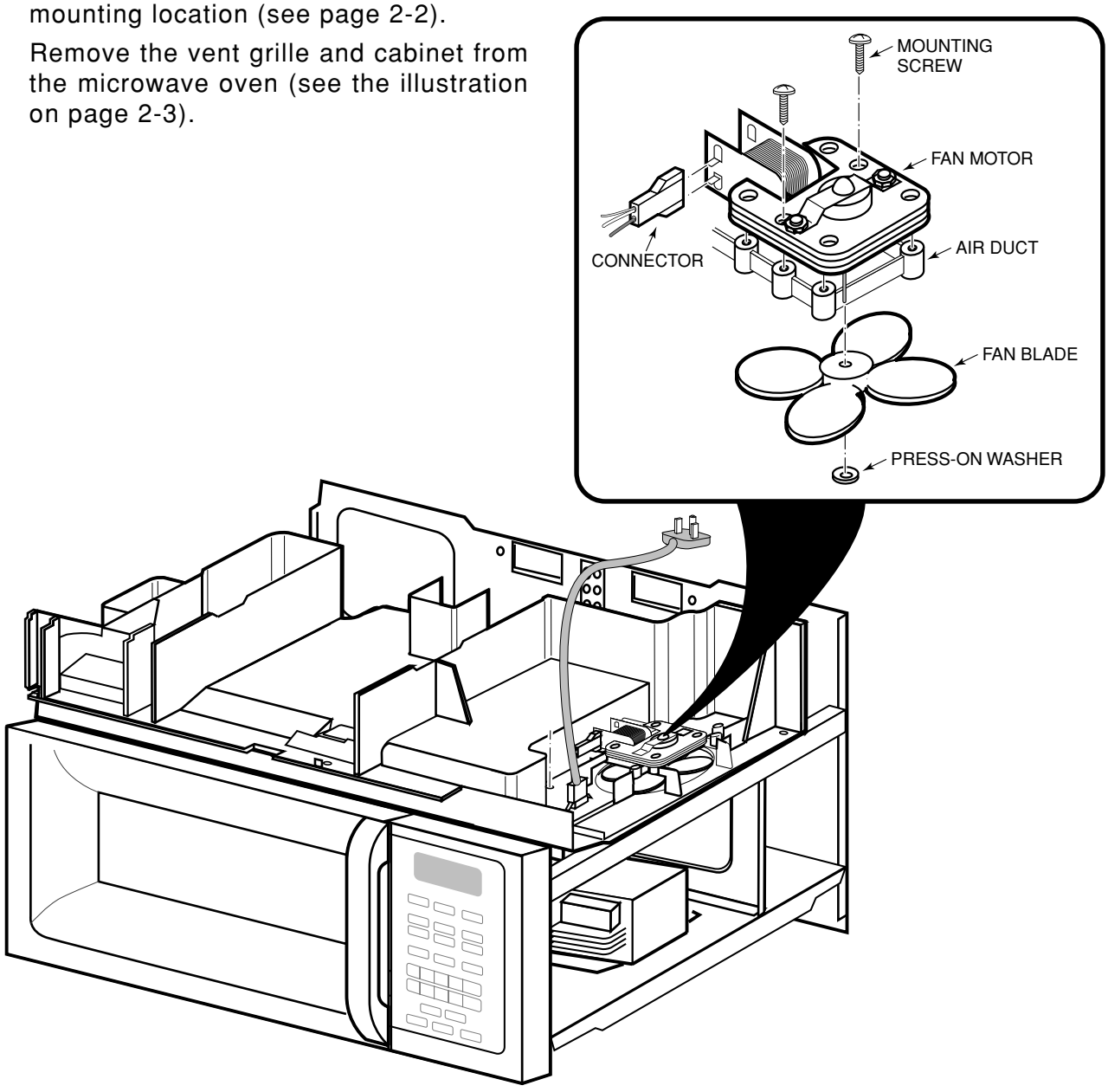
REMOVING THE FAN MOTOR

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Pull the fan blade and press-on washer off the fan motor shaft.
5. Unplug the connector from the fan motor terminals.
6. Remove the two mounting screws from the fan motor and remove the motor from the air duct.
7. Install the new fan motor in its mounting location and reassemble the microwave oven.



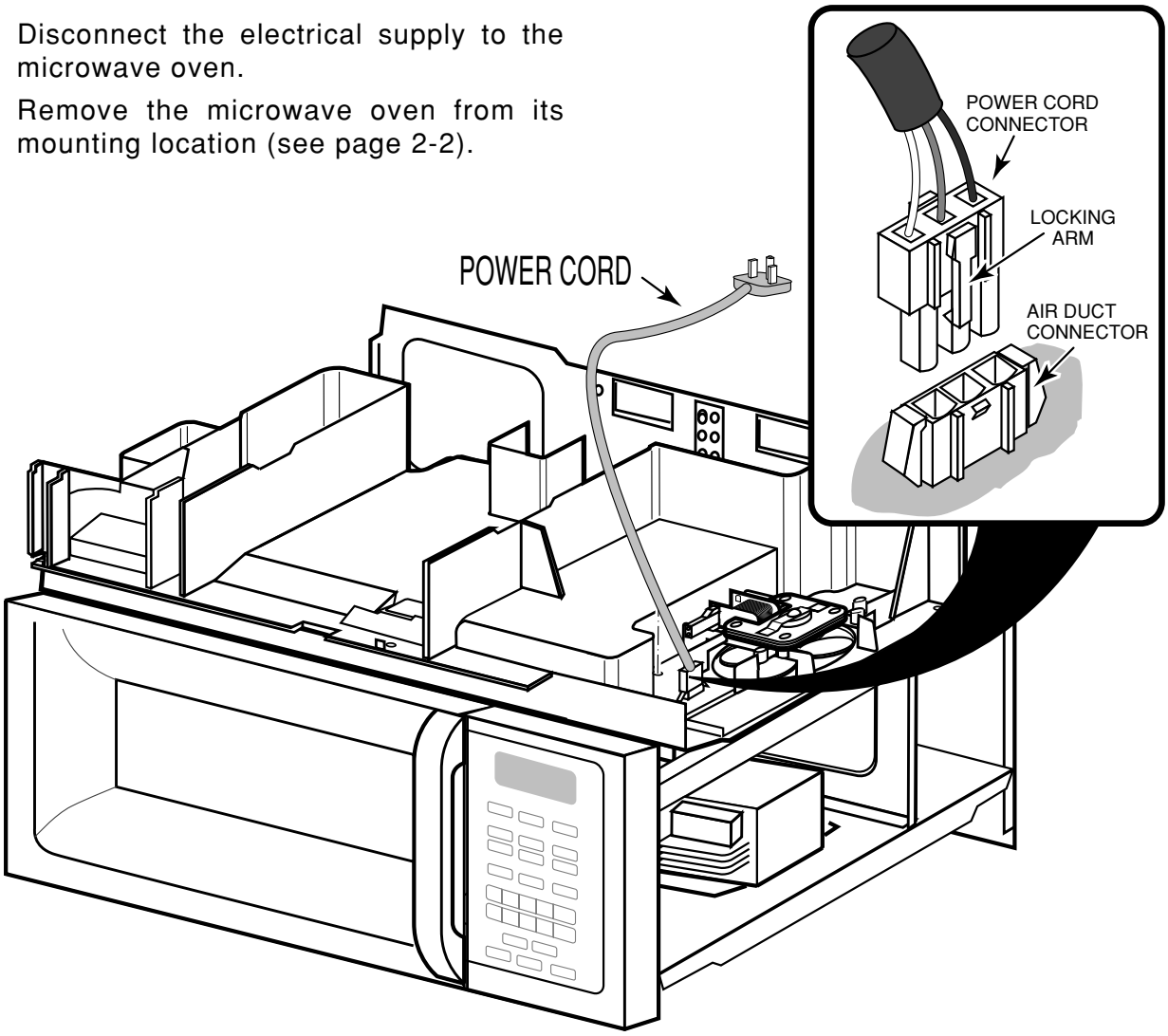
REMOVING THE POWER CORD

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Unplug the connector on the old power cord from the air duct connector and install the new power cord.
5. Reassemble the microwave oven.



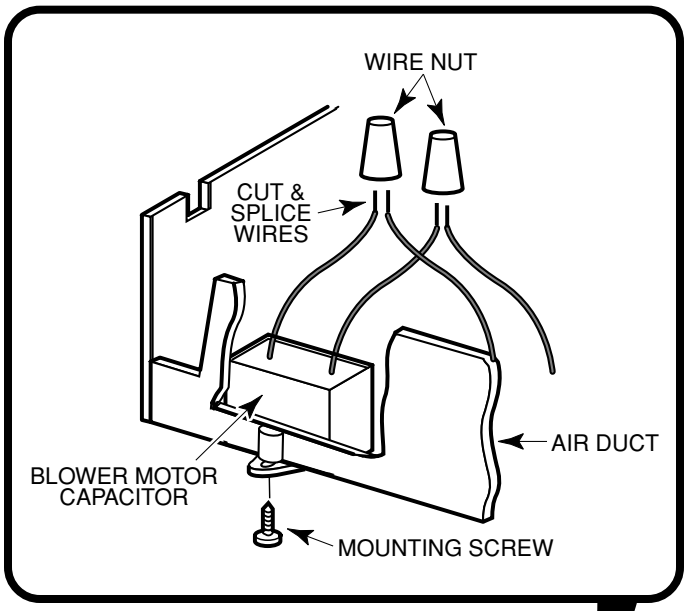
REMOVING THE BLOWER MOTOR CAPACITOR

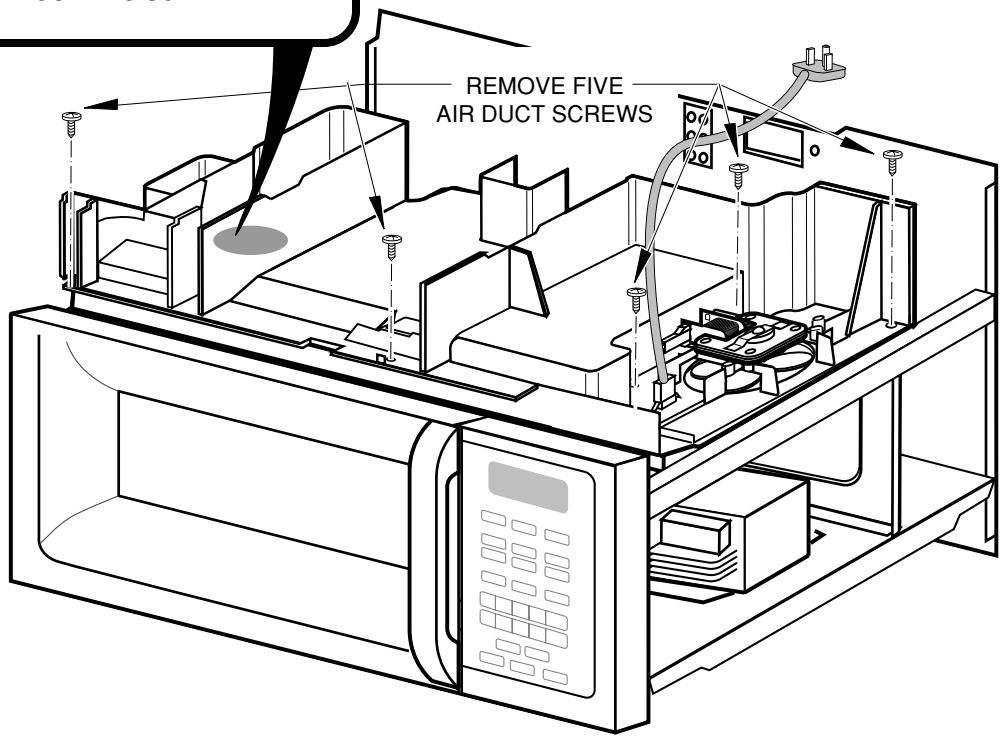
⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct.
5. Cut the wires near the body of the blower motor capacitor.
6. Remove 1/2″ of insulation from the cut wire ends of the red harness wires and then splice them to the wires of the new capacitor with two wire nuts.
7. Install the new blower motor capacitor to the air duct and reassemble the microwave oven.





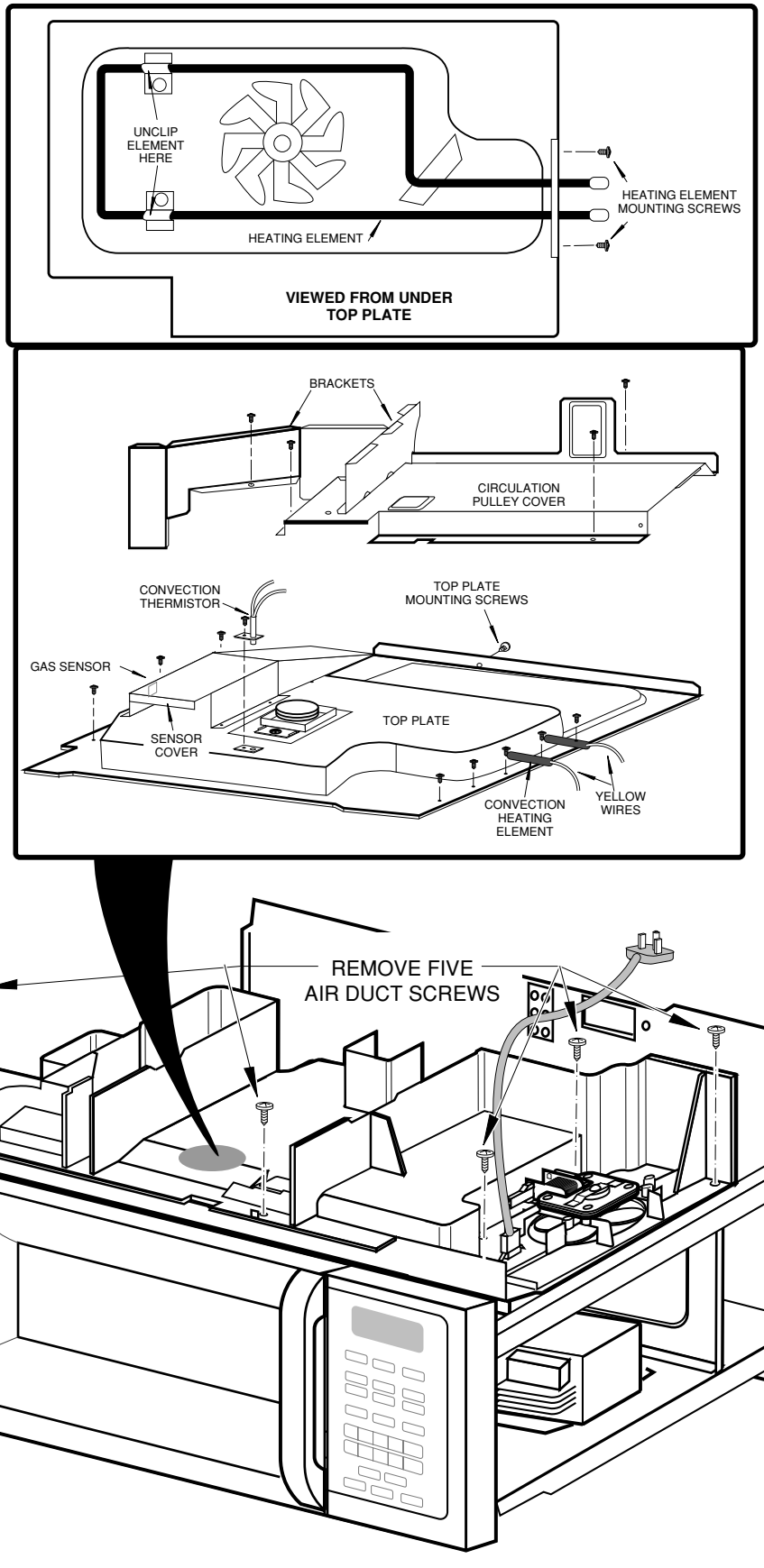
REMOVING THE CONVECTION HEATING ELEMENT

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct, then lift the duct and postion it so you can access the convection heating element.
5. Remove the three phillips screws from the circulation pulley cover and the one from the bracket, and remove the cover and attached brackets from the top of the oven. Do not remove the brackets from the cover.
6. Remove the screw from the gas sensor and position the sensor out of the way.
7. Unhook the drive belt from the circulation fan pulleys and set it aside.
8. Remove the phillips screw from the convection thermistor that is located on the top plate. Remove the thermistor and position it out of the way.
9. Disconnect the wires from the convection heating element terminals.
10. Remove the phillips screws from the top cover, remove it from the oven, and turn it over.
11. Remove the two phillips screws from the convection heating element bracket. Unclip the element from the cover and remove it.
12. Install the new heating element into the mounting clips in the top cover, and secure the mounting bracket with two phillips screws.
13. Reassemble the microwave oven.


UNCLIP ELEMENT HERE
HEATING ELEMENT
HEATING ELEMENT MOUNTING SCREWS
VIEWED FROM UNDER TOP PLATE
BRACKETS
CIRCULATION PULLEY COVER
CONVECTION THERMISTOR
TOP PLATE MOUNTING SCREWS
GAS SENSOR
SENSOR COVER
TOP PLATE
CONVECTION HEATING ELEMENT
YELLOW WIRES
REMOVE FIVE AIR DUCT SCREWS

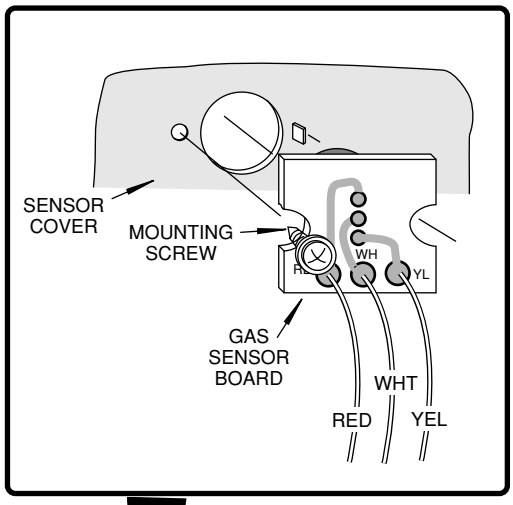
REMOVING THE GAS SENSOR

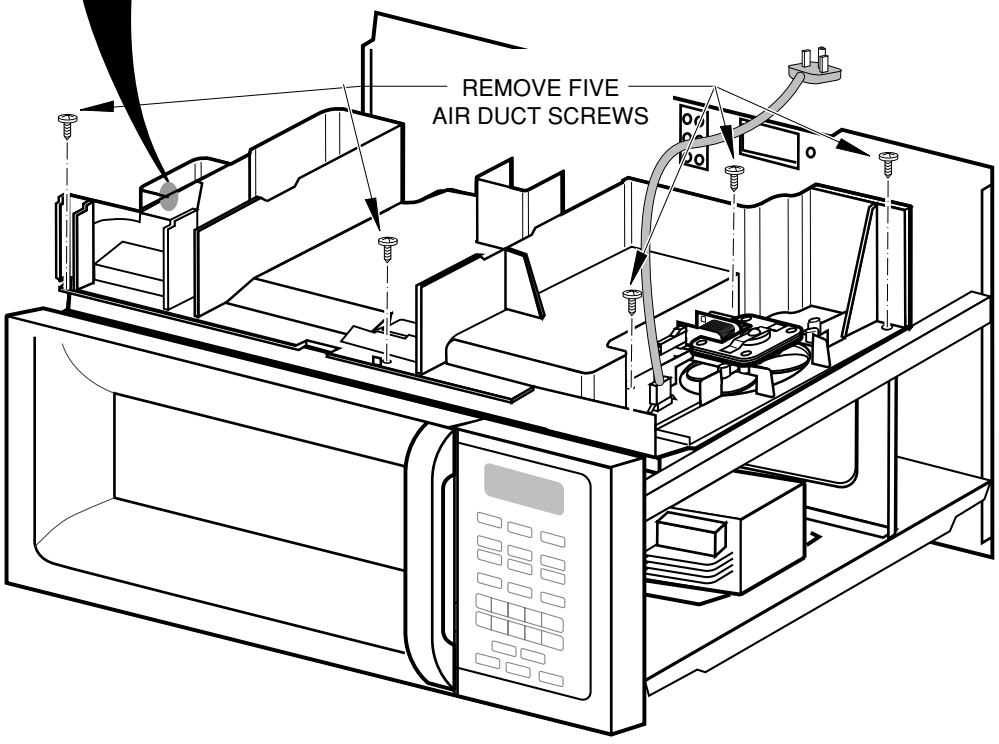
⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct, then lift the duct and postion it so you can access the gas sensor.
5. Remove the screw from the gas sensor board and remove it from the sensor cover, then unplug the connector from the control board.
6. Install the new gas sensor board and then reassemble the microwave oven.





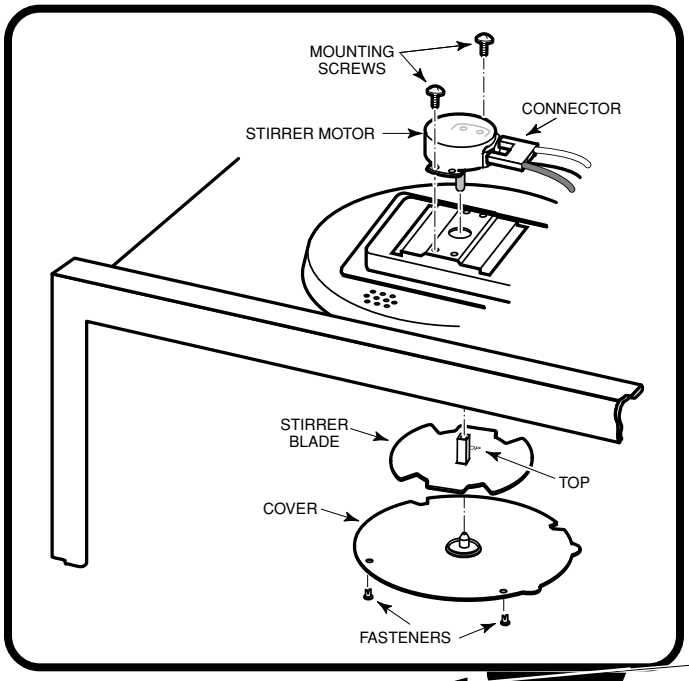
REMOVING THE STIRRER MOTOR

⚠WARNING

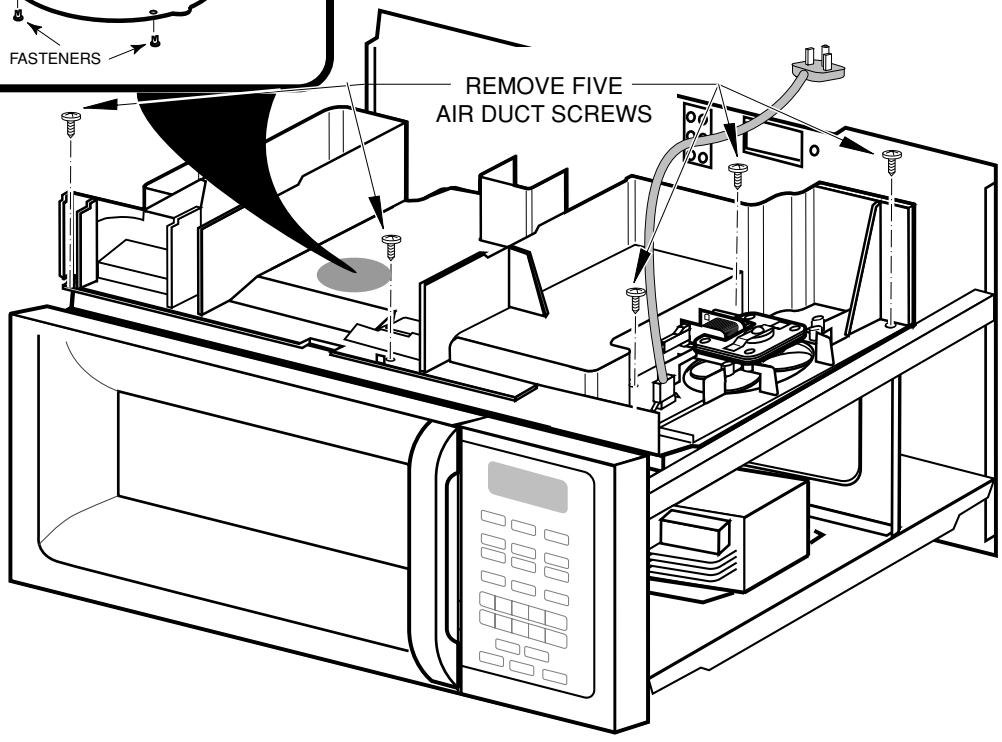
Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.



2. Remove the microwave oven from its mounting location (see page 2-2).
3. Remove the vent grille and cabinet from the microwave oven (see the illustration on page 2-3).
4. Remove the five screws from the air duct and lift the duct just enough to access the stirrer motor, then unplug the connector from the stirrer motor terminals.
5. Remove the two mounting screws from the stirrer motor, lift the motor straight up so that the shaft is free of the stirrer blade, and remove the motor.
6. Install the new stirrer motor so the motor shaft fits into the hole of the rectangular pivot on the stirrer blade, and secure the motor to its mounting location.
7. To access the stirrer blade, unsnap the two fasteners from the top cover inside the oven cavity, and lower the cover and the stirrer blade. NOTE: When you reassemble the cover and stirrer blade, make sure that you position the blade with the “TOP” marking facing up.
8. Reassemble the microwave oven.



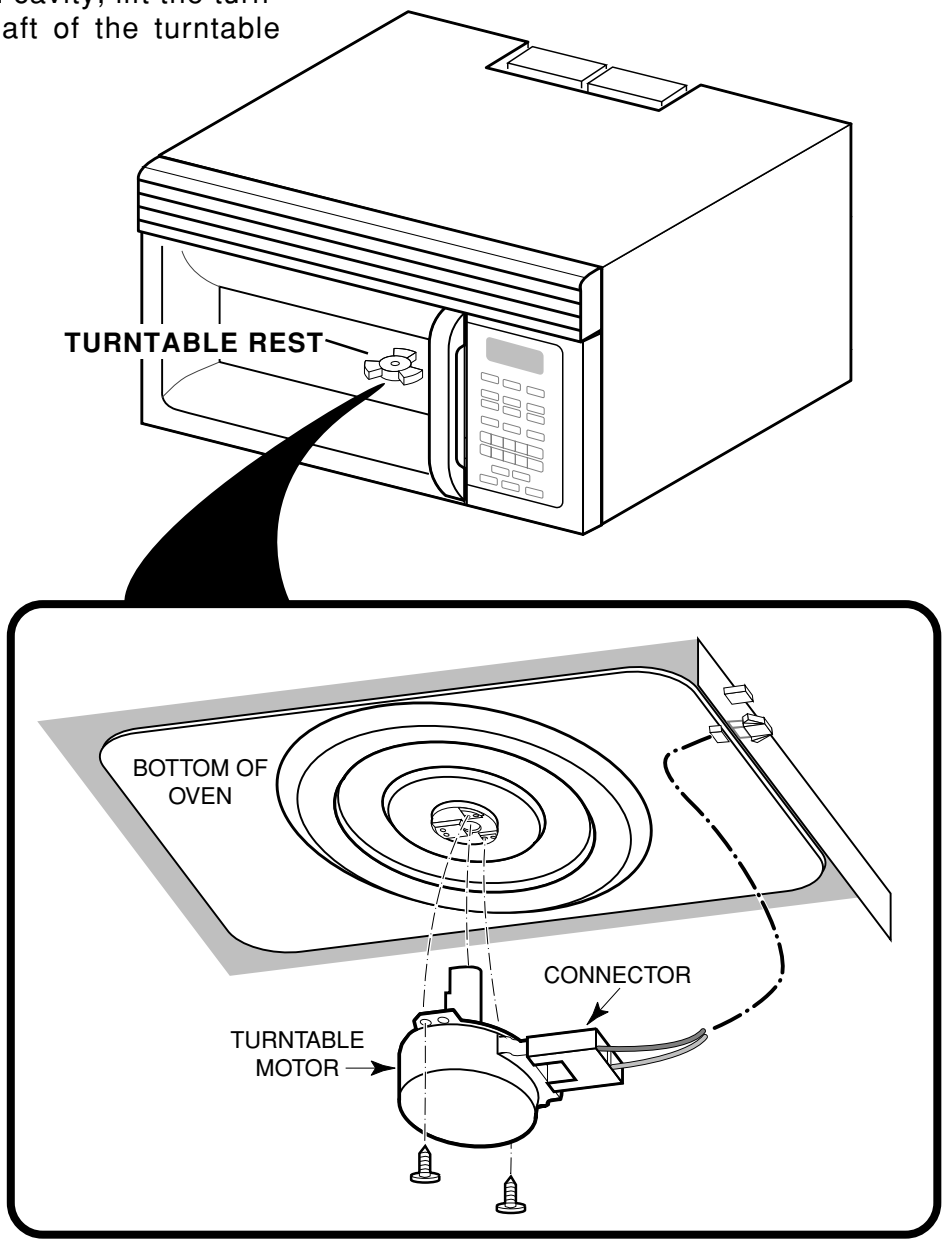
REMOVING THE TURNTABLE MOTOR

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. From inside the oven cavity, lift the turntable rest off the shaft of the turntable motor
3. Remove the base plate from the microwave oven and unplug the cooktop light connector (see the illustration on page 2-3).
4. Unplug the connector and remove the two mounting screws from the turntable motor, then remove the motor from the bottom of the microwave oven.
5. Mount the new turntable motor and reassemble the microwave oven.



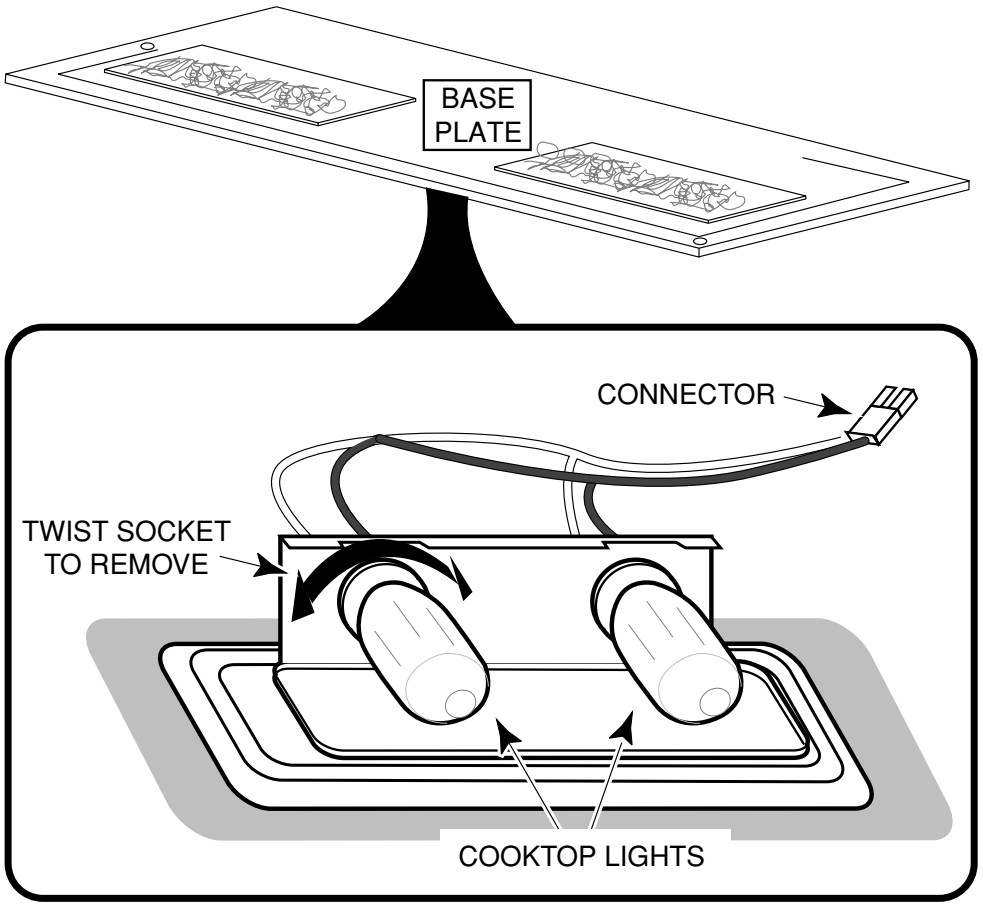
REMOVING THE COOKTOP LIGHT SOCKETS

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

1. Disconnect the electrical supply to the microwave oven.
2. Remove the base plate from the microwave oven and unplug the cooktop light connector (see the illustration on page 2-3).
3. Remove the bulbs from the sockets and unplug the socket wire connector from the microwave oven.
4. To remove the sockets, press the locking tabs near the base of each socket, and twist the socket until the tabs align with the slots in the bracket, then remove the sockets from the bracket.
5. Mount the new sockets to the bracket, reinstall the bulbs, and reassemble the microwave oven.



THE HIGH VOLTAGE COMPONENTS
ACCESSING THE COMPONENTS

The components for service in this section include the:

Magnetron
High Voltage Rectifier
High Voltage Capacitor
High Voltage Transformer

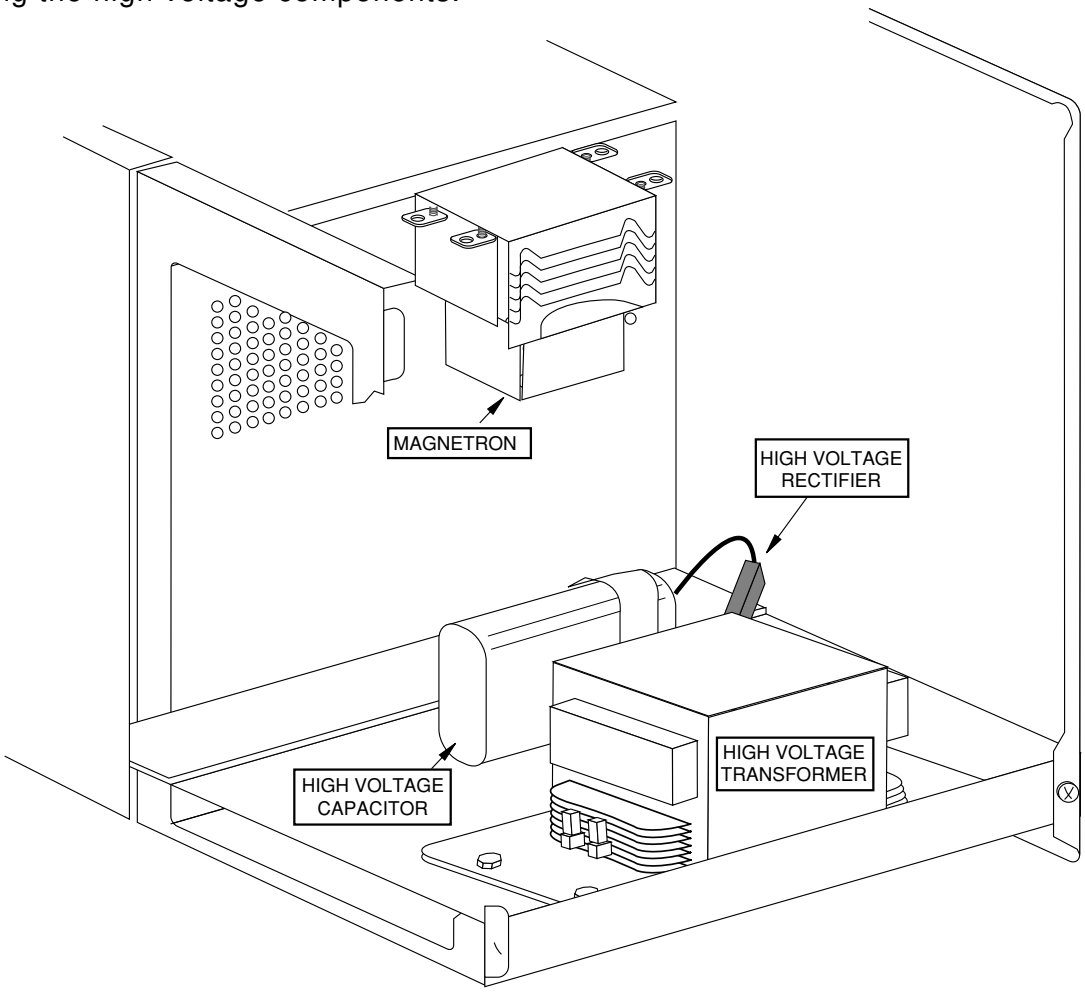
The locations of the high voltage components are shown below. All of the high voltage components are accessible through the front control panel cutout. However, the cabinet must be removed to access the mounting screws for the magnetron. Refer to the following pages for servicing the high voltage components.

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

Discharge the high voltage capacitor before working inside the oven. Failure to do so could result in death or electrical shock.



REMOVING THE MAGNETRON

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

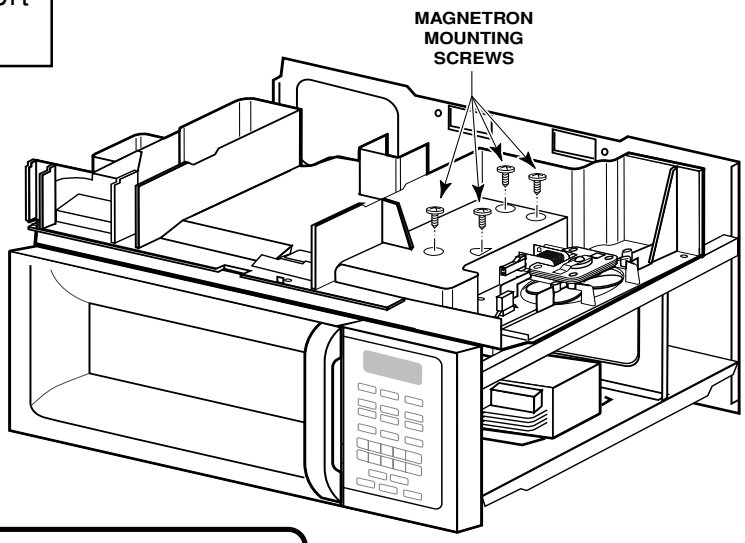
1. Disconnect the electrical supply to the microwave oven.

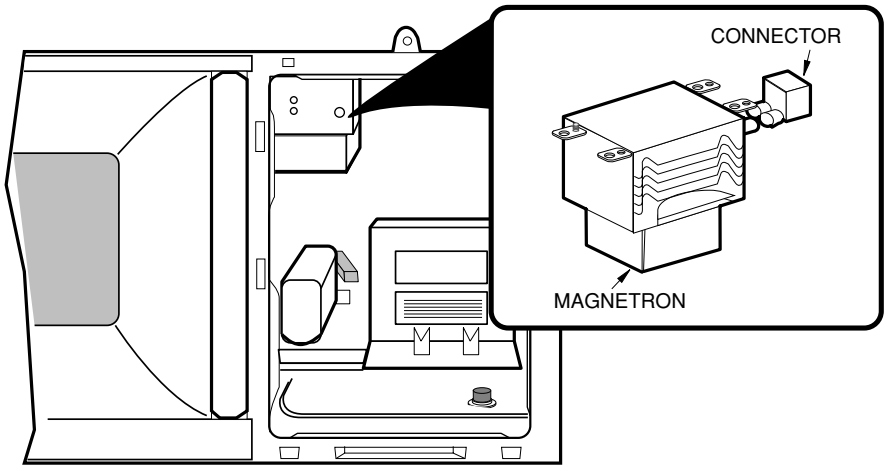
⚠WARNING

Personal Injury Hazard

Disconnect from power supply before servicing. Discharge the capacitor using a 20,000-ohm discharge resistor, or an insulated plastic-handle screwdriver to short across the capacitor terminals.

2. Discharge the high-voltage capacitor.
3. Remove the microwave oven from its mounting location, then remove the vent grille and the cabinet from the oven (see pages 2-2 and 2-3).
4. Remove the control panel from the microwave oven (see page 2-6).
5. From inside the control panel opening, support the magnetron with one hand, then remove the four mounting screws from the magnetron through the four access holes in the top of the air duct.
6. Unplug the wire connector from the back of the magnetron and remove the magnetron from the oven.
7. Install the new magnetron and reassemble the microwave oven.





REMOVING THE HIGH VOLTAGE RECTIFIER AND THE HIGH VOLTAGE CAPACITOR

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

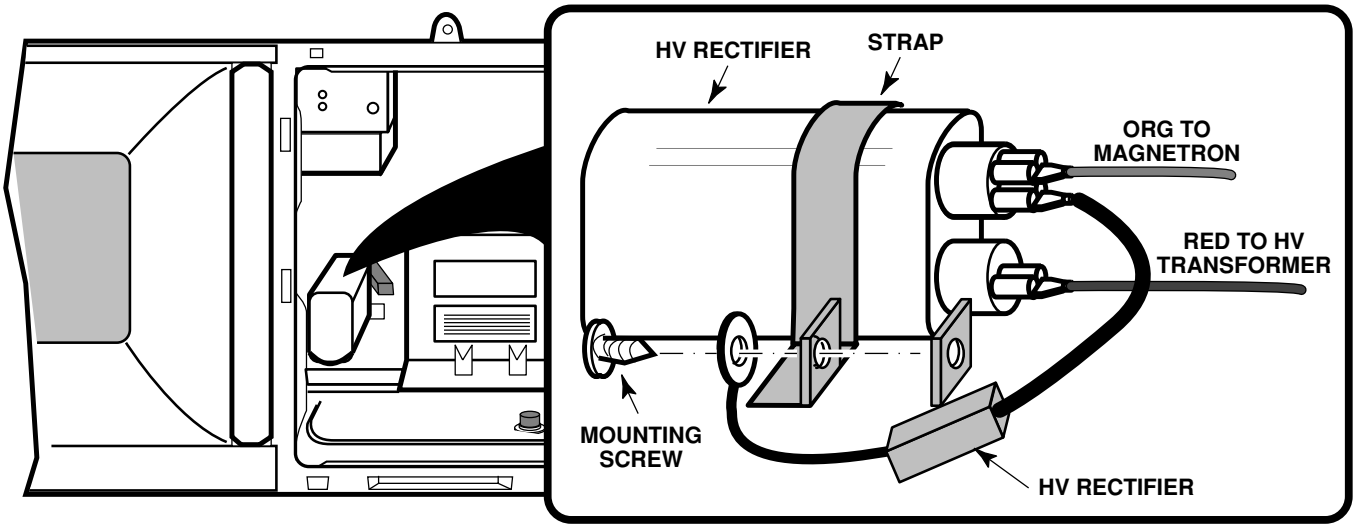
1. Disconnect the electrical supply to the microwave oven.

⚠WARNING

Personal Injury Hazard

Disconnect from power supply before servicing. Discharge the capacitor using a 20,000-ohm discharge resistor, or an insulated plastic-handle screwdriver to short across the capacitor terminals.

2. Discharge the high-voltage capacitor.
3. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
4. Remove the control panel from the microwave oven (see page 2-6).
5. From inside the control panel opening, remove the screw from the capacitor bracket, and remove the bracket and capacitor so that you can access the capacitor terminals.
6. Unplug the wire connectors and the high voltage rectifier from the capacitor terminals and remove the capacitor and rectifier from the oven.
7. Install the high voltage rectifier and capacitor and reassemble the microwave oven.



REMOVING THE HIGH VOLTAGE TRANSFORMER

⚠WARNING

Personal Injury Hazard

Disconnect from the electrical supply before servicing the unit. Failure to do so could result in death or electrical shock.

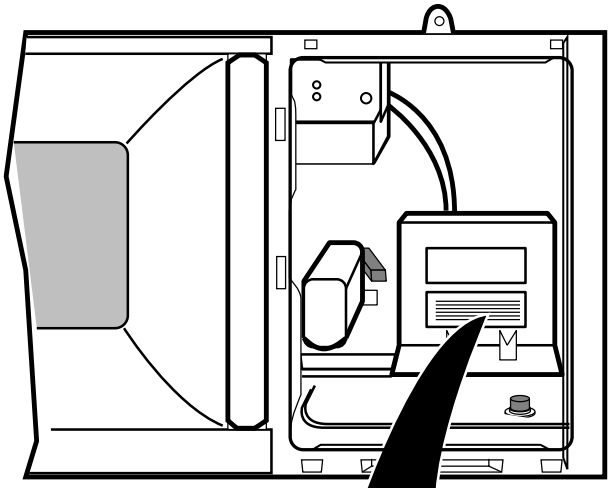
1. Disconnect the electrical supply to the microwave oven.

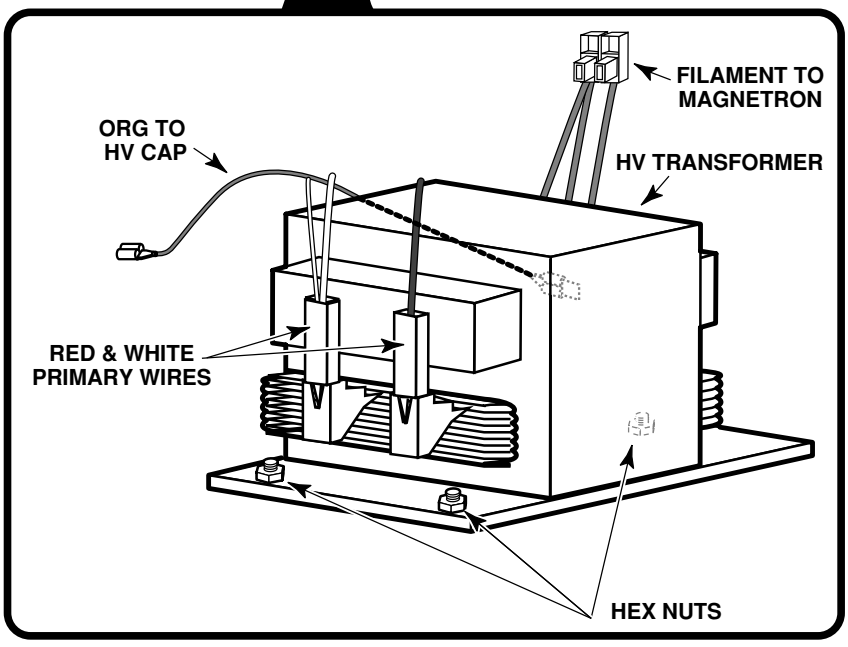
⚠WARNING

Personal Injury Hazard

Disconnect from power supply before servicing. Discharge the capacitor using a 20,000-ohm discharge resistor, or an insulated plastic-handle screwdriver to short across the capacitor terminals.

2. Discharge the high-voltage capacitor.
3. Remove the two screws from the top of the cabinet for the vent grille and remove the grille (see the illustration on page 2-3).
4. Remove the control panel from the microwave oven (see page 2-6).
5. Disconnect the filament wires from the magnetron, then disconnect the three remaining wires from the terminals at the front and back of the high voltage transformer.
6. Remove the three hex nuts from the high voltage transformer and remove the transformer from the oven.
7. Install the new high voltage transformer and reassemble the microwave oven.





— NOTES —

COMPONENT DESCRIPTION & TESTING

IMPORTANT SAFETY INSTRUCTIONS

⚠CAUTION

Warning To Service Technicians!

To avoid possible exposure to microwave radiation or energy, visually check the oven for damage to the door and door seal before operating any oven. Use a microwave survey meter to check the amount of leakage before servicing. In the event the R.F. leakage exceeds 4 mW/cm at 5 cm, appropriate repair must be made before continuing to service the unit. Check interlock function by operating the door latch. The oven cook cycle should cut off before the door can be opened.

The door and latching assembly contains the radio frequency energy within the oven. The door is protected by three safety interlock switches. Do not attempt to defeat them.

UNDER NO CIRCUMSTANCES SHOULD YOU TRY TO OPERATE THE OVEN WITH THE DOOR OPEN.

- Proper operation of microwave ovens requires that the magnetron be properly assembled to the waveguide and cavity. Never operate the magnetron unless it is properly installed.
- Be sure the “RF” seal is not damaged and is assembled around the magnetron dome properly when installing the magnetron.
- Routine service safety procedures should be exercised at all times.
- Untrained personnel should not attempt service without a thorough review of test procedures and safety information contained in this manual.

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 the microwave power for any service test or inspection within the microwave generating components, check the magnetron, wave guide or transmission line and cavity for proper alignment.

D. Any defective or misadjusted components in the interlock, monitor, door seal and microwave generation and transmission system shall be repaired or adjusted by procedures described in the Basic Service Manuals for the specific microwave oven being serviced before the oven is released to the owner.

E. A microwave leakage check to verify compliance with Federal Performance Standards 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.

Whirlpool microwave ovens have a monitoring system designed to assure proper operation of the safety interlock systems.

The interlock monitor switch will immediately cause the oven fuse to blow if the door is opened and the primary door interlock switch and/or the secondary interlock switch contacts fail in a closed position.

CAUTION: REPLACE BLOWN FUSE WITH 15 AMPERE CLASS H FUSE ONLY.

Test the upper and lower door interlock switches, cook relay and interlock monitor switch (middle switch) for proper operation as described in the component test procedures, before replacing the blown oven fuse.

DO NOT ATTEMPT TO REPAIR STICKING CONTACTS OF ANY INTERLOCK SWITCH, SAFETY SWITCH OR COOK (LATCH) RELAY. REPLACE THE SWITCHES AND RELAY.

Any indication of sticking contacts during component tests requires replacement of that component to assure reliability of the safety interlock system.

IF THE FUSE IS BLOWN, THE MONITOR, PRIMARY AND SECONDARY INTERLOCK SWITCHES MUST BE REPLACED. BE SURE THEY ARE PROPERLY CONNECTED.

Precautions to Avoid Possible Exposure to Excessive Microwave Energy

DO NOT attempt to operate the oven with the door open since open-door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.

DO NOT place any object between the oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.

DO NOT operate the oven if it is damaged. It is particularly important that the oven door close properly and that there is no damage to the:

1. Door (bent).
2. Hinges and Latches (broken or loosened).
3. Door Seals and Sealing Surfaces.

DO NOT operate the microwave oven if the door window is broken.

The microwave oven should be checked for microwave leakage by qualified service personnel after a repair is made.

The oven should not be adjusted or repaired by anyone except properly qualified service personnel.

DO NOT operate the microwave oven with the outer cabinet removed.

⚠CAUTION

- High voltages are present during the cook cycle. Extreme caution should be observed at all times.
- Abrasive cleansers, steel-wool pads, gritty wash cloths, etc. can damage the control panel and the interior and exterior oven surfaces. Use a sponge with mild detergent or paper towels with spray glass cleaner. Apply spray glass cleaner to paper towel. Do not spray directly on oven.
- Before touching any oven component or wiring, always unplug the oven from its power source and discharge the capacitor by using a 20,000 ohm discharge resistor or use an insulated plastic handle screwdriver to short across the capacitor terminals.
- Check that the unit is grounded before troubleshooting. Be careful of the high voltage circuits. Discharge any static charge from your body by touching ground before handling any part of the circuitry on the control board. Electrostatic discharge may damage the control circuit.
- Do not touch oven components or wiring during operation. Attach meter leads with alligator clips when making operational tests.
- For continued protection against radiation emission, replace only with these types of switches:

  Primary (Interlock) Switch: SZM-V16-FA-63 or VP-533A-OF; Secondary (Interlock) Switch: SZM-V01-FA-32; Interlock (Monitor) Switch: SZM-Vl6-FA-62 or VP-532A-OF; Oven Lamp Switch: SZM-V6-FA-31 or VP-331A-OD.
- It is neither necessary nor advisable to attempt measurement of high voltage.
- Attaching the adaptor ground terminal to the wall receptacle cover screw does not ground the appliance unless the cover screw is metal and not insulated and the wall receptacle is grounded through the house wiring.

⚠WARNING

- Disconnect the oven from electrical supply before servicing. Failure to do so could result in electrical shock or death.
- Improper use of the grounding plug can result in a risk of electrical shock. Do not, under any circumstance, cut or remove the third ground prong from the power cord plug.

Fire, Electrical Shock, Excessive Exposure to Microwave Energy, Personal Injury & Product Damage Hazard

- Do not block the rear air intake openings or exhaust vents. Allow a few inches of space at the back of the oven where intake openings and exhaust vents are located. Blocking the air intake openings and exhaust vents can cause damage to the oven and poor cooking results. Make sure the microwave oven legs are in place to ensure proper airflow.
- Do not install the oven next to or over a heat source (a cooktop or range).
- Do not install oven in any area where excessive heat and steam are generated. This could cause fire, electrical shock, excessive exposure to microwave energy, other personal injury or damage to the outside of the cabinet.

THE THERMAL FUSES

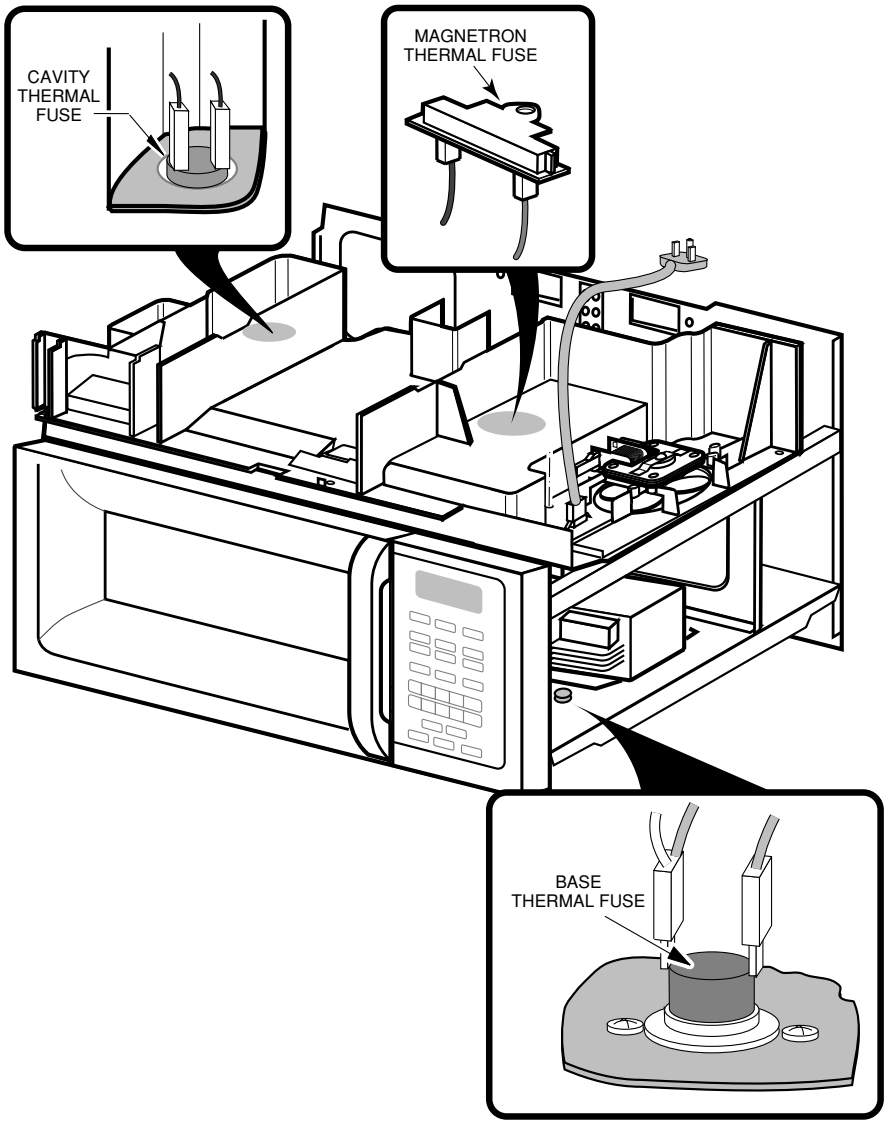
There are three thermal fuses in the OTR Microwave Oven. They are: the magnetron thermal fuse, the cavity thermal fuse, and the base thermal fuse. The magnetron and cavity thermal fuses are located inside the high-voltage section of the oven. These two thermal fuses are normally-closed, and will open at a set temperature to disable the oven. Both of these fuses are resettable.

The base thermal fuse is located directly behind the control panel. It is a normally-open fuse that, when closed, activates the blower motor at a low speed.

POSSIBLE CUSTOMER COMPLAINT:

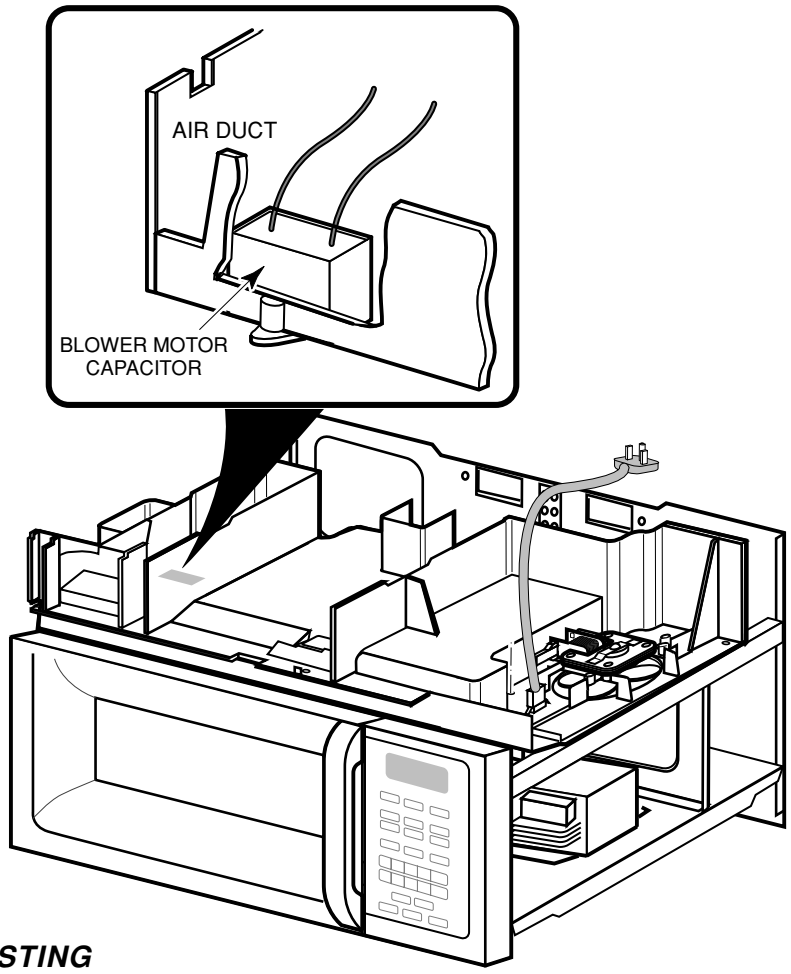
The unit turns on by itself.

Magnetron Thermal Fuse	Opens @ 228˚F/109˚C	Resets @ 140˚F/60˚C
Cavity Thermal Fuse	Opens @ 230˚F/110˚C	Resets @ 140˚F/60˚C
Base Thermal Fuse	Closes @ 133˚F/56˚C	Resets @ 104˚F/40˚C



THE BLOWER MOTOR CAPACITOR

The blower motor capacitor is located below the air duct at the indicated location. It is in use any time the blower (vent) motor is operating. The capacitor helps to maintain a constant voltage to the blower motor so that it runs more efficiently.



TESTING

1. Set the ohmmeter to the *R x 10K* scale.
2. Measure across the capacitor terminals.

   The ohmmeter should indicate several ohms, then gradually return to infinity.

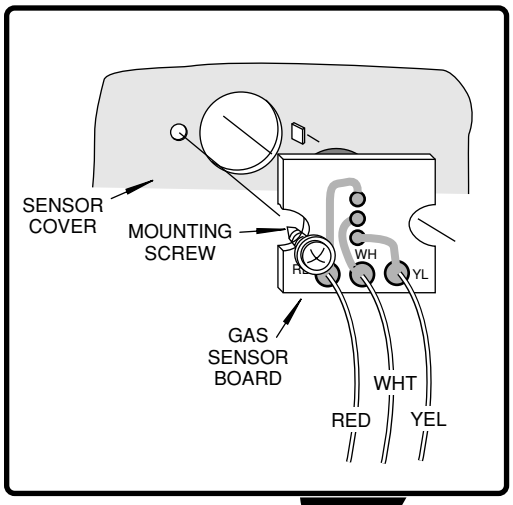
THE GAS SENSOR

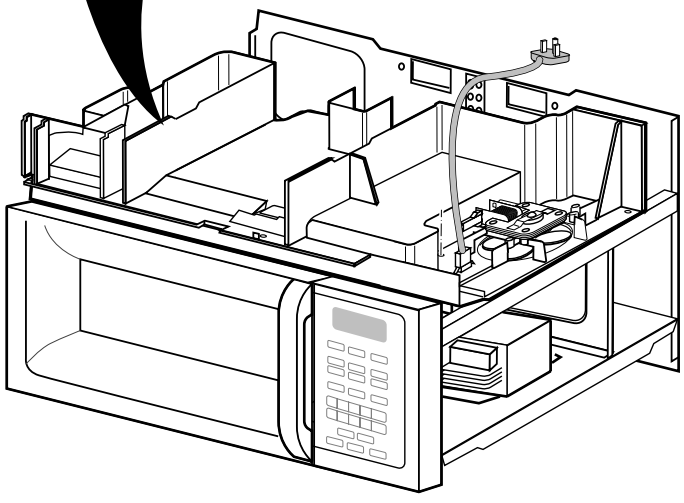
The gas sensor is used during the “Sensor Cook” operation of the oven. It is located above the oven and is mounted on the left side of the sensor cover. The sensor consists of two circuits housed on a small microcomputer board that is supplied with a current to keep it heated. The sensor heat conductivity will vary, depending upon the humidity of the oven. Changing humidity conditions, due to the cooking process within the oven cavity, causes a difference in potential between these two circuits. This difference is monitored by the microcomputer during cooking, allowing the microcomputer to determine the proper cook time.

NOTE: Always verify that the sensor cover is not obstructed (proper air flow is passing over the sensor), and that the fan motor is working properly, before replacing the gas sensor.

TESTING

1. Set the ohmmeter to the *R x 1* scale.
2. Remove the 3-pin connector from the control circuit board and measure the resistance between the:
   a) Red & white wire terminals. You should measure 20 Ω @ 68˚F.
   b) White & yellow wire terminals. You should measure infinity.





THE CONVECTION THERMISTOR

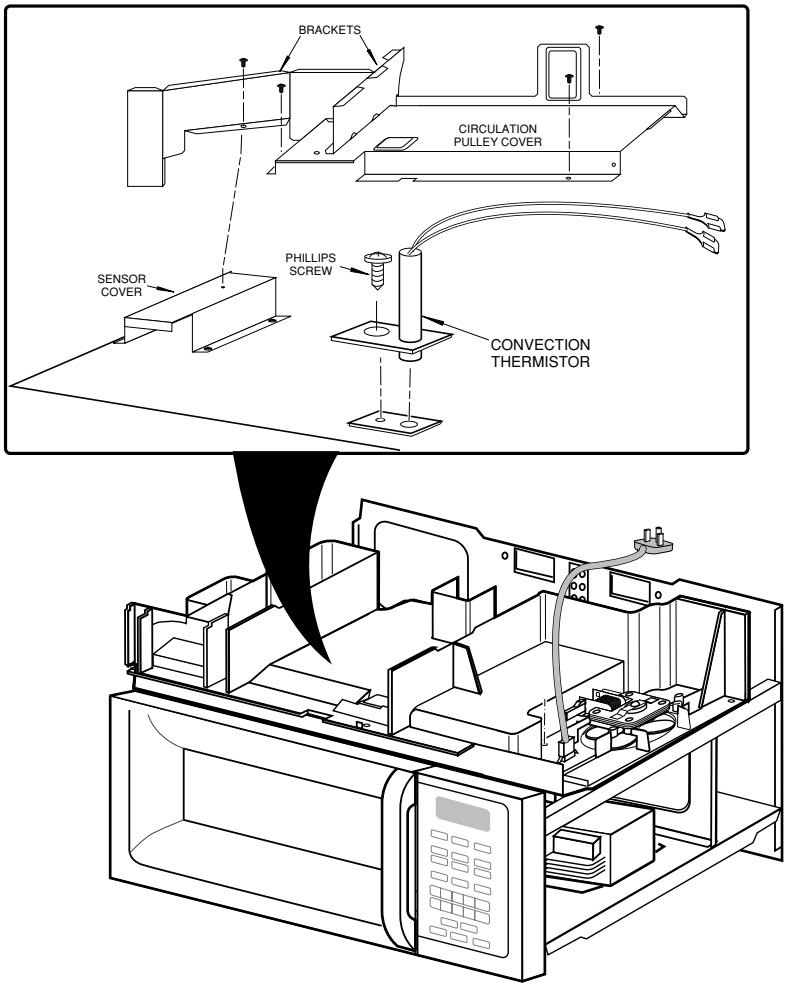
The convection thermistor is located under the circulation pulley cover and is used during the convection operation of the oven. When the temperature increases, the resistance of the thermistor decreases. The thermistor resistance is monitored by the microcomputer. As the oven temperature rises and falls, the thermistor signal going back to the microcomputer causes the heater relay to open and close, and cycles the heating element on and off.

NOTE: Verify that the heating element is working correctly before replacing a thermistor.

TESTING

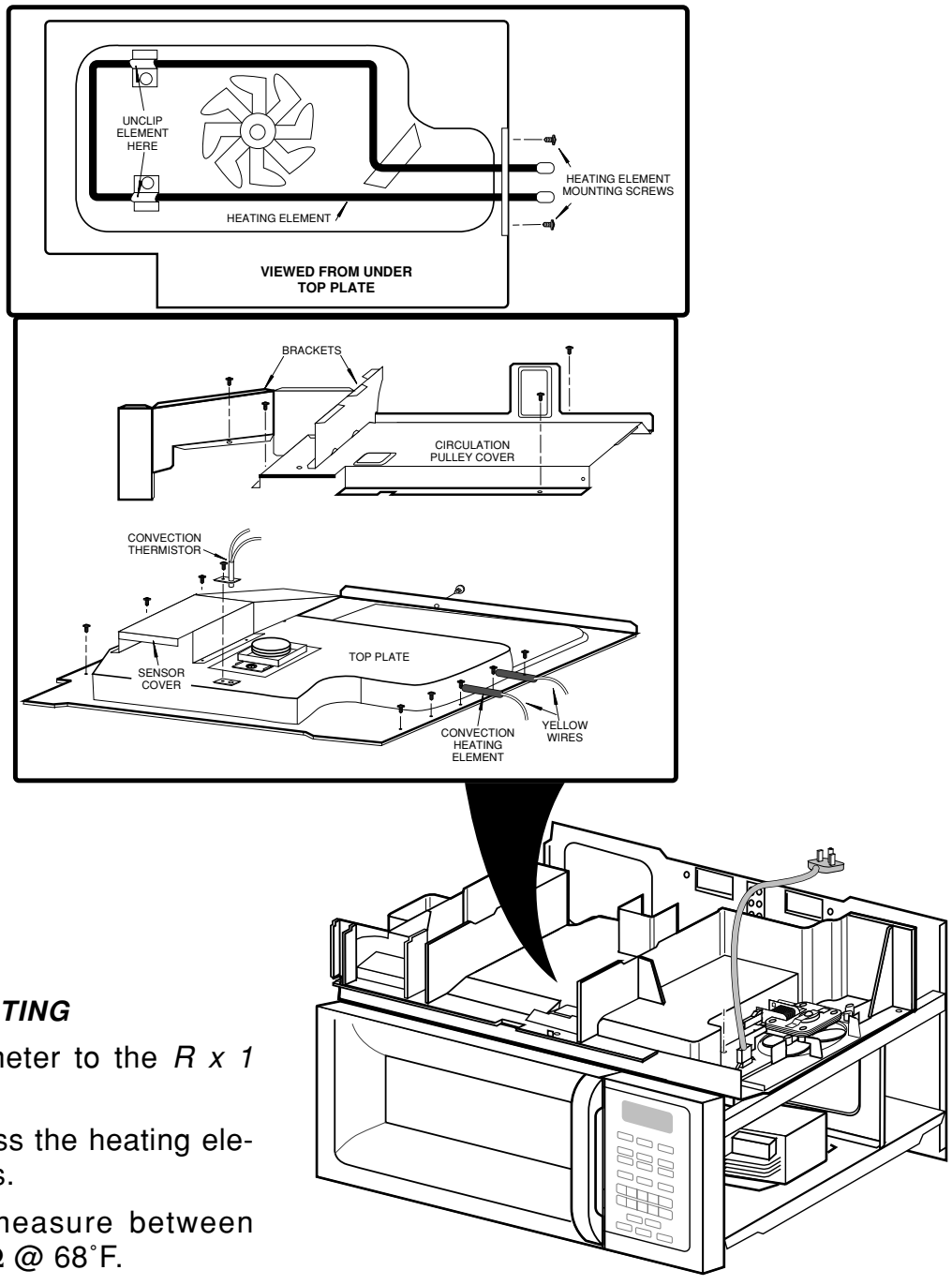
1. Set the ohmmeter to the *R x 10K* scale.
2. Remove the 6-pin connector from the control circuit board and measure across terminals 5 & 6.

   You should measure 155 kΩ to 350 kΩ @ 68˚F.



THE CONVECTION HEATING ELEMENT

The 1400-watt convection heating element is located under the circulation pulley cover and the top plate. The heating element heats the air that is distributed into the oven cavity by the convection fan. It operates on 120 VAC and is controlled by the convection thermistor, and the heater relay on the microcomputer board. During a convection, or combination cooking cycle, the heater cycles on and off to maintain the programmed cavity temperature. The heating element surrounds the convection fan blade and is not visible through the oven cavity.

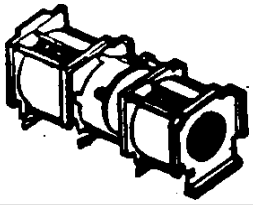
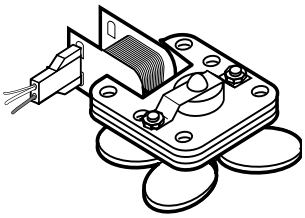
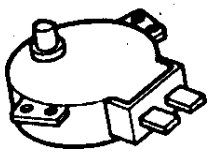


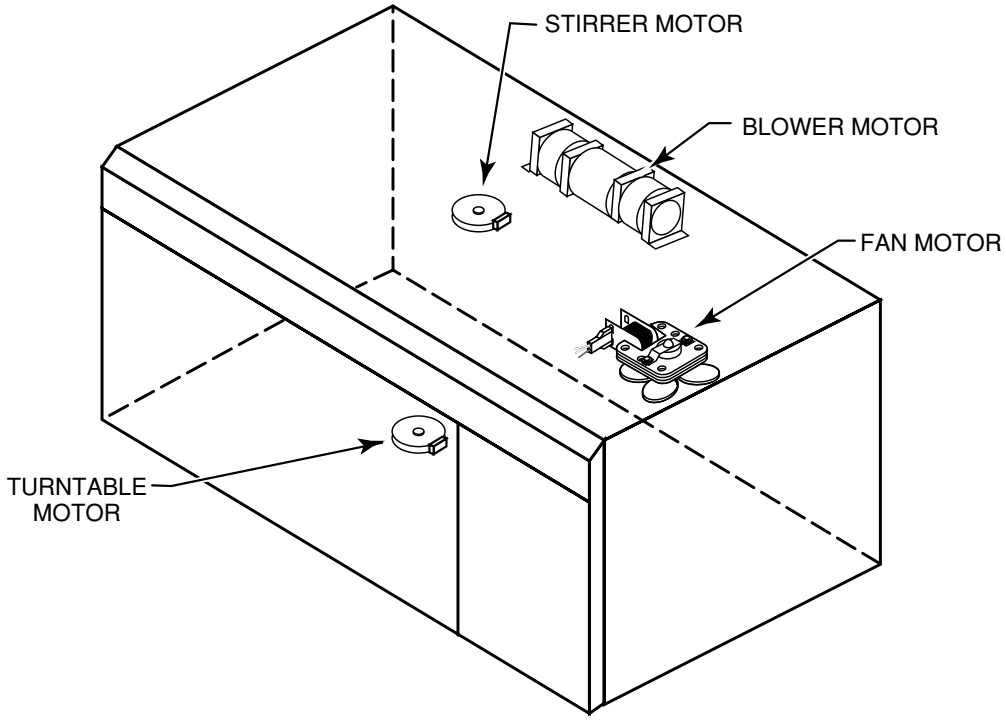
TESTING

1. Set the ohmmeter to the *R x 1* scale.
2. Measure across the heating element terminals.

   You should measure between 40 Ω and 90 Ω @ 68˚F.

MOTORS

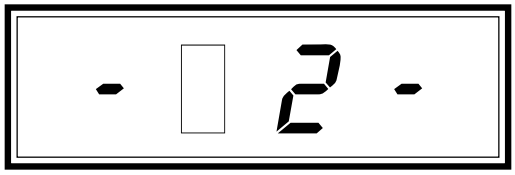
	***Blower Motor***—Removes smoke and odors from the kitchen cooking area through outside venting or recirculation.
	***Fan Motor***—Cools the magnetron and circulates air through the oven during microwave cooking.
	***Stirrer and Turntable Motors***—Distribute microwave energy evenly during microwave cooking.



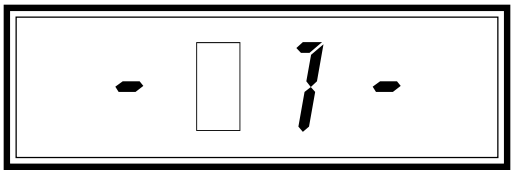
PROGRAMMING CHECKS

TOUCH PANEL CONTINUITY TEST

1. Unplug the microwave oven's power supply cord.
2. Open the oven door.
3. Plug the power cord back into the AC receptical. You should see the following display if any of the interlock switches are closed:



If the sensor is defective, or if the wires are not properly connected, you will see the following display:



CHARTS

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Line fuse blows when power cord is plugged into a wall receptacle.	Shorted wire in power cord, wiring harness, or overload circuit.	1. Check wiring with ohm-meter for continuity. 2. Use separate 15- to 20-ampere circuit.
Oven will not operate.	1. No power at wall plug. 2. Open wire in power cord or wiring harness. 3. Control board. 4. Line fuse. 5. Thermal fuses.	1. Check fuse or breaker box. 2. Check wiring with ohm-meter for continuity. 3. Check board. 4. Check fuse. 5. Check fuses.
Oven cavity light will not turn on.	1. Bulb is burned out. 2. Lamp socket. 3. Oven lamp switch. 4. Open wiring between the above components. 5. Control board.	1. Replace bulb. 2. Check lamp socket. 3. Check control board. 4. Repair open wire. 5. Check control board.
Oven will not go into “Cook” cycle when the door is closed.	1. Control board. 2. Line fuse and/or thermal fuses. 3. Interlock switches. 4. Open wiring between the above components.	1. Check control board. 2. Check line fuse and/or thermal fuses. 3. Check interlock switches. 4. Repair open wire.
Oven goes into “Cook” cycle, but does not complete the cycle. Heat is produced in the oven load.	1. Control board. 2. Low line voltage (should be at least 108-volts AC). 3. Thermal fuse. 4. Thermal fuse on magne-tron. 5. Circuit is overloaded.	1. Check control board. 2. Use separate 15- to 20-ampere circuit. 3. Check thermal fuse. 4. Check thermal fuse on magnetron. 5. Use separate 15- to 20-ampere circuit.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Little or no heat is produced in the oven load.	1. High voltage transformer. 2. Rectifier diode. 3. High voltage capacitor. 4. Magnetron. 5. Power selector.	1. Check the high voltage transformer. 2. Check the high voltage rectifier diode. 3. Check the high voltage capacitor. 4. Check the magnetron. 5. Check the power selector.
Oven fuse blows when the door is opened.	1. Primary interlock switch. 2. Shorted wire harness.	1. Check primary interlock switch. 2. Repair wiring.
Oven lamp goes on with the door open, but the light goes out when the door is closed with the control on.	1. Secondary interlock.	1. Check secondary interlock.
The power source fuse blows when the door starts to open.	1. High voltage transformer. 2. Secondary circuit of the high voltage transformer is shorted. 3. High voltage capacitor is shorted. 4. Shorted wiring between the above components. 5. Blower motor.	1. Check the high voltage transformer. 2. Check the high voltage transformer. 3. Check the high voltage capacitor. 4. Use an ohmmeter to check continuity, and repair wiring. 5. Check blower motor.
Fan motor will not operate.	1. Fan motor. 2. Open or loose wiring in circuit to fan motor.	1. Check fan motor. 2. Use ohmmeter to check continuity, and repair wiring.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Blower motor will not operate.	1. Blower motor. 2. Control board. 3. Open or loose wiring in circuit to blower motor.	1. Check blower motor. 2. Check control board. 3. Use ohmmeter to check continuity, and repair wiring.
Cooktop lamps do not come on.	1. Bulb burned out. 2. Control board. 3. Lamp sockets. 4. Open wiring between the above components.	1. Check bulb. 2. Check control board. 3. Check lamp sockets. 4. Use ohmmeter to check continuity, and repair wiring.
Oven heats too fast.	1. Line voltage is too high (should be between 108- and 132-volts AC). 2. Control board.	1. Use separate 15- to 20-ampere circuit. 2. Check control board.
Oven cooks too slowly.	1. Line voltage is too low (should be between 108- and 132-volts AC). 2. User error. 3. Magnetron.	1. Use separate 15- to 20-ampere circuit. 2. Instruct user regarding proper cooking times. 3. Check magnetron.
Speaker does not sound at conclusion of cooking sequences, or after elapsed time in Minute Timer.	1. Open connection or failed speaker. 2. Tones are programmed out.	1. Replace board. 2. Program tones back in. (Touch and hold key #1 for 4-seconds).
Oven cooks on “HIGH” when a lower cook power is selected.	1. Shorted relay. 2. Control board.	1. Check the control board. 2. Check control board.
Oven runs but will not cook.	1. Secondary interlock switch. 2. Relay 2 is open. 3. High voltage components.	1. Check secondary interlock switch. 2. Check control board. 3. Check high voltage components.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Console will not display data, or has incorrect data.	1. No power at wall plug. 2. Open line fuse. 3. Thermal fuse. 4. Thermal fuse on magnetron. 5. Interlock safety switches. 6. Control board.	1. Check fuse or breaker box. 2. Replace line fuse. 3. Check thermal fuse. 4. Check magnetron thermal fuse. 5. Check interlock safety switches. Replace, if defective. 6. Check control board.
Erratic console display during operation.	1. Magnetron.	1. Check magnetron.
Display continues to count down when door is open during a “Cook” cycle.	1. Secondary interlock switch. 2. Control board.	1. Check secondary interlock switch. Replace, if defective. 2. Check control board.
Oven operates without a “Start” command.	1. Defective control board.	1. Replace control board.

CHECKING THE MICROWAVE POWER OUTPUT

Use the following procedure to checkout the operation of the microwave oven.

1. Fill a 1-cup (260 ml) glass measuring cup with warm water (between 90˚F/32˚C and 100˚F/38˚C).
2. Open the oven door, place the container of water into the oven, and close the door.
3. Press the COOK keypad, and set the cooking time for 4-minutes.
4. Press the START/ENTER keypad. The oven cavity light should come on, the cooking cycle should begin, and the timer should count down in “seconds” from 4:00.
5. After approximately 2-1/2 to 3-minutes, the water should start to boil. If more than 3-minutes is required, it could mean that the operating voltage is low, (below 110-volts), or it is not functioning properly and may need to be checked by a qualified technician.

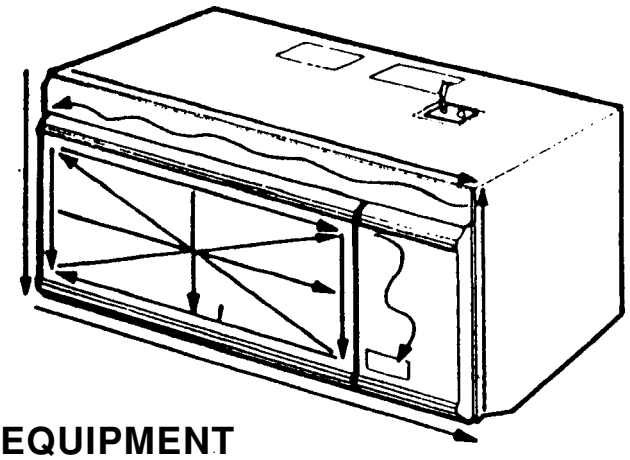
CHECKING FOR MICROWAVE ENERGY LEAKAGE

⚠ CAUTION

On every service call, checks for microwave energy emission must be made according to the following manner.

1. Remove the cooking rack from the oven cavity, if the microwave oven is so equipped.
2. Place a 275 ML (9. oz.) glass of water in the center of the oven bottom.
3. Select "HIGH" cook power, turn the microwave oven on, and test for R.F. leakage using the following pattern:
   a) Check around the cabinet at the front.
   b) Check around the door.
   c) Check across the console panel.
   d) Check horizontally across the door
   e) Check vertically across the door.
   f) Check diagonally across the door.
   g) Check across the air vents.
   h) Check across the rear air vent.

NOTE: The scan speed is one-inch-per-second.



EQUIPMENT

- Electromagnetic energy leakage monitor (NARDA 8100B, HOLADAY H1501).
- 6100 cc glass beaker.
- Glass thermometer 100˚C or 212˚F.

When checking for R.F. leakage, use an approved R.F. measuring device to assure less than 4 mw/cm^2 emission at 5 cm distance with a maximum scan rate of 2.5 cm/second, in compliance with U.S. Government Department of Health, Education and Welfare 21 CFR1030, performance Standard for Microwave Ovens.

A properly operating door and seal assembly will normally register small emissions, but they must be no greater than 4 mw/cm^2 to allow for measurement uncertainty.

NOTE: Enter leakage readings in the space BEFORE and AFTER on the service document.

All microwave ovens exceeding the emission level of 4 mw/cm^2 must be reported to Dept. of Service for microwave ovens immediately and the owner should be told not to use the microwave oven until it has been repaired completely.

If a microwave oven is found to operate with the door open, report to Dept. of Service, the manufacturer, and CDRH* immediately. Also tell the owner not to use the oven.

The interlock monitor switch acts as the final safety switch protecting the customer from microwave radiation. If the interlock monitor switch operates and opens the line fuse, the interlock switches have failed, and you must replace all of them (primary and secondary interlock switches, and the monitor switch), because their contacts may be melted and welded together.

All repairs must be performed so that microwave energy emissions are minimal.

* CDRH: Center for Device and Radiological health, food, and drug administration.

MAKING THE MEASUREMENTS

Measuring The Oven With The Cabinet Installed

MEASUREMENT NOTES:

- When measuring for leakage, use the 2″ (5 cm) spacer that is provided with the probe.
- Leakage with the outer panels removed should be less than 5 mW/cm.sq.
- Leakage for a fully assembled oven (before the lamp switch primary is interrupted) with the door opened slightly, should be less than 2 mW/cm.sq.
- Do not exceed the meter's full-scale deflection.
- Do not move the test probe along the measuring surfaces faster than 1-inch-per-second (2.5 cm/sec), otherwise a false reading will occur.
- When testing near a corner of the door, keep the probe perpendicular to the surface, and move it horizontally without touching the surfaces, otherwise a false reading will occur.
- Hold the test probe by its gripping surface only, otherwise a false reading will occur.

To measure for oven leakage:

1. Pour 275 (±25cc) of water into a 600 cc graduated beaker.
2. Place the beaker into the center of the microwave oven.
3. Set the energy leakage monitor to 2,450 MHz, and use it according to the manufacturer's recommended test procedure to obtain the correct results.
4. Measure the microwave radiation with an electromagnetic radiation monitor. Hold the probe perpendicular to the surface being measured, and measure around the door viewing window, the exhaust opening, and air inlet openings.
5. Operate the oven at its maximum energy output, and take the measurements.

Measuring The Oven With The Cabinet Removed

When the magnetron has been replaced, use the previous procedure, and measure for microwave energy leakage after all of the necessary components are replaced or adjusted, and before the cabinet is installed. Take special care to measure around the magnetron and the waveguide. **WARNING:** ***Be careful not to contact any of the high voltage components when making measurements with the cabinet removed.***

MEASURING MICROWAVE POWER OUTPUT USING THE IEC-705 RATING STANDARD

When determining the microwave oven's power output using the IEC-705 rating standard, the following conditions must be met:

- When making microwave power output measurements, the oven is supplied with its rated line voltage, and operated at its maximum power output setting with a load of 1000 (±5) cc of potable water.
- The water is contained in a cylindrical borosilicate glass vessel having a maximum material thickness of 1/8″ and an outside diameter of approximately 7.6″.
- The oven and the empty vessel are at ambient temperature prior to the start of the test.
- The initial temperature of the water is 10˚C ±2˚ (50˚F). It is measured immediately before the water is added to the vessel. After addition of the water to the vessel, the load is immediately placed on the center of the shelf, which is in the lowest position, and the microwave power switched on.
- The time (in seconds) for the temperature of the water to rise by a value of 10˚C ±2˚ is measured. The initial and final water temperatures are selected so that the maximum difference between the final water temperature, and the ambient temperature, is 5˚C.
- The microwave power output (in watts) is calculated, using the following formula:

$$P = \frac{(L)\ 4187\ (\Delta T)}{T1}$$

L = time (in seconds).

P = microwave output power.

(ΔT) = temperature rise.

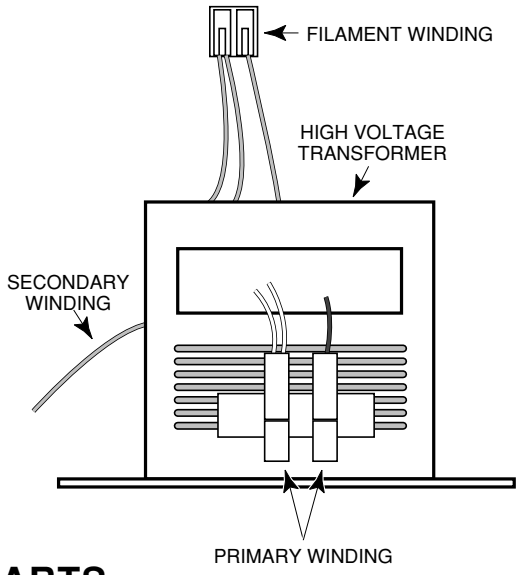
- Microwave power output is measured with the oven operating at full power. The magnetron filament heat-up time (approximately 2-seconds) is not included.
- The water is stirred to equalize the temperature throughout the vessel, prior to measuring the final water temperature.
- Stirring devices and measuring instruments are selected to minimize the addition or removal of heat.

COMPONENT TESTING

⚠WARNING

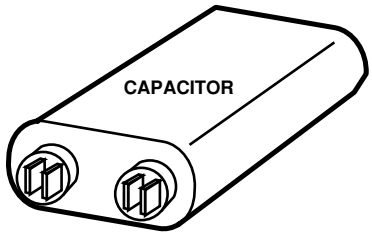
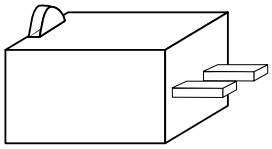
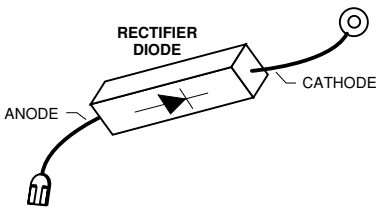
ELECTRICAL SHOCK HAZARD

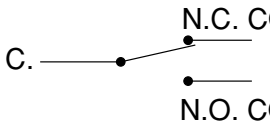
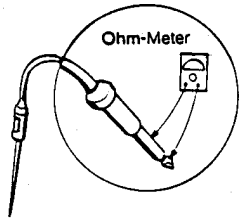
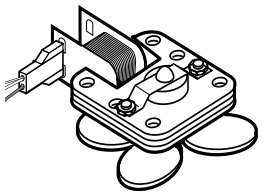
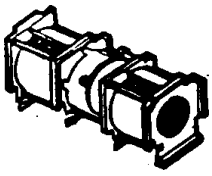
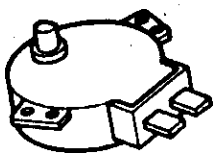
DISCONNECT THE POWER SUPPLY CORD FROM THE WALL OUTLET WHEN REMOVING THE CABINET FROM THE OVEN. PROCEED WITH THE TESTS ONLY AFTER DISCHARGING THE HIGH VOLTAGE CAPACITOR, AND REMOVING THE WIRE LEADS FROM THE PRIMARY WINDING OF THE HIGH VOLTAGE TRANSFORMER.



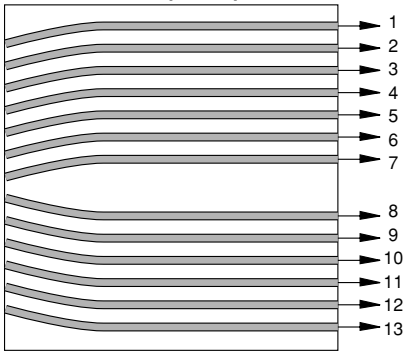
TEST CHARTS

COMPONENT	TEST PROCEDURE	RESULT
High-Voltage Transformer (with wire leads unplugged).	1. Set the ohmmeter to the *R x 1* scale, and measure the: a) Primary winding. b) Secondary to ground. c) Filament winding. 2. Set the ohmmeter to its *R x 1000* scale, and measure the: a) Primary to ground. b) Filament to ground.	a) 0.3 to 0.5 ohms. b) 65 to 120 ohms. c) 0.2 to 0.4 ohms a) Normal = infinity. b) Normal = infinity.
Magnetron (with wire leads unplugged). NOTE: A microwave energy leakage test must always be performed when the oven is serviced for any reason. NOTE: Replace the magnetron if the checks and all of the high voltage component tests are good, but the unit still does not heat a load.	1. Set the ohmmeter to the *R x 1* scale, and measure the: a) Filament terminal. 2. Set the ommeter to the *R x 1000* scale and measure the: a) Filament winding to chassis.	a) Normal readings - Less than 1 ohm. a) Normal = infinity.

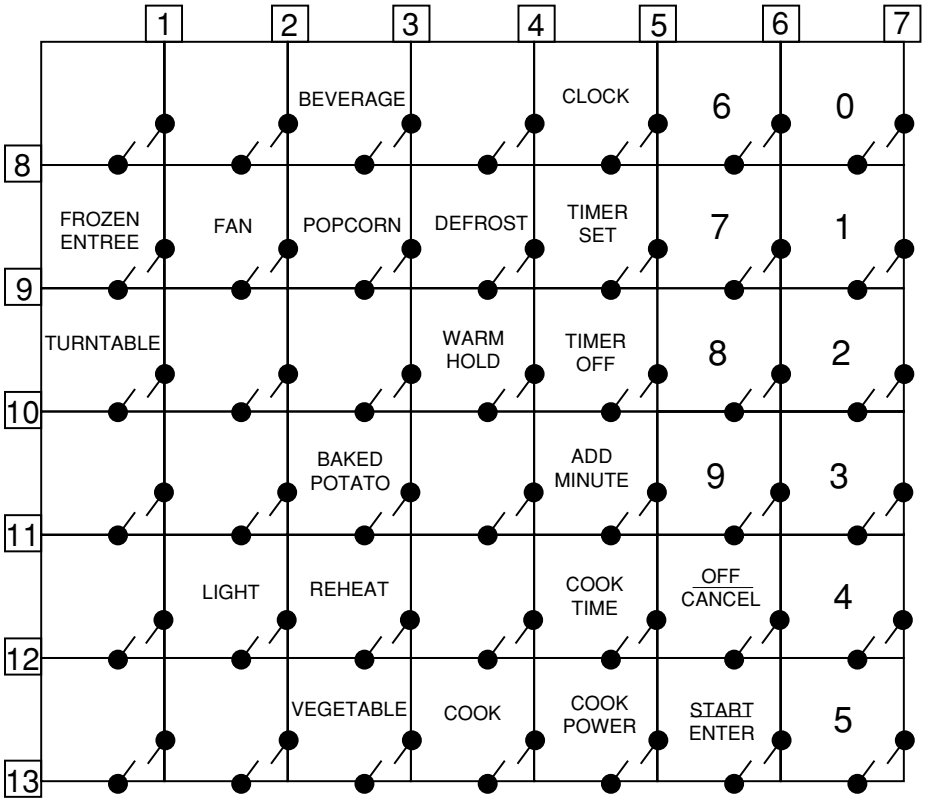
COMPONENT	TEST PROCEDURE	RESULT
High-Voltage Capacitor  	**Terminal-To-Terminal** Set the ohmmeter to the *R x 10 k* scale, and measure the resistance across the capacitor terminals.	a) Normal - The meter indicates several ohms, then gradually returns to infinity. b) Abnormal - The meter indicates infinity, or zero ohms (a short) immediately.
	Terminal-To-Case Set the ohmmeter to the *R x 1* scale, and measure the resistance between each terminal and the case.	a) Normal - The meter indicates infinity. b) Abnormal - The meter indicates zero ohms, or a short.
Blower Motor Capacitor 	**Terminal-To-Terminal** Set the ohmmeter to the *R x 10 k* scale, and measure the resistance across the capacitor terminals.	a) Normal - The meter indicates several ohms, then gradually returns to infinity. b) Abnormal - The meter indicates infinity, or zero ohms (a short) immediately.
High-Voltage Rectifier  	**Forward Continuity** Set the ohmmeter to the *R x 1* scale, and measure the forward resistance across the rectifier terminals with the (+) lead touching the anode and the (–) lead touching the cathode.	a) Normal - The meter indicates several ohms. b) Abnormal - The meter indicates infinity, or zero ohms (a short).
	Reverse Continuity Set the ohmmeter to its highest scale, and measure the reverse resistance across the rectifier terminals with the (+) lead touching the cathode and the (–) lead touching the anode.	a) Normal - The meter indicates infinity. b) Abnormal - The meter indicates infinity, or zero ohms (a short).

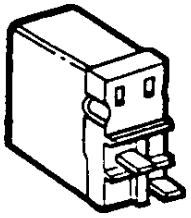
<table>
<tr><th>COMPONENT</th><th>TEST PROCEDURE</th><th>RESULT</th></tr>
<tr><td rowspan="2">Switches (with wire leads removed). All of the switches are measured in the same manner.
 
</td><td>N.O. and C Terminals
Set the ohmmeter to the R x 1 scale, and measure the resistance between the normally-open (N.O.) and the common (C) terminals of the switch.</td><td>a) Normal - The meter indicates infinity.
b) Abnormal - The meter indicates zero ohms (a short).</td></tr>
<tr><td>N.C. and C Terminals
Set the ohmmeter to the R x 1 scale, and measure the resistance between the normally-closed (N.C.) and the common (C) terminals of the switch.</td><td>a) Normal - The meter indicates continuity, or zero ohms.
b) Abnormal - The meter indicates infinity.</td></tr>
<tr><td>Temperature Probe
 
</td><td>Set the ohmmeter to the R x 10 k scale, and measure the temperature probe with the leads positioned at either terminal.</td><td><table><tr><th>Ambient Temp. (˚F)</th><th>Resistance Value</th></tr><tr><td>60</td><td>75.24 kΩ (±11 kΩ)</td></tr><tr><td>68</td><td>62.57 kΩ (±8 kΩ)</td></tr><tr><td>70</td><td>59.79 kΩ (±8 kΩ)</td></tr><tr><td>80</td><td>45.80 kΩ (±7 kΩ)</td></tr><tr><td>90</td><td>36.94 kΩ (±6 kΩ)</td></tr></table></td></tr>
<tr><td>Fan Motor (with leads disconnected).
  </td><td>Set the ohmmeter to the R x 1 scale, and measure across the terminals.</td><td>a) Fan Motor - Normal = 130 to 155 ohms.</td></tr>
<tr><td>Blower Motor (with leads disconnected)
  </td><td>Set the ohmmeter to the R x 1 scale, and measure the:
a) High speed windings (blue and black wires).
b) Low speed windings (blue and white wires).</td><td>a) Normal - High speed: 25 to 45 ohms.
b) Normal - Low speed: 45 to 65 ohms.</td></tr>
<tr><td>Stirrer & Turntable Motors (with leads disconnected)
  </td><td>Set the ohmmeter to the R x 1 scale, and measure the resistance between the motor terminals.</td><td>a) Normal - 1 to 4 ohms.
b) Abnormal - Infinite or zero ohms.</td></tr>
</table>

COMPONENT	TEST PROCEDURE	RESULT
Convection Thermistor	Set the ohmmeter to the *R x 10 K* scale. Remove the 6-pin connector from the circuit board and measure across terminals 5 & 6.	a) Normal = 155 K to 350 K ohms @ 68˚F. b) Abnormal = Infinity, or zero ohms (a short).
Convection Heating Element (with leads disconnected)	Set the ohmmeter to the *R x 1* scale, and measure across the terminals.	a) Normal = 9 to 40 ohms @ 68˚F ±2˚. b) Abnormal = Infinity, or zero ohms (a short).
Gas Sensor	Set the ohmmeter to the *R x 1* scale. Remove the 3-pin connector from the circuit board and measure the resistance between: a) Red & white wire terminals. b) White & yellow wire terminals.	a) 20 ohms @ 68˚F ±2˚. b) Infinite.

COMPONENT	TEST PROCEDURE	RESULT
Touch Keyboard (see below). **FPC CONNECTOR (TOP)**  	Measure the resistance between the terminal pins of the keypad (shown below) that you wish to check. For example: To measure the "CLOCK" keypad, refer to the illustration, and: 1. Find the first terminal number along the top bar (pin 5). 2. Find the second terminal number in the side bar (pin 8). 3. Set the ohmmeter to the *R x 1* scale. a) Touch the ohmmeter leads between pins 5 and 8 on the ends of the FPC connector. b) Press the CLOCK keypad.	**Normal Reading:** 100 Ω resistance.

KEYBOARD MATRIX



<table>
<tr><th>COMPONENT</th><th>TEST PROCEDURE</th><th>RESULT</th></tr>
<tr>
<td>Relay 2 (RY2)
<u>WARNING: When you apply power to the unit, be careful not to touch any of the high voltage circuits.</u>
  </td>
<td>Set the ohmmeter to the R x 1 scale, and check for continuity between the two relay terminal pins. Use the following steps.
1.Remove the wire connectors from the relay terminals.
2.Use a pair of alligator clips, and clip the ohmmeter leads to the two terminals of the relay. Make sure that you do not allow the clips to short to anything.
3.Plug the microwave oven into an AC receptical.
4.Set the power level, as shown in the chart in the right column, and check the relay operation for the ten power levels. NOTE: During the operating time set for each level, the relay will close (short) for the time specified in the chart, and then open for another specified amount of time. When the open time elapses, the cycle begins again until the cooking time elapses and the oven turns off.</td>
<td>
<table>
<tr><th>Power Level</th><th>CLOSED</th><th>OPEN</th></tr>
<tr><td>1</td><td>4 Seconds</td><td>18 Seconds</td></tr>
<tr><td>2</td><td>6 Seconds</td><td>16 Seconds</td></tr>
<tr><td>3</td><td>8 Seconds</td><td>14 Seconds</td></tr>
<tr><td>4</td><td>10 Seconds</td><td>12 Seconds</td></tr>
<tr><td>5</td><td>12 Seconds</td><td>10 Seconds</td></tr>
<tr><td>6</td><td>14 Seconds</td><td>8 Seconds</td></tr>
<tr><td>7</td><td>16 Seconds</td><td>6 Seconds</td></tr>
<tr><td>8</td><td>18 Seconds</td><td>4Seconds</td></tr>
<tr><td>9</td><td>20 Seconds</td><td>2Seconds</td></tr>
<tr><td>10</td><td>22 Seconds</td><td>0Seconds</td></tr>
</table>
</td>
</tr>
</table>

CONTROL CIRCUIT BOARD CHECK LIST

The following problems indicate a defective control circuit board:

1. The START function fails to operate, but the high voltage systems, the interlock switches, the door sensing, and the relay checks are good.
2. The oven operates okay with a replacement relay installed.
3. Proper temperature measurements cannot be obtained.
4. The buzzer does not sound, or continues to sound.
5. Some segments of one or more digits do not light up, or they continue to light up, or segments light when they should not.
6. Wrong figures appear on the display.
7. The digits on the display flicker.
8. Some of the indicators do not light.
9. The clock does not keep the proper time.

PRIMARY, MONITOR, & SECONDARY SWITCH CHECKOUT PROCEDURE

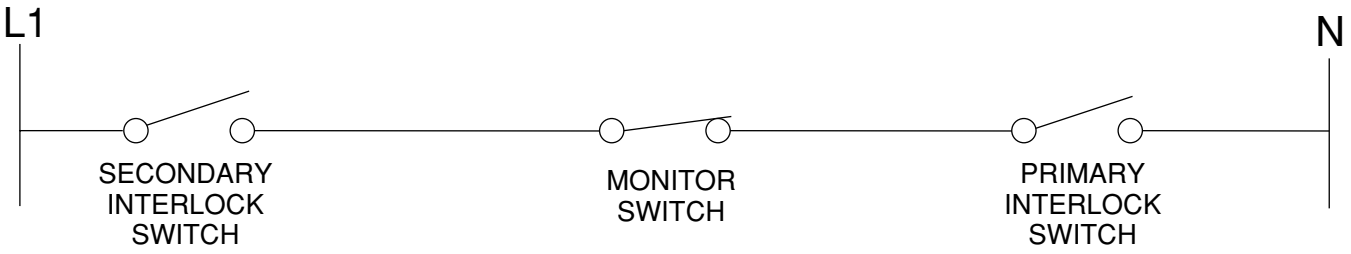
NOTE: The following chart and strip circuits show the continuity and position of the door switches when the microwave oven door is open and closed.

CONTINUITY TEST CHART

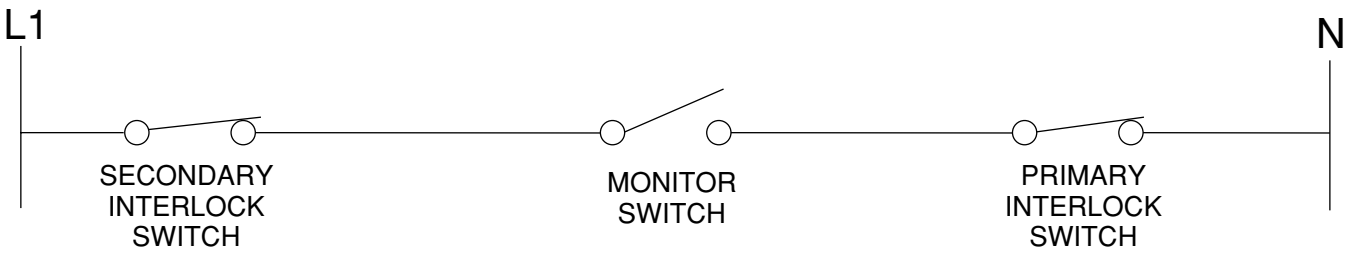
SWITCH	TESTING	DOOR OPEN	DOOR CLOSED
Primary Interlock	Disconnect the 3-pin connector CN3 from the control module. Check from the pink wire (pin 1) to the blue wire (pin 3).	–	+
Secondary Interlock	Disconnect the wires at the Secondary Interlock Switch. Check from the common terminal (white wires) to the normally-open terminal (white wires).	–	+
Monitor	Disconnect the wires from the Monitor Switch. Check from the common terminal (white wires) to the normally-closed terminal (red wire).	+	–

(+) = CONTINUITY
(–) = NO CONTINUITY

DOOR OPEN

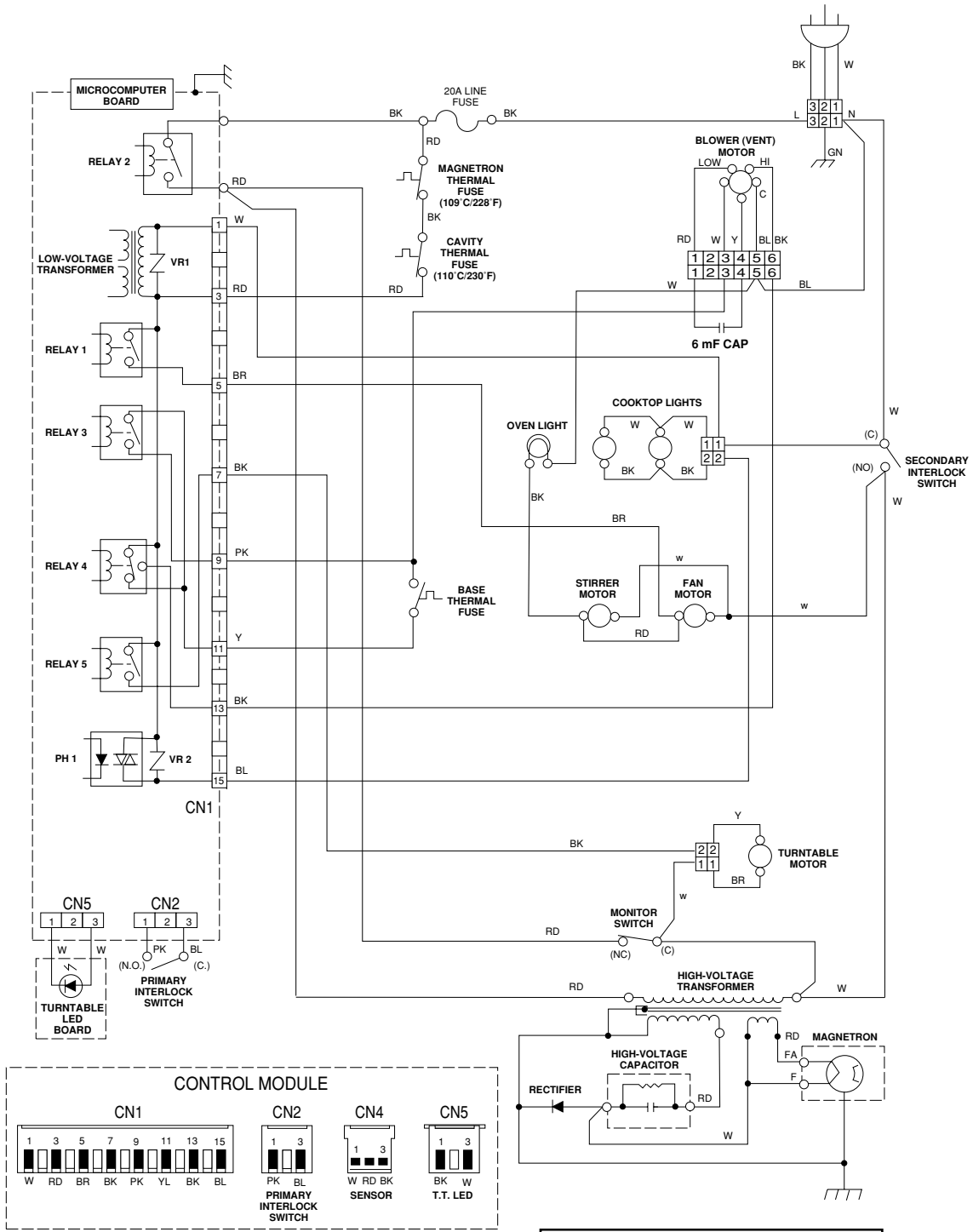


DOOR CLOSED



TECH TIPS

WIRING DIAGRAMS
Models MH7130XE & MH7135XE

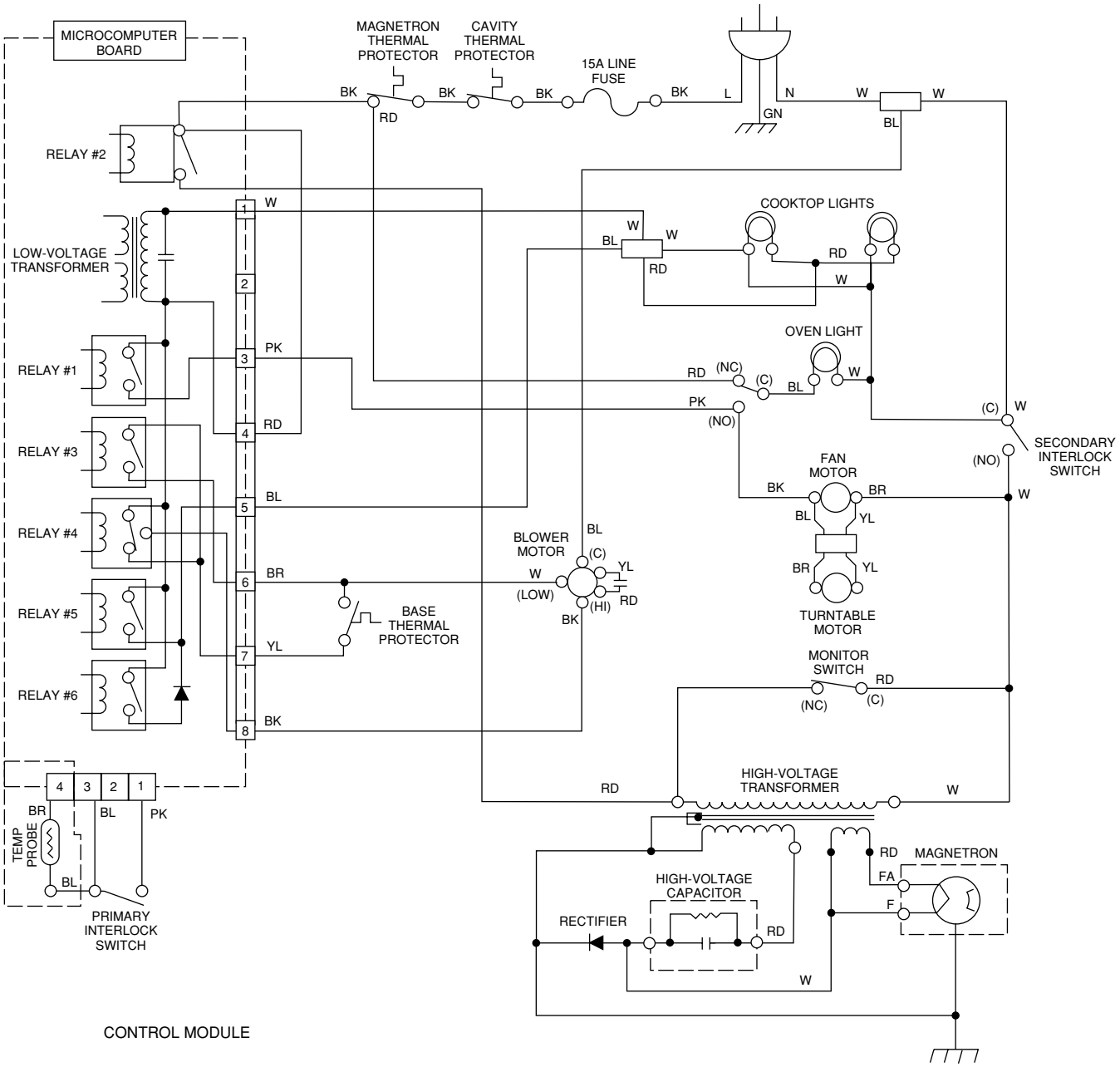


NOTES:

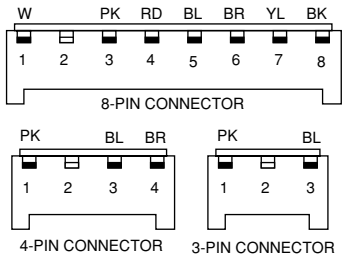
1. Oven is Off.
2. Door is Open.

BK = Black	BR = Brown
RD = Red	YL = Yellow
GN = Green	BL = Blue
PK = Pink	WH = White

Model MH9115XE



CONTROL MODULE



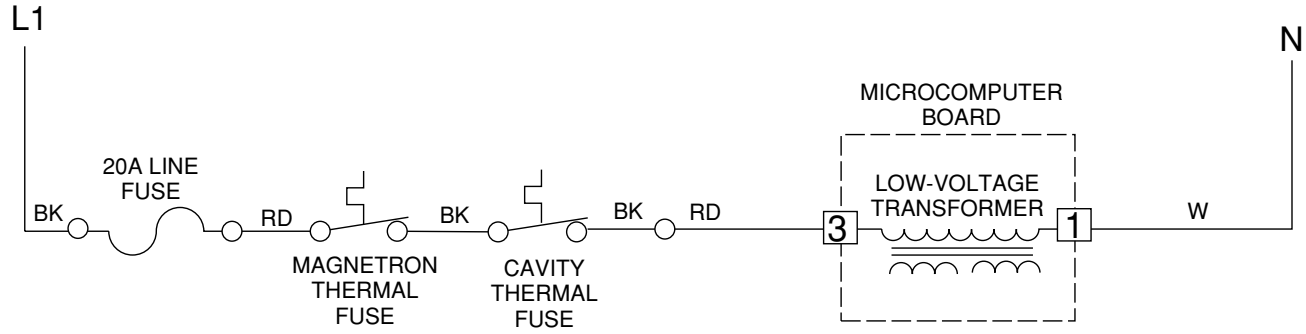
NOTES:

1. Oven is Off.
2. Door is Open.

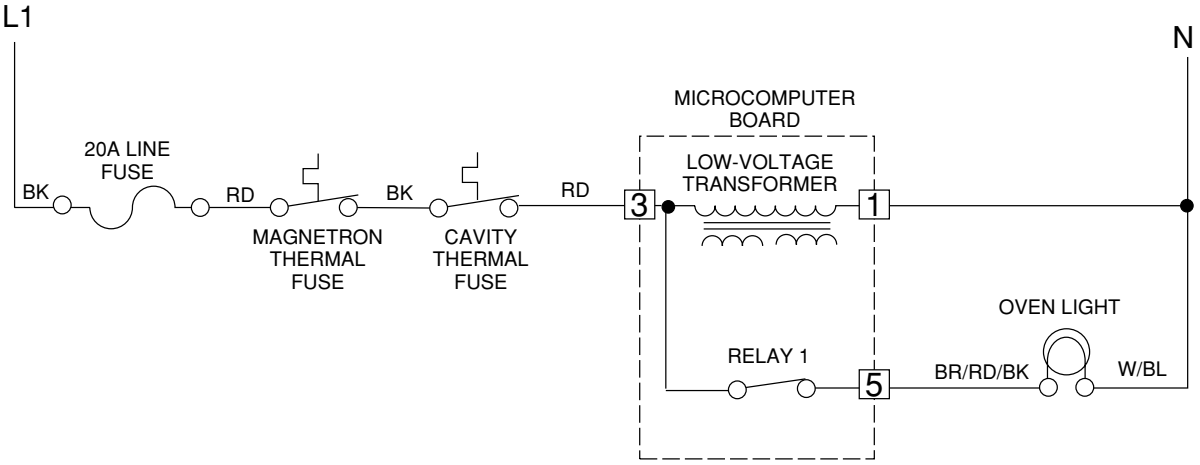
BK = Black	BR = Brown
RD = Red	YL = Yellow
GN = Green	BL = Blue
PK = Pink	WH = White

STRIP CIRCUITS

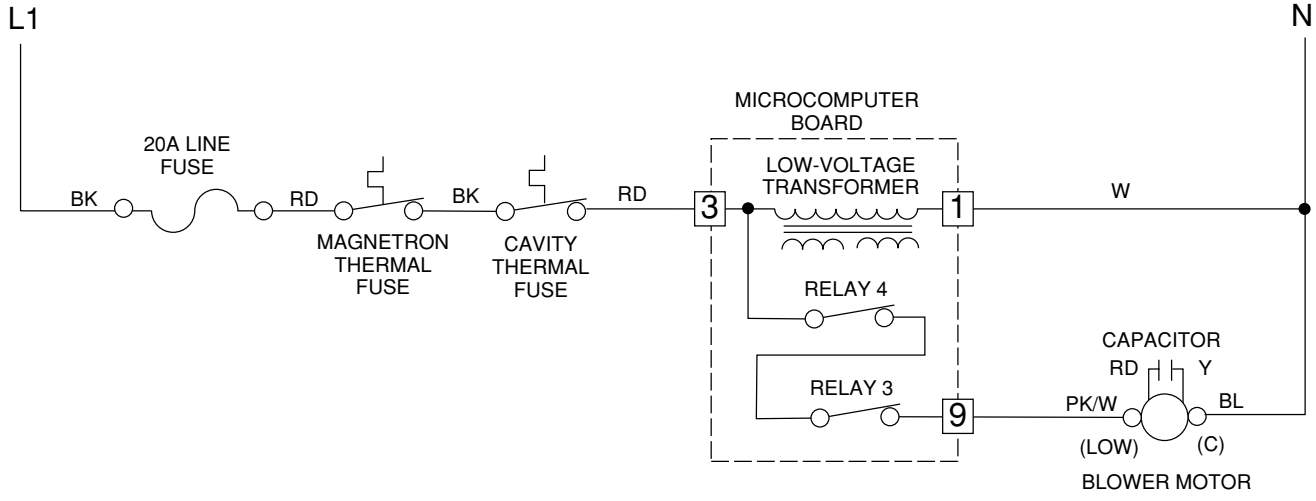
1. UNIT IS PLUGGED IN — CLOCK IS WORKING



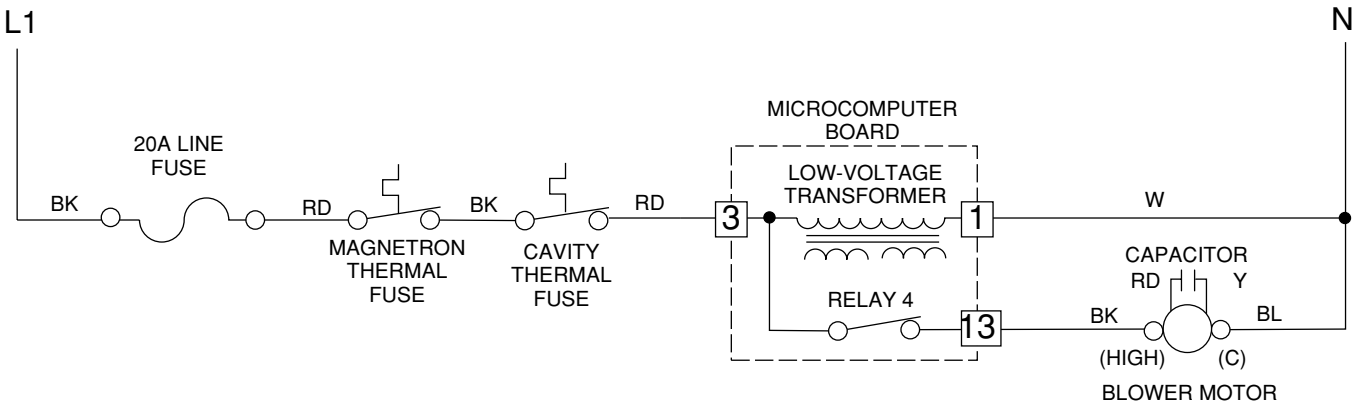
2. DOOR IS OPEN — OVEN LIGHT IS ON



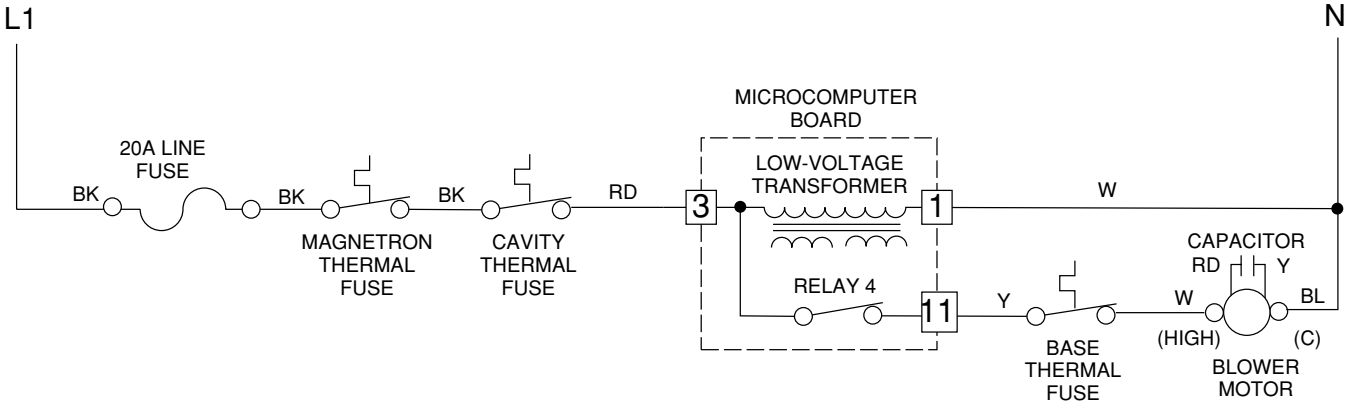
3. BLOWER MOTOR IS ON “LOW”



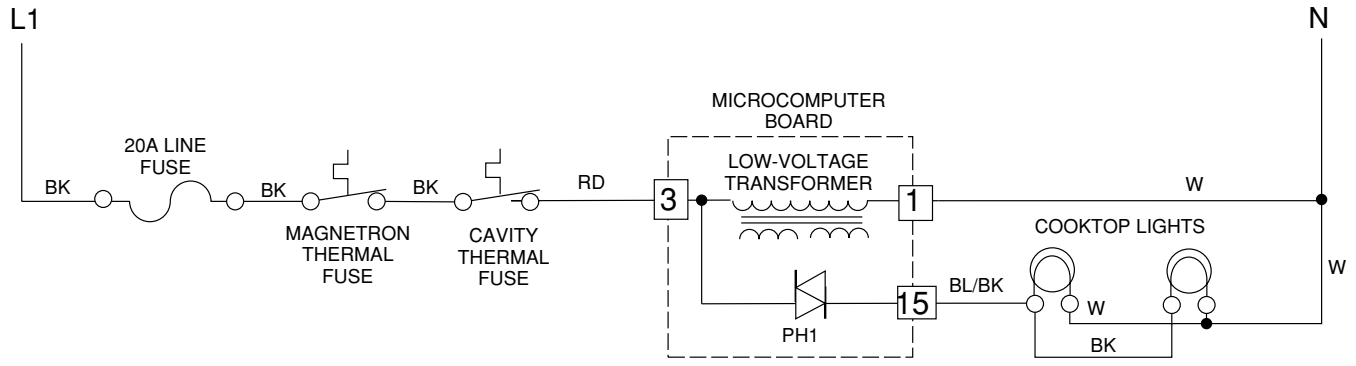
4. BLOWER MOTOR IS ON “HIGH”



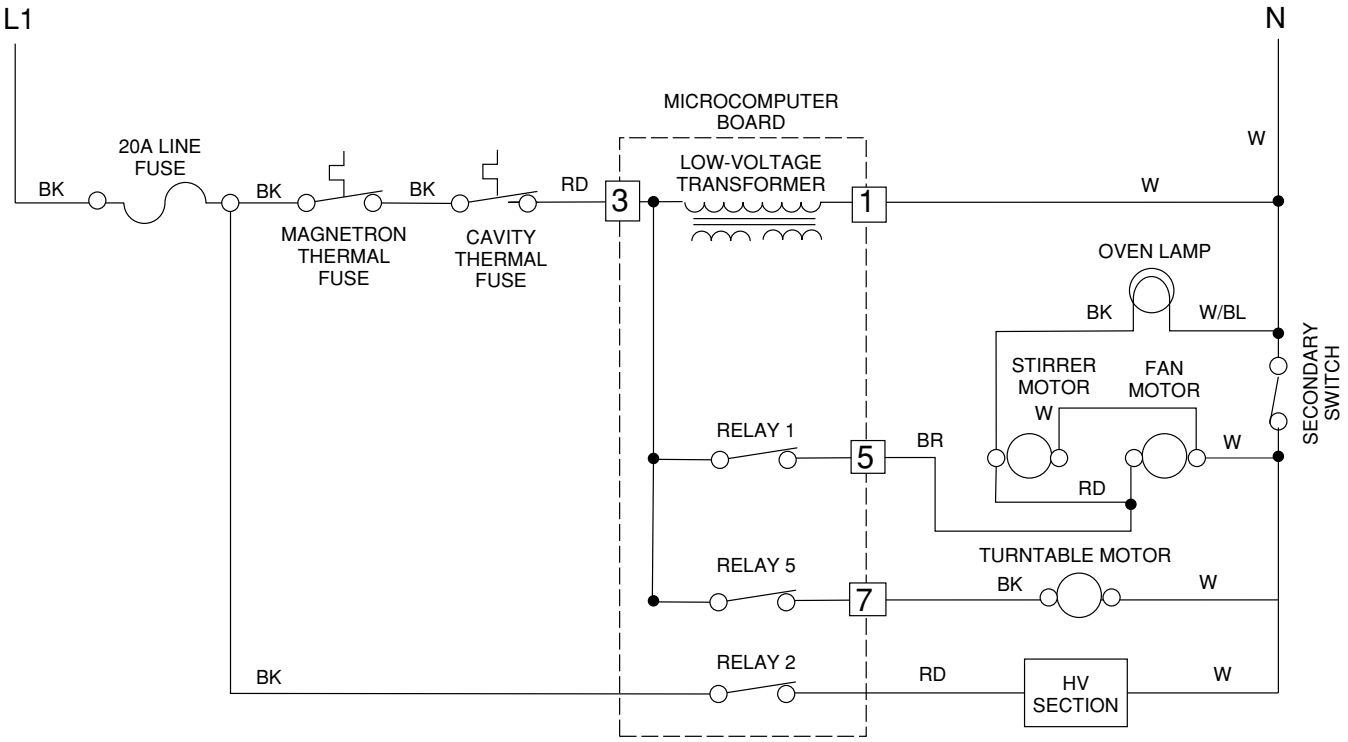
5. OVEN IS OFF — CAVITY TEMPERATURE IS ABOVE 133˚F BLOWER MOTOR IS ON “LOW”



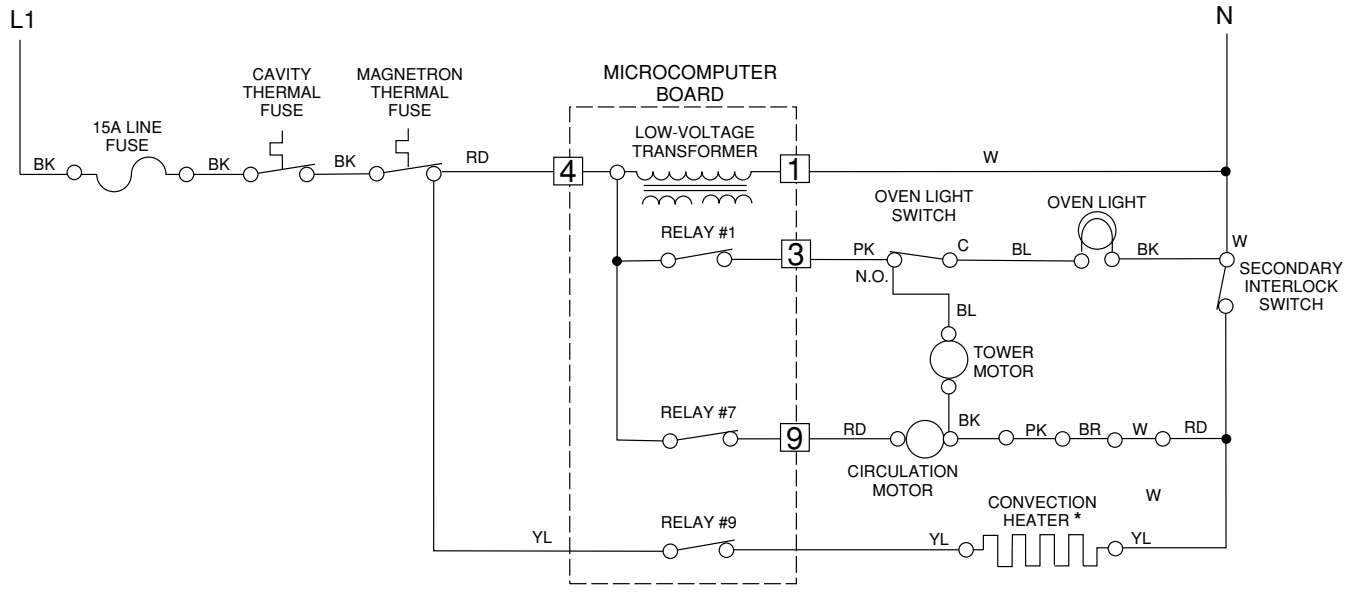
6. COOKTOP LIGHTS ARE ON “HIGH” OR “LOW”



7. MICROWAVE COOKING IS ON



8. CONVECTION COOKING IS ON



SPECIFICATIONS

Rated Power Consumption	1500-watts, maximum (microwave oven only). 1750-watts, maximum (microwave oven, cooktop lamps, ventilation fan).
Microwave Output	850-watts (IEC 705 Test Procedure). Adjustable 85-watts through 850-watts in 10-steps.
Frequency	2450 MHz ±50 MHz.
Power Supply	120-volts ±12-volts AC, 60 Hz.
Rated Current	13-amperes (microwave oven only). 15-amperes (microwave oven, cooktop lamps, ventilation fan).
Magnetron Cooling	Forced air.
Microwave Stirring	Stirring fan disk.
Rectification	Rectification voltage doubler, half-wave.
Door Sealing	Choke System.
Safety Devices:	
Magnetron Thermal Fuse	Opens @ 228˚F/109˚C, resets @ 140˚F/60˚C.
Cavity Thermal Fuse	Opens @ 230˚F/110˚C, resets @ 140˚F/60˚C.
Base Thermal Fuse	Closes @ 133˚F/56˚C, resets @ 104˚F/40˚C.
Line Fuse	15-ampere.
Door Interlock Switches	Primary Interlock Switch. Secondary Interlock Switch. Interlock Monitor.
Magnetron Type	2M214.
High Voltage Capacitor	0.91 µFd, 2.1 kV AC.
High Voltage Diode	350 mA, 9.0 kV.
Cooktop Lamp	120-volts, 30-watts.
Cavity Lamp	125-volts, 30-watts.
Timer	Digital, up to 99 minutes, 99 seconds (in each cooking stage).
Tray	Ceramic plate.

SPECIFICATION CHARTS

MODEL NUMBER	*MH7130XEQ*	*MH7130XEZ*	*MH7135XEB*
CONTROL SYSTEM:			
Timer:	Yes	Yes	Yes
Type	Electronic	Electronic	Electronic
Limits	99 Min. - 99 Sec.	99 Min. - 99 Sec.	99 Min. - 99 Sec.
Scale	Linear (Digital)	Linear (Digital)	Linear (Digital)
Operation	30 Touch Pads	30 Touch Pads	30 Touch Pads
Display	5-Digit - Blue- Green Fluorescent - Callouts In Display	5-Digit - Blue- Green Fluorescent - Callouts In Display	5-Digit - Blue- Green Fluorescent - Callouts In Display
Microwave Cooking Cycles:			
Cook Time	Yes	Yes	Yes
Auto Cook	Yes, Non-Sensored Three Catagory	Yes, Non-Sensored Three Catagory	Yes, Non-Sensored Three Catagory
Auto Defrost (Non-Sensored)	Yes - Three Category By Weight	Yes - Three Category By Weight	Yes - Three Category By Weight
Popcorn	Yes, Non-Sensored Three Settings	Yes, Non-Sensored Three Settings	Yes - Sensored
Baked Potato	Yes, Non-Sensored - Four Settings	Yes, Non-Sensored - Four Settings	Yes - Sensored
Reheat	Yes, Non-Sensored - Five Catagory	Yes, Non-Sensored - Five Catagory	Yes - Sensored -Three Category
Beverage	Yes, Non-Sensored - Two Settings	Yes, Non-Sensored - Two Settings	No
Frozen Entree	Yes, Two Settings	Yes, Two Settings	Yes, Sensor Cook
Vegetable	Yes, Non-Sensored Three Catagory	Yes, Non-Sensored Three Catagory	Yes, Sensored - Three Catagory
Auto Roast	No	No	No
Warm Hold	5% Power - 99 Min., 99 Sec. Max	5% Power - 99 Min., 99 Sec. Max	5% Power - 99 Min., 99 Sec. Max
Add Minute	Yes	Yes	Yes
Probe Temp	No	No	No
Personal Choice	No	No	Yes
Convection Cooking Cycles:			
Convection Bake	No	No	No
Convection Broil	No	No	No
Combination Cooking Cycles:			
Combination Bake	No	No	No
Combination Roast	No	No	No
Other Hidden Features:			
Stoppable Turntable - 12-3/4" Diameter	Yes	Yes	Yes
LED Indicator On Turntable TouchPad	Yes - Red	Yes - Red	Yes - Red
Pause	Door Open	Door Open	Door Open
Clock	Yes	Yes	Yes
Independent Minute Timer	Yes	Yes	Yes
Time Set	Yes	Yes	Yes
Timer Off	Yes	Yes	Yes
Auto Start	No	No	No
Stage Cooking	Yes (4) - Cook I, II, Defrost Warm Hold	Yes (4) - Cook I, II, Defrost Warm Hold	Yes (4) - Cook I, II, Defrost Warm Hold
In-Use Reprogramming	Yes	Yes	Yes
More/Less Function	Yes	Yes	Yes
Sales Demonstration Mode	Yes	Yes	Yes
Child Lock	Yes	Yes	Yes
Start/Enter	Yes	Yes	Yes
Off/Cancel	Yes	Yes	Yes
Variable Power:	Yes	Yes	Yes
Type	Electronic	Electronic	Electronic
Range	0% - 100%	0% - 100%	0% - 100%
Scale	Digital	Digital	Digital

MODEL NUMBER	*MH7130XEQ*	*MH7130XEZ*	*MH7135XEB*
Temperature Sensor Probe:	No	No	No
Type	No	No	No
Range	No	No	No
Scale	No	No	No
Levels	No	No	No
Operation	No	No	No
Timed Override	No	No	No
Exhaust Fan:	Yes	Yes	Yes
High	Yes	Yes	Yes
Low	Yes	Yes	Yes
Manual Off	Yes	Yes	Yes
Auto Off	Yes	Yes	Yes
Note	Automatic Turn On At 133˚F/56˚C.	Automatic Turn On At 133˚F/56˚C.	Automatic Turn On At 133˚F/56˚C.
Cooktop Light:	Yes	Yes	Yes
High	Yes	Yes	Yes
Low	Yes	Yes	Yes
Manual Off	Yes	Yes	Yes
Auto Off	Yes	Yes	Yes
Wattage	30 Watts	30 Watts	30 Watts
Light Cover	Glass	Glass	Glass
Size of Cover	8" W x 3-1/2" H	8" W x 3-1/2" H	8" W x 3-1/2" H
Display Indicators:			
Display Annunciators	10 - In Display	10 - In Display	14 - In Display
Display Words	46 - Spelled In Display	46 - Spelled In Display	49 - Spelled In Display
Microwave Cook Indication	“COOK” Annunciator	“COOK” Annunciator	“COOK” Annunciator
Microwave Stage Indication	No	No	"2" Annunciator Only
Microwave Defrost Indication	“DEF” Annunciator	“DEF” Annunciator	“DEFR” Annunciator
Sensor Cook Indication	No	No	“SENSOR” Annunciator
Convection Cook Indication	No	No	No
Convection Preheat Indication	No	No	No
Combination Cook Indication	No	No	No
Auto Cycle Indication	“AUTO” Annunciator	“AUTO” Annunciator	“AUTO” Annunciator
Auto Start Indication	No	No	No
User Enter Indication	“ENTER” Annunciator	“ENTER” Annunciator	“ENTER” Annunciator
Start Indication	Flashing “START” Annunciator	Flashing “START” Annunciator	“START?” Annunciator
Probe Temp Indication	No	No	No
Weight Indication	“OZ”	“OZ”	“OZ”
Clock Set	“CLOCK” & Colon Flashes	“CLOCK” & Colon Flashes	“CLOCK” & Colon Flashes
Independent Minute Timer	“TIMER” Annunciator	“TIMER” Annunciator	“TIMER” Annunciator
End Of Cooking Reminder	“END”	“END”	“END”
Power Failure Indication	Yes - 88:88 Displayed	Yes - 88:88 Displayed	Yes - 888:88 Displayed
Technical Error Indication	“F-” With Error Number	“F-” With Error Number	“F-” With Error Number
Diagnostic System	Yes	Yes	Yes
Audible Signals:	Yes	Yes	Yes
Type	Resonator	Resonator	Resonator
Programming Tone (w/On/Off Function)	Yes - One Short Beep	Yes - One Short Beep	Yes - One Short Beep
Between Cycles (w/On/Off Function)	Yes - Two Beeps	Yes - Two Beeps	Yes - Two Beeps

MODEL NUMBER	*MH7130XEQ*	*MH7130XEZ*	*MH7135XEB*
OVEN INTERIOR FEATURES:			
Size	19" W x 8-9/16" H x 14-5/8" D	19" W x 8-9/16" H x 14-5/8" D	19" W x 8-9/16" H x 14-5/8" D
Capacity	1.3 Cubic Feet	1.3 Cubic Feet	1.3 Cubic Feet
Finish	Epoxy Powder Coat	Epoxy Powder Coat	Epoxy Powder Coat
Cooking Power	900 Watts (IEC-705 Rating)	900 Watts (IEC-705 Rating)	900 Watts (IEC-705 Rating)
Ventilation	Forced Air	Forced Air	Forced Air
Shelf	Spillguard Sealed-In	Spillguard Sealed-In	Spillguard Sealed-In
Bi-Level Rack	Yes	Yes	Yes
Light	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)
Turntable Roller	Yes	Yes	Yes
Temperature Probe	No	No	No
DOOR FEATURES:			
Stamped Steel	Yes - With Tempered Cover	Yes - With Tempered Cover	Yes - With Tempered Cover
Window	Water Clear Glass	Water Clear Glass	Low - T Glass
Window Size	16-1/3" W x 5-5/12" H	17-1/3" W x 5-5/12" H	17-1/3" W x 5-5/12" H
Window Graphics	White With Dots On Edge	Almond With Dots On Edge	None
Door Screen	White	Almond	Black
Door Baffle	None	None	None
Cooking Guide Label	Yes	Yes	Yes
Door Swing	Left Hand (Hinge Side)	Left Hand (Hinge Side)	Left Hand (Hinge Side)
Handle/Latch	Textured, Pull to Open	Textured, Pull to Open	Textured, Pull to Open
Seals	Three Stage (Capacitive, Reflective & Absorbive)	Three Stage (Capacitive, Reflective & Absorbive)	Three Stage (Capacitive, Reflective & Absorbive)
Color	White	Almond	Black
MICROWAVE SYSTEM:			
Distribution	Top Feed	Top Feed	Top Feed
Magnetron	Ceramic Dome, Horizontally Cooled with Forced Air	Ceramic Dome, Horizontally Cooled with Forced Air	Ceramic Dome, Horizontally Cooled with Forced Air
SAFETY FEATURES:			
Interlock	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)
Thermal Protectors	Two - 1 Magnetron & 1 Oven Cavity	Two - 1 Magnetron & 1 Oven Cavity	Two - 1 Magnetron & 1 Oven Cavity
VENTILATION SYSTEM:			
Type	Convertible	Convertible	Convertible
Duct Outlet Size	3-1/4" H x 10" W	3-1/4" H x 10" W	3-1/4" H x 10" W
Recirculation CFM	120	120	120
Vertical CFM (Hi/Low)	280/180	280/180	280/180
Horizontal CFM (Hi/Low)	300/200	300/200	300/200
Touch Control (2 Speed)	Yes	Yes	Yes
Auto ON - Low Speed	Yes - 133˚F/56˚C	Yes - 133˚F/56˚C	Yes - 133˚F/56˚C
Noise Level	55 dBA	55 dBA	55 dBA
Damper	Yes	Yes	Yes
Grease Filter	Yes (2)	Yes (2)	Yes (2)
Blower Type	Twin Squirrel Cage	Twin Squirrel Cage	Twin Squirrel Cage
Shipped	Vertical	Vertical	Vertical

MODEL NUMBER	*MH7130XEQ*	*MH7130XEZ*	*MH7135XEB*
EXTERIOR FEATURES:			
Outside Dimensions	29-15/16" W x 16-7/16" H x 15-3/8" D	29-15/16" W x 16-7/16" H x 15-3/8" D	29-15/16" W x 16-7/16" H x 15-3/8" D
Cabinet Finish	White Textured	Almond Textured	Black Textured
Construction	Unitized Chassis With Wrapper & Mounting Plate	Unitized Chassis With Wrapper & Mounting Plate	Unitized Chassis With Wrapper & Mounting Plate
Bottom Finish	Painted Steel - Matte Gray	Painted Steel - Matte Gray	Painted Steel - Matte Black
Bottom Construction	High Gauge Steel - No Embossments	High Gauge Steel - No Embossments	High Gauge Steel - No Embossments
Control and Door Frames	One Piece Molded - White	One Piece Molded - Almond	One Piece Molded - Black
Cooktop Light w/Touch Control	Two Lamps - 30 Watt Easy Access	Two Lamps - 30 Watt Easy Access	Two Lamps - 30 Watt Easy Access
Power Cord Length	4-feet	4-feet	4-feet
OTHER SPECIFICATIONS:			
Electrical	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit
Domestic Use Only	Yes	Yes	Yes
Agency Approvals	FCC, DHHS, U.L. Listed	FCC, DHHS, U.L. Listed	FCC, DHHS, U.L. Listed
Approximate Shipping Weight	64 lbs.	64 lbs.	64 lbs.
Approximate Net Weight	58 lbs.	58 lbs.	58 lbs.
APPROVED ACCESSORIES:			
Filler Kit	4158439	4378403	4158311
Charcoal Filter Kit	4359416	4359416	4359416 (Included)
Exhaust Damper Assembly	Yes (1 Set)	Yes (1 Set)	Yes (1 Set)
Hardware For Installation	Yes (1 Set)	Yes (1 Set)	Yes (1 Set)
LITERATURE:			
Use & Care Guide	4359337	4359337	4359338
Installation Instructions	4359330	4359330	4359330
Warranty	In Use & Care	In Use & Care	In Use & Care
Cooking Guide	In Use & Care	In Use & Care	In Use & Care
Cookbook with Hard Cover	Accessory: 4358520	Accessory: 4358520	Accessory: 4358520
Carton Tag	Std. - On Carton Corner	Std. - On Carton Corner	Std. - On Carton Corner
Tech Sheet	4359414	4359414	4359414
Service Manual	4322167	4322167	4322167

MODEL NUMBER	*MH7135XEQ*	*MH9115XEB*	*MH9115XEQ*
CONTROL SYSTEM:			
Timer:	Yes	Yes	Yes
Type	Electronic	Electronic	Electronic
Limits	99 Min. - 99 Sec.	99 Min. - 99 Sec.	99 Min. - 99 Sec.
Scale	Linear (Digital)	Linear (Digital)	Linear (Digital)
Operation	30 Touch Pads	37 Touch Pads	37 Touch Pads
Display	5-Digit - Blue- Green Fluorescent - Callouts In Display	5-Digit - Blue- Green Fluorescent - Callouts In Display	5-Digit - Blue- Green Fluorescent - Callouts In Display
Microwave Cooking Cycles:			
Cook Time	Yes	Yes	Yes
Auto Cook	Yes, Sensored Three Catagory	No	No
Auto Defrost (Non-Sensored)	Yes - Three Category By Weight	Yes - Three Category By Weight	Yes - Three Category By Weight
Popcorn	Yes - Sensored	Yes - Sensored	Yes - Sensored
Baked Potato	Yes - Sensored	No	No
Reheat	Yes - Sensored - Three Catagory	Yes	Yes
Beverage	No	No	No
Frozen Entree	Yes - Sensor Cook	Yes - Sensor Cook	Yes - Sensor Cook
Vegetable	Yes- Sensored - Three Catagory	No	No
Auto Roast	No	Yes, Non-Sensored w/Probe 6 Category	Yes, Non-Sensored w/Probe 6 Category
Warm Hold	5% Power - 99 Min., 99 Sec. Max	5% Power - 99 Min., 99 Sec. Max	5% Power - 99 Min., 99 Sec. Max
Add Minute	Yes	Yes	Yes
Probe Temp	No	Yes	Yes
Personal Choice	Yes	No	No
Convection Cooking Cycles:			
Convection Bake	No	Yes	Yes
Convection Broil	No	Yes	Yes
Combination Cooking Cycles:			
Combination Bake	No	Yes	Yes
Combination Roast	No	Yes	Yes
Other Hidden Features:			
Stoppable Turntable - 12-3/4" Diameter	Yes	No	No
LED Indicator On Turntable TouchPad	Yes - Red	No	No
Pause	Door Open	Door Open	Door Open
Clock	Yes	Yes	Yes
Independent Minute Timer	Yes	Yes	Yes
Time Set	Yes	Yes	Yes
Timer Off	Yes	Yes	Yes
Auto Start	No	Yes - Auto Start; 11 Hr. 59 Min.	Yes - Auto Start; 11 Hr. 59 Min.
Stage Cooking	Yes (4) - Cook I, II, Defrost Warm Hold	Yes (5) - Cook I, II, Defrost Auto Start, Warm Hold	Yes (5) - Cook I, II, Defrost Auto Start, Warm Hold
In-Use Reprogramming	Yes	Yes	Yes
More/Less Function	Yes	Yes	Yes
Sales Demonstration Mode	Yes	Yes	Yes
Child Lock	Yes	Yes	Yes
Start/Enter	Yes	Yes	Yes
Off/Cancel	Yes	Yes	Yes
Variable Power:	Yes	Yes	Yes
Type	Electronic	Electronic	Electronic
Range	0% - 100%	0% - 100%	0% - 100%
Scale	Digital	Digital	Digital

MODEL NUMBER	*MH7135XEQ*	*MH9115XEB*	*MH9115XEQ*
Temperature Sensor Probe:	No	Yes	Yes
Type	No	Electronic	Electronic
Range	No	90˚ F - 200˚F	90˚ F - 200˚F
Scale	No	Digital	Digital
Levels	No	111	111
Operation	No	Direct Entry	Direct Entry
Timed Override	No	60 Min. If No Increase In Temp. Occurs	60 Min. If No Increase In Temp. Occurs
Exhaust Fan:	Yes	Yes	Yes
High	Yes	Yes	Yes
Low	Yes	Yes	Yes
Manual Off	Yes	Yes	Yes
Auto Off	Yes	Yes	Yes
Note	Automatic Turn On At 133˚F/56˚C.	Automatic Turn On At 133˚F/56˚C.	Automatic Turn On At 133˚F/56˚C.
Cooktop Light:	Yes	Yes	Yes
High	Yes	Yes	Yes
Low	Yes	Yes	Yes
Manual Off	Yes	Yes	Yes
Auto Off	Yes	Yes	Yes
Wattage	30 Watts	30 Watts	30 Watts
Light Cover	Glass	Glass	Glass
Size of Cover	8" W x 3-1/2" H	8" W x 3-1/2" H	8" W x 3-1/2" H
Display Indicators:			
Display Annunciators	14 - In Display	21 - In Display	21 - In Display
Display Words	49 - Spelled In Display	56 - Spelled In Display	56 - Spelled In Display
Microwave Cook Indication	“COOK” Annunciator	“COOK” Annunciator	“COOK” Annunciator
Microwave Stage Indication	"2" Annunciator Only	"2" Annunciator Only	"2" Annunciator Only
Microwave Defrost Indication	“DEFR” Annunciator	“DEFR” Annunciator	“DEFR” Annunciator
Sensor Cook Indication	"SENSOR" Annunciator	"SENSOR" Annunciator	“SENSOR” Annunciator
Convection Cook Indication	No	"CONV" Annunciator	"CONV" Annunciator
Convection Preheat Indication	No	"PREHEAT" Annunciator	"PREHEAT" Annunciator
Combination Cook Indication	No	"COMB" Annunciator	"COMB" Annunciator
Auto Cycle Indication	“AUTO” Annunciator	“AUTO” Annunciator	“AUTO” Annunciator
Auto Start Indication	No	"DELAY" Annunciator	"DELAY" Annunciator
User Enter Indication	“ENTER” Annunciator	“ENTER” Annunciator	“ENTER” Annunciator
Start Indication	“START?” Annunciator	“START?” Annunciator	“START?” Annunciator
Probe Temp Indication	No	"TEMP" & "PROBE" Annunciator	"TEMP" & "PROBE" Annunciator
Weight Indication	“OZ”	“OZ”	“OZ”
Clock Set	“CLOCK” & Colon Flashes	“CLOCK” & Colon Flashes	“CLOCK” & Colon Flashes
Independent Minute Timer	“TIMER” Annunciator	“TIMER” Annunciator	“TIMER” Annunciator
End Of Cooking Reminder	“END”	“END”	“END”
Power Failure Indication	Yes - 888:88 Displayed	Yes - 888:88 Displayed	Yes - 888:88 Displayed
Technical Error Indication	“F-” With Error Number	“F-” With Error Number	“F-” With Error Number
Diagnostic System	Yes	Yes	Yes
Audible Signals:	Yes	Yes	Yes
Type	Resonator	Resonator	Resonator
Programming Tone (w/On/Off Function)	Yes - One Short Beep	Yes - One Short Beep	Yes - One Short Beep
Between Cycles (w/On/Off Function)	Yes - Two Beeps	Yes - Two Beeps	Yes - Two Beeps

MODEL NUMBER	*MH7135XEQ*	*MH9115XEB*	*MH9115XEQ*
OVEN INTERIOR FEATURES:			
Size	19" W x 8-9/16" H x 14-5/8" D	18-3/16" W x 8-5/32" H x 12-5/8" D	18-3/16" W x 8-5/32" H x 12-5/8" D
Capacity	1.3 Cubic Feet	1.1 Cubic Feet	1.1 Cubic Feet
Finish	Epoxy Powder Coat	Epoxy Powder Coat	Epoxy Powder Coat
Cooking Power	900 Watts (IEC-705 Rating)	850 Watts (IEC-705 Rating)	850 Watts (IEC-705 Rating)
Ventilation	Forced Air	Forced Air	Forced Air
Shelf	Spillguard Sealed-In	Spillguard Sealed-In	Spillguard Sealed-In
Bi-Level Rack	Yes	Yes	Yes
Light	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)	Yes - Automatic - Turns on when oven door is operating. 30-Watt Extended Life (4000 Hours)
Turntable Roller	Yes	No	No
Temperature Probe	No	Yes	Yes
DOOR FEATURES:			
Stamped Steel	Yes - With Tempered Cover	Yes - With Tempered Cover	Yes - With Tempered Cover
Window	Water Clear Glass	Low - T Glass	Water Clear Glass
Window Size	17-1/3" W x 5-5/12" H	15.9" W x 5.3" H	15.9" W x 5.3" H
Window Graphics	White With Dots On Edge	None	White With Dots On Edge
Door Screen	White	Black	White
Door Baffle	None	Black	White
Cooking Guide Label	Yes	Yes	Yes
Door Swing	Left Hand (Hinge Side)	Left Hand (Hinge Side)	Left Hand (Hinge Side)
Handle/Latch	Textured, Pull to Open	Textured, Pull to Open	Textured, Pull to Open
Seals	Three Stage (Capacitive, Reflective & Absorbive)	Three Stage (Capacitive, Reflective & Absorbive)	Three Stage (Capacitive, Reflective & Absorbive)
Color	White	Black	White
MICROWAVE SYSTEM:			
Distribution	Top Feed	Bottom Feed Using Motor Driven Ant.	Bottom Feed Using Motor Driven Ant.
Magnetron	Ceramic Dome, Horizontally Cooled with Forced Air	Ceramic Dome, Horizontally Cooled with Forced Air	Ceramic Dome, Horizontally Cooled with Forced Air
SAFETY FEATURES:			
Interlock	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)	Three Door/Latch Operated Switches (1 Power Interrupt, 1 Monitor, 1 Low Voltage)
Thermal Protectors	Two - 1 Magnetron & 1 Oven Cavity	Two - 1 Magnetron & 1 Oven Cavity	Two - 1 Magnetron & 1 Oven Cavity
VENTILATION SYSTEM:			
Type	Convertible	Convertible	Convertible
Duct Outlet Size	3-1/4" H x 10" W	3-1/4" H x 10" W	3-1/4" H x 10" W
Recirculation CFM	120	120	120
Vertical CFM (Hi/Low)	280/180	280/180	280/180
Horizontal CFM (Hi/Low)	300/200	300/200	300/200
Touch Control (2 Speed)	Yes	Yes	Yes
Auto ON - Low Speed	Yes - 133˚F/56˚C	Yes - 133˚F/56˚C	Yes - 133˚F/56˚C
Noise Level	55 dbA	55 dbA	55 dbA
Damper	Yes	Yes	Yes
Grease Filter	Yes (2)	Yes (2)	Yes (2)
Blower Type	Twin Squirrel Cage	Twin Squirrel Cage	Twin Squirrel Cage
Shipped	Vertical	Recirculating	Recirculating

MODEL NUMBER	*MH7135XEQ*	*MH9115XEB*	*MH9115XEQ*
EXTERIOR FEATURES:			
Outside Dimensions	19" W x 8-9/16" H x 14-5/8" D	29-7/8" W x 16-3/16" H x 14" D	29-7/8" W x 16-3/16" H x 14" D
Cabinet Finish	White Textured	Black Textured	White Textured
Construction	Unitized Chassis With Wrapper & Mounting Plate	Unitized Chassis With Wrapper & Mounting Plate	Unitized Chassis With Wrapper & Mounting Plate
Bottom Finish	Painted Steel - Matte Gray	Painted Steel - Matte Black	Painted Steel - Matte Gray
Bottom Construction	High Gauge Steel - No Embossments	High Gauge Steel - No Embossments	High Gauge Steel - No Embossments
Control and Door Frames	One Piece Molded - White	One Piece Molded - Black	One Piece Molded - White
Cooktop Light w/Touch Control	Two Lamps - 30 Watt Easy Access	Two Lamps - 30 Watt Easy Access	Two Lamps - 30 Watt Easy Access
Power Cord Length	4-feet	4-feet	4-feet
OTHER SPECIFICATIONS:			
Electrical	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit	120V, Single Phase, 60 Hz, 1500 Watts For Use With 15 or 20 Amp Circuit
Domestic Use Only	Yes	Yes	Yes
Agency Approvals	FCC, DHHS, U.L. Listed	FCC, DHHS, U.L. Listed	FCC, DHHS, U.L. Listed
Approximate Shipping Weight	64 lbs.	79 lbs.	79 lbs.
Approximate Net Weight	58 lbs.	69 lbs.	69 lbs.
Carton Dimensions	33-7/16" W x 19-5/16" H x 19-17/32" D	33" W x 17-3/8" H x 18-3/16" D	33" W x 17-3/8" H x 18-3/16" D
APPROVED ACCESSORIES:			
Filler Kit	4158439	4158311	4158439
Charcoal Filter Kit	4359416 (Included)	4359416 (Included)	4359416 (Included)
Exhaust Damper Assembly	Yes (1 Set)	Yes (1 Set)	Yes (1 Set)
Hardware For Installation	Yes (1 Set)	Yes (1 Set)	Yes (1 Set)
LITERATURE:			
Use & Care Guide	4359338	4359339	4359339
Installation Instructions	4359330	4359330	4359330
Warranty	In Use & Care	In Use & Care	In Use & Care
Cooking Guide	In Use & Care	In Use & Care	In Use & Care
Cookbook with Hard Cover	Accessory: 4358520	Accessory: 4358520	Accessory: 4358520
Carton Tag	Std. - On Carton Corner	Std. - On Carton Corner	Std. - On Carton Corner
Tech Sheet	4359414	4359414	4359414
Service Manual	4322167	4322167	4322167

MODEL & SERIAL NUMBER EXPLANATION

MODEL NUMBER	M	H	7	13	0	X	E	Q	0

INTERNATIONAL SALES IND.
OR MARKETING CHANNEL, IF PRESENT

PRODUCT GROUP
M = MICROWAVE

PRODUCT IDENTIFICATION
B = BROWNER
C = CONVECTION
G = GRILL / CRISPER
H = OTR HOOD COMBO
K = KITS
S = STIRRER FAN
T = TURNTABLE

MODEL VARIATIONS
0 - 9

CUBIC FEET

04 = .4 CU. FT.	10 = 1.0 CU. FT.
06 = .6 CU. FT.	12 = 1.2 CU. FT.
07 = .7 CU. FT.	13 = 1.3 CU. FT.
08 = .8 CU. FT.	14 = 1.4 CU. FT.
09 = .9 CU. FT.	16 = 1.6 CU. FT.

FEATURE LEVEL
0 = 30" KIT (IF KIT)
2 = 22" KIT (IF KIT)
4 = 24" KIT (IF KIT)
5 = SENSORED MODEL
7 = 27" KIT (IF KIT)

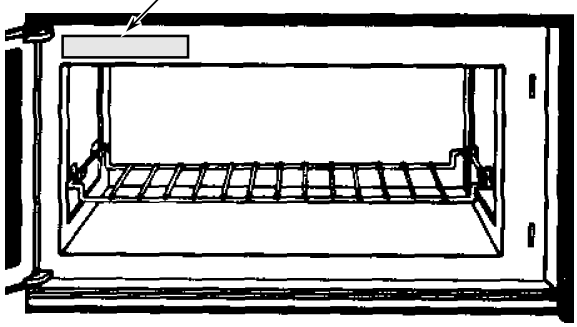
FEATURE CODE
C = CSA APPROVED
X = FEATURE NOT DEFINED

YEAR OF INTRODUCTION
D = 1996
E = 1997

COLOR CODE
B = BLACK
Q = WHITE
Z = ALMOND

ENGINEERING CHANGE (0, 1, 2, ETC.)

SERIAL PLATE LOCATION



WHIRLPOOL MICROWAVE HOOD WARRANTY

LENGTH OF WARRANTY	WHIRLPOOL WILL PAY FOR:	WHIRLPOOL WILL NOT PAY FOR:
ONE YEAR FULL WARRANTY From Date of Installation.	FSP® replacement parts and repair labor costs to correct defects in materials or workmanship. Service must be provided by an authorized Whirlpool service company.	A. Service calls to: 1. Correct the installation of the oven. 2. Instruct you how to use the oven. 3. Replace house fuses or correct house wiring. B. Repairs when oven is used in other than normal home use. C. Damage resulting from accident, alteration, misuse, abuse, improper installation or installation not in accordance with local electrical codes. D. Any labor costs during the limited warranty. E. Replacement parts or repair labor costs for units operated outside the United States. F. Pickup and delivery. This product is designed to be repaired in the home. G. Repairs to parts or systems caused by unauthorized modifications made to the appliance.
SECOND THROUGH FIFTH YEAR LIMITED WARRANTY From Date of Installation.	Replacement of microwave magnetron tube on microwave oven to correct defects in materials or workmanship. For convection cooking models, replacement parts for the electric element to correct defects in materials or workmanship.	

WHIRLPOOL DOES NOT ASSUME ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state-to-state.

Outside the United States and Canada, a different warranty may apply. For details, please contact your authorized Whirlpool dealer.

If you need service, first see the "If You Need Assistance or Service" section of the Use and Care Guide. After checking "If You Need Assistance or Service," additional help can be found by calling our Consumer Assistance Center telephone number, **1-800-253-1301**, from anywhere in the U.S.A.