



GE Consumer Service Training

Technician Manual

GE 1.3 Cu. Ft. Countertop Convection Microwave Oven

Turntable - 850 Watt
JE1390GV/WW

IMPORTANT SAFETY NOTICE

This information 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.

DISCONNECT POWER BEFORE SERVICING

IMPORTANT – RECONNECT ALL GROUNDING DEVICES

All parts of this appliance capable of conducting electrical current are grounded. 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.

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

- A. A microwave emission check should be performed prior to servicing if the oven is operative.
- B. Do not operate or allow the oven to be operated with the door open.
- C. If the oven operates with the door open:
 - 1) Instruct the user not to operate the oven and
 - 2) contact the manufacturer and the Center for Devices and Radiological Health immediately.
- D. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
 1. Interlock operation
 2. Proper door closing
 3. Seal and sealing surfaces (arcing, wear, and other damage)
 4. Damage to or loosening of hinges and latches
 5. Evidence of dropping or abuse
- E. Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
- F. Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced or adjusted by procedure described in this manual before the oven is released to the owner.
- G. A microwave leakage check to verify compliance with the federal performance standard should be performed on each oven prior to release to the owner.

MICROWAVE LEAKAGE TEST

1. Place 275 ml. water in 600 ml. beaker (WB64X5010).
2. Place beaker in center of oven shelf.
3. Set meter to 2450 MHz scale.
4. Turn oven "ON" for 5 minute test at high power (power level 10).
5. Hold probe perpendicular to surface being tested and scan surfaces at rate of one inch/second. Test following areas:
 - Entire perimeter of door and control panel
 - Viewing surface of door window
 - Exhaust vents
6. Maximum leakage 4MW/CM².
7. Record date on service invoice and microwave leakage report.

NOTE: MAXIMUM ALLOWABLE LEAKAGE IS 5MW/CM². 4MW/CM² IS USED TO ALLOW FOR MEASUREMENT AND METER ACCURACY.

Inform the manufacturer of any oven found to have emission in excess of 5MW/CM². Make repairs to bring the unit into compliance at no cost to owner and try to determine cause. Instruct owner not to use oven until it has been brought into compliance.

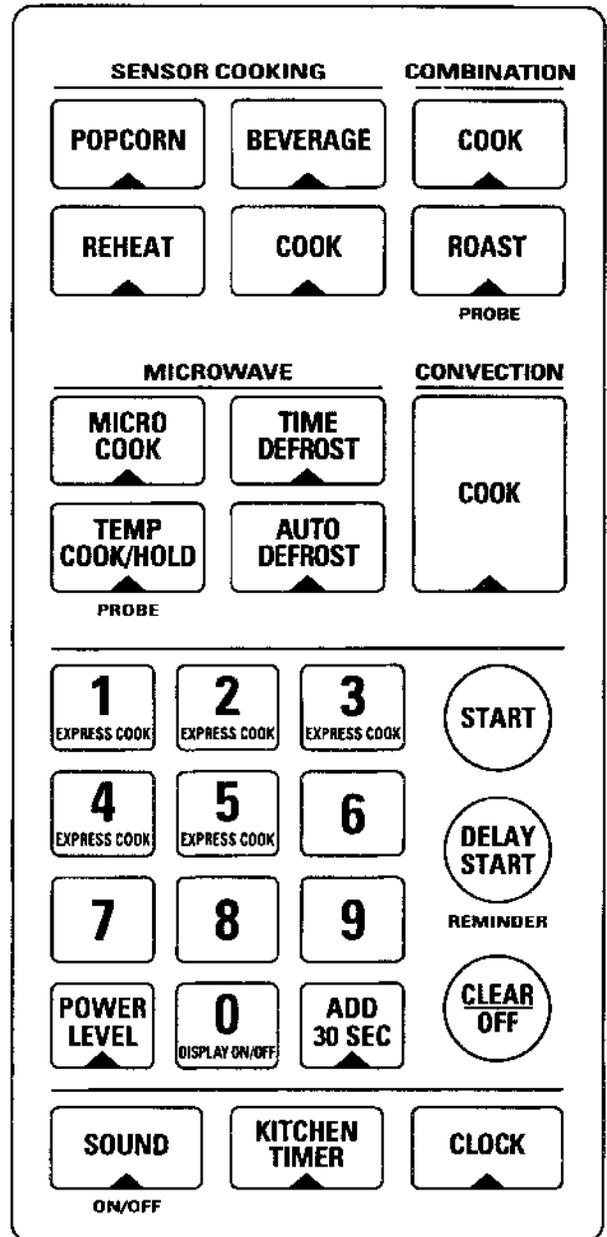
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FEATURES	JE1390GV/WW
Add 30 Seconds	Yes
Delay Start/Reminder	Yes
Beeper Volume On/Off	Yes
Kitchen Timer	Yes
Power Levels	10
Micro Cook	Yes
Time Defrost	Yes
Express Cook	Yes
Auto Defrost	Yes
Temp Cook	Probe
Beverage	Sensor
Cook	Sensor
Popcorn	Sensor
Reheat	Sensor
Roast	Combination
Cook	Combination
Cook	Convection
Display On/Off	Yes
Cavity Size	1.3 cu. ft.
Output Watts	1500
Warranty/Mag	1/10
Line Current	13.5A
Mag Power (IEC-705)	850
Weight	64 lbs.
27" Build-in Kits	JX1327 (WP&BP)*
30" Build-in Kits	JX1330 (WP&BP)*

*WP = White Kit

*BP = Black Kit



PREFERRED METHOD

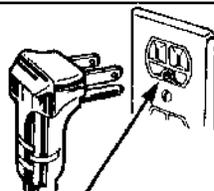


Fig. 1 Ensure proper ground exists before use

TEMPORARY METHOD

(Adapter plugs not permitted in Canada)
Align large prongs/slots

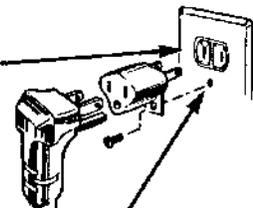


Fig. 2 Ensure proper ground and firm connection before use

COUNTERTOP CONVECTION 1.3 CU. FT. MICROWAVE OVEN

A complete new redesign of the countertop convection microwave is being introduced into the GE model line in the Fall of 1995. This model has 1.3 cu. ft. capacity, 850 Watts of cooking power and a turntable.

WEIGHT

This microwave oven has a shipping weight of 64 pounds.

CAVITY LIGHT

A special 25-watt incandescent bulb is located at the top of the oven cavity at the right front. It is not consumer replaceable. It comes as an assembly and the outer case must be removed to replace it.

POWER UP

At power up or after a power interruption the display lights all segments and function indicator words for 15 seconds, and then "RESET".

CLOCK

To set the clock, touch CLOCK and enter the time-of-day. The display will flash "TIME". Touch START (or CLOCK) to start the clock.

NOTE: The display can be turned off by pressing the 0 number pad.

CLEAR/OFF

When this pad is touched, it shuts off the oven and erases all settings (except for the time of day).

MINI-MANUAL LOCATION

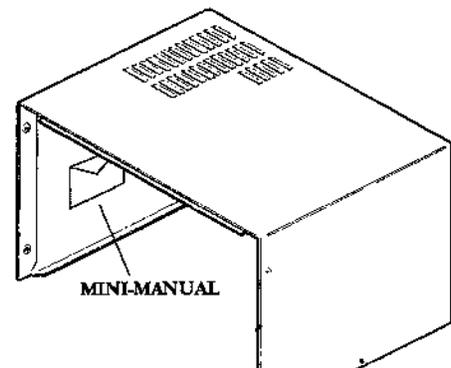
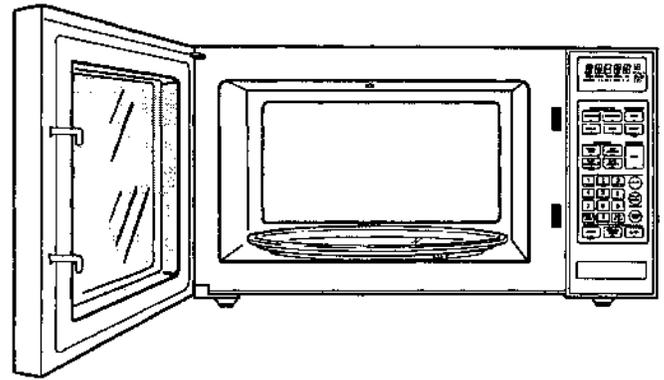
The mini-manual will be stored in an envelope attached to the outer case. The envelope will have double backed tape and will be stuck on the inside of the side case, hinge side.

COOKING COMPLETE REMINDER

After the completion of all defrost and cook cycles (except Temp. Cook/Hold) the control will beep once every minute until door is opened or clear pad is touched.

POWER LEVELS AND DUTY CYCLE

The control has 10 power levels, 1-10. The chart indicates the time in seconds that the magnetron is on and off during the 22 second duty cycle.



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

KITCHEN TIMER

The KITCHEN TIMER is a no power HOLD feature which can be used for four timing functions:

- Operates as a minute timer.
- Can be used to "Delay Start" cooking. (Time Cook or Temp Cook only.)
- Can be used as a hold setting after defrost.
- Could be used while another program is running, no need to touch start.



To Use Kitchen Timer While Another Program is Operating:

1. Set up the other program.
2. Touch KITCHEN TIMER pad.
3. Enter the amount of time you want by touching the number pads.
4. Timer will automatically start in 3 seconds, no need to touch start.

CHILD LOCKOUT

The control panel can be locked to prevent the microwave from accidentally being started.

1. Press and hold the CLEAR/OFF pad for about 3 seconds. The display will show LOCK and then return to the time of day. A small "L" will be displayed indicating the control is locked.
2. To unlock the control, press and hold the CLEAR/OFF pad for 3 seconds.



MICRO COOK

The Micro Cook function can be programmed for **one** or **two** time cook cycles in the same program. The two cycle feature is useful if a power level change is desired during the cooking operation. Each function can be set for a maximum of 99 minutes and 99 seconds.

Micro Cook 1 & 2 can be programmed in any sequence but it will always execute **Micro Cook 1** first.



EXPRESS COOK (No Function Pad)

This "instant on" feature will provide 1-5 minutes of cooking at power level 10 as soon as it is selected.

DELAY START

The DELAY START function provides a 12-hour delay start for any program or sequence of programs. Since it is a 12-hour timer, the start time can be delayed up to a maximum of 11 HOURS and 59 MINUTES.

NOTE: The time-of-day clock must be set for the DELAY START function to work.

To Use Delay Start:

1. Touch DELAY START pad.
2. Enter the time of day you want the oven to start. Microwave must show correct time of day.
3. Enter desired cooking program.
4. Touch START pad. The oven will automatically start at the desired time.



REMINDER

REMINDER (Use Delay Start Pad)

The Reminder feature, like an alarm clock, will signal when a desired time of day is reached.

To Use Reminder:

1. Touch DELAY START pad.
2. Enter the desired time of day (11 hours and 59 minutes maximum) that you want the oven to signal. Clock must show correct TOD.
3. Touch START pad (REM will be in display).
4. When desired time is reached oven will signal with fast beeps until clear pad is touched or door is opened.

NOTE: This feature cannot be used with or during any cooking function.



SOUND FEATURE

This feature can turn the beeper off.

Touch the SOUND LEVEL pad once to turn the oven beeper off. When the sound has been turned off a small "MUTE" appears in the display.

Touch the SOUND LEVEL pad again to turn the beeper on, MUTE will disappear from the display.



ADD 30 SECONDS

The ADD 30 SECONDS feature provides "instant on" at high power (10) for 30 seconds or can be used to add 30 seconds to any **timed** function.



TIME DEFROST

The defrost setting is approximately 30% power. Touch time defrost and enter time.



TEMP COOK

The TEMP COOK feature is a Temperature Cook function that will maintain the programmed temperature, for up to 1 hour.

The programmed temperature limits are 90°F-199°F. The control will not accept any inputs outside these limits.

In normal operation when the program temperature is reached, the control "beeps" and the display shows "HOLD". The magnetron cycles "on" and "off" as needed, at power level 5 to maintain the programmed temperature.

IMPORTANT: Temp Cook does not terminate automatically. It will stay in the HOLD mode until user stops it by touching CLEAR/OFF.

It will "HOLD" the food at the programmed temperature for 60 minutes.



AUTO DEFROST (NON-SENSOR FEATURE)

The Auto Defrost function automatically sets the defrosting time and power levels by entering the weight of the frozen food. The weight must be entered in tenths of pounds. Use conversion guide and auto defrost guide in Use and Care.

At the end of the total defrost time, the control "BEEPS" and displays "HOLD" (no power) for the appropriate time associated with that code. At the end of the "HOLD" time the control "BEEPS" as it does for the end of the cooking mode.



TO USE AUTO DEFROST:

1. Touch AUTO DEFROST:
2. Enter food weight, use conversion guide and auto defrost guide.
3. Touch START.

When the oven reaches approximately half of the total defrosting time, the control "BEEPS" and the display flashes "TURN" as a signal to turn the food over for the remainder of the defrost time.

IMPORTANT: The magnetron power will continue to defrost even if food is not "turned". "Turn" will continue to flash in the display.



SENSOR COOKING CONDITION

Using the COOK, POPCORN, BEVERAGE or REHEAT function, the foods are cooked without calculating time, power level or quantity. When the oven senses moisture, heat and gases from the food, it relays the information to the microprocessor which will calculate the remaining cooking time and power level needed for best results. When the food is cooked, these conditions are developed. The sensor "senses" them and its resistance increases gradually. When the resistance reaches the value set according to the menu, supplementary cooking is started.

The time of supplementary cooking is determined by experiment with each food category and entered into the microprocessor.

An example of how the sensor works:

(COOK, 4)

1. Potatoes at room temperature. Vapor is emitted very slowly.
2. Heated potatoes. Moisture and humidity are emitted rapidly.
3. The sensor detects the moisture and humidity and calculates cooking time and variable power.

SENSOR COOKING PREFERENCE CONTROL

When using the sensor assisted cooking code - Cook (Codes 3-7) it is possible to adjust the oven cooking time by 10%.

By immediately touching the number 1 pad after touching the Cook pad (Codes 3-7) the oven will turn off 10% sooner.

By pressing the number 9 pad the oven will cook 10% longer.

TIP: If control panel displays "ERROR" 10-30 seconds after a sensor assisted cooking program is selected check the sensor circuit for an open or shorted condition.

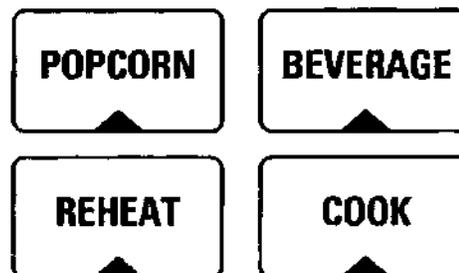
BEVERAGE (SENSOR COOKING)

This instant on pad reheats beverages by sensing the steam with the sensor system.

The last 20 seconds of beverage sensor cooking is done without power.

NOTE: Maximum heating time is 4:00

SENSOR COOKING



COOK (SENSOR COOKING)

The COOK feature will automatically microwave at pre-programmed power levels and determines the proper amount of cooking time. This feature has 7 codes (Generic quantities & types of food are used). Do not use positive seal containers (Ex. Tupperware) when using sensor cooking. Moisture has to be allowed to escape. Use plastic or wax paper to cover food.

- **Code 1** is designed for reheating foods quickly, turns the oven off automatically as soon as the sensor detects steam from the foods.
- **Codes 2-7**, When these codes are selected the oven determines how much additional cooking time is needed after steam has been sensed, automatically switches to TIME COOK and signals. The word "AUTO" on the display is then replaced by countdown numbers indicating remaining cooking time. When the signal is heard, the oven door may be opened for stirring, turning or rotating food.

To Use COOK:

1. Touch COOK pad.
2. Enter desired code.
3. Touch START.

To Adjust Cook Time by 10% on cooking codes 3-7:

- Adding a 1 after the preselected cooking code will subtract 10% of the cooking time.
- Adding a 9 after the preselected cooking code will add 10% to the cooking time.

Example: If code 6 cooks chicken more done than wanted, enter code 61 and it will cook 10% less time. Auto code 6 will show in the display, the number 1 will not.

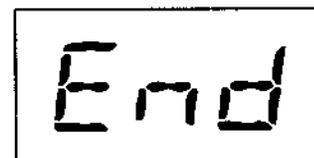
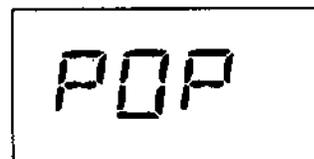
POPCORN (SENSOR COOKING)

The POPCORN feature is a preprogram function that uses the humidity sensor to automatically select the correct cooking time.

NOTE: This feature works best when the popcorn contents are in the 3.0-3.5 ounces range. Maximum heating time is 6:00.

To Use POPCORN:

1. Remove the outer wrapper from the microwave popcorn.
2. Open oven door and place package of popcorn in the center of the oven floor as directed by the manufacturer's instructions. Close oven door.
3. Touch POPCORN pad. "POP" flashes. Oven turns on instantly.
4. The popcorn sensor automatically calculates the cooking time. After the popcorn sensor detects steam, the oven signals and displays remaining cooking time needed.
5. When cooking is completed, the oven signals and flashes "End". Open the door and remove the popcorn.



HOW TO ADJUST THE POPCORN PROGRAM TO PROVIDE A SHORTER OR LONGER COOKING TIME

How to adjust the Popcorn Program to provide a shorter or longer cook time:

If popcorn is under-cooked you can make an adjustment by adding time.

- Touch the POPCORN pad and then touch number pad 9. The word "POP" will appear on the display with a plus sign beside it. The plus sign indicates 20 seconds more cooking time is being provided.



If popcorn is overcooked you can make an adjustment by subtracting time.

- Touch the POPCORN pad and then touch number pad 1. The word "POP" will appear on the display with a minus sign beside it. The minus sign indicates 20 seconds less cooking time is being provided.



REHEAT (SENSOR COOKING)

With this feature the oven automatically adjusts its heating time to various types and amounts of precooked food by sensing the steam that escapes as food heats. Do not open the oven door while the word "REHEAT" IS DISPLAYED, steam escaping will affect oven performance.

REHEAT is an instant on function. No need to press start after selecting REHEAT.

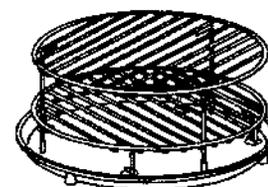
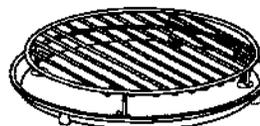
NOTE: Best results are obtained with foods you want to steam or retain moisture (must be covered). Maximum heating time is 5:00.



SHELF SYSTEM

Two shelves are included with this product.

- ◆ When *Microwaving* do not use the shelves.
- ◆ When *Combination* cooking only use the shorter shelf.
- ◆ During *Convection* cooking always use the shorter shelf first, then if there is a need for two level cooking (ex. two layer cake), then use the second and taller shelf.



Cooking comparisons:

	Microwave	Convection	Combination
COOKING METHOD	Microwave energy is distributed evenly throughout the oven for thorough, fast cooking of food.	Hot air circulates around food to produce browned exteriors and seal in juices.	Microwave energy and convection heat combine to cook foods in up to one-half the time of regular ovens, while browning and sealing in juices.
HEAT SOURCE	Microwave energy.	Circulating heated air.	Microwave energy and circulating heated air.
HEAT CONDUCTION	Heat produced within food by instant energy penetration.	Heat conducted from outside of food to inside.	Food heats from instant energy from penetration and heat conducted from outside of food.
BENEFITS	Fast, high efficiency cooking. Oven and surroundings do not get hot. Easy clean-up.	Aids in browning and seals in flavor. Cooks some foods faster than regular ovens.	Shortened cooking time from microwave energy, plus browning and crisping from convection heat.

CONVECTION COOK

(MUST USE SHORTER SHELF ON TURNTABLE)

Convection cooking uses a heating element and a fan that circulates warm air throughout the oven cavity. The shorter shelf is used to allow better air circulation and more even browning. The shelf is installed on top of the turntable.

The **Convection Cook** function can also be used with or without the probe;

If the probe is not connected the user must enter **the oven temperature and cooking time.**

If the probe is used, the user enters the **oven temperature and food temperature.**

- Oven temperature limits are 225°-450°F.
- Food temperature limits are 90°-199°F.

To Preheat and Convection Time Cook:

1. Touch Convection Cook. ("ENTER CONV TEMP" flashes).
2. Enter oven temperature. "ENTER CONV COOK TIME" flashes with HR (do not enter time).
3. Touch start.

The display shows "PRE CONV" until oven reaches the preset temperature. The control "beeps" and the display shows "READY" and "CONV" when temperature is reached.

NOTE: If the door is not opened in 60 minutes the oven will shut off automatically.

Preheat temperature will be less than set temperature. Preheat purpose is to warm the cavity.

4. When the oven is preheated, place food in oven and close door. The display will then flash "ENTER CONVECTION COOK TIME" and "HR".

NOTE: The oven set temperature will be within 5-10% of that temp with an amplitude of 20 degrees, when measured in the middle of the oven.

5. Enter the cooking time. The maximum time is 9 hours and 99 minutes (10 hrs & 39 mins).
6. Touch START. When cooking is complete the control "beeps" and flashes "END" and turns the oven off.

NOTE: Any time the door is opened during cooking, the display flashes "HOT" as a reminder that the oven is hot.

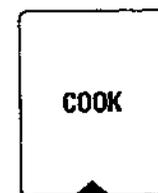
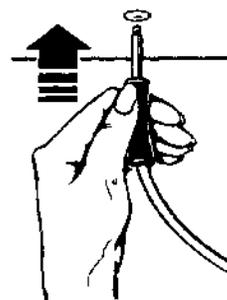
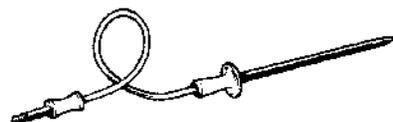
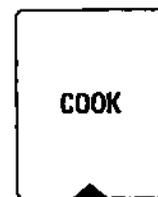
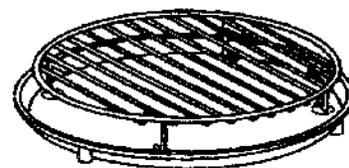
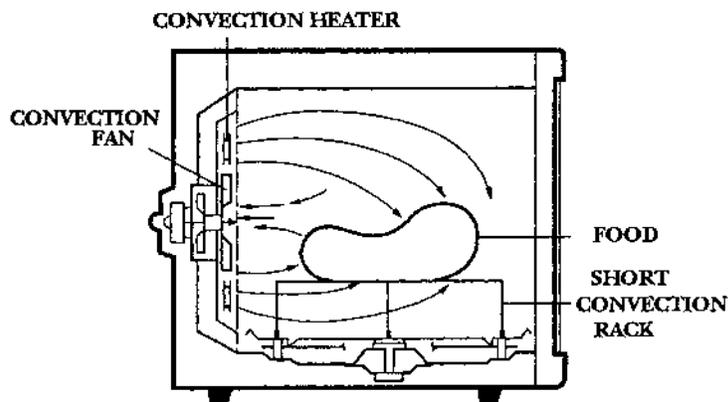
To Convection Cook without preheating:

1. Touch COOK.
2. Enter oven temperature (225-450).
3. Enter cooking time.
4. Touch Start.

To Convection Cook with Probe:

1. Insert probe and touch COOK.
2. Enter Oven temperature (225-450).
3. Enter Food temperature (90-199).
4. Touch Start, when food reaches preselected temperature, display shows "END", oven signals and turns off.

The fan driven hot air enters the inside of the oven through the vent holes in the back plate of the oven. It heats the food and is then pulled through the center of the oven cavity back. Reheated and in a continuous cycle redistributed into the oven.



COMBINATION COOKING (MUST USE METAL SHELF ON OVEN FLOOR)

Combination cooking uses microwave power and convection heat. Microwave power is "ON" 8 seconds and "OFF" 14 seconds of the 22 second Duty Cycle. Convection heat is "ON" 14 seconds and "OFF" 8 seconds. In this way microwave power and convection heat alternate "on" time. Both are never "on" at the same time.

Combination cooking can be done by time or by food temperature.

To Cook by Time:

1. Touch Combination Cook.
2. Enter temperature (225-450).
3. Enter time in hours and minutes.
4. Start.

To Cook by Food Temp:

1. Connect probe.
2. Touch Combination Cook.
3. Enter oven temperature (225-450).
4. Enter food temperature (90-199).
5. Start.

NOTE: Display shows "COOL" until the internal food temperature reaches 90°F then it will display actual food temperature.

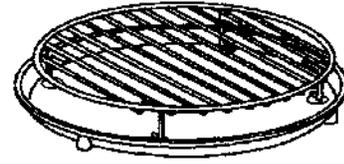
COMBINATION ROAST

COMBINATION ROAST is a combination function which is similar to combination temperature cooking, using both microwave and convection cooking in conjunction with the temperature probe. The Combination Roast feature eliminates most of the steps necessary to program combination temperature cooking.

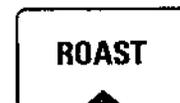
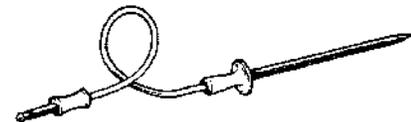
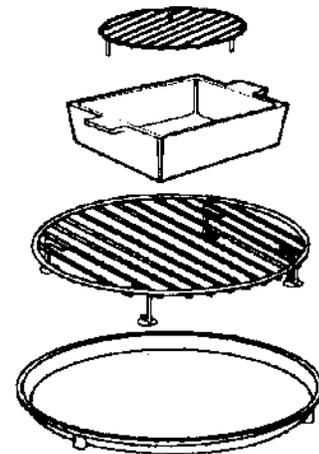
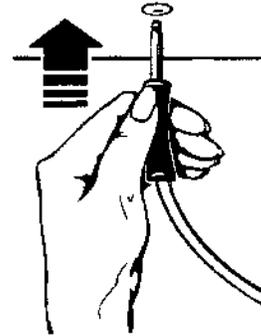
Important: The shorter shelf must be in place on the turntable when using convection or combination cooking. The food is placed on a trivet in a glass dish for cooking during Combination Roast. If the food is too tall to fit into the oven you can remove the trivet.

To cook by Combination Roast:

- 1 Place meat on a trivet in a glass dish.
 - 2 Insert probe into meat and plug the probe firmly into ceiling receptacle.
 - 3 Touch COMBINATION ROAST pad once for "medium" doneness and touch pad twice for cooking "well".
 - 4 Touch START. When oven signals "turn", unplug probe from ceiling and turn meat over.
- NOTE: Make sure probe is still positioned properly in the meat. Plug probe back into probe receptacle.*
- 5 Touch START, when finished oven will sound and display "HOLD". The oven will then hold the set temperature for up to an hour.



COMBINATION



PROBE

OPERATION

DESCRIPTION OF OPERATING SEQUENCE

The following is a description of component functions during oven operation.

OFF CONDITION

Closing the door activates the door sensing and primary interlock switches. (In this condition, the monitor switch contacts are opened.)

When oven is plugged in, 120 volts A.C. is supplied to the smart board.

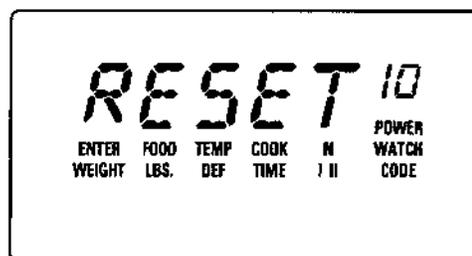
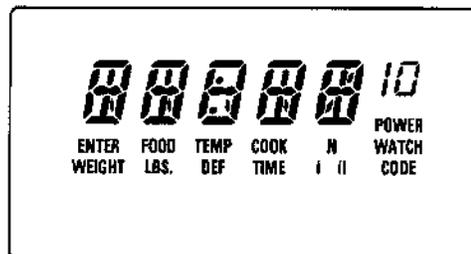
- ◆ The display panel lights up for 15 seconds then "RESET" appears. Touch the CLOCK pad to set the clock and the oven is ready for use.

If power is disrupted at any time, the above sequence recurs, and you must reset the clock after touching the CLEAR/OFF pad.

COOKING CONDITION

When the START pad is touched the following occurs:

1. Relay contacts are closed and the following components are turned on:
RY-1 - oven lamp/fan motor/turntable motor
RY-2 - power transformer
2. 120 volts A.C. is supplied to the primary winding of the power transformer through the contacts of relay 2 and is converted to about 3.3 volts A.C. output on the filament winding, and approximately 2100 volts on the high voltage winding.
3. The filament winding voltage heats the magnetron filament and the H.V. is sent to a voltage doubler circuit.
4. The microwave energy produced by the magnetron is channeled through the wave guide into the cavity feedbox, and then into the cavity where the food is to be cooked.
5. Upon completion of the cooking time, the power transformer, oven lamp, etc. are turned off and the generation of microwave energy is stopped. The oven will revert to the OFF condition.
6. When the door is opened during a cook cycle, the monitor switch, door sensing switch, primary interlock switch and power relay are deactivated with the following results: The circuits to the cooling fan motor and the high voltage components are de-energized, the oven lamp remains on and the digital readout displays the time remaining in the cook cycle when the door was opened.
7. The monitor switch electrically monitors the operation of the primary interlock switch and the power relay and is mechanically associated with the door so that it will function in the following sequence:
 - ◆ When the door opens, the primary interlock switch, power relay and door sensing switch open their contacts, then the monitor switch contacts close.



DESCRIPTION AND FUNCTION OF COMPONENTS

TOUCH CONTROL PANEL ASSEMBLY TEST

The touch control panel assembly is divided into two units, Key Panel and Smart Board, and troubleshooting by unit replacement is described according to the symptoms indicated.

1. Key Panel.

The following symptoms indicate a defective key panel:

- a) When touching the pads, a certain pad produces no signal at all.
- b) When touching a number pad, two figures or more are displayed.
- c) When touching the pads, sometimes a pad produces no signal.

NOTE: If necessary key panel can be checked with ohmmeter.

2. Smart Board

The following symptoms indicate a defective smart board:

2-1 In connection with pads

- a) When touching the pads, a certain group of pads do not produce a signal.
- b) When touching the pads, no pads produce a signal.

2-2 In connection with indicators

- a) At a certain digit, all or some segments do not light up.
- b) At a certain digit, brightness is low.
- c) Only one indicator does not light.
- d) The corresponding segments of all digits do not light up; or they continue to light up.
- e) Wrong figure appears.
- f) A certain group of indicators do not light up.
- g) The figure of all digits flicker.

2-3 Other possible problems caused by defective smart board

- a) Buzzer does not sound or continues to sound.
- b) Clock does not operate properly.
- c) Cooking is not possible.
- d) Proper temperature measurement is not obtained.

OUTER CASE REMOVAL

To remove outer case, proceed as follows:

1. Disconnect oven from power supply.
2. Remove screws from rear and along the side edge of case.
3. Slide the entire case back about 1 inch to free it from retaining clips on the cavity faceplate.
4. Lift entire case from the unit.

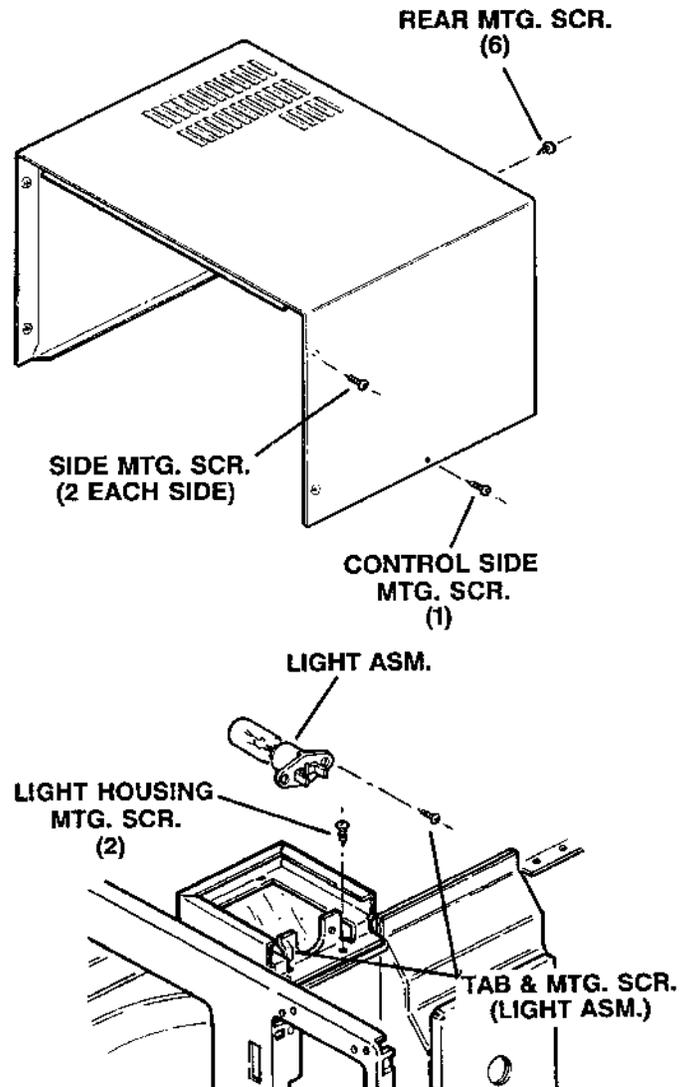
CAUTION: Discharge high voltage capacitor before touching any oven components or wiring.

OVEN LAMP

The oven lamp assembly is located in the corner of the cavity behind the control panel.

To replace the lamp the outer case must be removed and replaced with a new assembly.

It is held in place by a tab and screw.



CONTROL PANEL

The control panel consists of the Key Panel (touch pad), Trim, Crystal & Smart Board along with the Door Release Button, spring and pivot bar.

To Remove Control Panel Assembly

1. DISCONNECT POWER, remove case and DISCHARGE CAPACITOR.
2. Disconnect leads to the control and smart board ground screw.
3. Remove top two mounting screws and lift control up to disengage slots at side of cavity and hooks from bottom of control assembly.

SMART BOARD (PCB)

NOTE: Most connectors are positive lock. Check before pulling wire.

The smart board is mounted to the control trim by two screws on each side of the low voltage transformer plus a catch on the top. It contains the Control Transformer, RY1 relay (oven lamp-turntable motor-magnetron fan), RY2 relay (power- H.V.transformer), RY3 relay (Convection heater), RY4 relay (Convection motor), varistor, and connectors.

Con. 1, lamp - turntable motor - monitor switch - rectifier asm.. Con. 2, door sensing switch.

Con. 3, Convection temperature sensor (thermistor). Con. 4, Ribbon connector.

Con. 5, Probe and humidity sensor.

The following checks can be made to help verify if a problem is with the smart board or another component:

1. Power to board – check across red & yellow and red leads to primary interlock relay (RY-2) – there should be 120V.

Remove power for these checks.

2. Check RY 1 and RY 2 relay contacts (with power and one wire lead removed), to determine if they are shorted (low ohms), they should read infinity ohms.
3. Check door sense switch by removing CN-2. Check connector and if door closed – 0 ohms,, with door open – infinity ohms, good readings.

CONTROL TRANSFORMER

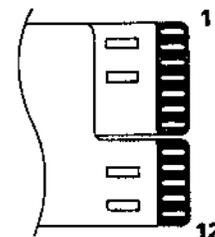
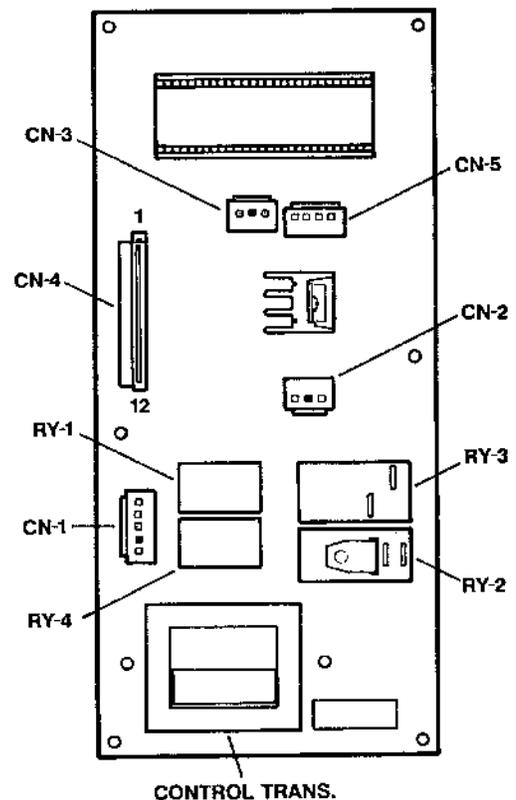
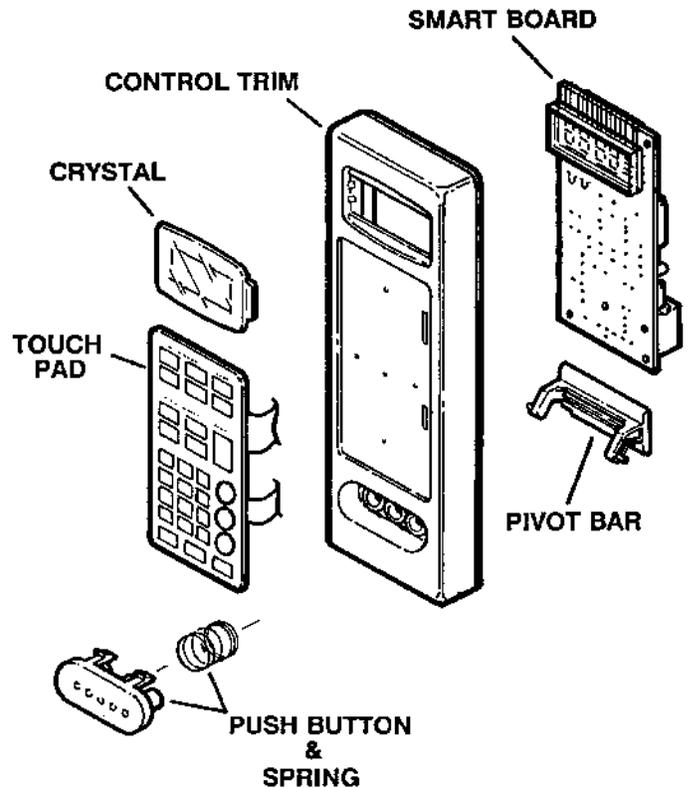
The control transformer is located on the board and if it fails the complete board must be replaced.

KEY PANEL

The key panel has 1 ribbon connector on smart board.

If necessary, the key panel pads can be checked by a continuity test. For ease of handling, the key panel or control should be removed and placed on a flat surface.

The ribbon connections are on one side (1-12). Pad operation can be checked between connections at end of ribbon (use high Ohms scale).



DOOR SENSING AND PRIMARY INTERLOCK SWITCHES

The primary interlock switch is mounted to the upper plastic switch bracket, the monitor and door sensing switches are mounted to the lower plastic switch bracket on the right side of the cavity.

The power relay (RY-2) is mounted on the smart board.

They are activated by the latch heads on the door. When the door is opened, the switches interrupt the circuit to all components, except the oven lamp. A cook cycle cannot take place until the door is firmly closed thereby activating both interlock switches. The primary interlock system consists of the door sensing switch, primary interlock switch and power relay.

MONITOR SWITCH

The monitor switch is activated (the contacts opened) by the latch head on the door when the door is closed. The switch is intended to render the oven inoperative by means of blowing the monitor fuse when the contacts of the primary interlock switch and power relay fail to open when the door is opened.

Functions:

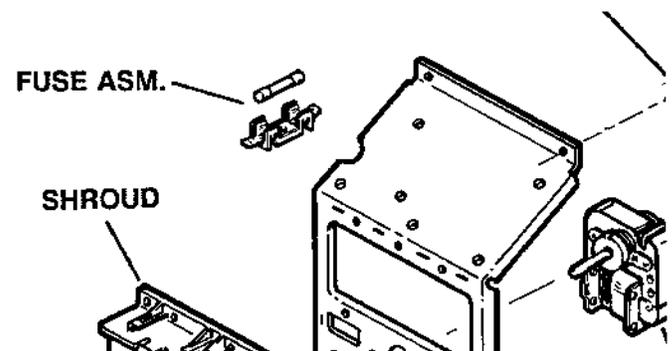
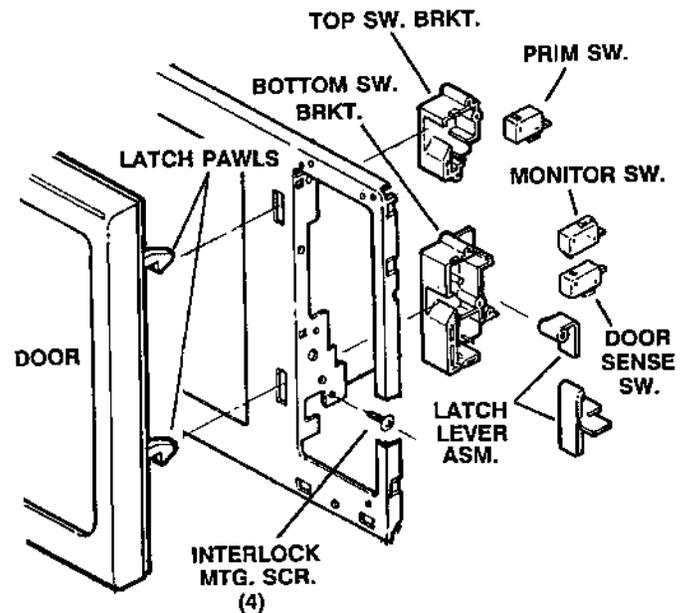
1. When the door is opened, the monitor switch contact closes (to the ON condition). At this time the primary interlock switch and power relay are in the OFF condition (contacts open).
2. As the door goes to a closed position, the monitor switch contacts are first opened and then the door sensing switch and the primary interlock switch contacts close. (On opening the door, each of these switches operate inversely.)
3. If the door is opened, and the primary interlock switch and power relay contacts fail to open, the monitor fuse blows simultaneously with closing of the monitor switch contacts.

CAUTION: Before replacing a blown monitor fuse, test the primary interlock switch, door sensing switch, monitor switch and power relay contacts for proper operation.

MONITOR/LINE FUSE

The fuse is located above the magnetron fan assembly and below the power cord. It is rated at 15 amps (WB27X0007). It is referred to as a line or monitor fuse.

CAUTION: Before replacing a blown monitor fuse, test the primary interlock relay, door sensing with, primary interlock switch secondary interlock relay and monitor switch for proper operation. If the monitor fuse is blown by improper switch operation, monitor fuse and switch must be replaced even if the monitor switch operates normally.



PRIMARY INTERLOCK SYSTEM TEST

Disconnect the oven from power supply.

Door Sensing Switch

Isolate the switch and connect the ohmmeter to the common (COM.) and normally open (NO) terminal of the switch, the meter should indicate an open circuit with the door open and a closed circuit with the door closed. If improper operation is indicated, replace the door sensing switch.

Power Relay (RY2)

Disconnect two (2) wire leads (plastic – squeeze) from the male tab terminals on the printed wiring circuit board provided in the control panel assembly. The tab terminals are located in the area of the circuit board on the component side, and are connected to the contacts of the power relay. Check the state of the relay contacts using an ohmmeter. The relay contacts should be open. If the relay contacts are closed, replace the circuit board entirely.

Primary Interlock Switch Test

Isolate the switch and connect the ohmmeter to the common (COM.) and normally open (NO) terminal of the switch. The meter should indicate an open circuit with the door open and a closed circuit with the door closed. If improper operation is indicated, replace the primary interlock switch.

MONITOR SWITCH TEST

Disconnect the oven from power supply. Before performing this test, make sure that the primary interlock switch and the power relay are operating properly. Disconnect the wire lead from the monitor switch (NC) terminal. Check the monitor switch operation by using the ohmmeter as follows:

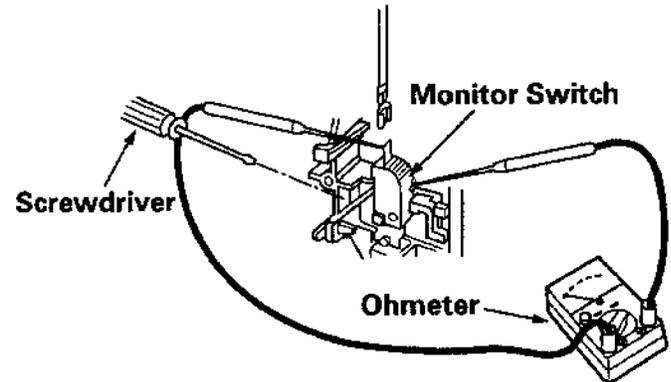
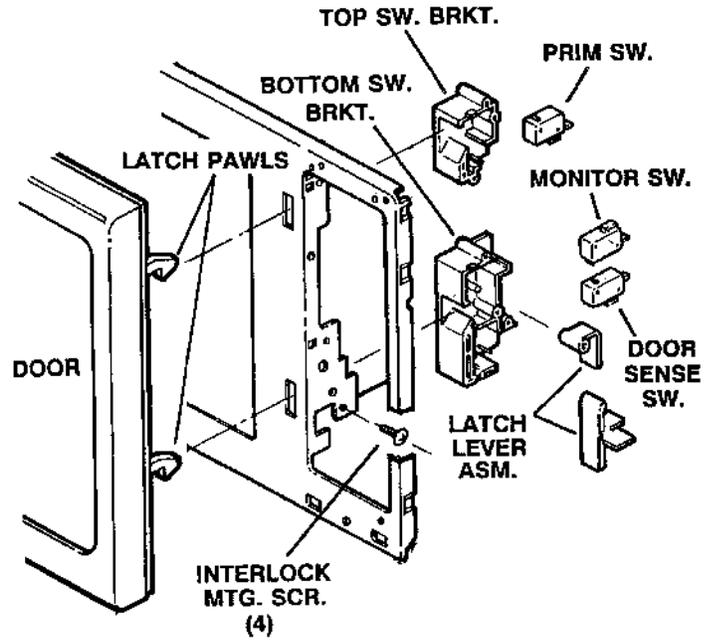
When the door is open, the meter should indicate a closed circuit. When the monitor switch actuator is pushed by a screwdriver through the lower latch hole on the front plate of the oven cavity with the door opened (in this condition the plunger of the monitor switch is pushed in), the meter should indicate an open circuit. If improper operation is indicated, the switch may be defective.

After testing the monitor switch, reconnect the wire lead to the monitor switch (NC) terminal.

DOOR SENSING, PRIMARY INTERLOCK AND MONITOR SWITCH REMOVAL

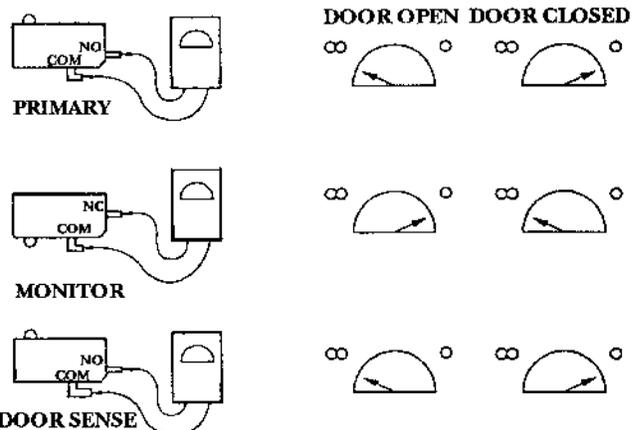
This procedure should be followed when replacing switches, otherwise they could be damaged.

1. Disconnect oven from power supply and remove outer case.
2. Discharge high voltage capacitor.
3. Disconnect wire leads from the switch(es).
4. Remove two screws holding the interlock bracket to component compartment flange.
5. Lift latch switch bracket assembly to release catch on bracket (top of bracket) to flange.



CHECK FOR CONTINUITY OF THE SWITCHES WITH OHM METER

RESULTS



NOTE: AFTER CHECKING SWITCHES RECONNECT WIRES.

6. Remove small screw that secures switch to bracket.
7. Lift switch off of bracket post.

DOOR SENSING, PRIMARY INTERLOCK AND MONITOR SWITCH ADJUSTMENT

If the door sensing switch, primary interlock switch and monitor switch do not operate properly due to a misadjustment, the following adjustment should be made:

1. Loosen the two (2) screws holding latch switch bracket to the component compartment flange.
2. With door closed, adjust latch switch bracket by moving it back and forth, and up and down. In and out play of the door allowed by the upper and lower position of the latch switch bracket should be less than 0.5mm (.02"). The vertical position of the latch switch bracket should be placed where the door sensing switch and primary interlock switch have activated with the door closed.
3. Firmly secure the screws with washers.
4. Check the door sensing switch operation. If the door sensing switch has not activated with the door closed, loosen screw and adjust the latch switch bracket position.

After adjustment, check the following:

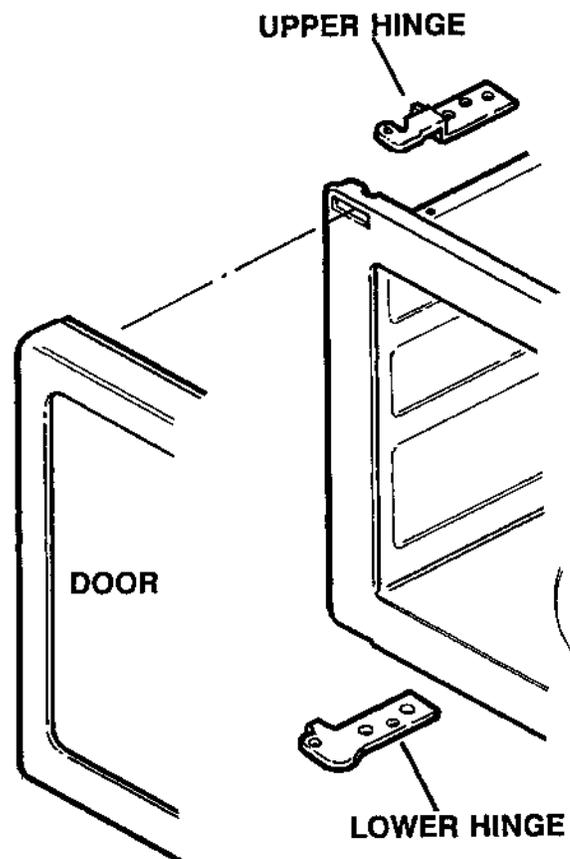
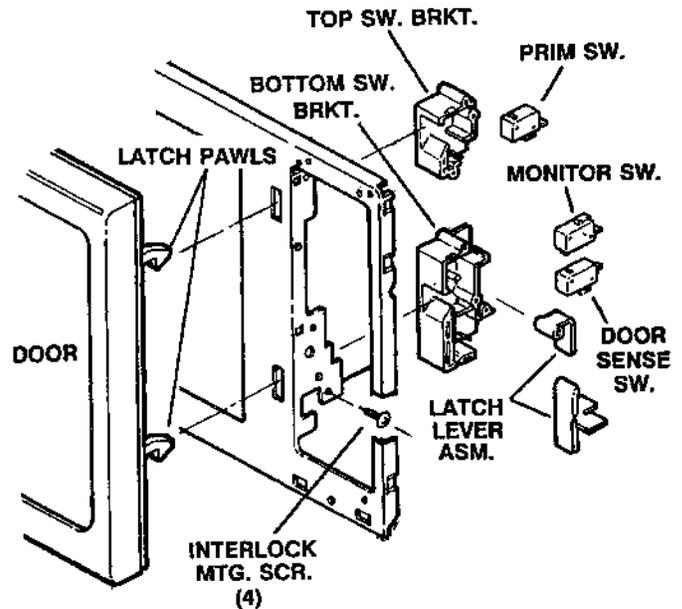
1. In and out play of door remains less than 0.5mm (.02") when in latched position. First check upper position of latch switch bracket, pushing and pulling upper portion of door toward the oven face. Then check lower portion of the latch switch bracket, pushing and pulling lower portion of the door toward the oven face. Both results (movement of the door) should be less than 0.5mm (.02").
2. The door sensing switch and primary interlock switch interrupt the circuit before the door can be opened.
3. Monitor switch contacts close when door is opened.
4. Reinstall outer case and check for microwave leakage around door with an approved microwave survey meter.

DOOR

The door will be replaced as an assembly.

DOOR REMOVAL

1. Remove power, case and short out capacitor.
2. Loosen the 3 5/16" hex head screws on door top hinge.
3. Gently pry (don't scratch door frame) top hinge over door pin. Lift door to remove bottom door pin from bottom hinge.
4. When reinstalling door reverse procedure, but close door and align it to the control panel before securing door hinge screws.



DOOR ADJUSTMENT

The door can be adjusted by keeping screws of each hinge loose.

After adjustment, make sure of the following:

1. Door latch heads catch smoothly, latch hook through latch holes, and also latch head goes through center of latch hole.
2. Deviation of door alignment from horizontal line of cavity faceplate is to be less than 1.0mm (.04").
3. Door is positioned with its face depressed toward cavity faceplate.
4. Reinstall outer case and check for microwave leakage around door with an approved microwave survey meter.

NOTE: Door on a microwave oven is designed to act as an electronic seal preventing the leakage of microwave energy from oven cavity during cook cycle. This function does not require that door be airtight, moisture- (condensation) tight or light-tight. Therefore, occasional appearance of moisture, light or sensing of gentle warm air movement around oven door is not abnormal and do not of themselves, indicate a leakage of microwave energy from oven cavity. If such were the case, the oven could not be equipped with a vent, the very purpose of which is to exhaust vapor-laden air from oven cavity.

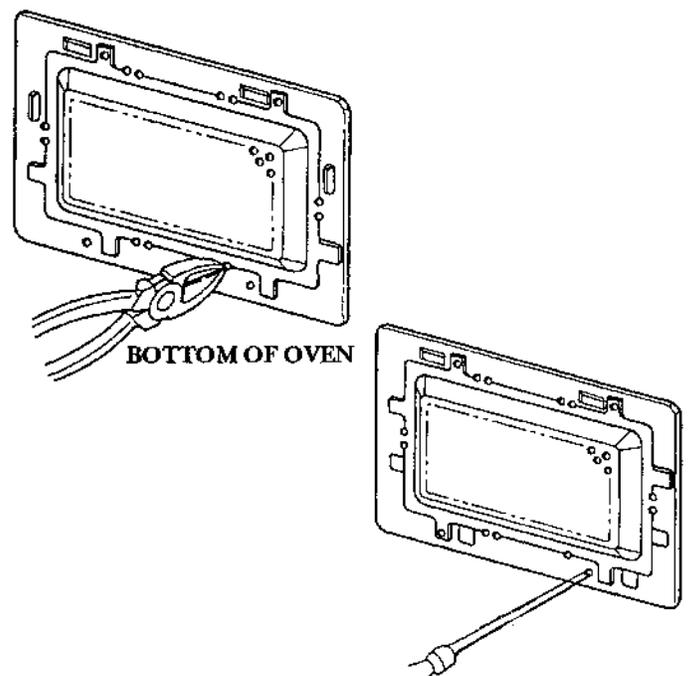
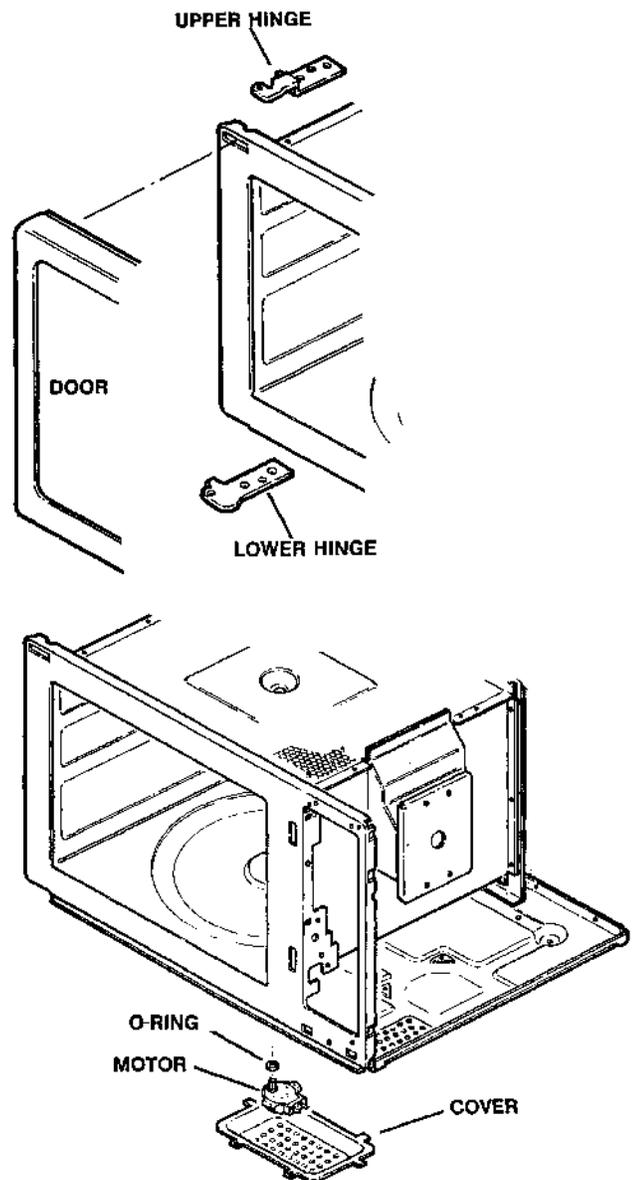
TURNTABLE

The turntable shelf is made of a ceramic type material and the supporter ring that it rests on is plastic. The shelf also sits on and is turned by the motor coupling, which can turn in either direction. The turntable shelf must be used when using oven. The turntable motor is mounted to the bottom of the cavity. The bottom plate of the microwave covers the motor. An access panel to the motor covers the motor area.

If the turntable motor has never been replaced then the access panel is not completely stamped out.

TURNTABLE MOTOR AND COUPLING REMOVAL

1. Disconnect the oven from the power supply.
2. Remove ceramic shelf and supporter from oven, put oven on its back.
3. Remove turntable motor cover access panel from case bottom. Using side cutters cut areas of access panel that were purposely not completely stamped out during production. Remove any burrs or rough areas.
4. Disconnect leads from motor and remove two mounting screws.
5. Remove motor – when motor is removed, turntable coupling will snap loose into oven cavity.
6. When reinstalling access panel use slots located towards the front of the unit and use two screws (and their screw holes) already located in the base pan to secure panel.



PROBE RECEPTACLE

Receptacle is located on ceiling of cavity.
The probe is a sensor that has a thermistor swagged in the tip of a stainless steel tube.

The probe can be checked by using an ohmmeter. At room temperature there should be approximately 55,000 ohms. If inserted into a container of hot water the resistance will visibly drop.

To Remove Probe Receptacle:

1. DISCONNECT POWER, remove case, discharge capacitor
2. Unscrew 2 screws (in cavity) that secure receptacle.
3. Disconnect wiring and lift receptacle off from top.

FLAME SENSOR/OVEN THERMAL CUTOUT

The thermal cutout, located on the top of the cavity compartment, is designed to prevent damage to the unit if the foods in the oven catch fire due to overheating caused by improper setting of cook time or failure of control unit.

Under normal operation, the oven thermal cutout remains closed. However, when abnormally high temperatures are reached within the oven cavity, the oven thermal cutout will open at 293°F, causing the oven to shut down.

NOTE: Oven thermal cutout is resettable.

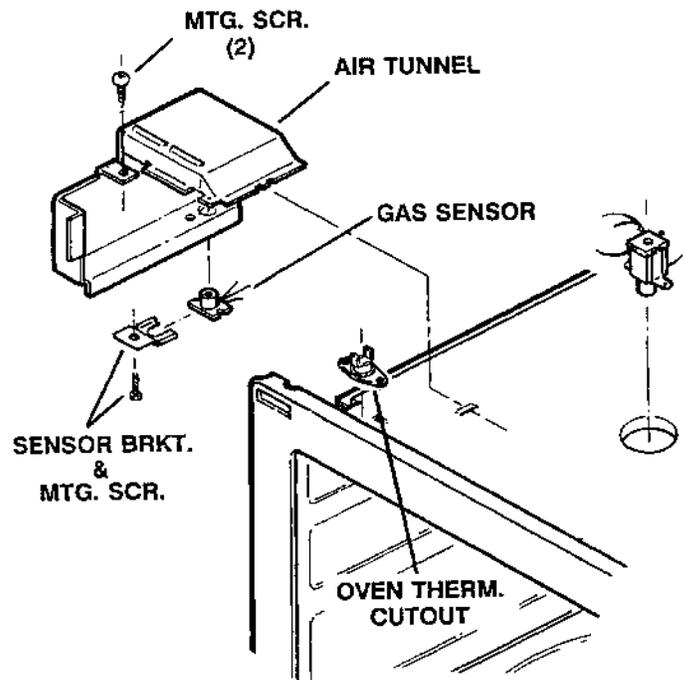
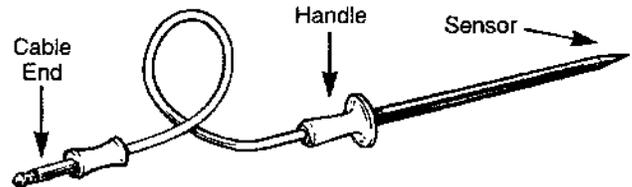
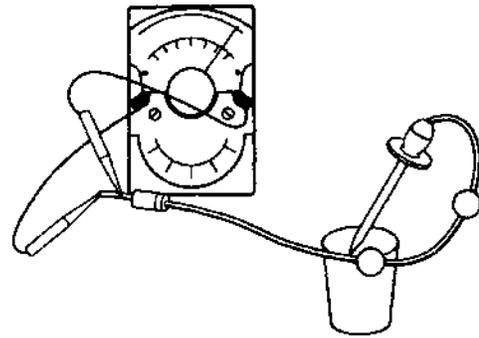
- ◆ The sensor is held in place by a screw and a tab and slot assembly near the top door hinge.

GAS/HUMIDITY SENSOR

Microwave sensor cooking uses a special gas sensor which detects both humidity (steam) and hydrocarbons (food odors) during the cooking process.

Checking the initial sensor cooking condition:

1. The oven should be plugged in at least five minutes before sensor cooking.
2. Room temperature should not exceed 95°F (35°C).
3. The unit should not be installed in any area where heat and steam are generated, for example, next to a conventional surface unit.
4. Exhaust vents are provided on the back of the unit for proper cooling and air flow in the cavity. To permit adequate ventilation, be sure to install so as not to block these vents. There should be some space for air circulation.
5. Be sure the exterior of the cooking container and the interior of the oven are dry. Wipe off any moisture with a dry cloth or paper towel.
6. The Sensor works with food at normal storage temperature. For example, chicken pieces would be at refrigerator temperature and canned soup at room temperature.



- Avoid using aerosol sprays or cleaning solvents near the oven while using Sensor settings. The sensor will detect the vapor given off by the spray and turn off before food is properly cooked.
- After about 2 to 9 minutes if the sensor has not detected the vapor of the food, ERROR will appear and the oven will shut off.
- The sensor is a plug-in device located in the air exhaust duct on top left corner.

To Remove Sensor:

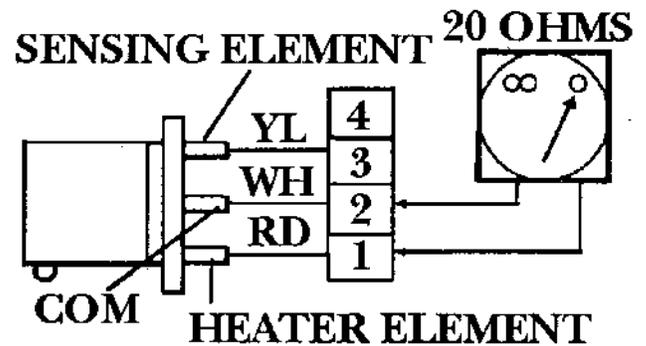
- Remove outer case.
- Remove one screw securing sensor board to air tunnel bracket.

NOTE: Only heater terminals (red & white leads) can be checked with ohmmeter (20 ohms).

CAUTION: Attempting to check sensor will damage it.

AUTO COOK DIAGNOSTIC TEST (QUICK TEST)

- With 3 fingers touch and hold the following pads at the same time: **6 - 7 - 8**.
- Observe diagnostic number in display (numbers approximate)
 - 40-205 (Normal – verify with “sensor detection test”)
 - 214 or higher (Sensor failed open, sensor unplugged, wiring, or smart board)
 - Less than 5 (shorted sensor, or smart board)



SENSOR DETECTION TEST

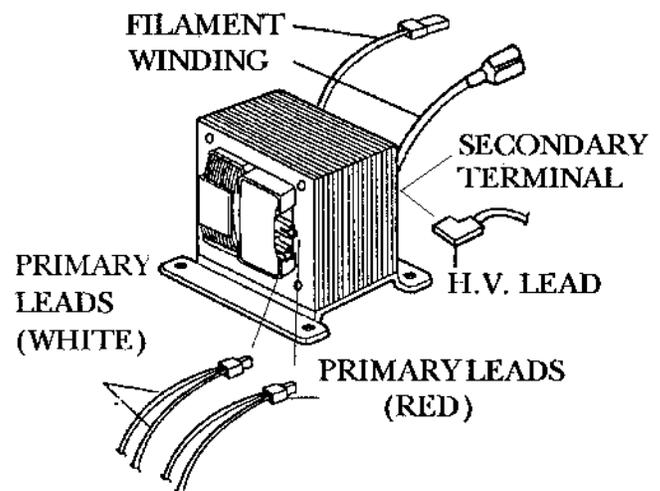
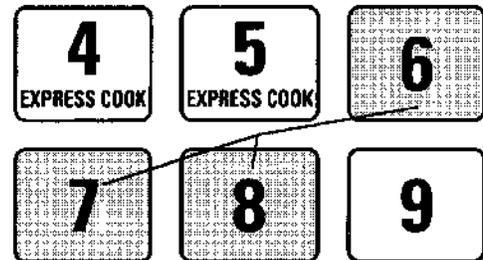
- Place small amount of water (about 1/3 cup) in a container on the turntable.
- Program COOK 1 (sensor cooking)
- Simultaneously touch **6 - 7 - 8** and observe diagnostic numbers in the display. Record initial number (Ex. 70)
- Record the number at humidity detection (control beeps – unit shuts off).
- The number of “detection” should be approximately 75% of the HIGHEST NUMBER.
Ex.: If high no. = 70, then low number should be approximately 52 ($70 \times .75 = 52$).

NOTE: As long as detection DOES OCCUR and is approximately 75% of high number, (plus or minus a few numbers) the sensor system is working normally.

POWER TRANSFORMER TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR!
(Very dangerous high voltages are present at the high voltage terminal. Do not attempt to measure the filament or high voltage).

- Disconnect the primary input terminals and measure the resistance of the transformer.
- Check for continuity of the windings.
- On the Rx 1 scale, the resistance of the primary coil should be less than 1 ohm. The resistance of the high voltage windings (secondary terminal to grounded screw of transformer) should be approximately 70-110 ohms and the resistance of the filament windings should be less than 1 ohm.



POWER TRANSFORMER REMOVAL

1. Disconnect oven from power supply and remove outer case.
2. Discharge high voltage capacitor.
3. Remove oven contents.
4. Disconnect and mark leads.
5. Remove two screws from the bottom and two that are located in the control section.
6. Reinstall reversing this procedure.

HIGH VOLTAGE RECTIFIER/DIODE TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR!

Isolate the rectifier from the circuit. Using the highest ohm scale of the meter, read the resistance across the terminals and observe, reverse the leads to the rectifier terminals and observe meter reading. If a short is indicated in both directions, or if an infinite resistance is read in both directions, the rectifier is probably defective and should be replaced.

HIGH VOLTAGE CAPACITOR TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR!

If the capacitor is open, no high voltage will be available to the magnetron. Disconnect input leads and check for short or open between the terminal using an ohmmeter.

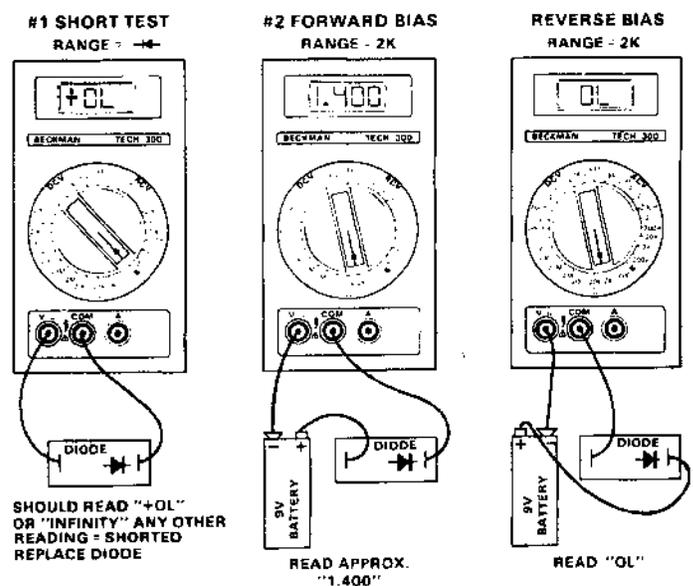
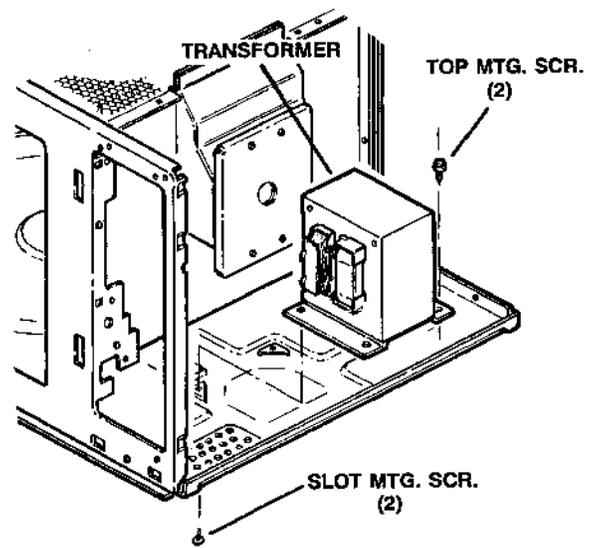
Checking with a high ohm scale, if the high voltage capacitor is normal, the meter will indicate continuity for a short time and should indicate an open circuit once the capacitor is charged. If the above is not the case, check the capacitor with an ohmmeter to see if it is shorted between either of the terminals and case.

If it is shorted, replace the capacitor.

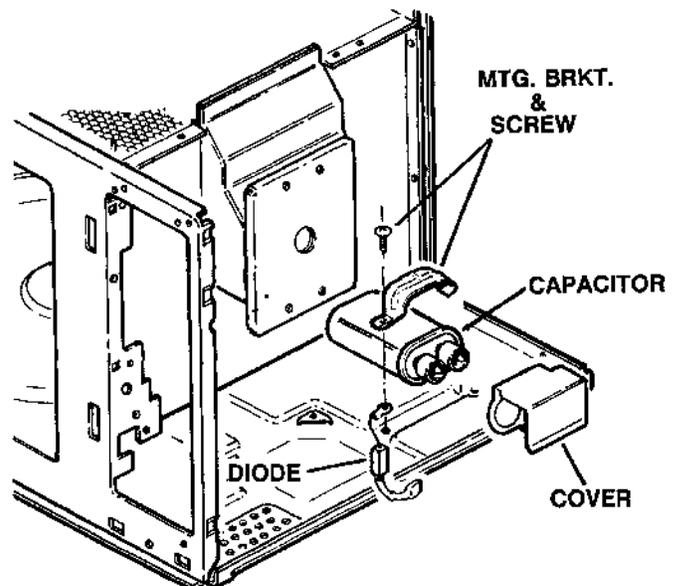
RECTIFIER/DIODE ASSEMBLY AND HIGH VOLTAGE CAPACITOR REMOVAL

1. Disconnect oven from power supply and remove outer case.
2. Discharge high voltage capacitor.
3. Remove one (1) screw holding capacitor holder to oven case floor.
4. Disconnect terminal of rectifier from capacitor (other end of rectifier is screwed into bracket).
5. Remove bracket holding capacitor.

CAUTION: When replacing high voltage rectifier and high voltage capacitor, ground side terminal of H. V. rectifier must be secured firmly with a grounding screw.



NOTE: READING MAY VARY WITH OTHER BRAND METERS.



MAGNETRON ASSEMBLY TEST

High voltages are present during the cook cycle, so extreme caution should be observed. Disconnect oven from power supply and discharge the high voltage capacitor before touching any oven components or wiring.

To test for an open filament, isolate the magnetron from the high voltage circuit. A continuity check across the magnetron filament leads should indicate less than 1 ohm.

To test for a shorted magnetron, connect the ohmmeter leads between the magnetron filament leads and chassis ground. This test should indicate an infinite resistance. If there is little resistance the magnetron is grounded and must be replaced. Power output of the magnetron can be measured by performing a water temperature rise test. This test should only be used if above tests do not indicate a faulty magnetron and there is no defect in the following components or wiring: Silicon rectifier, high voltage capacitor and power transformer.

MAGNETRON REMOVAL

1. Disconnect oven from power supply and remove outer case.
2. Discharge high voltage capacitor.
3. Remove two screws securing air duct from the side of the magnetron and remove magnetron wiring.
4. Remove four screws holding magnetron to wave guide. When removing the screws hold the magnetron to prevent it from falling.
5. Remove the magnetron from the unit with care so it does not hit any metal object.

MAGNETRON THERMAL CUTOUT

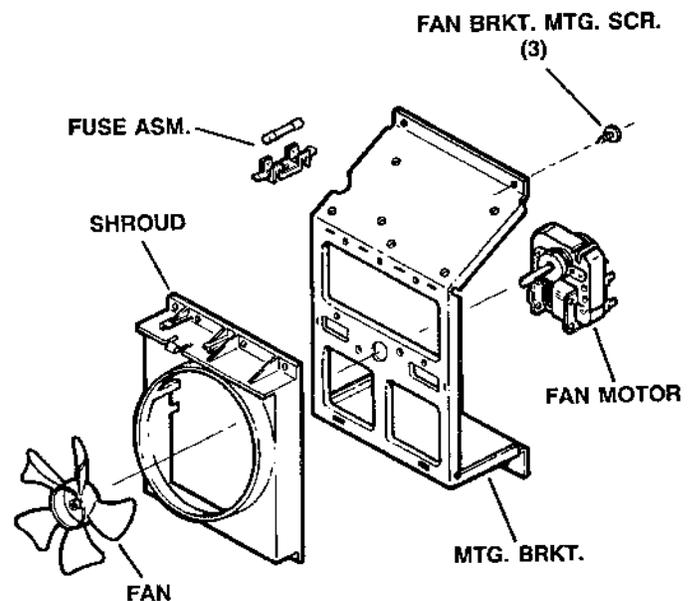
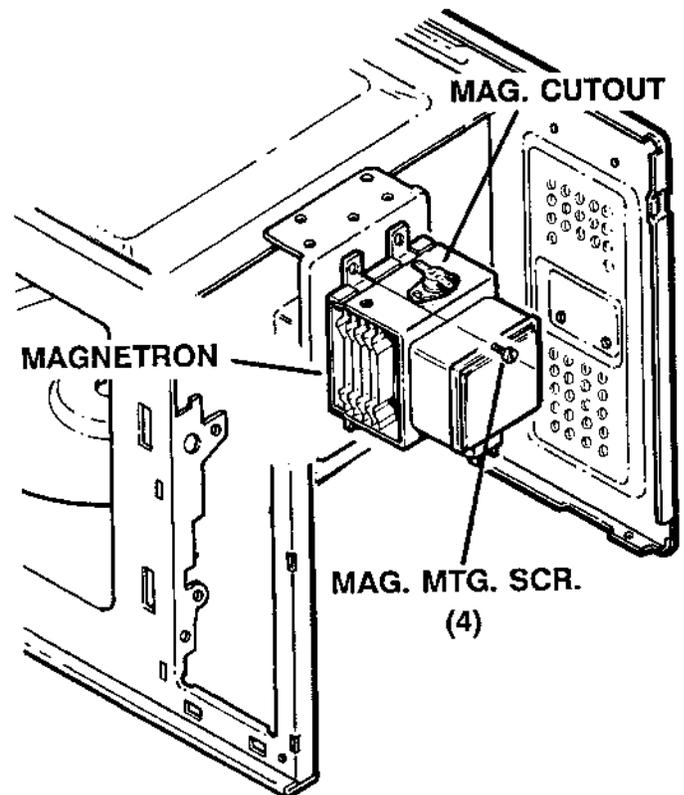
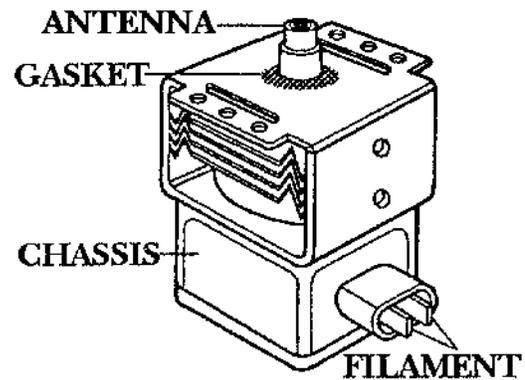
The magnetron thermal cutout is located on the top portion of the magnetron and designed to prevent damage to the magnetron if an overheated condition develops in the tube due to cooling fan failure, obstructed air ducts, dirty or blocked air intake.

Under normal operation, the magnetron thermal cutout remains closed. However, when abnormally high temperatures are reached within the magnetron, the magnetron thermal cutout will open at 302°F causing the oven to shut down.

NOTE: Magnetron thermal cutout is resettable.

MAGNETRON FAN MOTOR

The magnetron fan motor drives a blade which draws in cool external air. This cool air is directed through the air vanes surrounding the magnetron and cools the magnetron assembly. This air is channeled through the oven cavity to remove steam and vapors given off from the heating foods. It is then exhausted through the exhausting air vents at the oven cavity.

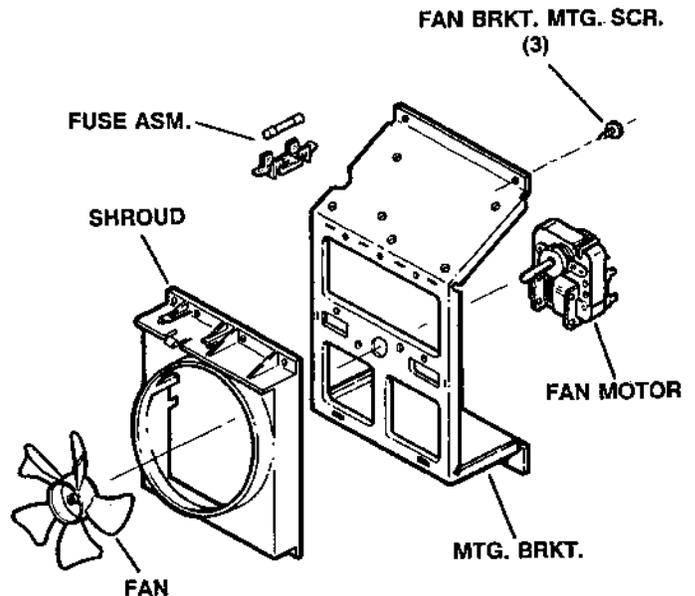


MAGNETRON FAN MOTOR ASSEMBLY REMOVAL

1. Disconnect oven from power supply and remove outer case.
2. Discharge high voltage capacitor.
3. Disconnect the wire leads to fuse and neutral connector.

At times the positive lock connectors will be housed in plastic. If so, just squeeze plastic and connector will release.

4. Remove three screws at rear of oven that secure metal fan bracket to outer case.
5. Rotate metal housing to gain access to plastic housing. Bend the five plastic catches to release plastic housing from metal housing.
6. Pull fan blade off of motor shaft and unscrew two screws holding fan motor to mounting bracket.



CONVECTION FAN AND HEATER

The convection fan and heater are located at the rear of the oven. There are two fan blades on the convection motor shaft. One is for the movement of air across the heater (internal blade) and the outside fan blade is to cool the fan motor.

The convection heater has two helix heater coils contained in the sheath. The resistance should measure about 9-10 ohms because they are in parallel. If they measure 18-20 ohms then one of the heater helix coils would be open. This would cause not enough convection heat and heater would have to be replaced.

To test the heater; remove connectors near magnetron fan and make a continuity check across the terminals. Do not attempt to make a continuity check for the heater at any other location, there are too many feedback circuits and an incorrect reading would result.

To test the convection fan motor; this can easily be done at the disconnect (approx. 25 ohms).

To inspect, repair or replace the convection heater, convection fan motor or blades the heater box would have to be removed.

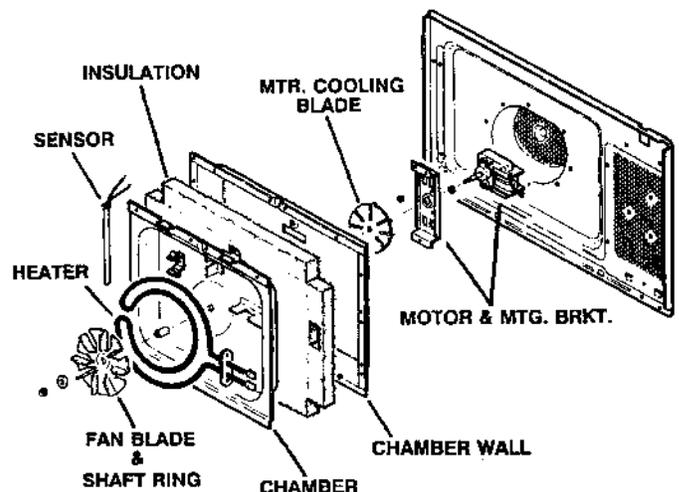
ACCESSING CONVECTION FAN AND HEATER

To Remove rear case wall:

1. Disconnect power, remove case, short capacitor.
2. Remove 3 screws along bottom of outer rear case and 2 on each side, case is now held in place by bottom catch (tabs).
3. Lift rear case to free from bottom catch and rotate to gain access to burner box.

To Remove burner box:

1. Remove 3 screws along top of burner box plus 1 on top towards mag, door side of burner box.
2. Remove 3 screws across each side and bottom.
3. Burner box is also held in place by tabs and slots. Lift box up and this will free tabs at top of box.



CONVECTION DUCT DOOR

This duct door remains open during microwaving and it is closed for convection and combination cooking.

The damper duct door is closed during those cooking functions because the magnetron fan motor is always running when the oven is on. This would allow more air (cooler room air) to be blown into the oven cavity.

Closing this door also contributes to the pressurizing of the cavity. This will minimize the air mixture and help cut down on moisture build up.

If the damper door did not close while convection cooking or combination cooking one of these two situations could occur:

1. More heated air could be pushed out of the exhaust, the flame sensor could detect this and open.
2. If the oven doesn't come up to temperature as quickly as the micom thinks it should, the display will show "ERROR".

The duct door is controlled by the micom. The micom sends 120 volts A.C. to a printed circuit board on top of the duct. This 120 volts A.C. is then rectified and changed to approximately 100 volts D.C. This allows the solenoid to remain energized during the cooking process without "chattering".

The solenoid is wired in parallel with the convection motor. When checking duct door operation for proper operation:

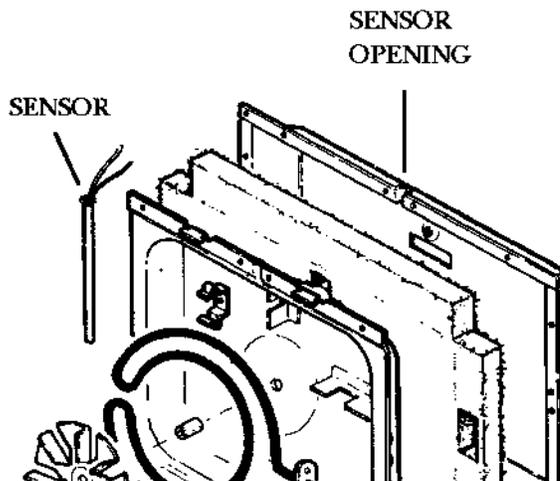
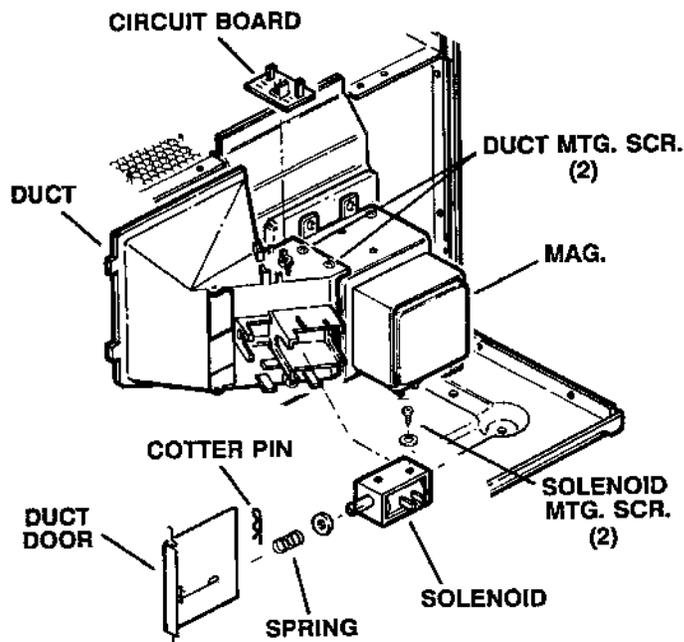
1. 120 volts A.C. on duct board between R&B connector and Yellow connector.
2. 100 volts D. C. between pink wires on board.
3. Remove power and check coil resistance, it should read approximately 2-3 K ohms of resistance.

OVEN SENSOR - CONVECTION COOKING

The oven sensor is a negative coefficient thermistor, that is when the temperature goes up the resistance goes down. The sensor should measure approximately 2,000K (2M) ohms resistance when cold (room temperature).

To Remove Oven Sensor:

1. DISCONNECT POWER and remove wrapper.
2. Pull Sensor up and out of its compartment. If it is too difficult to pull, loosen screws on each side of case.
3. Unplug connector number 3.



TRUE & FALSE REVIEW QUESTIONS

- | | | | |
|-----|---|---|---|
| 1. | Any shelf can be used when microwaving food. | T | F |
| 2. | The oven lamp is consumer replaceable. | T | F |
| 3. | Convection and combination cook continually brings air in from outside of the cavity and heats it. | T | F |
| 4. | The control transformer can be replaced as an individual part. | T | F |
| 5. | The door can be replaced as an assembly. | T | F |
| 6. | The oven thermal cut out (flame sensor) is resettable. | T | F |
| 7. | When servicing the turntable motor or connections for the first time it will be necessary to cut away the turntable cover. | T | F |
| 8. | The JE1390 uses a 20 amp fuse. | T | F |
| 9. | If "ERROR" appears in the control panel display 10-30 seconds after a sensor assisted cooking program, the sensor circuit could be shorted or open. | T | F |
| 10. | The touch control sound and the display can be turned off on the JE1390. | T | F |
| 11. | Micro Cook is the same feature as Time Cook I & II. | T | F |
| 12. | The convection heater has two helix heater coils contained in the sheath. | T | F |
| 13. | The resistance of the oven sensor at room temperature is approximately 2 M ohms. | T | F |
| 14. | The convection duct door solenoid is operated by 120 Volts A.C.. | T | F |

MICROWAVE PERFORMANCE TEST

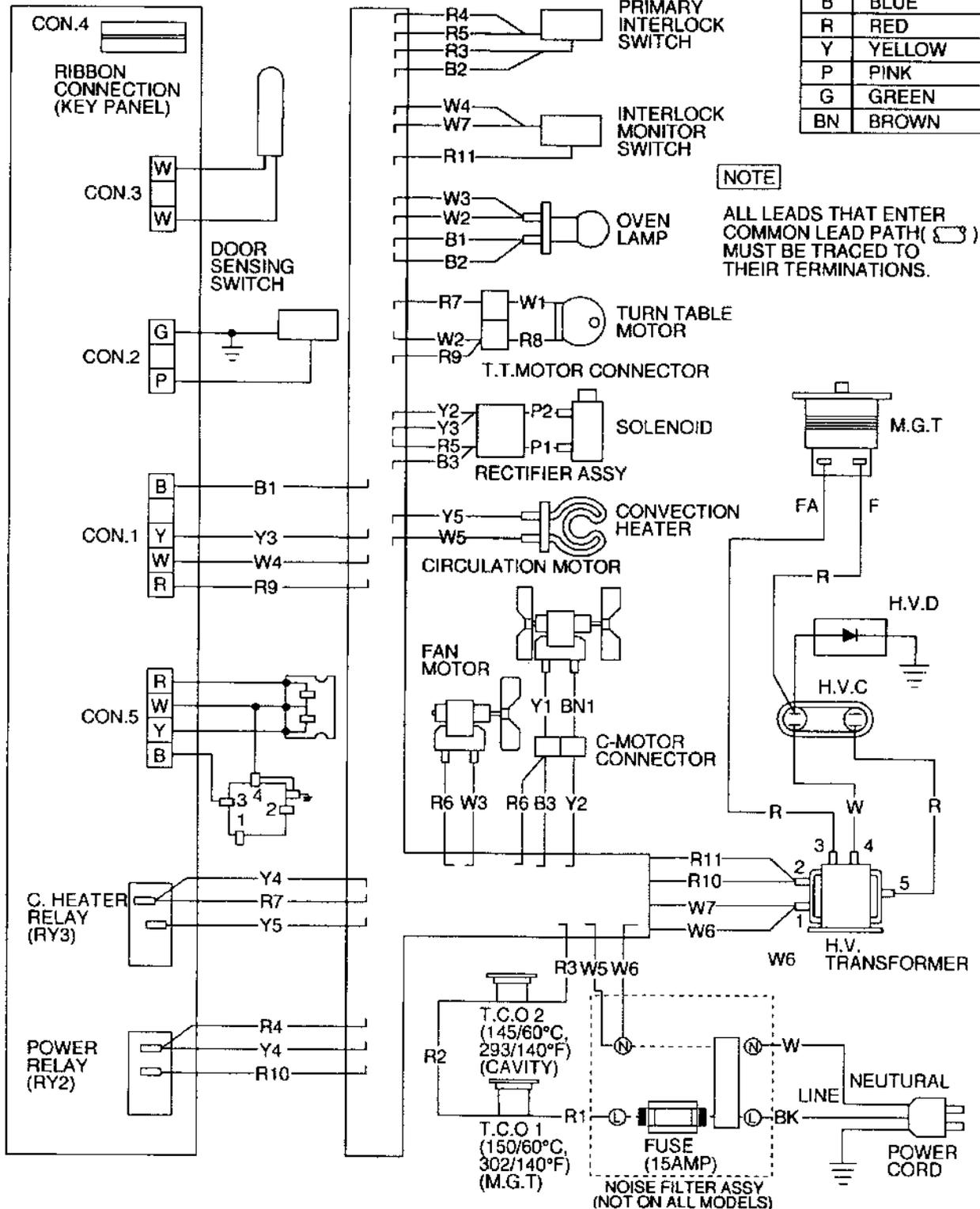
1. Measure line voltage (loaded). This test is based on normal voltage variations of 105V to 130V.
2. Place 1 WB64X0073 beaker containing exactly one liter of water between 59 - 75 degrees F in the center of the shelf. Record starting temperature.
3. Set at High (power level 10) power.

4. Set cooking time for 2 minutes and 3 seconds.
5. After that time has elapsed record ending temperature. The difference between the starting temperature and ending temperature is the temperature rise.
6. At 120V the temp rise should be 30 degrees F.

322A11029080

WIRING DIAGRAM

SYM	COLOR
BK	BLACK
W	WHITE
B	BLUE
R	RED
Y	YELLOW
P	PINK
G	GREEN
BN	BROWN

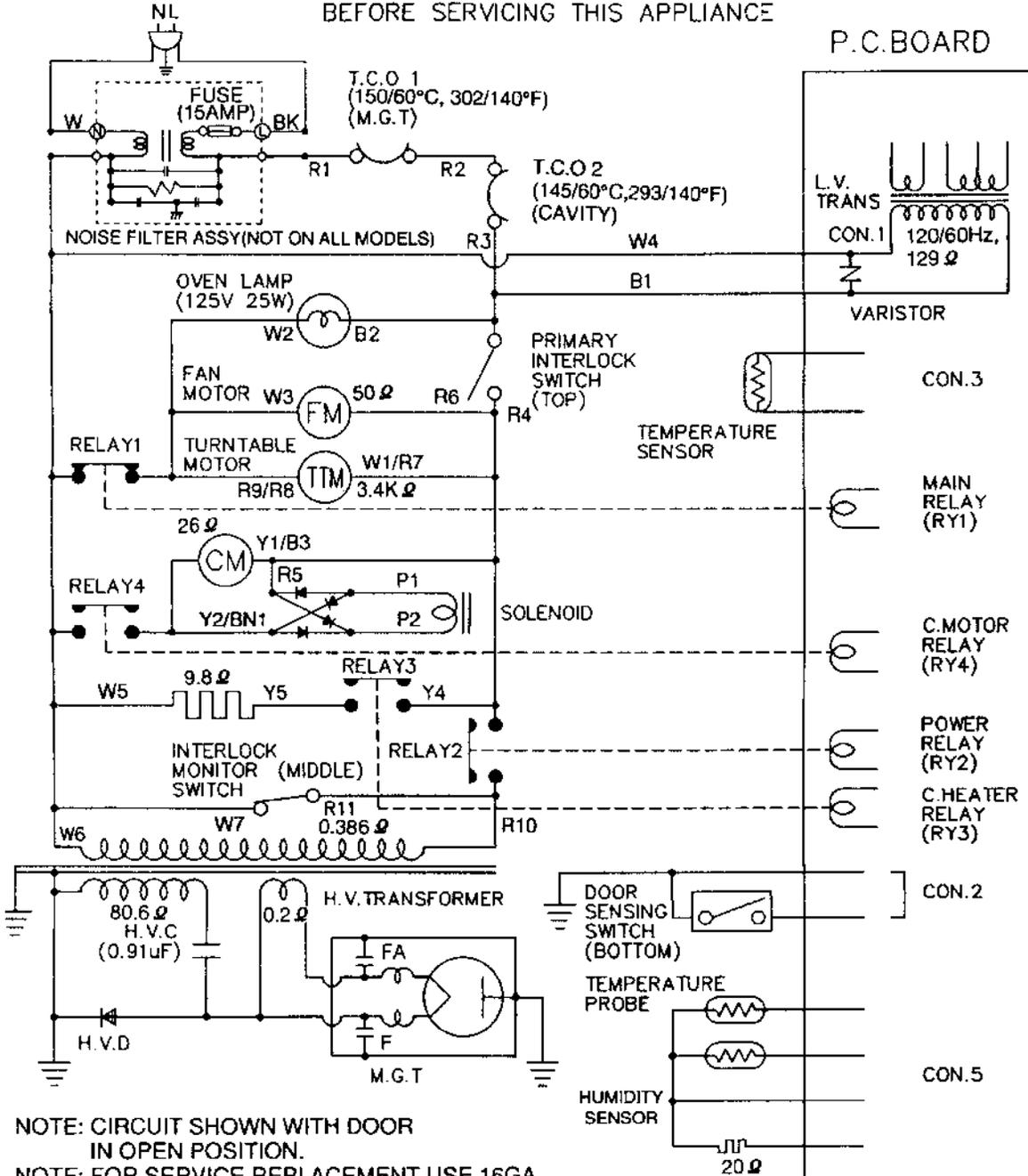


MODEL NAME
 JE1390 GV/WV
 JE1390 GVC/WVC
 322A11029080

SCHEMATIC DIAGRAM

WARNING
 POWER MUST BE DISCONNECTED
 BEFORE SERVICING THIS APPLIANCE

AC 120V/60Hz



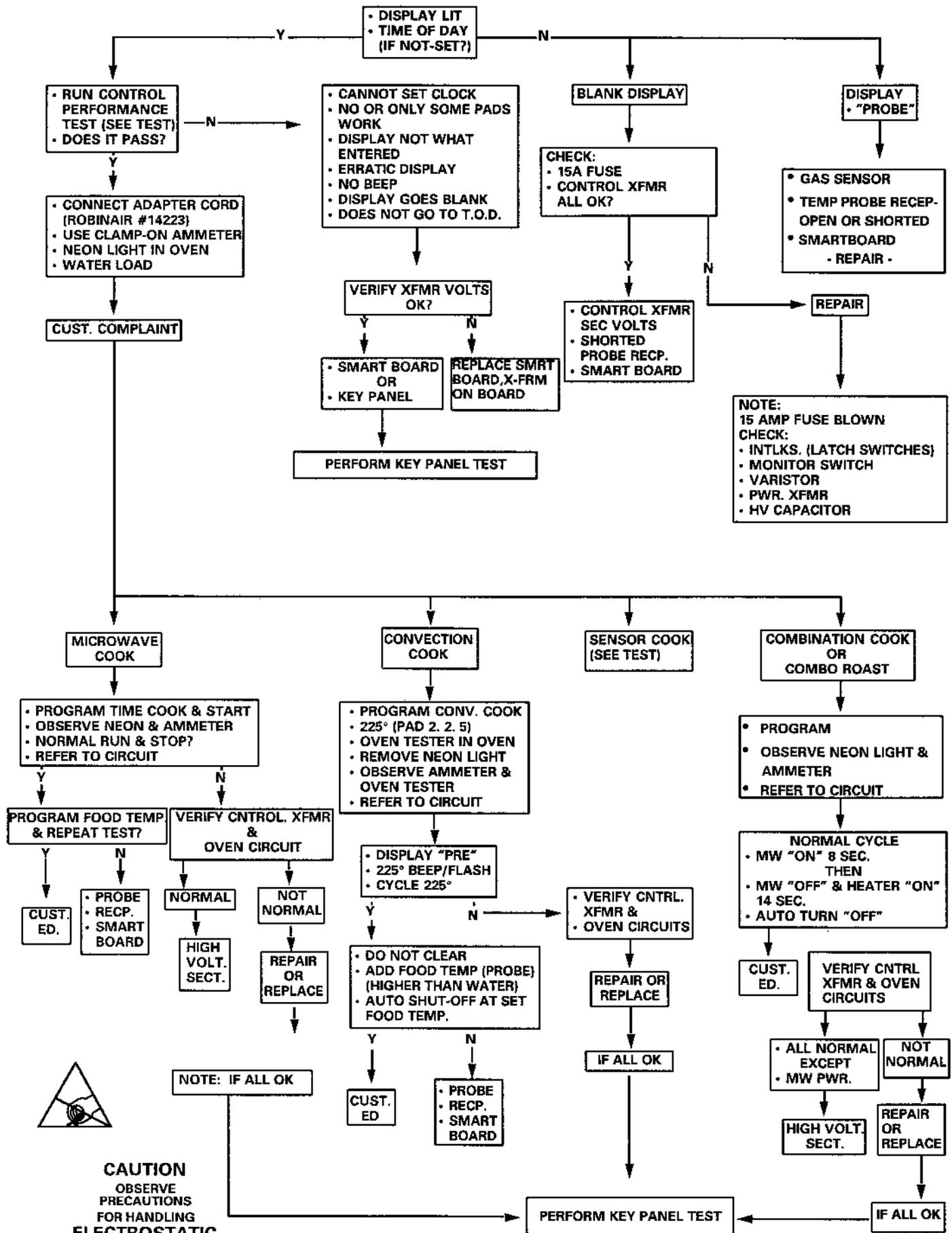
NOTE: CIRCUIT SHOWN WITH DOOR IN OPEN POSITION.
 NOTE: FOR SERVICE REPLACEMENT USE 16GA 105°C THERMOPLASTIC COVERED WIRE EXCEPT FOR HIGH VOLTAGE LEADS OR AS NOTED ON SPECIAL LEADS.

SERVICING TROUBLESHOOTING GUIDE

When troubleshooting the microwave oven, it is helpful to follow the Sequence of Operation in performing the checks. Many of the possible causes of trouble will require that a specific test be performed. These tests are given a procedure which will be found in the "Description and Function of Components" section.

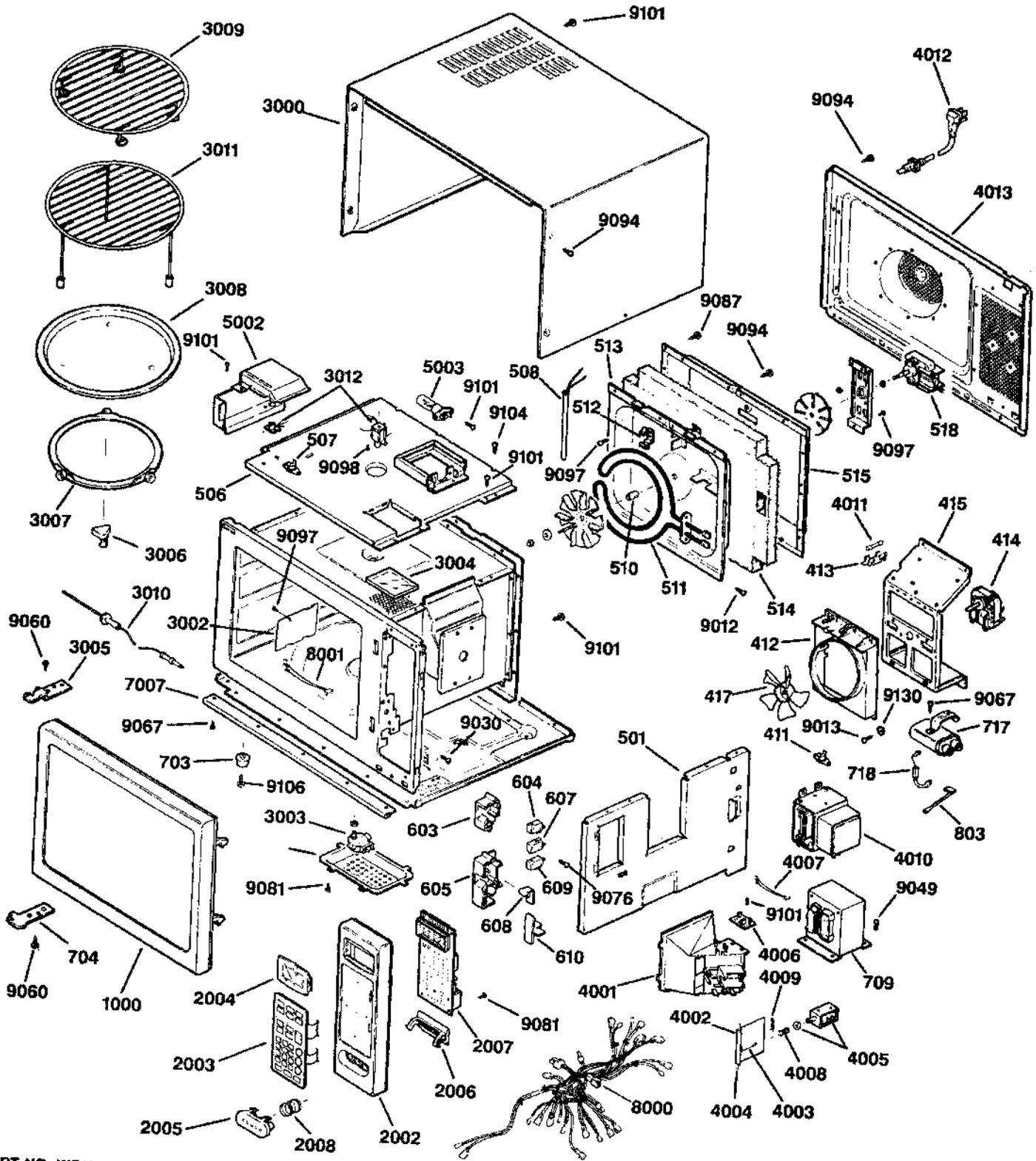
IMPORTANT: If the oven becomes inoperative because of a blown monitor fuse in the monitor switch, power relay and primary interlock switch circuit, check the monitor switch, power relay, door sensing switch and primary interlock switch before replacing the monitor fuse.

TEST PROCEDURE																						
CONDITION	PROBLEM	Short in Power Cord	Short or Open Wiring	Magnetron	Power Transformer	Rectifier Assembly	H.V. Capacitor	Primary Interlock Switch	2nd Interlock Switch	Monitor Switch	Monitor Fuse	Flame Sensor-Thermal Cut-out	Control Unit	Oven Lamp or Socket	Cooling Fan Motor	Stirrer Fan	Wrong Operation	Low Voltage	Dirty Oven Cavity	Sensor Assembly	Turntable Motor	
OFF CONDITION	Home fuse blows when power cord is plugged into wall receptacle	●	●																			
	Microwave fuse blows when power cord is plugged into wall receptacle.		●							●												
	All letter and indicator lights do not appear in display when power cord is first plugged into wall outlet.		●							●	●	●	●									
	Display does not operate properly when CLEAR/OFF key is touched. (Buzzer should sound and time of day should appear in display.)							●					●									
	Oven lamp does not light with door opened.		●								●	●	●	●								
COOKING CONDITION	Door closed, oven lamp and cooling fan motor on can not clear.							●														
	Oven lamp does not light in cool cycle or when door is opened.												●									
	Oven lamp does not light at all.		●										●	●								
	Oven lamp lights but fan motor or turntable motor do not operate.		●												●						●	
	Oven does not go into cook cycle when START pad is touched.		●					●	●		●	●	●									
	Oven seems to be operating but little or no heat is produced in oven load. (Food is incompletely cooked or not cooked at all at end of cook cycle.)		●	●	●	●	●	●														
	Oven produces extremely uneven heating in cook cycle.		●												●	●	●	●	●			●
	Oven does not cook properly when programmed for Cooking Power 5 mode. (Operates properly on Cooking Power 10 mode.)		●											●								
SENSOR COOKING CONDITION	Oven is in the sensor cooking condition but sensor does not end, or sensor turns off about max. 30 min. after start. When a cup of water is heated by sensor, the oven does not shut off when water is boiling.												●								●	



CAUTION
OBSERVE
PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

PARTS IDENTIFICATION JE1390(V)-01



(ART NO. WB11884) C

REF. PART PART DESCRIPTION JE1390 GV WV
NO. NO.

0029	WB03X0880	BUTTON, DOOR PUSH	1	-		
0411	WB20X0167	THERMOSTAT, MAGNETRON	1	1	5003	WB36X0934 LAMP, BASELESS 1 1
0412	WB06X0463	ORIFICE, SUCTION GUIDE	1	1	7007	WB07X2073 FRONT, DECORATIVE 1 1
0413	WB06X0464	HOLDER, FUSE	1	1	8000	WB18X0557 WIRE HARNESS, MAIN 1 1
0414	WB26X0178	MOTOR, FAN	1	1	8001	WB18X0558 WIRE ASM, TURNTABLE 1 1
0415	WB06X0465	BRACKET, MOTOR MOUNT	1	1	9012	WB01X1504 SCREW, TRUSS HEAD M 2 2
0417	WB06X0466	BLADE, FAN	1	1	9013	WB01X1505 SCREW, TRUSS HEAD M 2 2
0507	WB20X0168	THERMOSTAT, OVEN	1	1	9017	WB01X1519 NUT, HEXAGON 2 2
0508	WB18X0556	THERMISTOR	1	1	9018	WB01X1520 NUT, HEXAGON 1 1
0509	WB06X0474	BLADE, CIRCULATION FAN	1	1	9030	WB01X1517 SCREW-D, SPECIAL 4 4
0510	WB01X1518	RING, SHAFT	1	1	9049	WB01X1506 SCREW, TAP TITE 6 6
0511	WB28X0130	HEATER ASM	1	1	9060	WB01X1507 SCREW-D, SPECIAL 6 6
0512	WB06X0467	HOLDER, HEATER ASM	1	1	9067	WB01X1508 SCREW, BIND'G HD TAP TITE 9 9
0514	WB06X0468	WOOL, GLASS	1	1	9076	WB01X1509 SCREW, PAN HEAD TAPPING 3 3
0516	WB06X0475	BLADE, MOTOR COOLING FAN	1	1	9081	WB01X1510 SCREW, PAN HEAD TAPPING 4 4
0518	WB26X0179	MOTOR, HEATER	1	1	9094	WB01X1511 SCREW, TRUSS HD TAPPING 25 25
0603	WB06X0470	LATCH BODY, UPPER	1	1	9097	WB01X1512 SCREW, TRUSS HEAD TAPPING 9 9
0604	WB24X0815	SWITCH, PRIMARY	1	1	9098	WB01X1513 SCREW, TRUSS HEAD TAPPING 2 2
0605	WB06X0471	LATCH BODY, LOWER	1	1	9101	WB01X1514 SCREW, TRUSS HEAD TAPPING 25 25
0607	WB24X0817	SWITCH, MONITOR	1	1	9106	WB01X1515 SCREW, TRUSS HEAD TAPPING 6 6
0608	WB06X0472	LEVER, SWITCH	1	1	9120	WB01X1521 WASHER, PLAIN 1 1
0609	WB24X0816	SWITCH, DOOR SENSING	1	1	9123	WB01X1522 WASHER, SPRING LOCK 1 1
0610	WB06X0473	ROD, RELEASE	1	1	9130	WB01X1516 WASHER 2 2
0703	WB06X0469	FOOT	4	4	9999	31-20209 MINI-MANUAL W/ WIRE DIAG 1 1
0704	WB14X0202	HINGE, LOWER	1	1		49-8570 USE AND CARE MANUAL 1 1
0708	WB01X1503	WASHER, HINGE	1	1		49-8647 COOK BOOK 1 1
0709	WB27X1087	TRANSFORMER, HIGH VOLT	1	1		
0717	WB27X1090	CAPACITOR, HIGH VOLTAGE	1	1		
0718	WB18X0560	DIODE, CABLE ASM, HV	1	1		
0803	WB18X0559	CABLE ASM, HIGH VOLT	1	1		
1000	WB55X0970	DOOR ASM, WHITE	-	1		
	WB55X0971	DOOR ASM, BLACK	1	-		
2002	WB07X2075	CONTROL PANEL, WHT	-	1		
	WB07X2076	CONTROL PANEL, BLK	1	-		
2003	WB27X1091	KEY PANEL, WHT	-	1		
	WB27X1092	KEY PANEL, BLK	1	-		
2004	WB36X0935	DISPLAY, WINDOW	1	1		
2005	WB03X0879	BUTTON, DOOR PUSH	-	1		
2006	WB06X0452	LEVER, RELEASE	1	1		
2007	WB27X1088	SMARTBOARD	1	1		
2008	WB06X0453	SPRING, RELEASE BUTTON	1	1		
3000	WB56X2176	CASE, OUTER - WHITE	-	1		
	WB56X2178	CASE, OUTER - GREYSTONE	1	-		
3002	WB06X0454	COVER, WAVEGUIDE	1	1		
3003	WB26X0177	MOTOR, TURNTABLE	1	1		
3004	WB36X0933	GLASS, LAMP	1	1		
3005	WB14X0201	HINGE, UPPER	1	1		
3006	WB06X0455	SUPPORT, TURNTABLE SHAFT	1	1		
3007	WB06X0456	SUPPORT, ROLLER	1	1		
3008	WB49X0686	TRAY, COOKING	1	1		
3009	WB48X0230	RACK, SHELF-LOWER	1	1		
3010	WB20X0166	PROBE, TEMPERATURE	1	1		
3011	WB48X0231	RACK, SHELF-UPPER	1	1		
3012	WB27X1083	SENSOR, TEMP JACK ASM	1	1		
4001	WB06X0457	DUCT, AIR	1	1		
4002	WB06X0458	BRACKET, DAMPER	1	1		
4003	WB06X0459	CONNECTOR, DAMPER	1	1		
4004	WB06X0460	SHAFT, DAMPER	1	1		
4005	WB27X1084	SOLENOID	1	1		
4006	WB27X1085	RECTIFIER ASM	1	1		
4007	WB18X0554	WIRE, RECTIFIER	1	1		
4008	WB06X0461	SPRING, SOLENOID	1	1		
4009	WB06X0462	PIN, SNAP	1	1		
4010	WB27X1086	MAGNETRON	1	1		
4011	WB27X1089	FUSE	1	1		
4012	WB18X0555	POWER CORD ASM	1	1		
4013	WB56X2177	COVER, BACK	1	1		

