Website http://us.lgservice.com

LG

MICROWAVE OVEN
SERVICE MANUAL

MODEL: LCRM1240SW
LCRM1240SB
LCRM1240ST

CAUTION
BEFORE SERVICING THE UNIT, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

P/NO : 3828W5S3848

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SAFETY PRECAUTIONS

This device is to be serviced only by properly qualified service personnel.
Consult the service manual for proper service procedures to assure continued safety operation and for precautions to be taken to avoid possible exposure to excessive microwave energy.

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 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.

D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

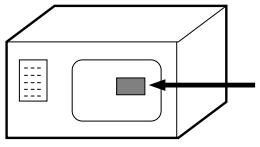
FOREWORD

Read this Manual carefully. Failure to adhere to or observe the information in this Manual may result in exposing yourself to the Microwave Energy normally contained within the oven cavity.

MECHANICAL SERVICE INFORMATION

TABLE OF CONTENTS

SPECIFICATIONS

ITEM	DESCRIPTION
MODEL	**LCRM1240SW** **LCRM1240SB** **LCRM1240ST**
Power Requirement	120 Volts AC 60 Hz (13.8A - MWO, 14.5A - Combo) Single phase, 3 wire grounded Microwave 1650W Coffee Maker 750W / 90W
Power Output	1200 Watts full microwave power (IEC60705)
Microwave Frequency	2450 MHz
Magnetron	2M246 - 050GF
Timer	0 ~ 59 sec. ,0 ~ 99 min.
Outside Dimensions	23”(W)x 12 1/2 ”(H)x 17 1/8 ”(D)
Cavity Dimensions	14 11/16 ”(W)x 9 5/8 ”(H)x 15 5/8 ”(D)
Net Weight	15.9 kg (approx.)
Shipping weight	17.3 kg (approx.)
Control Complement	Microwave Power for Variable Cooking Power level MAX ..... Full power throughout the cooking time MED.-HIGH ..... approx. 80% of Full power MEDIUM ..... approx. 60% of Full power DEFROST ..... approx. 40% of Full power LOW/WARM ..... approx. 20% of Full power COFFEE MAKER, COMBI
Nameplate Location	
Accessories	Owner's manual Glass turntable Roller rest

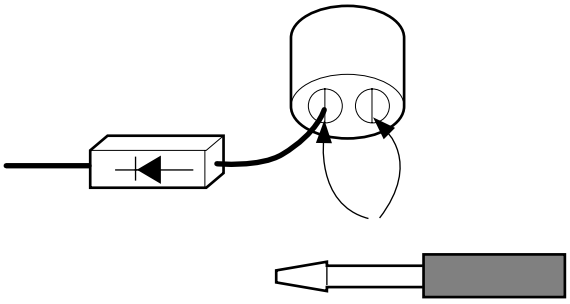
This microwave oven is designed for household use only.

It is not recommended for commercial purposes.

CAUTIONS

Unlike other appliances, the microwave oven is high-voltage and high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

- DO NOT operate on a 2-wire extension cord during repair and use.
- NEVER TOUCH any oven components or wiring during operation.
- BEFORE TOUCHING any parts of the oven, always remove the power plug from the outlet.
- For about 30 seconds after the oven stops, an electric charge remains in the high voltage capacitor. When replacing or checking, you must discharge the high voltage capacitor by shorting across the two terminals with an insulated screwdriver.

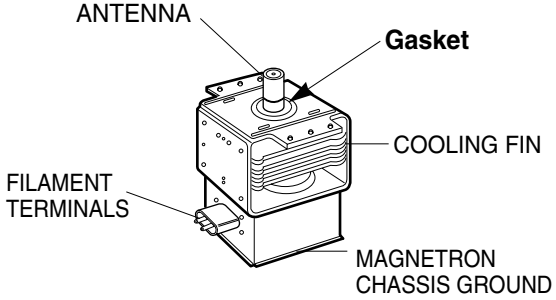


- Remove your watches whenever working close to or replacing the Magnetron.
- DO NOT touch any parts of the control panel circuit. A resulting static electric discharge may damage this P.C.B.
- NEVER operate the oven with no load.
- NEVER injure the door seal and front plate of the oven cavity.
- NEVER put iron tools on the magnetron.
- NEVER put anything into the latch hole and the interlock switches area.

MICROWAVE RADIATION

Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating device if it is improperly used or connection.
All input and output microwave connections, waveguide, flange and gasket must be secure never operate the device without a microwave energy absorbing load attached.
Never look into an open waveguide or antenna while the device is energized.

- Proper operation of the microwave oven requires that the magnetron be assembled to the waveguide and cavity. Never operate the magnetron unless it is properly installed.
- **Be sure that the magnetron gasket is properly installed around the dome of the tube whenever installing the magnetron.**



MAGNETRON

THE OVEN IS TO BE SERVICED ONLY BY PROPERLY QUALIFIED SERVICE PERSONNEL.

INSTALLATIONS

BEFORE YOU BEGIN, READ THE FOLLOWING INSTRUCTIONS COMPLETELY AND CAREFULLY.

INSTALLING

1. Empty the microwave oven and clean inside it with a soft, damp cloth. Check for damage such as misaligned door, damage around the door or dents inside the cavity or on the exterior.

2. Put the oven on a counter, table, or shelf that is strong enough to hold the oven and the food and utensils you put in it. (The control panel side of the oven is the heavy side. Use care when handling.)

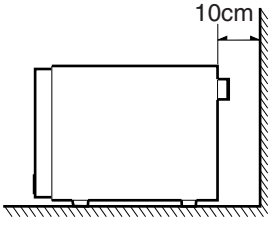
3. Do not block the vent and the air intake openings. Blocking vent or air intake openings can cause damage to the oven and poor cooking results. Make sure the microwave oven legs are in place to ensure proper air flow.

4. The oven should not be installed in any area where heat and steam are generated, because they may damage the electronic or mechanical parts of the unit.
   Do not install the oven next to a conventional surface unit or above a conventional wall oven.

5. Use microwave oven in an ambient temperature less than 104°F(40°C).

6. Place the microwave oven on a sturdy and flat surface at least 10 cm(4 inches) from the wall.

7. Place the microwave oven as far away as possible from TV, RADIO, COMPUTER, etc., to prevent interference.



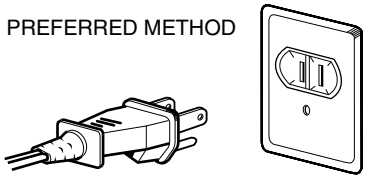
GROUNDING INSTRUCTIONS

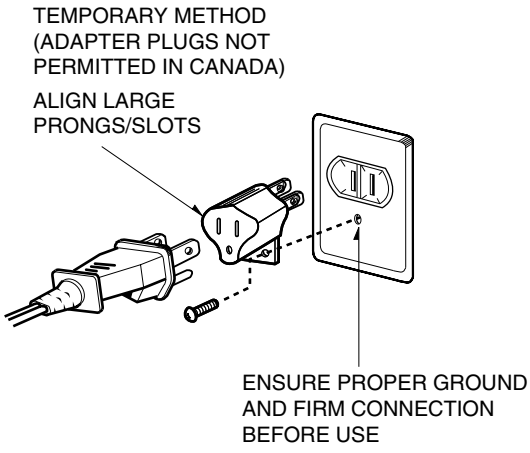
For personal safety, this appliance must be fully grounded at all times.

In the event of an electrical short circuit, grounding reduces the risk of electrical shock.
The plug must be plugged into an outlet that is properly installed and grounded.

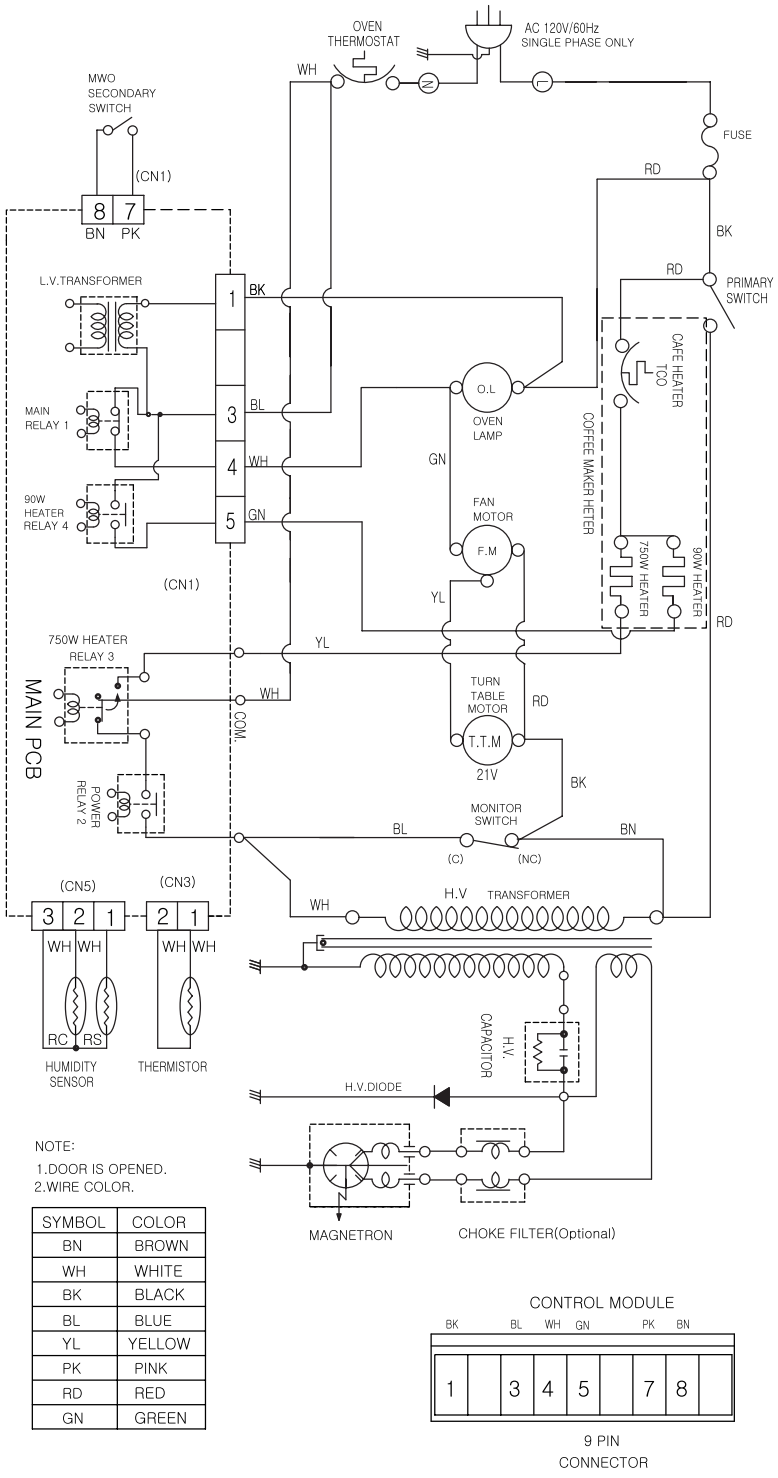
WARNING

Improper use of the grounding plug can result in a risk of electric shock.
Do not, under any circumstances, cut or remove the third ground prong from the power cord plug.





6. OVERALL CIRCUIT DIAGRAM
A. SCHEMATIC DIAGRAM



NOTE:
1.DOOR IS OPENED.
2.WIRE COLOR.

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

Figure 3

B. MATRIX CIRCUIT FOR TOUCH KEY BOARD

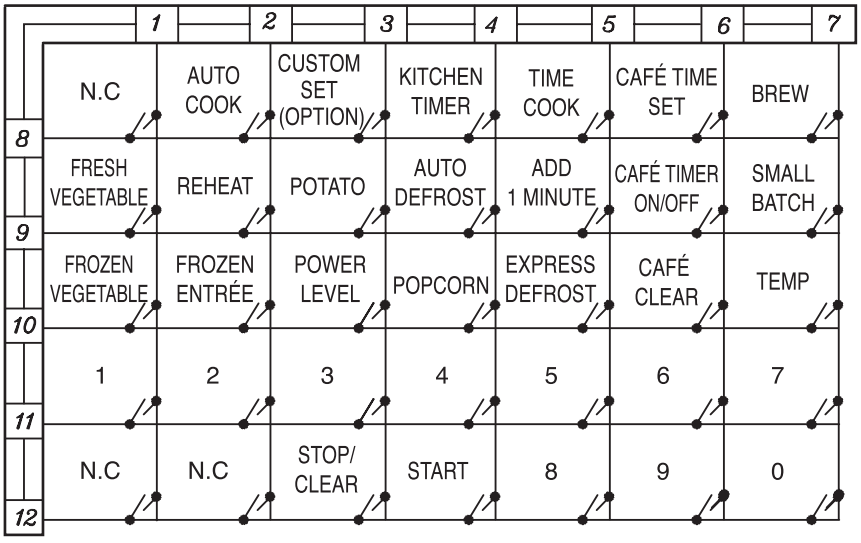
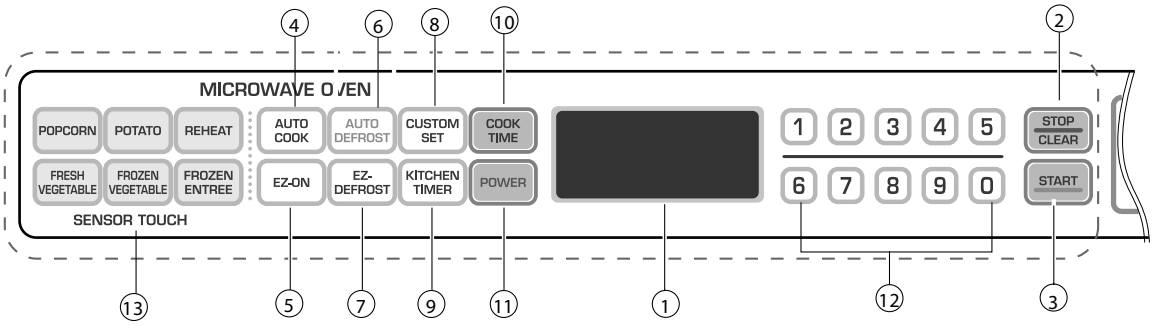


Figure 4

7. OPERATING PROCEDURES

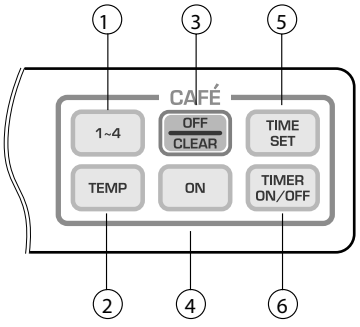
A. OVEN CONTROL PANEL

MICROWAVE CONTROL AREA



1. **DISPLAY.** The Display includes a clock and indicators that tell you time of day, cooking time settings, and cooking functions selected.
2. **STOP/CLEAR.** Touch this pad to stop the oven or clear entries. (microwave oven only)
3. **START.** Touch this pad to start all entries (except the Auto Cook and Add Minute function which start automatically) and to turn Child Lock on or off.
4. **AUTO COOK.** Touch this pad to select programmed food items.
5. **EZ-ON.** Touch this pad to cook at 100% cooking power for 1 minute to 99 minutes 59 seconds.
6. **AUTO DEFROST.** This pad is an accurate defrosting method for frozen meat, poultry and fish up to 6.0 lbs.
7. **EZ DEFROST.** This pad provides you with the quick defrosting method for 1.0 pound of frozen foods.
8. **CUSTOM SET.** Touch this pad to change the oven's default settings for clock, sound, scroll speed and Lbs/Kg.
9. **KITCHEN TIMER.** Touch this pad to use your microwave oven as a kitchen timer.
10. **COOK TIME.** Touch this pad to set the cooking time.
11. **POWER.** Touch this pad to set the cooking power.
12. **NUMBER PADS.** Touch Number Pads to enter cooking time, power level, quantities, or weights.
13. **SENSOR TOUCH.** This pad allows you to cook most of your favorite foods without having to select cooking times and power levels.

COFFEE MAKER CONTROL AREA



1. **1-4.** This pad is small batch function. This pad is used when you want to brew a small amount (1~4 cups) of coffee.
2. **TEMP.** This pad is used when you want to adjust the warming plate temperature of the coffee.
3. **OFF/CLEAR.** Touch this pad to stop the coffee maker or clear entries. (coffee maker only)
4. **ON.** This pad is used when you want to brew more than 4 cups of coffee.
5. **TIME SET.** Touch this pad to change the default setting of the coffee maker for brew timer or warming plate timer.
6. **TIMER ON/OFF.** This pad is used when you want to turn the brew timer function On or Off.

B. EASY USE TABLE

MICROWAVE OVEN

(1) KITCHEN TIMER

1. Touch STOP/CLEAR.
2. Touch KITCHEN TIMER.
3. Touch correct number for time.
4. Touch START.

(2) CHILD LOCK

To set:

1. Touch STOP/CLEAR.
2. Touch “START” more than 4 seconds.

To cancel:

1. Touch STOP/CLEAR.
2. Touch “START” more than 4 seconds.

(3) AUTO COOK

1. Touch STOP/CLEAR.
2. Touch AUTO COOK Category.
3. Touch START.
   (Although you don’t touch start, it will start after 4 seconds automatically)

(4) EZ-ON

1. Touch STOP/CLEAR.
2. Touch EZ-ON.

(5) AUTO DEFROST

1. Touch STOP/CLEAR.
2. Touch AUTO DEFROST.
   Three different defrosting levels are provided.
   (Touch 1 : Meat
   Touch 2 : Poultry
   Touch 3 : Fish)
3. Enter the weight of your food in decimal increments from 0.1 to 6.0 pounds.
4. Touch START
5. At beeping, turn food over by following the instructions in the manual.
6. After turning food over, touch START to resume defrosting.

(6) TIMED COOKING

1. Touch STOP/CLEAR.
2. Touch COOK TIME.
3. Touch number for cooking time.
4. Touch POWER.
5. Touch number for cooking power level.
6. Touch START.

(7) MULTI-STAGE COOKING

1. Touch STOP/CLEAR.
2. Touch COOK TIME.
3. Touch number for cooking time.
4. Touch POWER.
5. Touch number for cooking power level.
6. Repeat steps 2-5 to set 2nd cooking stage.
7. Touch START.

COFFEE MAKER

(1) BREW

1. Touch BREW.

(2) Small Batch

1. Touch 1-4.

(3) TIME SET.

1. Time of the day.
2. Touch TIME SET.
3. Touch 1 Auto-on time or Touch 2 warm time.
4. Setting Auto-on time.
5. Touch TIME SET.
6. Touch 1 for A.M.or Touch 2 for P.M.
7. Touch TIME SET.
8. Touch 1 for brew or Touch 2 for small batch.
9. Touch TIME SET.

8. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

A. CAUTIONS

(1) Be sure to check a microwave emission prior to servicing the oven if the oven is operative prior to servicing.

(2) The service personnel should inform the manufacturer, importer, or assembler of any certified oven unit found to have a microwave emission level in excess of 5mW/cm.sq. and should repair any unit found to have excessive emission levels at no cost to the owner and should ascertain the cause of the excessive leakage. The service personnel should instruct the owner not to use the unit until the oven has been brought into compliance.

(3) If the oven operates with the door open, the service personnel should;
- Tell the user not to operate the oven
- Contact the manufacturer and CDRH (Center for Devices and Radiological Health) immediately.

NOTE: Address on CDRH
Office of Compliance (HFZ-312)
Center for Devices and Radiological Health
1390 Piccard Drive
Rockville, Maryland 20850

(4) The service personnel should check all surface and vent openings for microwave emission testing.

(5) Check for microwave energy leakage after every servicing. The power density of the microwave radiation leakage emitted by the microwave oven should not exceed 1mW/cm.sq. And always start measuring of an unknown field to assure safety for operating personnel from radiation leakage.

NOTE: The standard is 5mW/cm.sq. while in the customer's home. 1mW/cm.sq. stated here is manufacturer's own voluntary standard for units in customer's home.

EQUIPMENT

- Electromagnetic energy leakage monitor (NARDA 8100B, HOLADAY HI 1501)
- 600cc glass beaker
- Glass thermometer 100°C

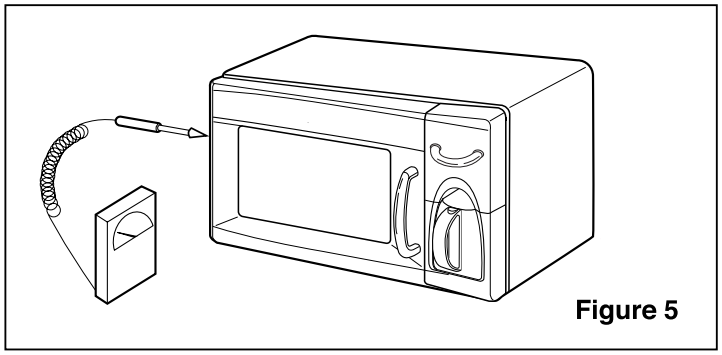


Figure 5

B. MEASURING MICROWAVE ENERGY LEAKAGE

(1) Pour 275 ± 15cc of 20 ± 5 °C water in a beaker which is graduated to 600 cc, and place the beaker in the center of the oven.

(2) Set the energy leakage monitor to 2450 MHz and use it following the manufacturer's recommended test procedure to assure correct result.

(3) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.

(4) Operate the oven at its maximum output.

(5) Measure the microwave radiation using and electromagnetic radiation monitor by holding the probe perpendicular to the surface being measured. (See Figure 6)

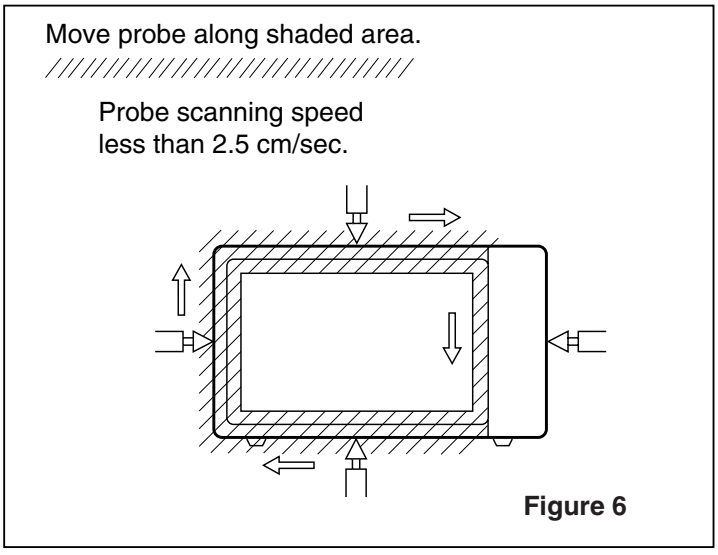


Figure 6

C. MEASUREMENT WITH THE OUTER CASE REMOVED

(1) When you replace the magnetron, measure for microwave energy leakage before the outer case is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring the following parts.
- Around the magnetron
- The waveguide

WARNING: AVOID CONTACTING ANY HIGH VOLTAGE PARTS.

D. MEASUREMENT WITH A FULLY ASSEMBLED OVEN

(1) After all components, including the outer panels, are fully assembled, measure for microwave energy leakage around the door viewing window, the exhaust opening and air inlet openings.
(2) Microwave energy leakage must not exceed the values prescribed below.
NOTES:
Leakage with the outer panels removed - less than 5mW/cm.sq. Leakage for a fully assembled oven (Before the latch switch (primary) is interrupted) with the door in a slightly opened position - less than 1 mW/cm .sq.

E. NOTE WHEN MEASURING

(1) Do not exceed meter full scale deflection.
(2) The test probe must be removed no faster than 1 inch/sec (2.5cm/sec) along the shaded area, otherwise a false reading may result.
(3) The test probe must be held with the grip portion of the handle. A false reading may result if the operator's hand is between the handle and the probe.
(4) When testing near a corner of the door, keep the probe perpendicular to the surface making sure the probe horizontally along the oven surface, this may possibly cause probe damage.

F. RECORD KEEPING AND NOTIFICATION AFTER MEASUREMENT

(1) After adjustment and repair of any microwave energy interruption or microwave energy blocking device, record the measured values for future reference. Also enter the information on the service invoice.
(2) Should the microwave energy leakage not be more than 1mW/cm.sq. after determining that all parts are in good condition, functioning properly and genuine replacement parts which are listed in this manual have been used.
(3) At least once a year, have the electromagnetic energy leakage monitor checked for calibration by its manufacturer.

G. POWER OUTPUT MEASUREMENT

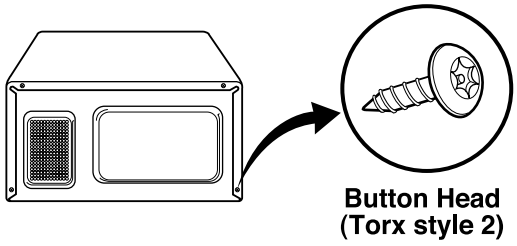
(1) Fill the test beaker with 59 °F(15 °C) ~ 75 °F(24 °C) 1 liter tap water.
(2) Stir the water in the beaker with thermometer (°F or °C) and measure temperature as T1.
(3) Place the beaker on the center of turntable.
(4) Set for one (1) minute and three (3) seconds and operate the oven at high power.
NOTE: The additional three (3) seconds is to allow the magnetron to begin generating power.
(5) When the heating is finished, stir the water again with thermometer and measure the temperature of water as T2.
(6) Subtract T1 from T2, this will give you the temperature rise.
(7) The microwave power output is within specification, if the temperature rise is as shown below:

	Temperature Rise	
Line Voltage	Degrees °F	Degrees °C
120 V	17.1 ~ 22.5	9.5 ~ 12.5
108 V	Min. 12.6	Min. 7.0

(8) Power output will be influenced by line voltage of power supply. Consequently, correct power output must be measured within 120V AC ± 1 Volt while unit is operating.

SPECIAL TIP

- **This oven used the button head screws.**



Button Head (Torx style 2)

- **When you remove the screws, using the tamper-resistant Torx driver have a pin-in-head.**

9. DISASSEMBLY INSTRUCTIONS

IMPORTANT NOTES:

UNIT MUST BE DISCONNECTED FROM ELECTRICAL OUTLET WHEN MAKING REPAIRS, RE-PLACEMENTS, ADJUSTMENTS AND CONTINUITY CHECKS. WAIT AT LEAST ONE MINUTE, UNTIL THE HIGH VOLTAGE CAPACITOR IN THE HIGH VOLTAGE POWER SUPPLY HAS FULLY DISCHARGED. THE CAPACITOR SHOULD BE DISCHARGED BY USING INSULATED WIRE - I.E. TEST PROBE CONNECTED TO 10KOHM RESISTOR IN SERIES TO GROUND. WHEN RECONNECTING THE WIRE LEADS TO ANY PART, MAKE SURE THE WIRING CONNECTIONS AND LEAD COLORS ARE CORRECTLY MATCHED ACCORDING TO THE OVERALL CIRCUIT DIAGRAM. (ESPECIALLY SWITCHES ANDHIGH VOLTAGE CIRCUIT.)

A. REMOVING OUT CASE (Figures 7)

(1) Remove four screws from the rear section.
(2) Remove one screw from the side section.
(3) Push the outer case back about 1 inch (3cm).
(4) Lift the case from the set.

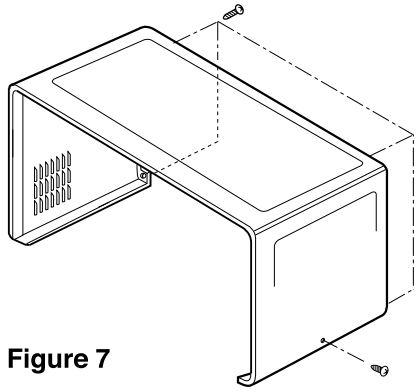


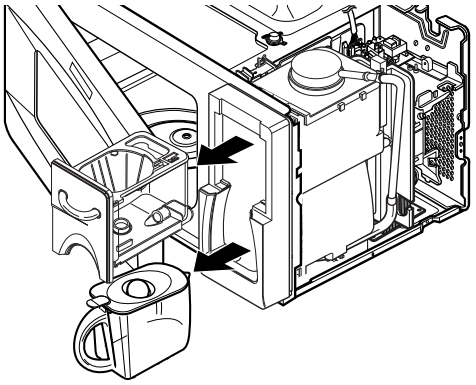
Figure 7

B. REMOVING COFFEE MAKER ASSEMBLY(Figure 8)

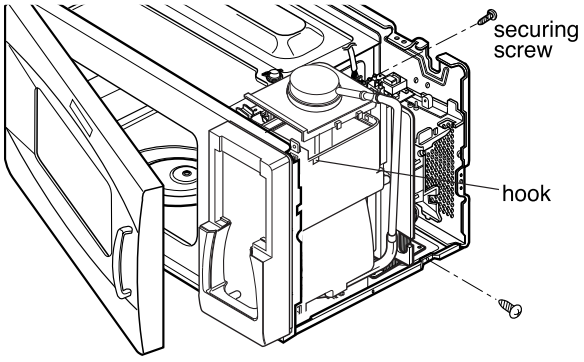
CAUTION: BE CAREFUL HOT SURFACE!
AFTER BREWING, ENTIRE WARNING PLATE SURFACES ARE VERY HOT. BEFORE SERVICING, COOL DOWN THE COFFEE MAKER PARTS ENOUGH NOT TO GET BURNT.

(1) Remove reservoir and carafe.
(2) Remove 2 screws, holding the coffee maker.
(3) Disconnect the 2 lead wires from connectors (CN3).
(4) Disconnect the heater wires from main leadwire.
(5) Lift up and pull out Coffee maker Assembly carefully from the cavity.

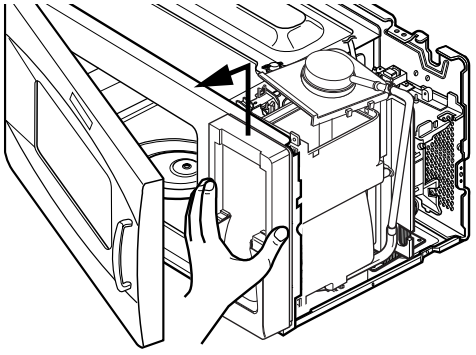
Remove reservoir and carafe

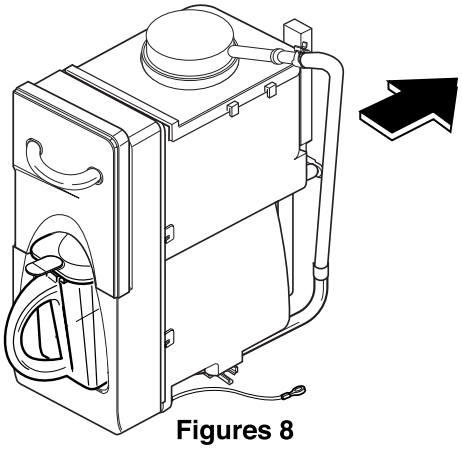


Remove screw and remove upper case by pushing the hook.



Lift up and pull out coffee maker assembly case upper





Figures 8

C. DOOR GROSS ASSEMBLY REMOVAL

(1) Open the door.
(2) Remove the choke cover cap very carefully with a flat-blade screwdriver.

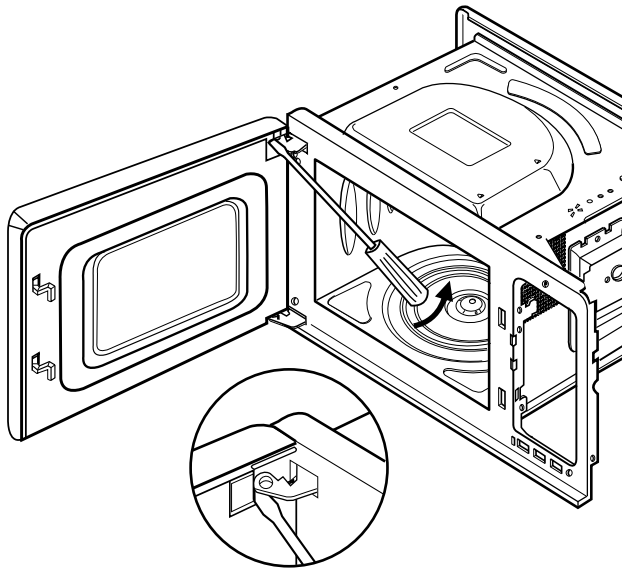
CAUTION : Be careful not to damage door seal plate by screwdriver.

(3) Lift up and push the door.

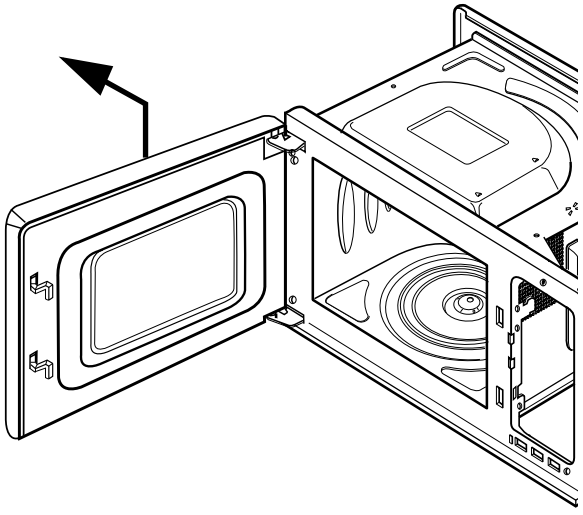
NOTE:

1. After replacing the door, be sure to check that the primary switch, monitor switch, and secondary switch operate normally.
2. After replacing the door, check for microwave energy leakage with a survey meter. Microwave energy must be below the limit of 5 mW/cm.sq. (with a 275 ml water load)
3. When mounting the door assembly to the oven assembly, be sure to adjust the door assembly parallel to the chassis. Also adjust so the door has no play between the inner door surface and oven frame assembly. If the door assembly is not mounted properly, microwaves may leak from the clearance between the door and the oven.

Remove choke cover cap



Remove Door



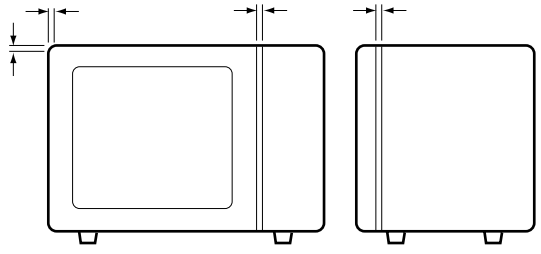


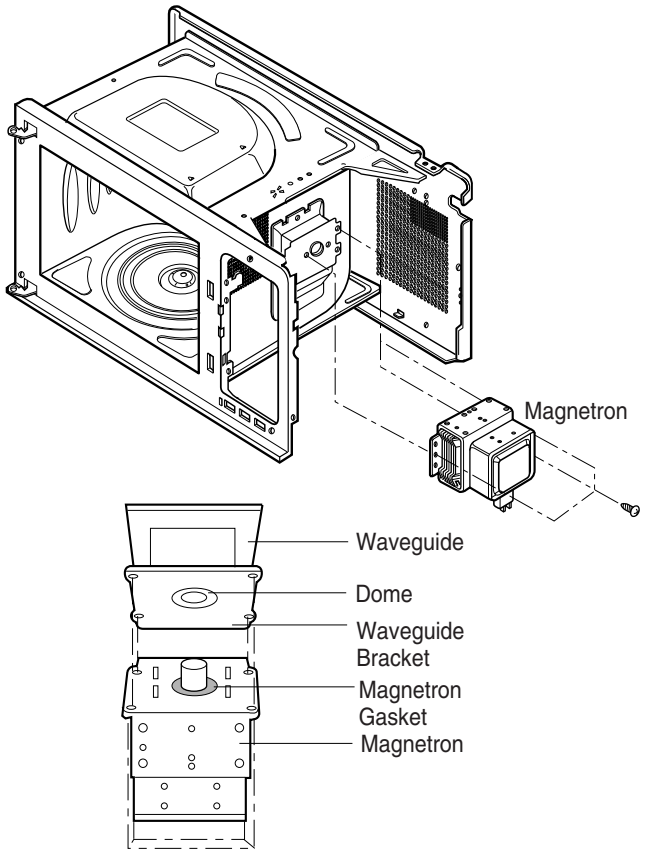
Figure 9

D. MAGNETRON REMOVAL (Figure 10)

1) Disconnect the wire lead from the magnetron.
2) Carefully remove the mounting screws holding the magnetron and the waveguide.
3) Remove the magnetron assembly until the tube is clear from the waveguide.

NOTE:

1. When removing the magnetron, make sure its dome does not hit any adjacent parts, or it may be damaged.
2. When replacing the magnetron, be sure to install the magnetron gasket in the correct position and be sure that the gasket is in good condition.
3. After replacing the magnetron, check for microwave leakage with a survey meter around the magnetron. Microwave energy must be below the limit of 5 mW/cm^{2}. (With a 275 ml. water load).
   Make sure that gasket is rigidly attached to the magnetron. To prevent microwave leakage, tighten the mounting screws properly, making sure there is no gap between the waveguide and the magnetron.



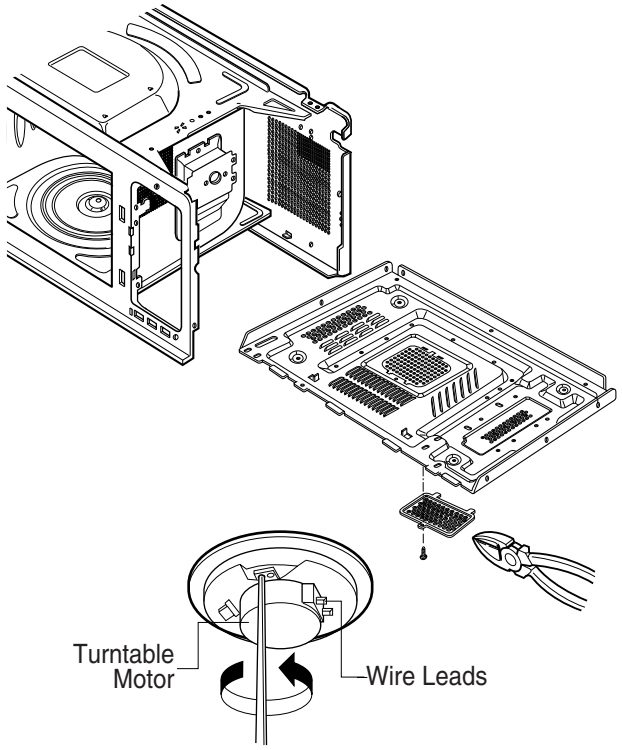
Figures 10

E. REMOVING THE TURNTABLE MOTOR (Figure 11)

1) Remove the turntable and rotating ring.
2) Lay the unit down on its back.
3) Remove the turntable motor cover.
   The turntable base cover is easily removed by pinching the eight parts with a wire cutting.
4) Disconnect the leadwire from the turntable motor terminals.
5) Remove the screw securing the turntable motor to the oven cavity ASSEMBLY.
6) After repairing the motor, rotate the removed turntable motor cover.
7) Fit the turntable motor cover's projecting part to the base plate slit.

NOTE:

1. Remove the wire lead from the turntable motor VERY CAREFULLY.
2. Be sure to grasp the connector, not the wires, when removing.



Figures 11

F. HIGH VOLTAGE TRANSFORMER REMOVAL

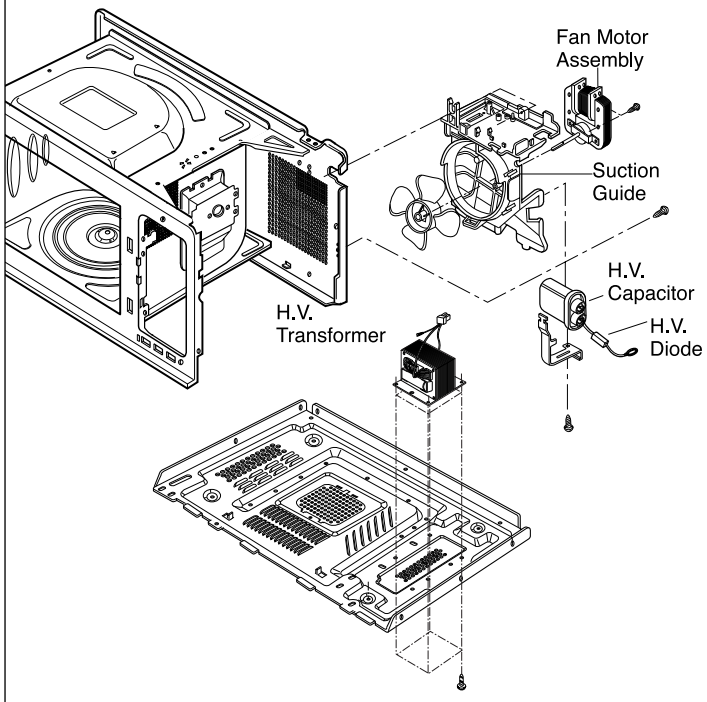
1) Discharge the high voltage capacitor.
2) Disconnect the leadwire from magnetron, high voltage transformer, and capacitor.
3) Remove the screw holding the high voltage transformer to the baseplate.

G. FAN MOTOR ASSEMBLY REMOVAL

1) Discharge the high voltage capacitor.
2) Disconnect the leadwire from fan motor and high voltage capacitor.
3) Remove the two screws holding the the suction guide ASSEMBLY to the oven cavity.
4) Remove the two screws holding the fan motor ASSEMBLY to the suction guide ASSEMBLY.

H. HIGH VOLTAGE CAPACITOR AND DIODE REMOVAL

1) Discharge the high voltage capacitor.
2) Disconnect the leadwire from fan motor and high voltage capacitor.
3) Remove the screw holding the suction guide ASSEMBLY to the oven cavity.
4) Remove the screw holding the high voltage capacitor bracket and remove the high voltage diode earth screw.



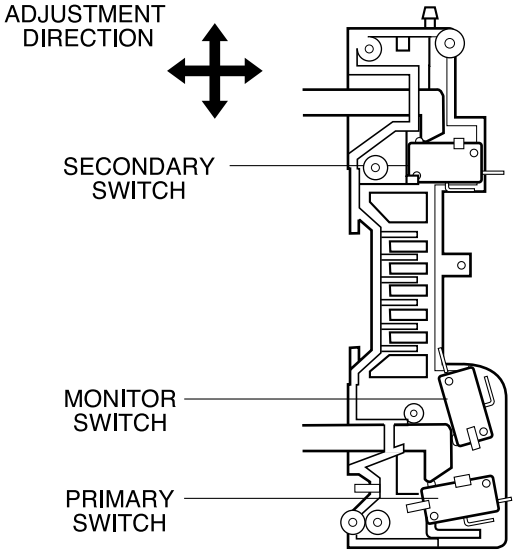
Figures 12

I. INTERLOCK SYSTEM

1) INTERLOCK MECHANISM
The door lock mechanism is a device which has been specially designed to eliminate completely microwave activity when the door is opened during cooking and thus to prevent the danger resulting from the microwave leakage.

2) MOUNTING OF THE PRIMARY/MONITOR/ SECONDARY SWITCHES TO THE LATCH BOARD
3) INSTALLATION AND ADJUSTMENT OF THE LATCH BOARD TO THE OVEN ASSEMBLY

- Mount the latch board to the oven assembly.
- Adjust the latch board in the arrow direction so that oven door will not have any play in it when the door is closed.
- Tighten the mounting screw.
- **Check for play in the door by pushing the door release button. Door movement should be less than 0.5 mm. (1/64 inch)**
  Don't push the door release button while making this adjustment. Make sure that the latch moves smoothly after adjustment is completed and that the screws are tight. Make sure the primary, monitor, and secondary switches operate properly by following the continuity test procedure.



Figures 13

10. INTERLOCK CONTINUITY TEST

WARNING : FOR CONTINUED PROTECTION AGAINST EXCESSIVE RADIATION EMISSION, REPLACE ONLY WITH IDENTICAL REPLACEMENT PARTS.

TYPE NO. SZM-V 16-FA-63 OR VP-533A-OF FOR PRIMARY SWITCH
TYPE NO. SZM-V 16-FA-62 OR VP-532A-OF FOR MONITOR SWITCH
TYPE NO. SZM-V 16-FA-63 OR VP-533A-OF FOR SECONDARY SWITCH

A. PRIMARY INTERLOCK SWITCH TEST

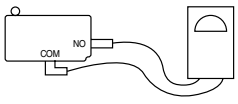
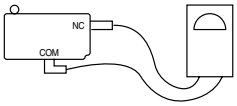
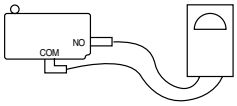
When the door release button is depressed slowly with the door closed, an audible **click** should be heard at the same time or successively at intervals. When the button is released slowly, the latches should activate the switches with an audible **click.**
If the latches do not activate the switches when the door is closed, the switches should be a adjusted in accordance with the adjustment procedure. Disconnect the wire lead from the primary switch. Connect the ohmmeter leads to the common (COM) and normally open (NO) terminal of the switch. The meter should indicate an open circuit in the door open condition. When the door is closed, the meter should indicate a closed circuit.
When the primary switch operation is abnormal, make the necessary adjustment or replace the switch only with the same type of switch.

B. SECONDARY INTERLOCK SWITCH TEST

Disconnect the wire lead from the secondary switch. Connect the ohmmeter leads to the common (COM) and normally open (NO) terminals of the switch. The meter should indicate a open circuit in the door open condition. When the door is closed, meter should indicate an closed circuit. When the secondary switch operation is abnormal, make the necessary adjustment or replace the switch only with the same type of switch.

C. MONITOR SWITCH TEST

Disconnect the wire lead from the monitor switch. Connect the ohmmeter leads to the common (COM) and normally closed (NC) terminals of the switch. The meter should indicate closed circuit in the door open condition. When the door is closed, meter should indicate an open circuit. When the monitor switch operation is abnormal, replace with the same type of switch.
NOTE: After repairing the door or the interlock system, it is necessary to do this continuity test before operating the oven.

COMPONENTS	TEST PROCEDURE		RESULTS	
SWITCHES (Wire leads removed)	Check for continuity of the switch with an Ohm-meter		Door open	Door closed
	Primary Switch			
	Monitor Switch			
	Secondary Switch			

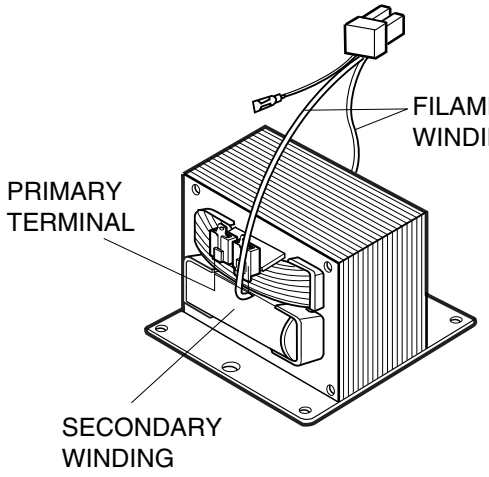
NOTE : After checking for the continuity of switches, make sure that they are connected correctly.

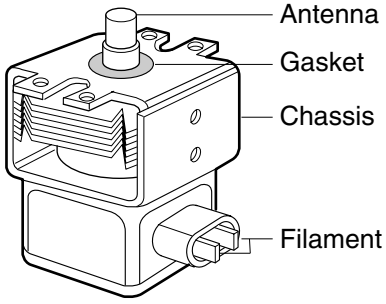
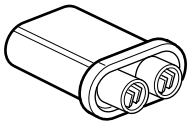
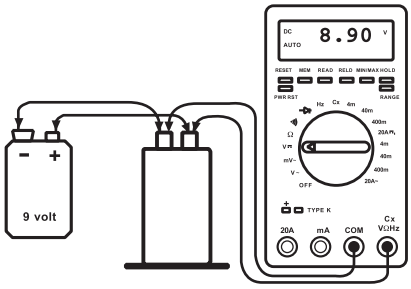
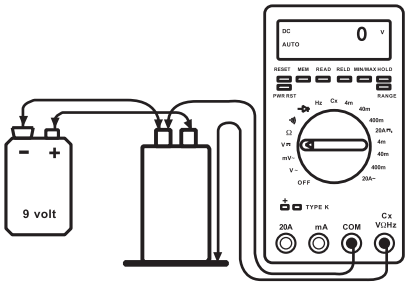
11. TEST AND CHECKOUT PROCEDURES, AND TROUBLESHOOTING

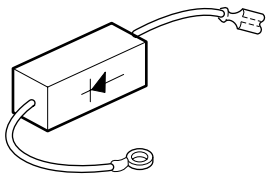
CAUTIONS

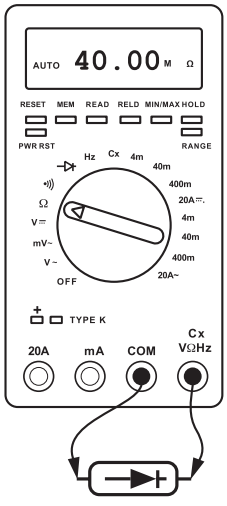
1. DISCONNECT THE POWER SUPPLY CORD FROM THE OUTLET WHENEVER REMOVING THE OUTER CASE FROM THE UNIT. PROCEED WITH THE TEST ONLY AFTER DISCHARGING THE HIGH VOLTAGE CAPACITOR AND REMOVING THE WIRE LEADS FROM THE PRIMARY WINDING OF THE HIGH VOLTAGE TRANSFORMER.
2. ALL OPERATIONAL CHECKS WITH MICROWAVE ENERGY MUST BE DONE WITH A LOAD (1 LITER OF WATER IN CONTAINER) IN THE OVEN.

A. TEST PROCEDURES

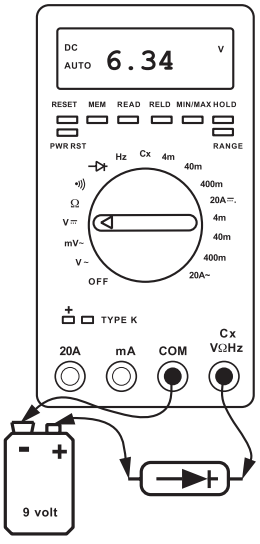
COMPONENTS	TEST PROCEDURE	RESULTS
HIGH VOLTAGE TRANSFORMER (Wire leads removed)	 1. Measure the resistance. (Select the ohm scale on the meter) • Primary winding • Secondary winding • Filament winding 2. Measure the resistance. (Select the ohm scale on the meter) • Primary winding to ground • Filament winding to ground	 Approx.: 0.7 ~ 0.9 ohm Approx.: 90 ~ 120 ohm Less than: 1 ohm Normal: Infinite Normal: Infinite
MAGNETRON (Wire leads removed)	1. Measure the resistance. (Select the ohm scale on the meter) • Filament terminal 2. Measure the resistance. (Select the ohm scale on the meter) • Filament to chassis	Normal: Less than 1 ohm Normal: Infinite

COMPONENTS	TEST PROCEDURE	RESULTS
	 NOTE: When testing the magnetron, be sure to install the magnetron gasket in the correct position and be sure that the gasket is in good condition.	
HIGH VOLTAGE CAPACITOR 	1. Check DC 9V battery before performing tests. 2. Select the DCV scale on the meter. 3. Using the meter, battery, and jump wire, connect the items as illustrated in figures. • Terminal to terminal. 	Normal: Approximately 9V
	1. Check DC 9V battery before performing tests. 2. Select the DCV scale on the meter. 3. Using the meter, battery, and jump wire, connect the items as illustrated in figures. • Terminal to case. 	Normal: Approximately 0V or a value displayed in mV Will be seen.

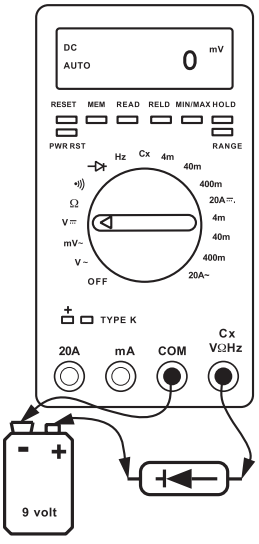
COMPONENTS	TEST PROCEDURE	RESULTS
H.V.Diode (rectifer) 	**STEP 1. Test the diode to see if it is shorted.** Procedure: 1. Select the Ω scale on the meter. 2. Place the meter leads across the diode as pictured in Figure 14-a. The reading should be "40MΩ," "OL," or a reading of infinity. 3. Reverse the meter leads. The reading should again indicate a reading of infinity. If the diode shows "infinity" in BOTH directions, it is NOT shorted. 4. If the diode is not shorted, proceed to step 2. **STEP 2. Test the diode for forward biasing.** Procedure: 1. Select the DCV scale on the meter. 2. Using the meter, battery, and jumper wire, connect the items as illustrated in Figure 14-b. This has the positive side of the battery connected to the cathode of the diode. 3. The diode should be forward biased therefore a voltage reading of approximately 4.7 VDC to 6.4 VDC will be read depending on meter, battery strength, etc. (Note: If the meter leads were reversed, a negative voltage of the same amount would be seen.) **STEP 3. Test the diode for reverse biasing.** Procedure: 1. Using the same scale on the meter, connect the positive side of the battery to the anode of the diode as illustrated in Figure 14-c. 2. The diode should be reverse biased therefore a reading of 0 volt or a value displayed in mV will be seen. (The display will be erratic changing values rapidly in the mV scale.)	Normal: Approximately 4 .7-6.4V Normal: Approximately 0V



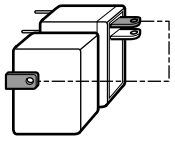
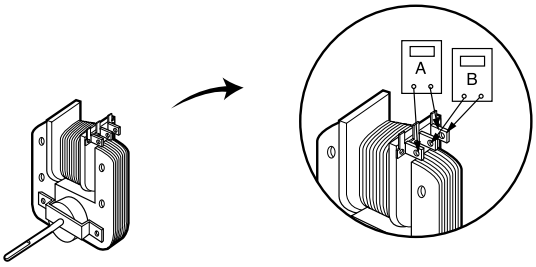
Figures 14-a

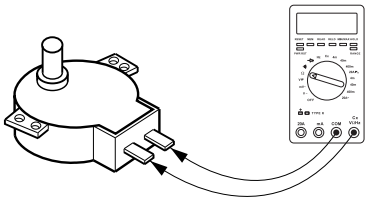


Figures 14-b



Figures 14-c

<table>
<tr><th>COMPONENTS</th><th>TEST PROCEDURE</th><th>RESULTS</th></tr>
<tr><td>RELAY 2
(Power Relay)
  </td><td>1. Measure continuity.
2. Remove the lead wires and operate oven at power level 1 through power level 10.</td><td><table>
<tr><th>POWER LEVEL</th><th>0</th><th>0.L</th></tr>
<tr><td>1</td><td>4 sec</td><td>18 sec</td></tr>
<tr><td>2</td><td>6 sec</td><td>16 sec</td></tr>
<tr><td>3</td><td>8 sec</td><td>14 sec</td></tr>
<tr><td>4</td><td>10 sec</td><td>12 sec</td></tr>
<tr><td>5</td><td>12 sec</td><td>10 sec</td></tr>
<tr><td>6</td><td>14 sec</td><td>8 sec</td></tr>
<tr><td>7</td><td>16 sec</td><td>6 sec</td></tr>
<tr><td>8</td><td>18 sec</td><td>4 sec</td></tr>
<tr><td>9</td><td>20 sec</td><td>2 sec</td></tr>
<tr><td>10</td><td>22 sec</td><td>0 sec</td></tr>
</table></td></tr>
<tr><td>FAN MOTOR</td><td>1. Remove wire leads.
2. Measure resistance.
  </td><td>Normal:
A: Approximately 95~120 ohms.
B: Approximately 10~25 ohms.

Abnormal:
Infinite</td></tr>
<tr><td>TURNTABLE MOTOR</td><td>1. Remove wire leads.
2. Measure resistance.
  </td><td>Normal: Approx.2.5~3.5 Kohms
Abnormal: Infinite or several ohm.</td></tr>
<tr><td colspan="3">NOTE : • A MICROWAVE LEAKAGE TEST MUST ALWAYS BE PERFORMED WHEN THE UNIT IS SERVICED FOR ANY REASON.
• MAKE SURE THE WIRE LEADS ARE IN THE CORRECT POSITION.
• WHEN REMOVING THE WIRE LEADS FROM THE PARTS, BE SURE TO GRASP THE CONNECTOR, NOT THE WIRES.</td></tr>
</table>

B. CHECKOUT PROCEDURES

(1) CHECKOUT PROCEDURES FOR FUSE BLOWING

CAUTION: REPLACE BLOWN FUSE WITH 15 AMPERE FUSE.

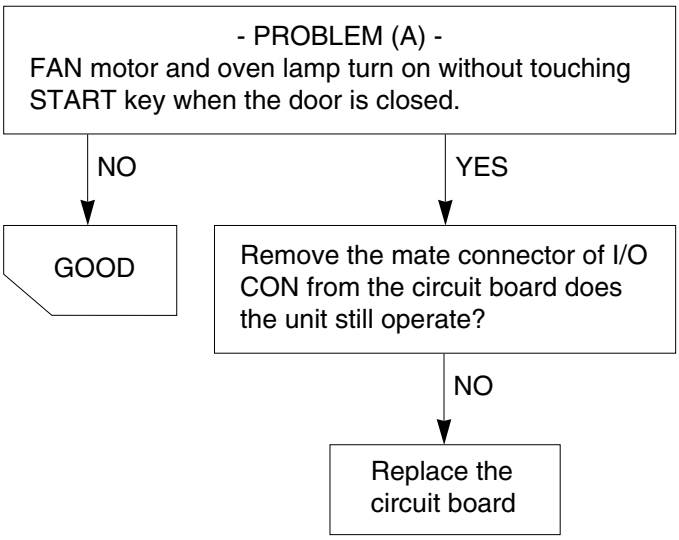
PROBLEMS	CAUSES
Fuse blows immediately after the door is closed.	Improper operation of the primary interlock, secondary interlock switches and/or the interlock monitor switch.
Fuse blows immediately after the door is opened.	
Fuse blows when the door is closed and START key is touched.	Malfunction of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

NOTES:

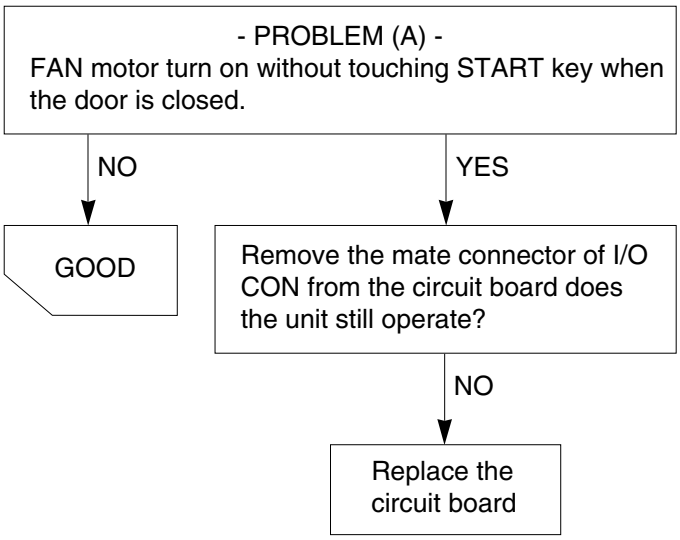
- If the fuse is blown by an improper switch operation, replace the defective switches and the fuse at the same time. After replacing the defective switches with new ones, make sure that they are correctly connected.
- Check for microwave energy leakage according to “1. ADJUSTMENT PROCEDURES” on page 3, when the primary interlock, secondary interlock switches and/or the interlock monitor switches are adjusted or replaced.

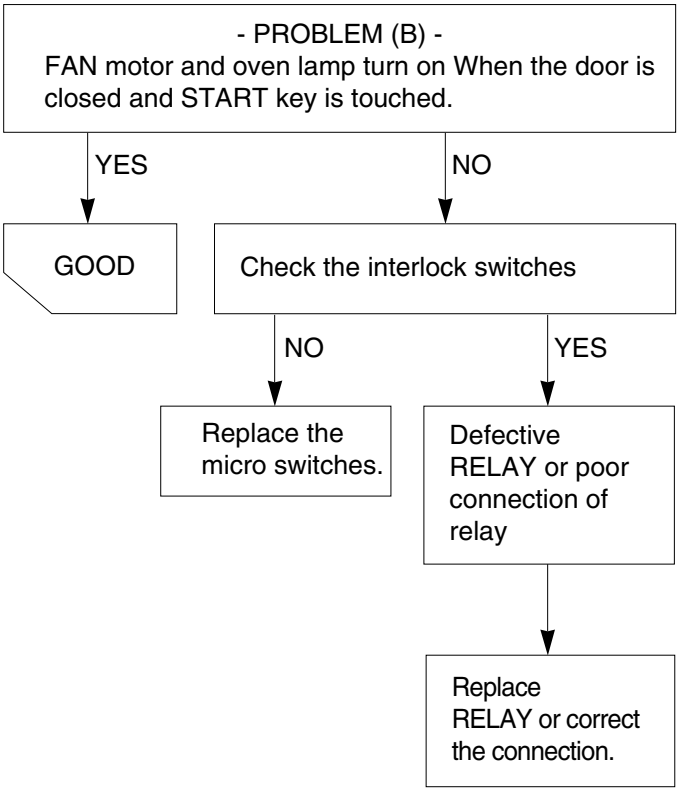
(2) CHECKOUT PROCEDURES FOR RELAY.

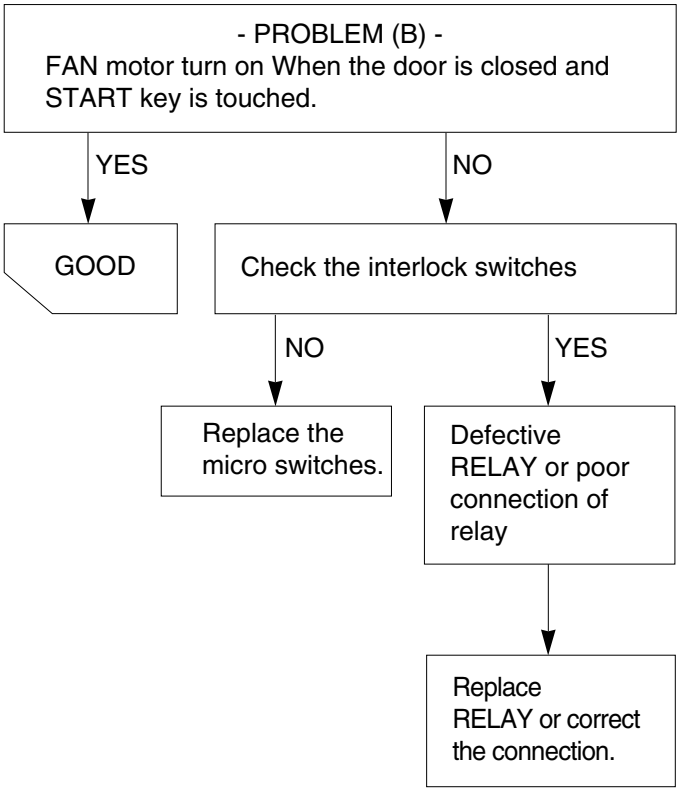
Microwave Oven



Coffee maker







(3) CHECKOUT PROCEDURES FOR CIRCUIT BOARD

The following symptoms indicate a defective circuit board.

(1) The start function fails to operate but the high voltage Systems, the interlock switches, the door sensing and the relay check good.
(2) The unit with a normal relay continuously operates.
(3) The buzzer does not sound or continues to sound.
(4) Some segments of one or more digits do not light up, or they continue to light up, or segments light when they should not.
(6) Wrong figures appear.
(7) The figures of all digits flicker.
(8) Some of the indicators do no light up.
(9) The clock does not keep time properly.

NOTE: A MICROWAVE ENERGY LEAKAGE TEST MUST ALWAYS BE PERFORMED WHEN THE UNIT IS SERVICED FOR ANY REASON.

C. TROUBLE SHOOTING

WHEN YOU GET A COMPLAINT FROM YOUR CUSTOMER, EVALUATE THE COMPLAINT CAREFULLY. IF THE FOLLOWING SYMPTOMS APPLY, PLEASE INSTRUCT THE CUSTOMER IN THE PROPER USE OF THE COFFEE MAKER AND MICROWAVE OVEN. THIS CAN ELIMINATE AN UNNECESSARY SERVICE CALL.

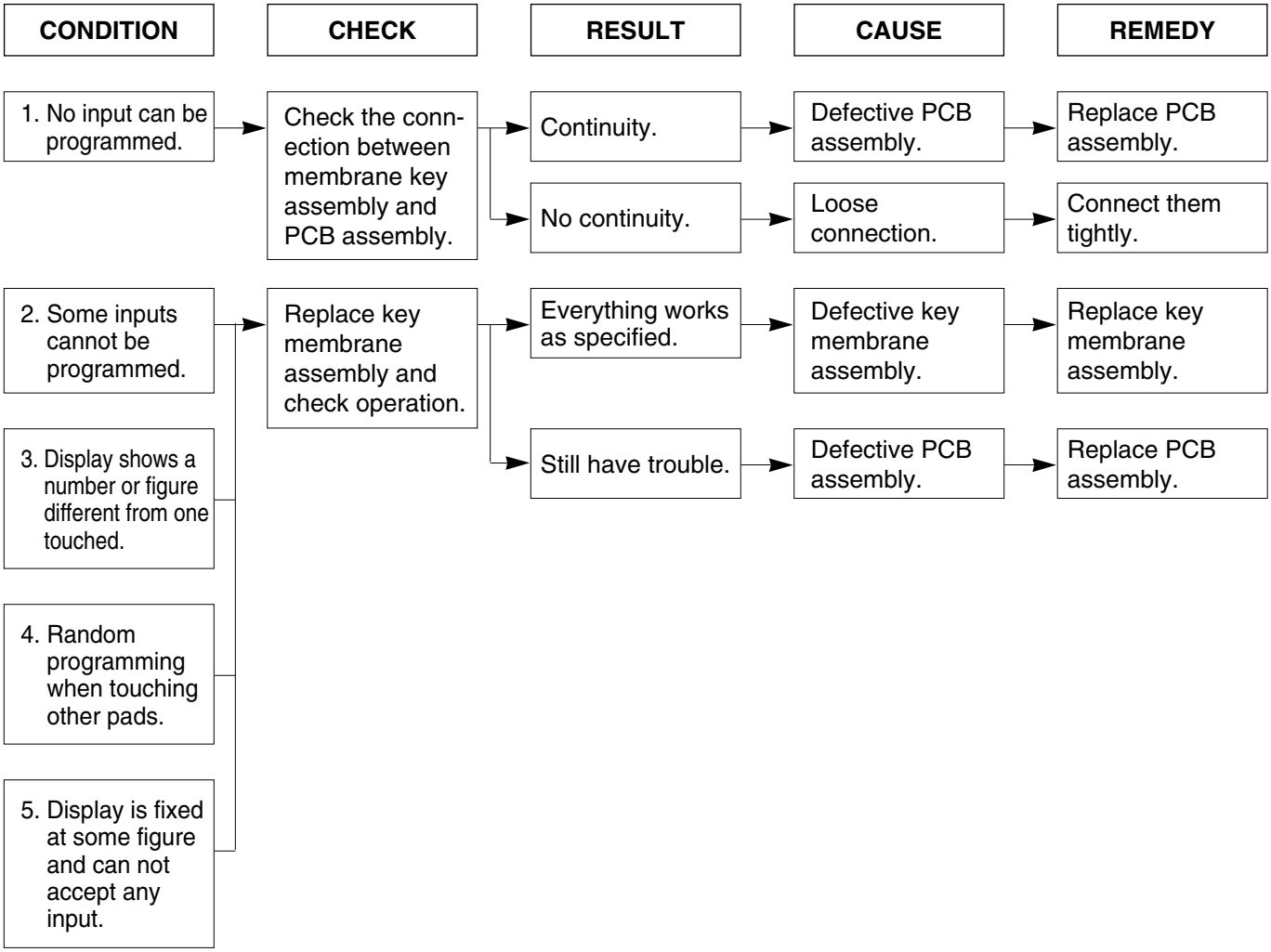
CAUTIONS

1. Check grounding and cool this unit before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge the high voltage capacitor.
4. When checking the continuity of the switches or of the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
5. Do not touch any part of the circuit on the PCB since static electric discharge may damage this control panel. Always touch yourself to ground while working on this panel to discharge any static charge built up in your body. (Micom model only)

CONDITION	CAUSE	REMEDY
Coffee maker and Microwave oven does not work.	Inserting many plugs into one outlet and using them at the same time (blown fuse or breaker)	Avoid using other electrical appliances when you use this unit.
	Plug is not inserted tightly.	Insert plug securely.
Output power is too low.	Low AC input voltage.	Use the this machine at adequate line voltage.
	Thermister detecting temperature is too high.	This may not be a defect. It is possible that heater cooled should be for a longer time period.
Sparks occur in oven.	Using metallic ware and allowing it to touch the oven wall.	Do not use metallic ware for cooking except where noted in the cooking guide.
	Ceramic ware trimmed in gold or silver powder is used.	Do not use any type of cookware with metallic trimming.
Uneven microwave cooking.	Inconsistent intensity of microwave by their characteristics.	1. Use plastic wrap or lid. 2. Stir once or twice while cooking soup, cocoa or milk, etc.

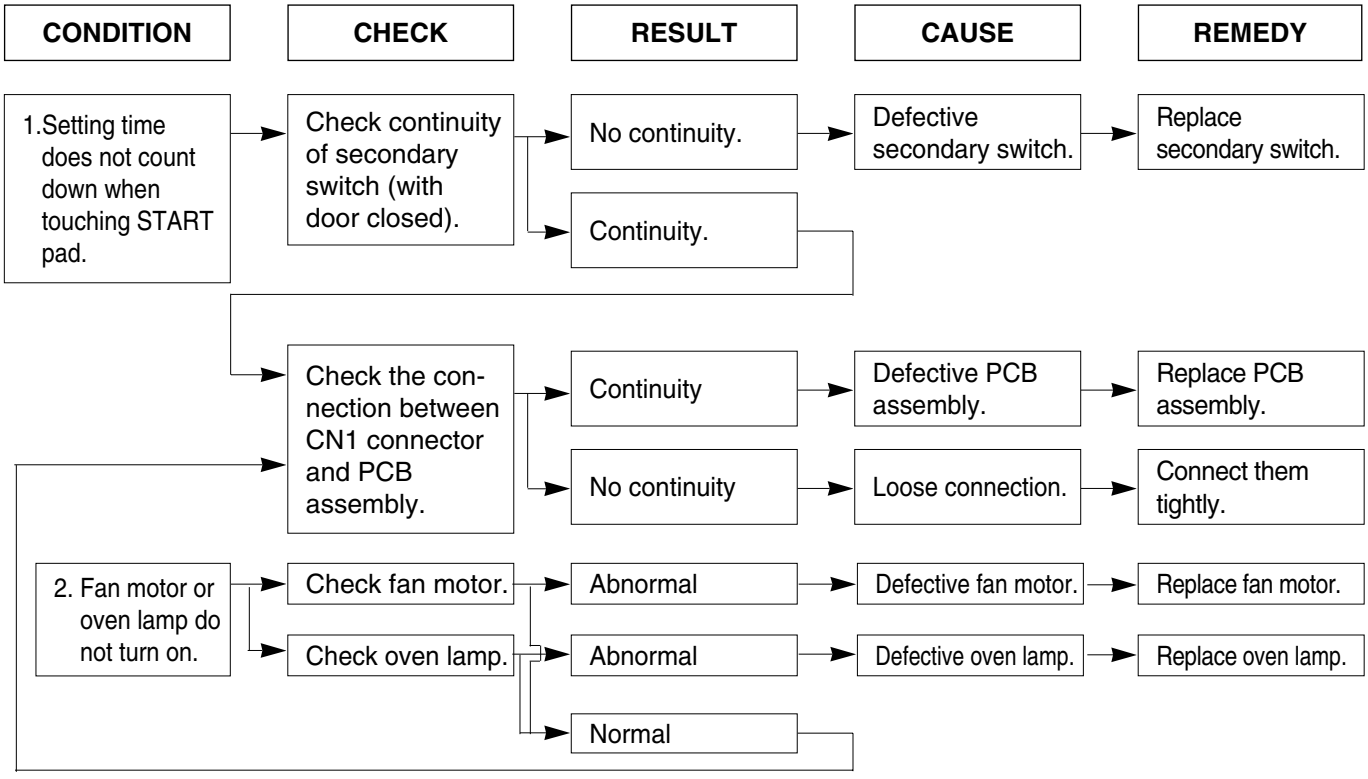
(TROUBLE 1) The following visual conditions indicate a probable defective control circuit.

1. Incomplete segments.
   - Segment missing.
   - Partial segment missing.
   - Digit flickering (NOTE: Slight flickering is normal.)
2. Colon does not turn on or blink.
3. A distinct change in the brightness of one or more numbers in display.
4. One or more digits in the display are not lighting.
5. Display indicates a number different from one touched, for example, key in **5** and **3** appears in the display.
6. Specific numbers (for example 7 or 9) will not display when key pad is touched.
7. Display does not count down with time blinking or up with clock operation.
8. Display obviously jumps in time while counting down.
9. Display counts down too fast while cooking.
10. Each indicator light does not turn on after setting cooking cycle.
11. Display time of day does not reappear when cooking is finished.

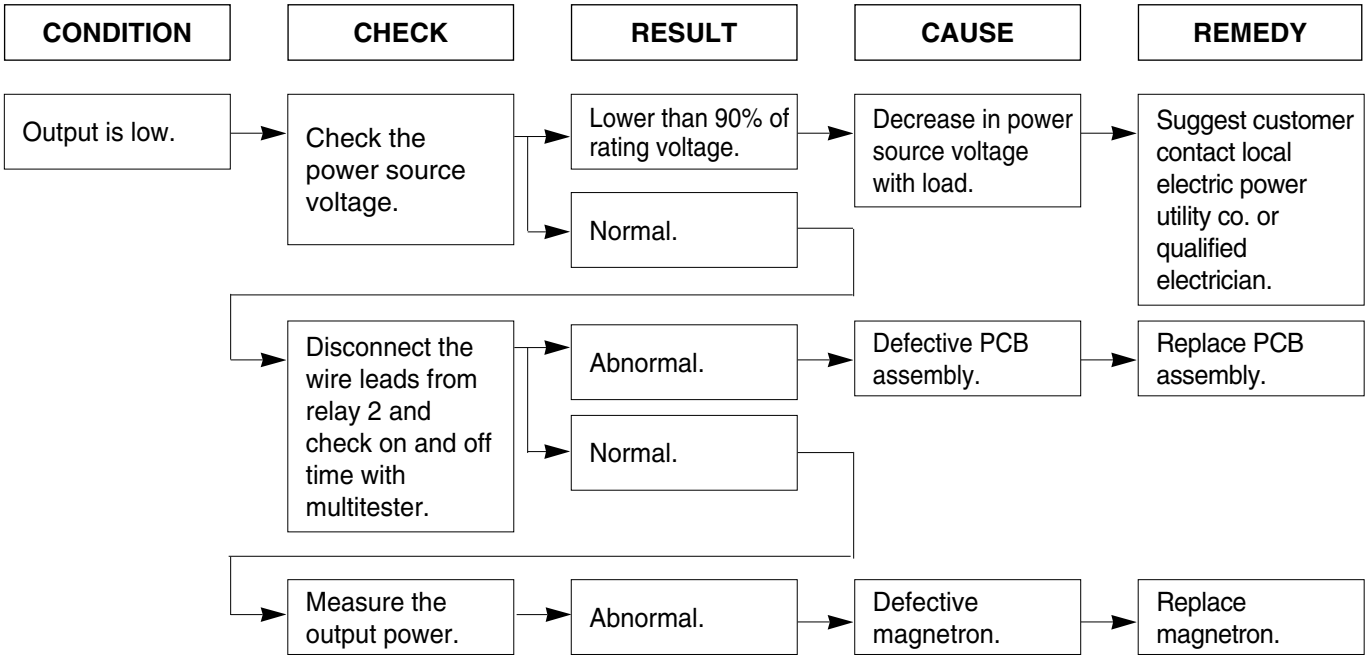


(TROUBLE 2) Microwave oven does not operate at all, Display window does not display any figures, and no input is accepted.

(TROUBLE 3) Display shows all figures set, but microwave oven does not start cooking while desired program times are set and START pad is touched.

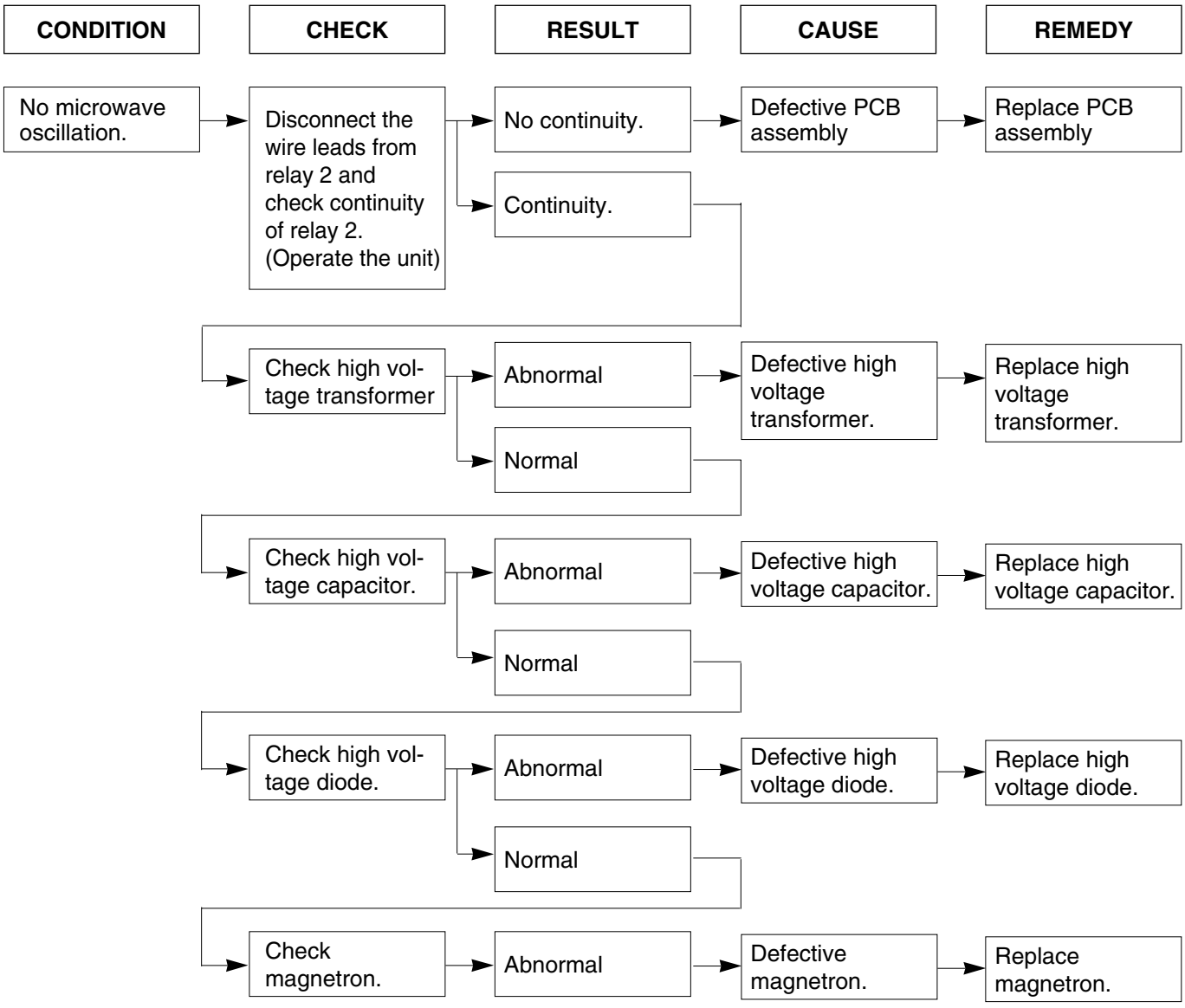


(TROUBLE 4) Microwave oven seems to be operating but little heat is produced in oven load.

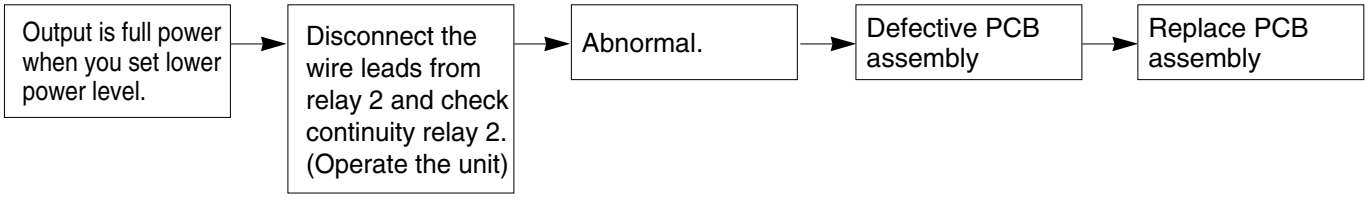


NOTE: Simple test of power output-conducted by heating one liter water for one min. if available.
Minimum 8.5°C temperature rise is normal condition.

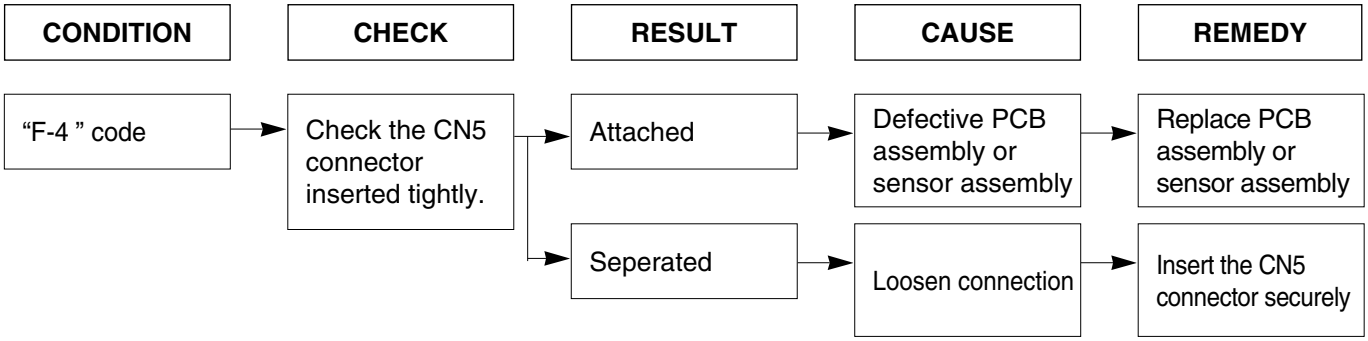
(TROUBLE 5) No microwave oscillation even though oven lamp and fan motor run.
(Display operates properly)



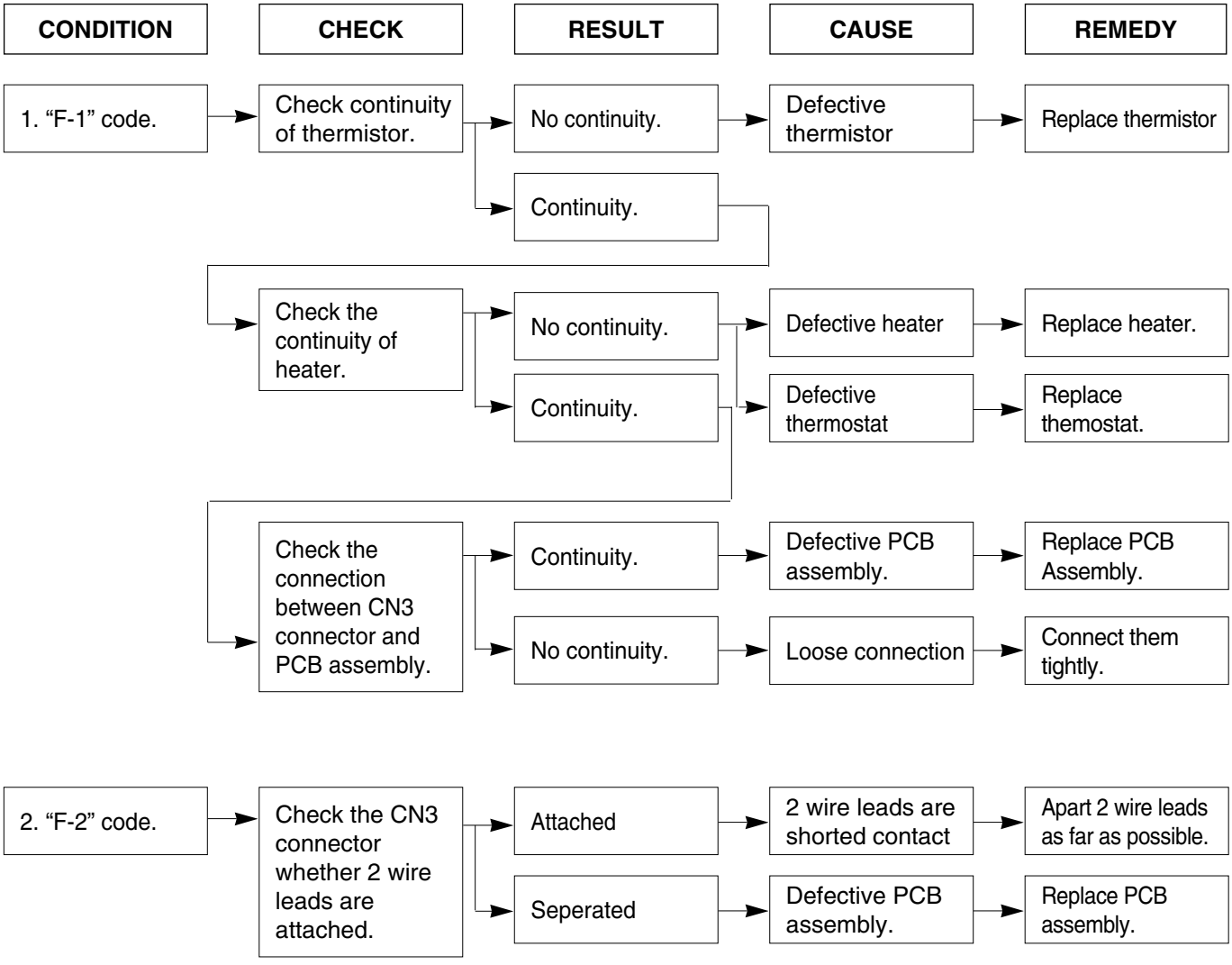
NOTE: • Make sure the wire leads correct position.
• When Removing the wire leads from the parts, be sure to grasp the connector, not the wires.
• When removing the magnetron, be sure to install the magnetron gasket in the correct position and in good condition.



(TROUBLE 6) When Microwave oven operates, strange cook can be seen on the display and stop with beep sound.

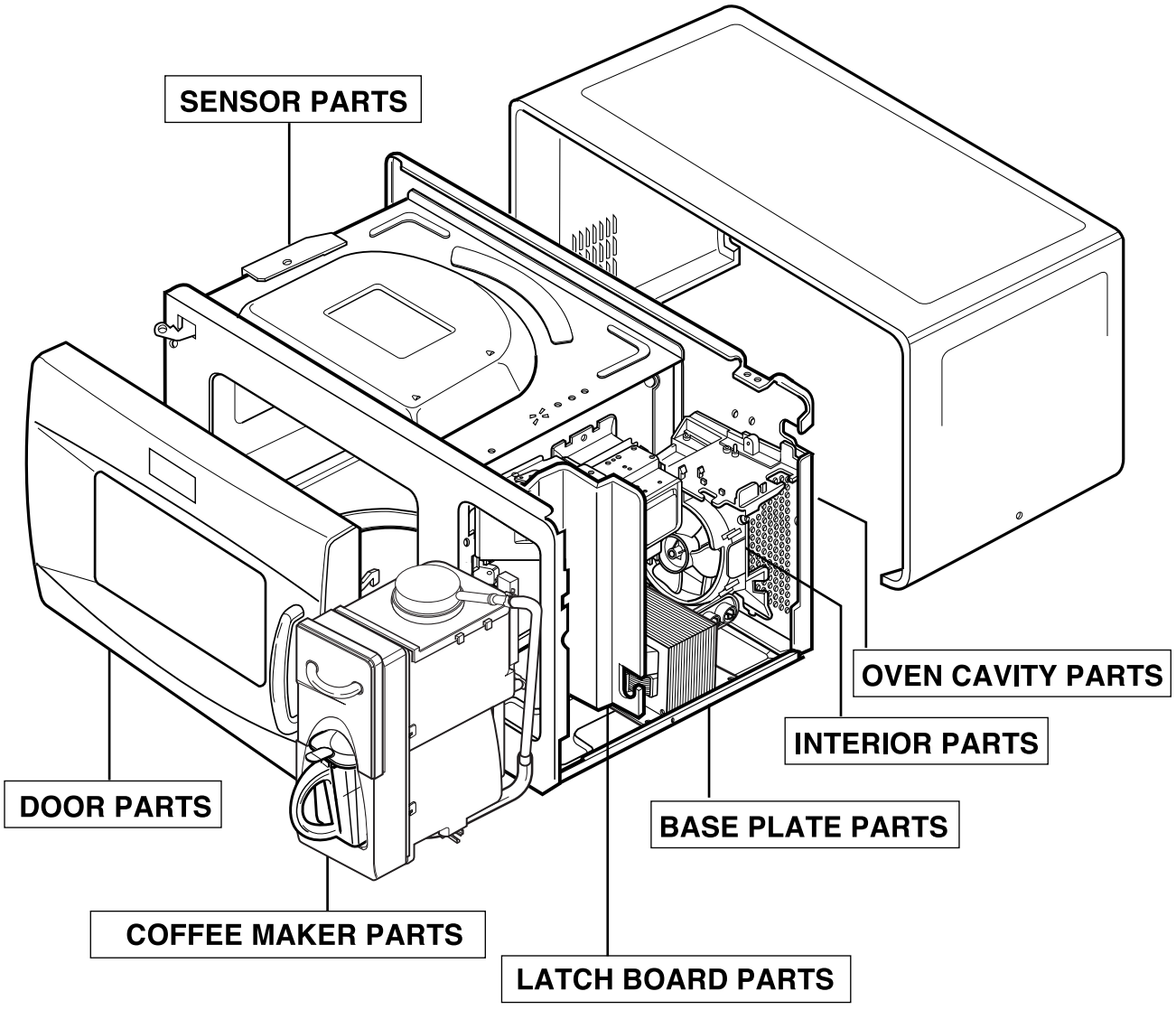


(TROUBLE 7) When coffee maker operates, strange code can be seen on the display and stop with beep sound.

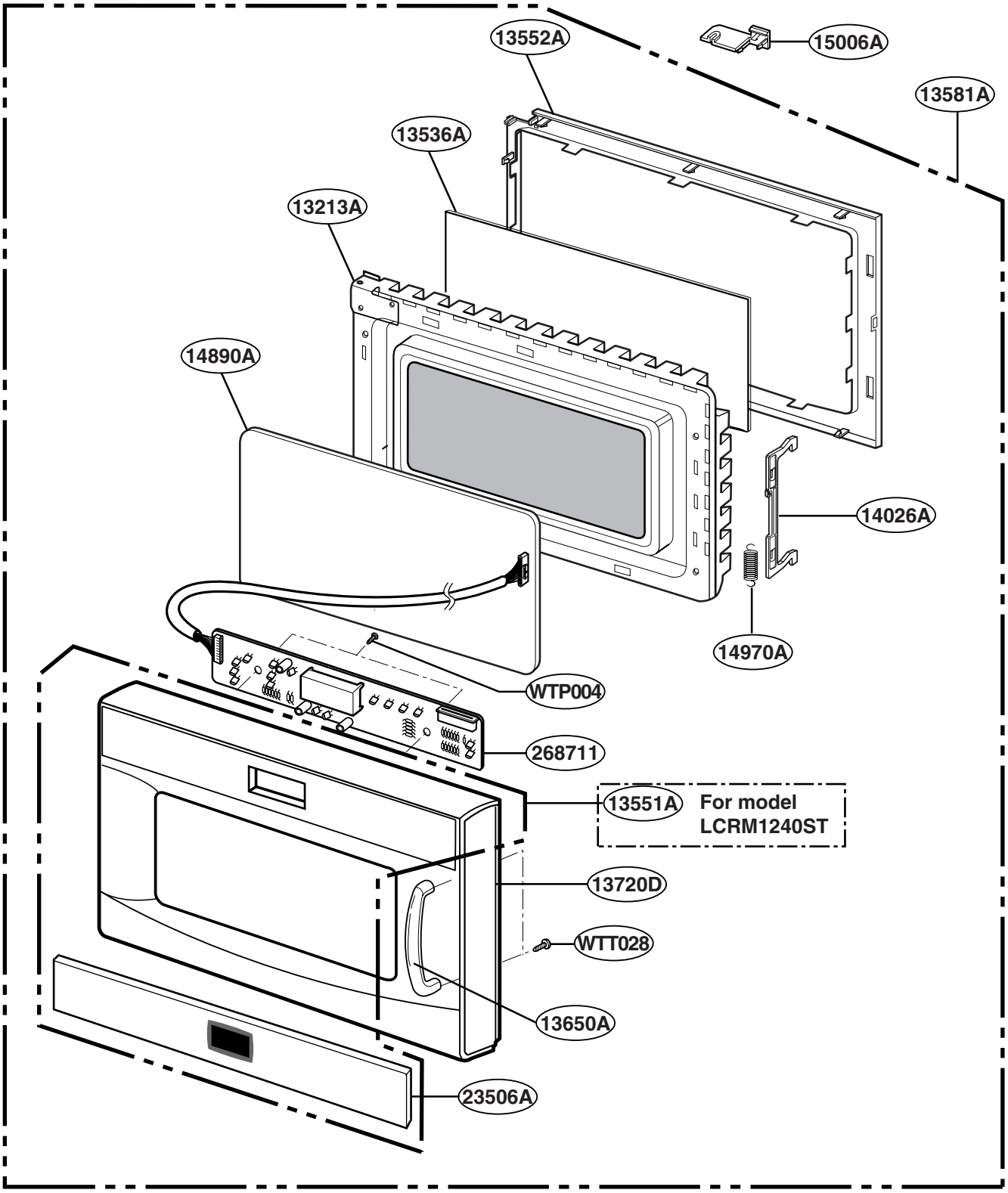


EXPLODED VIEW

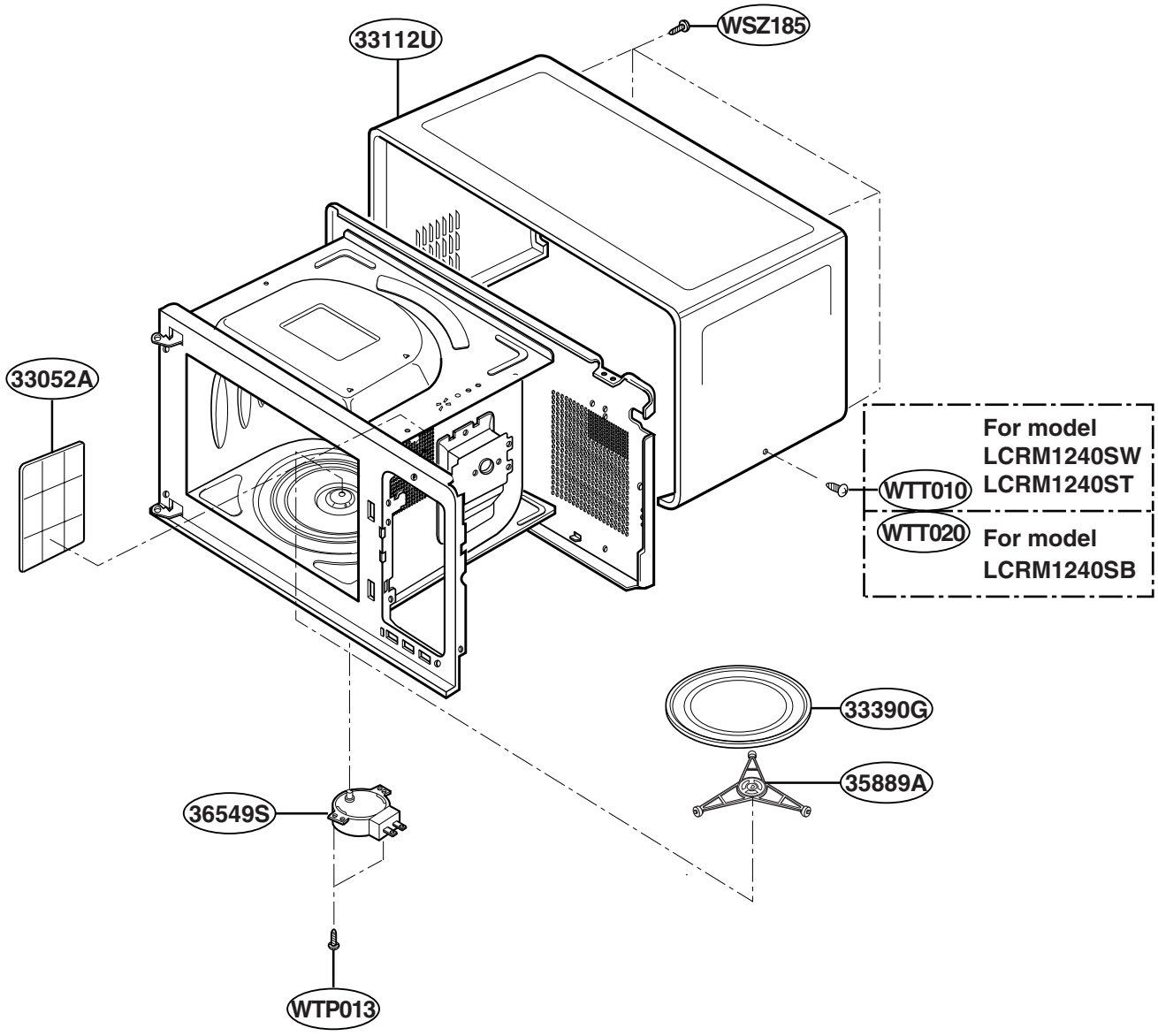
INTRODUCTION



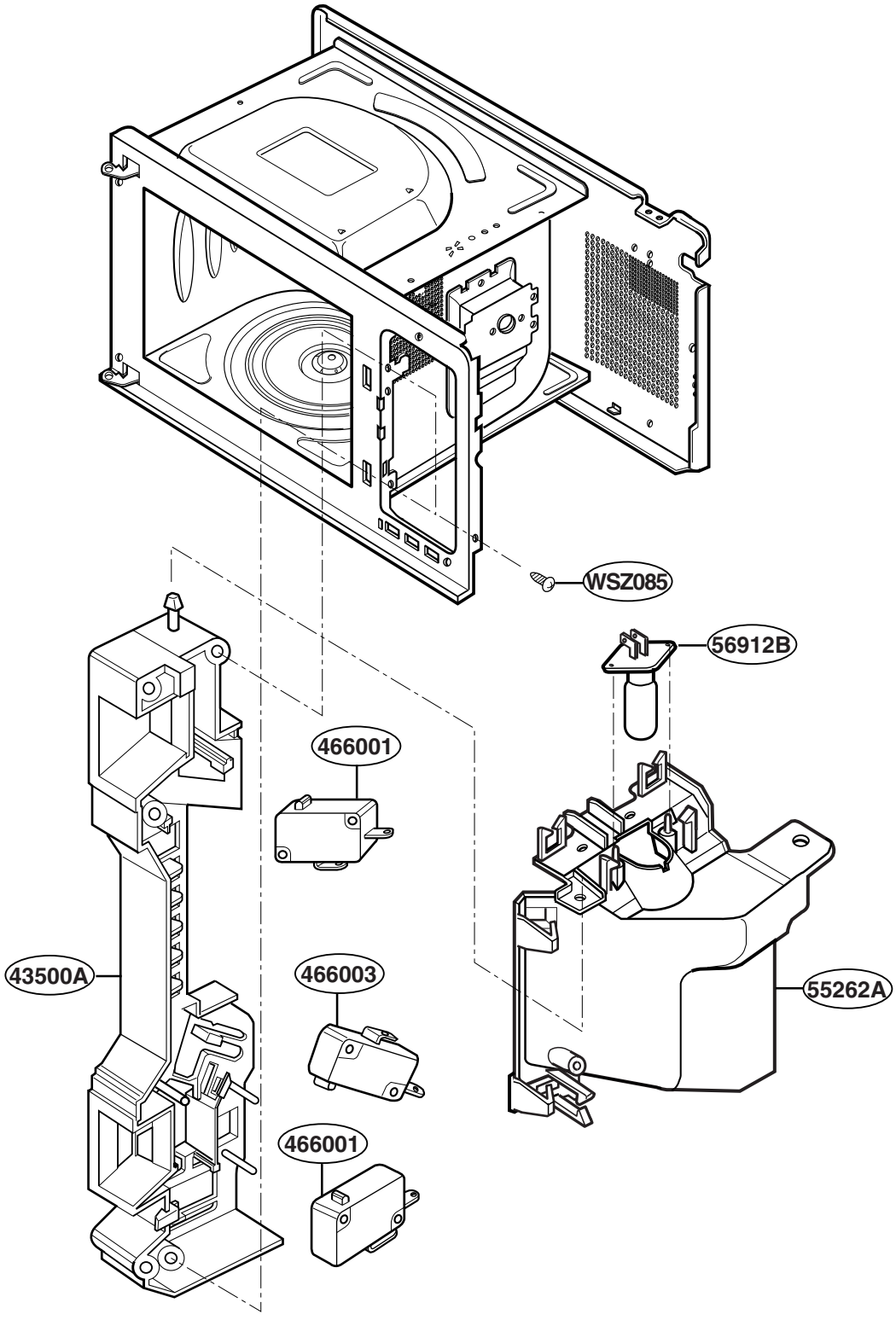
DOOR PARTS


13552A
15006A
13581A
13536A
13213A
14890A
14026A
14970A
WTP004
268711
13551A
For model
LCRM1240ST
13720D
WTT028
13650A
23506A

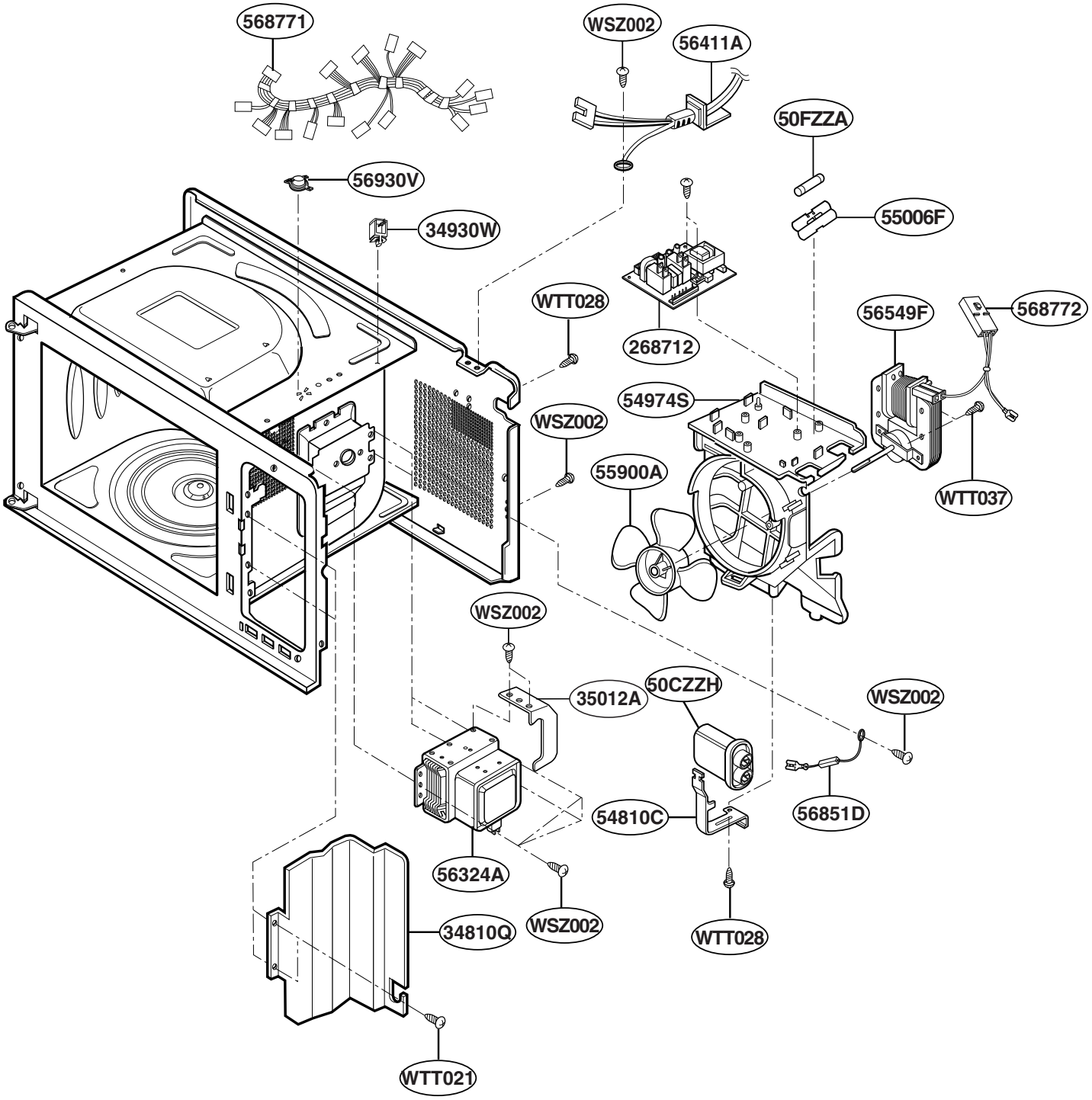
OVEN CAVITY PARTS



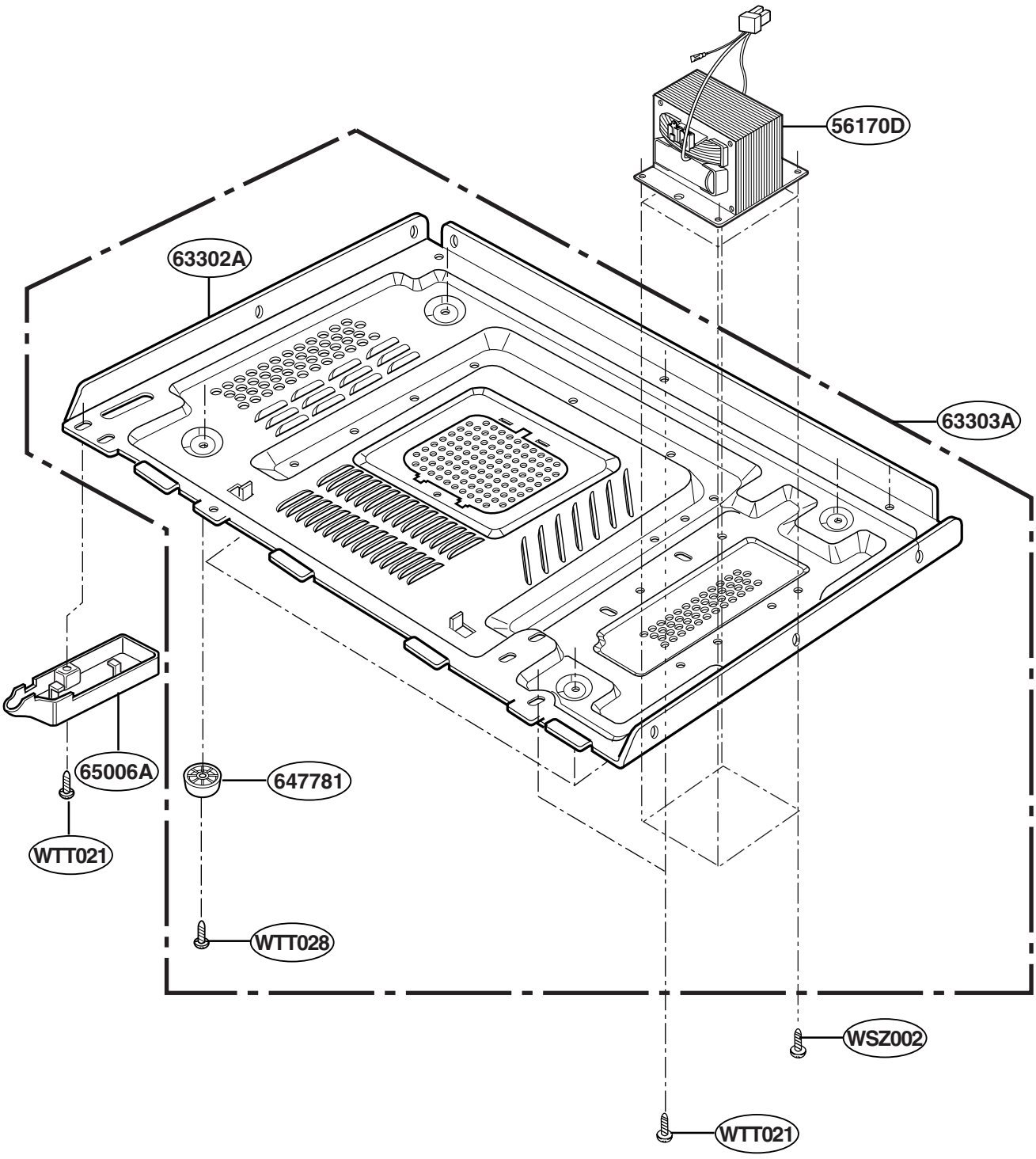
LATCH BOARD PARTS



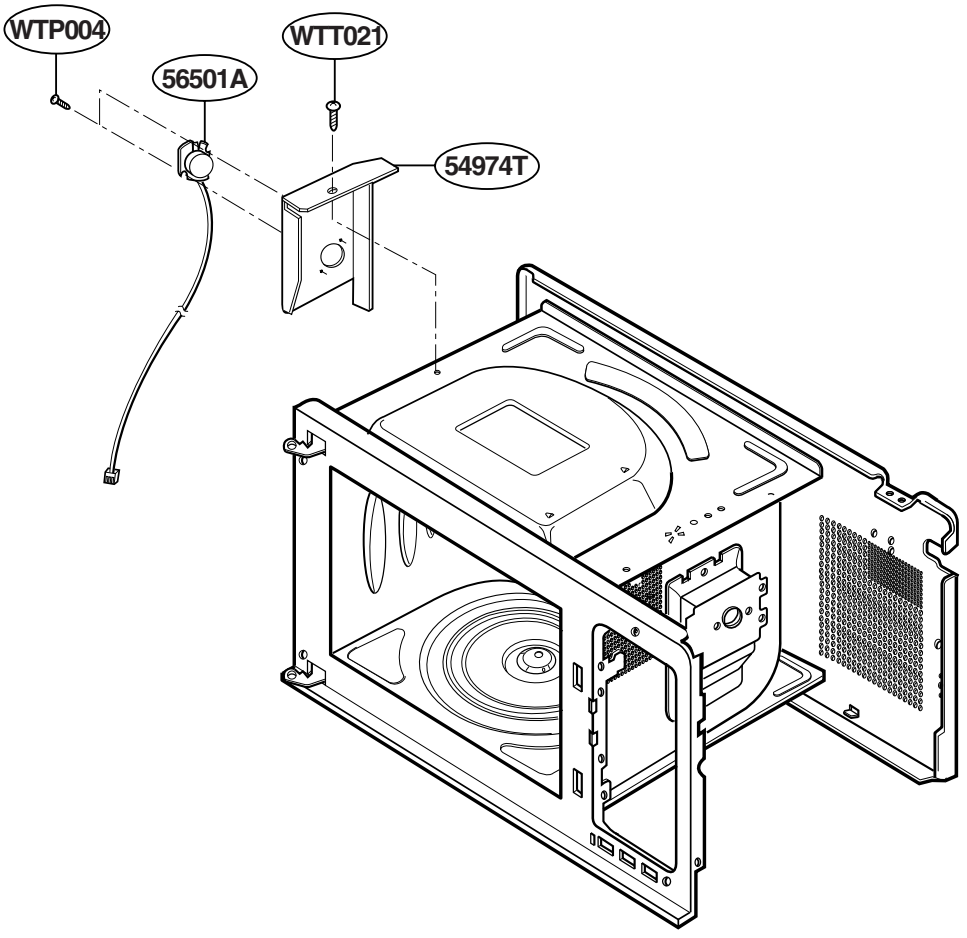
OVEN INTERIOR PARTS



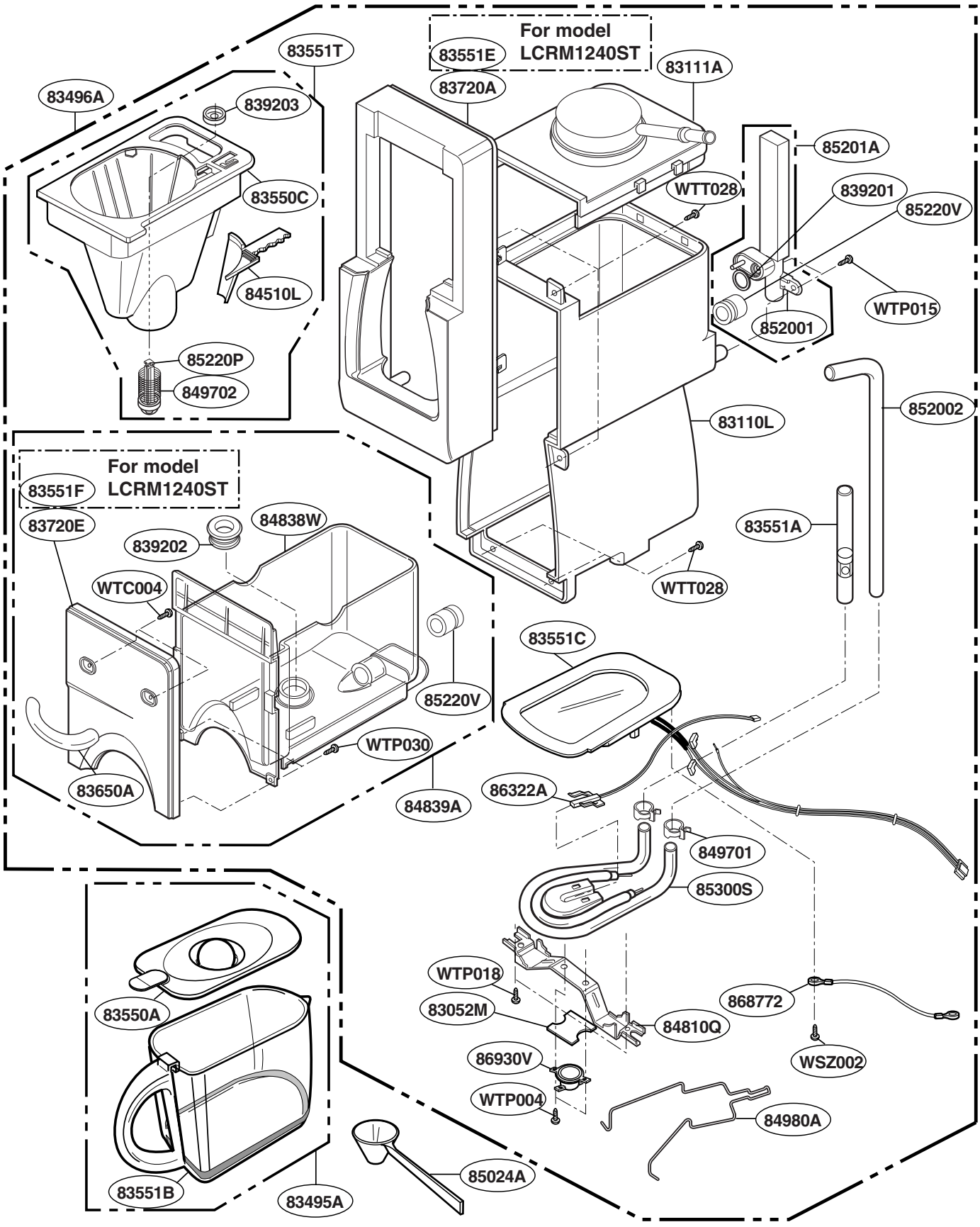
BASE PLATE PARTS



SENSOR PARTS



COFFEE MAKER PARTS




LG