

S/M No. :

# Service Manual

## Microwave Oven

Model: KQG-8A6K5S

### ✓ 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

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## ***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 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.

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# SAFETY AND PRECAUTIONS

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## 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 servicing, a microwave emission check should be performed prior to servicing the oven.
  - (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 the dealer immediately.

### IMPORTANT

The wire in this mains lead 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', earth symbol or colored green-and-yellow.

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

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

### NOTE :

The oven is designed for counter-top use only.

# SPECIFICATIONS

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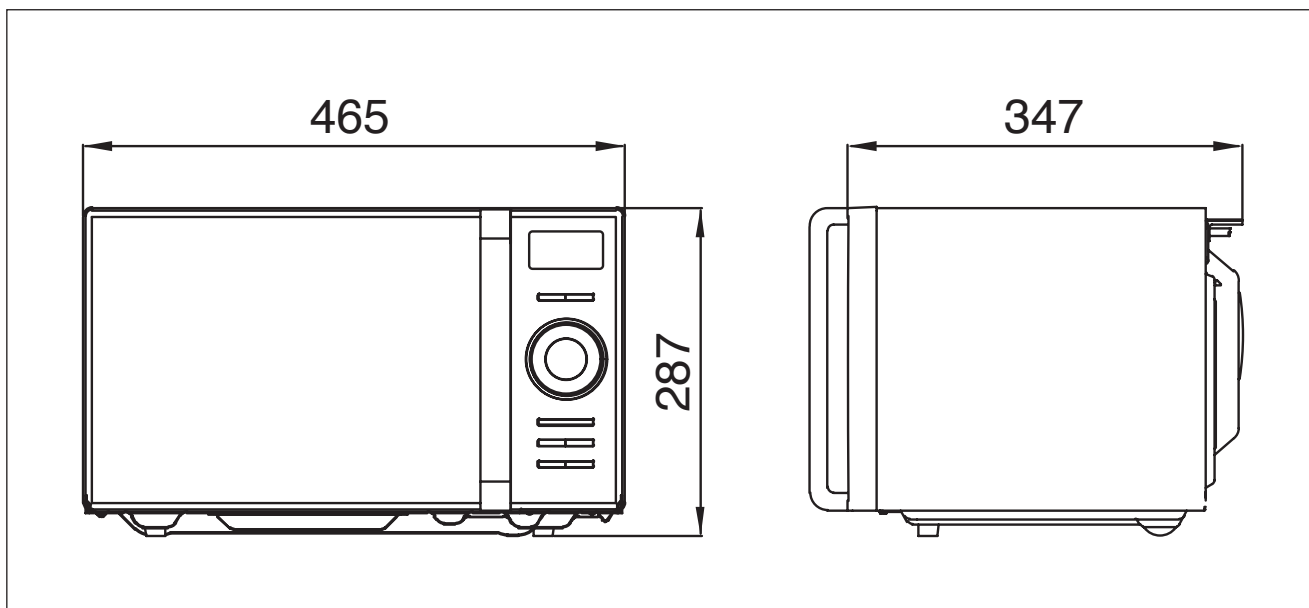
POWER SUPPLY		230V AC 50Hz, SINGLE PHASE WITH EARTHING
POWER CONSUMPTION	MICROWAVE	1200 W
	GRILL	1050 W
	COMBINATION	2200 W
MICROWAVE ENERGY OUTPUT		800 W
MICROWAVE FREQUENCY		2450 MHz
OUTSIDE DIMENSIONS (W x H x D)		465 x 287 x 347 mm
CAVITY DIMENSIONS (W x H x D)		298 x 230 x 330 mm
CAVITY VOLUME		23 L
NET WEIGHT		APPROX. 12.7 Kg
TIMER		60 min
POWER SELECTIONS		10 LEVELS

\* Specifications are subject to change without notice.

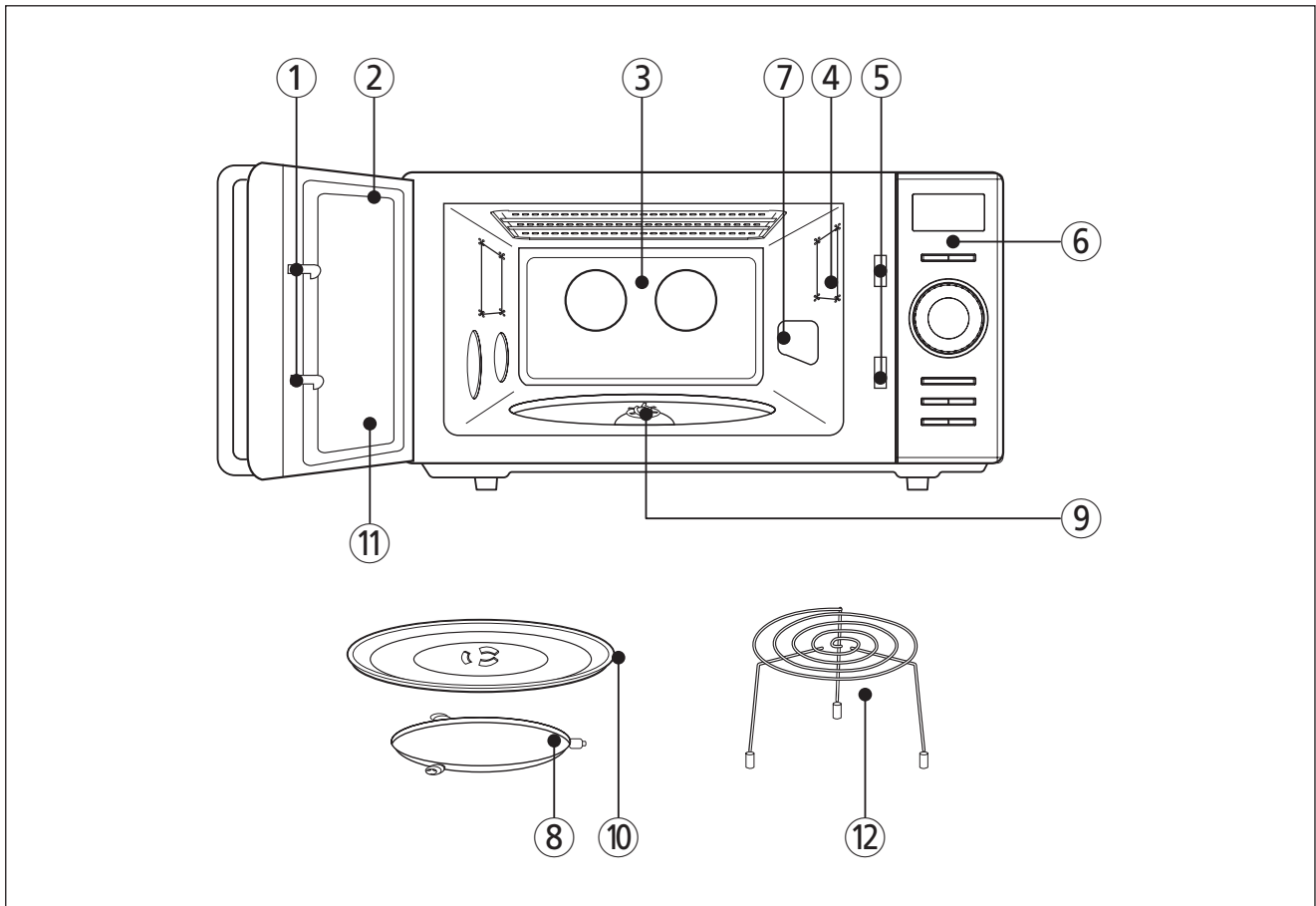
# EXTERNAL VIEW

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## 1. OUTER DIMENSION

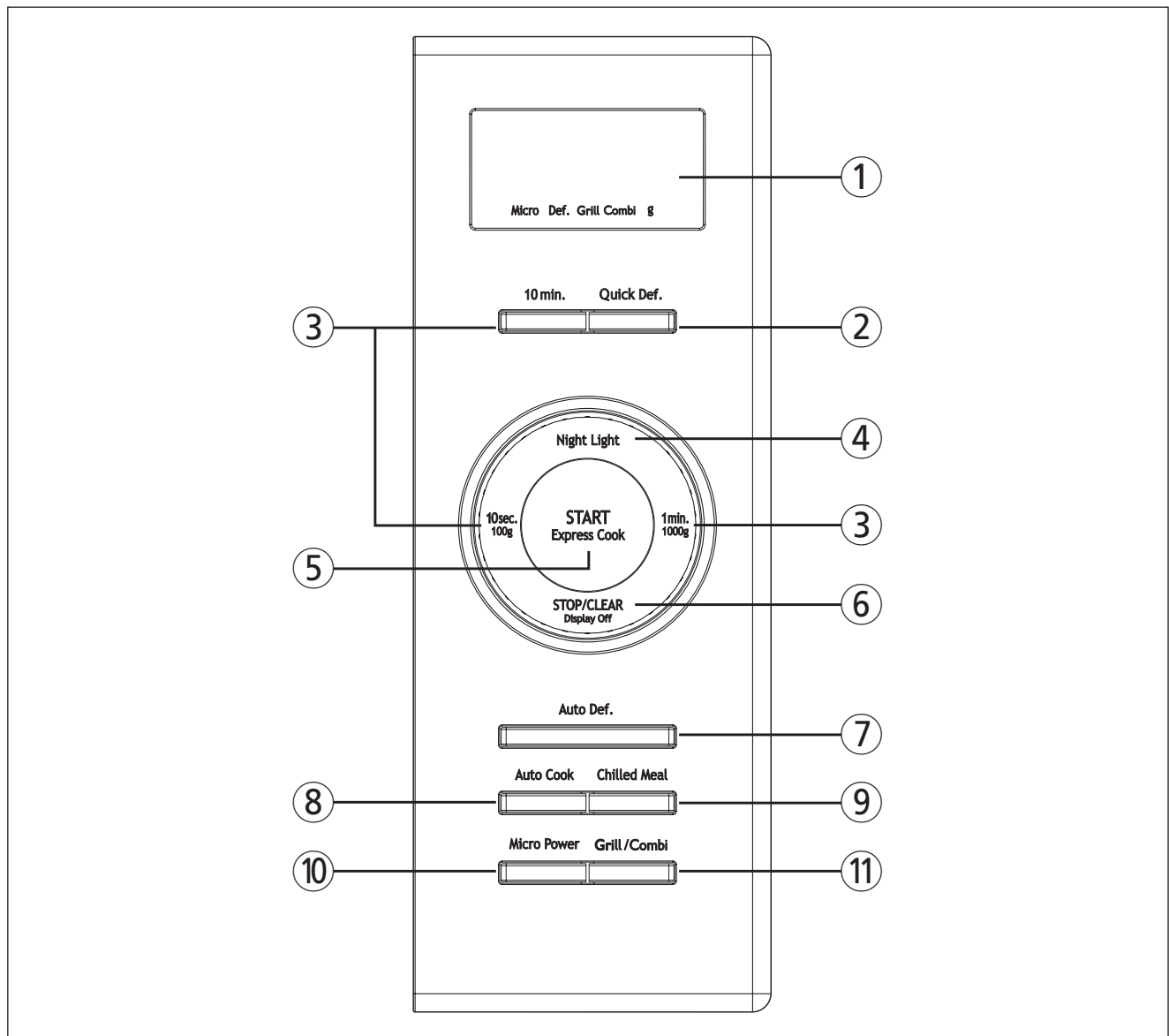


## 2. FEATURES DIAGRAM



- ① **Door hook** - When the door is closed, it will automatically lock shut. If door is opened while oven is operating, magnetron tube will immediately stop operating.
- ② **Door seal** - Door seal maintains the microwave within the oven cavity and prevents microwave leakage.
- ③ **Oven cavity**
- ④ **Oven lamp** - Automatically turns on during oven operating.
- ⑤ **Safety interlock system**
- ⑥ **Control panel**
- ⑦ **Spatter shield** - Protects the microwave outlet from splashes of cooking foods.
- ⑧ **Roller guide** - Supports the glass cooking tray.
- ⑨ **Coupler** - This fits over the shaft in the center of the oven cavity floor. This is to remain in the oven for all cooking.
- ⑩ **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.
- ⑪ **Door screen** - Allows viewing of food. Microwave cannot pass through perforations in screen.
- ⑫ **Metal rack**

### 3. CONTROL PANEL



① **Display** - Cooking time, power level, indicators are displayed.

② **Quick Defrost** - Used to defrost foods very quickly

③ **Time Set Pad** - Used to set the cooking time and weight.

④ **Night Light** - Used to turn ON/OFF the Night Light.

⑤ **Start/Express Cook** - Used to start the oven operation or to increase the reheat time by 30 seconds.

⑥ **Stop/Clear** - Used to stop operation the oven or to delete the cooking data.

⑦ **Auto Defrost** - Used to defrost foods. (for weight defrost)

⑧ **Auto Cook** - Used to cook or reheat many of favorite food.

⑨ **Chilled Meal** - Used to reheat meal or dinner plate.

⑩ **Micro Power** - Used to set power level.

⑪ **Grill/Combi** - Used to cook Grill/Combi.

# INSTALLATION

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## 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 failure.

## 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. Position the oven as far from them as possible.

## 4. Away from heating appliances and water taps

Keep the oven away from hot air, steam and 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 microwave oven requires a current of approximately 10 amperes, 230 Volts, 50 Hz.

- Power supply cord is about 0.8 meters long.

- Used the voltage 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 the oven to become room temperature before operating.

## EARTHING INSTRUCTIONS

This appliance must be earthed. In the event of an electrical short circuit, earthing 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 earthing plug. The plug must be plugged into an outlet that is properly installed and earthed.

### WARNING

Improper use of the earthing plug can result in a risk of electric shock. Consult a qualified electrician or service-man if the earthing instructions are not completely understood, or if doubt exists as to whether the appliance is properly earthed, and either : If it is necessary to use an extension cord, use only a 3-wire extension cord that has a 3-blade earthing 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.



# OPERATIONS AND FUNCTIONS

1. Connect the mains lead to an electrical outlet.
2. After placing the food in a suitable container, open the oven door and put it on the glass tray. The glass tray must always be in place during cooking.
3. Close the door securely.
4. The oven door can be opened at any time during operation by pulling the door.  
The oven will automatically shut off. To restart the oven, close the door and then push the START button.
5. Each time a button is pushed, a BEEP will sound to acknowledge the push.
6. The oven automatically cooks on full power unless set to a lower power level.
7. The display will show “: 0” when the oven is plugged in.
8. Time clock returns to the present time when the cooking time ends.
9. When the STOP/Clear button is pushed during the oven operation, the oven stops cooking and all information retained.  
To erase all information (except the present time), push the STOP/Clear pad once more. If the oven door is opened during the oven operation, all information is retained.
10. If the START button is pushed and the oven does not operate, check the area between the door and door is closed securely. The oven will not start cooking under 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 pushing the Micro power button. The chart shows the display, the power level and the percentage of power.

Push the Micro Power Button	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%

# DISASSEMBLY AND ASSEMBLY

## Cautions to be observed when troubleshooting.

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 earthed.

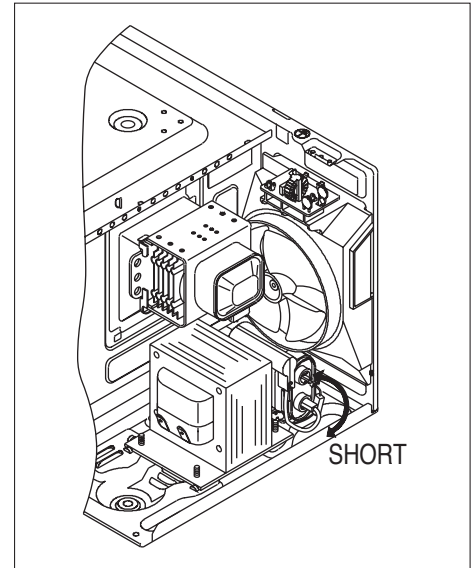
It is imperative, therefore, to make sure it is earthed properly before beginning repair work.

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

For about 30 seconds after the operation stopped and 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 15A fuse is blown out 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.

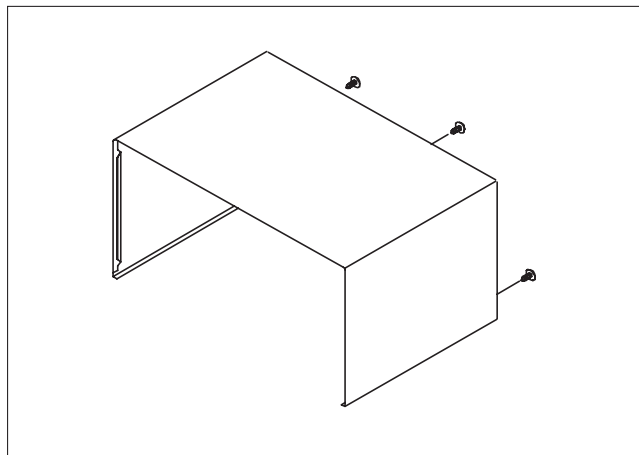


**CAUTION :** Service personnel should remove their watches whenever working close to or replacing the magnetron.

**WARNING :** When servicing the appliance, need a care of 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.

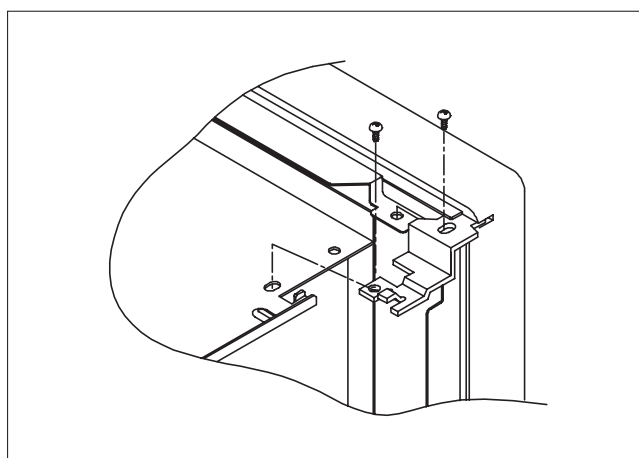
## 1. To remove cabinet

- 1) Remove three screws on cabinet back.
- 2) Pull the cabinet backward.



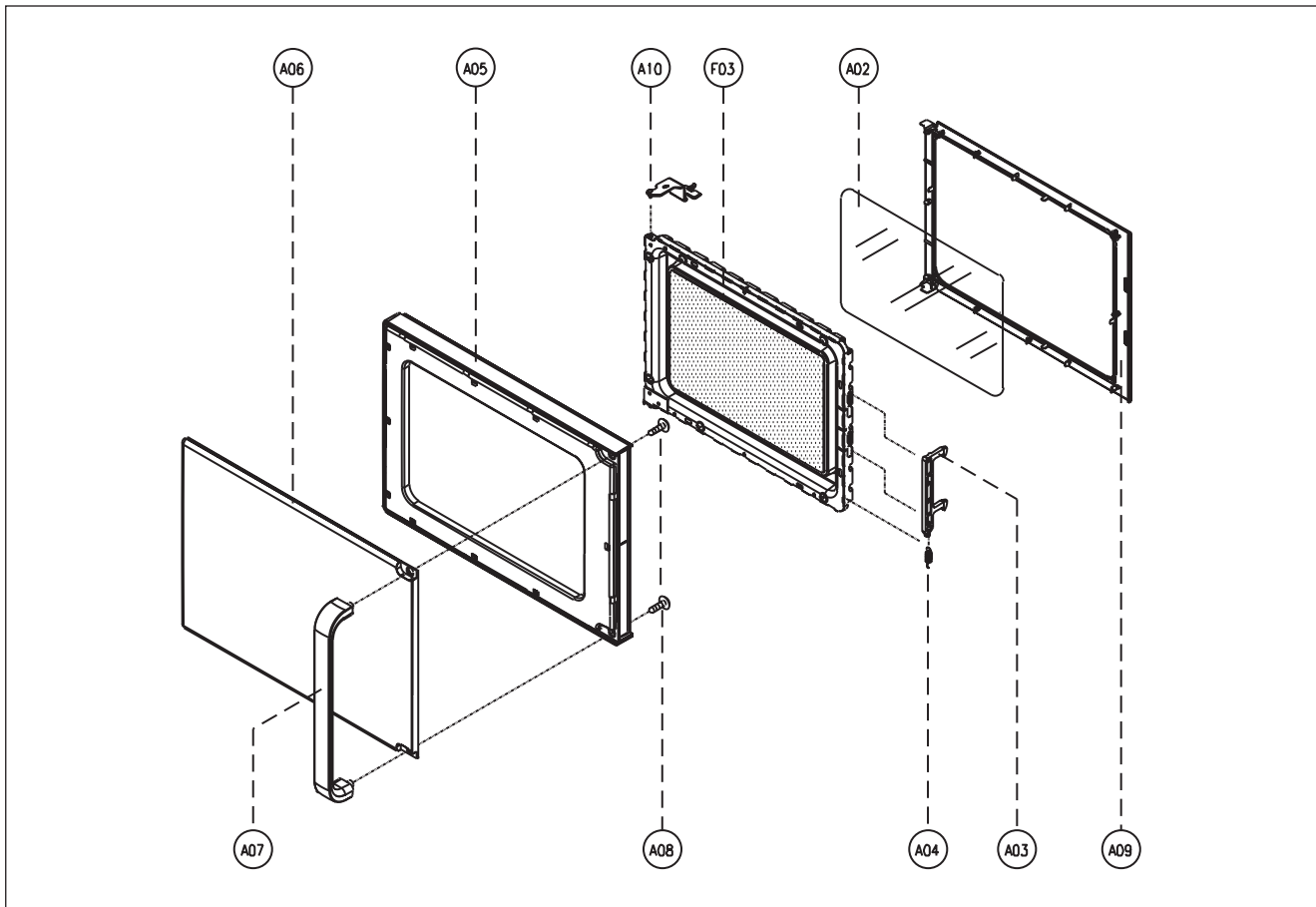
## 2. To remove door assembly

- 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.

### 3. To remove door parts.

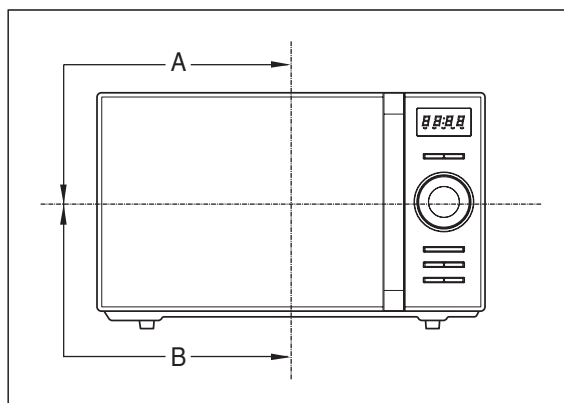


REF. NO	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
A01	3511719500	DOOR PAINTING AS	KOR-6C0B5S	1	
A02	3517002800	BARRIER-SCREEN *I	POLYESTER T0.1	1	
A03	3513100750	HOOK	POM	1	
A04	3515102000	SPRING HOOK	PW1	1	
A05	3512210280	FRAME DOOR	ABS SG-0760D SG-175 COATING	1	
A06	3517009930	BARRIER-SCREEN *O	ABS UT-0510 SMOG	1	
A07	3512606870	HANDLE DOOR	ABS SG-0760D SG-175 COATING	1	
A08	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	2	
A09	3512300210	GASKET DOOR	PP	1	
A10	3515204100	STOPPER HINGE *T AS	KOR-63150S	1	

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

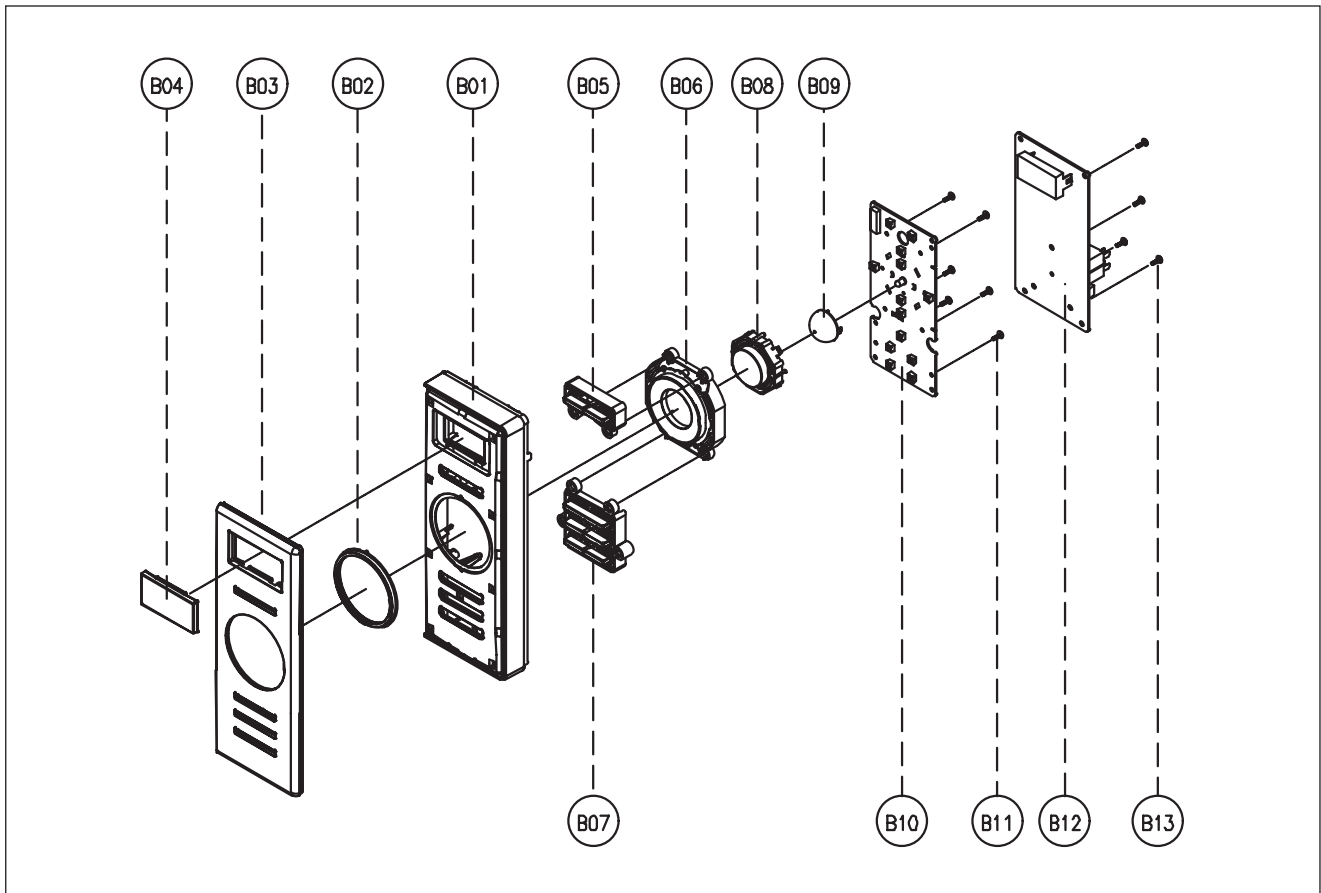
#### 4. Method to reduce the gap between the door seal and the oven front surface.

- (1) To reduce gap located on part A
  - Loosen two screws on the stopper hinge top, and then push the door to contact the door seal to the oven front surface.
  - Tighten two screws.
- (2) To reduce gap located on part B
  - Loosen two screws on the stopper hinge under, and then push the door to contact the door seal to the oven front surface.
  - Tighten two screws.



**NOTE :** A small gap may be acceptable if the microwave leakage does not exceed 4mW/cm<sup>2</sup>.

## 5. TO REMOVE CONTROL PANEL PARTS.

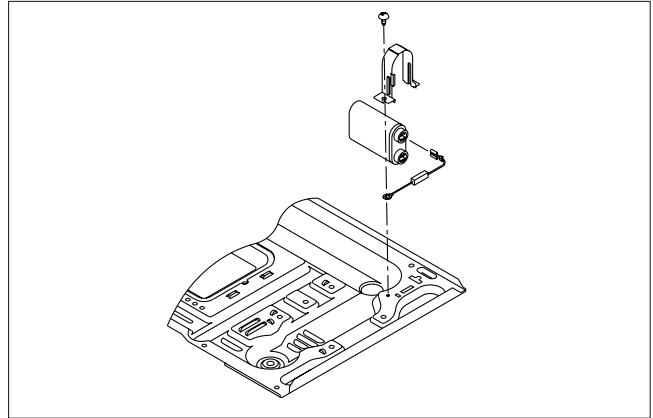


REF. NO	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3516735620	CONTROL-PANEL	ABS SG-0760D SG-175 COATING	1	
B02	3511618030	DECORATOR RING	ABS SG-0760D SG-175 COATING	1	
B03	3511616980	DECORATOR C-PANEL	ABS SG-0760 SG-175 COATING	1	
B04	3515502310	WINDOW DISPLAY	SAN CR-5381 SMOG	1	
B05	3516911150	BUTTON FUNCTION-A	ABS SG-0760D SG-175 COATING	1	
B06	3516911270	BUTTON FUNCTION-B	ABS SG-0760 SG-175 SEMI-COATING	1	
B07	3516913230	BUTTON FUNCTION-C	ABS SG-0760D SG-175 COATING	1	
B08	3516915040	BUTTON START	ABS SG-0760 SG-175 SEMI-COATING	1	
B09	3511405910	COVER LED	PP	1	
B10	PKBPMSGC10	PCB BUTTON MANUAL AS	KOR-8A6KKS	1	
B11	7621301011	SCREW TAPPING	T2S PAN 3X10 PW MFZN	7	
B12	PKMPMSZXR0	PCB MAIN MANUAL AS	KQG-8A6K5S(SMPS MODULE)	1	
B13	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	3	

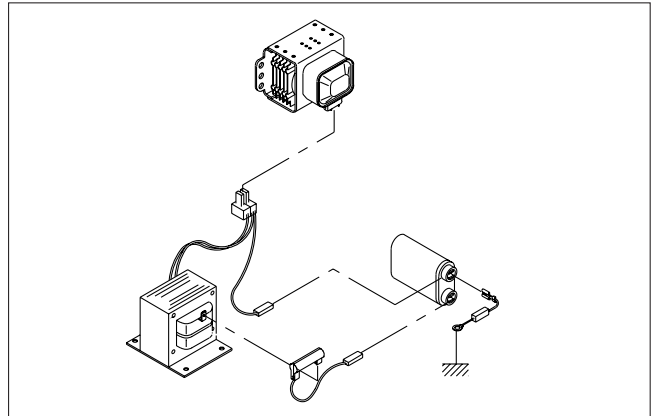
- 1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- 2) Remove the lever door open from the control panel.
- 3) Remove three screws which secure the PCB assembly to control panel.
- 4) Disconnect membrane tail from the connector of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

## 6. To remove high voltage capacitor.

- 1) Remove the 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.

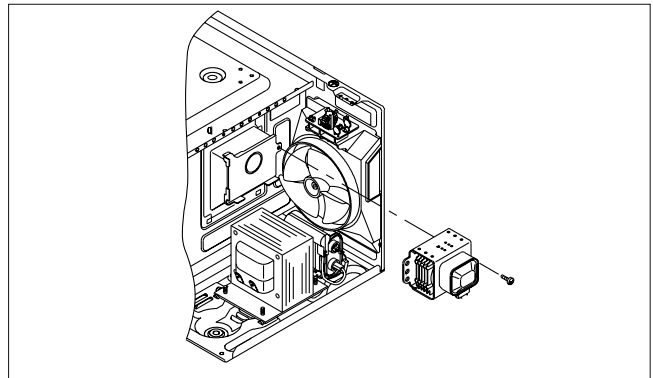


## ◆ High voltage circuit wiring

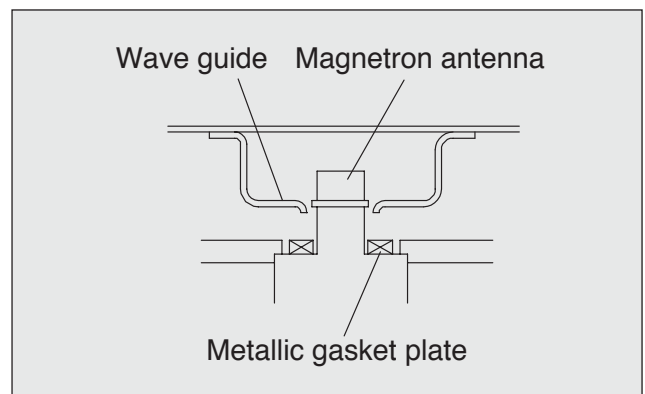
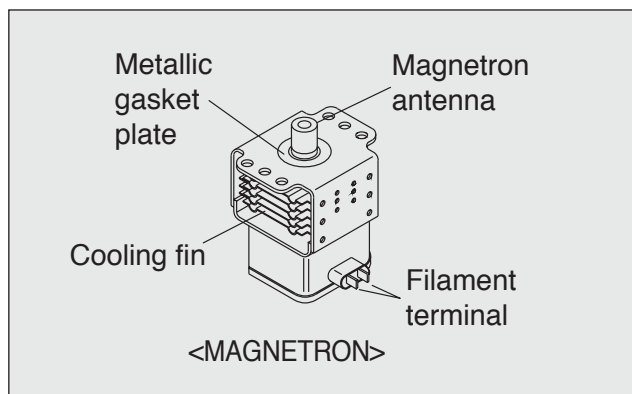


## 7. To remove magnetron.

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

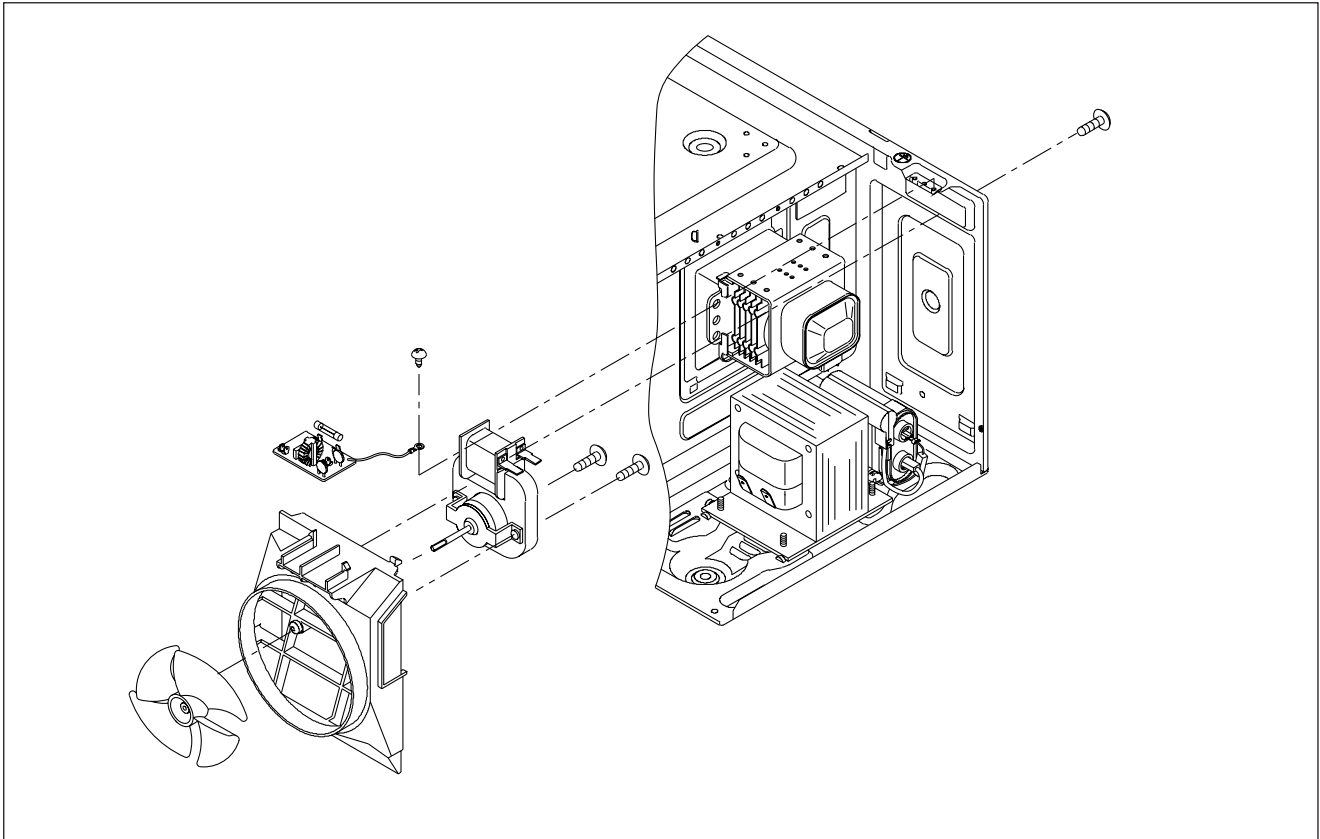


**NOTE :** Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed  $4\text{mW}/\text{cm}^2$  for a fully assembled oven with door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



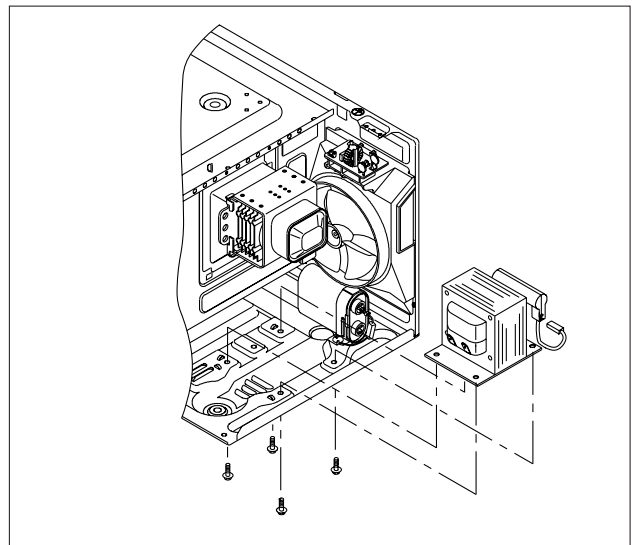
## 8. To remove wind guide assembly.

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



## 9. To remove H.V.transformer.

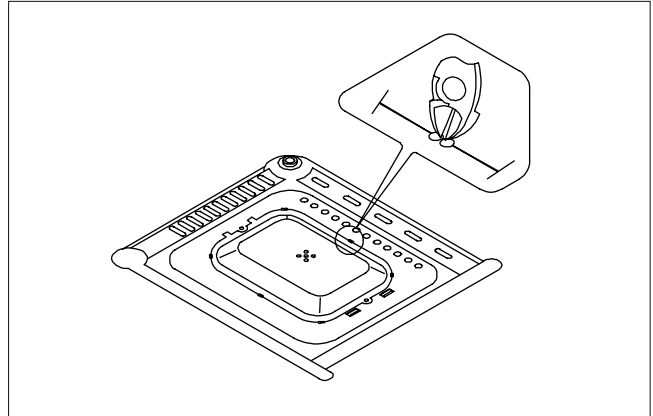
- 1) Remove four screws holding the H.V.transformer.
- 2) Remove the H.V.transformer.
- 3) Reverse the above steps for reassembly.



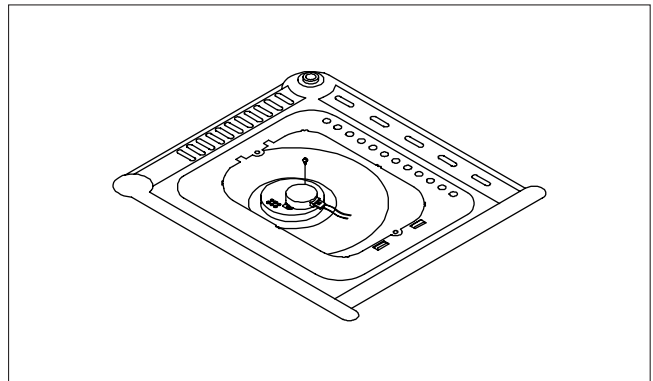


## 10. To remove tray motor.

- 1) Remove the coupler in the cavity.
- 2) Turn the set upside down.
- 3) Cut the tray motor cover part from the base plate.
- 4) Remove the tray motor cover.

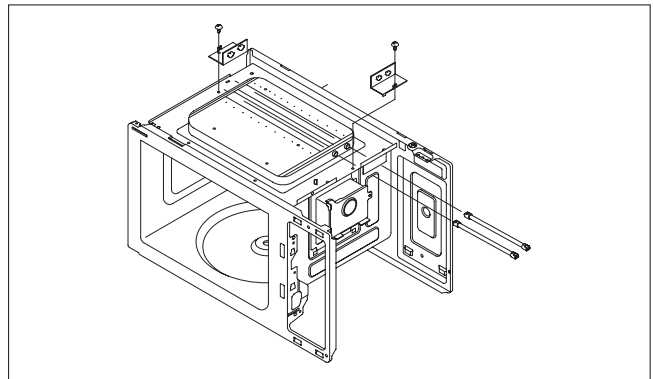


- 5) Remove a screw which secure the tray motor.
- 6) Remove the tray motor.
- 7) Reverse the above steps for reassembly except for securing the tray motor cover with screw.



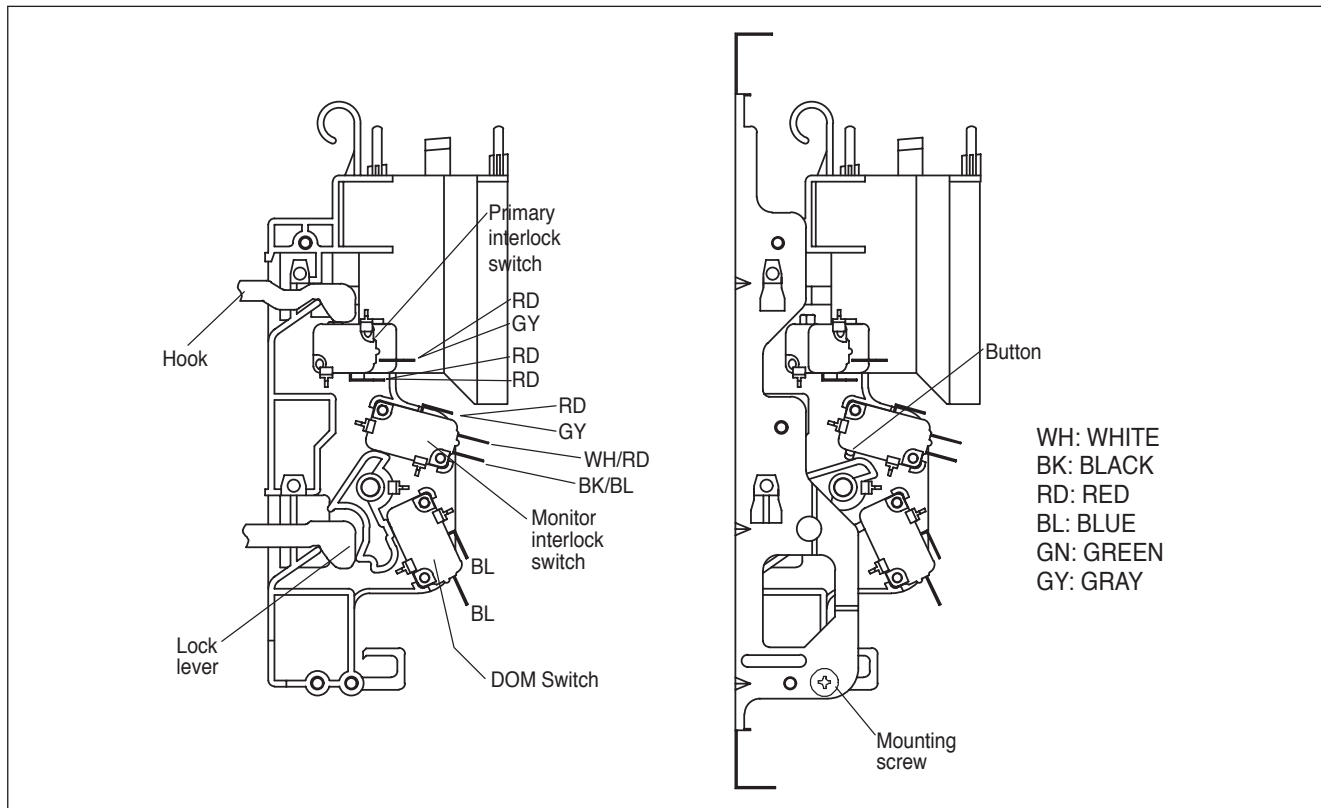
## 11. To remove heater assembly.

- 1) Remove the three screws.
- 2) Remove two Heater Brackets.
- 3) Remove Heaters.



# 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 microswitch. Then the button of the primary interlock switch bring it under "ON" condition.

## (2) Secondary interlock switch and interlock monitor 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 "OFF" condition and presses the button of the secondary interlock switch to bring it under "ON" condition.

### ADJUSTMENT :

#### Interlock monitor switch

When the door is closed, the interlock monitor switch should be "OFF" condition before other switches are closed.

When the door is opened, the interlock monitor switch should be "ON" condition after other switches are opened.

## (3) Adjustment steps

a) Loosen the mounting screw.

b) Adjust interlock switch assembly position.

Actuation distance of primary and secondary interlock switch shall be adjusted almost 0.7mm.

c) Make sure that lock lever moves smoothly after adjustment is completed.

d) Tighten completely a mounting screw.

### NOTE :

Microwave emission test should be performed after adjusting interlock mechanism. If the microwave emission exceed 4mW/cm<sup>2</sup>, readjust interlock mechanism.

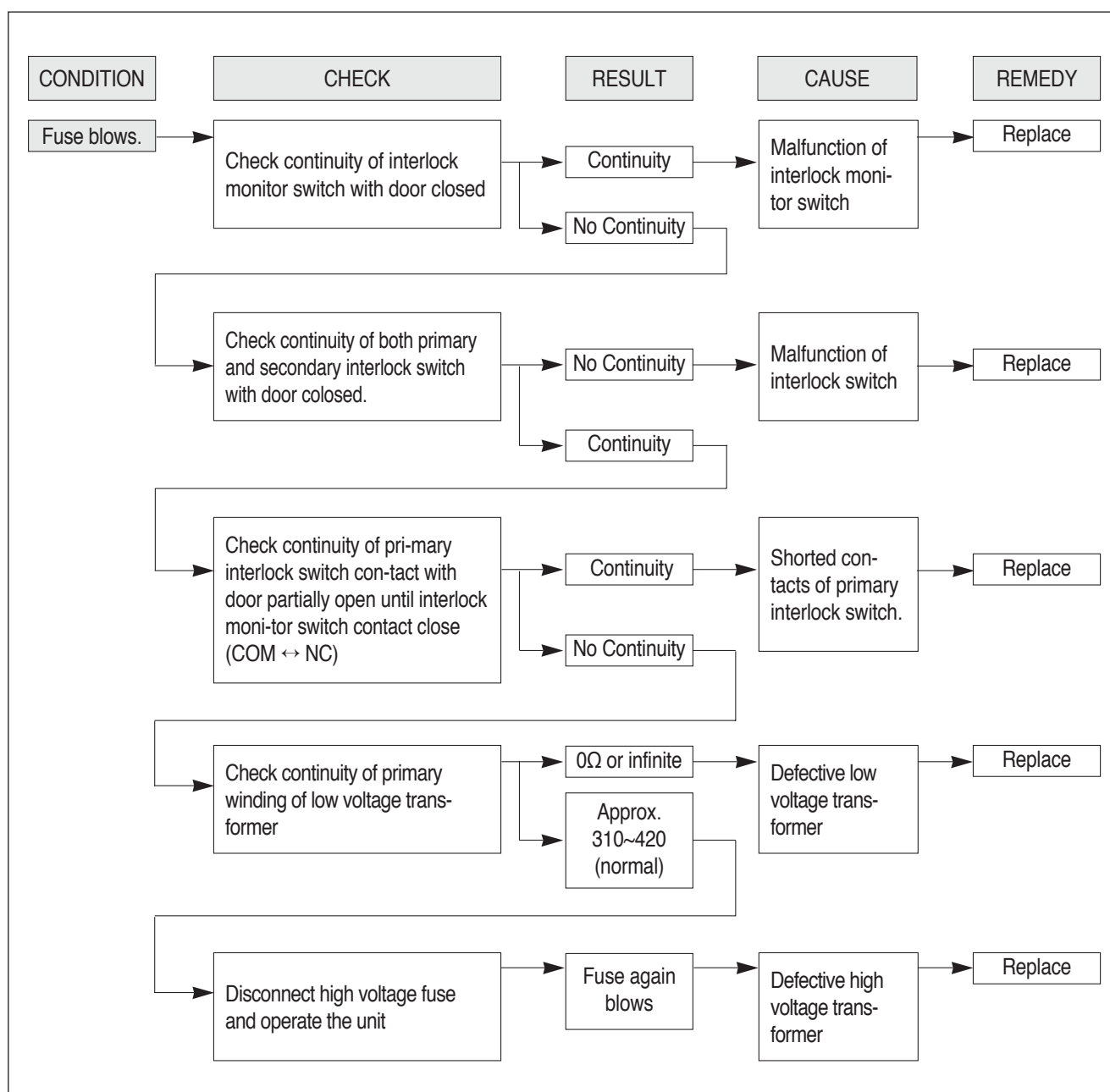
# TROUBLESHOOTING GUIDE

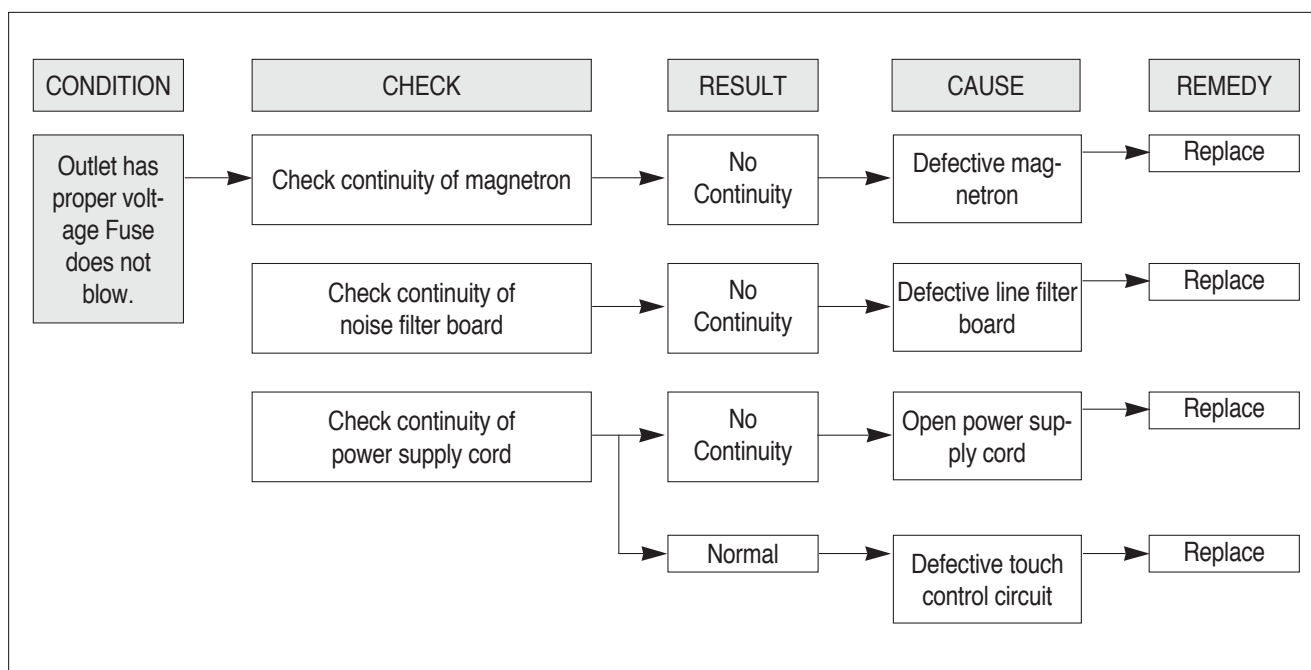
Following the procedure below to check if the oven is defective or not.

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 lead 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 connected 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.

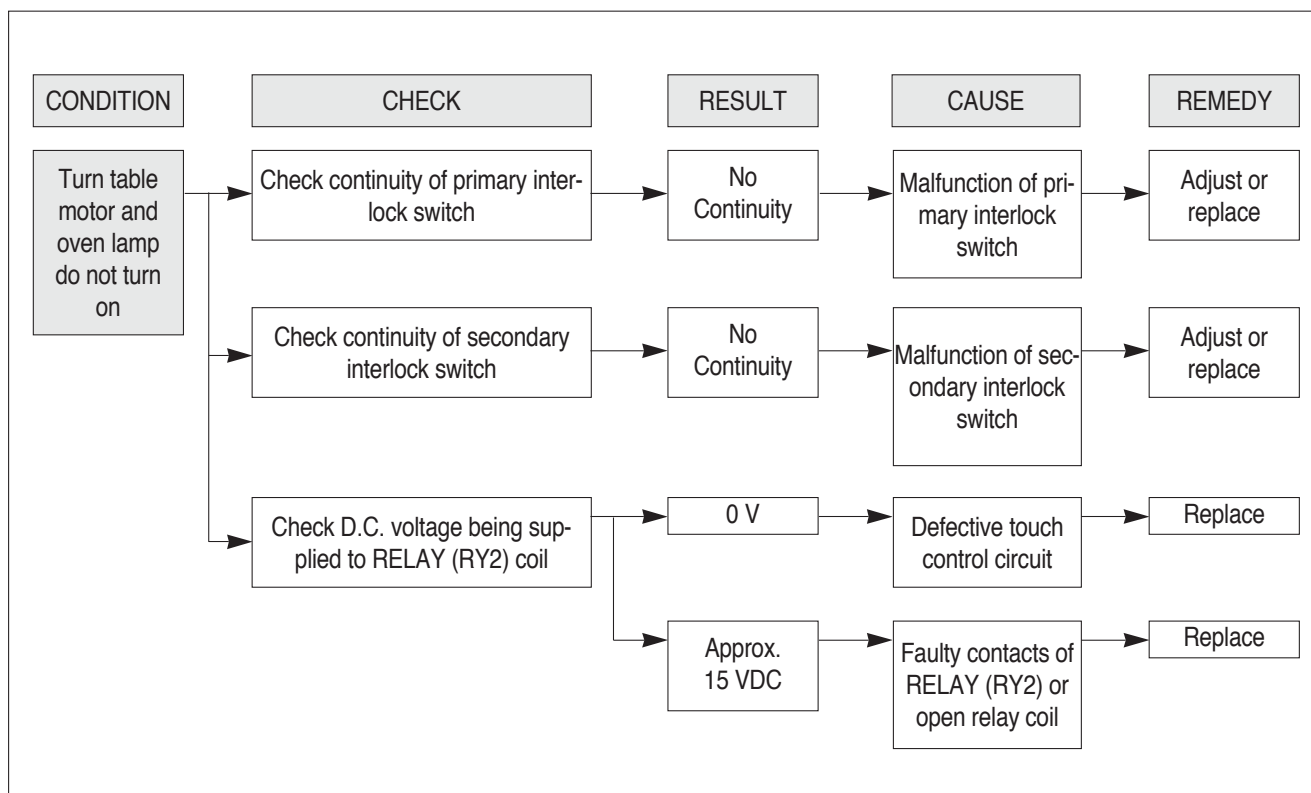




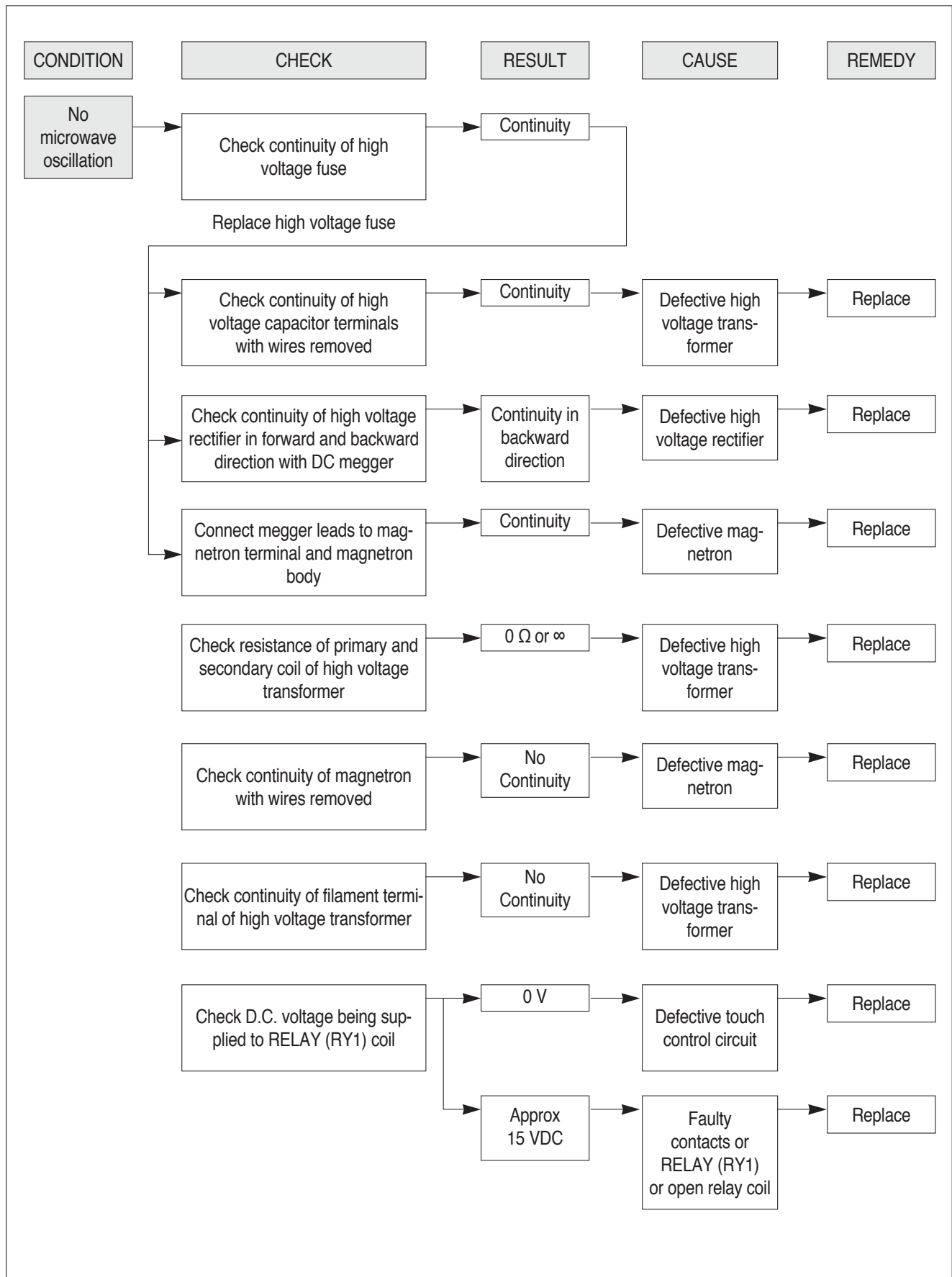
#### NOTE

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 button is tapped.

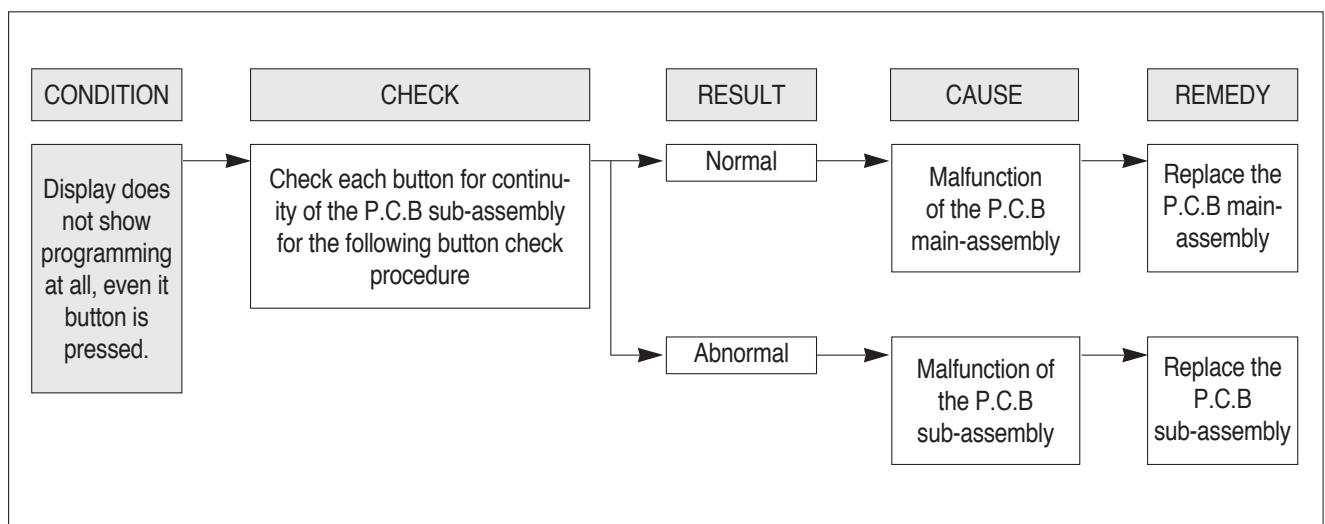
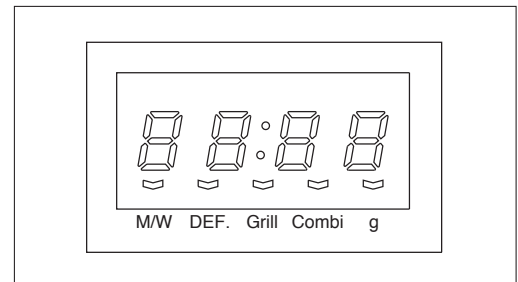


**(TROUBLE 3) No microwave oscillation even though fan motor rotates.**



**(TROUBLE 4)** 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 display are not on when they numbers is 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 button is touched.
6. Display does not count down or up with time cooking or clock operation.
7. Oven is programable 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 when cancel button 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 troubleshooting guide for the button of control panel failure, please check for the continuity of each wire-harness between the P.C.B main-assembly and P.C.B. sub-assembly.

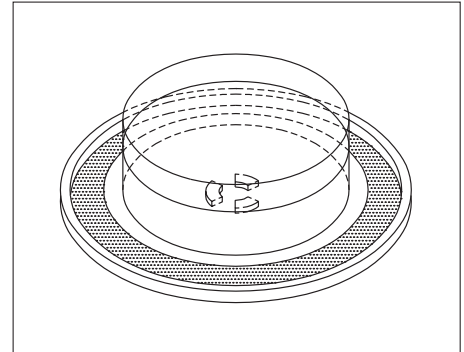
# MEASUREMENT AND TEST

## 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

1. 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.
2. 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.
3. 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.
4. Microwave power is switched on.
5. 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.
6. The initial and final temperature of water is selected so that the maximum difference between the ambient and final water temperature is 5K.
7. The microwave power output P in watts is calculated from the following formula :



$$P = 4187 \times \Delta T / t$$

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

### CAUTION :

1. Water load should be measured exactly to 1 liter.
2. Input power voltage should be exactly specified voltage (Refer to SPECIFICATIONS).
3. 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

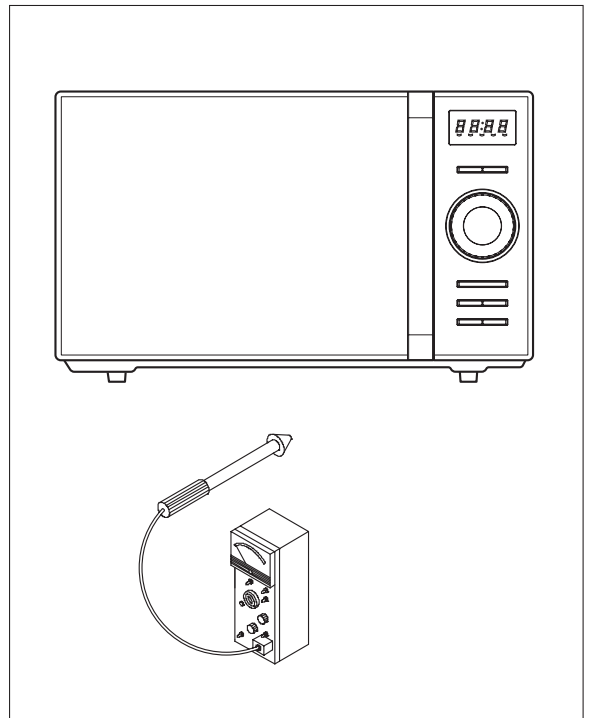
## 2. MICROWAVE RADIATION TEST

### 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. 95mm(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 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.





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### 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.  $140\Omega \pm 10\%$
  - Filament winding .....Approx.  $0\Omega$
  - Primary winding .....Approx.  $2\Omega$

#### 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.

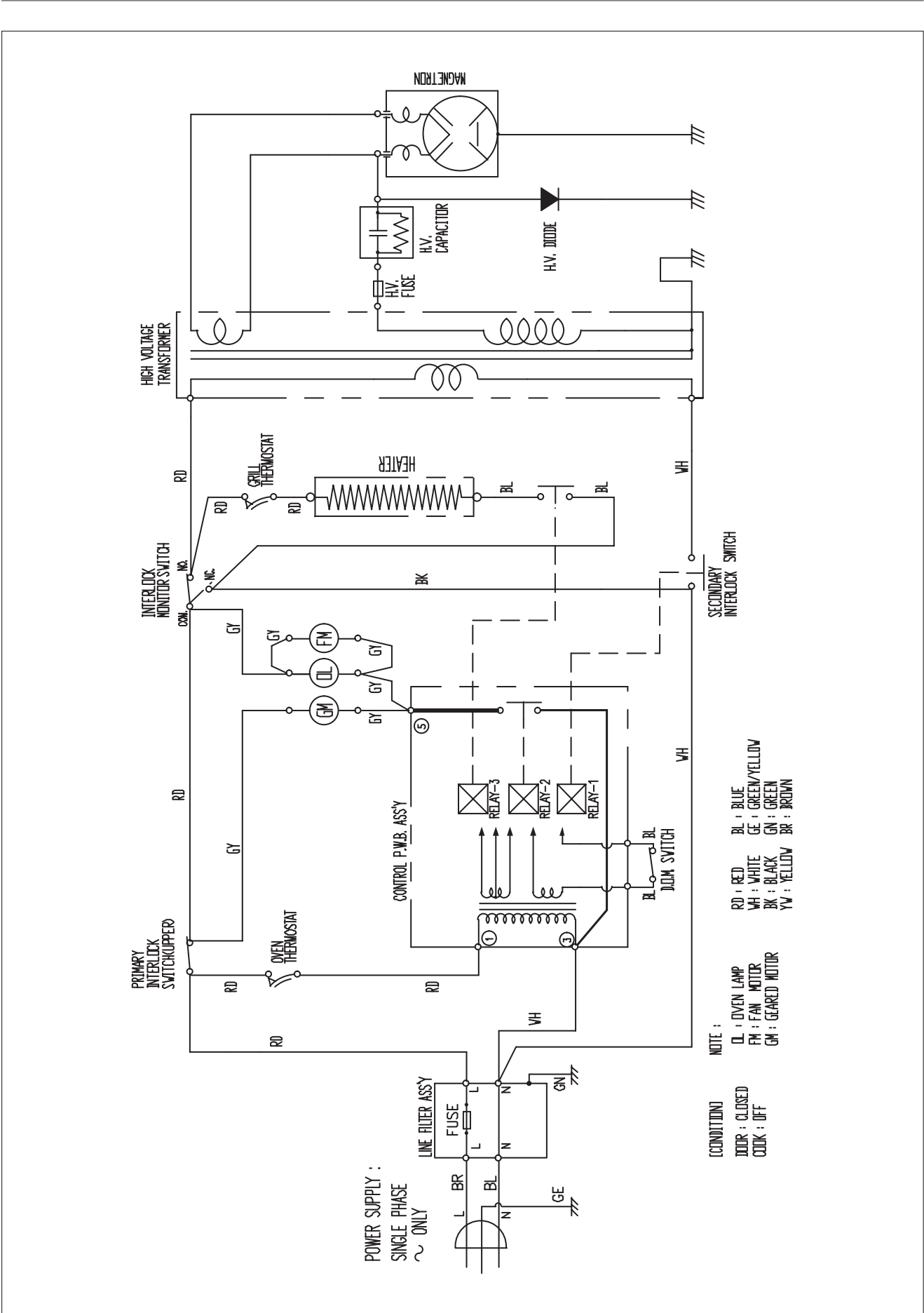
#### 5. Fuse

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.

\_\_\_\_\_



# 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: 230V / Frequency: 50Hz

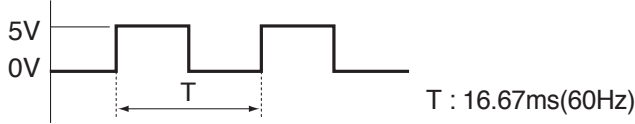
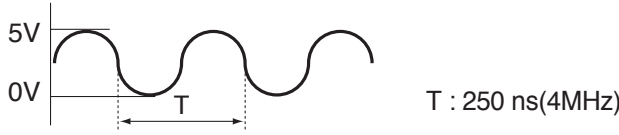
Terminal Voltage	LOAD	NO LOAD
5-6-7	AC 12.6 V	AC 14.7 V

#### NOTE

1. Refer to Circuit Diagram.
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

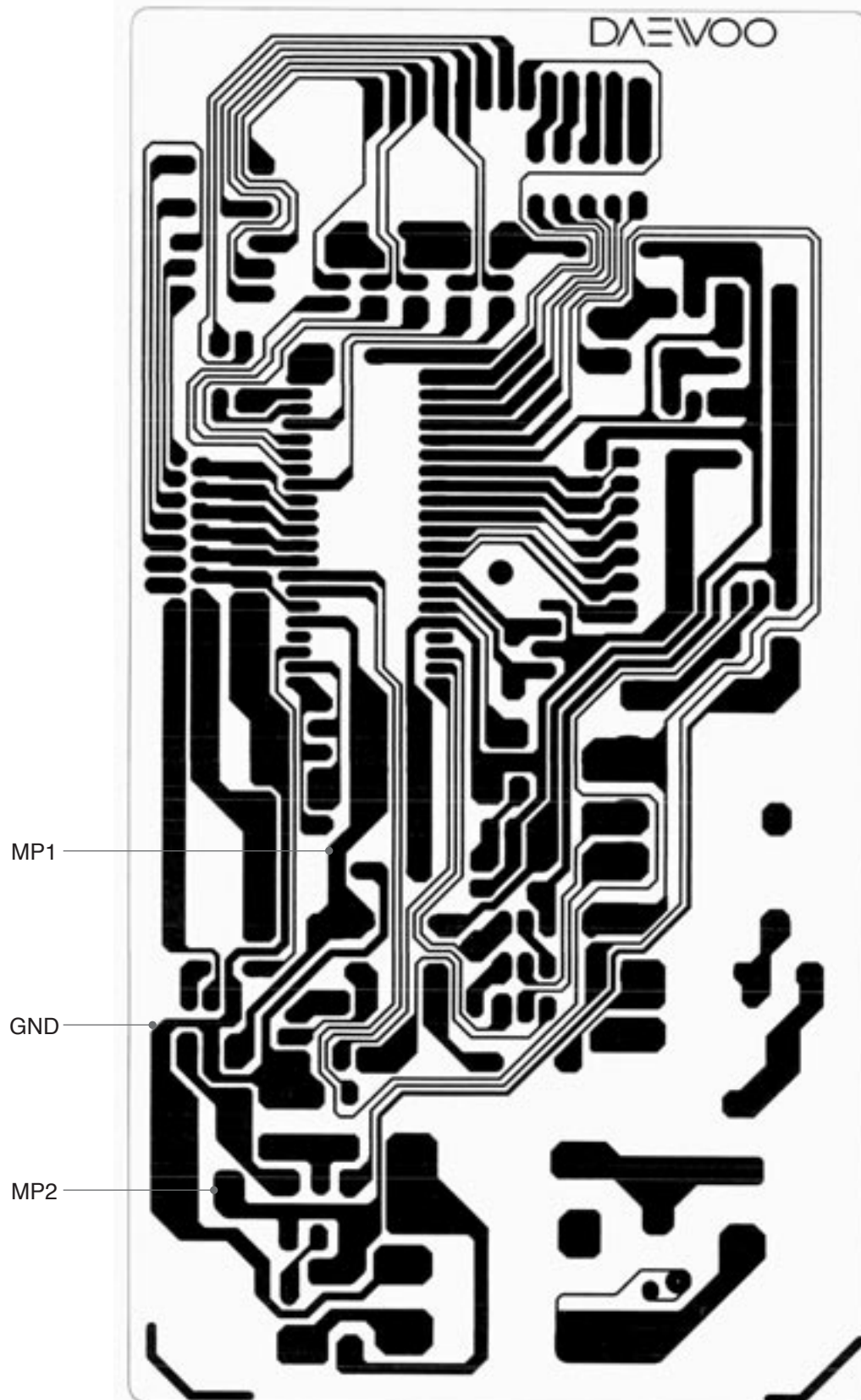
NO	CHECK POINT	REMARK
1	IC1 PIN 5	5VDC
2	IC1 PIN 8	
3	IC1 PIN 35 OR PIN 36	

- 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, D12, D13, D14	NO LOAD

#### NOTE

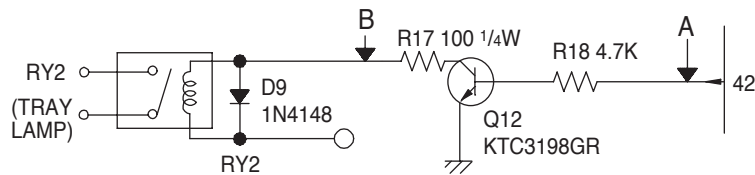
Each measure point must be measured with GND points.



Measure Point

3. WHEN THERE IS NO MICROWAVE OSCILLATION

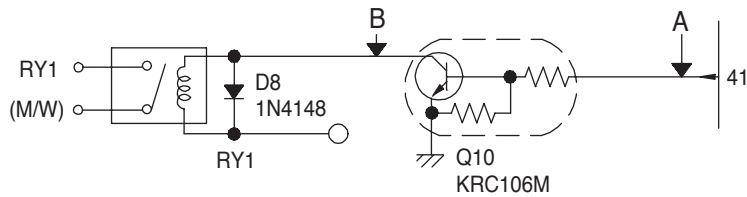
- 1) When touching **START** pad, oven lamp does not turn on.  
Fan motor does not rotate, but cook indicator in display comes on.



- Check method

STATE	POINT	A	B
RELAY 2 ON		5VDC	GND
RELAY 2 OFF		GND	12VDC

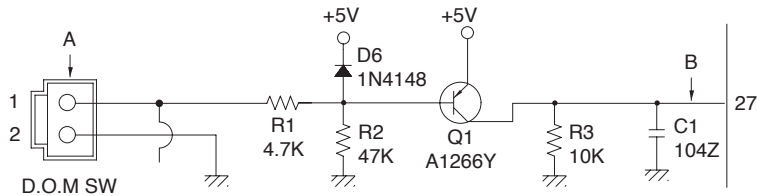
- 2) When touching **START** pad, oven lamp turns on.  
Fan motor and turntable rotate and cook indicator in display comes on.



- Check method

STATE	POINT	A	B
RELAY 1 ON		5VDC	GND
RELAY 1 OFF		GND	12VDC

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




- Check method

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

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

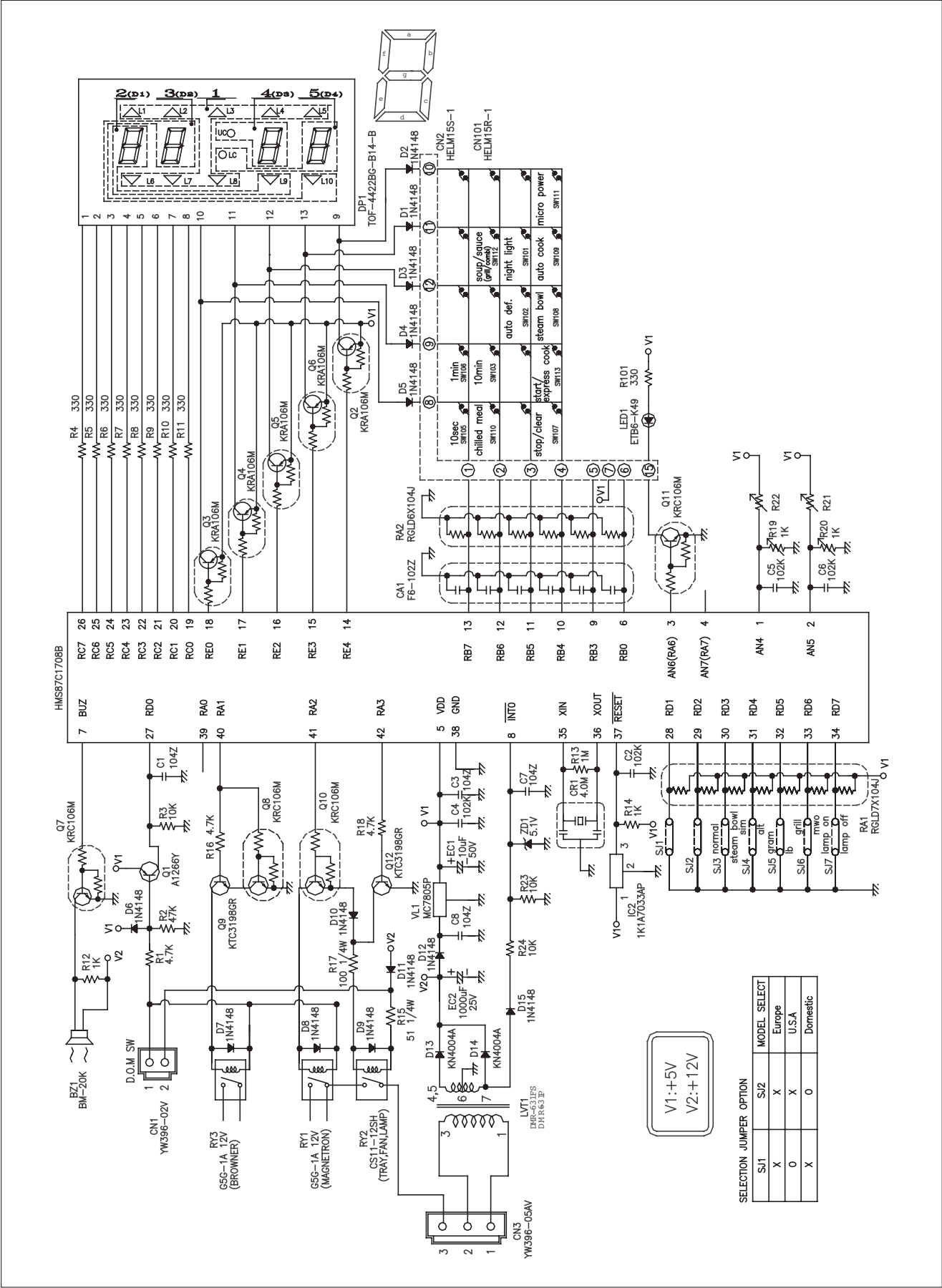
#### 5. When the digital clock does not operate properly.

→ refer to Circuit Diagram.

POINT	WAVE FORM
IC 1 PIN 8	

※ If clock does not keep exact time, you must check resistor R20 and zener diode ZD2.

2. P.C.B. CIRCUIT DIAGRAM



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

\*MAIN PCB ASS'Y(M346)

NO	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY	REMARK
1	BUZZER	BZ1	BM-20K	3515600100	1	
2	C ARRAY	CA1	7P(6) 1000PF M 50V	CN6XB-102M	1	
3	C ELECTRO	EC1	50V RS 10uF	CEXE1H100A	1	
4	C ELECTRO	EC2	25V RSS 1000MF	CEXF1E102V	1	
5	CONNECTOR WAFER	CN1	YW396-02V	3519150520	1	
6	CONNECTOR WAFER	CN2	HLEM15S-1	4CW215SBD0	1	
7	CONNECTOR WAFER	CN3	YW396-05AV	3519150510	1	
8	DIODE RECTIFY	D1~6,D8~12,15	1N4148	DZN4148---	12	
9	DIODE RECTIFY	D13,14	KN4004A	DZN4004A--	2	
10	DIODE ZENER	ZD1	UZ- 5.1BSB 1/2W	DZUZ5R1BSB	1	
11	LED DISPLAY	DP1	TOF-4422BG-B14-B	DDDG6CCK--	1	
12	PCB MAIN	M346	86X163.5	3514331640	1	
13	R ARRAY	RA1	8P(7) 1/8 100K OHM J	RA-88X104J	1	
14	R ARRAY	RA2	7P(6) 1/8 100K OHM J	RA-87X104J	1	
15	RESISTOR	R4~11	1/6W 330 5%	RD-AZ331J-	8	
16	RESISTOR	R12,14,19,20	1/6W 1K 5%	RD-AZ102J-	4	
17	RESISTOR	R1,18	1/6W 4.7K 5%	RD-AZ472J-	2	
18	RESISTOR	R2	1/6W 47K 5%	RD-AZ473J-	1	
19	RESISTOR	R3,23,24	1/6W 10K 5%	RD-AZ103J-	3	
20	RESISTOR	R13	1/6W 1M 5%	RD-AZ105J-	1	
21	RESISTOR	R15	1/4W 51 5%	RD-4Z510J-	1	
22	RESISTOR	R17	1/4W 100 5%	RD-4Z101J-	1	
23	RESONATOR CERA	CR1	CRT 4.00MS	5P4R00MTS-	1	
24	IC REGULATOR	VL1	MC7805C	1CPMC7805C	1	
25	TRANSISTOR	Q2~6	KRA106M	TZRA106M--	5	
26	TRANSISTOR	Q7,10,11	KRC106M	TZRC106M--	3	
27	TRANSISTOR	Q1	KTA-1266Y	TZTA1266Y-	1	
28	TRANSISTOR	Q12	KTC3198GR	TZTC3198GR	1	
29	CAPACITOR CERA	C2,C4~6	102 50V Z AXIAL	CCZB1H102K	4	
30	CAPACITOR CERA	C1,3,7,8	104 50V Z AXIAL	CCZF1H104Z	4	
31	TRANS POWER	LVT1	DMR-631FS	5EPV035303	1	
32	WIRE COPPER	J2~6,8,J10~12	1/0.52 TIN COATING	85801052GY	9	7.5mm
33	WIRE COPPER	J1,7,9	1/0.52 TIN COATING	85801052GY	3	10mm
34	WIRE COPPER	SJ6,7	1/0.52 TIN COATING	85801052GY	3	7.5mm
35	SW RELAY	RY1	G5G-1A DC12V	5SC0101121	1	
36	SW RELAY	RY2	OJ-SS-112LM 1C 1P	5SC0101404	1	
37	IC MICOM	IC1	HMS87C1716BK	150LC1716B	1	
38	IC RESET	IC2	KIA7033AP	1K1A7033AP	1	

\*SUB PCB ASS'Y(M347)

NO	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY	REMARK
1	CONN WAFER	CN101	HLEM15R-1	4CW215RBD0	1	
2	LED	LED1	TOL-50bUWdKOa-ETB6-K49	DT0L-ETB6-	1	
3	PCB SUB	M347	77X163.5	3514331750	1	
4	RESISTOR	R101	1/6W 330 5%	RD-AZ331J-	1	
5	SW TACT	SW101~SW103, SW105~SW113	KPT-1115AM	5S50101Z93	12	
6	WIRE COPPER	J101~J105	1/0.52 TIN COATING	85801052GY	5	10mm
7	WIRE FLAT	WF1	1.25X15X90XC	WSJ-159007	1	



# EXPLODED VIEW AND PARTS LIST

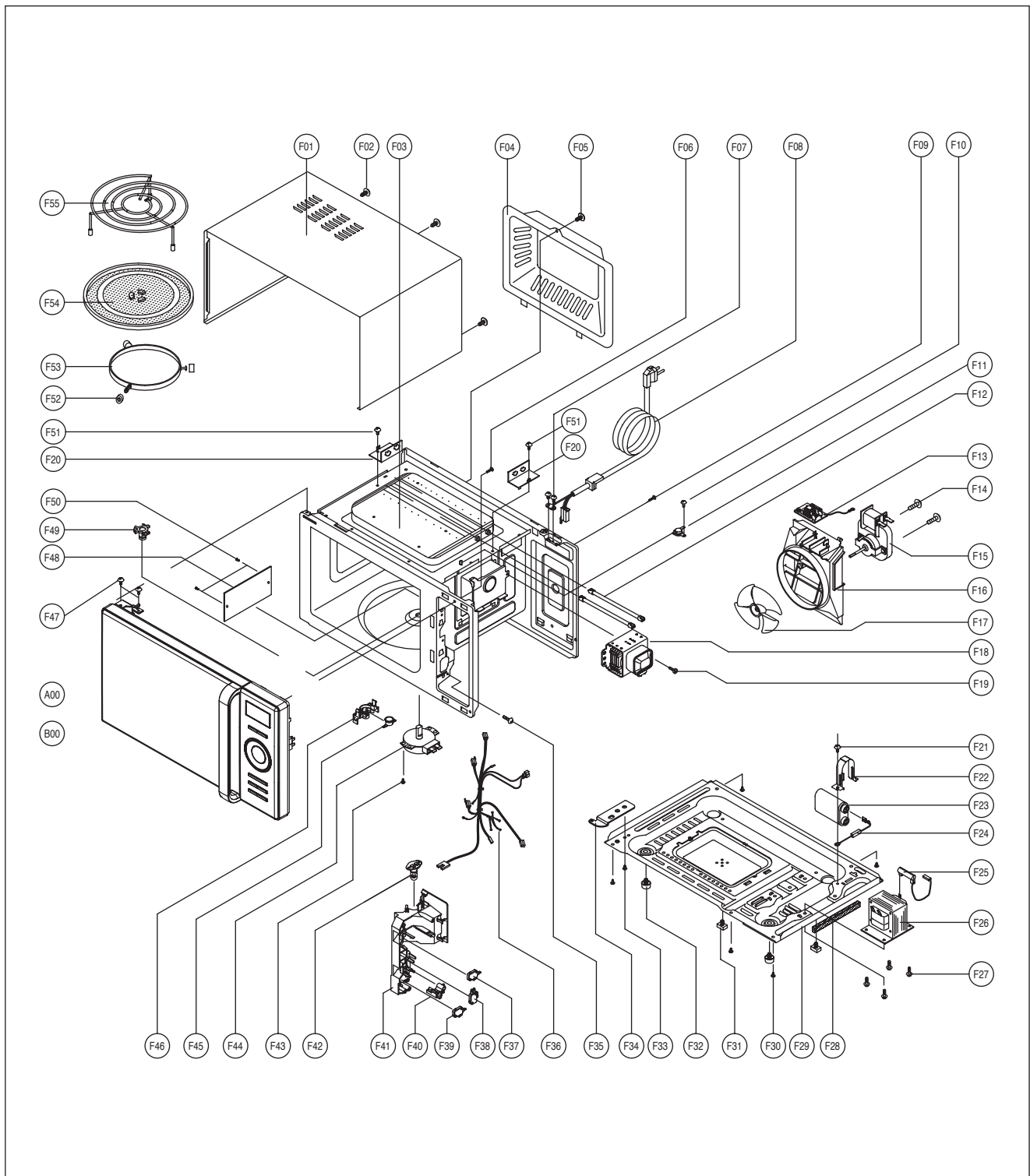
## 1. DOOR ASSEMBLY

Refer to Disassembly and assembly.

## 2. CONTROL PANEL ASSEMBLY

Refer to Disassembly and assembly.

## 3. TOTAL ASSEMBLY



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REF. NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
A00	3511725250	DOOR AS	KOR-8A6KKS	1
B00	PKCPSWGCB0	CONTROL-PANEL AS	KQG-8A6K5S	1
F01	3510805340	CABINET AS	KQG-8A0R5S LOUVER	1
F02	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	3
F03	3516119500	CAVITY AS	KQG-8A0R5S	1
F04	3511413700	COVER REAR	SBHG T0.4	1
F05	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1
F06	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
F07	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	2
F08	35113A5QJ5	CORD POWER AS	3X1.5 80X80 120-RTML	1
F09	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
F10	7121300611	SCREW TAPPING	T2S PAN 3X6 MFZN	1
F11	3518906210	THERMOSTAT	OFF:70 ON:60 H #187	1
F12	3512807330	HEATER QUARTZ	115V 500W 240mm B WADEN	2
F13	3518606100	NOISE FILTER	DWLF-M13	1
F14	7121402511	SCREW TAPPING	T2S PAN 4X25 MFZN	2
F15	3963514400	MOTOR SHADED POLE	230V 50HZ OEM-10DWC2-A07 (A)	1
F16	3512517000	GUIDE WIND	PP	1
F17	3511800300	FAN	PP+30%GLASS	1
F18	3518003700	MAGNETRON	2M218JFL 6CF	1
F19	3516004000	SPECIAL SCREW	T2 BOLT FLANGE 5X12 DACRO	1
F20	3510610900	BRACKET HEATER	SECC T0.5	2
F21	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F22	3513003200	HOLDER HV CAPACITOR	SECC T0.6	1
F23	3518302201	CAPACITOR HV	2100VAC 0.98UF #187 75MM	1
F24	3518400900	DIODE HV AS	HVR-1X-30B #187	1
F25	3518701100	FUSE HV	5KV 0.55A HV-41A55-02	1
F26	3518122310	TRANS HV	R1S58B (LA00)	1
F27	3516003700	SPECIAL SCREW	TT3 HEX 4X8 FLG MFZN	4
F28	3517304310	FOAM	CR 10TX180X15	1
F29	3510311700	BASE	SBHG T6.0	1
F30	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	5
F31	3512101900	FOOT *B	PP	2
F32	3512102000	FOOT *F	PP	2
F33	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F34	3515201101	STOPPER HINGE *U	SCP-1 T2.5	1
F35	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1

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REF. NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
F36	3512767950	HARNESS MAIN	KOG-8A0R5S	1
F37	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1
F38	4415A66910	SW MICRO	VP-531A-OF/SZM-V16-FA-61	1
F39	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1
F40	3513702620	LEVER LOCK	POM	1
F41	3513811750	LOCK	FH-44N	1
F42	3513601600	LAMP	BL 240V 25W T25 C7A H187	1
F43	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1
F44	3966031600	MOTOR SYNCRO	220/240V 50/60HZ ST-16 MN73MQAD A	1
F45	3518906710	THERMOSTAT	OFF:80 ON:70 H #187 NB	1
F46	3513003410	HOLDER THERMOSTAT	PP(BK)	1
F47	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	2
F48	3511405100	COVER WAVE GUIDE	MICA T0.5	1
F49	3517400600	COUPLER	XAREC	1
F50	4078502031	BUTTON LOCKING	PP	2
F51	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	2
F52	3514700710	ROLLER	TEFLON	3
F53	3512517300	GUIDE ROLLER	PP	1
F54	3517203600	TRAY	GLASS	1
F55	3517206900	TRAY RACK AS	KOG-37150S 110MM	1



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