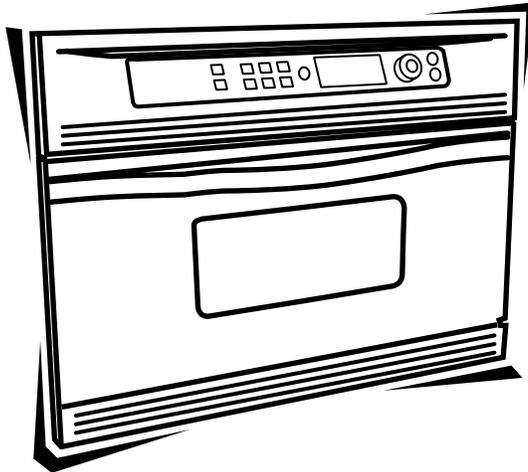




# TECHNICAL SERVICE GUIDE

## Advantium™ Built-In Oven



ADVANTIUM™

### MODEL SERIES:

SCB2000  
SCB2001  
ZSC2000  
ZSC2001





### **IMPORTANT SAFETY NOTICE**

The information in this service guide is intended for use by individuals possessing adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

### **WARNING**

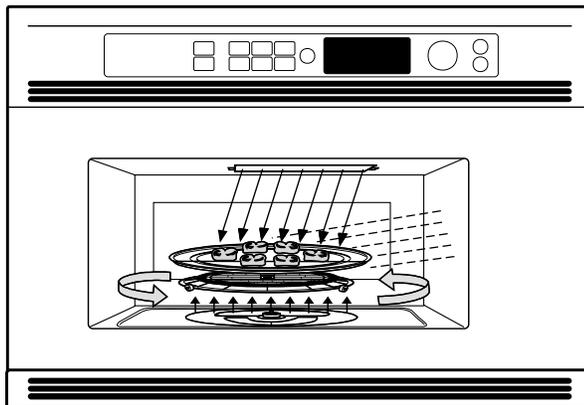
To avoid personal injury, disconnect power before servicing this product. If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

***GE Consumer Home Services Training***  
*Technical Service Guide*  
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GEA00403

**ADVANTIUM™**

# Welcome to **ADVANTIUM™**

The new Advantium™ oven uses breakthrough speedcook technology to cook food with light. Foods cook in a fraction of the time needed in conventional ovens, with delicious results. Advantium browns, bakes, roasts, broils, and crisps just like a conventional oven, and requires no preheating. Advantium uses high-intensity halogen lights to cook food from the top and bottom simultaneously, cooking the surface and interior to seal in moisture and flavor. For added convenience, the Advantium oven can be converted to a fully functional microwave by simply pressing a button.

## Advantium™ Owner's Kit

Included with the purchase of the Advantium™ oven is an Advantium™ Owner's Kit. The kit includes the following helpful tools and literature:

- 136-page cookbook
- 4-page cooking guide
- Owner's Manual (use & care guide)
- "Getting Started" video (17:37 min.)
- Cleaning scraper



Pub. No. 28-X139

## Cookbook

The cookbook includes numerous recipes, helpful cooking tips, information on proper cooking techniques, and proper use of cookware for various types of recipes. The cookbook is also a helpful diagnostic tool when servicing an Advantium™ oven for a cooking issue. Be sure to reference the cookbook prior to servicing a unit for any cooking concern. Be sure that the customer is following the proper selections for the type and size of food. Also be sure to consult the front of

the cookbook for proper cookware selection and food placement on the turntable surface.



Pub. No. 49-40070

## Cooking Guide

The cooking guide is a four-page, quick-reference guide containing numerous helpful cooking tips. In addition, it contains helpful use and care information and two pages of information which will assist the consumer in adapting their favorite recipe for the Advantium oven.



Pub. No. 49-40122

## "Getting Started" Video (17:37 min.)

The "Getting Started" video provides general information on proper use and care, and is intended to help the consumer during their initial use of the product (getting started).



Pub. No. 28-X060

## Owner's Manual

The Owner's Manual provides the customer with detailed information on the operation, use, and care of their product. It also contains a section on helpful troubleshooting tips.



Pub. No. 49-40101

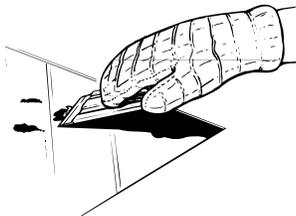
## Scraper/Cleaner

The last item included in the Advantium™ Owner's Kit is a scraper/cleaner. This tool is included in order to aid the consumer in cleaning the upper and lower halogen lamp covers. These covers must be kept clean in order to ensure maximum cooking efficiency.



WX5X1614

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For heavy or burned on soil

GEA00411

# Installation Instructions

**Before you begin** — Read these instructions completely and carefully.

- Save these instructions for local inspector's use.
- **Observe all governing codes and ordinances.**

**Note to Installer:** Be sure to leave these instructions with the consumer.

**Note to Consumer:** Keep these instructions with your Owner's Manual for future reference.

**WARNING:** This appliance must be properly grounded. See "Electrical Requirements" in this section.

Proper installation is the responsibility of the installer. Product failure due to improper installation is not covered under the GE Appliance Warranty. See the Owner's Manual for warranty information.

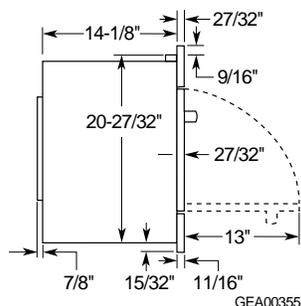
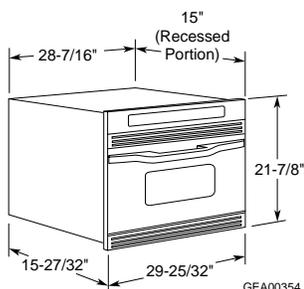
Use this appliance only for its intended purpose.

**Caution:** This oven should be installed by a qualified installer or service technician.

- Never use the oven for warming or heating a room. Prolonged use of the oven without adequate ventilation can be hazardous.

Check with local utilities for electrical codes that apply in your area. Local codes vary. Installation of electrical connections and grounding must comply with applicable codes. In the absence of local codes, the oven should be installed in accordance with National Electrical Code ANSI/NFPA 70 or latest edition.

## Product Dimensions



## Advance Planning

- This oven may be installed directly into a wall or wall oven cabinetry, 30 in. minimum width.
- The front surface of the oven will be nearly flush with surrounding cabinetry doors.
- This oven can be installed over any GE single electric built-in oven or a single GE electric built-in warming drawer.
- This oven must be installed at least 36 in. above the floor.

**WARNING:** For personal safety, this oven cannot be installed in a cabinet arrangement such as an island or peninsula.

**Caution:** This oven **is not** approved for use above another built-in speedcook oven, side-by-side, or under-the-countertop installations.

- Cabinets installed adjacent to wall ovens must have an adhesion specification of at least 194°F temperature rating.
- Allow for clearance to adjacent corners, walls, drawers, etc.

## Tools and Materials Required

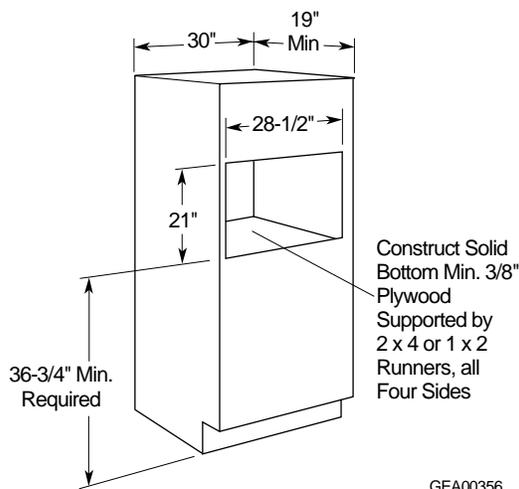
- 2 x 4 or 2 x 2 lumber for runners
- Saw
- Level
- Drill and 3/32-in. bit
- Phillips screwdriver
- Wood screws and adhesive or other hardware for installing runners or shelf to support oven

## Electrical Requirements

- Junction box
- Electrical cable - 3-conductor or 4-conductor wire, as required by local codes
- UL-listed conduit connector
- Wire cutters and wire stripper

## Prepare the Opening

### Single Speedcook Installation



Order a 30-in. wide single oven cabinet or cut the opening in a wall to dimensions shown.

The rough opening must be:

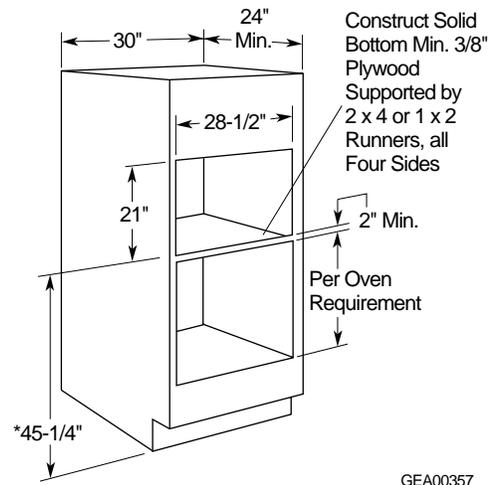
- Depth - 19 in. min.
- Width - 28-1/2 in. min.
- Height - 21 in. min.
- 36-3/4 in. from the floor to the cutout is required.
- These ovens require 3/4-in. overlap on each side, top, and bottom of the cutout.
- Oven overlaps will conceal cut edges on all sides of the opening.

When installed over a single oven or a warming drawer, allow at least 2 in. between the two openings. This separation will provide clearance for bottom overlap of the speedcook oven and top overlap of the single oven or warming drawer.

- Construct a solid oven floor of 3/8-in. min. thick plywood supported by 2 x 4 or 1 x 2 runners on all sides.
- The support must be level and rigidly mounted, flush with the bottom edge of the cutout.

**WARNING:** For personal safety, the mounting surface must be capable of supporting the cabinet load, in addition to the added weight of this approximately 100-lb. product plus additional oven loads of up to 50 lb., or a total weight of 150 lb.

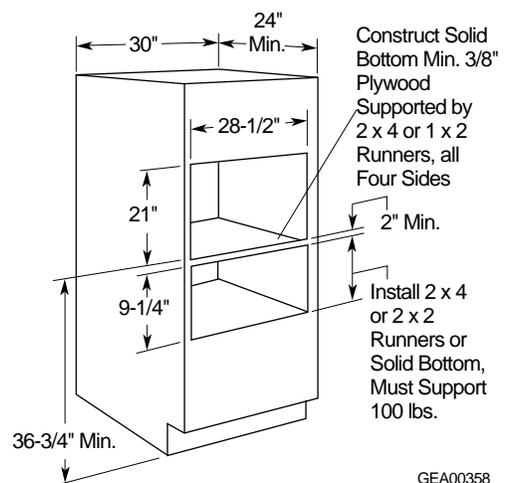
### Speedcook Oven Installed Above a GE Built-In Wall Oven



\* If you are replacing a GE electric double oven with the combined installation of a speedcook and single wall oven, use the dimensions shown. The middle rail separating the two openings may need to be larger than the 2 in. min. shown.

- Always maintain 36-3/4 in. min. distance from the floor to the speedcook oven cutout in any installation combination.

### Speedcook Oven Installed Above a GE Warming Drawer



**Note:** Additional clearance between the cutouts may be required. Check to be sure the oven supports above the warming drawer location do not obstruct the required interior 23-1/2 in. depth and 9-1/4 in. height. See Installation Instructions for details.

When installing the speedcook oven over a GE electric warming drawer, follow the product installation instructions.

- An anti-tip block must be installed at the rear of the warming drawer opening. Again, see Installation Instructions for complete details.

## Electrical Requirements

### Single Speedcook Installation

Product rating is 120/208 or 120/240V, 60 Hz, 30 amps. This product must be connected to a supply circuit of the proper voltage and frequency and protected by a time delay fuse or circuit breaker. The power supply should be brought to a separate 30 ampere branch circuit. Wire size must conform to the requirements of the National Electric Code or the prevailing local code.

### Combined Speedcook and Wall Oven Installation

When installed in combination with a GE single wall oven, use separate electrical junction boxes,

**or**

Install a single junction box connected to 50 amp. supply circuit or properly rated supply circuit.

- Refer to single oven installation instructions for electrical requirements of that product.
- These connections must be made by a qualified electrician. All electrical connections must meet National Electrical Code or prevailing local codes.

### Combined Speedcook and Warming Drawer Installation

When installing the speedcook oven over a GE electric warming drawer, a separate 120V, 60Hz, properly grounded receptacle must be installed. See instructions packed with the warming drawer.

### WARNING: Electrical Shock Hazard

- The electrical power to the oven branch circuit **must** be shut off while line connections are being made.
- Use copper wiring only.
- Electrical ground is required on this appliance. The free end of the green wire (the ground wire) **must** be connected to a suitable ground. This wire **must** remain grounded to the oven.
- If cold water pipe is interrupted by plastic, non-metallic gaskets, union connections, or other insulating materials, **do not** use for grounding.
- **Do not** ground to a gas pipe.

- **Do not** have a fuse in the NEUTRAL or GROUNDING circuit. A fuse in the NEUTRAL or GROUNDING circuit could result in an electrical shock.
- Check with a qualified electrician if you are in doubt as to whether the appliance is properly grounded.

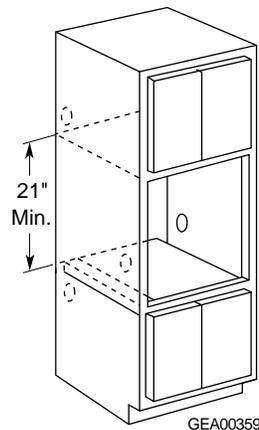
Failure to follow these instructions could result in serious injury or death.

## Install Junction Box

**Note:** The conduit is located at the top right on the back of the oven.

Locate and install the junction box within reach of the oven conduit:

- Through the left or right sides of the cabinet wall and into adjacent cabinet, or
- Through the cutout floor, or
- In the upper cabinet.



## Installation

### Remove Packaging and Parts

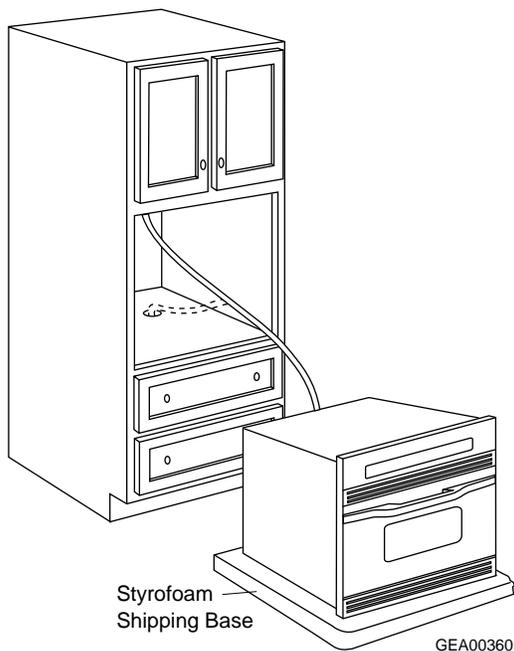
1. Open the door and remove packing material with ceramic tray.
2. Locate Owner's Kit in carton. Remove and save.
3. Locate box with metal trays in carton. Remove and save.
4. Locate parts package containing 5 mounting screws (4 required, 1 extra).

**Caution:** To protect the bottom trim, do not remove the styrofoam shipping base until the oven is slipped into the opening.

### Route Conduit Through Cutout

**Caution:** Two people are required to lift the oven into the opening. Grasp the bottom at front and rear. Discard styrofoam base. **Do not use the oven handle to lift the oven. Damage will occur!**

1. With the oven in front of the cabinet opening, insert conduit into cabinet opening.
2. Lift the oven into the opening while continuing to feed the conduit in the direction of the installed junction box. Be sure the conduit does not get pinched between the back of the oven and the cabinet wall.

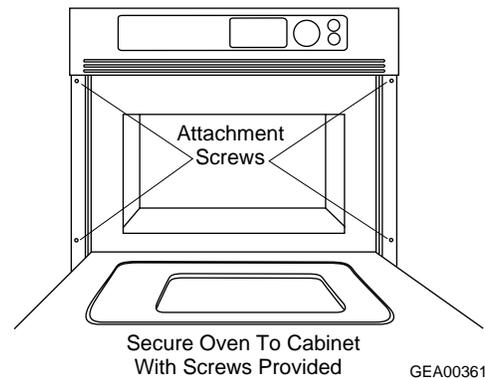


### Secure Oven to Cabinet

1. Slide oven into the cabinet opening.
2. Drill 3/32-in. pilot holes into the cabinet frame through the 4 mounting holes in the oven's front frame.

**WARNING:** Securely fasten oven to cabinet using the screws provided. Failure to do so could cause the oven to move or tip during use and result in personal injury.

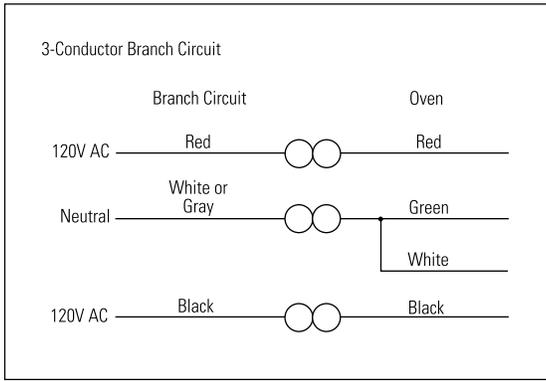
3. Secure oven to cabinet with screws supplied.



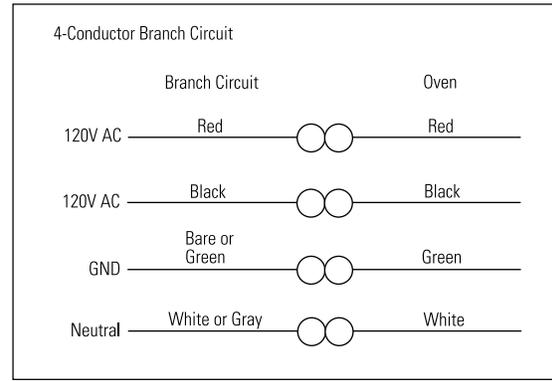
### Connect Electrical

**WARNING: Electrical Shock Hazard**

- Electrical ground is required on the appliance.
- **Do not** connect the electrical supply until appliance is permanently grounded.
- Disconnect power to the junction box before making the electrical connection.
- This appliance **must** be grounded to a metallic, permanent wiring system, or a grounding connector should be connected to the grounding terminal or wire lead on the appliance.
- Failure to do so could result in fire, personal injury, or electrical shock.



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GEA00363

**When Connecting to a 3-Conductor Branch Circuit:**

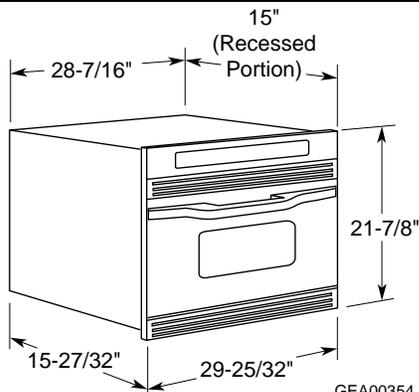
1. Connect oven red lead to branch circuit red lead.
2. Connect oven black lead to branch circuit black lead.
3. Connect oven green ground lead and white lead to branch circuit neutral (white or gray).

**When Connecting to a 4-Conductor Branch Circuit:**

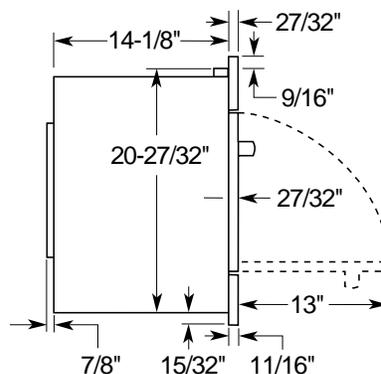
1. Connect oven red lead to branch circuit red lead.
2. Connect oven black lead to branch circuit black lead.
3. Break connection between oven white lead and oven green ground lead.
4. Connect oven white lead to branch circuit neutral lead (white or gray).
5. Connect oven green ground lead to branch circuit ground lead (green or bare copper).



# Specifications

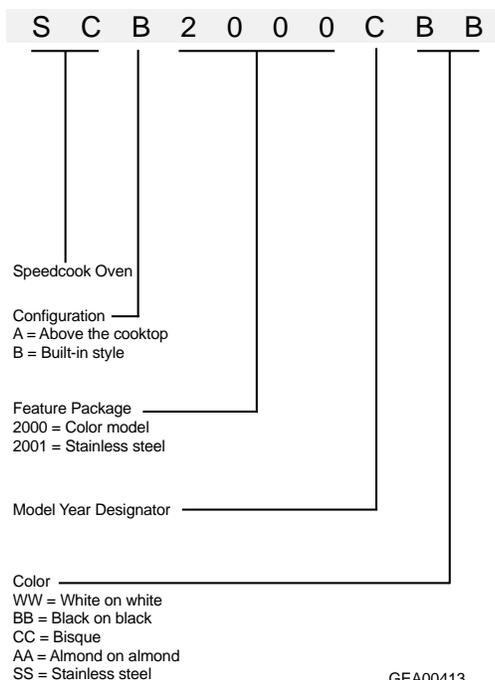


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GEA00355

## Nomenclature



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GEA00414

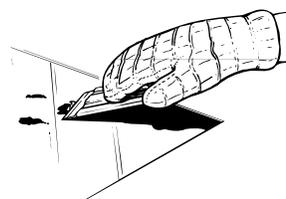
## Cleaning

Clean the inside of the oven after each use. Some spatters can be removed with a paper towel, others may require a warm soapy cloth. Remove greasy spatters with a sudsy cloth, then rinse with a damp cloth.

Do not use abrasive cleaners or sharp utensils on oven walls. **Never use a commercial oven cleaner on any part of your oven.** Do not clean the inside of the oven with metal scouring pads.

Both the upper and lower halogen lamp covers must be kept free of grease and food splatterings in order to operate effectively. To clean the upper and lower lamp covers, remove the turntable. Wipe

the covers with a warm soapy cloth or plastic scrubbie.



GEA00412

For heavy burned-on soil, a cleaning scraper may be used to clean the halogen lamp covers.

Do not use cleaners containing ammonia or alcohol on the outside of the oven because they can damage the oven.

## Warranty Information

**Sales slip or cancelled check is required as proof of original purchase date to obtain service under warranty.**

All warranty service is provided by our Factory Service Centers or an authorized Customer Care® technician.

<b>For The Period Of:</b>	<b>GE Will Replace:</b>
<b>One Year</b> <i>From the date of the original purchase</i>	<b>Any part</b> of the oven which fails due to a defect in materials or workmanship. During this <b>full one-year warranty</b> , GE will also provide, <b>free of charge</b> , all labor and in-home service to replace the defective part.
<b>Ten Years</b> <i>From the second through the tenth year from the date of original purchase</i>	<b>The halogen speedcook lamps</b> , if the halogen lamps fail due to a defect in materials or workmanship. During this <b>full ten-year warranty</b> , GE will also provide, <b>free of charge</b> , all labor and in-home service to replace the defective part.
<b>Ten Years</b> <i>From the second through the tenth year from the date of original purchase</i>	<b>The magnetron tube</b> , if the magnetron tube fails due to a defect in materials or workmanship. During this additional <b>nine-year limited warranty</b> , you will be responsible for any labor or in-home service costs.

### **What GE Will Not Cover:**

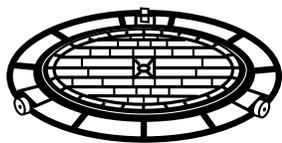
- Service trips to your home to teach you how to use the product.
- Improper installation.
- Failure of the product if it is abused, mis-used, or used for other than the intended purpose or used commercially.
- Replacement of house fuses or resetting of circuit breakers.
- Damage to the product caused by accident, fire, floods, or acts of God.
- Incidental or consequential damage to personal property caused by possible defects with this appliance.

*This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. In Alaska, the warranty excludes the cost of shipping or service calls to your home. Proof of the original purchase date is needed to obtain service under the warranty.*

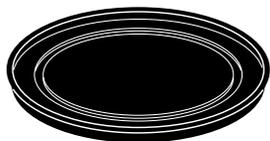
*Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.*

**Warrantor: General Electric Company. Louisville, KY 40225**

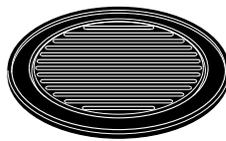
## Overview of Advantium



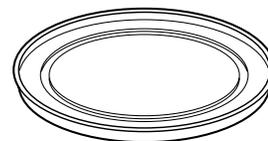
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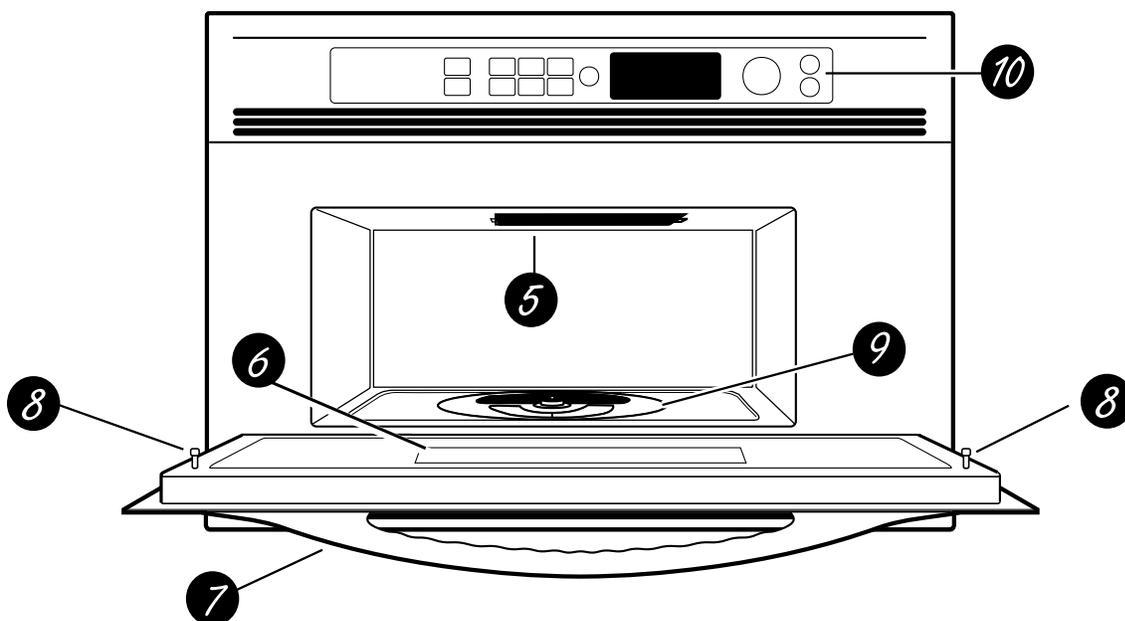
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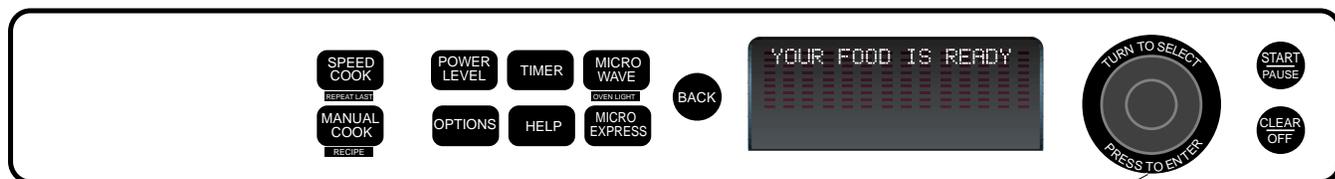
4



- 1 Oven Rack (Turntable)**  
The oven rack (turntable) must always be in place, on the oven floor, for all cooking. Be sure the oven rack (turntable) is seated securely over the square spindle in the center of the oven.
- 2 Black Metal Tray/Baking Sheet**  
**Used during speedcooking only.** Put food directly on the black metal tray and place on the oven rack (turntable) when using the speedcook features.
- 3 Black Grill Tray/Baking Sheet**  
**Used during speedcooking only.** Put food directly on the black grill tray and place on the oven rack (turntable) when speedcooking foods you would normally cook on the grill.
- 4 White Ceramic Tray**  
**Used during microwave oven cooking only.** Place on the oven rack (turntable) when using the microwave features. Place food or microwave-safe cookware directly on the tray.

- 5 Upper Halogen Lamp Assembly**  
**Used during speedcooking only.** Two 1500-watt halogen lamps provide heat from the top of the oven cavity.
- 6 Window**  
Allows cooking to be viewed while keeping microwaves confined in the oven.
- 7 Door Handle**  
Pull to open the door. The door must be securely latched for the oven to operate.
- 8 Door Latches**
- 9 Lower Halogen Lamp Assembly**  
**Used during speedcooking only.** One 1500-watt halogen lamp provides heat from the bottom of the oven cavity.
- 10 Control Panel**  
The buttons used to operate the oven are located on the control panel.

## Control Panel Features



Selector Dial

GEA00416

### ***SPEEDCOOK/REPEAT LAST***

Press this button to access the preset speedcook menu. Press and hold for 3 seconds to repeat the last cooking selection.

### ***MANUAL COOK/RECIPE***

Press this button to set your own speedcook program.

### ***POWER LEVEL***

Press this button and turn/press the selector dial to change the speedcook upper lamps, lower lamp, and microwave power level before and during cooking.

### ***OPTIONS***

Press this button to set the **Clock** and access the **Beeper Volume, Clock Display ON/OFF, Display Scroll Speed** features.

### ***TIMER***

Press this button to set the minute timer.

### ***HELP***

Press this button to find out more about your oven's features.

### ***MICROWAVE/OVEN LIGHT***

Press this button to operate the microwave. Press while microwave cooking to light the oven cavity. The light will come on and will remain on until the end of the cooking cycle.

### ***MICRO EXPRESS***

Press for 30 seconds of microwave cooking time. Each press of the button adds an additional 30 seconds to the remaining cooking time. The oven starts immediately.

### ***BACK***

Press this button to step back one or more levels in the program process, such as when entering custom recipes.

### ***SELECTOR DIAL-Turn to select, Press to enter***

First turn then press the dial to make food selections. Also use the dial to increase (turn clockwise) or decrease (turn counterclockwise) cooking times.

### ***START/PAUSE***

Press this button to start or pause any cooking function.

### ***CLEAR/OFF***

Press this button to cancel **all** oven programs except the clock and timer.

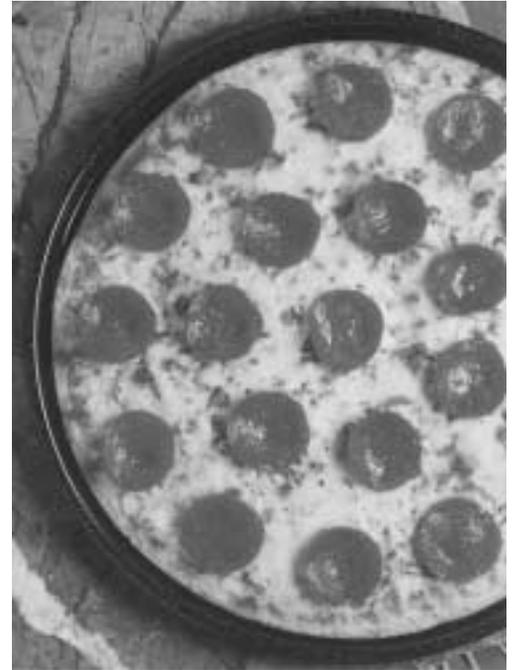


# How to Speedcook

## To Select a Speedcook Program:

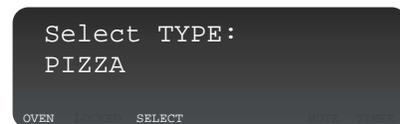
1. Press the SPEEDCOOK button.
2. Turn the selector dial to select the type of food you want. Press the dial to enter it.
3. Turn the dial to select the specific food. Press the dial to enter it.
4. Turn the dial to select the amount, size, and/or doneness (if required, the oven will prompt you). Press the dial after each selection.
5. Once the display shows "ADJUST TIME OR START," press either the selector dial or START/PAUSE button to start cooking.

If the door is opened during cooking, the oven stops and "PAUSE" appears in the display. Close the door and press START/PAUSE to resume cooking. At any time during the cooking, you can turn the selector dial to change the cooking time. You can also change power levels.



GEA00417

Press the SPEEDCOOK button to begin:



1. "Select TYPE [of food]:" Turn to "PIZZA" and then press the selector dial to enter selection.

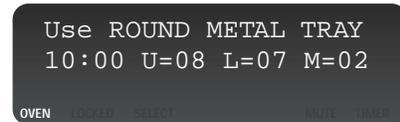


2. "Select PIZZA type:" Turn to "REG. CRUST, FROZEN" and then press the selector dial to enter selection.

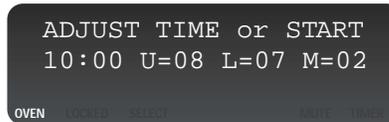


3. "Select SIZE:" Turn to "Regular (12")" and then press the selector dial to enter selection.

GEA00418



4. After entering the size, you will see a message instructing you to "Use ROUND METAL TRAY." Be sure to use the metal tray that came with the Advantium.



5. "ADJUST TIME or START" appears. Press the START button or selector dial to begin cooking.



6. Once the oven starts cooking, you will see your selection in the display with remaining cooking time counting down.

GEA00419



7. After approximately 3-5 sec., the cook time may be adjusted up or down to compensate for variations in line voltage.



8. Minutes before cooking ends, "CHECK for DONENESS" appears. Power shuts off until restarted (START).



9. Minutes later, enjoy pizza with a crispy brown crust and golden melted cheese. It doesn't get much easier than this.

GEA00420

# Operating Characteristics

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## Power Levels

Advantium uses power from high-intensity halogen lamps, as well as microwave energy, to cook foods evenly and quickly (average of one-fourth the time of a conventional oven) to seal in moisture and flavor.

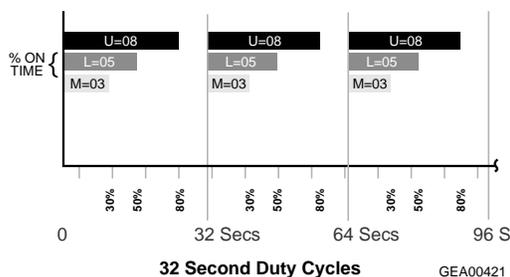
Power levels are selected with the selector dial and can be adjusted before cooking or during cooking. When using preset menu foods, the power levels are already selected for you. However, power levels can be adjusted when cooking both preset menu food and when manual cooking.

Power levels are adjusted independently for the upper halogen lamps (pair), lower halogen lamp (single), and microwave energy. When selecting an upper halogen lamp power level, the power level can only be selected for the pair. You can not select power levels for the upper rear and upper front independently.

Power levels of 0 to 10 can be selected for the upper halogen lamps (pair), lower halogen lamp, and microwave energy. The power levels control the percentage of ON time for the upper halogen lamp pair, the lower halogen lamp, and microwave high voltage circuit.

The programming on the smart board which controls the upper and lower halogen lamps, as well as the high voltage/magnetron circuits, operates on a duty cycle of 32 seconds. This means the power level you select for each component controls the percentage of ON time during each 32-second period of time.

In the following example, the upper halogen lamps would cycle for 80% of each 32-second period, the lower would cycle at 50% of each 32-second period, and the microwave high voltage circuit would be energized for 30% of each 32-second period.

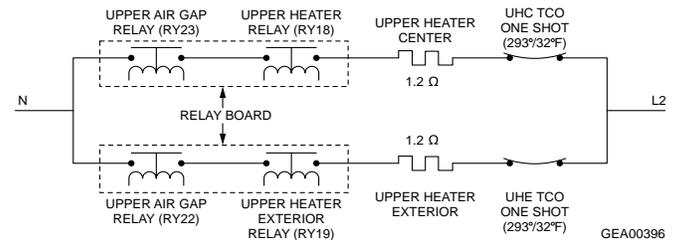
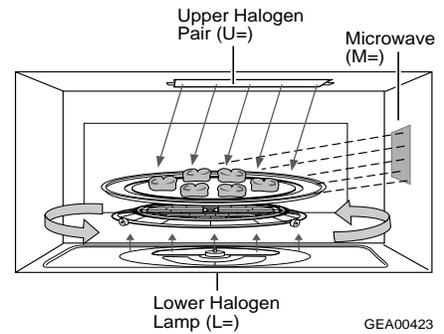


**Example:** Upper element set at 80% (U=08), lower element set at 50% (L=05), and microwave set at 30% (M=03).



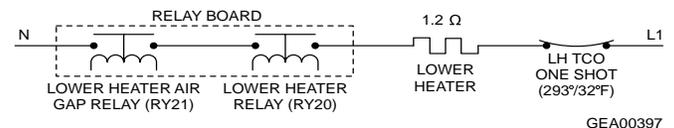
## Upper Halogen Lamp Pair (U=)

The upper halogen lamps provide radiant heat to the top surface of the food. Select a higher setting for thin foods requiring a golden brown top (example: fish fillets, toast, boneless chicken breasts). Select a lower setting for thicker foods and foods with high sugar or fat content (example: cakes, roasts).



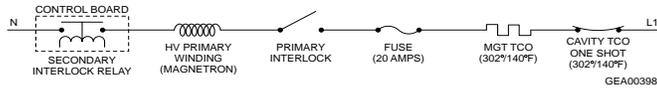
## Lower Halogen Lamp (L=)

The lower halogen lamp provides cooking from below to heat the cooking surface (cooking trays and cookware). Select a higher setting for thick or dense foods that may not cook quickly in the center (example: casseroles). Select a lower setting for thin foods (example: cookies) and foods containing high fat or sugar content (example: pastries, cakes).



## Microwave Energy (M=)

Microwave energy is provided by the high voltage/magnetron circuit and directed via the wave guide directly into the oven cavity. As the food rotates on the oven turntable, microwave energy is evenly distributed to all portions of the food. Select a higher setting to shorten cooking time for dense or heavy foods (example: casseroles, whole chicken). Select a lower setting for delicate foods (example: cakes, breads, souffles) or foods requiring longer cooking times for tender results (example: stew, pot roast).

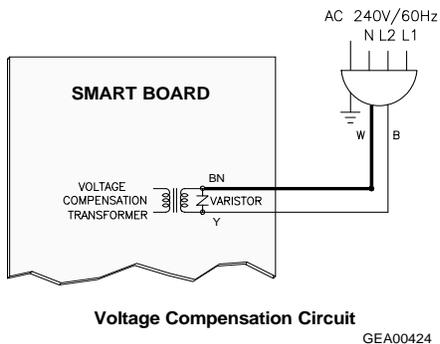


## Voltage Compensation

**Note:** Voltage compensation only occurs during speedcook operation (preselect menu item). In other words, when cooking with manual cook, voltage compensation does not occur. When using speedcook, you are selecting preselected items from a menu. These items require compensation for accurate and consistent cooking results.

Voltage fluctuations in the power lines can cause inconsistencies in cooking. Advantium automatically measures line voltage at the start of each speedcooking selection and **adjusts the cooking time** to achieve consistent quality results.

Line voltage is monitored by the voltage compensation transformer, which is located on the smart board. This transformer monitors the voltage from L2 to neutral.



The optimal line voltage, where no voltage compensation occurs, is 120 VAC. Above 120 VAC, time is subtracted from the recipe. Below 120 VAC, time is added to the recipe. The amount of voltage compensation required is dependent upon the incoming voltage at the start of the cooking cycle, and the particular

speedcooking selection that is chosen. The chart below shows the predicted compensation times based on a 5-minute speedcook selection (such as: Biscuits, Refr; Large; 8 biscuits).

VOLTAGE L2 to N	TIME (secs) COMPENSATION
108	60.0
110	47.9
112	36.7
114	26.3
116	16.7
118	7.9
<b>120</b>	<b>0.0</b>
122	-7.1
124	-13.3
126	-18.8
128	-23.3
130	-27.1
132	-30.0

Voltage compensation occurs after approximately 5 seconds of cooking operation. The display will show "OPTIMIZING COOK TIME." The time will flash and then display the new adjusted time, based on the amount of voltage compensation required.



GEA00425

Voltage compensation only occurs during speedcook operation and only occurs once during the cooking cycle (at initial start of speedcook operation).

## Upper Halogen Lamp Balance

As stated previously, the upper halogen lamps operate together at the same power level. However, in order to provide even (balanced) cooking performance, the upper rear halogen lamp will always cycle at 85% of the upper front halogen lamp. In other words, if the upper halogen lamps are set at power level 10 (U=10), you would expect both elements to operate at 100% of each 32-second duty cycle. Instead, the upper rear halogen will cycle at 85% of power level 10, or

85% of 32 seconds. The upper rear halogen lamp will cycle off just prior to the upper front.

## Thermal Compensation

**Note:** Thermal compensation only occurs during speedcook operation (preselect menu item). In other words, when cooking with manual cook, thermal compensation does not occur. When using speedcook, you are selecting preselected items from a menu. These items require compensation for accurate and consistent cooking results.

When cooking several food items consecutively, the temperature in the oven's interior can become very hot. The Advantium speedcooking program (smart board) automatically compensates for the increased temperature by adjusting the cooking power levels of the upper and/or lower halogen lamps. This innovative technology gives you oven-quality food with consistent results.



GEA00439

Located inside of the oven cavity (upper right rear) is a thermistor. At the start of each new speedcooking operation (just prior to voltage compensation occurring), the cavity thermistor reads the oven cavity temperature. Depending upon the oven cavity temperature and the amount of cooking time selected, the smart board will adjust the power level of the upper and/or the lower halogen lamps to compensate for the additional heat that may already exist in the oven cavity (if previous cooking occurred).



The oven cavity thermistor has a negative temperature coefficient. In other words, as the temperature of the thermistor probe increases, the resistance of the thermistor decreases. This

resistance changes rapidly with small changes in temperature. In fact, you can squeeze the thermistor and see the resistance change fairly quickly. At room temperature, the thermistor should read approximately 200K to 250K ohms.

Thermal compensation can affect the upper halogen lamps power level, the lower halogen lamp power level, or both the upper and lower halogen power levels simultaneously. Thermal compensation can lower the upper halogen pair by 1, 2, or 3 power levels. The lower halogen lamp can also be reduced by 1, 2, or 3 power levels, but never independently of the top halogen lamp pair. In other words, thermal compensation on the lower lamp will never be greater than the compensation occurring on the top lamps. It is possible, however, to have thermal compensation occurring on the upper halogen lamp pair, but not on the lower lamp.

Neither the upper halogen lamp pair nor the lower halogen lamp can be compensated below power levels of 2. In other words, if a power level of 3 is selected for either the upper halogen pair or the lower halogen lamp, then thermal compensation can only reduce the power level by a maximum of 1 power level.

Thermal compensation only occurs when oven cavity temperatures are higher than normal from the previous cooking operation. When thermal compensation is required, it will occur immediately upon the start of a new speedcook operation (just prior to voltage compensation occurring) and there will be no indication in the display that thermal compensation has occurred. The amount of thermal compensation (1, 2, or 3 power levels) depends upon the temperature of the oven cavity at the start of the speedcook operation and the amount of time selected.

When thermal compensation occurs, it is not possible to see the **adjusted** power levels in the display. If you were to press the power level pad during a speedcook operation in which thermal compensation occurred, you would not see the adjusted power levels in the display. In fact, what you would see is the original power level setting. However, you can visually see compensation occurring by carefully observing the cycling of the halogen lamps.

**WARNING:** When viewing the halogen lamps, do **not** stare directly into the face of the door window. View the oven interior from a distance far enough not to cause eye strain.



## Thermal Compensation Test

To better understand this operation, you can perform the following test (only if the oven cavity is at room temperature). Remove the pan from the oven so you can see both the upper and lower halogen lamps. Select "Speedcook, Meats, Hamburger, 1/2 inch thick, 1-2 patties." The following will show in the display:



GEA00426

Notice that the display shows power levels of 10 for each cooking component. During this test, you will be operating the oven with no load. For this reason, it will be necessary to **adjust the microwave power level to zero (M=00)**. To do this, press the power level button on the control panel. Leave the upper and lower power levels at 10 (U=10, L=10), and adjust the microwave to zero (M=00).



NOTE: Set Microwave to Zero (M=00)

GEA00427

Start the speedcook operation and carefully notice the cycling of the halogen lamps. At power levels of 10, both the upper halogen lamp pair and the lower halogen lamp should be on 100% of the time. However, remember that the upper rear halogen lamp always cycles at 85% of the upper halogen power level setting, so you will be able to see the upper rear halogen lamp cycle off briefly (see "UPPER HALOGEN LAMP BALANCE" for additional information).

With approximately 1 minute remaining, the oven will stop and you will be instructed to turn over the food. Briefly open the door and close it, and then touch START to resume the remainder of the cooking time. At the end of the cooking cycle, repeat the steps above using the same hamburger selection (**remember to once again set the microwave power level to zero (M=00)**). Once again pay attention to the halogen lamp cycling. Since the oven is now hot, you should be able to visually see thermal compensation occurring. You will notice that both the upper and lower halogen lamp power levels have been decreased by some amount.

What is important to note is that while the power levels have been reduced (thermal compensation), the power levels which will show in the display (if you touch the power level pad while speedcooking operation is occurring) will be the original power levels (U=10, L=10, and M=00).

From a consumer's point of view, if the consumer were to cook two hamburger patties, and then immediately cook two more patties, they could notice the halogen lamps cycling differently with the same selection used each time. This is perfectly normal when thermal compensation occurs. The consumer's Owner's Manual states the following:

### Page 21 - Lights

"The halogen lights will dim and cycle on and off during a speedcook cycle, sometimes even at full power levels. This is normal. The oven senses the heat level and adjusts automatically."

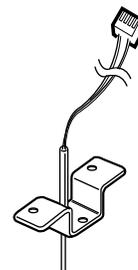
### Page 38 - Troubleshooting, Lights

"Light during a speedcook cycle dims and cycles on and off, even at full power levels. This is normal. Power level has been automatically reduced because the oven is hot. The oven senses the heat level and adjusts automatically."

## Thermal Protection

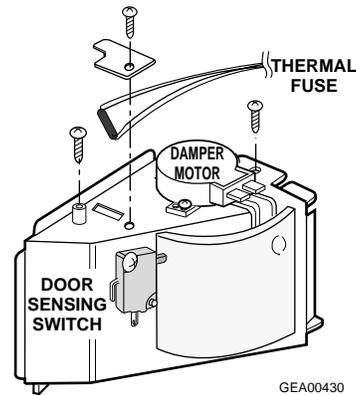
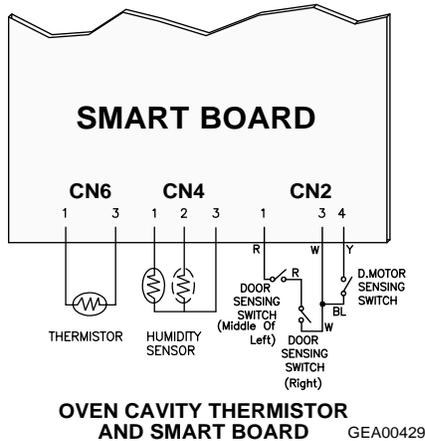
If oven cavity temperatures reach somewhere in the range of 500°F to 600°F, or if a speedcooking selection is chosen which exceeds 12 minutes of cooking at halogen lamp power levels (upper and lower) greater than 7, all power levels (upper, lower, and microwave) will be reduced to 7 for the remainder of the speedcooking selection. This system allows for safe exterior operating temperatures.

In the unlikely event that thermal protection is required, the consumer will not notice any change in the display readout (no power level change indication); however, they may notice that the halogen lamps are cycling differently than expected, due to the change in power levels.

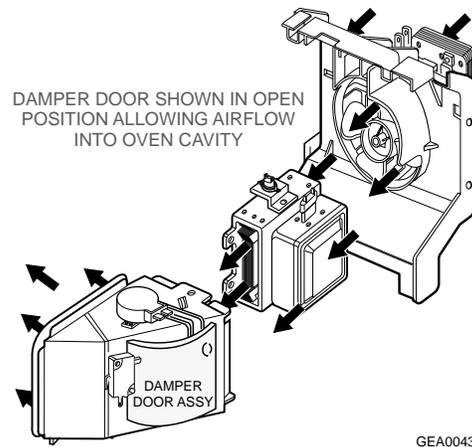


GEA00428

As was the case with thermal compensation, the control is provided by the thermistor and smart board, with the thermistor sensing the oven cavity temperature and the smart board providing the proper responses to lower all power levels to 7.



During microwave oven cooking, the damper door is fully open, allowing air to travel through and around the magnetron tube into the oven cavity.



## Thermal Safety

In the unlikely event that internal oven cavity temperatures exceed 600°F, speedcooking operation will be terminated.

The oven cavity thermistor is constantly sensing oven cavity temperatures and providing input to the smart board. When the smart board determines that over 600°F has been reached, it will terminate speedcooking operation and return the oven display to its normal OFF position (with time-of-day clock showing in the display). When the unit cools, it will return to normal operation.

Thermal safety provides an additional means of thermal protection, in addition to the thermal protection mode mentioned in the previous section.

## Damper Door Assembly

The damper door assembly has a metal semi-round door, which rotates by control of a damper motor, to open and close off air from the damper chamber to the oven cavity. The thermal fuse and door sensing switch mount to the damper door assembly.

During speedcooking operation (recipe or manual speedcook), the metal damper door rotates into the damper chamber, closing off air flow from the magnetron blower into the oven cavity. In doing so, heat from the oven interior is contained in the oven cavity.

### Damper Door Switch

The damper door sensing switch is mounted to the damper duct. The switch monitors the metal door position and provides this information to the smart board (“Metal damper door open” or “Metal damper door closed”), which controls the direction and operation of the damper door motor. If the damper door sensing switch shorts (or opens), the damper motor will continually cycle the damper door open and closed until one complete switch cycle is detected.

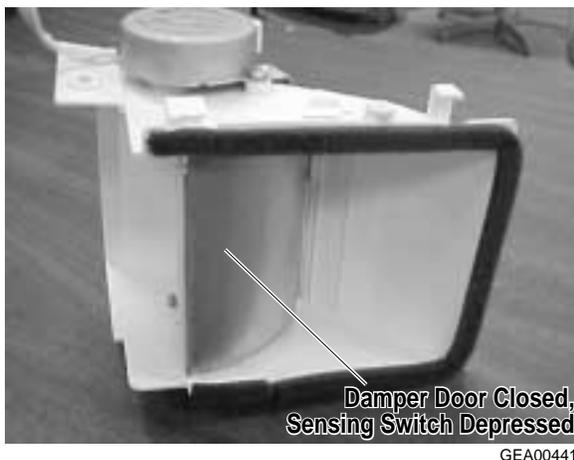
### Damper Door Open:

The following illustration shows the position of the metal damper door in the open position. In this position, air blowing through and across the magnetron tube can enter the oven interior. With the damper door open, the damper door sensing switch is not depressed.



### Damper Door Closed:

The following illustration shows the position of the metal damper door in the closed position. In this position, air from the magnetron blower will not enter the oven interior. With the damper door closed, the damper door sensing switch is depressed.



The following damper door positions will occur with various operations:

- **When the oven is not in use** (power applied to the unit with time-of-day clock showing), the damper door will always be in the open position.

- **Speedcooking** - At the start of speedcooking operation, the damper door will close, sealing off the damper duct from the oven cavity. The damper door will remain in the closed position during the entire speedcook operation, depressing the damper door sensing switch.
- **Microwave oven cooking** - At the start of microwave cooking, the damper door will cycle one complete revolution (completely close and then reopen) and stop in the open position (damper door sensing switch not depressed). **The oven cavity lamps will not illuminate during microwave operation.**

### Oven Cavity Lamps

The oven cavity lamps are located at the upper rear of the oven cavity and illuminate only when the oven door is opened. During microwave oven cooking, the oven interior can be illuminated by pressing the MICROWAVE OVEN LIGHT pad on the front panel. The lights will come ON and will remain ON until the end of the cooking cycle. In the event that it becomes necessary to change the lamps, it will be necessary to remove the oven from its installation.

### Thermal Fuse

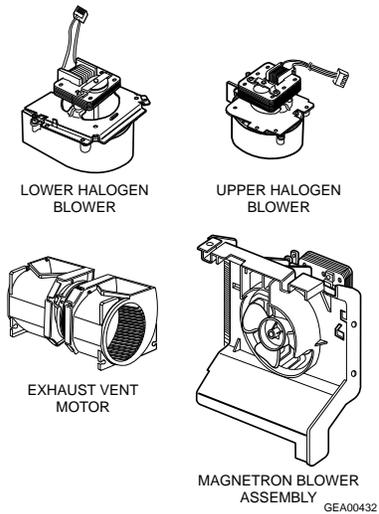
The thermal fuse is mounted to the top of the damper duct over a small rectangular hole in the duct. This hole allows the thermal fuse to sense temperatures inside the duct cavity. The fuse is secured to the damper duct with a small screw and retainer. In the event that it becomes necessary to change this fuse, it will be necessary to remove the oven from its installation (see page 32).

### Air Flow

There are four fan motors in the Advantium design which provide airflow for proper cooling. During speedcooking (pre-selected recipe or manual speedcook), **all four fan motors will run during the entire speedcook operation.**

## Upper and Lower Halogen Blowers

The upper and lower halogen blowers only run during speedcook operations (speedcook recipe or manual speedcook selections). Both motors pull in fresh air from outside the unit and direct the air across the halogen lamps.



### Upper Halogen Blower

As you will note from the illustration on the following page, the upper halogen blower pulls air in from the upper grille area. The air is then directed (blown) across the upper halogen lamp pair and exhausted back into the room through the lower grille area. The hot air directed across the upper halogen lamp pair is **not** controlled or directed by the exhaust motor.

### Lower Halogen Blower

The lower halogen blower draws room air in through the upper grille area. The air is pulled down into the lower halogen blower and directed (blown) across the lower halogen lamp. The air is then exhausted through the lower grille area.

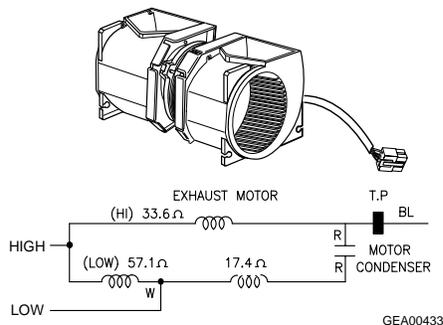
### Magnetron Blower Assembly

During microwave operation, room air is drawn in through the upper grille area and into the magnetron blower area. The magnetron fan blows the cool air through and around the magnetron tube. The air then passes through the damper door assembly (damper door is open during microwave operation) into the oven cavity.

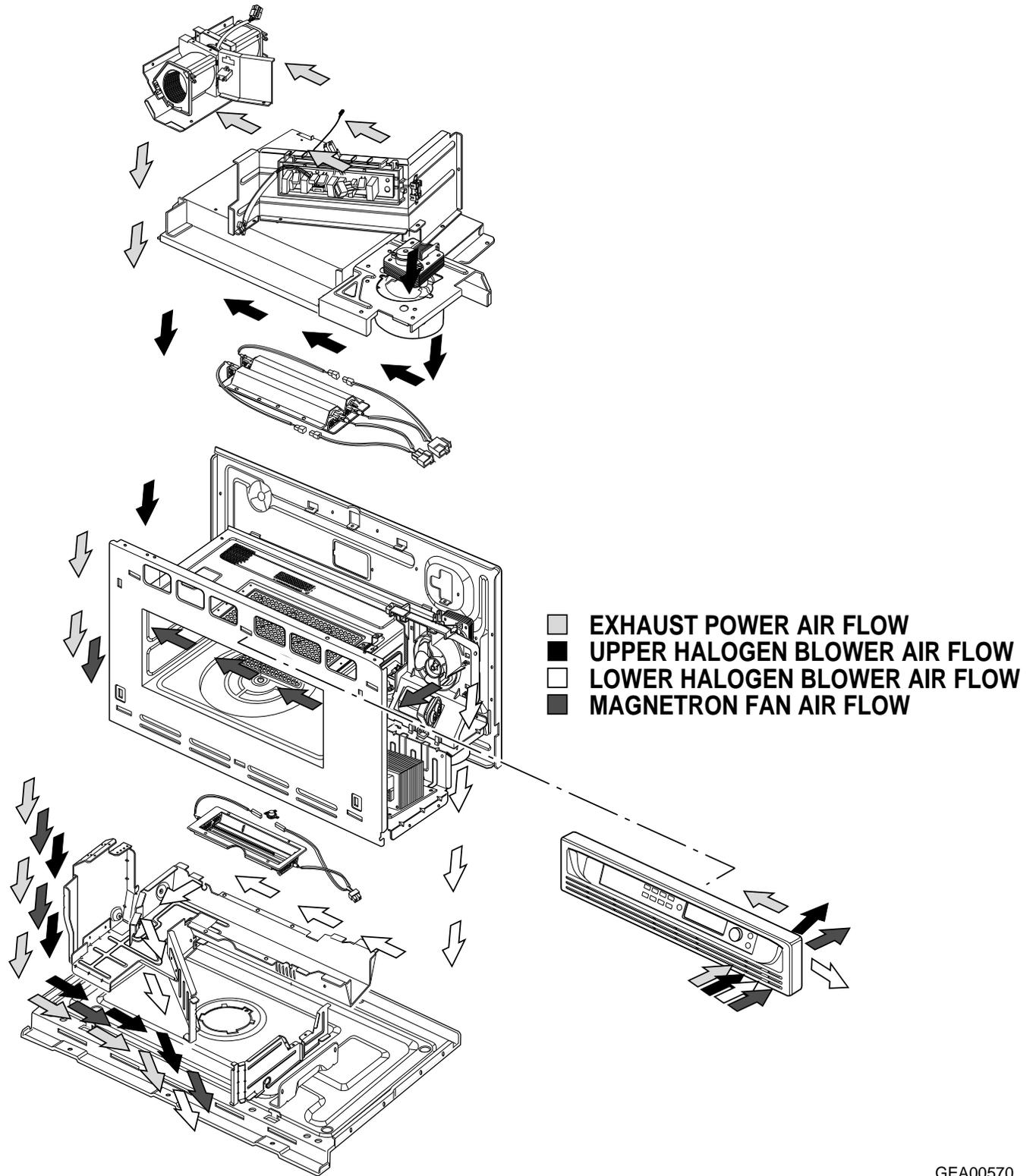
As air enters the oven cavity, pressure builds up inside, forcing hot air out the top of the oven. The air passes across the humidity sensor and back into the room through the lower grille area.

## Exhaust Motor

The exhaust motor helps remove heat from all components. The fan will be ON during cooking. At the end of speedcooking, the exhaust fan will continue to run for 1 minute (30 seconds on HIGH and 30 seconds on LOW), and the display will read "OVEN IS COOLING." The fan will automatically shut off when the internal parts of the oven have cooled.



Air Flow Diagram



GEA00570

# *Mechanical Disassembly*

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## Serviceability With Oven Installed

The following component can be accessed from the front of the oven with the unit installed:

- Oven door

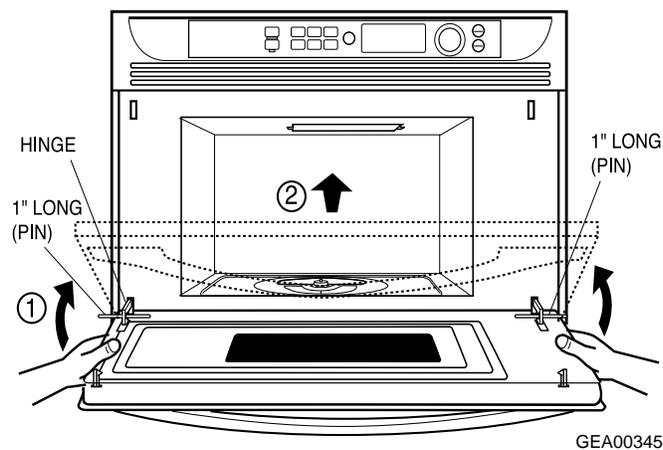
### Remove Oven Door

**WARNING:** A microwave leakage test must be performed anytime a door is removed, replaced, disassembled, or adjusted for any reason. **The maximum leakage is 4 MW/CM<sup>2</sup> (refer to “Microwave Leakage Test” on page 44).**

1. Disconnect power by turning off the circuit breaker.
2. Open the door and remove any ceramic or metal trays or grills from the oven.

**Caution:** Put electrician's tape on each side of the hinges prior to performing the next step. This will protect the door panel from scratches.

3. Insert a 1.0-in.-long pin (0.098-in. diameter) into the hole of each hinge.
4. Close the door approximately one-third of the way.
5. Lift up on the door to remove it from the oven.

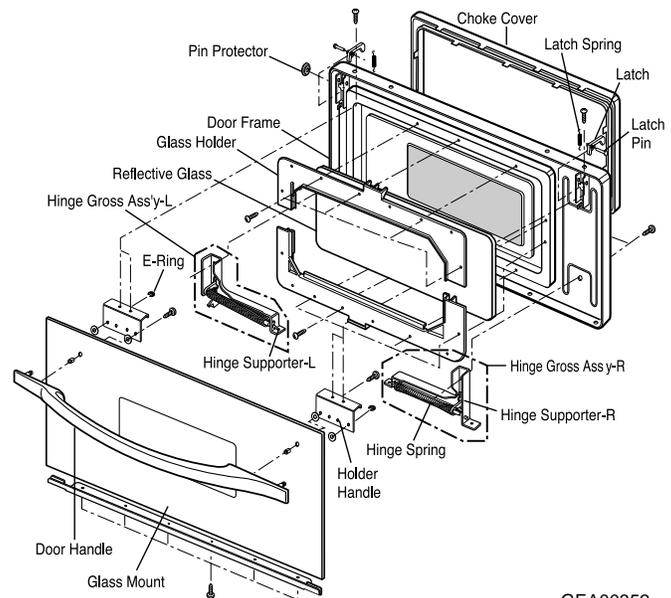


GEA00345

### Disassemble Oven Door

1. Remove the door from the oven (see previous procedure).
2. Remove 4 screws from the upper side of the door frame. This will separate the door glass.

3. To remove the door handle, remove 2 screws and 2 E-rings from the holder handle.
4. To remove the glass mount, remove 6 screws from the bottom of the door frame.
5. To remove hinge assemblies, remove 6 screws from the door frame.



GEA00352

## Serviceability With Oven Removed

**WARNING:** Before proceeding, remove all power to the oven by turning off the appropriate circuit breaker.

**WARNING:** When reassembling the product, remember to reattach all ground wires and put screws in their correct locations.

**The oven must be removed from the installation to allow servicing of internal components.**

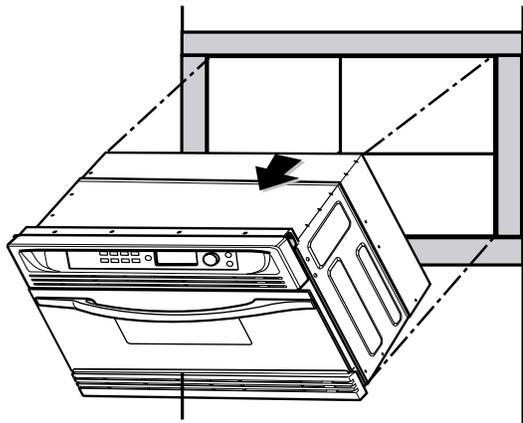
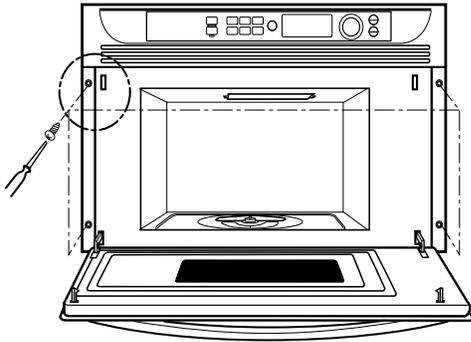
### Remove Oven From Cabinet or Wall Opening

**WARNING:** This oven requires 2 people for the removal process. Grasp the bottom of the oven at the front and rear on each side.

**Caution:** Do not use the oven handle to lift or lower the oven. Damage will occur!

- Be careful that the conduit is not caught or stressed during removal.

1. Remove 4 mounting screws located in the front oven frame.



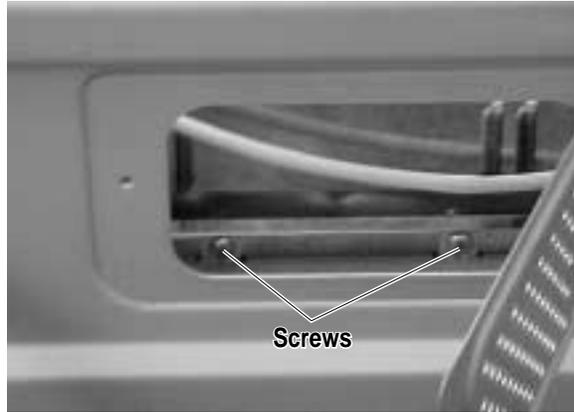
GEA00342

2. Slide the oven forward, out of the cabinet or wall opening.
3. Lower the oven onto a protected surface for further servicing.

### Remove Oven Cavity Lamps

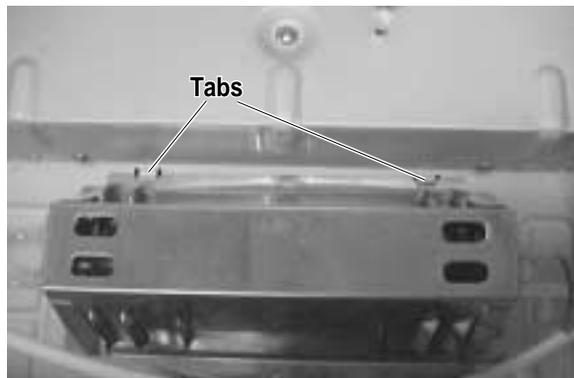
1. Remove the access panel at the rear of the unit.

2. Remove 2 screws holding the lamp housing in place.



GEA00442

3. Slide the housing out from under the tabs.



GEA00443

4. Rotate the lamp housing to replace the bulb (WB36X10160).

### Remove Outer Access Covers

**To access all other electrical components (excluding the left latch switch), one or more covers must be removed.**

**WARNING:** Before removing covers, remove all power to the oven by turning off the appropriate circuit breaker.

#### To Remove the Top Access Cover:

1. Remove 9 screws and lift off the cover.

#### To Remove the Right Access Cover:

1. Remove the top access cover (see previous procedure).
2. Remove 8 screws on the right access cover panel.
3. Lift off the cover.

### To Remove the Left Access Covers:

1. Remove the top access cover (see previous procedure).
2. Remove 8 screws from the left access cover and lift off the cover.

### To Remove the Rear Access Cover:

1. Remove the top, right, and left access covers (see previous procedures).
2. Remove 6 screws from the rear access cover.
3. Lift off cover.

### To Remove the Lower Front Grille:

1. Remove 3 screws under the grille from the bottom access panel.
2. Place fingers on each side of the grille.
3. Pull grille forward and upward to disengage hinge tabs from the chassis.

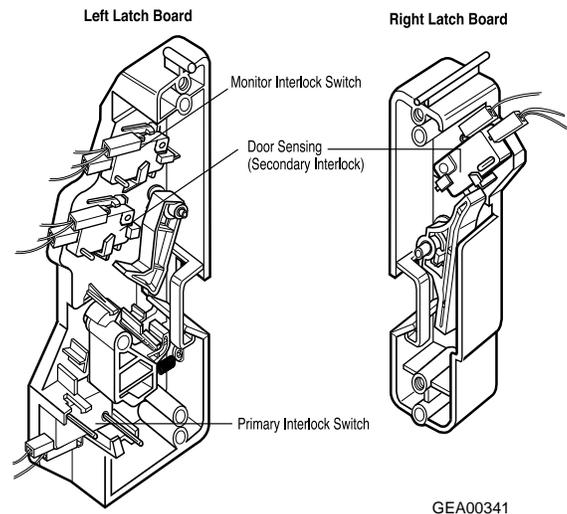
### To Remove the Bottom Access Cover:

1. Remove the lower screws from the right access panel (5 screws) and rear access panel (1 screw).
2. Remove the left access panels and lower front grille (see previous procedures).
3. Remove 7 screws from the bottom access panel.
4. Lift cover slightly to disengage tabs from oven chassis.
5. Remove bottom access cover.

## **Interlocks and Monitor**

The primary, door sensing (right and left), and monitor switches are mounted to plastic latch boards on the right and left sides of the oven cavity.

**Note:** To access the 3 switches in the left latch assembly, remove 1 screw from the door switch access cover on the left access panel. Remove the access cover.



### Primary Interlock Test

1. Disconnect the power, remove the enclosure, and discharge the capacitor.
2. Check the continuity of the switch:
  - Door closed: 0 ohms
  - Door open: infinite ohms

### Door Sensing Test

Make continuity check between switch terminals. Normal readings are:

- Door closed: 0 ohms
- Door open: infinite ohms

### Monitor Switch

The bottom latch pawl pushes horizontally and actuates the lever of the monitor interlock, opening the switch.

- Door closed: infinite ohms
- Door open: 0 ohms

### Interlock System Test

1. Disconnect the power, remove the enclosure, and discharge the capacitor.
2. Check the 20-amp fuse for continuity and proper size. Do **not** use any other fuse or size except 20 amp.
3. Remove the monitor switch leads to isolate the switch.
4. Check continuity of the monitor switch with the door open and door closed.
  - Door closed: infinite ohms
  - Door open: 0 ohms

5. Test the circuit operation.

- a. Connect temporary jumper leads across relay contacts, and primary interlock and door sensing switches to simulate shorted switch contacts. Locate convenient connections in the circuit to be certain COM and NO terminals are used.
- b. Connect the ohmmeter (Rx1) across the line terminals of the power cord. Continuity must show:
  - Door closed: low ohms
  - Door open: 0 ohms
- c. Remove the 20-amp fuse. The circuit must open (infinite ohms). If the circuit does not open, check wiring of monitor and interlock circuits.

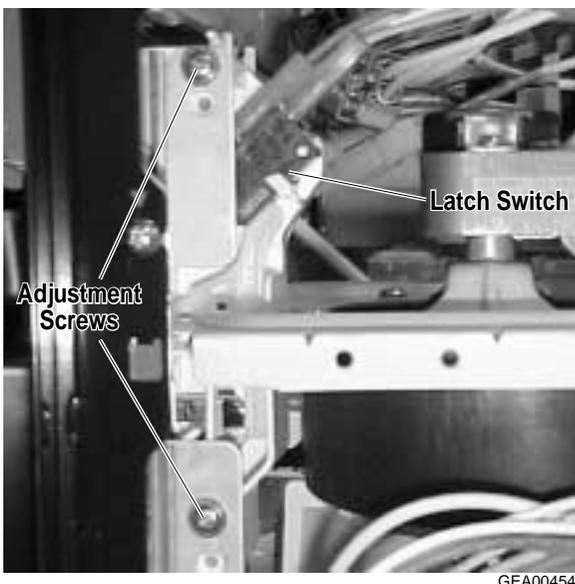
**WARNING:** After completing the test, remove the temporary jumper leads from the interlocks and relay, and reconnect the monitor switch leads.

### Remove and Adjust Door Latches

**Caution:** Perform the microwave leakage test when replacing or adjusting interlock switches or a latch board.

#### To Adjust the Right Latch Assembly:

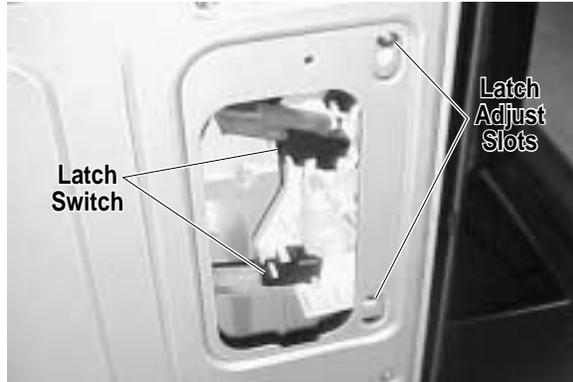
1. Remove the top and right access covers (see page 28).
2. Adjust the screws or replace the door switch as needed.
3. Retighten screws.



GEA00454

#### To Adjust the Left Latch Assembly:

1. Remove the door switch access cover on the left access panel.
2. Adjust the screws or replace the door switches as needed.
3. Retighten screws.



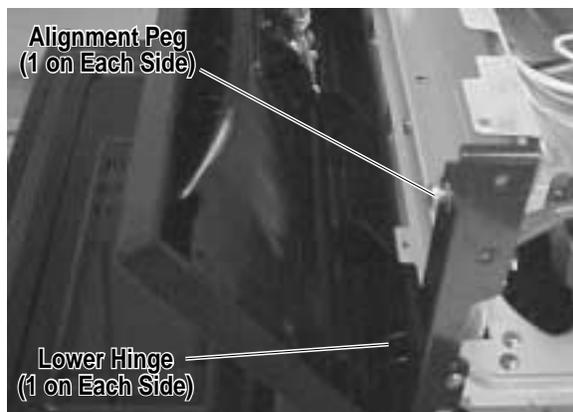
GEA00455

### Access and Remove Control Panel

The control panel is hinged at the bottom and secured at the top with holes that fit over alignment pegs on the oven trim.

#### To Access the Control Panel:

1. Open the oven door and place your thumbs under each end of the control panel.
2. Push upward to disengage the holes from the alignment pegs.
3. Allow the top of the control panel to fall forward.

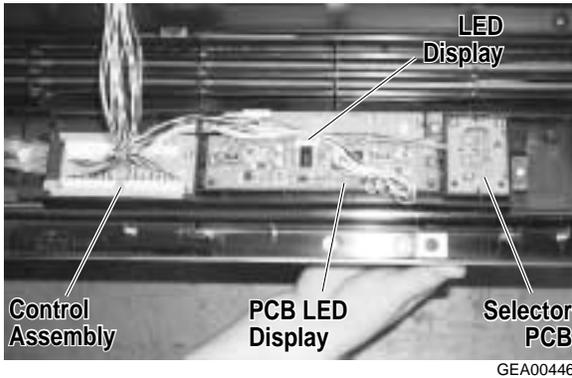


GEA00445

To Remove the Control Panel:

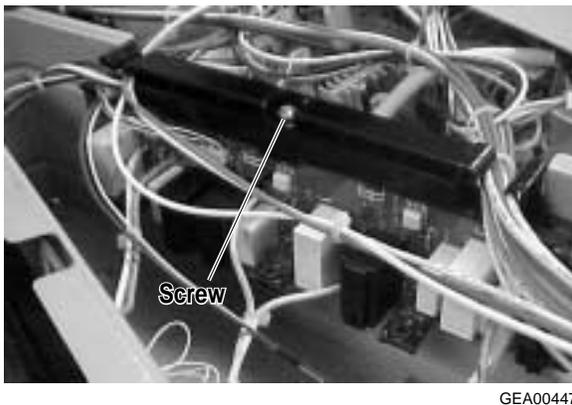
**Caution:** Be sure to note the location and routing of wires for proper reinstallation purposes.

1. Remove the top access cover (see page 28).
2. Disconnect all associated connector plugs.
3. Lift the control panel to disengage the lower hinge tabs from the chassis.
4. Remove the control panel.



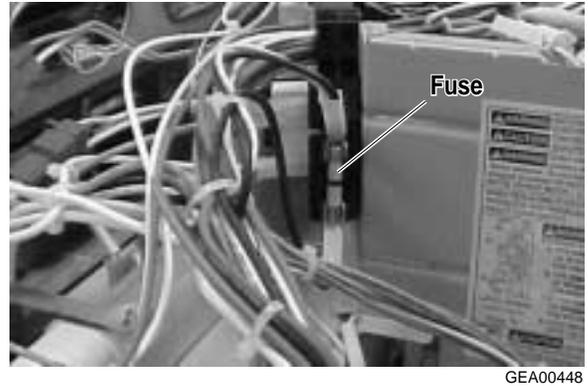
**Remove Relay Board**

1. Remove the top access cover (see page 28).
2. Remove 1 screw that secures the relay board to the metal frame.



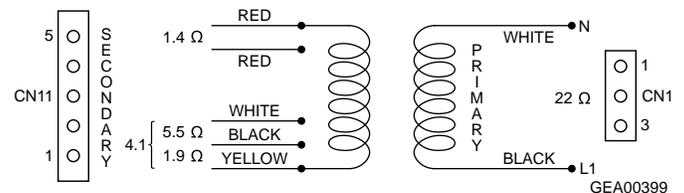
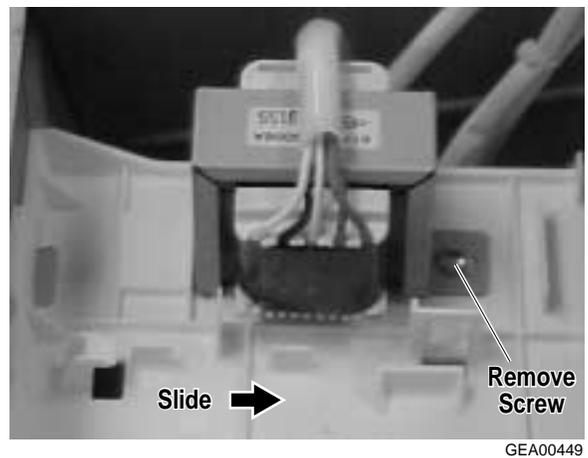
3. Disconnect all associated wiring to relay board.
4. Lift the relay board and disengage the hinges at the bottom of the board.
5. Remove the relay board.

**Note:** The fuse is located on the right side of the relay board housing.



**Remove Low Voltage Transformer**

1. Remove the top and rear access covers (see pages 28-29).
2. Remove 1 screw on the front tab of the low voltage transformer beside the main PCB assembly.
3. Slide the transformer forward to disengage the back tab from the molded holder on the chassis.

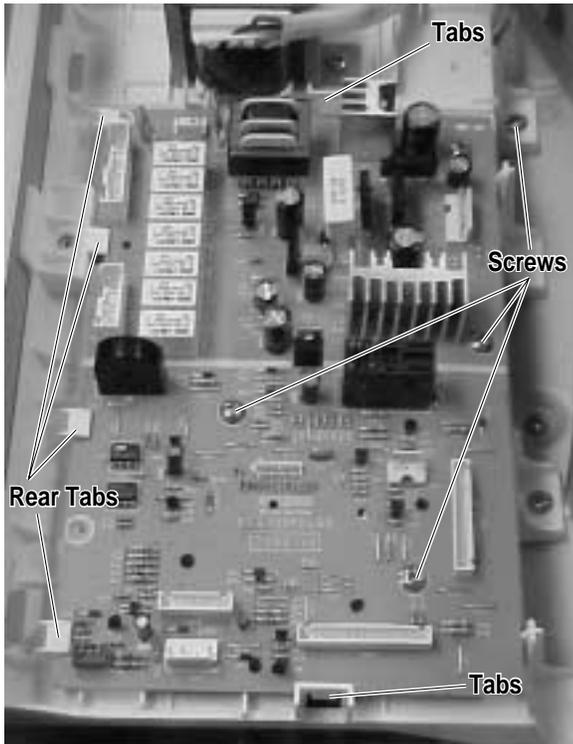


CN11

Pins 4 to 5	.....	1.4 ohms	.....	7.7 VAC
Pins 1 to 3	.....	4.1 ohms	.....	6.6 VAC
Pins 1 to 2	.....	1.9 ohms	.....	12.4 VAC
Pins 2 to 3	.....	5.5 ohms	.....	19.0 VAC

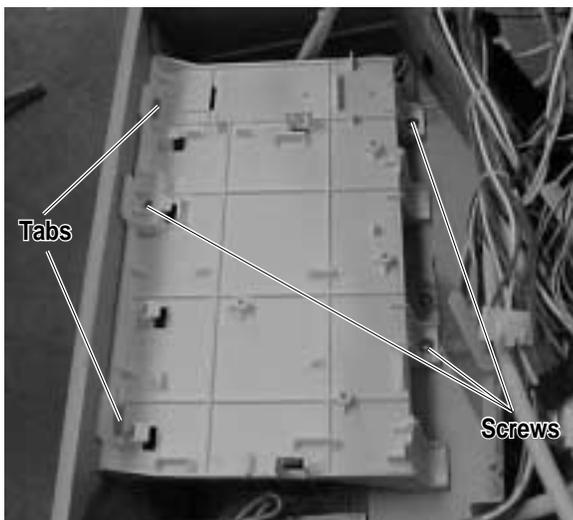
## Remove Main PCB Assembly

1. Remove the top and rear access covers (see pages 28-29).
2. Remove 4 screws that attach the main PCB assembly to the plastic support.
3. Slide the board forward and lift it slightly upward to disengage the board from 4 rear tabs.



GEA00450

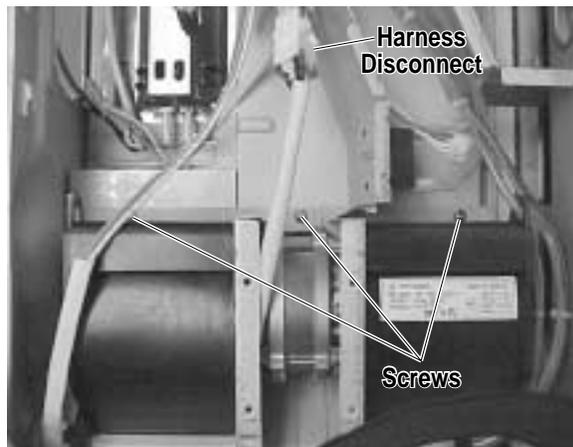
4. Remove 2 screws on the front and 1 screw on the back of the plastic support. Slide the support to the left.



GEA00451

## Remove Upper Exhaust Assembly - Left

1. Remove the top, left, and rear access covers (see pages 28-29).
2. Remove 3 screws and disconnect the harness.



GEA00452

3. Lift exhaust motor upward to remove.

**Note:** The fan capacitor is located to the right of the exhaust motor.



GEA00453

## Remove Damper Door Assembly

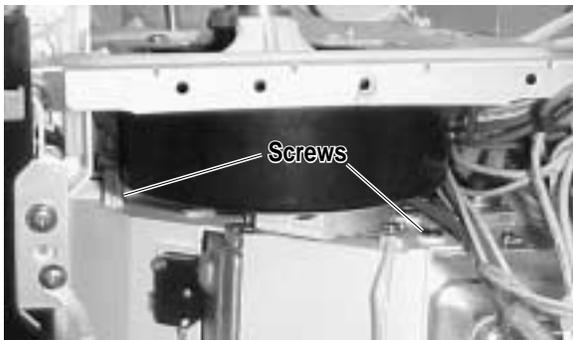
1. Remove the top and right access covers (see page 28).

- Remove 1 screw for more flexibility when accessing the damper door assembly and oven cavity thermistor.



GEA00576

- Remove 2 screws via the damper screw access holes.

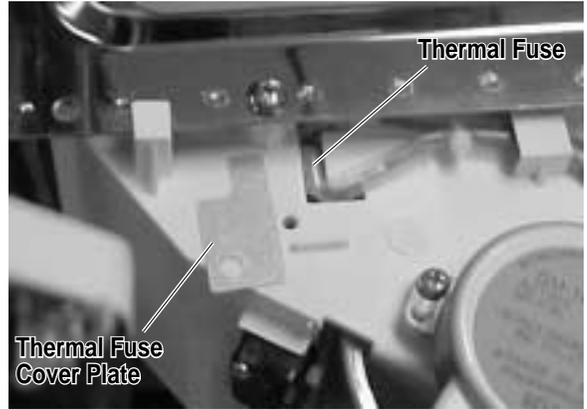


GEA00575



GEA00574

- To change the thermal fuse, remove 1 screw from the thermal fuse cover plate.

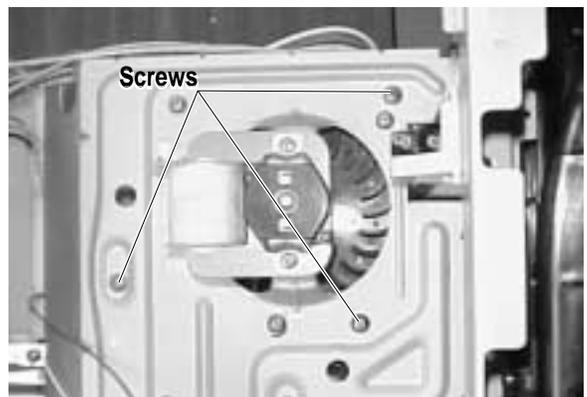


GEA00469

- Move the fan motor assembly out of the way.
- Remove 2 screws securing the damper door assembly.
- Remove the assembly.

### Remove Upper Blower Motor Assembly

- Remove the top and right access covers (see page 28).
- Remove the damper door assembly (see previous procedure).
- When the damper housing is removed, remove 3 screws by the upper blower motor.



GEA00463

- Remove the motor.

### Remove Oven Cavity Thermistor

- Remove the top and right access covers (see page 28).
- Remove the damper door assembly (see page 32), HV capacitor and diode (see page 36), magnetron fan motor assembly (see page 36), and magnetron (see page 37).

- With the magnetron removed, you can now see the thermistor, located under the air tunnel.



GEA00579

- Remove 2 screws holding the thermistor in place. Access the screws through the access ports.

**Note:** Plug buttons sit on the access ports. Remember to insert them when reinstalling the thermistor.



GEA00578

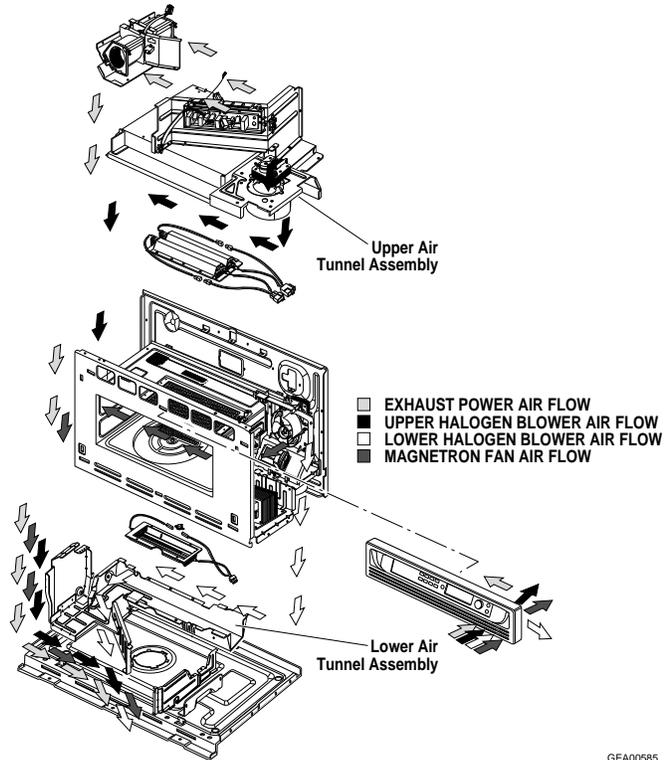
- Push up on the thermistor from inside the oven cavity and remove.



GEA00439

- Disconnect the thermistor plug.

## Remove Upper Air Tunnel Assembly



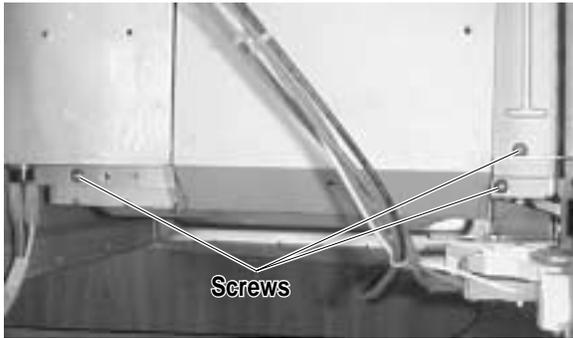
GEA00585

- Remove all access covers (see pages 28-29).
- Remove the exhaust motor, PCB assembly, and upper barrier (see page 32).
- Remove 4 screws from upper air tunnel assembly.
- Carefully lift assembly up from the chassis to remove.

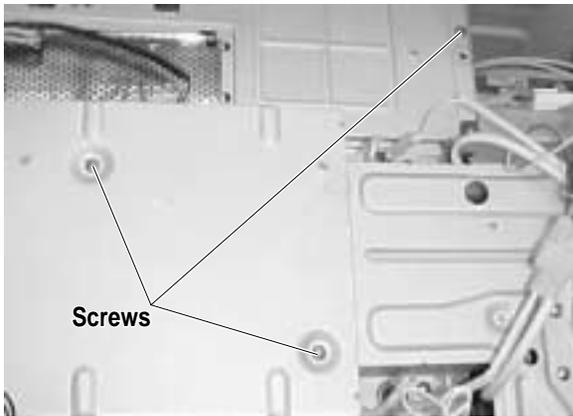
## Remove Upper Halogen Assembly

- Remove all access covers (see pages 28-29).
- Unplug the wiring harness from the following components:
  - Left latch switches
  - Oven cavity T.C.O. (upper left rear of unit)
  - Exhaust fan assembly
  - All connections to the main PCB except the LVT
  - Upper halogen lamps and oven cavity lamps
  - Fuse
  - Relay board
  - Upper blower fan assembly
- Remove the exhaust fan assembly and fan capacitor support.

4. Remove the main PCB.
5. Remove the relay board and mounting.
6. Remove 6 air cover screws.

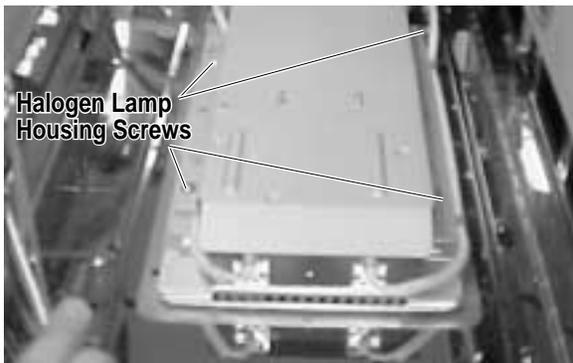


GEA00457



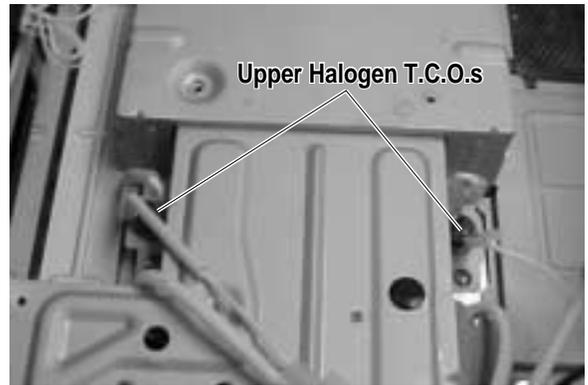
GEA00458

7. Remove 4 screws from the lamp cover.



GEA00459

8. Remove the control panel (see page 31).
9. Remove the oven cavity lamp assembly (see page 28).
10. Disconnect 4 wire leads from the upper thermostat.



GEA00460

11. Straighten 8 tabs that secure the reflector to the halogen cover.
12. Carefully lift the cover off the lamps.

**Caution: Do not touch the halogen lamps. Dirt and skin oil can cause the lamps to explode when turned on.**

**Note:** The two upper halogen lamps are replaced as a pair.



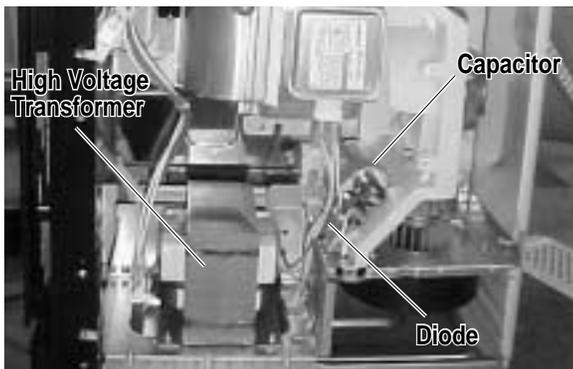
GEA00461

## Microwave High-Voltage Section

**WARNING:** Prior to servicing the high-voltage capacitor or diode, remove power to the oven (turn off the circuit breaker).

**WARNING:** Always be certain the capacitor is discharged before servicing. Manually discharge by placing an insulated-handle screwdriver between the diode connection of the capacitor and the oven chassis ground. Use screw head close to capacitor to ensure ground metal contact.

The microwave high-voltage section is located on the right side of the Advantium oven. To access, remove the top and right access covers (see page 28).



GEA00571

## Remove HV Capacitor and Diode

1. Disconnect all associated connector plugs.
2. Remove 1 screw connecting the diode to the oven chassis.
3. Remove 1 screw connecting the capacitor mounting bracket to the plastic holder.

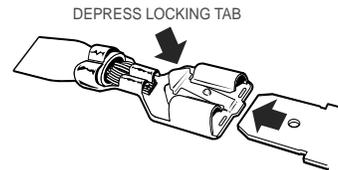


GEA00467

4. Remove the capacitor, diode, and capacitor mounting bracket as one assembly.

## Remove Magnetron Fan Motor Assembly

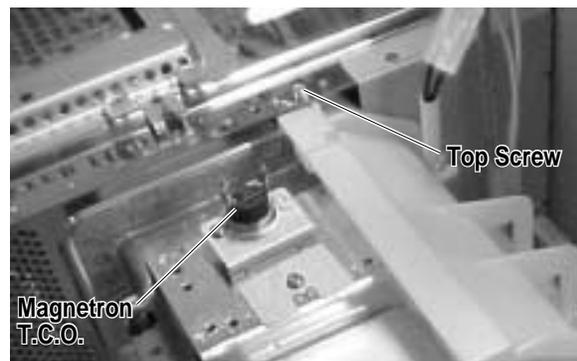
**Note:** The electrical terminal ends which attach to the high-voltage capacitor have locking tabs on them. These tabs cannot be seen because they are encased in plastic. To remove these terminals, grasp the top and bottom of the terminal with needle-nose plier jaws. Gently squeeze the plier jaws together while pulling the electrical terminal from the capacitor.



**NOTE:** TERMINAL END IS ENCASED IN CLEAR RUBBER AND DOES NOT ALLOW YOU TO SEE LOCKING TAB

GEA00434

1. Disconnect the red and white high-voltage transformer leads from the capacitor.
2. Remove the top screw from the fan motor assembly.



GEA00464

3. Remove 1 screw connecting the diode to the oven chassis.



GEA00465

4. Pull the assembly toward you and tip it slightly back to remove the assembly from the oven.

## Remove Magnetron Assembly

1. With the top and right access covers removed, remove the HV capacitor, diode, magnetron fan (see page 36); and the damper housing (see page 32).
2. Disconnect all associated connector plugs.
3. Remove 4 screws securing the magnetron assembly to the oven chassis and remove the magnetron assembly.

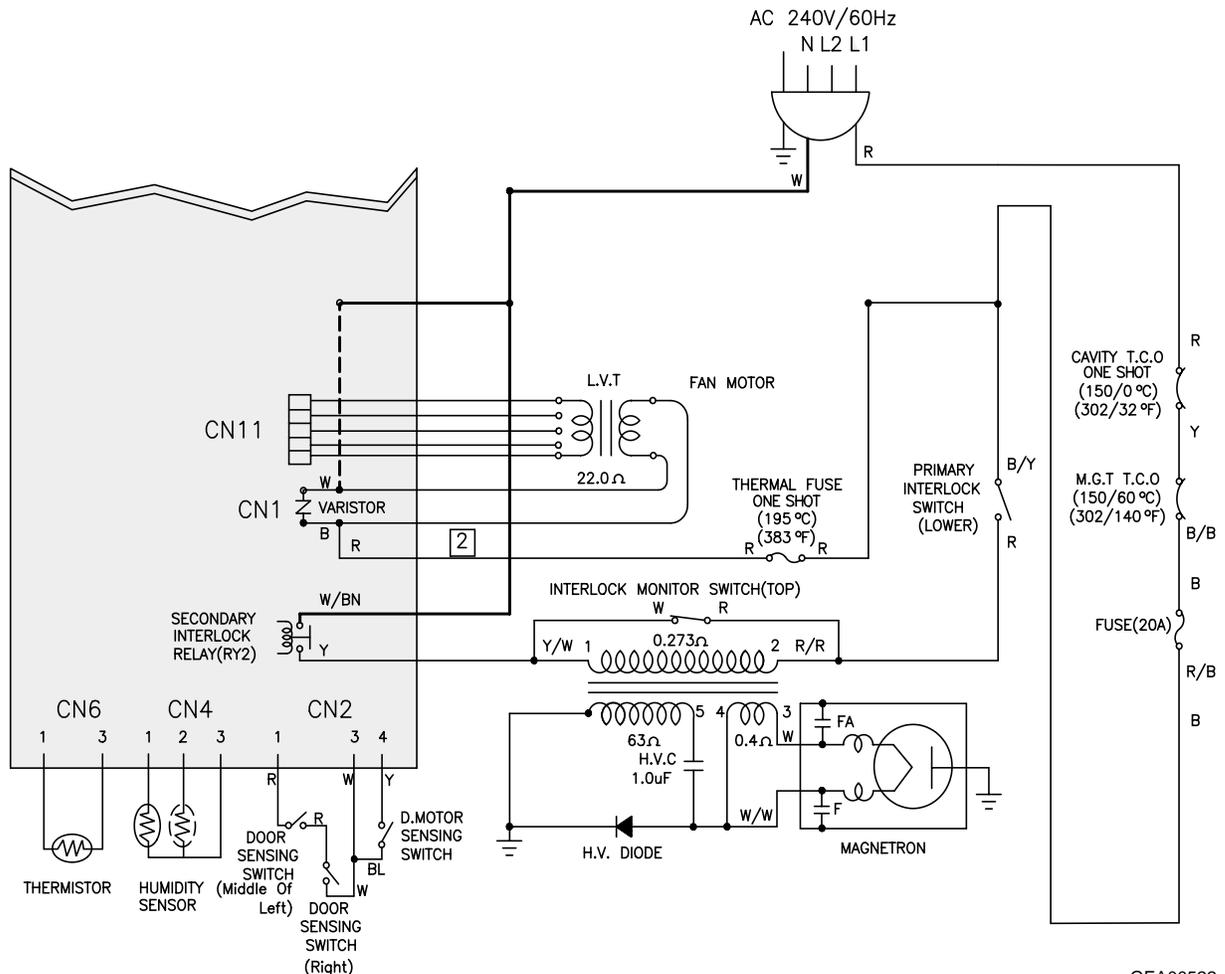


GEA00577

4. Remove the magnetron thermal cut-out (T.C.O.).

## Remove High-Voltage Transformer

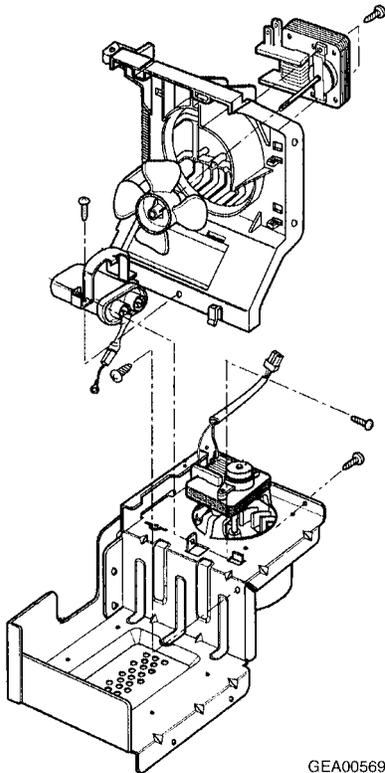
1. Disconnect 6 wiring connector plugs.
2. Remove 4 screws that secure the high-voltage transformer to the lower blower motor assembly.
3. Remove the high-voltage transformer.



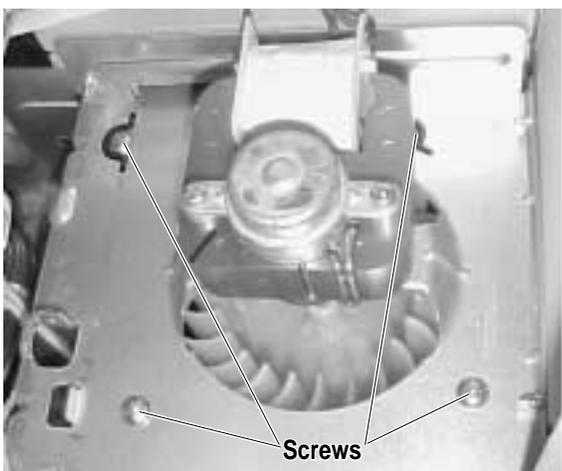
GEA00522

## Remove Lower Blower Motor Assembly

**Note:** The magnetron fan motor, HV capacitor, and diode **must** be removed before you can access the lower blower motor assembly.



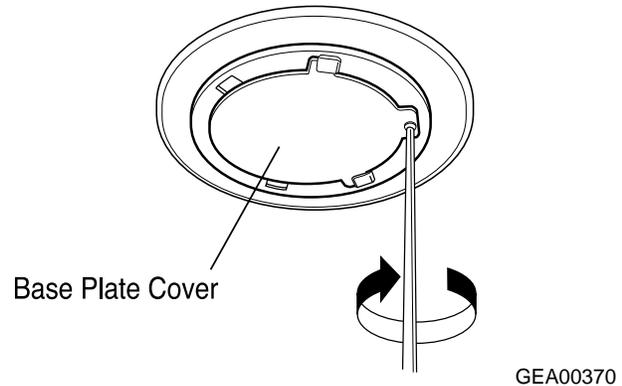
1. Remove the top and right access covers (see page 28).
2. Remove 4 screws securing the magnetron blower to the oven chassis (see page 37).
3. Remove 4 screws securing the lower blower motor in place.



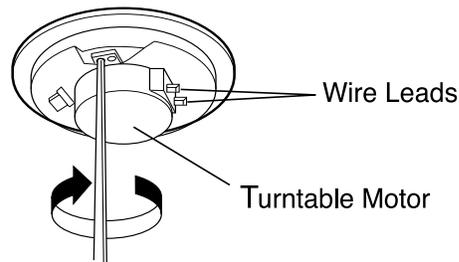
4. Disconnect all associated connector plugs.
5. Lift fan motor assembly upward while removing the lower blower motor assembly from the chassis.

## Remove Turntable Motor

1. Remove the turntable.
2. On the bottom access cover, remove 1 screw from the base plate cover. Remove the cover by rotating it counterclockwise.



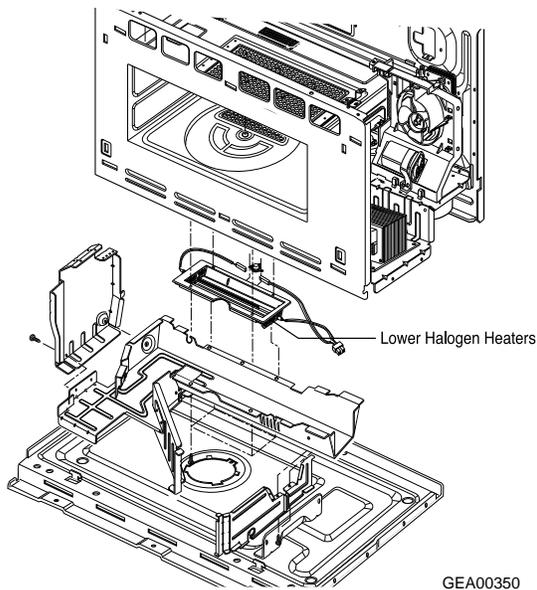
3. Disconnect motor leads.
4. Remove 2 screws securing the turntable motor to the oven cavity assembly.



## Remove Lower Halogen Lamp

1. Remove the turntable.
2. Remove 3 screws from the lower right access panel, and 1 screw from the lower corner of the rear access panel.
3. Remove the left and bottom access covers (see page 29).
4. Disconnect wiring to the lower halogen lamp (white connector).

5. Remove 2 screws from the lower edge of the inside left panel.
6. Remove 1 screw from the small right barrier and remove the barrier.
7. Remove 1 screw from the large right barrier, straighten the mounting tabs, and remove the barrier.
8. Remove 4 screws from the lower air tunnel assembly.
9. Lower the air tunnel and ease it out from under the inside left panel.
10. Disconnect the leads to the lower halogen lamp T.C.O.
11. Remove the halogen lamp.





# *Troubleshooting*

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## Diagnosing Cooking Problems

An important part of diagnosing any consumer cooking concern is listening carefully to the consumer describe the problem. Equally important is asking the consumer the right questions. The following diagnostic information is intended as a guide for you to follow when addressing cooking concerns.

### Food Items Appear to be Undercooked

Foods which appear to be undercooked or partially cooked can be the result of any one of the following items. The possible causes listed below are sorted from most likely to least likely, with item #1 being the first item that you should check.

1. Is the consumer selecting the correct type of cooking (microwave vs. speedcook), and/or is the consumer using the correct time and power levels for the type, size, and quantity of food being cooked (see the Advantium cooking guide)?
2. Is the consumer using the correct cookware for the type of food being cooked (see pages 5 and 17 of the Owner's Manual, and pages 5 and 6 of the Advantium cookbook)?
3. Is the consumer arranging the food properly on the metal cooking trays (see the Advantium cooking guide and page 7 of the cookbook)?
4. Is the turntable operating properly so that microwave energy and halogen heat are being evenly distributed to the food?
5. Inspect the upper and lower halogen lamp covers to ensure that they are free of grease and food splatterings. Build-ups of grease and food splatterings can cause a decrease in cooking performance.
6. Confirm proper line voltage to the unit (check voltage under full load).
7. Confirm that voltage compensation is operating properly (see page 18 of this service guide for details and diagnostic information).
8. Confirm that the upper and lower halogen lamps are operating (illuminating).
9. Check upper and lower halogen lamp operation at power level 10 and again at power level 5 to be sure that lamps are cycling properly. At this point, you must have a

thorough understanding of power level operation, upper halogen lamp balance operation, and thermal compensation (see pages 17-21 of this service guide for detailed information).

10. Perform a microwave performance test (page 44) to confirm that microwave energy output (HV/magnetron circuit) is operating to specification.
11. Are all fan motors operating properly (page 23 of this service guide)? During speedcook operation, **all** fan motors must operate (exhaust fan, upper halogen lamp blower, lower halogen lamp blower, and magnetron blower). Improper airflow can cause the halogen lamps or magnetron tube to cycle on the thermal cut-outs (T.C.O.s).

### Food Items Appear to be Overcooked or Burned

Foods which appear to be overcooked or burned can be the result of any one of the following items. The possible causes listed below are sorted from most likely to least likely, with item #1 being the first item that you should check.

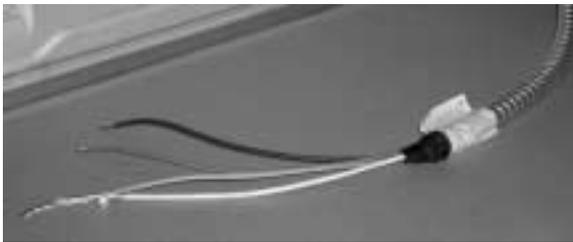
1. Is the consumer selecting the correct type of cooking (microwave vs. speedcook), and/or is the consumer using the correct time and power levels for the type, size, and quantity of food being cooked (see the Advantium cooking guide)?
2. Is the consumer using the correct cookware for the type of food being cooked (see pages 5 and 17 of the Owner's Manual, and pages 5 and 6 of the Advantium cookbook)?
3. Is the consumer arranging the food properly on the metal cooking trays (see the Advantium cooking guide and page 7 of the cookbook)?
4. Is the turntable operating properly so that microwave energy and halogen heat are being evenly distributed to the food?
5. Confirm proper line voltage to the unit (check voltage under full load).
6. Confirm that voltage compensation is operating properly (see page 18 of this service guide for details and diagnostic information).

- Check upper and lower halogen lamp operation at power level 10 and again at power level 5 to be sure that lamps are cycling properly. At this point, you must have a thorough understanding of power level operation, upper halogen lamp balance operation, and thermal compensation (see pages 17-21 of this service guide for detailed information).
- Confirm that thermal compensation is operating properly by following the thermal compensation test (see page 21 of this service guide).

## Diagnosing a “Dead” Unit

A “dead” unit is better defined as a unit that appears to have no power to it (**no clock display, oven cavity lamp, or key panel responses**). The following components and associated wiring should be checked in the below order when diagnosing a “dead” unit.

- At the power source, use your volt/ohmmeter and check the resistance from L1 to NEUTRAL. The resistance should be approximately 22.0 ohms. **Note:** The resistance reading that you just made is shown in the schematic diagram at the upper right corner of this page (low voltage transformer primary resistance).

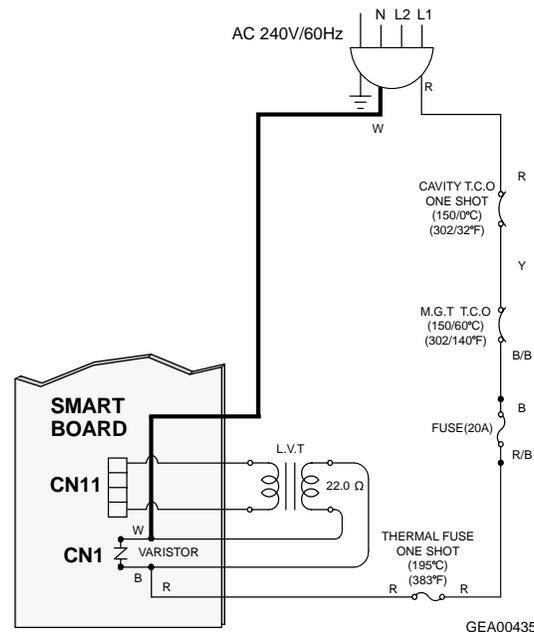


GEA00517

- If you do not read continuity from L1 to NEUTRAL, suspect the following:

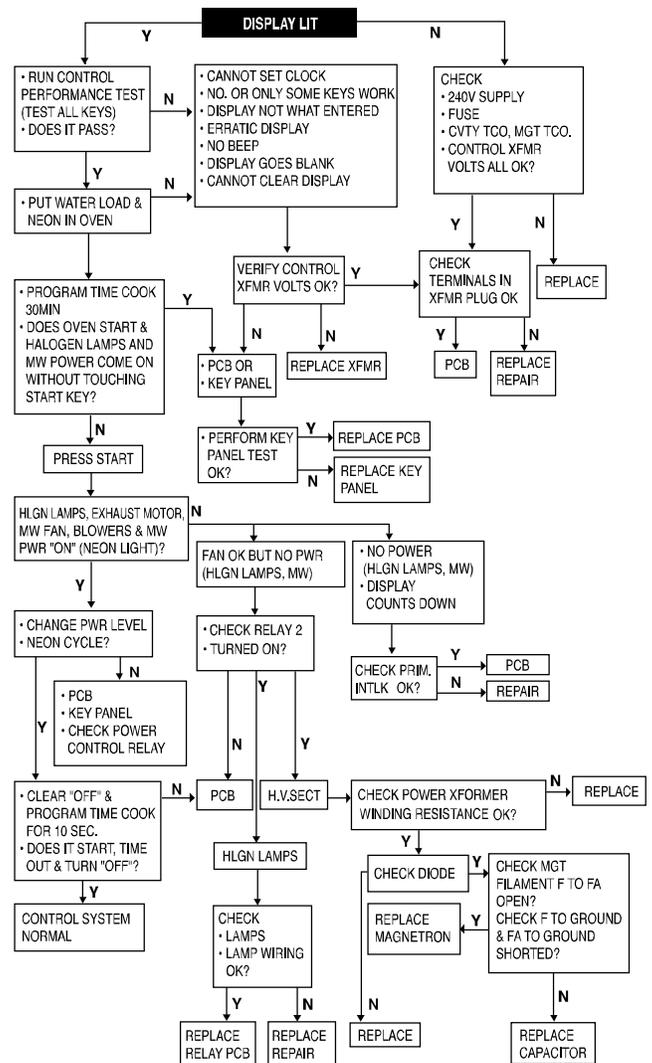
- Open fuse
- Open cavity T.C.O.
- Low voltage transformer (open primary winding)
- Open magnetron tube T.C.O.
- Open thermal fuse
- Defective smart board

Also, check all associated wiring and wiring connections.



GEA00435

- If you read approximately 22 ohms from L1 to NEUTRAL, suspect a defective smart board, loose wiring connection, or open secondary winding of the low voltage transformer.



GEA00436

## Microwave Performance Test

This test will verify that the microwave oven high voltage and magnetron circuits are operating to performance specifications.

1. Using only a WB64XO073 beaker, place a standard test load of 1 liter (1000 ml) of water in the beaker. Measure and record the water temperature prior to making the test. The water temperature should be between 59°F and 75°F.
2. Place the beaker in the center of the oven on the white ceramic microwave cooking tray.
3. Close the oven door. At the front control panel, select "Microwave, Time Cook, 2:03 Minutes, Power Level 10." Press START to begin microwave cooking.



GEA00437

4. At the end of the cooking cycle, remove the beaker of water, and measure and record the temperature.
5. The minimum difference between the initial and ending temperatures should be 32°F at 240 volts.

If the water temperature rose but did not reach the 32°F minimum, suspect a problem with the line voltage (test under full load) or magnetron tube/high voltage circuit.

If the water temperature did not rise at all, suspect a problem in the high voltage circuit.

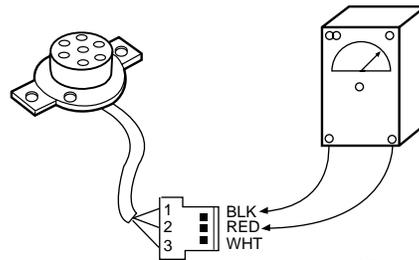
## Humidity Sensor Test

**Note:** Oven should be plugged in at least 5 minutes before test.

- Room temperature should not exceed 95°F.
- Be sure the exterior of the cooking container and the interior of the oven are dry.
- No sensor cooking is available during 5 minutes immediately after speedcook.

The humidity sensor can be tested from the front control panel area using the following diagnostic procedure:

1. Disconnect the humidity sensor connector from the smart board (CN4, 3 pin - red connector plug located at the top of the smart board).
2. Using an ohmmeter, set the scale to Rx1000, and confirm the following approximate resistance readings:
  - a. BLK - RED = 6.2K ohms
  - b. RED - WHT = 3.1K ohms
  - c. BLK - WHT = 3.1K ohms



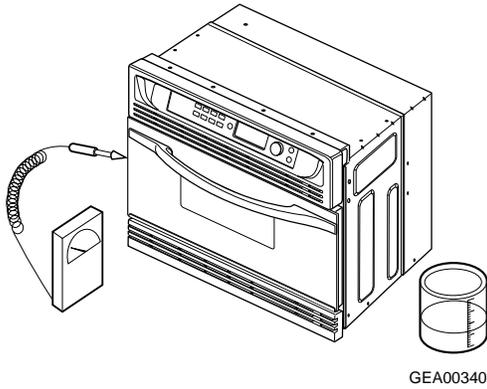
GEA00438

## Microwave Leakage Test

**Caution:** This test should **not** be performed during a speedcook operation. This test should only be performed during microwave-only operation.

To perform a microwave leakage test:

1. Place 275 ml of water in a 600 ml beaker (WB64X5010).
2. Place the beaker in the center of the white ceramic tray.
3. Set the leakage meter to the 2450 MHz scale.
4. Program the microwave for 5 minutes (power level 10) and press START.
5. Hold the probe perpendicular to the surface being tested and scan surfaces at a rate of one inch/sec. Scan the following areas:
  - Entire perimeter of door and control panel
  - Viewing surface of door window
  - Exhaust vents



**Note:** Maximum allowable leakage should not exceed 4 MW/CM<sup>2</sup>, which is used to allow for measurement and meter accuracy.

6. Leakage should not exceed 4 MW/CM<sup>2</sup>.
7. Inform the manufacturer of any oven found to have emissions in excess of 5 MW/CM<sup>2</sup>. Try to determine the cause of excessive leakage and make repairs to bring the unit into compliance at no cost to owner. Instruct the owner not to use the oven until it has been brought into compliance.
8. Record the data on your service invoice and/or microwave leakage report.

### Performance Test for Halogen Lamps

**Caution:** When performing this test, use **only** a glass beaker. Plastic beakers will melt!

**Note:** This test should be run when the oven is cool.

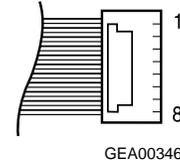
1. Place 1000 ml of water in a 1000 ml glass beaker.
2. Record the initial water temperature.
3. Place the beaker in the center of the black metal tray.
4. Program oven at U=10, L=10, and M=0 for 2.5 minutes and press START.
5. Record the ending water temperature.

The minimum difference between the initial and ending temperature should be 15°F at 240 volts.

Also, a continuity test can be taken on the upper halogen lamps by disconnecting the blue and white connectors located near the upper blower motor. Check the resistance with an ohmmeter.

### Key Panel Test

If necessary, the key panel pads can be verified by a continuity test. For ease of handling, the key panel should be removed and placed on a flat protected surface. Check continuity between the connections at the end of the ribbon (use high ohm scale).



To perform the test, press the appropriate pad on the front panel. While pressing the pad, check for continuity between the appropriate pins. For example, while pressing the SELECTOR DIAL, you should read continuity between pins 1 and 8.

PAD	CONN.	PAD	CONN.
DIAL ENTER	1-8	MICRO EXPRESS	4-8
POWER LEVEL	1-7	MICROWAVE / OVEN LIGHT	4-7
SPEED COOK / REPEAT LAST	2-8	OPTIONS	3-6
TIMER	3-7	MANUAL COOK / RECIPE	5-8
CLEAR / OFF	2-6	BACK	4-6
START / PAUSE	2-3		
HELP	2-7		

### Fault Codes

The smart board monitors various operations and can detect certain failure modes. In the event of specific failures, cooking will be terminated, a 4-beep signal will be heard, and a fault code will be displayed.

Pressing the CLEAR pad will remove the fault code display unless the failure is a shorted key panel switch. Detection of a failed sensor will have no effect on features that do not use that sensor.

**F4 (open or shorted humidity sensor) and F6 (high cavity temperature during microwave cooking) codes apply only to microwave cooking.**

The chart below indicates failure modes which can be detected and displayed:

DISPLAY	FAILURE DETECTED
F1	Oven cavity thermistor <b>open</b>
F2	Oven cavity thermistor <b>shorted</b>
F3	Key panel shorted (> 60 seconds)
F4	Humidity sensor open or shorted
F6	High cavity temperature detected <b>during microwave oven cooking</b>

**Sometimes fault codes will appear with no apparent cause. These codes and their symptoms include:**

- **F1** - If the food is a large cold load that must cook over 5 minutes, the temperature of the cavity may not rise fast enough to change the thermistor resistance very much. The control

believes that the thermistor is not responding because it is open, and thus displays the F1 code. This can be cleared at the end of the cycle and cooking will continue.

- **F4** - If there is an electrical surge or excessive line “noise” within the home, it could cause F4 to display on the control. The sensor will remain inoperable until the control is reset. This can be done by removing power (turning off the circuit) to the unit for 1 minute.

**NOTE:** Replacing the humidity sensor will **not** cure this situation if it was due to electrical “noise.”

- **Interior oven lights stay on or off and do not respond to key commands** - This is also caused by electrical surge or excessive line “noise.” Remove power (turn off the circuit) to the unit for 1 minute. Replacing parts will **not** solve the problem.

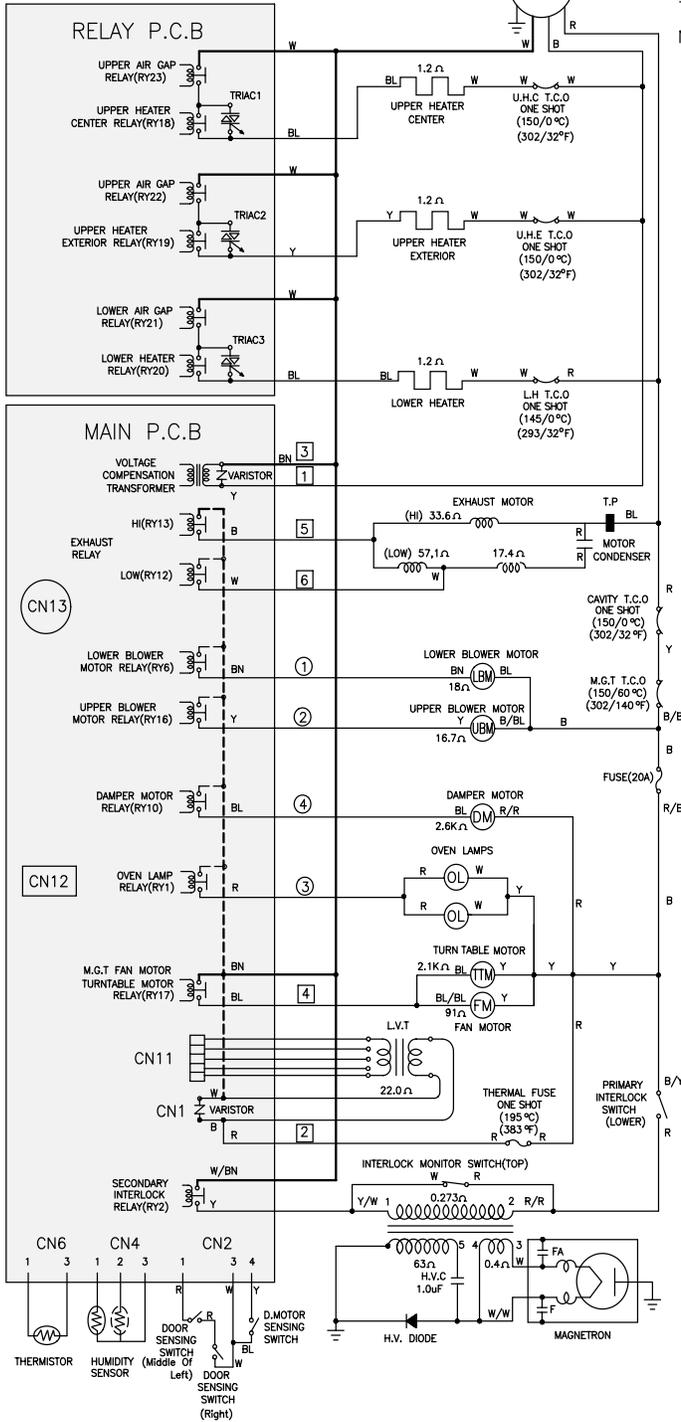
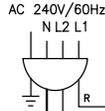


# Schematics and Wiring Diagrams

MODEL NAME
SCB2000/2001
ZSC2000/2001

## SCHEMATIC DIAGRAM

WARNING  
POWER MUST BE DISCONNECTED  
BEFORE SERVICING THIS APPLIANCE

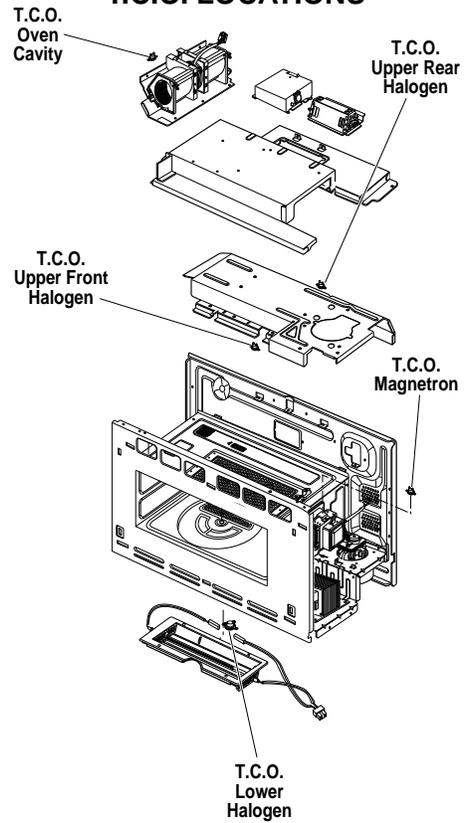


COLOR	SYMBOL
RED	R
WHITE	W
BLACK	B
BROWN	BN
BLUE	BL
GREY	G
YELLOW	Y

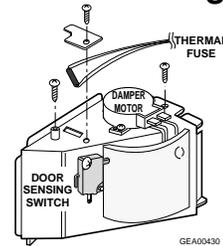
—|— GROUND

NOTE: DOOR IS OPEN

## T.C.O. LOCATIONS

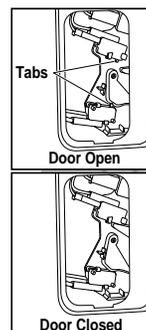
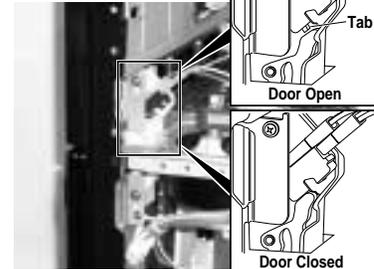


## SWITCH LOCATIONS



GEA00430

### Right Latch Assembly



### Left Latch Assembly



GEA00541

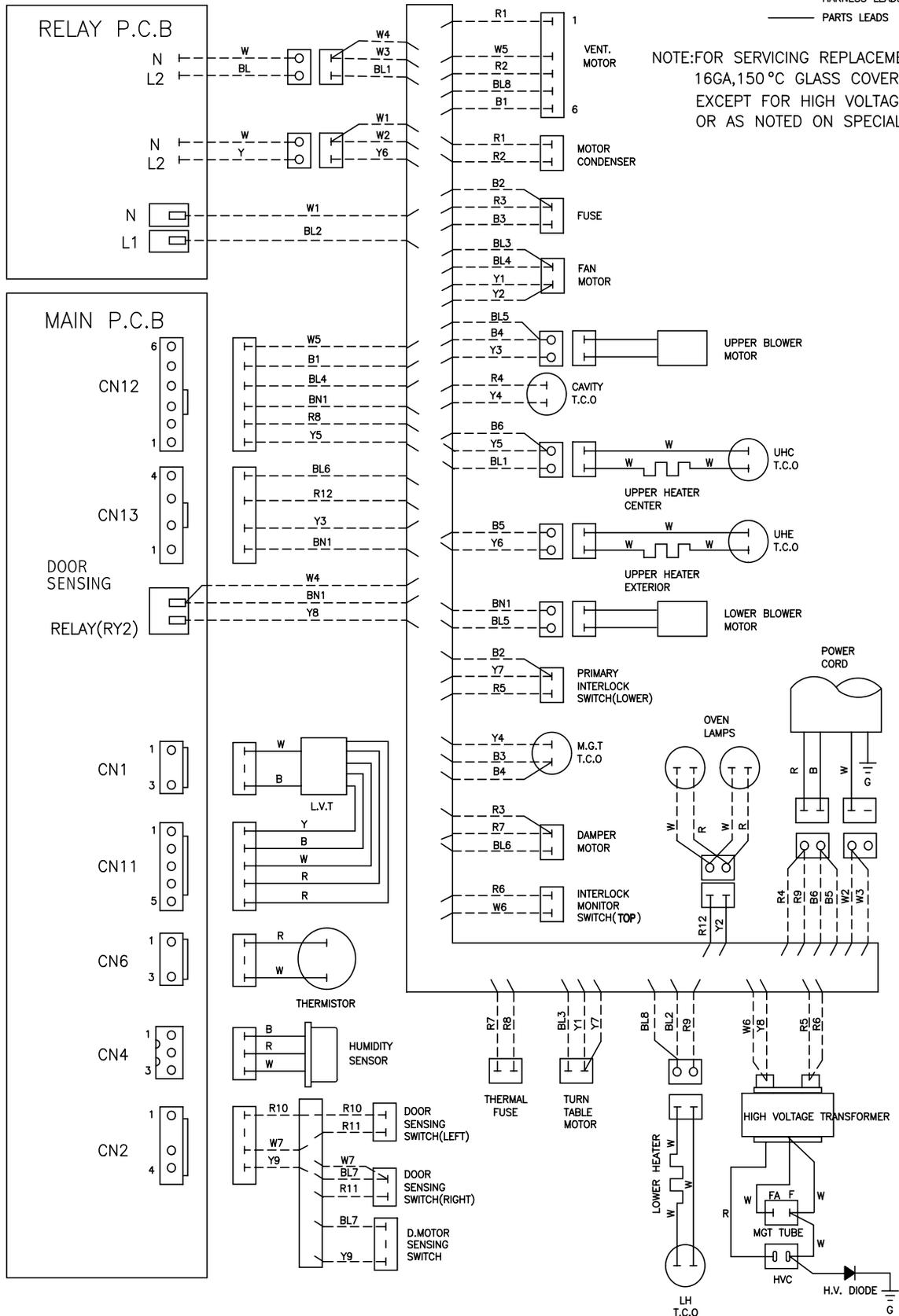
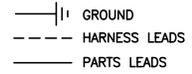
All T.C.O.s are non-resettable ("one shot") except for the magnetron T.C.O., which will reset at 140°F (60°C).

MODEL NAME
SCB2000/2001
ZSC2000/2001

# WIRING DIAGRAM

WARNING  
POWER MUST BE DISCONNECTED  
BEFORE SERVICING THIS APPLIANCE

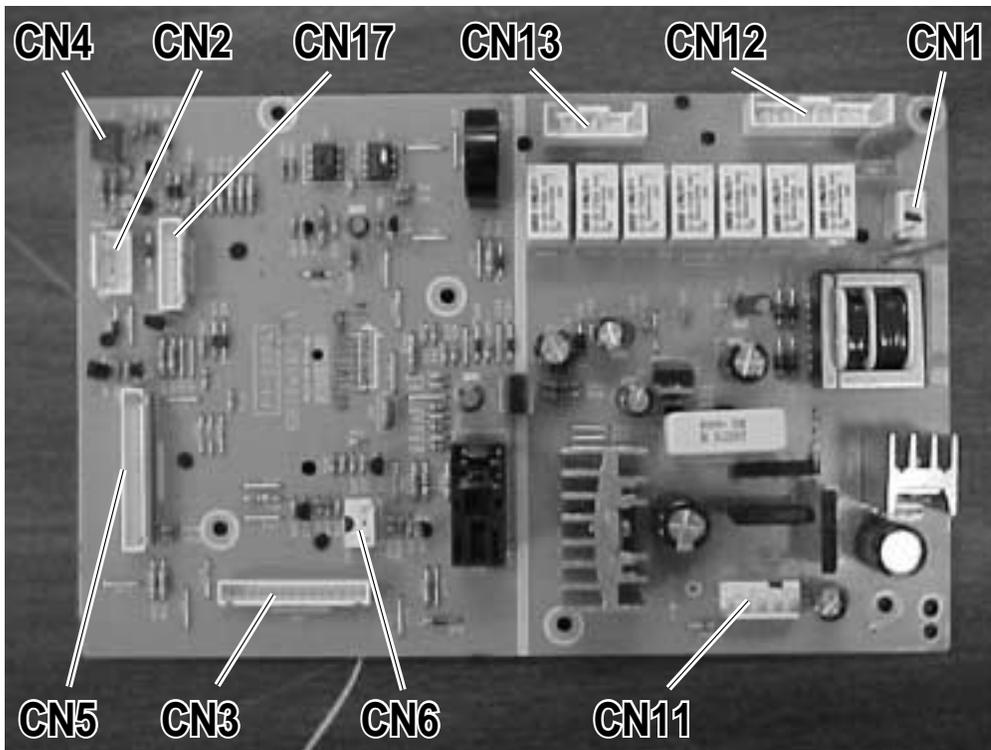
COLOR	SYMBOL
RED	R
WHITE	W
BLACK	B
BROWN	BN
BLUE	BL
YELLOW	Y



NOTE: FOR SERVICING REPLACEMENT USE  
16GA, 150°C GLASS COVERED WIRE  
EXCEPT FOR HIGH VOLTAGE LEADS  
OR AS NOTED ON SPECIAL LEADS.

## Smart Board

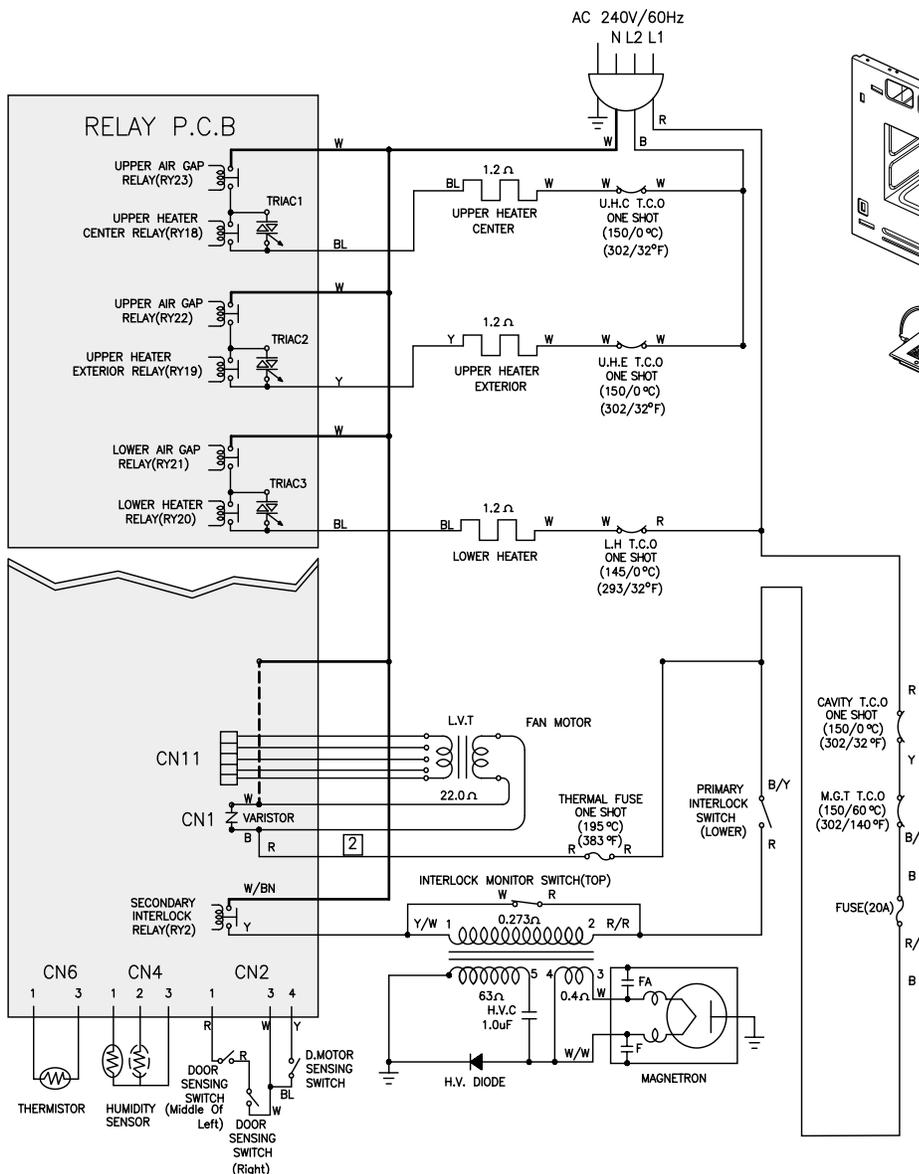
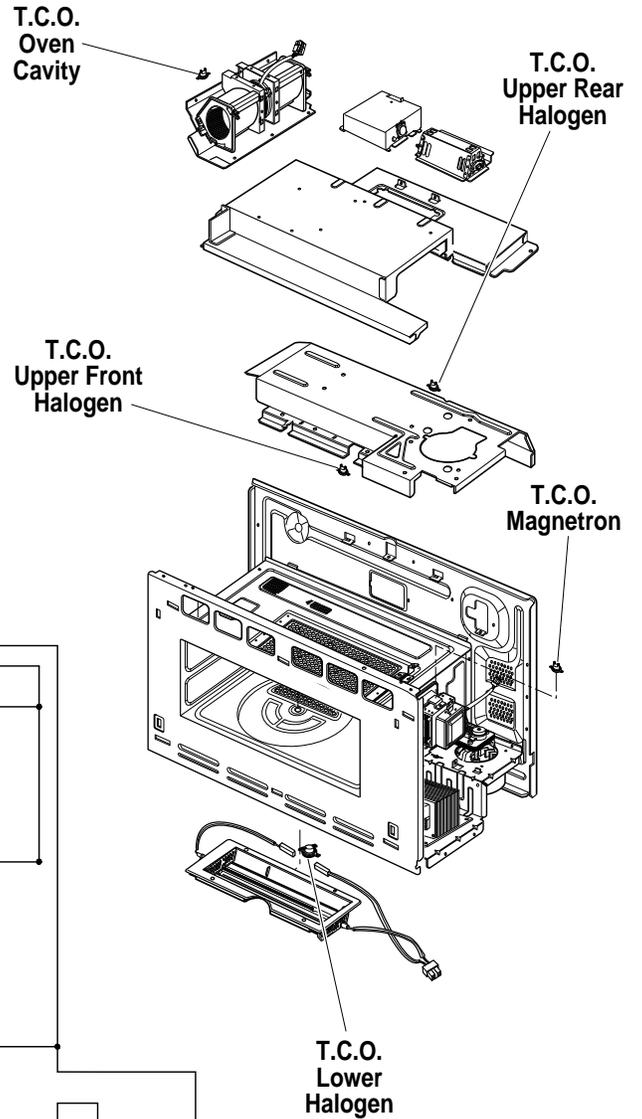
CONN	COLOR	# PINS	DESCRIPTION
CN1	White	3 Pin	To LV transformer (primary)
CN2	Blue	3 Pin	Door sensing switches (left and right and damper motor)
CN3	White	11 Pin	To control display (key panel control assembly)
CN4	Red	3 Pin	Humidity sensor
CN5	Blue	5 Pin	To control display (key panel control assembly)
CN6	Yellow	3 Pin	Thermistor
CN11	White	4 Pin	From LV transformer (secondary)
CN12	White	5 Pin	Vent motor, blower motor, thermal fuse, upper halogen T.C.O.
CN13	White	6 Pin	Damper motor, oven lamps, upper blower motor, lower blower motor
CN17	White	8 Pin	To control display (key panel control assembly)



GEA00471

# Thermal Cut-Outs (T.C.O.s)

THERMAL CUT-OUTS		
DESCRIPTION	OPEN	CLOSED
CAVITY T.C.O.	302°F 150°C	1 Shot
<b>HALOGEN T.C.O.s</b>		
Upper Halogen T.C.O.s (2)	302°F 150°C	1 Shot
Lower Halogen T.C.O. (1)	293°F 145°C	1 Shot
<b>MAGNETRON (M.G.T.) T.C.O.</b>	302°F 150°C	140°F 60°C



All T.C.O.s are non-resettable (“one shot”) except for the magnetron T.C.O., which will reset at 140°F (60°C).



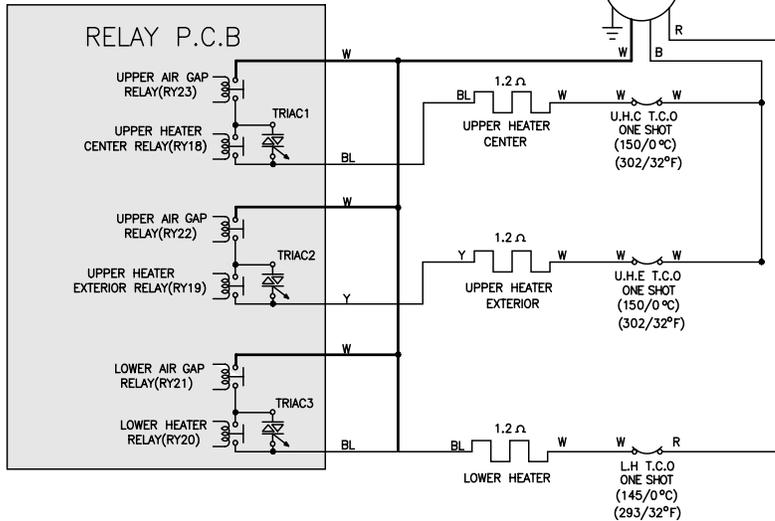
# Halogen Lamp Circuits

MODEL NAME
SCB2000/2001
ZSC2000/2001

## SCHEMATIC DIAGRAM

WARNING  
POWER MUST BE DISCONNECTED  
BEFORE SERVICING THIS APPLIANCE

COLOR	SYMBOL
RED	R
WHITE	W
BLACK	B
BROWN	BN
BLUE	BL
GREY	G
YELLOW	Y



—||— GROUND

NOTE: DOOR IS OPEN

**All T.C.O.s are non-resettable ("one shot") except for the magnetron T.C.O., which will reset at 140°F (60°C).**

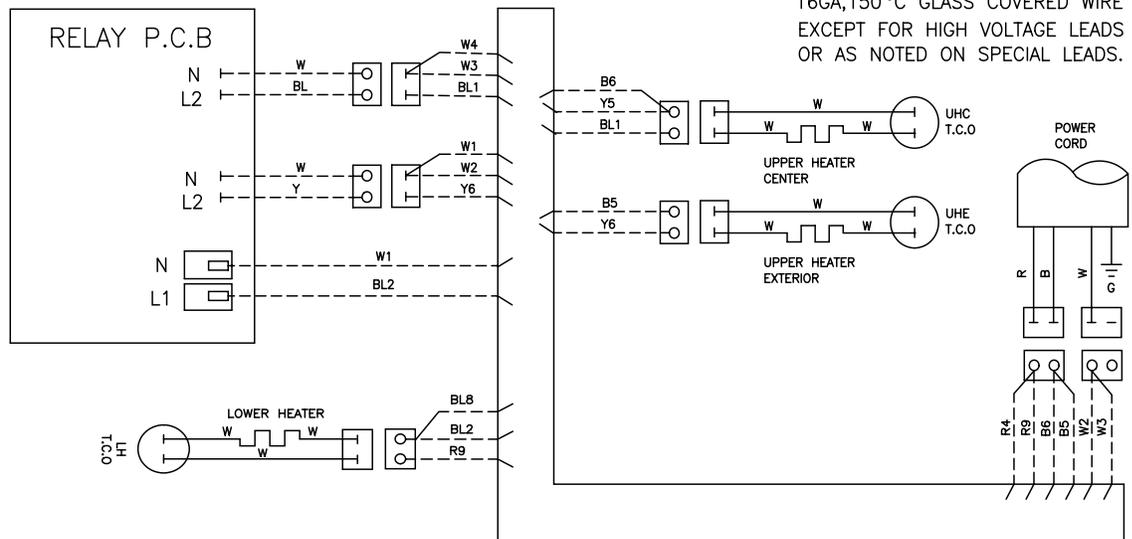
## WIRING DIAGRAM

WARNING  
POWER MUST BE DISCONNECTED  
BEFORE SERVICING THIS APPLIANCE

MODEL NAME
SCB2000/2001
ZSC2000/2001

COLOR	SYMBOL
RED	R
WHITE	W
BLACK	B
BROWN	BN
BLUE	BL
YELLOW	Y

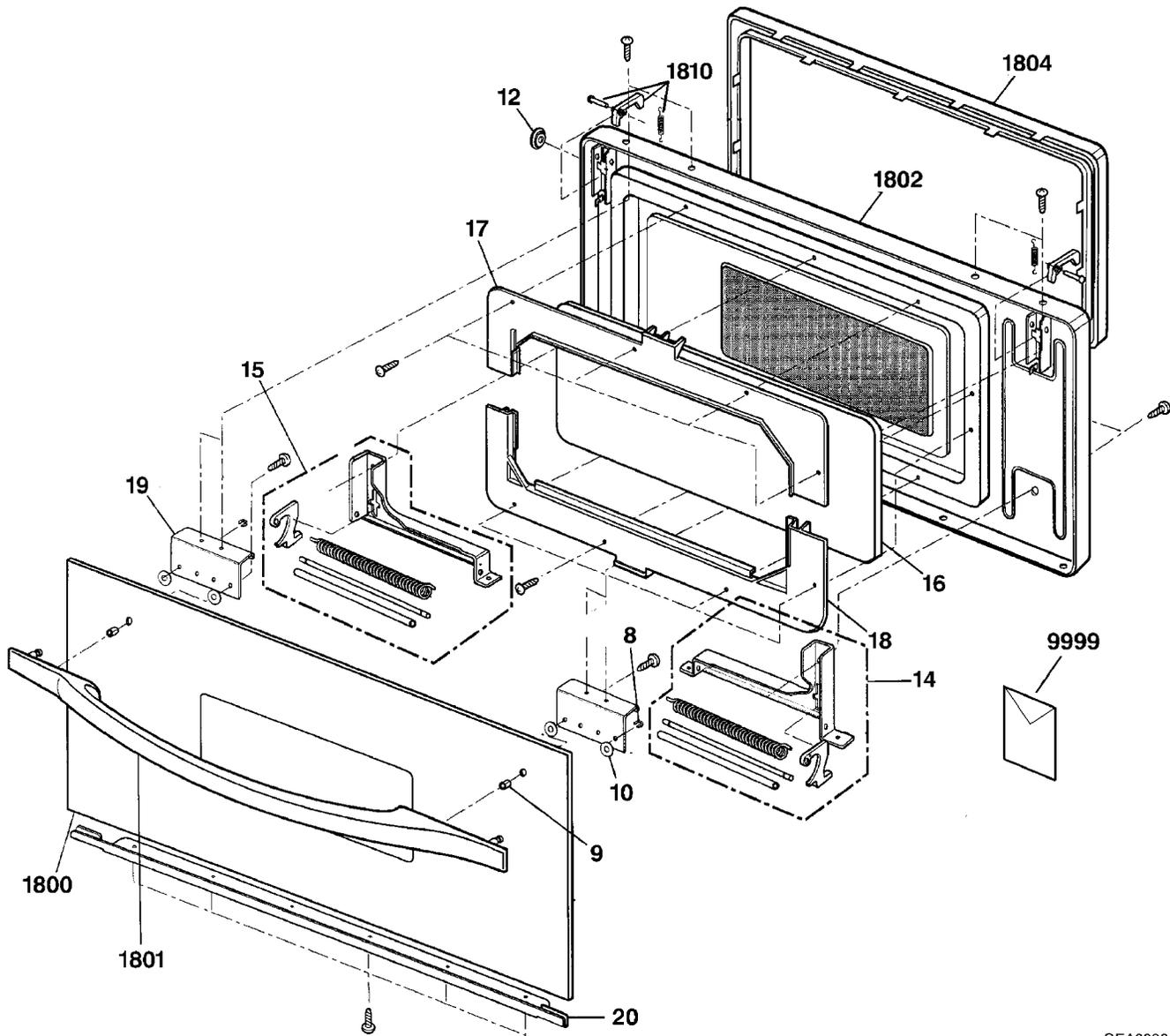
—||— GROUND  
- - - HARNES LEADS  
— PARTS LEADS



NOTE: FOR SERVICING REPLACEMENT USE  
16GA, 150°C GLASS COVERED WIRE  
EXCEPT FOR HIGH VOLTAGE LEADS  
OR AS NOTED ON SPECIAL LEADS.

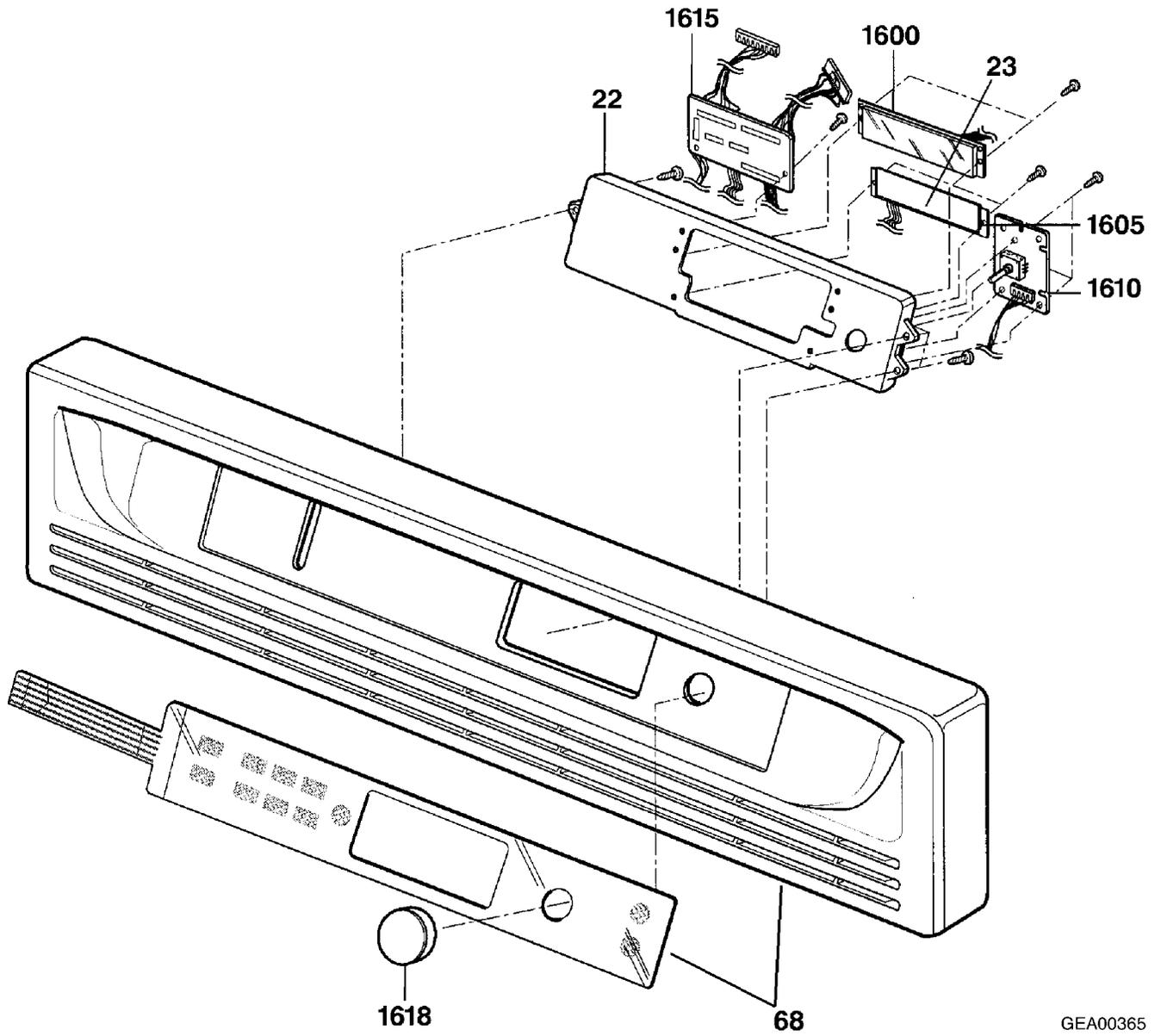
GEA00521

# Illustrated Parts Breakdown



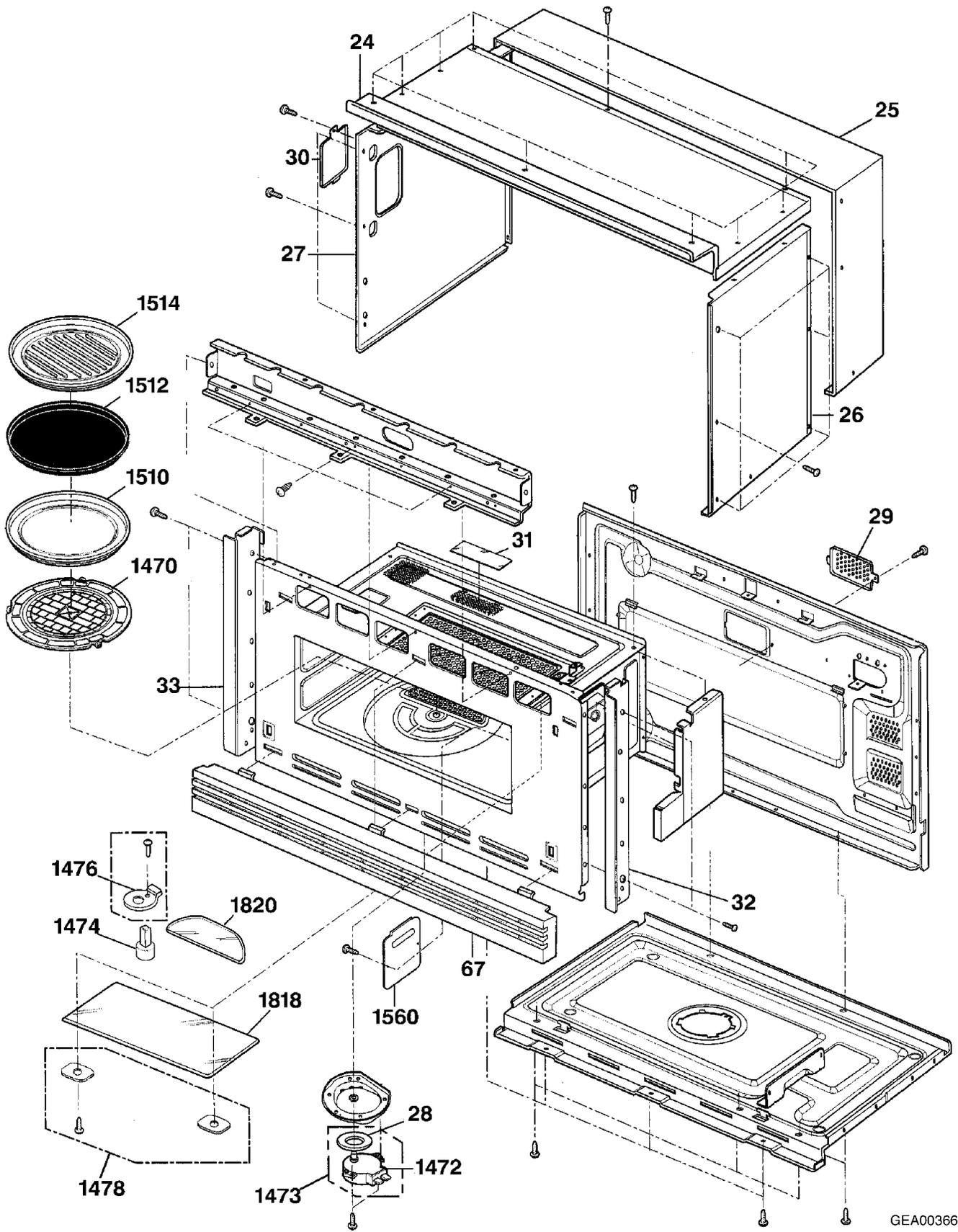
GEA00364

Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.



GEA00365

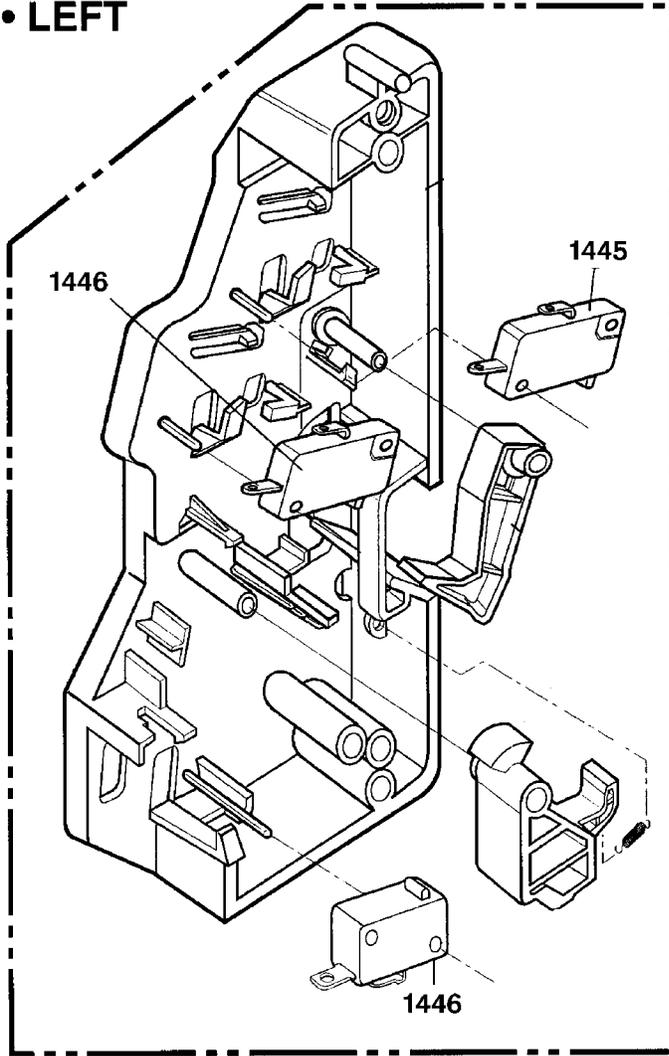
**Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.**



GEA00366

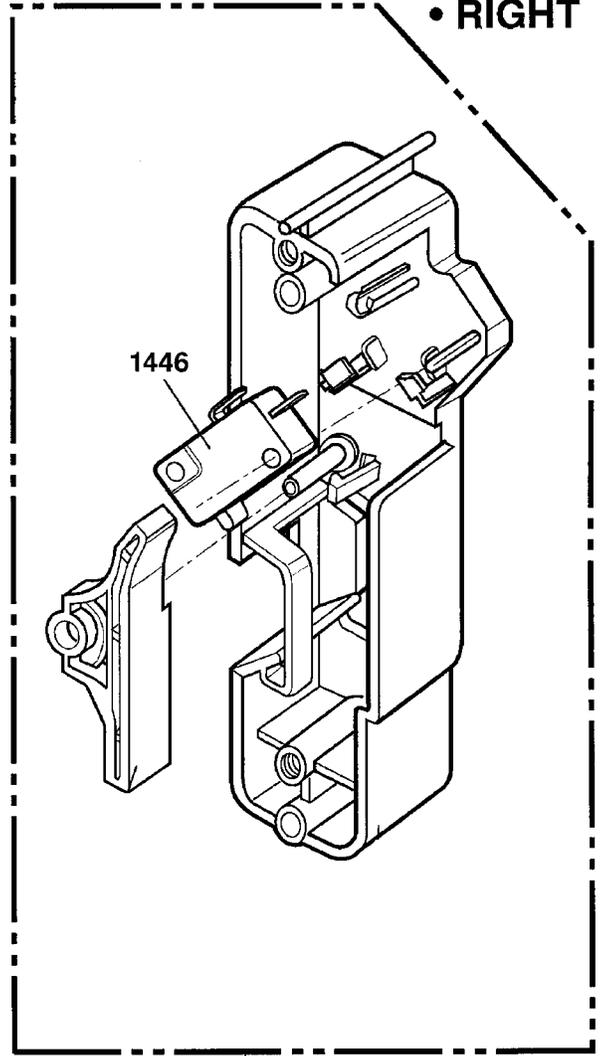
Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.

• LEFT



1203

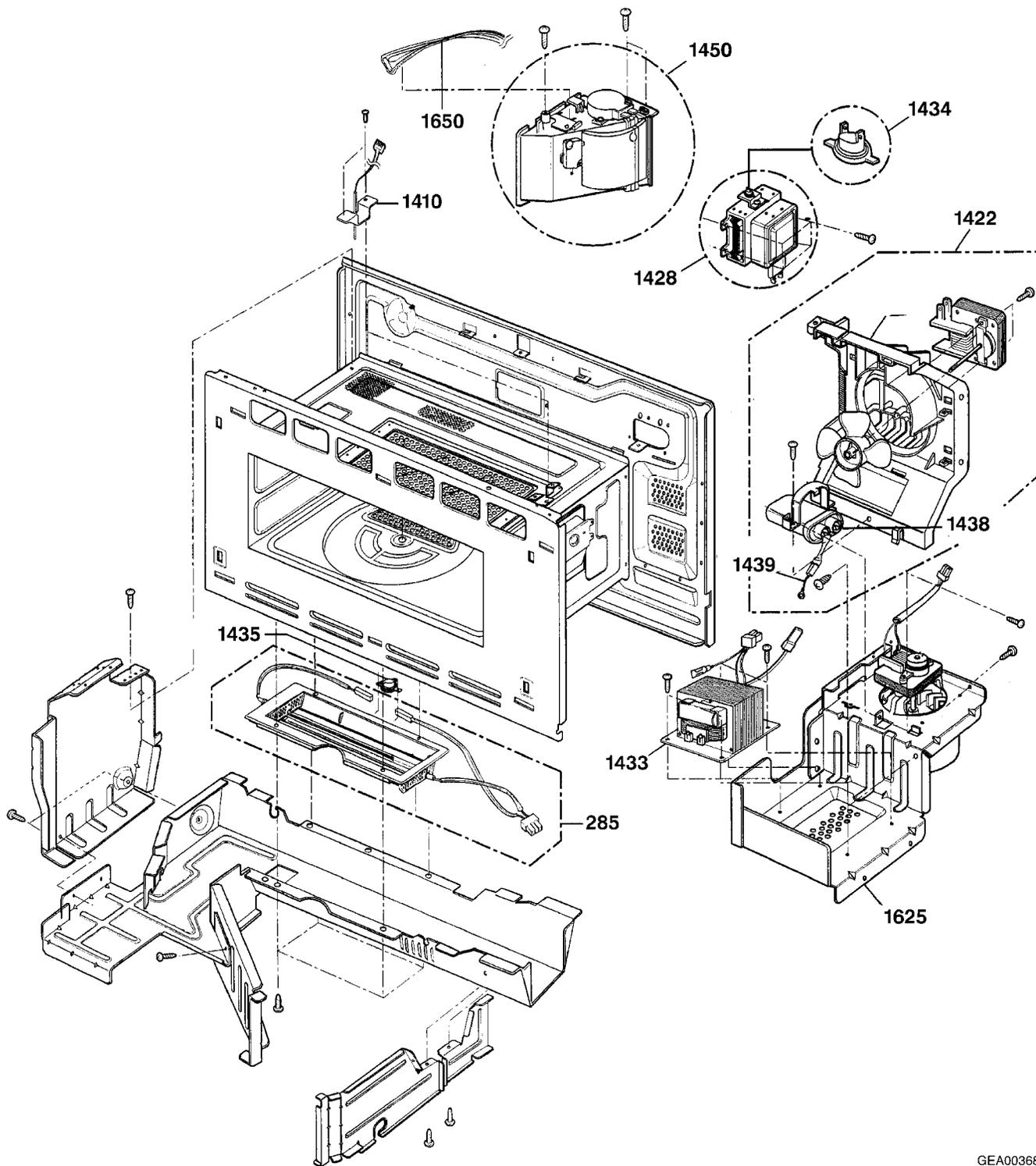
• RIGHT



1204

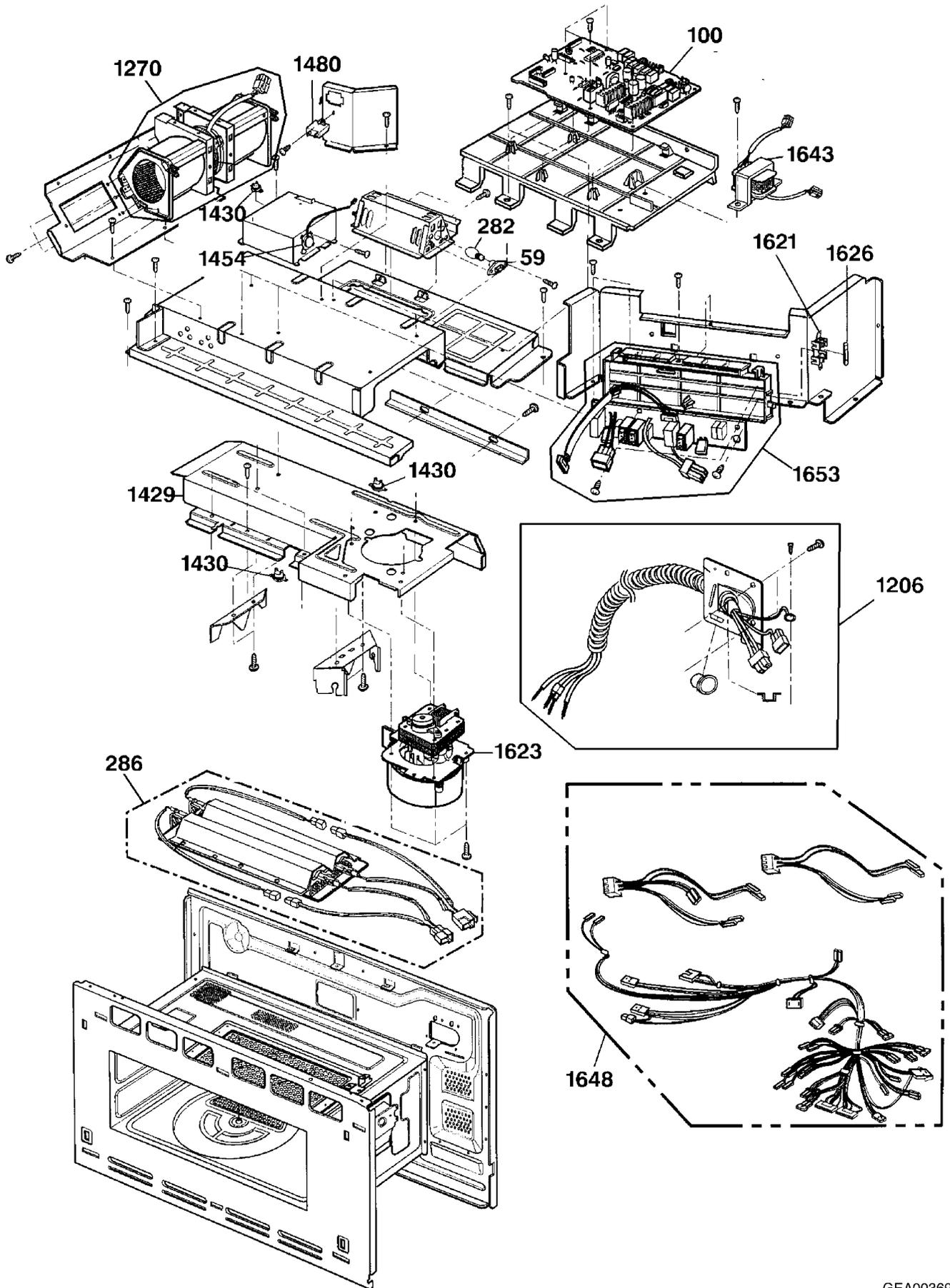
GEA00367

Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.



GEA00368

**Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.**



Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.

GEA00369

Item #	Part #	Description	Qty
8	WB01X10106	RING STOP - "C" CLIP	
9	WB01X10105	CUSHION - TEFLON	
10	WB01X10104	WASHER - TEFLON	
12	WB02X10672	PIN - PROTECTOR	
14	WB14X10020	HINGE ASS'Y - RIGHT	
15	WB14X10021	HINGE ASS'Y - LEFT	
16	WB55X10346	DOOR MIDDLE GLASS	
17	WB55X10347	GLASS HOLDER - UPPER	
18	WB55X10348	GLASS HOLDER - LOWER	
19	WB02X10673	DOOR HANDLE MNTG BRACE	
20	WB02X10687	DOOR GLASS MOUNT - AD	
22	WB02X10676	FRAME - LED	
23	WB02X10677	HOLDER - LED	
24	WB02X10678	ACCESS COVER - TOP	
25	WB02X10679	ACCESS COVER - REAR	
26	WB02X10680	ACCESS COVER - RIGHT	
27	WB02X10681	ACCESS COVER - LEFT	
28	WB02X10682	GASKET RING T/T	
29	WB02X10683	CAVITY LIGHT ACCESS CVR	
30	WB02X10684	DOOR SWITCH ACCESS CVR	
31	WB36X10161	CAVITY LIGHT GLASS CVR	
32	WB07X10374	TRIM - RIGHT SIDE	
33	WB07X10375	TRIM - LEFT SIDE	
59	WB04X10015	LAMP HOLDER	
67	WB07X10391	GRILLE - LOWER - AD	
68	WB07X10388	CONTROLLER ASS'Y - AD	
100	WB27X10394	MAIN PCB ASS'Y	
282	WB36X10160	CAVITY LAMP	
285	WB36X10158	LOWER HALOGEN ASS'Y	
286	WB36X10159	UPPER HALOGEN ASS'Y	
1203	WB06X10232	LATCH BRACKET ASS'Y - L	
1204	WB06X10231	LATCH BRACKET ASS'Y - R	
1206	WB18X10113	POWER CORD ASS'Y	
1270	WB27X10389	UPPER BLOWER ASS'Y LEFT	
1410	WB27X10386	THERMISTOR	
1422	WB26X10074	FAN MOTOR ASS'Y	
1428	WB27X10327	MAGNETRON ASS'Y	
1429	WB02X10689	PLUG BUTTON	
1430	WB21X10046	THERMOSTAT - UPPER HEATER	
1433	WB27X10393	HIGH VOLTAGE TRANSFORMER	
1434	WB20X0167	TCO - MAG	
1435	WB20X10007	THERMOSTAT - LOWER HTR	

Item #	Part #	Description	Qty
1438	WB27X10233	CAPACITOR HIGH VOLTAGE	
1439	WB27X10330	DIODE	
1445	WB24X0817	SWITCH MONITOR INTERLOC	
1446	WB24X10047	SW PRIM INTERLOCK & DOOR	
1450	WB06X10217	DAMPER ASS'Y	
1454	WB24X10044	SENSOR - HUMIDITY	
1470	WB06X10219	TURNTABLE	
1472	WB26X10075	MOTOR - TURNTABLE	
1473	WB26X10073	MOTOR ASS'Y	
1474	WB02X10624	SHAFT - TURNTABLE	
1476	WB36X10128	LOWER GLASS HOLD DOWN	
1478	WB36X10127	UPPER GLASS HOLD DOWN	
1480	WB27X10387	MOTOR CAPACITOR	
1510	WB49X10052	TRAY - CERAMIC	
1512	WB49X10053	TRAY - METAL PAN	
1514	WB49X10054	TRAY - GRILLE PAN	
1560	WB06X10215	WAVE GUIDE - MICA COVER	
1600	WB27X10332	LED DISPLAY	
1605	WB27X10395	PCB ASS'Y - LED	
1610	WB27X10396	SELECTOR PCB	
1615	WB27X10397	PCB CONTROL ASS'Y	
1618	WB03X10098	KNOB - AD	
1621	WB06X10034	FUSE HOLDER	
1623	WB27X10391	UPPER BLOWER MOTOR ASSY	
1625	WB27X10390	LOWER BLOWER MOTOR ASSY	
1626	WB27X10388	FUSE	
1643	WB20X10017	LOW VOLTAGE TRANSFORMER	
1648	WB18X10112	LEAD WIRE ASS'Y	
1650	WB27X10335	FUSE - THERMAL	
1653	WB27X10392	PCB RELAY ASS'Y - FRONT	
1800	WB55X10356	GLASS DOOR OUTER - AD	
1801	WB15X10060	HANDLE ASS'Y - AD	
1802	WB55X10343	DOOR FRAME GLASS ASS'Y	
1804	WB55X10344	CHOKE COVER	
1810	WB10X10026	DOOR LATCH ASS'Y	
1818	WB36X10129	UPPER GLASS COVER	
1820	WB36X10130	LOWER GLASS COVER	
9999	28-X060	USE & CARE VIDEO	
9999	31-20940	MINI-MANUAL	
9999	49-40102	USE & CARE MANUAL	
9999	49-40103	INSTALLATION INSTRUCTION	
9999	49-40104	COOKBOOK	

**Exploded parts views and list for Model SCB2000.  
Refer to microfiche for specific model information.**

## Quiz

1. The new Advantium Built-in Oven uses a breakthrough speedcook technology to cook food quickly. On average, compared to a conventional oven, what is the time saving?
  - a. 50% faster.
  - b. 1/4 the time.
  - c. 60% faster.
  - d. The same as a regular gas or electric range.
2. The damper door is closed for:
  - a. All speedcook functions.
  - b. Microwave cooking only.
  - c. Sensor cooking.
  - d. Never closed.
3. What component can be serviced without removing the built-in Advantium from its installation?
  - a. The magnetron.
  - b. The lower halogen lamp.
  - c. The oven lamps.
  - d. The door.
4. The small thermal fuse, electrically in series with the low voltage transformer, is located:
  - a. Near the vent motor.
  - b. On the magnetron.
  - c. On the damper duct.
  - d. Near the upper halogen lamps.
5. If the upper halogen lamps do not come on, but the lower halogen lamp and the microwave work just fine, the problem could be:
  - a. The thermal fuse.
  - b. The cavity T.C.O.
  - c. A tripped circuit house breaker.
  - d. A door switch.
6. Voltage compensation is used for:
  - a. Adjusting the cook time in speedcook functions to achieve consistent quality results.
  - b. Adjusting the time in microwave cooking only.
  - c. The temperature.
  - d. Controlling the upper lamp balance.
7. Thermal compensation:
  - a. Adjusts the cook time.
  - b. Only occurs during speedcook operations (preset menu items).
  - c. Adjusts the microwave power levels.
  - d. Occurs at 600°F oven temperature.
8. A fault code for an open sensor is:
  - a. F1.
  - b. F2.
  - c. F3.
  - d. The Advantium does not display fault codes.
9. What components listed below are one-time tripping devices?
  - a. All T.C.O.s.
  - b. Magnetron T.C.O.
  - c. U.H.C. T.C.O., U.H.E. T.C.O., L.H. T.C.O.
  - d. Lower cavity T.C.O.
10. With a stuck open/burnt primary interlock switch, the Advantium will:
  - a. Still work fine.
  - b. Still speedcook with excellent results.
  - c. Still operate the 3 halogen lamps.
  - d. Will microwave just fine, but the halogen lamps won't work.

