MIDEA SERVICE MANUAL

COMPACT OVEN

September, 2019

This document is published to be used for after sales service only. The content are subject to change without prior notice.
In interest of user safety the appliance should be restored to its original condition and only parts identical to those should be applied.

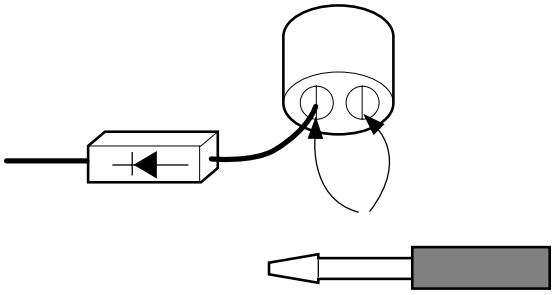
Midea Kitchen Appliance

CONTENTS

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 NOTOperate 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.

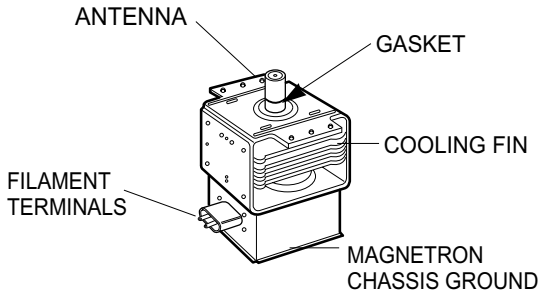


- Remove your watches whenever working close to or replacing the Magnetron.
- NEVERoperate the oven with no load.
- NEVERinjure the door seal and front plate of the oven cavity.
- NEVERput iron tools on the magnetron.
- NEVERput anything into the latch hole and the interlock switches area.

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.)

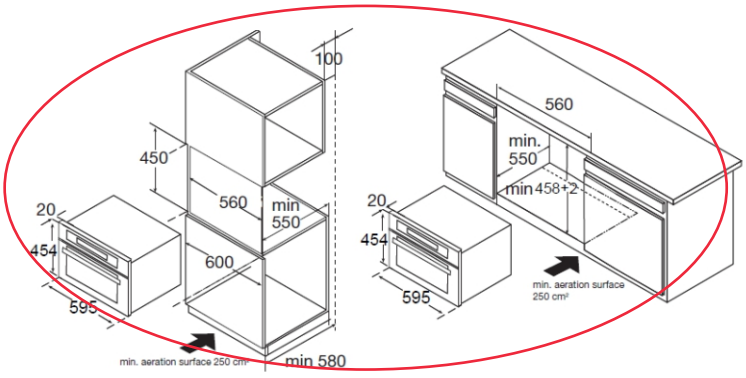
3. Do not block the vent and the air intake openings. Blocking vent or air intake openings can cause damage to the oven and poor cooking results. Make sure the microwave oven legs are in place to ensure proper air flow.

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.



Note: The figure above is shown as a sample, for specific model please refer to the instruction manual.

EARTHING INSTRUCTIONS

This microwave oven is designed to be used in a fully earthed condition.
It is imperative, therefore, to make sure it is properly earthed before servicing

WARNING-
THIS APPLIANCE MUST BE EARTHED

IMPORTANT

The wires in this mains lead are colored in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colors of the wires in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows.

The wire which is colored green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol (⏚) or colored green or green-and-yellow .

The wire which is colored blue must be connected to the terminal in the plug which is marked with the letter N or colored black .

The wire which is colored brown must be connected to the terminal in the plug which is marked with the letter L or colored red .

SERVICE INFORMATION

TOOLS AND MEASURING INSTRUMENTS

NECESSARY TOOLS

Tools normally used for TV servicing are sufficient.
Standard tools are listed below.

- Diagonal pliers
- Long nose pliers
- Phillips screwdriver
- Flat blade screwdriver
- Wrench (size 5mm)
- Nutdriver (size 5mm)
- Adjustable wrench
- Soldering iron
- Solder
- Vinyl insulation tape
- Polishing cloth

NECESSARY MEASURING INSTRUMENTS

- TESTER(VOLTS-DC, AC., Ohmmeter)
- Microwave survey meter
  - Holaday HI-1500
    HI-1501
  - Narda 8100
    8200
- Inch scale
- 600 cc non conductive material beaker (glass or plastic), inside diameter: approx. 8.5 cm($3^1/_2$ in.)
- Cylindrical and made of borosilicate glass vessel.
  max. thickness: 3 mm
  outside diameter: approx. 190mm
  height: approx. 90mm
- Glass thermometer: 100°C or 212°F (1 deg scale)

MICROWAVE LEAKAGE TEST

CAUTIONS

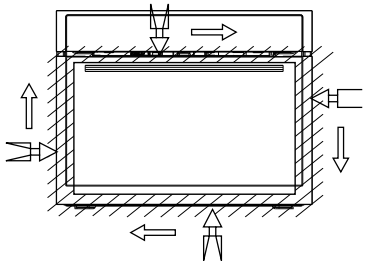
- Be sure to check microwave leakage prior to servicing the oven if the oven is operative prior to servicing.
- The service personnel should inform the manufacture importer, or assembler of any certified oven unit found to have a microwave emission level in excess of 5 mW/cm ^{2} and should repair any 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.
- If the oven operates with the door open, the service personnel should:
  - Tell the user not to operate the oven.
  - Contact the manufacturer.
- The service personnel should check all surface and vent openings for microwave leakage.
- Check for microwave leakage after every servicing. The power density of the microwave radiation leakage emitted by the microwave oven should not exceed 4 mW/cm^2. Always start measuring of an unknown field to assure safety for operating personnel from radiation leakage.

MEASURING MICROWAVE ENERGY LEAKAGE

- Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600 cc, and place the beaker on the center of the turntable.
- Set the energy leakage monitor to 2450 MHz and use it following the manufacturer's recommended test procedure to assure correct result.
- When measuring the leakage, always use the 2-inch (5cm) spacer supplied with the probe.
- Operate the oven at its maximum output.
- Measure the microwave radiation using and electromagnetic radiation monitor by holding the probe perpendicular to the surface being measured

Move probe along shaded area

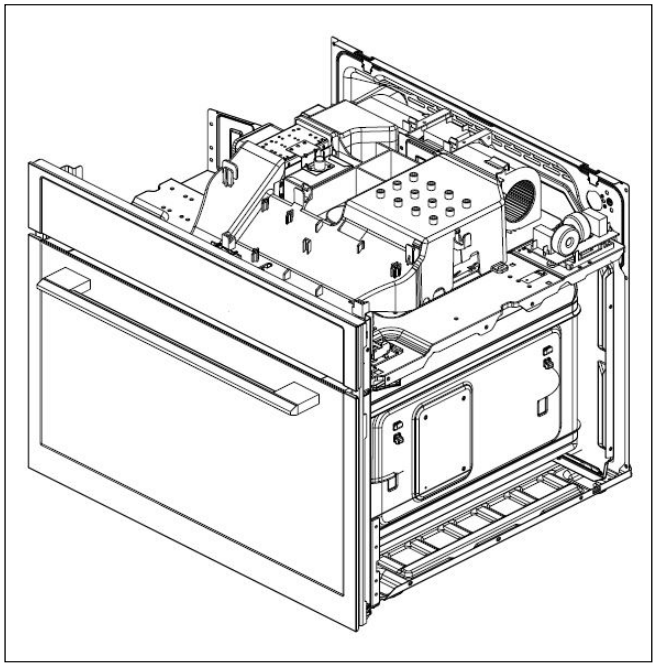
Probe scanning speed
Less than 2.5 cm/sec
(1in/sec)



MEASUREMENT WITH OUTER CASE REMOVED

• 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. (Circled area of below Fig.)
- Around the magnetron
- The waveguide

WARNING : AVOID CONTACTING ANY HIGH VOLTAGE PARTS



MEASUREMENT WITH A FULLY ASSEMBLED OVEN

• After all components, including the outer case, are fully assembled, measure for microwave energy leakage around the door viewing window, the exhaust opening, and air inlet openings.
• Microwave energy leakage must not exceed the values prescribed below.

NOTE: Leakage with the outer case removedless than 5 mW/cm^2.sq. Leakage for a fully assembled oven (Before the latch switch (primary) is interrupted) with the door in a slightly opened position-less than 2 mW/cm^2.sq.

NOTES WHEN MEASURING

• Do not exceed meter full scale deflection.
• The test probe must be removed no faster than 1 inch/sec (2.5 cm/sec) along the shaded area, otherwise a false reading may result.
• 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.
• 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.

RECORD KEEPING AND NOTIFICATION AFTER MEASUREMENT

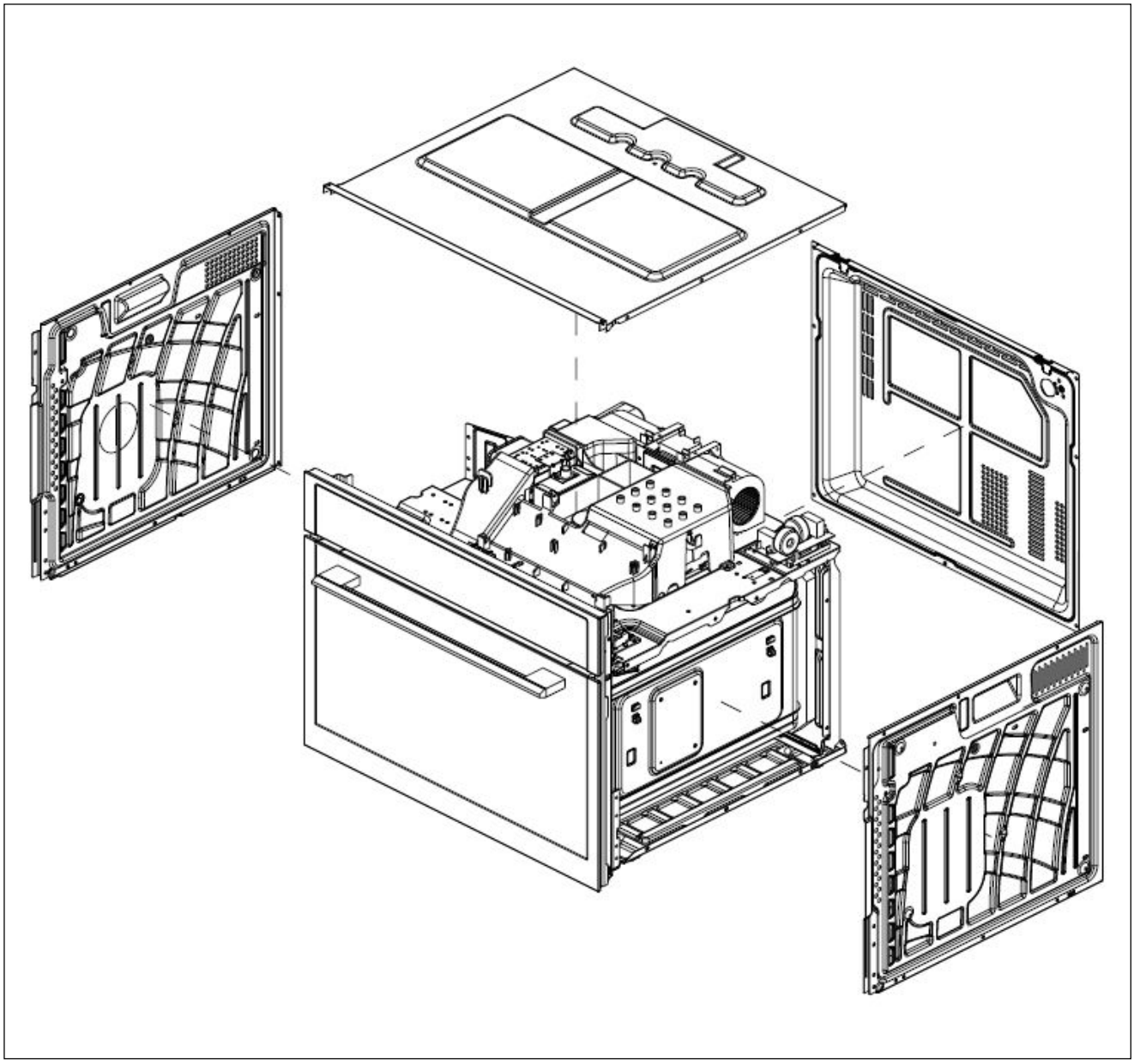
• After adjustment and repair of any microwave energy interruption or microwave energy blocking device, record the measured values for future reference. Also enter the information on the service invoice.
• The microwave energy leakage should not be more than 4 mW/cm^2.sq. after determining that all parts are in good condition, functioning properly and genuine replacement parts which are listed in this manual have been used.
• At least once a year, have the electromagnetic energy leakage monitor checked for calibration by its manufacturer.

CAUTION: DISCHARGE THEHIGH VOLTAGE
CAPACITOR BEFORE SERVICING
(refer to page 2-1)

DISASSEMBLY AND ADJUSTMENT

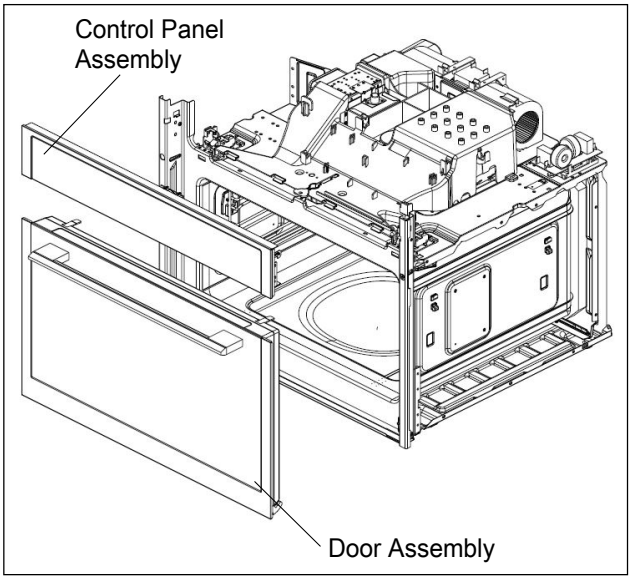
1. OUTER COVER REMOVAL

1) Loose screws on top and take out the top outer cover.
2) Turn to the backside, loose screws and take out the back one.
3) Loose screws on both sides, then take out the left and right one in turn.



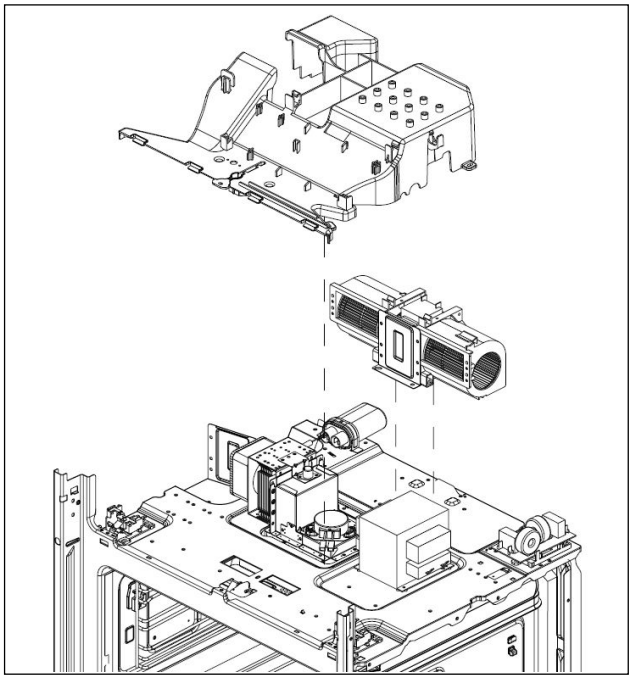
2. DOOR ASSEMBLY AND CONTROL PANEL ASSEMBLY

1) Open the door to 90° , lift up the hinge lock and put it down.
2) Close the door to 30° , lift up the whole door assembly slightly and take it out.
3) Disconnect the wires connected to the PCB.
4) Loose the screws fixed on the bracket.
5) Take out the control panel assembly.



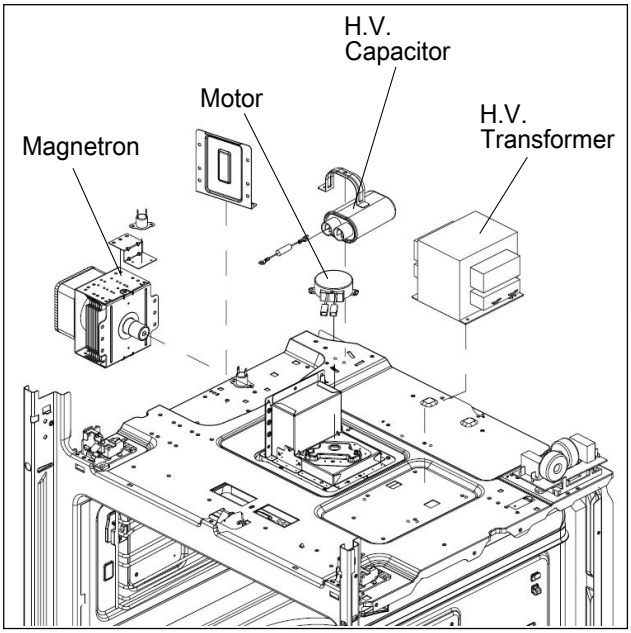
3. FAN ASSEMBLY REMOVAL

1) Loose screws and take out the wind guide cover.
2) Then remove the fan.

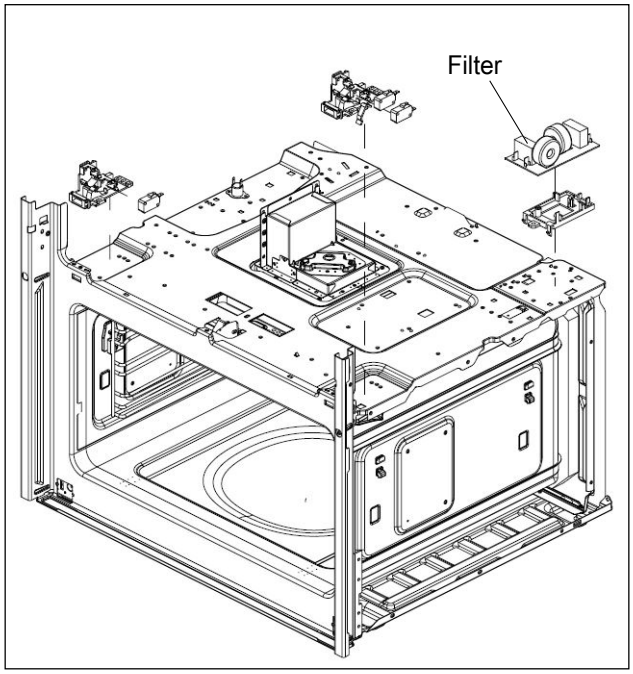


4. ELECTRICAL DEVICE REMOVAL

1) Loose screws and remove the H.V. transformer.
2) Then the magnetron. Also take out the thermostat and its bracket on top.
3) Remove the metal bracket next to the magnetron.
4) Release the capacitor bracket. Take out the capacitor and remove the H.V. diode.
5) Loose screws and remove the motor.

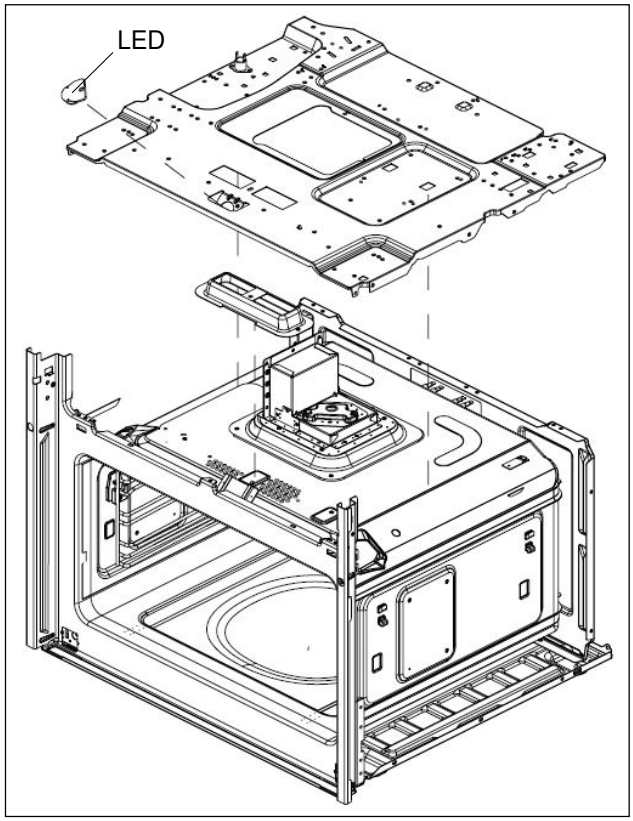


6) Loose screw fixed on the filter bracket. Then take out the filter.
7) Remove the interlock assembly on both sides.



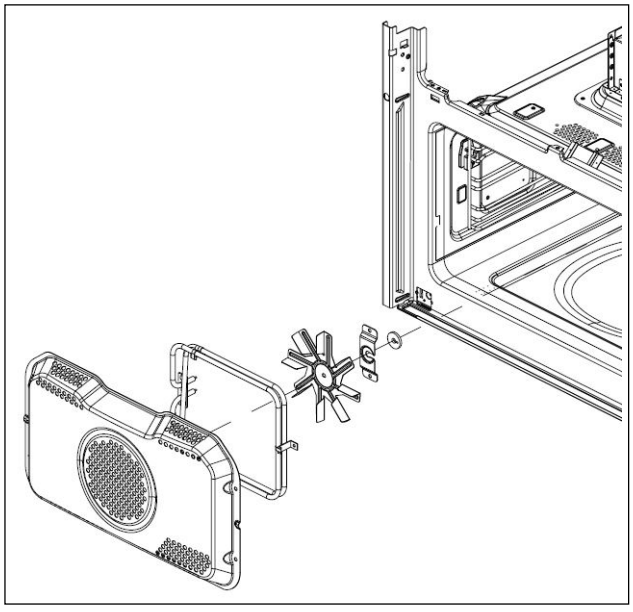
5. TOP INSULATED PLATE REMOVAL

1) Remove the LED bulb first.
2) Then loose screws and take out the top insulated plate.
3) Take out the metal cover.



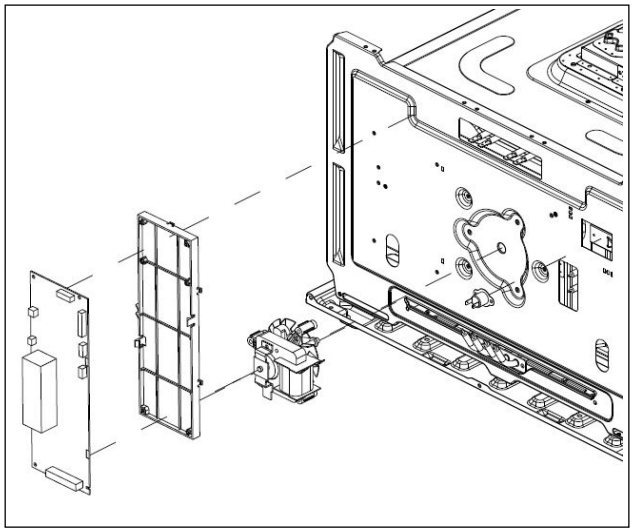
6. CONVECTION ASSEMBLY REMOVAL

1) Loose screws and take out the heater cover.
2) Then take out the heater inside.
3) Loose the nut and take out the convection fan.



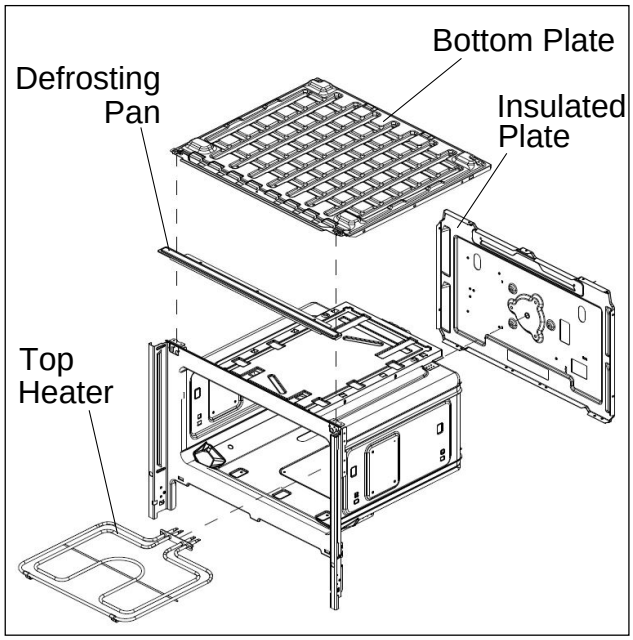
7. POWER BOARD REMOVAL

1) Turn around the whole unit.
2) Loose screws and take out the convection motor.
3) Disconnect the wires leading to the power board.
4) Loose screws and remove the power board and its bracket.



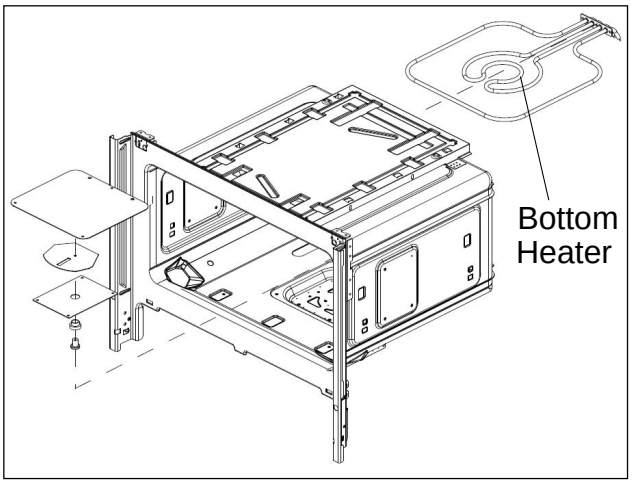
8. BOTTOM PLATE REMOVAL

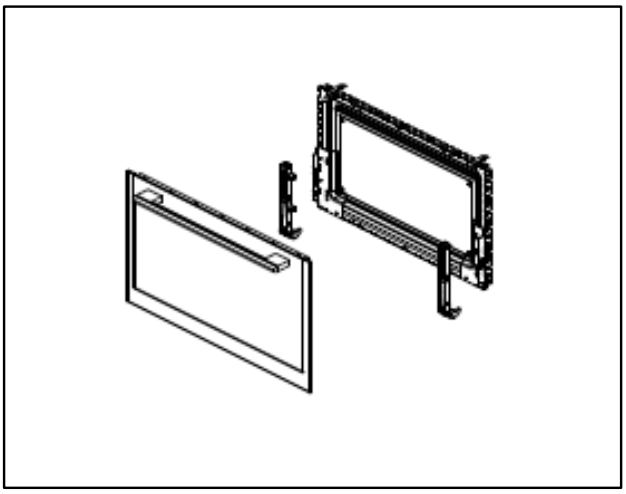
1) Take out the hanging brackets on both sides
2) Turn over the whole unit.
3) Loose screws fixed between bottom plate and backside insulated plate.
4) Remove the insulated plate.
5) Loose the other screws on bottom plate. Then take it out.
6) Also take out the defrosting pan below.

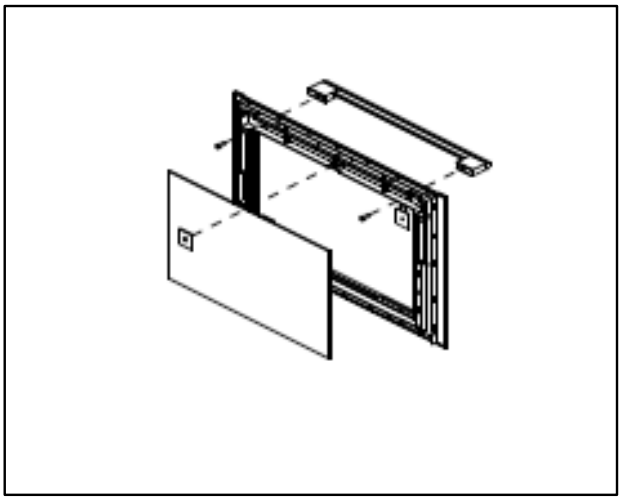


9. HEATERS AND STIRRIER ASSEMBLY REMOVAL

1) Loose screws inside the cavity and nuts on backside. Then take out the top heater.
2) The bottom heater is the next one.
3) Loose screws fixed on the splash cover and remove it.
4) Take out the stirrer assembly and disassemble it.

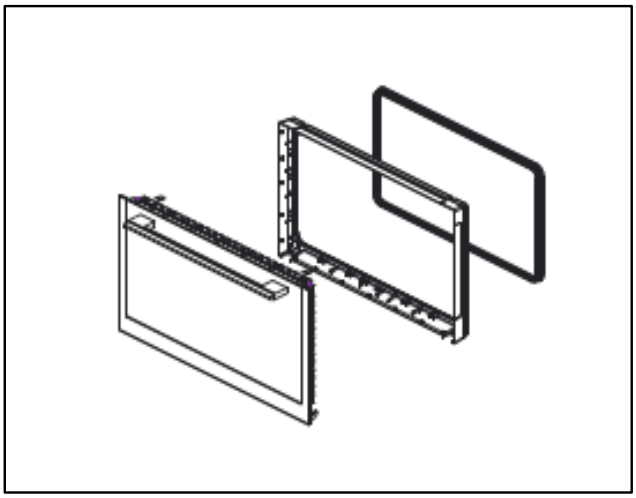






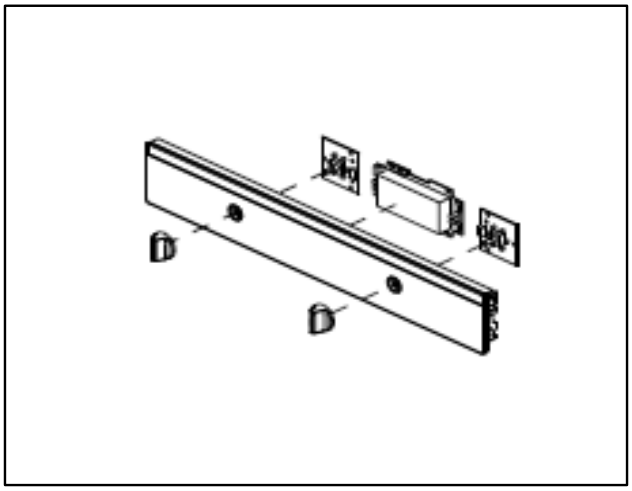
10. DOOR ASSEMBLY

1) Remove the door gasket and seal ring
2) Remove the door fram and remove the hinge
3) Take out the insulation glass,loose screws and remove the handle assembly



11. CONTROL PANEL ASSEMBLY

1) Remove the knobs
2) Disconnect the wires and remove the PCB



INTERLOCK CONTINUITY TEST

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

TYPE NO. KW3A FOR SWITCHS

1 . 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.

2 . SECONDARY INTERLOCK SWITCH TEST

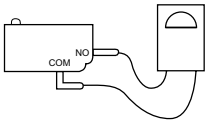
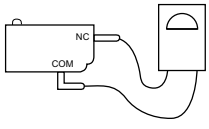
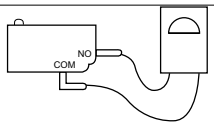
Disconnect the wire lead from the secondary switch.

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.

3. 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.

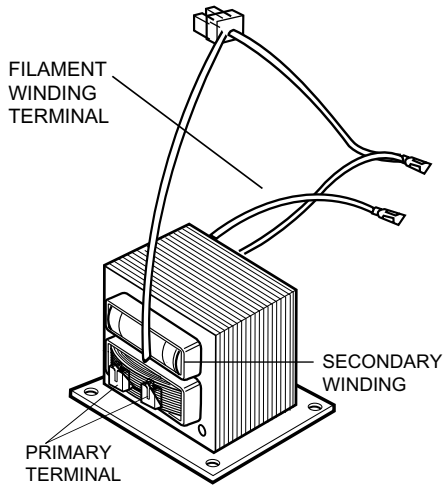
NOTE: After repairing the door or the interlock system, it is necessary to do this continuity test before operating the oven.

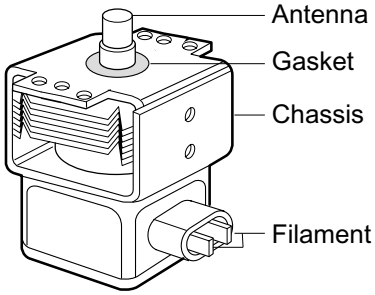
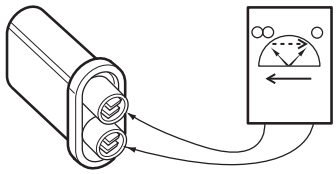
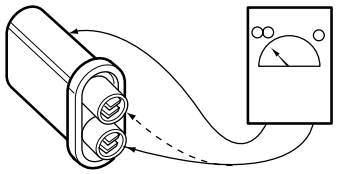
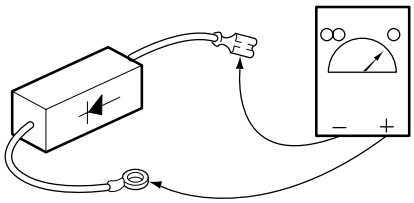
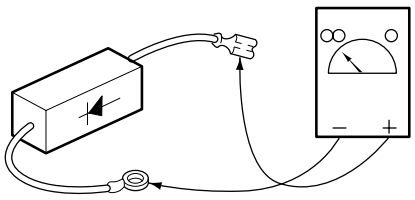
COMPONENTS	TEST PROCEDURE		RESULTS	
SWITCHES (Wire leads removed)	Check for continuity of the switch with an Ohm-meter		Door open	Door closed
	Primary Switch Type No.KW3A			
	Monitor Switch Type No.KW3A			
	Secondary Switch Type No.KW3A			
	NOTE : After checking for the continuity of switches, make sure that are correctly connected.			

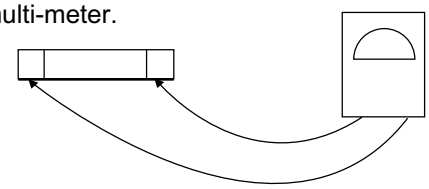
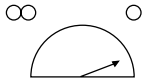
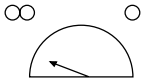
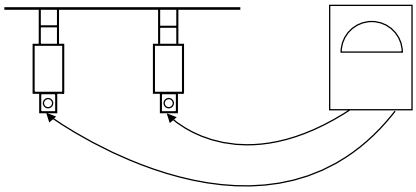
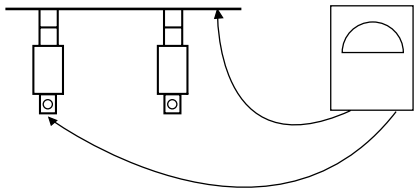
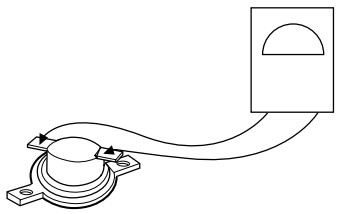
COMPONENT TEST PROCEDURE

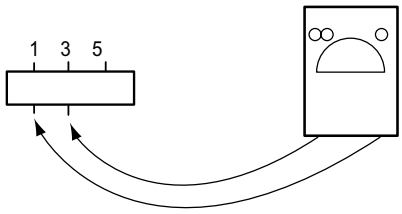
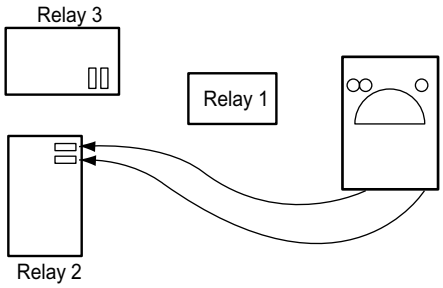
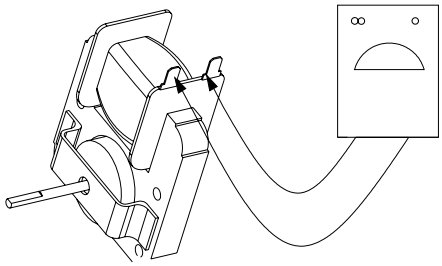
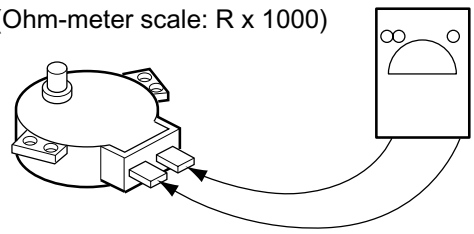
CAUTIONS

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. (SEE PAGE 2-1)
2. ALL OPERATIONAL CHECKS WITH MICROWAVE ENERGY MUST BE DONE WITH A LOAD (1 LITER OF WATER IN CONTAINER) IN THE OVEN.

COMPONENTS	TEST PROCEDURE	RESULTS
HIGH VOLTAGE TRANSFORMER (Wire leads removed)	 1. Measure the resistance. (Ohm-meter scale: Rx1) • Primary winding • Secondary winding • Filament winding 2. Measure the resistance. (Ohm-meter scale: Rx1000) • Primary winding to ground • Filament winding to ground	 Approx.: 1.4 ohm Approx.: 90 ohm Less than: 1 ohm Normal: Infinite Normal: Infinite
MAGNETRON (Wire leads removed)	1. Measure the resistance. (Ohm-meter scale: Rx1) • Filament terminal 2. Measure the resistance. (Ohm-meter scale: Rx1000) • 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	Measure the resistance. (Ohm-meter scale: Rx1000) • Terminal to terminal. 	Normal: Momentarily indicates several ohms, and then gradually returns to 10M ohms.
	Measure the resistance. (Ohm-meter scale: Rx1000) • Terminal to case. 	Normal: ∞
HIGH VOLTAGE DIODE *NOTE : Some inexpensive meters may indicate infinite resistance in both direction.	Measure the continuity (Forward). (Ohm-meter scale: Rx10000) 	Normal: Continuity. Abnormal: ∞ *
	Measure the continuity (Reverse). (Ohm-meter scale: Rx10000) 	Normal: ∞ Abnormal: Continuity.

<table>
<tr><th>COMPONENTS</th><th>TEST PROCEDURE</th><th colspan="2">RESULTS</th></tr>
<tr><td rowspan="2">FUSE</td><td rowspan="2">Check for continuity of the fuse with an multi-meter.
  </td><td>Normal</td><td>Abnormal</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="3">NOTE: If the fuse is blown, check the primary, the secondary, and the monitor switches, H.V.D. and H.V.C. before replacing the fuse.
If the fuse is blown by improper switch operation replace the defective switch and the fuse at the same time. Replace just the fuse if the switches operate normally.</td></tr>
<tr><td rowspan="3">HEATER ELEMENT
(Wire leads removed.)</td><td>Measure the resistance.
(Multi-meter scale: Rx1)
  </td><td colspan="2">Normal:
*Grill heater
Approx. 38 ohm
(at 20 ~ 30°C)</td></tr>
<tr><td>Measure the resistance with 500V-100M ohm insulation resistance meter.
  </td><td colspan="2">Normal: more than 0.5 Mohm</td></tr>
<tr><td colspan="3">NOTE: Make sure heater is fully cooled when tested.</td></tr>
<tr><td rowspan="2">THERMAL CUT-OUT</td><td rowspan="2">  </td><td>Below specified temperature</td><td>Above specified temperature</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

<table>
<tr><th>COMPONENTS</th><th>TEST PROCEDURE</th><th>RESULTS</th></tr>
<tr><td>L.V.Transformer of P.C.B
(Refer to schemetic diagram)</td><td>Check for P.C.B. connector.
*Disconnect the 3 pin
connector from P.C.B.
 
</td><td>Normal | Abnormal
   </td></tr>
<tr><td>RELAY 2, RELAY 3
OF P.C.B.
(Wire leads removed.)
Note: Relay
Relay 1: Fan motor
Turntable motor
Oven lamp
Relay 2: Microwave
Relay 3: Grill</td><td> 
</td><td>Cooking Start | OFF
   </td></tr>
<tr><td>FAN MOTOR
(Wire leads removed)</td><td>Measure the resistance.
(Ohm-meter scale: R x 1)
  </td><td>Normal: 100~500 Ω
Abnormal: ∞ or several Ω</td></tr>
<tr><td>TURNTABLE
MOTOR
(Wire leads removed)</td><td>Measure the resistance.
(Ohm-meter scale: R x 1000)
  </td><td>Normal: Approx.100~200KΩ
Abnormal: ∞ or several Ω</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>

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 MICROWAVE OVEN. THIS CAN ELIMINATE AN UNNECESSARY SERVICE CALL.

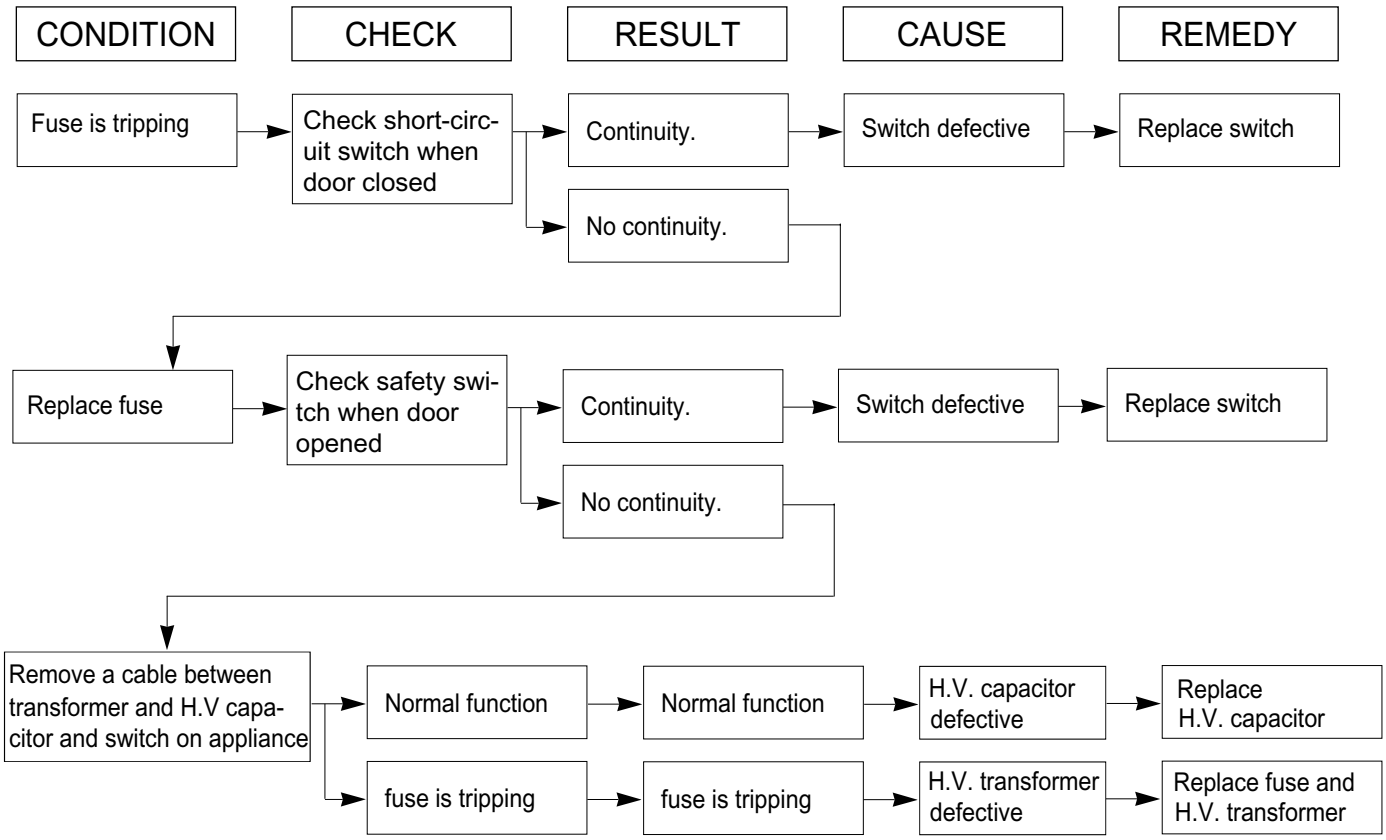
CAUTIONS

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge the high voltage capacitor. (See page 1)
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 circuitry on the digital programmer circuit since static electric discharge may damage this control panel.
   Always touch yourself ground while working on this panel to discharge any static charge built up in your body.

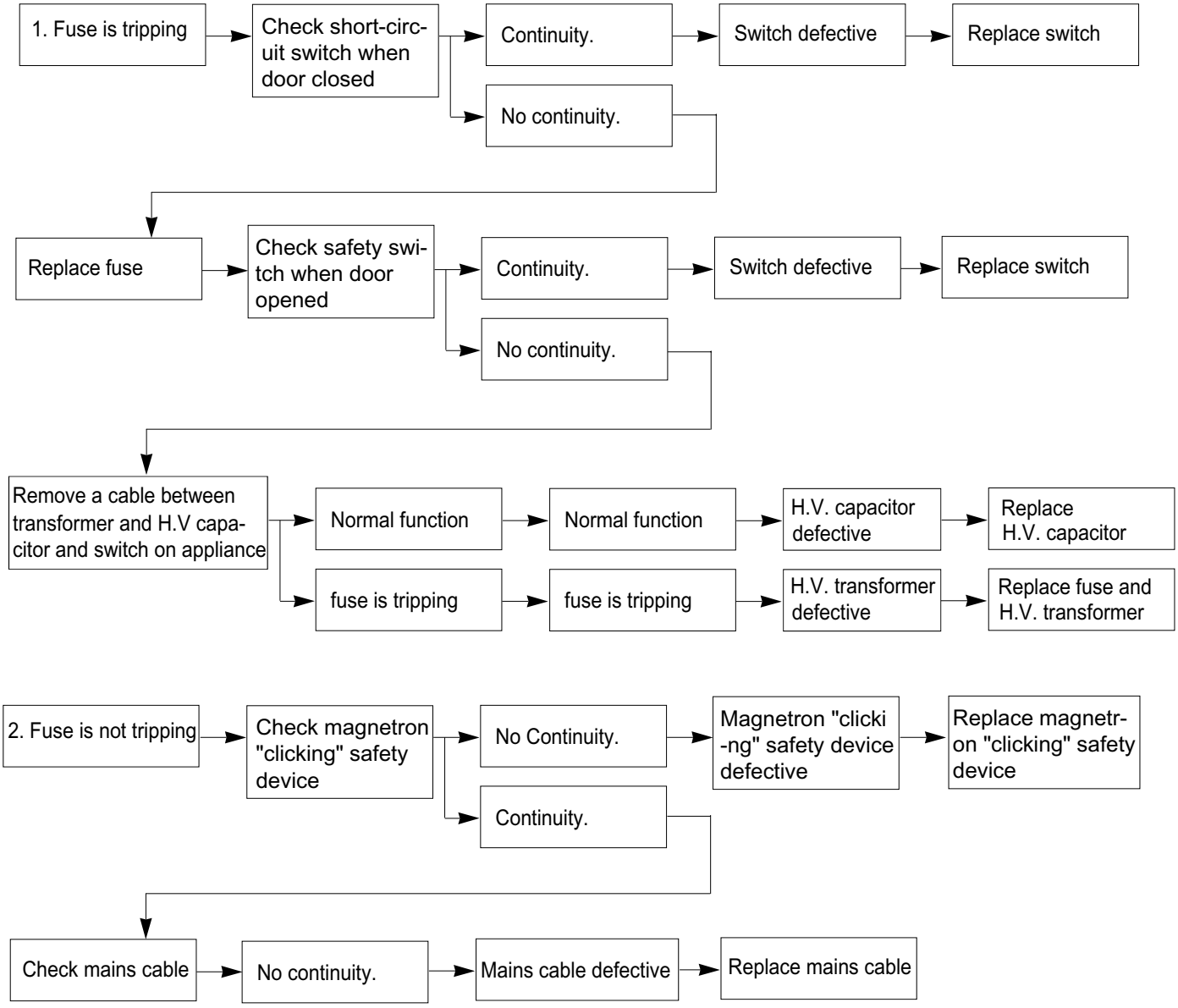
CONDITION	CAUSE	REMEDY
Built-in Compact oven does not work.	Inserting many plug into one plug outlet and using them at the same time (causes overloading).	Avoid using other electrical appliances when you use the microwave oven.
	Microwave oven plug is not inserted tightly.	Insert microwave oven plug securely.
Output power is too low.	Low AC input voltage.	Use the microwave oven at adequate line voltage.
	Food temperature is too low.	This may not be a defect. It is possible that the food should be cooked for a longer time period.
Sparks occurring.	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 cooking.	Inconsistent intensity of microwave by their characteristics.	1. Wrap the thinner part with aluminum foil. 2. Use plastic wrap or lid. 3. Stir once or twice while cooking soup, cocoa or milk, etc.
Turntable drags or makes noise.	Excessive weight on tray or improperly balanced.	Distribute food evenly. Cook smaller portions and,or use lighter weight cookware.

(TROUBLE 1) Fuse is tripping.

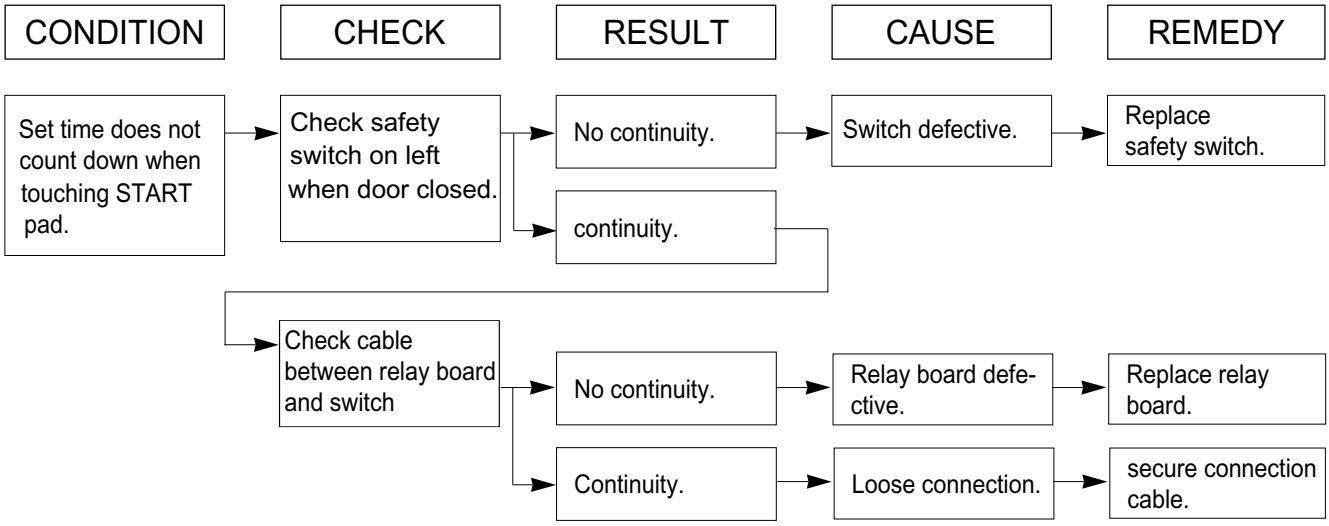
The appliance does not function at all; there are no symbols/numerals on the display and no input are accepted.



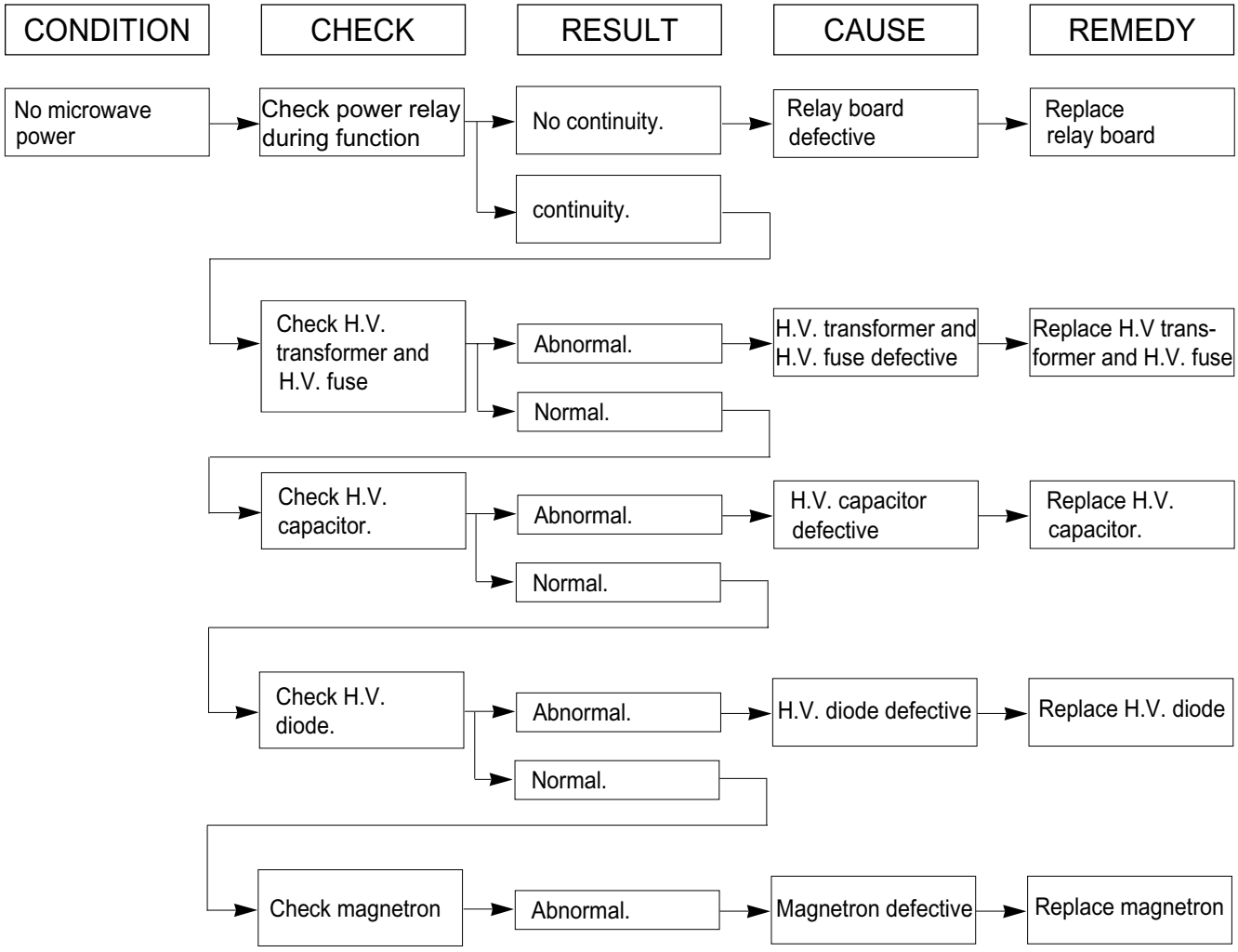
(TROUBLE 2) Oven does not operate at all



(TROUBLE 3) Oven does not start.



(TROUBLE 4) No microwave power.



ERROR CODE

Error Code	Description	Condition
E-01	Temperature sensor open-circuit protection	Temperature sensor is open-circuit, the unit stop working and buzzer once, the unit reset to stand by condition and the display window shows “E-01”;
E-04	Temperature sensor short-circuit protection	Temperature sensor is short-circuit, the unit stop working and buzzer once, the unit reset to stand by condition and the display window shows “E-04”;
E-11	Button abnormal protection	Button is pressed over 60 seconds, display window shows “E-11”, release the button, the unit reset to stand by condition;
E-17	Pre-heating malfunction	Pre-heat for 15 minutes and has not reach the setting temperature, display window shows “E-17”, the unit stop working and buzzer once, 3 seconds later, the unit reset to stand by condition;

ATTACHED FILES LIST

1. Exploded View **2. Spare Parts List** **3. Wiring Diagram**

*** Note: The manual may update without prior notice. Please download the latest version on website: https://tsp.midea.com.**