

S/M No. : G875T2S001

Service Manual

Microwave Oven

Model: KOG-875T2S

DAEWOO

DAEWOO ELECTRONICS CO., LTD.

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PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- (a) Do not operate or allow the oven to be operated with the door open.
- (b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) Interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
- (c) Before turning on 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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PROPER USE AND 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 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) This microwave oven weight 17.6kg (38.9 lbs.) and must be placed on a horizontal base strong enough to support this weight.
- 2) The oven should be placed as far from high temperature source and vapour as possible.
- 3) The power supply cord is about 1.1m (3.2ft) long. Earthing is required when connecting the power source.
- 4) Maximum power consumption of this oven is approximately 2.5Kw(230V). It is suggested that the unit is operated on such power line (about 13 amperes) that can provide more power than this rating.
- 5) Object must not be placed on the top enclosure so as not to obstruct air flow for ventilation.

WARNING : This appliance must be earthed.

IMPORTANT

The wires 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' or by earth symbol or 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.

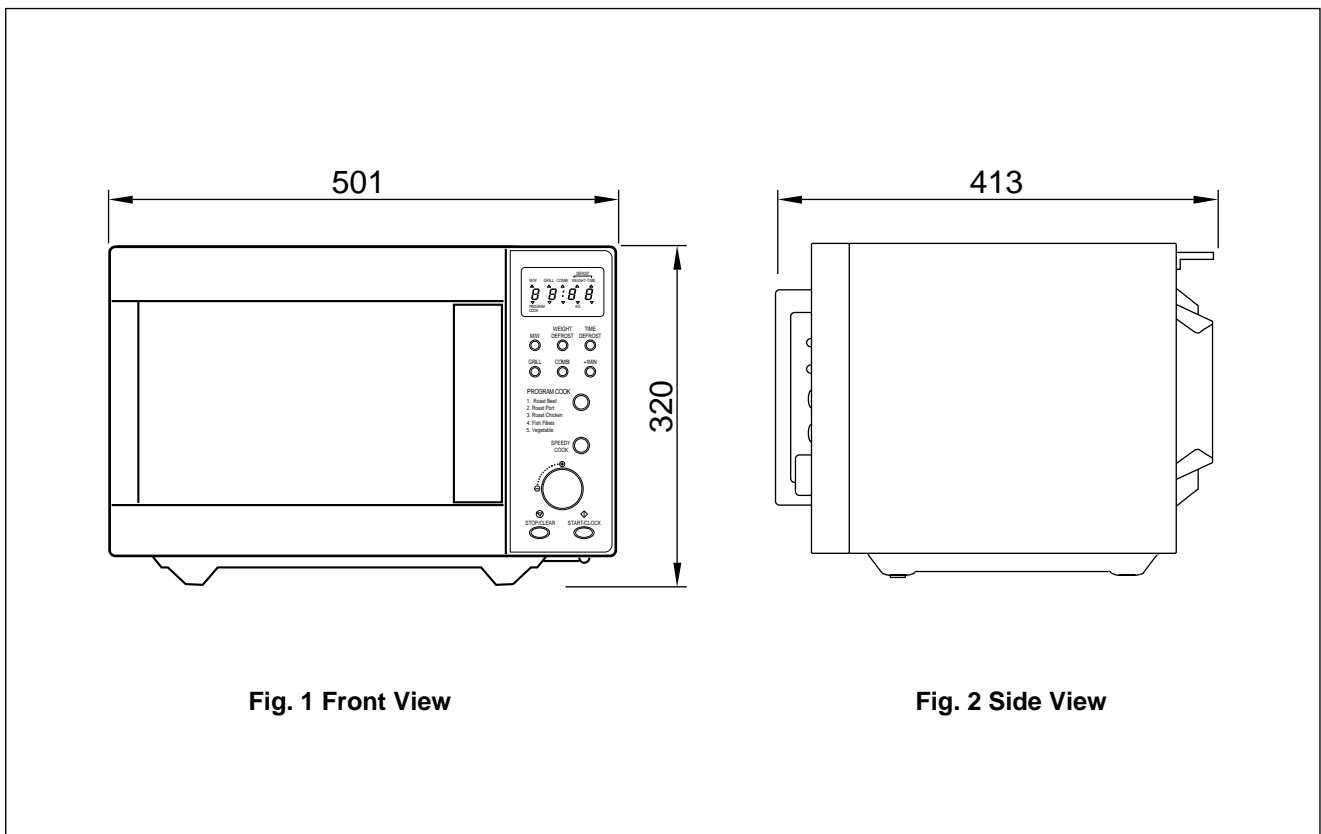
NOTE : This oven is designed for counter-top use only.

SPECIFICATIONS

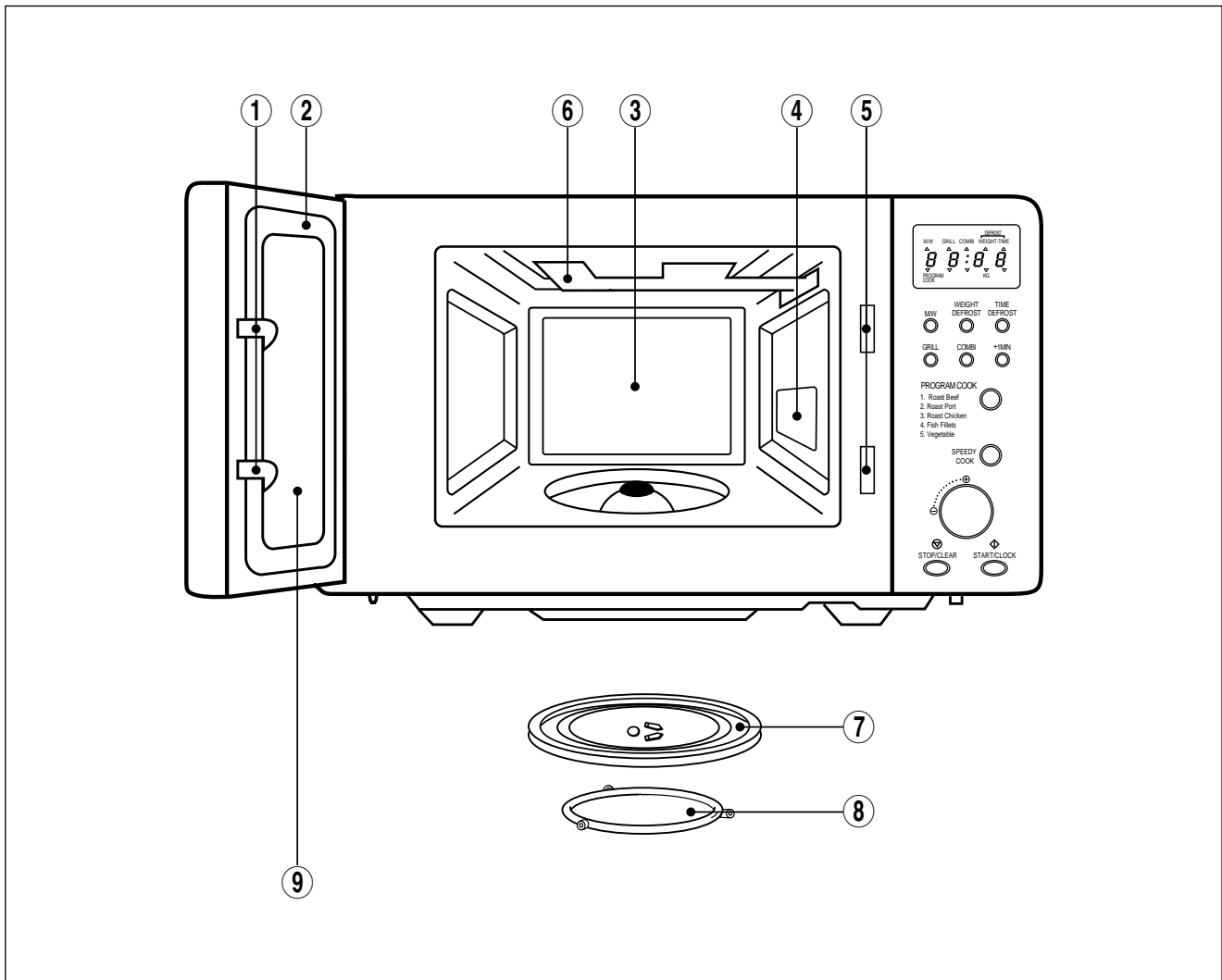
POWER SUPPLY		230V ~ , 50Hz single phase with earthing
MICROWAVE	POWER CONSUMPTION	1,400 W
	OUTPUT POWER	900 W (IEC 705)
	FREQUENCY	2,450 MHZ
GRILL POWER CONSUMPTION		1,400 W
COMBINATION HEATING POWER CONSUMPTION		1,400 W
OUTSIDE DIMENSIONS (W X D X H)		501 X 320 X 413 mm (19.7 X 12.6 X 16.2 in.)
CAVITY DIMENSIONS (W X D X H)		310 X 229 X 320 mm (12.2 X 9.0 X 12.6 in.)
NET WEIGHT		17.6 kg (38.9 lbs.)
TIMER		60 minutes
SELECT FUNCTION		Microwave/Grill /Combination Heating
MICROWAVE POWER LEVEL		10 stages

* Specifications subject to change without notice.

EXTERNAL VIEWS



NAMES AND FUNCTION OF PARTS



① Door latch

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

② Door seal

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

③ Oven cavity

④ Spatter shield

Protects the microwave outlet from splashes of cooking foods.

⑤ Safety interlock system

Prevents the oven from operating while the door is opened.

⑥ Heater

Grill or Combi-Mode has need for the heater.

⑦ Glass cooking tray

Made of special heat resistant glass. The tray must always be in proper position before operating. Do not cook food directly on the tray.

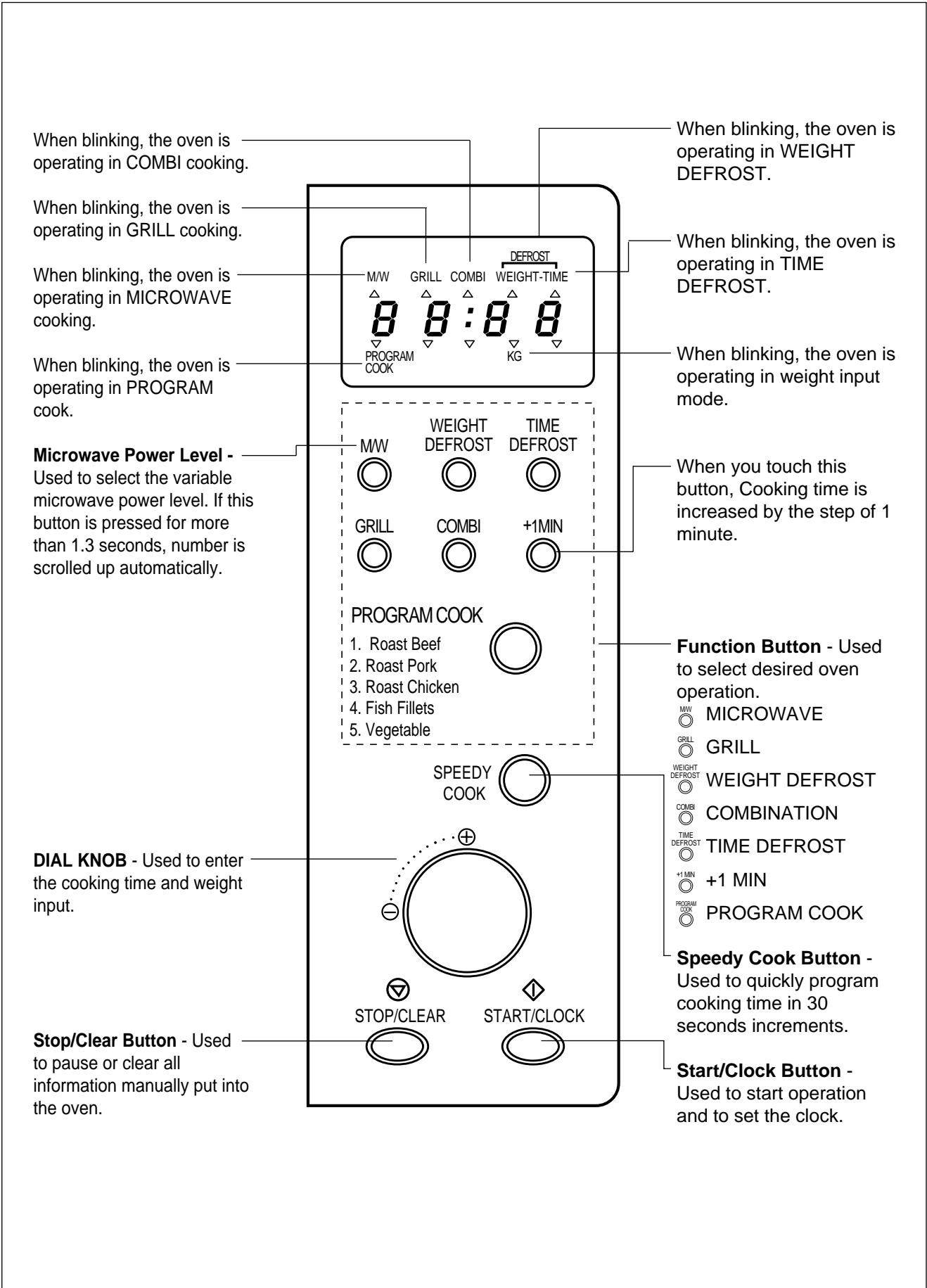
⑧ Roller guide

Supports the glass cooking tray.

⑨ Door screen

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

CONTROL PANEL



INTERLOCK MECHANISM FUNCTIONS AND ADJUSTMENTS

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.

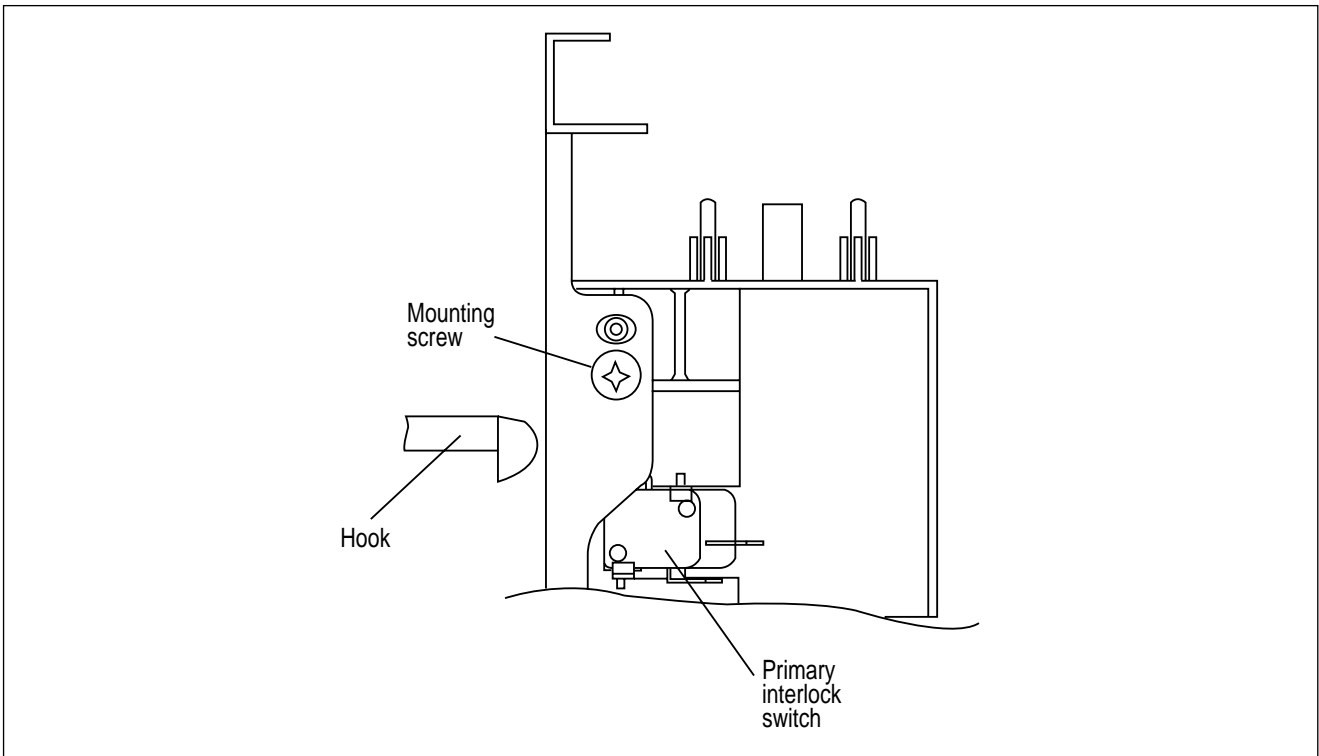
(1) Primary interlock switch

When the door is closed, the hook locks the oven door.

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

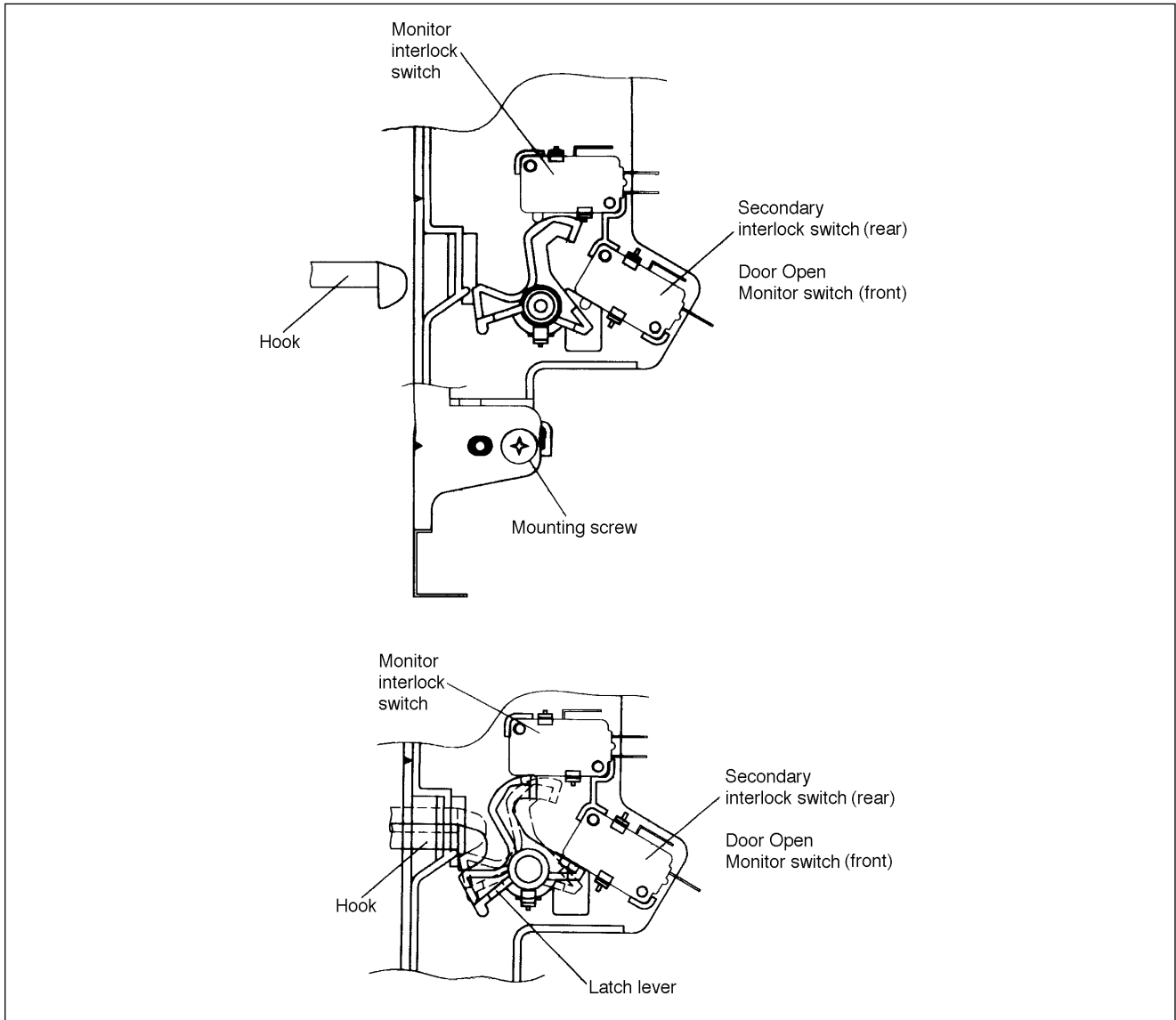
When the door is closed, the hook pushes the lever downward.

The lever presses the button of the primary interlock switch to bring it under 'ON' condition.



(2) Monitor interlock switch

When the door is closed, the hook pushes the lever forward, and pushes the Latch Lever downward the lever press the button of the interlock monitor switch to bring it under 'OFF' condition. The latch Lever press the button on the secondary interlock switch to bring it under 'ON' condition.



- Adjustment

Interlock monitor switch

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

Adjustment steps :

- Loosen the two mounting screws.
- Adjust the interlock switch assembly position.
- Make sure that the latch lever moves smoothly after adjustment is completed.
- Completely tighten the two mounting screws.

PRECAUTIONS FOR DISASSEMBLY AND REPAIR

– Cautions to be observed when trouble shooting.

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

You are asked to observe the following precautions carefully.

- (1) Always remove the power plug from the outlet before servicing.
- (2) Use an insulated screwdriver and wear rubber gloves when servicing the high voltage side.
- (3) 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 earthing.

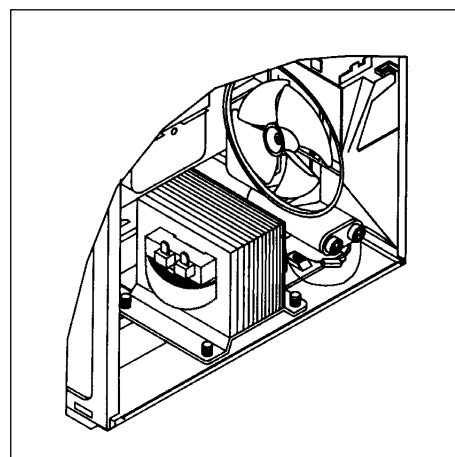
Do not operate on a 2-wire extension cord.

The microwave oven is designed to be used when 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 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 (normal blow type) is blown out due to the operation of the monitor switch; replace primary, secondary interlock switch and monitor switch. Refer to 7 page for the necessary adjustment.
- (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.

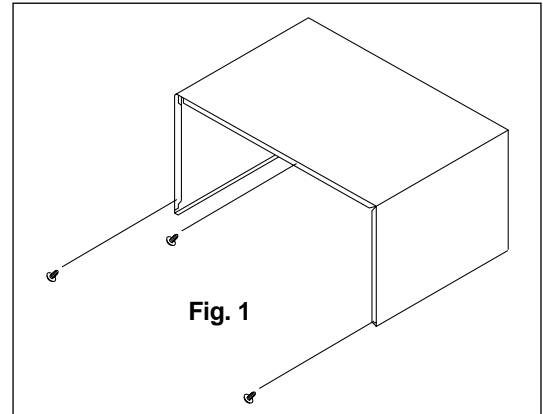
CAUTION : Service personnel should remove their watches whenever working close to or repairing the magnetron.

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 - H.V. Transformer, magnetron, H.V. Diode, H.V. Capacitor.

DISASSEMBLY AND ASSEMBLY

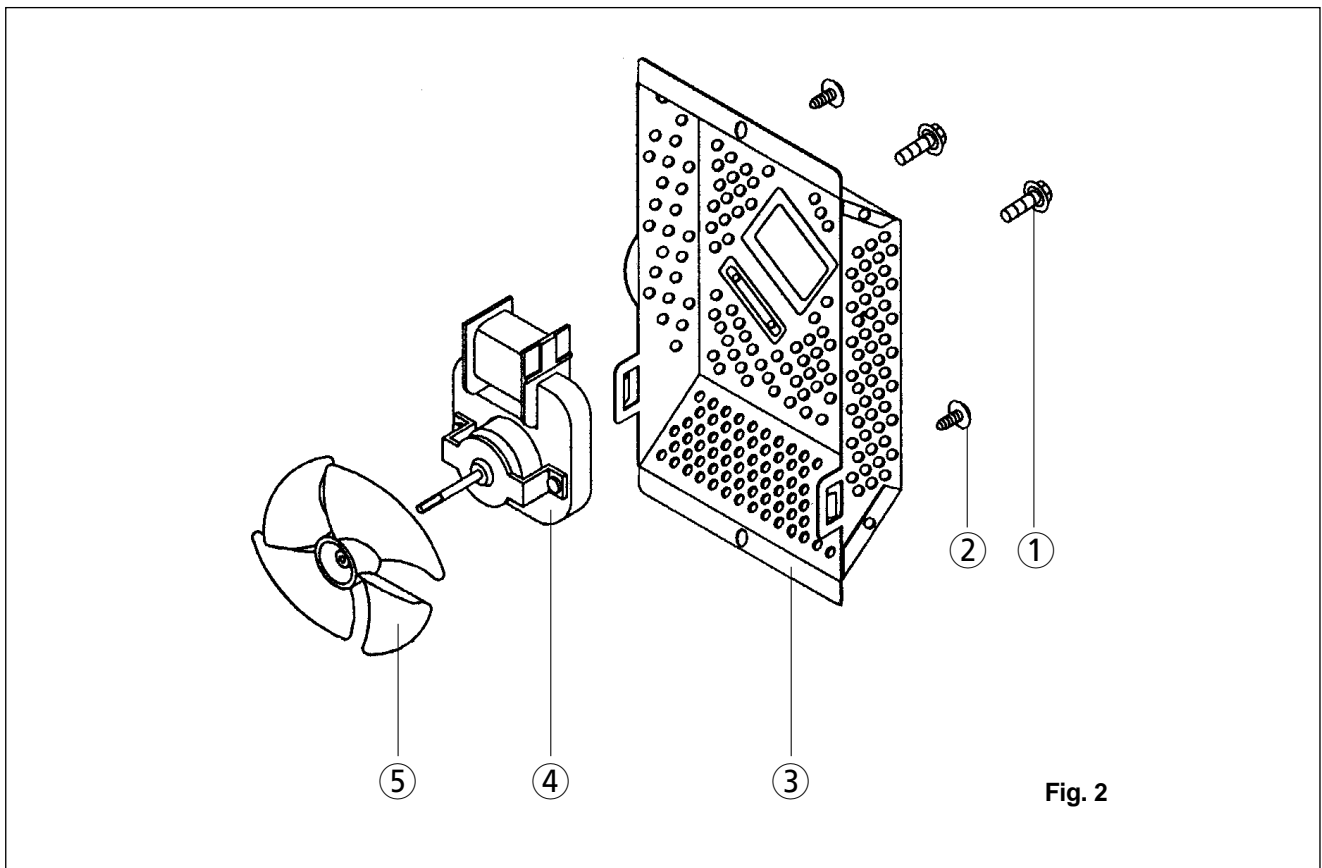
1. To remove cabinet. (Refer to Fig. 1)

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



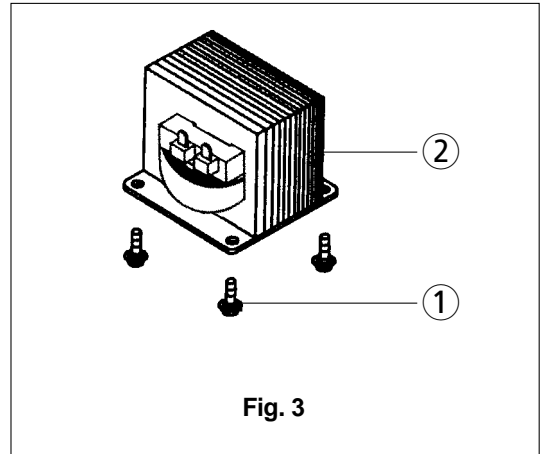
2. To remove guide wind assembly. (Refer to Fig. 2)

- 1) Release two screws (2).
- 2) Remove back-cover (3).
- 3) Pull the fan (5) to the motor shaft.
- 4) Release two screws (1) which secure the motor shaded pole (4).
- 5) Reverse the above steps for reassembly.

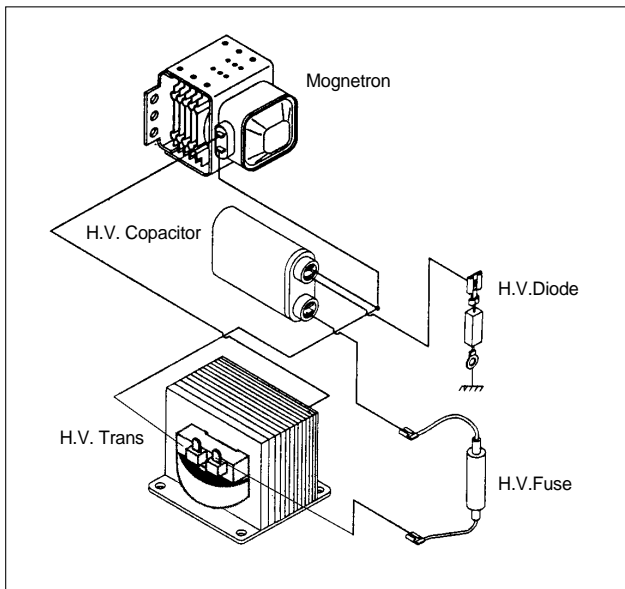


3. To remove H.V. transformer. (Refer to Fig. 3)

- 1) Remove four screws ① which secure the H.V. Transformer bracket to the base plate.
- 2) Remove the H.V. Transformer ②.



High voltage circuit wiring



4. To remove magnetron. (Refer to Fig. 4)

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

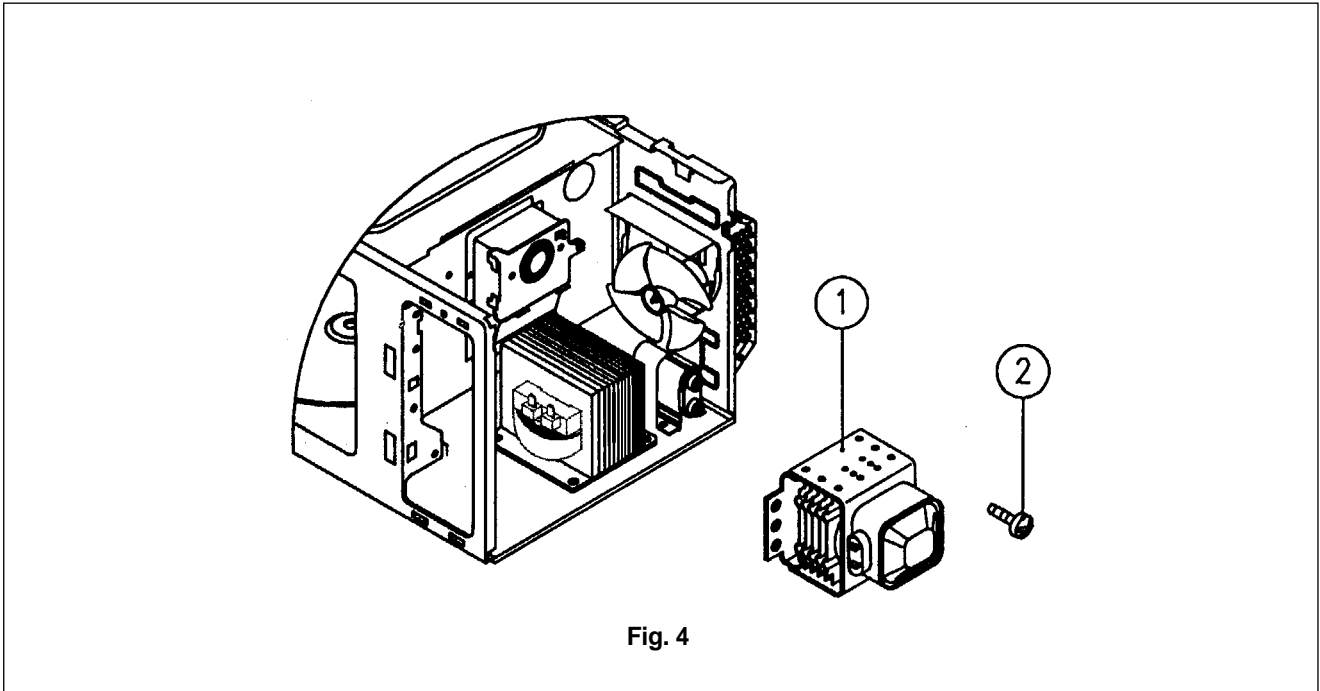
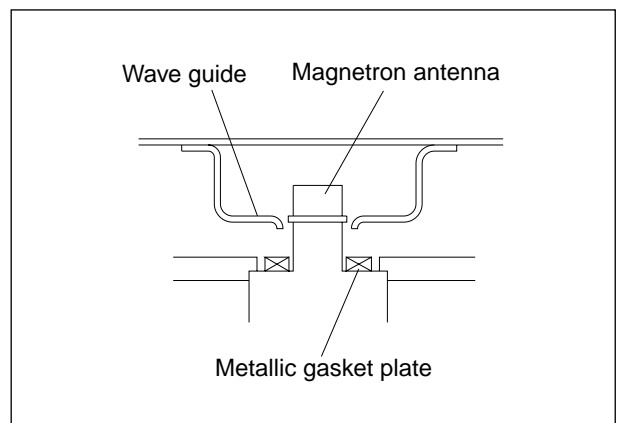
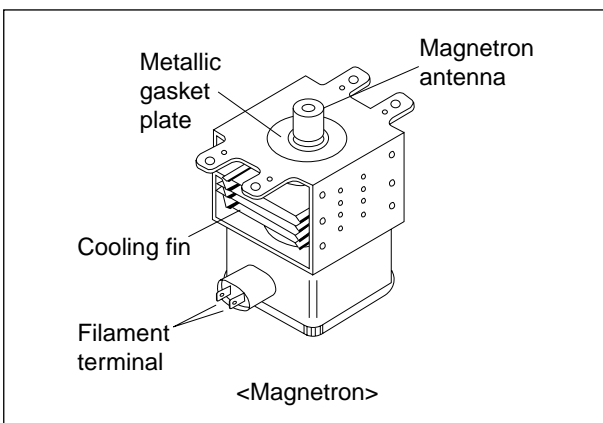


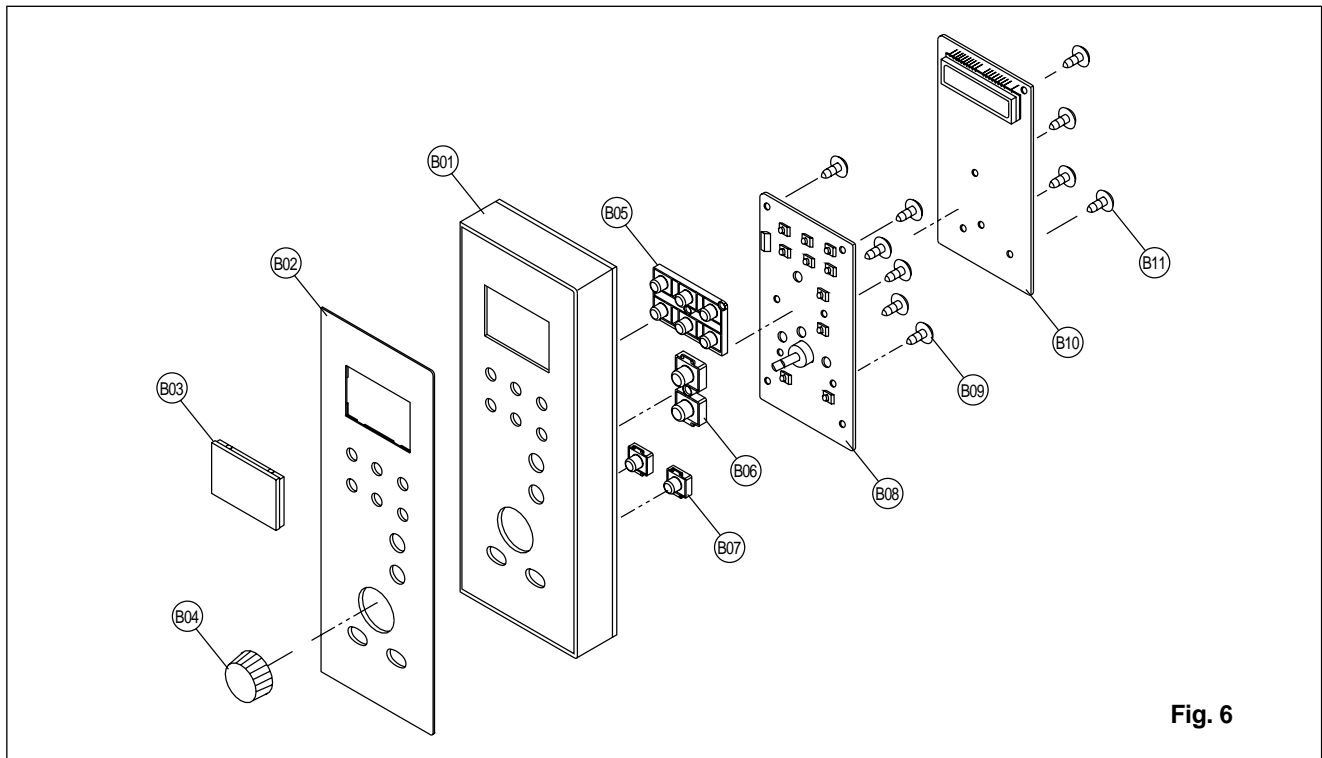
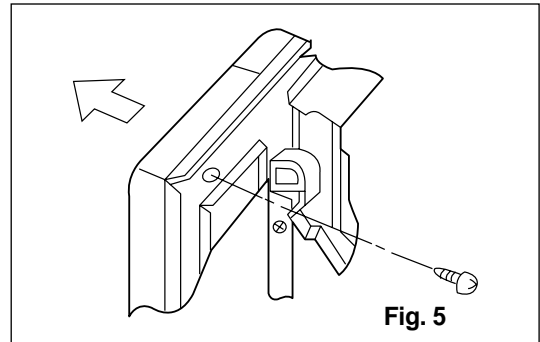
Fig. 4

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.



5. To remove control panel assembly. (Refer to Fig. 5, 6)

- (1) Remove a screw holding control panel assembly to the oven front plate.
At the same time, draw forward the control panel assembly from oven front plate.
- (2) Remove the Dial knob.
- (3) Remove nine screws which secure the main and sub PCB assembly to control panel.
- (4) Remove buttons.
- (5) Remove the Window display and Decorator Panel.



REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3516716350	CONTROL-PANEL	ABS XR-401	1	
B02	3511602520	DECORATOR C-PANEL	STS304 T0.6H/L	1	
B03	3515501310	WINDOW DISPLAY	PMMA	1	
B04	3513404620	KNOB VOLUME	ABS XR-401	1	
B05	3516905120	BUTTON FUNCTION	ABS XR-401	1	
B06	3516907200	BUTTON FUNCTION	ABS XR-401	1	
B07	3516906320	BUTTON FUNCTION	ABS XR-401	2	
B08	PKBPMSYB00	PCB SUB AS	KOC-984T1S	1	
B09	7621301011	SCREW TAPPING	T2S PAN 3X10 PW MFZN	6	
B10	PKMPMSVG10	PCB MAIN AS	KOG-875T2S	1	
B11	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	4	

6. To remove door assembly. (Refer to Fig. 7)

- 1) Remove two screws ① which secure to hinge.
- 2) Remove door assembly ②.
- 3) Remove door above for reassembly taking case to replace fixing glue.

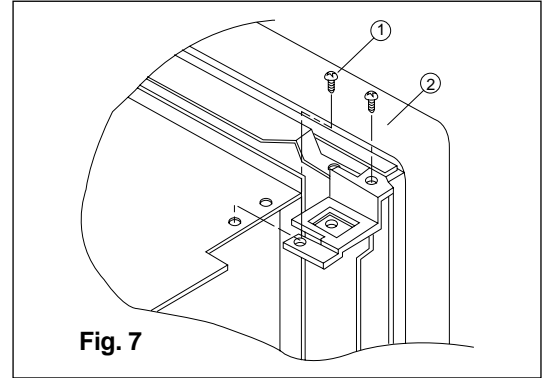


Fig. 7

7. To remove door part. (Refer to Fig. 8)

- (1) Remove the Gasket door
- (2) Remove the Door seal Ass'y.
- (3) Remove the Hook and Spring.
- (4) Remove the Barrier Screen.
- (5) Remove a screw holding the handle.
- (6) Remove the Handle form the Frame door.

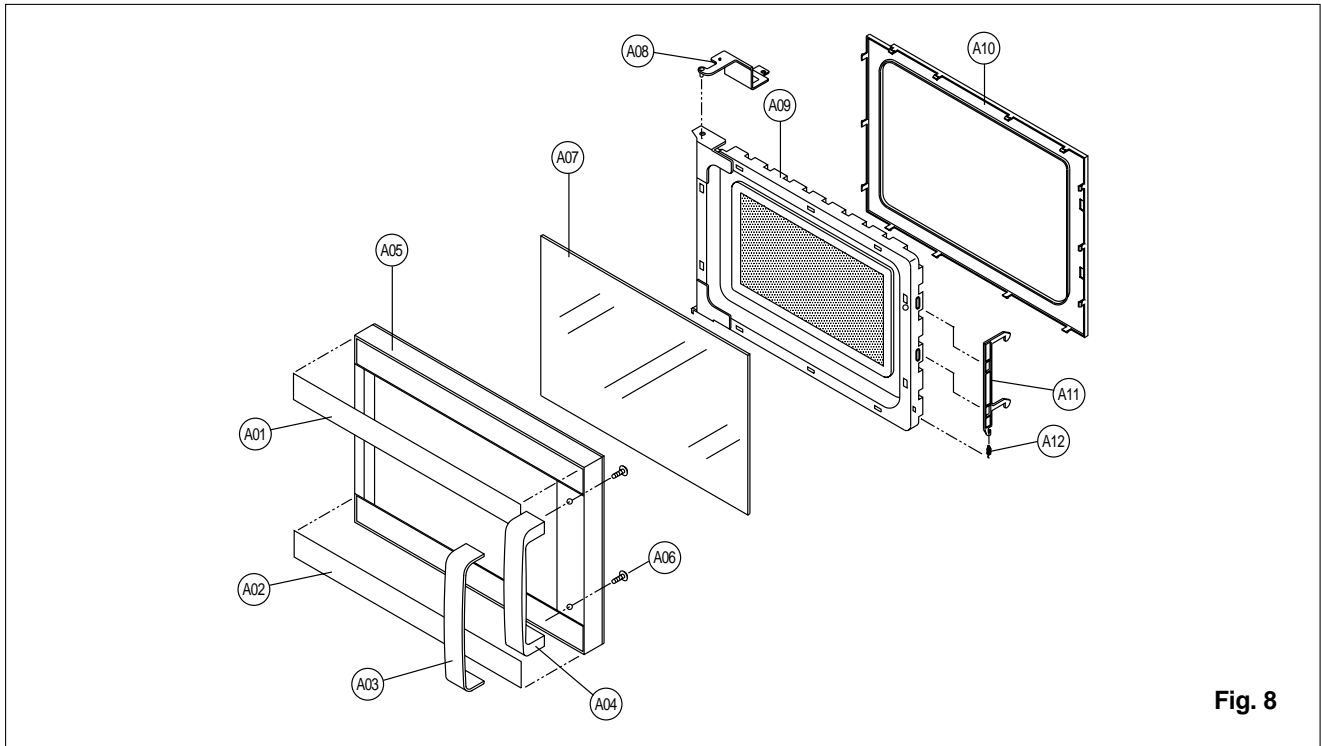
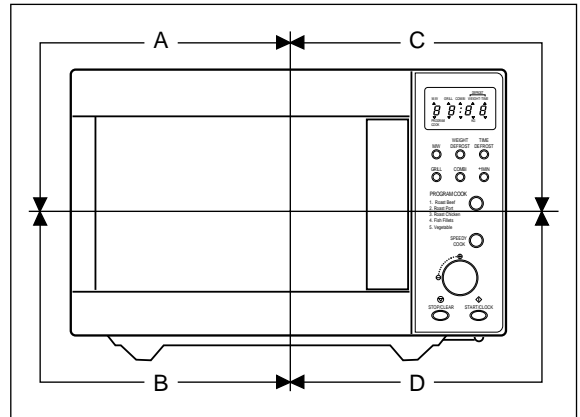


Fig. 8

REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
A01	3511604200	DECORATOR DOOR *T	STS304 T0.6 H/L	1	
A02	3511604300	DECORATOR DOOR *U	STS304 T0.6 H/L	1	
A03	3512602600	HANDEL DOOR *T	STS304 T0.6 H/L	1	
A04	3512602700	HANDLE DOOR *U	ABS XR-401	1	
A05	3512203590	FRAME DOOR	ABS XR-401	1	
A06	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	2	
A07	3517004580	BARRIER-SCREEN *O	TEMPERED GLASS T3.2	1	
A08	3515203600	STOPPER HING *T AS	KOC-970T1S	1	
A09	3511709000	DOOR SEAL AS	KOC-871C0S	1	
A10	3512301310	GASKET DOOR	PP	1	
A11	3513101300	HOOK	POM	1	
A12	3515101300	SPRING HOOK	PW1	1	

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

- (1) To reduce gap located on part 'A'.
1) Remove the cabinet.
2) Loosen a screw on top door hinge, then push the door to contact the door seal to oven front surface.
3) Tighten a screw.



- 2) To reduce gap located on part 'B'.
1) Loosen a screw on bottom hinge, then push the door to contact the door seal to oven front surface.
2) Tighten a screw.
- (3) To reduce gap located on part 'C'.
1) Remove the cabinet.
2) Loosen a screw on interlock switch assembly located bottom of oven body.
3) Draw the interlock switch assembly inward as possible to engage with hook on the door bottom.
4) Tighten a screw.
- (4) To reduce gap located on part 'D'.
1) Remove the cabinet.
2) Loosen a screw on interlock switch assembly located top of oven body.
3) and 4) are same as step (3).

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

NOTE : The door on a microwave oven is designed to act as an electronic seal preventing the leakage of microwave energy from the oven cavity during the cook cycle. This function does not require that the door be air-tight, moisture (condensation) - Tight or light-tight. Therefore, the occasional appearance of moisture, light or the sensing of gentle warm air movement around the oven door is not abnormal and do not of themselves, indicate a leakage of microwave energy from the oven cavity. If such were the case, your oven could not be equipped with a vent, the very purpose of which is to exhaust the vapor-laden air from the oven cavity.

9. To remove tray motor and under Heater. (Refer to Fig. 9)

- 1) Cut the tray motor cover parts from the base plate (Refer to Fig. 9).
- 2) Remove two screws ② which secure the tray motor ①.

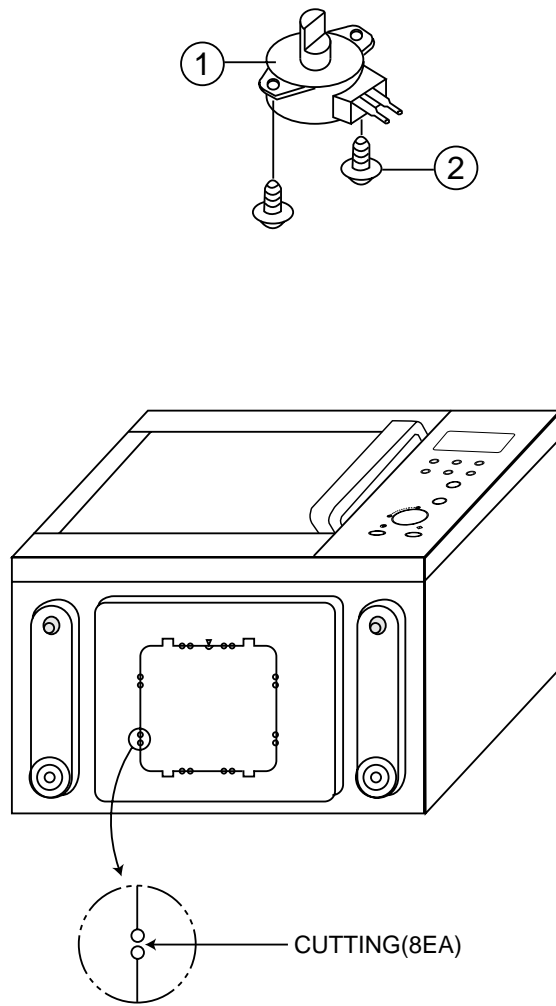


Fig. 9

10. To remove grill heater assembly. (Refer to Fig. 10)

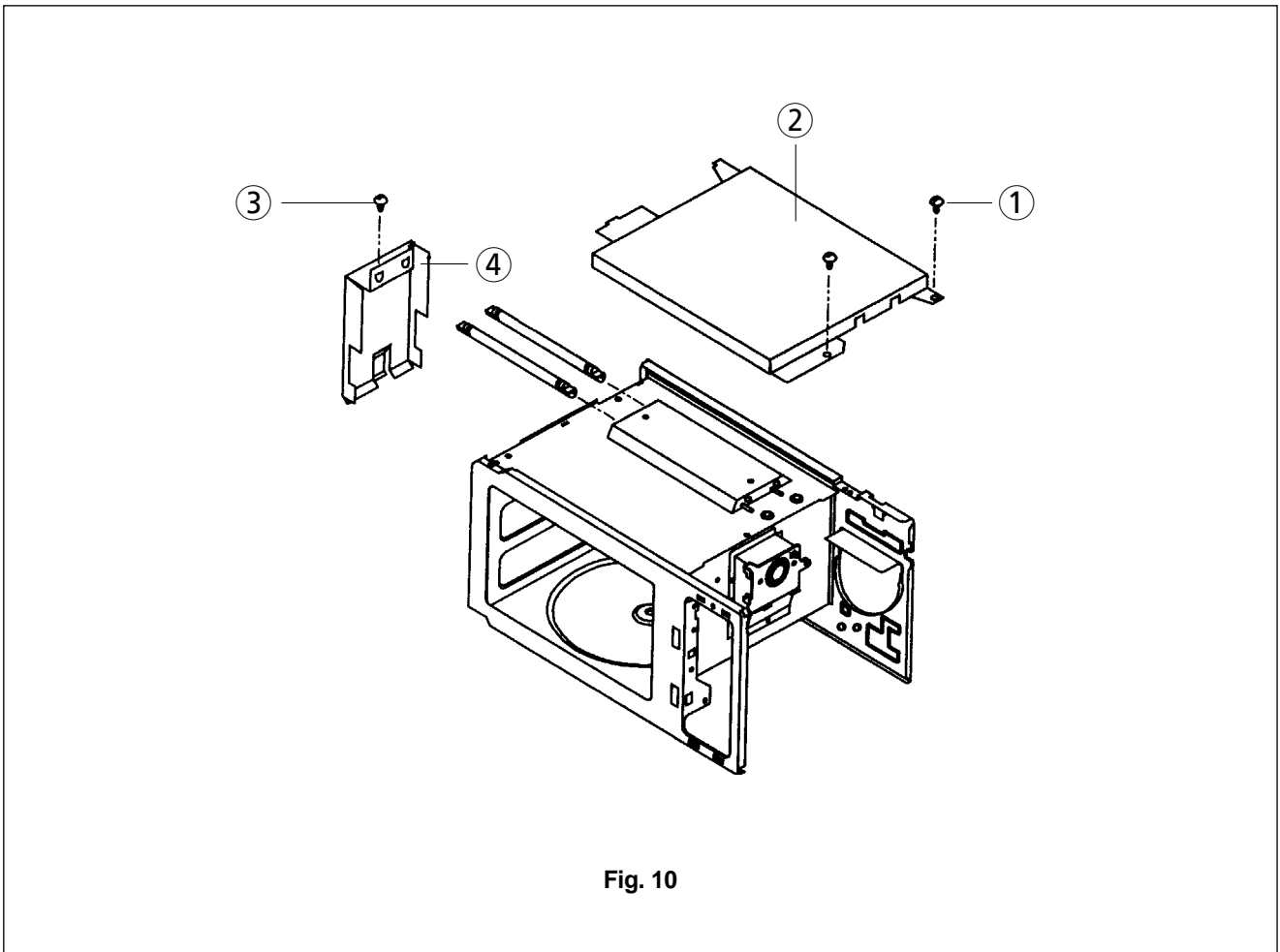


Fig. 10

- 1) Remove the cabinet.
- 2) Release two screws ① , and remove the Top cover ②.
- 3) Release a screws ③ , and remove Air Guide outlet ④.
- 4) Release grill Heaters Bracket ⑤.
- 5) Release the above steps for reassembly.

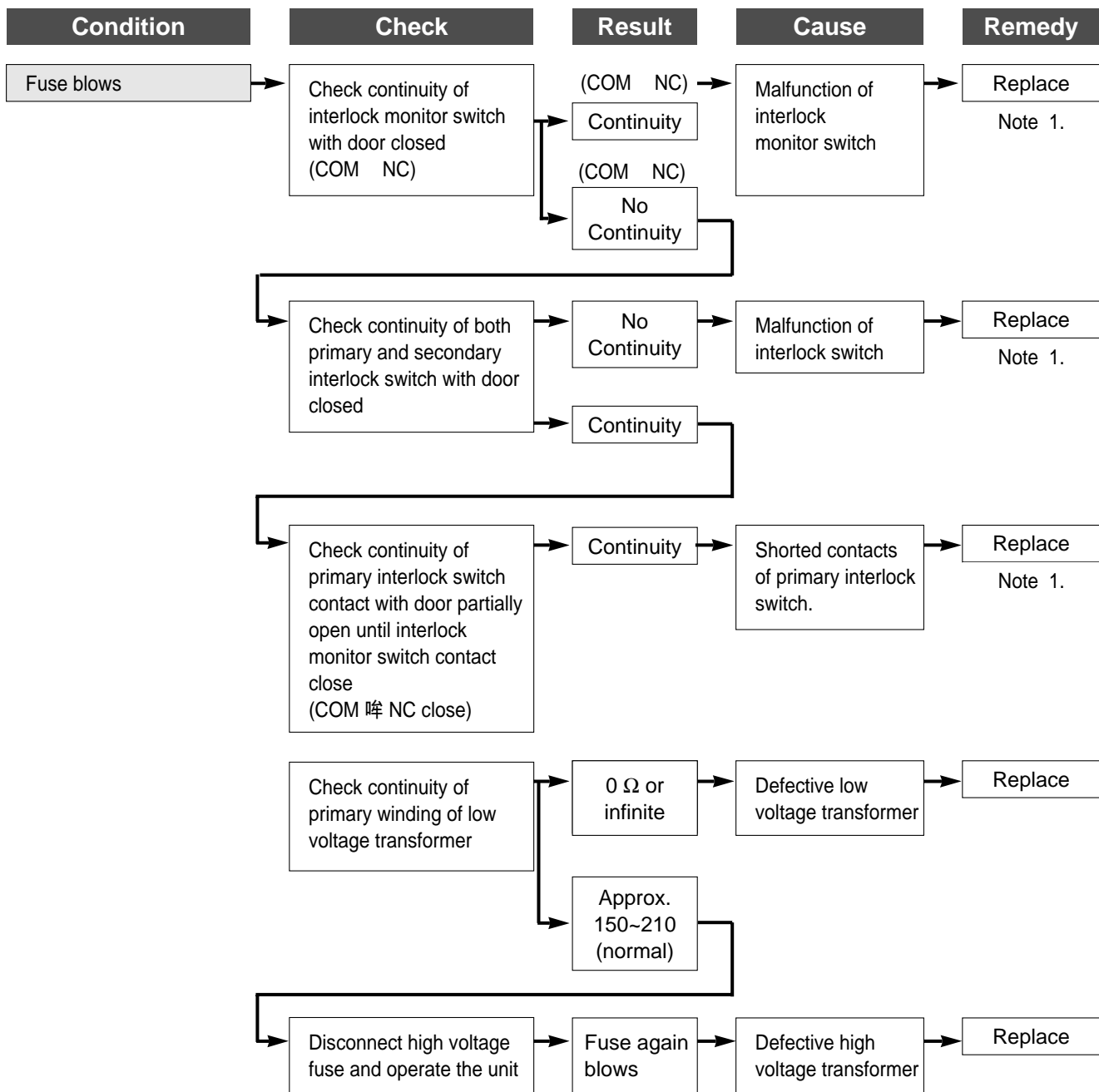
TROUBLE SHOOTING GUIDE

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

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

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

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



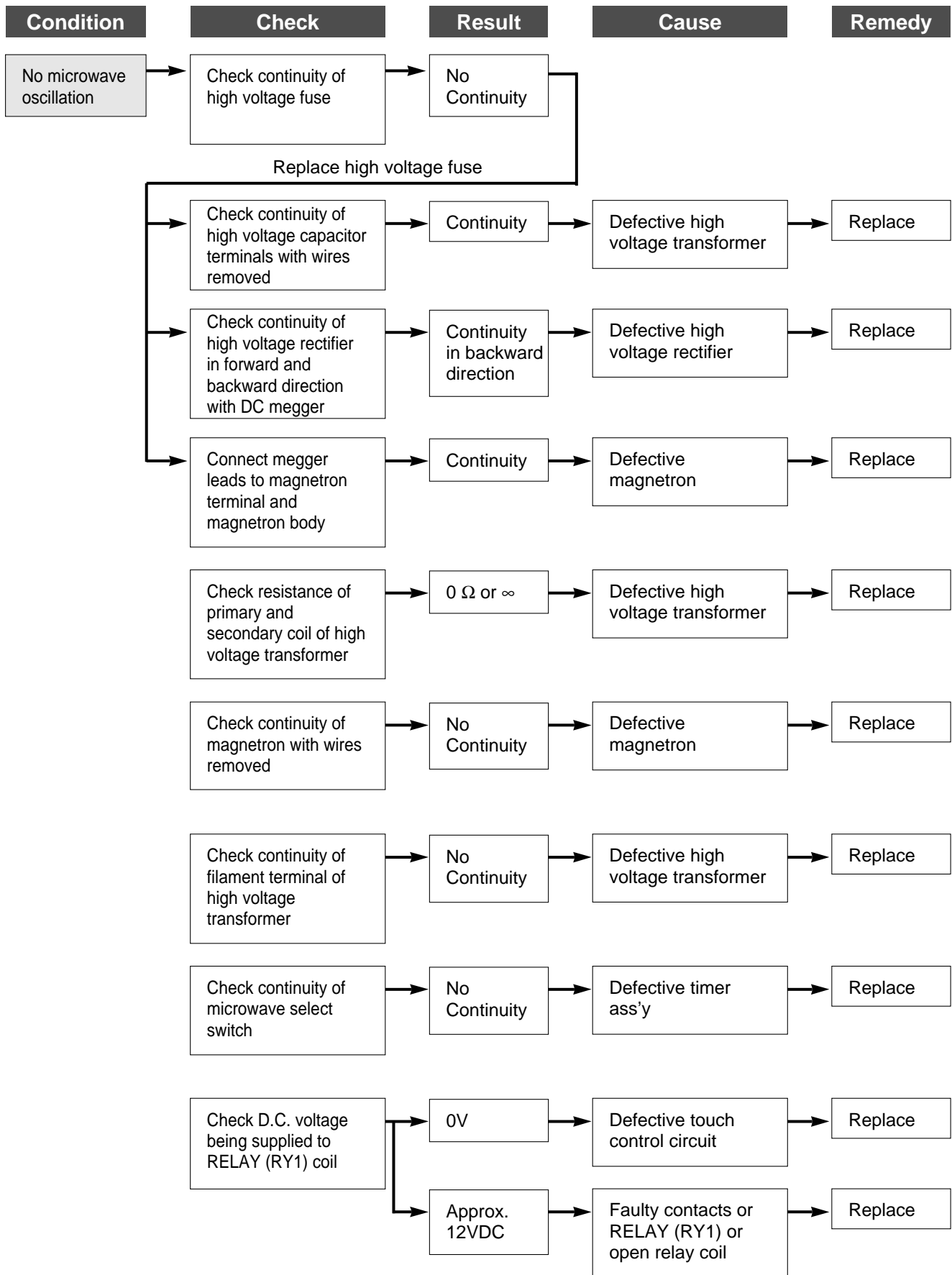
Condition	Check	Result	Cause	Remedy
Outlet has proper voltage. Fuse does not blow.	Check continuity magnetron	No Continuity	Defective magnetron	Replace
	Check continuity of noise filter board	No Continuity	Defective line filter board	Replace
	Check continuity of power supply cord	No Continuity	Open power supply cord	Adjust.
		Normal	Defective touch control circuit	Adjust.

NOTE1 : All these switches must be replaced at the same time, please refer to page7 for adjustment instructions

(TROUBLE 2) Grill Heater (Top heater) does not heat (Food will not become hot).

Condition	Check	Result	Cause	Remedy
Grill heater is not heated	Check continuity of primary interlock switch	No Continuity	Malfunction of Primary Interlock Switch	Adjust or replace
	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 (RY2) coil	0V	Defective touch control circuit	Replace
		Approx. 12VDC	Faulty contacts of RELAY (RY2) or open relay coil	Replace

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

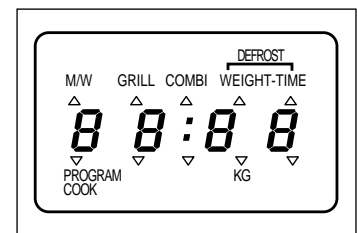


(TROUBLE 4) Display shows all figures selected, but oven does not start cooking, even though desired program and time are set and start pad is tapped.

Condition	Check	Result	Cause	Remedy
Turn table 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 "3" coil.	0V	Defective touch control circuit	Replace
		Approx. 12VDC	Faulty contacts of RELAY "3" or open relay coil	Replace

(TROUBLE 5) The following visual conditions indicate a probable defective touch control circuit or membrane switch assembly

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



Condition	Check	Result	Cause	Remedy
Display does not show programming at all, even if keyboard is touched.	Check each button for continuity of the button keyboard for the following keyboard check procedure	Normal	Malfunction of touch control circuitry of control box sub-assembly	Replace control box sub-assembly
		Abnormal	Malfunction of the button keyboard	Replace the button keyboard

NOTE1 : Before following the particular steps listed above in the trouble shooting guide for the button keyboard's, failure, please check for the continuity of each wire-harness between the button keyboard and P.C.B. assembly.

BUTTON KEYBOARD CHECK PROCEDURE

1. Type of encoding and button names.

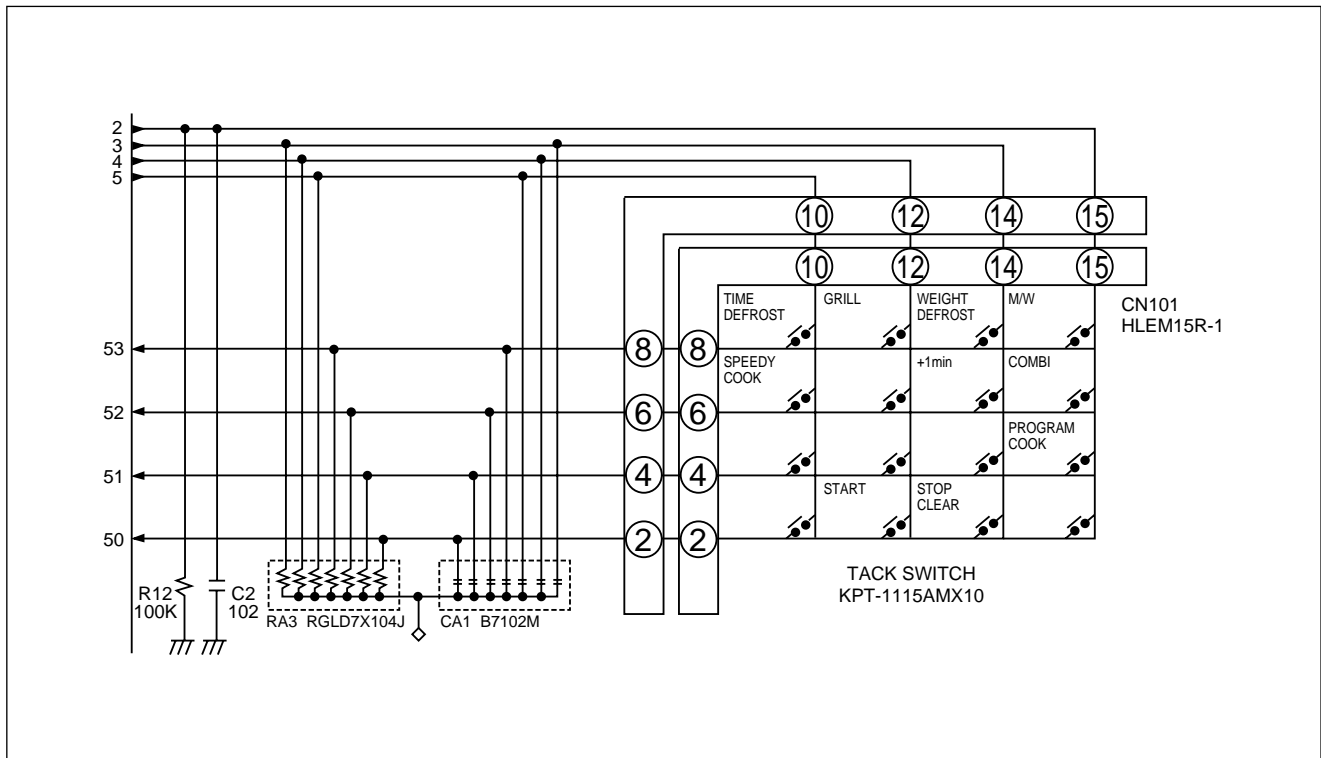


Fig. 11 Key Matrix and circuit diagram

The button keyboard consists of 12 keys whose configurations are described above and provides 8 pad terminations to be connected to the touch control circuit as in Fig. 11.

2. Key check procedure.

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

- | | |
|-------------------|---------------------------|
| 1) PROGRAM COOK | button : Between 4 and 15 |
| 2) WEIGHT DEFROST | button : Between 8 and 14 |
| 3) MICROWAVE | button : Between 8 and 15 |
| 4) COMBI | button : Between 6 and 15 |
| 5) GRILL | button : Between 8 and 12 |
| 6) +1 MIN | button : Between 6 and 14 |
| 7) TIME DEFROST | button : Between 8 and 10 |
| 8) STOP/CLEAR | button : Between 2 and 14 |
| 9) START/CLOCK | button : Between 2 and 12 |
| 10) SPEED COOK | button : Between 6 and 10 |

MEASUREMENT

1. Microwave Output Power

1-1. Standard Method

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.

- 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 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. (fig. 12).

- 4) Microwave power is switched on.
- 5) Heating time should be exactly 46 seconds.
Heating time is measured while the microwave generator is operating at full power.
- 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 :

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

- T is actual temperature rise.
- t is the heating time.

The power measured should be $900\text{W} \pm 10\%$

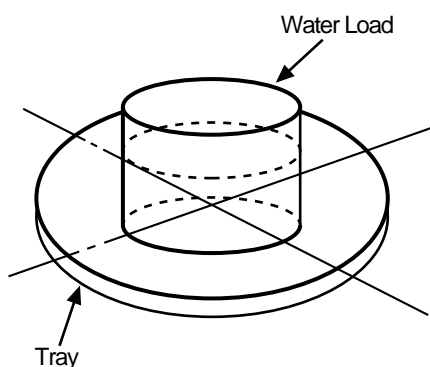


Fig. 12

CAUTION :

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

2. Electrical Continuity Check of Interlock Switch

2-1. Procedure

NOTE : Remove the power plug from the wall receptacle before testing.

1) Primary Interlock Switch

- 1) Disconnect two connector from Primary Interlock Switch.
- 2) Connect the ohm-meter leads between the terminals of the primary interlock switch.
- 3) Read the value of resistance between the terminals of the switch, when the door is opened, and when the door is closed.

2) Secondary Interlock Switch

- 1) Disconnect two connector from secondary interlock switch.
- 2) Connect the ohm-meter leads between the terminals of the secondary interlock switch.
- 3) Read the value of resistance between the terminals of the switch, when the door is opened, and when the oven door is closed.

3) Interlock Monitor Switch

- 1) Disconnect the lead wire connecting the primary interlock switch and interlock monitor switch from primary interlock switch terminal.
- 2) Connect the ohm-meter leads between the lead wire connector disconnected as item '1' and the power supply natural plug pin.
- 3) Read the value of resistance between the lead wire connector and the power supply natural plug pin, when the oven door is opened, and when the oven door is closed.

2-2. Judgement

The value of resistance should be applied to the value specified below.

Door	Open	Closed
Primary Interlock Switch		0
Secondary Interlock Switch		0
Interlock Monitor Circuit	0	

3. Microwave Leakage Test

3-1. Warning

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

3-2. Method

The power density of the microwave leakage emitted by the microwave oven should not exceed $1\text{mW}/\text{cm}^2$ at any point 50mm (2 in). or more away from the external surface of the oven as measured prior to acquisition by a purchaser and there after once the oven is in use, $4\text{mW}/\text{cm}^2$ at any point 50mm (2 in) or more away from the external surface of the oven, checks to be made around the whole of the door seal and on each of the main unit surface.

Measurements should be made with the oven operating at its maximum output and containing a load of 275 ± 15 milliliters of tap water initially at $68 \pm 9^\circ\text{F}$ ($20 \pm 5^\circ\text{C}$) placed within the cavity at the center of the load carrying surface provided by the manufacture. The water container should be a low from 600 milli-liters beaker having an inside diameter of approximately 85mm (3-11/32 in.) and made of an electrically nonconductive material such as glass or plastic.

3-3. Procedures

- 1) Prepare 600cc glass or plastic container.
- 2) Pour 275 ± 15 milliliters of tap water initially at $68 \pm 9^\circ\text{F}$ ($20 \pm 5^\circ\text{C}$) in the container.
- 3) Place it at the center of the tray and set it in a cavity.
- 4) Operate oven.
- 5) Measure the microwave leakage using a Narda 8100 or similarly approved microwave leakage meter after a few minutes operation.

NOTE : The scan rate should not exceed 1 inch/sec.

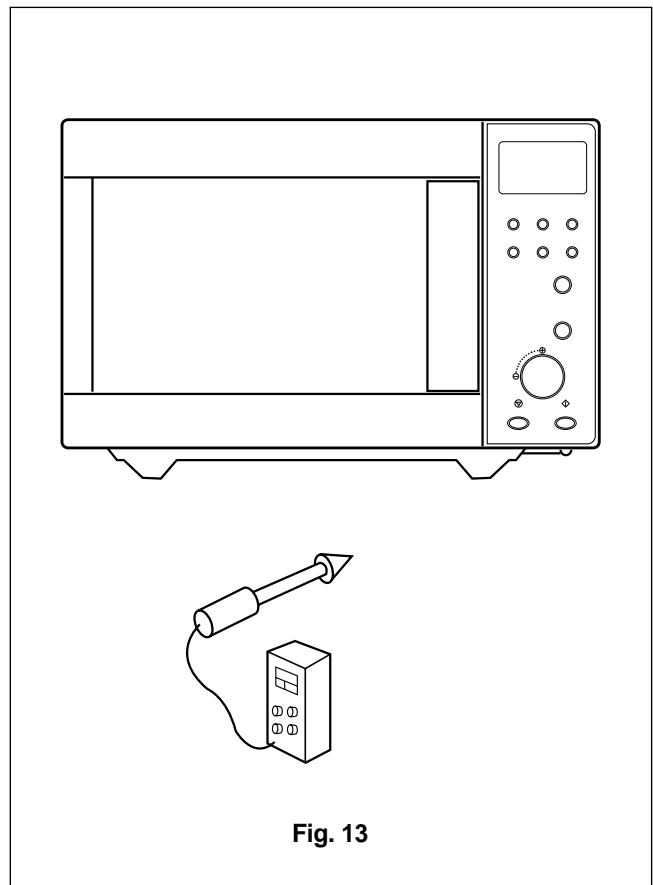


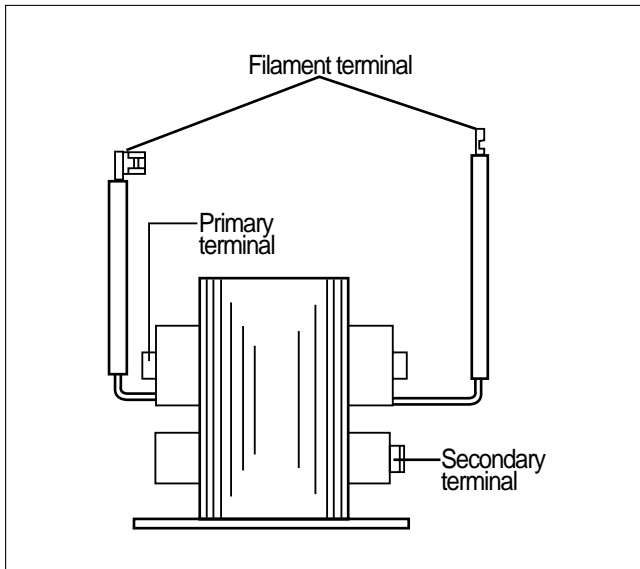
Fig. 13

COMPONENT TEST PROCEDURE

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook 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 8).

1. High voltage transformer

- (A) Remove connections from the transformer terminals and check continuity.
- (B) Normal readings should be as follows:
- | | |
|-------------------|-----------------------------|
| Secondary winding | Approx. $90\Omega \pm 10\%$ |
| Filament winding | Approx. 0Ω |
| Primary winding | Approx. 0Ω |



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

The high voltage diode is located on the base near the transformer.

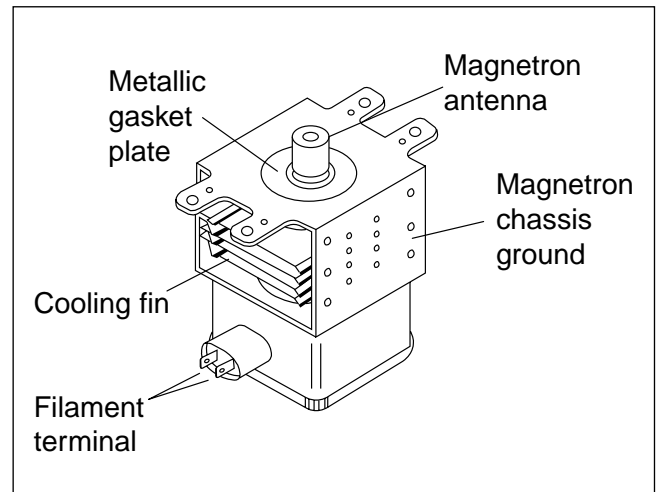
- (A) Isolate the diode from the circuit by disconnecting the leads.
- (B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back 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

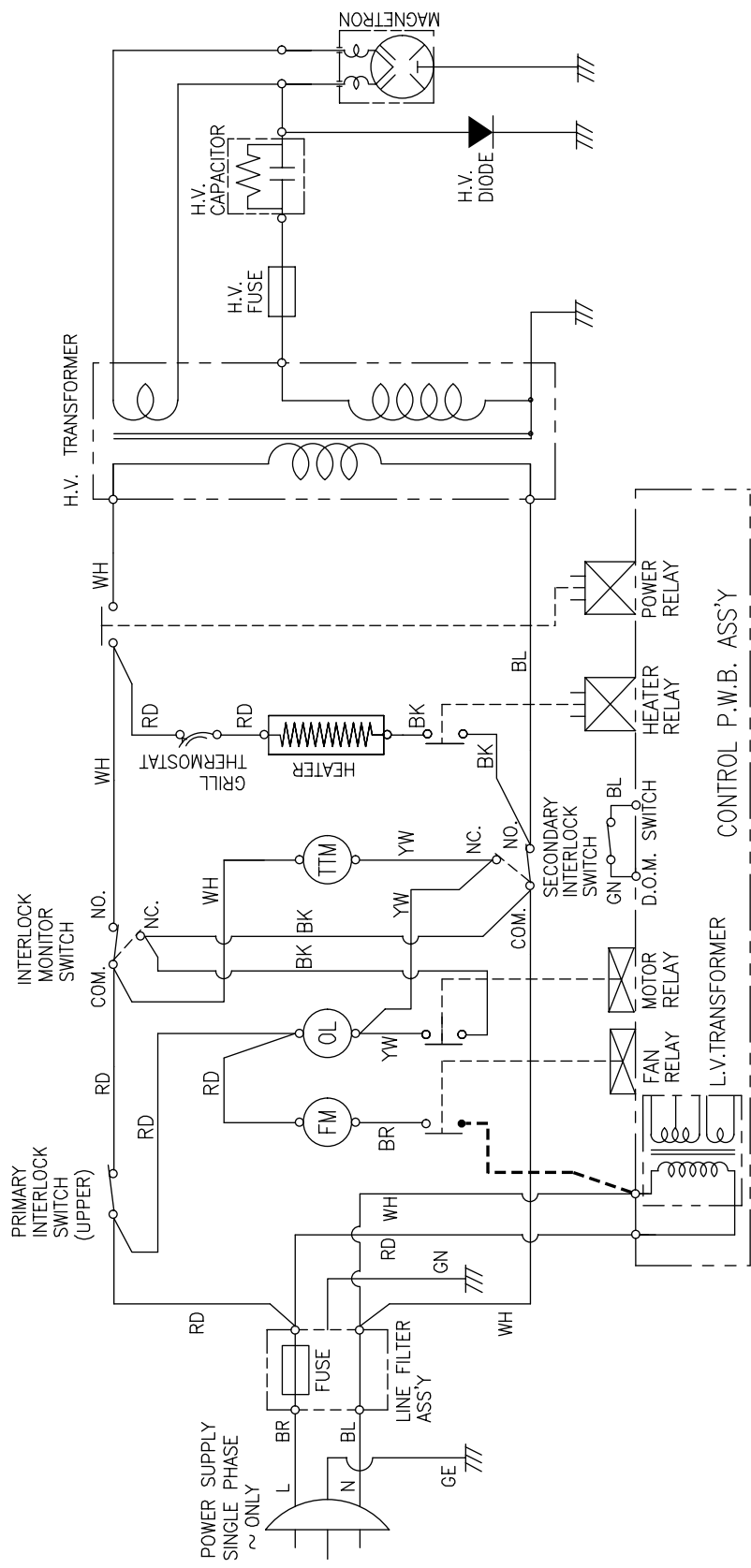
For complete magnetron diagnosis, refer to "Measurement of the Microwave Output Power".

Continuity checks can only indicate an 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 one ohm or less.
- (C) A continuity check between each filament terminal and magnetron case should read open.



WIRING DIAGRAM



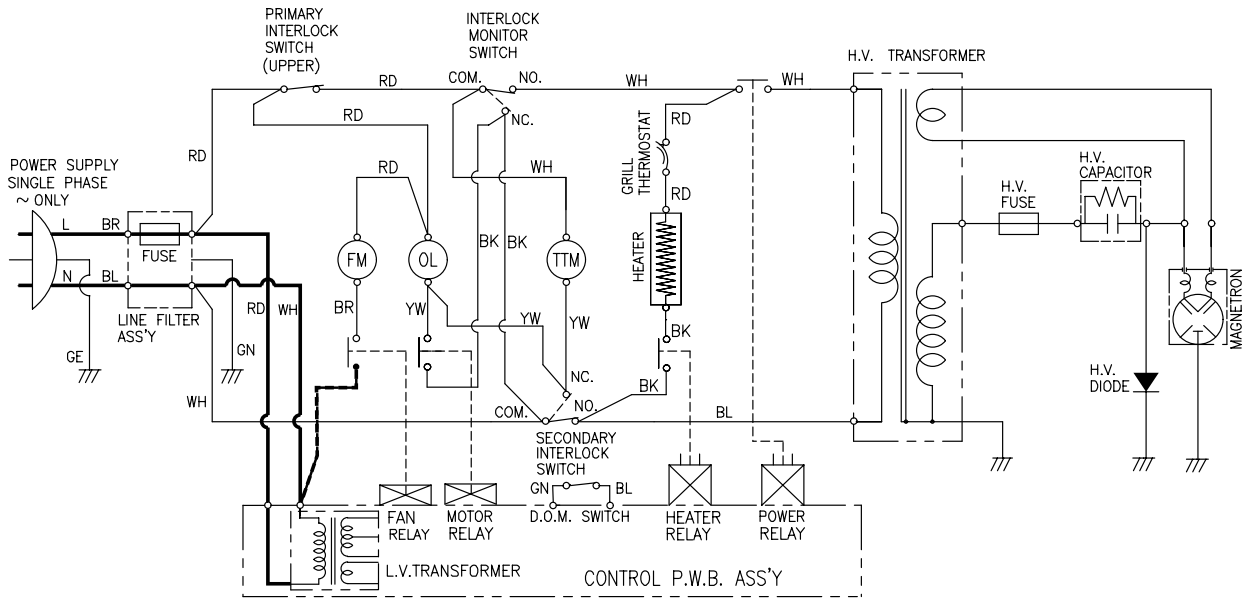
CONDITION

- 1.DOOR : CLOSED
- 2.COOK : OFF

- OL : OVEN LAMP
- FM : FAN MOTOR
- TTM : TURNTABLE MOTOR
- RD : RED
- WH : WHITE
- BK : BLACK
- BL : BLUE
- YW : YELLOW
- BR : BROWN
- GN : GREEN
- GE : GREEN/YELLOW

SCHEMATIC DIAGRAM

IDLE CONDITION



CONDITION
 1.DOOR : CLOSED
 2.COOK : OFF

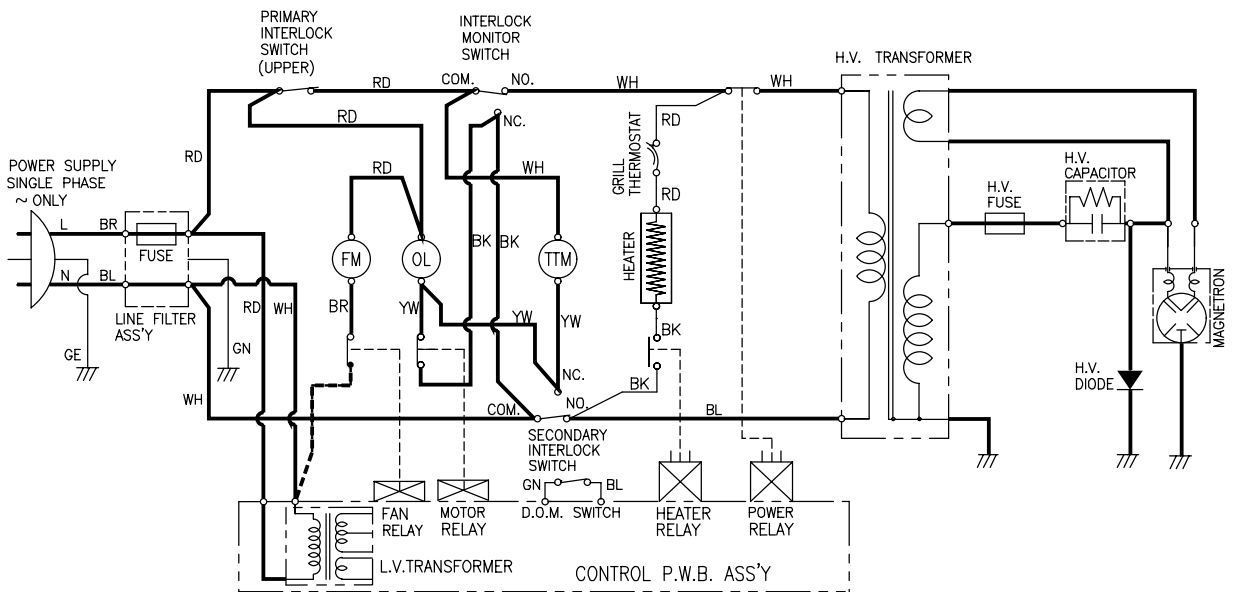
OL : OVEN LAMP
 FM : FAN MOTOR
 TTM : TURNTABLE MOTOR

RD : RED
 WH : WHITE
 BK : BLACK
 BR : BROWN

BL : BLUE
 YW : YELLOW
 GE : GREEN/YELLOW

GN : GREEN

MICROWAVE COOKING CONDITION



CONDITION
 1.DOOR : CLOSED
 2.COOK : OFF

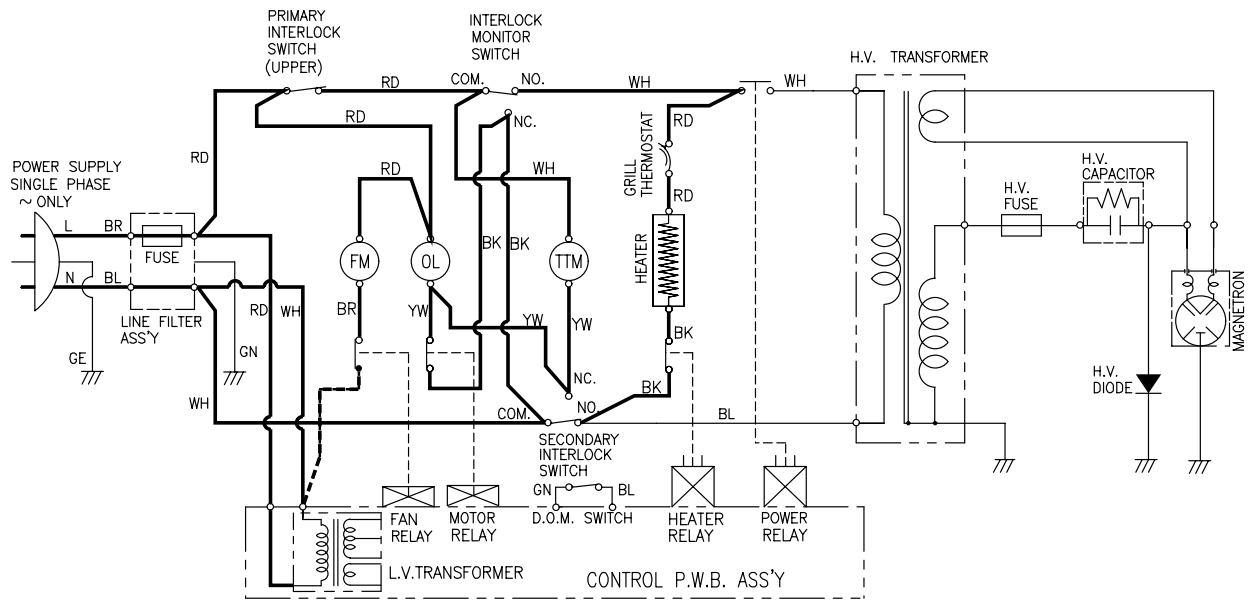
OL : OVEN LAMP
 FM : FAN MOTOR
 TTM : TURNTABLE MOTOR

RD : RED
 WH : WHITE
 BK : BLACK
 BR : BROWN

BL : BLUE
 YW : YELLOW
 GE : GREEN/YELLOW

GN : GREEN

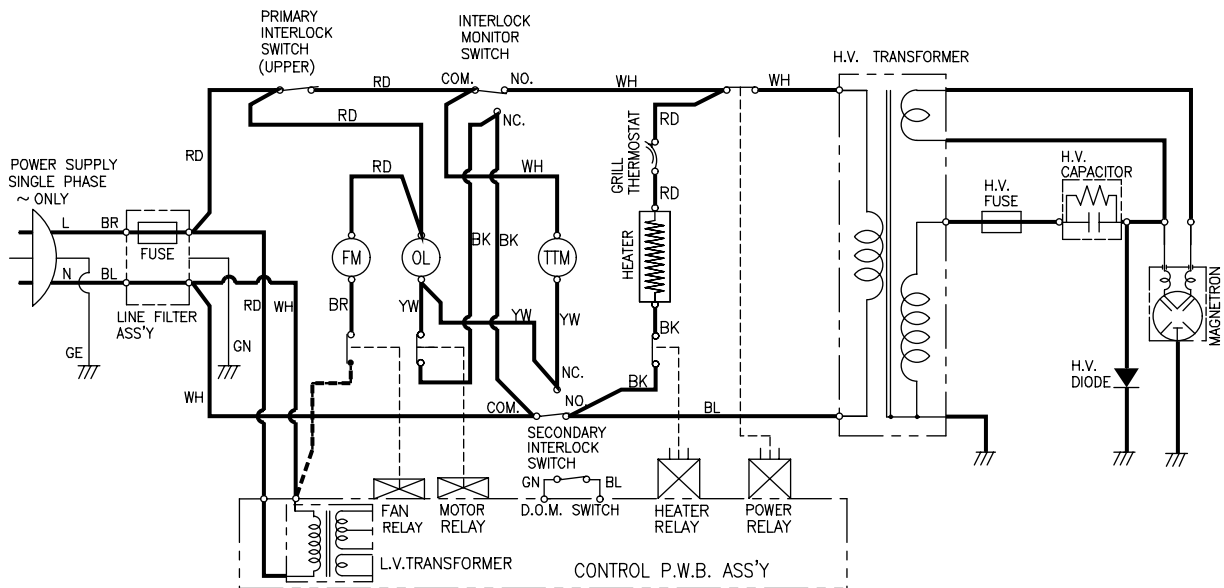
GRILL COOKING CONDITION



CONDITION
 1.DOOR : CLOSED
 2.COOK : OFF

OL : OVEN LAMP	RD : RED	BL : BLUE	GN : GREEN
FM : FAN MOTOR	WH : WHITE	YW : YELLOW	GE : GREEN/YELLOW
TTM : TURNTABLE MOTOR	BK : BLACK	BR : BROWN	

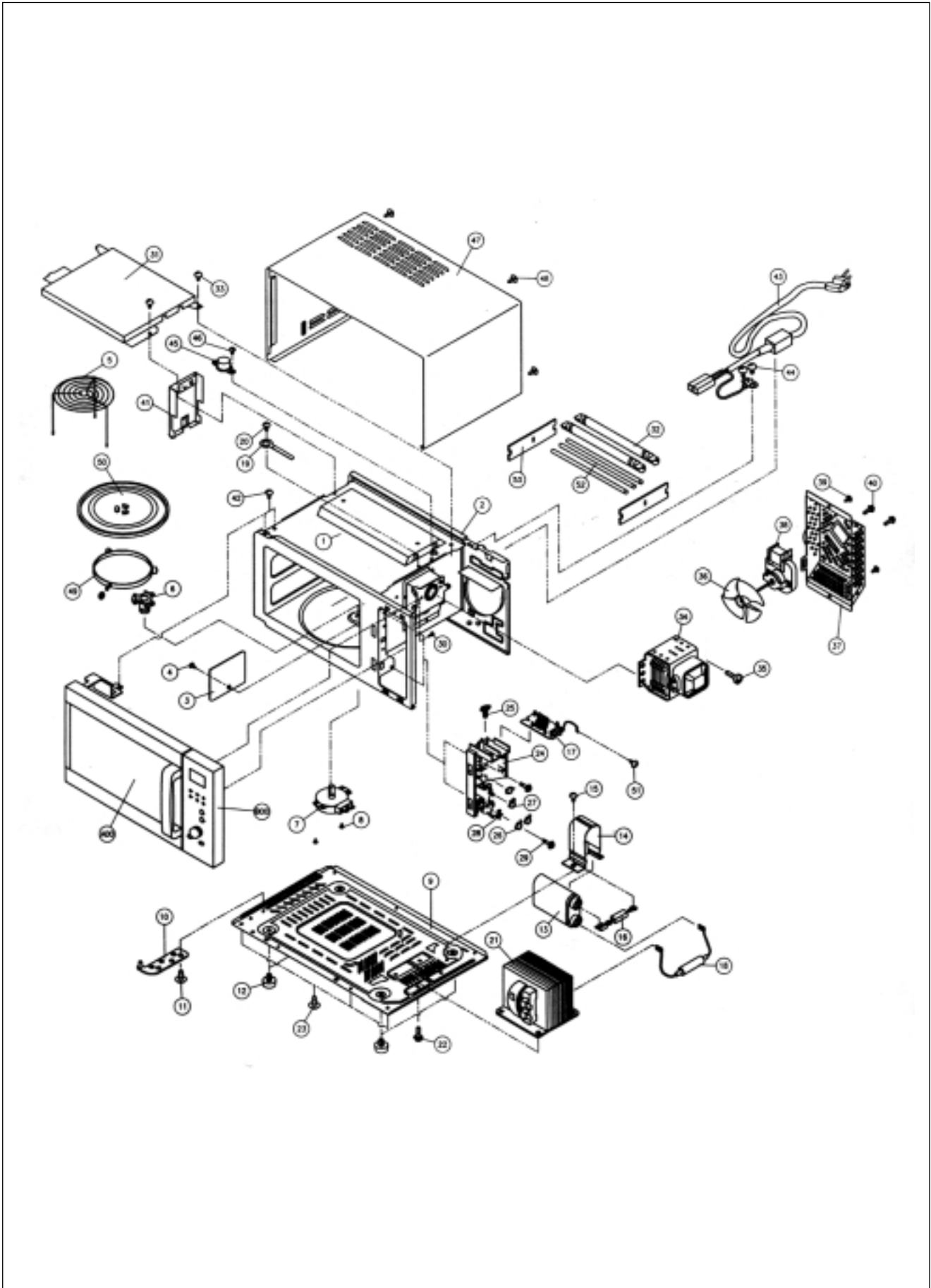
COMBI COOKING CONDITION



CONDITION
 1.DOOR : CLOSED
 2.COOK : OFF

OL : OVEN LAMP	RD : RED	BL : BLUE	GN : GREEN
FM : FAN MOTOR	WH : WHITE	YW : YELLOW	GE : GREEN/YELLOW
TTM : TURNTABLE MOTOR	BK : BLACK	BR : BROWN	

EXPLODED VIEWS AND PARTS LIST



NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
A00	3511710030	DOOR AS	KOG-875T0S	1
B00	PKCPSWVG10	CONTROL PANEL AS	KOG-875T2S	1
1	3516108660	CAVITY AS	KOG-87050S	1
2	3516503900	REAR PLATE *0	SBHG-1 T0.6	1
3	3511403800	COVER WAVE GUIDE	MICA T0.35	1
4	7113400814	SCREW TAPPING	T1 BIN 4X8 MFNI	1
5	3517203201	TRAY RACK AS	KOG-84150S 104MM	1
6	3517400610	COUPLER	TEFLON	1
7	3966030500	MOTOR SYNCRO	220/240V 4W GM-16-24FD016	1
8	7121400611	SCREW TAPPING	T2S PAN 4*6 MFZN	2
9	3510311000	BASE	SBHG-1 T0.8	1
10	3515202800	STOPPER HINGE *U AS	KOR-121M0A	1
11	7272400811	SCREW TAPTITE	TT3 TRS 4*8 MFZN	1
12	3512101400	FOOT	DASF-310	4
13	4416W67820	CAPACITOR HV	2100VAC 1.1 μ F	1
14	3513001900	HOLDER HV CAPACITOR	SECC T0.8	1
15	7272400811	SCREW TAPTITE	TT3 TRS 4*8 MFZN	1
16	4416V24000	DIODE HV	SANKEN HVR-1X-32B(D5.3)	1
17	3518605001	NOISE-FILTER	DWLF-M05	1
18	3518700211	FUSE HV	5KV 0.7A	1
19	3511200400	CLAMP WIRE	SBHG	1
20	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1
21	3518112400	TRANS HV	JY-N90S1-87T	1
22	3516003800	SCREW SPECIAL	T2 FLANGE 5X8 MFAN	4
23	7112401011	SCREW SPECIAL	T1 TRS 4X10 MFZN	5
24	3513805710	LOCK	POM	1
25	3513601600	LAMP	BL 240V 25W T25 C7A H187	1
26	4415A66910	SW MICRO	V-531A-0F/ SZM-V16-FA-61	2
27	4415A17352	SW MICRO	VP-533A-0F-SPNO #187 200G	2
28	3513701300	LEVER LOCK	POM	1
29	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	2
30	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	1
31	3511405000	COVER INSUATOR *T	SECC T0.5	1
32	3512803000	HEATER MIRACLON	115V 550W	1
33	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	2
34	3518002200	MAGNETRON	2M218H(MF)I	1
35	3516004000	SPECIAL SCREW	T2 BOLT FLANGE 4*10 MFZN	1
36	3511800100	FAN	P.P GF20	1
37	3511402500	COVER *B	SBHG T0.8	1
38	39635113900	MOTOR SHADED PLE	230V 17W MW15CA-K02	1
39	7S312X40A1	SCREW SPECIAL	T1 TRS 4X10 SE MFZN	2
40	7S101W4081	SCREW MACHINE	PAN FLANGE 4X8 MFZN	2

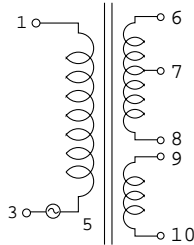
NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
41	3512515500	GUIDE AIR OUTLET	SA1D T0.5	1
42	7S427W40A1	SCREW SPECIAL	TT2 HEX FG 4X10 SE MFZN	2
43	35113ACSJ5	CORD POWER AS	3X1.5 40X40 120-RTML	1
44	7122401011	SCREW TAPPING	T2S TRS 4*10 MFZN	2
45	3518905000	THERMOSTAT	OFF:100 ON:90 V#187	1
46	7121300611	SCREW TAPPING	T2S PAN 3X6 MFZN	1
47	3510800800	CABINET	PCM 0.6T	1
48	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	3
49	3512512910	GUIDE ROLLER AS	KOR-121Q3A	1
50	3517200401	TRAY	BORO-SI 810G	1
51	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1
52	3517503000	PROTECTOR WIRE	STS430 DIA:4	3
53	3517503100	PROTECTOR HEATER	MICA MT56 T1.0	2

PRINTED WIRING BOARD

1. CIRCUIT CHECK PROCEDURE

1) Low voltage transformer (DMR-984FS) check.

The low voltage transformer is located on the P.C.B.
 Measuring condition: Input voltage: 230VAC/50Hz



Terminal	Voltage
1-3	230.0V
6-7	9 VAC
7-8	9 VAC
9-10	2.3 VAC

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

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

2) Voltage Check

- Key check point (1~5: Micom Pin, 6: Display Pin)

NO.	CHECK POINT	REMARK
1	PIN 63, 64	+5VDC $\pm 5\%$
2	PIN 29, 32, 62	0V
3	PIN 28	+5VDC $\pm 5\%$
4	PIN 45	+5VDC
5	PIN 30, 31	5V
6	PIN 1, 25	2.6VAC (Display filament voltage)

- CHECK METHOD

NO.	CHECK POINT	REMARK
1	+5VDC	Replace Q3, ZD3, R26, C10
2	+12 VDC	Replace D7, D8, EC2, EC3, C14, C11
3	-24 VDC	Replace D9, D10, EC4, EC5, C15

NOTE : The marks of the above corresponding voltages (+5, +12, -24VDC) are written on the PCB.
 Each measuring points 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 display pin 1 & 25	2.6VAC	Fix the pin 1 & 25 on the P.C.B.
2	The display has some trouble in its segment or grid.	Refer to "The display trouble shooting data" below		Replace P.C.B. assembly.
3	Loss vacuum in the display.	Find white spot.		Replace P.C.B. assembly.

The display trouble shooting data.

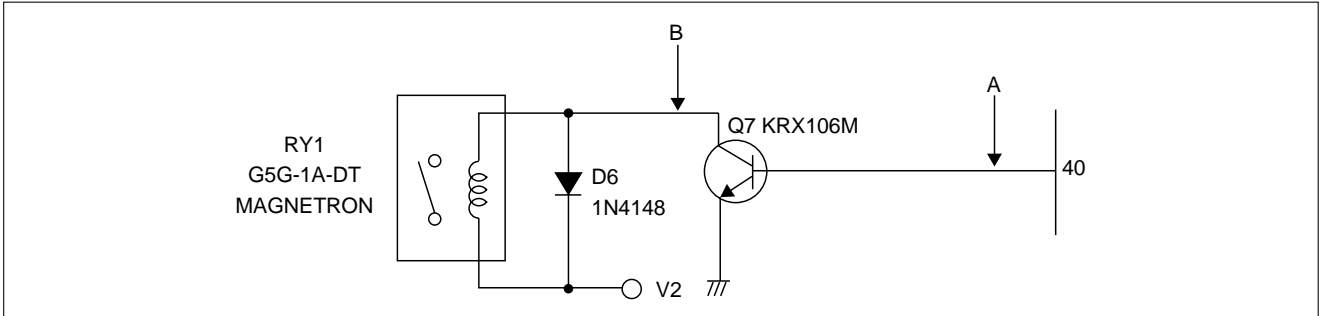
TROUBLE	DISPLAY NAME & PIN NO.	MICOM OUTPUT IN PIN NO.
Grid 1 doesn't come on.	Grid 1 (G1), 4, 7	13
Grid 2 doesn't come on.	Grid 2 (G2), 10	16
Grid 3 doesn't come on.	Grid 3 (G3), 14	18
Grid 4 doesn't come on.	Grid 4 (G4), 17	17
Grid 5 doesn't come on.	Grid 5 (G5), 21	24
Segment "a" doesn't come on from G1 to G5.	Segment a, 23	26
Segment "b" doesn't come on from G1 to G5.	Segment b, 22	25
Segment "c" doesn't come on from G1 to G5.	Segment c, 20	23
Segment "d" doesn't come on from G1 to G5.	Segment d, 19	22
Segment "e" doesn't come on from G1 to G5.	Segment e, 18	21
Segment "f" doesn't come on from G1 to G5.	Segment f, 16	20
Segment "g" doesn't come on from G1 to G5.	Segment g, 15	19
Segment "h" doesn't come on from G1 to G5.	Lower bar h, 5	14
Segment "i" doesn't come on from G1 to G5.	Upper bar i 6, 8, 9, 11	15

4) When there is no microwave oscillation.

(1) When touching "M/W" button, oven lamp turns on.

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

* Cause : Relay 1 (RY1) dose not operate.



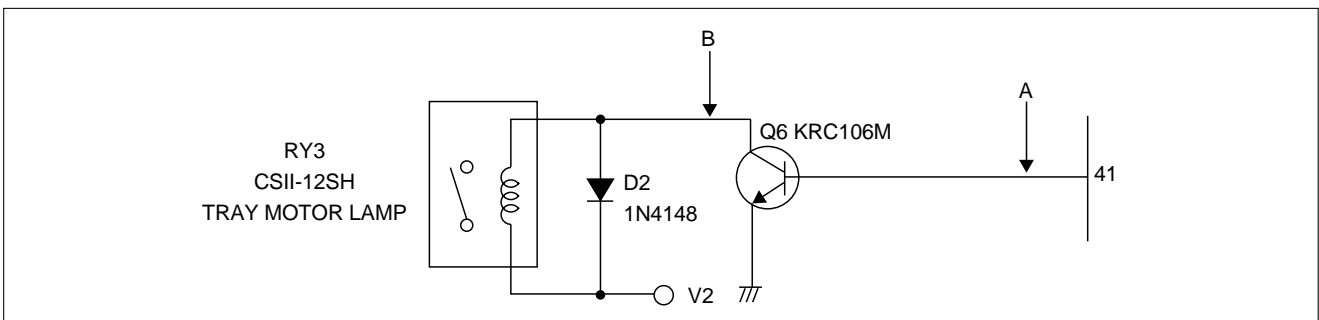
CHECK METHOD

STAGE \ POINT	A	B
RY1 "ON"	+5VDC	GND
RY1 "OFF"	GND	12VDC

(2) When touching "M/W" button, oven lamp dose not turn on.

Turntable motor dose not rotate, but cook indicator in display comes on.

* Cause : Relay 3 (RY3) dose not operate.



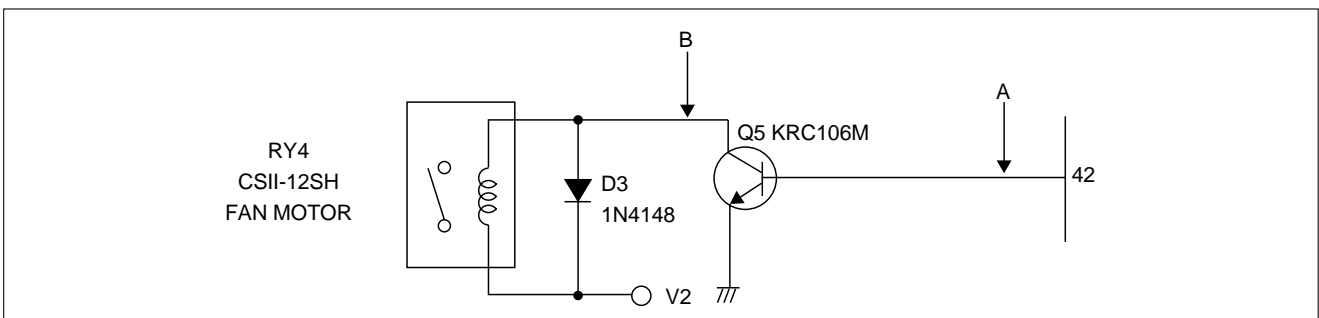
CHECK METHOD

STAGE \ POINT	A	B
RY3 "ON"	+5VDC	GND
RY3 "OFF"	GND	+12VDC

(3) When touching "M/W" button, oven lamp turns on.

Fan motor dose not rotate, but cook indicator in display comes on.

* Cause : Relay 4 (RY4) dose not operate.



CHECK METHOD

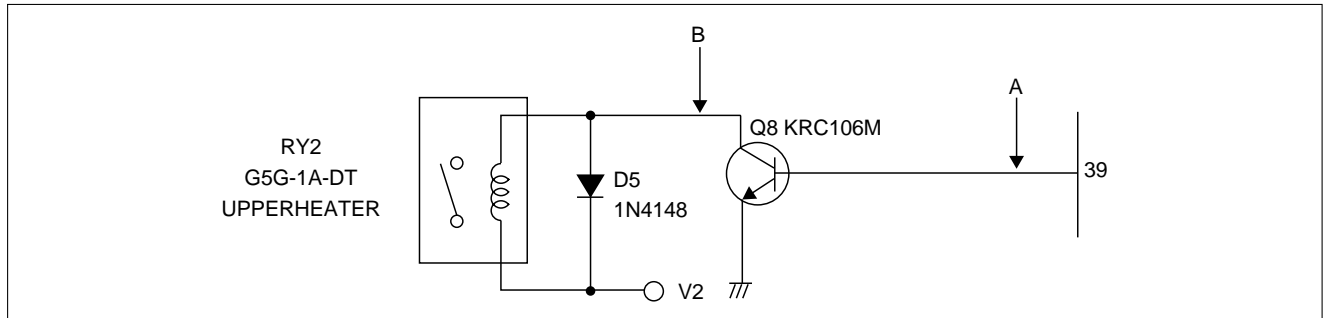
STAGE \ POINT	A	B
RY4 "ON"	+ 5VDC	GND
RY4 "OFF"	GND	+12VDC

5) When there is not heater.

When touching "TEMP COOK & COMBI" button, oven lamp turns on.

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

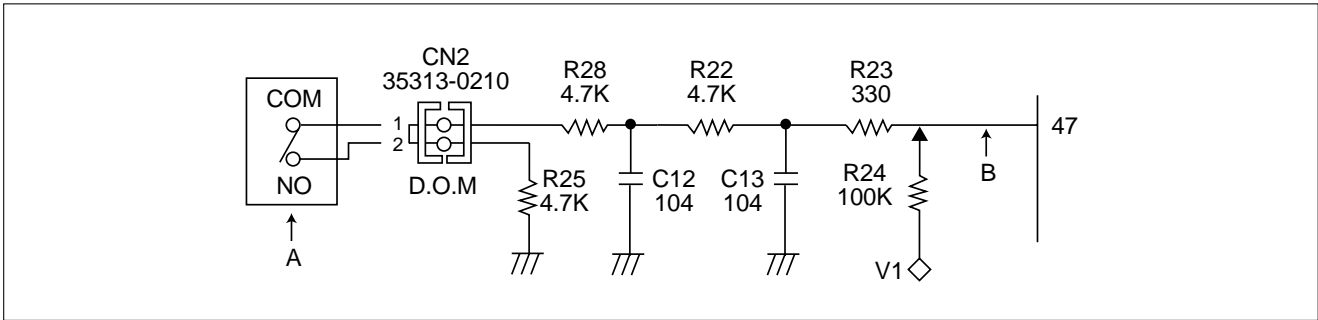
* Cause : Relay 2 (RY2) dose not operate.



CHECK METHOD

STAGE \ POINT	A	B
RY2 "ON"	+5VDC	GND
RY2 "OFF"	GND	+12VDC

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

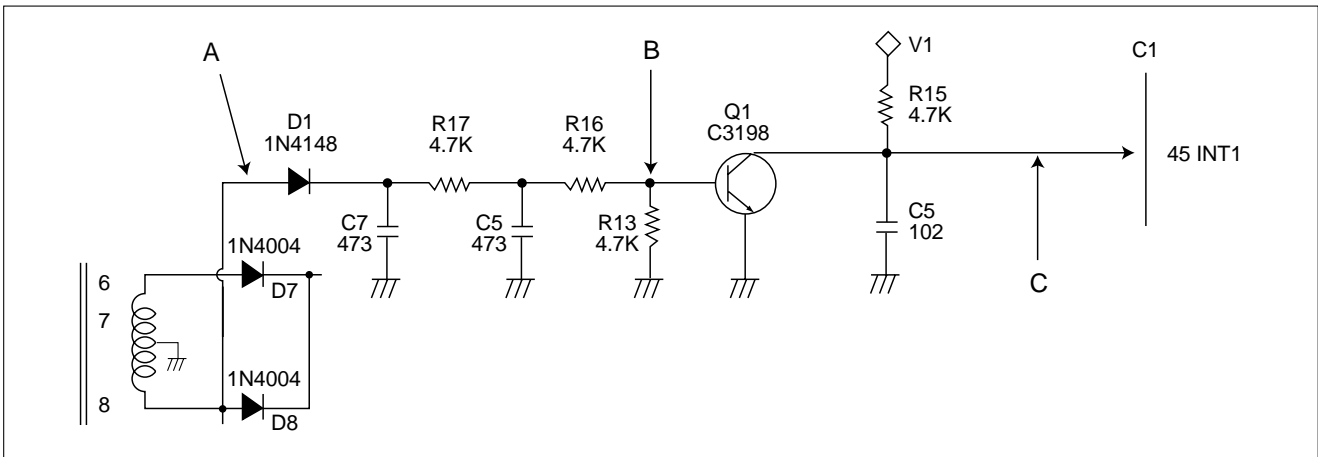


CHECK METHOD

STAGE \ POINT	A	B
DOOR OPENED	OPEN	+5VDC
DOOR CLOSED	CLOSED	GND

NOTE : Check the state of the secondary interlock switch.

7) When “ErrE” comes on display.



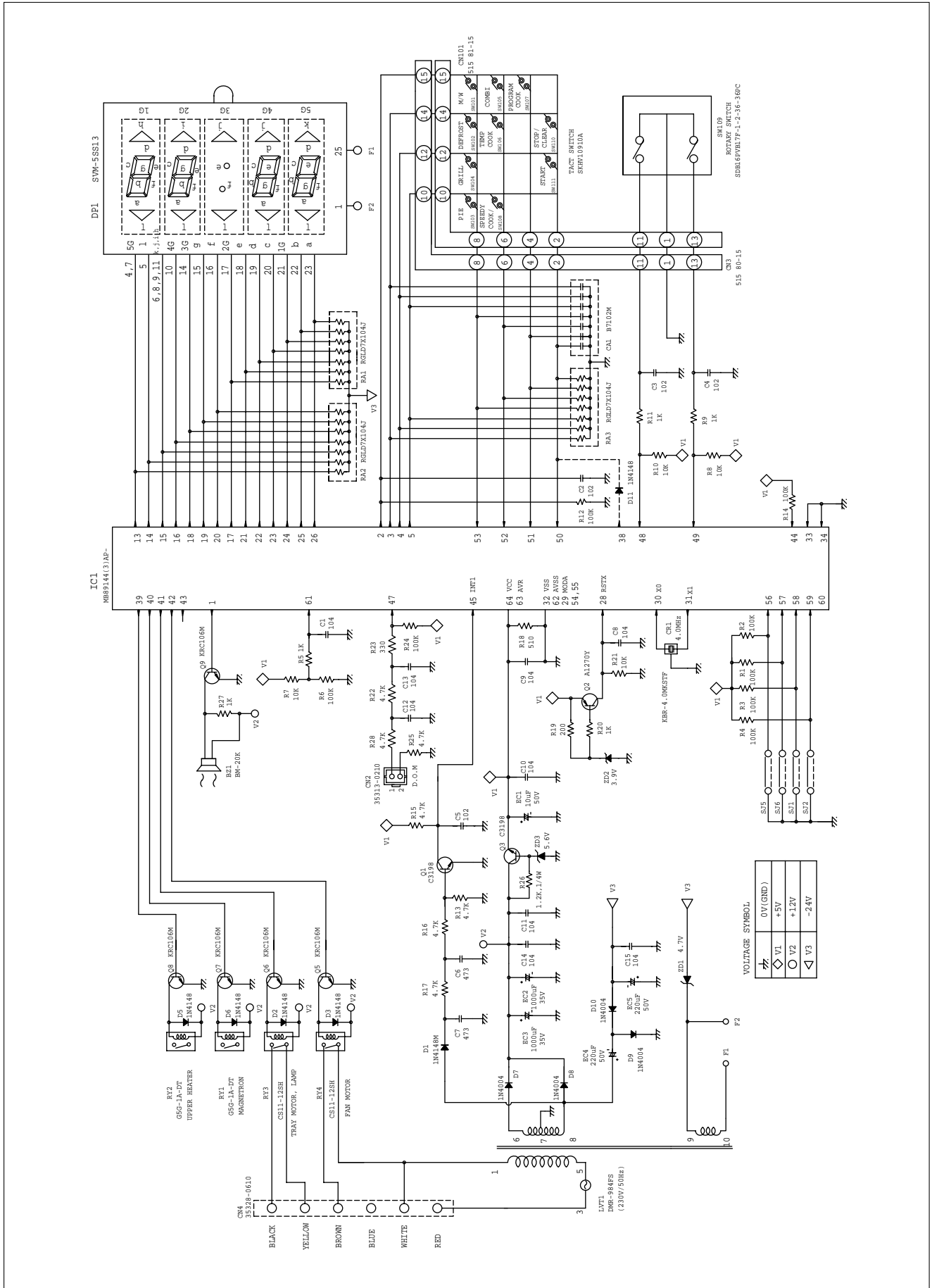
CHECK METHOD

POINT	WAVEFORM
A	
B	
C	

T=20ms (50Hz)

if clock does not keep exact time, you must check. Diode 1, transistor Q2.

P.C.B CURCUIT DIAGRAM



MAIN P.C.B. ASS'Y PART LIST

NO.	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY
1	PCB MAIN	M218	93X213	3514314980	1
		M219	91.5X163	3514314990	1
2	BUZZER	BZ1	BM-20K	3515600100	1
3	CONNECTOR WAFER	CN2	35313-0210	30166M7020	1
4	CONNECTOR WAFER	CN3	515 80-15	Q4CW215SBD0	1
5	CONNECTOR WAFER	CN4	35328-0610	4CW3061MX0	1
6	CONNECTOR WAFER	CN101	515 81-15	4CW215RBD0	1
7	DIGITRON	DP-1	SVM-5SS13	DSVM5SS13-	1
8	HOLDER VFD	DPH	PP DIR-9930	3513002000	1
9	IC MICOM	IC1	MB89144P-252	141SC985T0	1
10	TRANS POWER	LVT1	DMR-984FS	5EPV41305	1
11	SW RELAY	RY1, RY2	G5G-1A-DT DC 12	5SC0101123	2
12	SW RELAY	RY3, RY4	CSII-12SH	5SC0101128	2
13	RESONATOR CERA	CR1	KBR-4.0MKSTF	5PKBR40MKS	1
14	C ELECTRO	EC1	RS 50V 10 μ F	CEXE1H100A	1
15	C ELECTRO	EC2,EC3	RSS 35V 1000 μ F	CEXF1V102V	2
16	C ELECTRO	EC4,EC5	RSS 50V 220 μ F	CEXF1H221V	2
17	TRANSISTOR	Q1, Q3	KTC3198GR	TZTC3198GR-	2
18	TRANSISTOR	Q2	KTA1266Y	TZTA1266Y-	1
19	TRANSISTOR	Q5--Q9	KRC106M	TZRC106M--	6
20	C CERA AXIAL	C1, C8~C15	H1KF 50V 0.1 μ F Z	CCZF1H104Z	9
21	C CERA AXIAL	C6, C7	H1KF 50V 0.047 μ F Z	CCZF1H473Z	2
22	C CERA AXIAL	C2~C5	H1KF 50V 1000pF K	CCZF1H101Z	4
23	C ARRAY	CA1	8P(7) 50V 100pF	CN7XB-102M	1
24	DIODE SWITCHING	D1~D3, D5, D6	1N4148M	DZN4148M--	5
25	DIODE SWITCHING	D7~D10	1N4004A	DZN4004A--	4
26	R CARBON FILM	R-1-R4,R12,R14,R24,R6	1/6W, 100K OHM J	RD-AZ104J-	8
27	R CARBON FILM	R5,R9,R11,R20,R27	1/6W, 1K OHM J	RD-AZ102J-	5
28	R CARBON FILM	R8,R10,R21,R7	1/6W, 10K OHM J	RD-AZ103J-	4
29	R CARBON FILM	R13,R15-R17,R22,R28	1/6W, 4.7K OHM J	RD-AZ472J-	6
30	R CARBON FILM	R18	1/6W, 510 OHM J	RD-AZ511J-	1
31	R CARBON FILM	R19	1/6W, 200 OHM J	RD-AZ201J-	1
32	R CARBON FILM	R23	1/6W, 330 OHM J	RD-AZ331J-	1
33	R CARBON FILM	R26	1/4W, 1.2K OJM J	RD-4Z122J-	1
34	ARRAY	RA1, RA2, RA3	8P(7) 1/8 100K J	RA88X104J	3
35	DIODE ZENER	ZD1	MTZ J 4.7B	DZUZ4R7BSB	1
36	DIODE ZENER	ZD2	MTZ J 3.9B	DZUZ3R9BSB	1
37	DIODE ZENER	ZD3	MTZ J 5.6B	DZUZ5R6BSB	1
38	SW ROTARY	SW109	SDB161PVB17F-1-2 -36-36PC(PITCH 5)	5S10109002	1
39	WIRE FLAT	WF1	1.25X15.X90XC	WSJ-159007	1
40	SW TACT	SW101-SW108, SW110, SW111	SKHV 10910A	5S50101Z90	10

DAEWOO

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