S/M No. : G867T9A001

Service Manual

Microwave Oven & Toaster

Model : KOG-867T

• Caution:
In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center (http://svc.dwe.co.kr).

Sep. 2003

DAEWOO ELECTRONICS

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 if necessary: (1) Interlock operation, (2) Proper door closing, (3) Seal and sealing surfaces (arcing, wear, and other damage), (4) Damage to or loosening of hinges and latches (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 ANDPRECAUTIONS

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 have excessive emission level 5mW/cm^2, the service person should:
   (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. WAVEGUIDES FLANGES AND GASKETS MUST BE SECURED. 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

POWER SUPPLY		120V AC 60 Hz SINGLE PHASE WITH EARTHING
MICROWAVE OVEN	POWER CONSUMPTION	1.4 KW
	OUTPUT POWER	1000 W
	FREQUENCY	2450 MHz
	TIMER	59 min. 99 sec.
	POWER LEVELS	10 LEVELS
	CAVITY DIMENSIONS	320 x 244 x 338 mm (12.6 x 9.6 x 13.3 inch)
	CAVITY VOLUME	0.9 Cu.ft
TOASTER	POWER CONSUMPTION	1.0 KW
OUTSIDE DIMENSIONS (W x H x D)		583 x 301 x 421 mm (22.9 x 11.8 x 16.5 inch)
NET WEIGHT		APPROX. 15.7 KG (34.3 lbs)

** Specifications are subject to change without notice.*

IMPORTANT

The wires in this mains lead are colored in accordance with the following code.

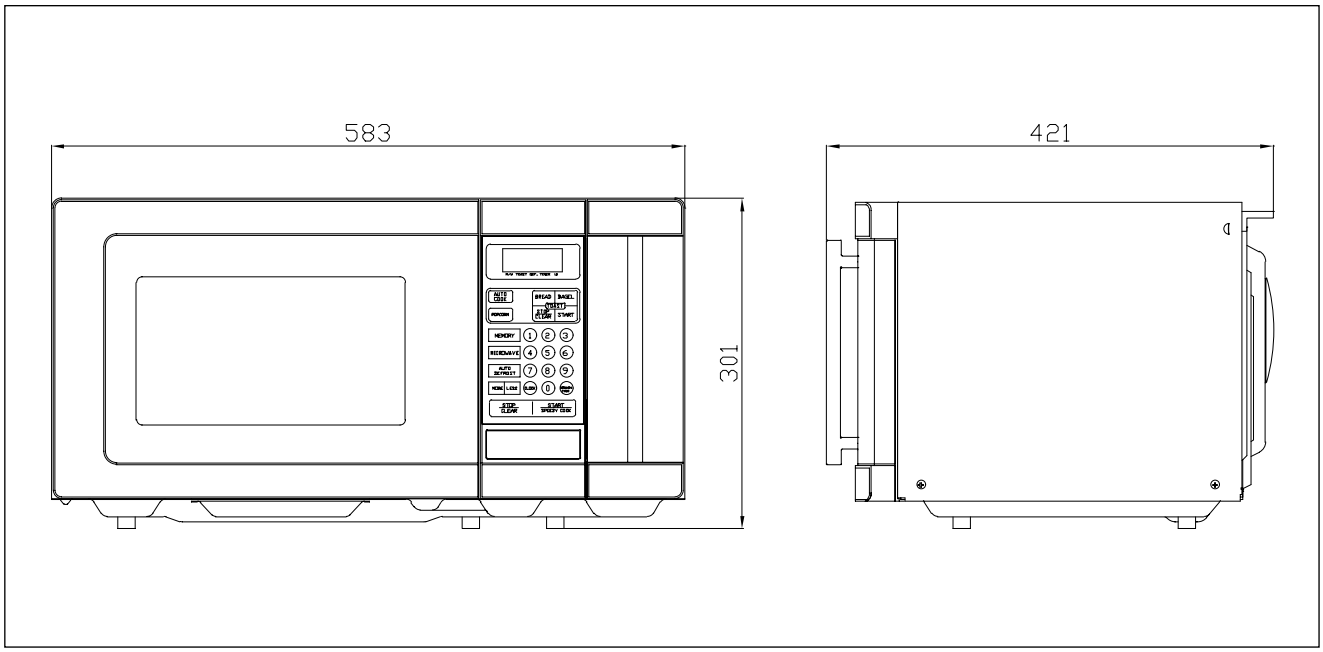
Green-and-yellow	: Earth
Blue	: Neutral
Brown	: Live

As the colors of the wires in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows: the wire which is colored green-and-yellow must be connected to the terminal in the plug which is marked with the letter 'E', the earth symbol or colored green-and-yellow. The wire which is colored blue must be connected to the terminal which is marked with the letter 'N' or colored black.
The wire which is colored brown must be connected to the terminal which is marked with the letter 'L' or colored red.

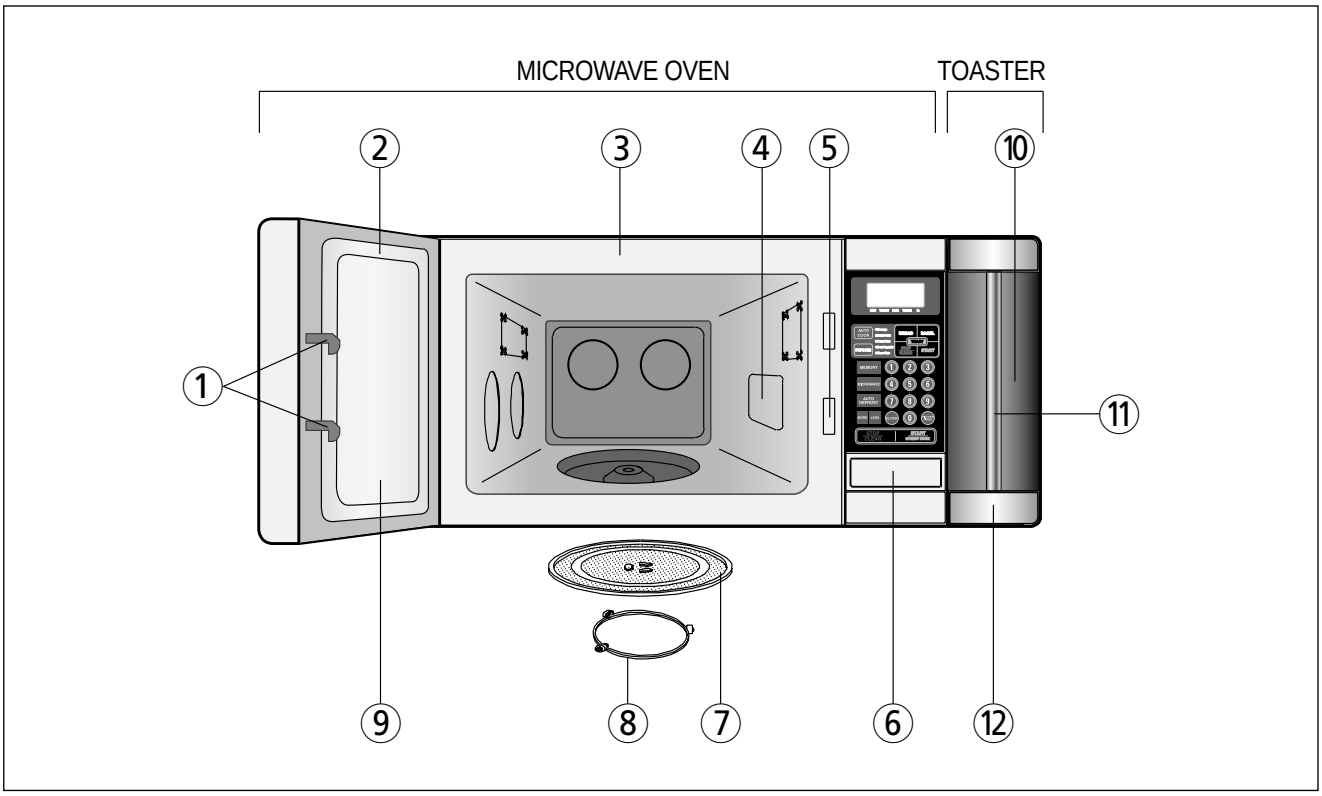
WARNING: This appliance must be grounded.

EXTERNAL VIEW

1. OUTER DIMENSION



2. FEATURE DIAGRAM



1. DOOR LATCH
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.

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. DOOR RELEASE BUTTON
Pushing this button stops oven operation and opens the door.

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.

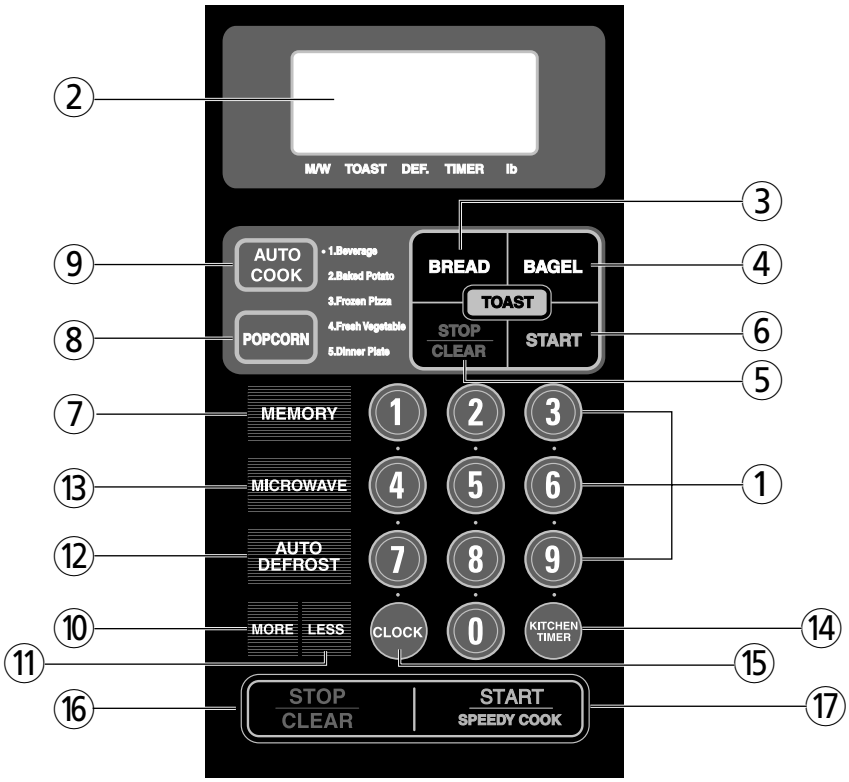
9. DOOR SCREEN
Allows viewing of food. The screen is designed so that light can pass through, but not the microwaves.

10. TOASTER DRAWER

11. TOASTER OPENING HANDLE

12. CRUMB TRAY(REFER. PAGE10)

3. CONTROL PANEL



1. TIME SET PAD - Used to set the cooking time and the present time.

2. DISPLAY - Cooking time, power level, indicators and present time are displayed.

3. TOAST BREAD - Used to reheat bread.

4. TOAST BAGEL - Used to reheat bagel.

5. TOAST STOP/CLEAR - Used to stop the toast operation or to clear the toast setting.
Used to transfer toaster mode to microwave mode.

6. TOAST START - Used to toast start.

7. MEMORY - Used to set favorite cooking mode.

8. POPCORN - Used to cook or reheat specific quantities of food.

9. AUTO COOK - Used to cook or reheat.

10. MORE - Used to add time to cooking.

11. LESS - Used to remove time from cooking.

12. AUTO DEFROST - Used to defrost foods.(for weight and time)

13. MICROWAVE - Used to select microwave power level.

14. KITCHEN TIMER - Used as a minute timer, to delay the start of cooking, or to set a holding time after cooking.

15. CLOCK - Used to set clock.

16. STOP/CLEAR - Used to stop the Microwave operation or to delete the cooking data Used to transfer Microwave mode to toaster mode.

17. START/SPEEDY COOK - 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.

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 oven failure. Position the oven as far from them as passible.

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 12 amperes, 120Volts, 60Hz grounded outlet.

➢ Power supply cord is about 1.0 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 oven to become room temperature before operating.

GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of an electrical short circuit, grounding 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 grounding wire with a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded.

WARNING

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

OPERATION PROCEDURE(MICROWAVE OVEN)

This section includes useful information about Microwave oven operation.
1. Plug power supply cord into a standard 3-pronged 20Amp, 120V AC 60Hz poweroutput.
2. After placing the food in a suitable container, open the oven door and put it on the glass tray.
   The glass tray and roller guide must always be in place during cooking.
3. Shut the Microwave oven door. Make sure that it is firmly closed.

1 The oven light is on only when the microwave oven is operating.

2 The oven door can be opened at any time during operation by touching the door release button on the control panel. The oven will automatically shut off.

3 Each time a pad is touched, a BEEP sounds to acknowledge the touch.

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

5 The display will show " : 0" when the oven is plugged in.

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

7 When the Microwave 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.

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

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

WATTAGE OUTPUT CHART

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

Touch MICROWAVE 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%

IMPORTANT

Before using the toaster for the first time, operate the toaster without bread in order to burn off residues on the heating elements. You will notice an odor that is characteristics of new heating elements. This is normal and will soon disappear.

CLEANING THE TOASTER

Always unplug the Microwaves & Toaster and allow the toaster to cool completely before cleaning.

Toaster drawer:
Wipe surface with a soft, clean, damp cloth. Never use abrasive cleaners, as they may scratch the surface. Do not use fork or other sharp, metal object to clean inside of the Toaster drawer, or to remove toast, as it may damage heating elements.

Crumb Tray :
After allowing the toaster to cool down and closing the door, gently slide out the crumb tray. Brush crumbs off the tray and, if necessary, wipe it with a clean, damp cloth. Always dry the tray thoroughly. When sliding the crumb tray into place, be sure you feel and hear it snap into position.

COOKING TIPS

WARNING!

Never place any object in the toaster for any reason!

- DO NOT toast pastries with runny fillings or frosting.
- DO NOT toast torn slices of bread or broken pastries.
- DO NOT place buttered bread, wrapped food, or frozen pastries in the toaster.
- DO NOT use this toaster to toast or warm small-size bread slices. These include “melba” size breads, slices of mini-baguettes, breadsticks, etc.
- DO NOT toast oversized bagel. Because thick bagel’s surface may become closer to the heater, this may cause overdone of surface and smoke.

NOTE : Different types of bread and their moisture levels may require different darkness settings. For example, dry bread will brown more rapidly than moist bread and so will be toasted to your taste at a lighter setting.

NOTE : 2 pieces of bread or bagel should be cooked with this toaster.

OPERATION PROCEDURE(TOASTER)

This section includes useful information about toaster operation.

1. Plug power supply cord into a standard 3-pronged 20Amp, 120V AC 60Hz poweroutput.
2. Put 2 pieces of toast bread or bagel between the toaster guides (wire rack) of the toaster drawer.
3. Shut the toaster drawer. Make sure that it is firmly closed.

1 The toaster drawer can be opened at any time during operation by pulling out the toaster handle on the toaster drawer. The toaster will automatically shut off.

2 Touch the bread or bagel pad of toast menu and the degree of darkness will be displayed.

3 Each time a pad is touched, a BEEP sounds to acknowledge the touch.

4 Touch toaster start pad and then the toast indicator linght is on and the best cooking time is displayed according to the condition of the toaster (not in the case of time toasting) and toast cooking starts. During the toast cooking, hot smoke or air may goes out from the gap of the toaster drawer.

5 When the toast STOP/CLEAR pad is touched during the oven operation, the toaster stops cooking and all information retained. To erase all information(except the present time), touch the STOP/CLEAR pad once more. If the toaster drawer is opened during the toaster operation, all information is retained.

6 If the toast START pad is touched and the toaster does not operate, check the toaster drawer is closed securely. The toaster will not start cooking until the toaster drawer is completely closed or the program has been reset.

NOTE :
When the toaster drawer is opened after toast cooking, hot smoke or air will go out and the toaster guides (wire rack) are very hot.
Take out food carefully not to touch hot surfaces of the toaster or hot air.

NOTE :
When the toaster is operated several times in series and is overheated, the safety thermal switch works and the heating elements stop operating. So, though the toaster seems to operate normally, it does not cook toast.
Open the toaster drawer and cool it for 5~6 min.
After then the toaster can cook toast normally.

NOTE :
When you start toast cooking (br-1~br-3 and bg-1~bg-3) within 1 min. in series after toast cooking, the toaster starts cooking with cooling time automatically added to the cooking time.

NOTE :
When you start toast cooking, the best cooking time is displayed according to the condition of the toaster. (br-1~br-3: 1 min. 20 sec.~2 min. 40 sec/ bg-1~bg-3: 1min. 20 sec.~2 min. 45 sec.)

DISASSEMBLY AND ASSEMBLY

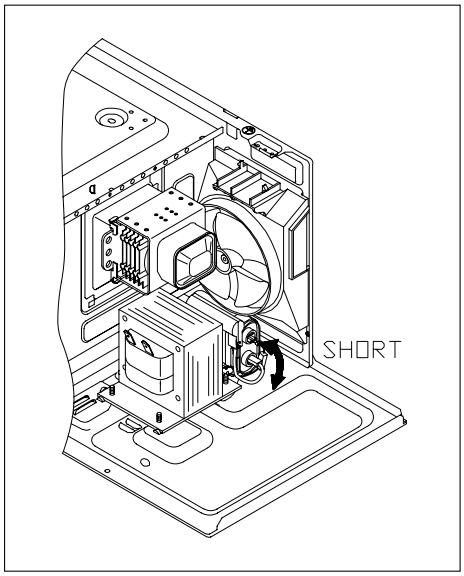
- Cautions to be observed when trouble shooting.

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

(2) Warning about the electric charge in the high voltage capacitor.
For about 30 seconds after the operation has 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.



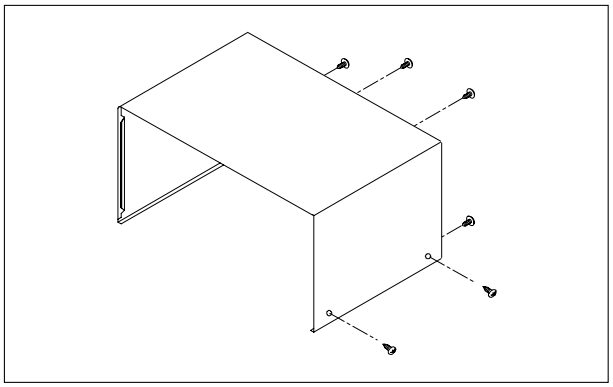
4. When the 20A fuse is blown due to the operation of the monitor switch; replace primary interlock switch, secondary interlock switch and interlock monitor switch.
5. After repair or replacement of parts, make sure that the screws are properly tightened, and all electrical connections are tightened.
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, take care when 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.

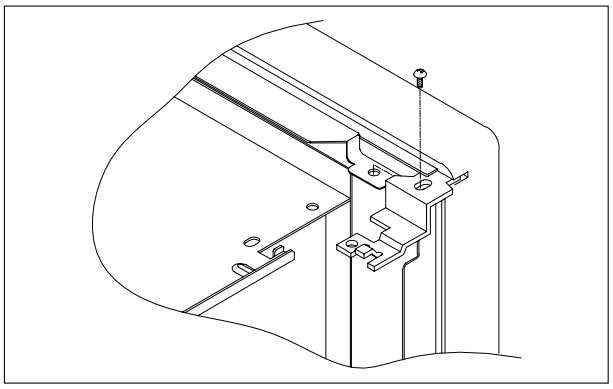
1. To remove cabinet

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



2. To remove door assembly

1) Remove 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.

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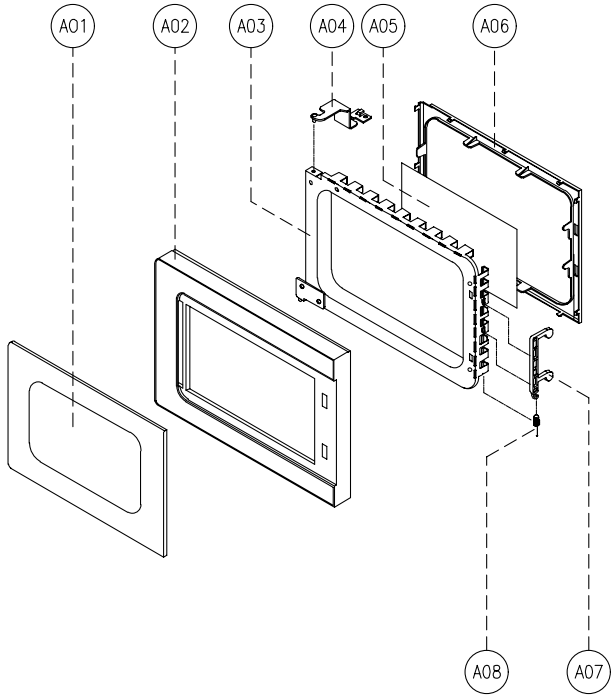
3. To remove door parts.



Door As : 3511724200

REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY
A01	3517008600	BARRIER SCREEN*O	SAN T1.5	1
A02	3511724400	DOOR SUB AS	KOG-867T9	1
A03	3511711800	DOOR PAINTING AS	KOR-86670S	1
A04	3515204100	STOPPER HINGE*T AS	KOR-63150S	1
A05	3517006000	BARRIER SCREEN*I	PE T0.1	1
A06	3512302000	GASKET DOOR	PP	1
A07	3513100700	HOOK	POM	1
A08	3515101300	SPRING HOOK	PW-1	1

(1) Remove the gasket door from door plate.
(2) Remove the barrier screen inner from door plate.
(3) Remove the door sub assembly from door painting assambly.
(4) Remove the stopper hinge top assembly from door painting assambly.
(5) Remove the spring and the hook.
(6) Remove the barrier screen outer from door sub assembly.
(7) Reverse the above steps for reassembly.

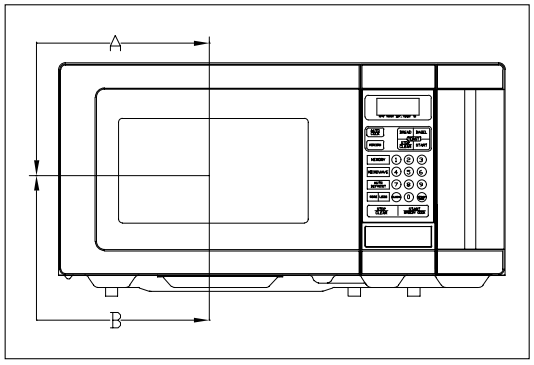
4. Method to reduce the gap between the door seal and the oven front surface.

(1) To reduce gap located on part 'A'.

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

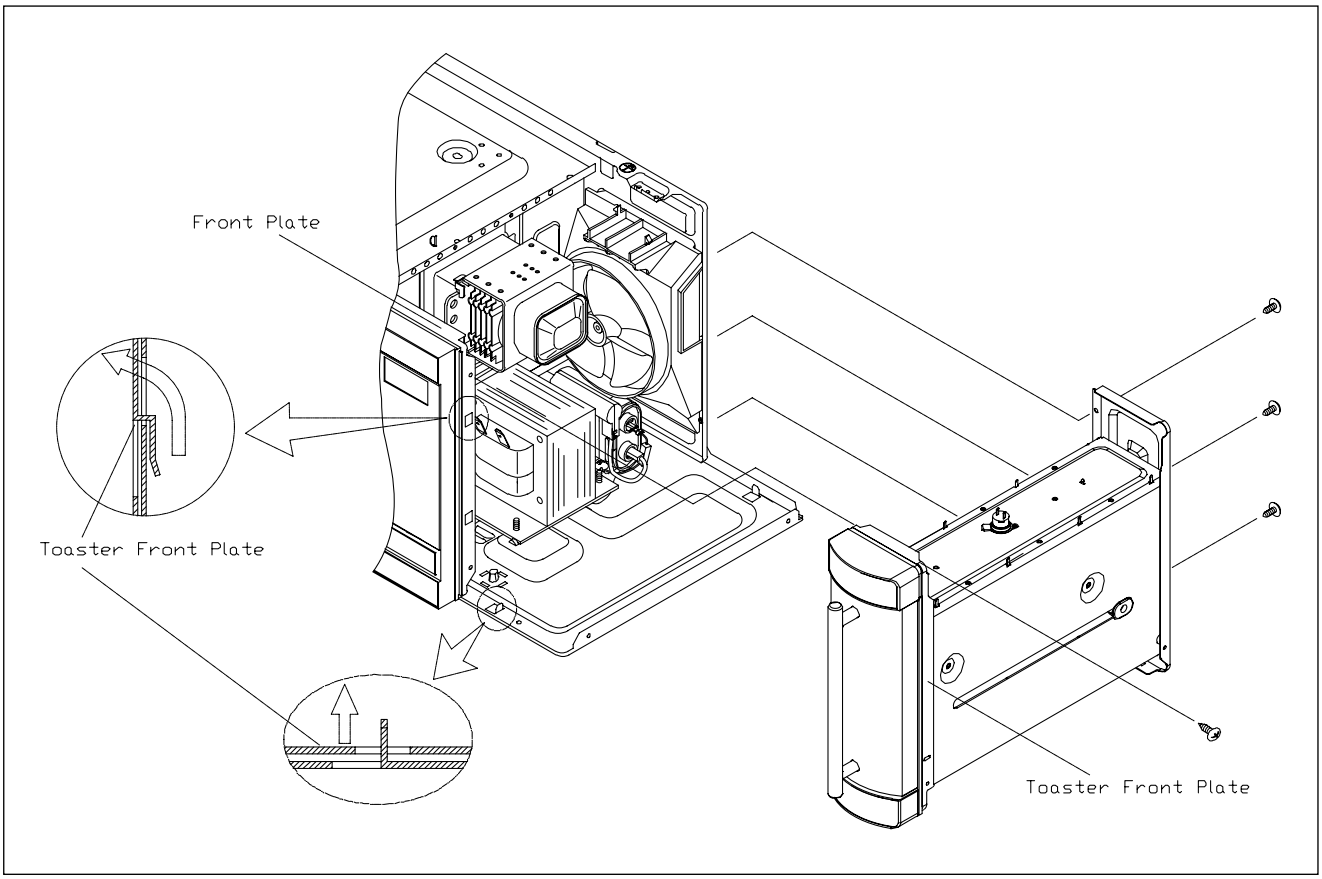
(2) To reduce gap located on part 'B'.

- 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 4mW/cm^2.

5. To take off the toaster assembly.



(1) Remove four screws on the toaster assembly.
(2) Lift up the toaster assembly and pull it out.
(3) Reverse the above for assembly.

NOTE : To assemble the toaster assembly, push two taps on the side of the toaster front plate into two rectomgular holes of the front plate securely. And push two rectangular holes of the bottom of the toaster front plate into two vertical taps of the base plate.

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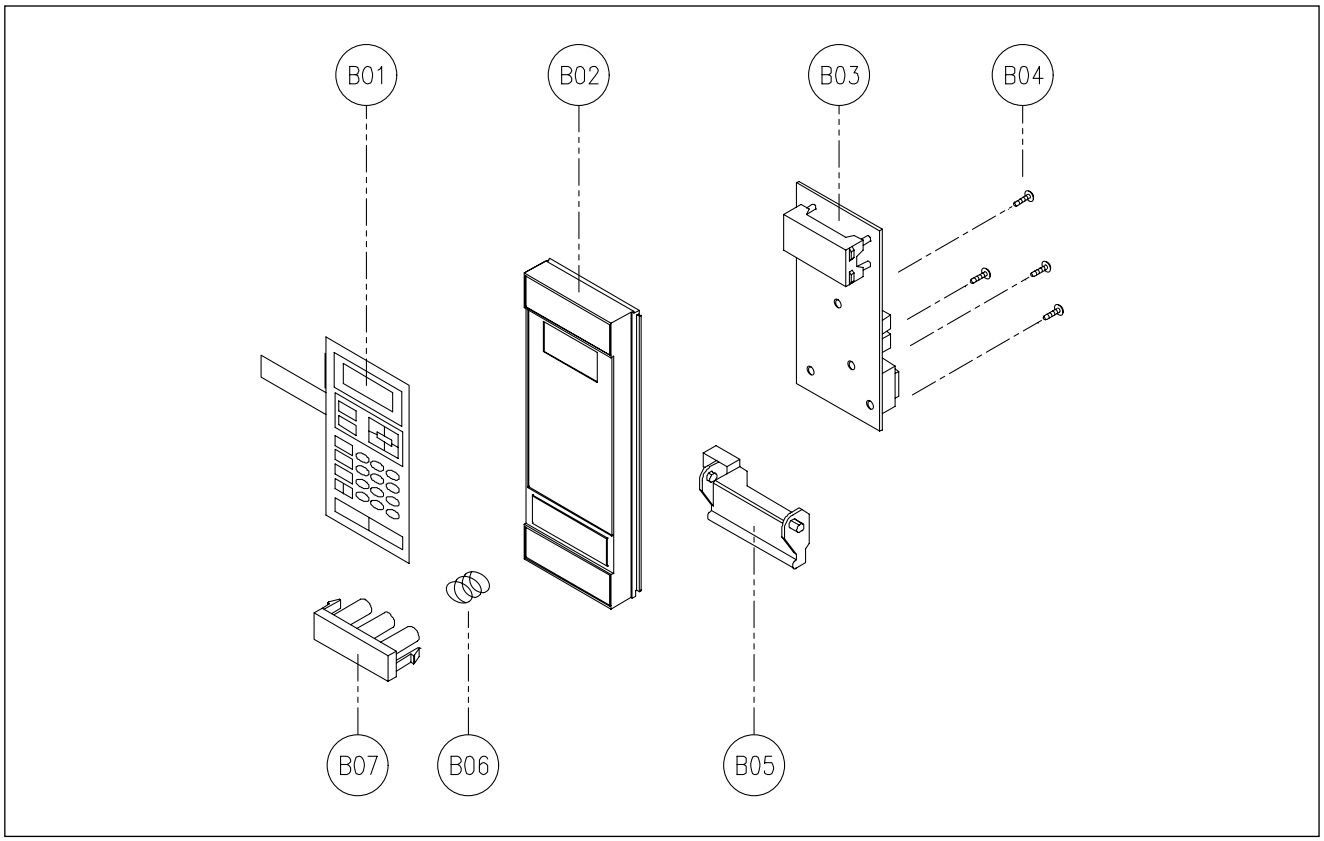
6. To remove control panel parts.

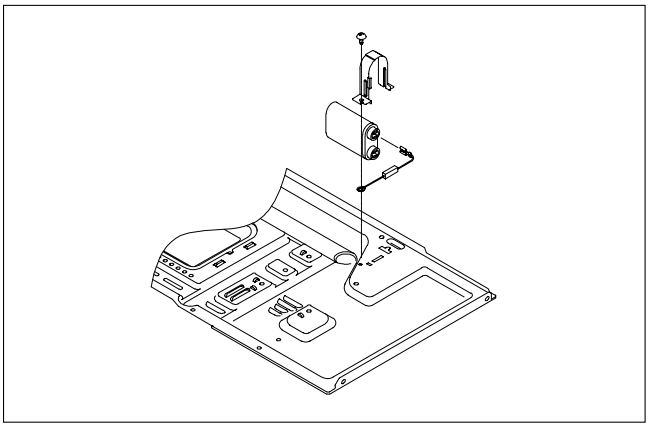


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY
B01	3518524400	SWITCH MEMBRANE	KOG-867T9	1
B02	3516731100	CONTROL PANEL	ABS VE-0826 AF-348	1
B03	PKMPMSAY00	PCB AS	KOG-867T9	1
B04	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	4
B05	3513702700	LEVER DOOR LOCK	PP	1
B06	441G430171	BUTTON SPRING	SWP DIA 0.7	1
B07	3516912300	BUTTON DOOR OPEN	ABS SG-175 SG-0760D	1

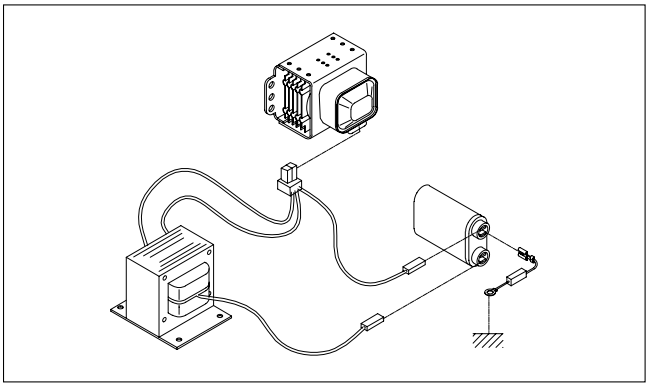
(1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
(2) Remove the door open lever from the control panel.
(3) Remove four screws which secure the PCB assembly to control panel.
(4) Disconnect membrane tail from the connector of the 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.

7. 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.

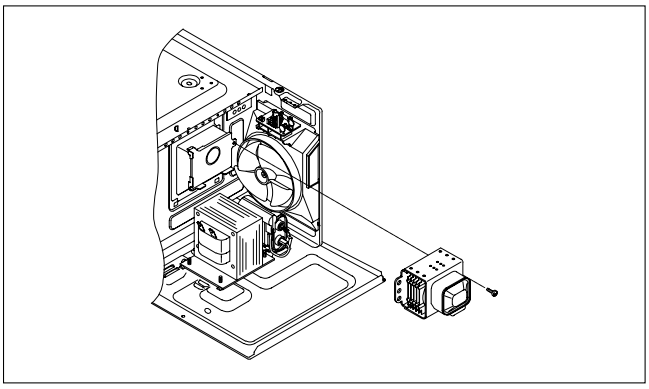


8. High voltage circuit wiring

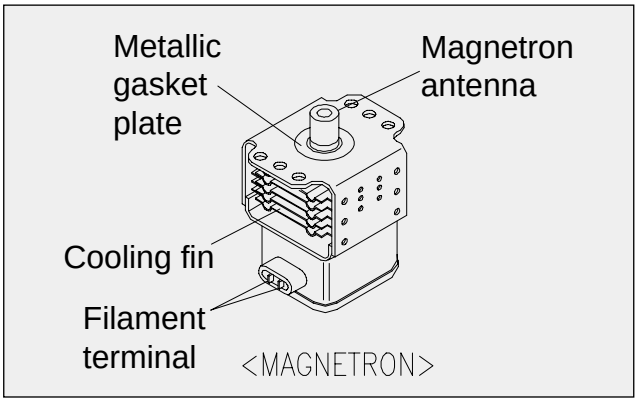


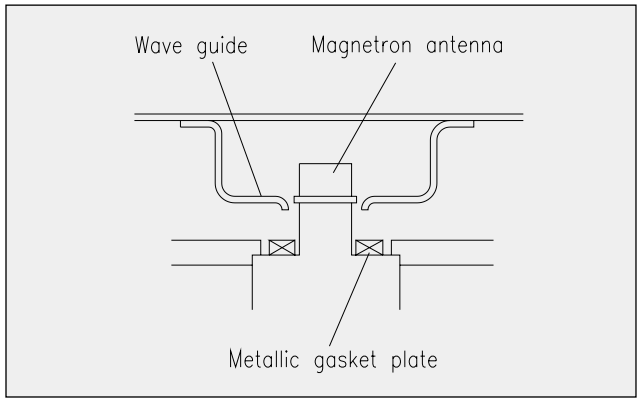
9. To remove magnetron.

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



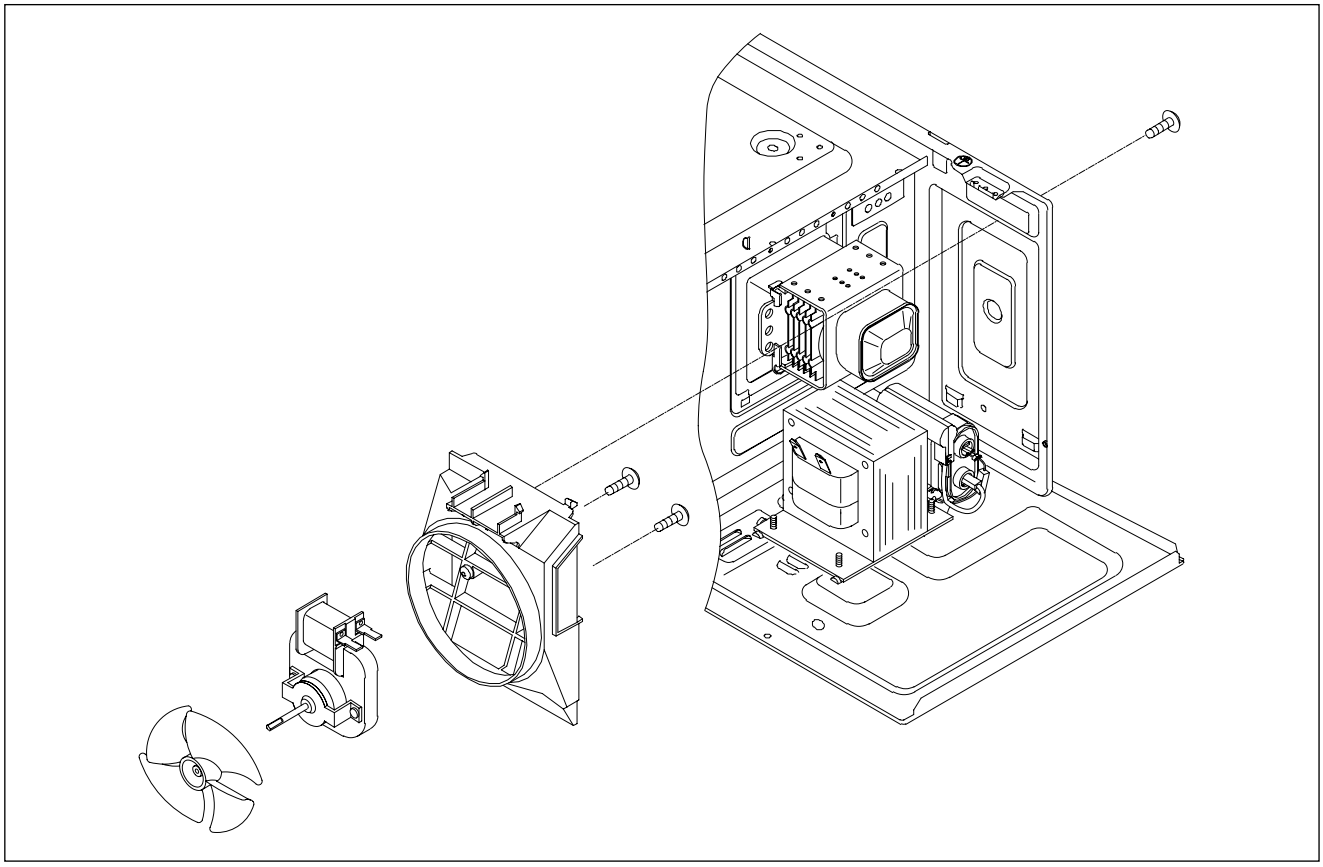
NOTE : Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed 4mW/cm^2 for a fully assembled oven with door normally closed.





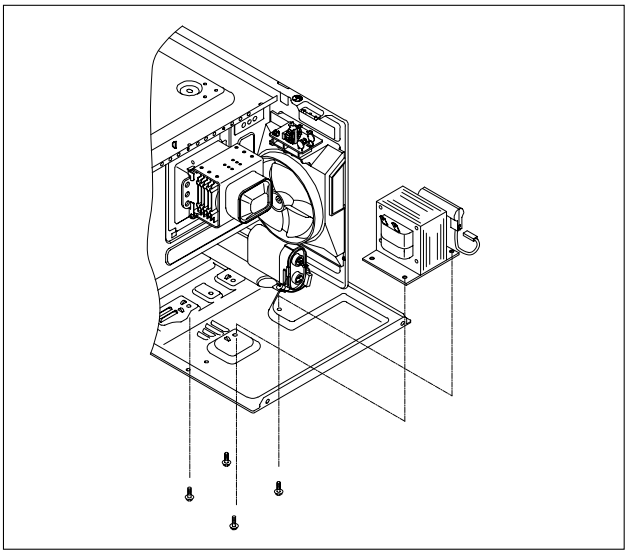
10. To remove wind guide assembly.

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 reasembly.



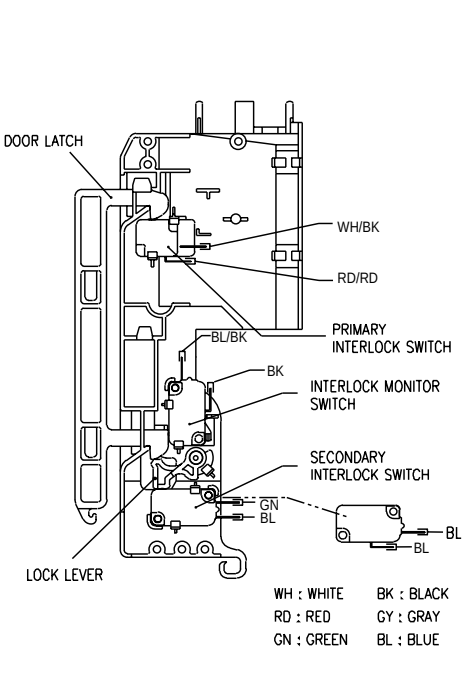
11. To remove H.V.transformer.

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

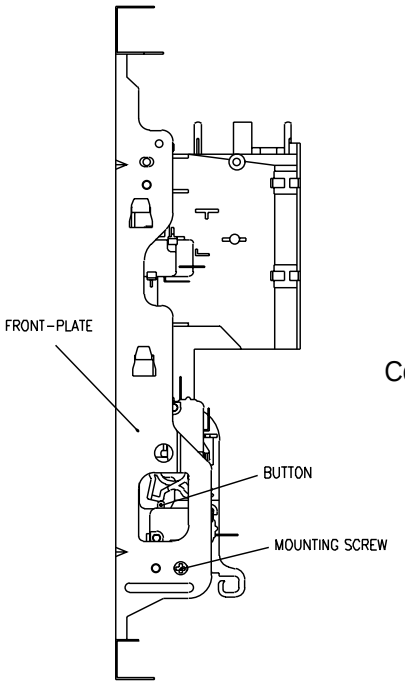


INTERLOCK MECHANISM AND ADJUSTMENT

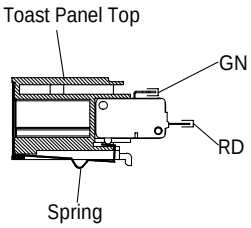
The door lock mechanism is a device which has been specially designed to completely eliminate microwave radiation when the door is opened during operation, and thus to perfectly prevent the danger resulting from the leakage of microwave.



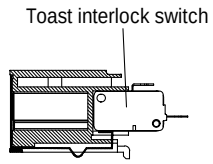
Condition : DOOR CLOSE



Condition : DOOR OPEN



Condition : Toast Drawer Open



Condition : Toast Drawer Close

(1) Primary interlock switch

When the door is closed, the hook locks the oven door. If the door is not closed properly, the oven will not operate.
When the door is closed, the hook pushes the button of the micro switch. Then the button of the primary interlock switch bring it under NO 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 NC condition. The lock lever presses the button of the secondary interlock switch to bring it under NO condition.

(3) Toast interlock switch

When the toast drawer is closed, the lever pushes the button of the micro switch.
Then the button of the toast interlock switch bring it under NO condition.

ADJUSTMENT :

Interlock monitor switch

When the door is closed, the interlock monitor switch should be changed (NC condition) before other switches are closed.
When the door is opened, the interlock monitor switch should be changed (NO condition) after other switches are opened.

(4) Adjustment steps

a) Loosen the one mounting screw.
b) Adjust interlock switch assembly position.
c) Make sure that lock lever moves smoothly after adjustment is completed.
d) Tighten completely two mounting screws.

NOTE :

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

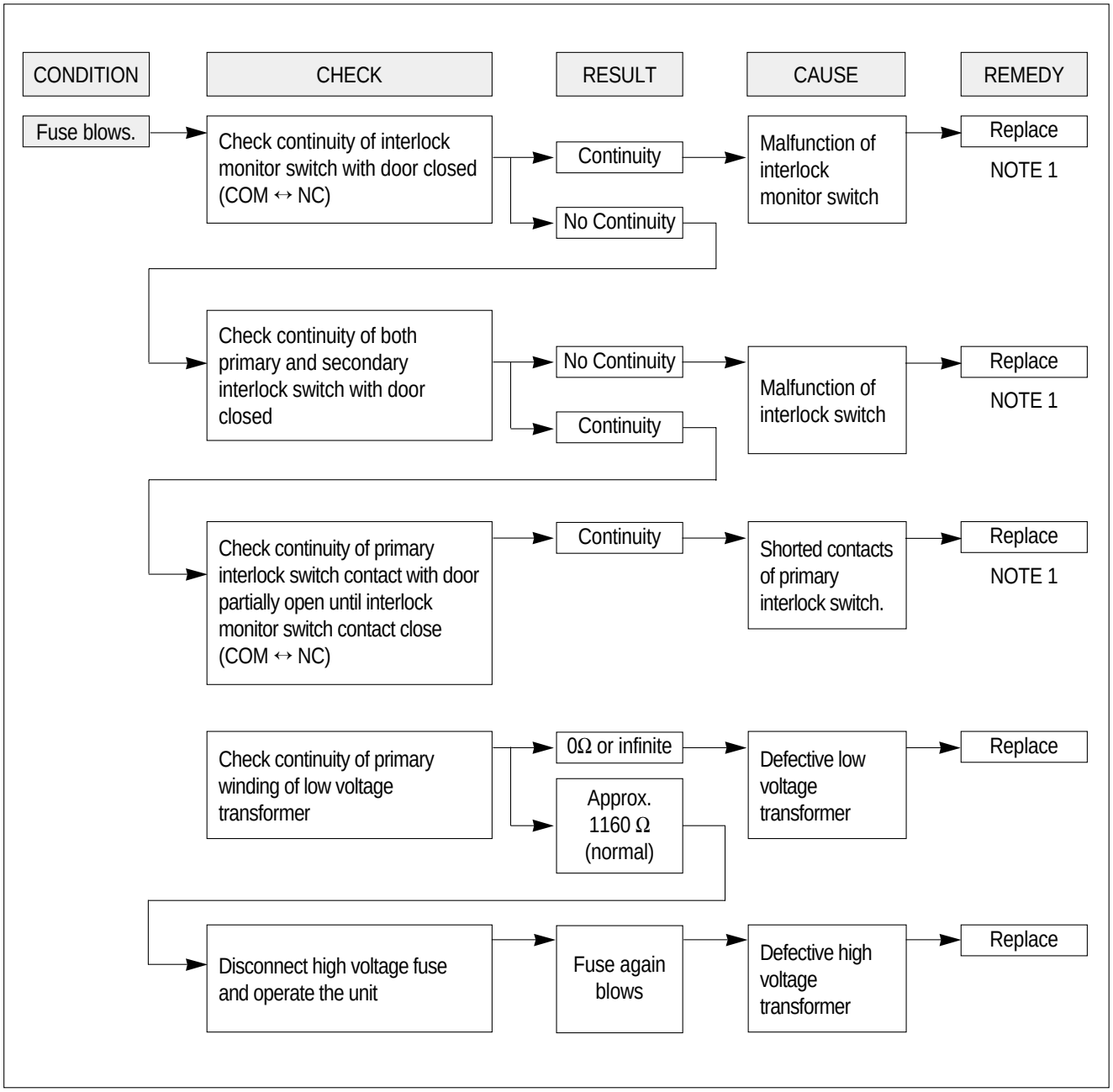
TROUBLE SHOOTING GUIDE

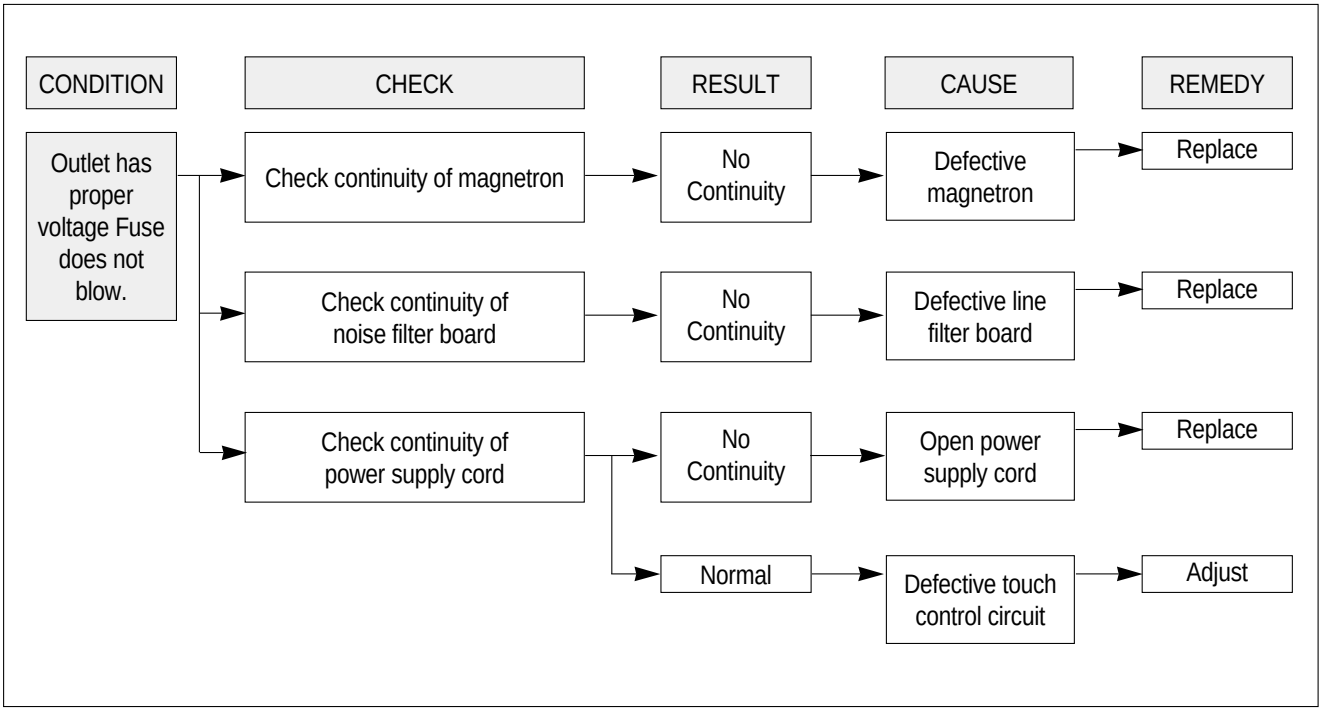
Following the procedure below to check if the oven is defective or not.

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 tranformer, disconnect one load 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 connection of the terminals and power cord before check the parts listed below.

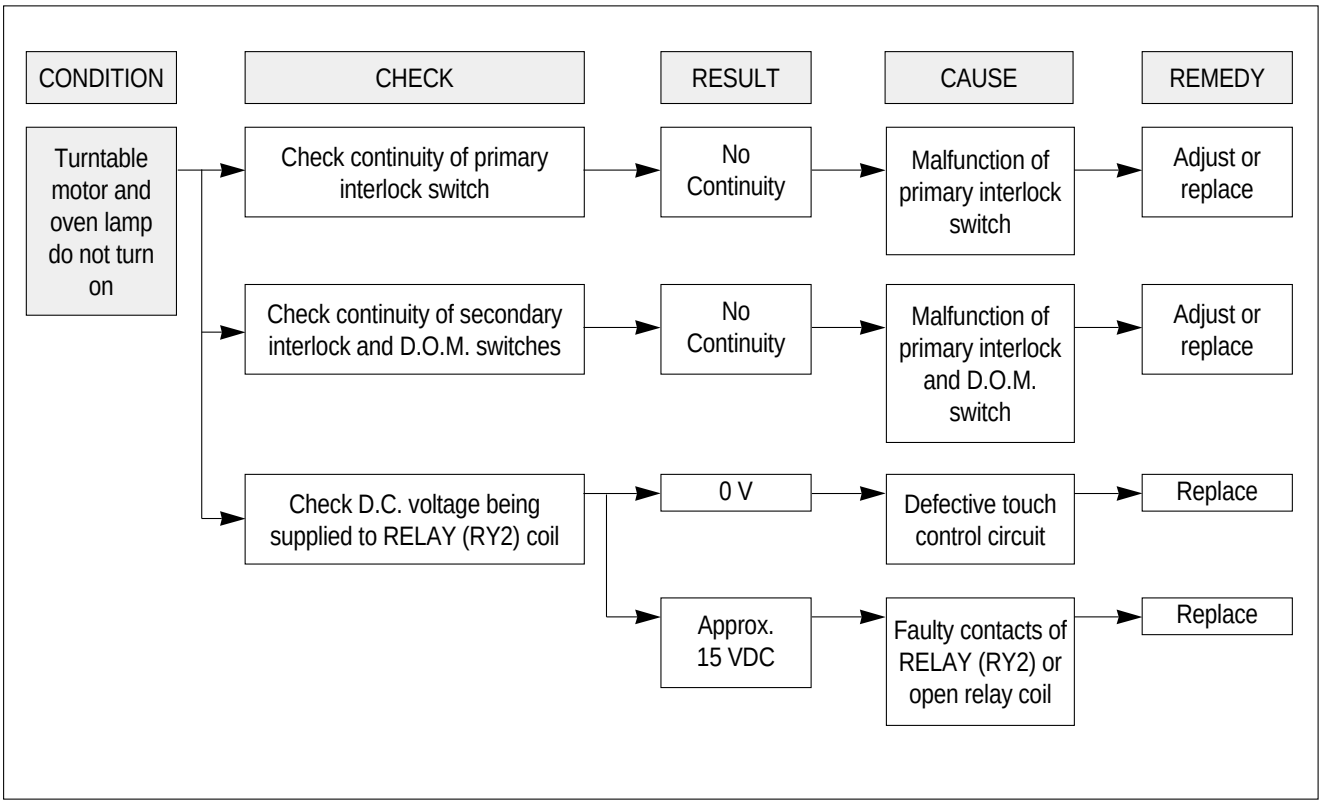
(TROUBLE 1) Oven does not operate at all : any inputs can not be accepted.



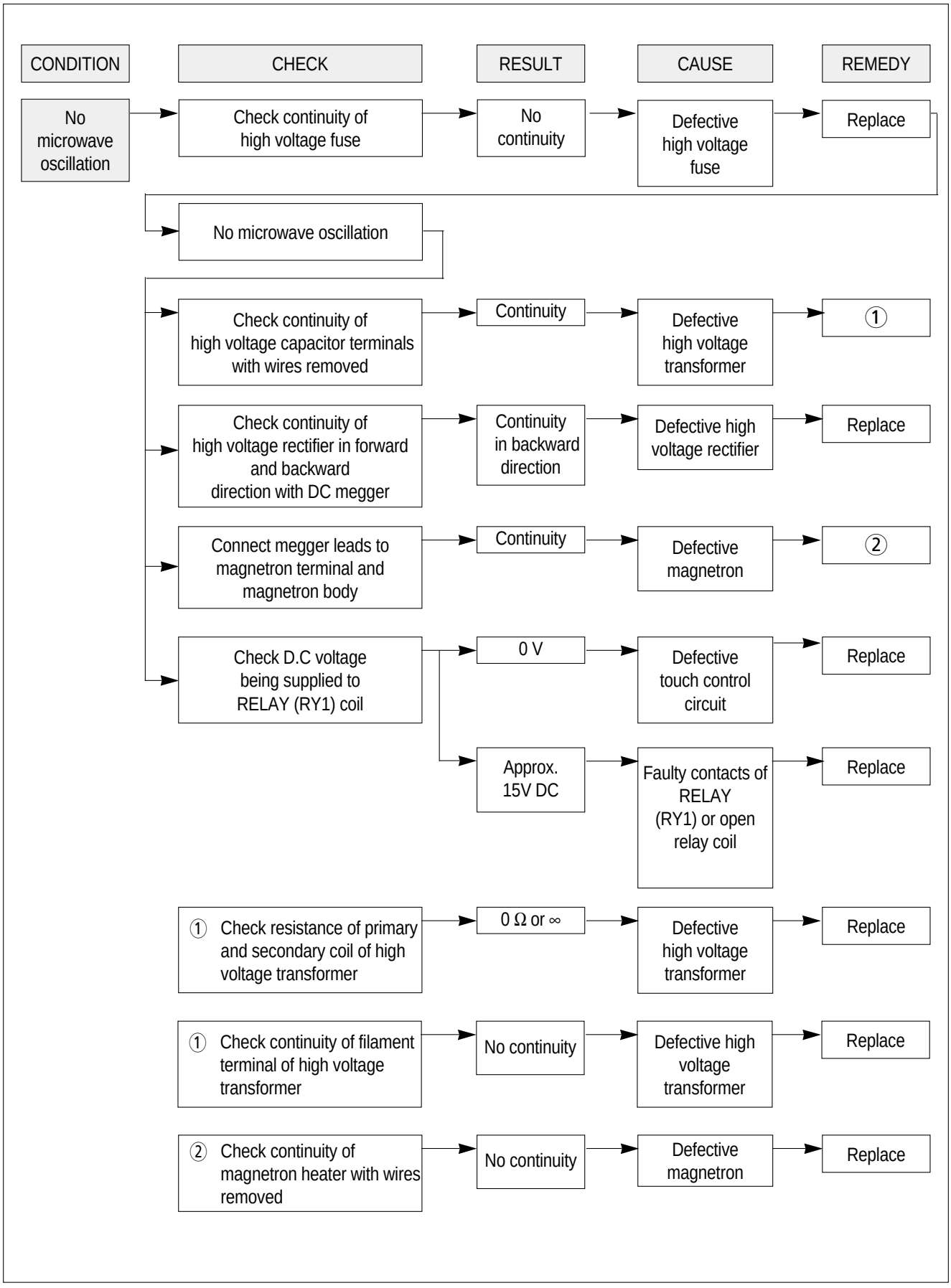


NOTE 1
All these switches must be replaced at the same time, please refer to “Interlock Mechanism And Adjustment”.

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

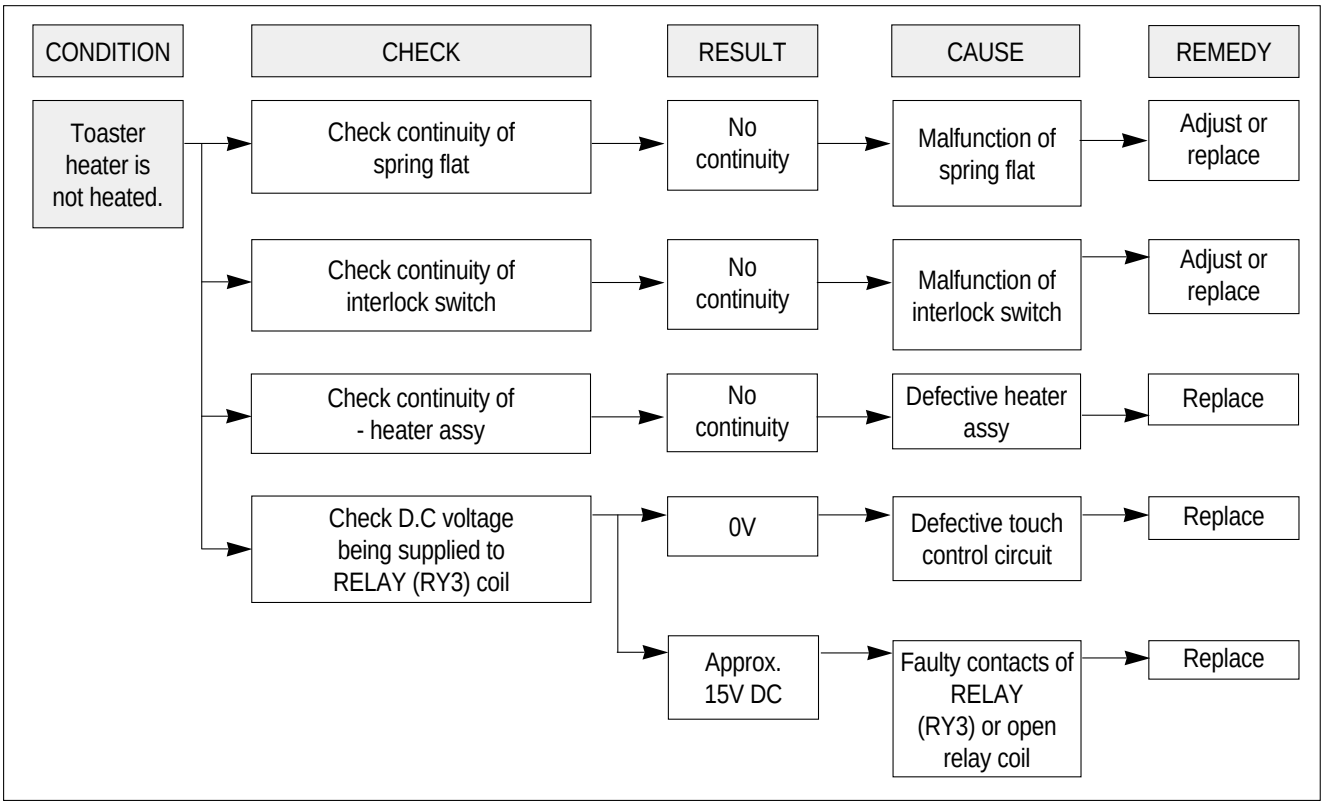


(TROUBLE 3) No microwave oscillation even though fan motor rotates.



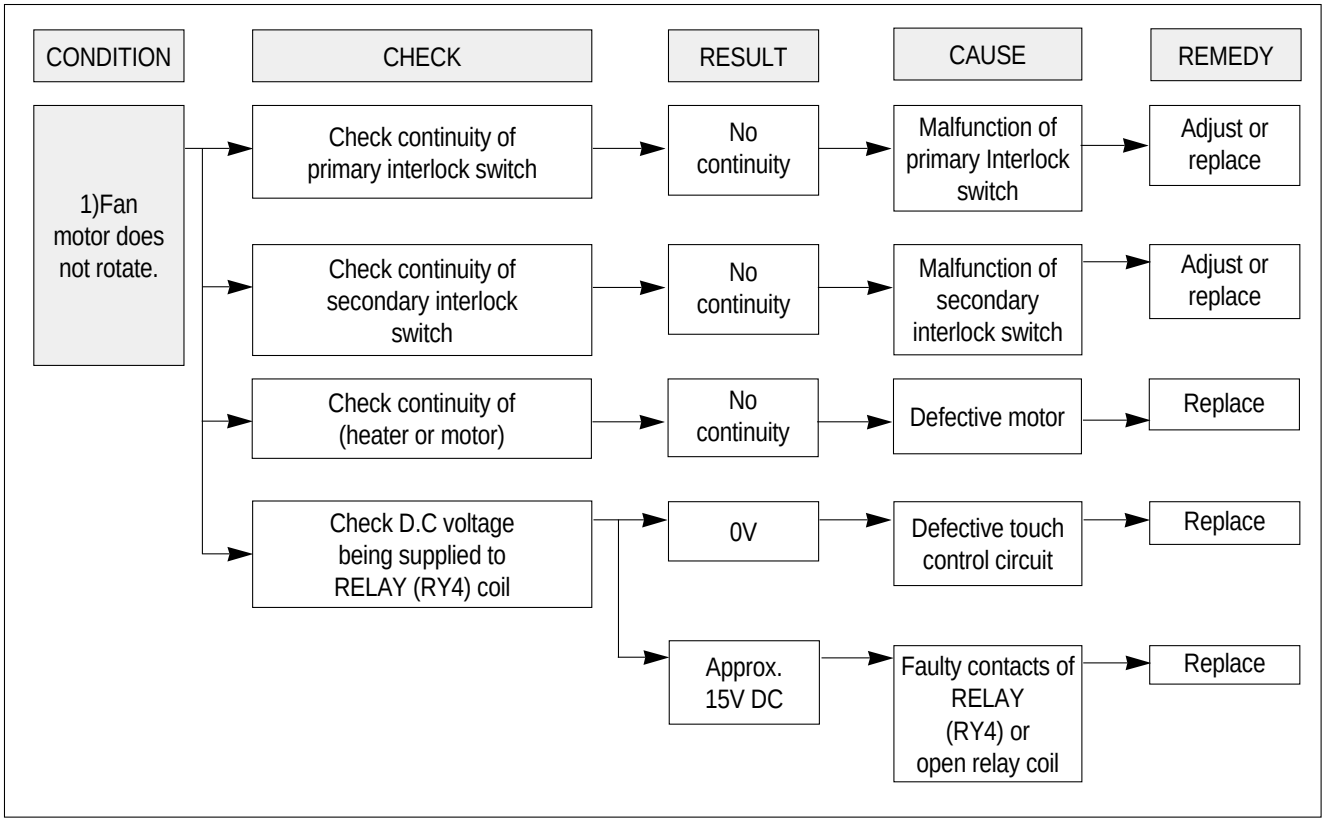
(TROUBLE 4)

Toaster heater is not heated; bread or bagel will not toast.

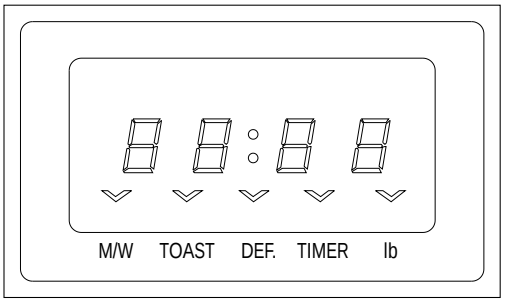


(TROUBLE 5)

1) Fan motor does no rotate.



(TROUBLE 6) 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 brightness of one or more numbers exists in the display.

3. One or more digits in the display are not on when they should be.

4. Display indicates a number different from one 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 programmable and cooks normally but no display shows.

8. Display obviously jumps in time while counting down.

9. Display counts down noticeably too fast while cooking.

10. Display 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 2 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 pad for continuity of the membrane keyboard for the following keyboard check procedure	Normal	Malfunction of pcb assembly	Replace pcb assembly
		Abnormal	Malfunction of the membrane keyboard	Replace the membrane keyboard

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.

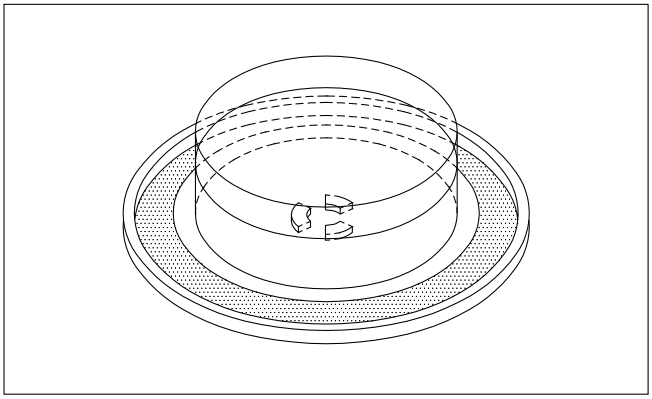
MEASUREMENT AND TEST

1. MEASUREMENT OF THE MICROWAVE POWER OUTPUT

Microwave output power can be checked by indirectly mmeasuring 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 ± 5cc 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 ± 2°C (50 ± 3.6°F). If 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:



$$P = \frac{4187 \times \Delta T}{t}$$

- Δ T is difference between initial and ending temperature.
- t is the heating time.

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

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

*** Heating time for power output:**

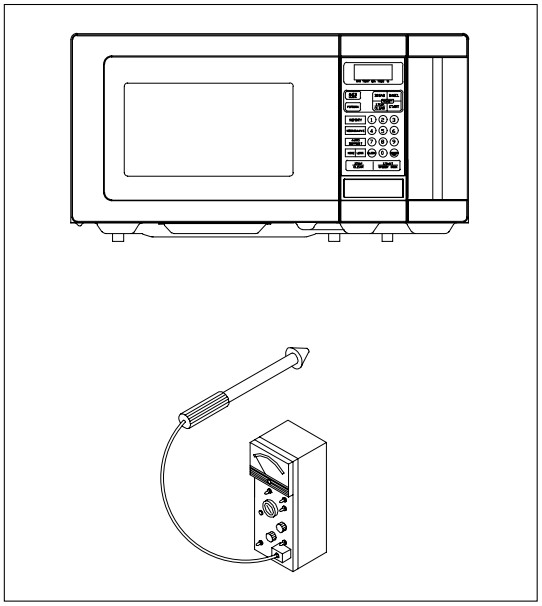
A (second)	70	64	60	56	52	49	47	44	42	40	38
B (W)	600	650	700	750	800	850	900	950	1000	1050	1100

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.

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. 8.5cm(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^2.
   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 Ω±10%
   Filament winding ... Approx. 0 Ω
   Primary winding ... Approx. 1 Ω

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 10MΩ once the capacitor charged.
3) A shorted capacitor will show continuous continuity.
4) An open capacitor will show constant 10MΩ.
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 kΩ in the other direction.

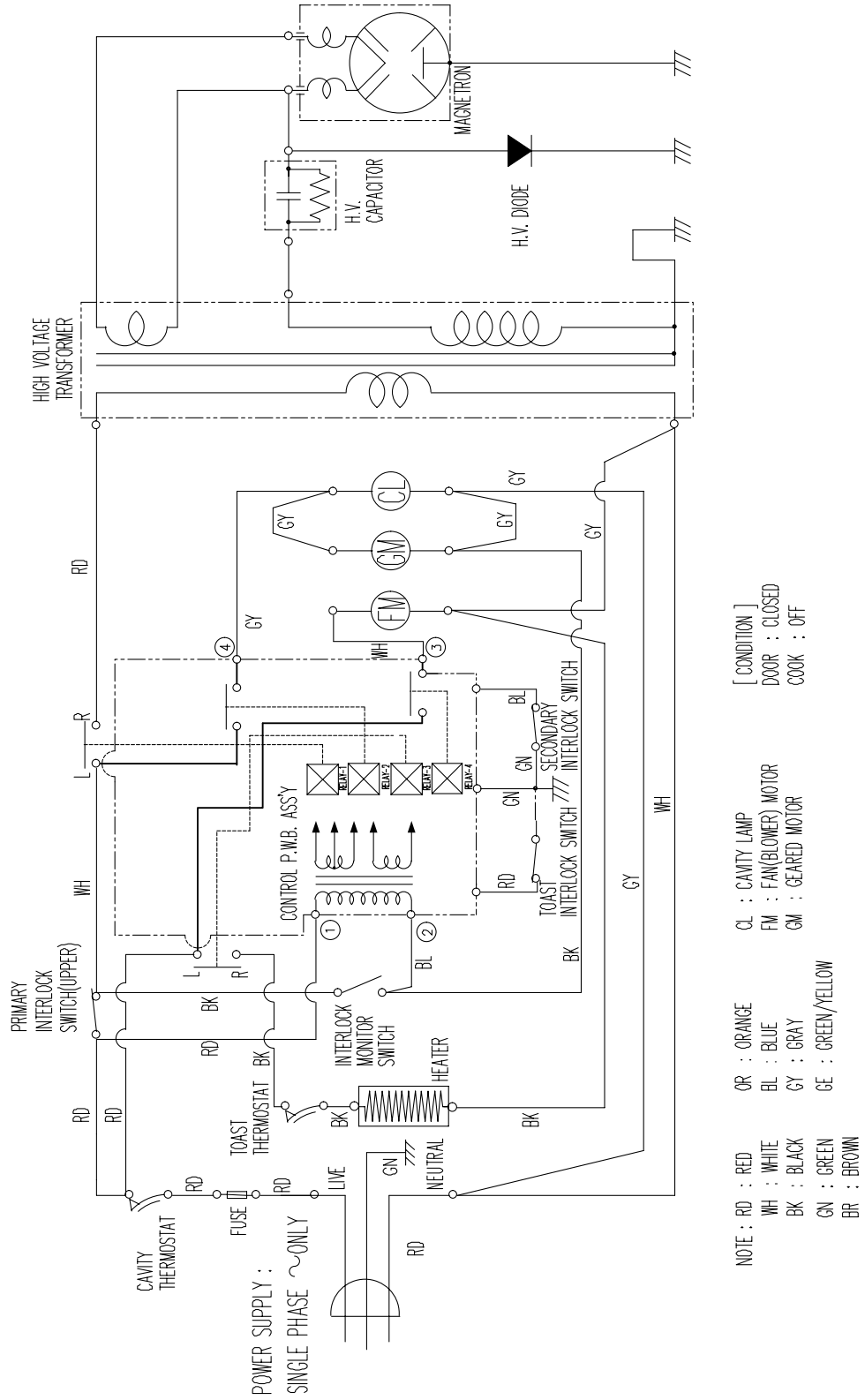
4. Magnetron

For complete magnetron diagnosis, refer to "Measurement of the Microwave Power Output." Continuity checks can only indicate and open filament or a shorted magnetron. To diagnose for an open filament or a shorted magnetron,
1) Isolate magnetron from the circuit by disconnecting the leads.
2) A continuity check across magnetron filament terminals should indicate 0.1 Ω 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

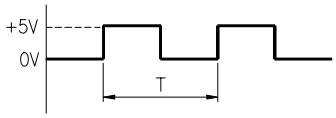
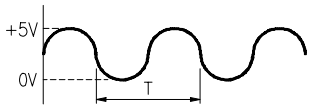
The low voltage transformer is located on the P.C.B.
Measuring condition: Input voltage: 120V / Frequency: 60Hz

Terminal Voltage	LOAD	NO LOAD
7-8	AC	AC 14.5 V

NOTE
1. Refer to Ciruit 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 ± 5% of nominal voltage.

2. Voltage Check

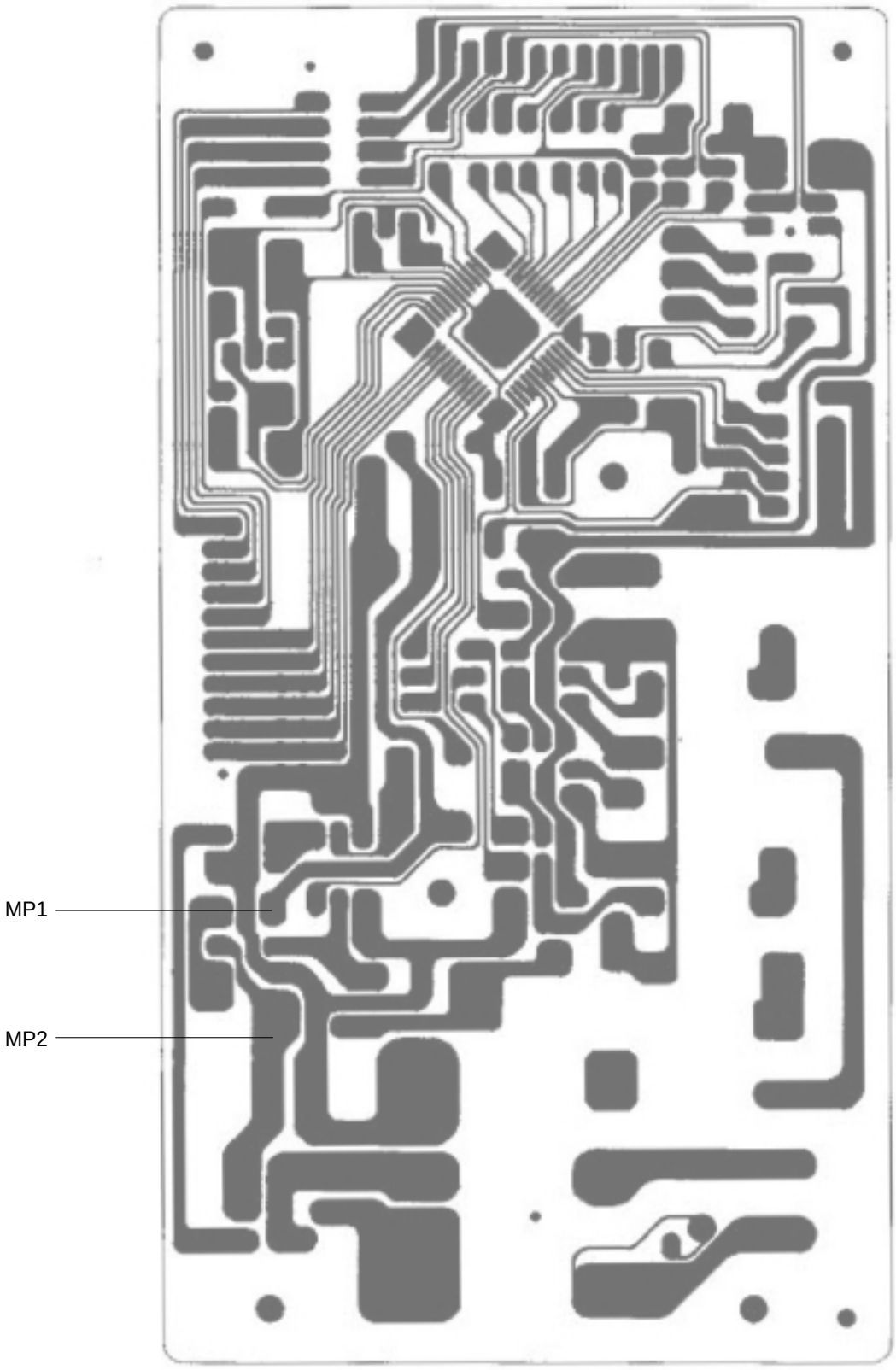
- Key check point

NO	CHECK POINT	REMARK
1	IC1 PIN 40, 18	+5VDC
2	IC1 PIN 29(INT)	 T : 16.67ms(60Hz)
3	IC1 PIN 15 OR 16	 T : 250 ns(4MHz)

- Check method

NO	MEASURE POINT	WAVE FORM	REMEDY	REMARK
1	MP1	DC +5V±0.25V	Replace VL1, EC1	NO LOAD
2	MP2	DC +12V±2.0V	Replace EC2, D12,14,15	NO LOAD

NOTE
Each measure point must be measured with GND points.



Mesure point

3. When there is no microwave oscillation

1) When touching **START** pad, oven lamp turns on and turntable rotates.
but cook indicator in display comes on.
✲ Cause : **RELAY 4** does not operate. → refer to Circuit Diagram (point 3)
- Check method

POINT / STATE	A	B
RELAY 4 ON	+5VDC	GND
RELAY 4 OFF	GND	+15VDC

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

POINT / STATE	A	B
RELAY 1 ON	+5VDC	GND
RELAY 1 OFF	GND	+15VDC

4. When toaster heater is not heated.

✲ Cause : **RELAY 3** does not operate. → refer to Circuit Diagram (point 6)
- Check method

POINT / STATE	A	B
RELAY 3 ON	+5VDC	GND
RELAY 3 OFF	GND	+15VDC

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

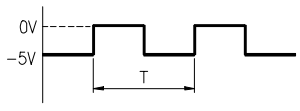
→ refer to Circuit Diagram (point 1)
- Check method

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

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

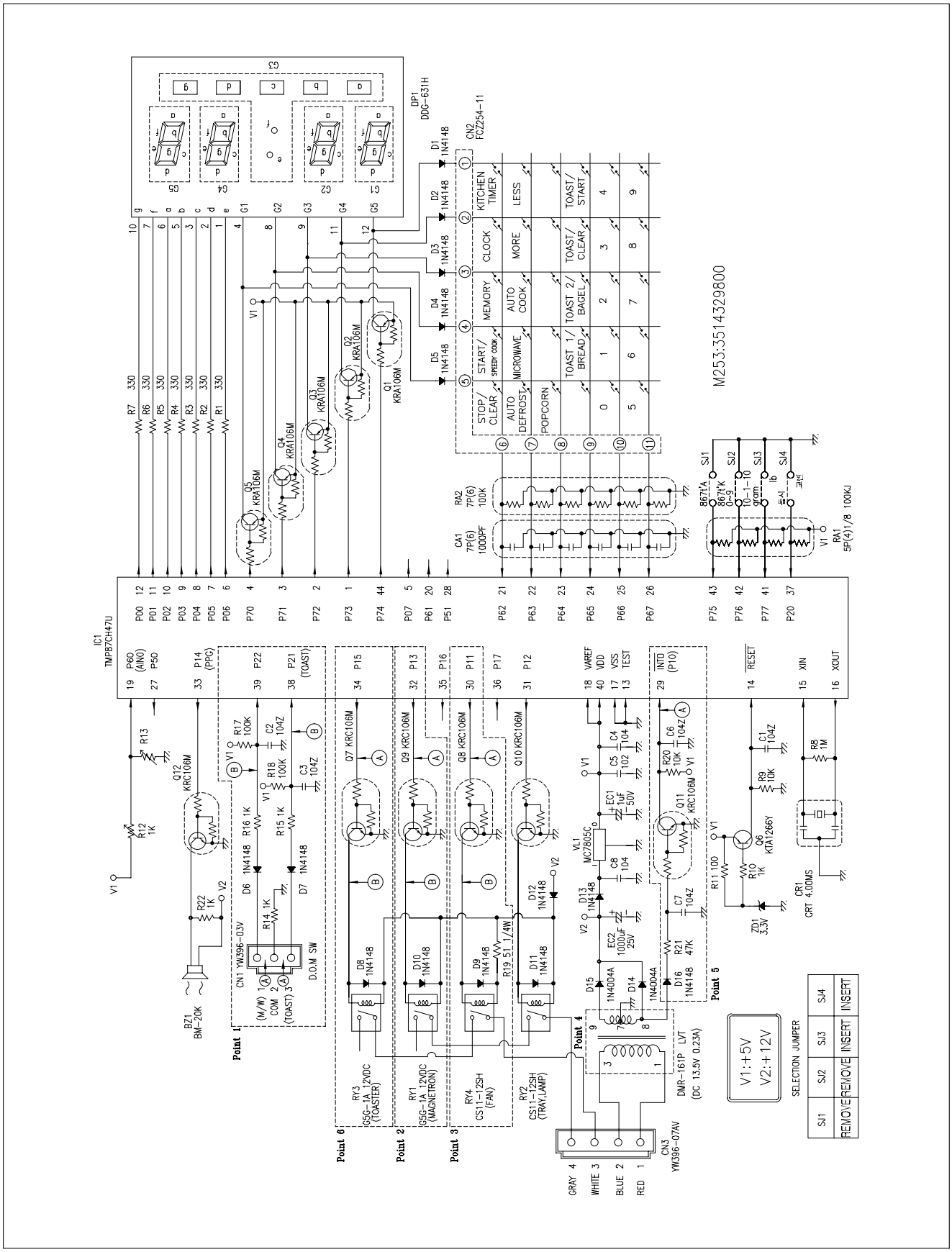
6. When the digital clock does not operate properly.

→ refer to Circuit Diagram (point 5)

POINT	WAVE FORM
A	 T: 16.67 ms(60Hz)

❋ If clock does not keep exact time, you must check R21,R20,Q11,C7,C6.

2. P.C.B. CIRCUIT DIAGRAM



✔ **Caution**: In this Service Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service information Center(http://svc.dwe.co.kr)

3. P.C.B. LOCATION NO

NO	NAME	SYMBOL	SPECIFICATION	PART CODE	Q'TY
1	PCB MAIN	M253	82X153	3514329800	1
2	BUZZER	BZ1	BM-20K	3515600100	1
3	C ARRAY	CA1	7P(6) 1000PF M 50V	CN6XB-102M	1
4	C CERA	C1~C6,C8	50V 104Z AXIAL	CCZF1H104Z	7
5	C CERA	C7	50V 102Z AXIAL	CCZB1H102K	1
6	C ELECTRO	EC1	50V RS 1MF	CEXE1H109A	1
7	C ELECTRO	EC2	25V RSS 1000MF	CEXF1E102V	1
8	CONNECTOR WAFER	CN1	YW396-03V	3519150530	1
9	CONNECTOR WAFER	CN2	FCZ 254-11	441M367160	1
10	CONNECTOR WAFER	CN3	YW396-07AV	3519150540	1
11	LED DISPLAY	DP1	LTC-4651HG(631)	DDDG631H02	1
12	DIODE	D1~D14	1N4148	DZN4148---	14
13	DIODE	D15,D16	1N4004A	DZN4004A--	2
14	DIODE ZENER	ZD1	UZ-3.3BSB 1/2W	DZUZ3R3BSB	1
15	IC MICOM	IC1	TMP87CH47U	13GL87PH47	1
16	IC REGULATOR	VL1	MC7805C	1CPMC7805C	1
17	R ARRAY	RA1	5P(4) 1/8 100K 5%	RA-85X104J	1
18	R ARRAY	RA2	7P(6) 1/8 100K 5%	RA-87X104J	1
19	R CARBON FILM	R19	1/4W 51 5%	RD-4Z510J-	1
20	R CARBON FILM	R11	1/6W 100 5%	RD-AZ101J-	1
21	R CARBON FILM	R1~R7	1/6W 330 5%	RD-AZ331J-	7
22	R CARBON FILM	R10,R13~R16,R22	1/6W 1K 5%	RD-AZ102J-	6
23	R CARBON FILM	R21	1/6W 47K 5%	RD-AZ473J-	1
24	R CARBON FILM	R9,R20	1/6W 10K 5%	RD-AZ103J-	2
25	R CARBON FILM	R17,R18	1/6W 100K 5%	RD-AZ104J-	2
26	R CARBON FILM	R8	1/6W 1M 5%	RD-AZ105J-	1
27	RESONATOR CERA	CR1	CRT 4.00MS	5P4R00MTS-	1
28	TRANSISTOR	Q1~Q5	KRA106M	TZRA106M--	5
29	TRANSISTOR	Q7~Q12	KRC106M	TZRC106M--	6
30	TRANSISTOR	Q6	KTA-1266Y	TZTA1266Y-	1
31	TRANS POWER	LVT1	DMR-161P	5EPU035303	1
32	SW RELAY	RY1,RY3	G5G-1A DC12V	5SC0101121	2
33	SW RELAY	RY2,RY4	CS11-12SH 1C 1P	5SC0101128	2
34	WIRE COPPER	J5~J8	1/0.52 TIN COATING	85801052GY	4
35	WIRE COPPER	J1~J4,J9~J13	1/0.52 TIN COATING	85801052GY	9
36	WIRE COPPER	SJ3,SJ4	1/0.52 TIN COATING	85801052GY	1

EXPLODED VIEW AND PARTS LIST

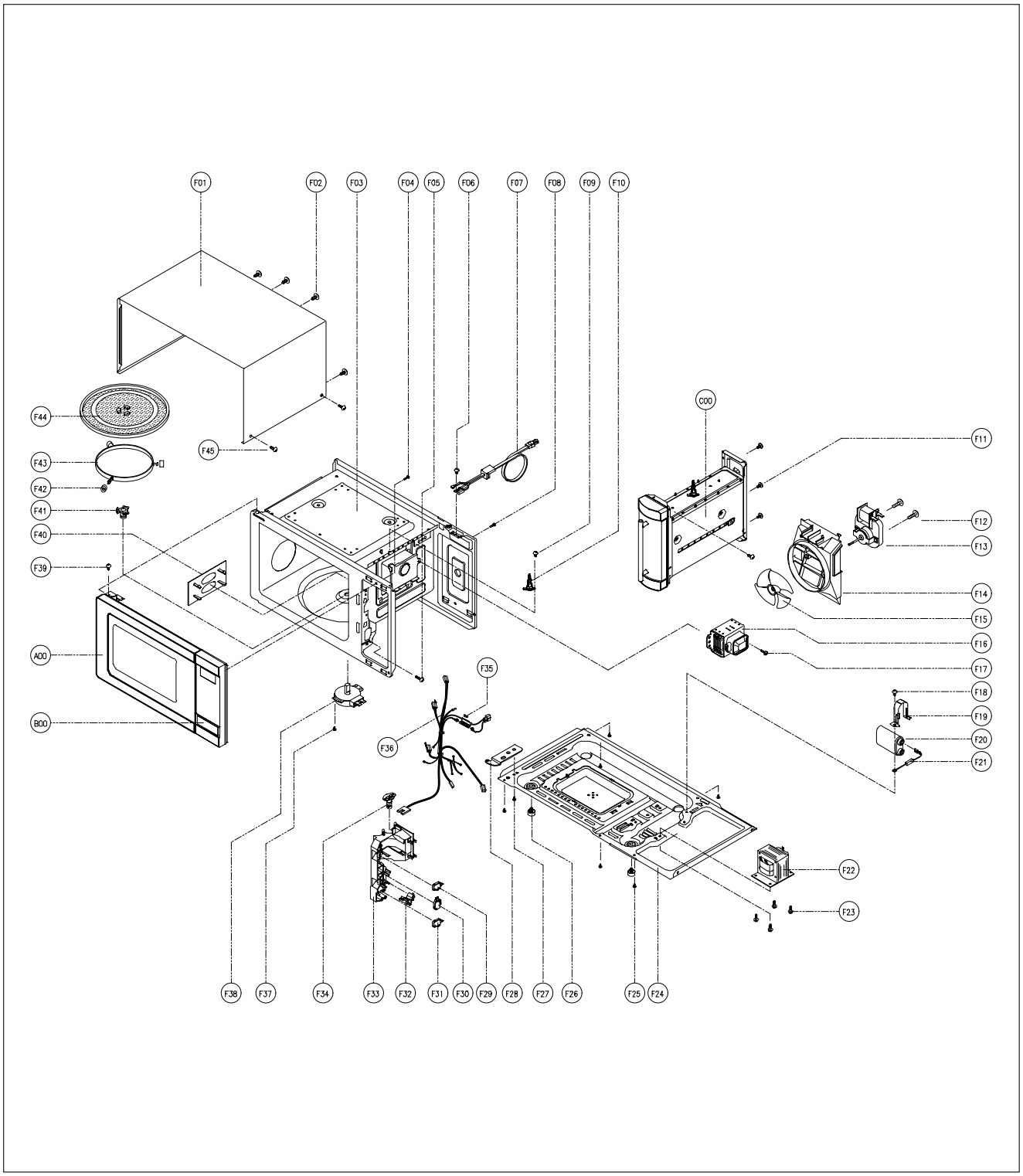
1. DOOR ASSEMBLY

Refer to Disassembly and assembly

2. CONTROL PANEL ASSEMBLY

Refer to Disassembly and assembly

3. TOTAL ASSEMBLY



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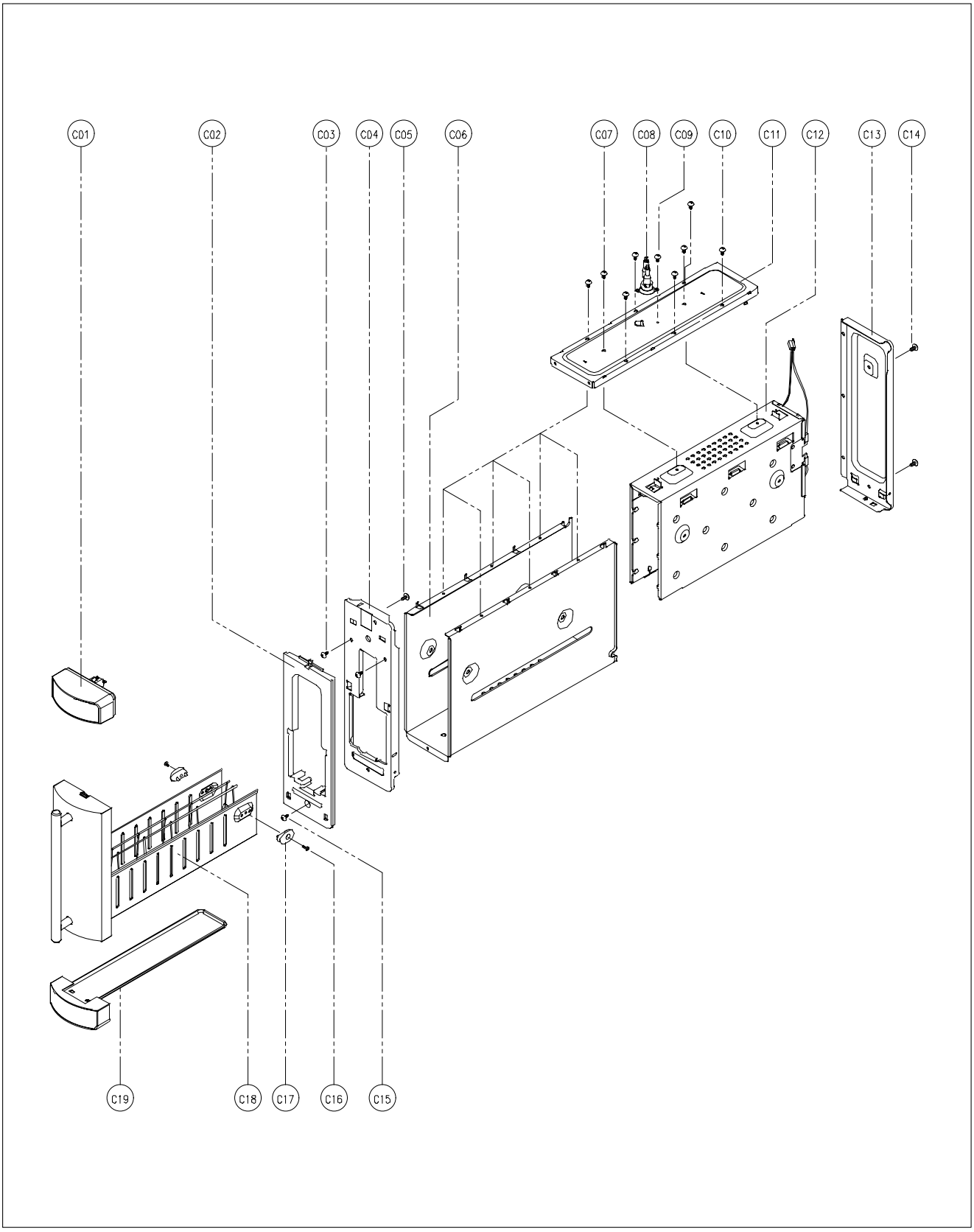
NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
A00	3511724200	DOOR AS	KOG-867T9A02	1
B00	PKCPSWAY00	CONTROL PANEL AS	KOG-867T9A02	1
C00	3510021100	ASSY TOASTER	KOG-867T9A02	1
F01	3510808010	CABINET	STS430 T0.5 H/L	1
F02	3516004100	SPECIAL SCREW	T1 TRS LR4 POLE 4X10 MFZN	4
F03	3516109900	CAVITY AS	KOR-86150S	1
F04	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
F05	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
F06	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1
F07	35113TCN35	CORD POWER AS	3X16 AWG 40X40 120-RTML	1
F08	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
F09	7121300611	SCREW TAPPING	T2S PAN 3X6 MFZN	1
F10	3518902600	THERMOSTAT	OFF:90 ON:60 H#187	1
F11	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	4
F12	7121402511	SCREW TAPPING	T2S PAN 4X25 MFZN	2
F13	3963821610	MOTOR SHADED POLE	120V 60HZ MW10XA-MO1	1
F14	3512517000	GUIDE WIND	PP	1
F15	3511800300	FAN	PP +30% GLASS	1
F16	3518002400	MAGNETRON	2M218J (F)	1
F17	3516004000	SPECIAL SCREW	T2 BOLT FLANGE 5X12 DACRO	1
F18	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F19	3513003200	HOLDER HV CAPACITOR	SECC T0.6	1
F20	3518302001	CAPACITOR HV	2100VAC 0.91UF #187 70MM	1
F21	3518400400	DIODE HV	HVR-1X-3AB 12KV #187	1
F22	3518118920	TRANS HV	DT-R11A0-1BT S	1
F23	3516003700	SPECIAL SCREW	TT3 HEX 4X8 FLG MFZN	4
F24	3510315600	BASE	SBHG T0.6	1
F25	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	5
F26	3512101400	FOOT	DASF-310	4
F27	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F28	3515201101	STOPPER HINGE *U	SCP-1 T2.5	1
F29	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1
F30	4415A66600	SW MICRO	VP-532A-OF/SPNC #187 200G	1
F31	3518571000	SWITCH PUSH	MP101C	1
F32	3513702600	LEVER LOCK	POM	1
F33	3513811700	LOCK	POM	1

✔ **Caution**: In this Service Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service information Center(http://svc.dwe.co.kr)

NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
F34	3513601500	LAMP	BL 120V 25W T25 C5A H187	1
F35	5F1CD2031S	FUSE	125V 20A 65TS	1
F36	3512767900	HARNESS MAIN	KOG-867T9A02	1
F37	7121400611	SCREW TAPPING	T2S PAN 4X6 MFZN	1
F38	3966821000	MOTOR SYNCRO	120V 60HZ TYJ50-8	1
F39	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1
F40	3511406200	COVER WAVE GUIDE	HEATPROOF PP	1
F41	3517400620	COUPLER	XAREC	1
F42	3514700900	ROLLER	TEFLON	3
F43	3512513610	GUIDE ROLLER	XAREC	1
F44	3517203510	TRAY	GLASS	1
F45	7113400814	SCREW TAPPING	T1 BIN 4X8 MFNI	2

4. TOAST ASSEMBLY (C00)



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NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
C01	3510021300	ASSY PANEL TOP	KOG-867T9A02	1
C02	3511410800	COVER FRONT	PBT	1
C03	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	2
C04	3514501900	PLATE FRONT	SBHG T0.6	1
C05	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	1
C06	3514502000	PLATE SIDE	SECC T0.5	1
C07	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	2
C08	3518903400	THERMOSTAT	OFF:150 ON:60 V H#187	1
C09	7121300611	SCREW TAPPING	T2S PAN 3X6 MFZN	1
C10	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	6
C11	3514502100	PLATE TOP	SBHG T0.4	1
C12	3510021200	ASSY HEATER	KOG-867T9A02	1
C13	3514502200	PLATE REAR	SECC T0.6	1
C14	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	2
C15	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1
C16	7122400811	SCREW TAPPING	T2S TRS 4X8 MFZN	2
C17	3515205000	STOPPER TOAST DRAWER	PBT	2
C18	3510021400	ASSY TOAST DRAWER	KOG-867T9A02	1
C19	3510021500	ASSY TRAY CRUMB	KOG-867T9A02	1

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TELEX: DWELEC K28177-8
CABLE: “DAEWOOELEC”

S/M No. : G867T9A001

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