



# Service

This manual is to be used by qualified appliance technicians only. Maytag does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

## 2004 Over the Range Domestic Convection Microwaves

This Base Manual covers general information

Refer to individual Technical Sheet  
for information on specific models

This manual includes, but is  
not limited to the following:

**AMV6177AAB/W/Q/S**  
**MMV6178AAB/W/Q/S**



16023057  
Revision 0  
May 2004

# Important Information

Pride and workmanship go into every product to provide our customers with quality products. It is possible, however, that during its lifetime a product may require service. Products should be serviced only by a qualified service technician who is familiar with the safety procedures required in the repair and who is equipped with the proper tools, parts, testing instruments and the appropriate service manual. **REVIEW ALL SERVICE INFORMATION IN THE APPROPRIATE SERVICE MANUAL BEFORE BEGINNING REPAIRS.**

## Important Notices for Consumers and Servicers



### WARNING

To avoid risk of serious injury or death, repairs should not be attempted by an unauthorized service personnel, dangerous conditions (such as exposure to electrical shock) may result.



### CAUTION

Maytag will not be responsible for any injury or property damage from improper service procedures. If performing service on your own product, assume responsibility for any personal injury or property damage which may result.

To locate an authorized servicer, please consult your telephone book or the dealer from whom you purchased this product. For further assistance, please contact:

### Customer Service Support Center

CAIR Center

<u>Web Site</u>	<u>Telephone Number</u>
WWW.AMANA.COM .....	1-800-843-0304
WWW.MAYTAG.COM .....	1-800-688-9900
CAIR Center in Canada .....	1-800-688-2002
Amana Canada Product .....	1-866-587-2002

### Recognize Safety Symbols, Words, and Labels



### DANGER

**DANGER**—Immediate hazards which **WILL** result in severe personal injury or death.



### WARNING

**WARNING**—Hazards or unsafe practices which **COULD** result in severe personal injury or death.



### CAUTION

**CAUTION**—Hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage.

# Table of Contents

Important Information .....	2	Disassembly Procedures .....	
Important Safety Information .....	4	Grille .....	22
Microwave Leakage Testing .....	5	Door Assembly .....	22
General Information .....		Door Disassembly .....	22
Specifications .....	7	Control Panel .....	23
Placement of the Oven .....	7	P.C. Board .....	23
Location of Model Number .....	7	Control Key Panel .....	24
Model Identification .....	7	Outer Case .....	24
Service .....	7	Stirrer Assembly .....	24
Parts and Accessories .....	7	Interlock Door Latch Switches .....	25
Asure™ Extended Service Plan .....	7	High Voltage Capacitor .....	26
Radio Interference .....	7	Diode .....	26
Electrical Requirements .....	8	Transformer .....	26
Cleaning .....	8	Fuse .....	26
Grounding Instructions .....	8	Magnetron .....	26
Microwave Oven Description .....	9	Magnetron Fan Assembly .....	27
Troubleshooting Procedures .....		Magnetron Thermal Fuse .....	27
General .....	10	Humidity Sensor .....	27
Error Codes .....	16	Oven Thermostat .....	27
Testing Procedures .....	17-21	Turntable Motor .....	28
		Vent Blower .....	28
		Convection Motor .....	28
		Convection Heater .....	29
		Light Socket .....	29
		Grill Heater .....	29
		Appendix A .....	
		Installation Instructions .....	A-2
		Appendix B .....	
		Use and Care information .....	B-2

# Important Safety Information



## CAUTION

Read the following information to avoid possible exposure to microwave radiation:

The basic design of the Maytag and Amana microwave oven makes it an inherently safe device to both use and service. However, there are some precautions which should be followed when servicing the microwave oven to maintain this safety. These are as follows:

1. Always operate the unit from an adequately grounded outlet. Do not operate on a two-wire extension cord.
2. Before servicing the unit (if unit is operable), perform the microwave leakage test.
3. The oven should never be operated if the door does not fit properly against the seal, the hinges or hinge bearings are damaged or broken; the choke is damaged, (pieces missing, etc.); or any other visible damage can be noted. Check the choke area to ensure that this area is clean and free of all foreign matter.
4. If the oven operates with the door open and produces microwave energy, take the following steps.
  - A. Tell the user not to operate the oven.
  - B. Contact Maytag immediately.
5. Always have the oven disconnected when the outer case is removed except when making the "live" tests called for in the Service Manual. Do not reach into the equipment area while the unit is energized. Make all connections for the test and check them for tightness before plugging the cord into the outlet.
6. Always ground the capacitors on the magnetron filter box and H. V. Capacitor with an insulated-handle screwdriver before working in the high voltage area of the equipment compartment. Some types of failures will leave a charge in these capacitors and the discharge could cause a reflex action which could make you injure yourself.
7. In the area of the transformer, capacitor, diode, and magnetron there is HIGH VOLTAGE. When the unit is operating, keep this area clean and free of anything which could possibly cause an arc or ground, etc.
8. Do not for any reason defeat the interlock switches. There is no valid reason for this action at any time; nor will it be condoned by Maytag.
9. **IMPORTANT:** Before returning a microwave to a customer, check for proper switch interlock action. The primary and secondary switches **MUST** open when the door is actuated. The monitor switch **MUST** close at a 1/4 inch when the door is opened.
10. Before returning a microwave to a customer, verify the door spacing is reasonably uniform along the top, bottom, and sides, and that it measures 1/8 inch or less.
11. The microwave oven should never be operated with:
  - Any components removed and/or bypassed.
  - Any of the safety interlocks failing.
  - Any of the seal surfaces failing, missing, or damaged.
12. To ensure that the unit does not emit excessive microwave leakage and to meet the Department of Health Human Service guidelines, check the oven for microwave leakage using Narda Model 8100, 8200, Holaday HI1500, HI1501 or Simpson 380M leakage monitor as outlined in the instructions. The maximum leakage level allowed is 4mW/cm<sup>2</sup>.
13. If servicer encounters an emission reading over 4 mW/cm<sup>2</sup> the servicer must cease repair and contact the Maytag Service Department immediately for further direction. Maytag will contact the proper Government Agency upon verification of the test results.

# Microwave Leakage Testing

## **WARNING**

Check for radiation leakage after servicing. Should the leakage be more than 4mW/cm<sup>2</sup> inform Maytag immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and HEW regulations. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

## **Equipment**

- Electromagnetic radiation monitor
- 600 cc glass beaker

## **Procedure For Measuring Radiation Leakage**

Note before measuring -

- Do not exceed meter full scale deflection. Leak monitor should initially be set to the highest scale.
  - To prevent false readings the test probe should be held by the grip portion of the handle only.
  - The scan speed is equal to one inch per antenna revolution or one inch per second if antenna speed is unknown.
  - Areas to be checked are all door seal areas and any venting parts.
  - Leakage with the outer panel removed...4mW/cm<sup>2</sup> or less.
  - Leakage for fully assembled oven with door normally closed ...4mW/cm<sup>2</sup> or less.
  - Leakage for a fully assembled oven (before the latch switch (primary) is interrupted) while pulling the door ... 4mW/cm<sup>2</sup> or less.
1. Pour 275 ±15 cc (9 oz ±1/2 oz) of 20 ± 5°C (68 ± 9°F) water in a beaker which is graduated to 600 cc and place the beaker in the center of oven.
  2. Set the radiation monitor to 2450 MHz and use it following the manufacturer's recommended test procedure to assure correct results.
  3. While measuring the leakage, always use the two inch (5 cm) spacer supplied with the probe.
  4. Press the start pad or turn on the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

## **Measurement With the Outer Panel Removed**

### **DANGER**

Avoid contacting any high voltage components.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

## **Measurement With a Fully Assembled Oven**

After all components including the outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening, and air inlet openings.

## **Record Keeping and Notification After Measurement**

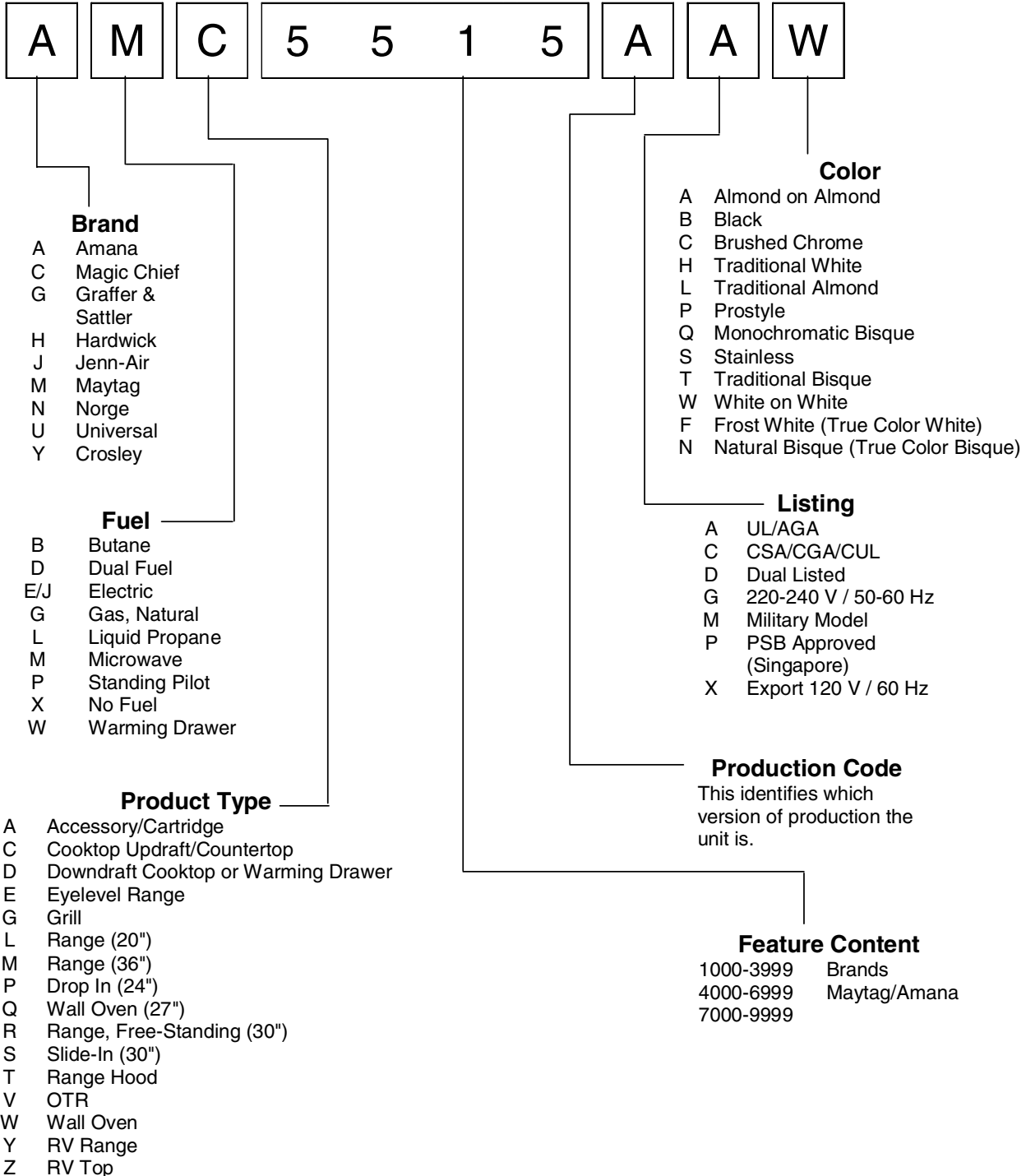
1. After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
2. A copy of the repair ticket and the microwave leakage reading should be kept by the repair facility.

# General Information

This manual provides basic instructions and suggestions for handling, installing, and servicing microwave ovens. The directions, information, and warnings in this manual are developed from experience with, and careful testing of the product. If the unit is installed according to the Installation Instructions, it will operate properly and will require minimal servicing. A unit in proper operating order ensures the consumer all the benefits provided by efficient microwave cooking.

This manual contains information needed by authorized service technicians to install and service the microwave oven pertaining to this manual. There may be, however, some information which needs further explanation. Refer to individual Installation Instructions, Use and Care, Technical Sheets, or toll free technical support line to answer questions from authorized service technicians.

## Cooking Nomenclature



# General Information

## Specifications

Refer to individual Technical Sheet for specification information.

## Placement of the Oven

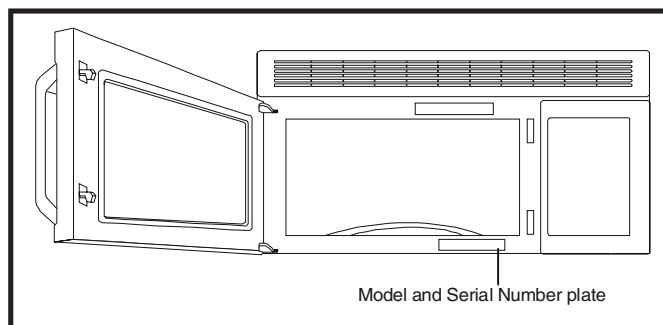
This microwave can be easily placed in the kitchen, family room, or anywhere else in the house. Place the oven on a flat surface such as a kitchen countertop or a specially designed microwave oven cart. Do not place oven above a gas or electric range. Free air flow around the oven is important.

## Do Not Block Air Vents

All air vents must be kept clear during cooking. If air vents are covered during operation the oven may overheat. In this case, a sensitive thermal safety device automatically turns the oven off. The oven will be inoperable until the oven has cooled sufficiently.

## Location of Model Number

To request service information or replacement parts, the service center will require the complete model, serial, and manufacturing number of your microwave oven. The number is located inside the oven door cavity as shown in the illustration below.



## Model Identification

Complete enclosed registration card and promptly return.

If registration card is missing:

- For Amana product call 1-800-843-0304 or visit the Web Site at [www.amana.com](http://www.amana.com)
- For Maytag product call 1-800-688-9900 or visit the Web Site at [www.maytag.com](http://www.maytag.com)
- For product in Canada call 1-866-587-2002 or visit the Web Sites at [www.amana.com](http://www.amana.com) or [www.maytag.com](http://www.maytag.com)

When contacting provide product information located on rating plate.

Record the following:

Model Number: \_\_\_\_\_  
Manufacturing Number: \_\_\_\_\_  
Serial or S/N Number: \_\_\_\_\_  
Date of purchase: \_\_\_\_\_  
Dealer's name and address: \_\_\_\_\_

## Service

Keep a copy of sales receipt for future reference or in case warranty service is required. To locate an authorized servicer:

- For Amana product call 1-800-628-5782 or visit the Web Site at [www.amana.com](http://www.amana.com)
  - For Maytag product call 1-800-462-9824 or visit the Web Site at [www.maytag.com](http://www.maytag.com)
  - For product in Canada call 1-866-587-2002 or visit the Web Sites at [www.amana.com](http://www.amana.com) or [www.maytag.com](http://www.maytag.com)
- Warranty service must be performed by an authorized servicer. We also recommend contacting an authorized servicer, if service is required after warranty expires.

## Parts and Accessories

Purchase replacement parts and accessories over the phone. To order accessories for your product call:

- For Amana product call 1-877-232-6771 or visit the Web Site at [www.amana.com](http://www.amana.com)
- For Maytag product call 1-800-462-9824 or visit the Web Site at [www.maytag.com](http://www.maytag.com)
- For product in Canada call 1-866-587-2002 or visit the Web Sites at [www.amana.com](http://www.amana.com) or [www.maytag.com](http://www.maytag.com)

## Extended Service Plan

We offer long-term service protection for this new oven.

- Asure™ Extended Service Plan is specially designed to supplement Amana's strong warranty. This plan covers parts, labor, and travel charges. Call 1-866-232-6244 for information.
- Dependability Plus™ Extended Service Plan is specially designed to supplement Maytag's strong warranty. This plan covers parts, labor, and travel charges. Call 1-800-925-2020 for information.

## Radio Interference

1. Microwave oven operation may interfere with the radio or TV reception.
2. When there is interference, it may be reduced or eliminated by taking the following measures:
  - Clean the door and the seal surface of the oven.
  - Reorient the receiving antenna of the radio or TV.
  - Relocate the microwave oven in relation to the radio or TV.
  - Move the microwave away from the receiver.
  - Plug the microwave into a different outlet so that the microwave and receiver are on different branch circuits.
3. 120 VAC, 60 Hz household outlet. Be sure the circuit is at least 15 or 20 A and the microwave oven is the only appliance on the circuit. It is not designed for 50 Hz or any circuit other than a 120 VAC, 60 Hz circuit.
  - Electrical Rating of the Oven: 120 VAC, 60 Hz



# General Information

## Electrical Requirements

The oven is designed to operate on a Standard 120 VAC, 60 HZ household outlet.

## Cleaning

Before cleaning the oven, unplug the power supply cord. If impossible, open the oven door to prevent an accidental oven start.

### Inside of the Oven

Use a damp cloth to wipe out crumbs and spillovers. It is important to keep the area between door and cavity front clean to assure a tight seal. Remove greasy spatters with a sudsy cloth, then rinse and dry. Do not use harsh detergent or abrasive cleaners.

### Glass Tray

The glass tray can be washed by hand or in the dishwasher.

### Control Panel

Wipe with a damp cloth followed immediately by a dry cloth. The Child Lock feature is also useful when cleaning the control panel. Child Lock prevents accidental programming when wiping the control panel (if so equipped).

### Door


If steam accumulates inside or around the outside of the oven door, wipe the panel with a soft cloth. This may occur when the microwave oven is operated under high humidity conditions and in no way indicates a malfunction of the unit.

### Outside Oven Surface

Clean with damp cloth. To prevent damage to the operating parts inside the oven, the water should not be allowed to seep into the ventilation openings. After cleaning the oven, be sure that the rotating ring and the glass tray are in the right position. Press the STOP/CLEAR pad twice to reset any accidental key setting.

## Grounding Instructions

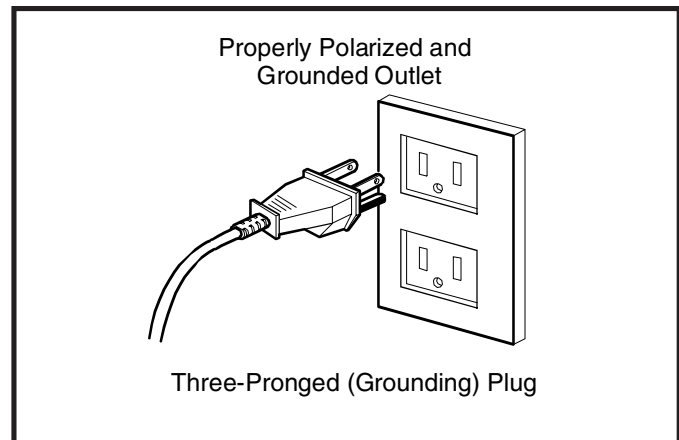
This appliance must be grounded. If an electrical short circuit occurs, grounding reduces the risk of electric shock by providing an escape wire for the electric current. The cord for this appliance has a grounding wire with a grounding plug. Put the plug into an outlet that is properly installed and grounded.

 **WARNING**

To avoid risk of electric shock, personal injury or death, use grounding plug properly.

Ask a qualified electrician if you do not understand the grounding instructions or if you wonder whether the appliance is properly grounded.

Keep the electrical power cord dry and do not pinch or crush it in any way.

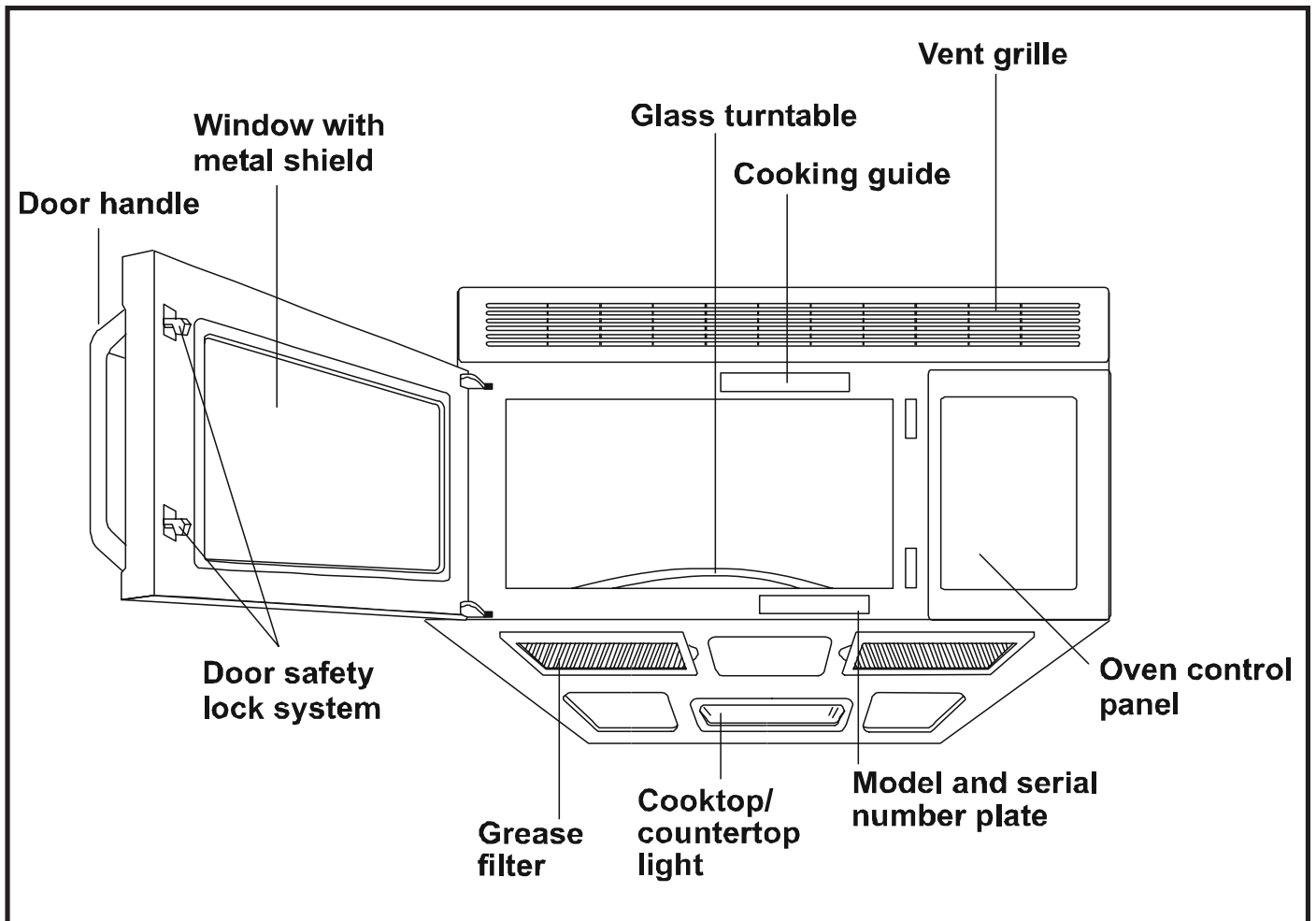


For a permanently connected appliance: This appliance must be connected to a grounded, metallic, permanent wiring system, or an equipment grounding conductor should be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance.



# General Information

## Microwave Oven Description



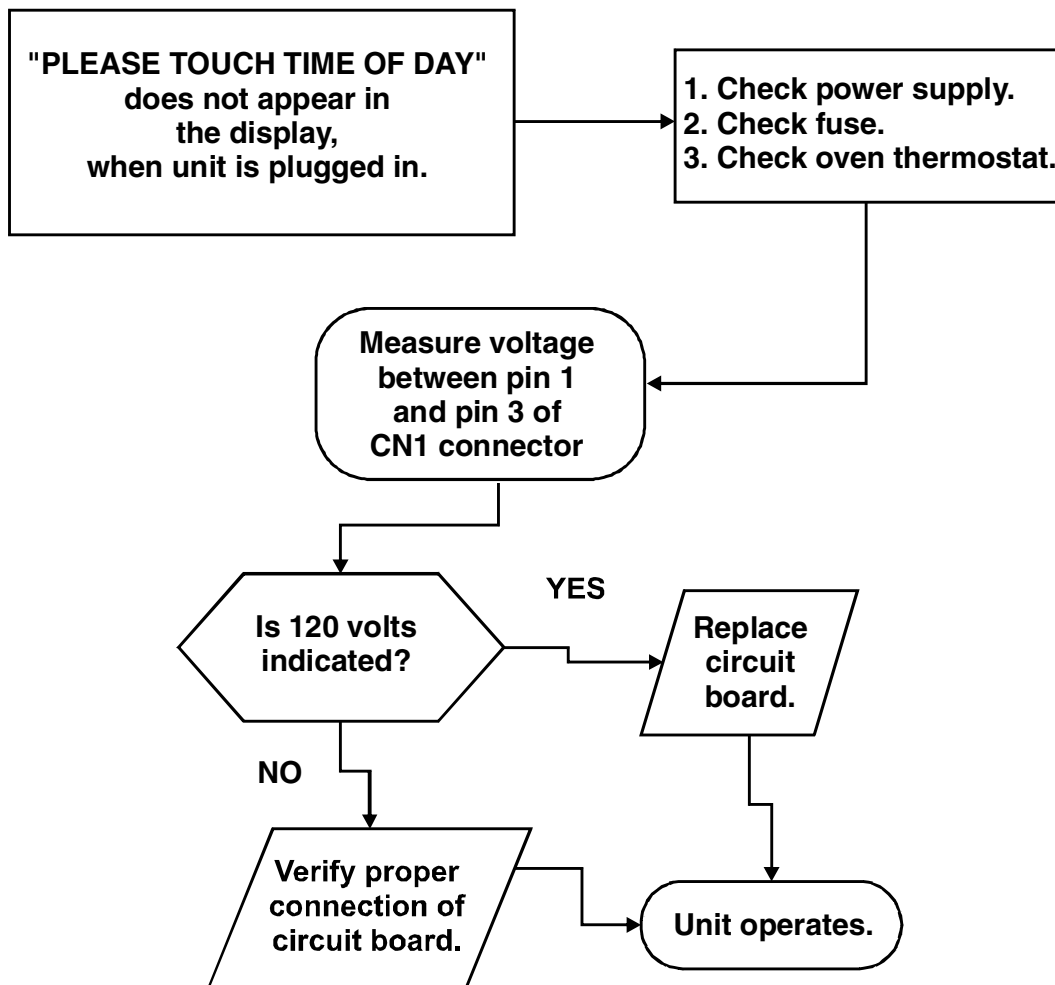
# Troubleshooting Procedures

## **WARNING**

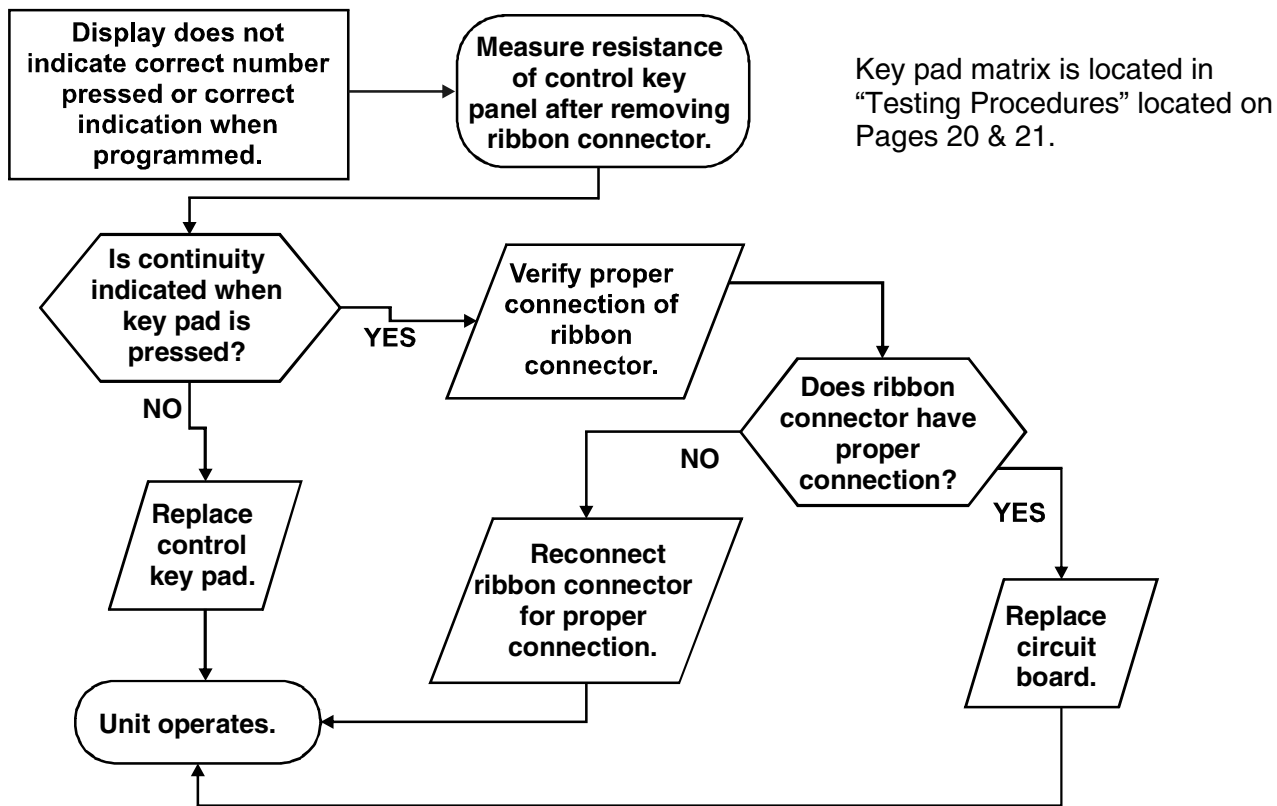
To avoid risk of electrical shock, personal injury, or death, disconnect power to oven before servicing, unless testing requires it.

## **CAUTION**

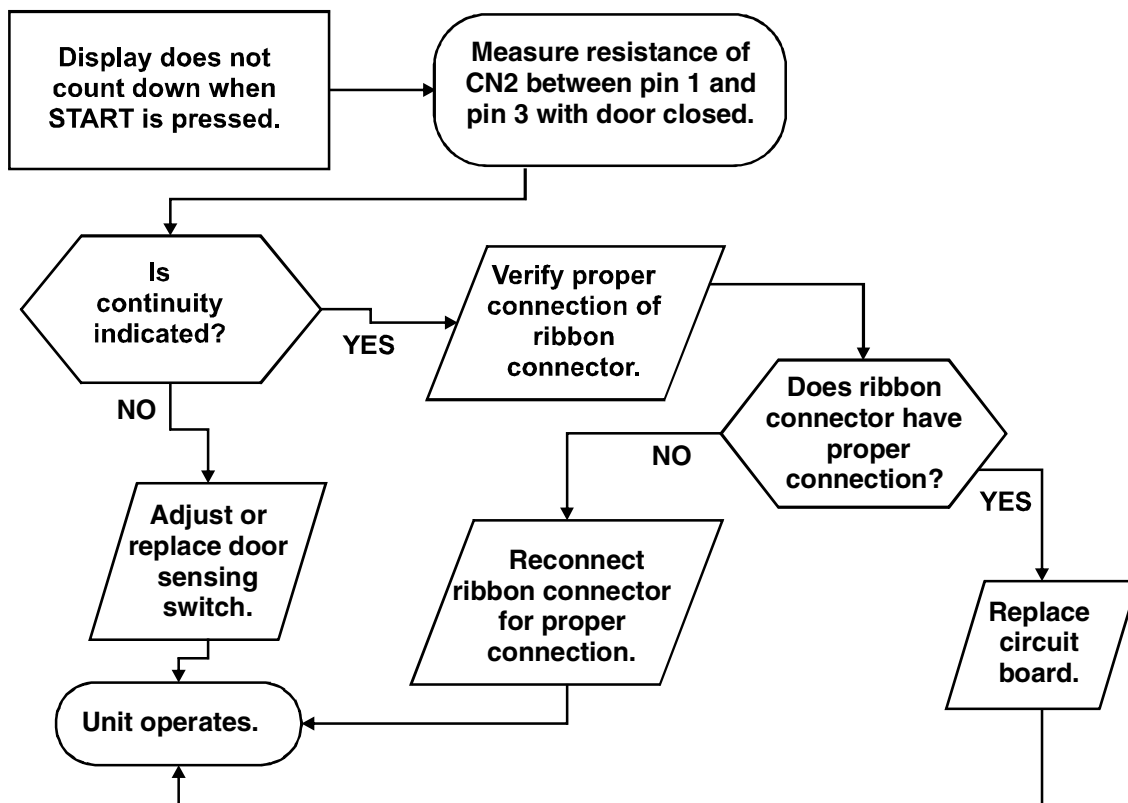
- Verify proper grounding before checking for trouble.
- Be careful of the high voltage circuit.
- Discharge the high voltage capacitor.
- When checking the continuity of the switches or of the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
- Do not touch any part of the circuit on the printed circuit board, since static electric discharge may damage the control panel. Always touch yourself to ground while working on this panel to discharge any static charge built up in your body.



# Troubleshooting Procedures

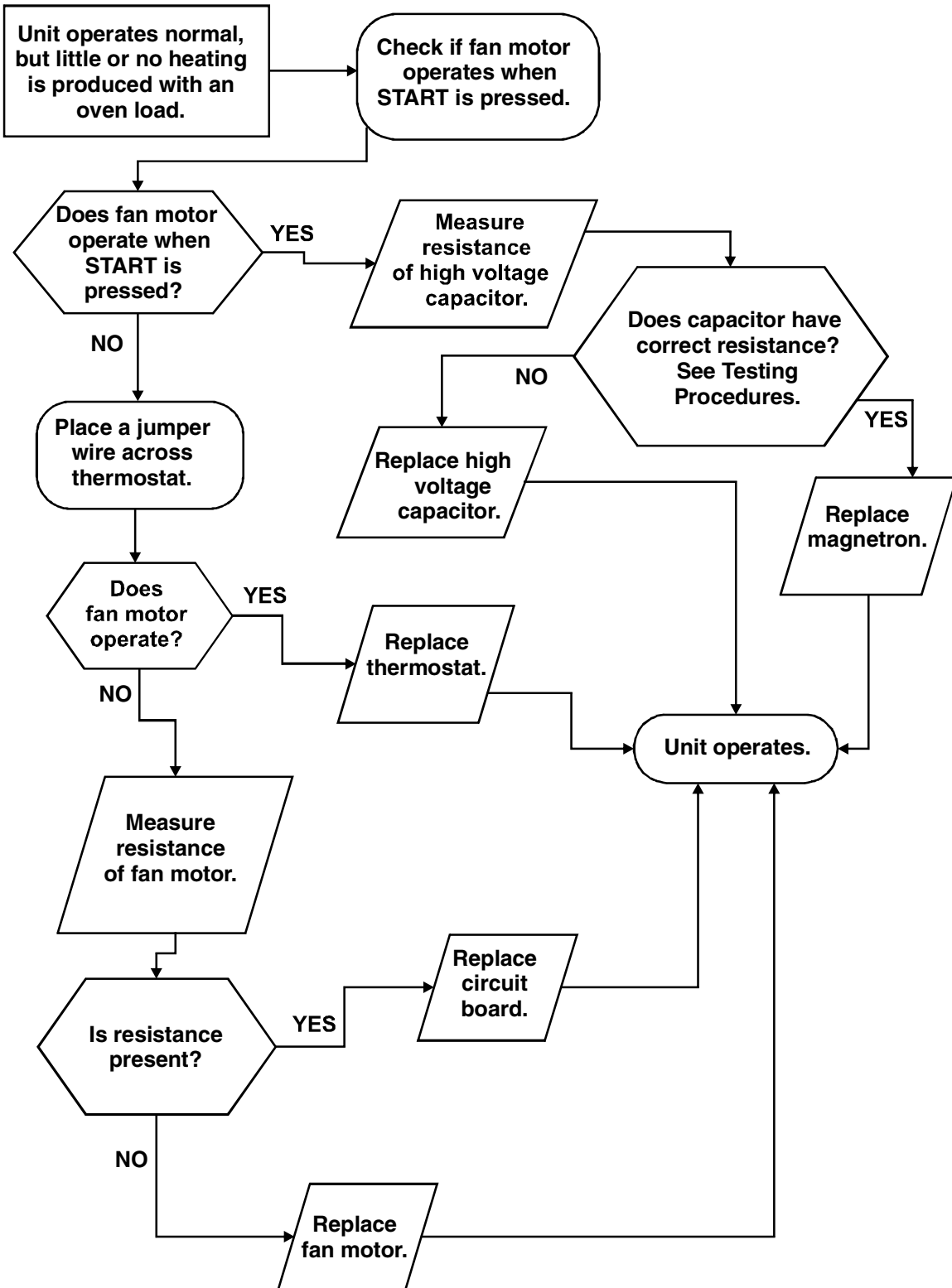


## Check Touch Keypad



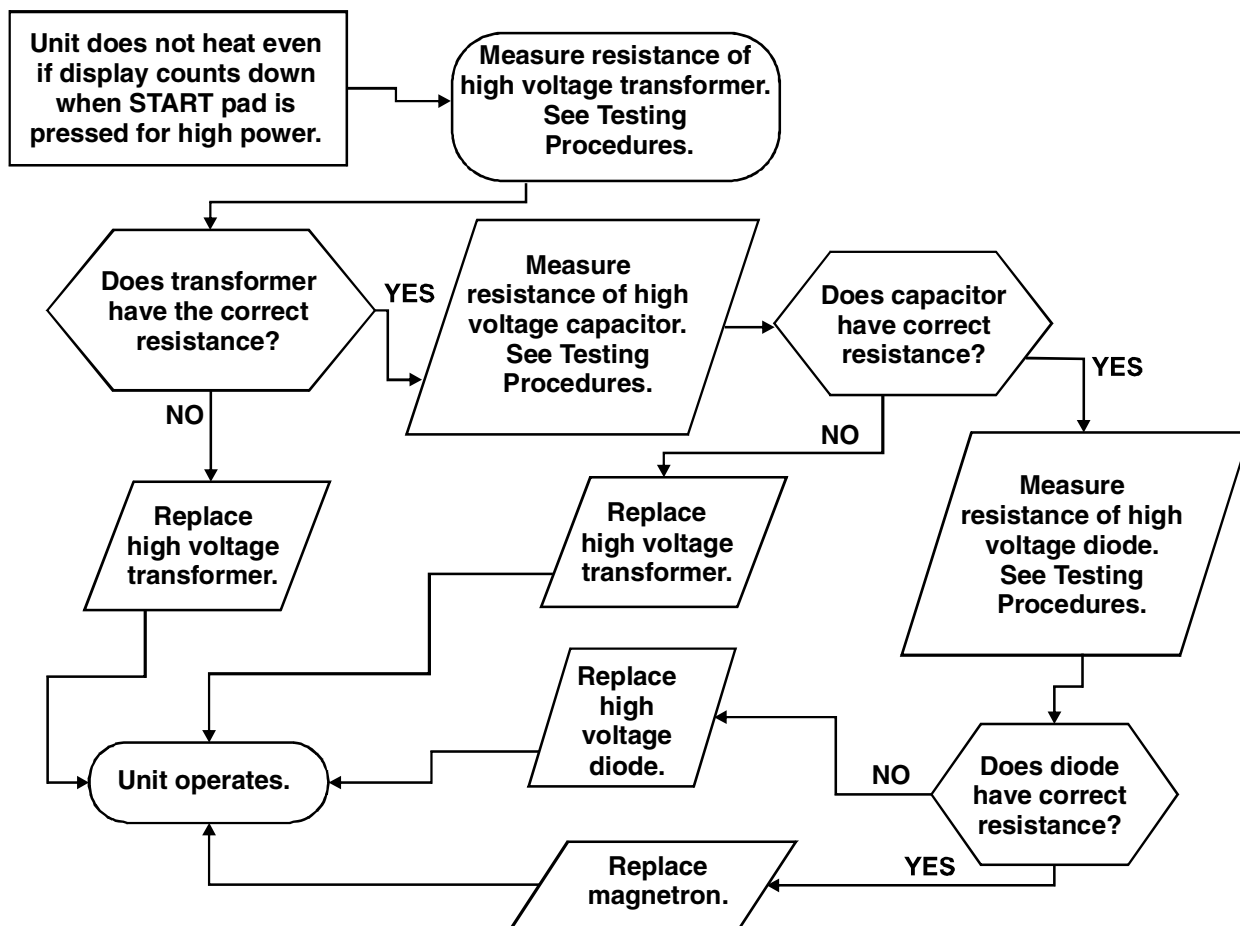
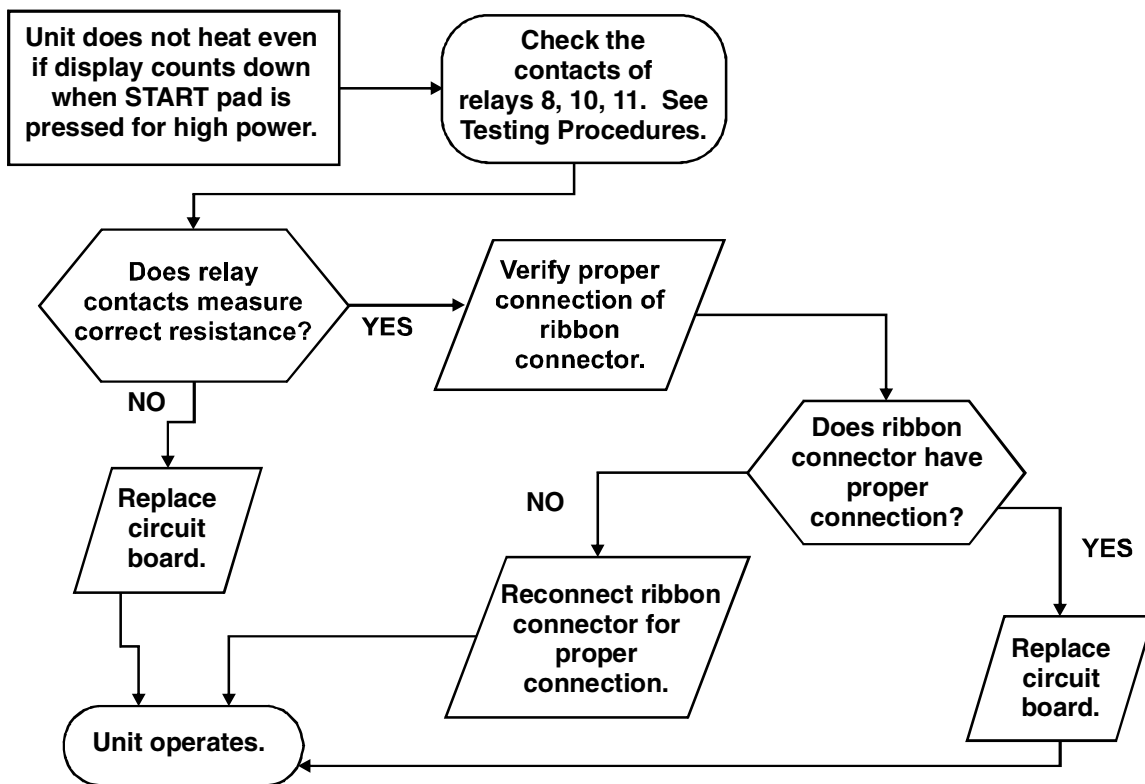
# Troubleshooting Procedures

## Check Air Vents



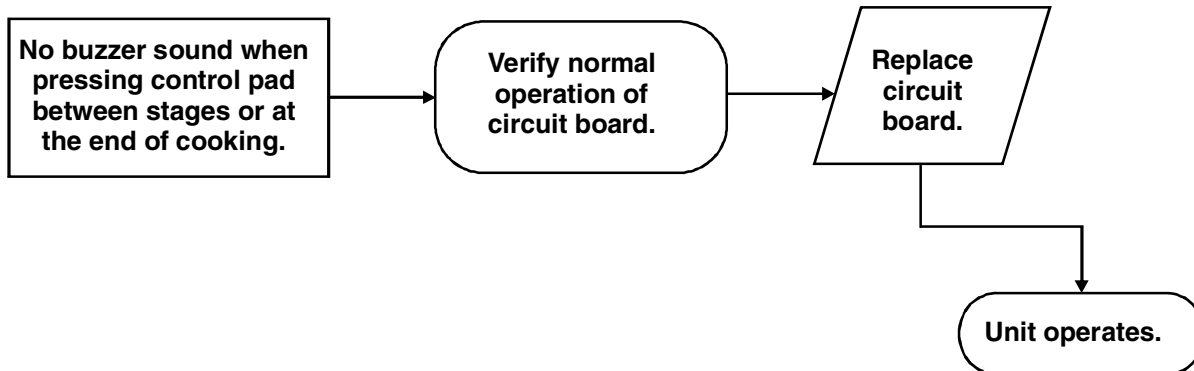
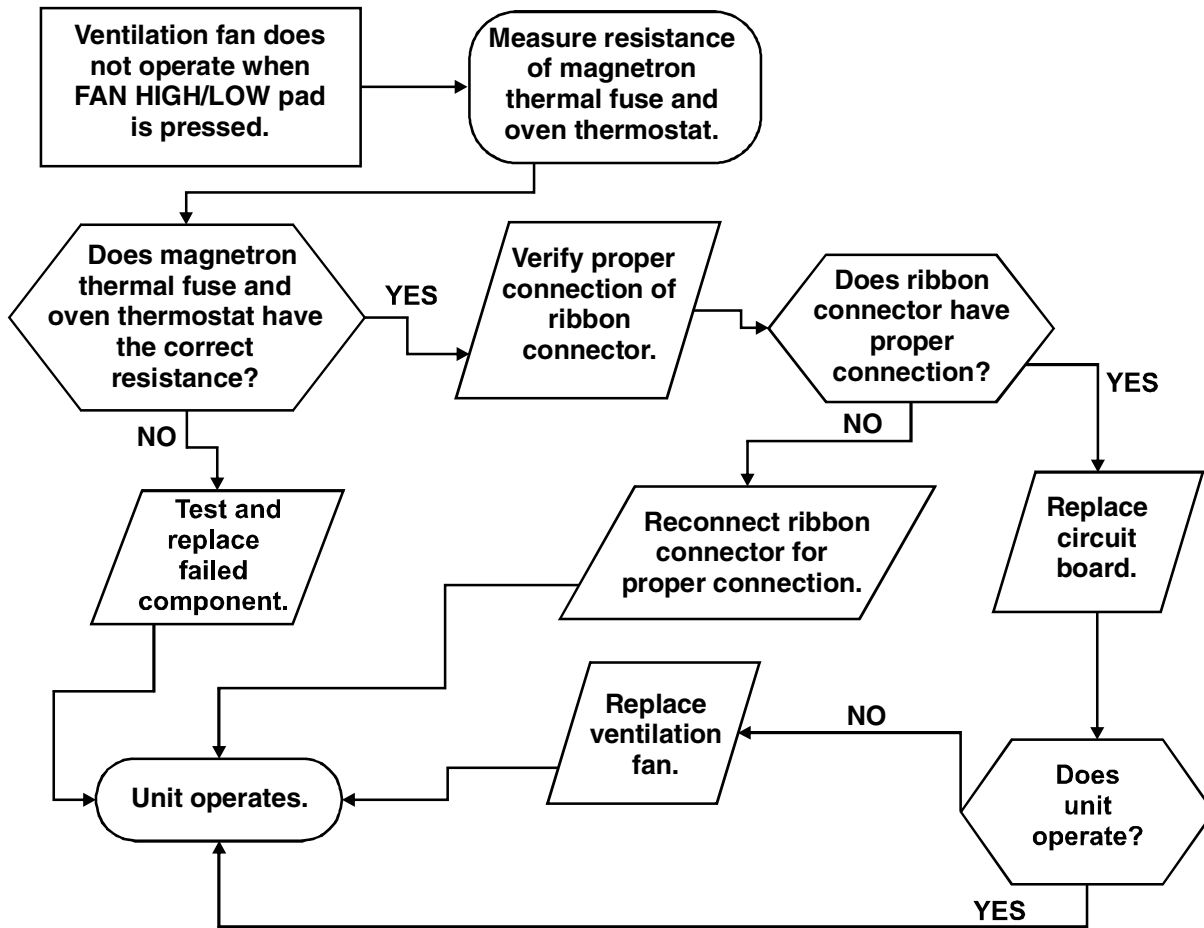
# Troubleshooting Procedures

## Check Primary/Secondary Interlock Switches and Thermostat



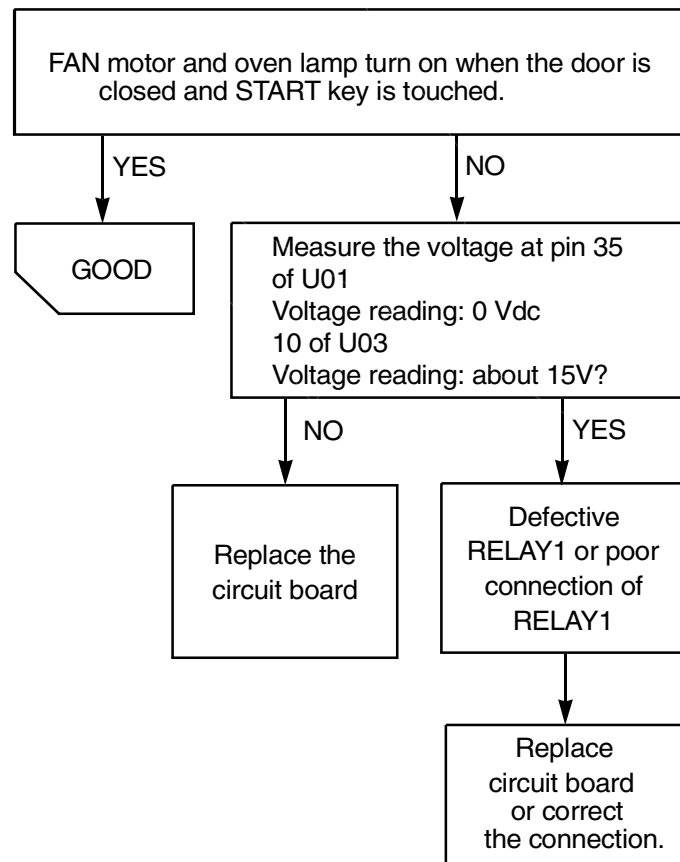
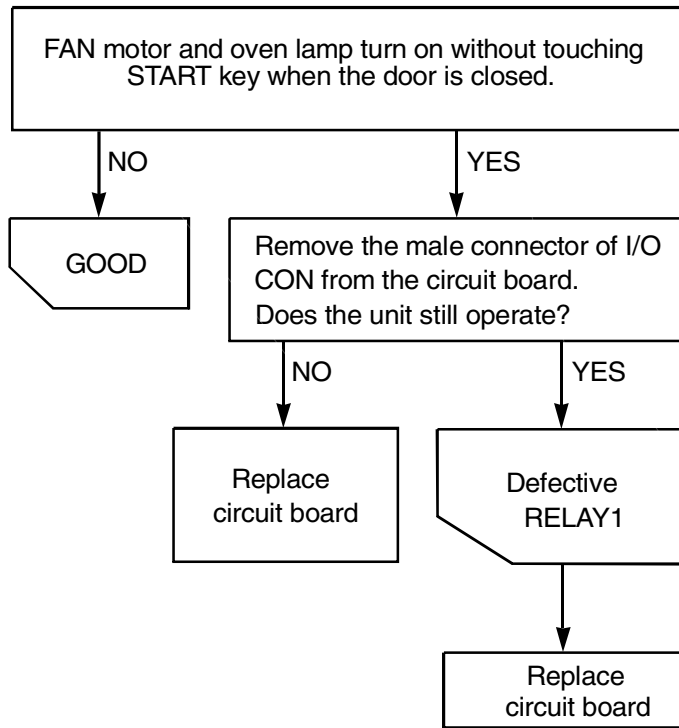
# Troubleshooting Procedures

## Check Power Supply and Fuse



# Troubleshooting Procedures

## Relay





# Troubleshooting Procedures

## Oven Error Code Display

Touchpad Display	Error Mode
F1	Thermistor Open
F2	Thermistor Short Before Cooking
F3	Thermistor Short After Cooking
F4	Sensor Open
F5	Damper Switch Sensing Error

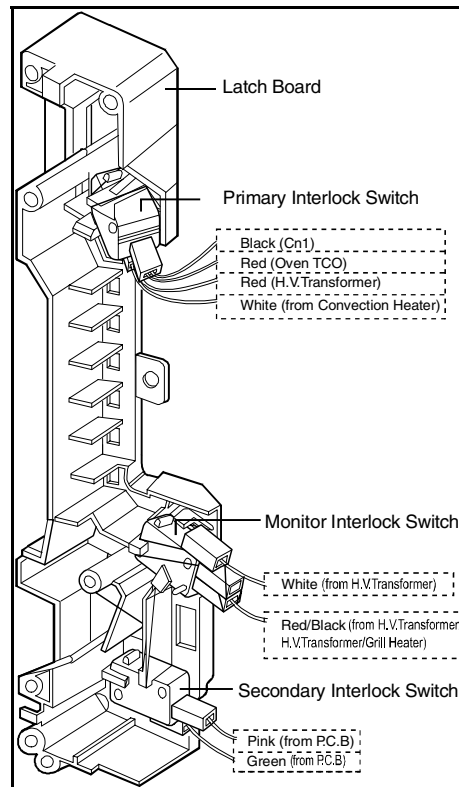
## Checkout Procedure: Fuse

PROBLEM	CAUSE
Fuse blows immediately after door is closed.	Improper operation of the primary interlock, secondary interlock switches and/or interlock monitor switch.
Fuse blows immediately after door is opened.	
Fuse blows when door is closed and START key is touched.	Malfunction of high voltage transformer; high voltage capacitor including diode, magnetron, blower motor or circuit board.

**NOTES:** Replace blown fuse with 20 Amp fuse.

If the fuse is blown due to an improper switch operation, replace all interlock switches, PCB Ass'y and the fuse simultaneously, and ensure they are connected properly.

Check for microwave energy leakage after replacing interlock and monitor switches.



## Checkout Procedure: Circuit Board

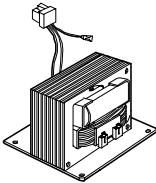
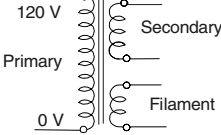
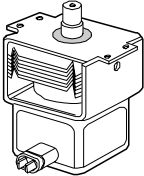
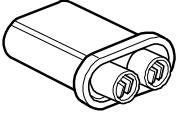
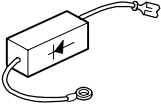
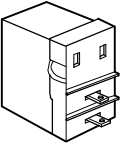
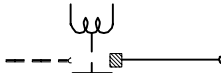
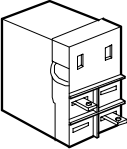
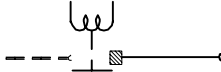
PROBLEM	CAUSE
The START function fails to operate, but the high voltage systems, interlock/monitor switches and door sensing/relays all test good.	Defective Control Printed Circuit Board Assembly
Proper temperature is not obtained.	
Buzzer does not sound or sounds continuously.	
Some segments of 1 or more digits display on the touch panel, or display when they should not.	

**NOTE:** Check for microwave energy leakage after replacing Printed Circuit Board Assembly.

# Testing Procedures

## ⚠ WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge the high voltage capacitor before servicing, unless testing requires power.

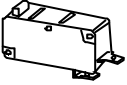
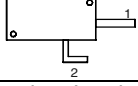
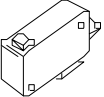
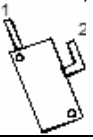
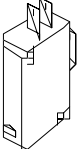
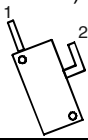


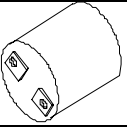
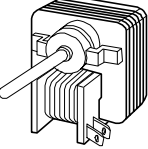
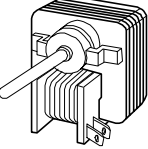
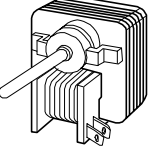
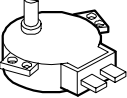
Illustration	Component	Test Procedure	Results																																	
	<p>High voltage transformer</p> 	<p><b>Discharge Capacitor</b>            Disconnect connector and measure continuity with meter on R x 1 scale:            Secondary.....            Filament.....            Primary.....            (Measure at room temperature, or 70° F)            Measure continuity with meter on "High" scale:            Primary winding to ground.....            Filament winding to ground.....</p>	<p>Approximately 65-120 Ω            Less than 1 Ω            Less than 1 Ω            Infinite Ω            Infinite Ω</p>																																	
	Magnetron	<p><b>Discharge Capacitor</b>            Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.</p>	<p><b>Between Terminals:</b> Less than 1 Ω  <b>Each terminal to ground:</b> Infinite resistance.  <b>Note:</b> This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest.</p>																																	
	High Voltage Capacitor	<p><b>Discharge Capacitor</b>            Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals.            Also check between each terminal and capacitor case.</p>	<p><b>Between Terminals:</b> Meter should momentarily indicate several ohms, then return to infinity. If no deflection occurs, or if continuous deflection occurs, replace capacitor.  <b>Terminal to Case:</b> Infinite resistance</p>																																	
	High Voltage Diode	<p><b>Discharge Capacitor</b>            Remove diode lead from capacitor and connect ohmmeter.            Reverse leads for second test.</p>	<p>Infinite resistance should be measured in one direction and continuity in the opposite direction.  <b>NOTE:</b> Ohmmeter must contain a battery of 6 volts minimum.</p>																																	
	Relay 8	<p>Disconnect the leads. Place water in the oven and select power levels 1 through 10. Check continuity between the terminals of the relays.</p> 	<table border="1"> <thead> <tr> <th>Power Level</th> <th>Cycle On</th> <th>Cycle Off</th> </tr> </thead> <tbody> <tr><td>1</td><td>4 sec</td><td>18 sec</td></tr> <tr><td>2</td><td>6 sec</td><td>16 sec</td></tr> <tr><td>3</td><td>8 sec</td><td>14 sec</td></tr> <tr><td>4</td><td>10 sec</td><td>12 sec</td></tr> <tr><td>5</td><td>12 sec</td><td>10 sec</td></tr> <tr><td>6</td><td>14 sec</td><td>8 sec</td></tr> <tr><td>7</td><td>16 sec</td><td>6 sec</td></tr> <tr><td>8</td><td>18 sec</td><td>4 sec</td></tr> <tr><td>9</td><td>20 sec</td><td>2 sec</td></tr> <tr><td>10</td><td>22 sec</td><td>0 sec</td></tr> </tbody> </table>	Power Level	Cycle On	Cycle Off	1	4 sec	18 sec	2	6 sec	16 sec	3	8 sec	14 sec	4	10 sec	12 sec	5	12 sec	10 sec	6	14 sec	8 sec	7	16 sec	6 sec	8	18 sec	4 sec	9	20 sec	2 sec	10	22 sec	0 sec
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6	14 sec	8 sec																																		
7	16 sec	6 sec																																		
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10	22 sec	0 sec																																		
	Relay 10, 11	<p>Disconnect the leads. Place water in the oven and select Convection Cooking. Check continuity between the terminals of the relays.</p> 	<table border="1"> <thead> <tr> <th>Convection Cooking Start</th> <th>Convection Cooking Stop</th> </tr> </thead> <tbody> <tr> <td>Continuity</td> <td>Open</td> </tr> </tbody> </table>	Convection Cooking Start	Convection Cooking Stop	Continuity	Open																													
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# Testing Procedures



## WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge the high voltage capacitor before servicing, unless testing requires power.

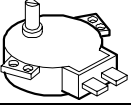
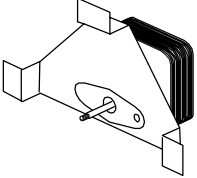
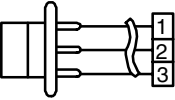
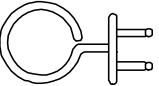
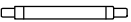
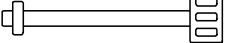
Illustration	Component	Test Procedure	Results
	Primary Interlock Switch Test (Top Switch) 	Measure resistance between terminals 1 and 2: Door Open..... Door Closed .....	Open Continuity
	Secondary Interlock Switch Test (Bottom Switch) 	Measure resistance between terminals 1 and 2: Door Open..... Door Closed .....	Open Continuity
	Interlock Monitor Switch Test (Middle Switch) 	Measure resistance between terminals 1 and 2: Door Open..... Door Closed .....	Continuity Open
	Magnetron Thermal Cut-Out (Thermostat)	Disconnect all wires from TCO. Measure resistance across terminals. Magnetron TCO.....	Open at 302°F (150°C) and closed at 32°F (0°C)
	Oven Thermal Cut-Out (Thermostat)	Disconnect all wires from TCO. Measure resistance across terminals. Magnetron TCO.....	Open at 293°F (145°C) and closed at 32°F (0°C)
	Lamp receptacle	Test continuity of receptacle terminals.	Indicates continuity if bulb is good and installed.
	Fan motor	Remove all wires from motor.  Measure resistance across coil .....	Approximately 35-55 Ω (70°F, 20°C)  Less than 30Ω or more than 60Ω (70°F, 20°C), motor is defective.
	Damper motor	Remove all wires from motor.  Measure resistance across coil .....	Approximately 2-4 Ω (70°F, 20°C)  Less than 1 Ω or more than 5 Ω (70°F, 20°C), motor is defective.
	Circulation motor	Remove all wires from motor.  Measure resistance across coil .....	Approximately 25-40 Ω (70°F, 20°C)  Less than 20 Ω or more than 45 Ω (70°F, 20°C), motor is defective.
	Turntable Drive Motor (Synchronous motor)	Measure across terminals	Voltage: Approximately 120 VAC Resistance: Approximately 4 Ω

# Testing Procedures



## WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge the high voltage capacitor before servicing, unless testing requires power.

Illustration	Component	Test Procedure	Results
	Ventilation Motor	Measure across terminals	Resistance: Approximately 25-45 $\Omega$
	Convection motor	Remove all wires from motor. Measure resistance across coil.....	Approximately 29.5 $\Omega$ $\pm$ 10% (70°F, 20°C)
	Sensor	Remove the 3-pin connector from the circuit board. Measure resistance across pins 1 & 2 ..... Measure resistance across pins 2 & 3 .....	Approximately 3 K $\Omega$ (70°F, 20°C $\pm$ 35°F, 2°C) Infinity (70°F, 20°C)
	Convection heater element	Remove all wires from heater. Measure resistance across terminals.....	Approximately 15-25 $\Omega$ (70°F, 20°C)
	Grill heater element (Model MMV6178AA*)	Remove all wires from heater. Measure resistance across terminals.....	Approximately 25-30 $\Omega$ (70°F, 20°C)
	Thermistor	Remove connector from circuit board. Measure resistance across pins 1 & 3 .....	Approximately 250-360 K $\Omega$ (70°F, 20°C $\pm$ 35°F, 2°C)
Refer to Parts Manual for proper power cord part number.	Power cord	Measure resistance of wires.	Continuity should be indicated on each wire. Verify polarity and grounding.

# Testing Procedures



## WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge the high voltage capacitor before servicing, unless testing requires power.

Illustration	Component	Test Procedure	Results		
			Pad	Trace	Measurement
<p>FPC CONNECTOR Top</p>	<p>Touch Pad/Control Panel Model AMV6177AA*</p>	<p>Removal of Touch Pad/Control Panel is required to perform test. Check for continuity.</p> <p>When touched: Less than 400 Ω When not touched: More than 1 Mega Ω</p>	1	8 & 1	Continuity
			2	8 & 2	Continuity
			3	8 & 3	Continuity
			4	8 & 4	Continuity
			5	8 & 5	Continuity
			6	8 & 6	Continuity
			7	8 & 7	Continuity
			8	13 & 5	Continuity
			9	13 & 6	Continuity
			0	13 & 7	Continuity
			Microwave	9 & 4	Continuity
			Convection	9 & 5	Continuity
			Combination	9 & 7	Continuity
			Sensor Popcorn	11 & 1	Continuity
			Sensor Cook	11 & 2	Continuity
			Sensor Reheat	11 & 3	Continuity
			Auto Defrost	11 & 4	Continuity
			Auto Cook	12 & 2	Continuity
			Speed Auto Combination	11 & 6	Continuity
			Custom Program	9 & 3	Continuity
			Soften	10 & 6	Continuity
			Melt	10 & 7	Continuity
			Control Setup	12 & 1	Continuity
			Power	13 & 1	Continuity
			Clock	12 & 5	Continuity
			More	12 & 6	Continuity
			Less	12 & 7	Continuity
			Add 30 Seconds	11 & 5	Continuity
			Stop/Clear	13 & 3	Continuity
			Enter/Start	13 & 4	Continuity
			Turntable On/Off	12 & 3	Continuity
			Light On/Off	10 & 3	Continuity
			Kitchen Timer	12 & 4	Continuity
			On/Off	10 & 1	Continuity
			5-Speed (Vent)	12 & 2	Continuity
			Auto Time Set	10 & 5	Continuity

# Testing Procedures



## WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge the high voltage capacitor before servicing, unless testing requires power.

Illustration	Component	Test Procedure	Results		
			Pad	Trace	Measurement
	<b>Touch Pad/Control Panel</b> Model MMV6178AA* 	Removal of Touch Pad/Control Panel is required to perform test. Check for continuity.  When touched: Less than 400 Ω When not touched: More than 1 Mega Ω	1	8 & 1	Continuity
			2	8 & 2	Continuity
			3	8 & 3	Continuity
			4	8 & 4	Continuity
			5	8 & 5	Continuity
			6	8 & 6	Continuity
			7	8 & 7	Continuity
			8	13 & 5	Continuity
			9	13 & 6	Continuity
			0	13 & 7	Continuity
			Microwave	9 & 4	Continuity
			Convection	9 & 5	Continuity
			Broil	9 & 6	Continuity
			Combination	9 & 7	Continuity
			Sensor Popcorn	11 & 1	Continuity
			Sensor Cook	11 & 2	Continuity
			Sensor Reheat	11 & 3	Continuity
			Auto Defrost	11 & 4	Continuity
			Auto Cook	12 & 2	Continuity
			Auto Combination	11 & 6	Continuity
			Auto Broil	11 & 7	Continuity
			Custom Program	9 & 3	Continuity
			Soften	10 & 6	Continuity
			Melt	10 & 7	Continuity
			Control Setup	12 & 1	Continuity
			Power	13 & 1	Continuity
			Clock	12 & 5	Continuity
			More	12 & 6	Continuity
			Less	12 & 7	Continuity
			Add 30 Seconds	11 & 5	Continuity
			Stop/Clear	13 & 3	Continuity
			Enter/Start	13 & 4	Continuity
			Turntable On/Off	12 & 3	Continuity
			Light Hi/Lo/Off	10 & 3	Continuity
			Light Timer	10 & 4	Continuity
			Kitchen Timer	12 & 4	Continuity
			On/Off	10 & 1	Continuity
			5-Speed (Vent)	12 & 2	Continuity
			Auto Time Set	10 & 5	Continuity

# Disassembly Procedures

## WARNING

High voltage is present at the high voltage terminal of the high voltage transformer during any cooking cycle.

It is neither necessary or advisable to attempt measurement of the high voltage.

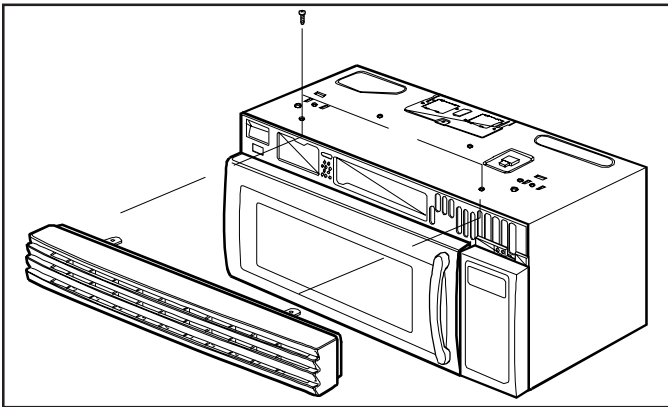
Before touching any oven components or wiring, always unplug the oven from its power source and discharge capacitor.

### Grille

The top full-width grille is removable for service to some components, such as: humidity sensor, oven light, door removal, flame sensor, vent motor capacitor, fuse, control panel, and stirrer motor (some models).

#### Grille Removal

1. Disconnect power to oven.
2. Remove screws located in front on top of microwave securing grille.



3. Pull outward on the top portion of the grille releasing the tabs.
4. Reassemble in reverse order.

### Door Assembly

## CAUTION

A microwave leakage test must be performed anytime a door assembly is removed, replaced, disassembled or adjusted for any reason.

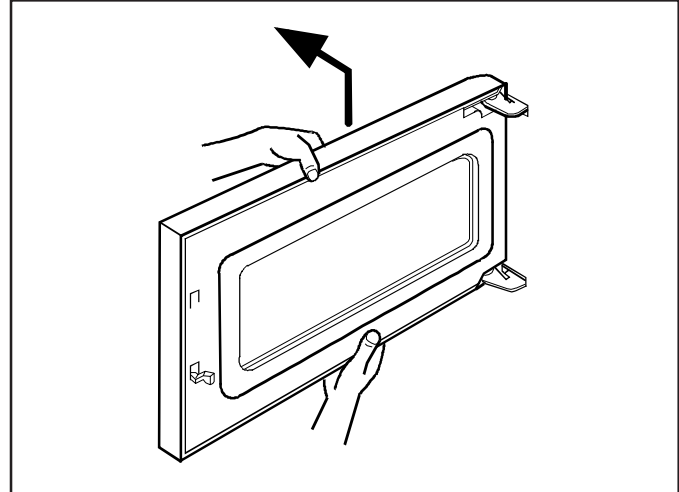
#### Door Removal

1. Disconnect power to oven and remove grille, (see "Grille" procedure).
2. Open the oven door, slowly raise the door evenly, disengaging the pins at the top and bottom.

**NOTE:** When aligning the door for assembly, the door must be opened as much as possible.

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

3. To place door back on unit, place bottom pin into hole first and then align the top pin. Once pins are aligned push door downward to lock into place.
4. Replace front grille to complete assembly.



### Door Disassembly

1. Disconnect power to oven and remove oven door, (see "Door Removal" procedure).
2. Pry away choke cover, by placing a tool in the upper right corner of the door and gently prying outward on the choke cover. Continue to work around the door casing until choke cover is completely loose.

## CAUTION

To avoid property damage, care must be taken when prying choke cover from oven door.

3. Slide latch assembly upward and to the left to release plastic tabs from door frame. Once latch assembly is loose the spring may be disconnected from the door frame.
4. Remove screws securing door frame assembly to door panel.
5. Remove door frame assembly by releasing tabs around entire door panel.
6. Remove door handle by removing screws securing handle to door panel.

**NOTE:** The door handle can only be re-installed by guiding the top and bottom insertion points into the correct receiving slots. It is impossible to re-install the door handle "upside-down."

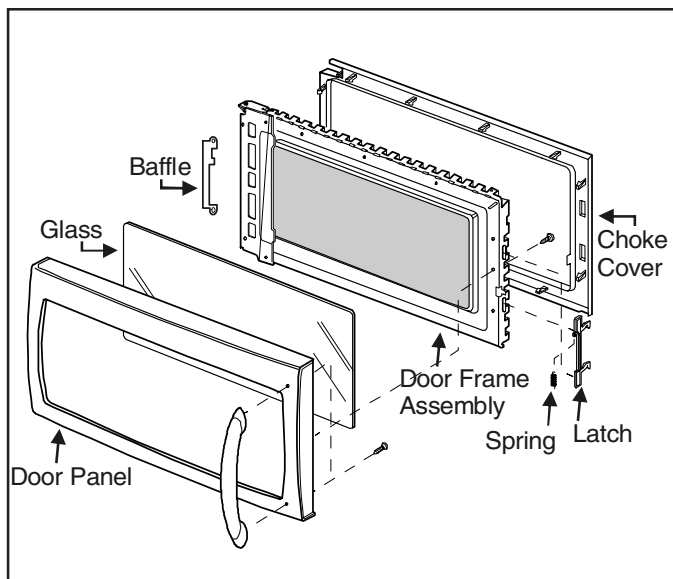
7. Remove door glass by releasing tab securing door glass baffle. Remove baffle, then slide door glass to the right slightly, then push the door glass upward to release the glass from the track.
8. Reassemble in reverse order.



# Disassembly Procedures

## WARNING

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.



## CAUTION

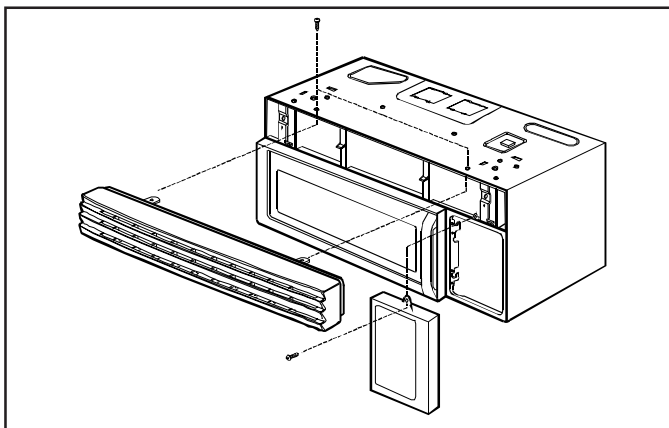
A microwave leakage test must be performed anytime a door assembly is removed, replaced, disassembled, or adjusted for any reason.

### Control Panel

The control panel is made up of several components, such as p.c. board and touch panel.

#### Control Panel Removal

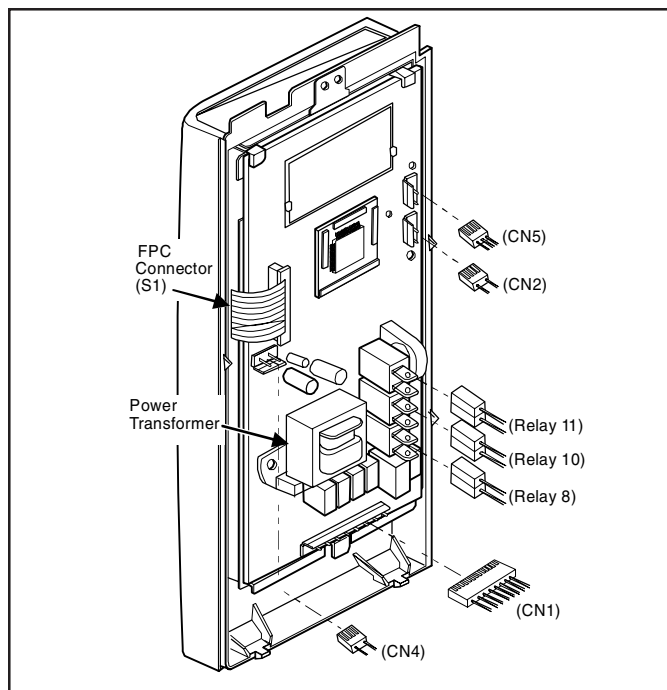
1. Disconnect oven power and remove grille, (see "Grille" section).
2. Remove screw located at the top of touch panel. Lift control panel up and out to release bottom tab connections.
3. Place control panel on a flat surface.
4. Reassemble in reverse order.



### P.C. Board

The p.c. board is located at the top on back of the control panel. Some boards has up to eight connection plugs which control the following:

CN1	Main power connector
CN2	Primary Switch
CN4	Humidity Sensor
CN5	Damper
FPC (S1)	Ribbon connector for key panel
Relay 8, 10, 11	Relay connector



#### P.C. Board Removal

1. Disconnect oven power and remove grille, (see "Grille" procedure).
2. Remove control panel, (see "Control Panel" procedure).
3. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
4. Disconnect ribbon connector by sliding top part of connector upward. Once in released position remove ribbon from connector by sliding ribbon side-to-side.

**NOTE:** Caution should be used when removing cable from connector. Ribbon cable has two holes which connector locks ribbon in place.

5. Disconnect and mark the wire connectors from p.c. board.
6. Remove screws securing p.c. board to control panel assembly.
7. Reassemble in reverse order.

**NOTE:** Do not flex p.c. board.

# Disassembly Procedures



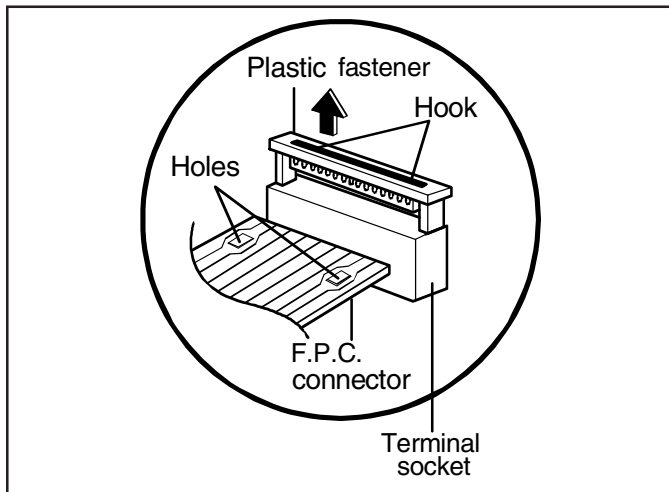
**WARNING**

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

## Control Key Panel

The key panel has one ribbon connection on the p.c. board.

The key panel pads can be checked through a continuity test. Operations of key pad can be checked by measuring connections at end of ribbon, (using high ohms scale).



## Control Key Panel Removal

1. Disconnect power to oven.
2. Remove control panel, (see "Control Panel" section).
3. Discharge high voltage capacitor, (see "High Voltage capacitor section).
4. Disconnect ribbon connector by sliding top part of connector upward. Once in released position remove ribbon from connector by sliding ribbon side-to-side.

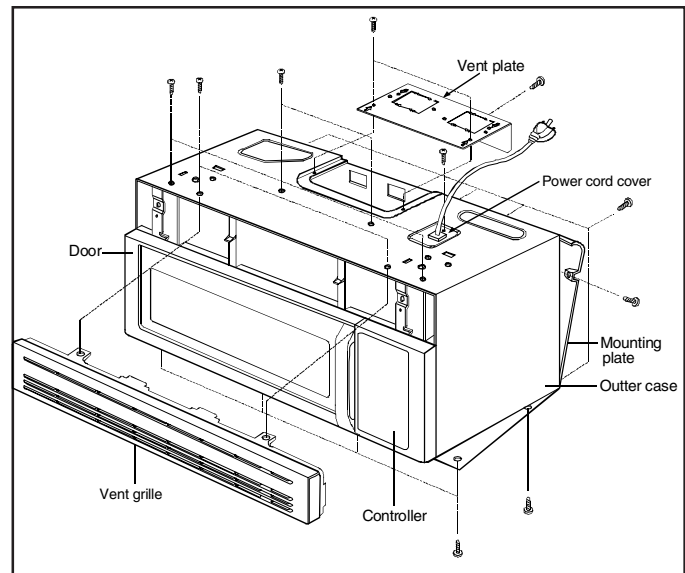
**NOTE:** Caution should be used when removing cable from connector. Ribbon cable has two holes which connector locks ribbon in place.

5. Peel failed key pad off and replace with new key pad.
6. Reassemble in reverse order.

## Outer Case

**NOTE:** This procedure requires removal of unit.

1. Disconnect power to oven and remove grille, (see "Grille" procedure).
2. Remove oven door (see "Door Removal" procedure).
3. Remove screws securing air duct to outer case.
4. Remove screws securing outer case to the chassis.
5. Remove screws securing vent plate to outer case.
6. Remove screw securing power cord cover to outer case and remove power cord cover (if equipped).
7. Slide outer case towards the rear of the unit, guide power cord through outer case power cord hole.
8. Place outer case to the side, so no damage will occur to the case.
9. Reassemble in reverse order.

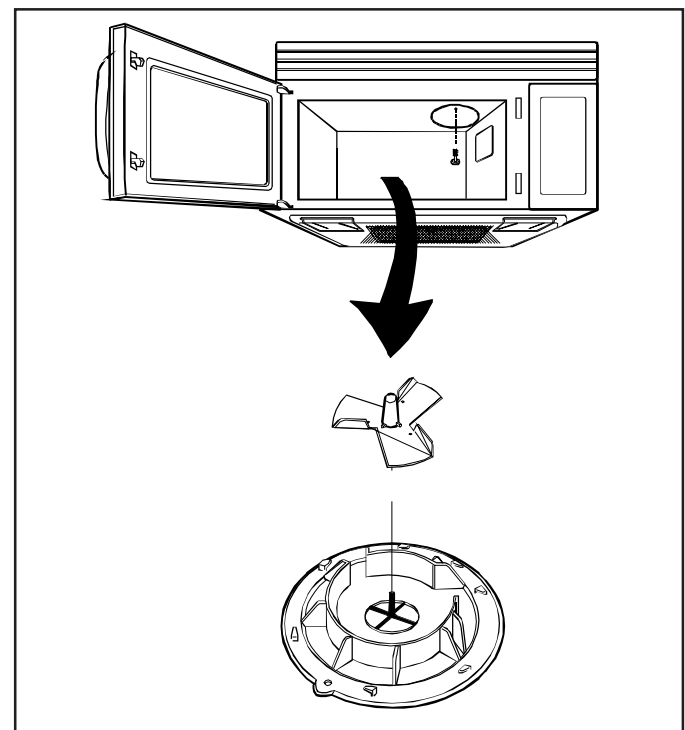


## Stirrer Assembly

Motor driven antenna assembly is located at the top of the cavity, using a top feed wave guide.

### Stirrer Blade Removal

1. Disconnect power to oven and open the oven door.
2. Carefully pry downward on the plastic rivets securing the stirrer cover.
3. Rotate slightly and pull down on stirrer fan cover .
4. Reassemble in reverse order.



# Disassembly Procedures

## WARNING

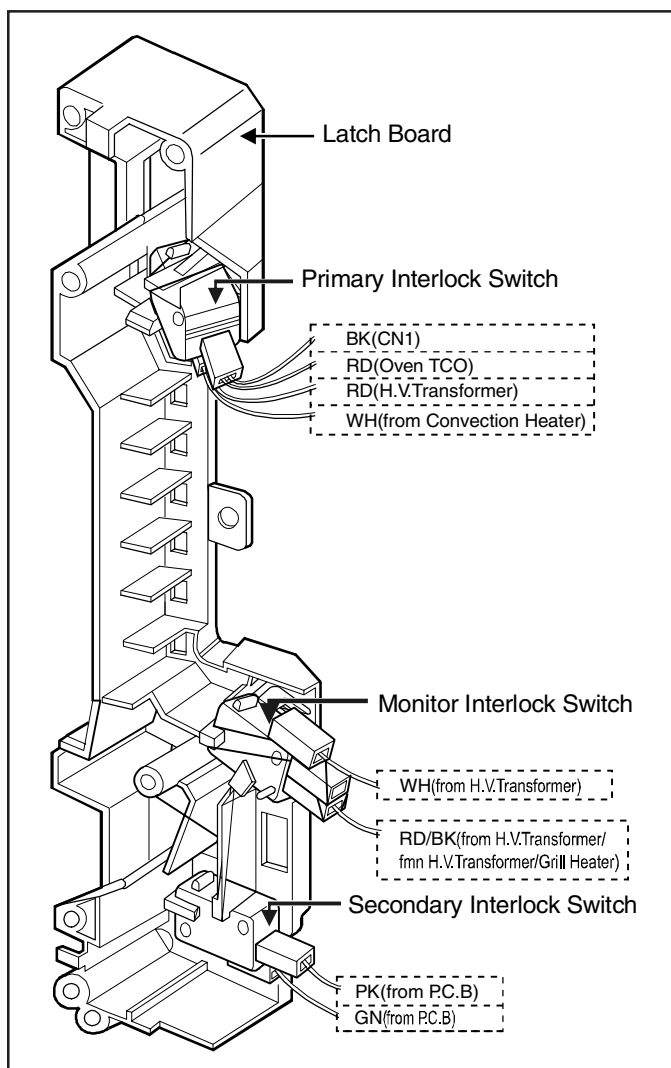
To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

### Interlock Door Latch Switches

Primary switch is operated by the top latch pawl.

#### Interlock Switch Removal

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Test interlock switches before removing, (see Testing Procedures).
4. Disconnect and label wire connections.
5. Remove interlock switch.



## CAUTION

Before replacing a blown monitor fuse, test the primary interlock switch, secondary interlock switch, monitor switch, and power relay contacts for proper operation. If the monitor fuse is blown by a failed switch operation, all switches and printed circuit board must be replaced.

### Adjusting Interlocks

The interlock monitor and primary switches act as a final safety switch, protecting the operator from microwave energy. After adjusting the interlock switches, verify connections are correctly connected.

#### For door fit and switch operation, switch housing is adjustable.

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
  2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
  3. Loosen switch housing mounting screws on vertical flange.
  4. Close oven door, move latch board upward toward the top of the oven and/or away from the door latch until gaps are less than 1/64-inch (0.5 mm).
  5. Hold latch board securely for proper switch operation and door fit, retighten screws.
  6. Open the oven door slowly, watching the switches. Verify switches release in the following order.
    - Primary interlock switch
    - Secondary interlock switch
    - Monitor interlock switch
- NOTE:** Adjust the latch board until all switches operate in proper sequence.
7. Close the oven door slowly, watching the switches. Verify switches active in the following order.
    - Monitor interlock switch
    - Secondary interlock switch
    - Primary interlock switch
  8. When proper sequence of switch has been achieved, tighten the latch board securely.

## CAUTION

A microwave leakage test must be performed anytime a door assembly is removed, replaced, disassembled or adjustment of latch board is made.

# Disassembly Procedures



## WARNING

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

### High Voltage Capacitor

High voltage capacitor should always be discharged by shorting a terminal to a chassis ground. The capacitor has a internal "shunt" resistor, but the mechanical discharge should always be performed to avoid personal injury.

#### High Voltage Capacitor Removal

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor by connecting a jumper wire to the terminal of high voltage capacitor with the diode connected to it. Connect the other end of the jumper wire to a well insulated screwdriver and touch a nearby chassis ground screw.
3. Remove screws that secure capacitor and diode.
4. Slide capacitor mounting bracket out of the slots and pull outward on capacitor, diode and bracket.
5. Reassemble in reverse order.

### Diode

The diode is located next to the high voltage capacitor.

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Disconnect diode wire terminal from high voltage capacitor and remove screw securing diode to ground.
4. Reassemble in reverse order.

### Transformer

High voltage transformer can be serviced through the front of the unit.

#### Power Transformer Removal

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Disconnect and label wire leads from transformer.
4. Remove screws securing transformer and remove out through the front.
5. Reassemble in reverse order.

### Fuse

The fuse is located behind the grille in line with the power cord on the right side of the unit.

### Fuse Removal

1. Disconnect power and remove grille, (see "Grille" procedure).
2. Remove and replace fuse and reassemble in reverse order.



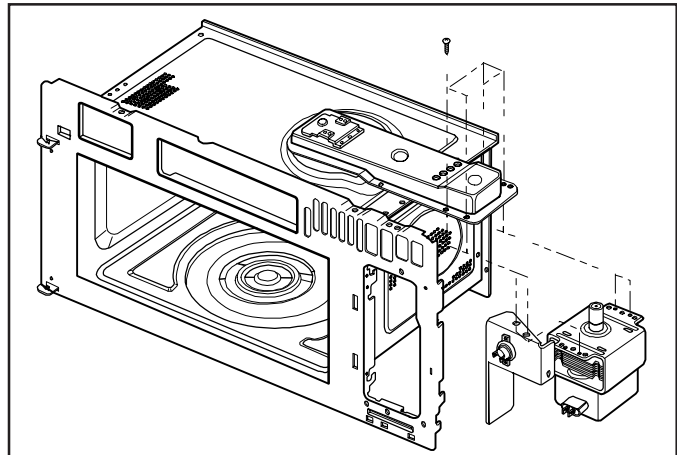
## CAUTION

Before replacing a blown monitor fuse, test the primary interlock switch, secondary interlock switch, monitor switch, and power relay contacts for proper operation. If the monitor fuse is blown by a failed switch operation, all switches and printed circuit board must be replaced.

### Magnetron

Magnetron is mounted on the side of the cavity to provide a top feed single waveguide.

1. Disconnect power to oven and remove grille, (see "Grille" procedure).
2. Remove control panel, (see "Control Panel" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
5. Remove screws securing magnetron to the wave guide.
6. Carefully remove the magnetron.
7. Reassemble in reverse order.



**NOTE:** When replacing the magnetron, make sure the gasket is in the correct position and in good condition.



## CAUTION

During replacement of magnetron, be certain the R.F. anode gasket is in place around anode stud.

# Disassembly Procedures



## WARNING

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.



## WARNING

A microwave leakage test must be performed anytime a magnetron assembly is removed, replaced, disassembled or adjusted for any reason.

### Magnetron Fan Assembly

Magnetron fan motor provides cool air circulation from an external air source, which provides direct cool air through air vanes surrounding the magnetron. This assembly is located above the magnetron.

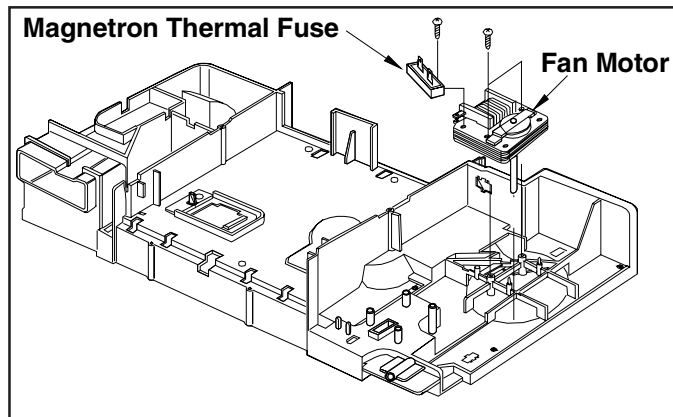
#### Magnetron Fan Removal

1. Follow steps 1 through 4 of "Magnetron" procedure.
2. Remove fan blade from fan motor.
3. Remove screws securing fan motor to air duct.
4. Disconnect wires from fan motor, and lift fan motor assembly out.
5. Reassemble in reverse order.

### Magnetron Thermal Fuse

**NOTE:** Thermal fuse is not resettable.

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Disconnect and label wire terminals.
5. Remove screw securing thermal fuse to cooling fan.
6. Replace and reassemble in reverse order.

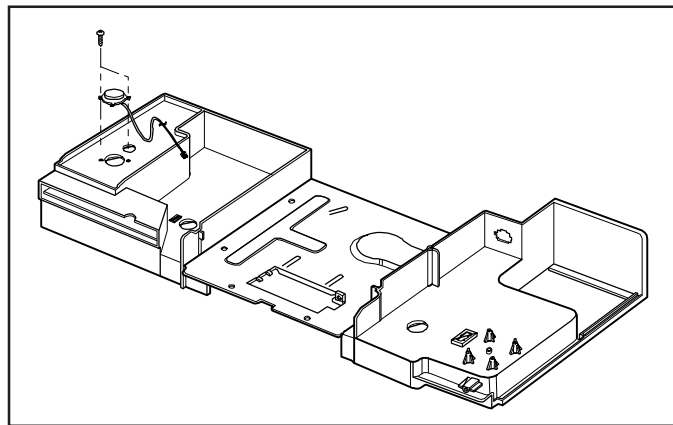


### Humidity Sensor

The sensor is a plug-in device located in the air exhaust duct.

### Humidity Sensor Removal

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Remove screws securing sensor to air duct.
5. Disconnect wire terminal plug and replace with new sensor.
6. Reassemble in reverse order.



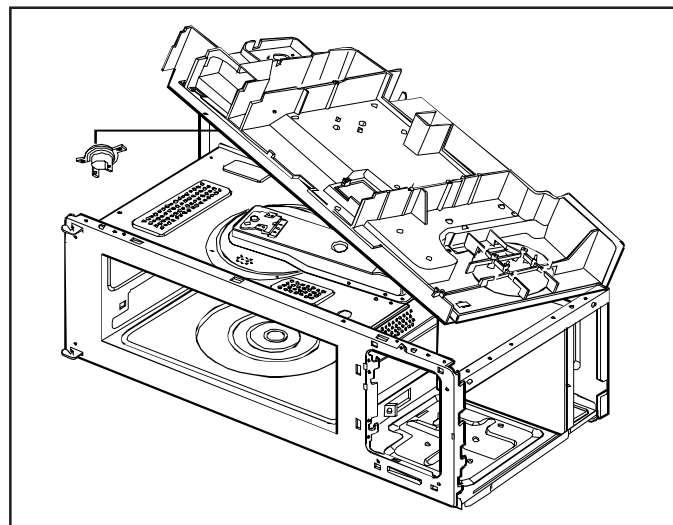
### Oven Thermostat

The oven thermostat is on the air duct assembly.

Thermostat is a resettable thermostat.

1. Disconnect power to oven and remove control panel, (see "Control Panel" procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Disconnect wire terminals from oven thermostat.

**NOTE:** Lift upward on left rear corner of air duct to release oven thermostat.





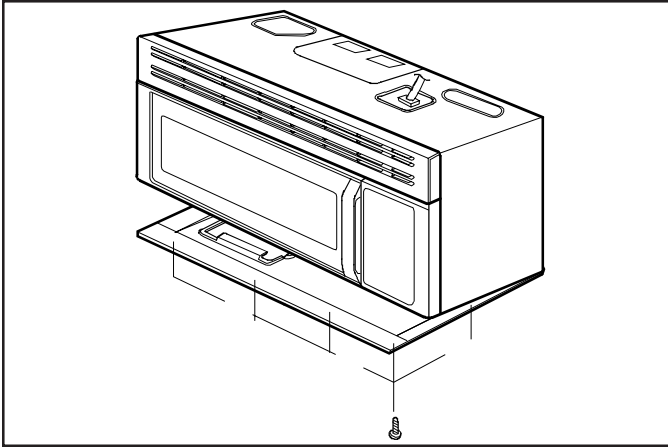
# Disassembly Procedures

## WARNING

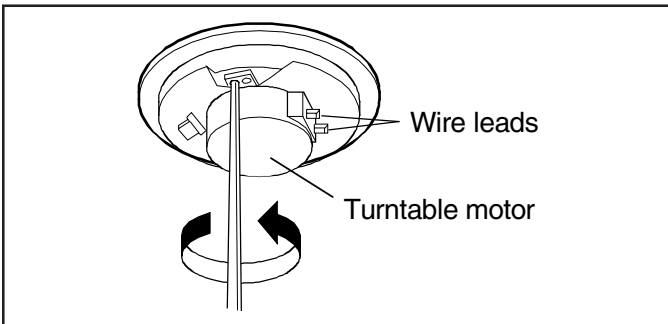
To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

### Turntable Motor

1. Disconnect power to oven.
2. Remove screws securing bottom plate cover.



3. Open the oven door, remove turntable, and gently pry upward on turntable shaft.
4. Disconnect wire leads from turntable motor.



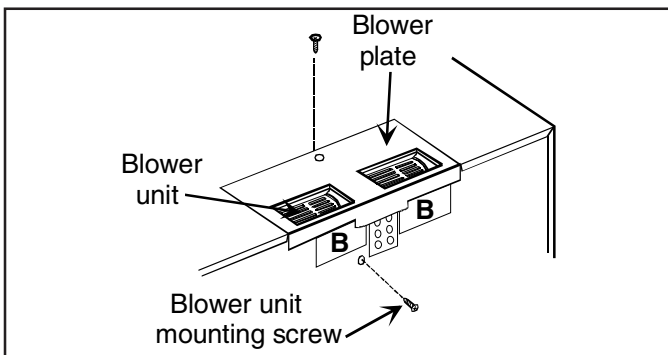
5. Remove screws securing turntable to the oven cavity.
6. Replace and reassemble in reverse order.

### Vent Blower

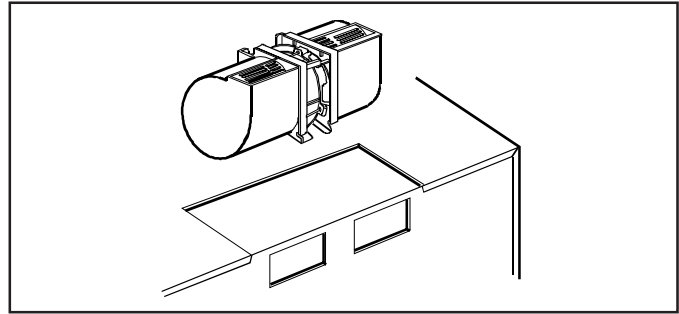
Vent blower is a five speed capacitor run blower assembly located on top of the oven. The blower is operated by voltage relays located on the p.c. board.

#### Vent Exhaust Blower Removal

1. Disconnect power to unit and remove unit from its installation.
2. Remove screws securing damper and motor assembly to top and back of unit.



3. Remove damper.
4. Lift blower assembly out and disconnect wire connection wire terminal.

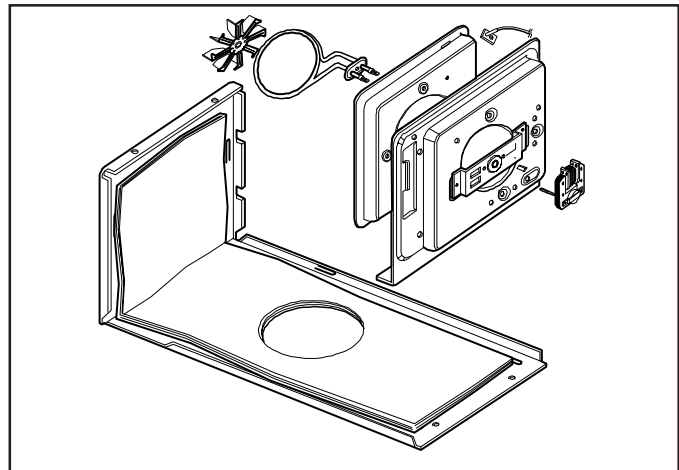


5. Reassemble in reverse order.

**NOTE:** Place blower assembly wires in slotted area to avoid pinching of wires.

### Convection Motor Removal

1. Disconnect power to oven.
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Remove screws securing back cover and pull the top of back cover downward sliding metal tab on right side from oven cavity.
5. Remove screws securing air duct to chassis and other components.
6. Disconnect wire leads from air duct.
7. Remove magnetron (see "Magnetron" procedure).
8. Remove screws securing bottom plate to chassis.
9. Disconnect wire leads from convection chamber.
10. Remove screws securing convection chamber assembly and lift chamber assembly from oven cavity.
11. Slide inner convection fan blade off convection motor shaft.
12. Remove hex nuts securing convection motor to bracket.
13. Replace and reassembly in reverse order.



# Disassembly Procedures

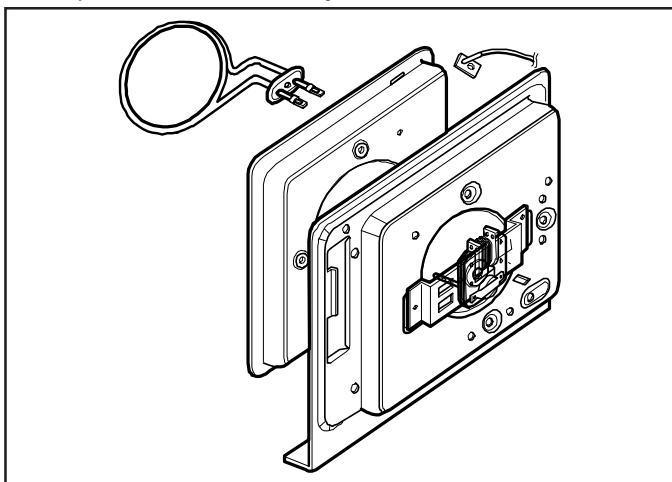


## WARNING

To avoid the risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitors before following any disassembly procedure.

### Convection Heater Element Removal

1. See "Convection Motor Removal", perform steps 1 through 9.
2. Remove screws at and next to terminals securing wires and element to heater box.
3. Release metal clip securing element to heater box.
4. Remove element from heater box.
5. Replace and reassembly in reverse order.

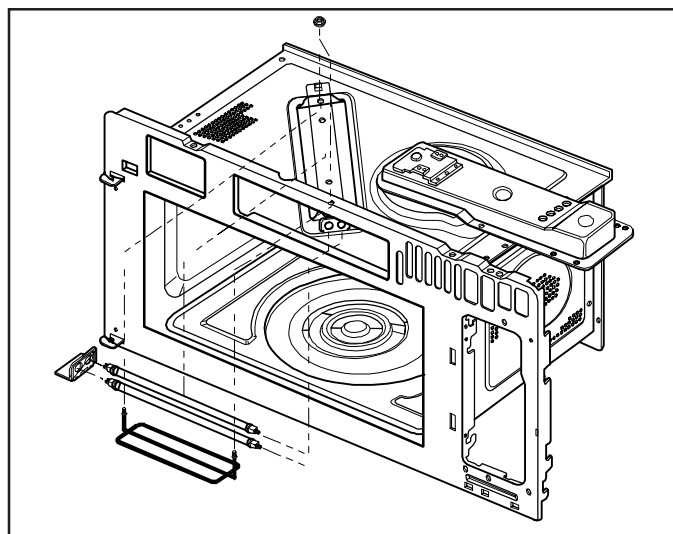


### Light Socket

1. Disconnect power to oven.
2. Remove Grille (see "Grille" procedure).
3. Remove screws securing bulb holder.
4. Remove light bulb and socket.
5. Disconnect wire terminal plug.
6. Replace and reassemble in reverse order.

### Grill Heater Element Removal

1. Disconnect power to oven.
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" procedure).
3. Remove outer case, (see "Outer Case" procedure).
4. Remove screws securing back cover and pull the top of back cover downward sliding metal tab on right side from oven cavity.
5. Remove screws securing air duct to chassis and other components.
6. Disconnect wire leads from air duct.
7. Remove screw securing upper insulator.
8. Remove screws securing the heater terminal and heater barrier.
9. Remove screws securing the heater holding bracket.
10. Remove grill heater from cavity.
11. Replace and reassembly in reverse order.





# Appendix A

# Installation Instructions

## IMPORTANT SAFETY INFORMATION

### **⚠ WARNING**

To avoid risk of personal injury, install microwave oven only as instructed.

### **⚠ WARNING**

To avoid risk of personal injury, place a piece of the carton or other heavy material, such as a blanket, over the countertop or cooktop to protect it. **DO NOT** use a plastic cover.

**NOTE:** 33" from the countertop to the top of microwave cut out is recommended for optimal performance of range and microwave.

### **Make Sure You Have Enough Space And Support**

- Mount the oven against a flat, vertical wall, so it is supported by the wall. The wall should be constructed of minimum 2" x 4" wood studding and 3/8" thick drywall or plaster/lath.
- **ATTACH AT LEAST ONE** of the two lag screws supporting the oven to a vertical, 2" x 4" wall stud.
- **DO NOT** mount the microwave oven to an island or peninsula cabinet.
- **BE SURE** the upper cabinet and rear wall structures are able to support 150 lbs., plus the weight of any items you place inside the oven or upper cabinet.
- Locate the oven away from strong draft areas, such as windows, doors, and strong heating vents.
- **BE SURE** you have enough space. See Figure 3 below for minimum vertical and horizontal clearance.
- This microwave oven can be installed over gas or electric cooking products no more than 36 inches wide.

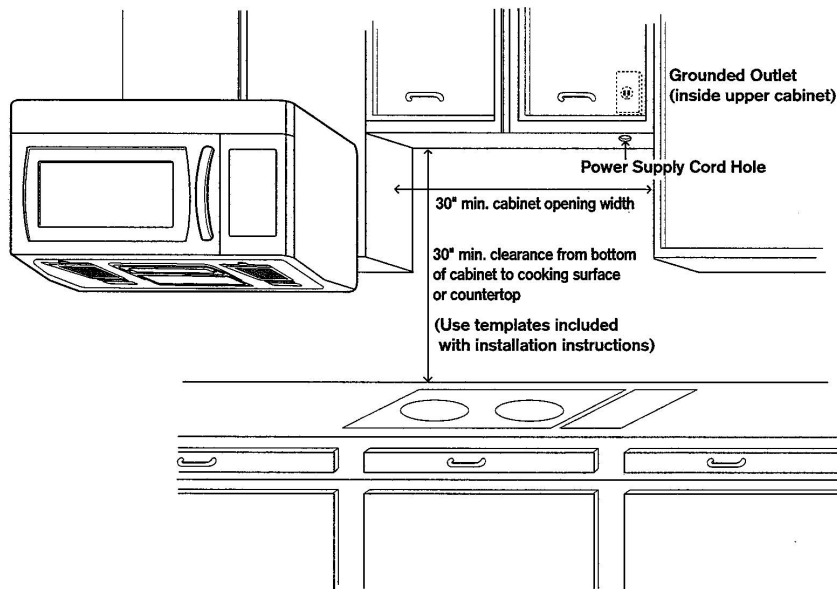


Figure 3

# Installation Instructions

## Parts, Tools, Materials

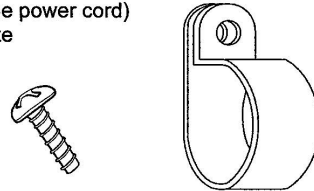
**THE FOLLOWING PARTS ARE SUPPLIED WITH THE OVEN:**

**NOTE:** Depending on your ventilation requirements, you may not use all of these parts.

**Damper/duct connector**  
(for roof vented or wall vented installation)  
Not Actual Size



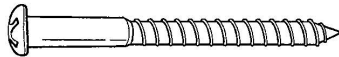
**One power cord clamp and  
One dark-colored mounting screw**  
(to hold the power cord)  
Actual Size



**One power cord clamp bushing - Actual Size** (for the cord hole in a metal upper cabinet)



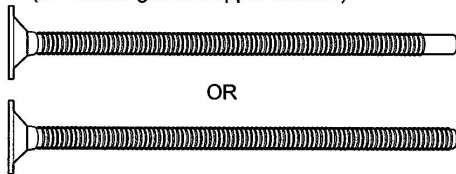
**Four 1/4" x 2" lag screws - Actual Size**  
(for wall stud holes)



**Four 1/4" x 3" toggle bolts - Actual Size**  
(for drywall holes)



**Two 1/4" x 3" bolts - Actual Size**  
(for securing to the upper cabinet)

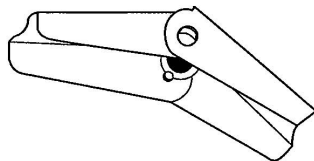


OR

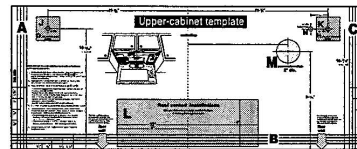
**Two tapping screws - Actual Size**  
(for attaching the damper duct connector)



**Four spring toggle heads - Actual Size**  
(for the toggle bolts)



Refer to Service Parts Catalog for correct  
Upper Cabinet Template part number.



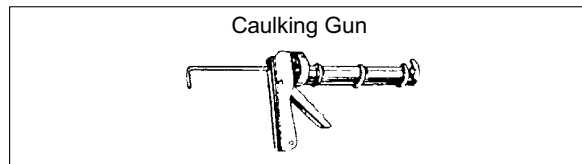
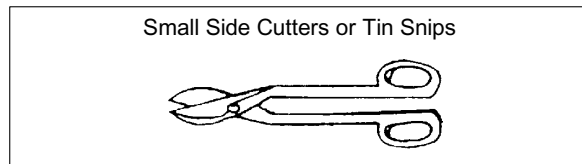
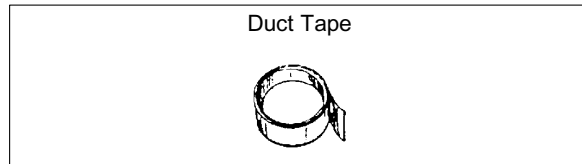
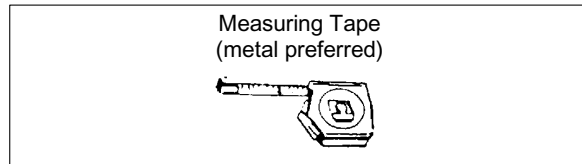
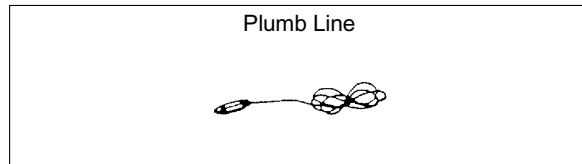
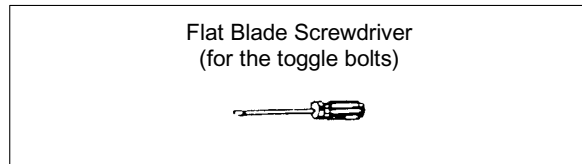
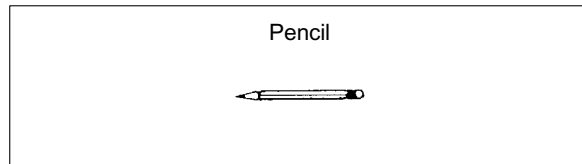
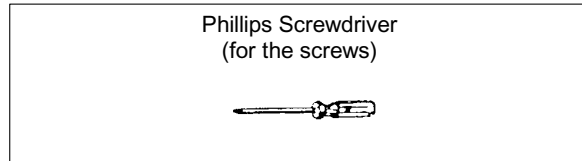
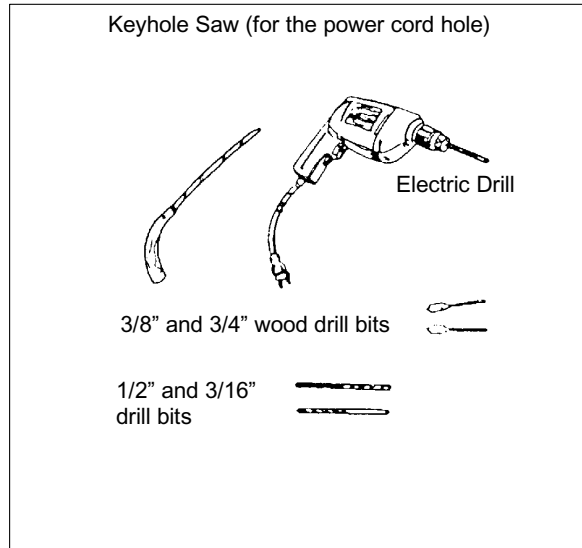
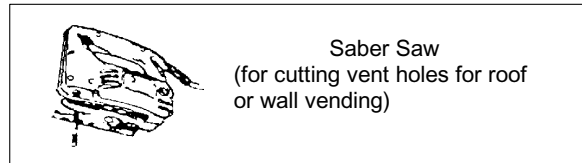
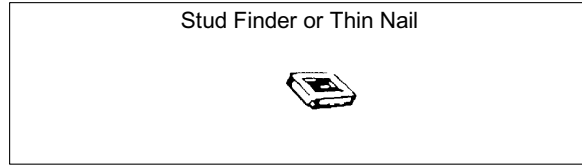
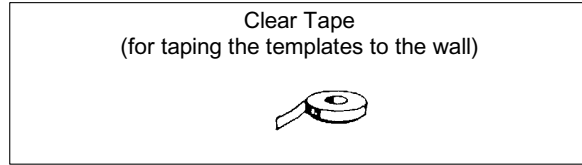
**NOTE:** You need to install at least one lag screw into a 2" x 4" stud and four anchor bolts into the wall, and the mounting area must meet the 150 lbs. weight requirement.

# Installation Instructions

## Parts, Tools, Materials

You will need the following tools and materials for the installation:

Carton or other heavy material for covering the counter top.



- If you have brick or masonry walls, you will need special hardware and tools.
- The ductwork you need for the installation is not included. All wall and roof caps must have a back-draft damper.

# Installation Instructions

## STEP 1: *Prepare The Electrical Connections*

### ⚠ W A R N I N G ⚠

**AVOID ELECTRICAL SHOCK! THIS APPLIANCE MUST BE GROUNDED!**

1. Locate the grounded electric outlet for this oven in the cabinet above the oven, as shown in Figure 4.

**NOTE:** The outlet should be on a circuit dedicated to the microwave oven (120V, 60 Hz., AC only) with a 15 or 20A fused electrical supply.

**IMPORTANT:** If you do not have the proper wall outlet, you **MUST** have one installed by a qualified electrician.

2. You will cut the power-supply-cord hole (shown in Figure 4) later when you prepare the wall and upper cabinet in Step 4.

**NOTE:** Do not use an extension cord.  
Keep the power cord dry and do not pinch or crush it.

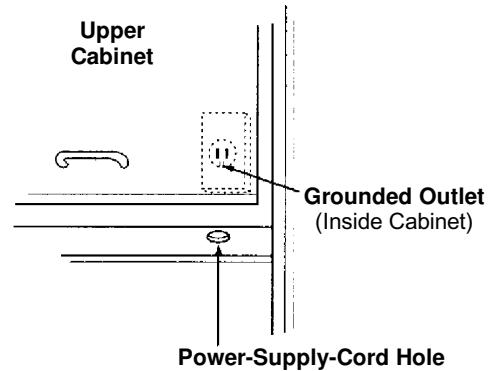


Figure 4

### ⚠ W A R N I N G ⚠

**Improper grounding could result in electric shock or other personal injury.**

- DO NOT, UNDER ANY CIRCUMSTANCES, REMOVE THE POWER SUPPLY CORD GROUNDING PRONG!
- This appliance **MUST** be grounded!

# Installation Instructions

## STEP 2: Prepare The Venting System

**NOTE:** The ductwork you need for outside ventilation is not included with your oven. The standard ductwork fittings and length are shown in Figure 9, page 10.

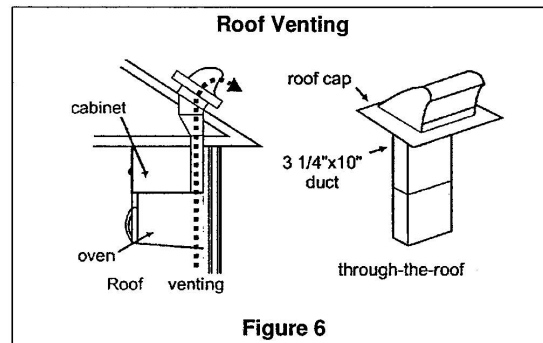
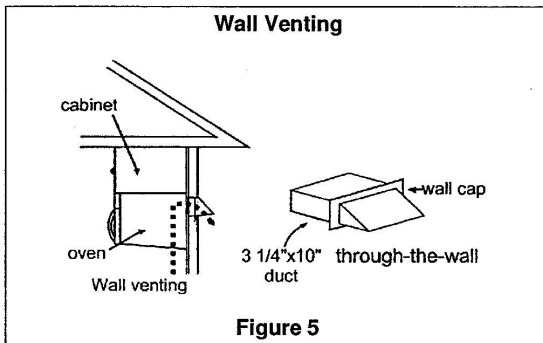
**⚠ WARNING - FIRE HAZARD ⚠**

**THIS OVEN MUST BE PROPERLY VENTED!**

You may vent your oven in one of three ways. However, do NOT vent into a wall cavity, an attic, or an unused area.

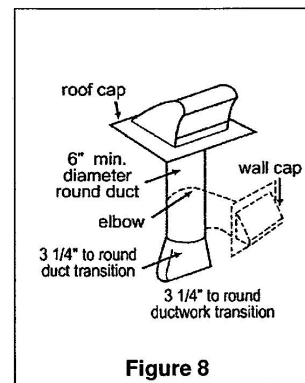
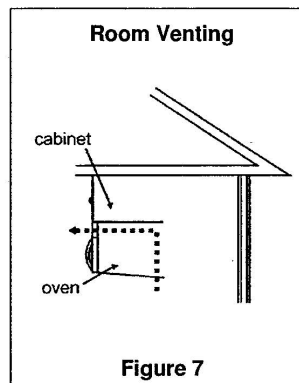
- **Roof-venting** If your oven is located on an outside wall near the roof, as in Figures 6 (3 1/4" x 10" duct) and Figure 8 (6" round duct.)
- **Wall-venting** If your oven is located on an outside wall of your house, as in Figure 5 (3 1/4" x 10" duct) and Figure 8 (6" round duct.)
- **Room-venting** If your oven is located on an inside wall of your house, as in Figure 7.

**NOTE:** If you choose the rear exhaust method (roof or wall venting), be sure there is enough clearance within the wall for the exhaust duct.



### REMEMBER AS YOU INSTALL THE VENTING:

- Keep the length of the ductwork and the number of elbows to a minimum to ventilate your oven efficiently. See examples on page 10.
- Keep the size of the ductwork the same.
- Do not install two elbows together.
- Use duct tape to seal all joints in the duct system.
- Use caulking to seal the exterior wall or roof opening around the cap.



# Installation Instructions

## STEP 2: Prepare The Venting System

### Standard Fittings

**NOTE:** If the existing duct is round, you must use a rectangular-to-round adapter, with a rectangular 3" extension duct installed between the damper assembly and the adapter to prevent the exhaust damper's sticking.

### Duct Length

The total length of the duct system, including straight duct, elbows, transitions, and wall or roof caps **must not exceed the equivalent of 140 feet.**

For best performance, do not use more than three 90 degree elbows, and keep length as short as possible.

Below are the standard fittings and their equivalent length in feet.





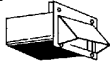


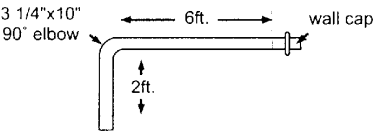
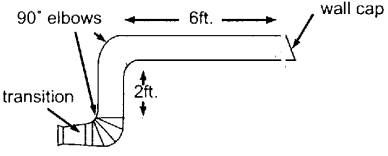
1  3 1/4"x10" to 6"=5ft.	2  3 1/4"x10" roof cap=24ft.	3  3 1/4"x10" 90° elbow=25ft.	
4  90° elbow =10ft.	5  3 1/4"x10" wall cap =40ft.	6  45° elbow =5ft.	7  3 1/4"x10" flat elbow =10ft.

Figure 9

To calculate the equivalent length of each duct piece used, see the examples below.

Examples	
<p><b>For 3 1/4"x10" SYSTEMS</b></p>  <p>3 1/4"x10" 90° elbow</p> <p>6ft.</p> <p>wall cap</p> <p>2ft.</p> <p>1-3 1/4" x 10" 90° elbow = 25 ft. 1-Wall Cap = 40 ft. 8 feet straight duct = 8 ft. <b>TOTAL LENGTH = 73 ft.</b></p>	<p><b>For 6" ROUND SYSTEMS</b></p>  <p>90° elbows</p> <p>6ft.</p> <p>wall cap</p> <p>transition</p> <p>2ft.</p> <p>1-transition = 5 ft. 2-90° elbows = 20 ft. 1-Wall Cap = 40 ft. 8 feet straight = 8 ft. <b>TOTAL LENGTH = 73 ft.</b></p>

# Installation Instructions

## STEP 3: Prepare The Venting Blower

### ⚠ WARNING ⚠

To avoid risk of property damage, unplug the microwave oven or disconnect power at source by removing fuse or throwing circuit breaker.

To avoid risk of personal injury, wear protective gloves when handling mounting plate.

**DO NOT PULL OR STRETCH THE BLOWER WIRING!** Pulling and stretching the blower wiring could result in electrical shock.

Your microwave oven is shipped with the blower assembled for room (recirculating) venting. If you want wall - venting or roof venting installation, you must change the blower, as detailed below.

#### Before You Start

1. Remove any shipping materials and parts from inside the microwave oven.
2. Cover the counter top or cooktop with a thick, protective covering to protect it from damage and dirt. See Figure 10.

**NOTE:** If you have a free-standing range, disconnect it, move it onto a piece of cardboard or hardboard and pull it away from the wall, so that you can get closer to the upper cabinet and back wall for easier measuring and drilling.

#### Remove The Mounting Plate:

1. Remove mounting plate screw(s) (1 or 2 screws) from the mounting plate as shown and discard. See Figure 11.
2. This plate will be used as the rear mounting plate. (It will be used to locate and mark the mounting holes on the rear wall.)
3. Locate exhaust adaptor, grease filters and hardware packet.
4. At this point, remove any adhesive tape (if there is any), on the exhaust adaptor, the grease filters and the power supply cord.

#### Room-Vented (recirculating) Installation:

This oven is shipped assembled for room-vented.

#### Wall-Vented Installation:

1. Remove one blower unit mounting screw and one or two blower plate screw(s). Remove the blower plate from cabinet. See Figure 12.
2. Carefully lift the blower unit out of the microwave oven.
3. Use side cutters or thin snips to cut and remove parts "B" from Back plate. Discard parts "B". Be careful not to distort the plate. See Figure 13.

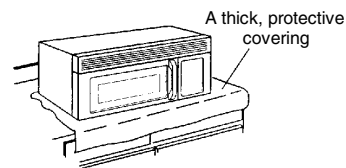


Figure 10

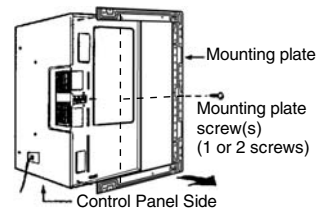
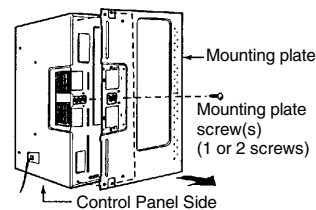


Figure 11

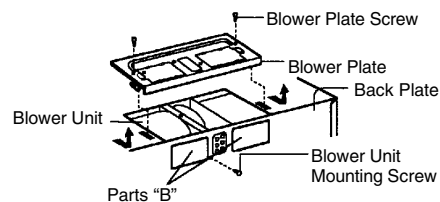


Figure 12

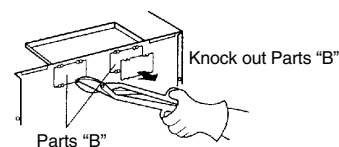


Figure 13



# Installation Instructions

## STEP 3: Prepare The Venting Blower

4. Reassemble the blower wire. See Figure 14.
5. Rotate the unit so that the exhaust ports face the rear of the cabinet. See Figure 16. When you insert blower unit, blower wire must be like figure 15.
6. Place blower unit back into cabinet. Check that the exhaust ports face towards the rear of the cabinet. See Figure 16.
7. Reattach the blower plate to cabinet so the exhaust ports and blower plate opening are aligned. Attach with one blower unit mounting screw and then one or two blower plate mounting screw(s). See Figure 17.

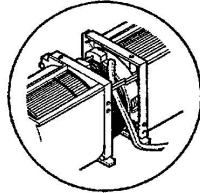


Figure 14

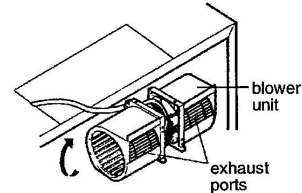


Figure 15

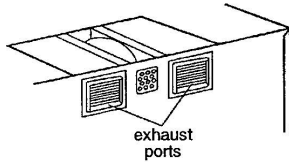


Figure 16

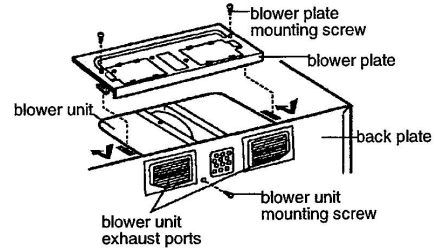


Figure 17

### Roof-Vented (Recirculating) Installation:

1. Remove one blower unit mounting screw and one or two blower plate screw(s). Remove the blower plate from cabinet. See Figure 18.
2. Carefully lift the blower unit out of the microwave oven.
3. Rotate blower unit 90° so the exhaust ports face the top of the cabinet. See Figure 19.
4. Place blower unit back into microwave oven.
5. Use side cutters or thin snips to cut and remove knockouts "A" from Back plate. Discard knockouts. Be careful not to distort the plate. See Figure 20.
6. Reattach blower plate to microwave oven. Attach with the one blower unit mounting screw and then the one or two blower plate mounting screw(s). See Figure 21.

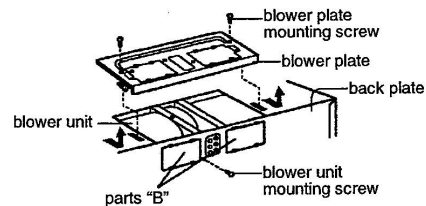


Figure 18

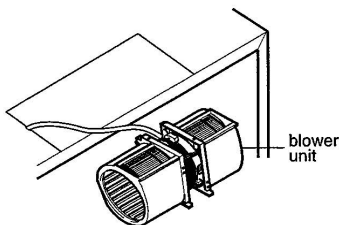


Figure 19

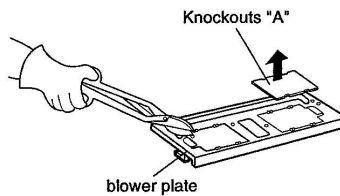


Figure 20

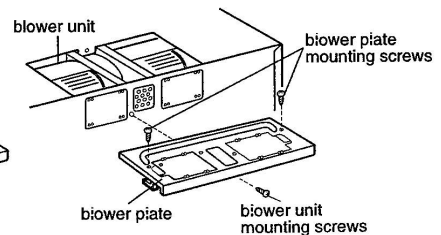


Figure 21

# Installation Instructions

## STEP 4: Prepare The Wall & Upper Cabinet

### ⚠ WARNING ⚠

To avoid personal injury or property damage, do not attempt to install this microwave oven if you cannot find a wall stud.

#### Measure And Track/Tape Up The Templates

1. Using a plumb line and (metal) measuring tape, find and mark the vertical center line on the back wall, as in Figure 22.
2. Find and mark one or two points where the studs are on the wall. (Studs are normally 16 inches apart). Then measure and mark the stud locations. If you cannot find any wall stud, consult a local building contractor.

#### **CAUTION**

**DO NOT ATTEMPT TO INSTALL THE MICROWAVE OVEN IF YOU CANNOT FIND A WALL STUD.**

3. Line up the plumb line on the wall with the center line on the mounting plate.

**NOTE:** Be sure the minimum width is 30 inches and the distance from the top of the wall template to the range or counter top is at least 30 inches. See Figure 22.

4. Center mounting plate in operating by lining up the plumb line on wall with centerline on mounting plate. Make sure the minimum width is 30 inches and that the top of the mounting plate is located a minimum of 30 inches above the cooking surface. See Figure 23.

**NOTE:** If the cabinets are not plumb, adjust the mounting plate to the cabinets. If the front edge of the cabinet is lower than the back edge, adjust the mounting plate to be level with the cabinet front.

5. Measure the bottom of the upper cabinet frame. Trim the edges A, B and C on the upper cabinet template so that the template will fit on the bottom of the upper cabinet. If upper cabinet has a recessed frame, trim the template so it fits inside the recessed area. Align the centerline of the upper cabinet template with the centerline of the mounting plate, then securely tape or tack the upper cabinet template in place. See Figure 23.

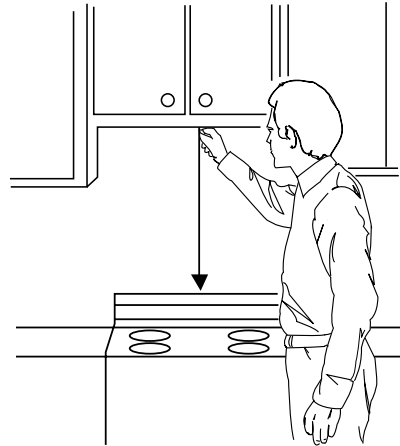
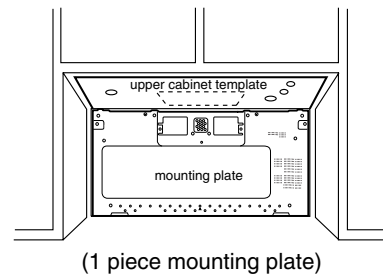
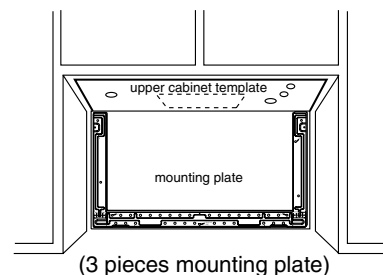


Figure 22



(1 piece mounting plate)



(3 pieces mounting plate)

Figure 23

# Installation Instructions

## STEP 4: Prepare The Wall & Upper Cabinet

### ⚠ WARNING ⚠

To avoid risk of personal injury, electrical shock or death:

- Note where electrical outlets and electrical wires are before you drill into the wall.
- Locate and disconnect power to any electrical circuits that could be affected by installing this oven.

### ⚠ WARNING ⚠

To avoid risk of personal injury, electrical shock or death, cover the edge of the power supply cord hole with the power supply cord bushing.

#### Drill The Holes In The Wall And Upper Cabinet.

1. Find the points on the mounting plate labeled A, B, C, and D. Drill a 3/16" diameter hole at any points that are over a wall stud. Drill a 3/4" diameter hole at any points over drywall.
2. Drill a 3/8" hole at points J, K, and N on the upper cabinet template.

**NOTE:** If the bottom of the upper cabinet is recessed 3/4" or more, you will need 2"x2" filler blocks (not included) to provide additional support for the bolts. See Figure 24.

- Mark the center of each filler block and drill a 3/8" diameter hole at the marks.
  - Align filler blocks over the two openings in the top of the microwave oven cabinet and attach to cabinet with masking tape. See Figure 25.
3. Cut or drill a 2" diameter hole at the area marked M. Power supply cord hole on the upper cabinet template. If the upper cabinet is metal, you will need to cover the edge of the hole with the power supply cord bushing (supplied) to prevent damage to the cord from the rough metal edge.
  4. Cut out the venting areas (with the saber saw):
    - Roof-Vented: cut out the shaded area marked L on the upper cabinet template.
    - Room-Vented: go to STEP 5, INSTALL THE MOUNTING PLATE,
  5. Complete whichever venting system you have chosen. Use caulking compound to seal the exterior wall or roof opening around the wall cap or roof cap.

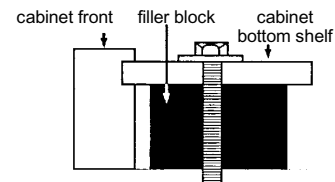


Figure 24

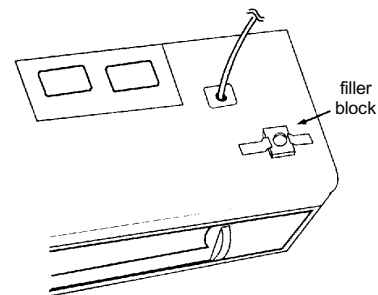


Figure 25

# Installation Instructions

## STEP 5: *Install The Mounting Plate*

### The Oven Must Be Connected To At Least One Wall Stud.

1. Draw a vertical line on the wall at the center of the 30 wide space. Use the mounting plate as the template for the rear wall. Place the mounting plate on the wall, making sure that the tabs are against the bottom of the cabinet. Line up the notch and center line on the mounting plate to the center line on the wall.
2. While holding the mounting plate with one hand, draw circles on the wall at holes A, B, C and D. Four holes must be used for mounting. If the holes are not used, the installation will not be secure. Installer must use these holes for proper installation. Use toggle bolts through these holes unless one of them lines up with a stud. Use a wood screw for studs.

**NOTE:** Draw a fifth circle inside area E, through one of the bottom holes to match the location of a stud.

For wall-vented: The oven requires a rear wall cutout opening for the rear wall duct and the exhaust adaptor must be attached to the mounting plate. See the next page on how to prepare the rear wall cutout opening and the exhaust adaptor/mounting plate for wall-vented.

3. Drill holes on the circles. If there is a stud, drill a 3/16 hole for lag screws. If there is no stud, drill a 5/8 hole for toggle bolts. Make sure to use at least 1 lag screw in a stud, and 4 toggle bolts in the drywall or the plaster.
4. Attach the plate to the wall. To use spring toggle head bolts: Remove the toggle wings from the bolts. Insert the bolts into the mounting plate and replace the spring toggle head to 3/4 past the bolt ends. Insert the spring toggle head into the holes in the wall to mount the plate. You may pull forward on the plate to help in tightening the toggle bolts. Tighten all bolts.

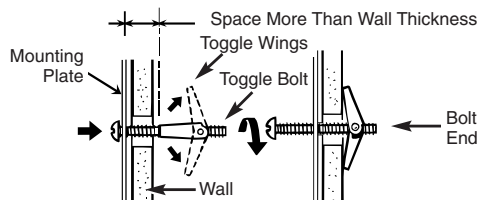
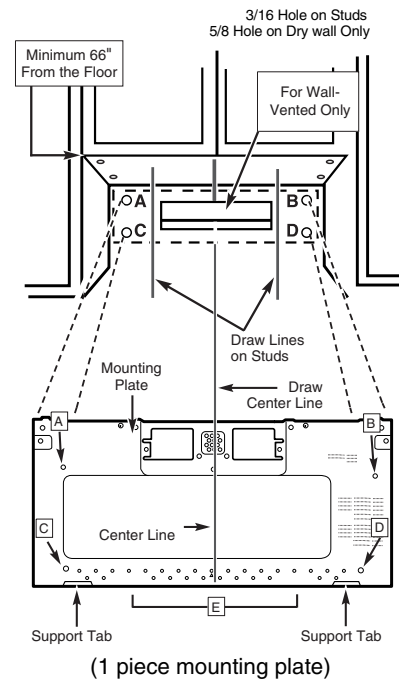
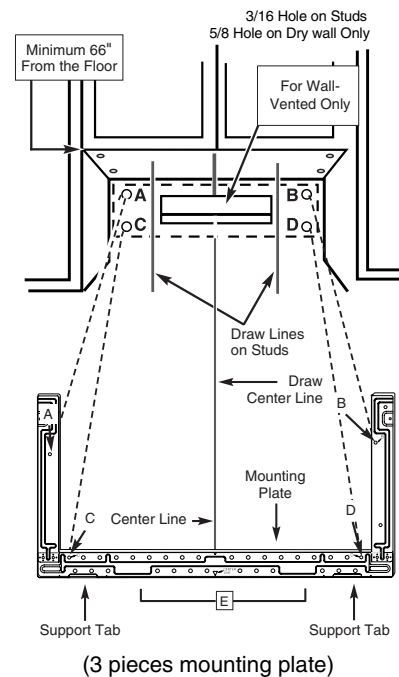


Figure 27



(1 piece mounting plate)



(3 pieces mounting plate)

Figure 26

# Installation Instructions

## STEP 5: *Install The Mounting Plate*

### TO PREPARE THE REAR WALL CUTOUT OPENING AND EXHAUST ADAPTOR/MOUNTING PLATE FOR WALL VENTING AND ROOF VENTING:

1. Place the mounting plate against the rear wall as described in step 5 item 1.
2. Using a pencil, put dots through slots F and G, and through holes H and I. Remove the mounting plate and draw lines extending through the points. This will give the location and size of the box cutout for the rear wall duct. See Figure 28.
  - Attach the exhaust adaptor to the rear mounting plate by sliding it into the guides at the top center of the plate on the wall side. Push in securely until it is past the top locking tabs and in the lower locking tabs. Take care to assure the damper hinge is installed so that it is at the top and that the damper swings freely.
  - Carefully guide the exhaust adaptor, now attached to the mounting plate, into the house duct. Before using the screws to attach the plate to the wall. This will assure proper alignment for installation. See Figure 29.
  - Return to step 5, item 3 to continue. After completing the installation of the mounting plate, again check the rear damper for free movement to assure it will operate properly.

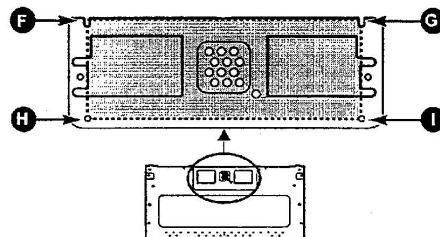


Figure 28

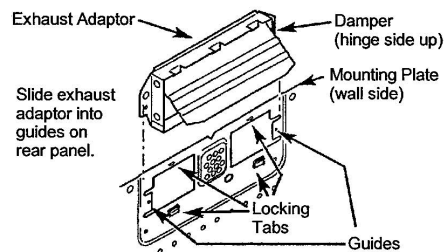


Figure 29

# Installation Instructions

## STEP 6: *Attach The Oven To The Wall*

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### ⚠ WARNING ⚠

To avoid risk of personal injury or property damage, you will need two people to install this microwave oven.

1. Carefully lift microwave oven and hang it on support tabs (See Figure 26 at the bottom of the mounting plate.) Reaching through upper cabinet, thread power supply cord through the power supply cord hole in the bottom of the upper cabinet. See Figure 30.
2. Rotate the microwave oven upward so the top of oven is against the bottom of the upper cabinet or cabinet frame.
3. Insert a bolt down through each hole in the upper cabinet bottom. See **Figure 31**. Tighten the bolts until the gap between the upper cabinet and microwave oven is closed.
4. If wall vented or room vented installation is used, go to No.7 on the next page.

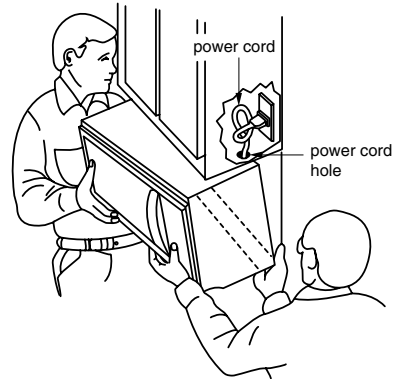


Figure 30

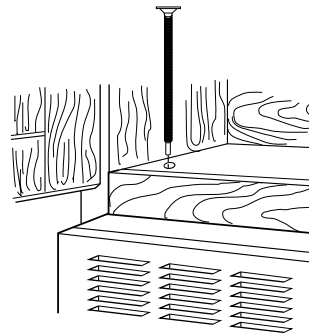


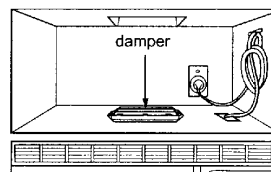
Figure 31

# Installation Instructions

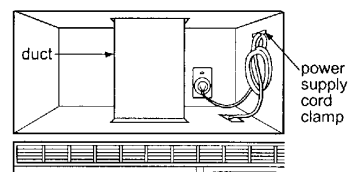
## STEP 6: *Attach The Oven To The Wall*

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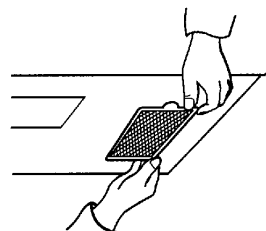
5. Roof venting installation: Install ductwork through the vent opening in the upper cabinet. Complete the venting system through the roof according to the method needed. See Figure 33. See PREPARE THE VENTING SYSTEM, STEP 2. Use caulking gun to seal the exterior roof opening around the exhaust cap. See Figure 6.
6. Use the power supply cord clamp to bundle the power supply cord. Install the power supply cord clamp, using a screw as shown in Figure 33, to inside of the cabinet.
7. Grasp filter screen with one hand holding the ring and the other hand holding the opposite end. Insert the end of the filter screen without ring into the opening and slide towards the side of the microwave oven. Insert ring end of filter screen into the opening and slide entire screen towards the center of the microwave until screen is securely in position. Repeat for other filter screen. See Figure 34.
8. Plug in the power supply cord.
9. Read your Owner's Manual, then check the operation of your microwave oven.



**Figure 32**



**Figure 33**



**Figure 34**

# Appendix B



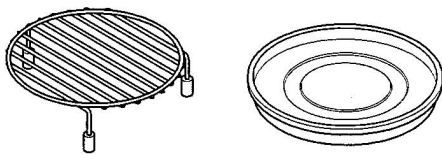
# Use and Care Information

## CARE AND CLEANING

For best performance and safety, keep the oven clean inside and outside. Take special care to keep the inner door panel and the oven front frame free of food or grease build-up. **Never-use rough powder or pads.** Wipe the microwave oven inside and out, including the hood bottom cover, with a soft cloth and a warm (not hot) mild detergent solution. Then rinse and wipe dry. Use a chrome cleaner and polish on chrome, metal and aluminum surfaces. Wipe spatters immediately with a wet paper towel, especially after cooking chicken or bacon. Clean your oven weekly or more often, if needed.

## CONVECTION RACK/ DRIP PAN

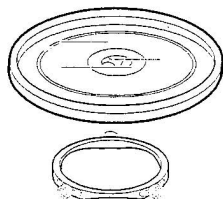
Wash the convection rack and drip pan with a mild soap and a soft or nylon scrub brush. Dry completely. Do not use abrasive scrubbers or cleaners to clean rack.



## OVEN TURNTABLE / ROTATING RING

The turntable and rotating ring are removable. They should be handwashed in warm (not hot) water and a mild detergent. Dry thoroughly with a soft cloth. **DO NOT** use cleaning powders, abrasives, steel wool, or other rough pads. **DO NOT** put in an automatic dishwasher.

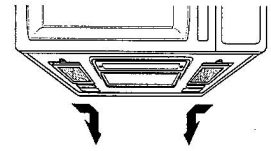
- Turntable may be cleaned at the sink. Be careful not to chip or scratch the edges as this could cause the turntable to break during use.
- Rotating ring must be cleaned regularly.
- Turntable must **ALWAYS** be in place when using this oven.



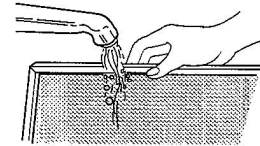
## CLEANING THE GREASE FILTER

The grease filter should be removed and cleaned often, at least once a month.

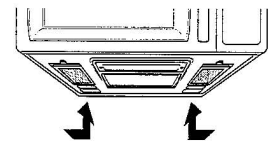
1. To remove grease filter, slide filter to the side. Pull filter downward and push to the other side. The filter will drop out.



2. Soak grease filter in hot water and a mild detergent. Rinse well and shake to dry. **Do not use ammonia or place in a dishwasher. The aluminum will darken.**



3. To reinstall the filter, slide it into the side slot, then push up and toward oven center to lock.



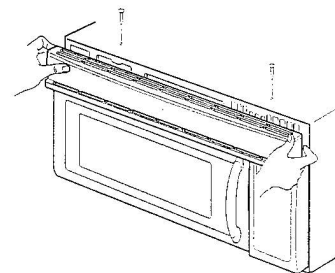
### ⚠ CAUTION

To avoid risk of personal injury or property damage, do not operate oven hood without filters in place.

## CHARCOAL FILTER REPLACEMENT

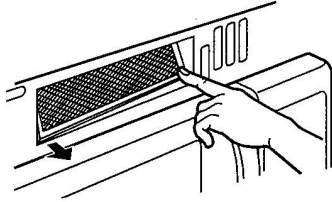
If your oven is vented inside, the charcoal filter should be replaced every 6 to 12 months, and more often if necessary. The charcoal filter cannot be cleaned. To order a new charcoal filter, contact the Parts Department at your nearest Authorized Service Center or call **1-800-843-0304** (inside U.S.A) or **1-800-688-2002** (Canada). Order Charcoal Filter kit #: MVHRK5.

1. Unplug the oven or turn off power at the main power supply.
2. Remove the two vent grille mounting screws. (2 middle screws)

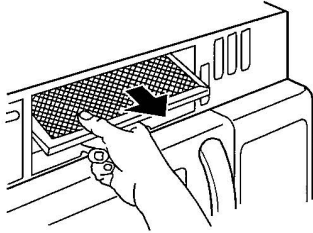


# Use and Care Information

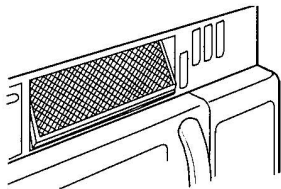
3. Push the right side lower part of the charcoal filter.



4. Remove old filter.



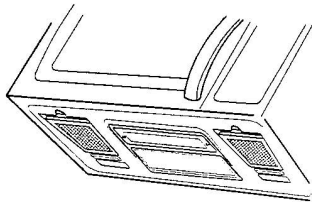
5. Slide a new charcoal filter into place. The filter should rest at the angle shown.



6. Slide the bottom of the grille into place. Push the top until it snaps into place. Replace the mounting screws. Turn the power back on at the main power supply and set the clock.

## COOKTOP/NIGHT LIGHT REPLACEMENT

1. Unplug the oven or turn off power at the main power supply.



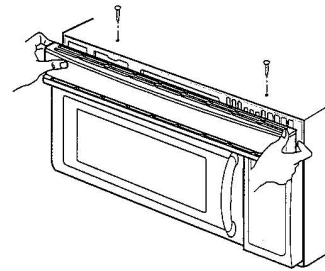
2. Remove the bulb cover mounting screws.
3. Replace bulb(s) with 20 watt appliance bulb(s).
4. Replace bulb cover, and mounting screws.
5. Turn the power back on at the main power supply.

## ⚠ CAUTION

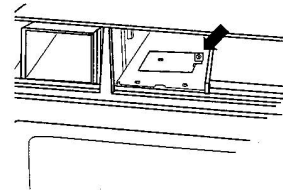
To avoid personal injury or property damage, wear gloves when replacing light bulb.

## OVEN LIGHT REPLACEMENT

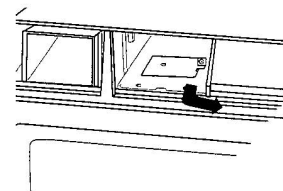
1. Unplug oven or turn off power at the main power supply.
2. Remove the vent cover mounting screws. (2 middle screws)
3. Tip the cover forward, then lift out to remove.



4. Remove bulb holder.



5. Lift up the bulb holder.



6. Replace bulb with a 20 or 30 watt appliance bulb.
7. Replace the bulb holder.
8. Slide the bottom of the vent cover into place. Push the top until it snaps into place. Replace the mounting screws. Turn the power back on at the main power supply.