

# Service Manual

## Microwave Oven

Model : KOG-366T0S



DAEWOO ELECTRONIC CO., LTD.  
OVERSEAS SERVICE DEPT.

# 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 opened.
- (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, and (5) evidence of dropping or abuse.
- (c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
- (d) Any defective or misadjusted components in the interlock, monitor, door seal and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (e) A microwave leakage check to verify compliance with the federal performance standard should be performed on each oven prior to release to the owner.

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**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.

## PROPER USE SERVICE PRECAUTIONS

### 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 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 it until the oven has been brought into compliance.
- 3) If the oven operates with the door opened, the service person should tell the user not to operate the oven and contact the manufacturer and CDRH immediately.

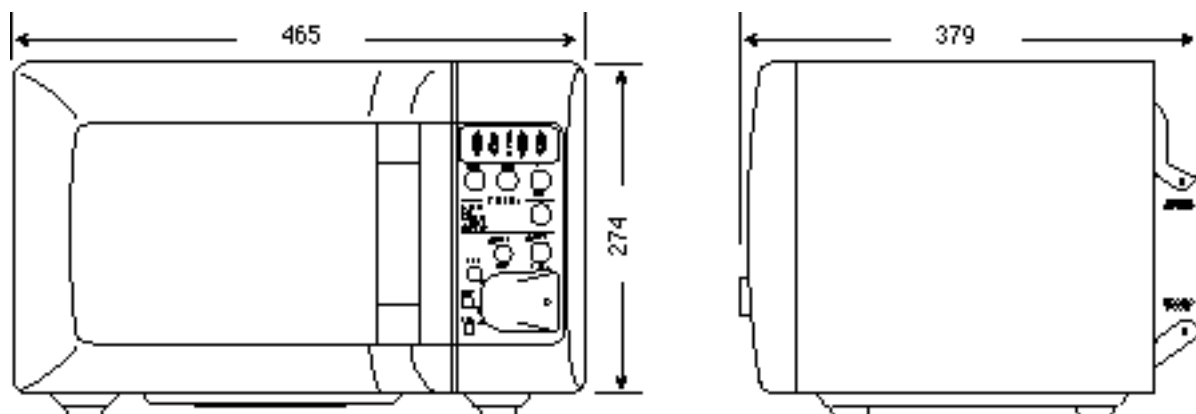
### **CAUTION** **MICROWAVE RADIATION**

PERSONNEL SHOULD NOT BE EXPOSED TO THE MICROWAVE ENERGY WHICH MAY RADIATE FROM THE MAGNETRON OR OTHER MICROWAVE GENERATING DEVICE IF IT IS MIPROPERLY USED OR CONNECTED. ALL INPUT AND OUTPUT MICROWAVE CONNECTIONS. WAVEGUIDE, FLANGES AND GASKETS MUST BE SECURE. NEVER OPERATE THE DEVICE WITHOUT A MICROWAVE ENERGY ABSORNING LOAD ATTACHED. NEVER LOOK INTO AN OPEN WAVEGUIDE OR ANTENNA WHILE THE DEVICE IS ENERGIZED.

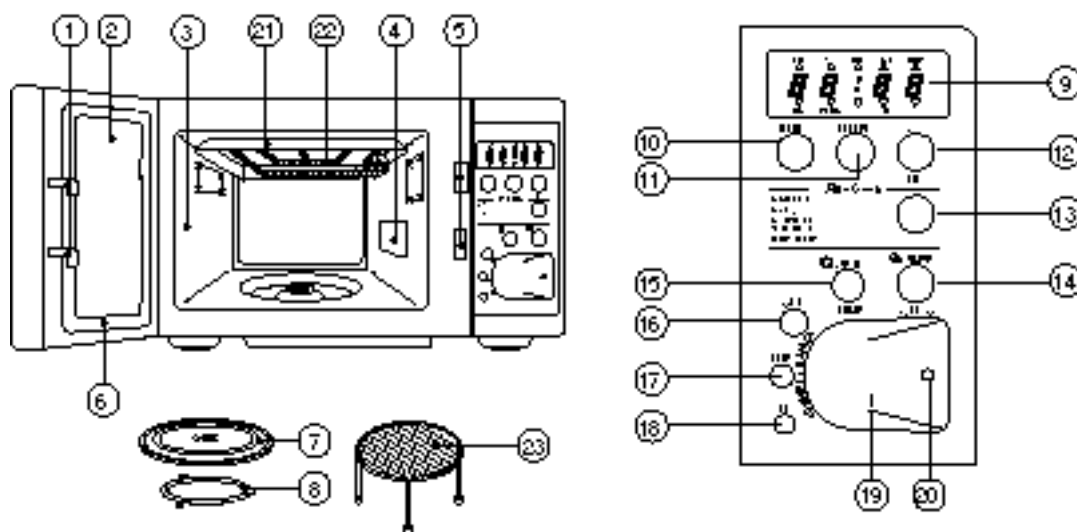
## SPECIFICATIONS

ITEM		SPECIFICATION
POWER SUPPLY		230V~50Hz, SINGLE PHASE WITH EARTHING
POWER CONSUMPTION	MICROWAVE	1200 W
	GRILL	1050 W
	COMBINATION	2200 W
MICROWAVE ENERGY OUTPUT		800 W(IEC 705)
MICROWAVE FREQUENCY		2450 MHz
OUTSIDE DIMENSIONS (W X H X D)		465 X 274 X 379 mm
CAVITY DIMENSIONS (W X H X D)		290X 200 X 290 mm
NET WEIGHT		14.5 Kg
TIMER		60 min
FUNCTION SELECTIONS		MICROWAVE/GRILL/COMBINATION
MICROWAVE POWER LEVELS		5 LEVELS

\* Specifications subject to change without notice.



## FEATURES DIAGRAM



- ① **Door latch** - When the door is closed it will automatically lock shut. If the door is opened while the oven is operating, magnetron will immediately stop operating.
- ② **Door seal** - Door seal maintains the microwave energy within the oven cavity and prevents microwave leakage..
- ③ **Oven cavity.**
- ④ **Spatter shield** - Protects the microwave outlet from splashed of cooking foods.
- ⑤ **Safety interlock system.**
- ⑥ **Door viewing screen** - Allows viewing of food. The screen is designed so that light can pass through, but not the microwaves.
- ⑦ **Glass cooking tray** - Made of special heat resistant glass. Food in a proper receptacle is placed on this tray for cooking.
- ⑧ **Roller guide** - This must always be used for cooking together with the glass cooking tray.
- ⑨ **Display** - Cooking time, power level, present time are displayed.
- ⑩⑪⑫ **Function buttons** - Used to select desired oven operation. : MICROWAVE, AUTOCOOK, DEFROST.
- ⑫ **Grill / Combi button** - Used to set the Grill or Combi mode.
- ⑬ **Start button** - Used to start a selected operation. When lamp blinks, press the start button.
- ⑭ **Speedy cook button** - Used to set desired time (It is increased 30 seconds)
- ⑮ **Stop/clear button** - Used to pause or clear all information manually put into the oven control panel except clock.
- ⑯⑰ **More/Less button** - Used to select auto cook time. (More/less 10% of auto cook time)
- ⑱ **Clock button** - Used to set and recall the time of day.
- ⑲ **Dial knob** - Used to set the cooking time, weight and quantity.
- ⑳ **Guide lamp** - When blinking it informs you to be ready to operate dial knob.
- ㉑ **Reflector (Insulator Heater)**
- ㉒ **Heating Element**
- ㉓ **Metal Rack**

## EARTHING INSTRUCTIONS

This appliance must be earthed. In the event of an electrical short circuit, earthing reduces the risk of electric shock by providing an escape, wire for the electric current. This appliances is equipped with a cord having a earthing wire with a earthing plug. The plug must be plugged into an outlet that is properly installed and earthed.

**CAUTION** : Improper use of the earthing pulg can result in a risk of electric shock. consult an qualified electrician or serviceman if the earthing instructions are not completely understood, or if doubt extension to whether the appliance is properly earthed. If it 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.

## INSTALLATION

- 1 Steady, flat location**  
This oven should be set on a steady, flat surface.  
This 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, oven 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, or antenna, feeder and so on.  
osition the oven as far from them as possible.
- 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 oven required a current of approximately 12 ampere. 230V 50Hz.
  - Power supply cord is about 1.1 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 a 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:**  
QA misaligned door, broken door, 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.

## OPERATION PROCEDURE

This section includes useful information about oven operation.

1. Plug power supply cord into a 230V 50Hz 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 must always be in place during cooking.
3. Shut the door. Make sure that it is firmly closed.

**1** When the oven door is opened, the light turns off.

**6** Time clock returns to the present time when the cooking time ends.

**2** The oven door can be opened at any time during operation by touching the door release button on the control panel. The oven will automatically shut off. To restart the oven, close the door and then touch START.

**7** When the STOP/CLEAR 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 STOP/CLEAR pad once more. If the oven door is opened during the oven operation, all information is retained.

**3** Each time a pad is touched, a BEEP will sound to acknowledge the touch.

**8** If the START pad is touched and the oven does not operate, check the area between the door and door is closed securely. The oven will not start cooking until the door is completely closed or the program has been reset.

**4** The oven automatically cook on full power unless set to a lower power level.

**5** The display will show “ : 0” when the oven is plugged in.

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

### Wattage output chart

- The power-level is set by pressing the M/W pad. The chart shows the display, the power level and the percentage of power.

Touch Power pad, Once the Touch	Power Level(Display)	Approximate Percentage of Power
5	800W	100%
4	650W	80%
3	450W	60%
2	300W	40%
1	140W	20%

## CONTROLS

**Tips :** • Be sure to read the cookbook's introduction before operating the oven.

- Also remember to read this operating instruction for proper safety information and instruction before using the oven.
- See the cookbook for specific recipes.
- Prior to setting the controls, place one cup of water in the oven, in a heat-proof glass measuring cup, for testing purposes.
- When setting the controls, everytime a button is pressed, a beep can be heard.
- If you don't take off the food after end cooking, buzzer will sound as 1 minute.

## CLOCK

- NOTE :**
- When the oven is plugged in, "0:00" appears in the display window.
  - The two dots between the hour and minute are the clock indicator lights. They will start to flash on and off.
  - The time of day will be displayed at all times, except when the oven is operating.
  - In the oven of a power failure or if the oven is unplugged, the clock will have to be reset for the proper time. Once power is restored or oven is plugged in, the display will show "0:00".
  - To reset the time of day, repeat the steps given below.
  - To check the time of day while the oven is poerating, press the CLOCK button, then the time will be displayed for 3 seconds.
  - When you turn DIAL KNOB, minutes are increased by to turn right and hours are increased as to turn left.

### SETTING THE CONTROL

1. Press CLOCK button.

If you push the CLOCK button once again, you can select 12 hour clock system.

Then guide lamp will starts blinking.

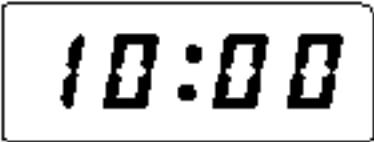
A digital display showing "24 H" in a bold, black, sans-serif font. The "H" is slightly larger than the numbers.

This example is 24 hour clock system.

**NOTE :** This oven is multiple clock system.

**NOTE :** If you are not setting current time for 3 seconds, display return to old time.

2. Turn left the DIAL KNOB for hour you want.

A digital display showing "10:00" in a bold, black, sans-serif font. The colon is slightly larger than the numbers.

**NOTE :**

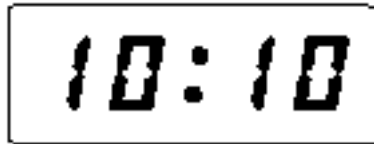
- If you selected 12 hour clock system, this digital clock allows you to set from 1:00 to 12:59.
- If you selected 24 hour clock system, this digital clock allows you to set from 0:00 to 23:59.
- The colon will stop blinking.

3. Turn right the DIAL KNOB for minute you want.

A digital display showing "10:10" in a bold, black, sans-serif font. The colon is slightly larger than the numbers.



4. Press CLOCK button.

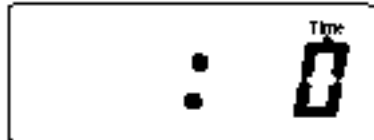


The display will show present time, and the colon starts blinking. This digital clock allows you to set to "10:10".

## TIME DEFROST

### SETTING THE CONTROL

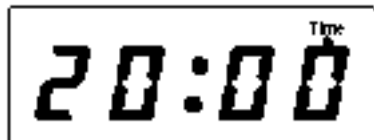
1. Press DEFROST button twice.



This TIME DEFROST indicator light will light up.

2. Turn the DIAL KNOB for the desired defrosting time.

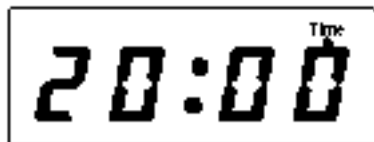
**For example :** 20 minutes.



20:00 will show in the display.

**NOTE :** Time can be set up to 60 minutes.

3. Press  button.



The TIME DEFROST indicator light will start blinking to show the oven is in TIME DEFROST mode.

4. Buzzer will sound at the end of the cooking time. The indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

**NOTE :** During the defrosting operation, turn over after buzzer sound for completed defrosting.

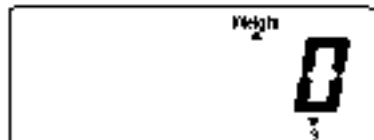
## WEIGHT DEFROST

**NOTE :**

- This digital weight allows you set from 200g to 3000g.
- Whenever you press this button, the display is circulated WEIGHT DEFROST, TIME DEFROST, and MICROWAVE mode.

## SETTING THE CONTROL

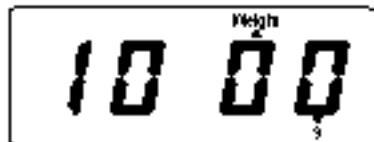
1. Press DEFROST button once.



The WEIGHT DEFROST indicator light will come on.  
The g indicator light will start blinking.

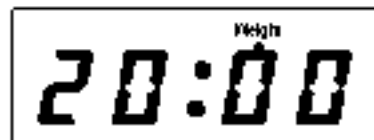
2. Turn the DIAL KNOB for the desired defrosting weight.

**For example :** 1000g



The 1000 will show in the display.  
It is represent 1000g.

3. Press  button.



The WEIGHT DEFROST indicator light will start blinking to show the oven is in WEIGHT DEFROST mode.

4. Buzzer will sound at the end of the cooking time. The indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

**NOTE :** During the defrosting operation, turn over after buzzer sound for completed defrosting.

## MICROWAVE

- NOTE :**
- To insure the best microwave and defrost results, be sure to start with a cool oven.  
Let the oven cool 15~20minutes with the door slightly open.
  - Power levels are 800W, 650W, 450W, 300W and 140W.
  - It is displayed after and interval of 10 seconds from 10 seconds to 5 minutes, 30 seconds from 5 minutes to 10 minutes, 1 minute from 10 minutes to 60 minutes.

## SETTING THE CONTROL

1. Press POWER button  
By repeatedly pressing this button, you can also select other power levels.

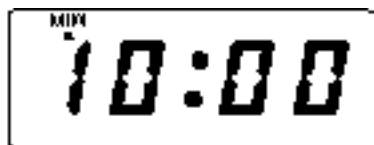


The M/W indicator light will light. The WATT indicator light start blinking.

**For example :** 800WATT

2. Turn the DIAL KNOB for the desired cooking time.

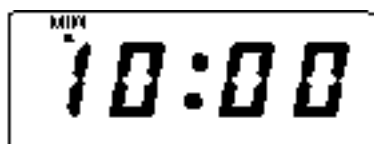
**For example :** 10minutes.



10:00 will show in the display.

**NOTE :** Time can be set up to 60 minutes.

3. Press  button.



The M/W indicator light will starts blinking to show the oven is in MICROWAVE mode.

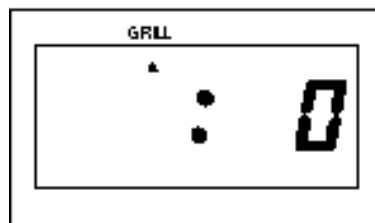
4. Buzzer will sound at the end of the cooking time. The indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

## GRILL COOK

- NOTE :**
- The heating element is located in the top of the oven.
  - There is no pre-heating the oven for grilling. Place food inside the oven when setting the controls.
  - The GRILL button is used with COMBI function.
  - Whenever this button is pressed, display is changed to GRILL/COMBI mode.
  - The setting time is increased if you are to turn right the DIAL KNOB.  
The setting time is decreased if you are to turn left the DIAL KNOB.
  - It is displayed after an interval of 10 seconds from 10 seconds to 5 minutes, 30 seconds from 5 minutes to 10 minutes, 1 minutes from 10 minutes to 30 minutes.

## SETTING THE CONTROL

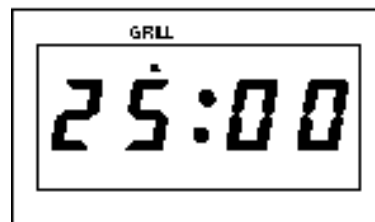
1. Press GRILL button once.



The GRILL indicator light will light.

2. Turn the DIAL KNOB for the desired cooking time.

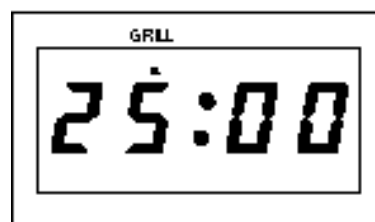
**For example :** 25 minutes.



25:00 will show in the display.

**NOTE :** Time can be set up to 30 minutes.

3. Press  button.



The GRILL indicator light will start blinking.

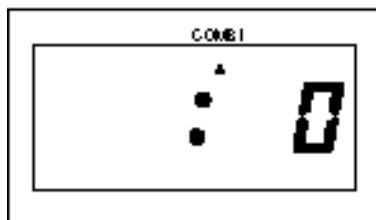
4. Buzzer will sound at the end of the cooking time. The indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

## COMBI COOK

- NOTE :**
- Microwave and Grill operate simultaneously (or sequentially) in this mode.
  - Whenever you press COMBI button, display is changed “0”, “: H”, “: L”, Therefore you can select power level of MICROWAVE.

## SETTING THE CONTROL

1. Press COMBI button once again.



The corresponding COMBI indicators will light on the display.

2. Turn the DIAL KNOB for the desired cooking time.

**For example :** 10 minutes.



10:00 will show in the display.

**NOTE :** Time can be set up to 30 minutes.

3. Press  button.



The COMBI indicator light will start blinking.

4. Buzzer will sound at the end of the cooking time. The indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

**NOTE :**

DISPLAY	POWER LEVEL
: 0	Approx. 450W
: H	Approx. 550W
: L	Approx. 350W

## AUTO COOK

**NOTE :** • There is programmed for cooking of five kinds(1~5).  
• You don't have to worry about setting time, power and function.

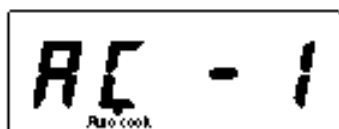
## SETTING THE CONTROL

You can operate MORE or LESS than programmed time as pressing MORE or LESS button whenever MORE or LESS button, display is changed "10" or "-10".

10 : Adds 10% for programmed time.

-10 : Remove 10% for programmed time.

1. Press AUTO COOK button.

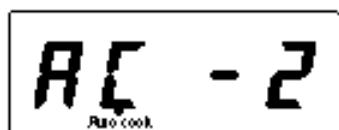


The AUTO COOK indicator light will light "AC-1" will show in the display.

2. Select the desired cooking.

**For example :** SOUP

Press AUTO COOK button twice.



"AC-2" will show in the display.  
The quantity indicator light will start.

3. If you want to select other menu, press AUTO COOK button until display your desired cooking menu.

4. Turn the DIAL KNOB for desired cooking quantity.




5. Select the desired cooking quantity.

**For example :** 3(350g)



"3" will show in the display.

6. If you want to select other, turn the dial knob until display you desired.

7. Press  button. This example don't set MORE or LESS function.



The oven will now start auto cook for menu2.  
The indicator light starts blinking.


8. Buzzer will sound at the end of the cooking time. the indicator light will go off. The display panel will return to the time of day. The oven light will turn off and the turntable will stop turning.

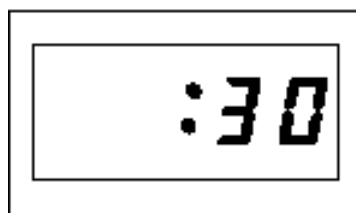
**NOTE :** •AUTO COOK menu and quantity.

MENU		QUANTITY NO	
1	BEVERAGE	1	1CUP
		2	2CUPS
		3	3CUPS
2	SOUP	1	250g
		2	300g
		3	350g
		4	400g
3	CASSEROLE	1	200g
		2	400g
		3	600g
		4	800g
4	VEGETABLE	1	250g
		2	300g
		3	350g
		4	400g
5	FISH FILLET	1	300g
		2	400g
		3	500g
		4	600g
		5	700g

## SPEEDY COOK

### SETTING THE CONTROL

1. Press  button.  
Then start lamp will start blinking.



Whenever the button is pressed, cooking time is increased 30 seconds. If the time was setting, this oven is operated automatically after 2 seconds to microwave high power.

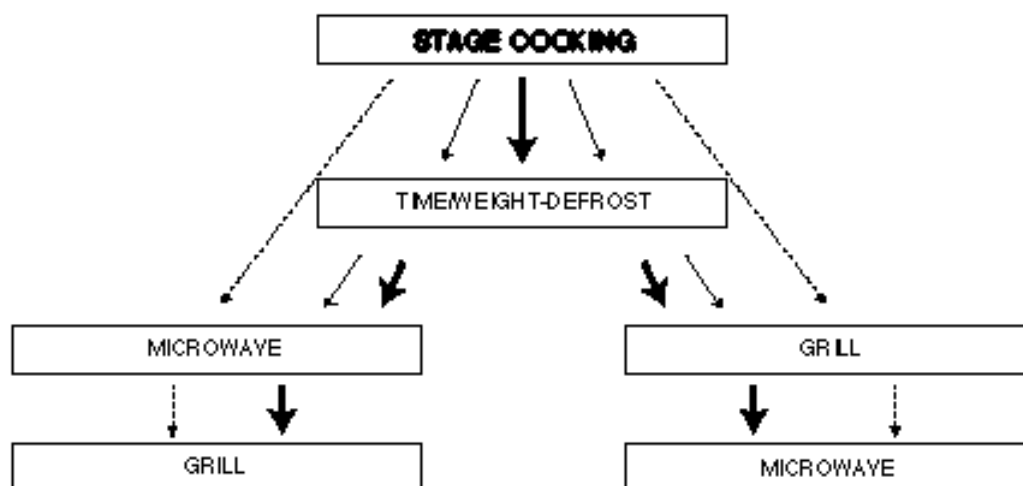
**NOTE :** This key is increased form 30 seconds to 5 minutes.  
If you are pressing more than about 0.5 seconds, the time is increased 30 seconds continuously.

## CHILD SAFETY LOCK

- The safety lock prevents unwanted oven operation such as by small children.
- To set, press STOP/CLEAR for 3 seconds, lock indicator light starts blinking.
- To cancel, press STOP/CLEAR for 3 seconds, lock indicator goes off.

### STAGE COMBINATIONS





This oven has the ability to be programmed to do up to three consecutive functions. These combinations are given below and either the complete program or part of it can be used.



- When you set stage mode, indicator is lighted only setting.
- When you press START button, all indicators of setted functions are lighted, and indicator of operating function is blinking.





## TO STOP THE OVEN WHILE IT IS OPERATING

1. Press  (STOP/CLEAR) button.
  - Touch  once more to erase all instruction except clock.
  - You can restart the oven by touching  (START) button.
2. Open the door
  - You can restart the oven by closing the door and touching  button.

**NOTE :** Oven stops operating when door is opened.

## ERASING INSTRUCTIONS

- TOUCH  (STOP/CLEAR) button to erase all instructions you set previously.
- Opening the oven door during cooking does not erase cooking instruction.
- If you touch  button during operation, the cooking instruction is all erased.

### GENERAL COOKING HINTS

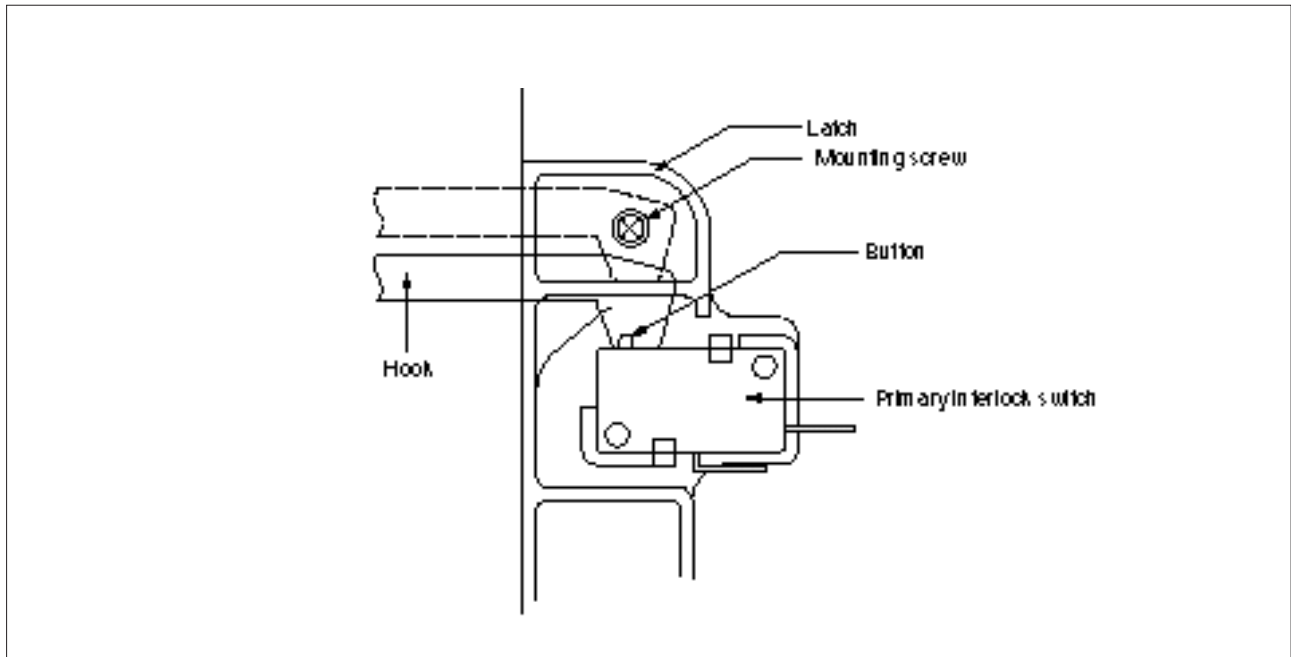
1. When cook a roast with an excess amount of dripping, it is helpful to remove the dripping at turnover time to prevent spattering.
2. Prick the meats, fish or poultry with a fork to prevent bursting.  
Steam builds up pressure in meats, fish or poultry which are tightly covered by a skin or membrane.
3. Reduce suggested cooking times, it is always better to undercook foods rather than to over-cook them.  
If a range of times is stated in a recipe, cook the minimum suggested time, check for doneness, and then cook slightly longer if necessary.

## INTERLOCK MECHANISM FUNCTIONS AND ADJUSTMENTS

The door lock mechanism is a device 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

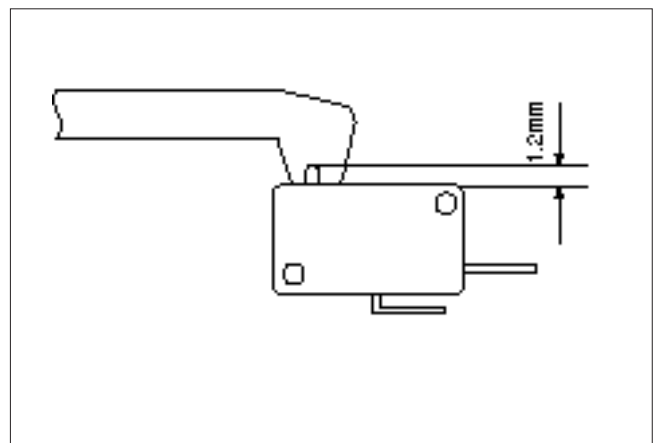
When the door is closed, the hook locks the oven door. If the door is not closed properly the oven will not operate. When the door is closed, the hook pushes the button of the micro switch. Then the button of the primary interlock switch bring it under on condition.



### Adjustment 1.

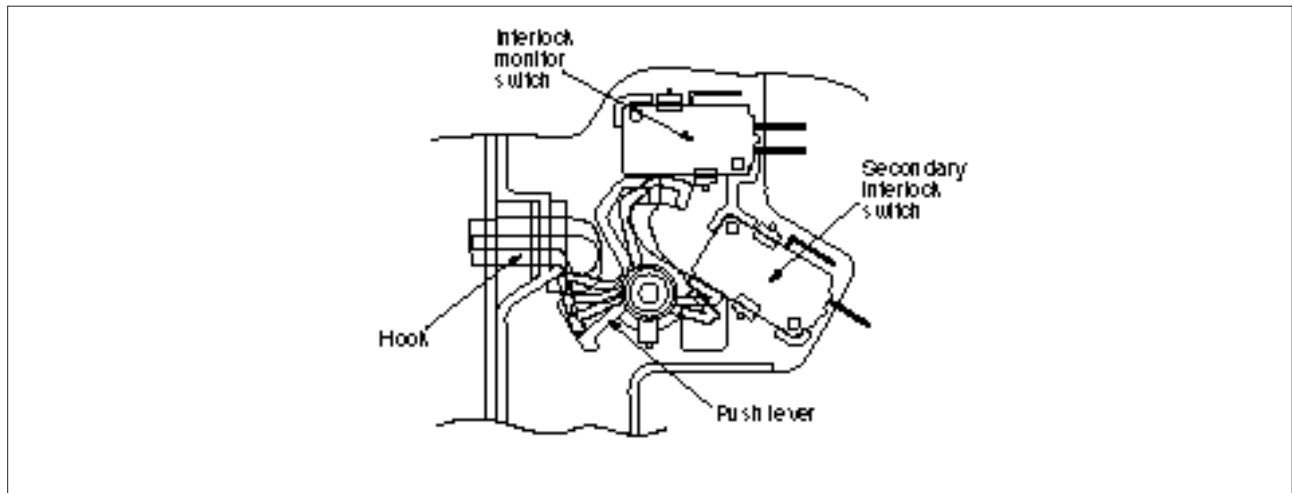
When the door is closed, the switch button is pushed by the hook.

The movement of the switch button should exceed 1.2mm measured at the top of the button.



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

When the door is closed, the hook pushes the push lever down ward, and push 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 2

Interlock monitor switch

When the door is closed, the interlock monitor switch should be opened before other switches close.

When the door is closed, the interlock monitor switch should be closed after other switches open

Secondary interlock switch

The movement of the switch button should exceed 1.2mm measured at the top of the button.

### (3) Adjustment steps

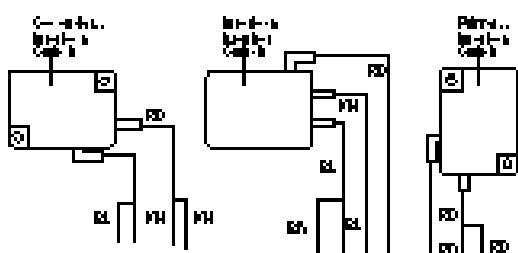
- Loosen the two mounting screws.
- Adjust interlock switch assembly position.
- Confirm the gap(1.2mm) described above.
- Make sure that push lever moves smoothly adjustments is completed.
- Completely tighten the two mounting screws.

**NOTE :** Microwave emission test should be performed after adjusting interlock mechanism. If the microwave emission exceed  $4\text{m W/cm}^2$ , readjust interlock mechanism.

### (4) Interlock switch replacement

Whenever safety interlock switches are replaced:

- Refer to the following diagram.
- Check the connection of monitor switch after replacement.
- Perform the electrical continuity check of interlock switches and microwave emission test mentioned in this manual.



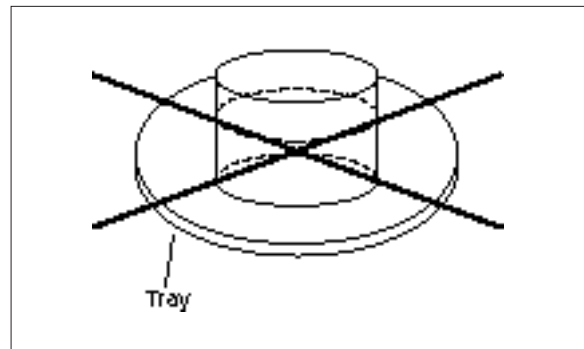
SYMBOL	COLOR
RD	RED
BL	BLUE
WH	WHITE
GY	GRAY
BK	BLACK

## MEASUREMENT OF THE MICROWAVE OUTPUT POWER

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  $1,000 \pm 5$ 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  $10 \pm 2^\circ\text{C}$ .  
It is measured immediately before the water is added to the vessel. After addition of the water to the vessel, 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 52 seconds.  
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 water temperatures are selected so that the maximum difference between the ambient and final water temperatures 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 actual temperature rise.
- $t$  is the heating time.

The power measured should be  $800\text{W} \pm 10.0\%$

### CAUTION:

1. Water load should be measured exactly to 1 liters.
2. Input power voltage should be exactly 120 volts as specified.
3. Ambient temperature should be  $20 \pm 2^\circ\text{C}$  ( $68 \pm 3.6^\circ\text{F}$ )

## MICROWAVE RADIATION TEST

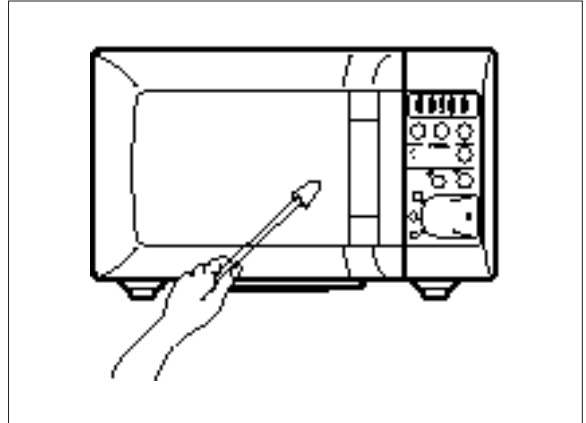
### WARNING

**Make sure to check the microwave leakage before and after repair or adjustment.**

- Always, start measuring of an unknown field to assure. Safety for operating personnel from microwave energy.
- Do not place you hands into any suspected microwave radiation field unless the safe density level is known.
- Care should be taken not to place the eyes in direct line with the source of microwave energy.
- Slowly approach the unit under test until the radiometer reads an apperaciable microwave leakage from the unit under the test.

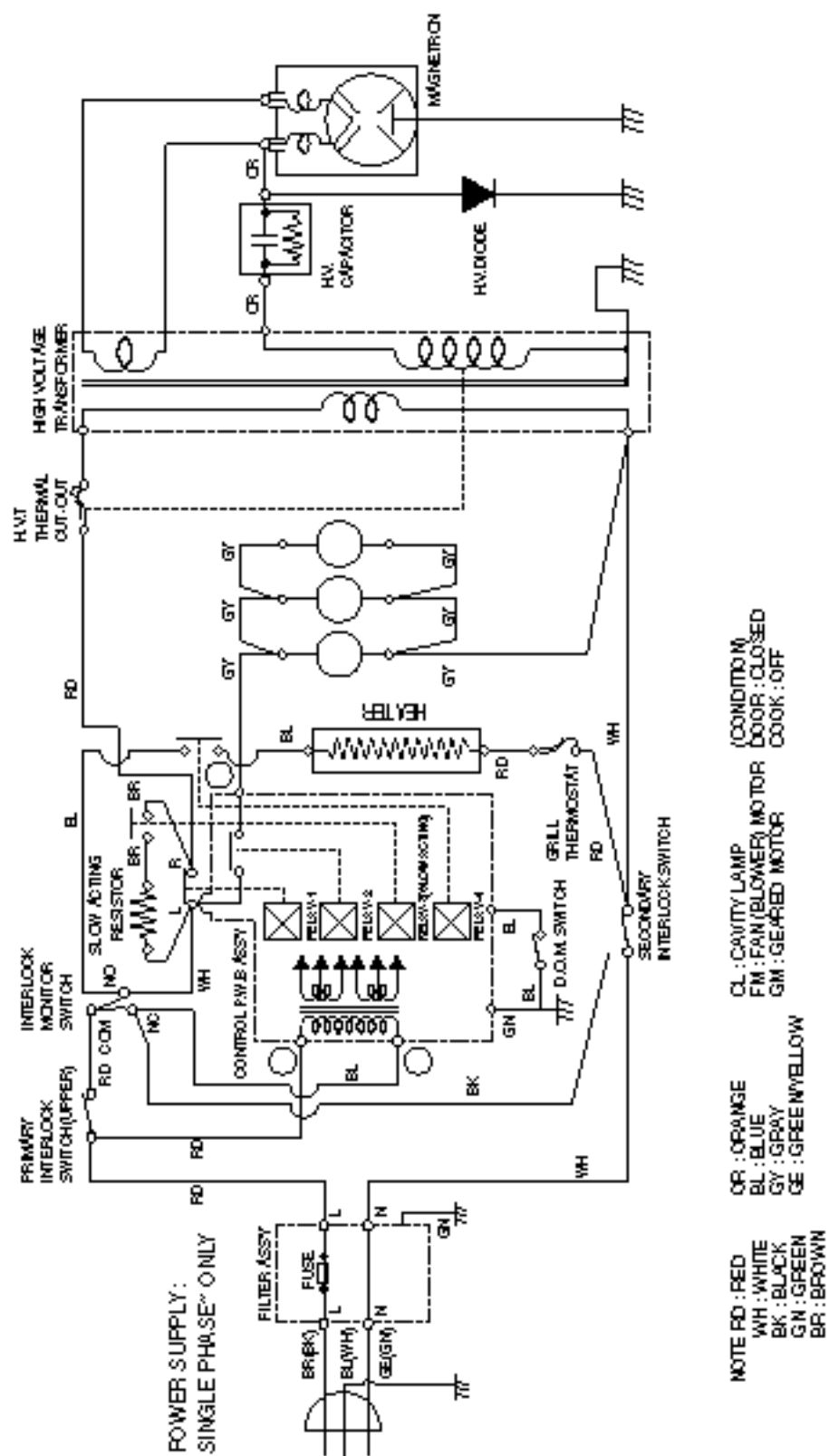
## Procedure

- A) Prepare Microwave Energy Survey Meter, 600cc glass breaker, glass thermometer 100°C or 212°F.
- B) Pour 275cc±15cc of tap water initially at 20±5°C (68±9°F) in the 600cc beaker with an inside diameter of approx. 8.5 cm (3.5 in).
- C) Place it at the center of the tray and set it in a cavity.
- D) Close the door and operate the oven.
- E) Measure the leakage by using microwave energy survey meter with dual ranges, set to 2,450 MHz.
  - Measured radiation leakage must not exceed the values prescribed below.
  - Leakage for a fully assembled oven with door normally closed must be less than 4m W/cm<sup>2</sup>.
  - When measuring the leakage, always use the 5cm space cone with probe. Hold the probe perpendicular to the cabinet, door. place the space cone of the probe on the door, cabinet, door seam, along the seam, the door viewing window, the exhaust air vents, the suction air vents.
  - Measuring should be in a counter-clockwise direction at a rate of 1 inch/sec. If the leakage of the cabinet door seam is unknown, move the probe more slowly.



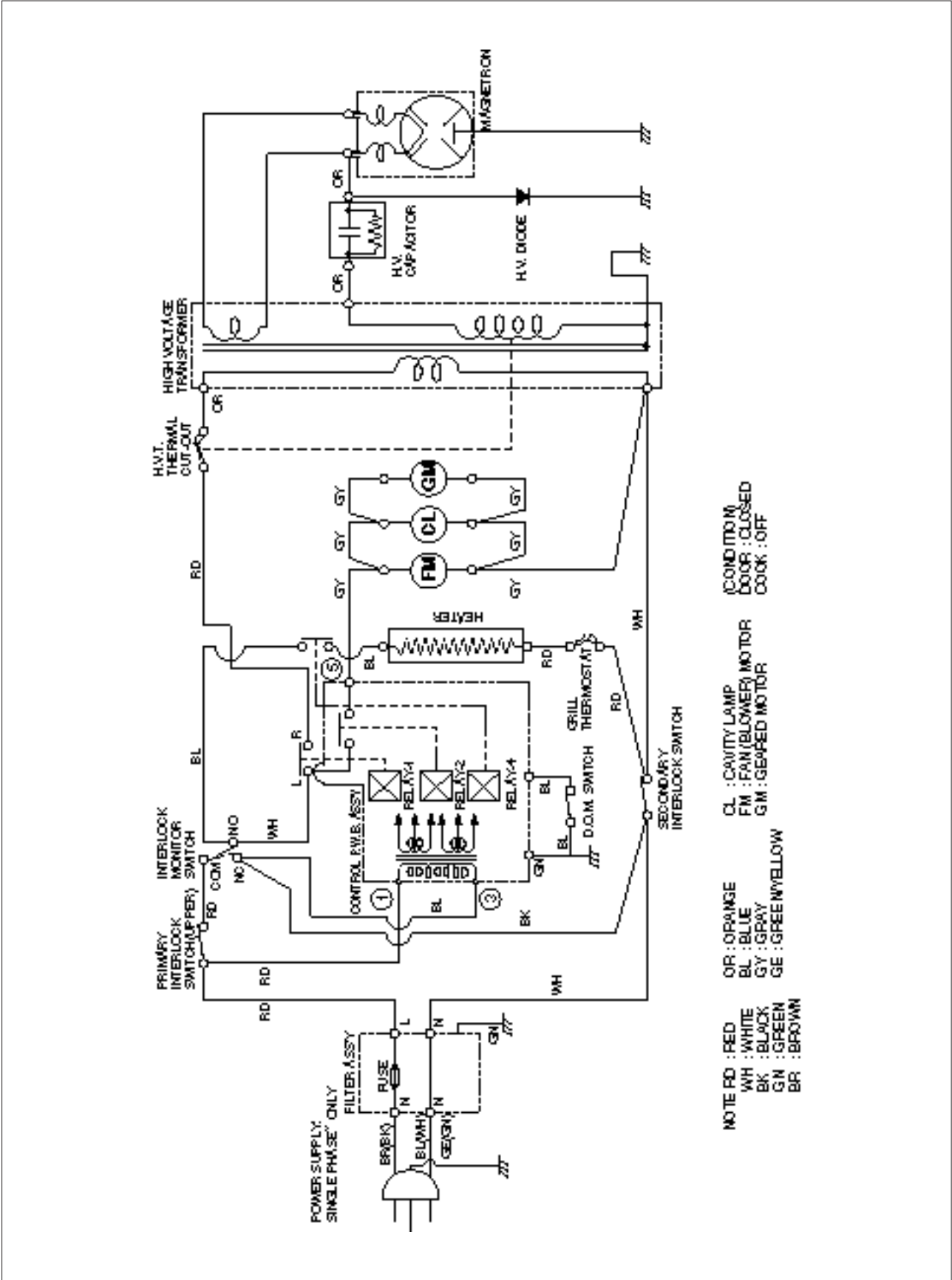
- When measuring near a corner of the door, keep the probe perpendicular to the areas making sure the probe end at the base of the cone does not get closer than 2 inches from any metal. If it does, erroneous reading may result.

## WIRING DIAGRAM (GERMANY)



**Fig. 1**

## WIRING DIAGRAM



**Fig. 1-1**

## CIRCUIT DESCRIPTION

Refer to the "WIRING DIAGRAM" on page 21, 22.

### MICROWAVE COOKING

#### TIME COOKING

##### 1. When the food is placed inside the oven and door is closed.

- 1) The low voltage transformer supplies the necessary voltage to the touch control circuit when the power cord is plugged in.
- 2) The contacts of the interlock monitor switch open.  
This switch creates short circuit to blow 15A fuse and stop magnetron oscillation when door is opened during operation under abnormal condition (i.e. the contacts of primary interlock switch do not open the circuit).
- 3) The contacts of primary interlock switch close the primary circuit.

##### 2. When cooking cycle, power and time are set by touching the function pads and the desired numerical pads.

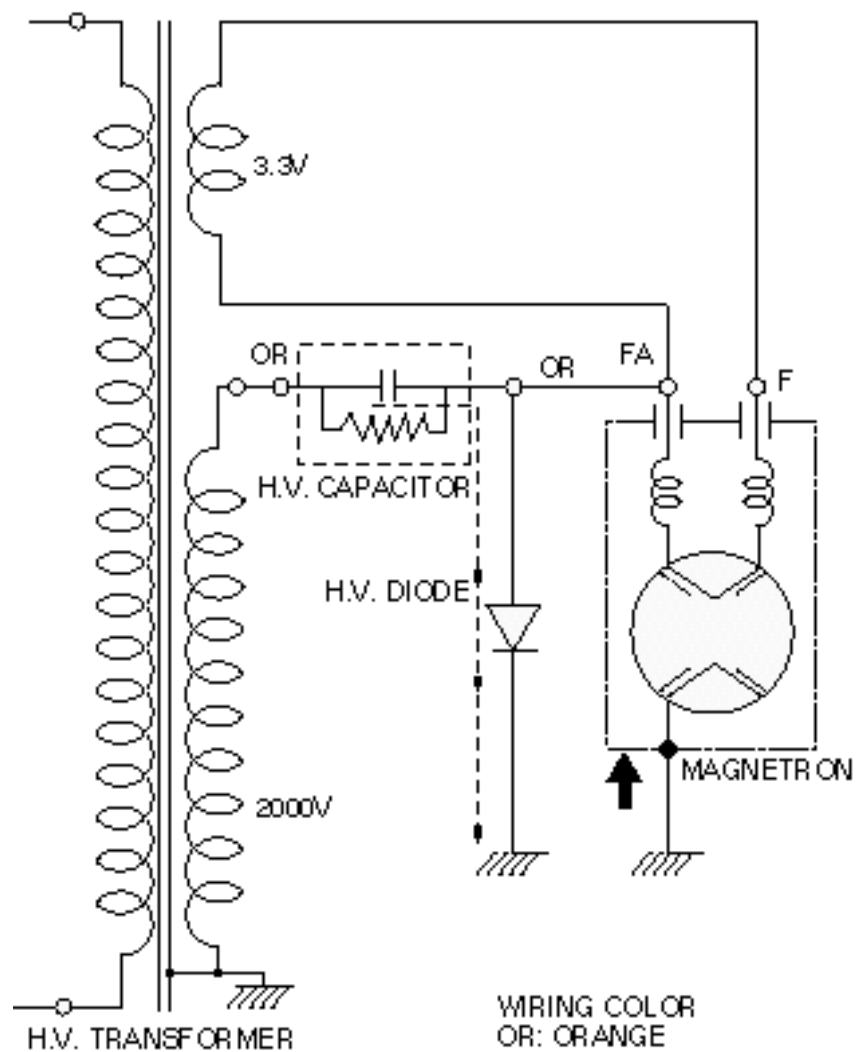
- 1) The function indicating bars are located on the digitron light to indicate that function have been set.
- 2) The time you set appears in the display window.
- 3) The touch control circuit memorizes the cooking program you set.

##### 3. When the start pad is touched.

\* The RELAY "1", "2" are controlled by the touch control circuit.

- 1) 230VAC is applied to the high voltage transformer through the contacts of RELAY "1".
- 2) Fan motor starts rotating and cools the magnetron by blowing the air coming from the intake on the rear plate hold.
- 3) The oven lamp light the inside of the oven.
- 4) Indicator light turns on to indicate function operation. Cooking time starts count down.
- 5) 3.3 Volts Ac is generated from the filament winding of the high voltage transformer. This filament voltage is applied to the magnetron to heat the magnetron filament through two noise preventing choke coils.
- 6) A high voltage of 2000 Volts AC is generated in the secondary of high voltage transformer and this secondary voltage is increased by the action of the diode and the charging of the high voltage capacitor. This resultant DC voltage is then applied to the anode of the magnetron. As shown in Fig. 2 the first half cycle of the high voltage produced in the high voltage transformer secondary charges the high voltage capacitor. Current flow is in the direction of the dotted-line during the second half cycle, the voltage produced by the transformer secondary, and the charge of the high voltage capacitor are combined and applied to the magnetron as shown by the solid line so that oscillations begin. The disturbance wave generated by the magnetron is prevented by the choke coils of 3.2 $\mu$ H, filter capacitor of 16pF and the magnetron's shielded case so that TV and radio programs are not impaired by noise.





**Fig. 2**

The touch control circuit controls the ON-OFF time of RELAY "1" in order to vary the output power of the microwave oven from "power level 1" to "HI (100%) power". One complete ON and OFF cycle of the RELAY "1" is 29 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in Fig. 3



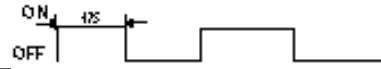
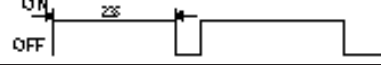
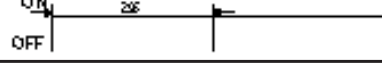
POWER LEVEL	OUTPUT POWER AGAINST FULL POWER	RELAY "1" TURN ON, OFF TIME
1	5/29	
2	11/29	
3	17/29	
4	23/29	
5	29/29	

Fig. 3

### AUTO DEFROST CYCLE

When auto defrost is selected and the desired defrosting time is chosen, the automatic cycle divides the defrosting time into 5 periods of alternating defrost and stand times, by cycling on and off.

#### 4. When the door is opened during cooking.

- 1) The primary interlock switch is opened to cut off primary voltage to the high voltage transformer to stop microwave oscillation.
- 2) The secondary interlock switch is opened to give the door open information to touch control circuit. The contacts of the RELAY "1" and "2" open, the display stops counting down.
- 3) Fan motor and turn table stop rotating.
- 4) The oven lamp turns off.
- 5) As soon as the door is opened, the interlock monitor switch contacts close and creates the short circuit.
- 6) If the contacts of primary interlock switch malfunction the 15A fuse blows open due to the large current surge caused by the short circuit activation, and this in turn stops magnetron oscillation (Fig. 1).

#### 5. When the STOP/CLEAR pad is touched during cooking.

- 1) The touch control circuit cuts the voltage supplied to the RELAY "1" coil and causes the magnetron to stop oscillating.
- 2) RELAY "2" turns off.
- 3) The display will show the time of day. If you don't set the clock, the display will show a colon.
- 4) The oven lamp turns off.
- 5) Fan motor and turn table motor stop rotating.

## SAFETY PRECAUTIONS FOR DISASSEMBLY AND REPAIR

– Cautions to be observed when trouble shooting.

Unlike many other appliances, the microwave oven is a high-voltage, high-current equipment. It is completely safety 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 which is attached to iron plate, and wear rubber gloves when servicing the high voltage side.
- (3) Warning about the electric charge in the high voltage capacitor. When inspecting and repairing the high voltage side, always short the capacitor terminals and make sure of discharge.

### 1. Check the grounding.

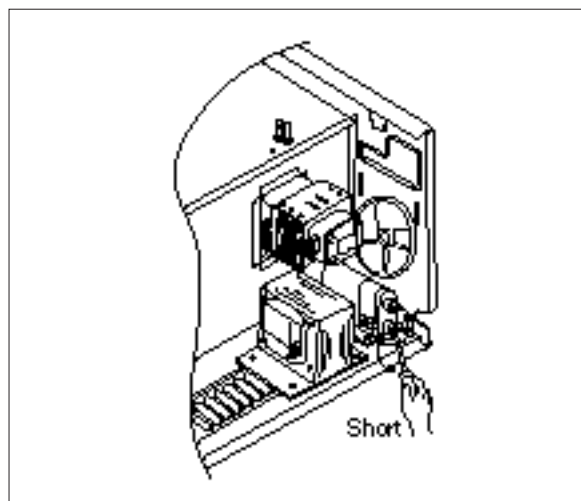
Do not operate on a 2-wire extension cord.

The microwave oven is designed to be used when grounded.

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

### 2. Warning about the electric charge in the high voltage capacitor.

For about 30 seconds after the operation stops, 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 screw driver to discharge.



- (4) When the 15 Amp. fuse is blown out to operation of the monitor switch; replace primary, and monitor switch. Refer to 17~18 page for the necessary adjustment.
- (5) After repair or replacement of parts, make sure that the screw are properly tightened, and all electrical connections are tightened.
- (6) Do not operate without cabinet.

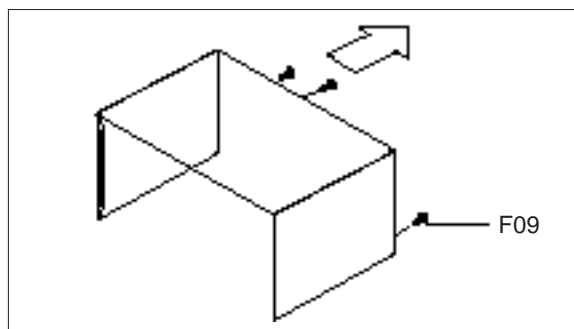
**CAUTION :** Service personnel should remove their watches whenever working close to or repairing the magnetron.

**WARNING :** When servicing the appliance, need a care of touching or replacing high potential parts because of electrical shock of exposing microwave. These parts are as follows—H.V. Transformer, Magnetron, H.V. Capacitor, H.V. Diode.

## DISASSEMBLY AND ASSEMBLY

### 1. To remove cabinet.

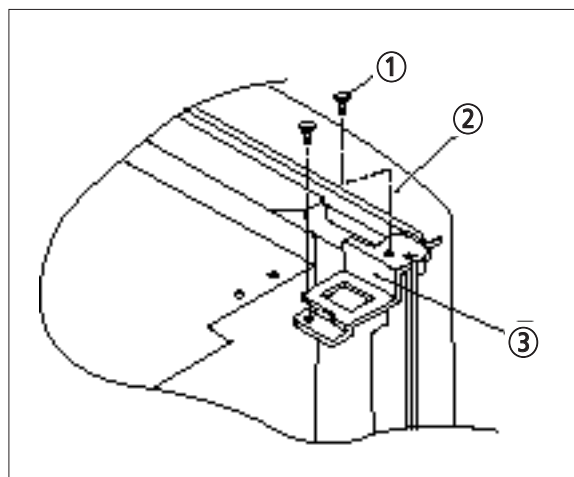
Remove three screws (F09) on cabinet back.



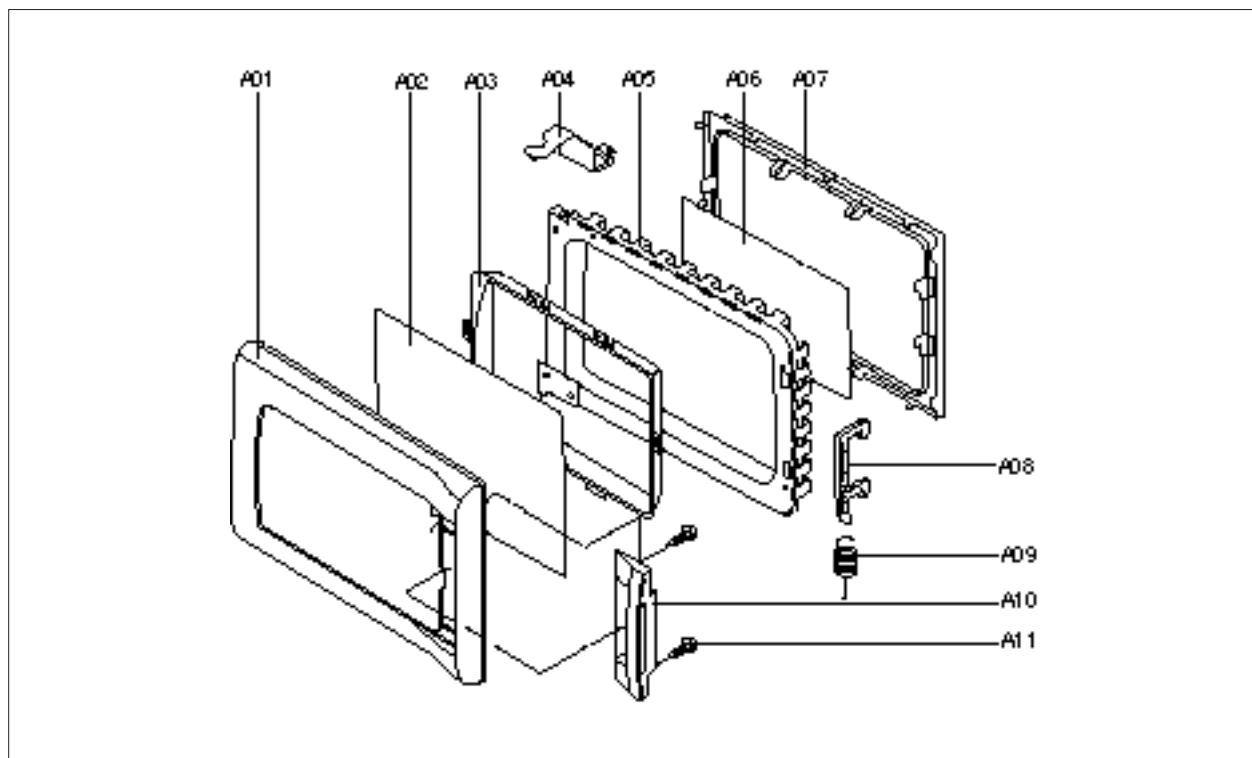
### 2. To remove door assembly.

- 1) Remove two screws ① which secure the stopper hinge top.
- 2) Remove the stopper hinge top ② and door assembly ③ from top plate of cavity.
- 3) Remove the stopper hinge top ② from door assembly.
- 4) Reverse the above for reassembly taking care to replace fixing glue.

**NOTE:** After replacing the door preform a check of correct alignment with the hinge and cavity front face.



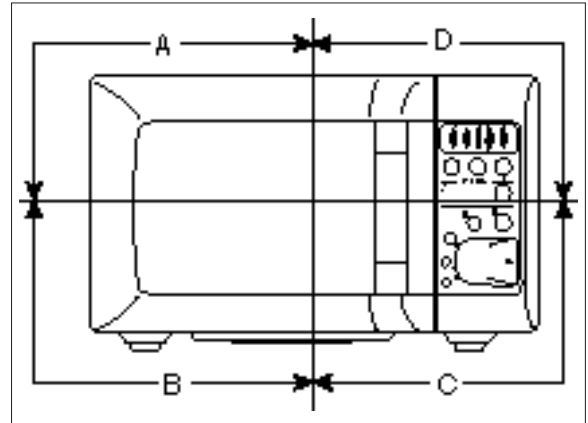
### 3. To remove door parts.



- (1) Remove the gasket door(A07) from door painting ass'y (A05)
- (2) Remove the door frame(A01) from door painting ass'y (A05)
- (3) Remove the barrier screen outer(A02) and the supporter barrier screen outer(A03).
- (4) Remove the hook spring (A09) and the hook (A08).
- (5) Remove the hinge stopper top ass'y(A04).
- (6) Remove two screws(A11) which secure the handle door(A10).
- (7) Remove the handle door(A10) from the door frame(A01).
- (8) 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'
  - 1) Loosen two screws on the top hinge stopper, and then push the door to contact the door seal to oven front surface.
  - 2) Tighten two screws.



- (2) To reduce gap located on part 'B'.
  - 1) Loosen two screws in under hinge stopper, and then the door to contact the door seal to oven front surface.
  - 2) Tighten two screws.
- (3) To reduce gap located on part 'C'. (See Fig. A)
  - 1) Loosen a screw on the interlock switch assembly located at the bottom of the oven body.
  - 2) Draw the interlock switch assembly inward as possible with hook on the door bottom.
  - 3) Tighten a screw.
- (4) To reduce gap located on part 'D'. (See Fig. B)
  - 1) Loosen a screw on the interlock switch assembly located at the top of the oven body.
  - 2) Follow step (3) 2) and 3).

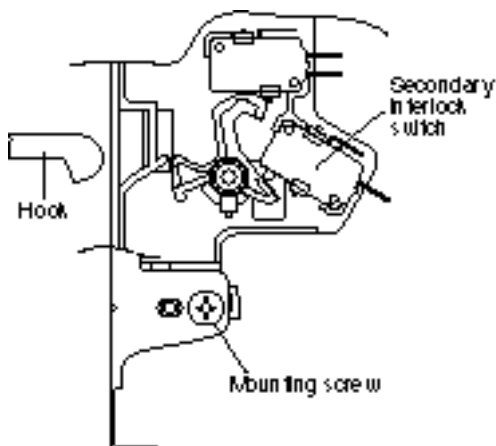


Fig. A

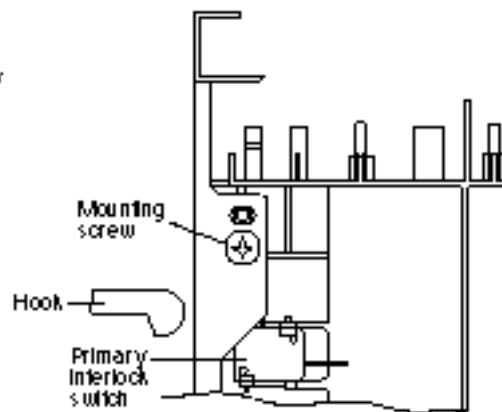
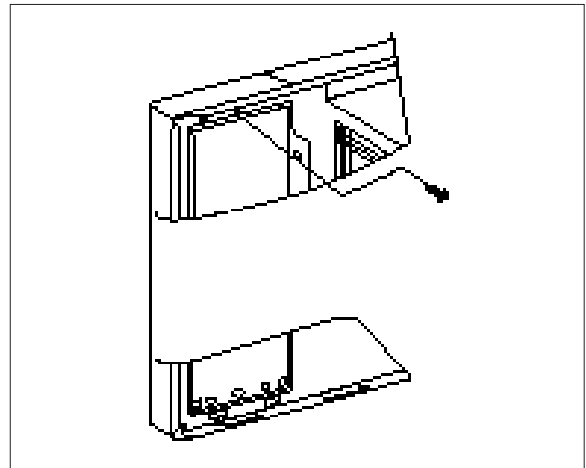


Fig. B

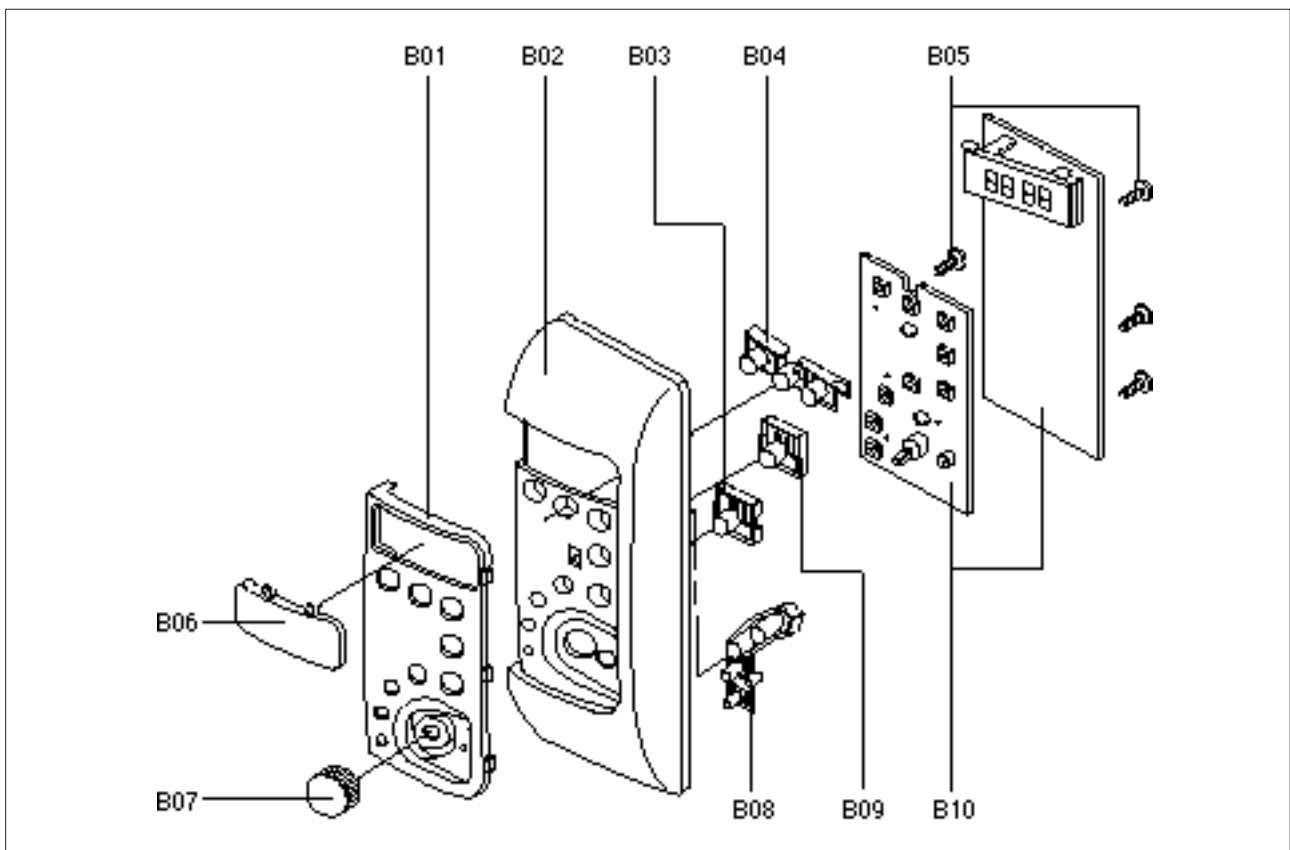
**NOTE:** A small gap may be acceptable if the microwave leakage does not exceed 4m W/cm<sup>2</sup>.

## 5. To remove control panel parts.

- (1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.



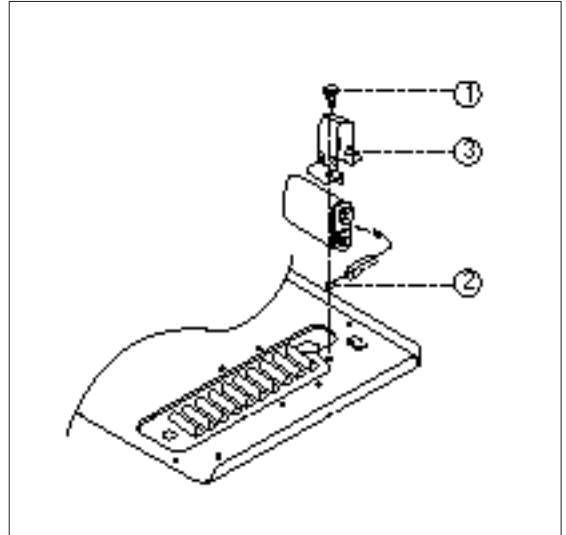
**NOTE:** Do not attempt to remove switch membrane except for replacement.



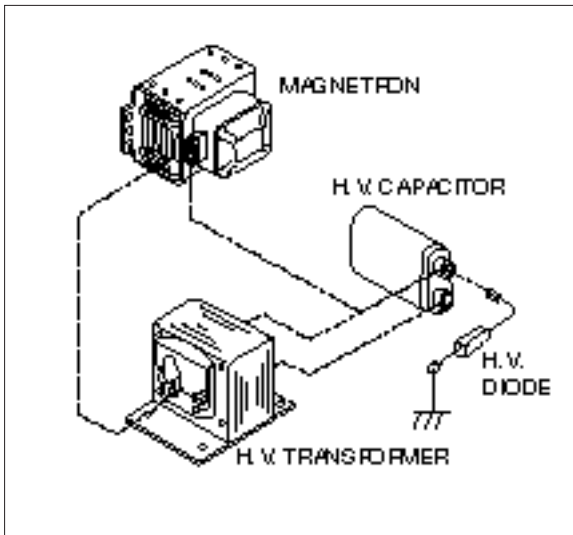
- (2) Pull out the knob volume (B07) from the control panel ass'y
- (3) Remove eight screws (B05) which secure the PCB ass'y (B10).
- (4) Remove the PCB ass'y (B10) from the control panel (B02).
- (5) Remove the button cook (B04), the button auto cook (B09), the button start (B03) and the button function (B08) from the control panel (B02).
- (6) Remove the decorator panel (B01) from the control panel (B02).
- (7) Remove the window display (B06) from the decorator panel (B01).
- (8) Reverse the above steps for reassembly.

#### 6. To remove high voltage capacitor.

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

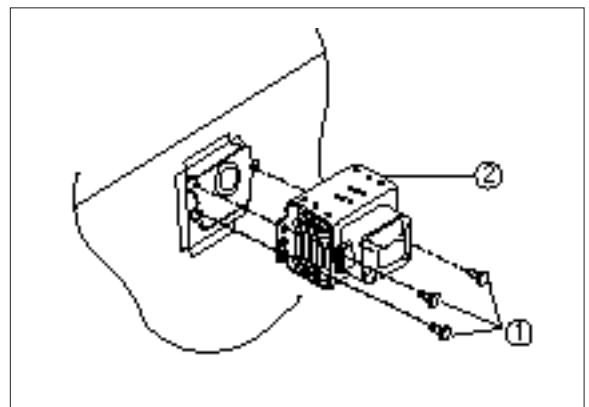


#### High voltage circuit wiring

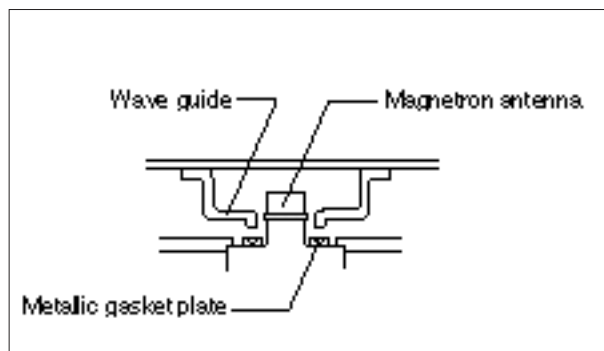
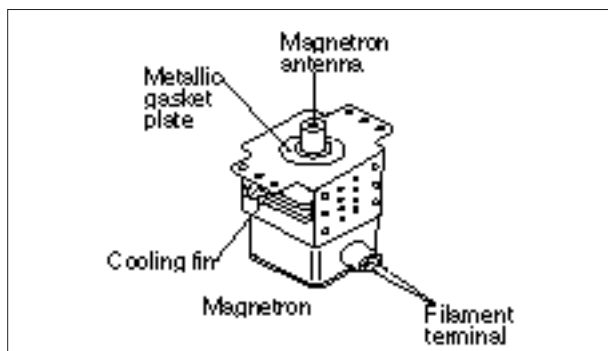


#### 7. To remove magnetron.

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

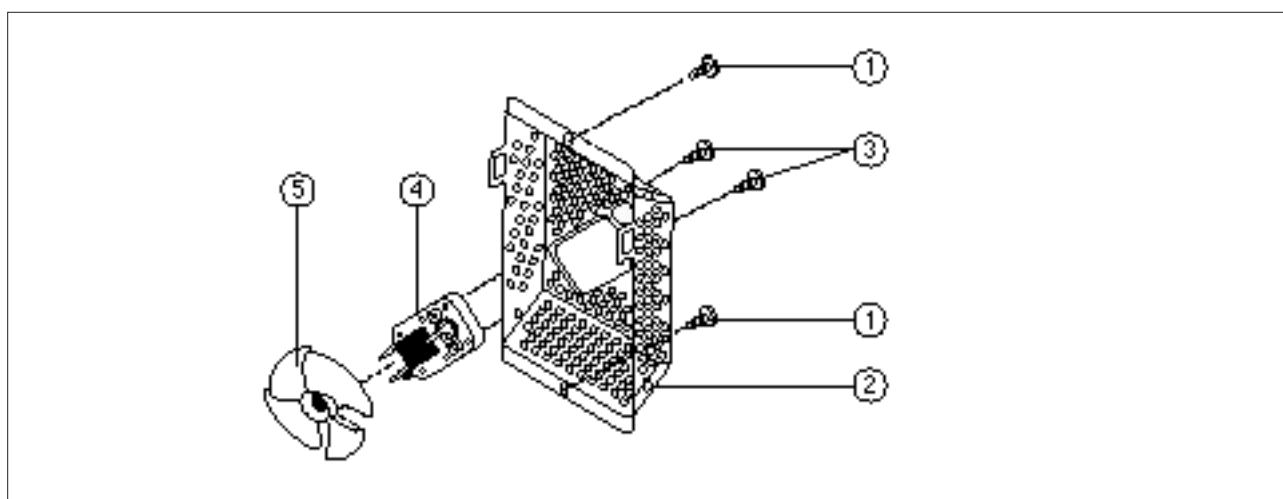


**CAUTION :** Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed 4mW/cm<sup>2</sup> for a fully assembled oven with door normally closed.



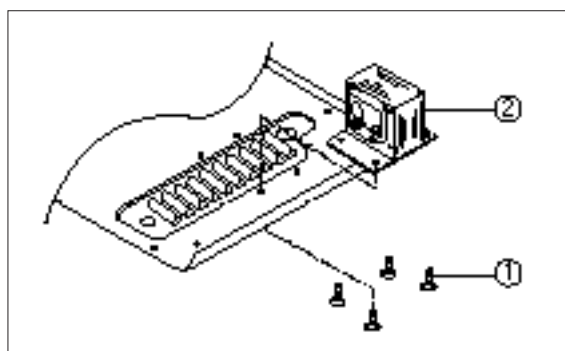
### 8. To remove fan motor assembly.

- (1) Remove two screws ① which secure the back cover ② from the cavity outer.
- (2) Remove two screws ① which secure the fan motor ④ from the back cover ②.
- (3) Pull out the fan ⑤ from the motor ④.
- (4) Remove the above steps for reassembly.



### 9. To remove transformer.

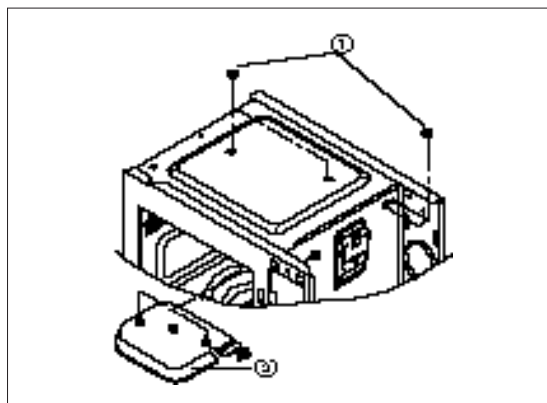
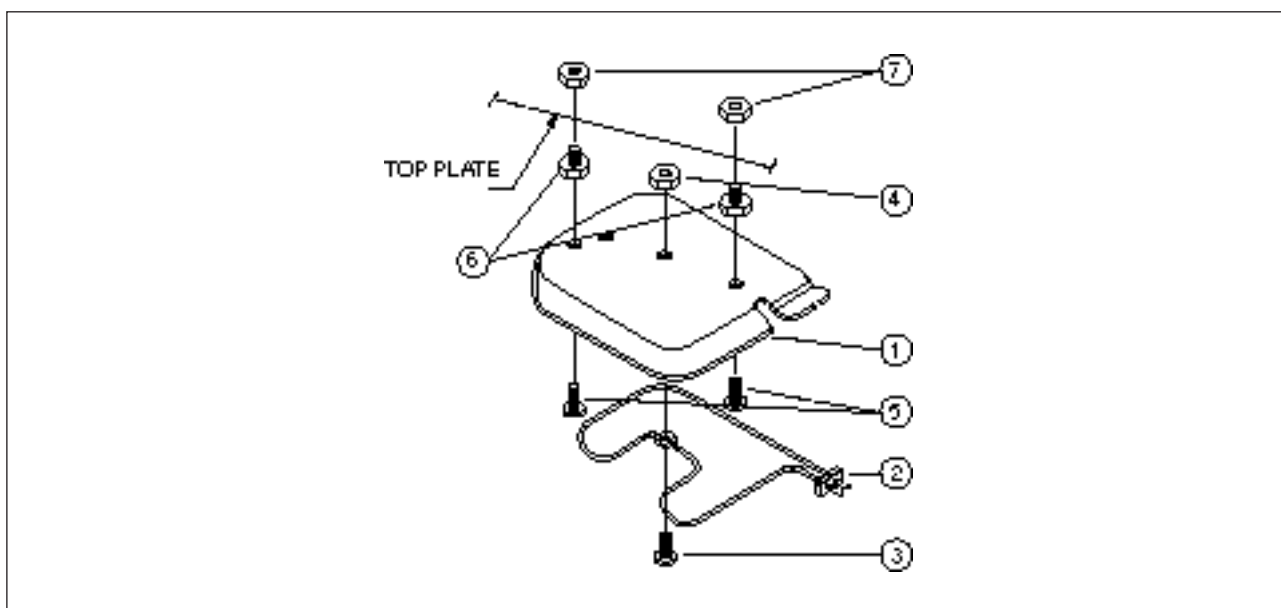
- (1) Remove the four screws ① holding the H.V. transformer ②.
- (2) Remove the transformer ②.
- (3) Reverse the above steps for reassembly.





**10. To remove insulator Heater assembly.**

- (1) Remove the four HEX Nuts ①.
- (2) Remove the insulator Heater assembly ②.
- (3) Reverse the above steps for reassembly.

**11. To remove Heater Part.**

NO	PART NAME	PART CODE	Q'TY	DESCRIPTION	REMARK
1	INSULATOR HEATER	3513301100	1	SPP T0.8	
2	HEATER	3512801700	1	230V 1000W	
3	SCREW MACHINE	7002500613	1	TRS 5X6 MFCR	
4	NUT HEX	7392500008	1	6N-2-5 SUS	
5	SCREW MACHINE	7002400413	2	TRS 4X4 MFCR	
6	SPACER INSULATOR *I	3515000700	2	C3771BD	
7	NUT HEX	7392500011	2	6N-2-5 MFZN	

- (1) Remove the HEX Nut ④.
- (2) Remove the Insulator Heater ① and Heater ②.
- (3) Remove the two screws ⑤.
- (4) Reverse the above steps for reassembly.

## TROUBLE SHOOTING GUIDE

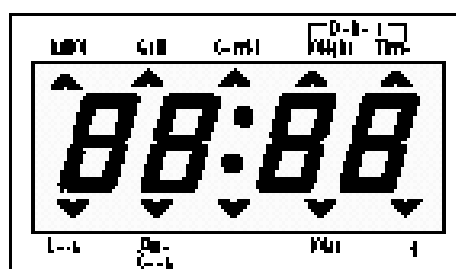
Following the procedures below to check if the oven is defective or not.

1. Check earthing before fault finding.
2. Be careful of the high voltage circuit.
3. Discharge the high voltage capacitor.
4. When checking the continuity of 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.

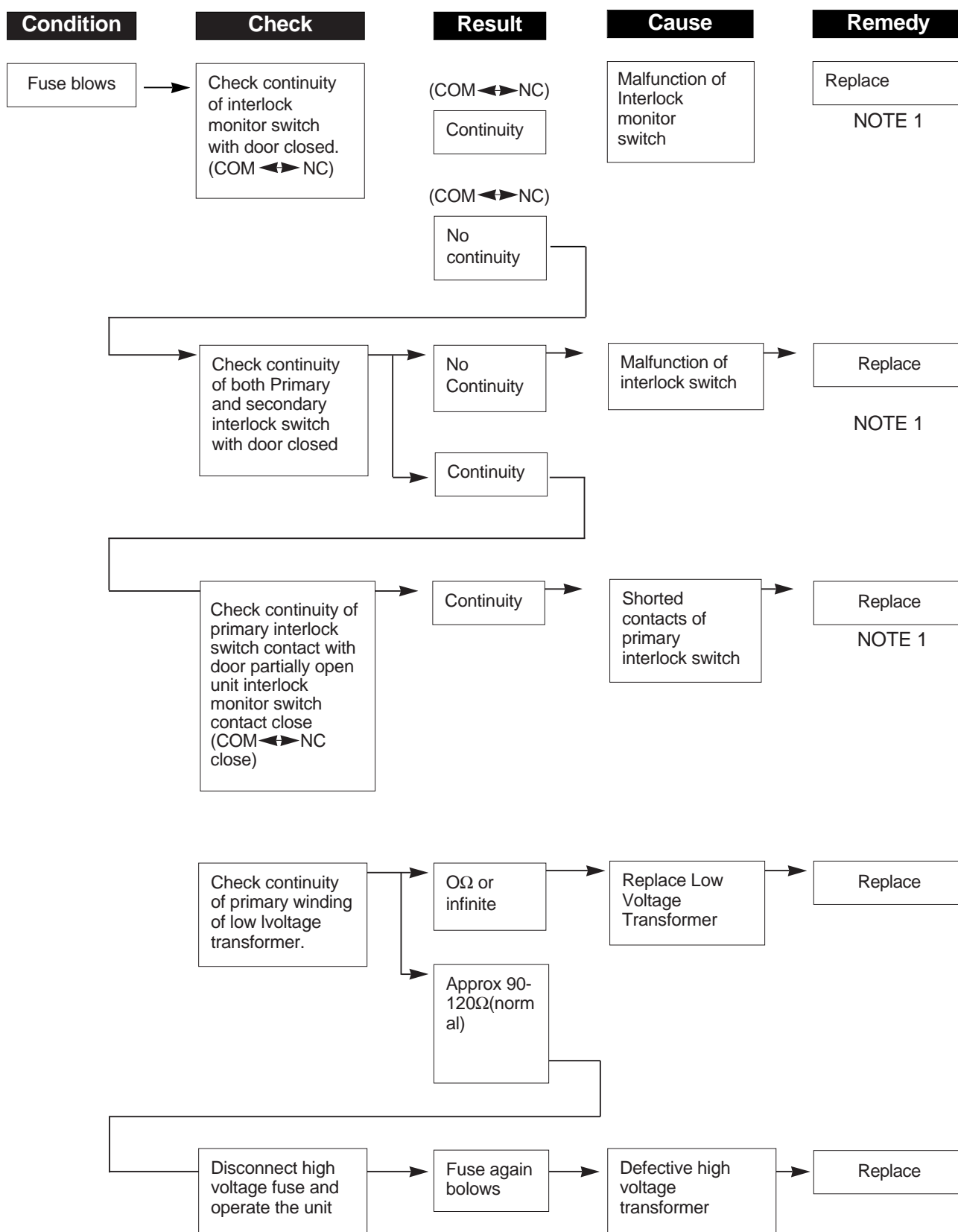
**NOTE :** When electric parts are checked or replaced, be sure the power cord is not inserted the wall outlet. Check wire harness, wiring, and connection of the terminals, and power cord before check the parts listed below.

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

1. Incomplete segments.
  - (A) Segments missing.
  - (B) Partial segments missing.
  - (C) Digit flickering other than normal fluorescent slight flickering.
2. A distinct change in the brightness of one or more numbers 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 setted. (For example, when 5:00 setted, 3:00 appears in the display.)
5. Specific numbers (for example 2 and 3 )do not display when the dial knob is rotated.
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 can not shift from the first stage cooking to the third stage cooking while 3 phase cooking (including defrost).
11. Display does not show the time of day when clear button is pressed.
12. Oven lamp and fan motor and turn table motor do not stop although cooking is finished. Check if the RELAY (RY2) contacts close if they are close, replace touch control circuit.



**(TROUBLE2) Oven does not operate at all; any inputs can not be acceted.**



Condition	Check	Result	Cause	Remedy
Outlet has proper Voltage Fuse does not open	Check continuity both magnetron and heater thermostat	No Continuity	Defective magnetron and heater thermostat	Replace
	Check continuity of noise filter board	No Continuity	Defective line filter board	Replace
	Check continuity of power supply cord.	No Continuity	Open power supply cord	Replace
		Normal	Defective touch control circuit	Replace

**NOTE 1 :** All these switches must be replaced at the same time, please refer to page 17 and 18 for adjustment instructions

**(TROUBLE3)** Display shows all figures selected, but oven does not start cooking, even though desired program and time are set and start button is tapped.

Condition	Check	Result	Cause	Remedy
Turn table motor and fan motor and oven lamp do not turn on	Check continuity of primary interlock switch	No Continuity	Malfunction of Primary interlock switch	Adjust or replace
	Check continuity of secondary interlock and D.O.M. switch	No Continuity	Malfunction of secondary interlock and D.O.M switch	Adjust or replace
	Check D.C. voltage being supplied to RELAY(RY2) coil.	0V	Defective touch control circuit	Replace
		Approx. -16V DC	Faulty contacts of RELAY (RY2) open relay coil	Replace

**(TROUBLE4) No microwave oscillation even though fan motor rotates.**

Condition	Check	Result	Cause	Remedy
No microwave oscillation	Check continuity of high voltage fuse	No continuity		
	Check continuity of high voltage capacitor terminals with wires removed	Continuity	Defective high voltage transformer	Replace
	Check continuity of high voltage rectifier in forward and backward direction with DC meggr	Continuity in backward direction	Defective high voltage rectifier	Replace
	Connect megger leads to magnetron terminal and magnetron body	Continuity	Defective magnetron	Replace
	Check resistance of primary and secondary coil of high voltage transformer	0 or	Defective high voltage transformer	Replace
	Check continuity of magnetron heater with wires removed	No continuity	Defective high voltage transformer	Replace
	Check continuity of filament terminal of high voltage transformer	No continuity	Defective high voltage transformer	Replace
	Check D.C. voltage being supplied to RELAY (RY1) coil	0V	Defective touch control circuit	Replace
		Approx -16V DC	Faulty contacts of RELAY(RY1) or open relay coil	Replace

Condition	Check	Result	Cause	Remedy
Display does not show program ming at all, even if button key is pressed	Check each button for continuity the tach switch deyboard as the following keyboard check procedure.	Normal	Malfunction of touch control circuitry of control box main-assembly	Replace control box main assembly
		Normal	Malfunction of touch control circuitry of control box sub-assembly	Replace control box sub-assembly

**NOTE 1 :** Before following the particular steps listed above in the trouble shooting guide for failure, please check for the continuity of each wire-harness between the tact switch keyboard and PCB assembly.

#### (TROUBLE5) Heater does not heat(Food will not become hot).

Condition	Check	Result	Cause	Remedy
Grill heater does not heat	Check continuity both primary interlock switch	No Continuity	Malfunction of primary interlock switch	Adjust or replace
	Check continuity of heater thermostat	No Continuity	Defective heater thermostat	Replace the heater thermostat
	Check continuity of secondary interlock switch	No Continuity	Malfunction of secondary interlock switch	Adjust or replace
	Check continuity of heater	No Continuity	Defective heater	Replace
	Check D.C. voltage being supplied to RELAY (RY3) coil.	OV	Defective touch control circuit	Replace
		Approx -24V DC	Faulty contacts of RELAY(RY3) or open relay coil.	Replace

## KEYBOARD CHECK PROCEDURE

### 1. Type of encoding and key names.

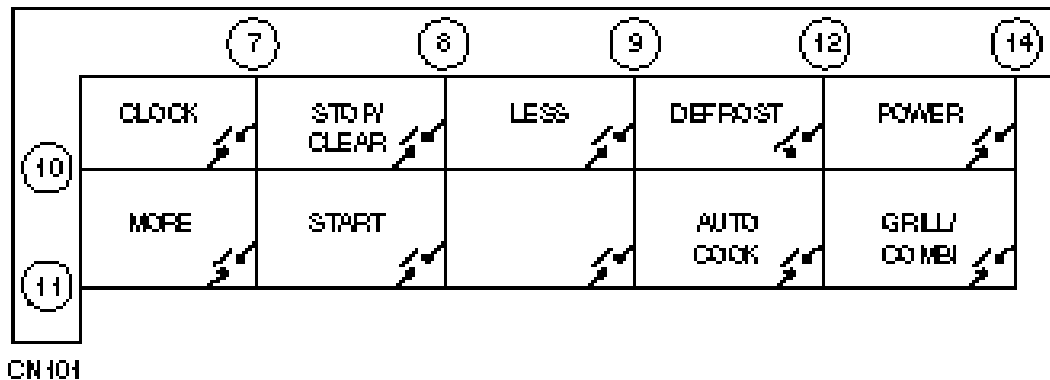


Fig. 4. KEY MATRIX

The tact switch keyboard consists of 9 keys whose configurations are described above.

### 2. Key check procedure

To determine if the tact switch keyboard is defective or not, check the continuity of each button contacts with a multimeter.

- |   |   |
|---|---|
| 1) CLOCK button : Between 7 and 10      | 6) MORE button : Between 7 and 11         |
| 2) STOP/CLEAR button : Between 8 and 10 | 7) START button : Between 8 and 11        |
| 3) LESS button : Between 9 and 10       | 8) AUTO COOK button : Between 12 and 11   |
| 4) DEFROST button : Between 12 and 10   | 9) GRILL/COMBI button : Between 14 and 11 |
| 5) POWER button : Between 14 and 10     |   |

## COMPONENT TEST PROCEDURE

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cooking cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components or wiring, always unplug the oven from its power source and discharge the capacitor (see page 26).

### 1. High voltage transformer

- (A) Remove connections from the transformer terminals and check continuity.
- (B) Normal readings should be as follows:  
Secondary winding .....Approx.  $100\Omega \pm 10\%$   
Filament winding .....Approx.  $0\Omega$   
Primary winding .....Approx.  $0\Omega$

### 2. High voltage capacitor

- (A) Check continuity of capacitor with meter on the highest OHM scale.
- (B) A normal capacitor will show continuity for a short time, and then indicate  $9M\Omega$  once the capacitor is charged.
- (C) A shorted capacitor will show continuous continuity.
- (D) An open capacitor will show constant  $9M\Omega$ .
- (E) Resistance between each terminal and chassis should be infinite.

### 3. High voltage diode

- (A) Isolate the diode from the circuit by disconnecting the leads.

- (B) 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 diodes 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 Output Power". (Page 19) Continuity checks can only indicate and open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

- (A) Isolate magnetron from the circuit by disconnecting the leads.
- (B) A continuity check across magnetron filament terminals should indicate ohm or less.
- (C) A continuity check between each filament terminal and magnetron case should read open.

### 5. Interlock monitor switch

The interlock switch can be checked with an ohmmeter. Isolate the switch and then connect the meter leads to the common (COM) and normally close (NC) terminals of the switch. The meter should indicate an open circuit with the door closed and a closed circuit with the door opened.

### 6. Primary and secondary interlock switch

The primary and secondary interlock switch can be checked with an ohmmeter. Isolate the switch and connect the meter leads to the common (COM) and normally open (NO) terminals of the switch.

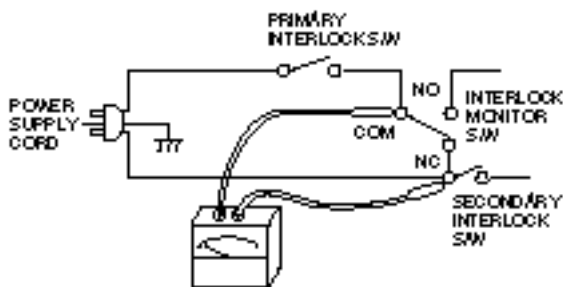
The meter should indicate an open circuit with the door opened and a closed circuit with the door closed. In case improper operation is indicated, make the necessary switch adjustment or replacement.



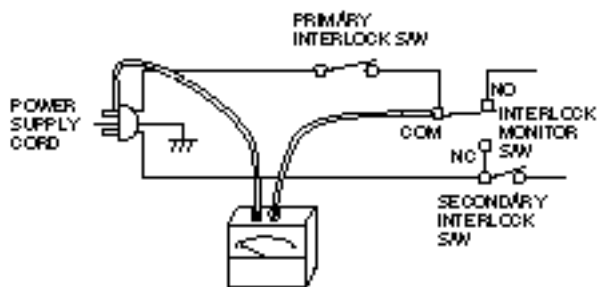
## SAFETY INTERLOCK CONTINUITY TEST

- Disconnect the oven from the power supply.
- You can test continuity of safety interlocks and monitor switch by using switch tester or ohmmeter.
- The switch operation is checked by the lamp on/off of resistance zero/unlimited.
- The sequence of check is interlock monitor switch; primary and secondary interlock switches check.
- Make circuits like Fig. a, Fig. b, Fig. c for tests.

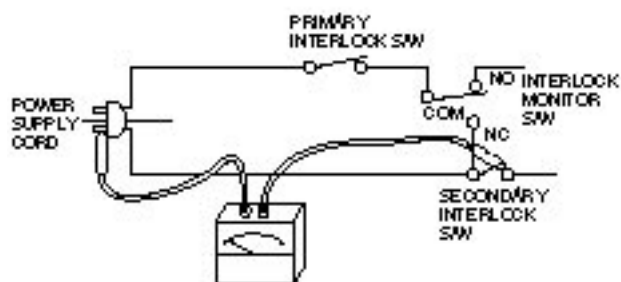
### 1) In case of interlock monitor check. (Lamp on or zero resistance)



### 2) In case of primary interlock check. (Lamp on or zero resistance)

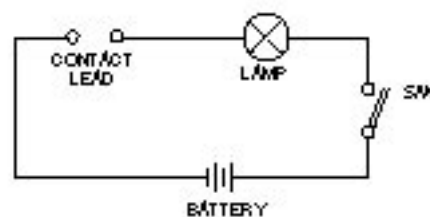


### 3) In case of secondary interlock switch.



(ohmmeter)  
– Fig. c –

\* (Schematic diagram of S/W tester)



Condition : 1) Door is closed.

## PRINTED CIRCUIT BOARD

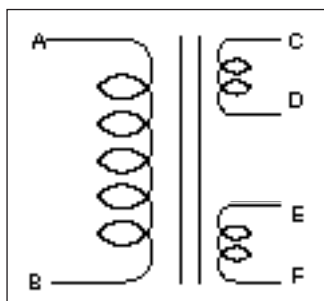
### 1. CIRCUIT CHECK PROCEDURE

1) Low voltage transformer (DMR-814FS) check.

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

Measuring condition: Input voltage : 230V

Frequency: 50Hz



Terminal \ Voltage	LOAD	NO LOAD
C-D	-19VDC	-24VDC
E-F	2.1VDC	2.2VAC

**NOTE 1 :** Secondary side voltage of the low voltage transformer changes in proportion to fluctuation of power source voltage.

**NOTE 2:** The acceptable tolerance of the secondary voltage is within  $\pm 5\%$  of nominal voltage.

### 2) Voltage Check

Key check point (MICOM PIN)

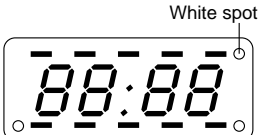
NO.	CHECK POINT	REMARK
1	PIN 21,24,32,33 OR 34	-5VDC
2	PIN 48	-27VDC
3	PIN 44	
4	PIN 18 OR 19	
5	DP1 PIN 1& 25	2.6VAC (DISPLAY FILAMENT VOLTAGE)

### CHECK METHOD

NO.	MEASURE POINT	WAVE FORM	REMARK
1	MP1	-5V DC	Replace Q4, EC2
2	MP2	-16V DC	Replace R6, EC3
3	MP3	-24V DC	Replace D12, D13, EC4

**NOTE:** Each measure point must be measured with GND points.

### 3) Display problems

NO.	CAUSE	MEASUREMENT	RESULT	REMEDY
1	Poor contact between P.C.B. and display filament.	Check the voltage of PIN 1 & PIN 25.	2.6 VAC	Fix the PIN 1 & 25 on the P.C.B.
2	The Display has some troubles in its segment.	Refer to "The display trouble shooting data" below.		Replace P.C.B. assembly.
3	Loss of vacuum in the display		White spot is generated on the display	Replace P.C.B. assembly

### Display trouble shooting data

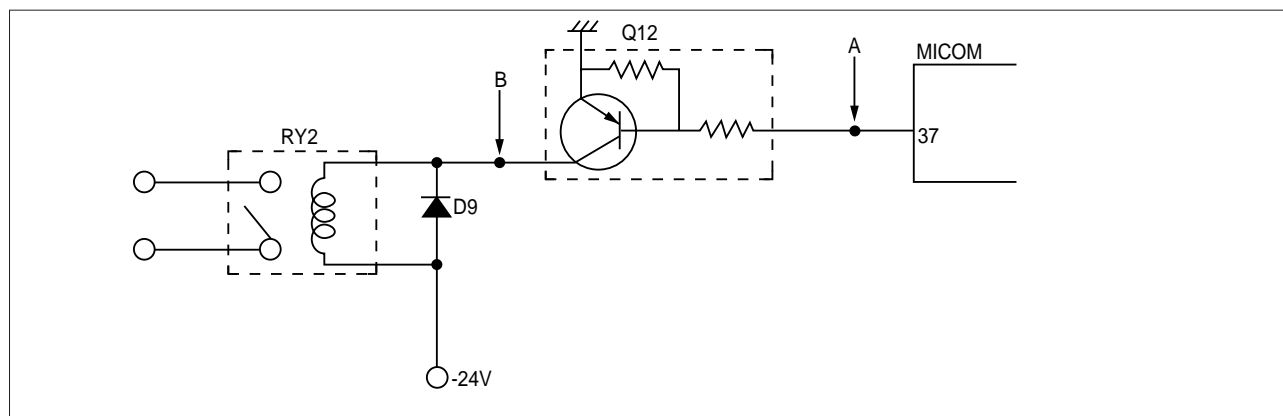
TROUBLE	DISPLAY NAME & PIN NO.	MICOM OUTPUT IN PIN NO.
TIME DEFROST, g do not come on	GRID 1(G1), 21	10
WEIGHT DEFROST, WATT do not come on.	GRID 2(G2), 17	6
COMBI does not come on	GRID 3(G3), 14	3
GRILL, AUTO COOK do not come on.	GRID 4(G4), 20	2
M/W, LOCK do not come on.	GRID 5(G5), 4, 7	1
SEGMENT, "a" does not come on form G1 to G5.	SEGMENT d, 19	8
SEGMENT, "b" does not come on form G1 to G5.	SEGMENT e, 18	7
SEGMENT, "c" does not come on form G1 to G5.	SEGMENT f, 16	5
SEGMENT, "d" does not come on form G1 to G5.	SEGMENT a, 23	12
SEGMENT, "e" does not come on form G1 to G5.	SEGMENT b, 22	11
SEGMENT, "f" does not come on form G1 to G5.	SEGMENT c, 20	9
SEGMENT, "g" does not come on form G1 to G5.	SEGMENT g, 15	4
DEFROST, COMBI, GRILL, M/W do not come on.	UPPER BAR I,5	63
LOCK, AUTO COOK, WATT, g do not come on.	LOWER BAR h,i,j,k,6,8,9,11	62

### 4) When there is not microwave oscillation.

(1) When pressing "START" button, oven lamp does not turn on.

Fan motor and turntable motor do not rotate, but cook indicator in display comes on.

\* Cause: RELAY "2" does not operate.



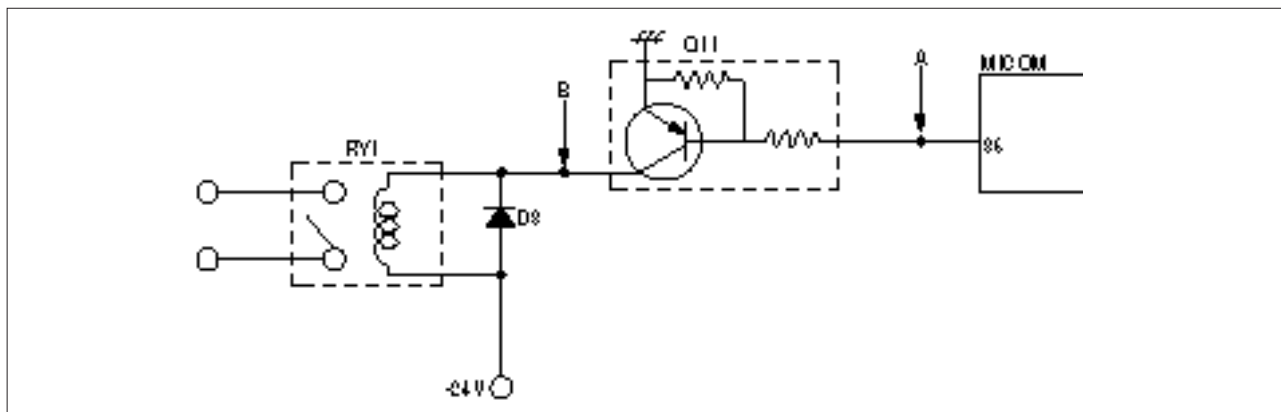
## CHECK METHOD

STAGE \ POINT	A	B
RELAY "2" ON	-5VDC	GND
RELAY "2" OFF	GND	-24VDC

(2) When touching "START" button, oven lamp turn on.

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

\* Cause: RELAY "1" does not operate.



## CHECK METHOD

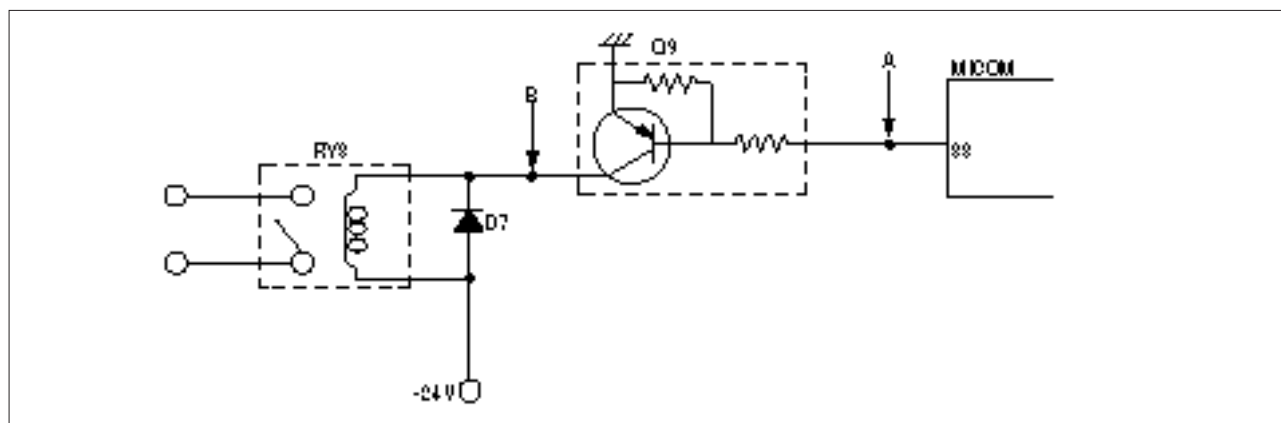
STAGE \ POINT	A	B
RELAY "2" ON	-5VDC	GND
RELAY "2" OFF	GND	-24VDC

## 5) When there is not Grill heat.

When pressing "START" button, oven lamp turns on.

Fan motor and turntable and cook indicator in display comes on

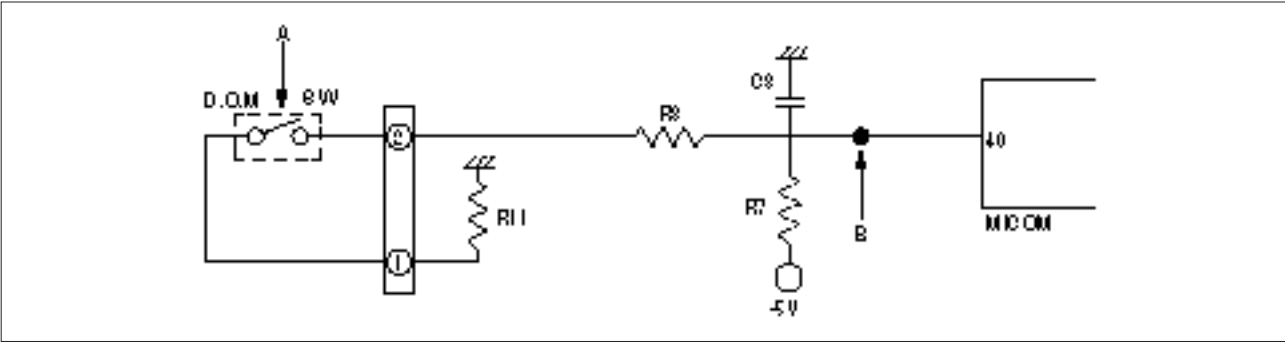
\* Cause: RELAY "3" does not operate.



## CHECK METHOD

STAGE \ POINT	A	B
RELAY "3" ON	-5VDC	GND
RELAY "3" OFF	GND	-24VDC

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

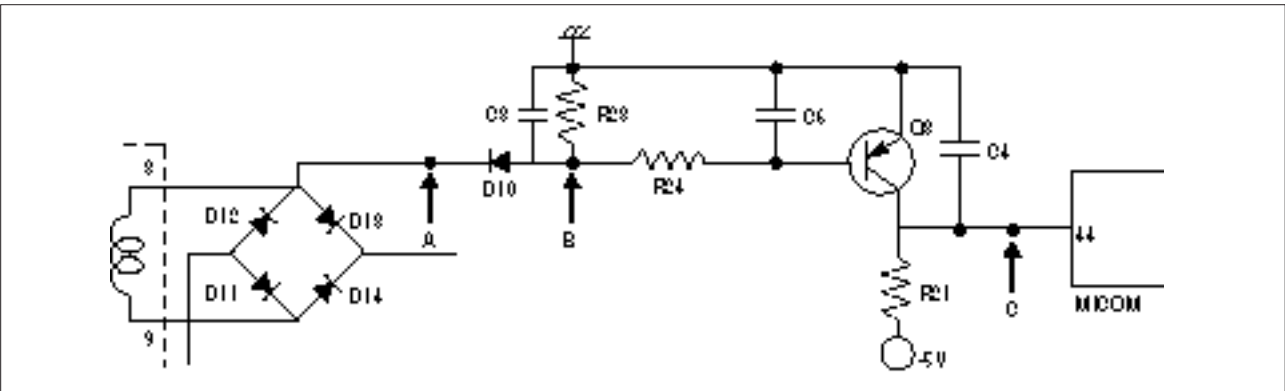


CHECK METHOD

STAGE \ POINT	A	B
1) DOOR OPENED	OPEN	-5VDC
2) DOOR CLOSED	CLOSED	GND

NO.	METHOD	REMEDY
1	Check the state (ON,OFF) of the secondary interlock switch by resistance measurement.	Replace secondary interlock switch

7) When the digital clock does not operate properly.



POINT	WAVEFORM
A	
B	
C	

If clock does not keep exact time, you must check Diode D10, transistor Q8.

■ : GRILL MODEL  
 ▲ : SLOW ACING MODEL

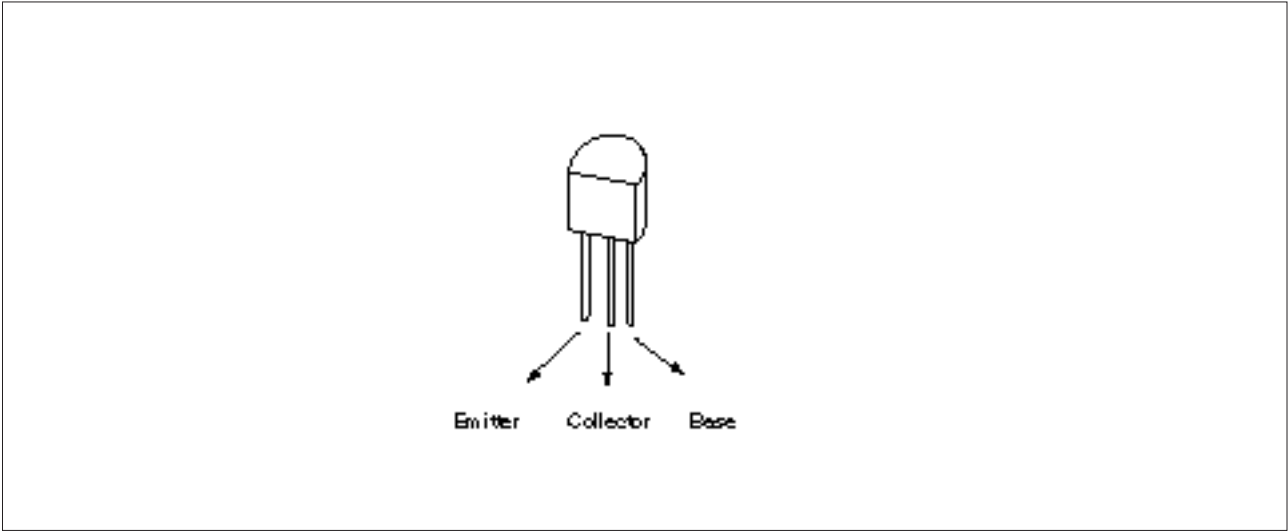
M156 S/N:3514313851  
 IC1 TMP47C862AN-GC17(DW-MD-KOR-8161)

M157 S/N:3514313861

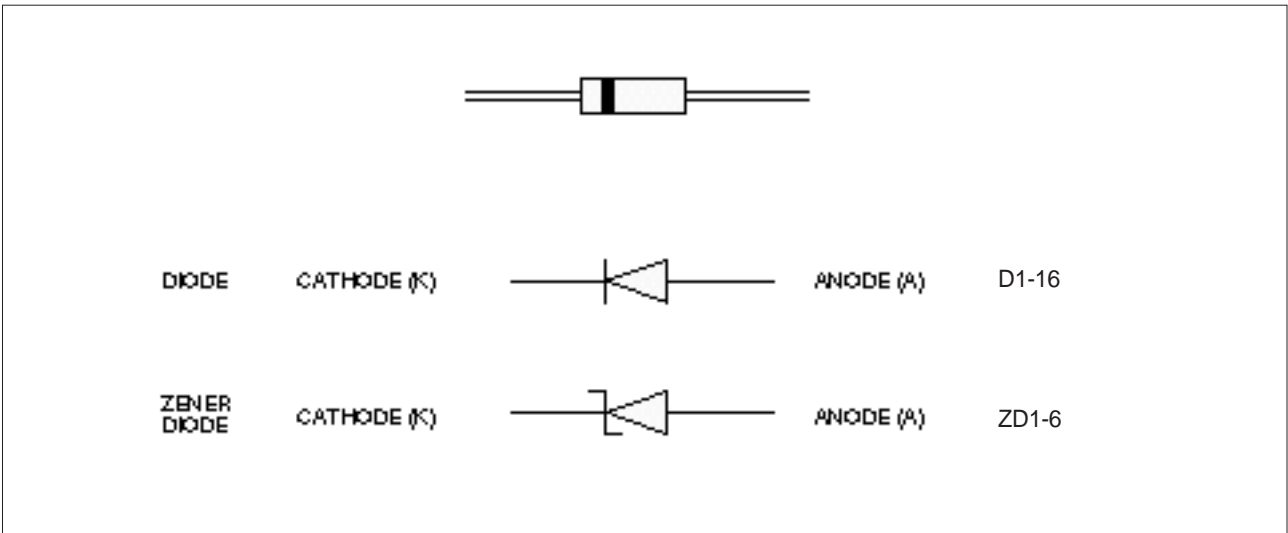
DP1 SWM-SSS13  
 F1  
 F2  
 NP  
 G1 23  
 G2 22  
 G3 20  
 G4 19  
 G5 18  
 G6 17  
 G7 16  
 G8 15  
 G9 14  
 G10 13  
 G11 12  
 G12 11  
 G13 10  
 G14 9  
 G15 8  
 G16 7  
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3. COMPONENT INFORMATION

1) Transistor (NPN Type)



2) Diode and Zener Diode



## PRINTED LOCATION NO.

NO	PART NAME	SYMBOL	SPECIFICATION	PARTCODE	Q'TY
1	PCB MAIN	M156	M156	3514313851	1
2	R CARBON FILM	R6, R9, R10, R12, R17	1/4W 1KΩJ	RD-4Z102J-	5
3	R CARBON FILM	R13	1/4W 100ΩJ	RD-4Z101J-	1
4	R CARBON FILM	R24	1/4 10KΩJ	RD-4Z103J-	1
5	R CARBON FILM	R8, R21	1/4W 4.7KΩJ	RD-4Z472J-	2
6	R CARBON FILM	R7, R23	1/4W 100KΩJ	RD-4Z104J-	2
7	R CARBON FILM	R22	1/4W 2KΩJ	RD-4Z202J-	1
8	R CARBON FILM	R5	1/6W 1MΩJ	RD-A4Z105J-	1
9	R CARBON FILM	R1, R2	1/6W 100ΩJ	RD-AZ101J-	2
10	R CARBON FILM	R3	1/6W 1KΩJ	RD-AZ102J-	1
11	R CARBON FILM	R4	1/6W 10KΩJ	RD-AZ103J-	1
12	R CARBON FILM	R11	1/6W 20KΩJ	RD-AZ203J-	1
13	R CARBON FILM	R19, R20	1/2W 6.8ΩJ	RD-2Z689JS	2
14	R CARBON FILM	R16, R18, R25	1/2W 470ΩJ	RD-2Z471JS	3
16	R CARBON FILM	R14	1/2W 100ΩJ	RD-2Z101JS	1
17	C CERAMIC	C1~C5, C7~C9	50V 0.1μF Z	CCKF1H473Z	8
18	C CERAMIC	C6	50V 0.047μF Z	CCKF1H104Z	1
19	C ARRAY	CA1	50V 1000PF(5P)	CN4XB-102M	1
20	DIODE ZENER	D1~D5, D10	1N4148	DZN4148-	6
21	DIODE RECTIFIER	D8, D9, D11~D14	1N4002A	DZN4002A-	6
22	DIODE SWITCHING	D6	1N4148M	DZN4148M-	1
23	DIODE ZENER	ZD1, ZD5	MTZ3.9B	DZTZ3R9B-	2
24	DIODE ZENER	ZD2	MTZ5.6B	DZTZ5R6B-	1
25	DIODE ZENER	ZD3, ZD4	MTZ24B	DZTZ24B-	2
26	TR DIGITAL	Q1, Q2, Q5	DTA114ES	TDTA114ES-	3
27	TR DIGITAL	Q6, Q11, Q12	KTRA106M	TZRA106M	3
28	TRANSISTOR	Q3, Q4, Q8	KTA1270Y	TZTA1270Y-	3
29	TRANSISTOR	Q7	KTA1273Y	TZTA1273Y-	1
30	C ELECTRO	EC2, EC4	RS 50V 10μF	CEXE1H100A	2
31	C ELECTRO	EC1	RS 25V 100μF	CEXE1E101A	1
32	C ELECTRO	EC3, EC6	RSS 50V 220μF	CEXF1H221V	2
33	C ELECTRO	EC5	RSS 50V 1000μF	CEXF1H102V	1



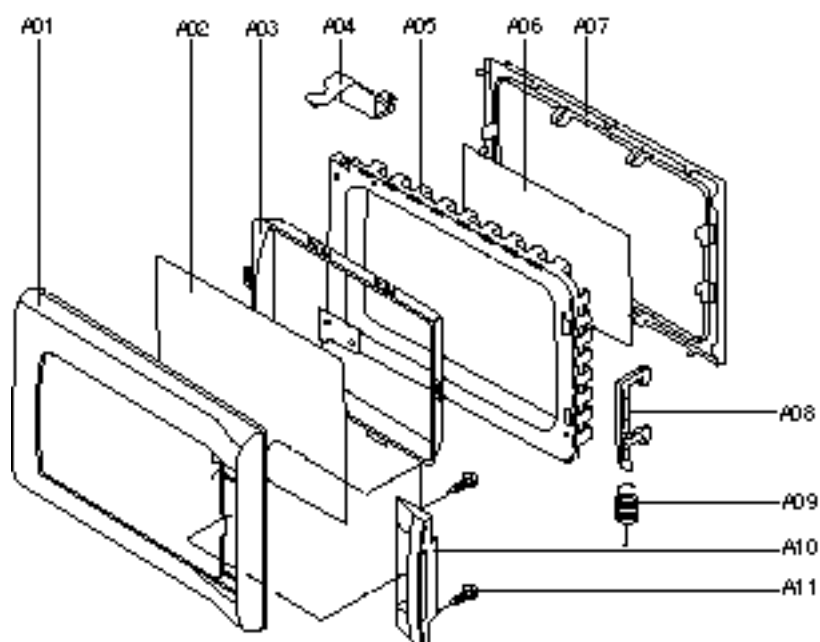
NO	PART NAME	SYMBOL	SPECIFICATION	PARTCODE	Q'TY
34	CONNECTOR	CN1	YW396-02V	3519150520	1
35	CONNECTOR	CN2	HLEM15S-1	4CW215SBD0	1
36	CONNECTOR	CN3	YW396-05AV	3519150510	1
37	WIRE FLAT		1.25X15X90XC	WSJ-159007	1
38	IC MICOM	IC1	TMP47C862AN-GC17	13GSR816T-	1
39	RESONATOR	CR1	KBR-40MKSTF	5PKBR40MKS	1
40	BUZZER	BZ1	BM-20K	3515600100	1
41	SW RELAY	RY1	G5J-1-TP-M 24V	5SC0101107	1
42	SW RELAY	RY2	G5B- 24V	5SC0101109	1
43	TRANS POWER	LVT1	DMR-814FS	5EPV035301	1
44	DIGITRON	DP1	SVM-05SS13	DSVM5SS13-	1
45	HOLDER VFD		PP(BLACK)	3513002600	1
46	JUMPER WIRE	J3~J7, J13~J17, J20~J25	1/0.52 TIN COATING	85801052GY (10MM)	16
47	JUMPER WIRE	J1, J2, J10, J11, J12	1/0.52 TIN COATING	85801052GY (5MM)	5

## 2) SUB PCB PART LIST

NO	PART NAME	SYMBOL	SPECIFICATION	PARTCODE	Q'TY
1	PCB SUB	M157	M157	3514313861	1
2	LED	L102	SLR-34VR	DSLR34VR-	1
3	SWITCH TACT	SW101~SW109	KPT-1115AM	5S50101Z93	9
4	SWITCH TACT	CN101	HLEM15R-1	4CW215RBD0	1
5	LED	L101	DLY-5013T	DLY-5013T-	1
6	SW ROTARY	EN101	SDB161PVB17F- 1-2-36-36PC(PITCH5)	5S10109002	1
7	R CARBON	R101~103	1/4W 1K $\Omega$ J	RD-4Z102J-	3
8	C CERAMIC	C101~104	50V 100PF Z	CCZF1H102Z	4
9	COVER LED		PP(NATURAL)	3511404600	2

## EXPLODED AND PARTS LIST

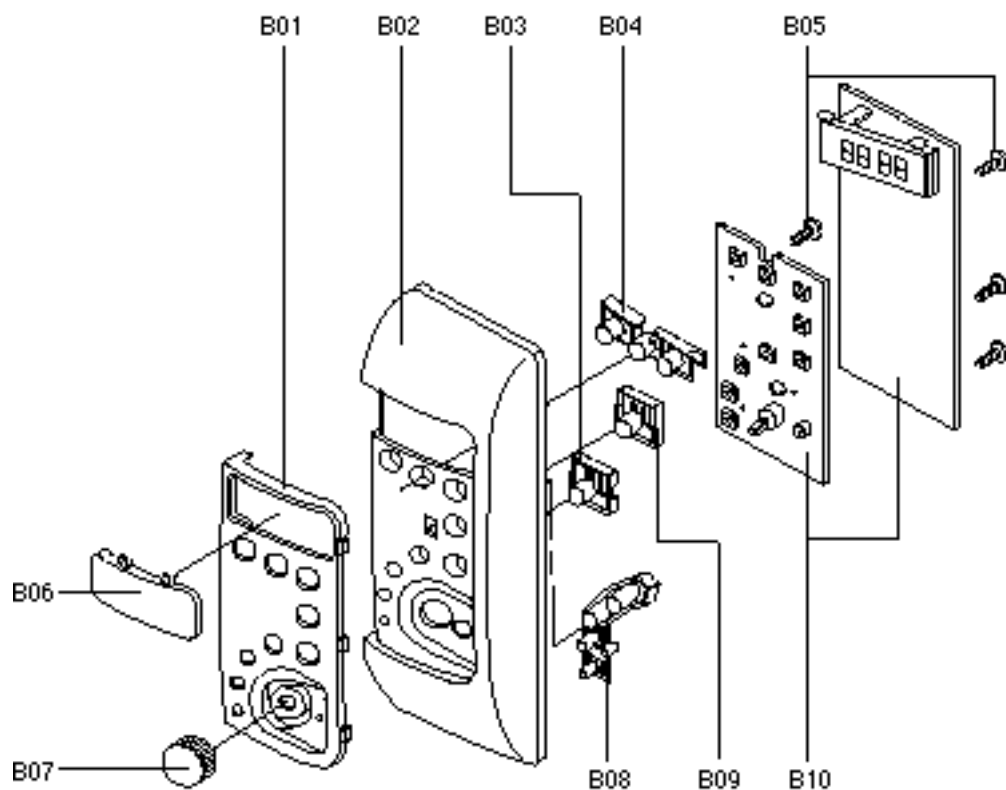
### 1. Door Assembly



DOOR AS : 3511707920

NO.	PART NAME	PART CODE	DESCRIPTION	Q'TY	REMARKS
A01	FRAME DOOR	3512202020	ABS	1	
A02	BARRIER-SCREEN*O	3517003040	ACRYLE 1.5T	1	
A03	SUPPORTER BARRI-S*O	3515304600	ABS	1	
A04	STOPPER HINGE*T	3515201500	KOR-61150S	1	
A05	DOOR PAINTING AS	3511706100	KOR-61150S	1	
A06	BARRIER-SCREEN*I	3517002800	PE 0.1T	1	
A07	GASKET DOOR	3512300200	PP	1	
A08	HOOK	3513100710	POM	1	
A09	SPRING HOOK	3515101500	PW1	1	
A10	HANDLE DOOR	3512601300	ABS	1	
A11	SCREW TAPPING	7S341W40B1	T2S PAN 4X12 PW MFZN	2	

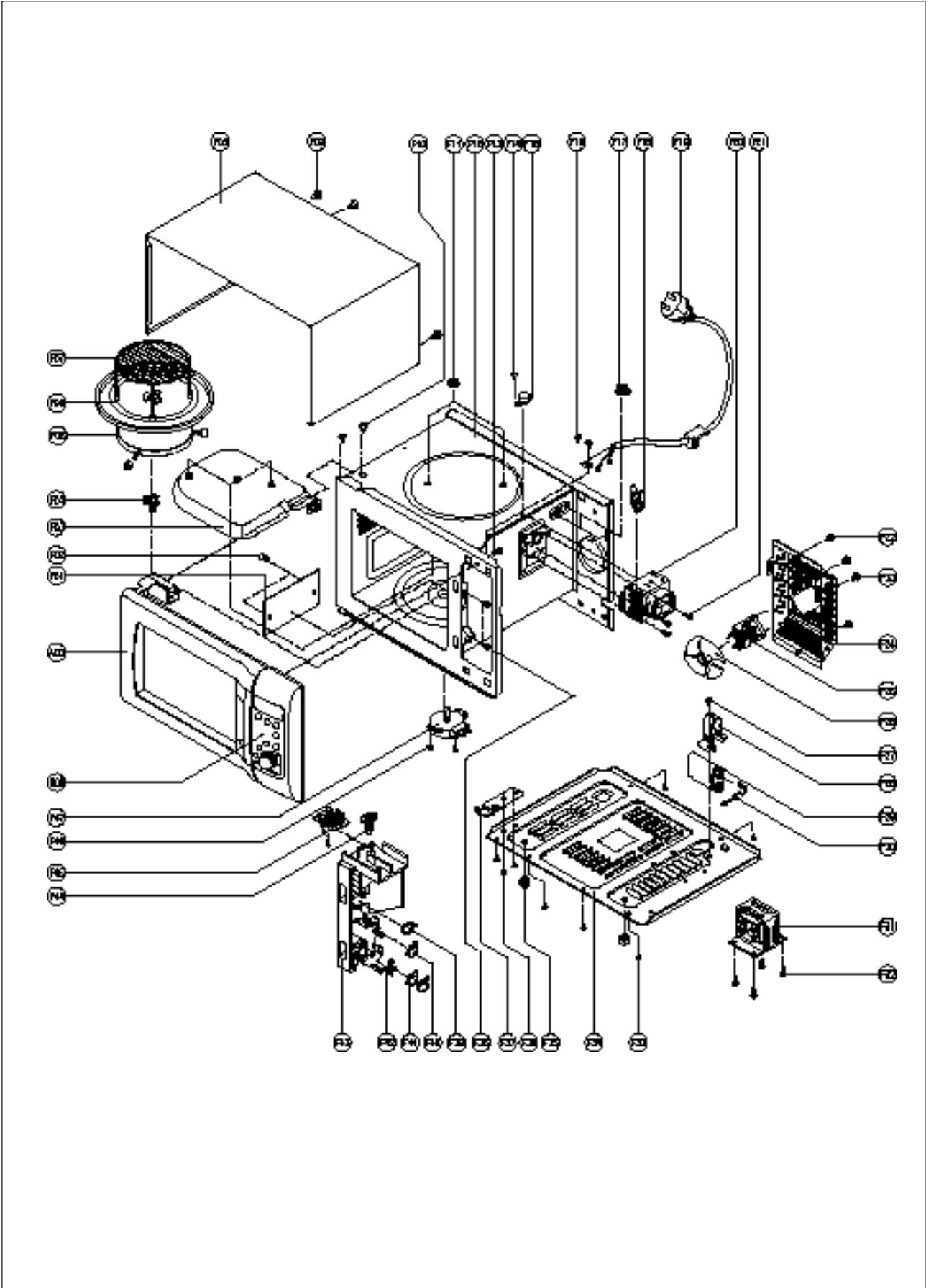
## 2. Control Panel Assembly



C-PANEL AS : PKCPSWSZ00

NO.	PART NAME	PART CODE	DESCRIPTION	Q'TY	REMARKS
B01	DECORATOR C-PANEL	3511602300	ABS	1	
B02	C-PANEL	3516710730	ABS	1	
B03	BUTTON START	3516905800	ABS	1	MILKY
B04	BUTTON FUNCTION(COOK)	3516905700	ABS	1	
B05	SCREW TAPPING	7621301011	T2S PAN 3X10 PW MFZN	8	
B06	WINDOW DISPLAY	3515500810	PMMA	1	SMOG
B07	KNOB VOLUME	3513403810	ABS	1	
B08	BUTTON FUNCTION	3516905600	ABS	1	
B09	BUTTON FUNCTION(AUTO)	3516905900	ABS	1	
B10	PCB MAIN MANUAL AS	PKMPMSSZ00	KOG-366TOS	1	

3. Main Unit



***KOG-366T0S PART LIST***

REF NO	PART NAME	PART CODE	DESCRIPTION	Q'TY	REMARK
F01	COVER WAVE GUIDE	3511403500	MICA T0.5	1	
F02	BUTTON LOCKING	4078502031	PP	2	
F03	INSULATOR HEATER AS	3513301400	KOG-36150S	1	
F03-1	HEATER	3512801700	230V 1000W	1	
F03-2	INSULATOR HEATER	3513301100	SPP T0.8	1	
F04	COUPLER	3517400600	PPS	1	
F05	GUIDE ROLLER AS	3512510600	KOR-61150S	1	
F06	TRAY	3517203600	GLASS	1	
F07	TRAY RACK AS	3517204410	KOG-361Q0S 100MM	1	
F08	CABINET	3510801300	PCM T0.6	1	
F09	SCREW TAPPING	7112401011	T1 TRS 4X10 MFZN	3	
F10	SCREW SPECIAL	3516003700	TT3 HEX FLG 4X8 MFZN	2	
F11	NUT HEX	7392500008	6N-2-5 SUS	2	
F12	CAVITY AS	3516104810	KOG-36150S	1	
F13	SCREW TAPPING	7112401011	T1 TRS 4X10 MFZN	1	
F14	SCREW TAPPING	7121300811	T2S PAN 3X8 MFZN	1	
F15	THERMOSTAT	3518902200	OFF:130 ON:115 H NT101	1	
F16	SCREW TAPPING	7112401011	T1 TRS 4X10 MFZN	3	
F17	NUT HEX	7S627W50X1	NUT FLANGE M5X0.8P MFZN	2	
F18	CLAMP POWER CORD	4413A90012	NYLON 66	1	
F19	CORD POWER AS	35113AAQG5	3X1.5 60X60 120-RTML	1	
F20	MAGNETRON	3518002200	2M218H(MF)I	1	
F21	SCREW SPECIAL	3516002700	T2 FG 4X10 PW SE MFZN	3	
F22	SCREW TAPPING	7112401011	T1 TRS 4X10 MFZN	2	
F23	SCREW MACHINE	7S101W4081	PAN FLANGE 4X8 MFZN	2	
F24	COVER * B	3511402500	SBHG T0.8	1	
F25	MOTOR SHADED POLE	3963512100	MW10CA-R01	1	
F26	FAN	3511800300	PP+30%GLASS	1	
F27	SCREW TAPTITE	7272400811	TT3 TRS 4X8 MFZN	1	
F28	HOLDER HV CAPACITOR	3513001900	SECC T0.8	1	
F29	CAPACITOR HV	441U667020	2100VAC 0.95uF	1	
F30	DIODE HV	4416V24000	HVR-1X-32B	1	
F31	TRANS HV	3518106210	JY-N80S0-61T	1	
F32	SCREW SPECIAL	3516003700	TT3 HEX FG 4X8 MFZN	4	
F33	SCREW TAPPING	7112401011	T1 TRS 4X10 MFZN	6	
F34	BASE	3510308700	SBHG T0.8	1	
F35	FOOT	3512100900	PP DASF-130	2	
F36	SCREW TAPTITE	7272400811	TT3 TRS 4X8 MFZN	2	
F37	STOPPER HINGE*U	3515201100	SCP-1 T2.5	1	
F38	SCREW TAPPING	7122401211	T2S TRS 4X12 PW MFZN	2	
F39	SW MICRO	4415A17352	VP-533A-OF	1	
F40	SW MICRO	4415A66910	VP-531A-OF	1	
F41	SW MICRO	4415A17352	VP-533A-OF	2	
F42	LEVER LOCK	3513701300	POM	1	
F43	LOCK	3513805710	POM	1	
F44	LAMP	3513601600	BL 240V 25W T25	1	
F45	NOISE-FILTER	3518603700	DWLF-M	1	
F46	SCREW TAPPING	7121400611	T2S PAN 4X6 MFZN	2	
F47	MOTOR SYNCRO	3966310100	GM-16-24FD12	1	
F	HARNESS MAIN	3512710630	KOG-366T0S	1	FOR GERMANY
		3512710640	KOG-366T0S		
B00	CONTROL-PANEL AS	PKCPSWSZ00	KOG-366T0S	1	FOR GERMANY
		PKCPSWSZ10	KOG-366T0S		
A00	DOOR AS	3511707920	KOR-616T0S	1	