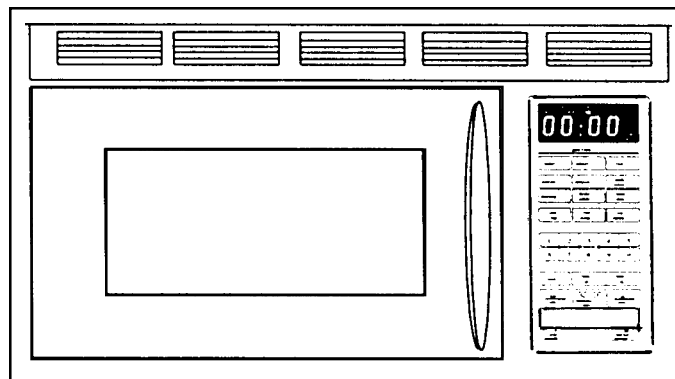


KM-24

MICROHOOD COMBINATION



JOB AID
Part No. 4322462

FORWARD

This Job Aid will introduce the technician to the Whirlpool MicroHood Combination (MHC) Oven. This Job Aid is a reference guide for the experienced technician. It is not designed as a replacement to basic training. This Job Aid does not replace the Service Manual or the Use and Care Guide. It is designed to be used in conjunction with these manuals.

OBJECTIVE

The objective of this Job Aid is to have the experienced appliance technician become familiar with the operation and service of the Whirlpool MCH Oven. It is designed as reference material and is not a replacement for basic training.

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TABLE OF CONTENTS

Important Safety Instructions	Page iv
MicroHood Model Features	Page 1
The Mounting Bracket	Page 2
The Rear Mounting Bracket Latch	Page 3
Blower Venting Positions	Page 4
The Oven Component Locations	Page 5
The Humidity Sensor	Page 6
The High Limit Thermostat	Page 7
The Hood Fan Motor	Page 8
The Magnetron Cooling Fan Motor	Page 9
The Hood Fan Thermostat & Blower Motor Capacitor	Page 10
Touch Keypad & Microcomputer Board Test	Page 11
Wiring Diagram	Page 12
Strip Circuits	Page 13
Primary, Monitor, & Secondary Switch Checkout Procedure	Page 16

IMPORTANT SAFETY INSTRUCTIONS

CAUTION

WARNING TO SERVICE TECHNICIANS

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

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

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

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

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

- a. Do not operate or allow the oven to be operated with the door open.
- b. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source and make repairs as necessary.
 1. Interlock Operation
 2. Proper Door Closing
 3. Seal and Sealing Surfaces (Arcing, Wear and Other Damage)
 4. Damage to or Loosening of Hinges and Latches
 5. Evidence of Dropping or Abuse
- c. Before turning on the microwave power for any service test or inspection within the microwave generating components, check the magnetron, wave guide or transmission line and cavity for proper alignment.
- d. Any defective or misadjusted components in the interlock, monitor, door seal and microwave generation and transmission system shall be repaired or adjusted by procedures described in the Basic Service Manuals for the specific microwave oven being serviced before the oven is released to the owner.
- e. A microwave leakage check to verify compliance with Federal Performance Standards should be performed on each oven prior to release to the owner.
- f. Do not attempt to operate the oven if the door glass is broken.

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

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

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

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

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

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

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

Precautions to Avoid Possible Exposure to Excessive Microwave Energy

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

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

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

1. Door (bent).
2. Hinges and latches (broken or loosened).
3. Door seals and sealing surfaces.

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

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

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

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

CAUTION

- High voltages are present during the cook cycle. Extreme caution should be observed at all times.
- Abrasive cleansers, steel-wool pads, gritty wash cloths, etc. can damage the control panel and the interior and exterior oven surfaces. Use a sponge with mild detergent or paper towels with spray glass cleaner. Apply spray glass cleaner to paper towel. Do not spray directly on oven.
- Before touching any oven component or wiring, always unplug the oven from its power source and discharge the capacitor by using a 20,000 ohm discharge resistor or use an insulated plastic handle screwdriver to short across the capacitor terminals.
- Check that the unit is grounded before trouble shooting. Be careful of the high voltage circuits. Discharge any static charge from your body by touching ground before handling any part of the circuitry on the control board. Electrostatic discharge may damage the control circuit.
- Do not touch oven components or wiring during operation. Attach meter leads with alligator clips when making operational tests.
- For continued protection against radiation emission, replace only with these types of switches: Primary (Interlock) Switch: SZM-V16-FA-63 or VP-533A-OF; Secondary (Interlock) Switch: SZM-V01-FA-32; Interlock (Monitor) Switch: SZM-VI6-FA-62 or VP-532A-OF; Oven Lamp Switch: SZM-V6-FA-31 or VP-331 A-OD.
- It is neither necessary nor advisable to attempt measurement of high voltage.
- Attaching the adaptor ground terminal to the wall receptacle cover screw does not ground the appliance unless the cover screw is metal and not insulated and the wall receptacle is grounded through the house wiring.

WARNING

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

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

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

MICROHOOD MODEL FEATURES

(1998 Production)

MODEL MH6140XF (VALUE MODEL)

- 1.4 Cubic Feet
- 950 Watts
- Sunken Turntable
- Electronic Controls & Clock
- Five (5) EZ-Choice™ Keypads
- Available in Black & White

MODEL MH7140XF (TRADE-UP MODEL)

- 1000 Watts
- Sunken Turntable
- Bi-Level Cooking Rack With 4-Plate Reheat
- Quiet Partner™ Hood & Microwave Oven
- EZ-VUE™ System
- Available in Black, White, & Almond

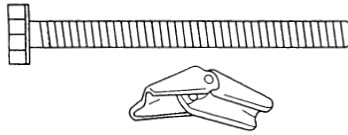
MODEL GH7145XF (GOLD SENSOR MODEL)

- Sensor One-Touch™ Cooking
- SimmerCook™ Function
- Four (4) Hood Fan Speeds
- Available in Black & White

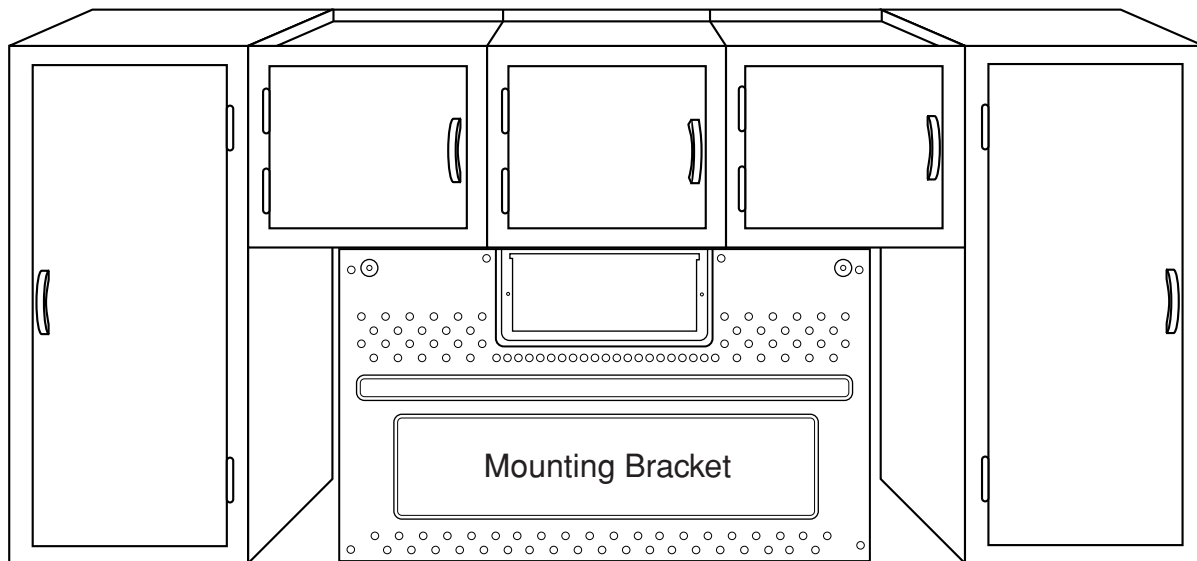
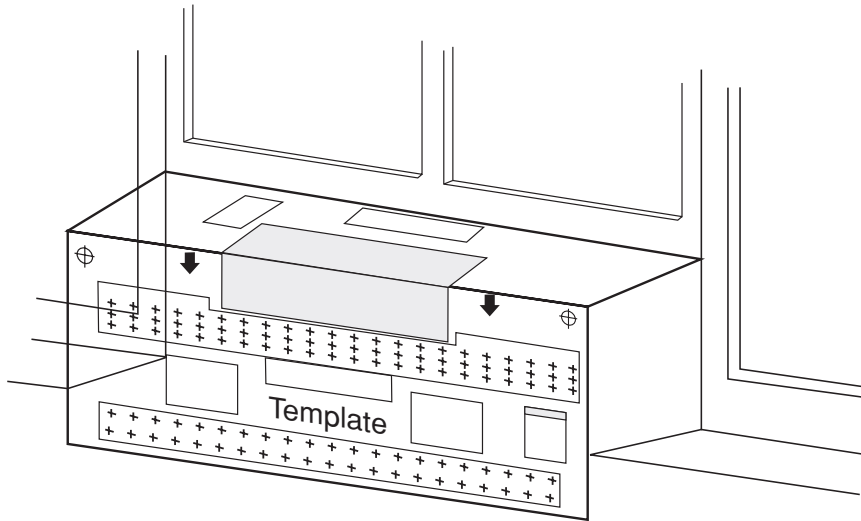
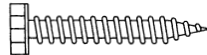
MOUNTING BRACKET

The mounting bracket for the MicroHood Oven (see the illustration at the bottom of the page) should be installed as shown in the "Installation Instructions" that were supplied with the unit. These instructions include installing:

- Molly bolts in each of the four corners of the bracket.



- A 1-1/2" lag bolt in a wall stud using one of the holes along the top or bottom of the bracket.

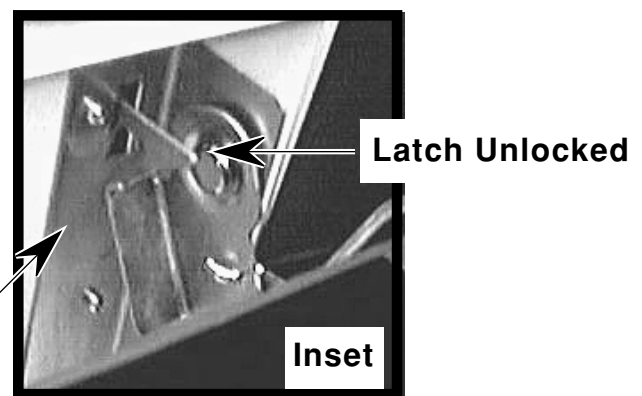
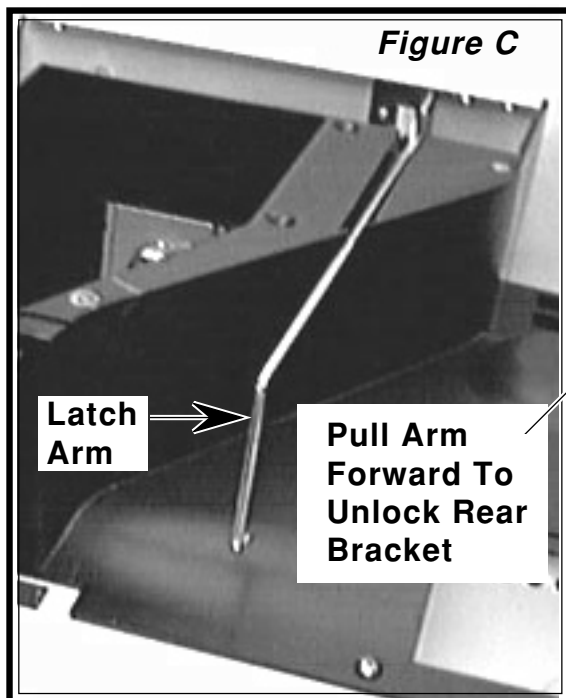
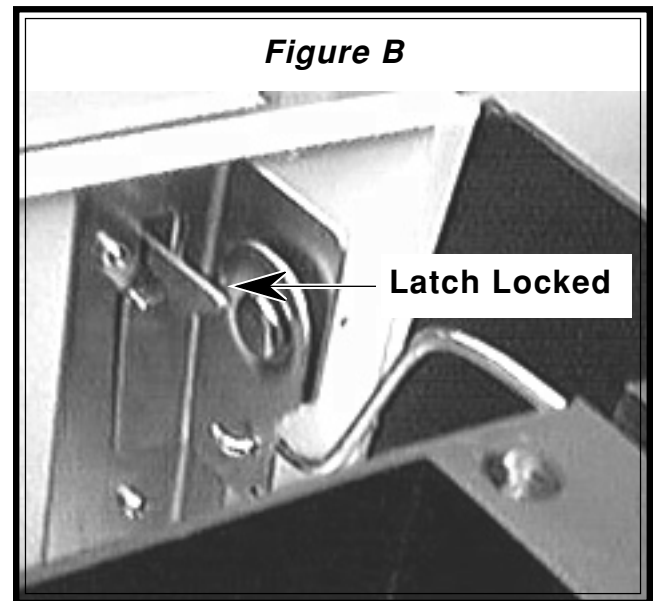
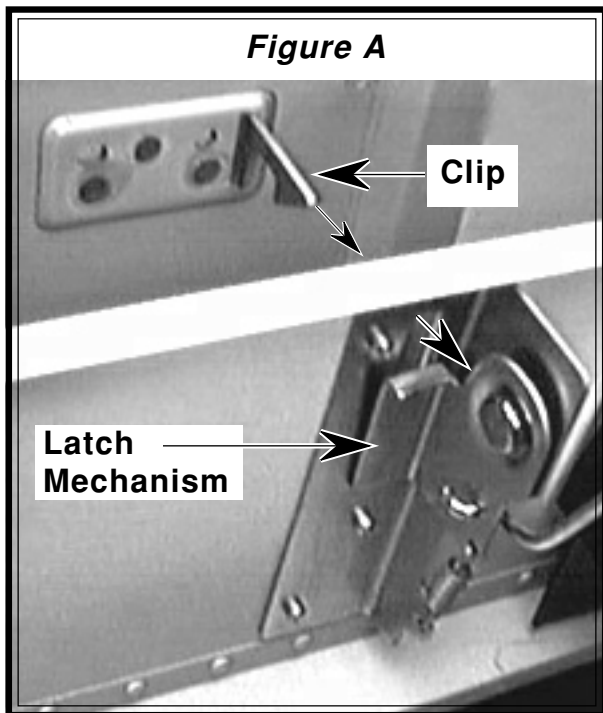


THE REAR MOUNTING BRACKET LATCH

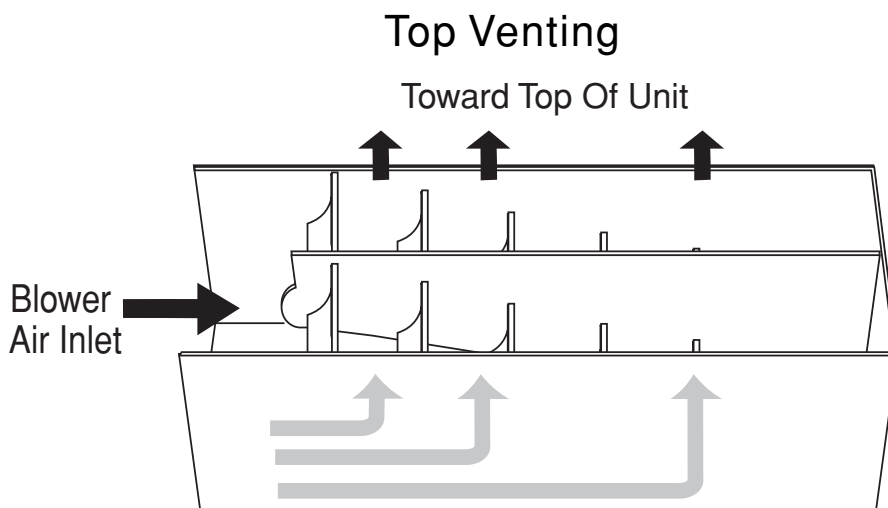
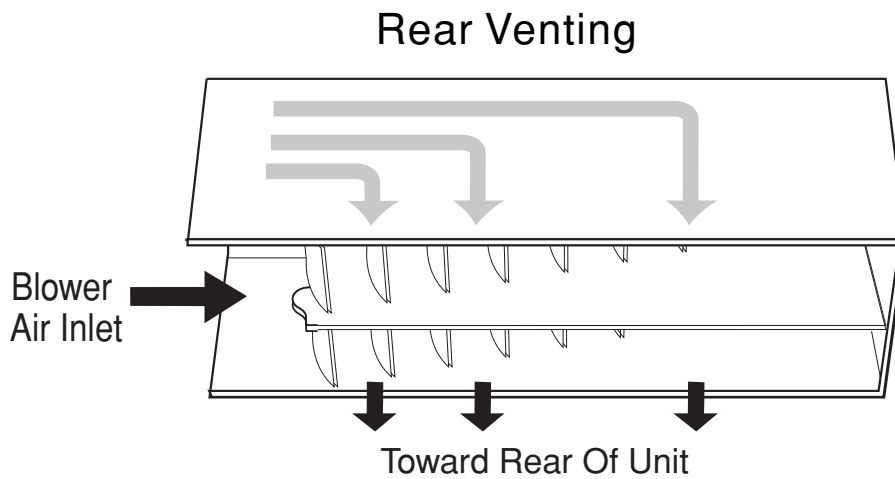
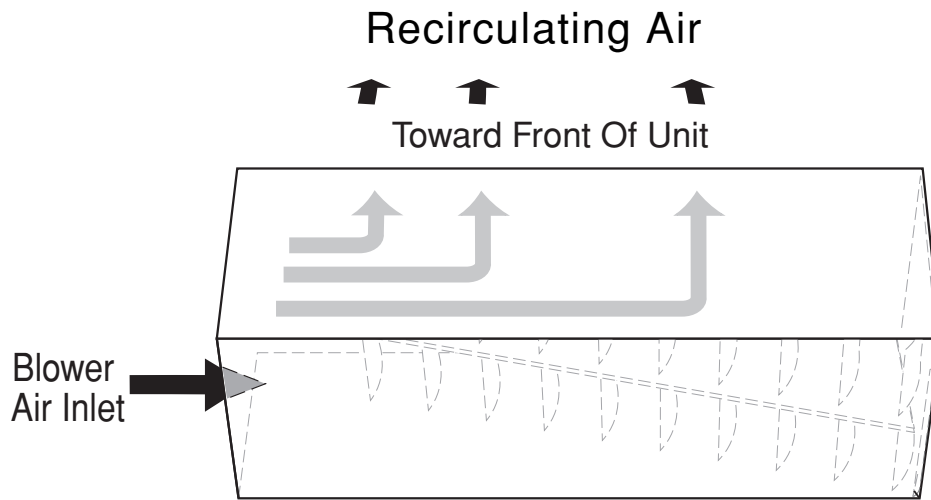
The Rear Mounting Bracket Latch is engaged when the microwave oven is mounted to the rear mounting bracket. The bracket clip is inserted into the rear oven panel, and is held by the latch mechanism (see Figures A & B). To release the clip from the latch, pull forward on the latch arm (see illustration C and the inset).

To access the latch arm:

1. Remove the two vent cover screws.
2. Tilt the top of the vent cover forward and remove it. The latch arm is now accessible from the front of the unit.

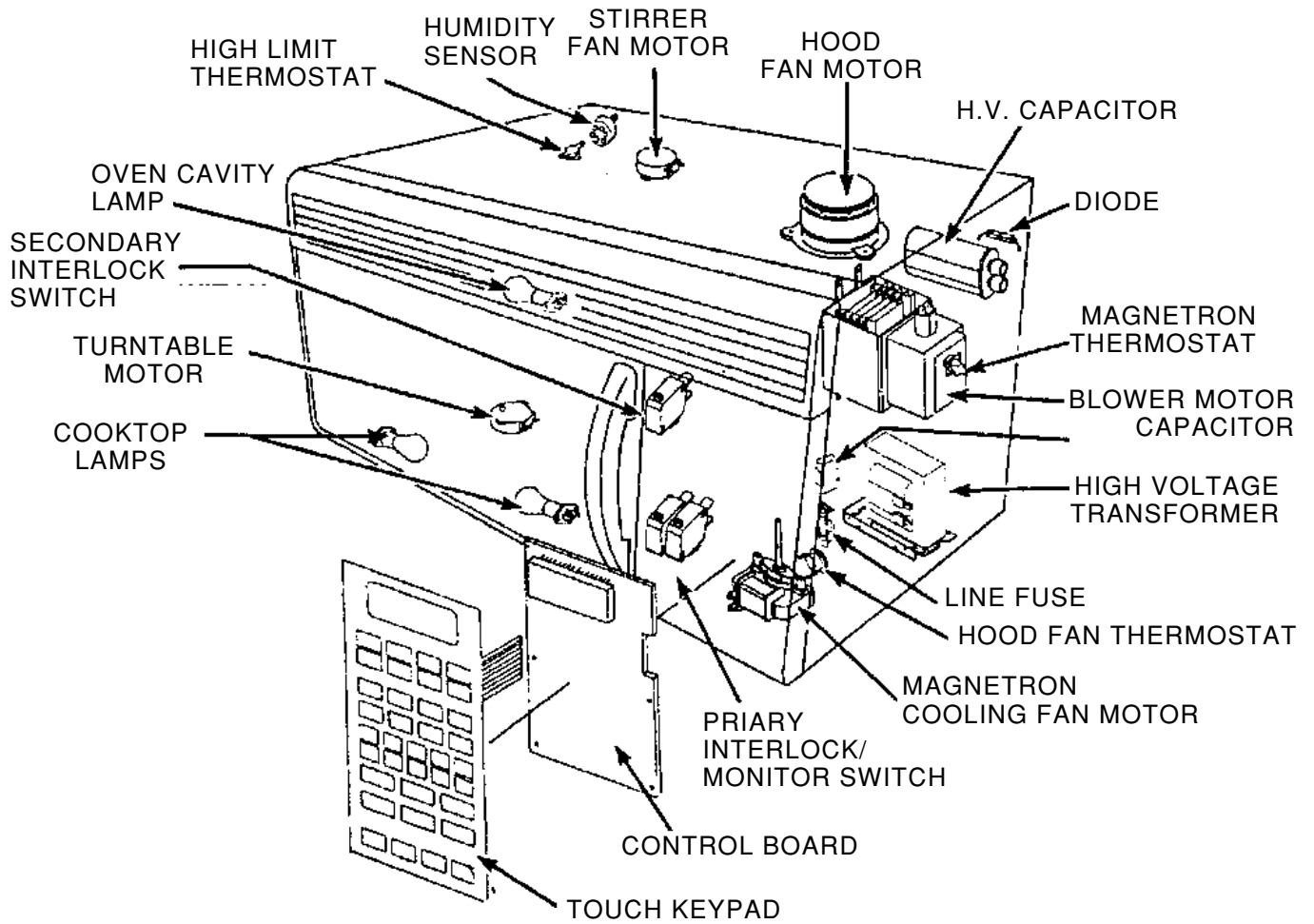


BLOWER VENTING POSITIONS



NOTE: All microwave ovens are shipped with the venting toward the top of the unit.

THE OVEN COMPONENT LOCATIONS



THE HUMIDITY SENSOR

The Humidity Sensor is used during the "Sensor Cook" operation of the oven. It is mounted inside a cutout area on the left side of the top cover (see the illustrations).

To access the humidity sensor:

1. Remove the top cover screws.
2. Lift the left side of the cover and slide the sensor bracket out of the cover slots from the bottom.
3. Remove the two screws from the sensor and remove it from the bracket, then unplug the 3-pin connector from the electronic control board.

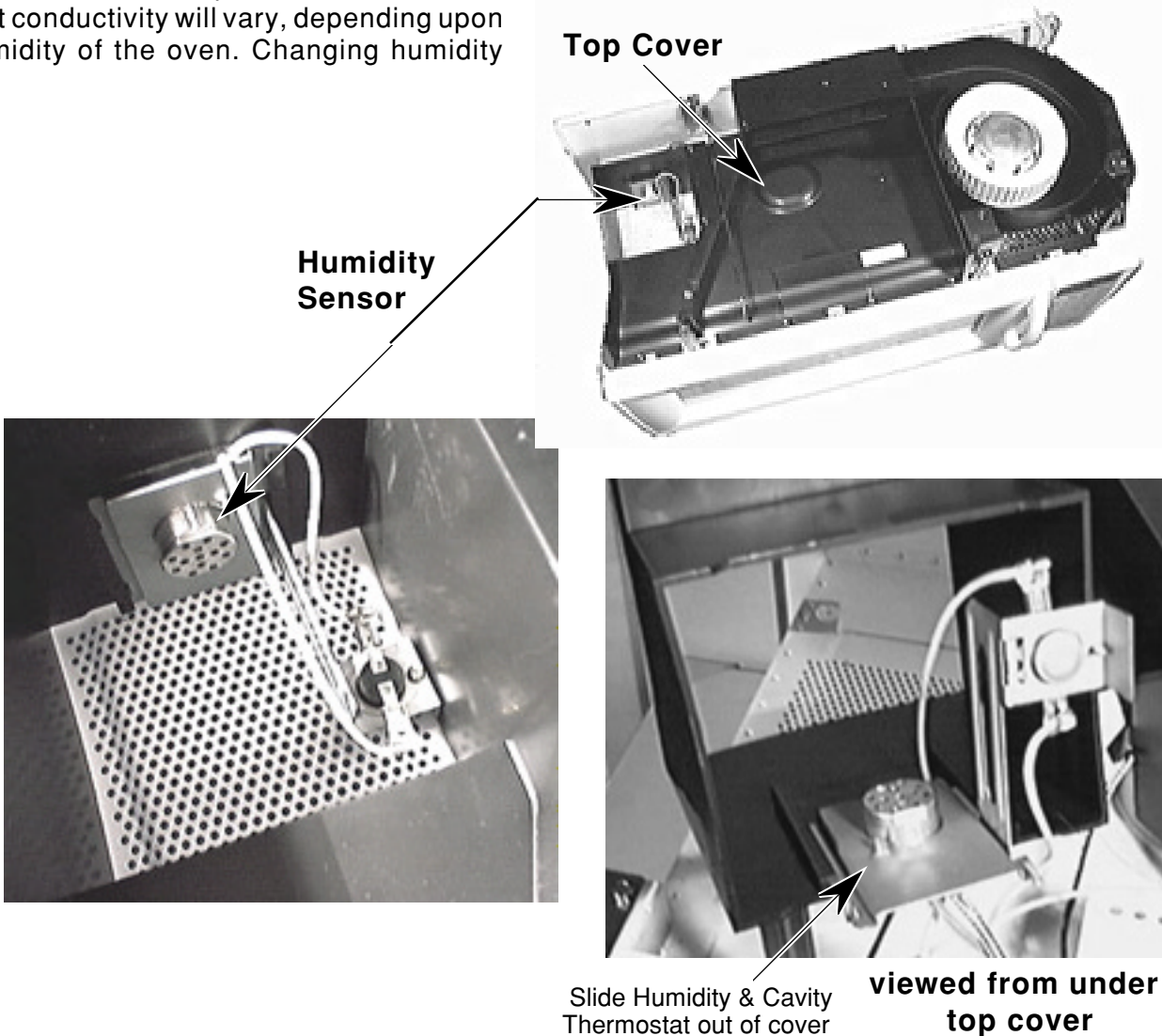
The sensor consists of two circuits in the microcomputer board on the electronic control panel. The microcomputer supplies a current to the sensor which keeps it heated. The sensor heat conductivity will vary, depending upon the humidity of the oven. Changing humidity

conditions, due to the cooking process within the oven cavity, causes a difference in potential between these two circuits. This difference is monitored by the microcomputer during cooking, allowing the microcomputer to determine the proper cook time.

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

To test the humidity sensor:

1. Set the ohmmeter to the R x 1 scale.
2. Touch the ohmmeter leads to the following pins on the sensor connector:
 - a) Pins 1 & 2 = 2.8 K Ω .
 - b) Pins 1 & 3 = 2.8 K Ω .



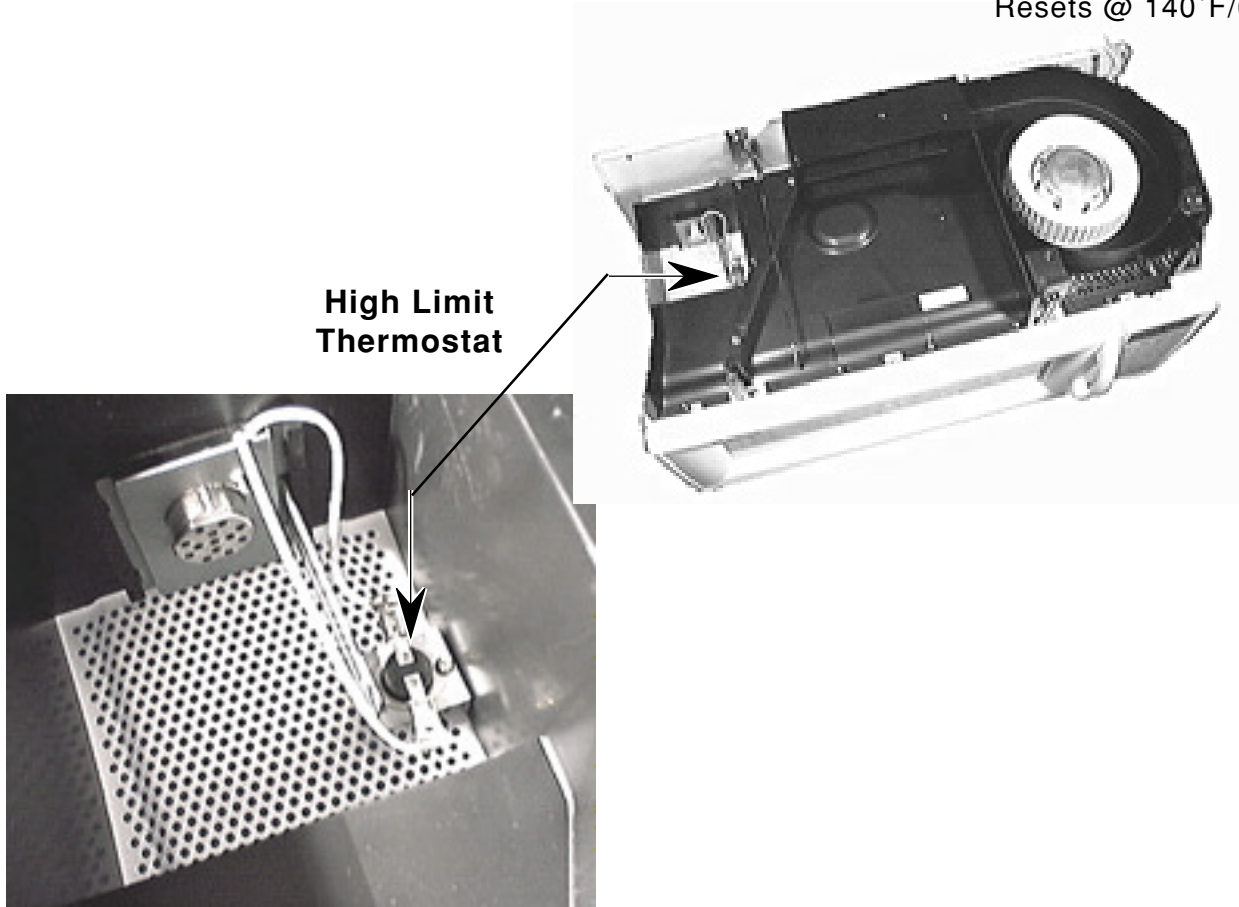
THE HIGH LIMIT THERMOSTAT

The High Limit Thermostat is normally-closed, and will open at a set temperature to disable the oven. The thermostat will reset itself when the temperature drops below its “trip” setting. The thermostat is mounted inside a cutout area on the left side of the top cover (see the illustration).

To access the thermostat:

1. Remove the top cover screws.
2. Lift the left side of the cover and slide the sensor bracket out of the cover slots from the bottom.
3. Remove the two screws from the thermostat and remove the two wires from the terminals.

High Limit Thermostat: Opens @ 293°F/145°C
Resets @ 140°F/60°C



THE HOOD FAN MOTOR

The hood fan motor removes smoke and odors from the cooking area through recirculation or outside venting. The exhaust fan motor is located at the right side of the top cover.

To access the hood fan motor:

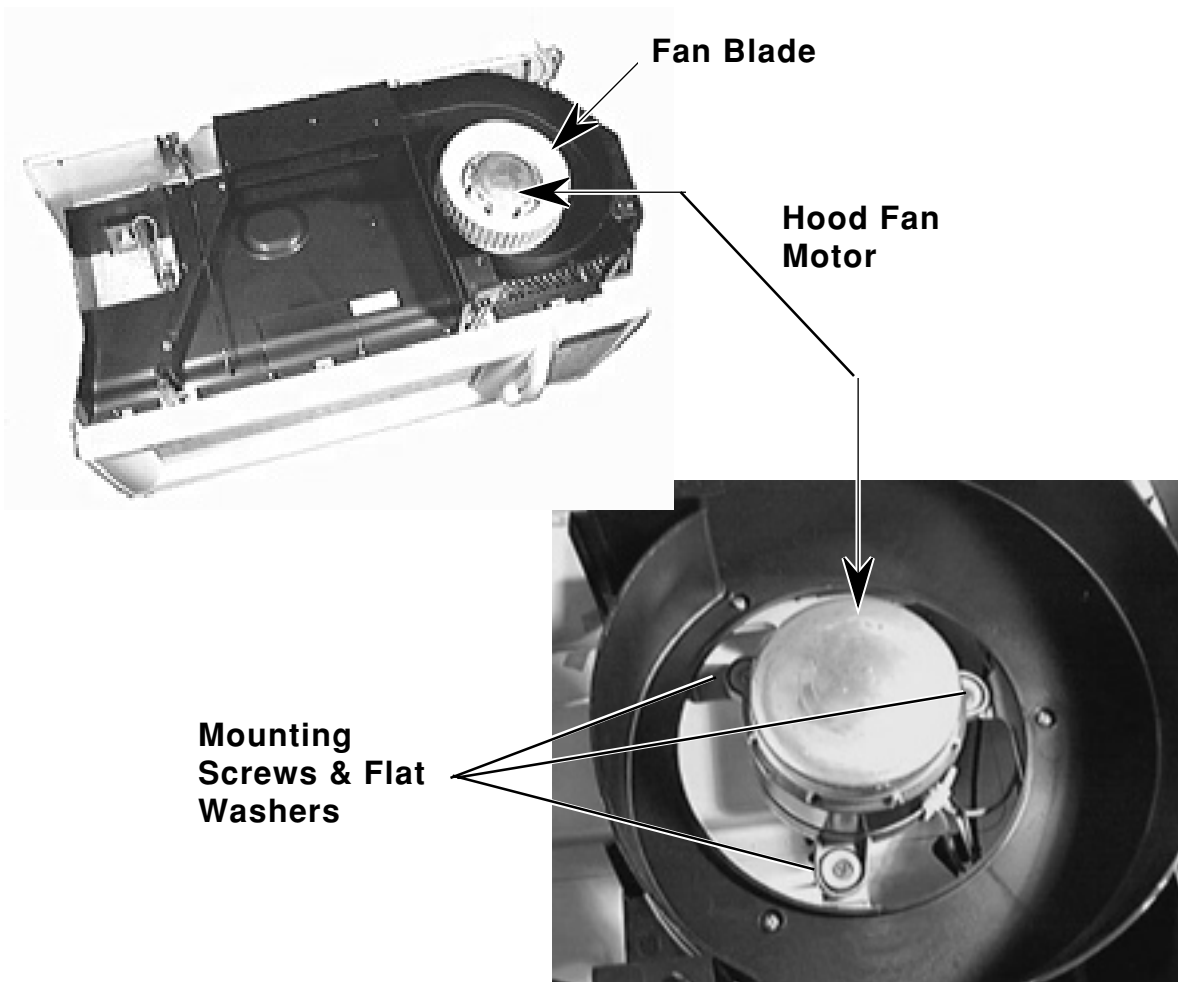
1. Remove the cabinet.
2. Lift the round fan blade off the top of the motor.
3. Remove the three mounting screws and flat washers from the motor.
4. Disconnect the three wires from the terminals and the ground wire screw from the chassis.

To test the hood fan motor:

1. Set the ohmmeter to R x 10.
2. Touch the ohmmeter leads to the following wires:

Black to white = 30 to 60 Ω .

Black to red = 30 to 60 Ω .



THE MAGNETRON COOLING FAN MOTOR

The Magnetron Cooling Fan Motor cools the magnetron during operation of the microwave oven.

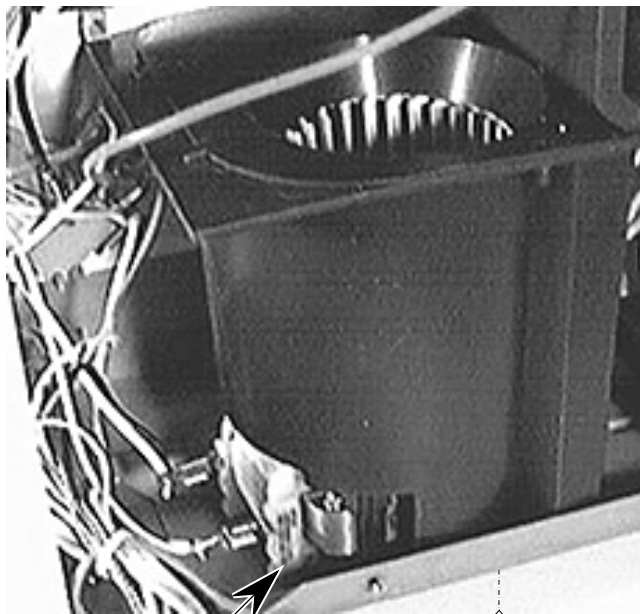
To access the motor:

1. Remove the cabinet.
2. Remove the right front side panel.
3. Remove the three screws from the bottom of the blower motor housing.
4. Remove the fan blade from the motor by pulling it off the shaft.

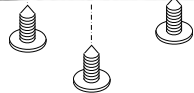
5. Disconnect the two wires from the terminals.
6. Remove the two phillips screws from the motor.

To test the fan motor:

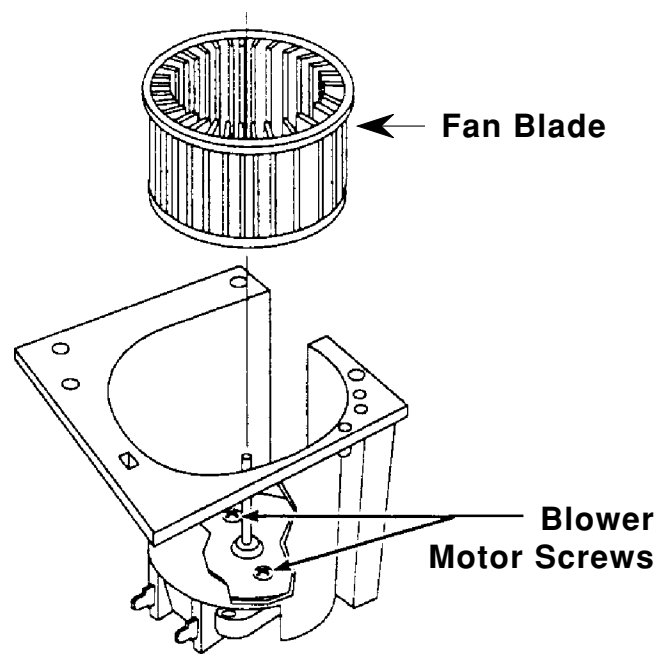
1. Set the ohmmeter to R x 10.
2. Touch the ohmmeter leads to the motor terminals. The meter should read between 17 Ω and 28 Ω .



Blower Motor



**Blower Housing
Screws**



Fan Blade

**Blower
Motor Screws**

THE HOOD FAN THERMOSTAT & BLOWER MOTOR CAPACITOR

The Hood Fan Thermostat turns on the motor when the magnetron temperature reaches a preset level. The Blower Motor Capacitor keeps the motor running smoothly during current fluctuations.

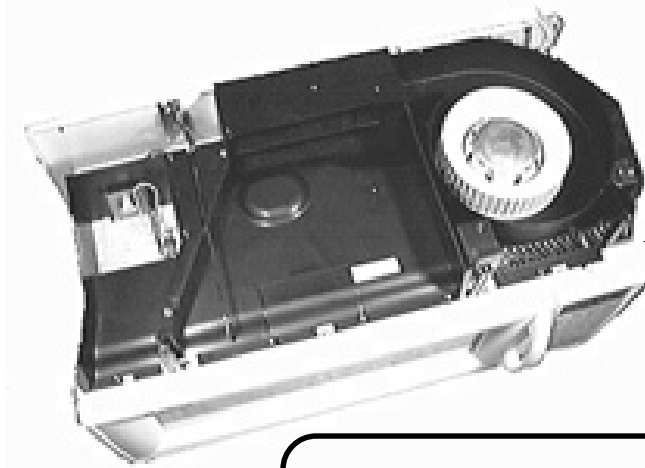
To access the hood fan thermostat and blower motor capacitor:

1. Remove the cabinet.
2. Remove the right front side panel (the components are mounted on the back).

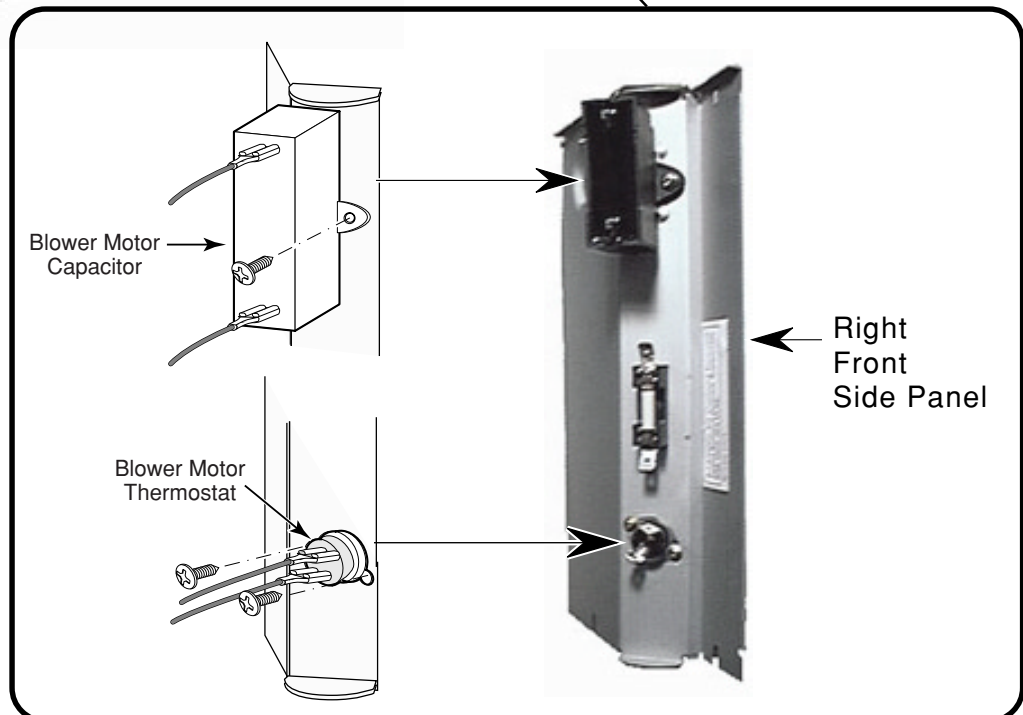
3. To remove the blower motor capacitor, remove the screw and disconnect the two wires from the terminals.
4. To remove the hood fan thermostat, remove the two phillips screws and disconnect the two wires from the terminals.

To test the capacitor:

1. Set the ohmmeter to R x 1.
2. Touch the ohmmeter leads to the terminals. The meter should indicate several ohms and then slowly return to infinity.



Right Front Side Panel

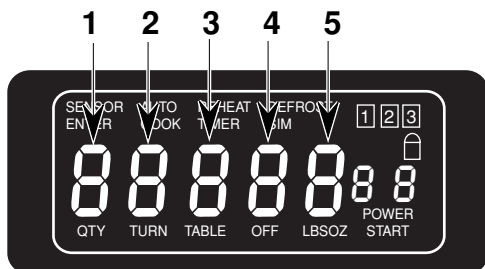


Right Front Side Panel

TOUCH KEYPAD & MICROCOMPUTER BOARD TEST

The microhood combination (MHC) is provided with a self-diagnosis routine that can be accessed through the touch keypad. To initiate this routine, perform the following steps:

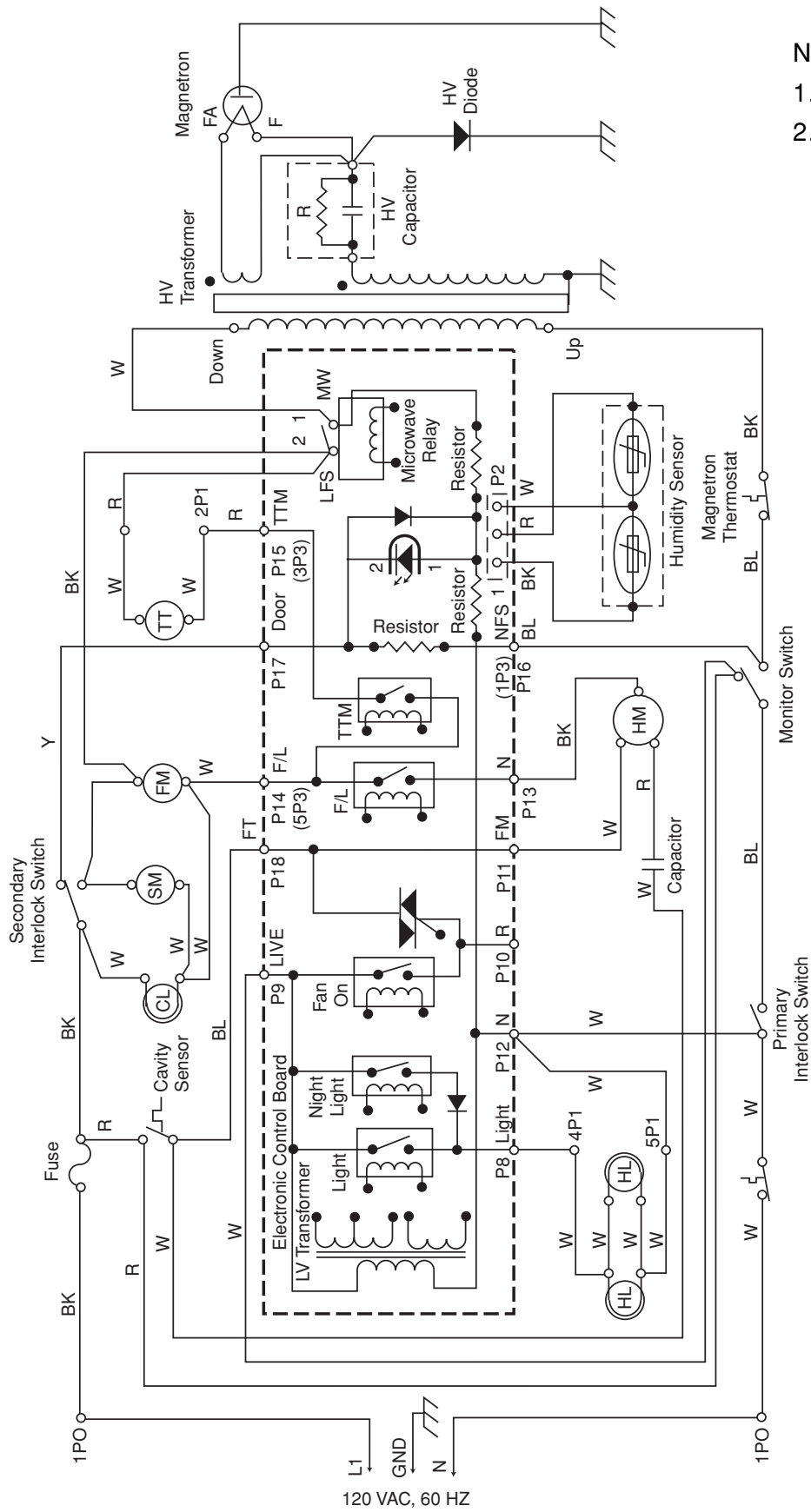
1. Hold the CANCEL pad down while opening the door.
2. Unplug the power supply cord from the wall outlet for two seconds and plug it back in.
3. Release the CANCEL pad then close the door.
4. By pressing each of the pads on the control panel, the numeral 8 will appear in the display to indicate that the circuits are complete and all relays are working.
5. The pads that control the oven and cooktop lights, in addition to the hood fan, will also turn these components on and off for a visual indication that the circuits are operating properly.



The number **8** will appear in the display position indicated in the table.

Key Name	In Circuit Relay	Display Position
Popcorn	-	5
Baked Potato	-	4
Frozen Vegetables	-	2
Fresh Vegetables	-	1
Frozen Entree	-	5
Beverage	-	4
Dinner Plate	-	2
Soup	-	1
Sure Sim./Sim. C	Humidity Sensor	5 ▲
Reheat	-	4
Defrost	-	2
Cook	-	1
Cook Time	-	5
Cook Power	-	4
Warm Hold	-	2
Add Minute	-	1
1	4901 (Cavity Lt.)	5
2	4902 (Hood Lt.)	4
3	-	3
4	-	2
5	-	1
6	4606 (TT Motor)	5
7	-	4
8	4908 (Night Lt.)	3
9	4909 (Hood Fan)	2
0	-	1
Clock	Buzzer	5
Timer (Set)	-	3
Timer Off	-	1
Start	-	5
Turntable	-	3
Off/Cancel	-	See Text
Light	-	5
Fan On/Off	-	4
Fan Speed Up	-	2
Fan Speed Down	-	1

WIRING DIAGRAM

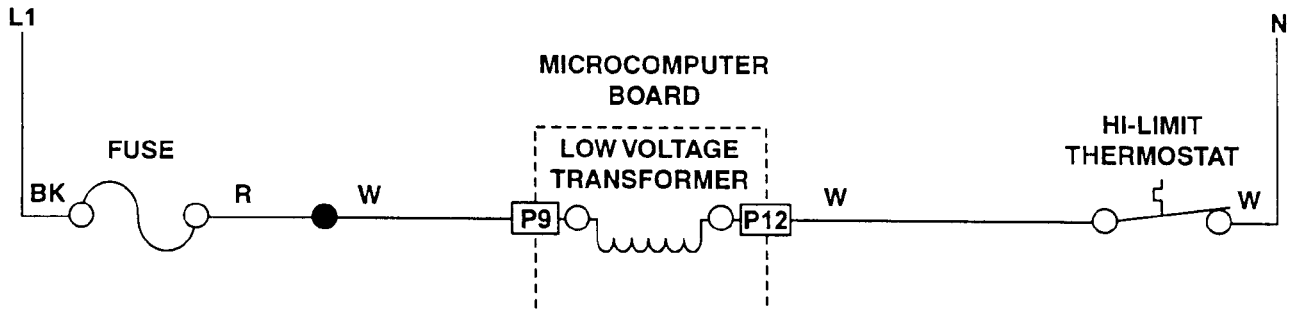


NOTES:

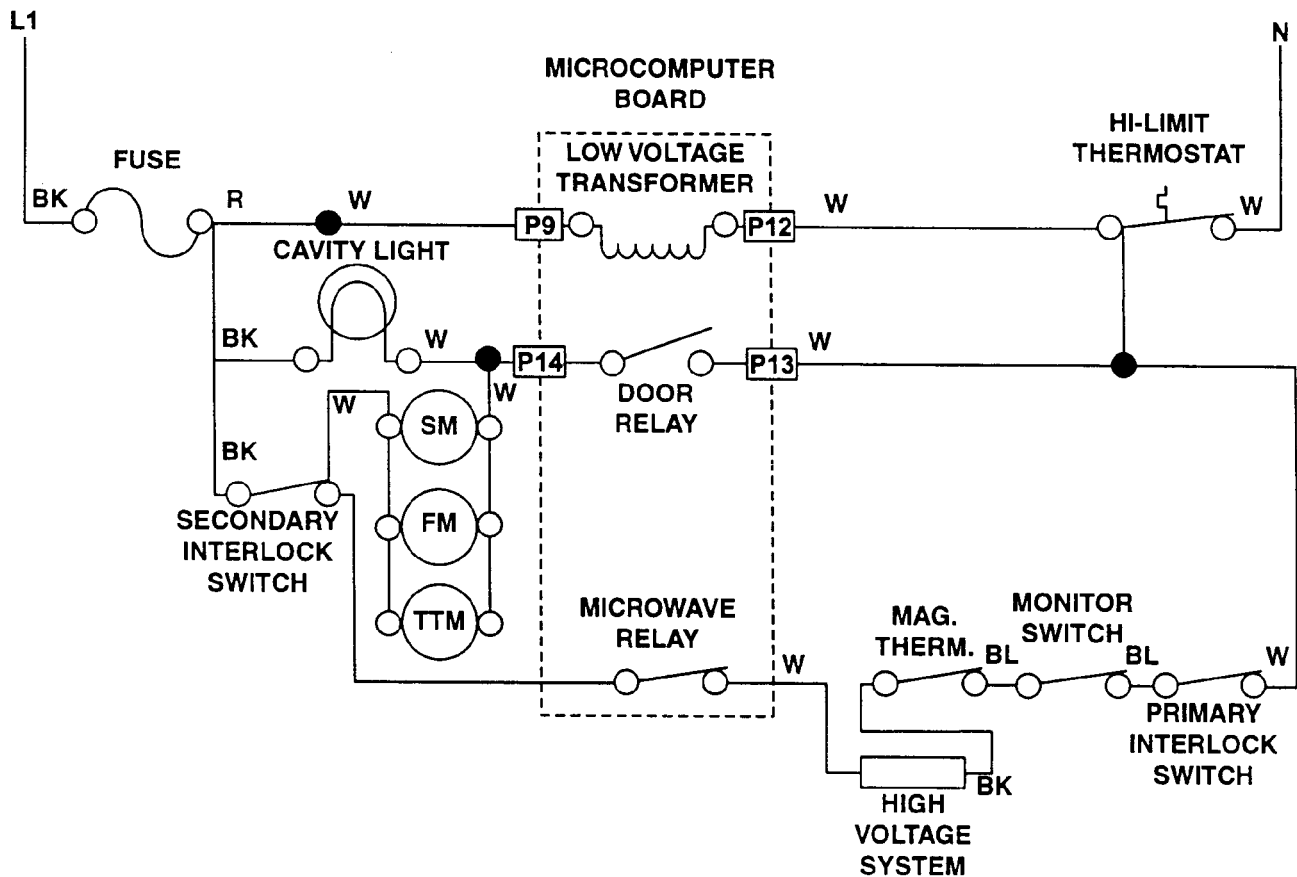
1. Oven OFF
2. Door OPEN

STRIP CIRCUITS

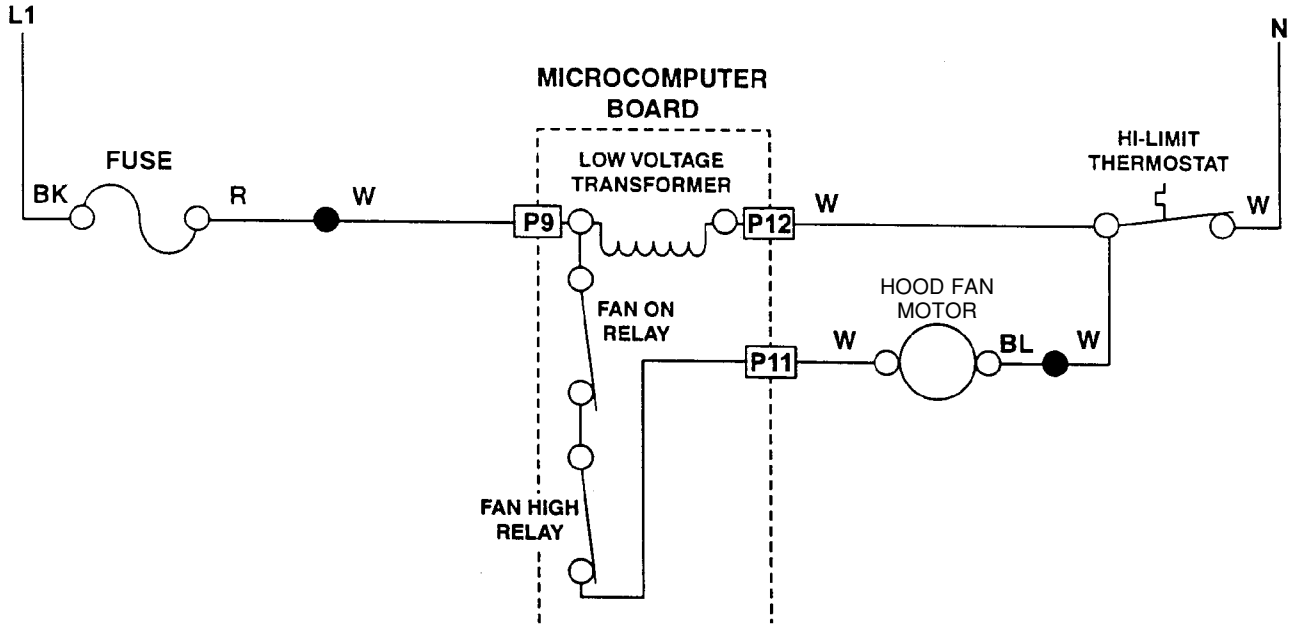
LOW VOLTAGE TO ELECTRONIC CONTROL BOARD



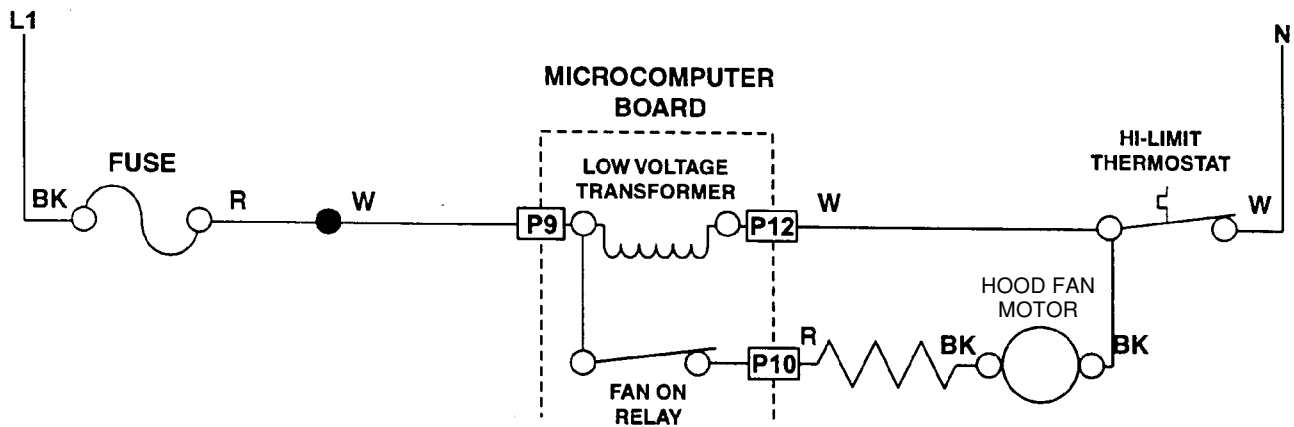
120-VOLTS TO OVEN COMPONENTS



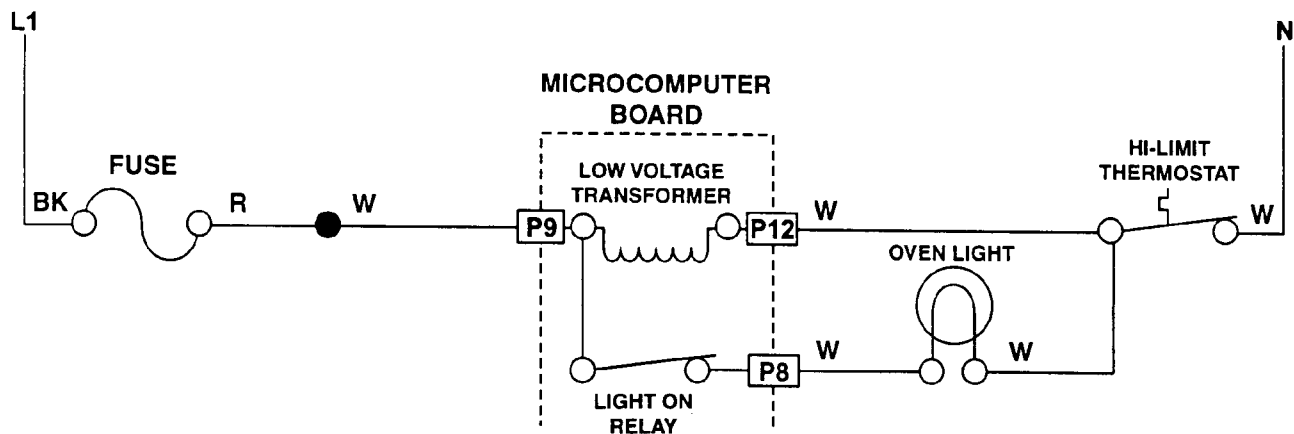
120-VOLTS TO EXHAUST FAN MOTOR (HIGH SPEED)



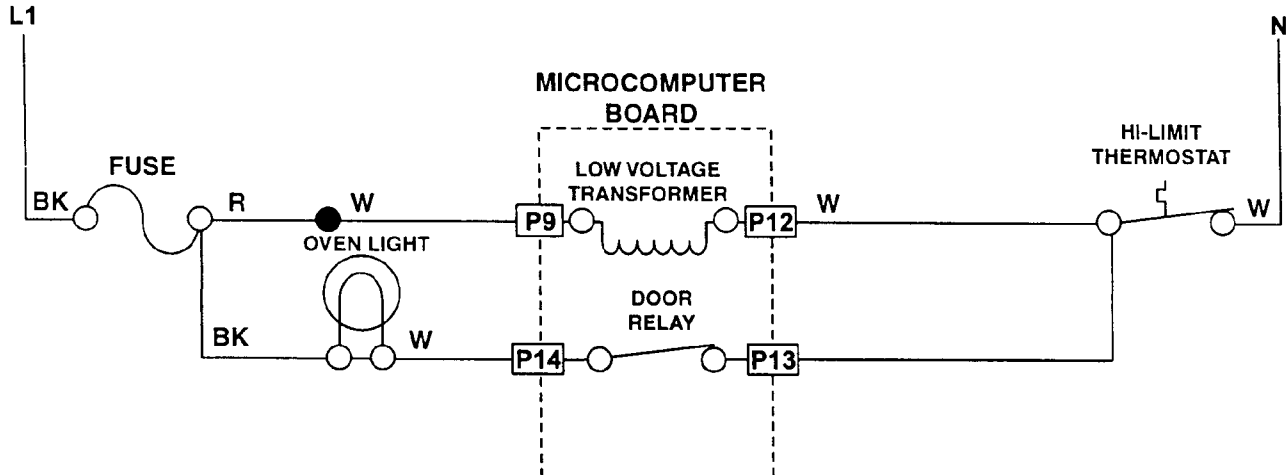
120-VOLTS TO EXHAUST FAN MOTOR (LOW SPEED)



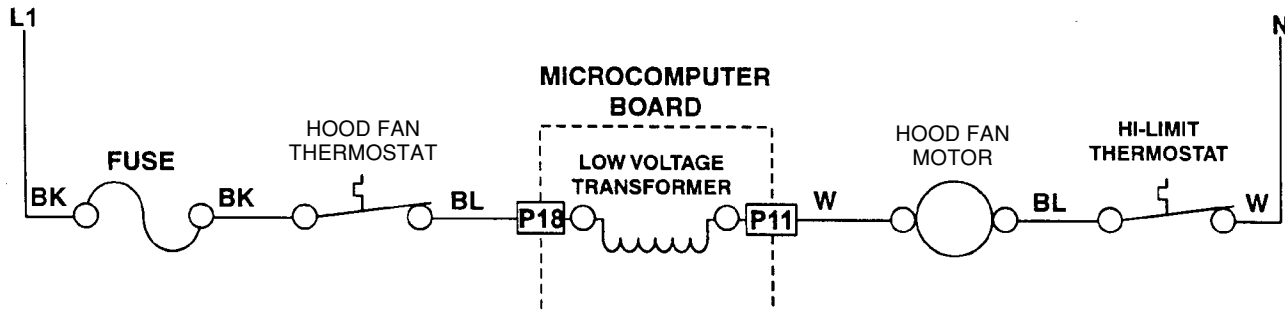
120-VOLTS TO OVEN LIGHT



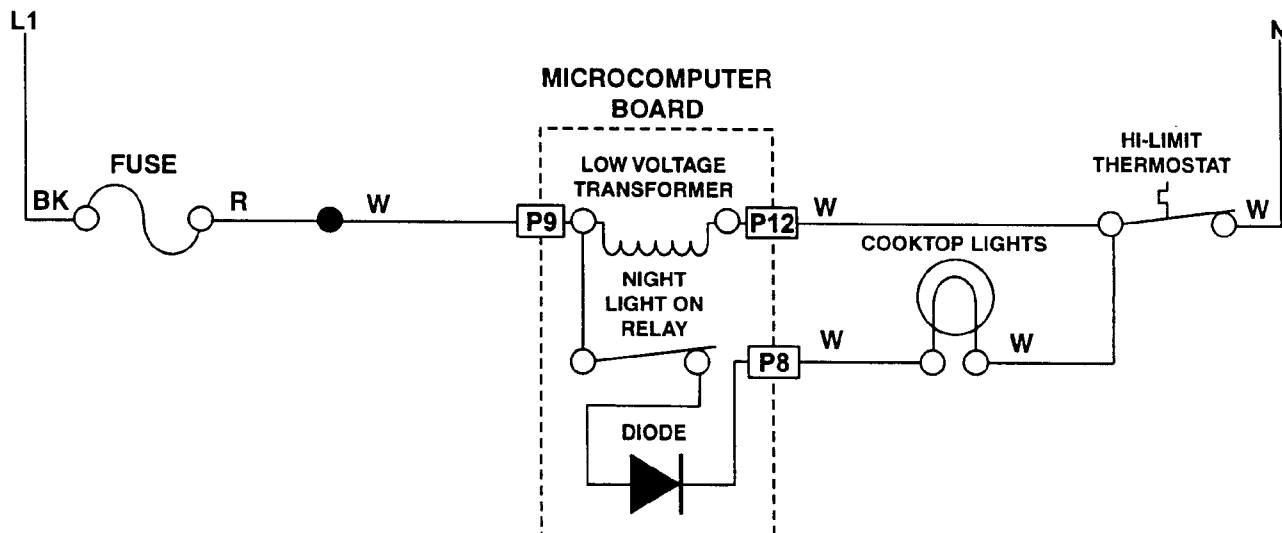
120-VOLTS TO OVEN LIGHT (ACTIVATES WHEN DOOR OPENS)



120-VOLTS TO EXHAUST FAN THERMOSTAT & FAN MOTOR



120-VOLTS TO COOKTOP LIGHTS (NIGHTLIGHT MODE)



PRIMARY, MONITOR, & SECONDARY SWITCH CHECKOUT PROCEDURE

<i>Switch</i>	<i>Test Procedure</i>	<i>Door Open</i>	<i>Door Closed</i>
Primary Interlock	<ol style="list-style-type: none"> 1. Disconnect wires from the primary interlock switch. 2. Measure from COM terminal (white wires) to N.O. terminal (blue wires). 	No continuity	Continuity
Secondary Interlock	<ol style="list-style-type: none"> 1. Disconnect wires from the secondary interlock switch. 2. Measure from COM terminal (white & black wires) to N.O. terminal (white wires). 3. Measure from COM terminal (white & black wires) to N.C. terminal (yellow wires). 	No continuity Continuity	Continuity No continuity
Monitor	<ol style="list-style-type: none"> 1. Disconnect wires from the monitor switch. 2. Measure from COM terminal (blue wires) to N.O. terminal (blue wires). 3. Measure from COM terminal (blue wires) to N.C. terminal (red & white wires). 	No continuity Continuity	Continuity No continuity