

**DAEWOO**

# Service Manual

## Microwave Oven

Model: KOG-3905



**DAEWOO ELECTRONICS CO., LTD.**

## 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

## 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 immediately.

### IMPORTANT

The wire in this mains lead coloured in accordance with the following code.

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

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

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter 'E', earth symbol or coloured green-and-yellow.

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

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

### NOTE

This oven is designed for counter-top use only.

# SPECIFICATIONS

|                                |             |                                       |  |
|--------------------------------|-------------|---------------------------------------|--|
| MODEL                          |             | KOG-3905                              |  |
| POWER SUPPLY                   |             | 230V~50Hz, SINGLE PHASE WITH EARTHING |  |
| POWER CONSUMPTION              | MICROWAVE   | 1350W                                 |  |
|                                | GRILL       | 1050W                                 |  |
|                                | COMBINATION | 2350W                                 |  |
| MICROWAVE ENERGY OUTPUT        |             | 900W                                  |  |
| MICROWAVE FREQUENCY            |             | 2450MHz                               |  |
| OUTSIDE DIMENSIONS (W X H X D) |             | 495 x 294 x 388 mm                    |  |
| CAVITY DIMENSIONS (W X H X D)  |             | 320 x 244 x 338 mm                    |  |
| NET WEIGHT                     |             | APPROX. 15.5 Kg                       |  |
| TIMER                          |             | 35 min. DUAL SPEED                    |  |
| FUNCTION SELECTIONS            |             | MICROWAVE/GRILL/COMBINATION           |  |
| POWER SELECTIONS               |             | 5 LEVELS                              |  |
| CAVITY VOLUME                  |             | 0.9 Cu.Ft.                            |  |

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

# EXTERNAL VIEW

## 1. OUTER DIMENSION

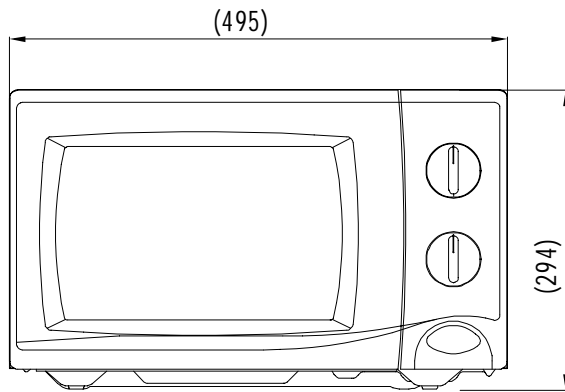


Fig1. Front view

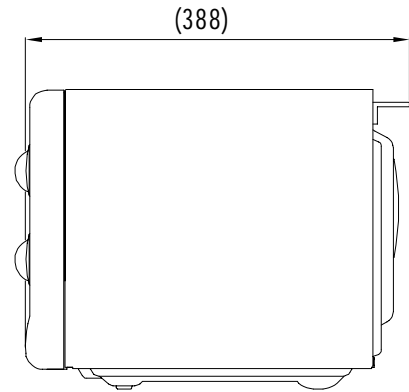
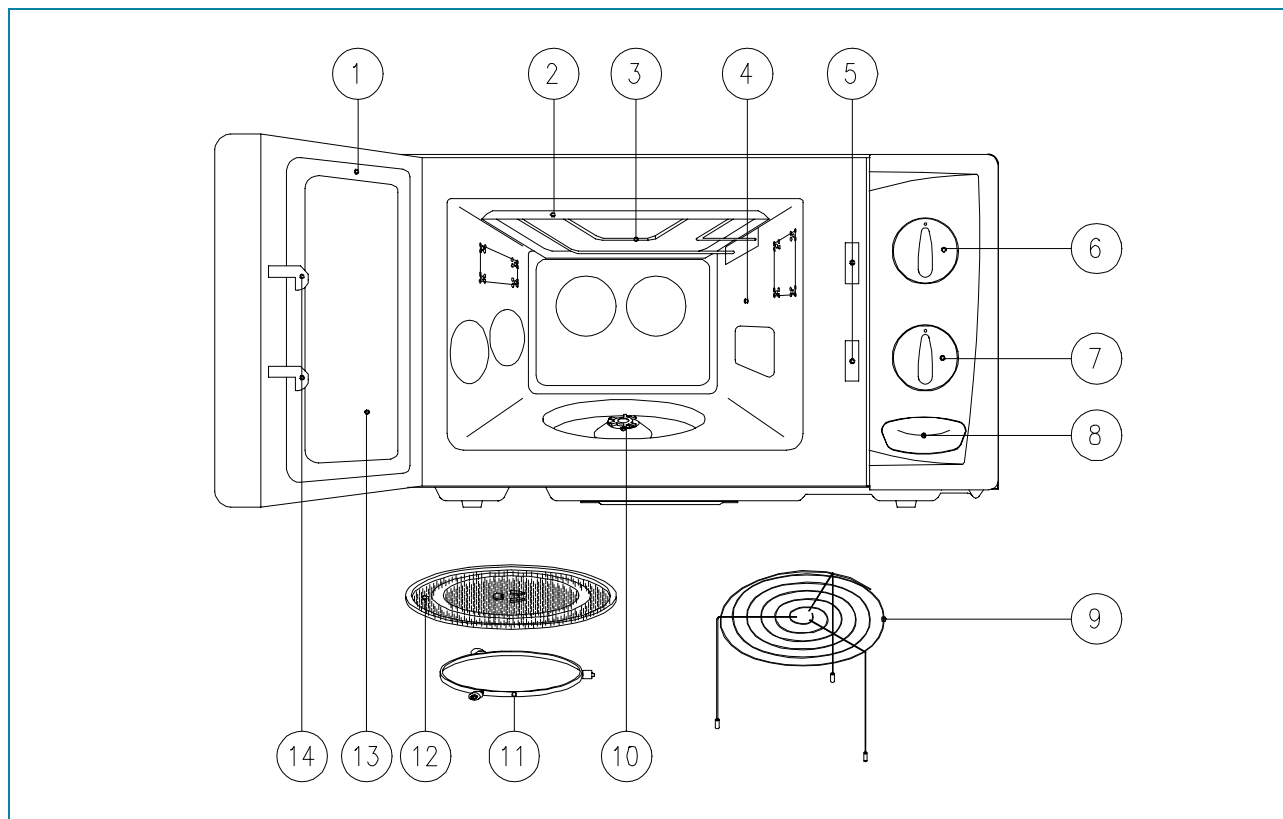


Fig2. Side view

## 2. FEATURE DIAGRAM



- 1) **Door seal** - Door seal maintains the microwave energy within the oven cavity and prevents microwave leakage.
- 2) **Reflector (Insulator Heater)**
- 3) **Heating Element**
- 4) **Oven cavity**
- 5) **Safety interlock system**
- 6) **Knob V.P.C** - Used to select a microwave power level.
- 7) **Knob timer** - Used in setting cooking time for all functions.
- 8) **Door release button** - By pushing this button the latch system cut off all circuits and stops the oven before the door is opened.
- 9) **Metal Rack**
- 10) **Coupler** - This fits over the shaft in the center of the ovens cavity floor.  
This is to remain in the oven for all cooking.
- 11) **Roller guide** - This must always be used for cooking together with the glass cooking tray.
- 12) **Glass cooking tray** - Made of special heat resistant glass.  
Food in a proper receptacle is placed on this tray for cooking.
- 13) **Door viewing screen** - Allows viewing of food.  
The screen is designed so that light can pass through, but not the microwave.
- 14) **Door hook** - When the door is closed, it will automatically shut off.  
If the door is opened while the oven is operating, the magnetron will automatically shut off.

# INSTALLATION

## 1. Steady, flat location

This microwave oven should be set on a steady, flat surface.

This microwave oven is designed for counter top use only.

## 2. Leave space behind and side

All air vents should be kept a clearance. If all vents are covered during operation, the oven may overheat and, eventually, cause 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 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 microwave oven requires a current of approximately 11 amperes, 230 Volts, 50 Hz. Power supply cord is about 0.8 meters long.
- The voltage used must be the same as specified on this oven. Using a higher voltage may result in a fire or other accident causing oven damage. Using low voltage will cause slow cooking. We are not responsible for damage resulting from use of this oven with a voltage of ampere fuse other than those specified.
- This appliance is supplied with cable of special type, which, if damaged, must be repaired with cable of same type. Such a cable can be purchased from DAEWOO and must be installed by a Qualified Person.

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

A misaligned door, broken door or a dent in cavity.

If any of the above are visible, DO NOT INSTALL, and notify dealer immediately.

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

(This may occur during delivery in cold weather.) Allow 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 wire with a earthing plug. The plug must be plugged into an outlet that is properly installed and earthed.

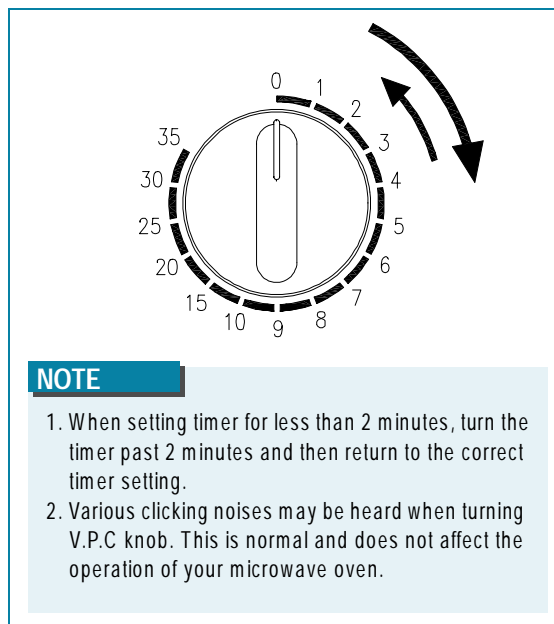
### WARNING

Improper use of the earthing plug can result in a risk of electric shock. Consult a qualified electrician or serviceman 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 main 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. Choose cooking power level by setting V.P.C knob to the desired position.  
Refer to cookbook for recommended power levels.
5. Determine cooking time. Consult cookbook for recipe timing.  
Oven light turns on and cooling fan starts to operate.  
Microwave cooking starts.
6. You may open the door while the oven is operating.  
As soon as the door is opened, the safety mechanisms stop the generation of microwave power and the operation of cooking timer.  
If you wish to change the time during cooking, simply adjust the timer to the desired time.
7. When the timer reaches zero, a bell will ring and the unit will turn off.  
Oven light turns off. If additional cooking time is needed and the door is closed, the oven will automatically start when the timer is reset.



- To set MICROWAVE cooking  
Set the variable power selector to the desired power level.

| SYMBOL | POWER LEVEL | Approximate Percentage of Power |
|--------|-------------|---------------------------------|
|        | DEFROST     | 33 %                            |
|        | MED-HIGH    | 77 %                            |
|        | HIGH        | 100 %                           |

- To set GRILL cooking  
Set the POWER SELECTOR to the (grill) position.
- To set COMBI cooking  
Set the POWER SELECTOR to the (combi) position.

## NOTE

When using the GRILL or COMBI mode;

- Do not open the door so often, the temperature inside the oven decrease and the cooking may not be completed in setting time.
- Never touch the oven window and metal interior of the oven when taking food in and out, because the temperature inside the oven and door is very high.
- When using these modes, be careful as the tray will be hot to touch, use oven gloves or pot holders while handling tray.



# DISASSEMBLY AND ASSEMBLY

Cautions to be observed when trouble shooting.

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment.

It is completely 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 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 earthed.

Do not operate on a two-wire extension cord.

The microwave oven is designed to be used with earthed.

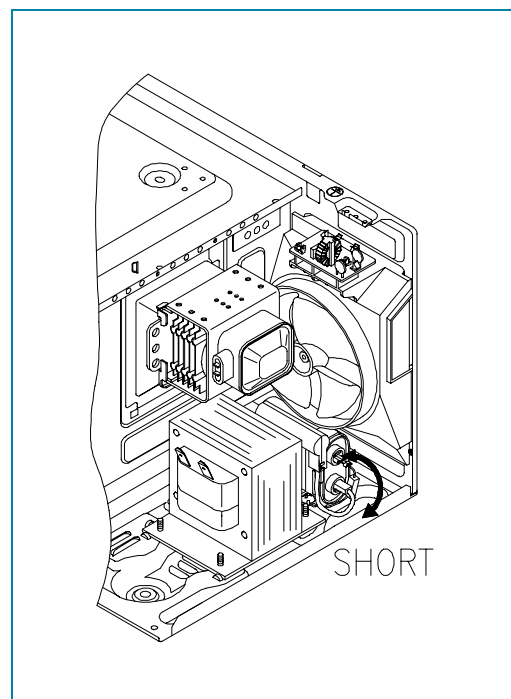
It is imperative, therefore, to make sure it is earthed properly before beginning repair work.

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

For about 30 seconds after the operation stopped, 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

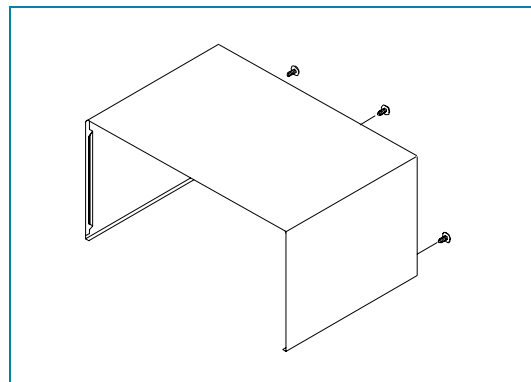
Service personnel should remove their watches whenever working close to or replacing the magnetron.

## WARNING

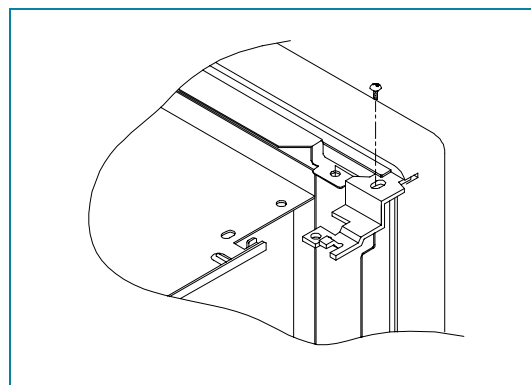
When servicing the appliance, need a care of touching or replacing high potential parts because of electrical shock or exposing microwave. These parts are as follows - HV Transformer, Magnetron, HV Capacitor, HV Diode, HV Fuse.

**1. To remove cabinet**

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

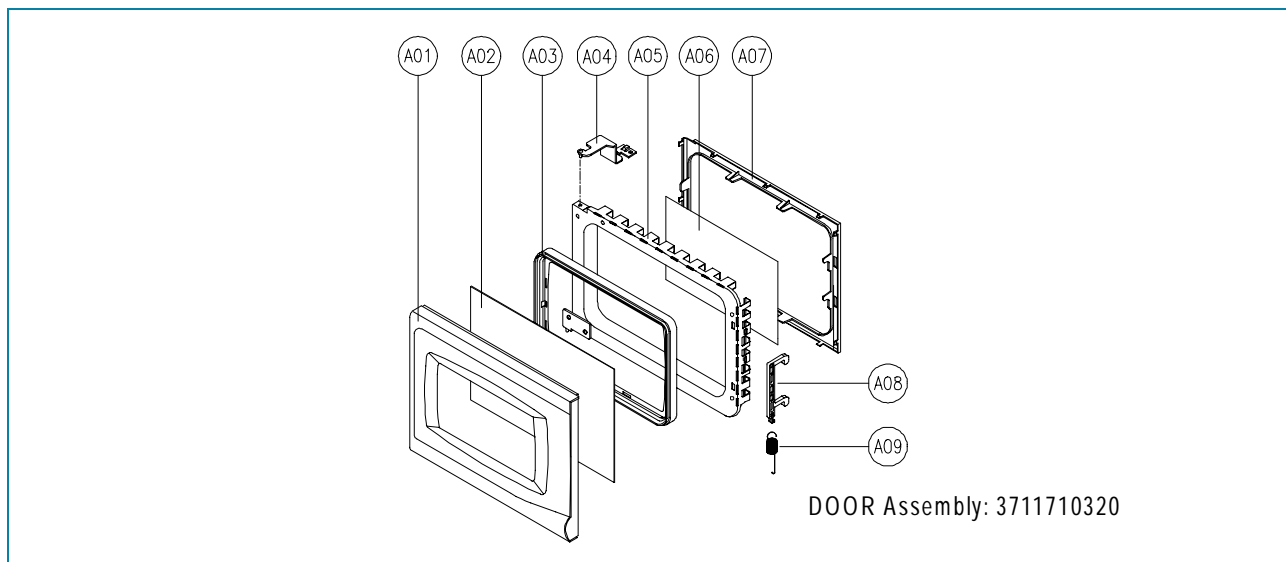
**2. To remove door assembly**

- (1) Remove a screw which secure the stopper hinge top.
- (2) Remove the door assembly from top plate of cavity.
- (3) Reverse the above steps for reassembly.

**CAUTION**

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

## 3. To remove door parts.



## KOG-37050S

| REF. NO | PART CODE  | PART NAME           | DESCRIPTION       | QTY | REMARK |
|---------|------------|---------------------|-------------------|-----|--------|
| A01     | 3512203810 | FRAME DOOR          | ABS XR-401 H-2938 | 1   |        |
| A02     | 3517003050 | BARRIER-SCREEN*O    | ACRYL T1.5        | 1   |        |
| A03     | 3515304610 | SUPPORTER BARR-S*O  | PP                | 1   |        |
| A04     | 3515204100 | STOPPER HINGE *T AS | KOR-63150S        | 1   |        |
| A05     | 3511705500 | DOOR WELD AS        | KOR-61150S        | 1   |        |
| A06     | 3517002800 | BARRIER-SCREEN *I   | POLYESTER T0.1    | 1   |        |
| A07     | 3512300200 | GASKET DOOR         | PP                | 1   |        |
| A08     | 3513100700 | HOOK                | POM               | 1   |        |
| A09     | 3515101300 | SPRING HOOK         | PW1               | 1   |        |

## KOG-39050S

| REF. NO | PART CODE  | PART NAME           | DESCRIPTION       | QTY | REMARK |
|---------|------------|---------------------|-------------------|-----|--------|
| A01     | 3512204110 | FRAME DOOR          | ABS XR-401 H-2938 | 1   |        |
| A02     | 3517003150 | BARRIER-SCREEN*O    | ACRYL T1.5        | 1   |        |
| A03     | 3515304410 | SUPPORTER BARR-S*O  | PP                | 1   |        |
| A04     | 3515204100 | STOPPER HINGE *T AS | KOR-63150S        | 1   |        |
| A05     | 3511705620 | DOOR WELD AS        | KOR-81250S        | 1   |        |
| A06     | 3517002900 | BARRIER-SCREEN *I   | POLYESTER T0.1    | 1   |        |
| A07     | 3512300400 | GASKET DOOR         | PP                | 1   |        |
| A08     | 3513100700 | HOOK                | POM               | 1   |        |
| A09     | 3515101300 | SPRING HOOK         | PW1               | 1   |        |

- (1) Remove the gasket door from door weld as.
- (2) Remove the barrier screen inner from door weld as.
- (3) Remove the door frame from door weld as.
- (4) Remove the stopper hinge top from door weld as.
- (5) Remove the spring and the hook.
- (6) Remove the supporter barrier screen outer from door frame.
- (7) Remove the barrier screen outer from door frame.
- (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'.

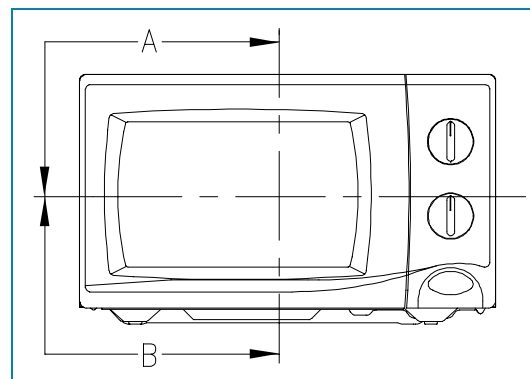
Loosen a screw on stopper hinge top, and then push the door to contact the door seal to oven front surface.

Tighten a screw.

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

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

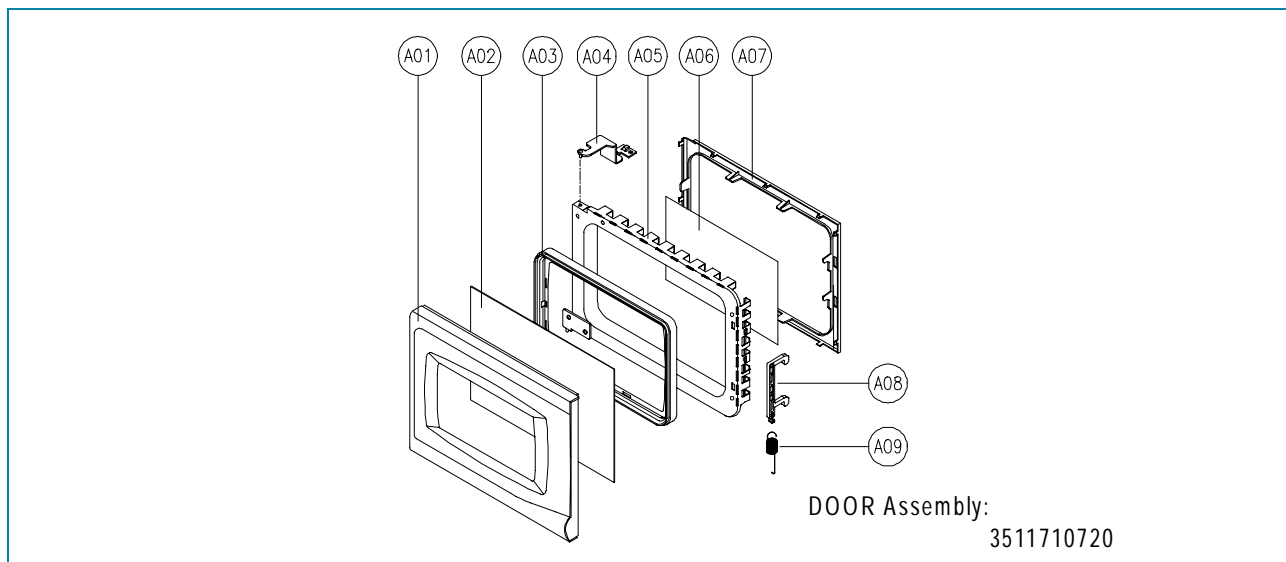
Tighten two screws.



#### NOTE

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

## 3. To remove door parts.



## KOG-37050S

| REF. NO | PART CODE  | PART NAME           | DESCRIPTION       | QTY | REMARK |
|---------|------------|---------------------|-------------------|-----|--------|
| A01     | 3512203810 | FRAME DOOR          | ABS XR-401 H-2938 | 1   |        |
| A02     | 3517003050 | BARRIER-SCREEN*O    | ACRYL T1.5        | 1   |        |
| A03     | 3515304610 | SUPPORTER BARR-S*O  | PP                | 1   |        |
| A04     | 3515204100 | STOPPER HINGE *T AS | KOR-63150S        | 1   |        |
| A05     | 3511705500 | DOOR WELD AS        | KOR-61150S        | 1   |        |
| A06     | 3517002800 | BARRIER-SCREEN *I   | POLYESTER T0.1    | 1   |        |
| A07     | 3512300200 | GASKET DOOR         | PP                | 1   |        |
| A08     | 3513100700 | HOOK                | POM               | 1   |        |
| A09     | 3515101300 | SPRING HOOK         | PW1               | 1   |        |

## KOG-39050S

| REF. NO | PART CODE  | PART NAME           | DESCRIPTION       | QTY | REMARK |
|---------|------------|---------------------|-------------------|-----|--------|
| A01     | 3512204110 | FRAME DOOR          | ABS XR-401 H-2938 | 1   |        |
| A02     | 3517003150 | BARRIER-SCREEN*O    | ACRYL T1.5        | 1   |        |
| A03     | 3515304410 | SUPPORTER BARR-S*O  | PP                | 1   |        |
| A04     | 3515204100 | STOPPER HINGE *T AS | KOR-63150S        | 1   |        |
| A05     | 3511705620 | DOOR WELD AS        | KOR-81250S        | 1   |        |
| A06     | 3517002900 | BARRIER-SCREEN *I   | POLYESTER T0.1    | 1   |        |
| A07     | 3512300400 | GASKET DOOR         | PP                | 1   |        |
| A08     | 3513100700 | HOOK                | POM               | 1   |        |
| A09     | 3515101300 | SPRING HOOK         | PW1               | 1   |        |

- (1) Remove the gasket door from door weld as.
- (2) Remove the barrier screen inner from door weld as.
- (3) Remove the door frame from door weld as.
- (4) Remove the stopper hinge top from door weld as.
- (5) Remove the spring and the hook.
- (6) Remove the supporter barrier screen outer from door frame.
- (7) Remove the barrier screen outer from door frame.
- (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'.

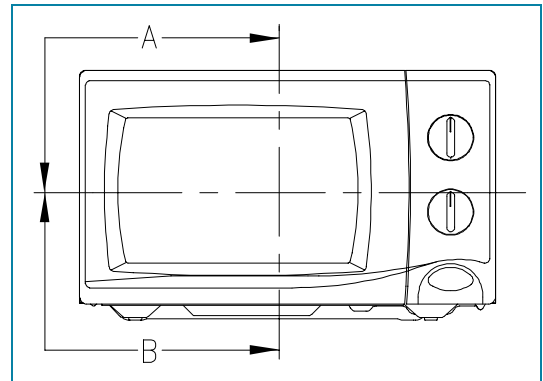
Loosen a screw on stopper hinge top, and then push the door to contact the door seal to oven front surface.

Tighten a screw.

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

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

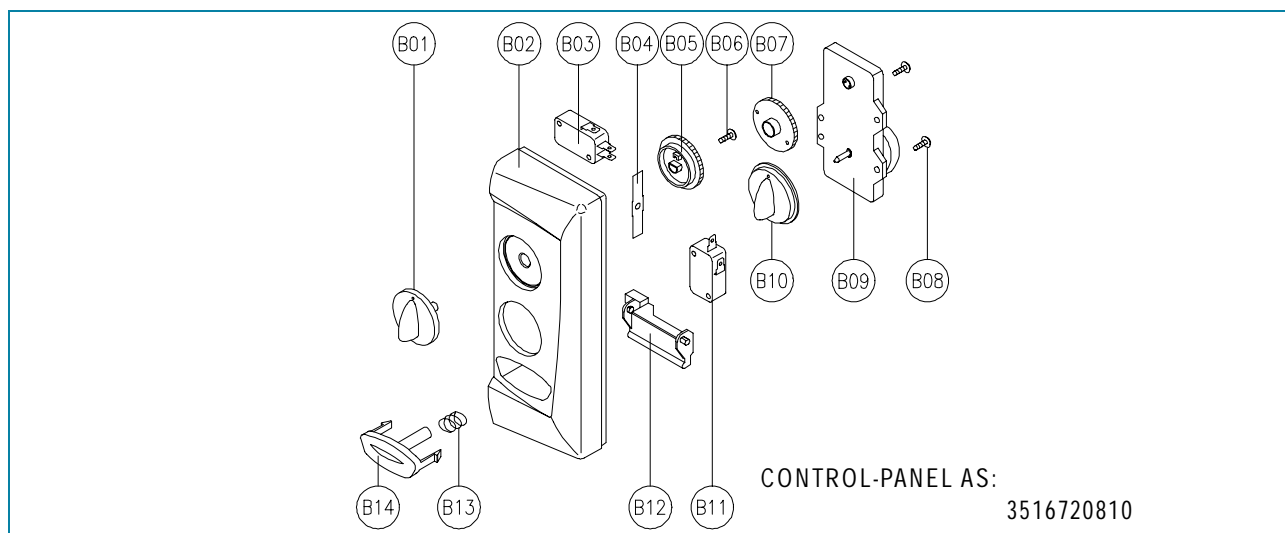
Tighten two screws.



#### NOTE

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

## 5. To remove control panel parts.

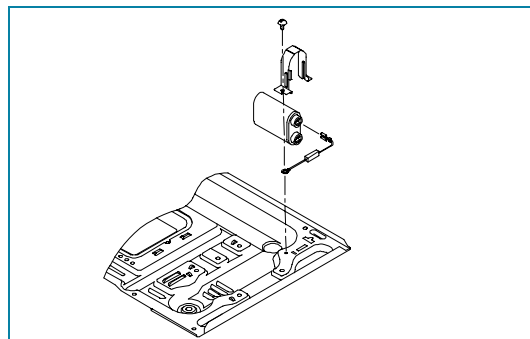


| REF. NO | PART CODE  | PART NAME        | DESCRIPTION               | QTY | REMARK   |
|---------|------------|------------------|---------------------------|-----|----------|
| B01     | 3513405510 | KNOB VPC         | ABS XR-401 H-2938         | 1   |          |
| B02     | 3516719310 | CONTROL-PANEL    | ABS XR-401 H-2938         | 1   | KOG-3905 |
| B03     | 4415A66910 | SW MICRO         | VP-531A-OF/SZM-V16-FA-61  | 1   |          |
| B04     | 3515101600 | SPRING FLAT      | SUS 301 T0.5              | 1   |          |
| B05     | 3517400500 | COUPLER VPC KNOB | POM                       | 1   |          |
| B06     | 7122401211 | SCREW TAPPING    | T2S TRS 4x12 MFZN         | 1   |          |
| B07     | 3517400400 | COUPLER TIMER    | POM                       | 1   |          |
| B08     | 7122401211 | SCREW TAPPING    | T2S TRS 4x12 MFZN         | 2   |          |
| B09     | 3518203800 | TIMER            | KN35MKD 24E-P             | 1   |          |
| B10     | 3513405410 | KNOB             | ABS XR-401 H-2938         | 1   |          |
| B11     | 4415A17352 | SW MICRO         | VP-533A-OF SPNO #187 200G | 1   |          |
| B12     | 3513702710 | LEVER DOOR OPEN  | ABS XR-401 H-2938         | 1   |          |
| B13     | 441G430171 | SPRING BUTTON    | SWP DIA 0.7               | 1   |          |
| B14     | 3516906910 | BUTTON DOOR OPEN | ABS XR-401 H-2938         | 1   |          |

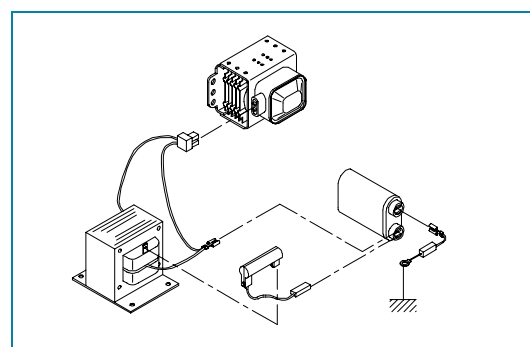
- (1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- (2) Remove the door open lever from the control panel.
- (3) Remove two screws which secure the timer assembly.
- (4) Remove the timer assembly.
- (5) Pull out the timer knob from the timer.
- (6) Pull out the timer coupler from the timer.
- (7) Remove the screw which secure the V.P.C coupler.
- (8) Pull out the V.P.C coupler, V.P.C knob and flat spring from the control panel.
- (9) Remove the door open button and button spring from the control panel.
- (10) Reverse the above steps for reassembly.

## 6. To remove high voltage capacitor.

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

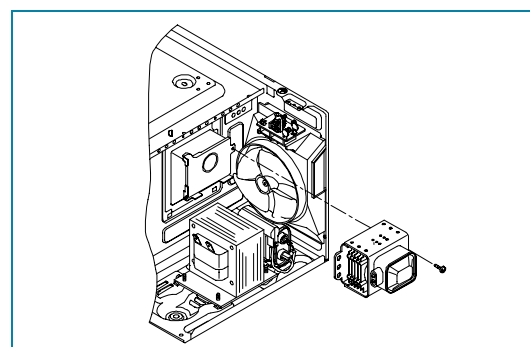


High voltage circuit wiring



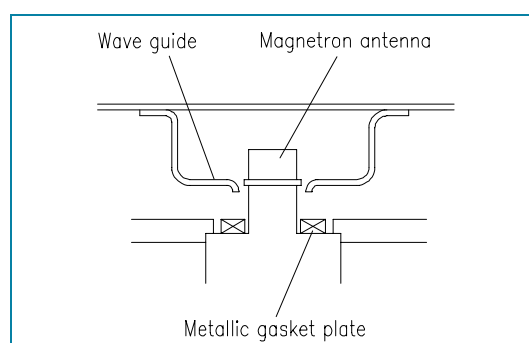
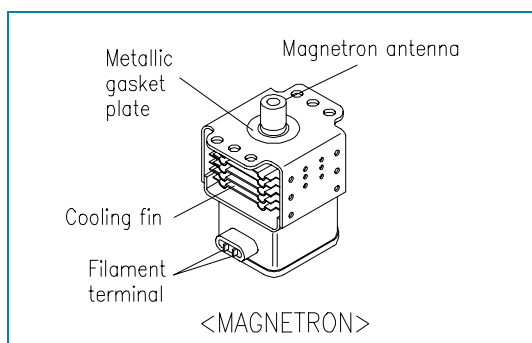
## 7. To remove magnetron.

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



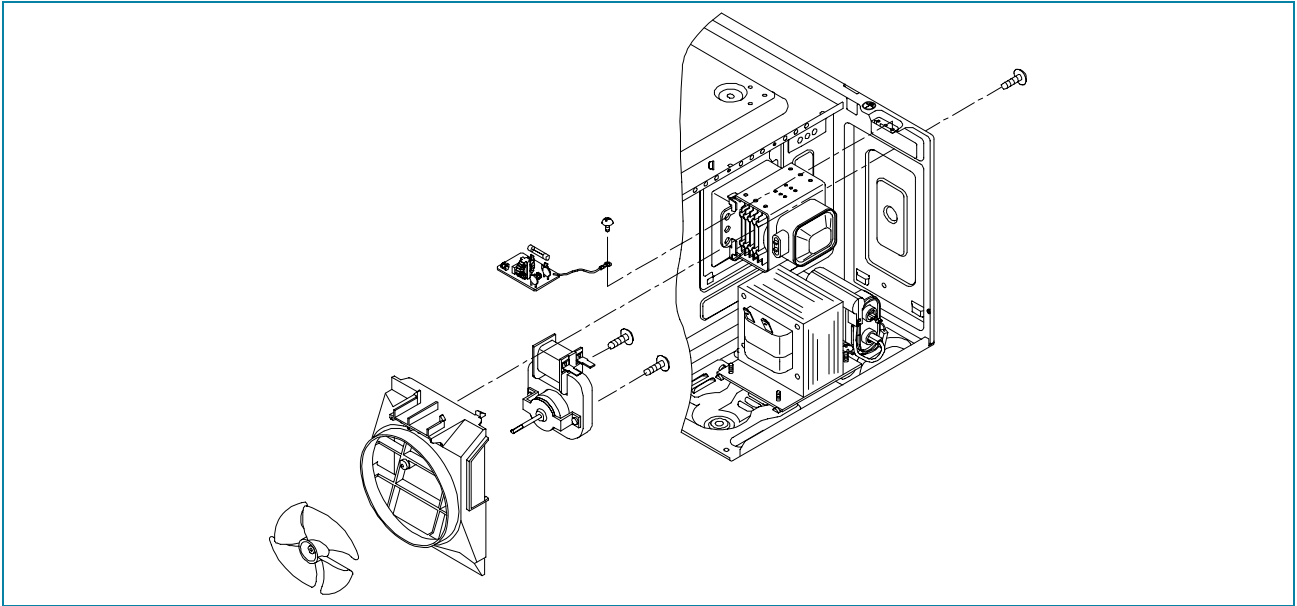
### CAUTION

Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave 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.





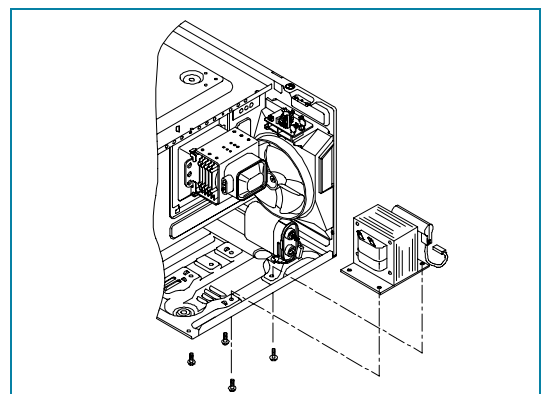
### 8. To remove wind guide assembly.



- (1) Remove a screw for earthing.
- (2) Remove the noise filter from the wind guide.
- (3) Remove a 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.

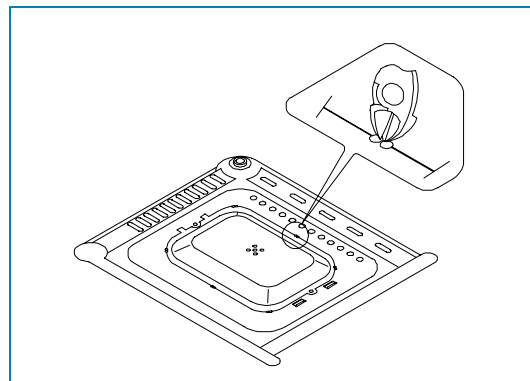
### 9. To remove H.V.transformer.

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

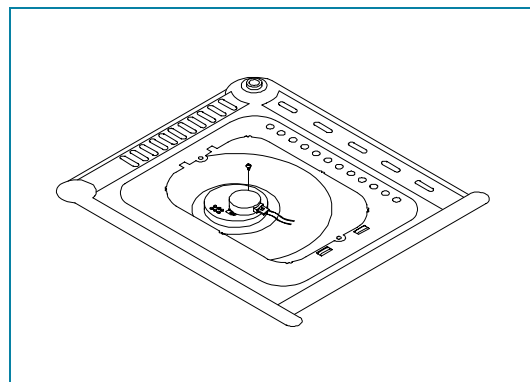


**10. To remove tray motor.**

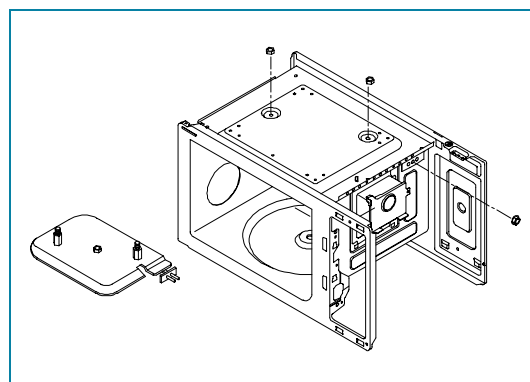
- (1) Remove the coupler in the cavity.
- (2) Turn the set upside down.
- (3) Cut the tray motor cover part from the base plate.
- (4) Remove the tray motor cover.



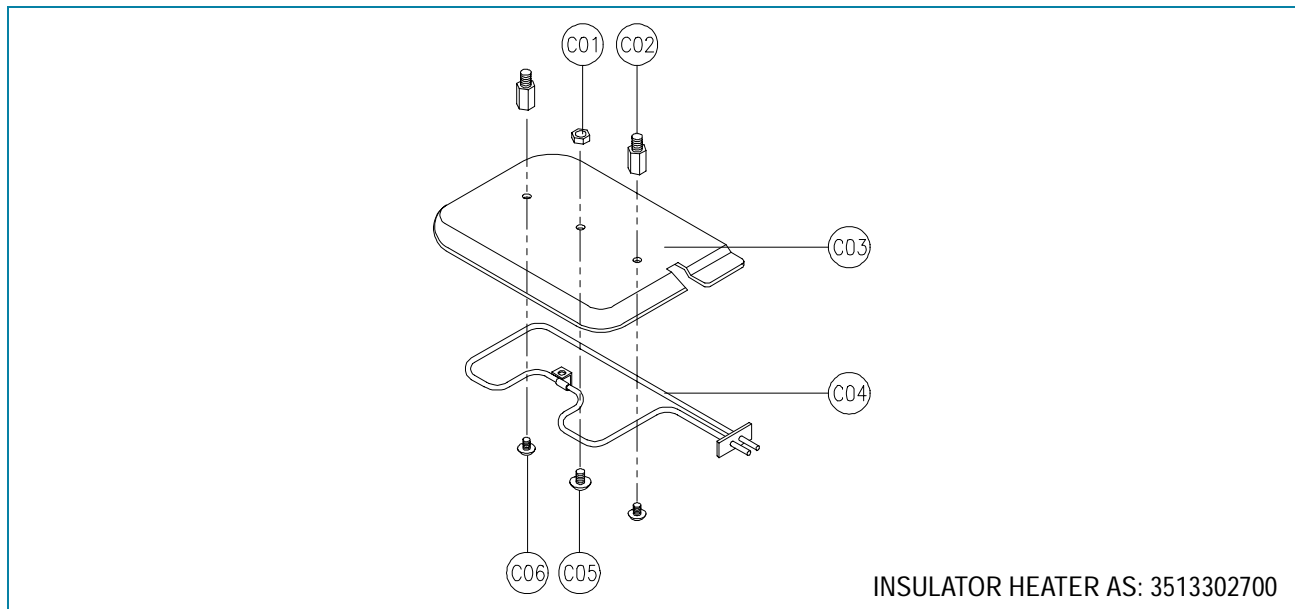
- (5) Remove a screw which secure the tray motor.
- (6) Remove the tray motor.
- (7) Reverse the above steps for reassembly except for securing the tray motor cover with screw.

**11. To remove heater assembly.**

- (1) Remove the three nuts.
- (2) Remove the insulator heater assembly.
- (3) Reverse the above steps for reassembly.



## 12. To remove heater parts.



| REF.NO | PART CODE  | PART NAME           | DESCRIPTION           | QTY | REMARK |
|--------|------------|---------------------|-----------------------|-----|--------|
| C01    | 7392500008 | NUT HEX             | 6N-2-5 SUS            | 1   |        |
| C02    | 3515000600 | SPACER INSULATOR *I | C3771BD               | 2   |        |
| C03    | 3513301100 | INSULATOR HEATER    | SPP T0.8              | 1   |        |
| C04    | 3512803400 | HEATER              | 230V 1000W 1R67994001 | 1   |        |
| C05    | 7002500613 | SCREW MACHINE       | TRS 5X6 MFCR          | 1   |        |
| C06    | 7002400413 | SCREW MACHINE       | TRS 4X4 MFCR          | 2   |        |

# INTERLOCK MECHANISM AND ADJUSTMENT

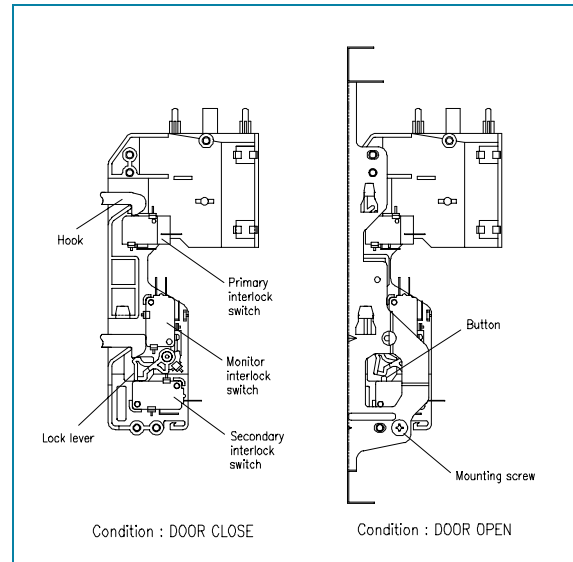
The door lock mechanism is a device which has been specially designed to completely eliminate microwave radiation when the door is opened during operation, and thus to perfectly prevent the danger resulting from the leakage of microwave.

## 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 opened before other switches are closed.

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

## 3. Adjustment steps

- (1) Loosen the one mounting screw.
- (2) Adjust interlock switch assembly position.
- (3) Make sure that lock lever moves smoothly after adjustment is completed.
- (4) Tighten completely one mounting screw.

## NOTE

Microwave emission test should be performed after adjusting interlock mechanism.

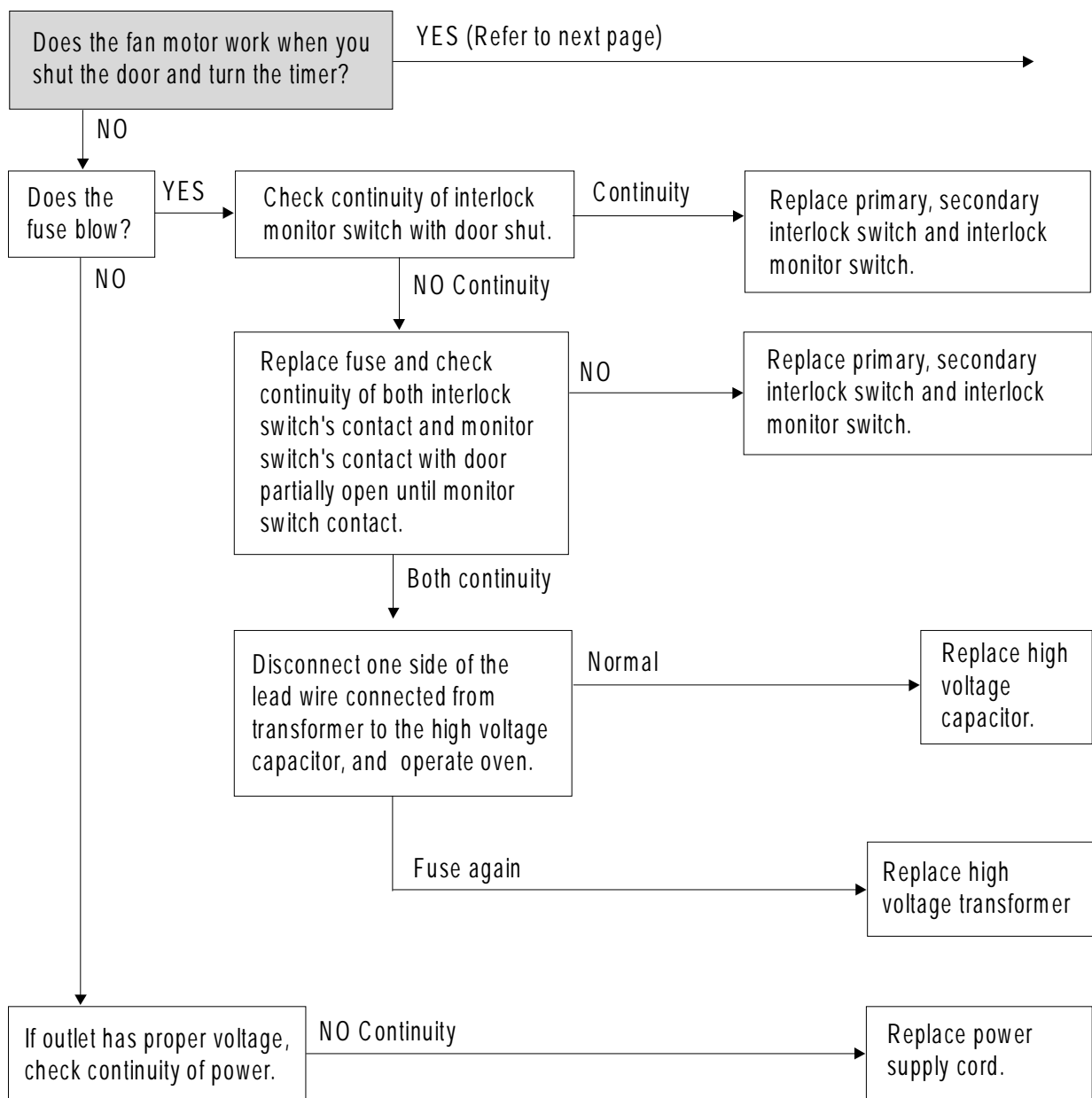
If the microwave emission exceed  $4\text{mW}/\text{cm}^2$ , readjust interlock mechanism.

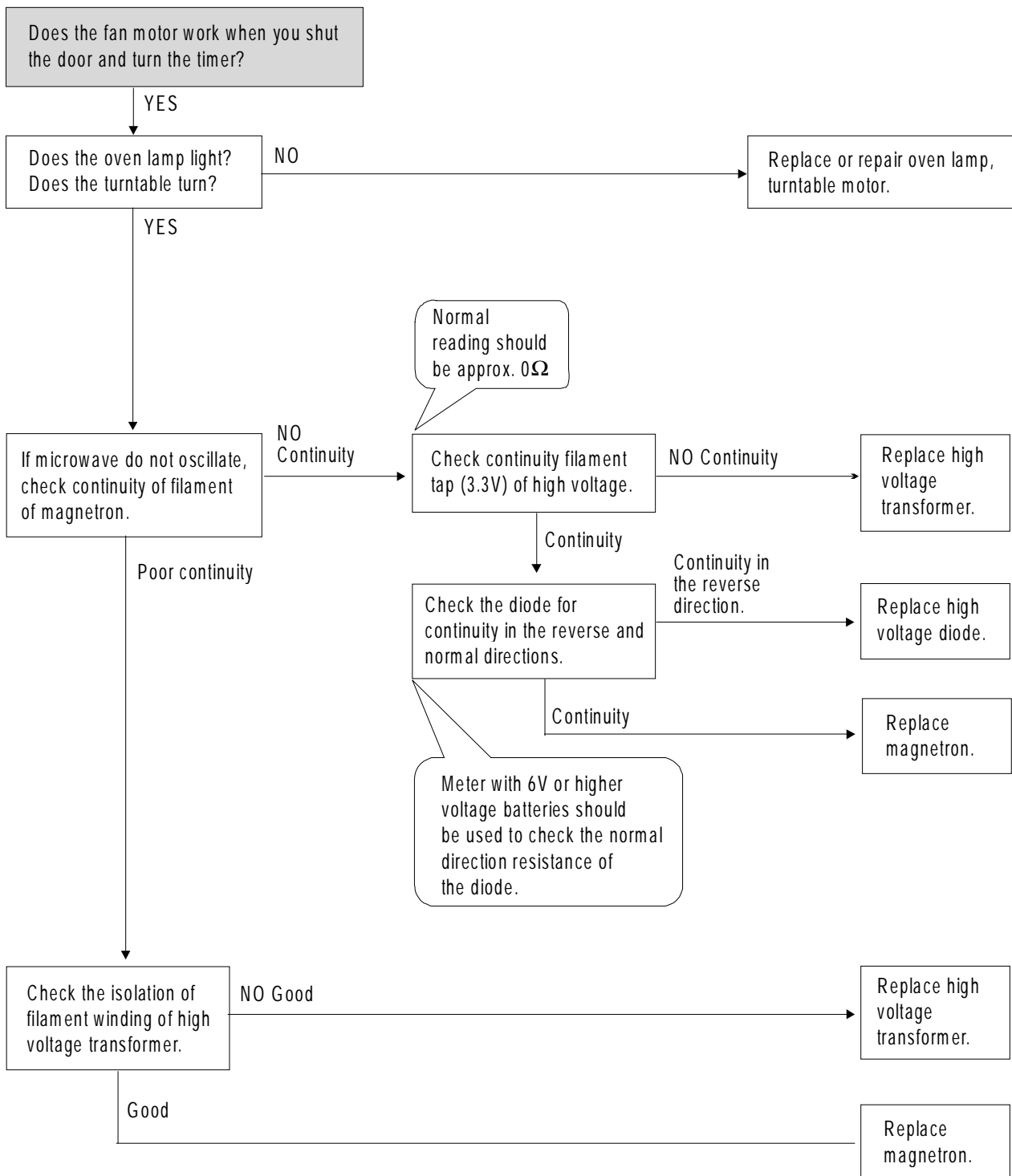
# TROUBLE SHOOTING GUIDE

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

1. Check grounding before checking trouble.
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 then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.

**(TROUBLE 1) Door shut, timer set, but no cooking takes place.**





# 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.

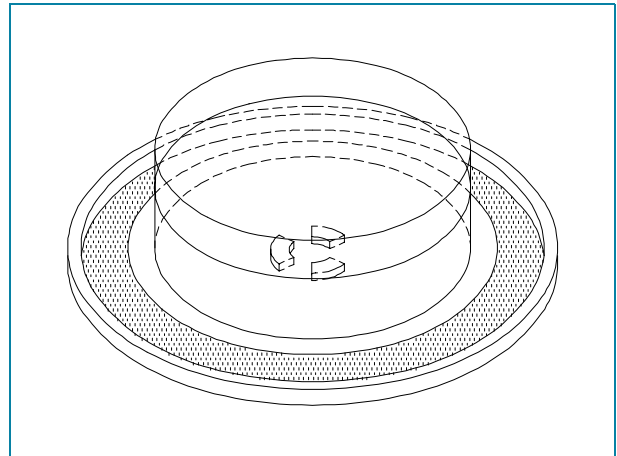
### PROCEDURE

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  $1000 \pm 5\text{cc}$  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) W  $\pm 10.0\%$ .



### NOTE

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

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 |

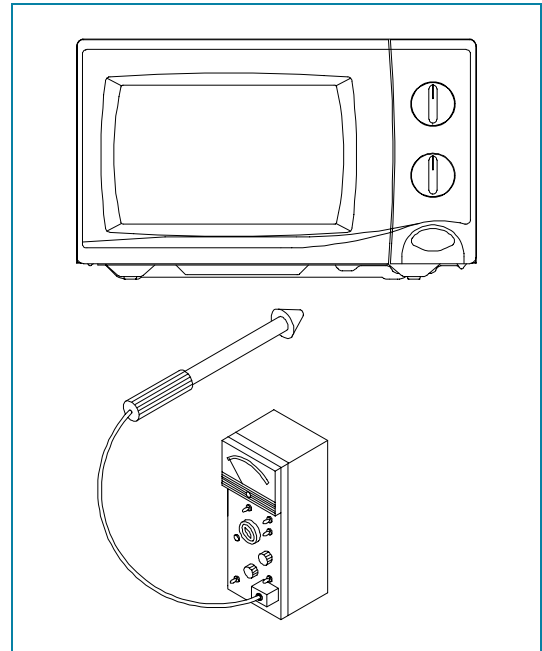
## 2. MICROWAVE RADIATION TEST

### WARNING

Make sure to check the microwave leakage before and after repair of adjustment.  
 Always start measuring of an unknown field to assure safety for operating personnel from microwave energy.  
 Do not place your 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 appreciable microwave leakage from the unit under the test.

### PROCEDURE

1. Prepare Microwave Energy Survey Meter, 600cc glass beaker, and glass thermometer 100°C (212°F).
2. Pour 275cc ± 15cc of tap water initially at 20 ± 5 °C (68 ± 9°F) in the 600 cc glass beaker with an inside diameter of approx. 95mm(3.5 in.).
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 4mW/cm<sup>2</sup>.
  - (2) When measuring the leakage, always use the 5 cm (2 in.) space cone with probe. Hold the probe perpendicular to the cabinet and door.  
 Place the space cone of the probe on the door, cabinet, door seem, door viewing screen, the exhaust air vents and the suction air vents.
  - (3) Measuring should be in a counter-clockwise direction at a rate of 1 in./sec.  
 If the leakage of the cabinet door seem is unknown, move the probe more slowly.
  - (4) When measuring near a corner of the door, keep the probe perpendicular to the areas making sure the probe end at the base of the cone does not get closer than 2 in. from any metal. If it does not, erroneous reading may result.





### 3. COMPONENT TEST PROCEDURE

High voltage is present at the high voltage terminal of the high voltage transformer during any cooking cycle.

It is neither necessary nor advisable to attempt measurement of the high voltage.

Before touching any oven components or wiring, always unplug the oven from its power source and discharge the capacitor.

#### 1. High voltage transformer

(1) Remove connections from the transformer terminals and check continuity.

(2) Normal readings should be as follows :

Secondary winding ... Approx.  $110\Omega \pm 10\%$

Filament winding .....Approx.  $0\Omega$

Primary winding ..... Approx.  $1\Omega$

#### 2. High voltage capacitor

(1) Check continuity of capacitor with meter on the highest OHM scale.

(2) A normal capacitor will show continuity for a short time, and then indicate  $10M\Omega$  once the capacitor 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 Output Power."

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.

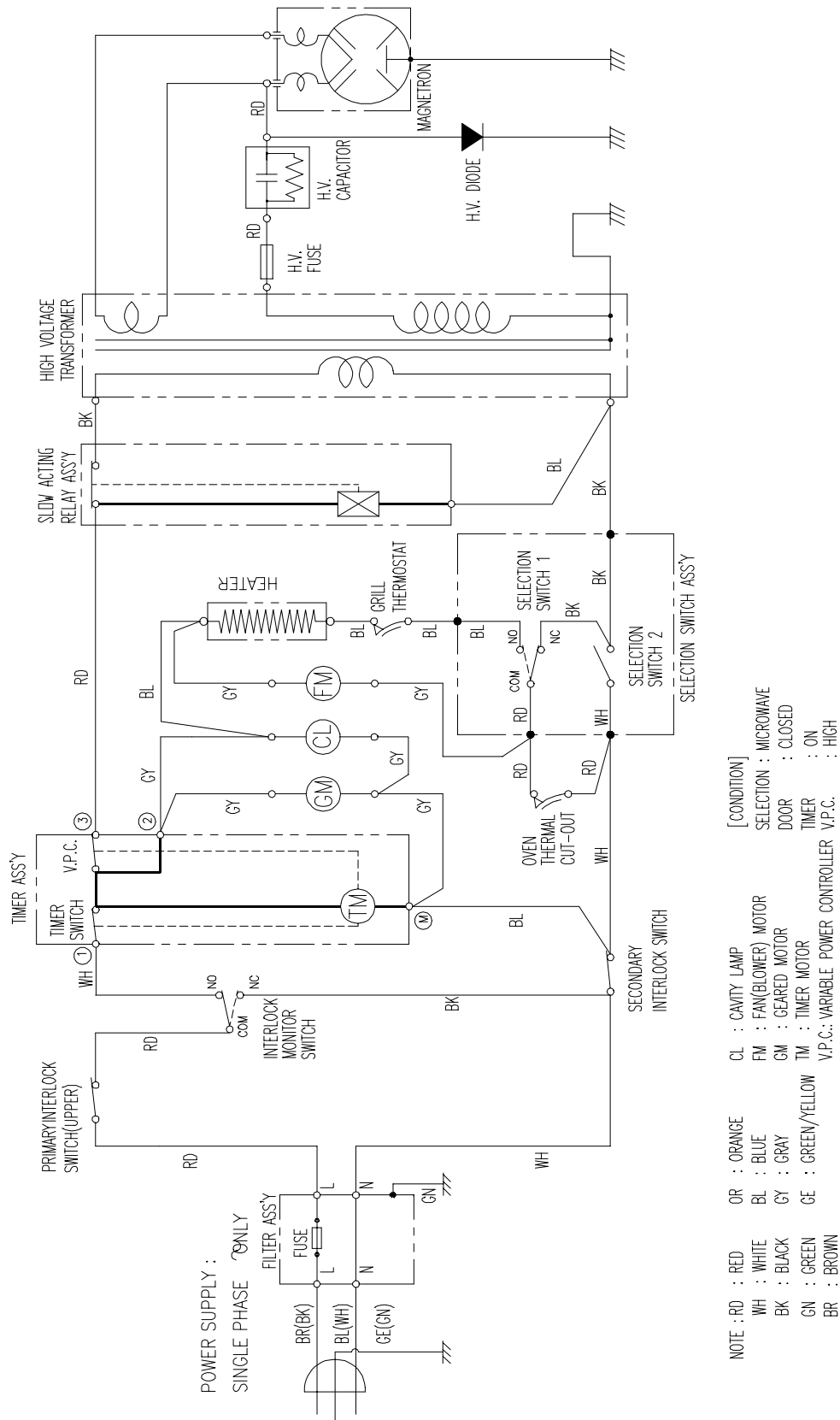
(2) The continuity check across magnetron filament terminals should indicate  $0.1\Omega$  or less.

(3) The continuity check between each filament terminal and magnetron case should read open.

#### 5. Fuse

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

# WIRING DIAGRAM



# EXPLODED VIEW AND PARTS LIST

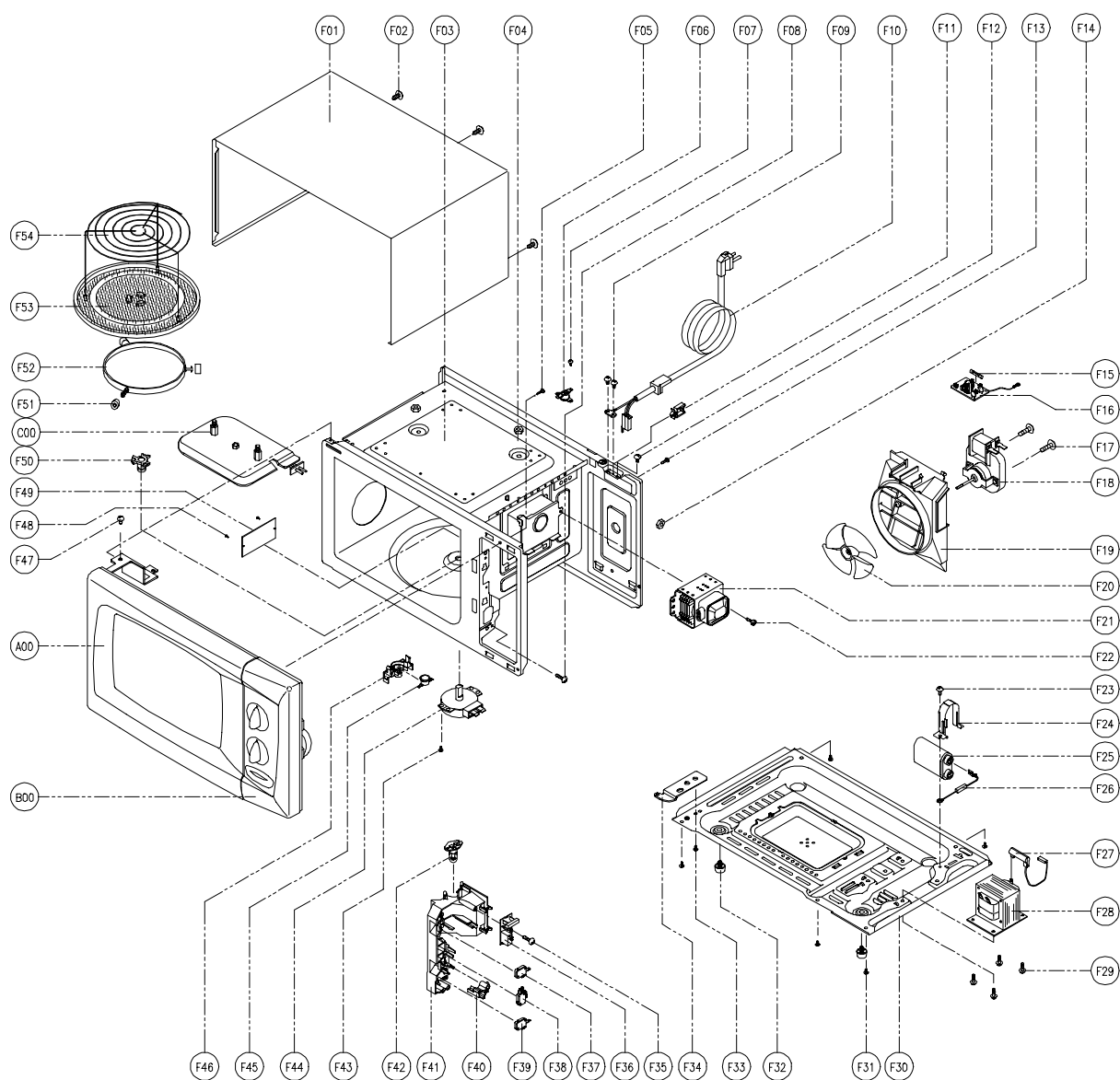
## 1. DOOR ASSEMBLY

Refer to Disassembly and assembly, page 10.

## 2. CONTROL PANEL ASSEMBLY

Refer to Disassembly and assembly, page 12.

## 3. TOTAL ASSEMBLY



## EXPLODED VIEW AND PARTS LIST

| NO. | PART CODE                                 | PART NAME           | DESCRIPTION                          | SUPPLY | REMARK     |
|-----|---|---------------------|--------------------------------------|--------|------------|
| A00 | Refer to .<br>Disassembly<br>and assembly | DOOR AS             | Refer to<br>Disassembly and assembly | 0      |            |
| B00 |   | CONTROL-PANEL AS    |                                      | 0      |            |
| C00 |   | INSULATOR HEATER AS |                                      | 0      |            |
| F01 |   | CABINET             |                                      | 0      | KOG-39050S |
|     | 3510801400                                |                     | PCM T0.6                             |        |            |
| F02 | 7S312X40A1                                | SPECIAL SCREW       | T1 TRS 4X10 SE MFZN                  | 0      |            |
| F03 |   | CAVITY WELD AS      |                                      | 0      | KOG-39050S |
|     | 3516109210                                |                     | KOG-39150S                           |        |            |
|     |   | CAVITY JOINT AS     |                                      |        | KOG-39050S |
|     | 3516109710                                |                     | KOG-39150S                           |        |            |
| F04 | 7S627W50X1                                | NUT HEX             | NUT FL M5X0.8P MFZN                  | 0      |            |
| F05 | 7122401211                                | SCREW TAPPING       | T2S TRS 4X12 MFZN                    | 0      |            |
| F06 | 3518904500                                | THERMOSTAT          | OFF:100 ON:90 HN #187                | 0      |            |
| F07 | 7121300611                                | SCREW TAPPING       | T2S PAN 3X6 MFZN                     | 0      |            |
| F08 | 7122401211                                | SCREW TAPPING       | T2S TRS 4X12 MFZN                    | 0      |            |
| F09 | 7112401011                                | SCREW TAPPING       | T1 TRS 4X10 MFZN                     | 0      |            |
| F10 | 35113A5QJ5                                | CORD POWER AS       | 3X1.5 80X70 120-RTML                 | 0      |            |
| F11 | 4413A90012                                | CLAMP POWER CORD    | NYLON66                              | 0      |            |
| F12 | 7112401011                                | SCREW TAPPING       | T1 TRS 4X10 MFZN                     | 0      |            |
| F13 | 7122401211                                | SCREW TAPPING       | T2S TRS 4X12 MFZN                    | 0      |            |
| F14 | 7S627W50X1                                | NUT HEX             | NUT FL M5X0.8P MFZN                  | 0      |            |
| F15 | 4414A25110                                | FUSE                | 250V 15A 65TS                        | 0      |            |
|     | 4414A25100                                |                     | 250V 15A MDA                         |        |            |
| F16 | 3518606100                                | NOISE-FILTER        | DWLF-M13                             | 0      |            |
| F17 | 7121403011                                | SCREW TAPPING       | T2S PAN 4X30 MFZN                    | 0      |            |
| F18 | 3963513100                                | MOTOR SHADED POLE   | 230V 17W OEM-10DWC2-A07              | 0      |            |
|     | 3963512310                                |                     | 230V 20W MW10CA-M02                  |        |            |
| F19 | 3512517000                                | GUIDE WIND          | PP                                   | 0      |            |
| F20 | 3511800300                                | FAN                 | PP+30%GLASS                          | 0      |            |
| F21 | 3518002200                                | MAGNETRON           | 2M218H(MF) I                         | 0      |            |
| F22 | 3516004000                                | SPECIAL SCREW       | T2 BOLT FL 5X12 DACRO                | 0      |            |
| F23 | 7272400811                                | TAPTITE SCREW       | TT3 TRS 4X8 MFZN                     | 0      |            |
| F24 | 3513003200                                | HOLDER HV CAPACITOR | SECC T0.6                            | 0      |            |
| F25 | 3518302200                                | CAPACITOR HV        | 2100VAC 0.98μF #187                  | 0      |            |
| F26 | 3518400400                                | DIODE HV            | HVR-1X-3AB 12KV #187                 | 0      |            |
| F27 | 3518701100                                | FUSE HV             | 5KV 0.55A HV-41A55-02 #187           | 0      |            |
| F28 |   | TRANS HV            |                                      |        | KOG-39050S |
|     | 3518114800                                |                     | DW-N90S0-86TB                        |        |            |
| F29 | 3516003700                                | SPECIAL SCREW       | TT3 HEX 4X8 FLG MFZN                 | 0      |            |

| NO. | PART CODE  | PART NAME         | DESCRIPTION               | SUPPLY | REMARK    |
|-----|------------|-------------------|---------------------------|--------|-----------|
| F30 |            | BASE              | SBHG T0.8                 | O      |           |
|     | 3510311900 |                   |                           |        | KOG-3905  |
| F31 | 7112401011 | SCREW TAPPING     | T1 TRS 4X10 MFZN          | O      |           |
| F32 | 3512100900 | FOOT              | PP DASF-130               | O      |           |
| F33 | 7272400811 | TAPTITE SCREW     | TT3 TRS 4X8 MFZN          | O      |           |
| F34 | 3515201101 | STOPPER HINGE*U   | SCP-1 T2.5                | O      |           |
| F35 | 7122401211 | SCREW TAPPING     | T2S TRS 4X12 MFZN         | O      |           |
| F36 | 3518570400 | SWITCH S/A RELAY  | DWSR-1                    | O      |           |
| F37 | 4415A17352 | SW MICRO          | VP-533A-OF SPNO #187 200G | O      | PRIMARY   |
| F38 | 4415A66910 | SW MICRO          | VP-531A-OF/SZM-V16-FA-61  | O      | MONITOR   |
| F39 | 4415A17352 | SW MICRO          | VP-533A-OF SPNO #187 200G | O      | SECONDARY |
| F40 | 3513702600 | LEVER LOCK        | POM                       | O      |           |
| F41 | 3513811700 | LOCK              | POM                       | O      |           |
| F42 | 3513601600 | LAMP              | BL 240V 25W T25 C7A H187  | O      |           |
| F43 | 7121400611 | SCREW TAPPING     | T2S PAN 4X6 MFZN          | O      |           |
| F44 | 3966310100 | MOTOR SYNCRO      | 220V 2.5W GM-16-24FD12    | O      |           |
|     | 3966310110 |                   | 220V 2.5W M2LJ49ZT52      |        |           |
| F45 | 3518905300 | THERMOSTAT        | OFF:75 ON:65 H #187 NB    | O      |           |
| F46 | 3513003400 | HOLDER THERMOSTAT | PBT                       | O      |           |
| F47 | 7272400811 | TAPTITE SCREW     | TT3 TRS 4X8 MFZN          | O      |           |
| F48 | 4078502031 | BUTTON LOCKING    | PP HONAM A353             | O      |           |
| F49 | 3511405100 | COVER WAVE GUIDE  | MICA T0.35                | O      |           |
| F50 |            | COUPLER           |                           | O      |           |
|     | 4418D10032 |                   | PPS                       |        | KOG-3905  |
| F51 |            | ROLLER            | TEFLON                    | X      |           |
|     | 3514700900 |                   |                           |        | KOG-3905  |
| F52 |            |                   |                           |        |           |
|     |            |                   |                           |        |           |
|     | 3512509200 | GUIDE ROLLER      | PP 5113MF6 A353B          | X      | KOG-3905  |
|     | 3512510600 | GUIDE ROLLER AS   | KOR-61150S                | O      |           |
| F53 |            | TRAY              | GLASS                     | O      |           |
|     | 3517203500 |                   |                           |        | KOG-3905  |
| F54 | 3517206900 | TRAY RACK AS      | KOG-37150S 110MM          | O      |           |