

S/M No. : R631Q2A001

Service Manual

Microwave Oven

Model: KOR-631Q2A

DAEWOO



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

CAUTION

This device is to be Serviced only by Properly Qualified Service Personnel. Consult the Service Manual for Proper Service Procedures to Assure Continued Safety Operation and for Precautions to be Taken to Avoid Possible Exposure to Excessive Microwave Energy.

1. FOR SAFE OPERATION

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

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

(Only a trained service personnel should make repairs.)

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

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

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

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

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

Do not attempt to defeat them.

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

2. FOR SAFE SERVICE PROCEDURES

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

CAUTION

MICROWAVE RADIATION

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

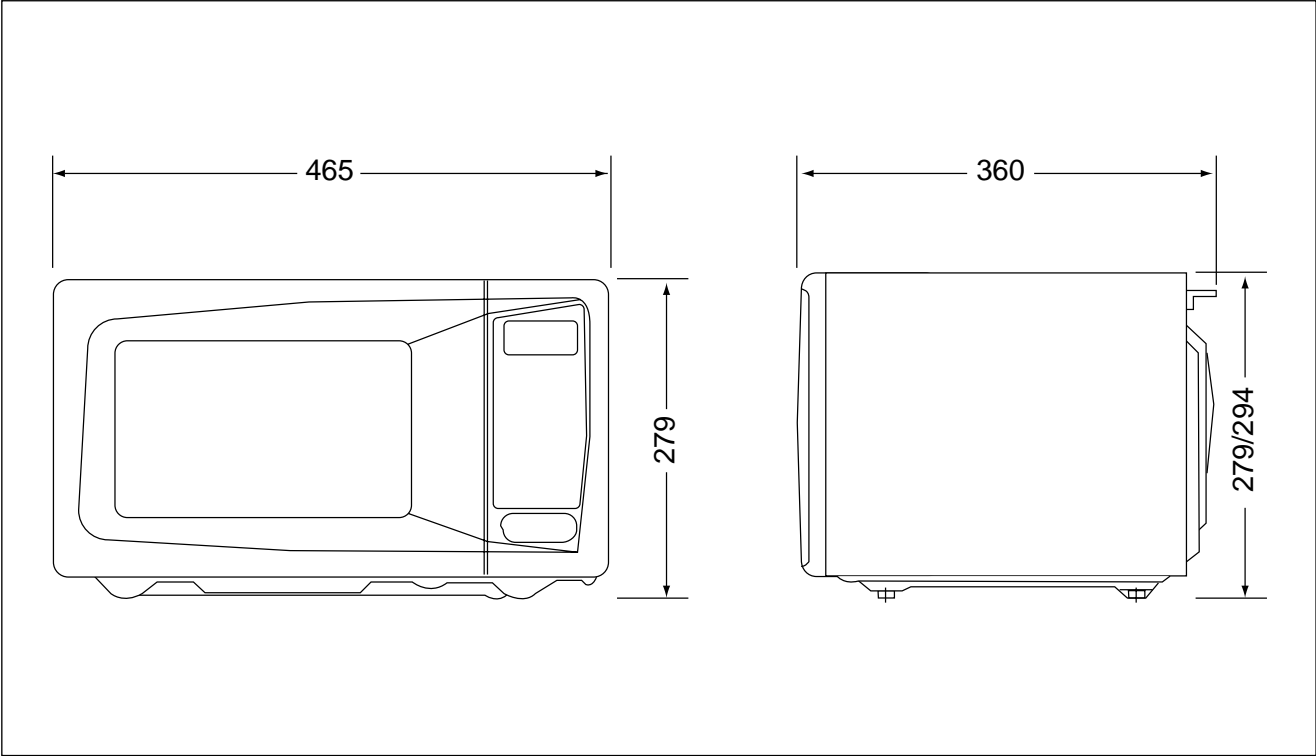
SPECIFICATIONS

MODEL		KOR-631Q2
POWER SUPPLY		120V~60Hz, SINGLE PHASE WITH GROUNDING
POWER CONSUMPTION	MICROWAVE	1350W
	GRILL	
	COMBINATION	
MICROWAVE ENERGY OUTPUT		900W
MICROWAVE FREQUENCY		2450MHz
OUTSIDE DIMENSIONS (W X H X D)		465x279x360 mm (18.3x11.0x14.2 in)
CAVITY DIMENSIONS (W X H X D)		290x211x306 mm (11.4x8.3x12.0 in)
NET WEIGHT		Approx. 12 kg (26.5 lbs.)
TIMER		59 min. 99 sec.
FUNCTION SELECTIONS		MICROWAVE
POWER SELECTIONS		10 LEVELS
CAVITY VOLUME		0.7 Cu. Ft.

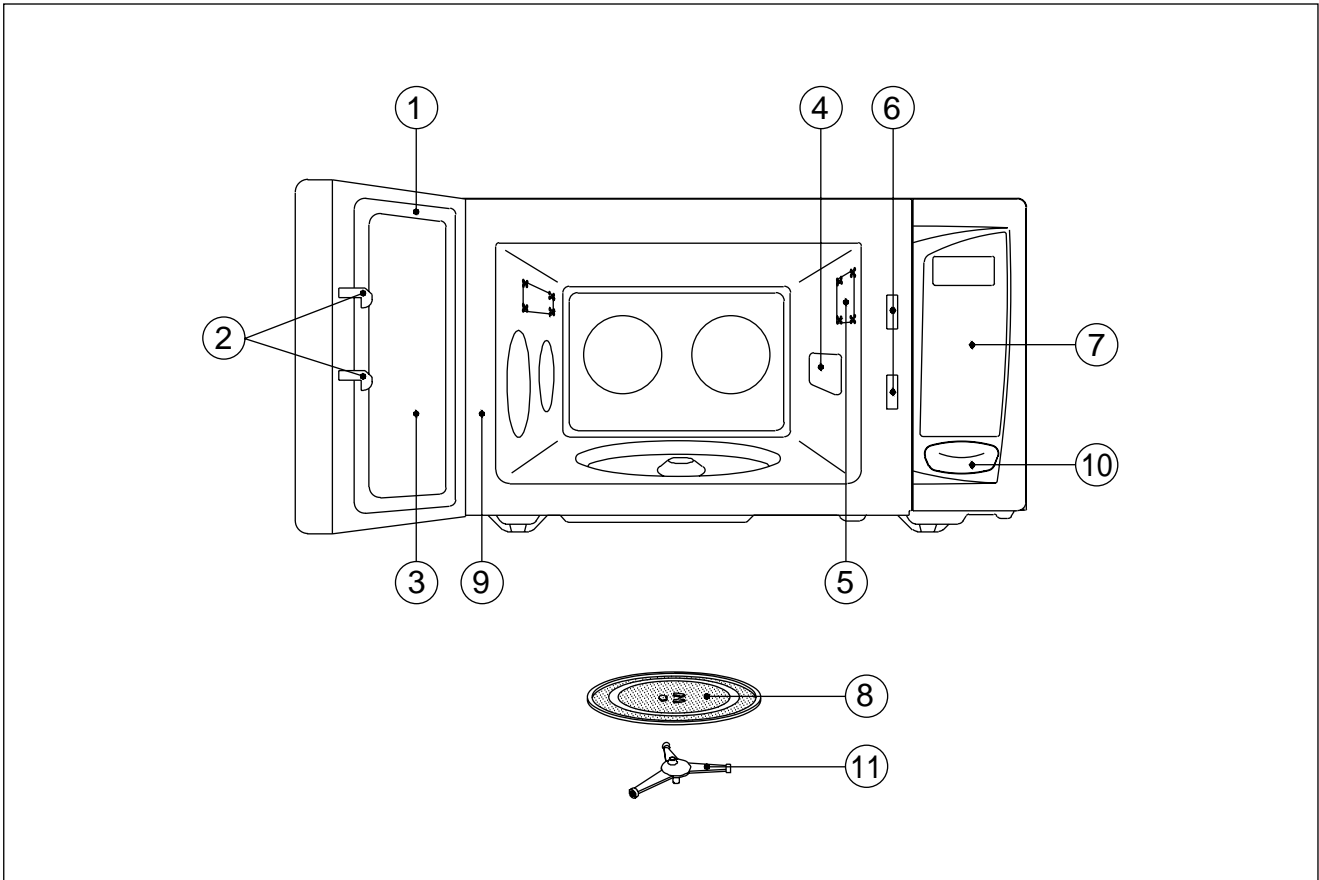
* SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

EXTERNAL VIEW

1. OUTER DIMENSION

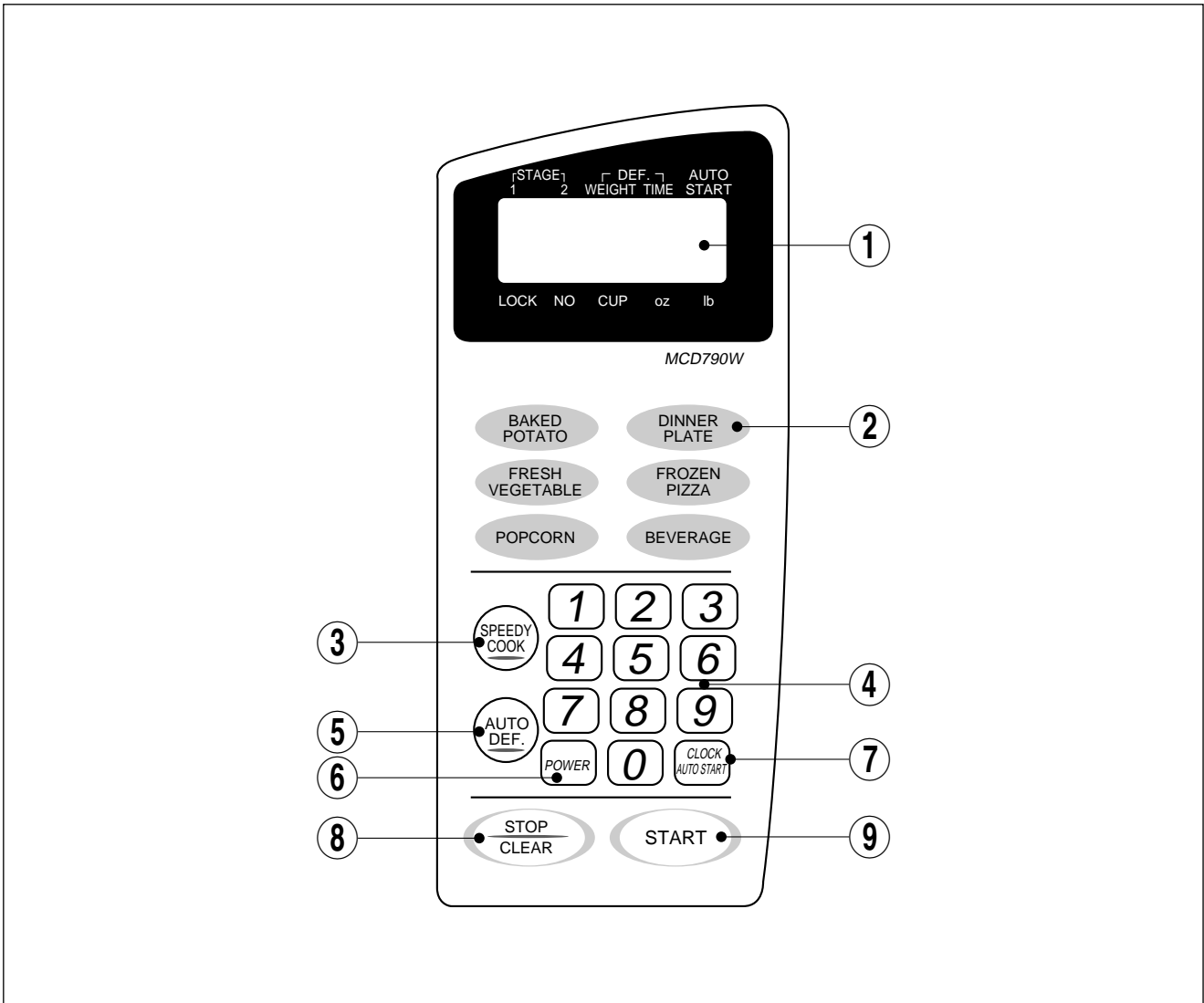


2. FEATURE DIAGRAM



- ① **DOOR SEAL**
Door seal maintains the microwave within the oven cavity and prevents microwave leakage.
- ② **DOOR HOOK**
When the door is closed, it will automatically lock shut. If door is opened while oven is operating, magnetron tube will immediately stop operating.
- ③ **DOOR SCREEN**
Allows viewing of food. Microwave cannot pass through perforations in screen.
- ④ **SPATTRSHIELD**
Protects the microwave outlet from splashes of cooking foods.
- ⑤ **OVEN LAMP**
Automatically turns on during oven operating.
- ⑥ **SAFETY INTERLOCK SYSTEM**
- ⑦ **CONTROL PANEL**
- ⑧ **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.
- ⑨ **OVEN FRONT PLATE**
- ⑩ **DOOR OPENING BUTTON**
To open the door push the door opening button. When door is closed, it will automatically lock shut. If door is opened while oven is operating, magnetron tube will immediately stop operating.
- ⑪ **ROLLER GUIDE**
Supports the glass cooling tray.

3. CONTROL PANEL



- ① **DISPLAY** – Cooking time, power level, indicators and present time are displayed.
- ② **ONE TOUCH** – Used to cook or reheat specific quantities of food.
- ③ **SPEEDY COOK** – Touch to set the desired reheat time.
- ④ **TIME SET PAD** – Used to set the cooking time and the present time.
- ⑤ **AUTO DEFROST** – Used to defrost foods.
- ⑥ **POWER** – Used to set power level.
- ⑦ **CLOCK/AUTO START** – Used to set clock and also used to set a delayed auto start.
- ⑧ **STOP/CLEAR** – Used to stop the oven operation or to delete the cooking data.
- ⑨ **START** – Used to start the oven and also used to set a reheat time.

INSTALLATION

1. Steady, flat location.

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

2. Leave space behind and side.

All air vents should be kept a clearance. If all vents are covered during operation, the oven may be overheated and, eventually, cause oven failure.

3. Away from radio, and TV sets

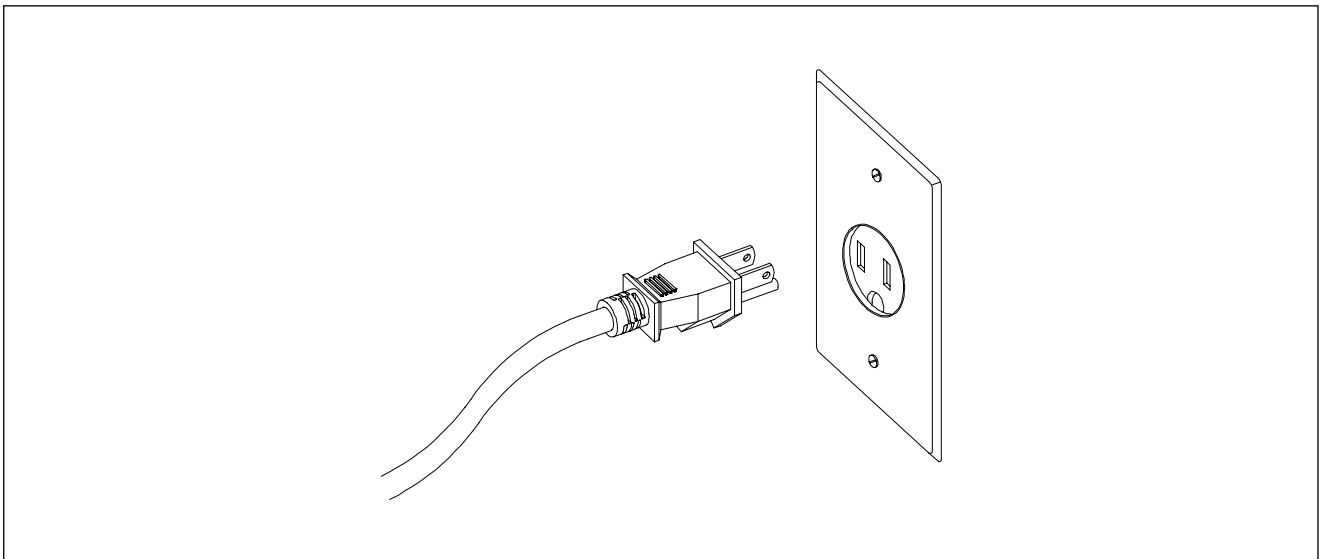
Poor television reception and radio interference may result if the oven is located close to a TV, radio, antenna, or feeder and so on.

4. Away from heating appliances and water taps

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

5. Power supply

- Check your local power source.
This microwave oven requires a current of approximately 15 amperes, 120Volts, 60Hz grounded outlet.
- Power supply cord is about 0.8 meters long.
 1. A short power-supply cord is provided to reduce the risks resulting from becoming entangled in or tripping over a longer cord.
 2. Longer cord sets or extension cords are available and may be used if care is exercised in their use.
 3. If a long cord or extension cord is used:
 - 1) The marked electrical rating of the cord set or extension cord should be at least as great as the electrical rating of the appliance.
 - 2) The extension cord must be a grounding type 3-wire cord.
 - 3) The longer cord should be arranged so that it will not drape over the counter top or tabletop where it can be pulled on by children or tripped over unintentionally.



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.

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. When the oven door is opened, the light turns off.
5. The oven door can be opened at any time during operation by touching the door release button on the control panel. The oven will automatically shut off. To restart the oven, close the door and then touch START.
6. Each time a pad is touched, a BEEP will sound to acknowledge the touch.
7. The oven automatically cook on full power unless set to a lower power level.
8. The display will show : 0 when the oven is plugged in.
9. Time clock returns to the present time when the cooking time ends.
10. When the STOP/CLEAR pad is touched during the oven operation, the oven stops cooking and all information retained. To erase all information (except the present time), touch the STOP/CLEAR pad once more. If the oven door is opened during the oven operation, all information is retained.
11. If the START pad is touched and the oven does not operate, check the area between the door and door is closed securely. The oven will not start cooking under the door is completely closed or the program has been reset.

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

Wattage output chart

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

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

DISASSEMBLY AND ASSEMBLY

Cautions to be observed when trouble shooting.

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. It is completely safe during normal operation.

However, carelessness in servicing the oven can result in an electric shock or possible danger from a short circuit. You are asked to observe the following precautions carefully.

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

(1) Check the grounding.

Do not operate on a two-wire extension cord.

The microwave oven is designed to be used while earthed.

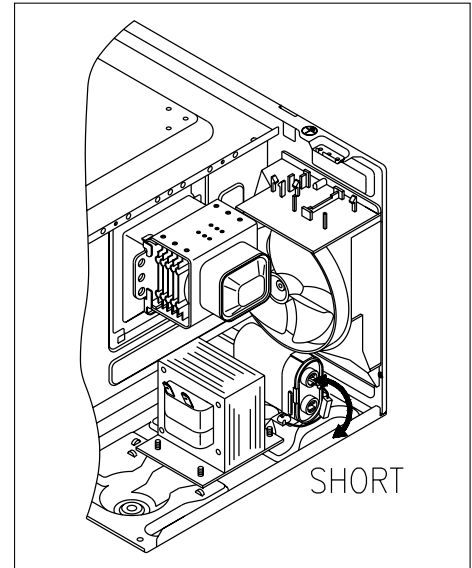
It is imperative, therefore, to make sure it is earthed properly before beginning repair work.

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

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

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

4. When the 15A fuse is blown out due to the operation of the monitor switch; replace primary interlock switch, secondary interlock switch and interlock monitor switch.
5. After repair or replacement of parts, make sure that the screws are properly tightened, and all electrical connections are tightened.
6. Do not operate without cabinet.

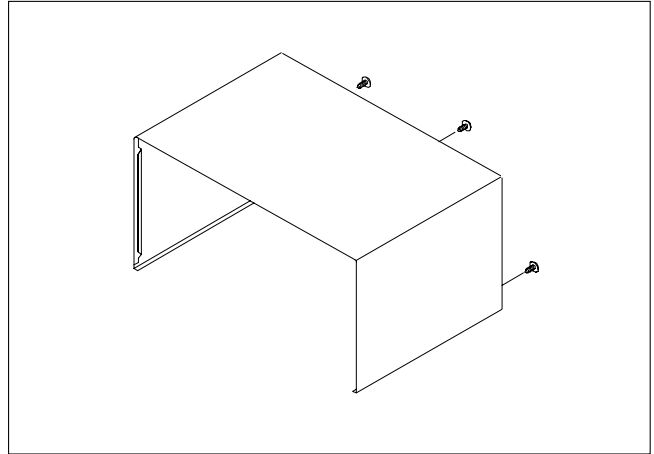


CAUTION : Service personnel should remove their watches whenever working close to or replacing the magnetron.

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

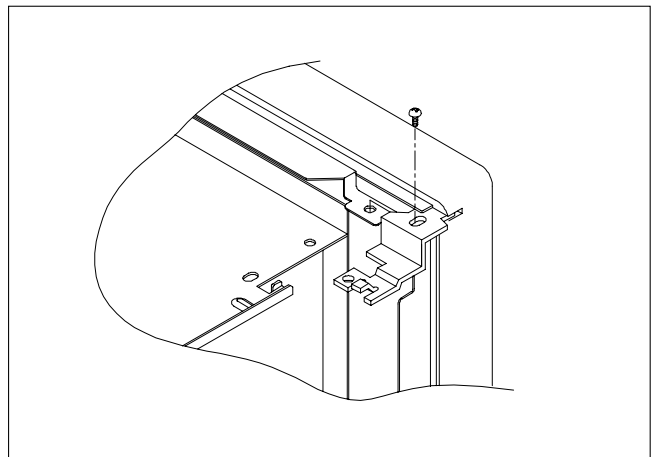
1. To remove cabinet

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



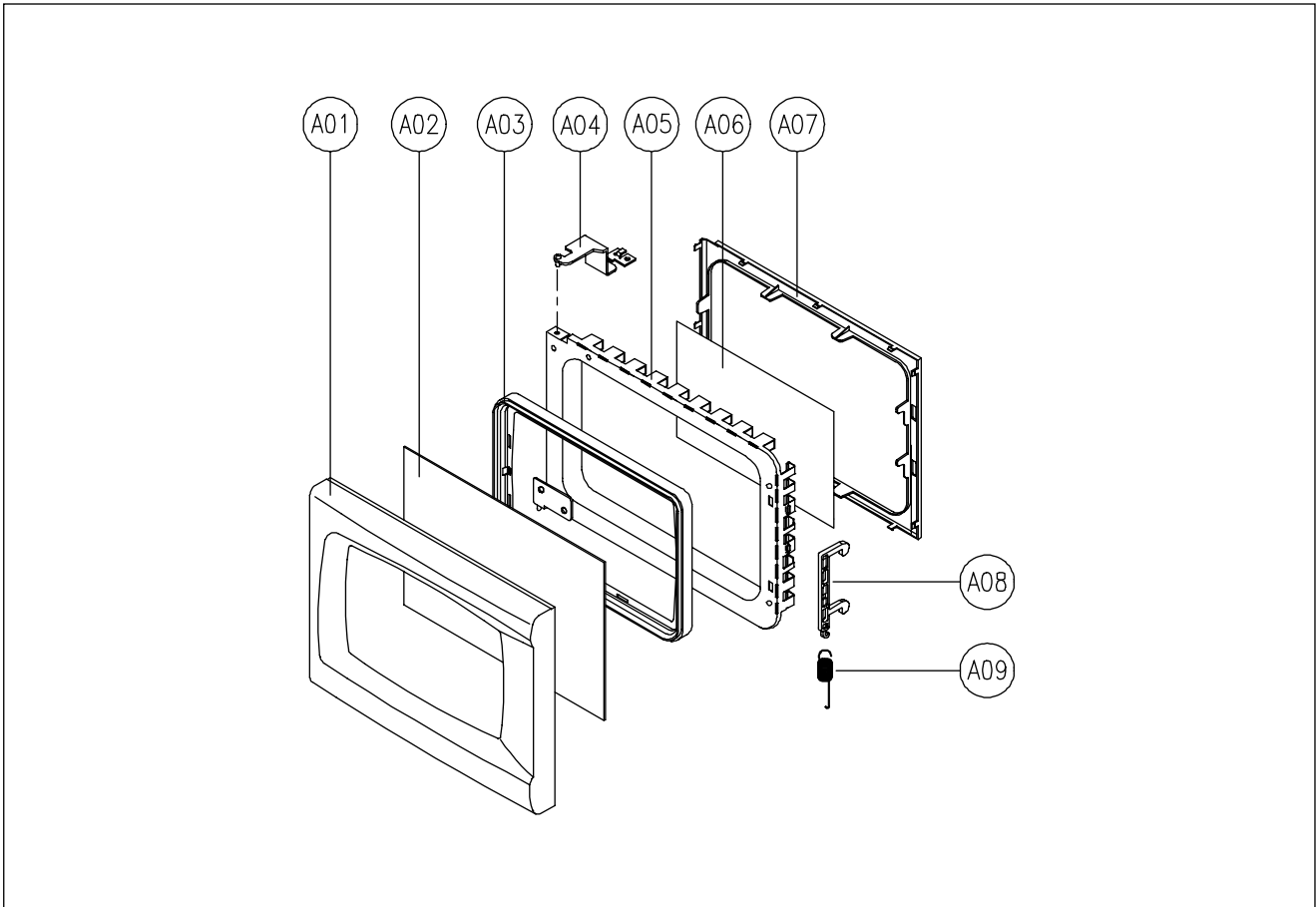
2. To remove door assembly

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



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

3. To remove door parts.

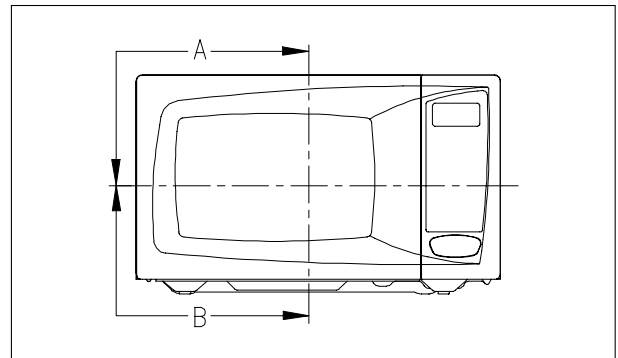


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
A01	3512203870	FRAME DOOR	ABS SG-175, SG-0760B	1	
A02	3517006180	BARRIER-SCREEN*0	SAN T1.5	1	
A03	3515304610	SUPPORTER BARR-S*0	PP	1	
A04	3515204100	STOPPER SINGE *T AS	KOR-63150S	1	
A05	3511705500	DOOR WELD AS	KOR-61150S	1	
A06	3517002800	BARRIER-SCREEN *I	POLYESTER T0.1	1	
A07	3512300200	GASKET DOOR	PP	1	
A08	3513100740	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.

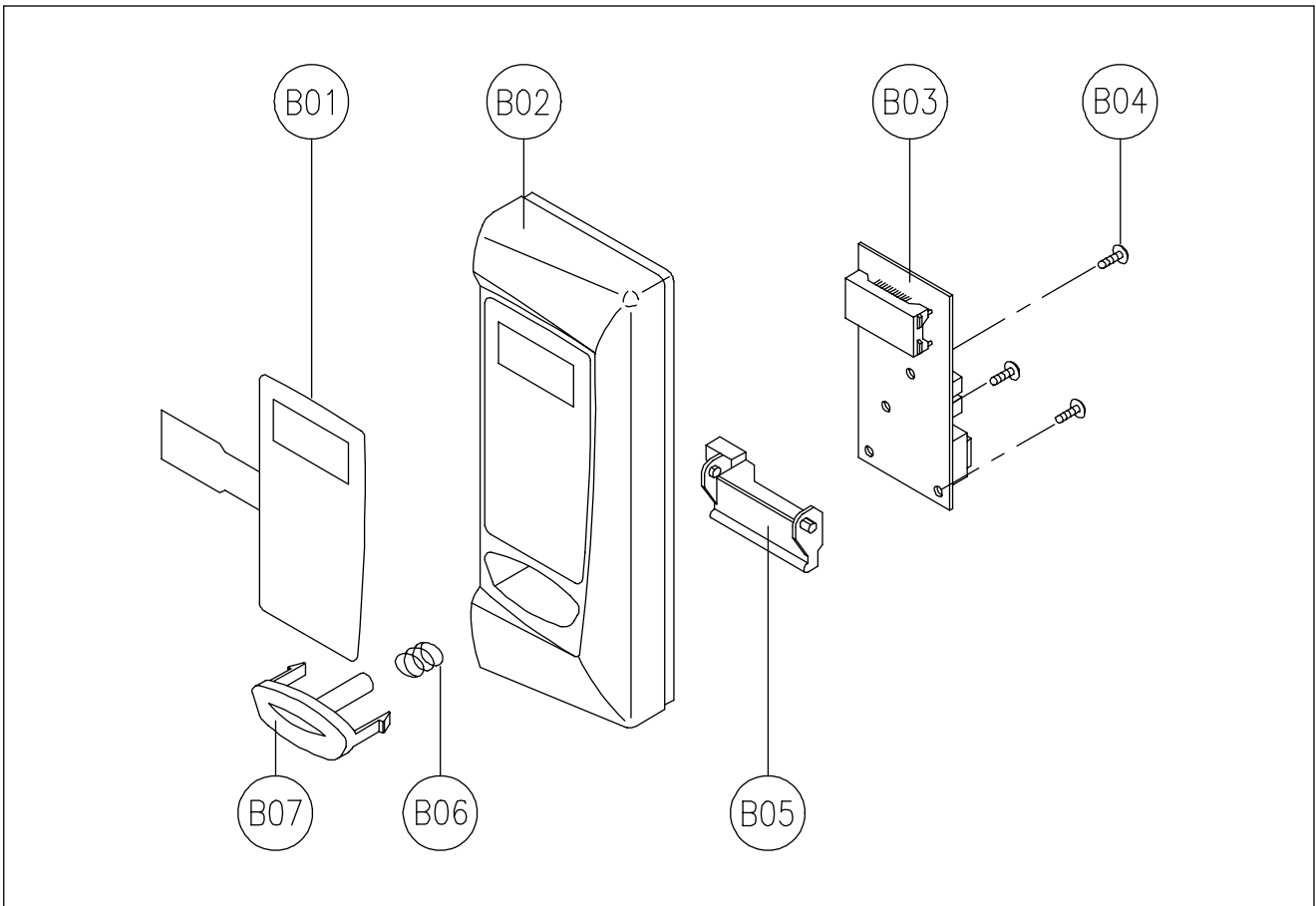
4. Method to reduce the gap between the door seal and the oven front surface.

- (1) To reduce gap located on part 'A'
Loosen a screws on stopper hinge top, and then push the door to contact the door seal to oven front surface.
Tighten two screws.
- (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 4mW/cm².

5. To remove control panel parts.

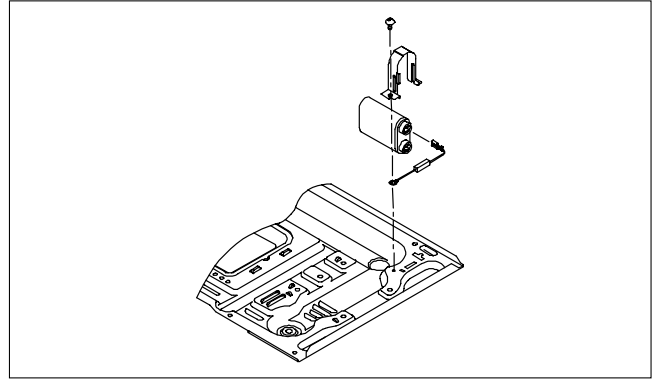


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3518521070	SWITCH MEMBRANE	KOR-631Q2A	1	
B02	3516721330	CONTROL PANEL	VT-0826, AF-348	1	
B03	3514324780	PCB AS	KOR-631Q2A	1	
B04	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	3	
B05	3513702700	LEVER DOOR OPEN	PP	1	
B06	441G430171	SPRING BUTTON	SWP DIA0.7	1	
B07	3516906900	BUTTON DOOR OPEN	ABS SG-076D, SG-175	1	

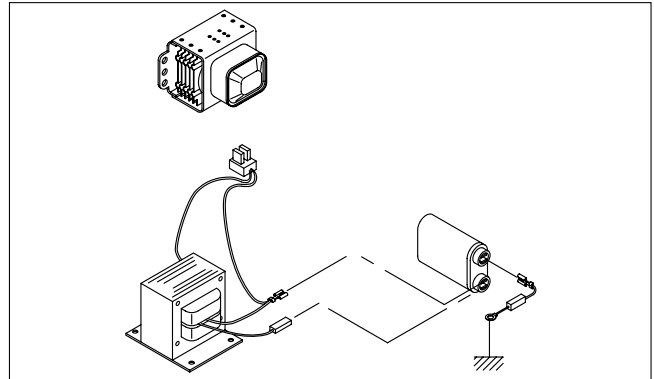
- 1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- 2) Remove the door open lever from the control panel.
- 3) Remove four screws which secure the PCB assembly to control panel.
- 4) Disconnect membrane tail from the connector of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

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.

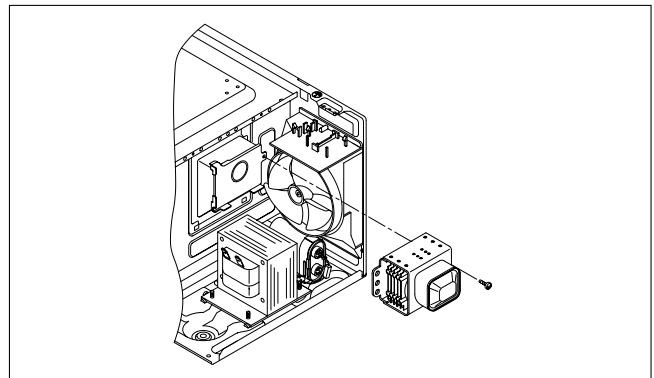


◆ High voltage circuit wiring

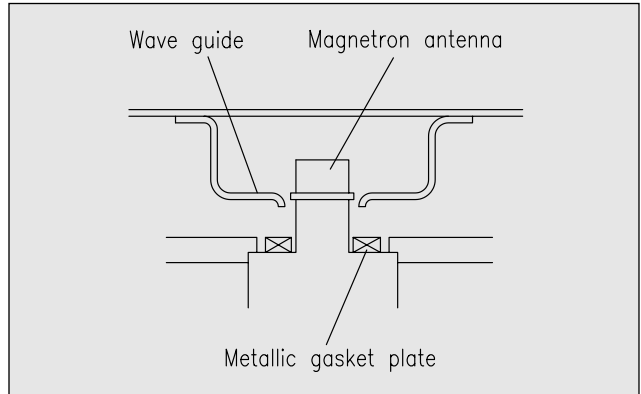
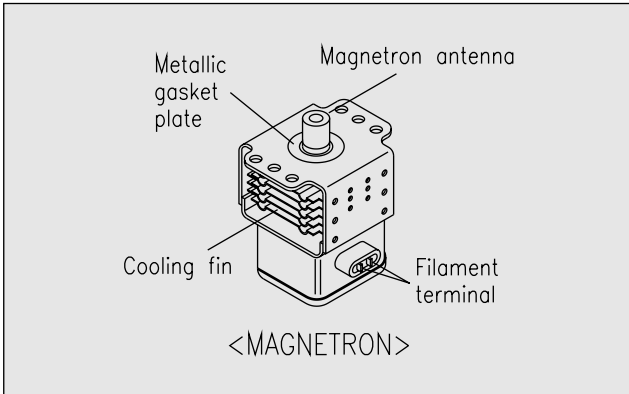


7. To remove magnetron.

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

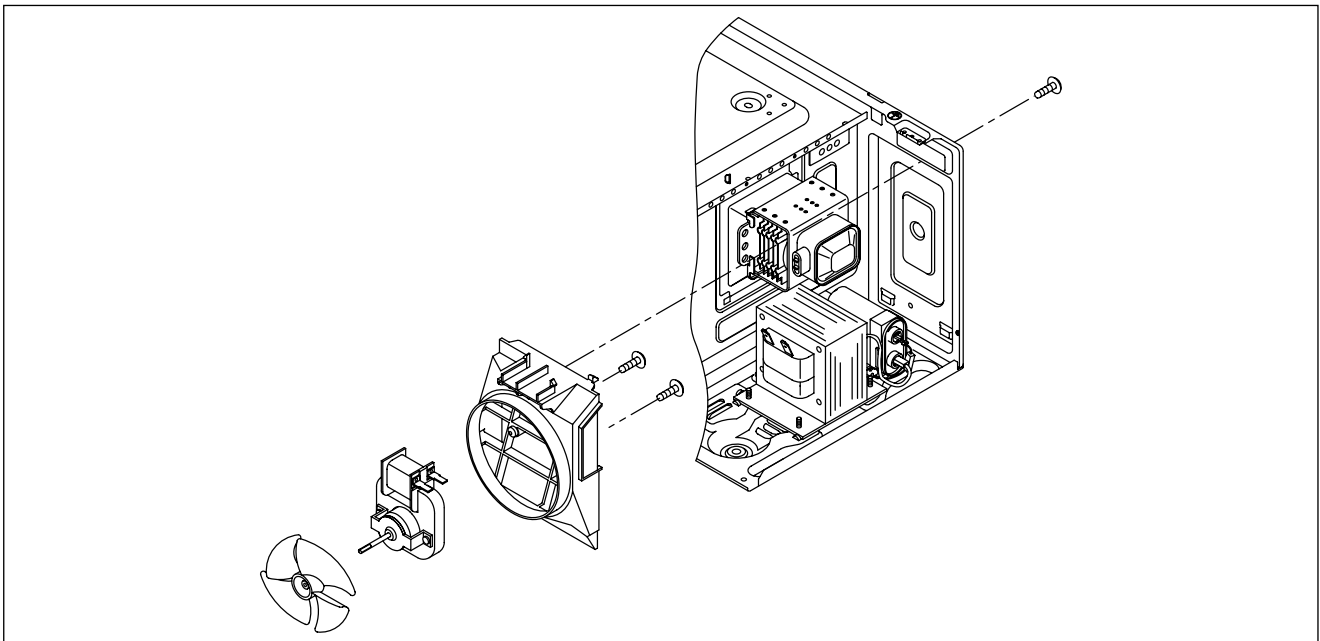


NOTE : Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed 4mW/cm² for a fully assembled oven with door normally closed.



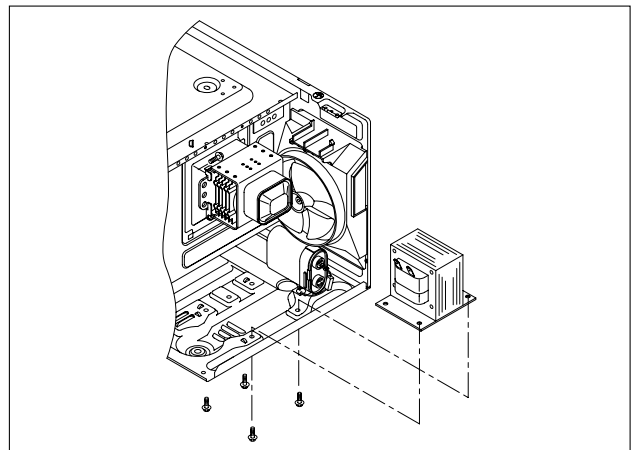
8. To remove wind guide assembly.

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



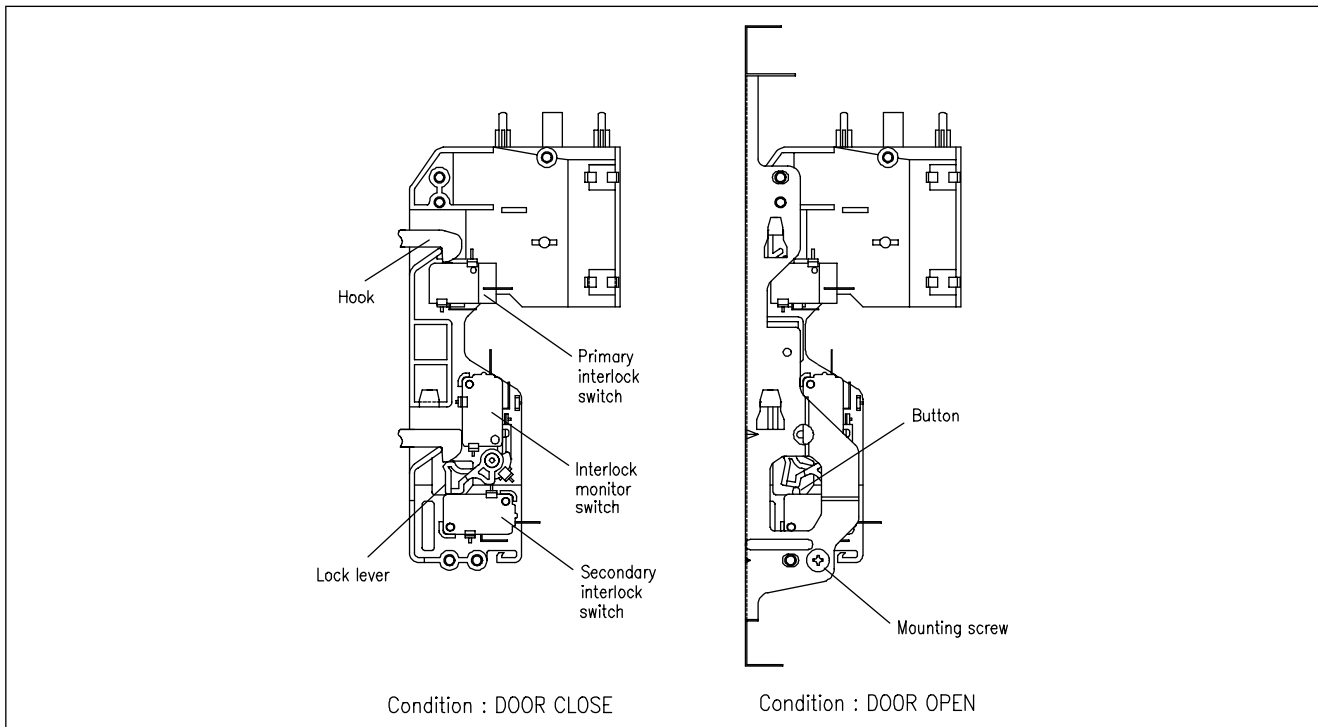
9. To remove H.V.transformer.

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



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

- Loosen the mounting screw.
- Adjust interlock switch assembly position.
- Make sure that lock lever moves smoothly after adjustment is completed.
- Tighten completely the mounting screw.

NOTE :

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

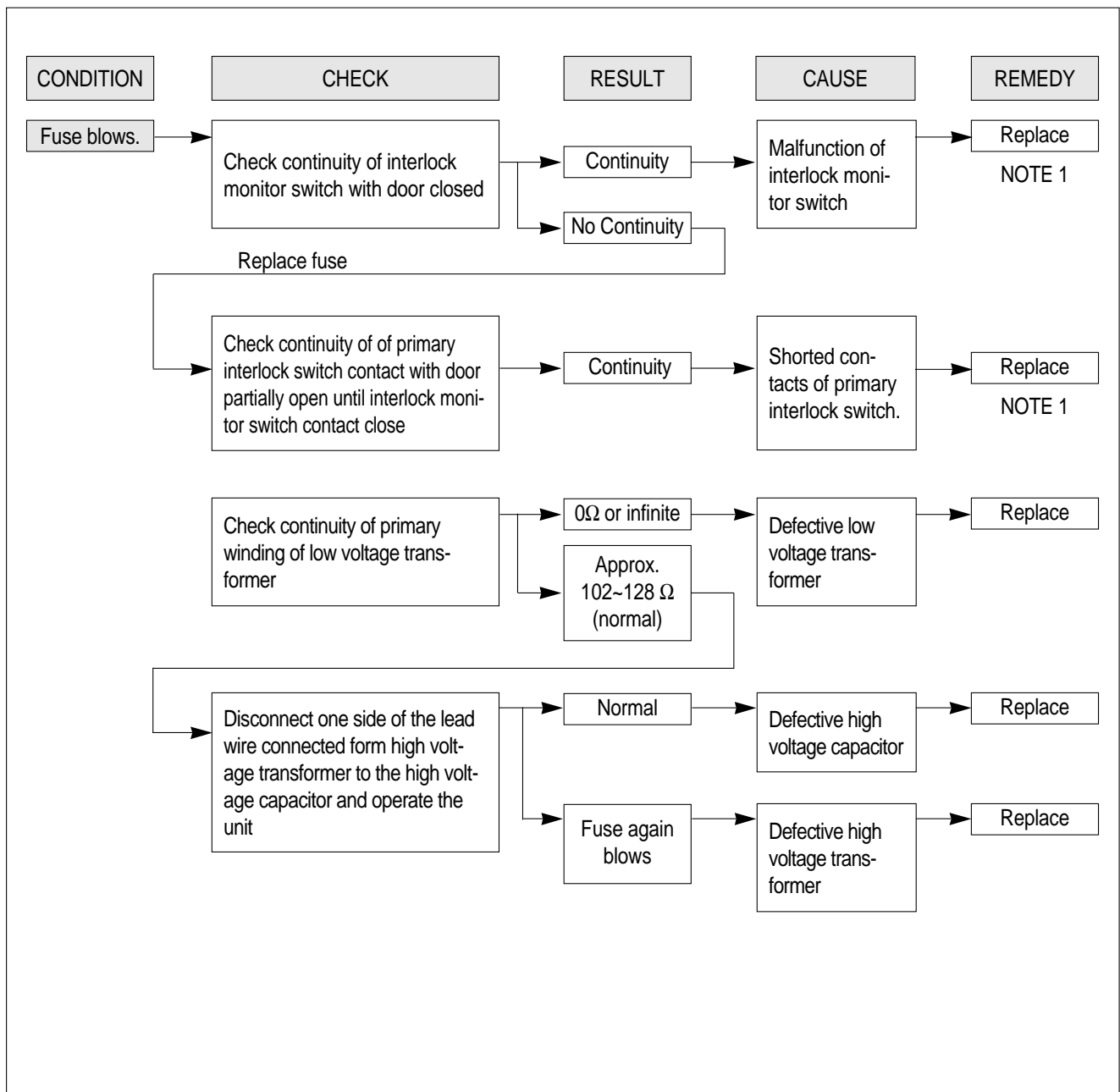
TROUBLE SHOOTING GUIDE

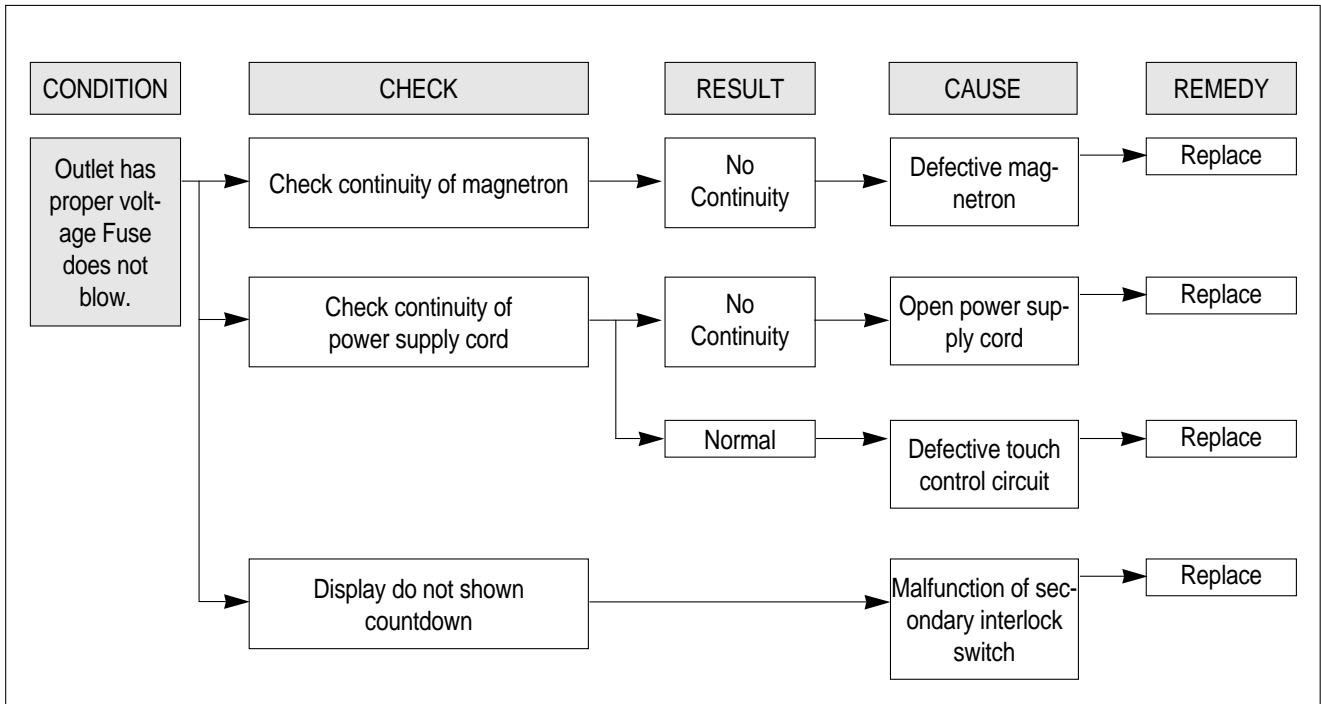
Following the procedure below to check if the oven is defective or not.

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

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

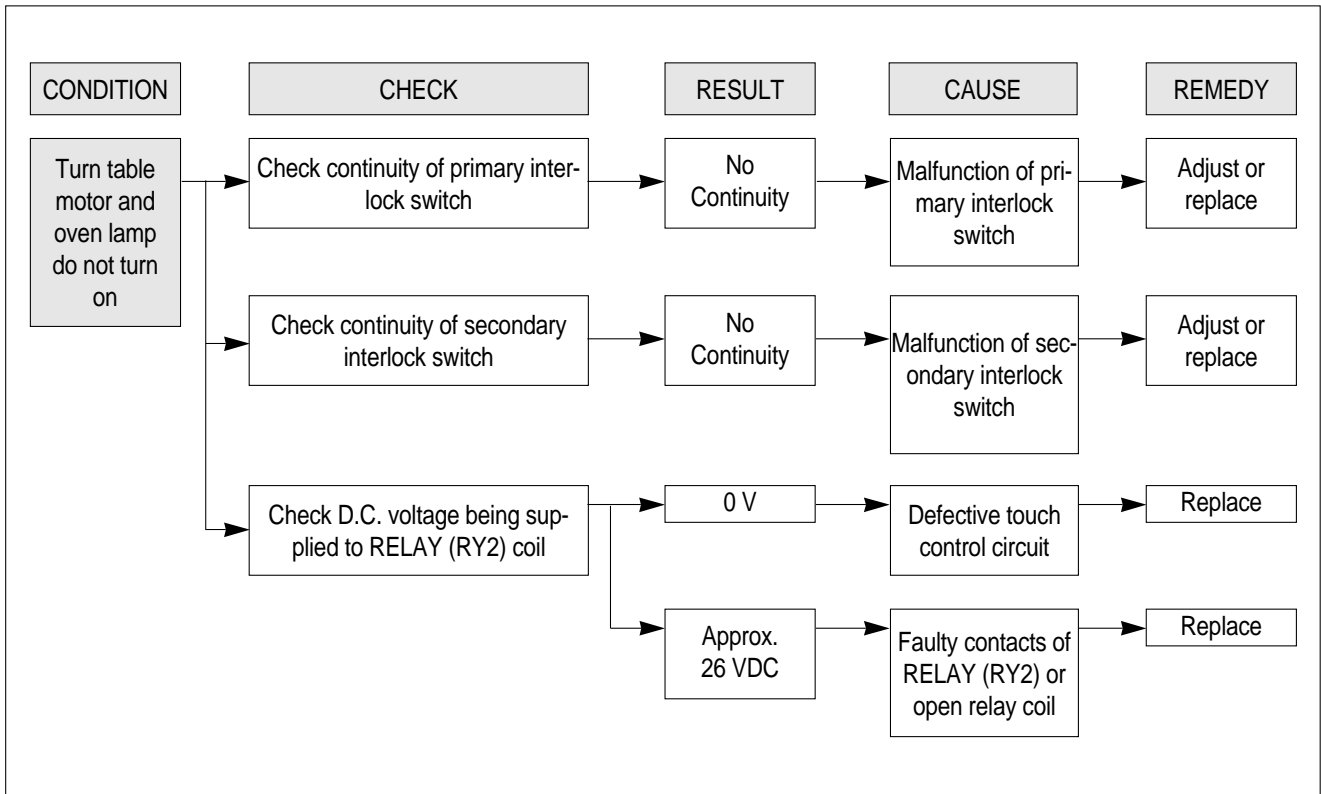
(TROUBLE 1) Oven does not operate at all ; any inputs can not be accepted.



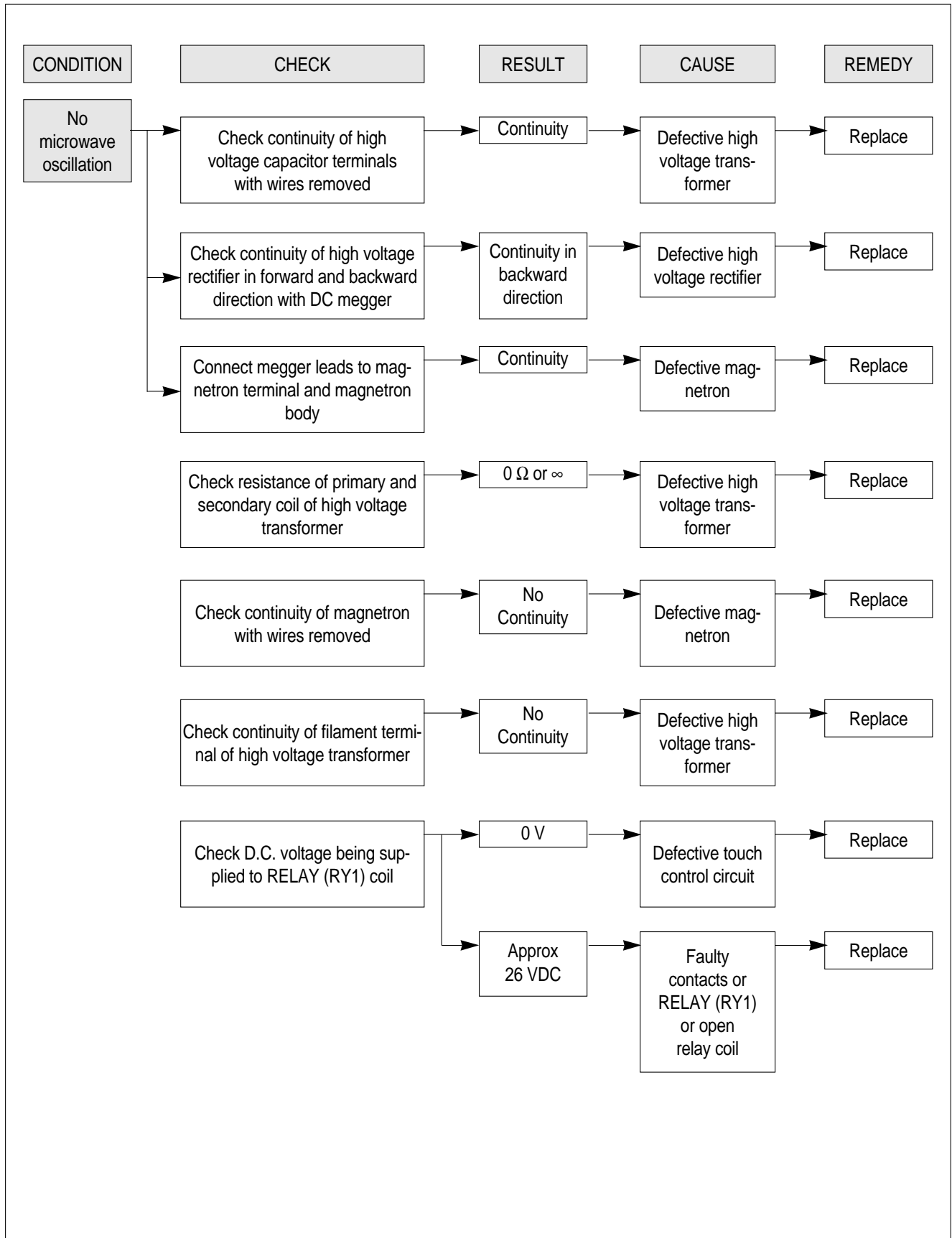


NOTE 1
All these switches must be replaced at the same time, please refer to "Interlock Mechanism And Adjustment".

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

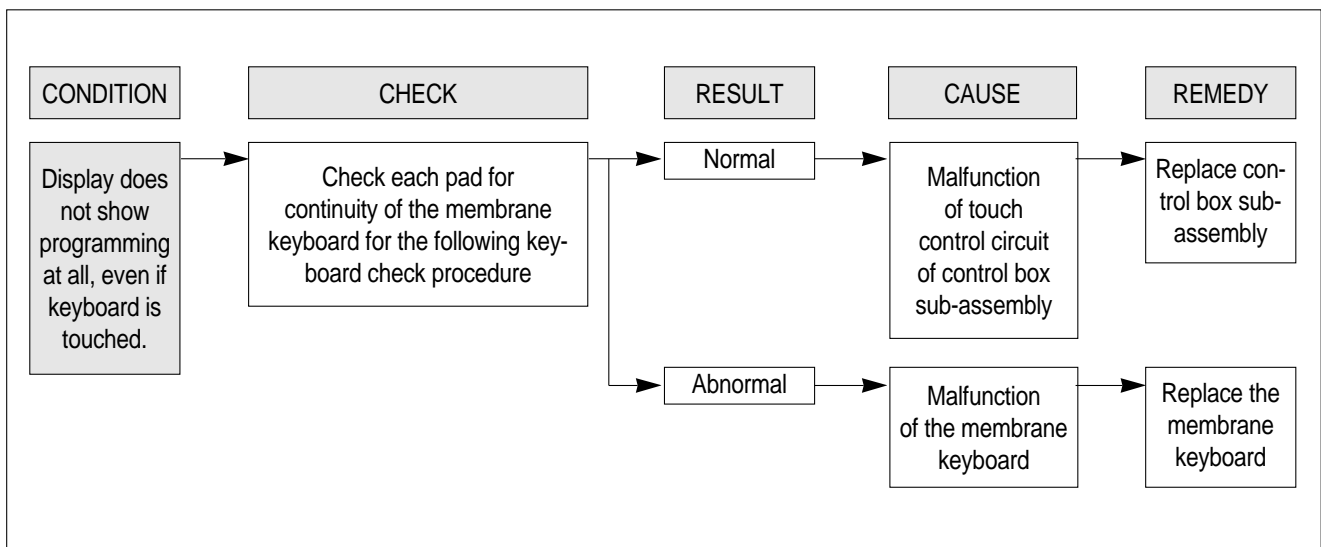
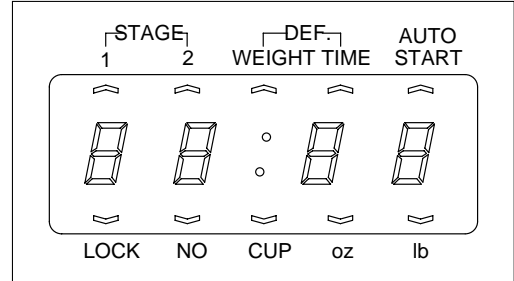


(TROUBLE 3) No microwave oscillation even though fan motor rotates.



(TROUBLE 4) The following visual conditions indicate a probable defective touch control circuit or membrane switch assembly.

1. Incomplete segments
 - (1) Segments missing
 - (2) Partical segments missing
 - (3) Digit flickering other than normal display slight flickering
 - (4) “ :0” does not display when power is on.
2. A distinct change in the display is not on when it should be.
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 number pad 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 the STOP/CLEAR pad is touched.
11. Oven lamp and turntable motor do not stop although cooking is finished. Check if the RELAY 2 contacts close if they are close, replace touch control circuit.



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

MEASUREMENT AND TEST

1. MEASUREMENT OF THE MICROWAVE POWER OUTPUT

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

PROCEDURE

- Microwave power output measurement is made with the microwave oven supplied at rated voltage and operated at its maximum microwave power setting with a load of 1000±5cc of potable water.
- The water is contained in a cylindrical borosilicate glass vessel having a maximum material thickness of 3 mm and an outside diameter of approximately 190 mm.
- The oven and the empty vessel are at ambient temperature prior to the start of the test.

The initial temperature of the water is 10±2°C (50±3.6°F)

It is measured immediately before the water is added to the vessel.

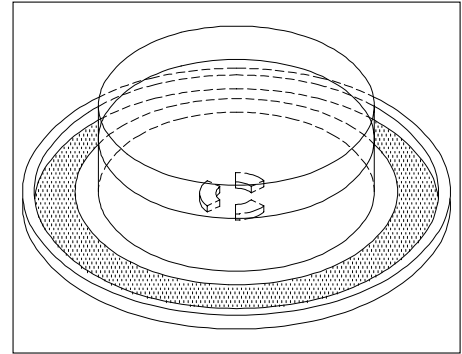
After addition of the water to the vessel, the load is immediately placed on the center of the shelf, which is in the lowest normal position.

- Microwave power is switched on.
- Heating time should be exactly A seconds. (Refer to table as following)
Heating time is measured while the microwave generator is operating at full power.
The filament heat-up time for magnetron is not included.
- The initial and final temperature of water is selected so that the maximum difference between the ambient and final water temperature is 5K.
- The microwave power output P in watts is calculated from the following formula :

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

- ΔT is difference between initial and ending temperature.
- It is the heating time.

The power measured should be B (Refer to SPECIFICATIONS)W±10.0%.



CAUTION :

- Water load should be measured exactly to 1 liters.
- Input power voltage should be exactly specified voltage(Refer to SPECIFICATIONS).
- Ambient temperature should be 20±2°C(68±3.6°F)

- Heating time for power output:

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

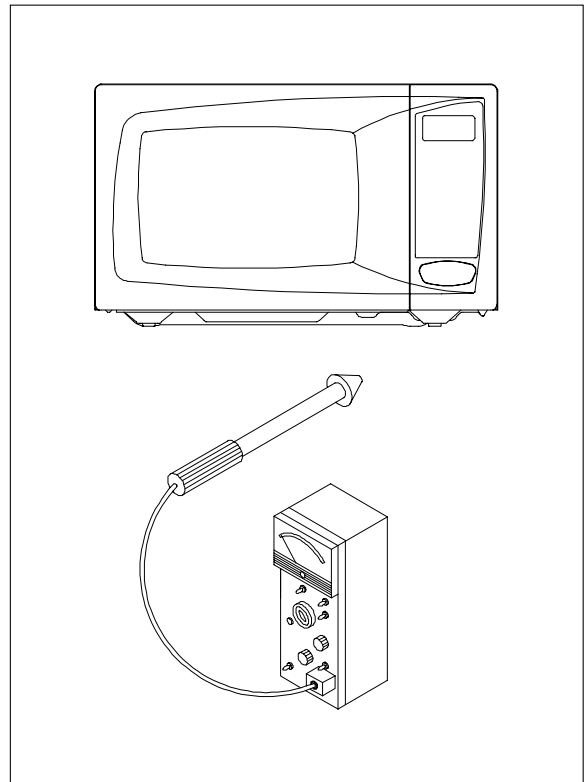
2. MICROWAVE RADIATION TEST

CAUTION :

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

PROCEDURES

1. Prepare Microwave Energy Survey Meter, 600cc glass beaker, and glass thermometer 100°C (212°F).
2. Pour $275\text{cc}\pm 15\text{cc}$ of tap water initially at $20\pm 5^{\circ}\text{C}$ ($68\pm 9^{\circ}\text{F}$) in the 600cc glass beaker with an inside diameter of approx. 95mm(3.5in.).
3. Place it at the center of the tray and set it in a cavity.
4. Close the door and operate the oven.
5. Measure the leakage by using Microwave Energy Survey Meter with dual ranges, set to 2450MHz.
 - 1) Measured radiation leakage must not exceed the value prescribed below. Leakage for a fully assembled oven with door normally closed must be less than $4\text{mW}/\text{cm}^2$.
 - 2) When measuring the leakage, always use the 5cm(2in.) space cone with probe. Hold the probe perpendicular to the cabinet and door. Place the space cone of the probe on the door, cabinet, door seem, door viewing screen, the exhaust air vents and the suction air vents.
 - 3) Measuring should be in a counter-clockwise direction at a rate of 1 in./sec. If the leakage of the cabinet door 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. 0Ω
Primary winding	Approx. 1Ω

2. High voltage capacitor

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

3. High voltage diode

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

4. Magnetron

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

Continuity checks can only indicate an open filament or a shorted magnetron.

To diagnose for an open filament or a shorted magnetron.

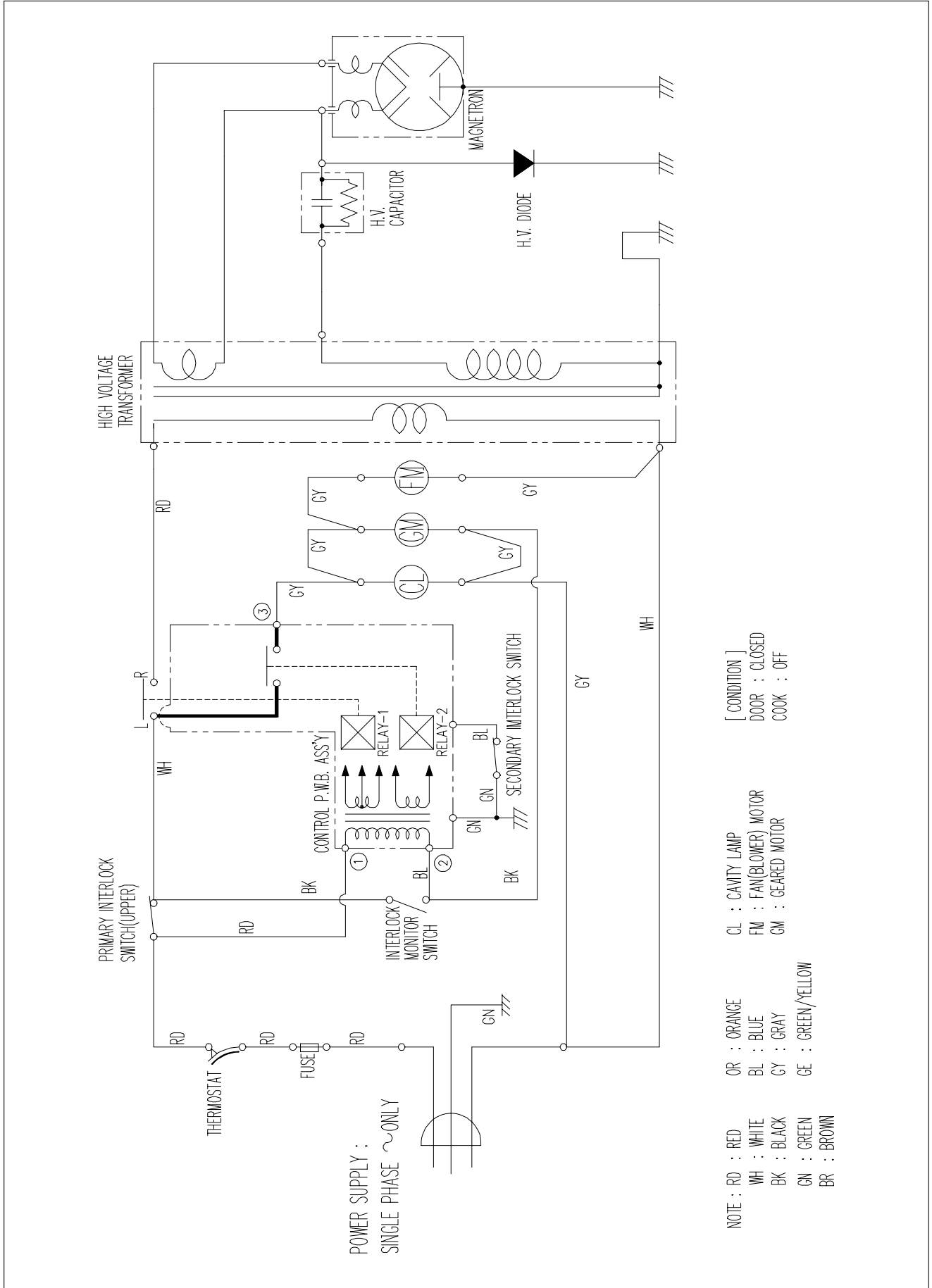
- (1) Isolate magnetron from the circuit by disconnecting the leads.
- (2) A continuity check across magnetron filament terminals should indicate 0.1Ω or less.
- (3) A continuity check between each filament terminal and magnetron case should read open.

5. Fuse

If the fuse in the primary and monitor switch circuit is blown when the door is opened, check the primary and monitor switch before replacing the blown fuse.

In case the fuse is blown by an improper switch operation, replace the defective switch and fuse at the same time. Replace just the fuse if the switches operate normally.

WIRING DIAGRAM



PRINTED CIRCUIT BOARD

1. CIRCUIT CHECK PROCEDURE

1. Low Voltage Transformer check

- The low voltage transformer is located on the P.C.B.
- Measuring condition: Input voltage : 120V, Frequency : 60Hz

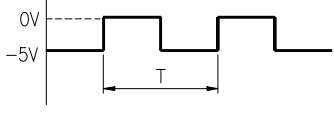
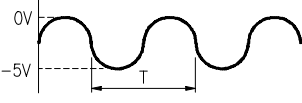
Terminal Voltage	LOAD	NO LOAD
6-7	AC 25.3 V	AC 26.9 V

NOTE :

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

2. Voltage check

- Key check point

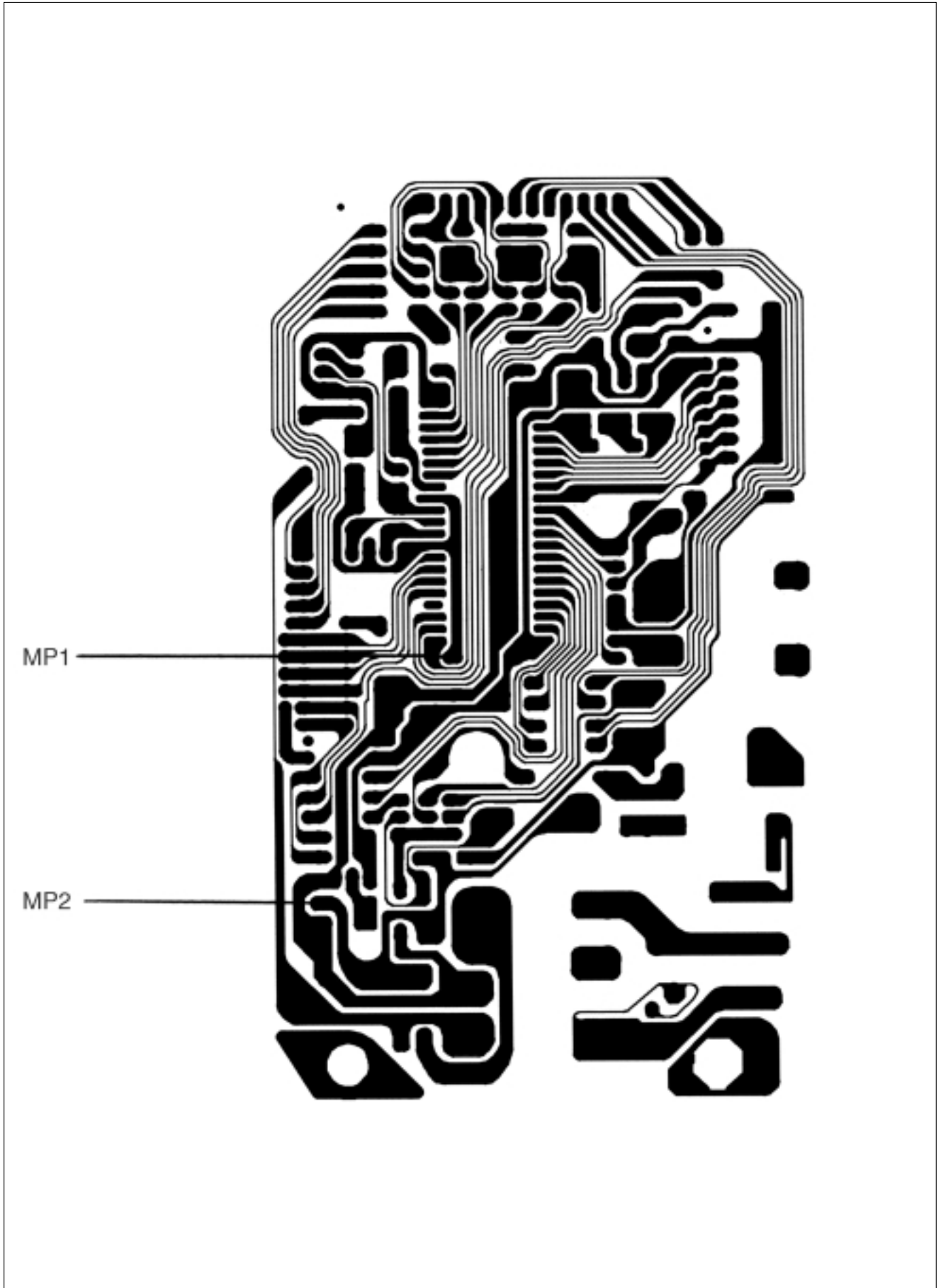
NO	CHECK POINT	REMARK
1	IC 1 PIN 6, 10, 11	-5 VDC
2	IC 1 PIN 22	 T:16.7ms(60Hz)
3	IC 1 PIN 8 OR 9	 T:250ns(4MHz)

- Check method

NO	MEASURE POINT	WAVE FORM	REMEDY	REMARK
1	MP1	DC -5V \pm 0.25V	Replace R36, R37, R39, ZD2, EC1, EC2	NO LOAD
2	MP2	DC -24V \pm 2.0V	Replace D11, 12, 13, 14, EC5, R40	NO LOAD

NOTE :

Each measure point must be measured with GND points.



Measure Point

3. When there is no microwave oscillation

1) When touching **START** pad, oven lamp does not turn on.

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

* Cause : **RELAY 2** does not operate. → refer to Circuit Diagram (Point 3)

- Check method

STATE \ POINT	A	B	C
RELAY 2 ON	-2.5 VDC	-23.3 VDC	-24 VDC
RELAY 2 OFF	GND	-29 VDC	GND

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

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

* Cause : **RELAY 1** does not operate. → refer to Circuit Diagram (Point 2)

- Check method

STATE \ POINT	A	B
RELAY 1 ON	-5 VDC	GND
RELAY 1 OFF	GND	-24 VDC

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

→ refer to Circuit Diagram (Point 1)

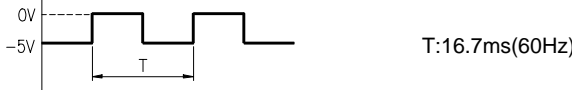
-Check method

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

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

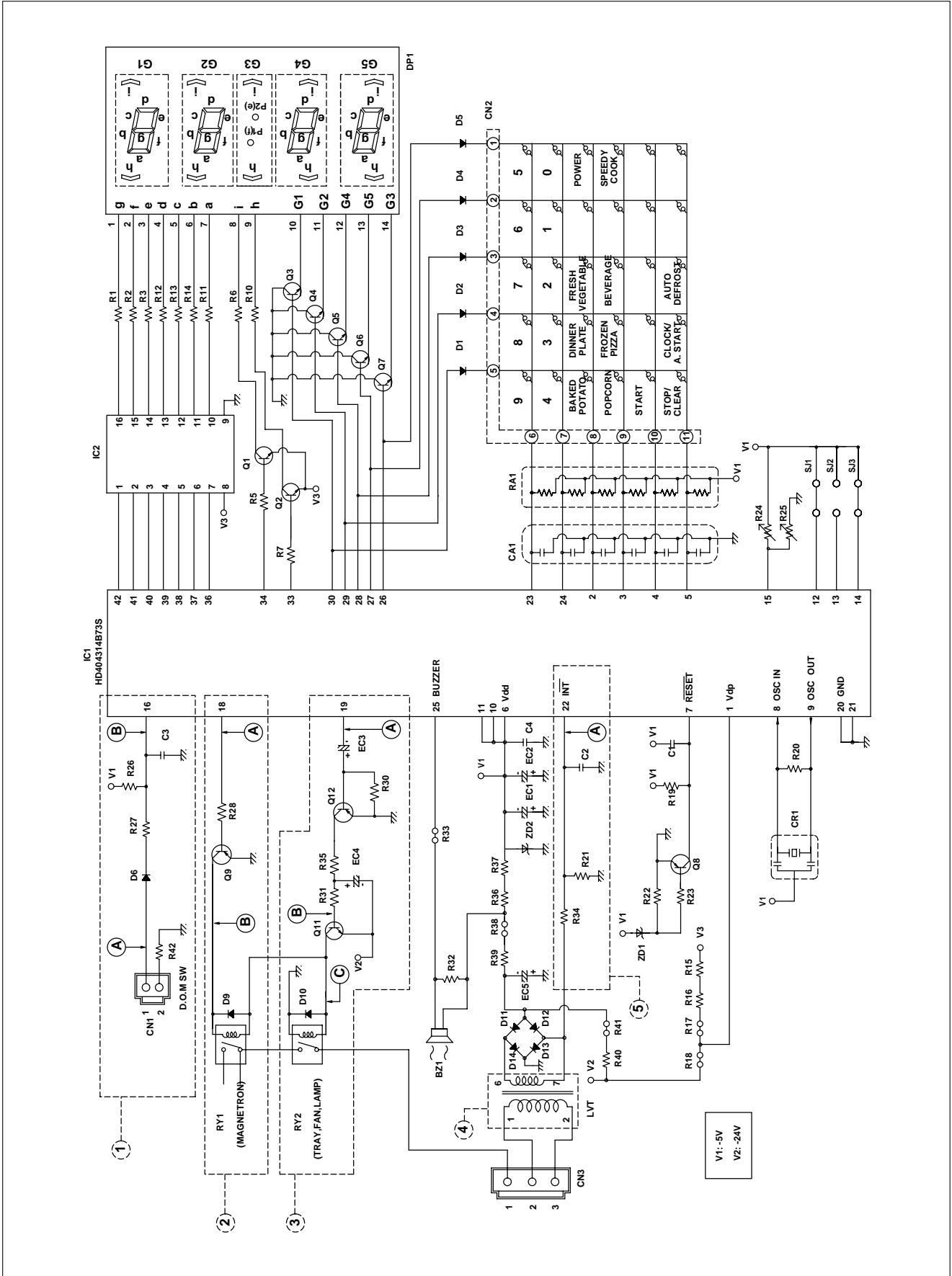
5. When the digital clock does not operate properly.

→ refer to Circuit Diagram (Point 5)

POINT	WAVE FORM
A	

* If clock does not keep exact time, you must check resistor R21, R34, C2.

2. PCB CIRCUIT DIAGRAM



3. P.C.B. LOCATION NO.

NO.	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY
1	BUZZER	BZ1	BM-20K	3515600100	1
2	C ARRAY	CA1	7P(6) 1000PF M 50V	CN6XB-102M	1
3	C ELECTRO	EC1,2	16V RS 47MF	CEXF1C470A	2
4	C ELECTRO	EC3	50V RS 0.1MF	CEXF1H108A	1
5	C ELECTRO	EC4	50V RS 2.2MF	CEXF1H229A	1
6	C ELECTRO	EC5	50V RSS 220MF	CEXF1H221V	1
7	CONNECTOR WAFER	CN1	YW396-02V	3519150520	1
8	CONNECTOR FILM	CN2	FCZ 254-11	441M367160	1
9	CONNECTOR WAFER	CN3	YW396-05AV	3519150510	1
10	DIODE	D1~6,9,10	1N4148M	DZN4148M--	8
11	DIODE	D11~14	KN4004A	DZN4004A--	4
12	DIODE ZENER	ZD1	UZ-3.9BSB	DZUZ3R9BSB	1
13	DIODE ZENER	ZD2	UZ-5.1BSB	DZUZ5R1BSB	1
14	DISPLAY LED	DP1	DDG-611Q	DDD611Q00	1
15	PCB MAIN	M143	82.5X155	3514309350	1
16	R ARRAY	RA1	7P(6) 1/8 100K J	RA-87X104J	1
17	R CARBON FILM	R40	1/2W 56 5%	RD-2Z560JS	1
18	R CARBON FILM	R15,16	1/2W 100 5%	RD-2Z101JS	2
19	R CARBON FILM	R39	1/2W 150 5%	RD-2Z151JS	1
20	R CARBON FILM	R22	1/6W 200 5%	RD-AZ201J-	1
21	R CARBON FILM	R36,37	1/2W 470 5%	RD-2Z471JS	2
22	R CARBON FILM	R23,24,32,35	1/6W 1K 5%	RD-AZ102J-	4
23	R CARBON FILM	R1~3,6,10~14	1/6W 1.2K 5%	RD-AZ122J-	9
24	R CARBON FILM	R5,7,28,30,31,42	1/6W 4.7K 5%	RD-AZ472J-	6
25	R CARBON FILM	R27	1/6W 10K 5%	RD-AZ103J-	1
26	R CARBON FILM	R19	1/6W 20K 5%	RD-AZ203J-	1
27	R CARBON FILM	R21,34	1/6W 47K 5%	RD-AZ473J-	2
28	R CARBON FILM	R26	1/4W 100K 5%	RD-4Z104J-	1
29	R CARBON FILM	R20	1/6W 1M 5%	RD-AZ105J-	1
30	RESONATOR CERA	CR1	CRT4.00MS	5P4R00MTS-	1
31	IC MICOM	IC1	HD404314B73S	147SGE8110	1
32	IC DRIVER	IC2	KID65004AP	1KD65004AP	1
33	TRANSISTOR	Q1~7,11	KTC3198GR	TZTC3198GR	8
34	TRANSISTOR	Q8,9,12	KTA1266Y	TZTA1266Y-	3
35	TRANS POWER	LVT	DMR-604P	5EPU041362	1
36	C CERA	C2	50V F 0.01MF Z	CCXF1H103Z	1
37	C CERA	C1,3,4	50V F 0.1MF Z	CCXF1H104Z	3
38	SW RELAY	RY1	G5G-1A 1C 1P DC24V	5SC0101122	1
39	SW RELAY	RY2	CS11-24SH 1C 1P	5SC0101129	1
40	WIRE COPPER	J1~11,13,14	1/0.52 TIN COATING	85801052GY	13
41	WIRE COPPER	R17,18,33,38,41	1/0.53 TIN COATING	85801053GY	5
42	WIRE COPPER	SJ1,3	1/0.53 TIN COATING	85801053GY	2

EXPLODED VIEW AND PARTS LIST

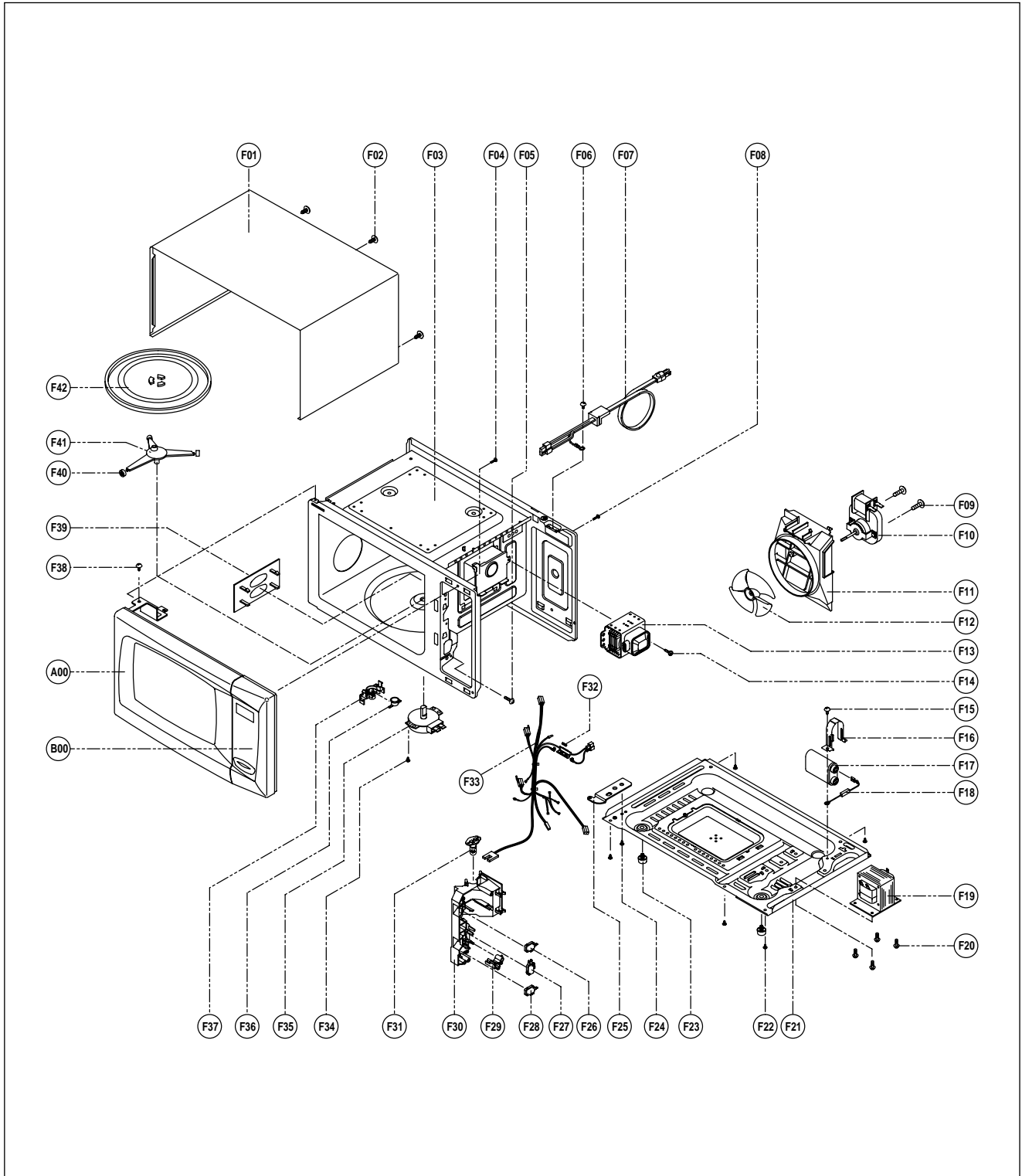
1. DOOR ASSEMBLY

Refer to Disassembly and assembly.

2. CONTROL PANEL ASSEMBLY

Refer to Disassembly and assembly.

3. TOTAL ASSEMBLY



NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
A00	3511710300	DOOR AS	KOR-63150S	1
B00	3516726910	CONTROL PANEL AS	KOR-631Q2A	1
F01	3510805300	CABINET AS	KOR-61150S	1
F02	3516004100	SPECIAL SCREW	T1 TRS LR4 POLE 4X10 MFZN	3
F03	3516109500	CAVITY AS	KOR-63150S	1
F04	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	1
F05	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	1
F06	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1
F07	35113TCNT5	CORD POWER AS	3X16 AWG 40X40 120-RTML	1
F08	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	1
F09	7121403011	SCREW TAPPING	T2S PAN 4X30 MFZN	2
F10	3963821610	MOTOR SHADED POLE	120V 60HZ MW10XA-MO1	1
F11	3512517000	GUIDE WIND	PP	1
F12	3511800300	FAN	PP +30% GLASS	1
F13	3518002400	MAGNETRON	2M218J (F)	1
F14	3516004000	SPECIAL SCREW	T2 BOLT FLANGE 5X12 DACRO	1
F15	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F16	3513003200	HOLDER HV CAPACITOR	SECC T0.6	1
F17	3518301600	CAPACITOR HV	2100VAC 0.79UF #187	1
F18	3518400900	DIODE HV AS	HVR-1X-30B #187	1
F19	3518118260	TRANS HV	DT-R90A0-63T	1
F20	3516003700	SPECIAL SCREW	TT3 HEX 4X8 FLG MFZN	4
F21	3510311700	BASE	SBHT T0.7	1
F22	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	5
F23	3512000900	FOOT	PP DASF-130	2
F24	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F25	3515201101	STOPPER HINGE *U	SCP-1 T2.5	1
F26	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1
F27	4415A66600	SW MICRO	VP-532A-OF/SPNO #187 200G	1
F28	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1
F29	3513702610	LEVER LOCK	POM	1
F30	3513811710	LOCK	POM BLACK	1
F31	3513601500	LAMP	BL 120V 25W T25 C5A H187	1
F32		FUSE		1
F33	3512715200	HARNESS MAIN	KOR-631G0A	1
F34	7121400611	SCREW TAPPING	T2S PAN 4X6 MFZN	1
F35	3966031210	MOTOR SYNCRO	ST-16 KX63MQAD3	1
F36	3518905600	THERMOSTAT	OFF:80 ON:65 H #187 NB	1
F37	3513003400	HOLDER THERMOSTAT	PP(NATURAL)	1
F38	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F39	3511406200	COVER WAVE GUIDE	HEATPROOF PP	1
F40	3514701700	ROLLER	TEFLON	3
F41	3512517310	GUIDE ROLLER	XAREC	1
F42	3517203600	TRAY	GLASS	1

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