

# Service

## Over The Range Domestic Microwave Ovens

Service Manual for  
Amana®

Models and manufacturing  
numbers in this manual

MVH140E	P1319501M
MVH140W	P1319502M
MVH240E	P1319503M
MVH240W	P1319504M
MVH240L	P1319505M
MVH340E	P1319506M
MVH340W	P1319507M
MVH340L	P1319508M

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

***Amana***

RS2100005  
Revision 0  
September 1998

# Important Product Information



## WARNING

Precautions to be observed before and during servicing to avoid possible exposure to excessive microwave energy or electrical shock, disconnect power to oven.

- (A) Do not operate or allow oven to be operated with door open.
- (B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
  - Interlock operation
  - Proper door closing
  - Seal and sealing surfaces (arcing, wear, and other damage)
  - Damage to or loosening of hinges and latches
  - Evidence of dropping or abuse
- (C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity, and connections.
- (D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced or adjusted by procedures described in this manual before oven is released to the consumer.
- (E) Check microwave leakage to verify compliance with the federal performance standard should be performed on each oven prior to release to the consumer.

## Wiring

Good service practice is to never route wiring over terminals and/or sharp edges. This applies to any wiring without regard to the circuit voltage. Wire insulation material and thickness is designed and regulated for electrical spacing purpose only, but cannot always be relied upon because of possible cuts and/or abrasions, which can occur during servicing.



## WARNING

To avoid risk of electrical shock, injury, or death, make sure these grounding instructions are followed.

## Grounding Instructions



## WARNING

Do not remove grounding prong when installing grounded appliance in a home or business that does not have three wire grounding receptacle, under no condition is grounding prong to be cut off or removed. It is the personal responsibility of the consumer to contact a qualified electrician and have properly grounded three prong wall receptacle installed in accordance with appropriate electrical codes

## Servicing of Grounded Products

The standard accepted color coding for grounding wires is GREEN or GREEN WITH YELLOW STRIPE. These ground leads are NOT to be used as current carrying conductors. It is extremely important that the technician replace any and all grounds prior to completion of the service call. Under no condition should ground wire be left off causing a potential hazard to technicians and consumer.

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# Important Safety Information



## CAUTION

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

The basic design of the 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 Amana Refrigeration, Inc. 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 Amana.
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 Amana microwave oven should never be operated with:
  - Any components removed and/or bypassed.
  - Any of the safety interlocks are found to be failed.
  - Any of the seal surfaces are defective, 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 4mw/cm<sup>2</sup> the servicer is to cease repair and contact the Amana Service Department immediately for further direction. Amana Refrigeration, Inc. will contact the proper Government Agency upon verification of the test results.

# Radiation Leakage Testing



## WARNING

Check for radiation leakage after servicing. Should the leakage be more than  $4\text{mW}/\text{cm}^2$  inform Amana Refrigeration, Inc. immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by DHHS 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... $4\text{mW}/\text{cm}^2$  or less.
  - Leakage for fully assembled oven with door normally closed ... $4\text{mW}/\text{cm}^2$  or less.
  - Leakage for a fully assembled oven (before the latch switch (primary) is interrupted) while pulling the door ...  $4\text{mW}/\text{cm}^2$  or less.
1. Pour  $275 \pm 15$  cc (9 oz  $\pm 1/2$  oz) of  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ ) 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 2-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.

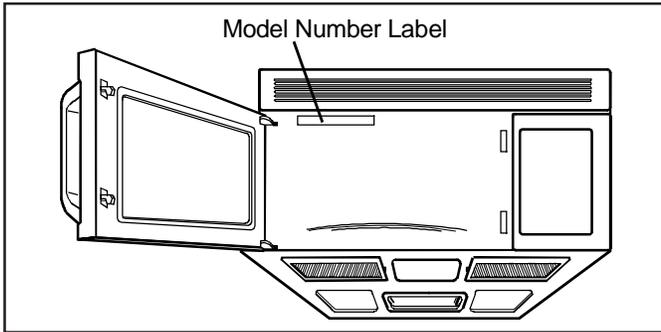
## Record Keeping and Notification After Measurement

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.

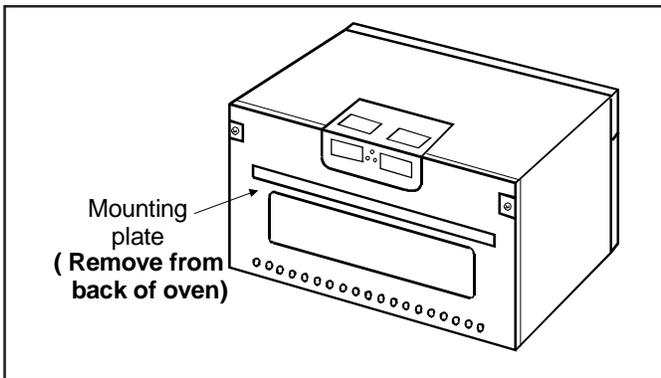
# Installation Instruction

## Proper installation is the installer's responsibility!

Write the model & serial numbers on the owner's manual. The model number label is located on the oven front.



The mounting plate is located on the back side of the microwave oven.



## The dimensions of the oven are as follows:

Height : 16 <sup>7</sup>/<sub>16</sub> inches

Width : 29 <sup>15</sup>/<sub>16</sub> inches

Depth : 15 <sup>3</sup>/<sub>8</sub> inches

Weight : 58 pounds



## CAUTION

You will need two people to install this oven. It is heavy and could cause personal injury if not handled properly.

## Avoid Electrical Shock!

- Before you drill into the wall, note where electrical outlets are and where electrical wires might be concealed behind the wall. **YOU COULD GET AN ELECTRIC SHOCK** if you contact electrical wires with your drill bit.
- Locate and disconnect the power to any electrical circuits that could be affected by installing this oven. **IF YOU DO NOT DISCONNECT THE POWER, YOU COULD GET AN ELECTRIC SHOCK.**

## Electrical rating of this oven: 120V AC 60Hz.

- 11.9 A / 1350 W (Microwave oven only)
- 12.9 A / 1460 W (Microwave oven, Cooktop Lamps, Ventilation Fan)
- You need a DEDICATED 120V, 60Hz, AC only, 15 or 20A, fused electrical supply (located in the cabinet above the microwave as close as possible to the microwave) serving only the microwave.



## WARNING

If you use the grounding plug improperly, you risk electric shock!

- Check with a qualified electrician if you are not sure whether the oven is properly grounded or if you do not completely understand the grounding instructions.
- Do not use a fuse in the neutral or grounding circuit.

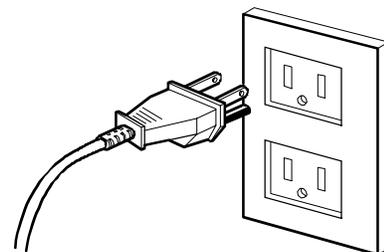


## WARNING

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

- Save these instructions for the local electrical inspector's use.
- This appliance must be grounded!
  - If there is an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a grounding wire with a grounding plug.
  - Place the plug into a properly installed and grounded outlet.
  - Do not use an extension cord.
  - Keep the power cord dry and do not pinch or crush it.
  - Do not, under any circumstances, remove the power supply cord grounding prong!
- This appliance **MUST** be grounded!

Properly Polarized and Grounded Outlet



Three-Pronged (Grounding) Plug

# Installation Instruction



## WARNING

If you do not use the microwave oven as instructed, you could be exposed to excessive microwave energy.

### Do not expose yourself to excessive microwave energy!

- DO NOT try to operate the microwave oven with the door open.
- DO NOT tamper with or defeat the safety interlocks.
- DO NOT place objects between the microwave oven front face and the door.
- DO NOT allow soil or cleaner residue to build up on the flat surfaces around the microwave oven door.
- DO NOT operate the microwave oven if it is damaged.
- The microwave oven door must close properly to operate safely.
- DO NOT USE THE MICROWAVE OVEN:
  - If the door is bent.
  - If the hinges or latches are broken or loose.
  - If the door seals, sealing surfaces or glass is broken.
- DO NOT ATTEMPT TO ADJUST OR REPAIR THE OVEN YOURSELF!
  - It should be adjusted and repaired by a qualified technician who can check for microwave leakage after repairing the oven.



## WARNING

If you do not mount the oven as instructed, you risk personal injury and/or property damage.

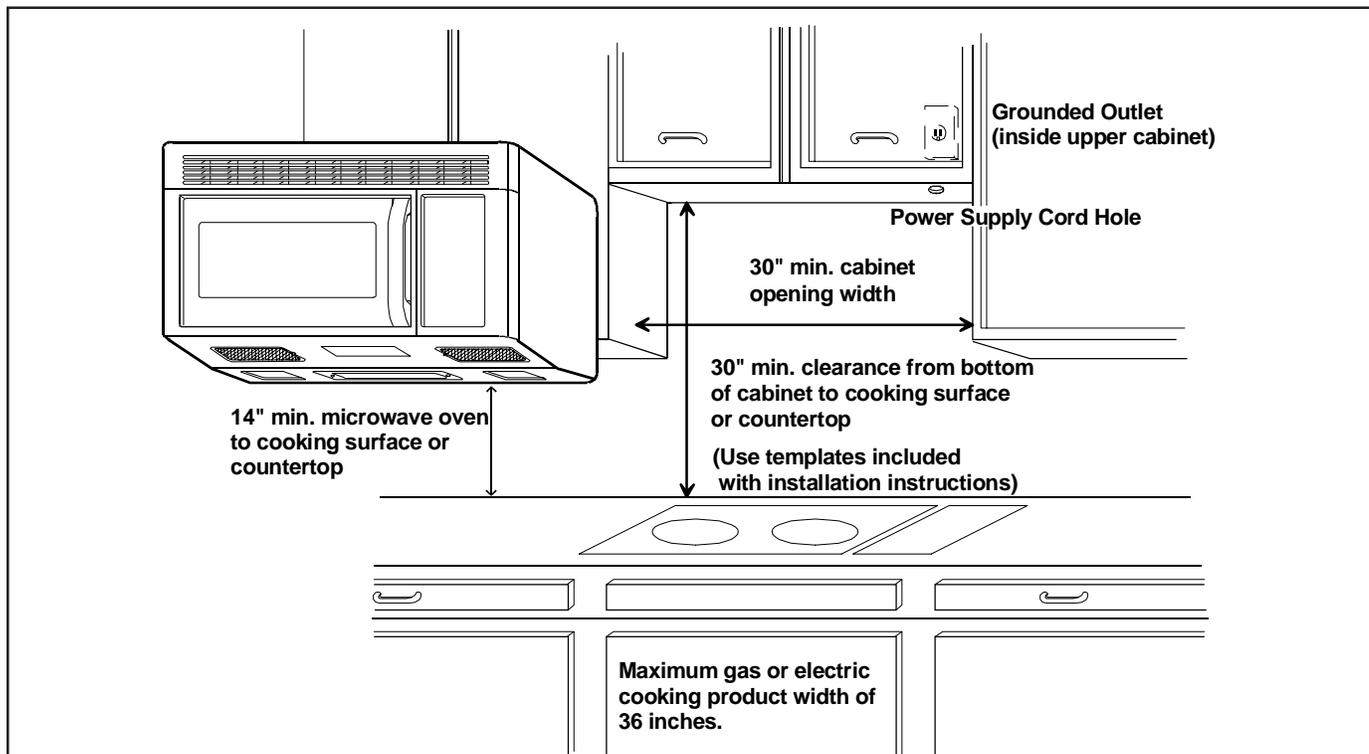


## CAUTION

Before you begin installing the oven, PLACE A PIECE OF THE CARTON OR OTHER HEAVY MATERIAL (a blanket) over the countertop or cooktop to protect it. **Do not use a plastic cover.** Failure to protect these surfaces could result in property damage.

### 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 studing 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 illustration 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.



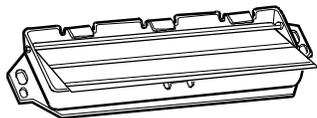
# Installation Instruction

## Parts, Tools, and Materials

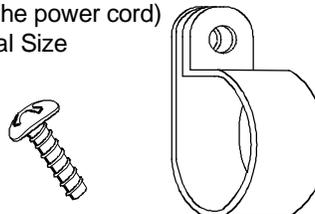
The following parts are supplied with the oven:

**NOTE:** Depending on ventilation requirements, not all parts will be used.

**Backdraft damper / duct connector**  
(for roof-venting or wall-venting installation)  
Not Actual Size ( 2 pieces must be assembled as shown )



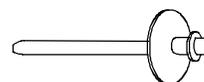
**One power cord clamp and  
One dark-colored mounting screw**  
(to hold the power cord)  
Actual Size



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



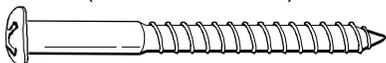
**One lock pin and one washer-**



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



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



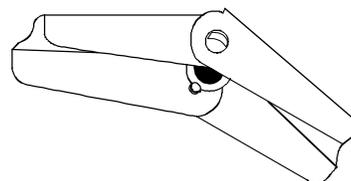
**Four 1/4" x 3" toggle bolts -**  
(for drywall holes)



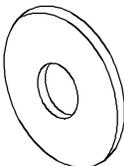
**Two 1/4" x 2" bolts -**  
(for securing to the upper cabinet)



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



**Two washers -**  
(for the two upper cabinet bolts)



**NOTE:** Install at two lag screws into one 2" X 4" stud and four anchor bolts into the wall.  
The mounting area must meet the 150 lbs. weight requirement.

## Tools and materials required for installation:

**NOTE:** Use the carton or heavy material for covering the counter top.

**NOTE:** Ductwork required for installation is not included. All wall and roof caps must have a back-draft damper.

# Installation Instruction

## Preparing Electrical Connection



### WARNING

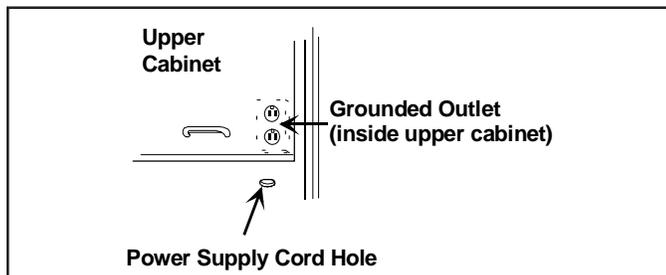
To avoid risk of electrical shock, this appliance must be grounded.

1. Locate grounded electrical outlet for oven in the cabinet above the oven.

**NOTE:** Outlet should be on a circuit dedicated to the microwave oven (120 VAC, 60 Hz) with a 15 or 20 Amp fused electrical supply.

**NOTE:** If proper wall outlet is not present, one must be installed by a qualified electrician.

2. Power supply cord hole will be cut later when preparing the wall and upper cabinet.



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

## Preparing Venting System

Oven may be vented in one of three ways.

**NOTE:** Do not vent oven into a wall cavity, an attic or an unused area.



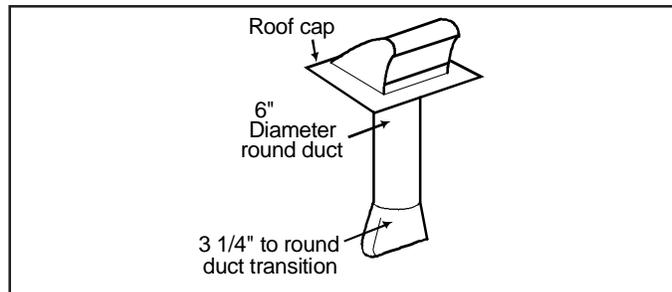
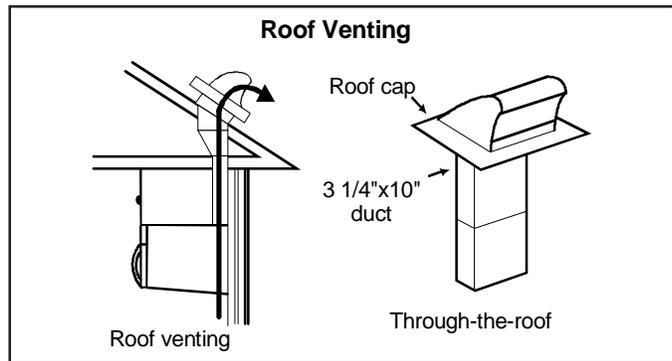
### WARNING

To avoid risk of fire, personal injury or property damage, oven must be properly vented.

**NOTE:** Duckwork needed for outside ventilation is not included with oven.

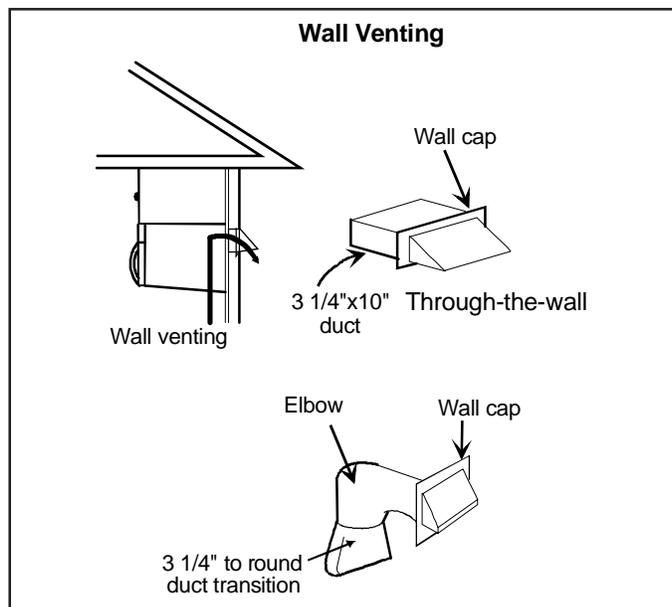
## Roof-Venting

Oven is located on an outside wall near roof.



## Wall Venting

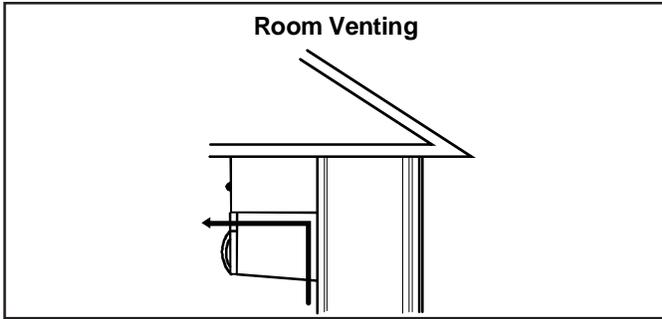
Oven is located on an outside wall of house.



# Installation Instruction

## Room Venting

Oven is located on an inside wall of house.



**NOTE:** Remember the following when installing venting.

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

## Standard Fittings

**NOTE:** If existing ductwork is round, a rectangular-to-round adapter must be used with a rectangular 3" extension duct installed between the damper assembly and adapter to prevent the exhaust damper from sticking.

## Ductwork Length

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

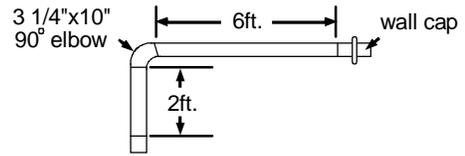
For best performance, do not use more than three 90° elbows and keep the length as short as possible.

Following are 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.

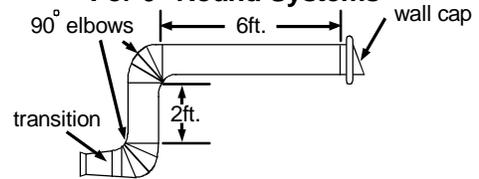
To calculate the equivalent length of each duct piece used, see examples below.

### For 3 1/4"x10" Systems



1-3 1/4" x 10" 90° elbow	=	25 ft.
1-Wall Cap	=	40 ft.
8 feet straight duct	=	8 ft.
<b>Total Length</b>	=	<b>73 ft.</b>

### For 6" Round Systems



1-transition	=	5 ft.
2-90° elbows	=	20 ft.
1-Wall Cap	=	40 ft.
8 feet straight	=	8 ft.
<b>Total Length</b>	=	<b>73 ft.</b>

# Installation Instruction

## Preparing Venting Blower



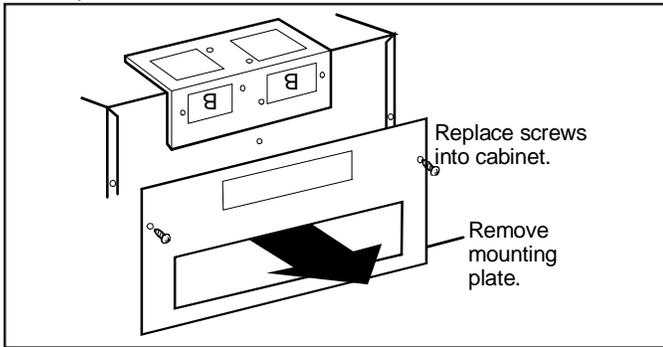
### WARNING

To avoid risk of electrical shock or personal injury, disconnect power to unit before working on vent blower.

**NOTE:** Do not pull or stretch blower wiring. Pulling or stretching blower wiring could result in electrical wiring damage.

Microwave oven is shipped with blower assembly for roof venting. If wall or room venting installation is desired, blower assembly must be changed.

1. Remove screws securing mounting plate to oven cabinet and set side.
2. Replace screws back into oven cabinet.

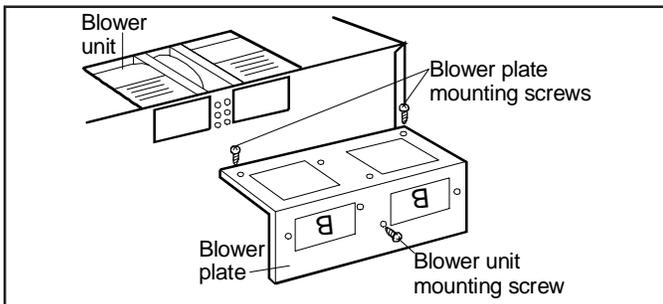


## Roof Venting Installation

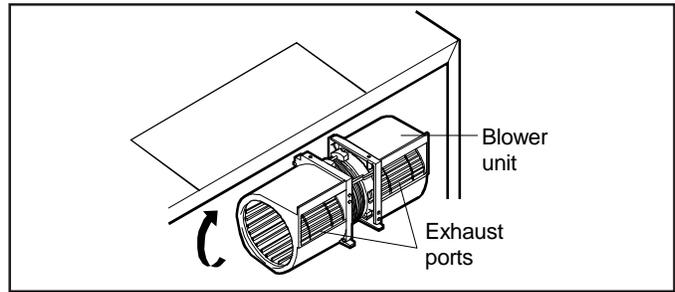
Blower venting is assembled at the factory for roof venting. Proceed to "Wall and Upper Cabinet Installation" section.

## Wall Venting Installation

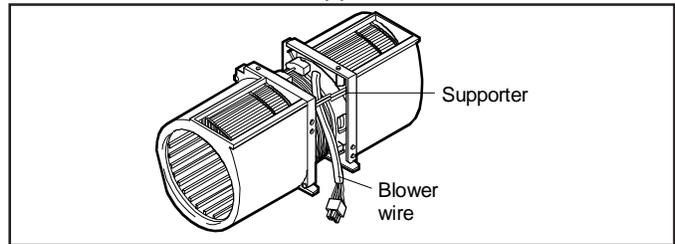
1. Remove blower unit mounting screw and blower plate screws (save screws for step 8). Remove blower plate from cabinet.



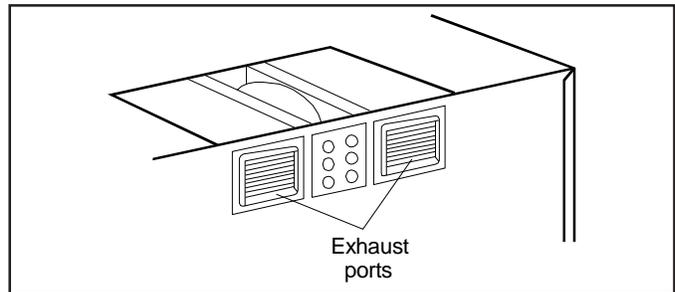
2. Carefully lift blower unit out of oven cabinet.
3. Disconnect blower motor terminal plug from wire harness.
4. Rotate blower unit so exhaust ports face the rear of the cabinet.



5. Reconnect blower motor terminal plug, making sure the wire is under the supporter.



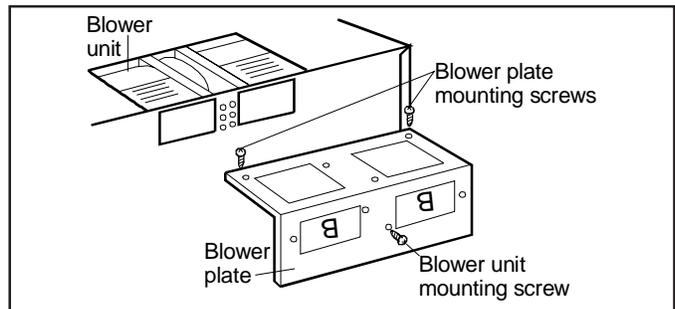
6. Place blower unit back into cabinet. Verify exhaust ports face towards the rear and are aligned with the holes in the back of the unit.



7. Remove knockouts marked **B** (see step 1 for illustration) from blower plate and discard. Be careful not to distort blower plate.
8. Attach blower plate to cabinet with exhaust ports and blower plate opening aligned. Secure blower unit with screws that were removed in step 1.

## Room Venting Installation (Recirculating)

1. Remove blower unit mounting screw and blower plate screws (save screws for step 5). Remove blower plate from cabinet.



2. Carefully lift blower unit out of oven cabinet.
3. Rotate blower unit 90° so that exhaust ports face the front of the cabinet.

# Installation Instruction

- Place blower unit back into cabinet. Verify exhaust ports face towards the front of the unit.
- Attach blower plate to cabinet. Secure blower unit with screws that were removed in step 1.

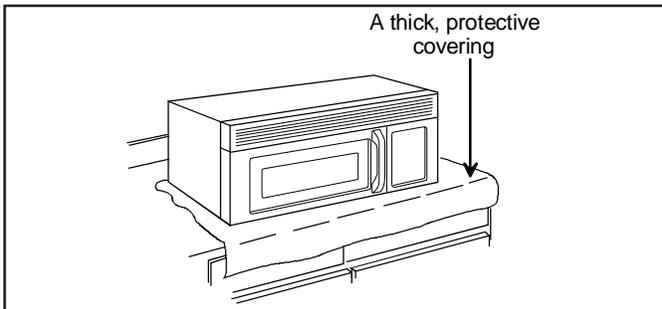
## Preparing Wall and Upper Cabinet



### CAUTION

To avoid property damage cover countertop or cooktop by placing a piece of cardboard from the carton or a heavy piece of material. Do not use plastic.

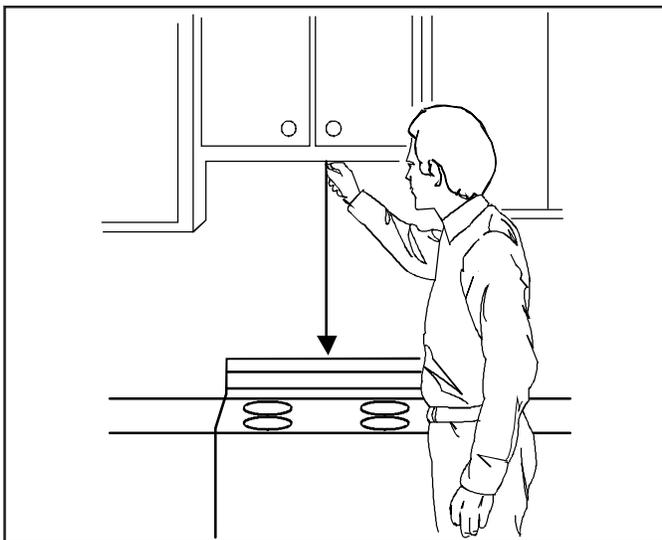
- Remove shipping material and parts from inside the microwave oven.
- Cover countertop or cooktop with a thick protective covering, to protect it from damage and dirt.



**NOTE:** For easy access to wall and upper cabinet, remove range from wall to allow easier measuring and drilling.

## Preparing Template Placement

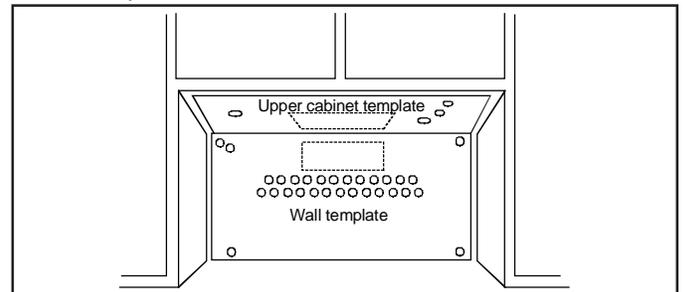
- Find and mark the vertical center line on the back wall, using a tape measure and plumb line.



### WARNING

To avoid risk of property damage or personal injury, do not attempt to install microwave oven if wall studs cannot be located.

- Align plumb line on wall with center line on the wall template.
  - Verify minimum width is 30" and the distance from the top of wall template to the range or countertop is at least 30".
- Secure wall template to the wall.
  - If cabinets are not level, adjust the wall template to align with cabinet.
  - Oven must hang level. If the front edge of the cabinet is lower than the back edge, adjust wall template to be level with the cabinet front.



- Measure the bottom of the upper cabinet frame. Trim the edges **A**, **B**, and **C** on the upper cabinet template, so template will fit on the bottom of the upper cabinet. If upper cabinet has a recessed frame, trim the template to fit inside the recessed area. Align the centerline of the upper cabinet template with the centerline on the wall template. Secure upper cabinet template in place.

# Installation Instruction

## Drilling Holes in the Wall and Upper Cabinet



### WARNING

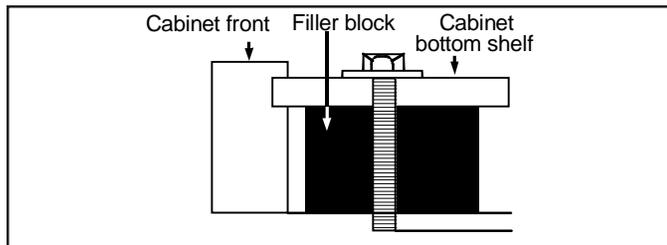
To avoid electrical shock or personal injury, be very careful when drilling holes into the wall. Electrical wires may be concealed behind the wall covering.

1. Find the points on the wall template labeled **D**, **E**, **F**, and **G**. Drill a  $\frac{3}{16}$ " diameter hole at any points located over a wall stud. Drill  $\frac{3}{4}$ " diameter hole at any point over the wall without studding.
2. Drill holes into studded areas marked **H** and **I** on the wall template using a  $\frac{3}{16}$ " drill bit. If wall studs are not located within these areas, drill  $\frac{3}{4}$ " holes nearest to the center of the areas as possible.

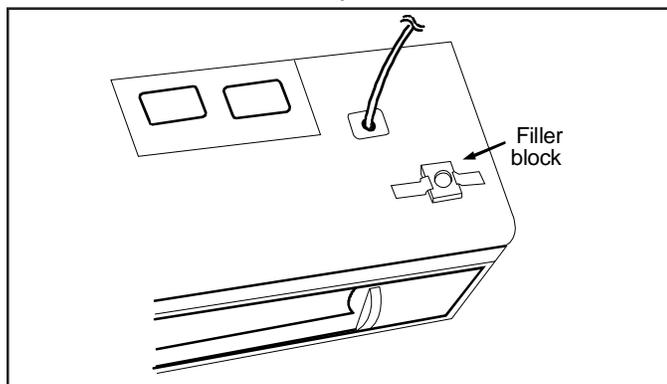
**NOTE:** If there are no wall studs within the areas marked **H** and **I**, or behind points marked **D**, **E**, **F**, and **G**, do not install microwave oven. (Consult a building inspector.) There must be at least one wall stud in the marked areas.

3. Drill a  $\frac{3}{8}$ " hole at points **J**, **K**, and **N** on upper cabinet template.

**NOTE:** If the bottom of the cabinet is recessed  $\frac{3}{4}$ " or more, filler block (not included) will be required to provide additional support for the bolts.



- Mark the center of each filler block needed and drill a  $\frac{3}{8}$ " hole through the block.
- Align the filler blocks with openings in the top of the microwave oven cabinet and attach to the cabinet with tape.



4. Cut or drill a 2" hole at the area marked **M**, for power cord access into upper cabinet.

**NOTE:** If upper cabinet is metal, cover the edges of the hole to prevent damage to the power cord.



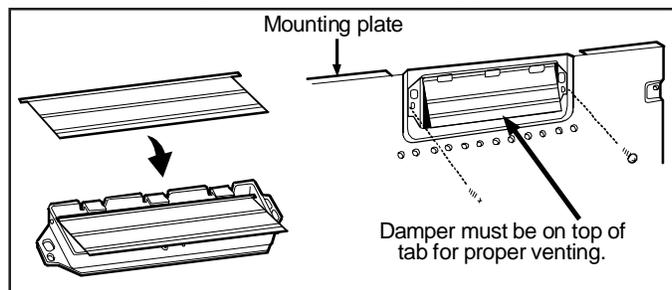
### WARNING

To avoid electrical shock or personal injury, cover edges on metal cabinet to prevent damage to power cord.

5. Cut out the venting area required for installation.
  - Roof vented: Cut out shaded area marked **L** on the upper cabinet template.
  - Wall vented: Cut out shaded area marked **O** on the wall template.
  - Room vented: Proceed to "Installing Mounting Plate" section.
6. Use caulking compound to seal the exterior wall or roof opening around the wall or roof cap.

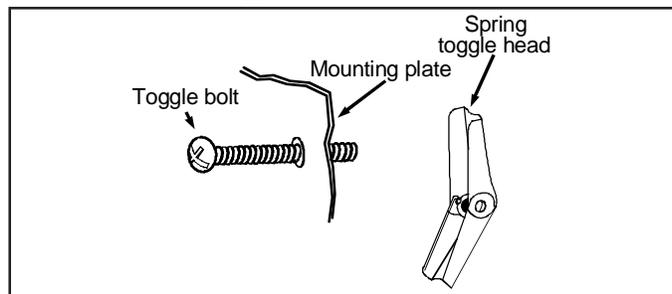
## Installing Mounting Plate

1. Remove templates from wall and upper cabinet.

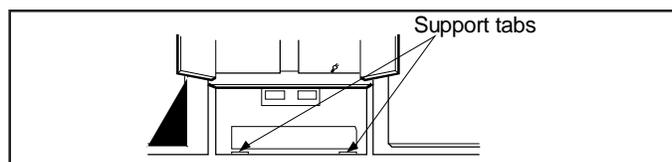


**NOTE:** If venting through the wall, verify alignment of damper on the rear of the mounting plate moves freely.

2. Place toggle bolts through mounting plate holes where  $\frac{3}{4}$ " holes were drilled. Attach spring toggle head on each toggle bolt.

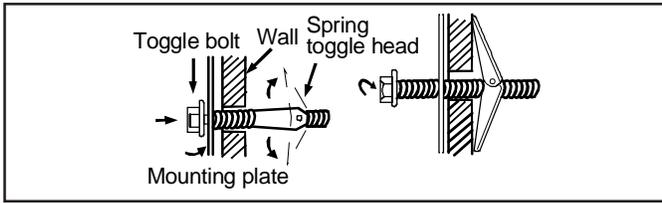


3. Place mounting plate against the wall aligning toggle bolts with holes.

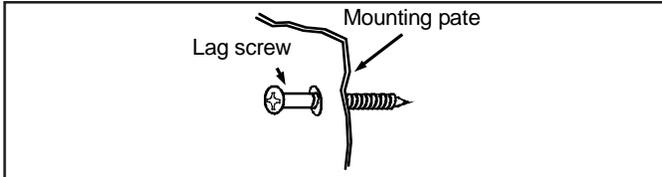


# Installation Instruction

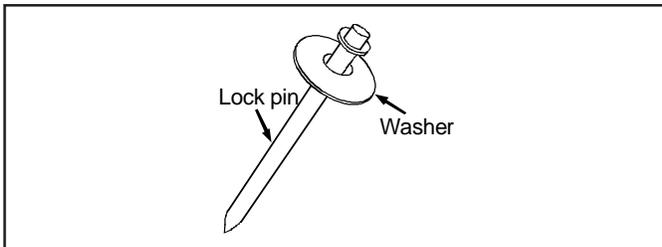
**NOTE:** Leave at least the wall thickness of space to allow spring toggle head to open once placed into the wall.



4. Locate wall stud holes and insert lag screws through mounting plate and into  $\frac{3}{16}$ " holes, do not tighten .



5. Insert toggle bolts through wall surface and tighten. Tighten lag screws at this point also.
6. Slide washer onto the lock pin and place inside the upper cabinet for further use.

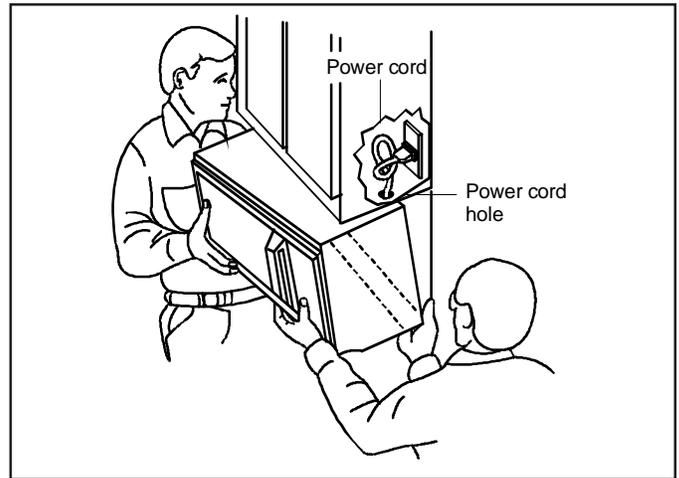


## Attaching Oven to the Wall

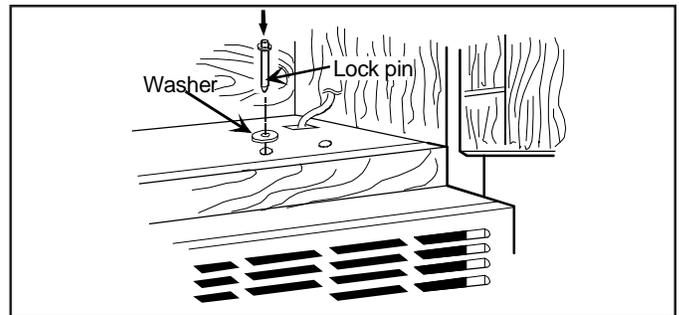
### **WARNING**

This unit is an excessive weight hazard, which can cause personal injury or property damage. Two or more people are required to lift unit. To prevent injury or property damage, use proper lifting and carrying techniques when moving unit.

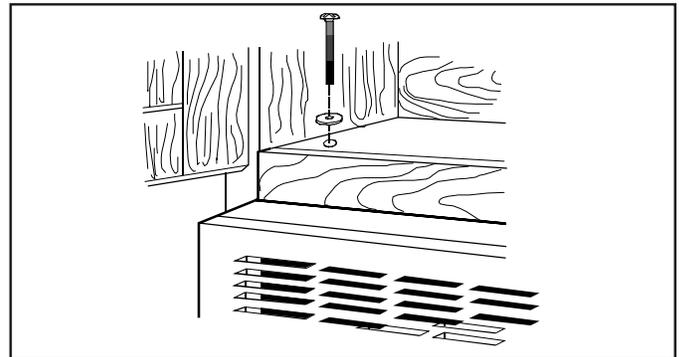
1. Carefully lift microwave oven and hang it on support tabs at the bottom of the mounting plate. Reaching through upper cabinet, thread power supply cord through cutout in the bottom of the upper cabinet.



2. Rotate the microwave upward until oven is against the bottom of the upper cabinet or cabinet frame.
3. Drop the lock pin and washer assembly into hole N, and push the pin downward as far as it will go.



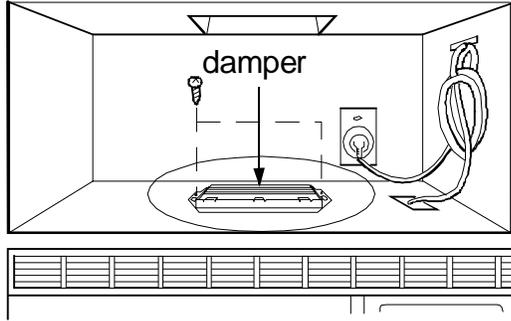
4. Insert 3" X  $\frac{1}{4}$ " bolts and washers down into holes J and K. Tighten the bolts until the gap between the microwave and cabinet has closed.



5. Remove the lock pin and washer. If wall or roof venting installation is used, skip to step 8.

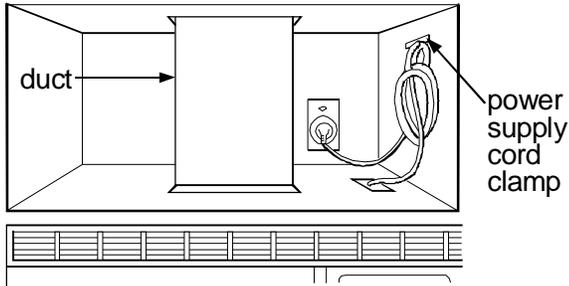
# Installation Instruction

6. Roof-vented installation: Align the damper/duct connector with the vent on top of the microwave oven. Damper should be on top of tab. Use two tapping screws (bright-colored) to attach damper/duct connector to the microwave oven.

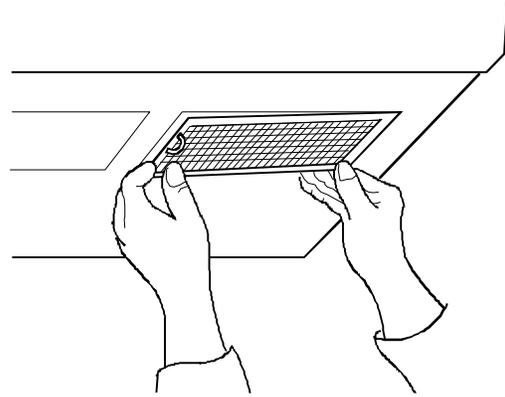


**NOTE:** Damper/duct connector must be attached to microwave oven **after** microwave oven is installed.

7. 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, Preparing Venting System section. Use caulking to seal the exterior roof opening around the exhaust cap.
8. Use the power supply cord clamp to bundle the power supply cord. Install the power supply cord clamp inside the cabinet.



9. 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.



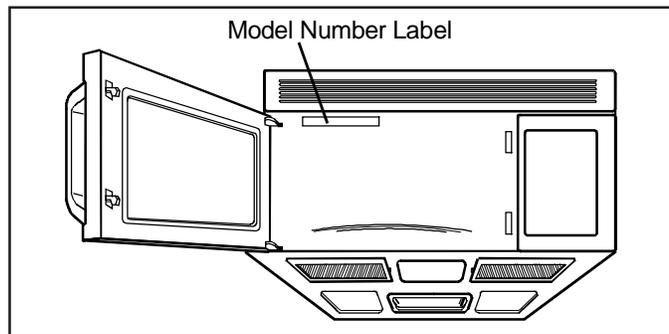
10. Plug in the power supply cord.

# General Information

Please read the owner's manual information. It will tell how to use all the features of this microwave oven.

## Location of Model Number

To request service information or replacement parts, the service center will require the complete model number of your microwave oven. The number is located on the oven front as shown in the illustration below.



## Model Identification

Complete enclosed registration card and promptly return. If registration card is missing, call Consumer Affairs Department at 1-800-843-0304 inside U.S.A. or 319-622-5511 outside U.S.A. When contacting Amana, 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:

## Parts and Accessories

Purchase replacement parts and accessories over the phone. To order accessories for your Amana product, call 1-800-843-0304 inside U.S.A. or 319-622-5511 outside U.S.A.

## Service

Keep a copy of sales receipt for future reference or in case warranty service is required. Any questions or to locate an authorized servicer, call 1-800-NAT-LSVC (1-800-628-5782) inside U.S.A. or 319-622-5511 outside U.S.A. Warranty service must be performed by an authorized servicer. Amana, also recommends contacting an authorized servicer if service is required after warranty expires.

## Asure™ Extended Service Plan

Amana offers 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 1-800-528-2682 for information.

## Oven Specifications

Output Power	900W (IEC 705 Standard)
Outer Dimensions	29-15/16" x 16-7/16" x 15-3/8"
Cavity Volume	1.3 cu. ft.
Net Weight	58 lbs.

## Electrical Rating

- Electrical Rating of the Oven: 120V AC, 60Hz
- 11.9A/1350 W (MWO Only)
- 12.9A/1460W (MWO + Cooktop Lamp + Ventilation Fan)

## Electrical Requirements

The oven is designed to operate on a Standard 120V/60Hz household outlet. Be sure the circuit is at least 15 or 20A and the microwave oven is the only appliance on the circuit. It is not designed for 50Hz or any circuit other than a 120V/60Hz circuit.

# General Information

## 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.

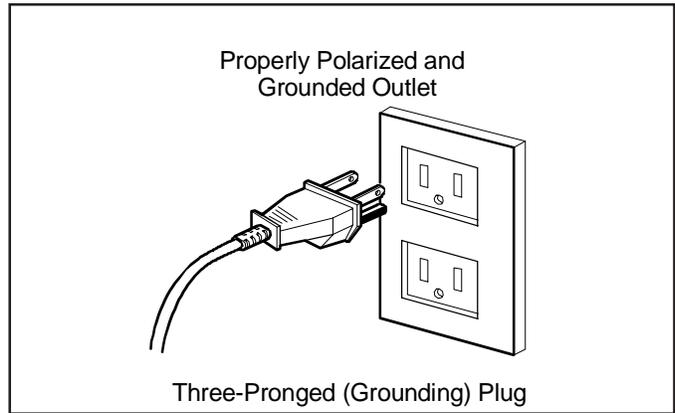


### WARNING

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

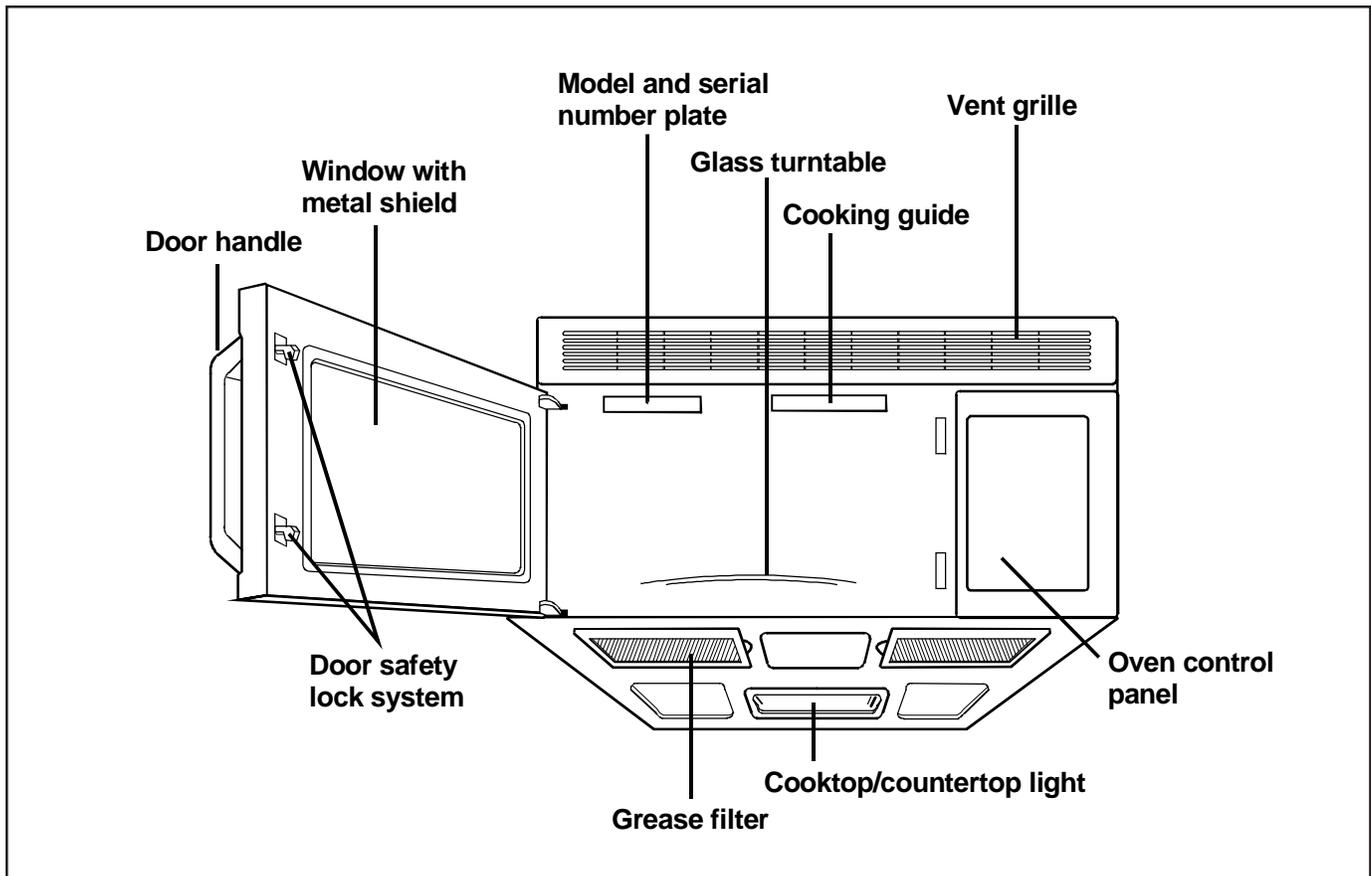
Ask a qualified electrician if you do not understand the grounding instructions or if you wonder whether the appliance is properly grounded.

Because this appliance fits under the cabinet, it has a short power-supply cord. See the Installation Instructions for directions on placing the cord properly. 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.

## Microwave Oven Description



# Care and Cleaning

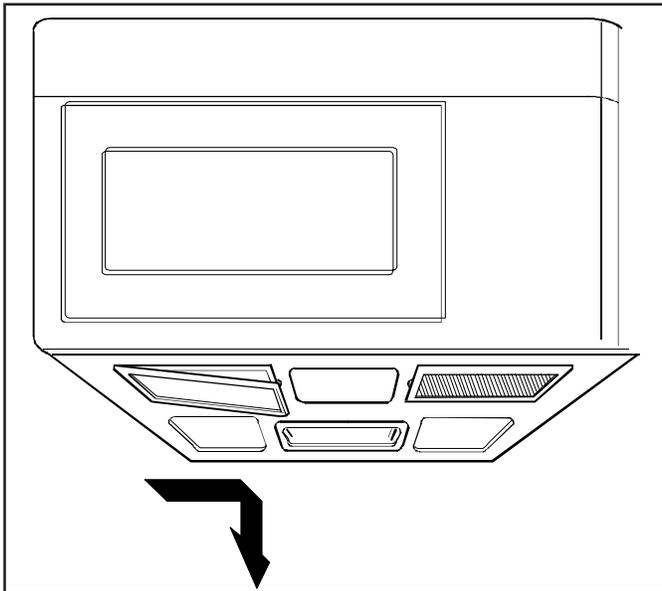
For best performance and safety, keep the oven clean inside and outside. Take special care to keep the inner door panel and the oven front frame free of food or grease build-up.

**Never use abrasive cleaners 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.

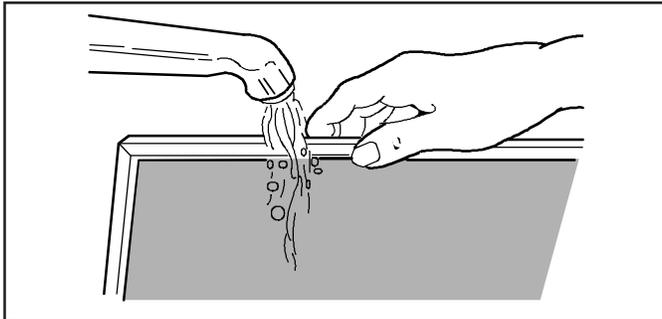
## Cleaning the Grease Filters

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

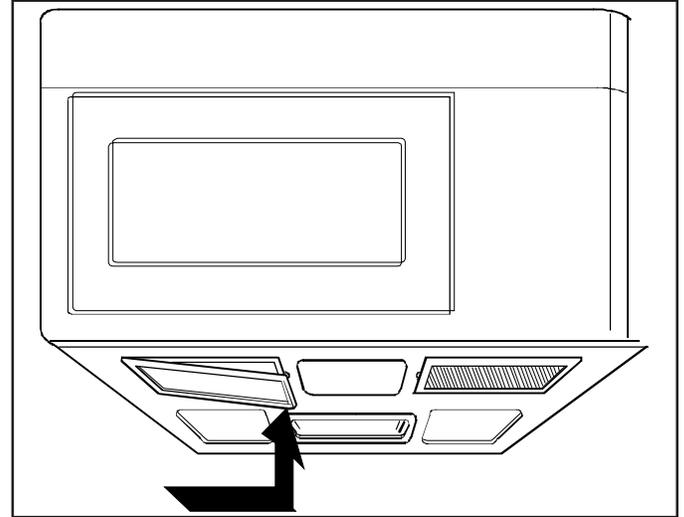
1. To remove grease filters, slide each filter to the side. Pull filters downward and push to the other side. The filter will drop out.



2. Wash in dishwasher or soak grease filters in hot water and a mild detergent. Rinse well and shake to dry. Do not use ammonia. The ammonia will darken the filter.



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



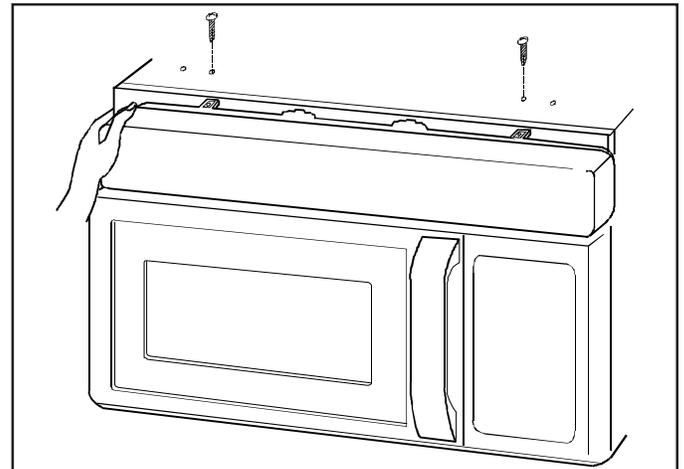
## CAUTION

To avoid risk of property damage, do not operate the hood vent system without the filters in place.

## Charcoal Filter Replacement

If the oven is vented inside the room, 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 Amana at 1-800-843-0304 (inside U.S.A.) 1-319-622-5511 (outside U.S.A.). Order Charcoal Filter Kit #: MVHRK2.

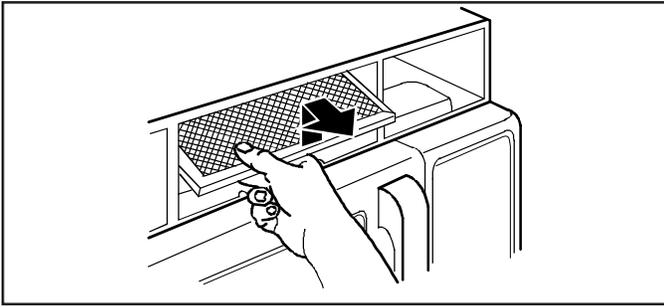
1. Disconnect power to oven.
2. Remove the two vent grille mounting screws. (2 middle screws)



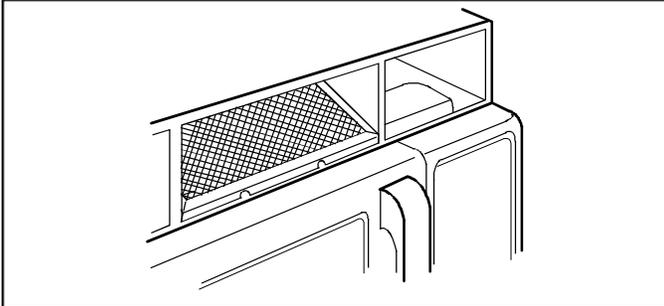
3. Tip the grille forward, then lift out.

# Care and Cleaning

4. Remove old filter.



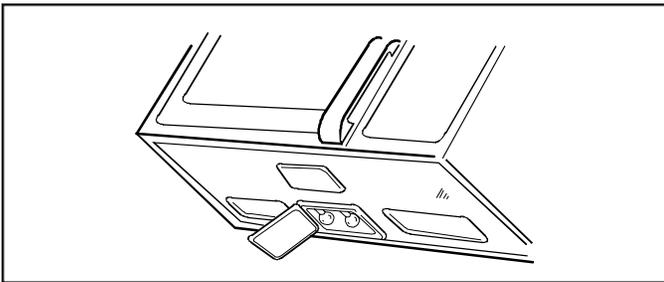
5. Slide new charcoal filter into place. The filter should rest at the angle shown.



6. 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 and set the clock.

## Cooktop/Night Light Replacement

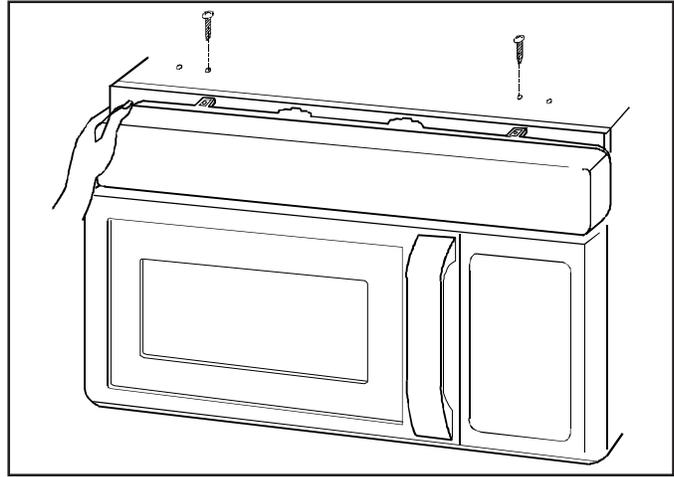
1. Unplug the oven or turn off power at the main power supply.



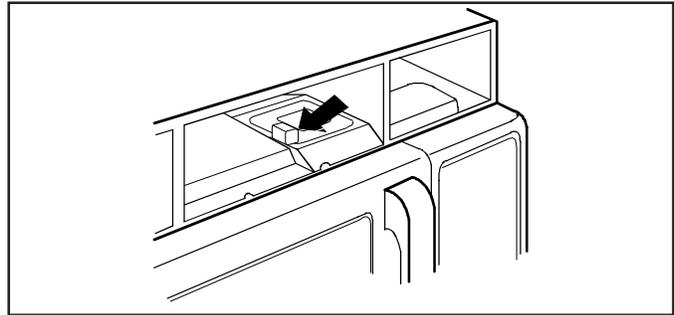
2. Remove the bulb cover mounting screws.
3. Replace bulb(s) with 30 or 40 watt appliance bulb(s).
4. Replace bulb cover.
5. Turn the power back on at the main power supply.

## Oven Light Replacement

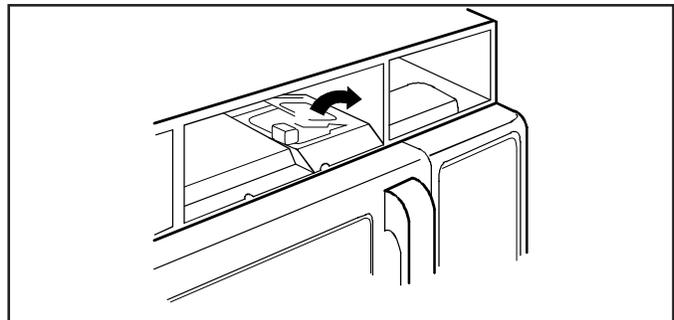
1. Unplug oven or turn off power at the main power supply.
2. Remove the vent cover mounting screws. (2 middle screws)
3. Tip the cover forward, then lift out to remove.



4. Remove bulb holder mounting screw.



5. Lift up the bulb holder.



6. Replace bulb with a 30 or 40 watt appliance bulb.
7. Replace the bulb holder and mounting screw.
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.

# Testing Procedures



## WARNING

Disconnect power before performing the following procedures unless testing requires it.

### NOTES:

- Perform microwave energy leakage test if unit is serviced for any reason.
- Verify wire leads are connected to correct positions.
- When removing wire terminal plugs from connectors, grasp the connector, not the wires

### Primary Interlock Switch Test

When the door is opened slowly, an audible click should be heard. If the latch does not activate the switch when the door is closed, the switch should be adjusted in accordance with the adjustment procedure.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads from switch.
4. Perform a continuity test by connecting one meter lead on COM terminal and the other meter lead on NO terminal.

#### Readings should be as follows:

Door closed ..... 0 ohms  
Door opened ..... Infinite ohms

**NOTE:** When replacing component use identical replacement part.

**NOTE:** After repairing the door or the interlock system, it is necessary to do a continuity test before operating the oven.

### Secondary Interlock Switch Test

When the door is opened slowly, an audible click should be heard. If the latch does not activate the switch when the door is closed, the switch should be adjusted in accordance with the adjustment procedure.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads from switch.
4. Perform a continuity test by connecting one meter lead on COM terminal and the other meter lead on NO terminal.

#### Readings should be as follows:

Door closed ..... 0 ohms  
Door opened ..... Infinite ohms

**NOTE:** When replacing component use identical replacement part.

**NOTE:** After repairing the door or the interlock system, it is necessary to do a continuity test before operating the oven.

### Interlock Monitor Switch Test

When the door is opened slowly, an audible click should be heard. If the latch does not activate the switch when the door is closed, the switch should be adjusted in accordance with the adjustment procedure.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads from switch.
4. Perform a continuity test by connecting one meter lead on COM terminal and the other meter lead on NC terminal.

#### Readings should be as follows:

Door closed ..... Infinite ohms  
Door opened ..... 0 ohms

**NOTE:** When replacing component use identical replacement part.

**NOTE:** After repairing the door or the interlock system, it is necessary to do a continuity test before operating the oven.

### Magnetron

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads to magnetron.
4. Measure the resistance across filament terminals of the magnetron.  
Reading should be less than 1 ohm.
5. Measure the resistance from each filament terminal to ground. Reading should indicate infinite ohms.

**NOTE:** Any other readings than what should be indicated, magnetron needs to be replaced.

**NOTE:** Replace the magnetron, if magnetron indications are good and all other high voltage components test good, but the unit still does not heat a load.

# Testing Procedures



## WARNING

Disconnect power before performing the following procedures unless testing requires it.

### High Voltage Transformer

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads to high voltage transformer.
4. Measure resistance of the terminals on the high voltage transformer with meter on R x 1 scale.

**Reading should be indicated as follows:**

Primary winding ..... approximately 0.3 to 0.5 ohms  
 Filament winding ....less than 0.1 ohms  
 Secondary winding . approximately 65 to 120 ohms

5. Measure resistance of the terminals on the high voltage transformer with meter on high scale.

**Reading should be indicated as follows:**

Primary winding to ground ..... Infinite ohms  
 Filament winding to ground ..... Infinite ohms

### High Voltage Capacitor

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads to high voltage capacitor.
4. Measure resistance of capacitor from terminal to terminal.

- **Normal reading**—momentarily indicates several ohms and then gradually returns to infinite ohms.
- **Abnormal reading**—Indicates continuity or infinite ohms.

5. Measure resistance of capacitor from terminal to case.

- **Normal reading**—Indicates infinite ohms
- **Abnormal reading**—Indicates continuity

### High Voltage Diode

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire leads to high voltage diode.
4. Measure resistance of diode in forward bias.

- **Normal reading**—Indicates continuity
- **Abnormal reading**—Indicates infinite ohms

5. Measure resistance of diode in reverse bias.

- **Normal reading**—Indicates infinite ohms
- **Abnormal reading**—Indicates continuity

### Humidity Sensor

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire terminal plug from control board (CN5).
4. Measure the following terminals with meter on R x 1000 scale.

**Normal indication:**

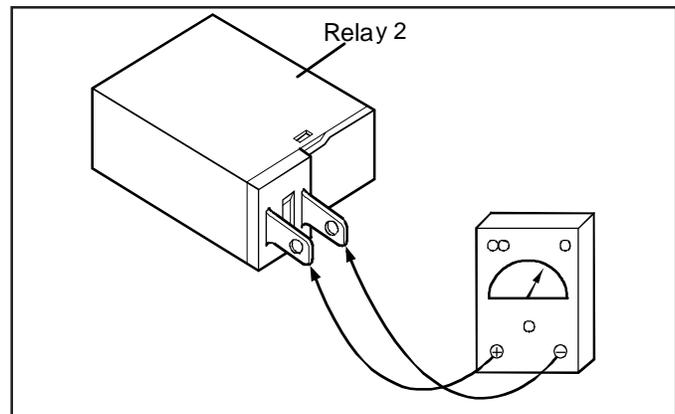
Terminal 1 to terminal 2 ..... 4.5K to 6.2K ohms  
 Terminal 2 to terminal 3 ..... 2.0K to 3.5K ohms  
 Terminal 1 to terminal 3 ..... 2.0K to 3.5K ohms

**Abnormal indication:**

Infinite or several ohms

### Relay

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. Disconnect wire terminal plug from control board (RY2), and operate the unit.



Power Level	Cycles On for:	Cycles Off for:
1	4 seconds	18 seconds
2	6 seconds	16 seconds
3	8 seconds	14 seconds
4	10 seconds	12 seconds
5	12 seconds	10 seconds
6	14 seconds	8 seconds
7	16 seconds	6 seconds
8	18 seconds	4 seconds
9	20 seconds	2 seconds
10	22 seconds	0 seconds

# Testing Procedures



## WARNING

Disconnect power before performing the following procedures unless testing requires it.

### Control Key Panel

1. Disconnect power to oven and remove control panel, (see "Control Panel" section in Disassembly Procedure).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section in Disassembly Procedure).
3. 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 holds the lock ribbon in place.

**NOTE:** Circuit board has numbers 1 and 13 on it for identification.

### MVH140 models

<u>Pad</u>	<u>Conn.</u>	<u>Pad</u>	<u>Conn.</u>
Vent HI/LOW/OFF	1 - 8	1	7 - 9
Light HI/LOW/OFF	1 - 9	2	7 - 10
Help	2 - 8	3	7 - 11
Control Setup	2 - 9	4	7 - 12
Clock	2 - 10	5	6 - 8
Stop Clear	2 - 12	6	6 - 9
Auto Cook	3 - 8	7	6 - 10
Auto Reheat	3 - 9	8	6 - 11
Minute	3 - 10	9	6 - 12
Start	3 - 12	0	7 - 8
Popcorn	4 - 8		
Potato	4 - 9		
Program	5 - 8		
Auto Defrost	5 - 9		
Kitchen Timer	5 - 10		
Power Level	5 - 11		
Hold Warm	5 - 12		

### MVH240 models

<u>Pad</u>	<u>Conn.</u>	<u>Pad</u>	<u>Conn.</u>
Vent HI/LOW/OFF	1 - 8	5	6 - 8
Light HI/LOW/OFF	1 - 9	6	6 - 9
Less	1 - 10	7	6 - 10
Favorite Recipe	1 - 11	8	6 - 11
Turn Table ON/OFF	1 - 12	9	6 - 12
More	1 - 13	0	7 - 8
Help	2 - 8	1	7 - 9
Control Setup	2 - 9	2	7 - 10
Clock	2 - 10	3	7 - 11
Stop Clear	2 - 12	4	7 - 12
Auto Cook	3 - 8		
Auto Reheat	3 - 9		
Minute	3 - 10		
Start	3 - 12		
Popcorn	4 - 8		
Potato	4 - 9		
Beverage	4 - 10		
Program	5 - 8		
Auto Defrost	5 - 9		
Kitchen Timer	5 - 10		
Power Level	5 - 11		
Hold Warm	5 - 12		

### MVH340 models

<u>Pad</u>	<u>Conn.</u>	<u>Pad</u>	<u>Conn.</u>
Vent HI/LOW/OFF	1 - 8	5	6 - 8
Light HI/LOW/OFF	1 - 9	6	6 - 9
Less	1 - 10	7	6 - 10
Favorite Recipe	1 - 11	8	6 - 11
Turn Table ON/OFF	1 - 12	9	6 - 12
More	1 - 13	0	7 - 8
Help	2 - 8	1	7 - 9
Control Setup	2 - 9	2	7 - 10
Clock	2 - 10	3	7 - 11
Stop Clear	2 - 12	4	7 - 12
Sensor Pizza	2 - 13		
Minute	3 - 10		
Start	3 - 12		
Sensor Potato	3 - 13		
Sensor Popcorn	4 - 13		
Program	5 - 8		
Auto Defrost	5 - 9		
Kitchen Timer	5 - 10		
Power Level	5 - 11		
Hold Warm	5 - 12		
Sensor Vegetable	5 - 13		
Sensor Reheat	6 - 13		
Sensor Cook	7 - 13		

# Testing Procedures



## WARNING

Disconnect power before performing the following procedures unless testing requires it.

### Circuit Board

Following symptoms indicate a failed circuit board.

- High voltage systems, interlock switches, door sensing and relay indicate good, but start function fails to operate.
- Continuously operating with a normal relay.
- Proper temperature measurement is not obtained.
- Buzzer does not sound or sounds continuous.
- Segments of one or more digits do not light, or continue to light or segments light when they should not.
- Wrong figures appear in the display.
- All segments light up.
- Some of the indicators light up or flicker.
- Clock does not keep time properly.

### Fuse



## 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.

### Problem:

- Fuse blows immediately after oven door is opened or closed.
  - Improper operation of primary, secondary and/or monitor switches
- Fuse blows when oven door is closed and START pad is pressed.
  - Malfunction of the high voltage transformer, high voltage capacitor including the diode, magnetron, blower motor or circuit board.

### Oven Thermostat

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove outer case, (see "Outer Case" section).
4. Remove screws securing air duct to oven cavity.
5. Disconnect wires from oven thermostat.
6. Following is temperature setting for the thermostat.

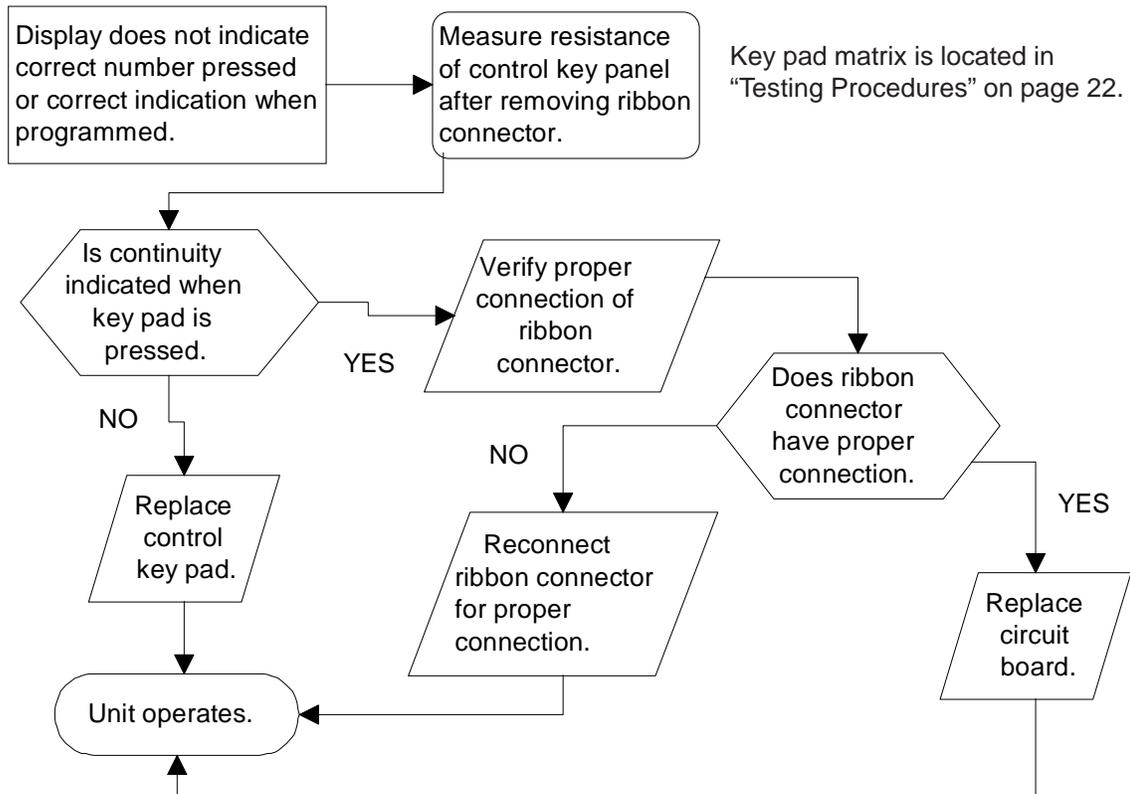
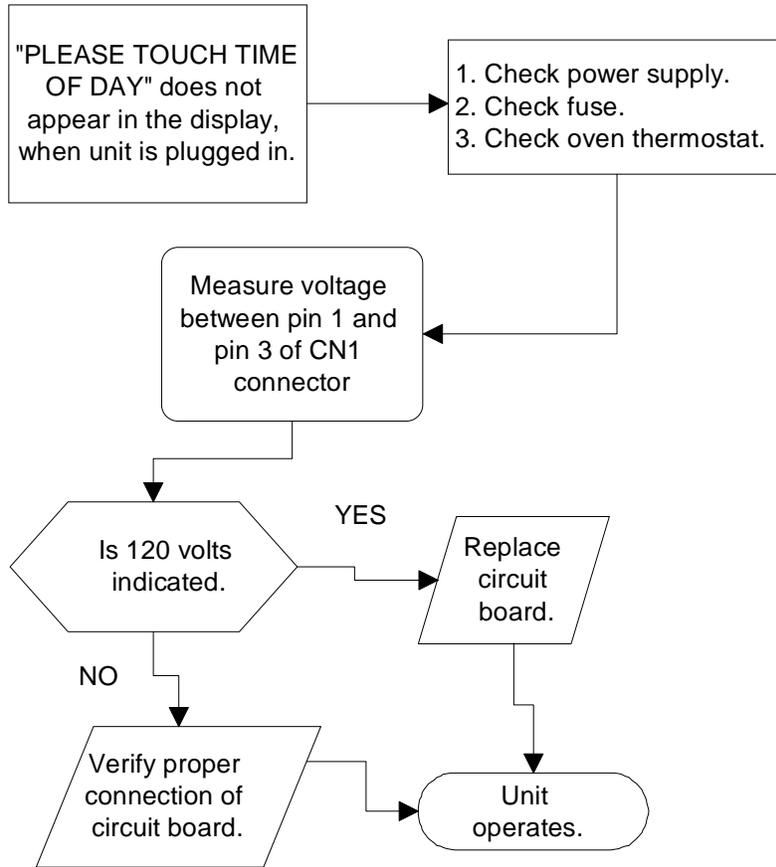
Fahrenheit	Centigrade	Cycle
230°F	110°C	OFF
32°F	0°C	ON

### Base Thermostat

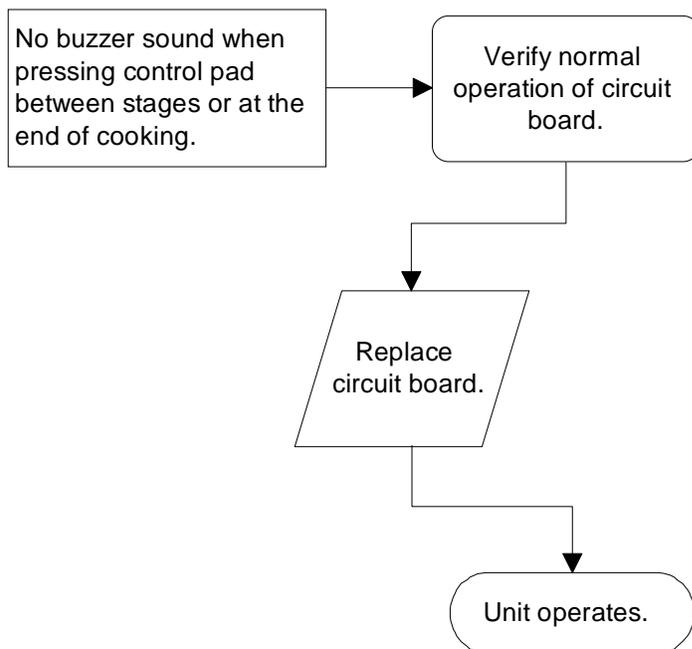
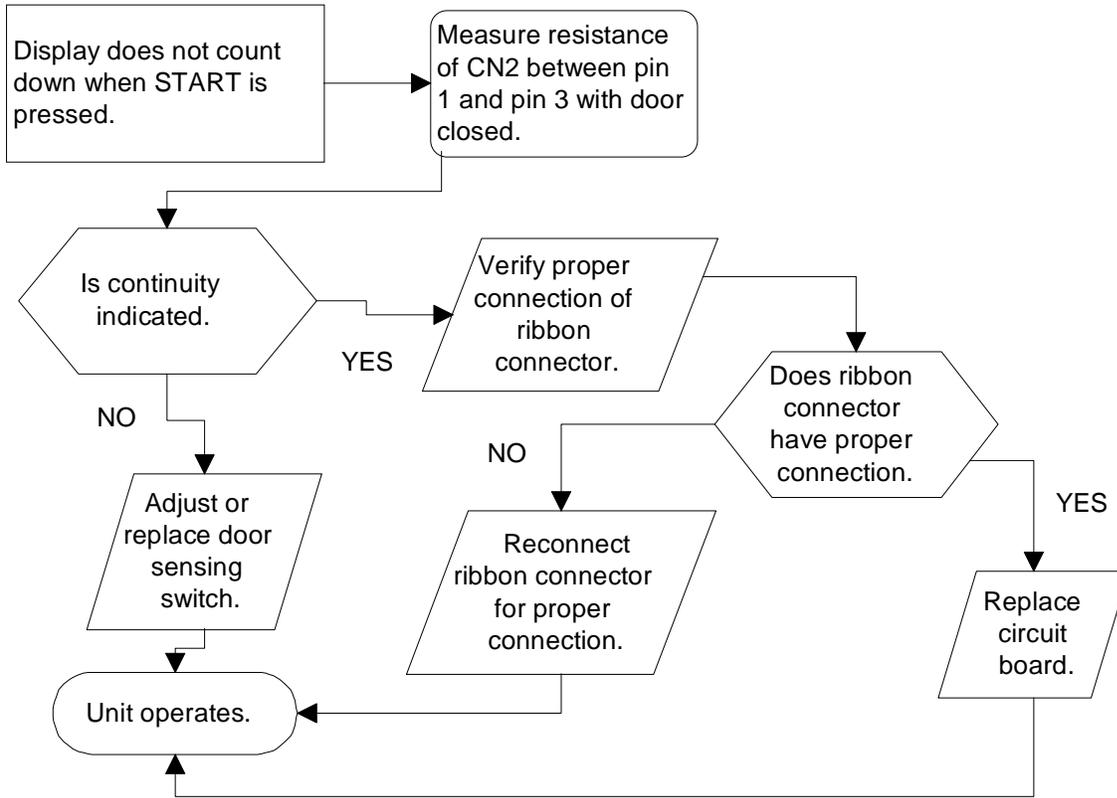
1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove screws securing thermostat to base plate and disconnect wires from thermostat.
4. Following is temperature setting for the thermostat.

Fahrenheit	Centigrade	Cycle
104°F	40°C	OFF
133°F	56°C	ON

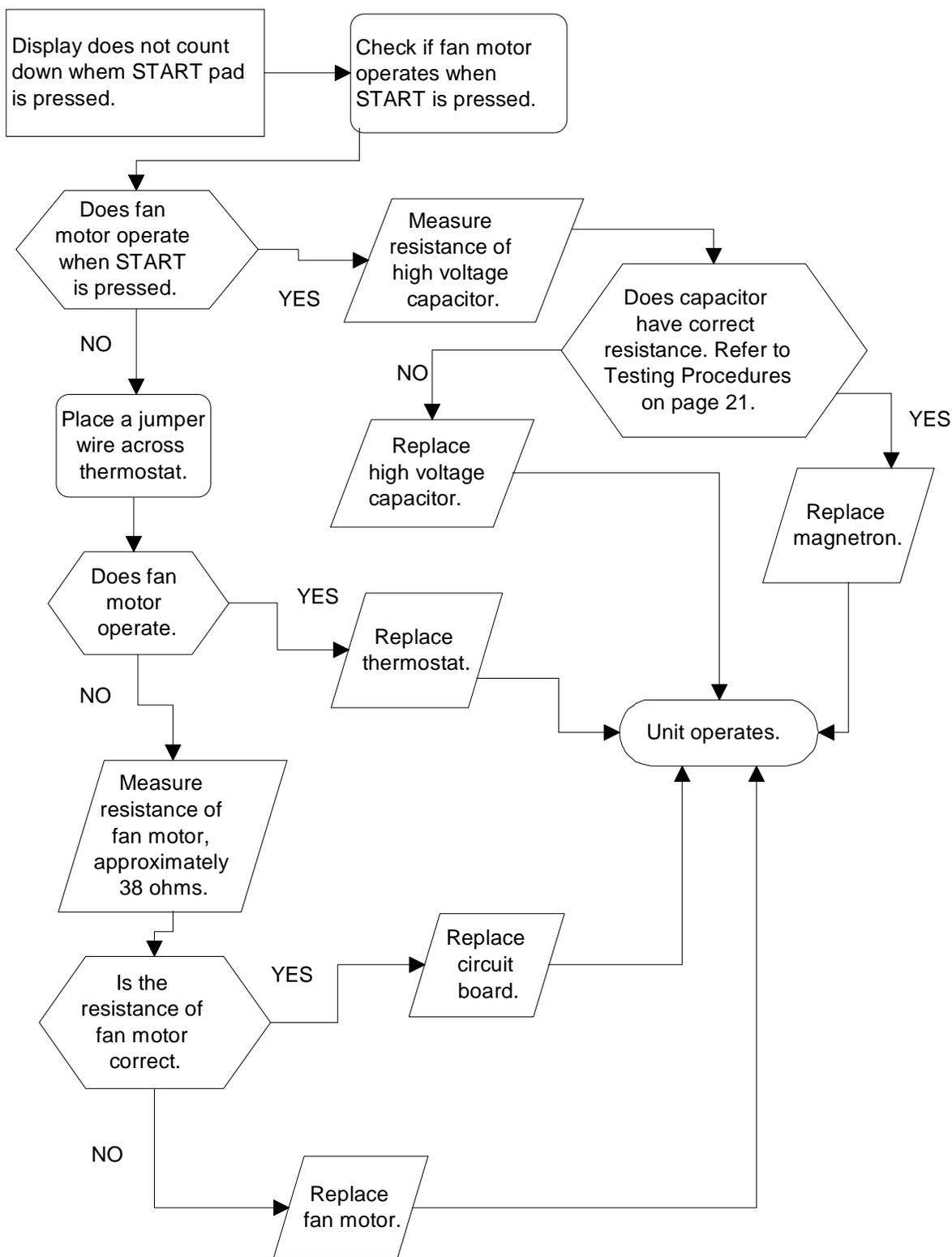
# Troubleshooting Procedures



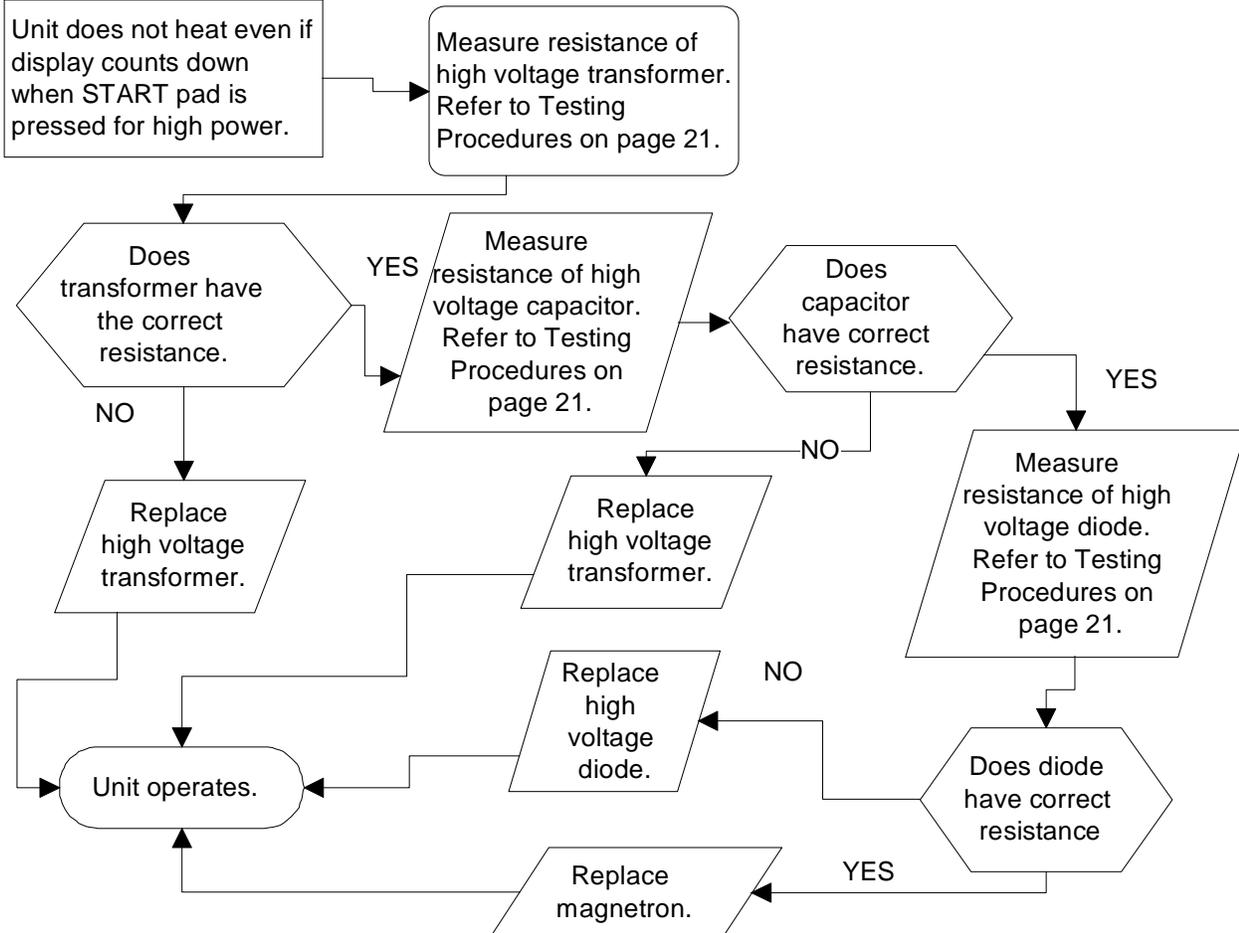
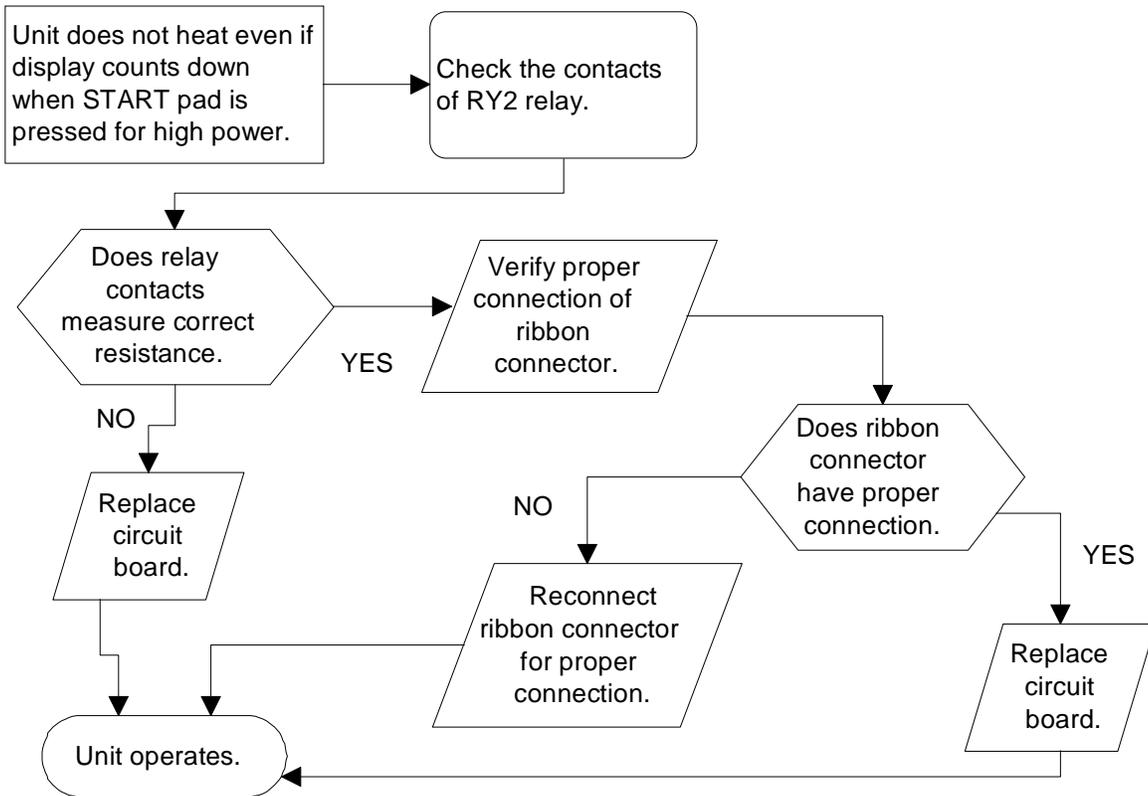
# Troubleshooting Procedures



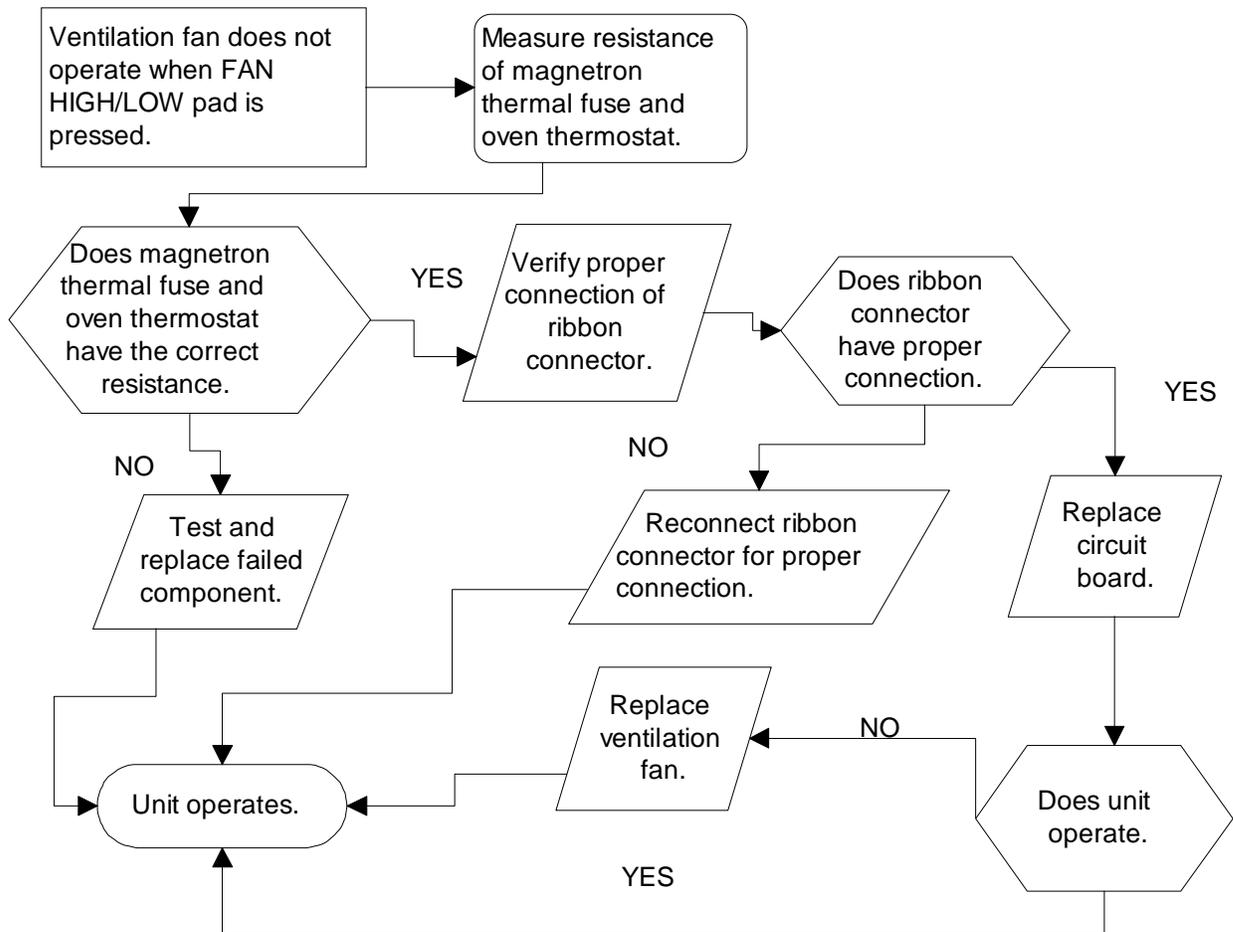
# Troubleshooting Procedures



# Troubleshooting Procedures



# Troubleshooting Procedures



# 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 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.

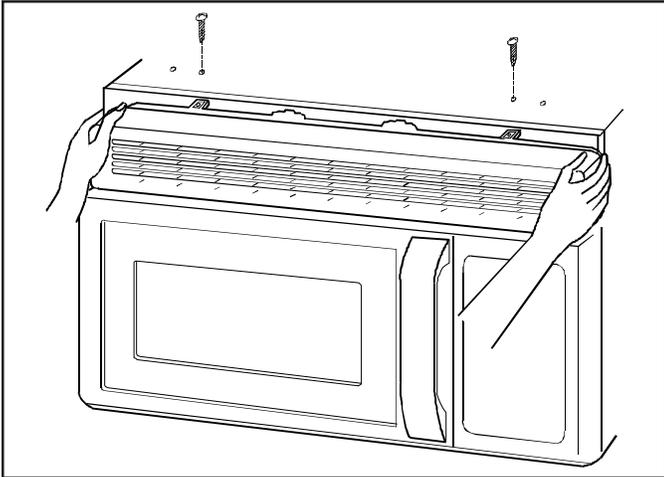
Before touching any oven components or wiring, always unplug the oven from its power source and discharge capacitor.

## **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**

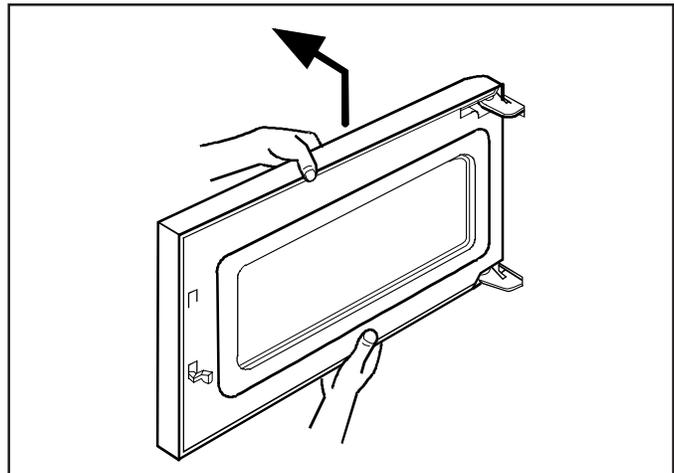
A microwave leakage test must be performed anytime a door assembly is removed, replaced, disassembled or adjusted for any reason.

## **Door Removal**

1. Disconnect power to oven and remove grille, (see "Grille" section).
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.

3. To place door back on unit, place bottom pin into slot 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").
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 handle and door frame to door panel.
5. Remove door frame by releasing tabs around entire door panel.
6. Remove door handle by placing a hand on door panel next to the top of the door handle. Twist door panel towards the inside of door and pulling on the top portion of the door handle in a quick jerking motion.

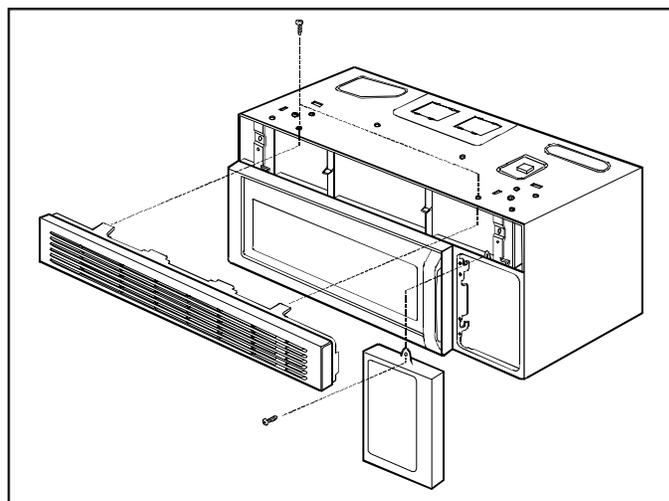
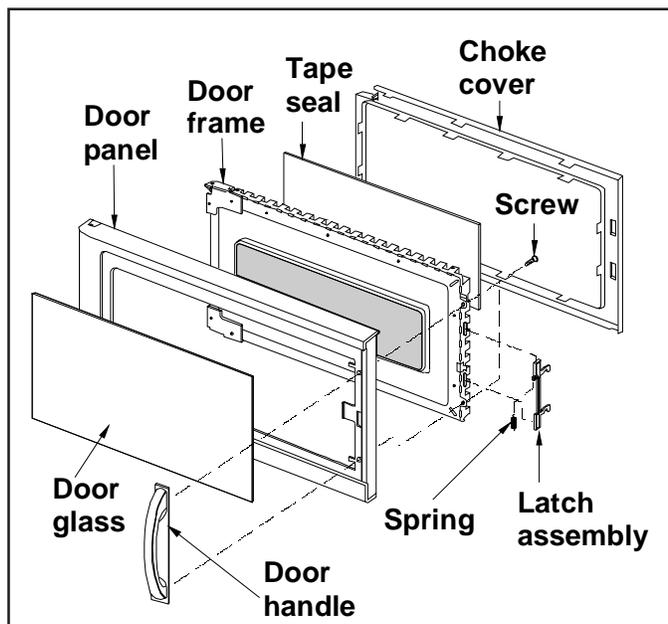
# Disassembly Procedures

## **WARNING**

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

**NOTE:** When replacing door handle, the bottom portion of the door handle must be inserted first.

7. 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.



## **P.C. Board**

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

CN1	Main power connector
CN2	Primary switch
CN5	Humidity sensor (some models)
FPC (S1)	Ribbon connector for key panel
Relay 2	Relay connector

## **CAUTION**

Once outer door trim panel is removed the glass panel is loose.

## **CAUTION**

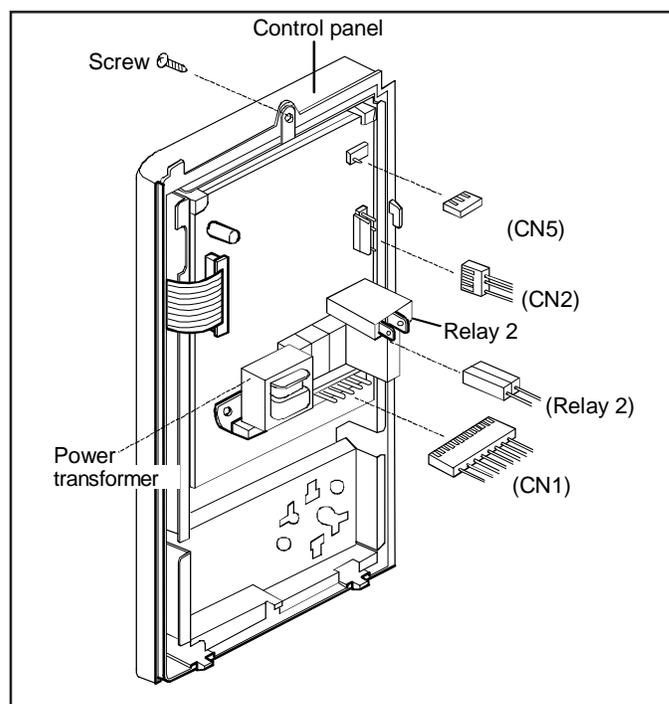
A microwave leakage test must be performed anytime a door assembly is removed, replaced, disassembly, or adjusted for any reason.

## **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.



# 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.

### P.C. Board Removal

1. Disconnect oven power and remove grille, (see "Grille" section).
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.

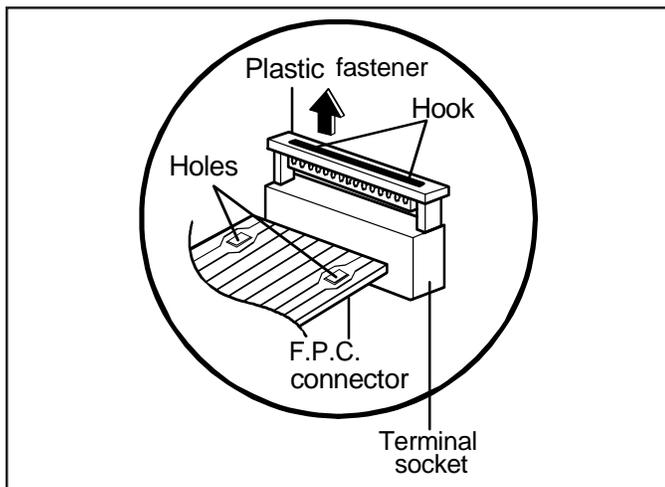
5. Disconnect and mark the wire connectors from p.c. board.
6. Remove screws securing p.c. board to control panel assembly.
7. Reassemble in reverse order.

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

### 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

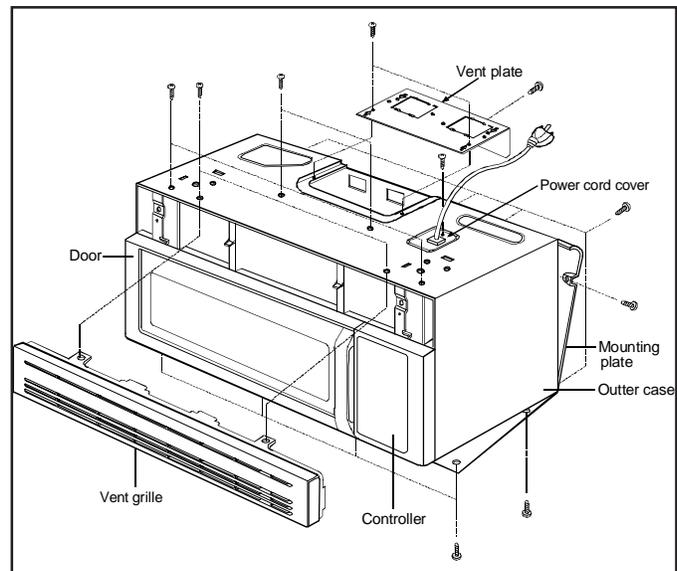
1. Disconnect power to oven.
2. Remove control panel, (see "Control Panel" section).
3. Discharge high voltage capacitor, (see "High Voltage capacitor section).
4. Disconnect ribbon connector by sliding top part of connector upward. Once in released position remove ribbon from connector by sliding ribbon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

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



# Disassembly Procedures



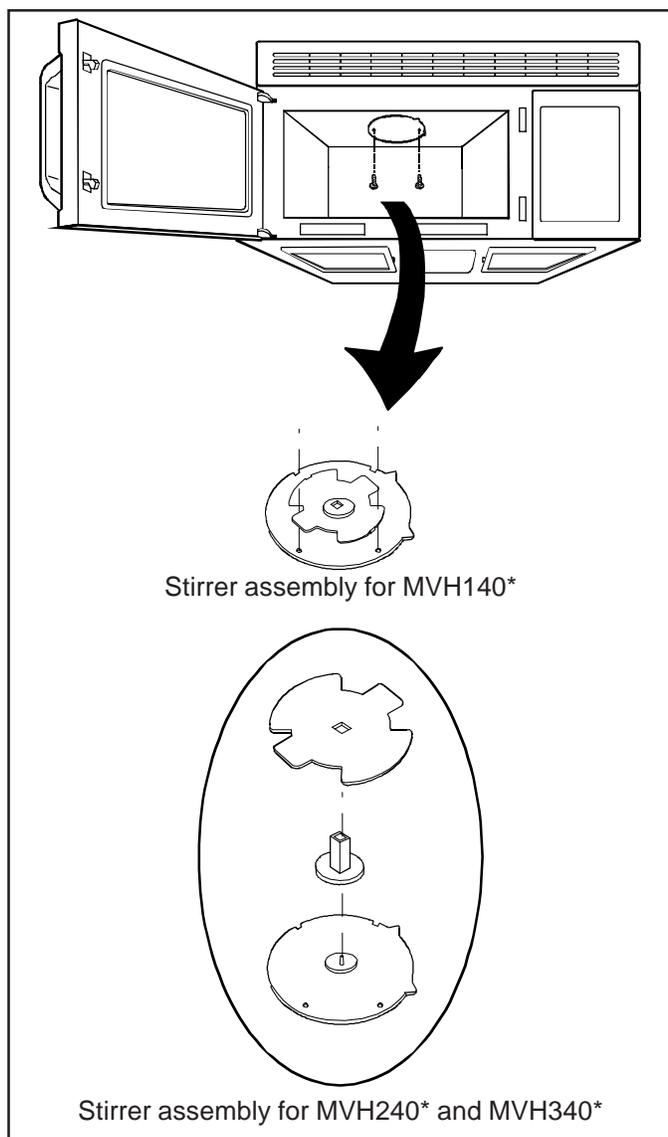
To avoid the risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

## Stirrer Assembly

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

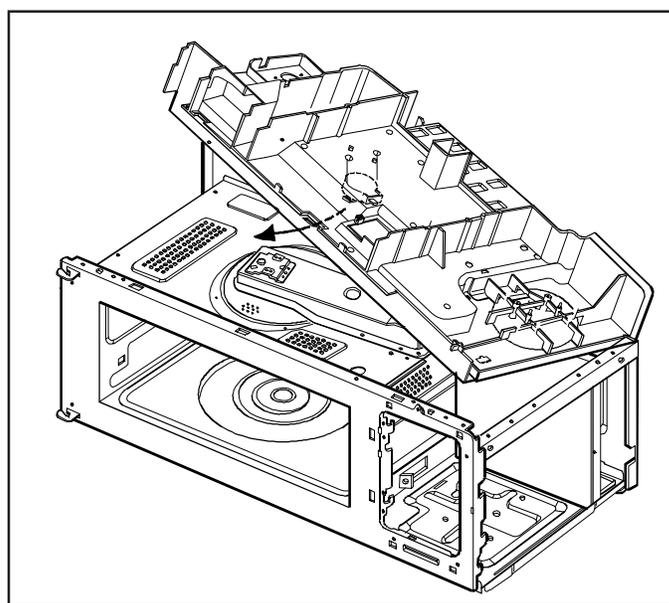
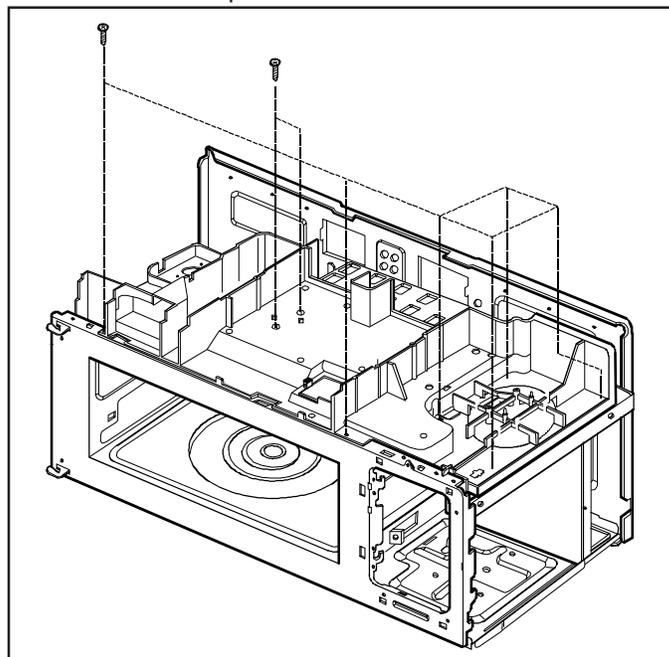
### Stirrer Blade Removal

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



## Stirrer Motor (MVH240 and MVH340)

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove outer case, (see "Outer Case" section).
4. Remove screws securing air duct to oven cavity and two screws securing stirrer motor.
5. Lift air duct and disconnect wires from stirrer motor.
6. Remove and replace stirrer motor in reverse order.



# Disassembly Procedures

## WARNING

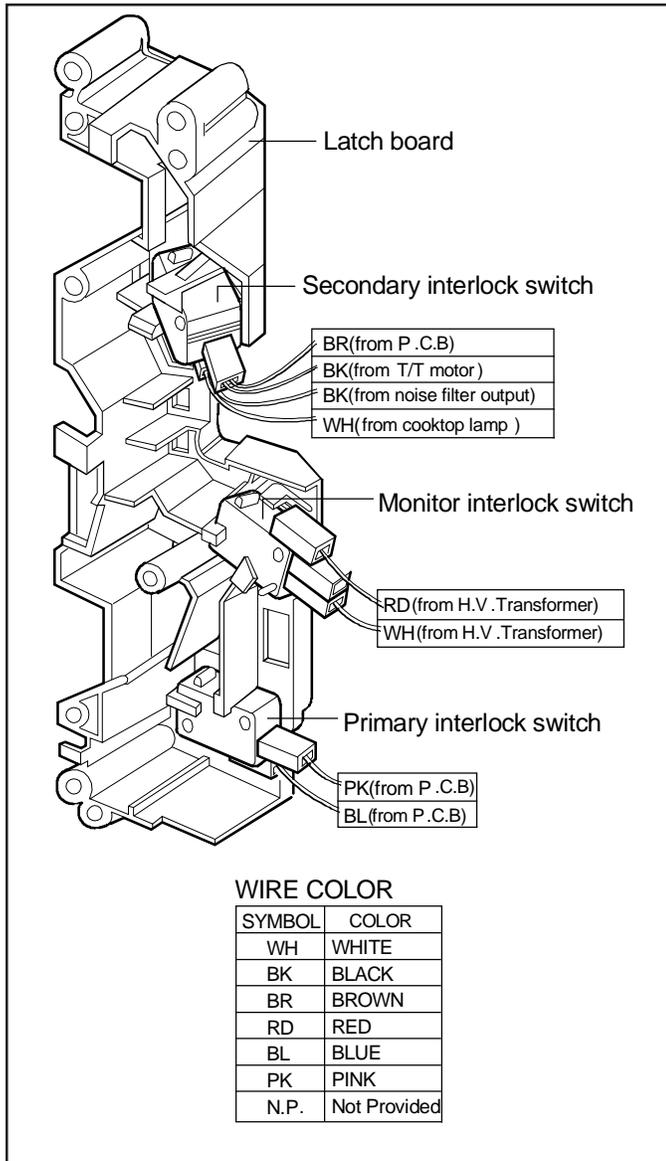
To avoid the risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

### Interlock Door Latch Switches

Primary switch is operated by bottom latch pawl.

#### Interlock Switch Removal

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
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 monitor switch, verify it is correctly connected.

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

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
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 1/6-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
  - Interlock monitor 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.
  - Interlock monitor switch
  - Secondary interlock switch
  - Primary interlock switch
8. When proper sequence of switch has been achieved, tighten the latch board securely.

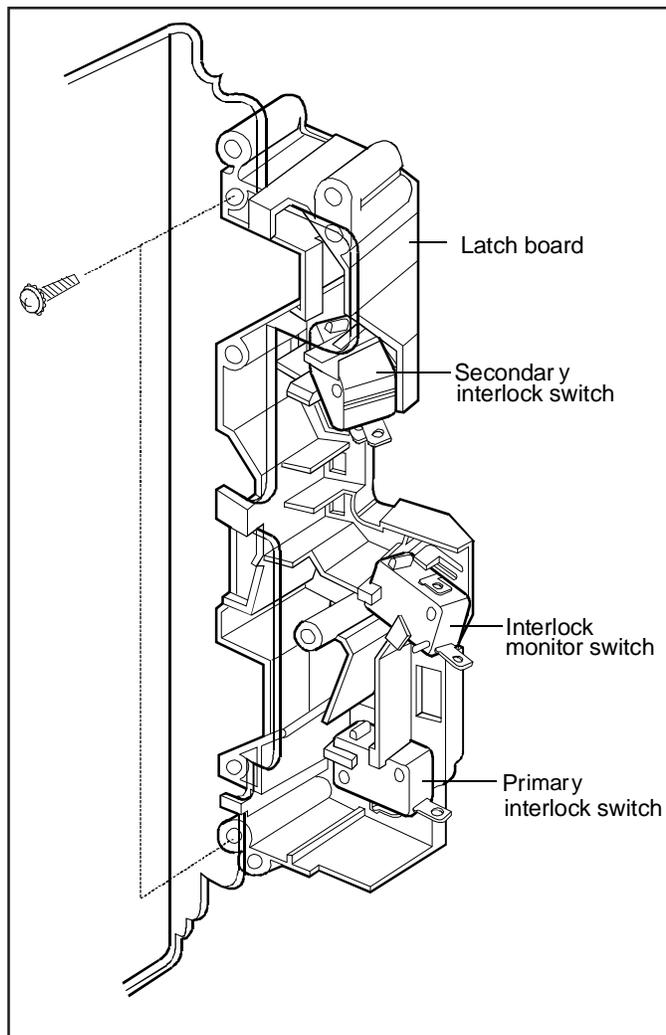
## CAUTION

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 an 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" section).
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" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
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" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Disconnect and label wire leads from transformer.
4. Remove screws securing transformer and remove out through the front.
5. Reassemble in reverse order.

## **Noise Filter Board**

Noise filter board is located behind the grille on the right side.

1. Disconnect power and remove grille, (see "Grille" section).
2. Disconnect wire terminals to the board.
3. Remove screws securing circuit board to oven chassis and remove board.
4. Reassemble in reverse order.

## **Fuse**

Fuse is located behind the grille on the right side of the noise filter board.

### **Fuse Removal**

1. Disconnect power and remove grille, (see "Grille" section).
2. Remove and replace fuse, 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.

# Disassembly Procedures

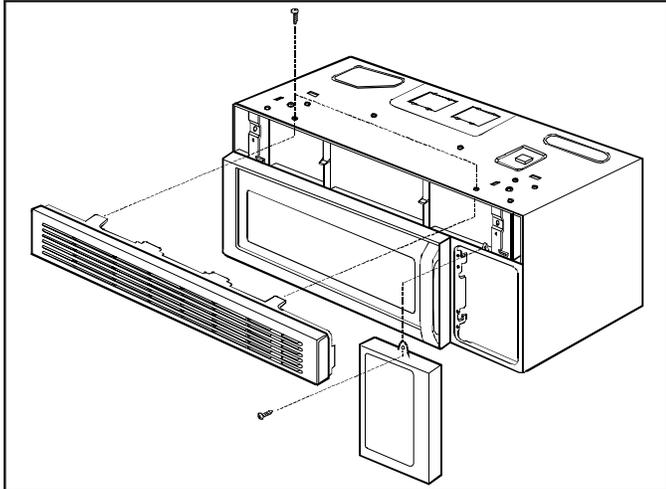
## **WARNING**

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

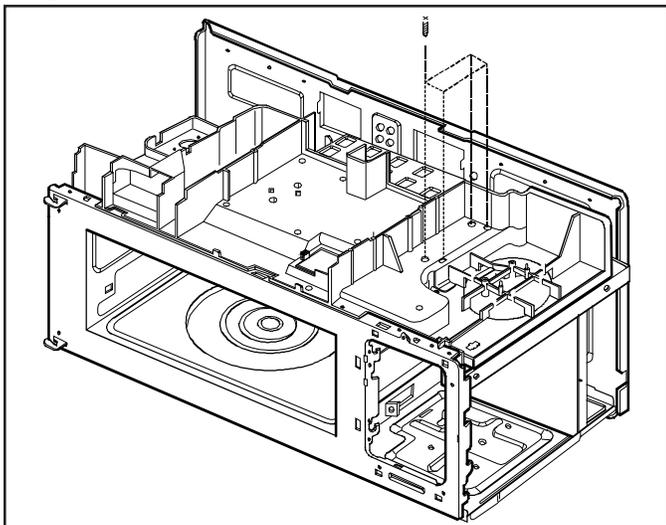
### Magnetron

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" section).
2. Remove control panel, (see "Control Panel" section).



3. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
4. Remove outer case, (see "Outer Case" section).
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.

## **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 beside the magnetron and above the high voltage transformer.

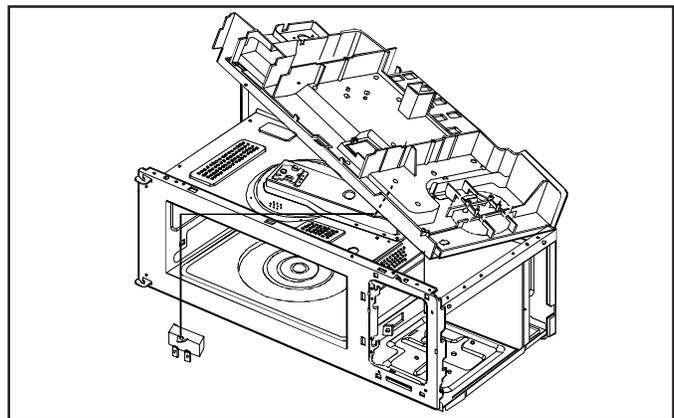
#### Magnetron Fan Removal

1. Follow steps 1 through 4 of "Magnetron" section.
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

Thermal fuse is not resettable.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove outer case, (see "Outer Case" section).
4. Remove screws securing air duct to oven cavity.
5. Lift air duct upward to gain access to magnetron thermal fuse.
6. Remove screw securing thermal fuse to air duct.
7. Replace and reassemble in reverse order.



# Disassembly Procedures



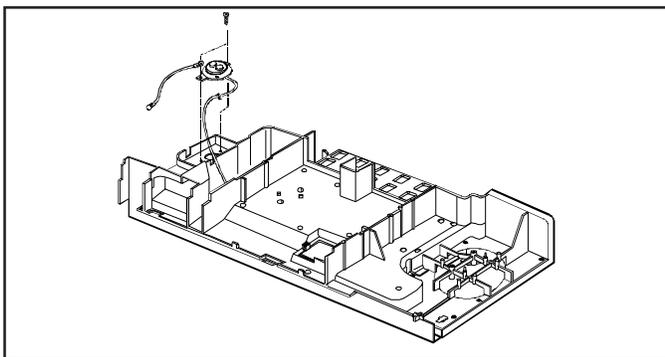
To avoid the risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

## 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" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove outer case, (see "Outer Case" section).
4. Remove screws securing sensor to air duct.
5. Disconnect wire terminal plug and replace with new sensor.
6. Reassemble in reverse order.

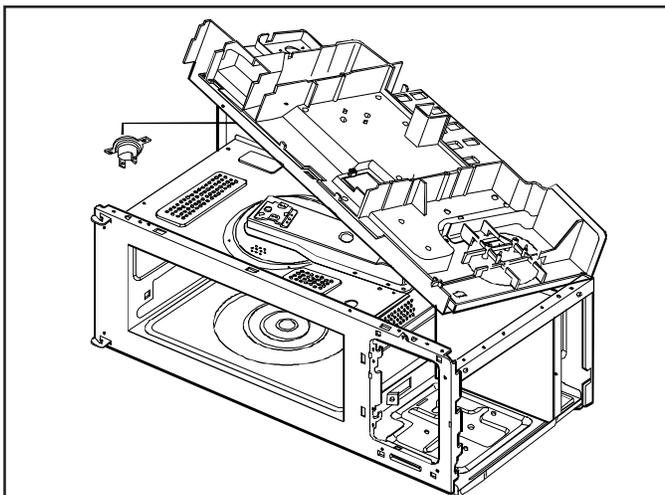


## Oven Thermostat

The oven thermostat is located under the air duct assembly.

Thermostat is a resettable thermostat.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove outer case, (see "Outer Case" section).
4. Remove screws securing air duct to oven cavity.
5. Disconnect wires from oven thermostat and replace thermostat.
6. Reassemble in reverse order.

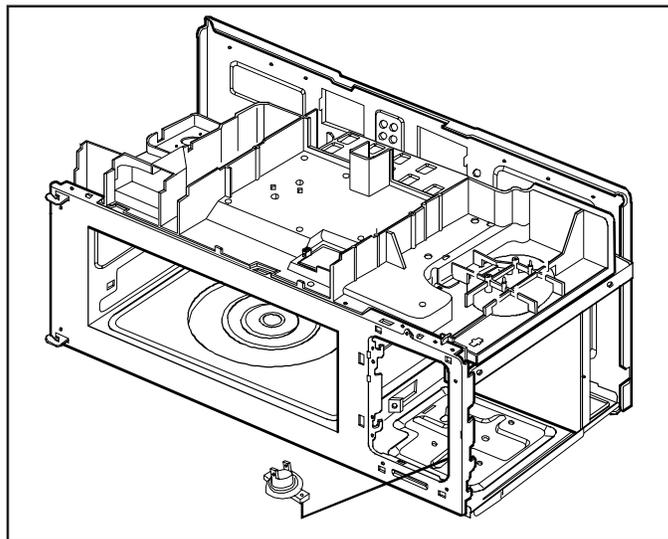


## Base Thermostat

The base thermostat is located behind the control panel assembly.

Thermostat is a resettable thermostat.

1. Disconnect power to oven and remove control panel, (see "Control Panel" section).
2. Discharge high voltage capacitor, (see "High Voltage Capacitor" section).
3. Remove screws securing thermostat to base plate and disconnect wires from thermostat.
4. Reassemble in reverse order.



## Light Socket

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

# Disassembly Procedures

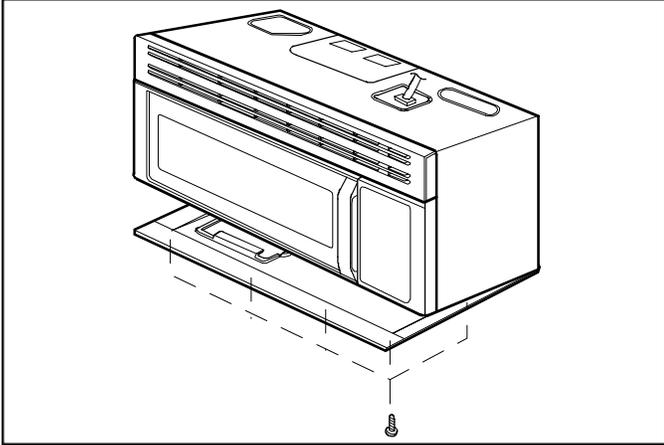


## WARNING

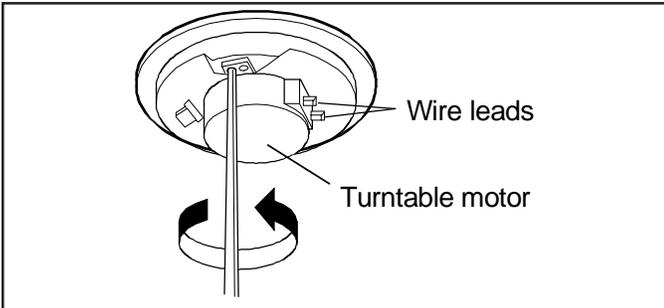
To avoid the risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

### 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.



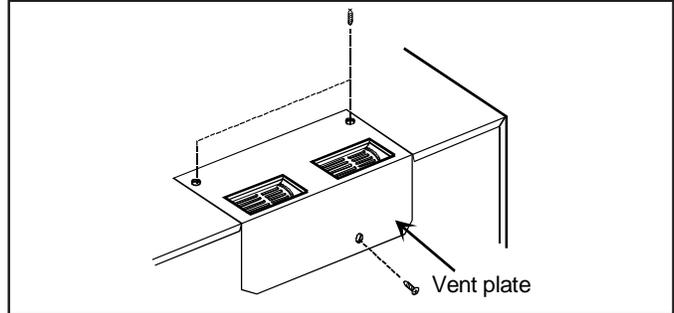
5. Remove screws securing turntable to the oven cavity.
6. Replace and reassemble in reverse order.

### Vent Blower

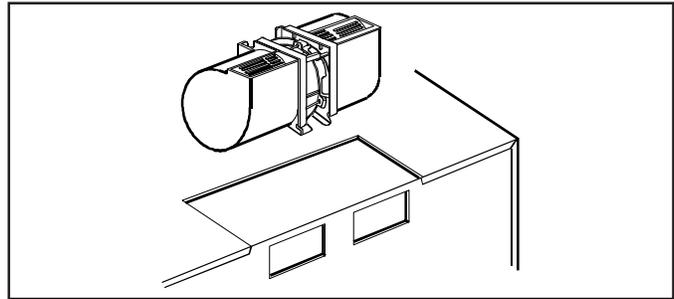
Vent blower is a two speed (HI-LOW) capacitor run blower assembly located on top of the oven. The blower is operated by voltage relays located on the p.c. board.

#### Vent Exhaust Blower Removal

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



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



6. Reassemble in reverse order.

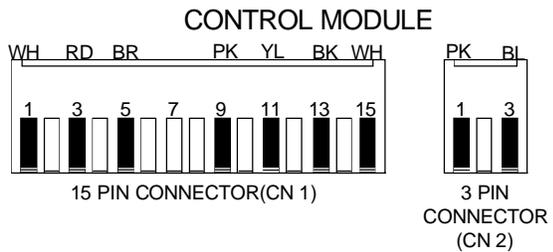
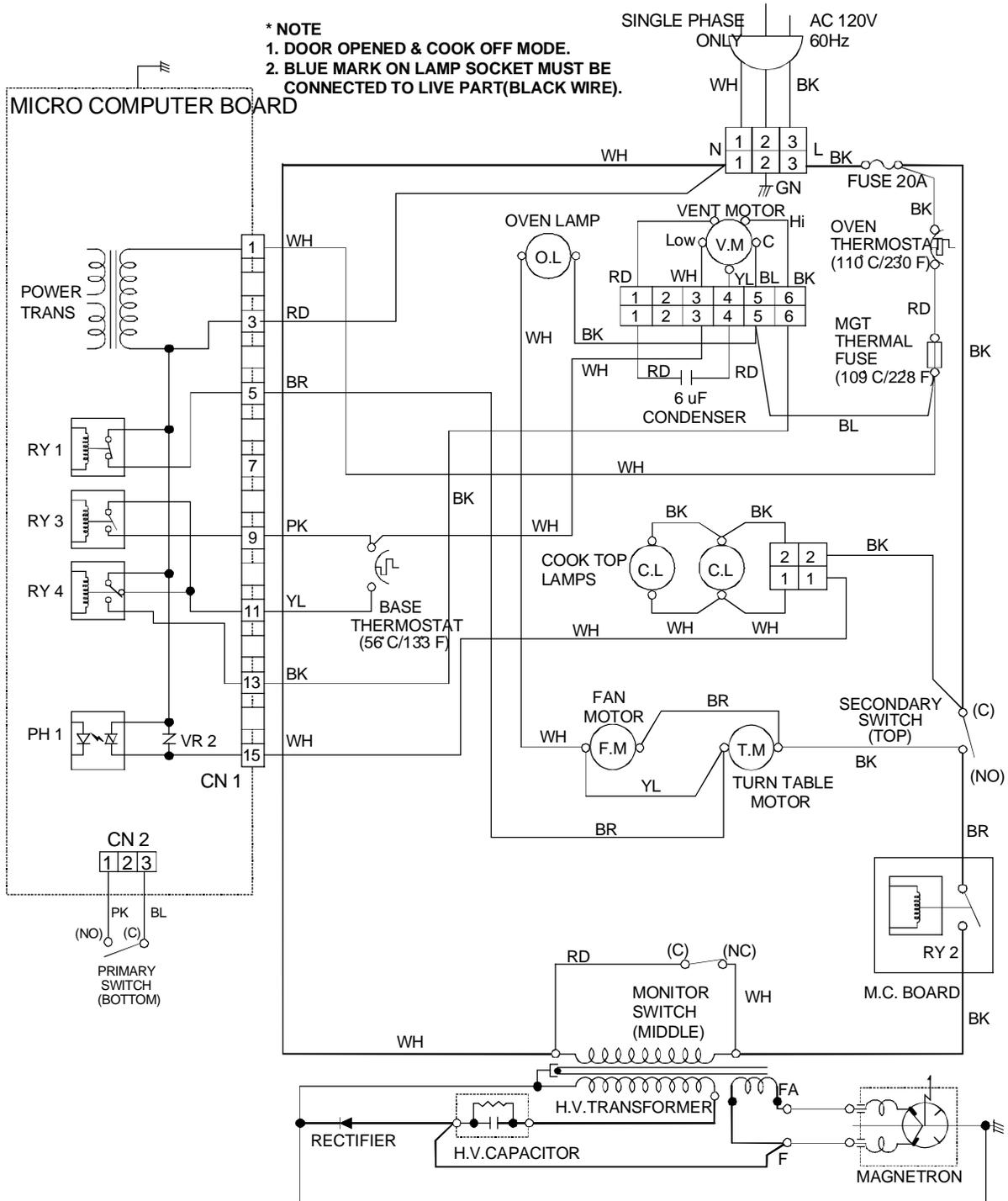
**NOTE:** Place blower assembly wires in slotted area to avoid pinching of wires.

# Wiring Diagram and Schematic

**WARNING**

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

- \* NOTE  
 1. DOOR OPENED & COOK OFF MODE.  
 2. BLUE MARK ON LAMP SOCKET MUST BE CONNECTED TO LIVE PART(BLACK WIRE).



\* WIRE COLORS

SYMBOL	COLOR
WH	WHITE
BK	BLACK
RD	RED
YL	YELLOW
PK	PINK
BL	BLUE
BR	BROWN
GN	GREEN

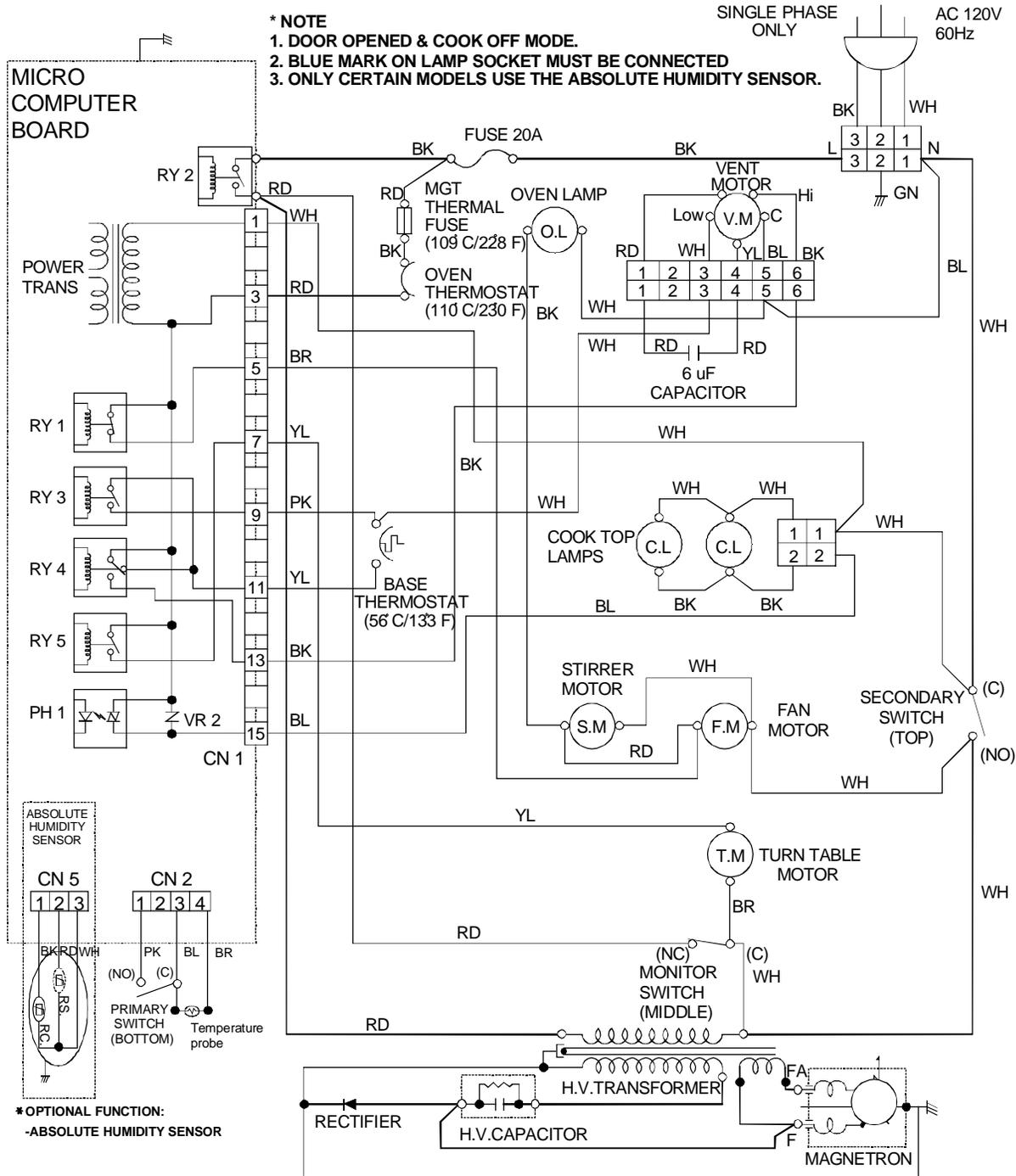
MVH140

# Wiring Diagram and Schematic

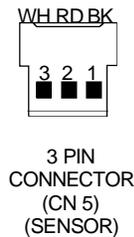
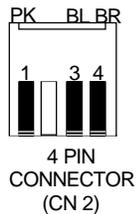
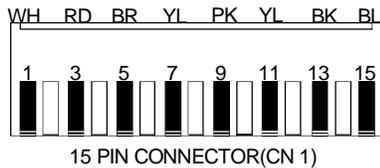


**WARNING**

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



## CONTROL MODULE



**\* WIRE COLORS**

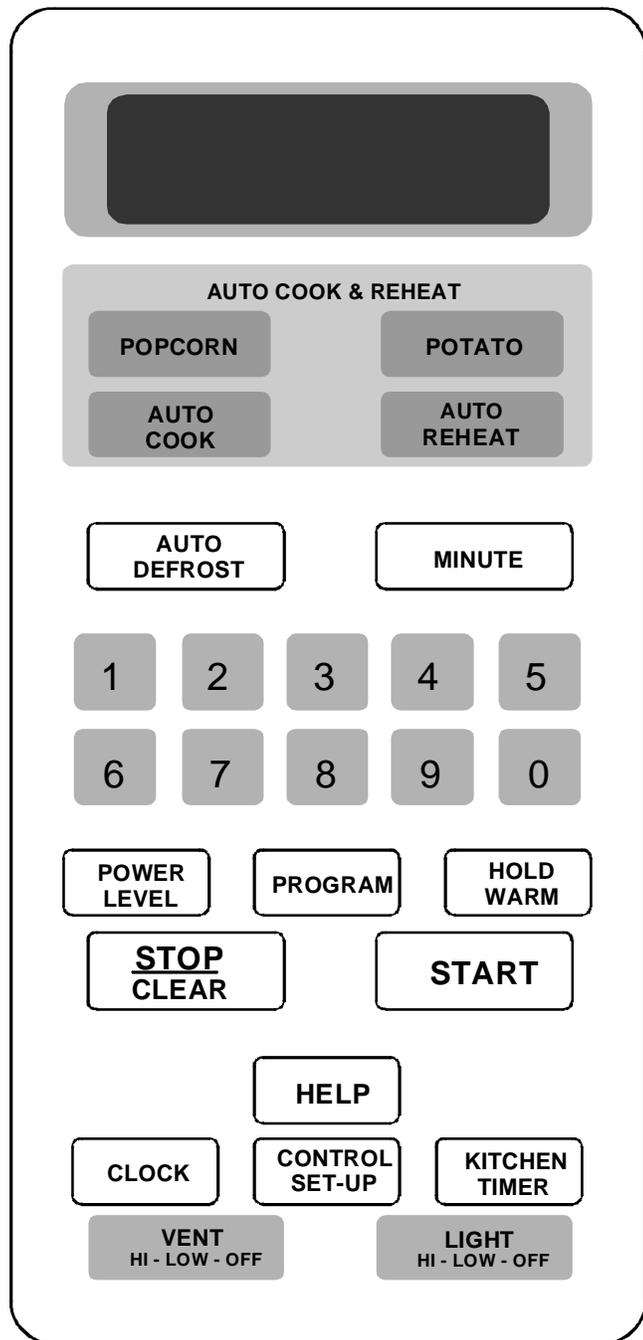
SYMBOL	COLOR
WH	WHITE
BK	BLACK
RD	RED
YL	YELLOW
PK	PINK
BL	BLUE
BR	BROWN
GN	GREEN

MVH240 / 340

# Appendix A

# Programming Instructions for MVH140

## Control Panel



- DISPLAY:** The display includes a clock and indicators to tell you time of day, cooking time settings, and cooking functions selected.
- POPCORN:** Touch this pad when popping popcorn in your microwave oven.
- POTATO:** Touch this pad to cook from 1 to 4 potatoes.
- AUTO COOK:** Touch this pad to cook vegetables, rice, casseroles.
- AUTO REHEAT:** Touch this pad to reheat pizza, soup/sauce, casseroles, roll/muffin.
- AUTO DEFROST:** Meat, poultry, fish. Touch on pad to select food type and defrost food by weight.
- MINUTE:** Touch this pad to cook for one minute at 100% power level.
- NUMBER:** Touch number pads to enter cooking time, power level, quantities, or weights.
- POWER LEVEL:** Touch this pad to select a cooking power level.
- PROGRAM:** Touch this pad to program multi cooking cycles.
- HOLD WARM:** Touch this pad to keep hot, cooked foods warm in your microwave oven for up to 99 minutes 99 seconds.
- STOP/CLEAR:** Touch this pad to stop the oven or to clear all entries.
- START:** Touch this pad to start a function. If you open the door after oven begins to cook, touch START again.
- HELP:** Touch this pad to learn how to use each oven function.
- CLOCK:** Touch this pad to enter the time of day.
- CONTROL SET-UP:** Touch this pad to change the oven's default settings for sound, clock, display scroll speed, defrost weight, and demo mode operations.
- KITCHEN TIMER:** Touch this pad to set the kitchen timer.
- VENT HI-LOW-OFF:** Touch this pad to turn the fan on or off.
- LIGHT HI-LOW-OFF:** Touch this pad to turn on the cooktop/countertop light.

# Programming Instructions for MVH140

This section discusses the concepts behind microwave cooking and introduces the basic need to operate the microwave oven. Please read this information before using.

## Help

Displays feature information and helpful hints. Press HELP, then select a key pad.

1. Press HELP pad.
2. Press the key pad that needs an explanation. Information will scroll across the display explaining the key pad function.

## Clock

This oven includes a 24-hour clock.

1. Press CLOCK pad. (Press once for AM, twice for PM.)
2. Enter the time by using the numbered key pad.
3. Press CLOCK pad to activate.

## Kitchen Timer

Microwave oven can be used as a timer up to 99 minutes, 99 seconds.

1. Press KITCHEN TIMER pad.
2. Enter the time by using the numbered key pad.
3. Press START pad. When the time is over, one long beep will sound and END will appear in the display.

## Control Set-Up

The following default values can be changed; beep sound, clock, display speed, defrost weight, and demo mode operations. See following chart for more information.

Number	Function	Number	Result
1	Beep ON/OFF control	1	Sound ON
		2	Sound OFF
2	Clock display control	1	Clock ON
		2	Clock OFF
3	Display	1	Slow speed
		2	Normal speed
		3	Fast speed
4	Defrost weight mode select	1	Lbs.
		2	Kg.
5	Demo mode select	1	Demo ON
		2	Demo OFF

1. Press CONTROL SET-UP pad.
2. Press the associated number that corresponds with the function that needs changed from the chart above.
3. Press the second number that will change the result of the function.

## Vent HI-LOW-OFF

The vent moves steam and other vapors from the surface cooking area.

- Press VENT once for HI fan speed, twice for LOW fan speed, or three times to turn the fan off.

**NOTE:** If the oven temperature gets too hot, the vent hood fan will automatically turn on at the LOW setting cooling the oven. Fan may stay on up to one hour to cool the oven.

## Light HI-LOW-OFF

- Press LIGHT once for bright light, twice for night light, or three times to turn the light off.

## Child Lock

Control panel can be locked out to prevent the microwave from being accidentally started or used by children. Child lock feature is also useful when cleaning the control panel to prevent any key pads from being activated.

1. Press STOP/CLEAR pad.
2. Press and hold the number 0 for approximately four seconds. LOCKED will appear in the display and two beeps will sound.
3. To reactivate the key pad, press and hold the number 0 for approximately four seconds. LOCKED will disappear from the display and two beeps will sound.

## Minute

Allows the microwave to cook 1 minute at 100% power by simply touching the "MINUTE" pad.

**NOTE:** Maximum time is 99 minutes.

- Press the MINUTE pad to activate one minute for each time the pad is pressed.

# Programming Instructions for MVH140

## Hold Warm

Allows cooked food to stay warm in the microwave oven for up to 99 minutes and 99 seconds. HOLD WARM can also be used by itself or to follow a cooking cycle automatically.

### NOTES:

- HOLD WARM operates for up to 99 minutes and 99 seconds.
- Cooked food should be covered during HOLD WARM.
- Pastry items (pies, turnovers, etc.) should be uncovered during HOLD WARM.
- Complete meals on a dinner plate could be covered during HOLD WARM.

### To make HOLD WARM automatically follow another cycle:

1. While programming the cooking instructions, press HOLD WARM pad before pressing START pad.
2. When the last cooking cycle is over, two tones will sound and "WARM" will appear in the display.
3. HOLD WARM can be set to follow AUTO DEFROST, or multi-cycle cooking.

## Cooking at High Cook Power

1. Enter the amount of cooking time desired.
2. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking at Lower Power Levels

Cooking with HIGH power level does not always give the best results with foods that is needed for slower cooking, such as roasts, baked goods, or custards. This oven has 10 power settings in addition to HIGH.

1. Enter the amount of cooking time desired.
2. Press POWER LEVEL pad.
3. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
4. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking With More Than One Cook Cycle

Some recipes call for one power level for a certain length of time, and another power level for another length of time. This oven can be set to change from one to another automatically, for up to three cycles only if defrost is one of the three cycles. Otherwise there can only be two cycles use in a cooking program.

1. Enter the first amount of cooking time desired.
2. Press PROGRAM pad.
3. Enter the second amount of cooking time desired.
4. Press POWER LEVEL pad.
5. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
6. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

# Programming Instructions for MVH140

## Cooking Guide for Lower Power Levels

The 11 power levels including HIGH, allows the operator to choose the best power level for cooking the food. Below is all the power levels listed, examples of foods best cooked at each level, and the amount of microwave power recommended.

Power Level	Microwave Output	Use
10 HIGH	100%	<ul style="list-style-type: none"> <li>• Boil Water.</li> <li>• Cook ground beef.</li> <li>• Make candy.</li> <li>• Cook fresh fruits and vegetables.</li> <li>• Cook fish and poultry.</li> <li>• Preheat browning dish.</li> </ul>
9	90%	<ul style="list-style-type: none"> <li>• Reheat meat slices quickly</li> <li>• Sauté onions, celery, and green pepper.</li> </ul>
8	80%	<ul style="list-style-type: none"> <li>• All reheating.</li> <li>• Cook scrambled eggs.</li> </ul>
7	70%	<ul style="list-style-type: none"> <li>• Cook breads and cereal products.</li> <li>• Cook cheese dishes, veal.</li> <li>• Cook cakes, muffins, brownies, cupcakes.</li> </ul>
6	60%	<ul style="list-style-type: none"> <li>• Cook pasta.</li> </ul>
5	50%	<ul style="list-style-type: none"> <li>• Cook meats, whole poultry.</li> <li>• Cook custard.</li> <li>• Cook whole chicken, turkey, spare ribs, rib roast, sirloin roast.</li> </ul>
4	40%	<ul style="list-style-type: none"> <li>• Cook less tender cuts of meat.</li> <li>• Reheat frozen convenience foods.</li> </ul>
3	30%	<ul style="list-style-type: none"> <li>• Thawing meat, poultry, and seafood.</li> <li>• Cooking small quantities of food.</li> <li>• Finish cooking casserole, stew, and some sauces.</li> </ul>
2	20%	<ul style="list-style-type: none"> <li>• Soften butter and cream cheese.</li> <li>• Heating small amounts of food.</li> </ul>
1	10%	<ul style="list-style-type: none"> <li>• Soften ice cream.</li> <li>• Raise yeast dough.</li> </ul>
0		<ul style="list-style-type: none"> <li>• Standing time.</li> </ul>

# Programming Instructions for MVH140

## Popcorn

Popcorn pad allows 1.75, 3.0, and 3.5 ounce bags of commercially packaged microwave popcorn options.

- Pop only one package of popcorn at a time.
- If you are using a microwave popcorn popper, follow manufacturer's instructions.
- To set your microwave oven correctly, follow this chart:

Bag Size-ounces	1.75	3.0	3.5
Touch NUMBER	1	2	3

1. Press POPCORN pad.
2. Press associated number corresponding to the bag size. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Potato

The POTATO pad allows potatoes to cook with preset times and cook powers. Operator can choose from 1 to 4 potatoes.

### NOTES:

- Cooking times are based on an average 8 ounce potato.
- Before baking, pierce potato with fork several times.
- After baking, let stand for 5 minutes.

1. Press POTATO pad.
2. Press number corresponding with the amount of potatoes being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Auto Cook

Auto cook provides four preset categories for cooking.

1. Press AUTO COOK pad.
2. Choose one of the following food categories.

Category	Pad number
Fresh vegetable	1
Frozen vegetable	2
Rice	3
Casserole	4

3. Enter the quantity/serving of food being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Number of cups
Fresh vegetable	1 - 4 cups
Frozen vegetable	1 - 4 cups
Rice	1 - 2 cups
Casserole	1 - 4 cups

## Auto Reheat

Auto reheat provides four preset categories for reheating food.

1. Press AUTO REHEAT pad.
2. Choose one of the following food categories.

Category	Pad number
Pizza	1
Soup / Sauce	2
Casserole	3
Roll / Muffin	4

3. Enter the quantity/serving of food being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Number of cups
Pizza	1 - 3 slices
Soup / Sauce	1 - 4 cups
Casserole	1 - 4 cups
Roll / Muffin	1 - 4 servings

# Programming Instructions for MVH140

## Cooking Guide for Auto Cook

Code	Category	Quantity	Directions
1	Fresh Vegetable	1 cup vegetables and 2 tbsp. water	Place in microwavable bowl or casserole. Add water according to the quantity. Cover with plastic wrap and vent. Let stand 5 minutes.
		2 cups vegetables and 1/4 cup water	
		3 cups vegetables and 1/3 cup water	
		4 cups vegetables and 1/2 cup water	
2	Frozen Vegetable	1 cup	Place in microwavable bowl or casserole. Cover with plastic wrap and vent. Let stand 5 minutes.
		2 cups	
		3 cups	
		4 cups	
3	Rice	1 cup of long grain rice and 2 1/4 cup of water	In large microwavable casserole, combine water, rice, margarine, and salt. Cover with microwavable lid or plastic wrap and vent. After cooking, let stand covered for 5 minutes.
		2 cups of long grain rice and 4 1/4 cup of water	
4	Casserole	1 cup	Place in microwavable bowl or casserole. Cover with plastic wrap and vent.
		2 cups	
		3 cups	
		4 cups	

## Cooking Guide for Auto Reheat

Code	Category	Serving Amount	Directions
1	Pizza (Refrigerated)	1 slice (5 oz.)	Place on a low plate & paper towel.
		2 slices (10 oz.)	Do not cover.
		3 slices (15 oz.)	
2	Soup/Sauce	1 cup	Place in shallow microwavable casserole. Cover with plastic wrap and vent.
		2 cups	
		3 cups	
		4 cups	
3	Casserole	1 cup	Place in a microwavable bowl or casserole. Cover with plastic wrap.
		2 cups	
		3 cups	
		4 cups	
4	Roll/Muffin	1 serving (2 oz.)	Place on paper towel.
		2 servings (4 oz.)	Do not cover.
		3 servings (6 oz.)	
		4 servings (8 oz.)	

# Programming Instructions for MVH140

## Auto Defrost

This microwave oven is preset with three defrost sequences. Using auto defrost is the best way to defrost frozen foods.

1. Press AUTO DEFROST pad.
2. Choose one of the following food categories.

Category	Pad number
Meat	1
Poultry	2
Fish	3

3. Enter the weight amount of food being defrosted.
4. Press START pad.
5. After 1/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food.
6. Close the door and press START pad again.
7. After 2/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food. When the cook time has ended, three beeps will sound and "END" will appear in the display.

**NOTE:** If the oven door is not opened within 3 seconds, unit will resume defrost cycle and display will continue to countdown.

## Weight Conversion Chart

Consumers are used to food weights being in pounds and ounces which are fractions of a pound (for example 4 ounces equals 1/4 pound). However, in order to enter food weight in AUTO DEFROST cycle, specify pounds and tenths of a pound must be used. If the weight on food package is in fractions of a pound, use the following chart to convert the weight to decimals.

Equivalent Ounce Weight	Number After Decimal
1.6	.10
3.2	.20
4.0	.25 One-Quarter Pound
4.8	.30
6.4	.40
8.0	.50 One-Half Pound
9.6	.60
11.2	.70
12.0	.75 Three-Quarters Pound
12.8	.80
14.4	.90
16.0	1.00 One Pound

## Defrosting Tips

1. When using AUTO DEFROST cycle, the weight being entered is the net weight in pounds and tenths of pounds (the weight of the food minus the container).
2. Use AUTO DEFROST cycle only for raw food. Auto defrost obtains the best results when food is a minimum of 0°F, (taken directly from a freezer). If food has been stored in a refrigerator-freezer that does not maintain a temperature of 5°F or below, always program a lower food weight for a shorter defrosting time, to prevent cooking the food.
3. If the food is stored outside the freezer for up to 20 minutes, enter a lower food weight.
4. The shape of the package alters the defrosting time. Shallow rectangular packets defrost more quickly than a deep block.
5. Separate pieces as they begin to defrost. Separated pieces defrost more easily.
6. You can use small pieces of aluminum foil to shield foods like chicken wings, leg tips, and fish tails, **but the foil must not touch the side of the oven.** Foil causes arcing, which can damage the oven lining.
7. Shield areas of food with small pieces of foil if they start to become warm.
8. For better results, a preset standard time is included in the defrosting time.

# Programming Instructions for MVH140

## Auto Defrost Charts

### Meat Category

Food	Setting	At Beep	Special Instructions
Beef			Meat of irregular shape and large, fatty cuts of meat should have the narrow or fatty areas shielded with foil at the beginning of a defrost sequence.
Ground Beef, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Do not defrost less than ¼ lb. Freeze in doughnut shape.
Ground Beef, Patties	MEAT	Separate and rearrange.	Do not defrost less than two oz. patties. Depress center when freezing.
Round Steak	MEAT	Turn over, Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Tenderloin Steak	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Stew Beef	MEAT	Remove thawed portions with fork. Separate remainder. Return remainder to oven.	Place in a microwavable baking dish.
Pot Roast, Chuck Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rib Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rolled Rump Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Lamb Cubes for Stew	MEAT	Remove thawed portions with fork. Return remainder to oven.	Place in a microwavable baking dish.
Chops (1 inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Pork Chops (½ inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Hot Dogs	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Spareribs Country-style Ribs	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Sausage, Links	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Sausage, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Place on a microwavable baking dish.
Loin Roast, Boneless	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.

# Programming Instructions for MVH140

## Poultry Category

Food	Setting	At Beep	Special Instructions
Chicken Whole (up to 9½ lbs.)	POULTRY	Turn over (finish defrosting breast-side down). Cover warm areas with aluminum foil.	Place chicken breast-side up on a microwavable roast rack. Finish defrosting by immersing in cold water. Remove giblets when chicken is partially defrosted.
Cut-up		Separate pieces and rearrange. Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Cornish Hens Whole	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Turkey Breast (under 6 lbs)	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on microwavable roasting rack. Finish defrosting by immersing in cold water.

## Fish Category

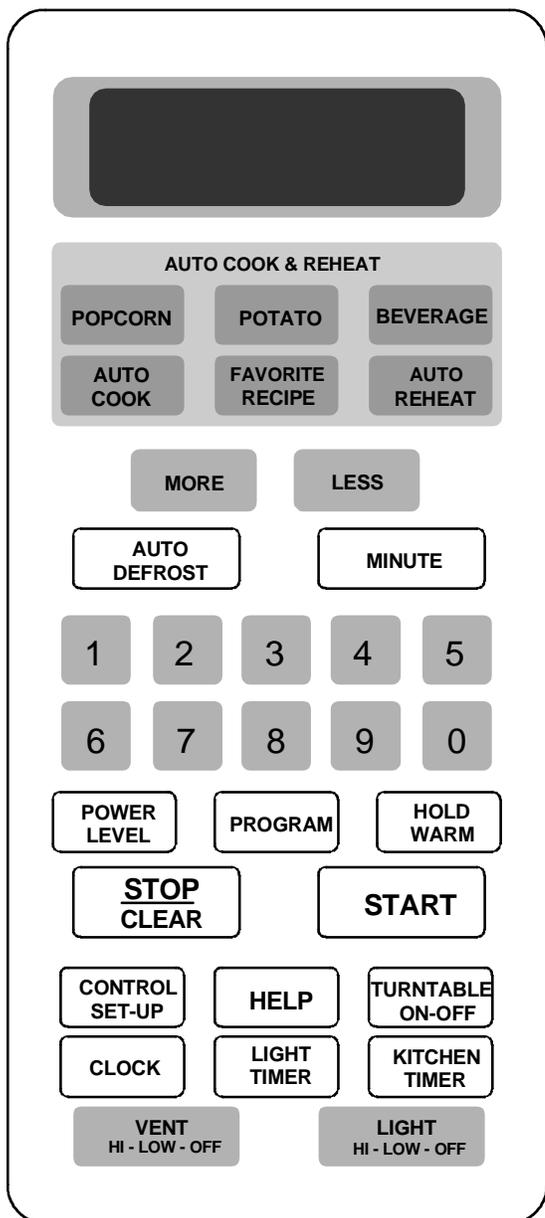
Food	Setting	At Beep	Special Instructions
Fish Fillets	FISH	Turn over. Separate fillets when partially thawed if possible.	Place in a microwavable baking dish. Carefully separate fillets under cold water.
Steaks	FISH	Separate and rearrange.	Place in a microwavable baking dish. Run cold water over to finish defrosting.
Whole	FISH	Turn over.	Place in a microwavable baking dish. Cover head and tail with foil; do not let foil touch sides of microwave. Finish defrosting by immersing in cold water.
Shellfish Crabmeat	FISH	Break apart. Turn over.	Place in a microwavable baking dish.
Lobster tails	FISH	Turn over and rearrange.	Place in a microwavable baking dish.
Shrimp	FISH	Separate and rearrange.	Place in a microwavable baking dish.
Scallops	FISH	Separate and rearrange.	Place in a microwavable baking dish.

**NOTE:** Food to be defrosted must not be more than 6.0 lbs. (4.0 Kg).

# Appendix B

# Programming Instructions for MVH240

## Control Panel



**DISPLAY:** The display includes a clock and indicators to tell you time of day, cooking time settings, and cooking functions selected.

**POPCORN:** Touch this pad when popping popcorn in your microwave oven.

**POTATO:** Touch this pad to cook from 1 to 4 potatoes.

**BEVERAGE:** Touch this pad to reheat one or two cups of a beverage.

**AUTO COOK:** Touch this pad to cook vegetables, rice, casseroles.

**FAVORITE RECIPE:** Touch this pad to recall one cooking instruction previously programmed into memory.

**AUTO REHEAT:** Touch this pad to reheat pizza, soup/sauce, casseroles, roll/muffin.

**AUTO DEFROST:** Meat, poultry, fish. Touch on pad to select food type and defrost food by weight.

**MORE:** Touch this pad to add ten seconds of cooking time each time you press it.

**LESS:** Touch this pad to subtract ten seconds of cooking time each time you press it.

**MINUTE:** Touch this pad to cook for one minute at 100% power level.

**NUMBER:** Touch number pads to enter cooking time, power level, quantities, or weights.

**POWER LEVEL:** Touch this pad to select a cooking power level.

**PROGRAM:** Touch this pad to program multi cooking cycles.

**HOLD WARM:** Touch this pad to keep hot, cooked foods warm in your microwave oven for up to 99 minutes 99 seconds.

**STOP/CLEAR:** Touch this pad to stop the oven or to clear all entries.

**START:** Touch this pad to start a function. If you open the door after oven begins to cook, touch START again.

**CONTROL SET-UP:** Touch this pad to change the oven's default settings for sound, clock, display speed, defrost weight, and demo mode operations.

**HELP:** Touch this pad to learn how to use each oven function.

**CLOCK:** Touch this pad to enter the time of day.

**LIGHT TIMER:** Touch this pad to set the light timer.

**KITCHEN TIMER:** Touch this pad to set the kitchen timer.

**VENT HI-LOW-OFF:** Touch this pad to turn the fan on or off.

**LIGHT HI-LOW-OFF:** Touch this pad to turn on the cooktop/ countertop light.

**TURNTABLE ON-OFF:** Touch this pad to turn off the turntable. T/TABLE OFF will appear in the display.

# Programming Instructions for MVH240

This section discusses the concepts behind microwave cooking and introduces the basic need to operate the microwave oven. Please read this information before using.

## Help

Displays feature information and helpful hints. Press HELP, then select a key pad.

1. Press HELP pad.
2. Press the key pad that needs an explanation. Information will scroll across the display explaining the key pad function.

## Clock

This oven includes a 24-hour clock.

1. Press CLOCK pad. (Press once for AM, twice for PM.)
2. Enter the time by using the numbered key pad.
3. Press CLOCK pad to activate.

## Kitchen Timer

Microwave oven can be used as a timer up to 99 minutes, 99 seconds.

1. Press KITCHEN TIMER pad.
2. Enter the time by using the numbered key pad.
3. Press START pad. When the time is over, one long beep will sound and END will appear in the display.

## Control Set-Up

The following default values can be changed; beep sound, clock, display speed, defrost weight, and demo mode operations. See following chart for more information.

Number	Function	Number	Result
1	Beep ON/OFF control	1	Sound ON
		2	Sound OFF
2	Clock display control	1	Clock ON
		2	Clock OFF
3	Display	1	Slow speed
		2	Normal speed
		3	Fast speed
4	Defrost weight mode select	1	Lbs.
		2	Kg.
5	Demo mode select	1	Demo ON
		2	Demo OFF

1. Press CONTROL SET-UP pad.
2. Press the associated number that corresponds with the function that needs changed from the chart above.
3. Press the second number that will change the result of the function.

## Vent HI-LOW-OFF

The vent moves steam and other vapors from the surface cooking area.

- Press VENT once for HI fan speed, twice for LOW fan speed, or three times to turn the fan off.

**NOTE:** If the oven temperature gets too hot, the vent hood fan will automatically turn on at the LOW setting cooling the oven. Fan may stay on up to one hour to cool the oven.

## TURNTABLE ON-OFF

For best cooking results, leave the turntable on. It can be turned off for large dishes. Press TURNTABLE ON-OFF to turn the turntable on or off.

**NOTE:** Sometimes the turntable can become hot to touch. Be careful touching the turntable during and after cooking.

## Light HI-LOW-OFF

- Press LIGHT once for bright light, twice for night light, or three times to turn the light off.

## LIGHT TIMER

The light can be set to turn on and off automatically at any time desired. The light comes on at the same time every day until reset.

1. Press LIGHT TIMER pad. (Press once for AM, twice for PM.)
2. Enter the timer desired to turn on the light.
3. Press LIGHT TIMER pad again. (Press once for AM, twice for PM.)
4. Enter the timer desired to turn off the light.
5. Press START pad.

**NOTE:** To reset desired time to turn on and off the light repeat steps 1 through 5.

## Cancelling LIGHT TIMER

1. Press LIGHT TIMER pad.
2. Press STOP/CLEAR pad.

**NOTE:** To cancel LIGHT TIMER in operation, press LIGHT HI-LOW-OFF pad.

# Programming Instructions for MVH240

## Child Lock

Control panel can be locked out to prevent the microwave from being accidentally started or used by children. Child lock feature is also useful when cleaning the control panel to prevent any key pads from being activated.

1. Press STOP/CLEAR pad.
2. Press and hold the number 0 for approximately four seconds. LOCKED will appear in the display and two beeps will sound.
3. To reactivate the key pad, press and hold the number 0 for approximately four seconds. LOCKED will disappear from the display and two beeps will sound.

## Minute

Allows the microwave to cook 1 minute at 100% power by simply touching the "MINUTE" pad.

**NOTE:** Maximum time is 99 minutes.

- Press the MINUTE pad to activate one minute for each time the pad is pressed.

## Hold Warm

Allows cooked food to stay warm in the microwave oven for up to 99 minutes and 99 seconds. HOLD WARM can also be used by itself or to follow a cooking cycle automatically.

### NOTES:

- HOLD WARM operates for up to 99 minutes and 99 seconds.
- Cooked food should be covered during HOLD WARM.
- Pastry items (pies, turnovers, etc.) should be uncovered during HOLD WARM.
- Complete meals on a dinner plate could be covered during HOLD WARM.

### To make HOLD WARM automatically follow another cycle:

1. While programming the cooking instructions, press HOLD WARM pad before pressing START pad.
2. When the last cooking cycle is over, two tones will sound and "WARM" will appear in the display.
3. HOLD WARM can be set to follow AUTO DEFROST, or multi-cycle cooking.

## Favorite Recipe

Favorite recipe allows recall of cooking instruction previously placed in memory and begins cooking.

1. Press FAVORITE RECIPE pad.
2. Enter the cooking time desired.
3. Press START pad.

## More/Less

By using the MORE or LESS keys, all of the AUTO TOUCH and programs can be adjusted to cook food for a longer or shorter time. Pressing MORE will add 10 seconds of the cooking time each time it is pressed. Pressing LESS will subtract 10 seconds of cooking time each time it is pressed.

## Cooking at High Cook Power

1. Enter the amount of cooking time desired.
2. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking at Lower Power Levels

Cooking with HIGH power level does not always give the best results with foods that is needed for slower cooking, such as roasts, baked goods, or custards. This oven has 10 power settings in addition to HIGH.

1. Enter the amount of cooking time desired.
2. Press POWER LEVEL pad.
3. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
4. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking With More Than One Cook Cycle

Some recipes call for one power level for a certain length of time, and another power level for another length of time. This oven can be set to change from one to another automatically, for up to three cycles only if defrost is one of the three cycles. Otherwise there can only be two cycles use in a cooking program.

1. Enter the first amount of cooking time desired.
2. Press PROGRAM pad.
3. Enter the second amount of cooking time desired.
4. Press POWER LEVEL pad.
5. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
6. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

# Programming Instructions for MVH240

## Cooking Guide for Lower Power Levels

The 11 power levels including HIGH, allows the operator to choose the best power level for cooking the food. Below is all the power levels listed, examples of foods best cooked at each level, and the amount of microwave power recommended.

Power Level	Microwave Output	Use
10 HIGH	100%	<ul style="list-style-type: none"> <li>• Boil Water.</li> <li>• Cook ground beef.</li> <li>• Make candy.</li> <li>• Cook fresh fruits and vegetables.</li> <li>• Cook fish and poultry.</li> <li>• Preheat browning dish.</li> </ul>
9	90%	<ul style="list-style-type: none"> <li>• Reheat meat slices quickly</li> <li>• Sauté onions, celery, and green pepper.</li> </ul>
8	80%	<ul style="list-style-type: none"> <li>• All reheating.</li> <li>• Cook scrambled eggs.</li> </ul>
7	70%	<ul style="list-style-type: none"> <li>• Cook breads and cereal products.</li> <li>• Cook cheese dishes, veal.</li> <li>• Cook cakes, muffins, brownies, cupcakes.</li> </ul>
6	60%	<ul style="list-style-type: none"> <li>• Cook pasta.</li> </ul>
5	50%	<ul style="list-style-type: none"> <li>• Cook meats, whole poultry.</li> <li>• Cook custard.</li> <li>• Cook whole chicken, turkey, spare ribs, rib roast, sirloin roast.</li> </ul>
4	40%	<ul style="list-style-type: none"> <li>• Cook less tender cuts of meat.</li> <li>• Reheat frozen convenience foods.</li> </ul>
3	30%	<ul style="list-style-type: none"> <li>• Thawing meat, poultry, and seafood.</li> <li>• Cooking small quantities of food.</li> <li>• Finish cooking casserole, stew, and some sauces.</li> </ul>
2	20%	<ul style="list-style-type: none"> <li>• Soften butter and cream cheese.</li> <li>• Heating small amounts of food.</li> </ul>
1	10%	<ul style="list-style-type: none"> <li>• Soften ice cream.</li> <li>• Raise yeast dough.</li> </ul>
0		<ul style="list-style-type: none"> <li>• Standing time.</li> </ul>

# Programming Instructions for MVH240

## Popcorn

Popcorn pad allows 1.75, 3.0, and 3.5 ounce bags of commercially packaged microwave popcorn options.

- Pop only one package of popcorn at a time.
- If you are using a microwave popcorn popper, follow manufacturer's instructions.
- To set your microwave oven correctly, follow this chart:

Bag Size-ounces	1.75	3.0	3.5
Touch NUMBER	1	2	3

1. Press POPCORN pad.
2. Press associated number corresponding to the bag size. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Potato

The POTATO pad allows potatoes to cook with preset times and cook powers. Operator can choose from 1 to 4 potatoes.

### NOTES:

- Cooking times are based on an average 8 ounce potato.
- Before baking, pierce potato with fork several times.
- After baking, let stand for 5 minutes.

1. Press POTATO pad.
2. Press number corresponding with the amount of potatoes being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Beverage

Beverage allows heating for up to 2 beverages.

**NOTE:** Reheat times based on an 8 ounce cup.  
Beverage may be very hot; remove from oven with care.

1. Press BEVERAGE pad.
2. Press appropriate number corresponding with the amount of glasses being heated.

## Auto Cook

Auto cook provides four preset categories for cooking.

1. Press AUTO COOK pad.
2. Choose one of the following food categories.

Category	Pad number
Fresh vegetable	1
Frozen vegetable	2
Rice	3
Casserole	4

3. Enter the quantity/serving of food being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Number of cups
Fresh vegetable	1 - 4 cups
Frozen vegetable	1 - 4 cups
Rice	1 - 2 cups
Casserole	1 - 4 cups

## Auto Reheat

Auto reheat provides four preset categories for reheating food.

1. Press AUTO REHEAT pad.
2. Choose one of the following food categories.

Category	Pad number
Pizza	1
Soup / Sauce	2
Casserole	3
Roll / Muffin	4

3. Enter the quantity/serving of food being cooked. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Number of cups
Pizza	1 - 3 slices
Soup / Sauce	1 - 4 cups
Casserole	1 - 4 cups
Roll / Muffin	1 - 4 servings

# Programming Instructions for MVH240

## Cooking Guide for Auto Cook

Code	Category	Quantity	Directions
1	Fresh Vegetable	1 cup vegetables and 2 tbsp water	Place in microwavable bowl or casserole. Add water according to the quantity. Cover with plastic wrap and vent. Let stand 5 minutes.
		2 cups vegetables and 1/4 cup water	
		3 cups vegetables and 1/3 cup water	
		4 cups vegetables and 1/2 cup water	
2	Frozen Vegetable	1 cup	Place in microwavable bowl or casserole. Cover with plastic wrap and vent. Let stand 5 minutes.
		2 cups	
		3 cups	
		4 cups	
3	Rice	1 cup of long grain rice and 2 1/4 cup of water	In large microwavable casserole, combine water, rice, margarine, and salt. Cover with microwavable lid or plastic wrap and vent. After cooking, let stand covered for 5 minutes.
		2 cups of long grain rice and 4 1/4 cup of water	
4	Casserole	1 cup	Place in microwavable bowl or casserole. Cover with plastic wrap and vent.
		2 cups	
		3 cups	
		4 cups	

## Cooking Guide for Auto Reheat

Code	Category	Serving Amount	Directions
1	Pizza (Refrigerated)	1 slice (5 oz.)	Place on a low plate & paper towel.
		2 slices (10 oz.)	Do not cover.
		3 slices (15 oz.)	
2	Soup/Sauce	1 cup	Place in shallow microwavable casserole. Cover with plastic wrap and vent.
		2 cups	
		3 cups	
		4 cups	
3	Casserole	1 cup	Place in a microwavable bowl or casserole. Cover with plastic wrap.
		2 cups	
		3 cups	
		4 cups	
4	Roll/Muffin	1 serving (2 oz.)	Place on paper towel.
		2 servings (4 oz.)	Do not cover.
		3 servings (6 oz.)	
		4 servings (8 oz.)	

# Programming Instructions for MVH240

## Auto Defrost

This microwave oven is preset with three defrost sequences. Using auto defrost is the best way to defrost frozen foods.

1. Press AUTO DEFROST pad.
2. Choose one of the following food categories.

Category	Pad number
Meat	1
Poultry	2
Fish	3

3. Enter the weight amount of food being defrosted.
4. Press START pad.
5. After 1/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food.
6. Close the door and press START pad again.
7. After 2/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food. When the cook time has ended, three beeps will sound and "END" will appear in the display.

**NOTE:** If the oven door is not opened within 3 seconds, unit will resume defrost cycle and display will continue to countdown.

## Weight Conversion Chart

Consumers are used to food weights being in pounds and ounces which are fractions of a pound (for example 4 ounces equals 1/4 pound). However, in order to enter food weight in AUTO DEFROST cycle, specify pounds and tenths of a pound must be used. If the weight on food package is in fractions of a pound, use the following chart to convert the weight to decimals.

Equivalent Ounce Weight	Number After Decimal
1.6	.10
3.2	.20
4.0	.25 One-Quarter Pound
4.8	.30
6.4	.40
8.0	.50 One-Half Pound
9.6	.60
11.2	.70
12.0	.75 Three-Quarters Pound
12.8	.80
14.4	.90
16.0	1.00 One Pound

## Defrosting Tips

1. When using AUTO DEFROST cycle, the weight being entered is the net weight in pounds and tenths of pounds (the weight of the food minus the container).
2. Use AUTO DEFROST cycle only for raw food. Auto defrost obtains the best results when food is a minimum of 0°F, (taken directly from a freezer). If food has been stored in a refrigerator-freezer that does not maintain a temperature of 5°F or below, always program a lower food weight for a shorter defrosting time, to prevent cooking the food.
3. If the food is stored outside the freezer for up to 20 minutes, enter a lower food weight.
4. The shape of the package alters the defrosting time. Shallow rectangular packets defrost more quickly than a deep block.
5. Separate pieces as they begin to defrost. Separated pieces defrost more easily.
6. You can use small pieces of aluminum foil to shield foods like chicken wings, leg tips, and fish tails, **but the foil must not touch the side of the oven.** Foil causes arcing, which can damage the oven lining.
7. Shield areas of food with small pieces of foil if they start to become warm.
8. For better results, a preset standard time is included in the defrosting time.

# Programming Instructions for MVH240

## Auto Defrost Charts

### Meat Category

Food	Setting	At Beep	Special Instructions
Beef			Meat of irregular shape and large, fatty cuts of meat should have the narrow or fatty areas shielded with foil at the beginning of a defrost sequence.
Ground Beef, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Do not defrost less than ¼ lb. Freeze in doughnut shape.
Ground Beef, Patties	MEAT	Separate and rearrange.	Do not defrost less than two oz. patties. Depress center when freezing.
Round Steak	MEAT	Turn over, Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Tenderloin Steak	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Stew Beef	MEAT	Remove thawed portions with fork. Separate remainder. Return remainder to oven.	Place in a microwavable baking dish.
Pot Roast, Chuck Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rib Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rolled Rump Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Lamb Cubes for Stew	MEAT	Remove thawed portions with fork. Return remainder to oven.	Place in a microwavable baking dish.
Chops (1 inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Pork Chops (½ inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Hot Dogs	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Spareribs Country-style Ribs	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Sausage, Links	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Sausage, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Place on a microwavable baking dish.
Loin Roast, Boneless	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.

# Programming Instructions for MVH240

## Poultry Category

Food	Setting	At Beep	Special Instructions
Chicken Whole (up to 9½ lbs.)	POULTRY	Turn over (finish defrosting breast-side down). Cover warm areas with aluminum foil.	Place chicken breast-side up on a microwavable roast rack. Finish defrosting by immersing in cold water. Remove giblets when chicken is partially defrosted.
Cut-up		Separate pieces and rearrange. Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Cornish Hens Whole	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Turkey Breast (under 6 lbs)	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on microwavable roasting rack. Finish defrosting by immersing in cold water.

## Fish Category

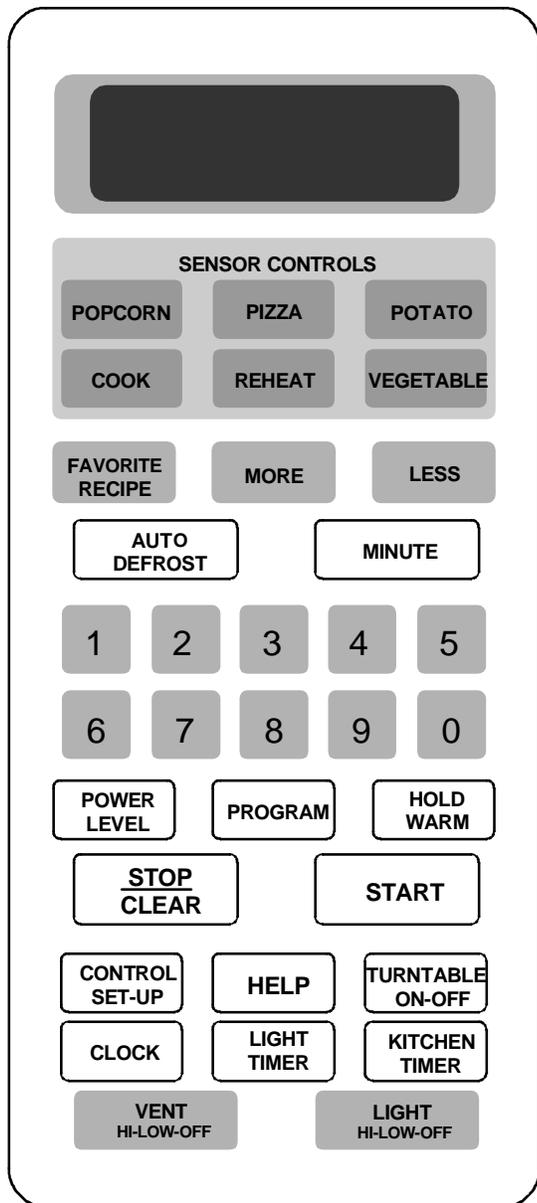
Food	Setting	At Beep	Special Instructions
Fish Fillets	FISH	Turn over. Separate fillets when partially thawed if possible.	Place in a microwavable baking dish. Carefully separate fillets under cold water.
Steaks	FISH	Separate and rearrange.	Place in a microwavable baking dish. Run cold water over to finish defrosting.
Whole	FISH	Turn over.	Place in a microwavable baking dish. Cover head and tail with foil; do not let foil touch sides of microwave. Finish defrosting by immersing in cold water.
Shellfish Crabmeat	FISH	Break apart. Turn over.	Place in a microwavable baking dish.
Lobster tails	FISH	Turn over and rearrange.	Place in a microwavable baking dish.
Shrimp	FISH	Separate and rearrange.	Place in a microwavable baking dish.
Scallops	FISH	Separate and rearrange.	Place in a microwavable baking dish.

**NOTE:** Food to be defrosted must not be more than 6.0 lbs. (4.0 Kg).

# Appendix C

# Programming Instructions for MVH340

## Control Panel



**DISPLAY:** The display includes a clock and indicators to tell you time of day, cooking time settings, and cooking functions selected.

**POPCORN:** Touch this pad when popping popcorn in your microwave oven. The oven's sensor will tell the oven how long to cook depending on the amount of humidity it detects from the popcorn.

**PIZZA:** Touch this pad to cook pizza without selecting cooking times and power levels.

**POTATO:** Touch this pad to cook potatoes. The oven's sensor will tell the oven how long to cook depending on the amount of humidity it detects from the potato.

**COOK:** Touch this pad to cook frozen entree, casserole, and rice. The oven's sensor will tell the oven how long to cook depending on the amount of humidity coming from the food.

**REHEAT:** Touch this pad to reheat casserole, dinner plate, and soup/sauce. The oven's sensor will tell the oven how long to cook depending on the amount of humidity coming from the food.

**VEGETABLE:** Touch this pad to reheat vegetables. The oven's sensor will tell the oven how long to cook depending on the amount of humidity it detects from the vegetables.

**FAVORITE RECIPE:** Touch this pad to recall one cooking instruction previously programmed into memory.

**MORE:** Touch this pad to add ten seconds of cooking time each time you press it.

**LESS:** Touch this pad to subtract ten seconds of cooking time each time you press it.

**AUTO DEFROST:** Meat, poultry, fish. Touch this pad to select food type and defrost food by weight.

**MINUTE:** Touch this pad to cook for one minute at 100% power level.

**NUMBER:** Touch number pads to enter cooking time, power level, quantities, or weights.

**POWER LEVEL:** Touch this pad to select a cooking power level.

**PROGRAM:** Touch this pad to program multi cooking cycles.

**HOLD WARM:** Touch this pad to keep hot, cooked foods warm in your microwave oven for up to 99 minutes 99 seconds.

**STOP/CLEAR:** Touch this pad to stop the oven or to clear all entries.

# Programming Instructions for MVH340

**START:** Touch this pad to start a function. If you open the door after oven begins to cook, touch START again.

**CONTROL SET-UP:** Touch this pad to change the oven's default settings for sound, clock, display speed, defrost weight, and demo mode operations.

**HELP:** Touch this pad to learn how to use each oven function.

**CLOCK:** Touch this pad to enter the time of day.

**LIGHT TIMER:** Touch this pad to set the light timer.

**KITCHEN TIMER:** Touch this pad to set the kitchen timer.

**VENT HI-LOW-OFF:** Touch this pad to turn the fan on or off.

**LIGHT HI-LOW-OFF:** Touch this pad to turn on the cooktop/countertop light.

**TURNTABLE ON-OFF:** Touch this pad to turn off the turntable. T/TABLE OFF will appear in the display.

This section discusses the concepts behind microwave cooking and introduces the basic need to operate the microwave oven. Please read this information before using.

## Help

Displays feature information and helpful hints. Press HELP, then select a key pad.

1. Press HELP pad.
2. Press the key pad that needs an explanation. Information will scroll across the display explaining the key pad function.

## Clock

This oven includes a 24-hour clock.

1. Press CLOCK pad. (Press once for AM, twice for PM.)
2. Enter the time by using the numbered key pad.
3. Press CLOCK pad to activate.

## Kitchen Timer

Microwave oven can be used as a timer up to 99 minutes, 99 seconds.

1. Press KITCHEN TIMER pad.
2. Enter the time by using the numbered key pad.
3. Press START pad. When the time is over, one long beep will sound and END will appear in the display.

## Control Set-Up

The following default values can be changed; beep sound, clock, display speed, defrost weight, and demo mode operations. See following chart for more information.

Number	Function	Number	Result
1	Beep ON/OFF control	1	Sound ON
		2	Sound OFF
2	Clock display control	1	Clock ON
		2	Clock OFF
3	Display	1	Slow speed
		2	Normal speed
		3	Fast speed
4	Defrost weight mode select	1	Lbs.
		2	Kg.
5	Demo mode select	1	Demo ON
		2	Demo OFF

1. Press CONTROL SET-UP pad.
2. Press the associated number that corresponds with the function that needs changed from the chart above.
3. Press the second number that will change the result of the function.

## Vent HI-LOW-OFF

The vent moves steam and other vapors from the surface cooking area.

- Press VENT once for HI fan speed, twice for LOW fan speed, or three times to turn the fan off.

**NOTE:** If the oven temperature gets too hot, the vent hood fan will automatically turn on at the LOW setting cooling the oven. Fan may stay on up to one hour to cool the oven.

## TURNTABLE ON-OFF

For best cooking results, leave the turntable on. It can be turned off for large dishes. Press TURNTABLE ON-OFF to turn the turntable on or off.

**NOTE:** Sometimes the turntable can become hot to touch. Be careful touching the turntable during and after cooking.

# Programming Instructions for MVH340

## Light HI-LOW-OFF

- Press LIGHT once for bright light, twice for night light, or three times to turn the light off.

## LIGHT TIMER

The light can be set to turn on and off automatically at any time desired. The light comes on at the same time every day until reset.

1. Press LIGHT TIMER pad. (Press once for AM, twice for PM.)
2. Enter the timer desired to turn on the light.
3. Press LIGHT TIMER pad again. (Press once for AM, twice for PM.)
4. Enter the timer desired to turn off the light.
5. Press START pad.

**NOTE:** To reset desired time to turn on and off the light repeat steps 1 through 5.

## Cancelling LIGHT TIMER

1. Press LIGHT TIMER pad.
2. Press STOP/CLEAR pad.

**NOTE:** To cancel LIGHT TIMER in operation, press LIGHT HI-LOW-OFF pad.

## Child Lock

Control panel can be locked out to prevent the microwave from being accidentally started or used by children. Child lock feature is also useful when cleaning the control panel to prevent any key pads from being activated.

1. Press STOP/CLEAR pad.
2. Press and hold the number 0 for approximately four seconds. LOCKED will appear in the display and two beeps will sound.
3. To reactivate the key pad, press and hold the number 0 for approximately four seconds. LOCKED will disappear from the display and two beeps will sound.

## Minute

Allows the microwave to cook 1 minute at 100% power by simply touching the "MINUTE" pad.

**NOTE:** Maximum time is 99 minutes.

- Press the MINUTE pad to activate one minute for each time the pad is pressed.

## Hold Warm

Allows cooked food to stay warm in the microwave oven for up to 99 minutes and 99 seconds. HOLD WARM can also be used by itself or to follow a cooking cycle automatically.

### NOTES:

- HOLD WARM operates for up to 99 minutes and 99 seconds.
- Cooked food should be covered during HOLD WARM.
- Pastry items (pies, turnovers, etc.) should be uncovered during HOLD WARM.
- Complete meals on a dinner plate could be covered during HOLD WARM.

### To make HOLD WARM automatically follow another cycle:

1. While programming the cooking instructions, press HOLD WARM pad before pressing START pad.
2. When the last cooking cycle is over, two tones will sound and "WARM" will appear in the display.
3. HOLD WARM can be set to follow AUTO DEFROST, or multi-cycle cooking.

## Favorite Recipe

Favorite recipe allows recall of cooking instruction previously placed in memory and begins cooking.

1. Press FAVORITE RECIPE pad.
2. Enter the cooking time desired.
3. Press START pad.

## More/Less

By using the MORE or LESS keys, all of the AUTO TOUCH and programs can be adjusted to cook food for a longer or shorter time. Pressing MORE will add 10 seconds of the cooking time each time it is pressed. Pressing LESS will subtract 10 seconds of cooking time each time it is pressed.

## Cooking at High Cook Power

1. Enter the amount of cooking time desired.
2. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

# Programming Instructions for MVH340

## Cooking at Lower Power Levels

Cooking with HIGH power level does not always give the best results with foods that is needed for slower cooking, such as roasts, baked goods, or custards. This oven has 10 power settings in addition to HIGH.

1. Enter the amount of cooking time desired.
2. Press POWER LEVEL pad.
3. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
4. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking With More Than One Cook Cycle

Some recipes call for one power level for a certain length of time, and another power level for another length of time. This oven can be set to change from one to another automatically, for up to three cycles only if defrost is one of the three cycles. Otherwise there can only be two cycles use in a cooking program.

1. Enter the first amount of cooking time desired.
2. Press PROGRAM pad.
3. Enter the second amount of cooking time desired.
4. Press POWER LEVEL pad.
5. Enter the power level number desired for cooking. (See, Cooking Guide for Lower Power Levels).
6. Press START pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Cooking Guide for Lower Power Levels

The 11 power levels including HIGH, allows the operator to choose the best power level for cooking the food. Below is all the power levels listed, examples of foods best cooked at each level, and the amount of microwave power recommended.

Power Level	Microwave Output	Use
10 HIGH	100%	<ul style="list-style-type: none"> <li>• Boil Water.</li> <li>• Cook ground beef.</li> <li>• Make candy.</li> <li>• Cook fresh fruits and vegetables.</li> <li>• Cook fish and poultry.</li> <li>• Preheat browning dish.</li> </ul>
9	90%	<ul style="list-style-type: none"> <li>• Reheat meat slices quickly</li> <li>• Sauté onions, celery, and green pepper.</li> </ul>
8	80%	<ul style="list-style-type: none"> <li>• All reheating.</li> <li>• Cook scrambled eggs.</li> </ul>
7	70%	<ul style="list-style-type: none"> <li>• Cook breads and cereal products.</li> <li>• Cook cheese dishes, veal.</li> <li>• Cook cakes, muffins, brownies, cupcakes.</li> </ul>
6	60%	<ul style="list-style-type: none"> <li>• Cook pasta.</li> </ul>
5	50%	<ul style="list-style-type: none"> <li>• Cook meats, whole poultry.</li> <li>• Cook custard.</li> <li>• Cook whole chicken, turkey, spare ribs, rib roast, sirloin roast.</li> </ul>
4	40%	<ul style="list-style-type: none"> <li>• Cook less tender cuts of meat.</li> <li>• Reheat frozen convenience foods.</li> </ul>
3	30%	<ul style="list-style-type: none"> <li>• Thawing meat, poultry, and seafood.</li> <li>• Cooking small quantities of food.</li> <li>• Finish cooking casserole, stew, and some sauces.</li> </ul>
2	20%	<ul style="list-style-type: none"> <li>• Soften butter and cream cheese.</li> <li>• Heating small amounts of food.</li> </ul>
1	10%	<ul style="list-style-type: none"> <li>• Soften ice cream.</li> <li>• Raise yeast dough.</li> </ul>
0		<ul style="list-style-type: none"> <li>• Standing time.</li> </ul>

# Programming Instructions for MVH340

## Sensor Operating Instructions

Sensor cook allows cooking of favorite foods without selecting cooking times and power levels. The display will indicate SENSING during the initial sensing period. The oven automatically determines required cooking time for each food item. When the internal sensor detects a certain amount of humidity coming from the food, it will tell the oven how much longer to heat. The display will show the remaining heating time. For best results for cooking by sensor, follow these recommendations.

1. Food cooked with the sensor system should be at normal storage temperature.
2. Glass Tray/(TURNTABLE) and outside of container should be dry to assure best cooking results.
3. Foods should always be covered loosely with microwavable plastic wrap, waxed paper, or a lid.
4. Do not open the door or touch the STOP/CLEAR key during the sensing time. When sensing time is over, the oven beeps twice and the remaining cooking time will appear in the display window. At this time you can open the door to stir, turn, or rearrange the food.

## Sensor Cooking Guide

Appropriate containers and coverings help assure good sensor cooking results.

1. Always use microwavable containers and cover them with lids or vented plastic wrap.
2. Never use tight-sealing plastic covers. They can prevent steam from escaping and cause food to overcook.
3. Match the amount of the size of the container. Fill containers at least half full for best results.
4. Be sure the outside of the cooking container and the inside of the microwave oven are dry before placing food in the oven. Beads of moisture turning into steam can mislead the sensor.

## Adding or Subtracting Cooking Time

If the SENSOR function is too long or too short, you can increase or decrease the cook time by 10% after choosing the function. You can only increase or decrease cook time before cooking starts.

## Popcorn

Popcorn pad allows consumer to pop commercially packaged microwave popcorn.

### NOTES:

- Pop only one package of popcorn at a time.
  - If you are using a microwave popcorn popper, follow manufacturer's instructions.
  - To set your microwave oven correctly, follow this chart:
- 
- Press POPCORN pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Pizza

Reheating pizza with PIZZA pad allows consumer to reheat one or several slices without selecting cooking times and power level.

- Press PIZZA pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Potato

The POTATO pad allows consumer to bake one or several potatoes without selecting cooking times and power level.

### NOTES:

- Before baking, pierce potato with fork several times.
  - After baking, let stand for 5 minutes.
- 
- Press POTATO pad. When the cook time has ended, three beeps will sound and "END" will appear in the display.

## Vegetable

Vegetable pad has preset cook powers for three different food categories.

1. Press VEGETABLE pad.
2. Press appropriate number corresponding with the food categories.

Category	Pad Number
Fresh	1
Frozen	2
Canned	3

**NOTE:** Place canned vegetables into a microwave safe bowl or casserole. Covered with a plastic wrap and vent. Let stand for 5 minutes when done.

# Programming Instructions for MVH340

## Cook

Using COOK pad allows consumer to heat common microwave prepared foods without needing to program times and power level. COOK pad has preset power levels for three different food categories.

1. Press COOK pad.
2. Choose one of the following food categories. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Pad number
Frozen Entree	1
Casserole	2
Rice	3

## Reheat

REHEAT pad allows consumer to heat foods without needing to program times and power level. REHEAT pad has preset powers levels for three different food categories.

1. Press REHEAT pad.
2. Choose one of the following food categories. When the cook time has ended, three beeps will sound and "END" will appear in the display.

Category	Pad number
Casserole	1
Dinner Plate	2
Soup / Sauce	3

## Auto Defrost

This microwave oven is preset with three defrost sequences. Using auto defrost is the best way to defrost frozen foods.

1. Press AUTO DEFROST pad.
2. Choose one of the following food categories.

Category	Pad number
Meat	1
Poultry	2
Fish	3

3. Enter the weight amount of food being defrosted.
4. Press START pad.
5. After 1/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food.
6. Close the door and press START pad again.
7. After 2/3 of the defrost time has lapsed. Display will prompt the operator to turn the food over. Open the door, turn the food over, and shield any warm portions of the food. When the cook time has ended, three beeps will sound and "END" will appear in the display.

**NOTE:** If the oven door is not opened within 3 seconds, unit will resume defrost cycle and display will continue to countdown.

## Weight Conversion Chart

Consumers are used to food weights being in pounds and ounces which are fractions of a pound (for example 4 ounces equals 1/4 pound). However, in order to enter food weight in AUTO DEFROST cycle, specify pounds and tenths of a pound must be used. If the weight on food package is in fractions of a pound, use the following chart to convert the weight to decimals.

Equivalent Ounce Weight	Number After Decimal
1.6	.10
3.2	.20
4.0	.25 One-Quarter Pound
4.8	.30
6.4	.40
8.0	.50 One-Half Pound
9.6	.60
11.2	.70
12.0	.75 Three-Quarters Pound
12.8	.80
14.4	.90
16.0	1.00 One Pound

# Programming Instructions for MVH340

## Defrosting Tips

1. When using AUTO DEFROST cycle, the weight being entered is the net weight in pounds and tenths of pounds (the weight of the food minus the container).
2. Use AUTO DEFROST cycle only for raw food. Auto defrost obtains the best results when food is a minimum of 0°F, (taken directly from a freezer). If food has been stored in a refrigerator-freezer that does not maintain a temperature of 5°F or below, always program a lower food weight for a shorter defrosting time, to prevent cooking the food.
3. If the food is stored outside the freezer for up to 20 minutes, enter a lower food weight.
4. The shape of the package alters the defrosting time. Shallow rectangular packets defrost more quickly than a deep block.
5. Separate pieces as they begin to defrost. Separated pieces defrost more easily.
6. You can use small pieces of aluminum foil to shield foods like chicken wings, leg tips, and fish tails, **but the foil must not touch the side of the oven.** Foil causes arcing, which can damage the oven lining.
7. Shield areas of food with small pieces of foil if they start to become warm.
8. For better results, a preset standard time is included in the defrosting time.

# Programming Instructions for MVH340

## Auto Defrost Charts

### Meat Category

Food	Setting	At Beep	Special Instructions
Beef			Meat of irregular shape and large, fatty cuts of meat should have the narrow or fatty areas shielded with foil at the beginning of a defrost sequence.
Ground Beef, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Do not defrost less than ¼ lb. Freeze in doughnut shape.
Ground Beef, Patties	MEAT	Separate and rearrange.	Do not defrost less than two oz. patties. Depress center when freezing.
Round Steak	MEAT	Turn over, Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Tenderloin Steak	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Stew Beef	MEAT	Remove thawed portions with fork. Separate remainder. Return remainder to oven.	Place in a microwavable baking dish.
Pot Roast, Chuck Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rib Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Rolled Rump Roast	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Lamb Cubes for Stew	MEAT	Remove thawed portions with fork. Return remainder to oven.	Place in a microwavable baking dish.
Chops (1 inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Pork Chops (½ inch thick)	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Hot Dogs	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Spareribs Country-style Ribs	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.
Sausage, Links	MEAT	Separate and rearrange.	Place on a microwavable roasting rack.
Sausage, Bulk	MEAT	Remove thawed portions with fork. Turn over. Return remainder to oven.	Place on a microwavable baking dish.
Loin Roast, Boneless	MEAT	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack.

# Programming Instructions for MVH340

## Poultry Category

Food	Setting	At Beep	Special Instructions
Chicken Whole (up to 9½ lbs.)	POULTRY	Turn over (finish defrosting breast-side down). Cover warm areas with aluminum foil.	Place chicken breast-side up on a microwavable roast rack. Finish defrosting by immersing in cold water. Remove giblets when chicken is partially defrosted.
Cut-up		Separate pieces and rearrange. Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Cornish Hens Whole	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on a microwavable roasting rack. Finish defrosting by immersing in cold water.
Turkey Breast (under 6 lbs)	POULTRY	Turn over. Cover warm areas with aluminum foil.	Place on microwavable roasting rack. Finish defrosting by immersing in cold water.

## Fish Category

Food	Setting	At Beep	Special Instructions
Fish Fillets	FISH	Turn over. Separate fillets when partially thawed if possible.	Place in a microwavable baking dish. Carefully separate fillets under cold water.
Steaks	FISH	Separate and rearrange.	Place in a microwavable baking dish. Run cold water over to finish defrosting.
Whole	FISH	Turn over.	Place in a microwavable baking dish. Cover head and tail with foil; do not let foil touch sides of microwave. Finish defrosting by immersing in cold water.
Shellfish Crabmeat	FISH	Break apart. Turn over.	Place in a microwavable baking dish.
Lobster tails	FISH	Turn over and rearrange.	Place in a microwavable baking dish.
Shrimp	FISH	Separate and rearrange.	Place in a microwavable baking dish.
Scallops	FISH	Separate and rearrange.	Place in a microwavable baking dish.

**NOTE:** Food to be defrosted must not be more than 6.0 lbs. (4.0 Kg).