

**DAEWOO**

# Service Manual

## Pizza Baker Built-in Microwaves Combo

**Model: KOD-135P9A**

**✓ Caution**

: In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center (<http://svc.dwe.co.kr>).

**DAEWOO ELECTRONICS CORP.**

<http://svc.dwe.co.kr>

Sep. 2004

# **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 if 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 power to the microwave oven 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.

## **TABLE OF CONTENTS**

<b>SAFETY AND PRECAUTIONS .....</b>	<b>3</b>
FOR SAFE OPERATION .....	3
FOR SAFE SERVICE PROCEDURES .....	3
<b>SPECIFICATIONS .....</b>	<b>4</b>
<b>EXTERNAL VIEW .....</b>	<b>4</b>
OUTER DIMENSION.....	4
FEATURE DIAGRAM.....	5
CONTROL PANEL .....	6
<b>INSTALLATION .....</b>	<b>7</b>
<b>OPERATION PROCEDURE(MICROWAVE OVEN).....</b>	<b>8</b>
<b>OPERATION PROCEDURE(PIZZA OVEN).....</b>	<b>9</b>
<b>IMPORTANT .....</b>	<b>9</b>
<b>CLEANING THE PIZZA OVEN.....</b>	<b>9</b>
<b>HANDLE CONTROLS .....</b>	<b>10</b>
<b>ABNORMAL MESSAGE .....</b>	<b>10</b>
<b>DISASSEMBLY AND ASSMBLY .....</b>	<b>11</b>
<b>INTERLOCK MECHANISM AND ADJUSTMENT .....</b>	<b>18</b>
<b>TROUBLE SHOOTING GUIDE .....</b>	<b>19</b>
<b>MESUREMENT AND TEST .....</b>	<b>24</b>
MEASUREMENT OF THE MICROWAVE POWER OUTPUT .....	24
MICROWAVE RADIATION TEST .....	25
COMPONENT TEST PROCEDURE .....	26
<b>WIRING DIAGRAM.....</b>	<b>27</b>
<b>PRINTED CIRCUIT BOARD .....</b>	<b>28</b>
CIRCUIT CHECK PROCEDURE .....	28
PCB CIRCUIT DIAGRAM.....	31
P.C.B. LOCATION NO .....	32
<b>EXPLODED VIEW AND PARTS LIST.....</b>	<b>33</b>
DOOR ASSEMBLY .....	33
CONTROL PANEL ASSEMBLY.....	33
TOTAL ASSEMBLY.....	33
PIZZAOVEN ASSEMBLY .....	35

# SAFETY AND PRECAUTIONS

## CAUTION

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.

## 1. FOR SAFE OPERATION

Damage that allows the microwave energy (that cooks or heats the food) to escape will result in poor cooking and may cause serious bodily injury to the operator.

IF ANY OF THE FOLLOWING CONDITIONS EXIST, OPERATOR MUST NOT USE THE APPLIANCE.

(Only a trained service personnel should make repairs.)

- (1) A broken door hinge.
- (2) A broken door viewing screen.
- (3) A broken front panel, oven cavity.
- (4) A loosened door lock.
- (5) A broken door lock.

The door gasket plate and oven cavity surface should be kept clean.

No grease, soil or spatter should be allowed to build up on these surfaces or inside the oven.

DO NOT ATTEMPT TO OPERATE THIS APPLIANCE WITH THE DOOR OPEN.

The microwave oven has concealed switches to make sure the power is turned off when the door is opened.

Do not attempt to defeat them.

DO NOT ATTEMPT TO SERVICE THIS APPLIANCE UNTIL YOU HAVE READ THIS SERVICE MANUAL.

## 2. FOR SAFE SERVICE PROCEDURES

1. If the oven is operative prior to servicing, a microwave emission check should be performed prior to servicing the oven.
2. If any certified oven unit is found to have excessive emission level  $5\text{mw}/\text{cm}^2$ , the service person should:
  - (a) inform the manufacturer, importer or assembler,
  - (b) repair the unit at no cost to the owner,
  - (c) attempt to ascertain the cause of the excessive leakage,
  - (d) tell the owner of the unit not to use the unit until the oven has been brought into compliance.
3. If the oven operates with the door open, the service person should tell the user not to operate the oven and contact the manufacturer and CDRH immediately.

## CAUTION

### 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 CONNECTED. ALL INPUT AND OUTPUT MICROWAVE CONNECTIONS, WAVEGUIDE FLANGES AND GASKETS 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.

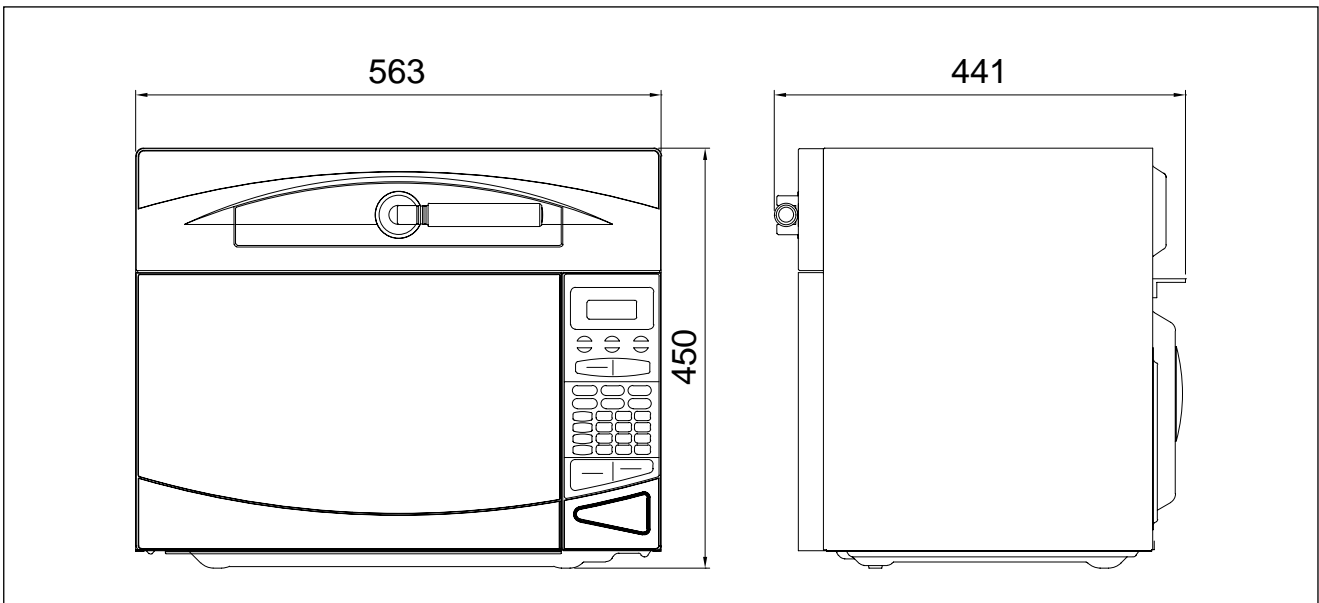
# SPECIFICATIONS

POWER SUPPLY		120V AC 60 Hz SINGLE PHASE WITH EARTHING
MICROWAVE OVEN	POWER CONSUMPTION	1.4 KW
	OUTPUT POWER	1000 W
	FREQUENCY	2450 MHz
	TIMER	59 min. 99 sec.
	POWER LEVELS	10 LEVELS
	CAVITY DIMENSIONS	380 X 246 X 386 mm (14.9 X 9.7 X 15.2 inch)
	CAVITY VOLUME	1.3 Cu.ft
PIZZA OVEN	POWER CONSUMPTION	1.45 KW
OUTSIDE DIMENSIONS (WXHXD)		563 X 450 X 441 mm (22.2 X 17.7 X 17.4 inch)
NET WEIGHT		APPROX. 19.8 Kg (43.7 lbs)

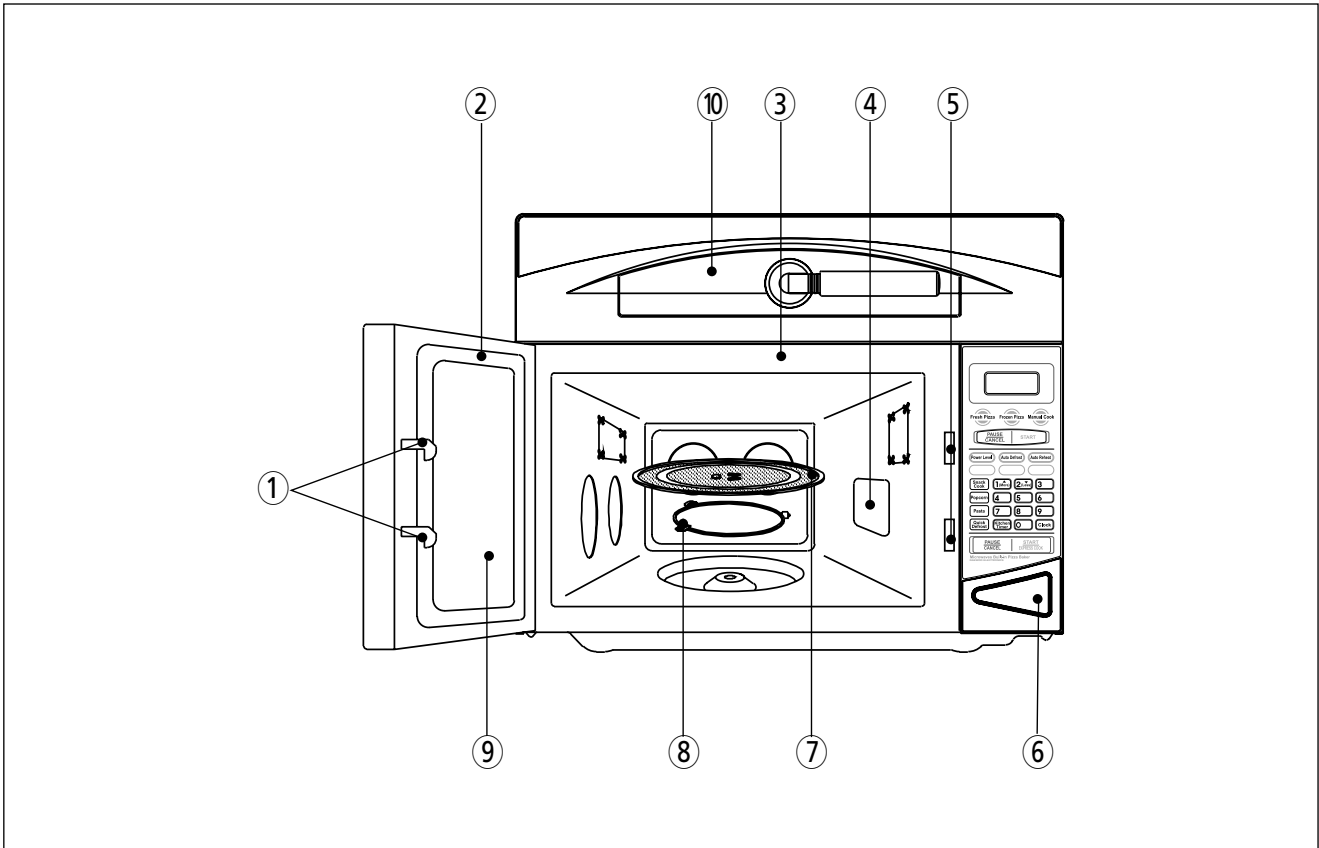
\* Specifications are subject to change without notice.

# EXTERNAL VIEW

## 1. OUTER DIMENSION



## 2. FEATURE DIAGRAM



### 1. Door latch

When the door is closed it will automatically shut off. If the door is opened while the oven is operating, the magnetron will automatically shut off.

### 2. Door seal

The door seal maintains the microwave within the oven cavity and prevents microwave leakage.

### 3. Oven cavity

### 4. Spatter shield

Protects the microwave outlet from splashes of cooking foods.

### 5. Safety interlock system

Prevents the oven from operating while the door is opened.

The oven will only operate with the door fully closed. When the door is open, the oven turns off and will only start again after the door is closed.

### 6. Door release button

Pushing this button stops oven operation and opens the door.

### 7. Glass cooking tray

Made of special heat resistant glass. The tray must always be in proper position before operating.

Do not cook food directly on the tray.

### 8. Roller guide

Supports the glass cooking tray.

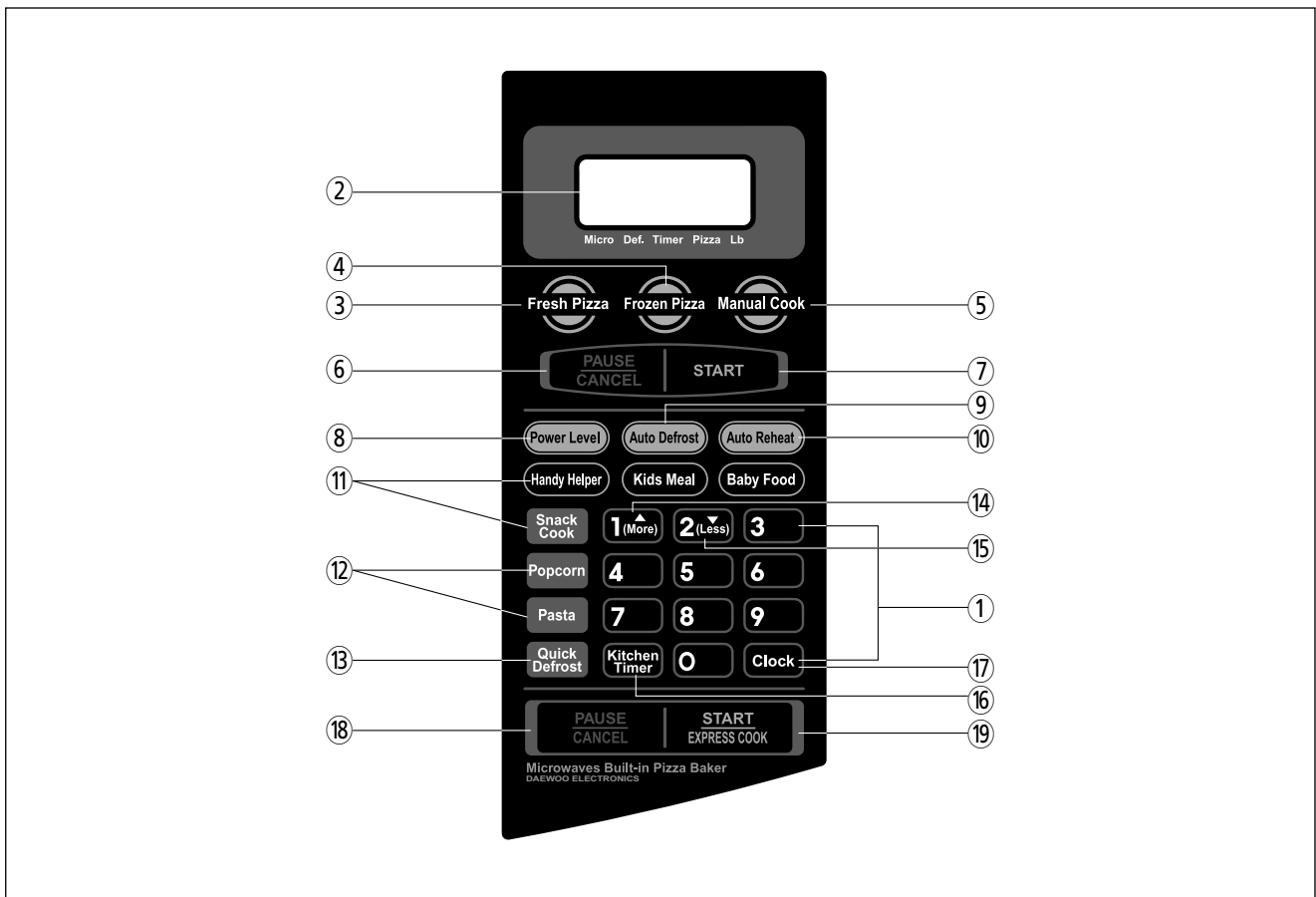
### 9. Door screen

Allows viewing of food.

The screen is designed so that light can pass through, but not the microwaves.

### 10. Pizza tray

### 3. CONTROL PANEL



1. **Time set pad** - Used to set the cooking time and the present time.
2. **Display** - Cooking time, power level, indicators and present time are displayed.
3. **Fresh Pizza** - Used to cook Fresh Pizza.
4. **Frozen Pizza** - Used to cook Frozen Pizza.
5. **Manual Cook** - Used to cook Manual Cook.
6. **Pizza Pause/Cancel** - Used to stop Pizza oven operation or to delete the cooking data.
7. **Pizza Start** - Used to start the Pizza Oven.
8. **Power Level** - Used to set power level.
9. **Auto Defrost** - Used to defrost foods.(for weight or time)
10. **Auto Reheat** - Used to reheat foods.
11. **Handy Helper, Kids Meal, Baby Food, Snack Cook** - Used to select type of dish to be reheated.
12. **One touch Cook** - Used to cook or reheat specific quantities of food.
13. **Quick Defrost** - Used to defrost foods.(for weight only)
14. **More** - Used to add time to cooking.
15. **Less** - Used to remove time from cooking.
16. **Kitchen Timer** - Used as a minute timer.
17. **Clock** - Used to set clock.
18. **Pause/Cancel** - Used to stop the microwave oven operation or to delete the cooking data.
19. **Start/Express cook** - Used to start the Microwave oven and also used to set a reheat time.

# INSTALLATION

---

## 1. Steady, flat location

This microwave oven should be set on a steady, flat surface.  
This microwave oven is designed for counter top use only.

## 2. Leave space behind and side

All air vents should be kept a clearance. If all vents are covered during operation, the oven may overheat and, eventually, cause oven failure. Position the oven as far from them as possible.

## 3. Away from Radio and TV sets

Poor television reception and radio interference may result if the oven is located close to a TV, radio, antenna, or feeder and so on.

## 4. Away from heating appliances and water taps

Keep the oven away from hot air, steam or splash when choosing a place to position it, or the insulation might be adversely affected and breakdowns occur.

## 5. Power supply

- Check your local power source.
- This Pizza baker built-in microwaves combo requires a current of approximately 13 amperes, 120Volts, 60Hz grounded outlet.  
Power supply cord is about 1.0 meters long.
- The voltage used must be the same as specified on this oven. Using a higher voltage may result in a fire or other accident causing oven damage. Using low voltage will cause slow cooking. We are not responsible for damage resulting from use of this oven with a voltage of ampere fuse other than those specified.
- This appliance is supplied with cable of special type, which, if damaged, must be repaired with cable of same type. Such a cable can be purchased from DAEWOO and must be installed by a Qualified Person.

## 6. Examine the oven after unpacking for any damage such as:

A misaligned door, broken door or a dent in cavity.  
If any of the above are visible, DO NOT INSTALL, and notify dealer immediately.

## 7. Do not operate the oven if it is colder than room temperature

(This may occur during delivery in cold weather.) Allow oven to become room temperature before operating.

## GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of an electrical short circuit, grounding reduces the risk of the electric shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a grounding wire with a grounding plug. 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. Consult a qualified electrician or serviceman if the grounding instructions are not completely understood, or if doubt exists as to whether the appliance is properly grounded, and either: If it is necessary to use an extension cord, use only a 3-wire extension cord that has a 3-blade grounding plug, and a 3-slot receptacle that will accept the plug on the appliance. The marked rating of the extension cord should be equal to or greater than the electrical rating of the appliance, or Do not use an extension cord.

# OPERATION PROCEDURE(MICROWAVE OVEN)

This section includes useful information about microwave oven operation.

1. Plug power supply cord into a standard 3- pronged 20Amp, 120V AC 60Hz power outlet.
2. After placing the food in a suitable container, open the oven door and put it on the glass tray.  
The glass tray and roller guide must always be in place during cooking.
3. Shut the door. Make sure that it is firmly closed.

- 1 The oven light is on when the microwave oven is operating.
- 2 The oven door can be opened at any time during operation by pressing the door release button on the control panel. The oven will automatically shut off.
- 3 Each time a pad is touched, a BEEP will sound to acknowledge the touch.
- 4 The oven automatically cooks on full power unless set to a lower power level.
- 5 The display will show ":0" when the oven is plugged in.
- 6 Time clock returns to the present time when the cooking time ends.

- 7 When the PAUSE/CANCEL pad is touched during the oven operation, the oven stops cooking and all information retained. To erase all information (except the present time), touch the PAUSE/CANCEL pad once more. If the oven door is opened during the oven operation, all information is retained.

Touch the PAUSE/CANCEL pad for microwave oven control part.  
During operation of the microwave oven, pads for pizza oven control part do not work.

- 8 If the START/EXPRESS COOK pad is touched and the oven does not operate, check the area between the door and door seal for obstructions and make sure the door is closed securely.  
The oven will not start cooking until the door is completely closed or the program has been reset.

Make sure the oven is properly installed and plugged into the electrical outlet.

## WATTAGE OUTPUT CHART

- The power-level is set by touching the POWER LEVEL pad. The chart shows the display, the power level and the percentage of power.

Touch POWER pad	Power Level (Display)	Approximate Percentage of Power
once	P-HI	100%
twice	P-90	90%
3 times	P-80	80%
4 times	P-70	70%
5 times	P-60	60%
6 times	P-50	50%
7 times	P-40	40%
8 times	P-30	30%
9 times	P-20	20%
10 times	P-10	10%
11 times	P-00	0%



# OPERATION PROCEDURE(PIZZA OVEN)

---

This section includes useful information about pizza oven operation.

1. Plug power supply cord into a standard 3-pronged 20Amp, 120V AC 60Hz power output.
2. Put pizza on the pizza tray.
3. Shut the pizza tray. Make sure that it is firmly closed.

- 1 The pizza tray can be opened at any time during operation by pulling out the handle on the pizza tray. The pizza oven will automatically shut off.
- 2 Touch the pizza menu pad and the symbol of menu will be displayed.
- 3 Each time a pad is touched, a BEEP sounds to acknowledge the touch.
- 4 Enter the cooking time and touch pizza start pad and then the pizza indicator lights and the cooking time is displayed and then pizza cooking starts. During the pizza cooking, hot smoke or air may go out from the gap of the pizza tray.
- 5 When the pizza PAUSE/CANCEL pad is touched during the oven operation, the pizza stops cooking and all information retained. To erase all information(except the present time), touch the PAUSE/CANCEL pad once more. If the pizza tray is opened during the pizza operation, all information is retained.

Touch the PAUSE/CANCEL pad for pizza oven control part.  
During operation of the pizza oven, pads for microwave oven control part do not work.

- 6 If the pizza START pad is touched and the pizza does not operate, check the pizza tray is closed securely. The pizza oven will not start cooking until the pizza tray is completely closed or the program has been reset.

**NOTE :**

When the pizza tray is opened after pizza cooking, hot smoke or air will go out and the pizza tray is very hot.  
Take out food carefully not to touch hot surfaces of the pizza oven or pizza tray or hot air.

**NOTE :**

When the pizza oven is operated several times in series and is overheated, the safety thermal switch works and the heating elements stop operating. So, though the pizza oven seems to operate normally, it does not cook pizza.  
Open the pizza tray and cool it for 4~5 min.  
After then the pizza can cook normally.

## IMPORTANT

---

Before using the pizza oven for the first time, operate the pizza oven without pizza for about 5 minutes in order to burn off residues on the heating elements. You will notice an odor that is characteristic of new heating elements. This is normal and will soon disappear.

## CLEANING THE PIZZA OVEN

---

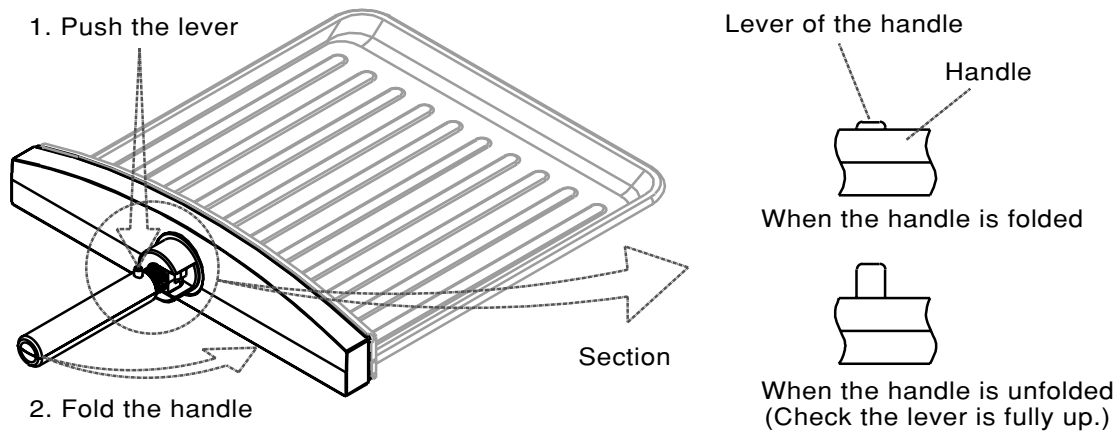
Always unplug the Pizza baker built-in microwaves combo and allow the pizza oven to cool completely before cleaning.

**Pizza Tray:**

Wipe surface with a soft, clean, damp cloth. Never use abrasive cleaners, as they may scratch the surface. Do not use fork or other sharp, metal object to clean the pizza tray, or to remove pizza, as it may damage the pizza tray.

# HANDLE CONTROLS

- When using the pizza tray, you must unfold the handle of the pizza tray and **check the lever of the handle rise up fully.**
- When not using the pizza oven, you would better fold the handle of the pizza tray.
- Before folding the handle of the pizza tray, you must push the lever of the handle.



## NOTE :

You'd better not cook pizza over 1.5 inch height like Deep-dish pizza.  
Those pizza would rise and touch heating element. It may burn the pizza.  
You'd better not cook the pizza more than two times. Because it may burn or harden the pizza.

# ABNORMAL MESSAGE

Err 1

Err 2

- When the temperature sensor is disconnected, "Err 1" message will be shown in the display.
- If the inside temperature of the pizza oven is higher than expected or the temperature sensor doesn't work properly, "Err 2" message will be shown in the display.
- To disappear the abnormal message, press the CANCEL button of the pizza oven.

\* When "Err 1" or "Err 2" message is shown in the display, you must call for service.

# DISASSEMBLY AND ASSEMBLY

## - Cautions to be observed when trouble shooting.

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. It is completely safe during normal operation. However, carelessness in servicing the oven can result in an electric shock or possible danger from a short circuit. You are asked to observe the following precautions carefully.

1. Always remove the power plug from the outlet before servicing.
2. Use an insulated screwdriver and wear rubber gloves when servicing the high voltage side.
3. Discharge the high voltage capacitor before touching any oven components or wiring.

(1) Check the grounding.

Do not operate on a two-wire extension cord.

The microwave oven is designed to be used while grounded.

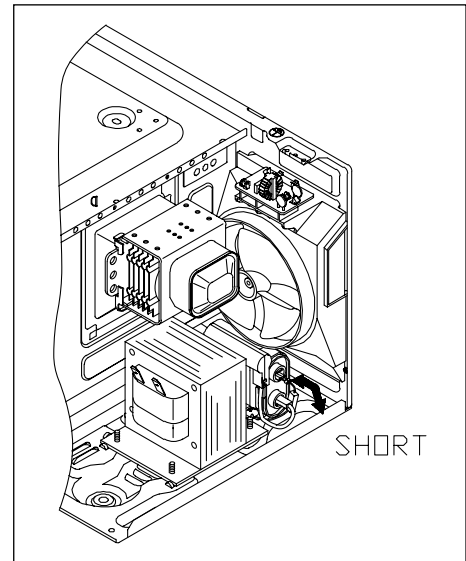
It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

(2) Warning about the electric charge in the high voltage capacitor.

For about 30 seconds after the operation has stopped, electric charge remains in the high voltage capacitor.

When replacing or checking parts, short between oven chassis and the negative high terminal of the high voltage capacitor by using a properly insulated screwdriver to discharge.

4. When the 20A fuse is blown due to the operation of the monitor switch; replace primary interlock switch, secondary interlock switch and interlock monitor switch.
5. After repair or replacement of parts, make sure that the screws are properly tightened, and all electrical connections are tightened.
6. Do not operate without cabinet.

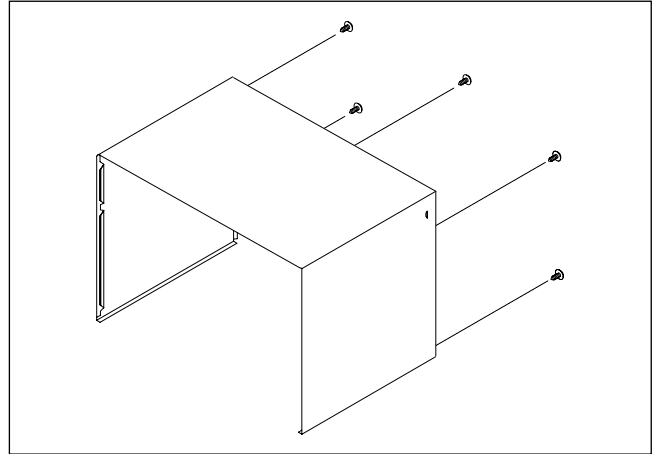


**CAUTION** : Service personnel should remove their watches whenever working close to or replacing the magnetron.

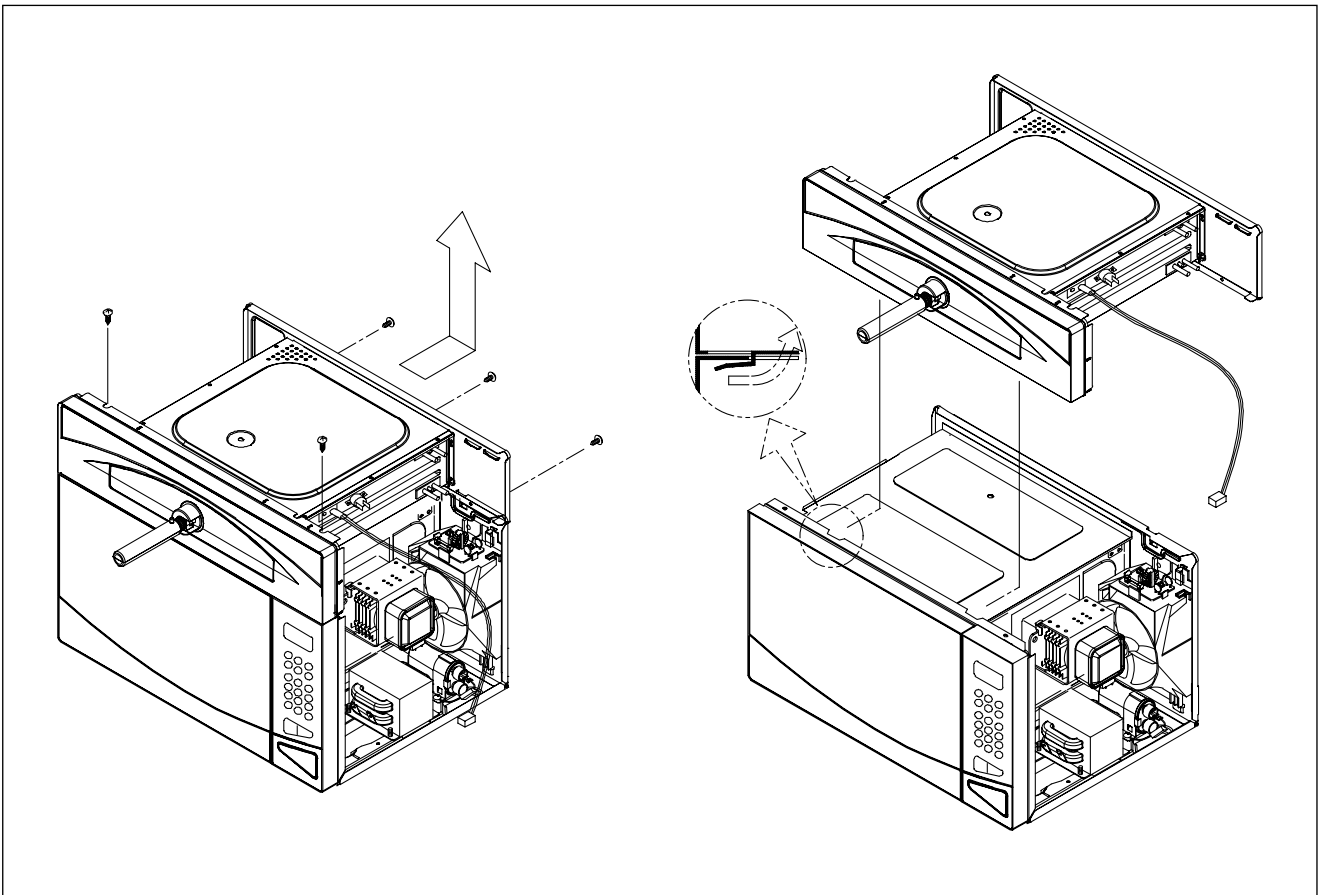
**WARNING** : When servicing the appliance, take care when touching or replacing high potential parts because of electrical shock or exposing microwave. These parts are as follows - HV Transformer, Magnetron, HV Capacitor, HV Diode, HV Fuse.

## 1. To remove cabinet

- 1) Remove five screws on cabinet back.
- 2) Push the cabinet backward.



## 2. To take off the pizza oven.

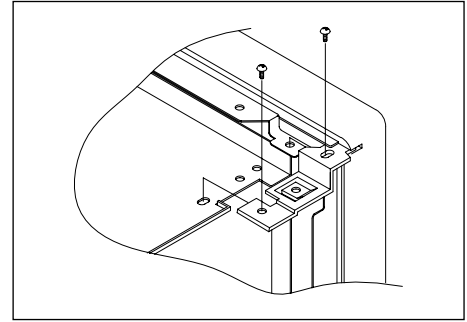


- 1) Remove four screws on the pizza oven.
- 2) Push the pizza oven backward and lift up.
- 3) Reverse the above for assembly.

**NOTE :** To assemble the pizza oven, push two taps on the bottom of the pizza front plate into two rectangular notches of the front plate securely.

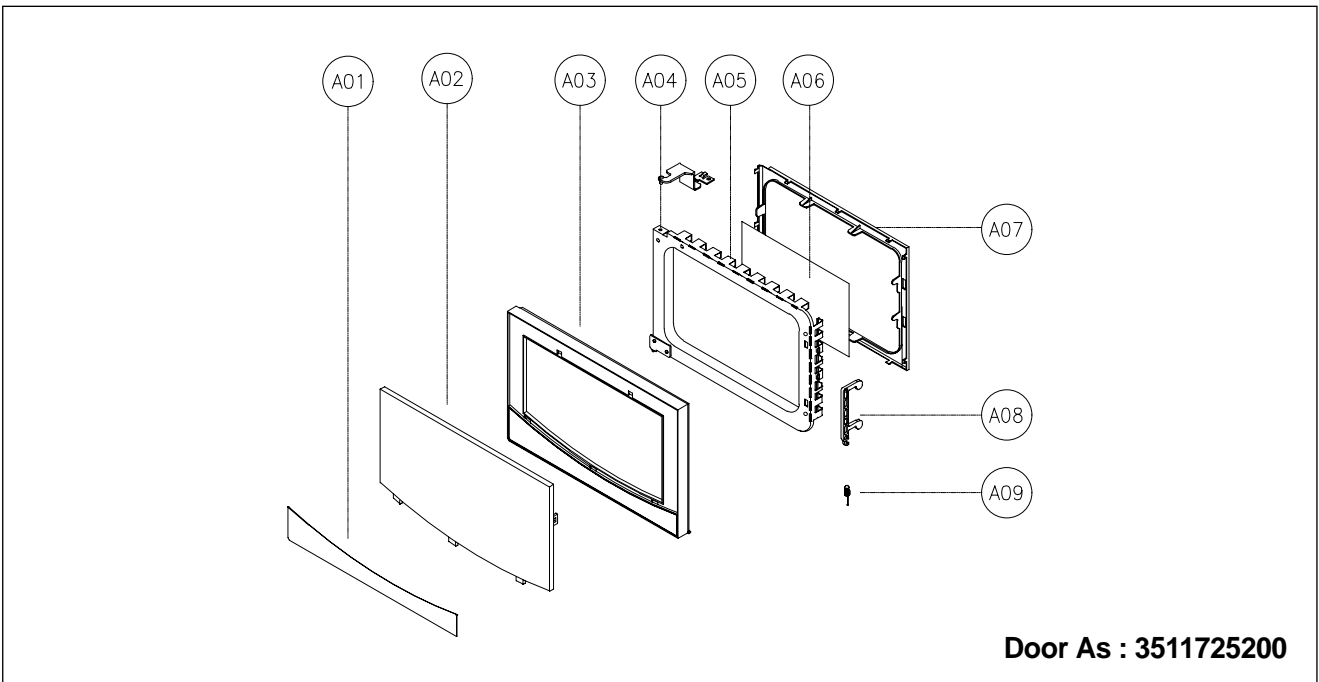
### 3. To remove door assembly

- 1) Remove two screws which secure the stopper hinge top.
- 2) Remove the door assembly from top plate of cavity.
- 3) Reverse the above for reassembly.



**NOTE :** After replacing the door assembly, perform a check of correct alignment with the hinge and cavity front plate.

### 4. To remove door parts.



REF NO.	PART NAME	PART CODE	DESCRIPTION	Q'TY
A01	DECORATOR DOOR	3511613600	STS T0.5 H/L	1
A02	BARRIER-SCREEN *O	3517006510	SAN	1
A03	FRAME DOOR	3512204620	ABS	1
A04	STOPPER HINGE *T AS	3515202900	KOR-121M0A	1
A05	DOOR PAINTING AS	3511713600	KOR-131G0A	1
A06	BARRIER-SCREEN *I	3517006400	PE T0.1	1
A07	GASKET DOOR	3512302200	PP	1
A08	HOOK	3513101400	POM	1
A09	SPRING HOOK	3515101900	PW-1	1

- (1) Remove the gasket door from door plate.
- (2) Remove the barrier screen inner from door plate.
- (3) Remove the door frame from door painting assembly.
- (4) Remove the stopper hinge top assembly from door painting assembly.
- (5) Remove the spring and the hook.
- (6) Remove the barrier screen outer from door frame.
- (7) Reverse the above steps for reassembly.

---

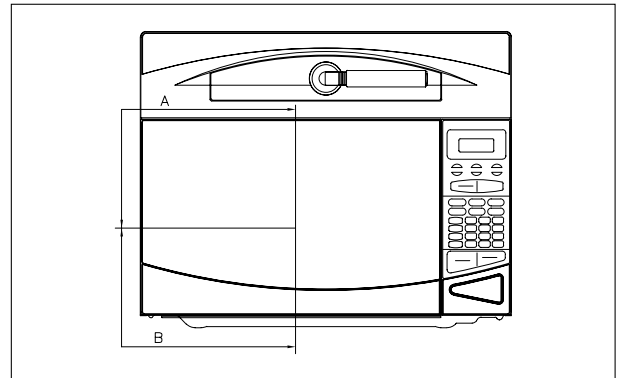
## 5. Method to reduce the gap between the door seal and the oven front surface.

(1) To reduce gap located on part 'A'.

- Loosen the screw on stopper hinge top, and then push the door to contact the door seal to oven front surface.
- Tighten the screw.

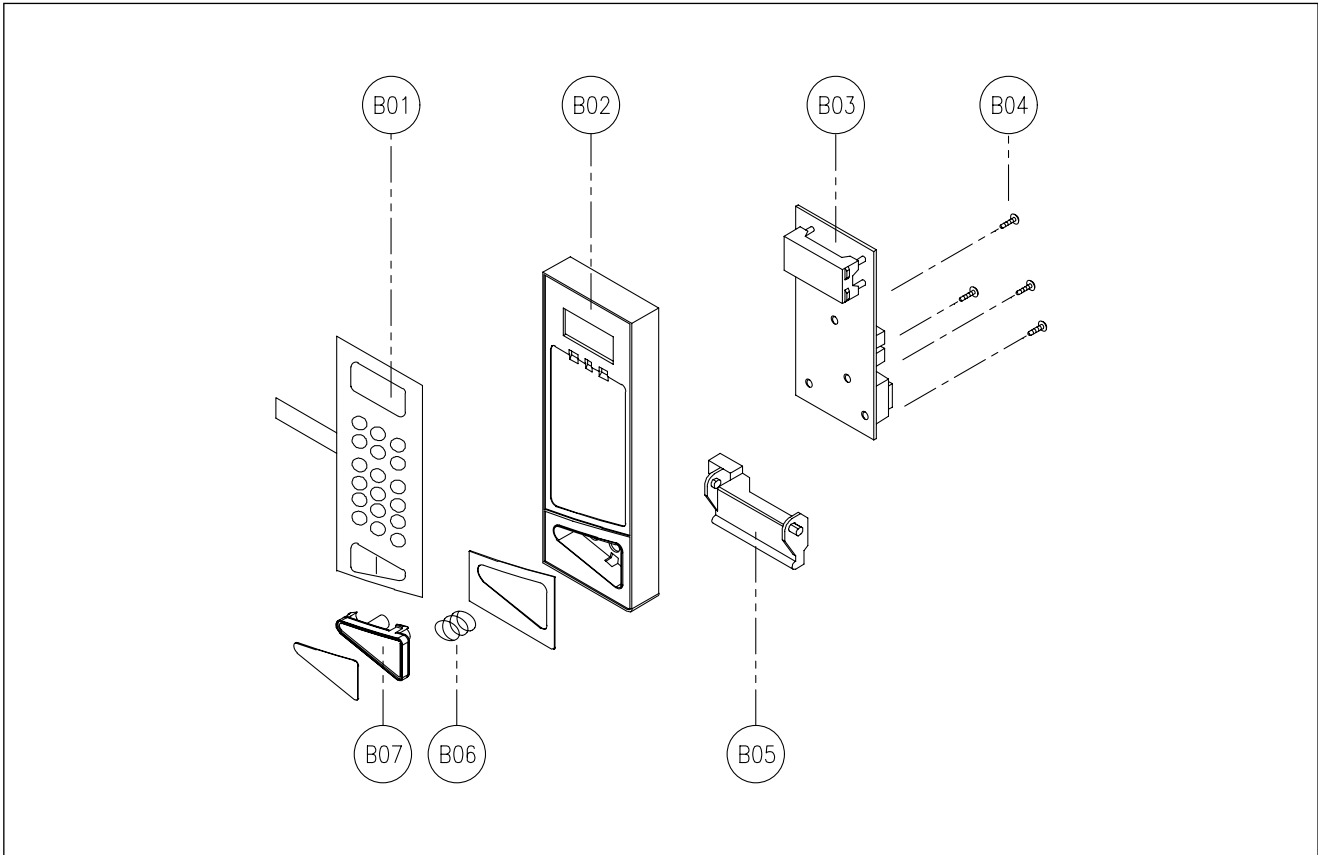
(2) To reduce gap located on part 'B'.

- Loosen two screws on stopper hinge under, and then push the door to contact the door seal to oven front surface.
- Tighten two screws.



**NOTE :** A small gap may be acceptable if the microwave leakage does not exceed  $4\text{mW}/\text{cm}^2$ .

## 6. To remove control panel parts.

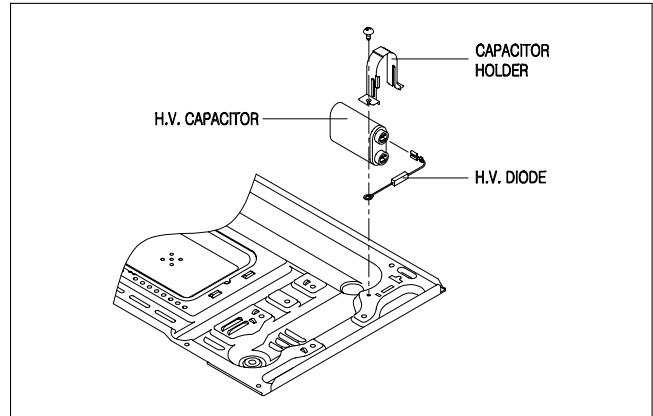


REF NO.	PART NAME	PART CODE	DESCRIPTION	Q'TY
B01	SWITCH MEMBRANE	3518522440	KOD-135P9A	1
B02	CONTROL-PANEL	3516725020	ABS	1
B03	PCB MAIN MANUAL AS	PKMPMSBC00	KOD-135P9A	1
B04	SCREW TAPPING	7122401211	T2S TRS 4X12 MFZN	4
B05	LEVER DOOR OPEN	3513702800	PP	1
B06	SPRING BUTTON	441G430171	SWP DIA. 0.7	1
B07	BUTTON DOOR OPEN	3516908140	ABS	1

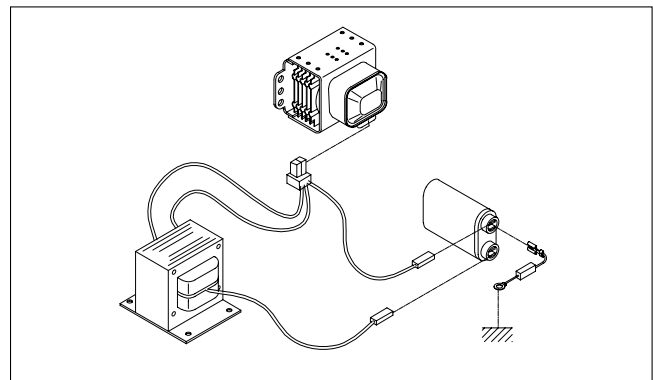
- 1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- 2) Remove the door open lever from the control panel.
- 3) Remove four screws which secure the PCB assembly to control panel.
- 4) Disconnect membrane tail from the connector of the PCB assembly.
- 5) Detach membrane from the control panel.
- 6) Remove door open button and button spring from the control panel.
- 7) Reverse the above steps for reassembly.

## 7. To remove high voltage capacitor.

- 1) Remove a screw which secure the grounding ring terminal of the H.V. diode and the capacitor holder.
- 2) Remove the H.V. diode from the capacitor holder.
- 3) Reverse the above steps for reassembly.

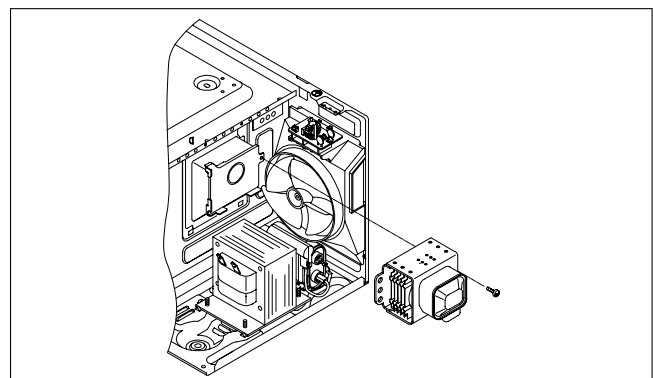


## 8. High voltage circuit wiring

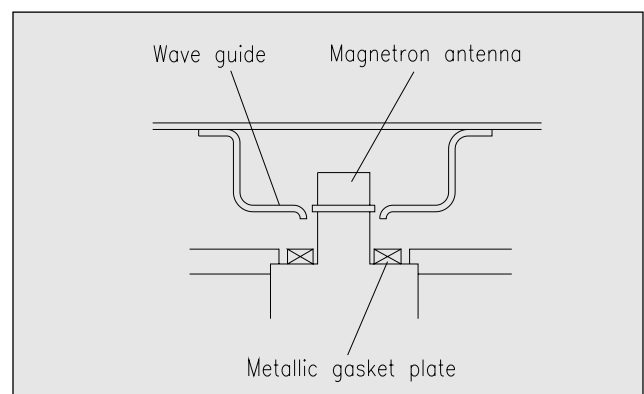
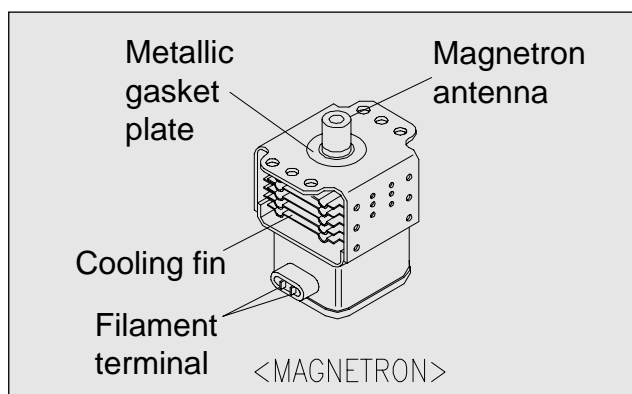


## 9. To remove magnetron.

- 1) Remove a screw which secure the magnetron.
- 2) Remove the magnetron.
- 3) Reverse the above steps for reassembly.



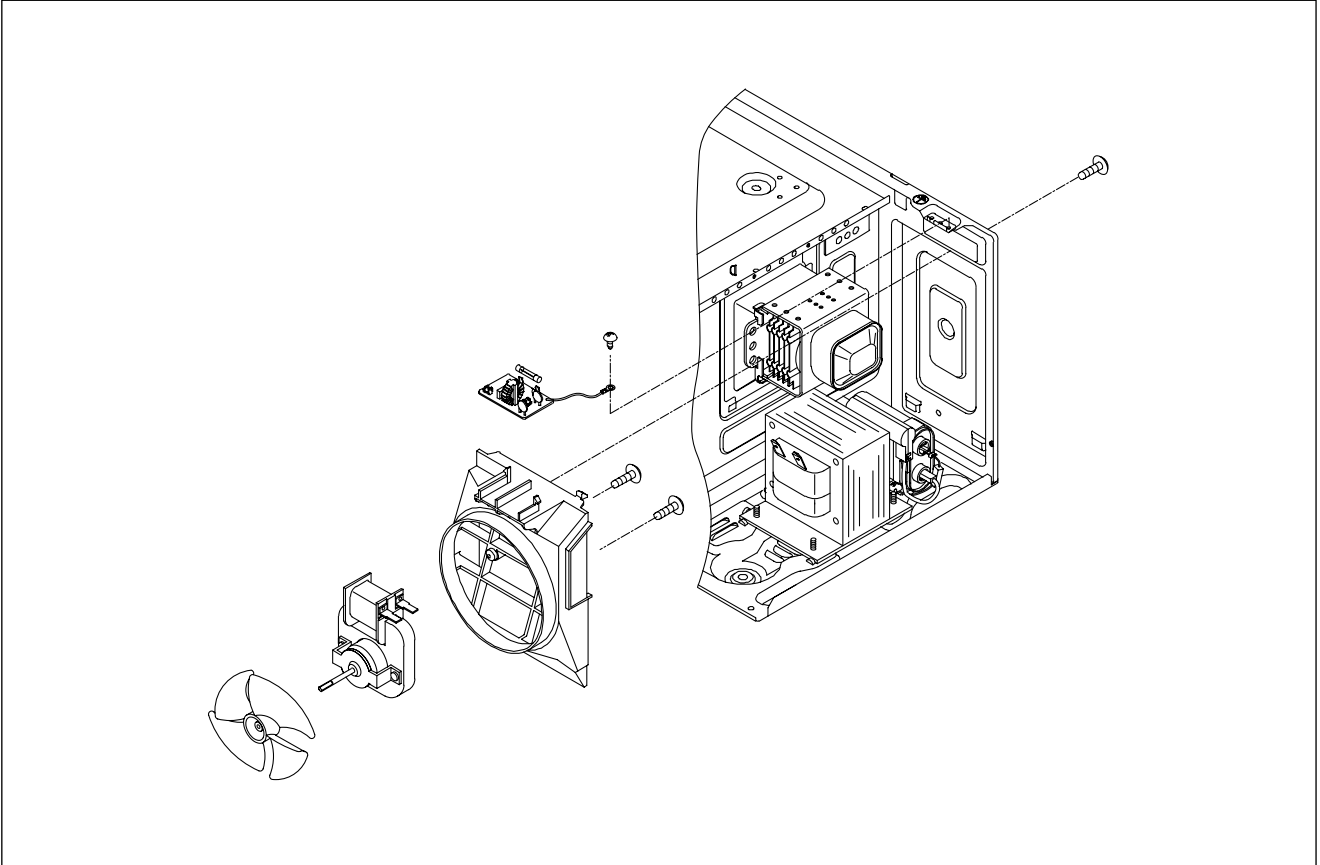
**NOTE :** Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed  $4\text{mW/cm}^2$  for a fully assembled oven with door normally closed.





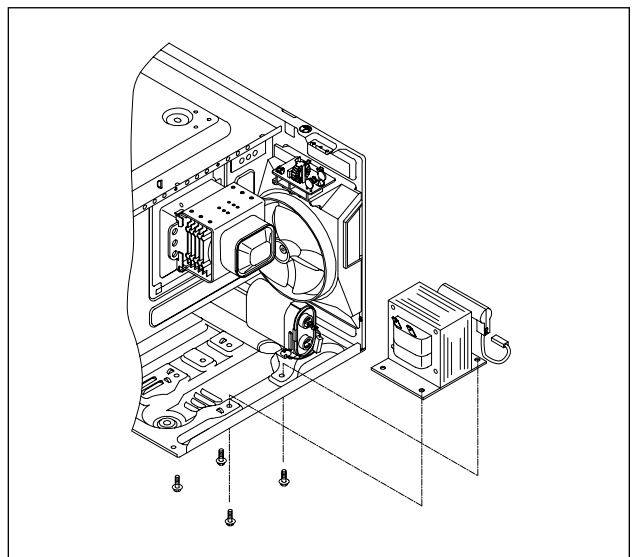
## 10. To remove wind guide assembly.

- 1) Remove a screw which secure the wind guide assembly.
- 2) Draw forward the wind guide assembly.
- 3) Pull the fan from the motor shaft.
- 4) Remove two screws which secure the motor shaded pole.
- 5) Remove the motor shaded pole.
- 6) Reverse the above steps for reassembly.



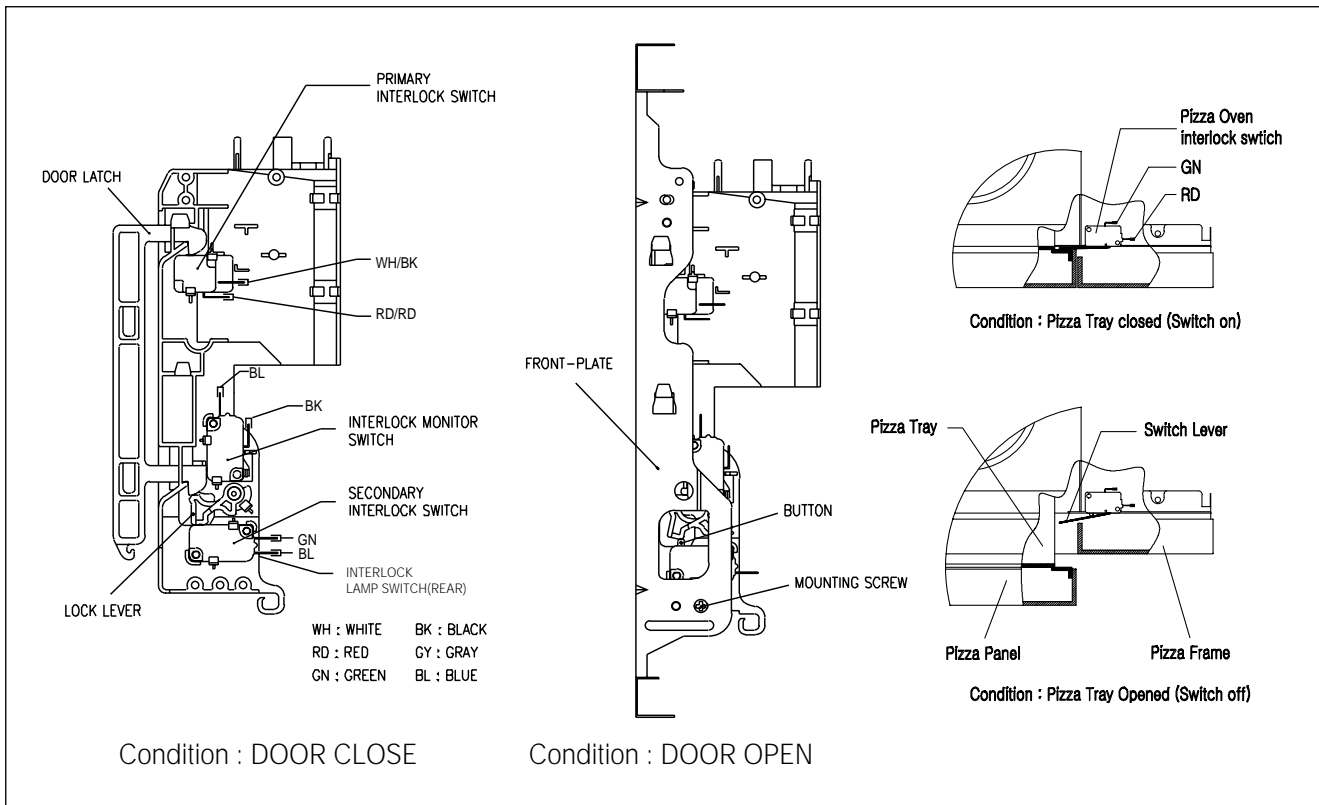
## 11. To remove H.V.transformer.

- 1) Remove four screws holding the H.V.transformer.
- 2) Remove the H.V.transformer.
- 3) Reverse the above steps for reassembly.



# INTERLOCK MECHANISM AND ADJUSTMENT

The door lock mechanism is a device which has been specially designed to completely eliminate microwave radiation when the door is opened during operation, and thus to perfectly prevent the danger resulting from the leakage of microwave.



## (1) Primary interlock switch

When the door is closed, the hook locks the oven door. If the door is not closed properly, the oven will not operate.

When the door is closed, the hook pushes the button of the micro switch. Then the button of the primary interlock switch bring it under NO condition.

## (2) Secondary interlock switch and interlock monitor switch / interlock lamp switch

When the door is closed, the hook pushes the lock lever downward. The lock lever presses the button of the interlock monitor switch to bring it under NO condition. The lock lever presses the button of the secondary interlock switch to bring it under NO condition.

## (3) Pizza Oven interlock switch

When the pizza tray is closed, the lever pushes the lever of the micro switch.

Then the button of the toast interlock switch bring it under NO condition.

### ADJUSTMENT :

Interlock monitor switch

When the door is closed, the interlock monitor switch should be changed (NO condition) before other switches are closed.

When the door is opened, the interlock monitor switch should be changed (NC condition) after other switches are opened.

## (4) Adjustment steps

- a) Loosen the one mounting screw.
- b) Adjust interlock switch assembly position.
- c) Make sure that lock lever moves smoothly after adjustment is completed.
- d) Tighten completely two mounting screws.

### NOTE :

Microwave emission test should be performed after adjusting interlock mechanism.

If the microwave emission exceed  $4\text{mW}/\text{cm}^2$ , readjust interlock mechanism.

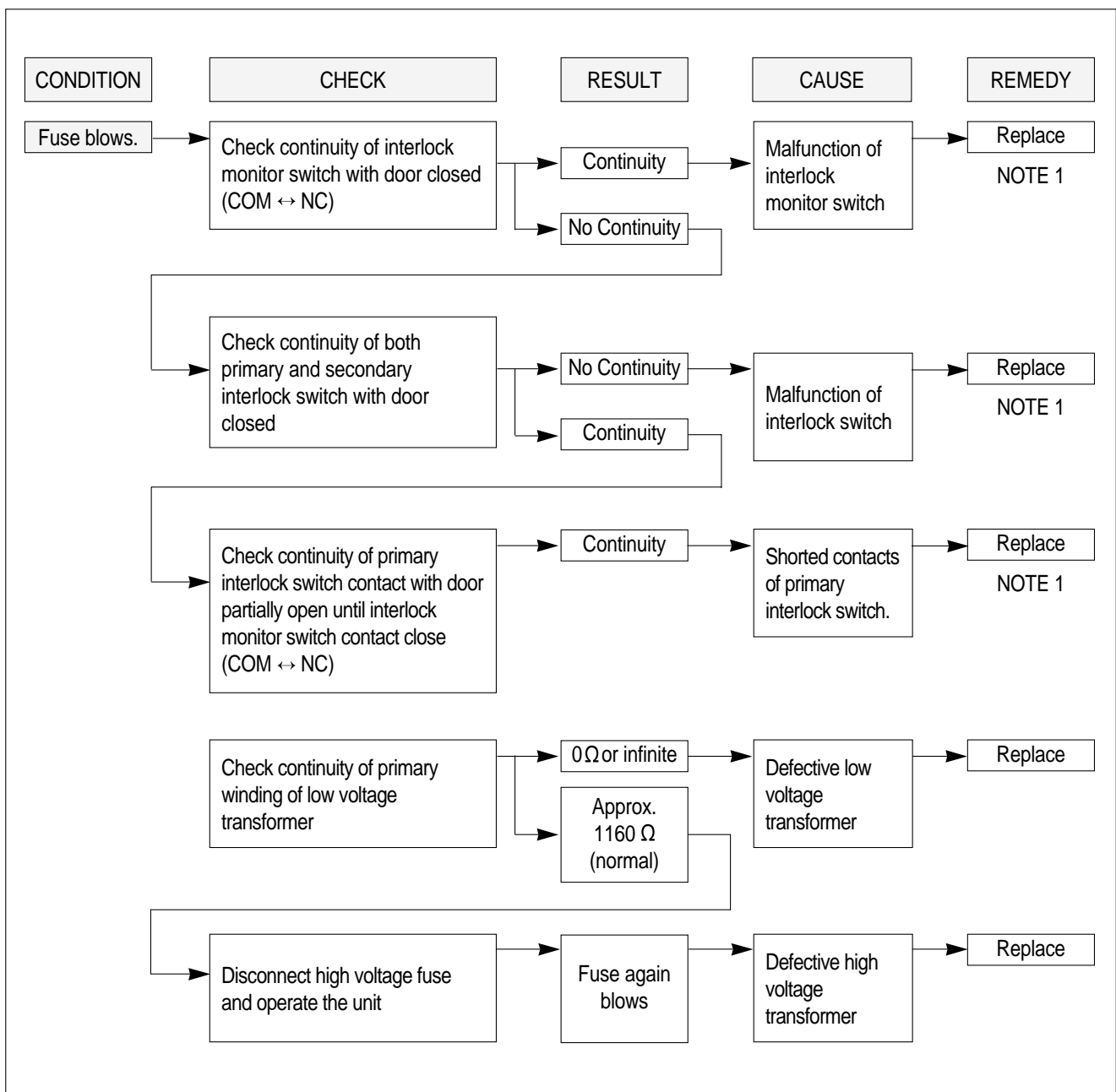
# TROUBLE SHOOTING GUIDE

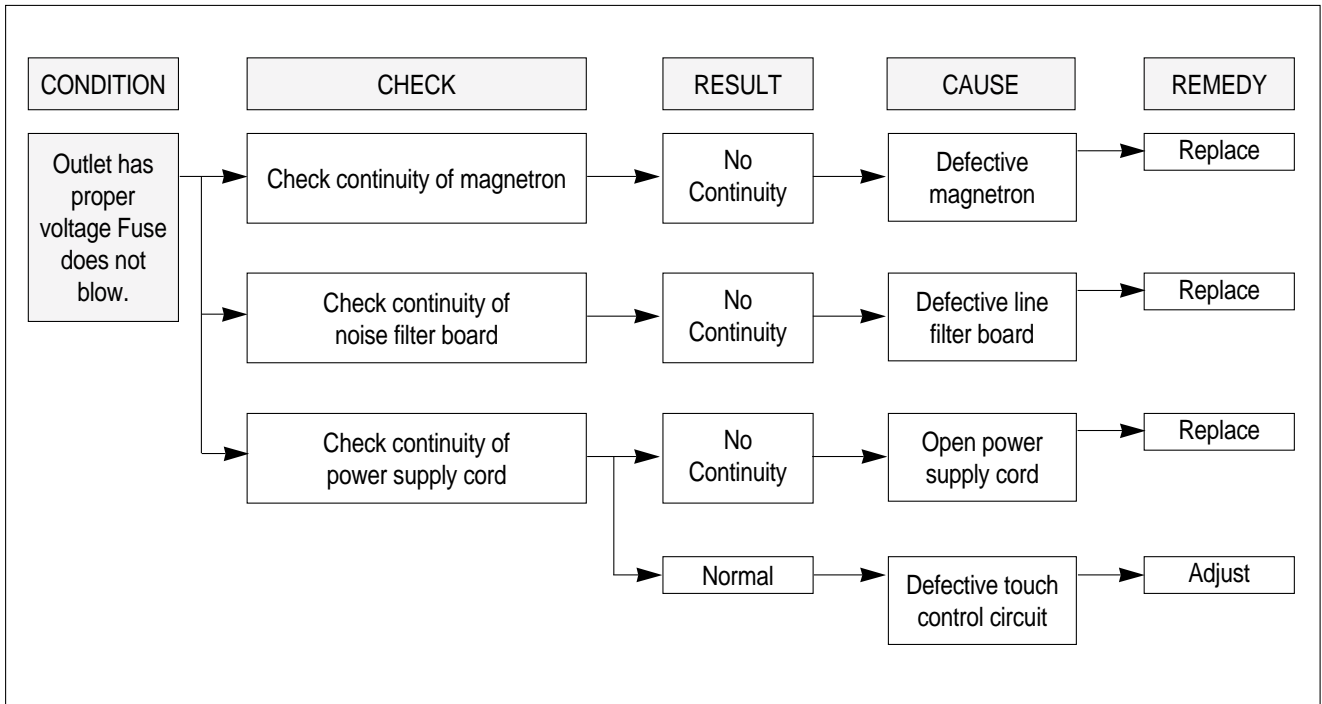
Following the procedure below to check if the oven is defective or not.

- 1) Check grounding before trouble checking.
- 2) Be careful of the high voltage circuit.
- 3) Discharge the high voltage capacitor.
- 4) When checking the continuity of the switches, fuse or high voltage transformer, disconnect one load wire from these parts and check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.

**NOTE :** When electric parts are checked, be sure the power cord is not inserted the wall outlet.  
Check wire harness, wiring and connection of the terminals and power cord before check the parts listed below.

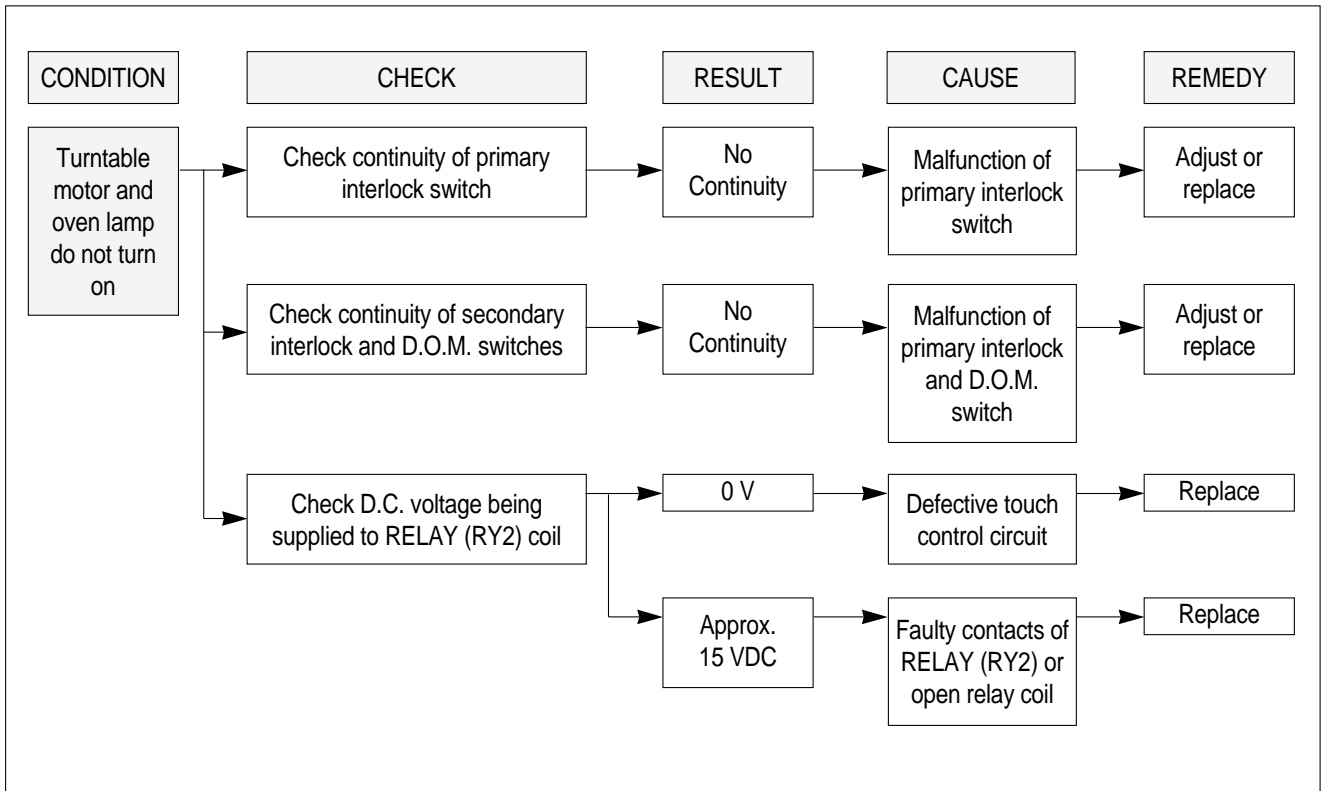
**(TROUBLE 1)** Oven does not operate at all : any inputs can not be accepted.



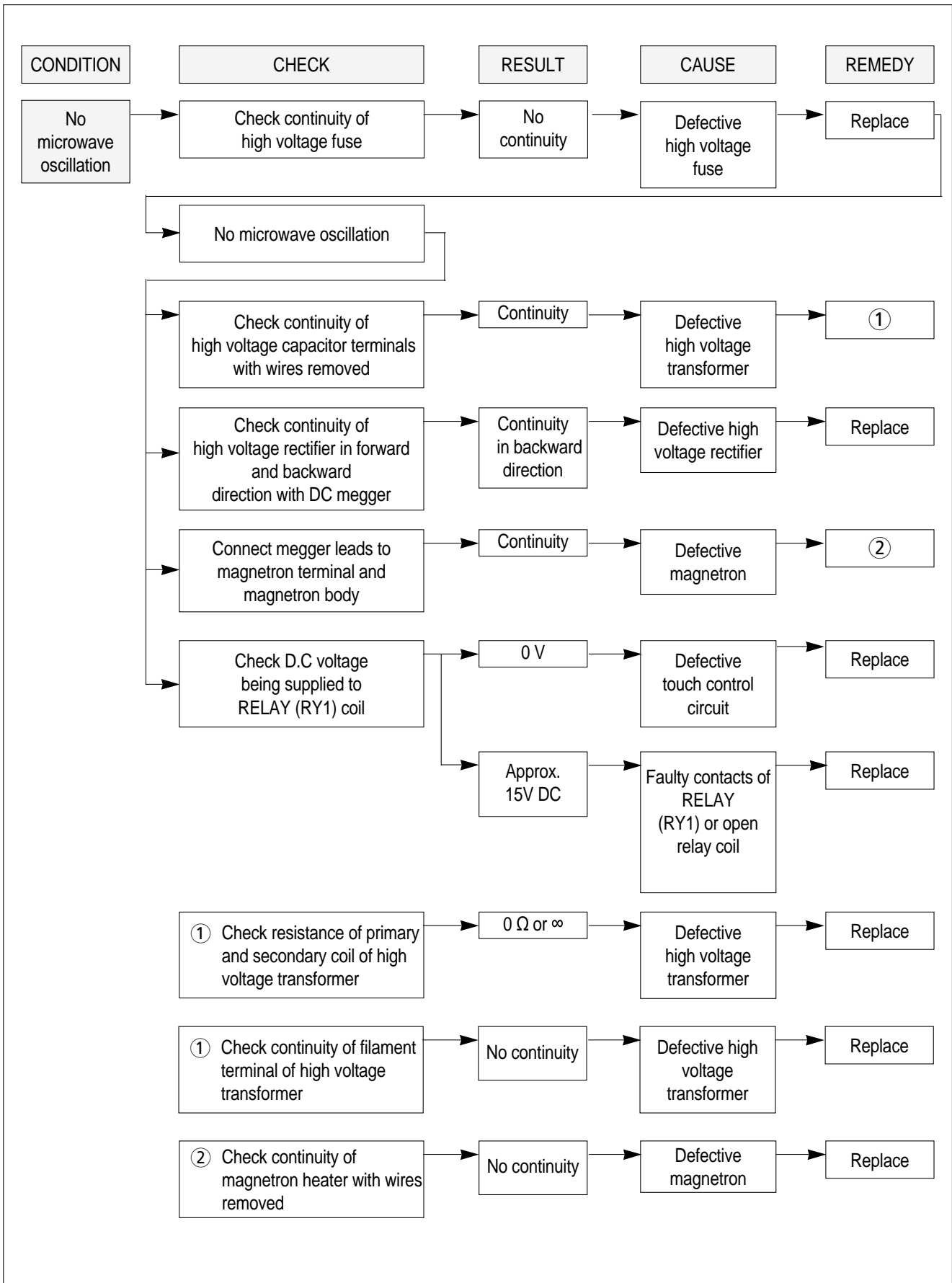


**NOTE 1**  
All these switches must be replaced at the same time, please refer to "Interlock Mechanism And Adjustment".

**(TROUBLE 2)** Display shows all figures selected, but oven does not start cooking, even though desired program and time are set and start pad is pressed.

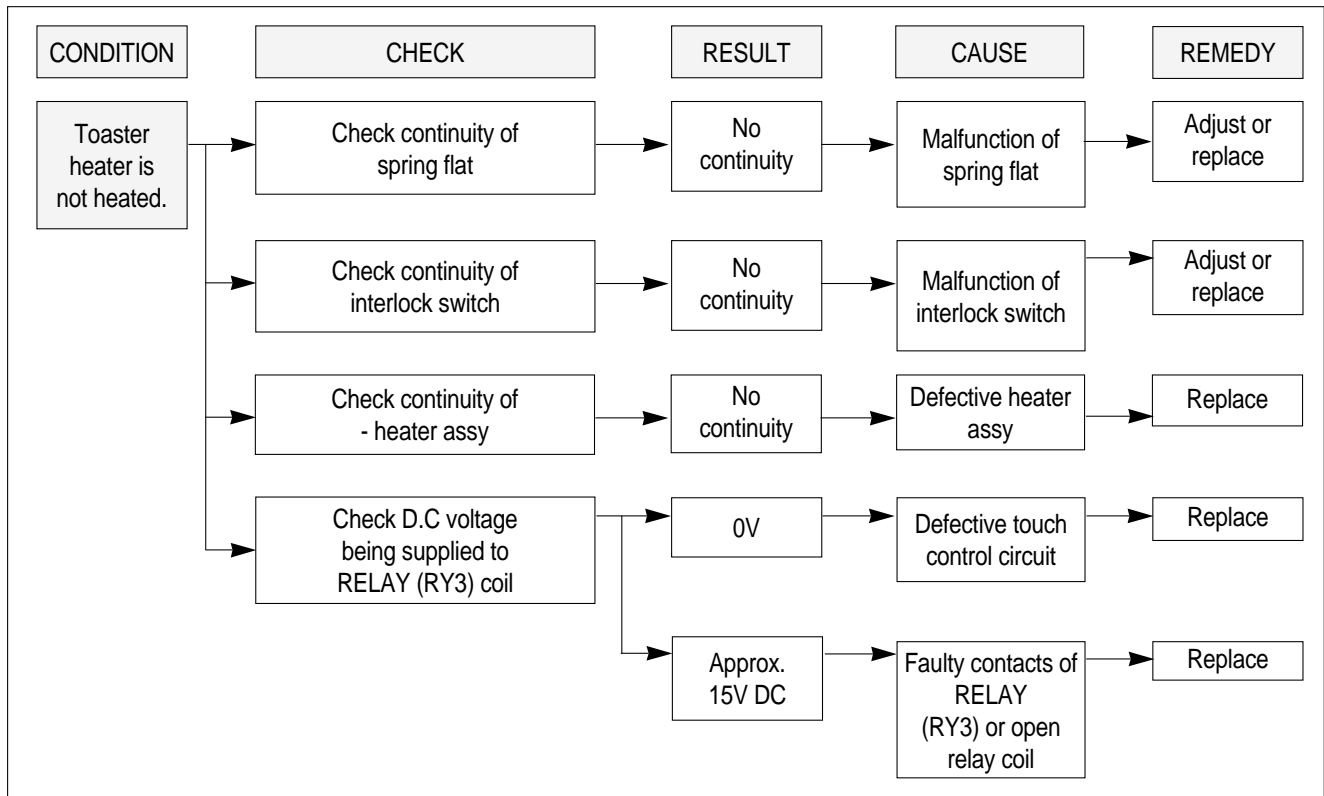


**(TROUBLE 3)** No microwave oscillation even though fan motor rotates.



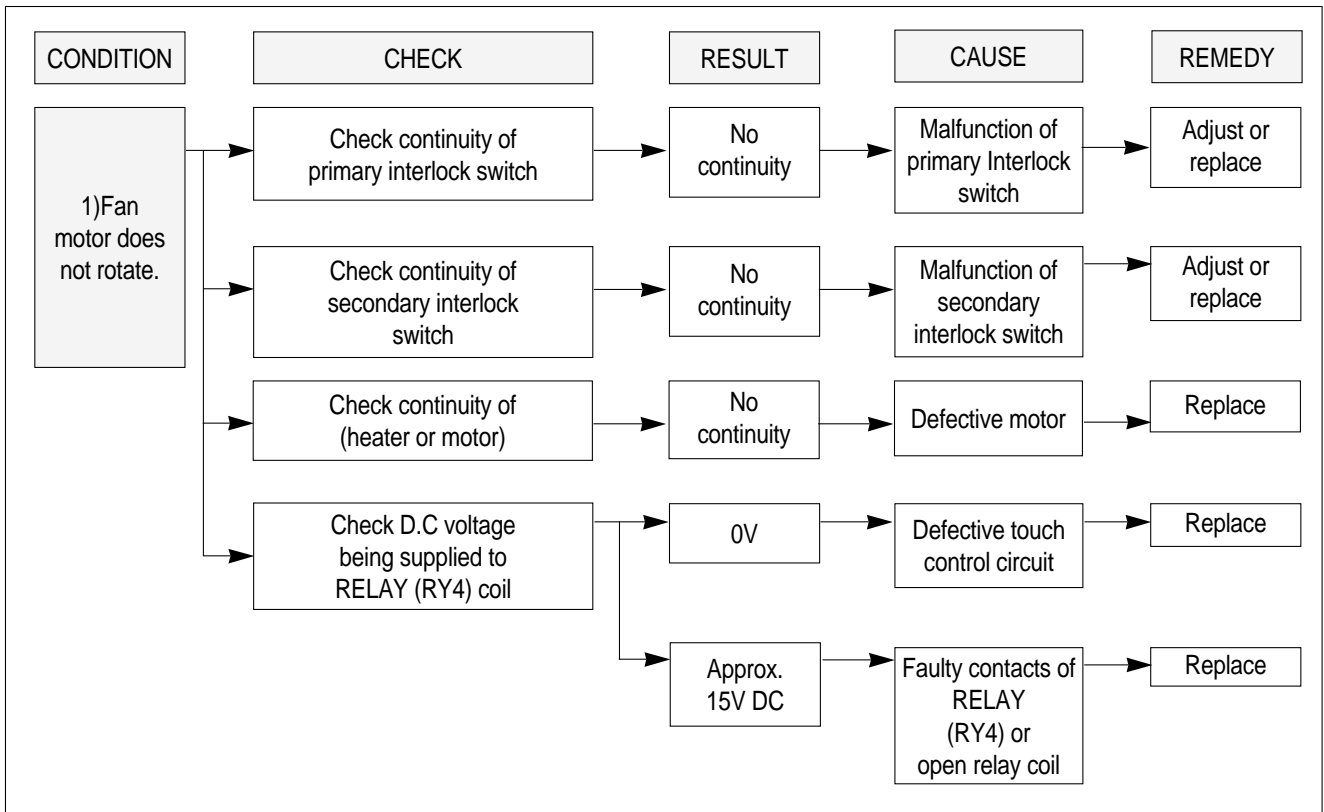
**(TROUBLE 4)**

Pizza Oven is not heated;



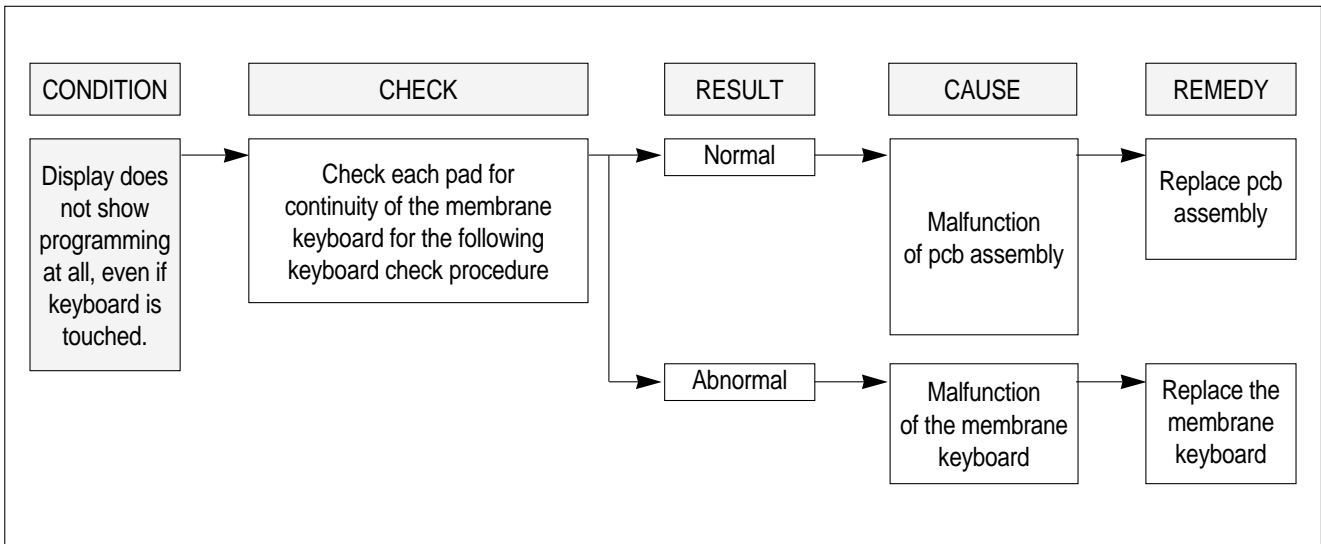
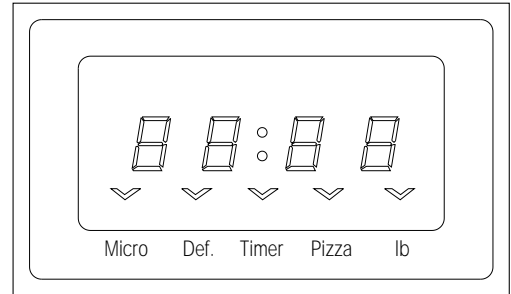
**(TROUBLE 5)**

1) Fan motor does no rotate.



**(TROUBLE 6)** The following visual conditions indicate a probable defective touch control circuit or membrane switch assembly

1. Incomplete segments,
  - 1) Segments missing.
  - 2) Partical segments missing.
  - 3) Digit flickering other than normal display slight flickering.
  - 4) " :0" does not display when power is on.
2. A distinct change in the brightness of one or more numbers exists in the display.
3. One or more digits in the display are not on when they should be.
4. Display indicates a number different from one touched.
5. Specific numbers (for example 2 or 3) will not display when the panel is touched.
6. Display does not count down or up with time cooking or clock operation.
7. Oven is programmable and cooks normally but no display shows.
8. Display obviously jumps in time while counting down.
9. Display counts down noticeably too fast while cooking.
10. Display does not show the time of day or " :0" when clear pad is touched.
11. Oven lamp and turntable motor do not stop although cooking is finished. Check if the RELAY 2 contacts close if they are close, replace touch control circuit.



**NOTE**  
 Before following the particular steps listed above in the trouble shooting guide for the membrane keyboard's failure, please check for the continuity of each wire-harness between the membrane keyboard and P.C.B. assembly.

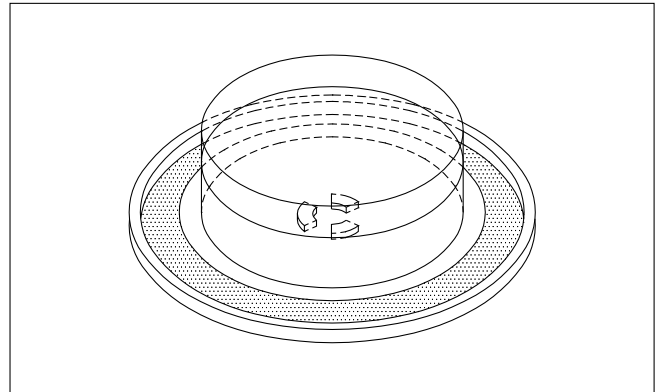
# MEASUREMENT AND TEST

## 1. MEASUREMENT OF THE MICROWAVE POWER OUTPUT

Microwave output power can be checked by indirectly measuring the temperature rise of a certain amount of water exposed to the microwave as directed below.

### PROCEDURE

- Microwave power output measurement is made with the microwave oven supplied at rated voltage and operated at its maximum microwave power setting with a load of  $1000 \pm 5$ cc of potable water.
- The water is contained in a cylindrical borosilicate glass vessel having a maximum material thickness of 3 mm and an outside diameter of approximately 190 mm.
- The oven and the empty vessel are at ambient temperature prior to the start of the test. The initial temperature of the water is  $10 \pm 2^\circ\text{C}$  ( $50 \pm 3.6^\circ\text{F}$ ). It is measured immediately before the water is added to the vessel. After addition of the water to the vessel, the load is immediately placed on the center of the shelf, which is in the lowest normal position.
- Microwave power is switched on.
- Heating time should be exactly A seconds.  
(Refer to table as following)  
Heating time is measured while the microwave generator is operating at full power. The filament heat-up time for magnetron is not included.
- The initial and final temperature of water is selected so that the maximum difference between the ambient and final water temperature is 5K.
- The microwave power output P in watts is calculated from the following formula:



$$P = \frac{4187 \times \Delta T}{t}$$

- $\Delta T$  is difference between initial and ending temperature.
  - t is the heating time.
- The power measured be B (Refer to SPECIFICATIONS)  $W \pm 10.0\%$ .

### CAUTION

- Water load should be measured exactly to 1 liter.
- Input power voltage should be exactly specified voltage (Refer to SPECIFICATIONS).
- Ambient temperature should be  $20 \pm 2^\circ\text{C}$  ( $68 \pm 3.6^\circ\text{F}$ )

### \* Heating time for power output:

A (second)	70	64	60	56	52	49	47	44	42	40	38
B (W)	600	650	700	750	800	850	900	950	1000	1050	1100



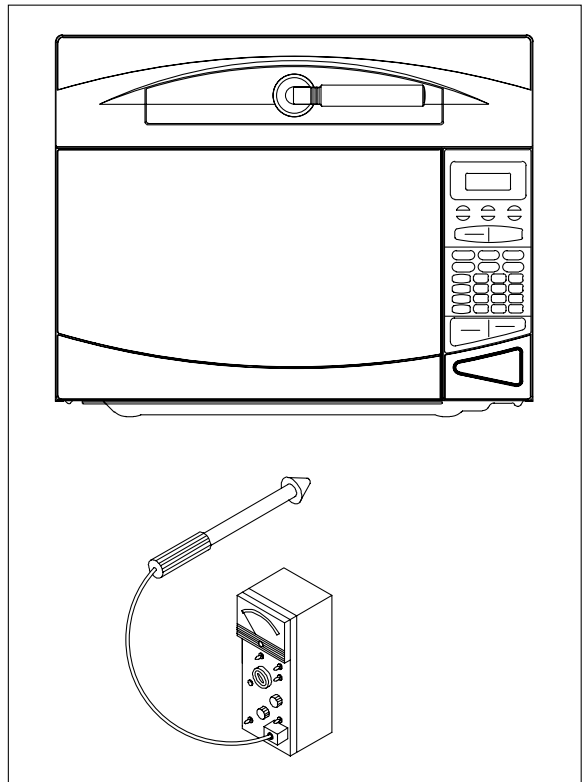
## 2. MICROWAVE RADIATION TEST

### CAUTION :

1. Make sure to check the microwave leakage before and after repair of adjustment.
2. Always start measuring of an unknown field to assure safety for operating personnel from microwave energy.
3. Do not place your hands into any suspected microwave radiation field unless the safe density level is known.
4. Care should be taken not to place the eyes in direct line with the source of microwave energy.
5. Slowly approach the unit under test until the radiometer reads an appreciable microwave leakage from the unit under the test.

### PROCEDURES

1. Prepare Microwave Energy Survey Meter, 600cc glass beaker, and glass thermometer  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).
2. Pour  $275\text{cc}\pm 15\text{cc}$  of tap water initially at  $20\pm 5^{\circ}\text{C}$  ( $68\pm 9^{\circ}\text{F}$ ) in the 600cc glass beaker with an inside diameter of approx. 8.5mm (3.5in.).
3. Place it at the center of the tray and set it in a cavity.
4. Close the door and operate the oven.
5. Measure the leakage by using Microwave Energy Survey Meter with dual ranges, set to 2450MHz.
  - 1) Measured radiation leakage must not exceed the value prescribed below. Leakage for a fully assembled oven with door normally closed must be less than  $4\text{mW}/\text{cm}^2$ .
  - 2) When measuring the leakage, always use the 5cm (2in.) space cone with probe. Hold the probe perpendicular to the cabinet and door. Place the space cone of the probe on the door, cabinet, door seem, door viewing screen, the exhaust air vents and the suction air vents.
  - 3) Measuring should be in a counter-clockwise direction at a rate of 1 in./sec. If the leakage of the cabinet door seem is unknown, move the probe more slowly.
  - 4) When measuring near a corner of the door, keep the probe perpendicular to the areas making sure the probe end at the base of the cone does not get closer than 2 in. from any metal. If it does not, erroneous reading may result.



---

### 3. COMPONENT TEST PROCEDURE

- High voltage is present at the high voltage terminal of the high voltage transformer during any cooking cycle.
- It is neither necessary nor advisable to attempt measurement of the high voltage.
- Before touching any oven components or wiring, always unplug the oven from its power source and discharge the capacitor.

#### 1. High voltage transformer

- (1) Remove connections from the transformer terminals and check continuity.
- (2) Normal readings should be as follows:
  - Secondary winding .....Approx.  $110\Omega \pm 10\%$
  - Filament winding .....Approx.  $0\Omega$
  - Primary winding .....Approx.  $1\Omega$

#### 2. High voltage capacitor

- (1) Check continuity of capacitor with meter on the highest OHM scale.
- (2) A normal capacitor will show continuity for a short time, and then indicate  $10M\Omega$  once the capacitor is charged.
- (3) A shorted capacitor will show continuous continuity.
- (4) An open capacitor will show constant  $10M\Omega$ .
- (5) Resistance between each terminal and chassis should be infinite.

#### 3. High voltage diode

- (1) Isolate the diode from the circuit by disconnecting the leads.
- (2) With the ohmmeter set on the highest resistance scale measure the resistance across the diode terminals.
  - Reverse the meter leads and again observe the resistance reading.
  - Meter with 6V, 9V or higher voltage batteries should be used to check the front-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
  - A normal diode's resistance will be infinite in one direction and several hundred  $K\Omega$  in the other direction.

#### 4. Magnetron

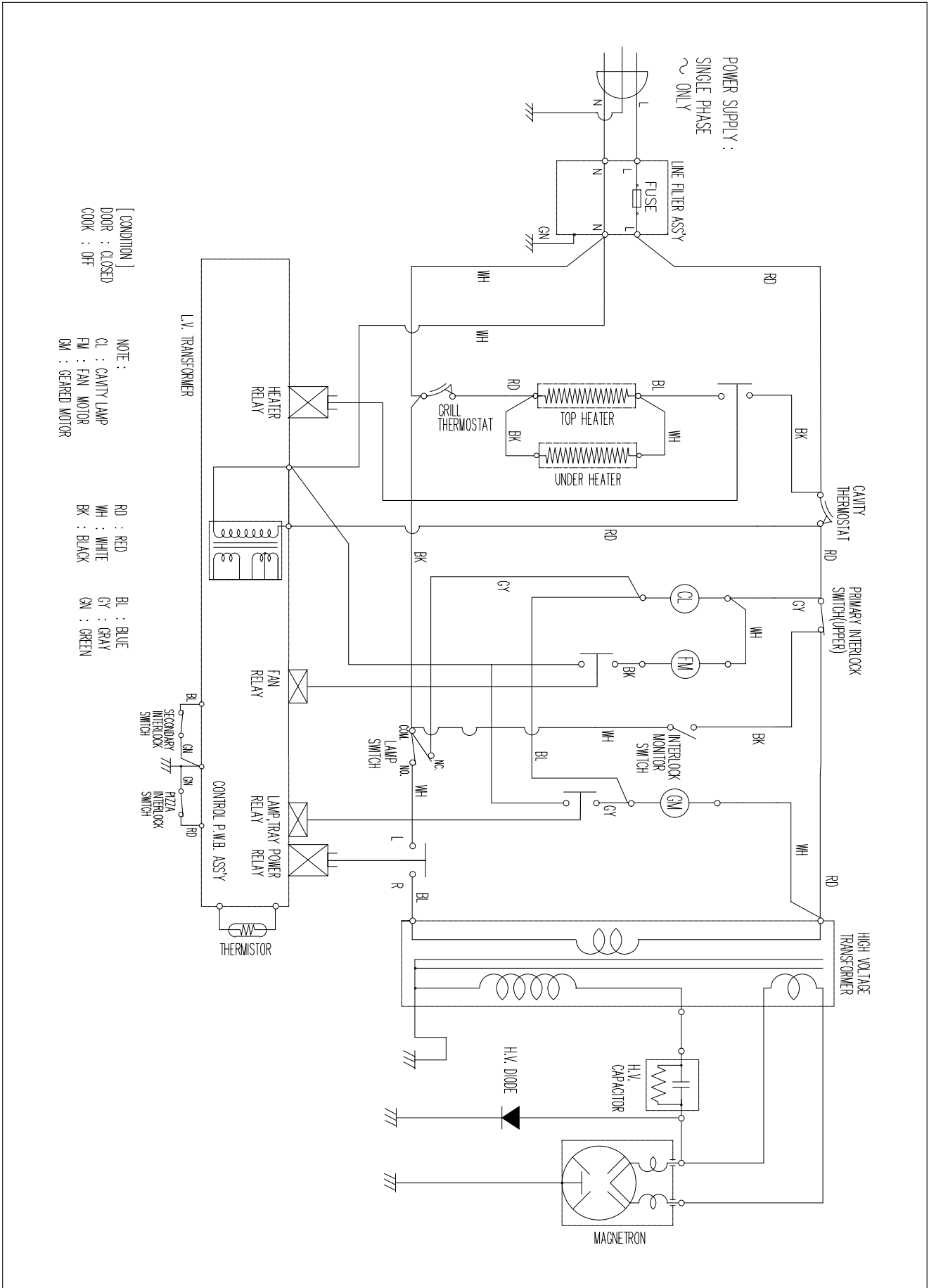
For complete magnetron diagnosis, refer to "Measurement of the Microwave Power Output".  
Continuity checks can only indicate an open filament or a shorted magnetron.  
To diagnose for an open filament or a shorted magnetron.

- (1) Isolate magnetron from the circuit by disconnecting the leads.
- (2) A continuity check across magnetron filament terminals should indicate  $0.1\Omega$  or less.
- (3) A continuity check between each filament terminal and magnetron case should read open.

#### 5. Fuse

If the fuse in the primary and monitor switch circuit is blown when the door is opened, check the primary and monitor switch before replacing the blown fuse.  
In case the fuse is blown by an improper switch operation, replace the defective switch and fuse at the same time.  
Replace just the fuse if the switches operate normally.

# WIRING DIAGRAM



# PRINTED CIRCUIT BOARD

## 1. CIRCUIT CHECK PROCEDURE

### 1. Low voltage transformer check

The low voltage transformer is located on the P.C.B.

Measuring condition: Input voltage: 120V / Frequency: 60Hz

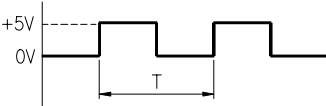
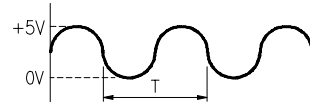
Terminal Voltage	LOAD	NO LOAD
7-8	AC	AC 14.5 V

#### NOTE

1. Refer to Circuit Diagram (point 4).
2. Secondary side voltage of the low voltage transformer changes in proportion to fluctuation of power source voltage.
3. The allowable tolerance of the secondary voltage is within  $\pm 5\%$  of nominal voltage.

### 2. Voltage Check

- Key check point

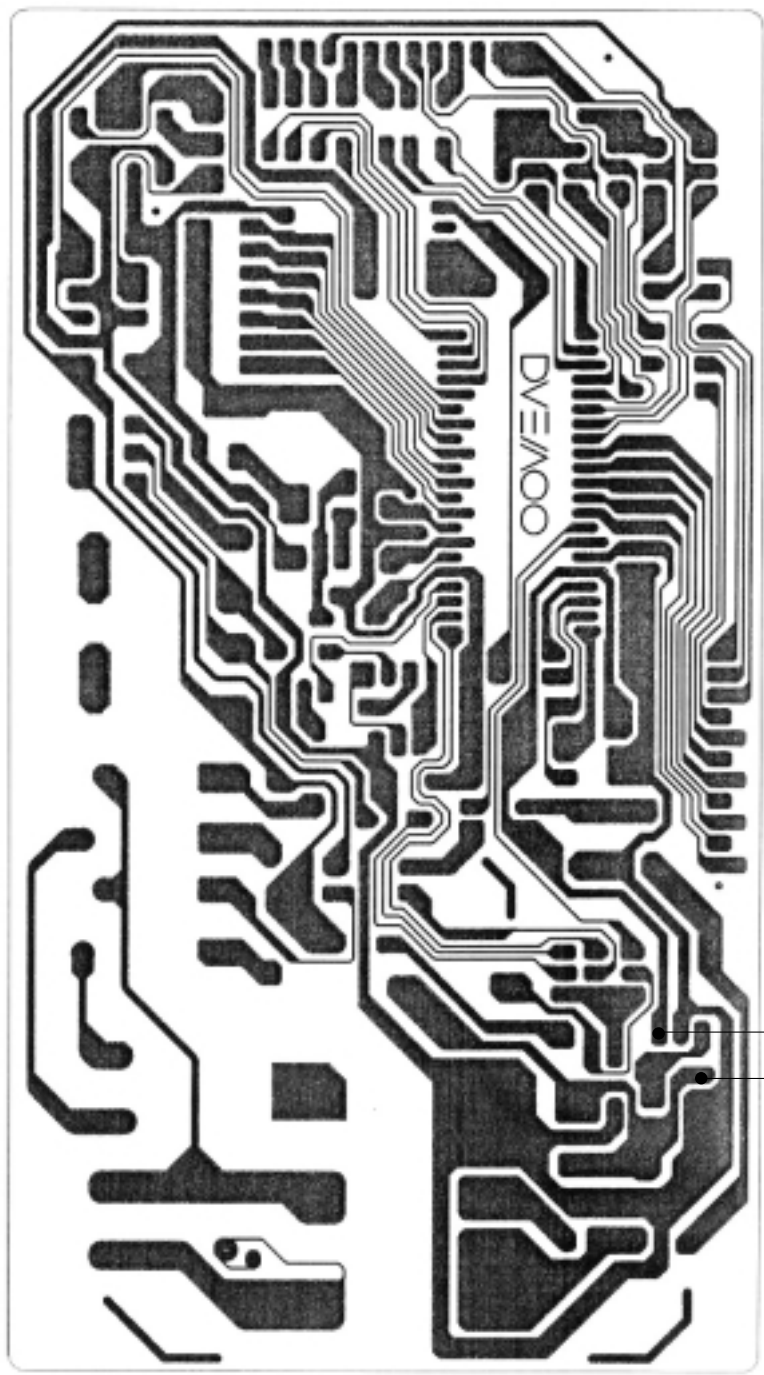
NO	CHECK POINT	REMARK
1	IC1 PIN 5	+5VDC
2	IC1 PIN 8(INT)	 <p>T : 16.67ms(60Hz)</p>
3	IC1 PIN 35 OR 36	 <p>T : 250 ns(4MHz)</p>

- Check method

NO	MEASURE POINT	WAVE FORM	REMEDY	REMARK
1	MP1	DC +5V $\pm$ 0.25V	Replace VL1, EC1	NO LOAD
2	MP2	DC +12V $\pm$ 2.0V	Replace EC2, D11,12,13	NO LOAD

#### NOTE

Each measure point must be measured with GND points.



MP1  
MP2

Measure Point

### 3. When there is no microwave oscillation

- 1) When touching **START** pad, oven lamp turns on and turntable rotates.  
but fan motor does not rotate.

\* Cause : **RELAY 1, 4** does not operate. → refer to Circuit Diagram (point 2, 3)  
- Check method

STATE \ POINT	A	B
RELAY 1, 4 ON	+5VDC	GND
RELAY 1, 4 OFF	GND	+15VDC

- 2) When touching **START** pad, oven lamp turns on.

Fan motor and turntable rotate and cook indicator in display comes on.

\* Cause : **RELAY 1** does not operate. → refer to Circuit Diagram (point 3)  
- Check method

STATE \ POINT	A	B
RELAY 1 ON	+5VDC	GND
RELAY 1 OFF	GND	+15VDC

### 4. When Pizza Oven is not heated.

\* Cause : **RELAY 3** does not operate. → refer to Circuit Diagram (point 6)  
- Check method

STATE \ POINT	A	B
RELAY 3 ON	+5VDC	GND
RELAY 3 OFF	GND	+15VDC

### 5. When the door is opened during operation, the count down timer does not stop.

→ refer to Circuit Diagram (point 1)


- Check method

STATE \ POINT	A	B
1) DOOR OPEN	OPEN	+5VDC
2) DOOR CLOSED	CLOSE	GND

CHECK NO	METHOD	REMEDY
1	Check the stage(ON, OFF) of the door open monitor switch by resistance measurement.	Replace door open monitor switch.

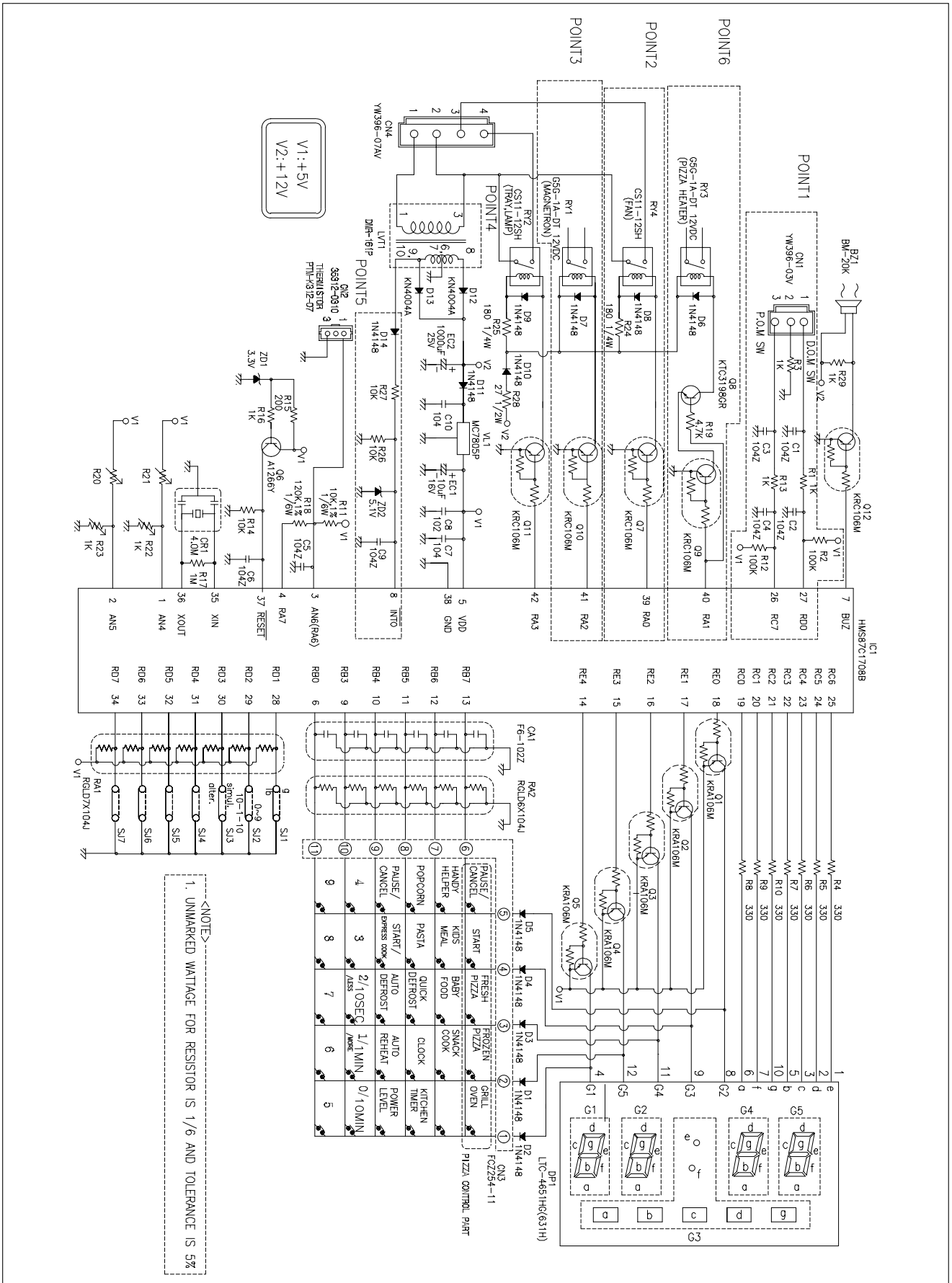
### 6. When the digital clock does not operate properly.

→ refer to Circuit Diagram (point 5)

POINT	WAVE FORM
A	

\* If clock does not keep exact time, you must check D14,R26,R27,ZD2,C9.

## 2. PCB CIRCUIT DIAGRAM



### 3. P.C.B. LOCATION NO.

NO	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY
1	BUZZER	BZ1	BM-20K	3515600100	1
2	C ARRAY	CA1	7P(6) 1000PF M 50V	CN6XB-102M	1
3	CAPACITOR CERA	C8	102 50V Z AXIAL	CCZB1H102K	1
4	CAPACITOR CERA	C1~7,C9,C10	104 50V Z AXIAL	CCZF1H104Z	9
5	CAPACITOR ELEC	EC1	50V RS 10UF	CEXE1H100A	1
6	CAPACITOR ELEC	EC2	25V RSS 1000MF	CEXF1E102V	1
7	CONNECTOR WAFER	CN1	YW396-03V	3519150530	1
8	CONN WAFER	CN2	35312-0310	30166M5030	1
9	CONNECTOR WAFER	CN3	FCZ 254-11	441M367160	1
10	CONNECTOR WAFER	CN4	YW396-07AV	3519150540	1
11	DIODE RECTIFY	D1~11, D14	1N4148	DZN4148---	12
12	DIODE RECTIFY	D12,13	KN4004A	DZN4004A--	2
13	DIODE ZENER	ZD1	UZ- 3.3BSB 1/2W	DZUZ3R3BSB	1
14	DIODE ZENER	ZD2	UZ- 5.1BSB 1/2W	DZUZ5R1BSB	1
15	IC MICOM	IC1	HMS87C1708B-	150SD135P-	1
16	LED DISPLAY	DP1	LTC-4651HG(631)	DDD631H02	1
17	PCB MAIN	M314	90X163.7	3514330600	1
18	R ARRAY	RA1	8P(7) 1/8 100K OHM J	RA-88X104J	1
19	R ARRAY	RA2	7P(6) 1/8 100K OHM J	RA-87X104J	1
20	R CARBON FILM	R4~10	1/6W 330 5%	RD-AZ331J-	7
21	R CARBON FILM	R1,3,13,16,22,23,29	1/6W 1K 5%	RD-AZ102J-	7
22	R CARBON FILM	R19	1/6W 4.7K 5%	RD-AZ472J-	1
23	R CARBON FILM	R15	1/6W 200 5%	RD-AZ201J-	1
24	R CARBON FILM	R14,R26,R27	1/6W 10K 5%	RD-AZ103J-	3
25	R CARBON FILM	R2,R12	1/6W 100K 5%	RD-AZ104J-	2
26	R CARBON FILM	R17	1/6W 1M 5%	RD-AZ105J-	1
27	R CARBON FILM	R24,R25	1/4W 180 5%	RD-4Z181J-	2
28	R CARBON FILM	R28	1/2W 27 5%	RD-2Z270JS	1
29	R METAL FILM	R11	1/6 10K OHM 1%	RN-AZ1002F	1
30	R METAL FILM	R18	1/6 120K OHM 1%	RN-AZ1203F	1
31	RESONATOR CERA	CR1	CRT 4.00MS	5P4R00MTS-	1
32	IC REGULATOR	VL1	MC7805C	1CPMC7805C	1
33	TRANSISTOR	Q1~5	KRA106M	TZRA106M--	5
34	TRANSISTOR	Q7,Q9~12	KRC106M	TZRC106M--	5
35	TRANSISTOR	Q6	KTA-1266Y	TZTA1266Y-	1
36	TRANSISTOR	Q8	KTC3198GR	TZTC3198GR	1
37	TRANS POWER	LVT1	DMR-161P	5EPU035303	1
38	SW RELAY	RY1,RY3	G5G-1A-DT DC12V	5SC0101123	2
39	SW RELAY	RY2,RY4	CS11-12SH 1C 1P	5SC0101128	2
40	WIRE COPPER	J1,2,4-8,10-13,J16,SJ1,3	1/0.52 TIN COATING	85801052GY	14
41	WIRE COPPER	J3,9,14,15	1/0.52 TIN COATING	85801052GY	4



# EXPLODED VIEW AND PARTS LIST

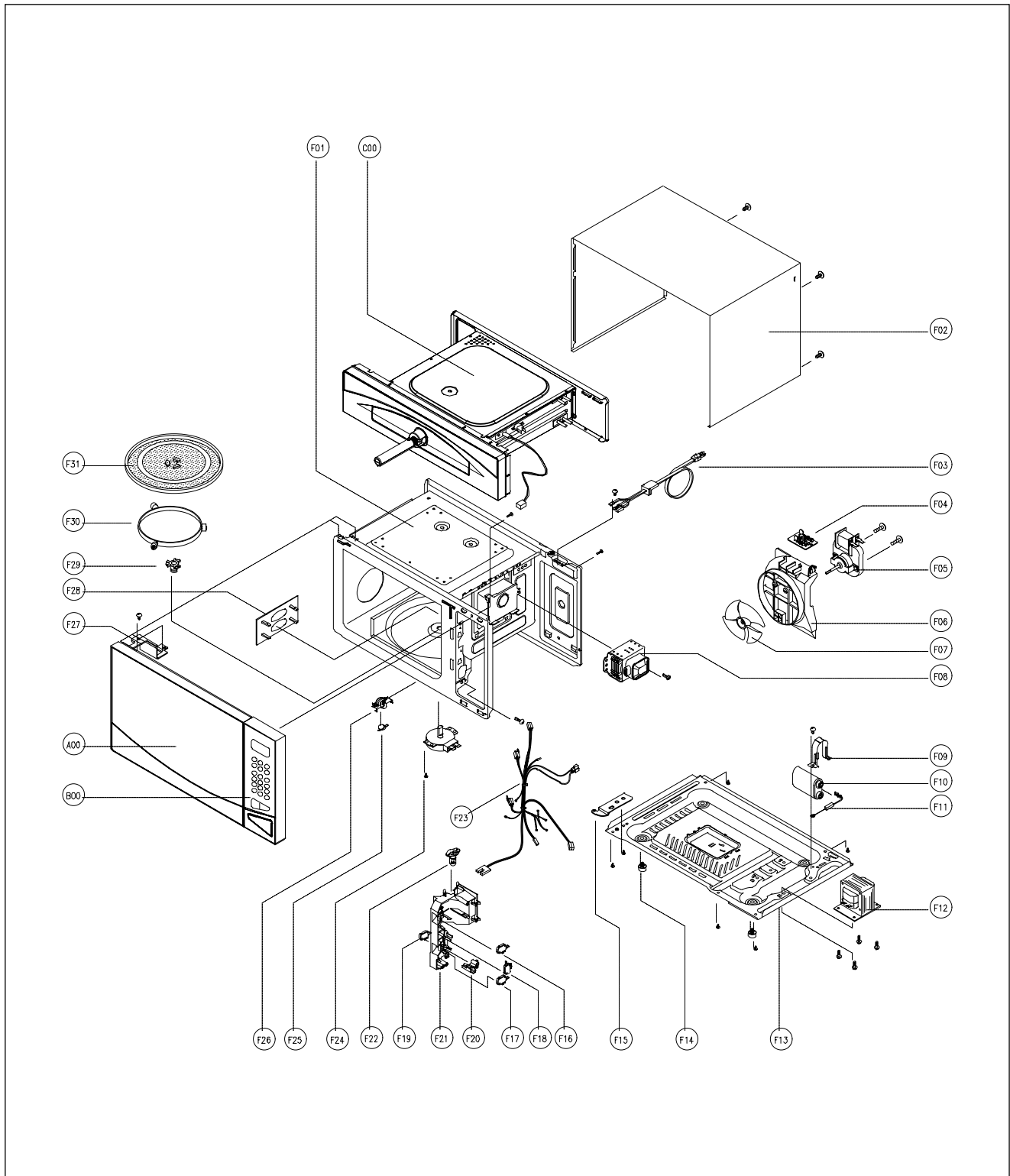
## 1. DOOR ASSEMBLY

Refer to Disassembly and assembly

## 2. CONTROL PANEL ASSEMBLY

Refer to Disassembly and assembly

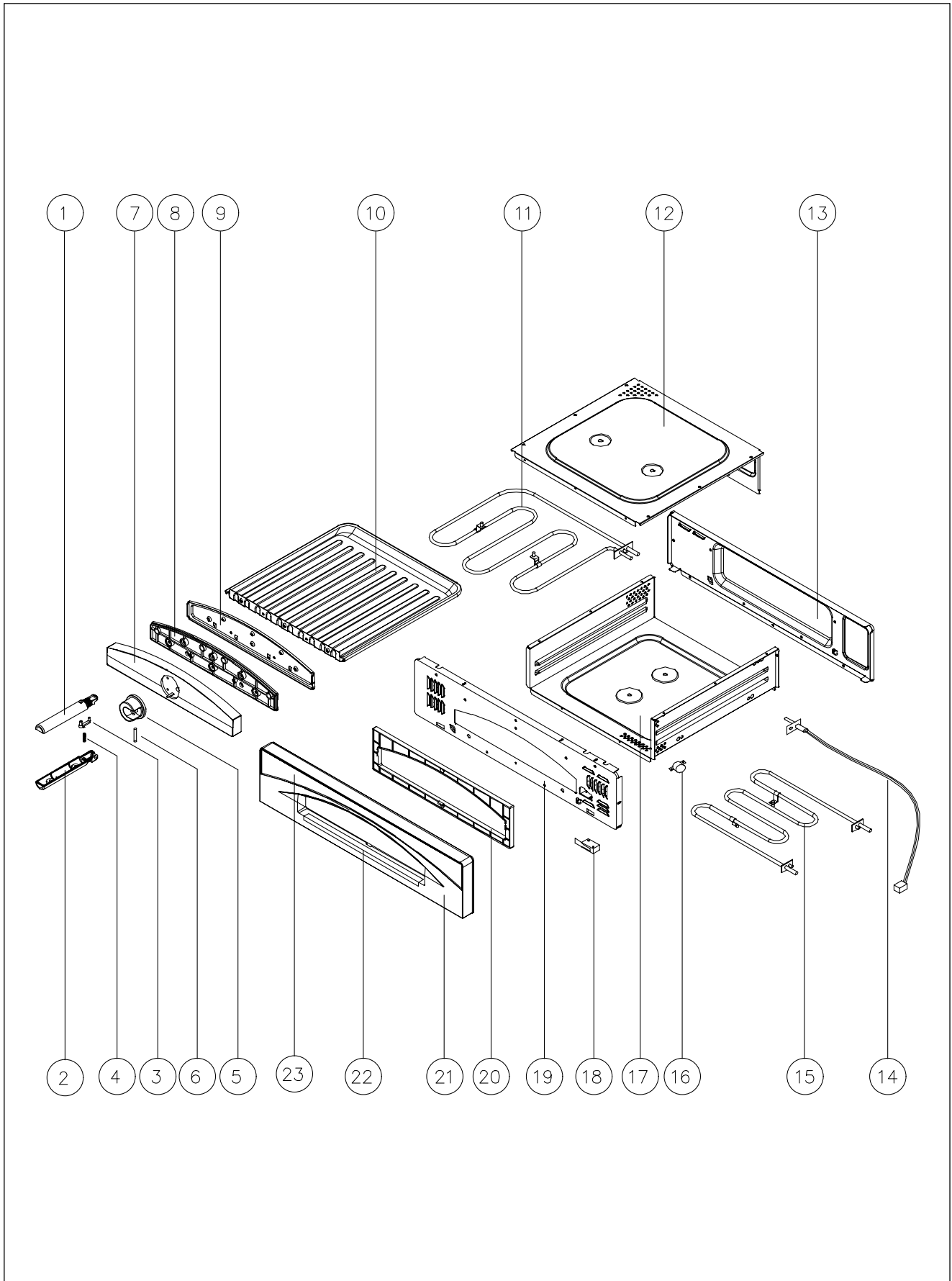
## 3. TOTAL ASSEMBLY



✓ **Caution** : In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center (<http://svc.dwe.co.kr>).

NO	PART NAME	PART CODE	DESCRIPTION	Q'TY
A00	DOOR AS	3511725200	KOD-135P9A	1
B00	CONTROL-PANEL AS	3516732500	KOD-135P9A	1
C00	ASSY PIZZA OVEN	3510022000	KOD-135P9A	1
F01	CAVITY AS	3516111500	KOR-131G0A	1
F02	CABINET AS	3510808700	KOD-135P9A	1
F03	CORD POWER AS	35113T5W0L	3X16AWG 80X80 120-RTML	1
F04	NOISE-FILTER	3518607500	DWLF-M20-1	1
F05	MOTOR SHADED POLE	3963822200	120V 30W OEM-15DWX1-B07	1
F06	GUIDE WIND	3512520000	PP	1
F07	FAN	3511800100	P.P GF20	1
F08	MAGNETRON	3518002900	2M218J(F)P 6CF	1
F09	HOLDER HV CAPACITOR	3513003200	SECC T0.6	1
F10	CAPACITOR HV	3518302100	2100VAC 0.95UF #187	1
F11	DIODE HV	3518400400	HVR-1X-3AB 12KV #187	1
F12	TRANS HV	3518117930	DWAR10A0-13T	1
F13	BASE	3510313400	SBHG T0.7	1
F14	FOOT	3512100900	PP DASF-130	2
F15	STOPPER HINGE *U AS	3515202800	KOR-121M0A	1
F16	SW MICRO	4415A17352	VP-533A-OF SPNO #187 200G	1
F17	SWITCH PUSH	3518571000	MP101C	1
F18	SW MICRO	4415A66600	VP-532A-OF SPNC #187 200G	1
F19	SW MICRO	4415A66910	VP-531A-OF/SZM-V16-FA-61	1
F20	LEVER LOCK	3513702600	POM	1
F21	LOCK	3513814300	POM M90-02 F20	1
F22	LAMP	3513601500	BL 125V 25W T25 C5A H187	1
F23	HARNESS MAIN	3512781500	KOD-135P9A	1
F24	MOTOR SYNCRO	3966820200	120V 2W GM-16-12F17	1
F25	THERMOSTAT	3518905400	OFF:90 ON:60 H #187 NB	1
F26	HOLDER THERMOSTAT	3513003410	PP(BK)	1
F27	STOPPER HINGE *T AS	3515202900	KOR-121M0A	1
F28	COVER WAVE GUIDE	3511406200	HEATPROOF PP	1
F29	COUPLER	3517400620	XAREC	1
F30	GUIDE ROLLER AS	3512512920	KOR-121Q4A	1
F31	TRAY	441X335A10	BORO-S1 GLASS(NEG)	1

#### 4. PIZZA OVEN ASSEMBLY (C00)



NO	PART NAME	PART CODE	DESCRIPTION	Q'TY
1	HANDLE PIZZA *T	3512605400	ABS	1
2	HANDLE PIZZA *U	3512605500	ABS	1
3	LEVER HANDLE	3513703200	PC	1
4	SPRING HANDLE	3515102800	SWP	1
5	BRACKET HANDLE	3510609200	ABS	1
6	SHAFT HANDLE	3514901400	SWRM3	1
7	PANEL PIZZA	3514200600	PC	1
8	SUPPORTER PIZZA PANEL	3515308700	PBT	1
9	PLATE PIZZA PANEL	3514502800	SBHG T0.6	1
10	TRAY PIZZA	3517210300	SA1D T0.6, Teflon coating	1
11	HEATER PIZZA *T	3512806500	KOD-135P9A	1
12	PLATE TOP	3514502600	SBHG T0.4	1
13	PLATE REAR	3514502700	SECC T0.5	1
14	SENSOR TEMPERATURE	3514801400	PTM-K312-D7	1
15	HEATER PIZZA *U	3512806600	KOD-135P9A	1
16	THERMOSTAT	3518907000	OFF:130 ON:60 V #187	1
17	PLATE SIDE	3514502500	SBHG T0.4	1
18	LEVER SW MICRO	3513703300	KOD-135P9A(SPNO)	1
19	PLATE FRONT	3514502400	SBHG T0.6	1
20	COVER FRONT	3511411400	PBT	1
21	FRAME PIZZA	3512208900	PC	1
22	PROTECTOR FRAME	3517504700	STS T0.5 H/L	1
23	DECORATOR PIZZA	3511613900	STS T0.5 H/L	1

**DAEWOO**

**DAEWOO ELECTRONICS CORP.**  
686, AHYEON-DONG MAPO-GU SEOUL, KOREA  
C.P.O. BOX 8003 SEOUL, KOREA  
TELEX: DWELEC K28177-8  
CABLE: "DAEWOOELEC"

PRINTED DATE: Sep. 2004

S/M NO. : D135P9A000