

Service Manual

Microwave Oven

Model: KOC-9N4T7S

KOC-9N4T7S24

KOC-9N5T7S

KOC-9N5T7R

KOC-9N5T7S21

KOC-9N7T7S

KOC-9N7T7S21

KOC-9N7T7SA2

✓ 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

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.

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1. SAFETY AND PRECAUTIONS

1. FOR SAFE OPERATION

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

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

(Only a trained service personnel should make repairs.)

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

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

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

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

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

Do not attempt to defeat them.

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

2. FOR SAFE SERVICE PROCEDURES.

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

IMPORTANT

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

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

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

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

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

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

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

2. SPECIFICATIONS

MODEL	KOC-9N4T7S, 9N4T7S24, 9N5T7S, 9N5T7S21		KOC-9N5T7R
POWER SUPPLY	230V~50Hz, SINGLE PHASE WITH EARTHING		
POWER CONSUMPTION	MICROWAVE	1450W	
	GRILL	850W	
	CONVECTION	2250W	1450W
	COMBINATION	2950W	1450W
MICROWAVE ENERGY OUTPUT	900W (IEC 705)		
MICROWAVE FREQUENCY	2450MHz		
OUTSIDE DIMENSIONS (W X H X D)	542X329X515mm(21.3X13.0X20.3 in.)		
CAVITY DIMENSIONS (W X H X D)	350X230X355mm(13.8X9.1X14.0 in.)		
NET WEIGHT	Approx. 18Kg (39.6 lbs.)		
TIMER	60 minutes		
FUNCTION SELECTIONS	Microwave / Grill / Convection / Combination		
POWER SELECTIONS	10 LEVELS		
CAVITY VOLUME	1.0 Cu. Ft		

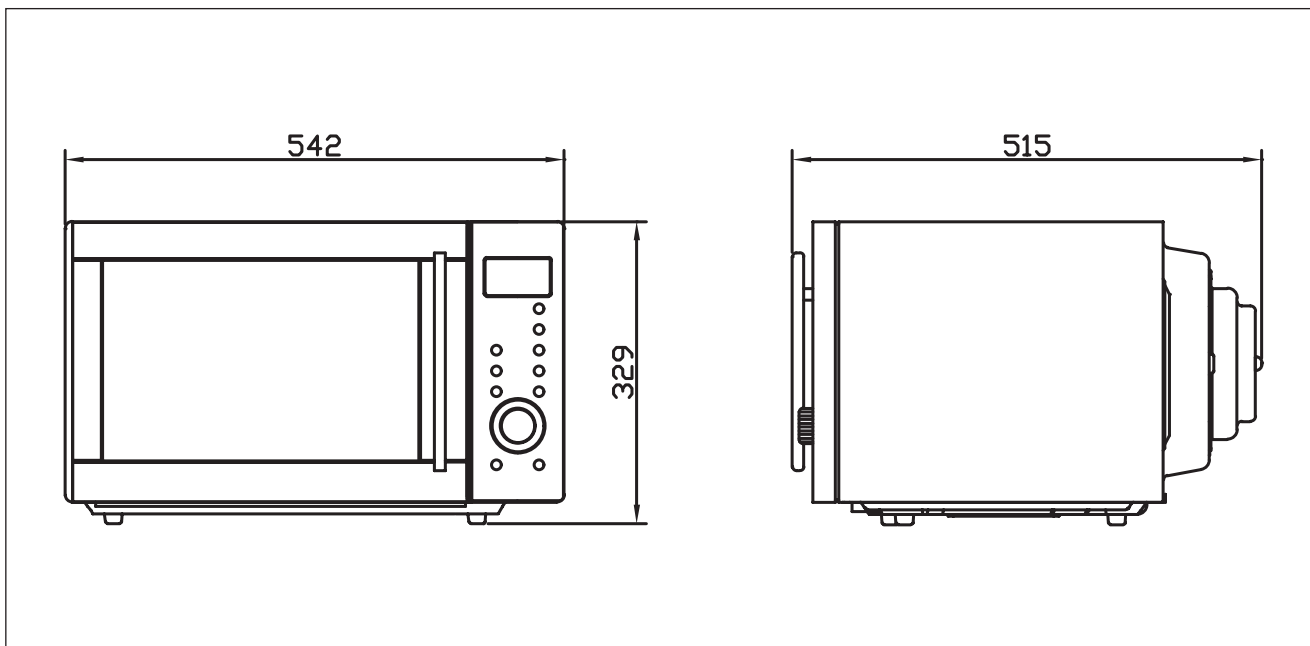
MODEL	KOC-9N7T7S, 9N7T7S21, 9N7T7SA2		
POWER SUPPLY	230V~50Hz, SINGLE PHASE WITH EARTHING		
POWER CONSUMPTION	MICROWAVE	1450W	
	GRILL	850W	
	CONVECTION	2250W	
	COMBINATION	2950W	
MICROWAVE ENERGY OUTPUT	900W (IEC 705)		
MICROWAVE FREQUENCY	2450MHz		
OUTSIDE DIMENSIONS (W X H X D)	542X329X514.1mm(21.3X13.0X20.2 in.)		
CAVITY DIMENSIONS (W X H X D)	350X230X355mm(13.8X9.1X14.0 in.)		
NET WEIGHT	Approx. 18Kg (39.6 lbs.)		
TIMER	60 minutes		
FUNCTION SELECTIONS	Microwave / Grill / Convection / Combination/ Barbeque(KOC-9N7T7SA2 ONLY)		
POWER SELECTIONS	10 LEVELS		
CAVITY VOLUME	1.0 Cu. Ft		

* SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE.

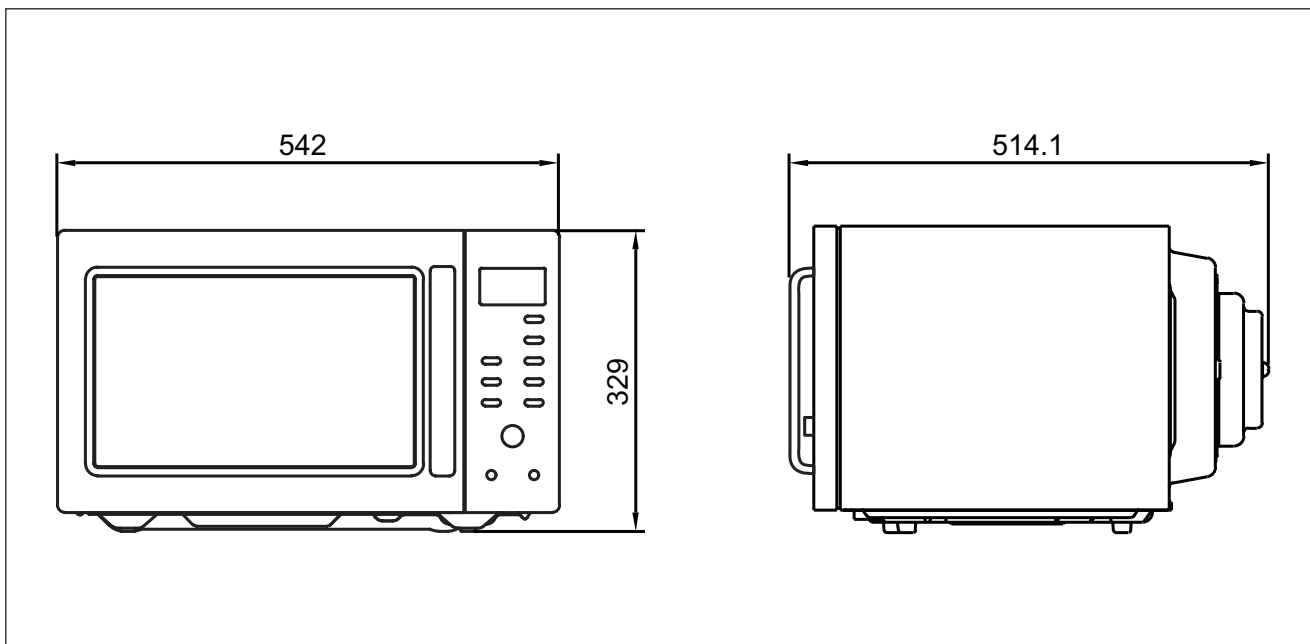
3. EXTERNAL VIEW

1. OUTER DIMENSION

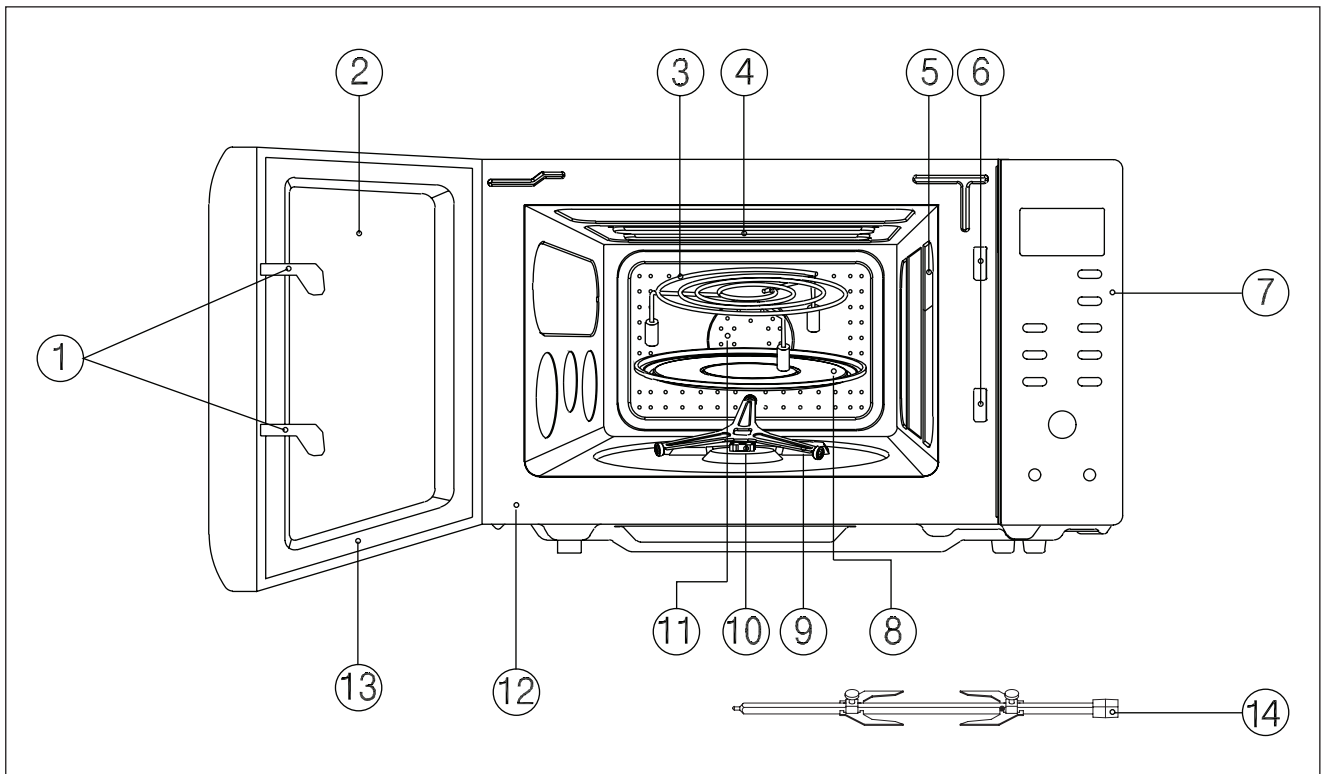
1)KOC-9N4T/9N5T



2)KOC-9N7T



2. FEATURE DIAGRAM



1. DOOR HOOK

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

2. DOOR VIEWING SCREEN

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

3. METAL RACK

4. TOP HEATER

Turns on when convection, grill and combi cooking is selected.

5. OVEN LAMP

Automatically turns on during oven operating.

6. SAFETY INTERLOCK SYSTEM

7. CONTROL PANEL

8. TURNTABLE TRAY

Rotates during cooking and ensure even distribution of Microwaves.
It can also be used as a cooking utensil.

9. ROLLER GUIDE

This must always be used for cooking together with the turntable tray.

10. COUPLER

This fits over the shaft in the center of the ovens cavity floor. This is to remain in the oven for all cooking.

11. CONVECTION OUTLET & FAN

12. OVEN FRONT PLATE

13. DOOR SEAL

Door seal maintains the microwave energy within the oven cavity and prevents microwave leakage.

14. BARBECUE BAR (KOC-9N7T7SA2 ONLY)

This is used barbecue cooking.

4. INSTALLATION

1. Steady, flat location

This microwave oven should be set on a steady, flat surface.
This microwave oven is designed for counter top use only.

2. Leave space behind and side

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

3. Away from Radio and TV sets

Poor television reception and radio interference may result if the oven is located close to a TV, Radio, antenna or feeder and so on.
Position the oven as far from them as possible.

4. Away from heating appliances and water taps

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

5. Power supply

- Check your local power source. This microwave oven requires a current of approximately 13 amperes, 230V, 50Hz.
- 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.

EARTHING INSTRUCTIONS

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

WARNING

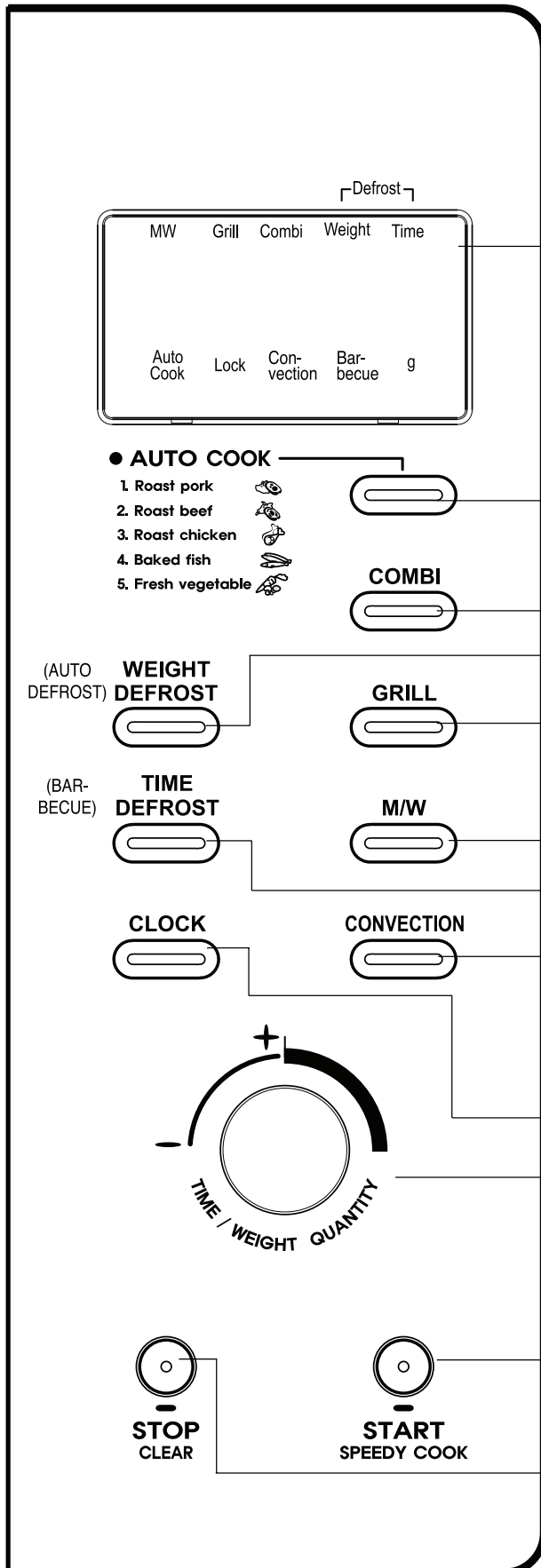
Improper use of the earthing plug can result in a risk of electric shock.

Consult a qualified electrician or serviceman if the earthing instructions are not completely understood, or if doubt exists as to whether the appliance is properly earthed, and either:

If it is necessary to use an extension cord, use only a 3-wire extension cord that has a 3-blade earthing plug, and a 3-slot receptacle that will accept the plug on the appliance.

The marked rating of the extension cord should be equal to or greater than the electrical rating of the appliance, or Do not use an extension cord.

5. CONTROL PANEL



- ① **Display** : Cooking time, power level, indicators and present time are displayed.
 MW : When blinking, the oven is operating in MICROWAVE COOK.
 Grill : When blinking, the oven is operating in GRILL.
 Combi : When blinking, the oven is operating in COMBI.
 Defrost Weight : When blinking, the oven is operating in WEIGHT DEFROST.
 Time : When blinking, the oven is operating in TIME DEFROST.
 Auto-cook : When blinking, the oven is operating AUTO COOK.
 Lock : When lighting, the oven is CHILD LOCK.
 Con-vection : When blinking, the oven is operating in CONVECTION.
 g : When blinking, the oven is operating in weight input mode.
 Barbecue : When blinking, the oven is operating in barbecue. (KOC-9N7T7SA2 only)
- ② **Auto cook** : Used to cook or reheat.
- ③ **Combi** : Used to select combi.
- ④ **Weight Defrost** : Press to select the weight defrosting cooking. (KOC-9N4T7S/9N4T7S24/9N5T7S/9N5T7R/9N5T7S21/9N7T7S/9N7T7S21 only)
Auto Defrost : Press to select the auto defrosting cooking. (KOC-9N7T7SA2 only)
- ⑤ **Grill** : Used to select grill.
- ⑥ **MW** : Used to set power level of micro wave.
- ⑦ **Time Defrost** : Press to select the time defrosting cooking. (KOC-9N4T7S/9N4T7S24/9N5T7S/9N5T7R/9N5T7S21/9N7T7S/9N7T7S21 only)
Barbecue : Press to select the barbecue cooking. (KOC-9N7T7SA2 only)
- ⑧ **Convection** : Used to select convection and selected temp.
- ⑨ **Clock** : Used to set clock.
- ⑩ **Dial knob** : Used to set time, weight and quantity.
- ⑪ **START/SPEEDY COOK** : Used to start a programmed, also for speedy start(each press adds 30 seconds microwave cooking time).
- ⑫ **STOP/CLEAR** : Used to stop the oven operation or to delete the cooking data.

6. 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.

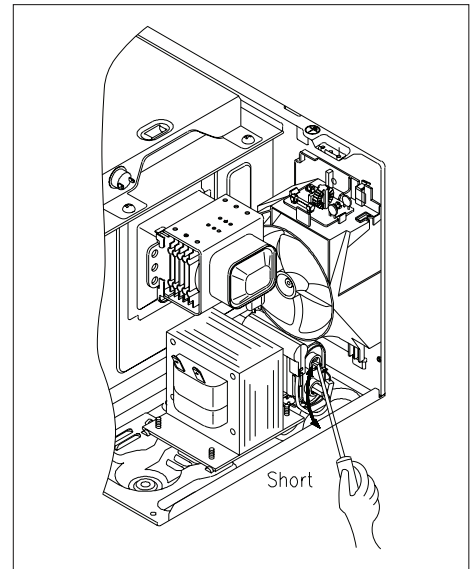
It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

(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 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.

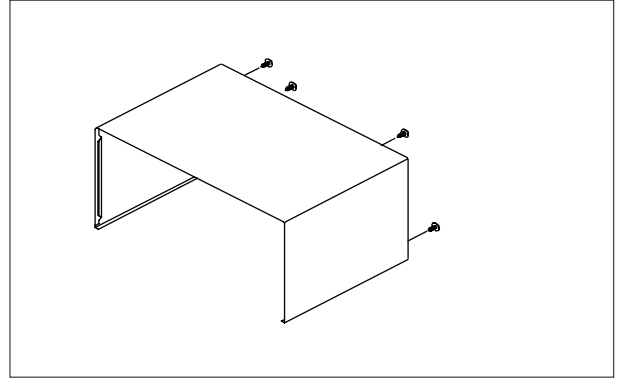


CAUTION : Service personnel should remove their watches whenever working close to or replacing the magnetron.

WARNING : When servicing the appliance, 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.

1. To remove cabinet

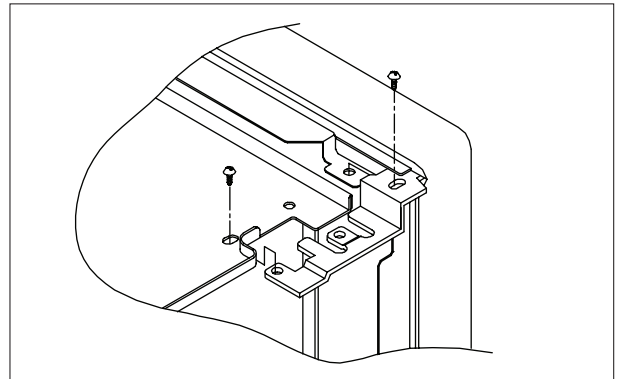
- 1) Remove four screws on cabinet back.
- 2) Push the cabinet backward.



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 assembly.

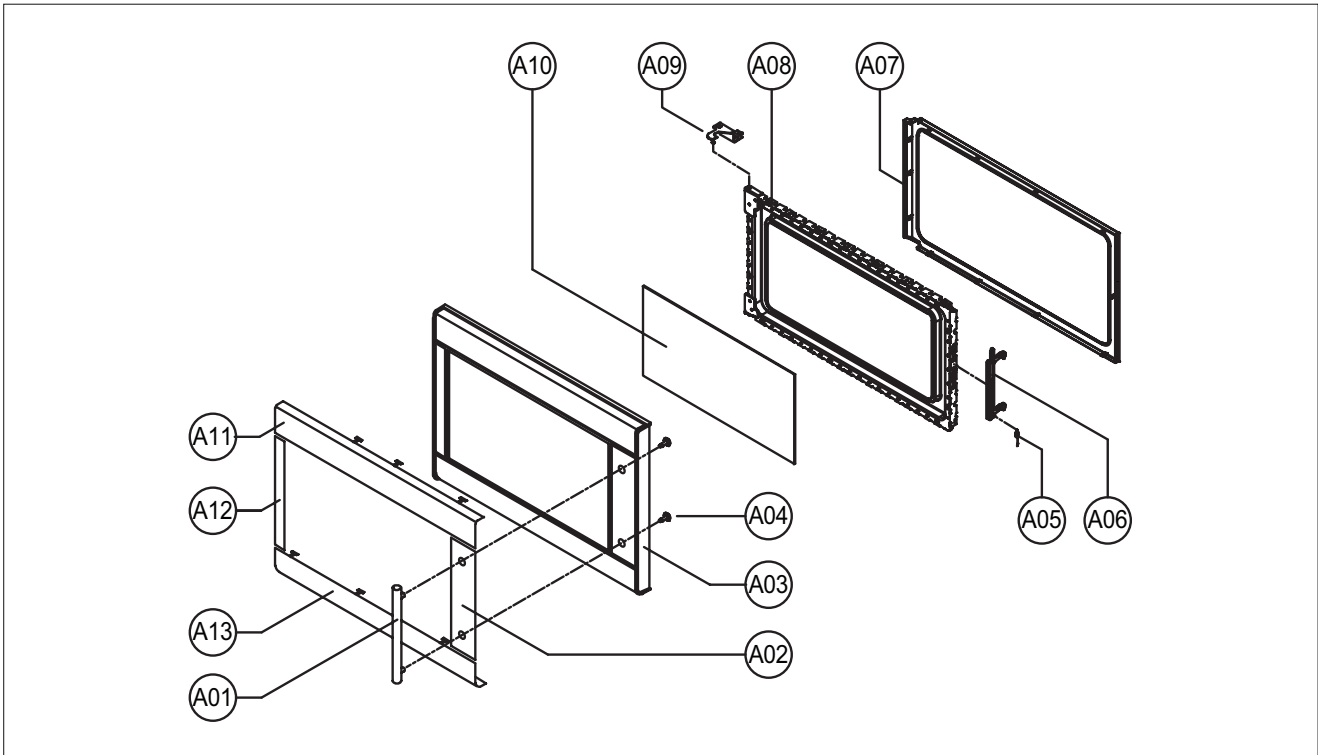
NOTE: After replacing the door assembly, perform a check of correct alignment with the hinge and cavity front plate.



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3. To remove door parts.

1) KOC-9N4T/9N5T

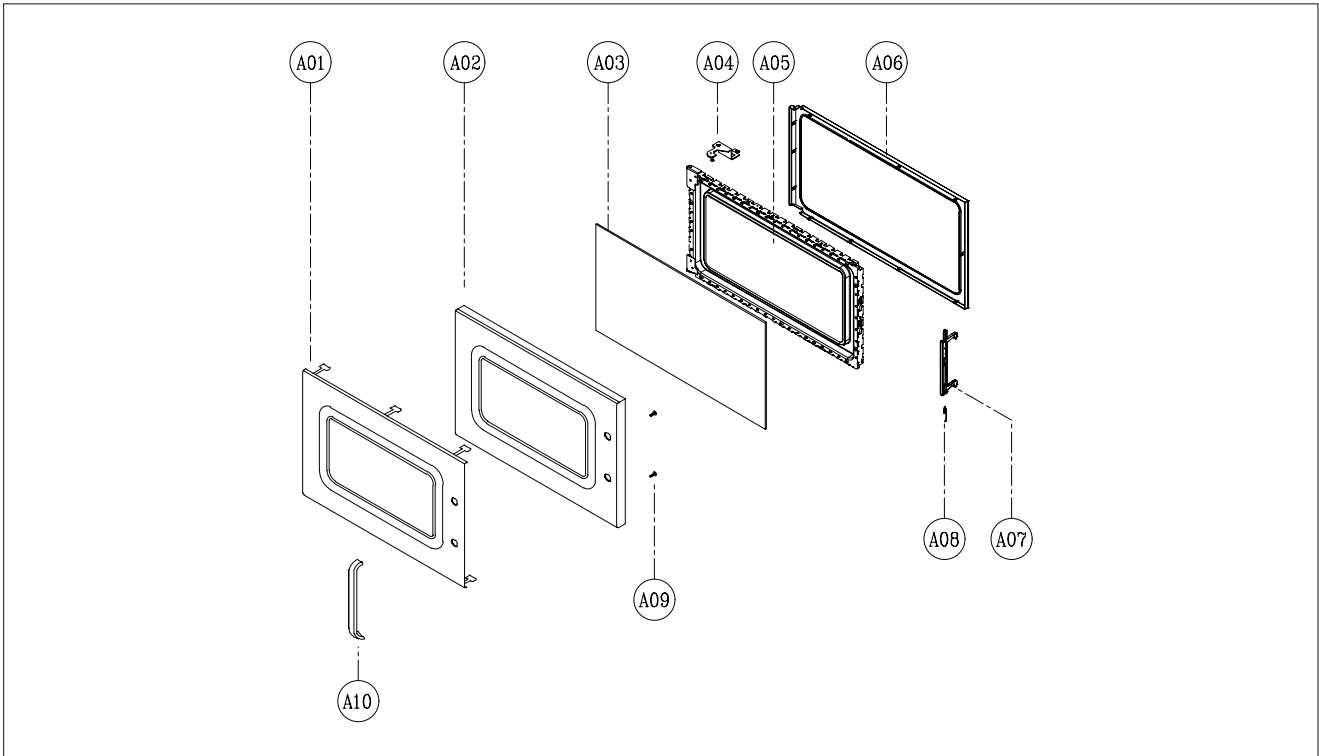


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
A01	3512603620	HANDLE DOOR	S455C	1	
A02	3511608300	DECORATOR DOOR*R	SUS430 T0.5 H/L	1	
A03	3512204820	FRAME DOOR	ALLOY PC+ABS	1	
A04	7001503011	SCREW MACHINE	PAN 5*30 MFZN	2	
A05	3515101800	SPRING HOOK	PW1	1	
A06	3513101200	HOOK	POM	1	
A07	3512302400	GASKET DOOR	PBT	1	
A08	3516602200	DOOR PLATE	SBHG-3A T0.7	1	
A09	3515304800	SUPPORTER HINGE*T	SCP-1 T2.0	1	
A10	3517007120	BARRIER-SCREEN *O	GLASS T3.2	1	
	3517007130	BARRIER-SCREEN *O	GLASS T3.2 MIRROR	1	KOC-9N4T7S24 ONLY
A11	3511608700	DECORATOR DOOR*T	SUS430 T0.5 H/L	1	
A12	3511608400	DECORATOR DOOR*L	SUS430 T0.5 H/L	1	
A13	3511608200	DECORATOR DOOR*U	SUS430 T0.5 H/L	1	

- (1) Remove the gasket door from door plate.
- (2) Remove the door frame from door plate.
- (3) Remove screws from door frame.
- (4) Remove the handle from door frame.
- (5) Remove the decorator door from door frame.
- (6) Remove the stopper hinge top from door plate.
- (7) Remove the spring and the hook.
- (8) Remove barrier screen outer from door frame.
- (9) Reverse the above steps for reassembly.

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2) KOC-9N7T



REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
A01	3511614600	DECORATOR DOOR	STS430 T0.5 H/L	1	
A02	3512209200	FRAME DOOR	ABS XR-401 SR-0320	1	
A03	3517007120	BARRIER-SCREEN*O	TEMP GLASS T3.2	1	
A04	3515204900	STOPPER HINGE*T AS	SCP-1 T2.0	1	
A05	3516602200	DOOR PLATE	SBHG-3A T0.7	1	
A06	3512302410	GASKET DOOR	LU POL 2300	1	
A07	3513101200	HOOK	POM	1	
A08	3515102300	SPRING HOOK	PW1	1	
A09	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	2	
A10	3512606010	HANDLE DOOR	ABS SG-0760D SG-175	1	

- (1) Remove the gasket door from door plate.
- (2) Remove the door frame from door plate.
- (3) Remove screws from door frame.
- (4) Remove the handle from door frame.
- (5) Remove the decorator door from door frame.
- (6) Remove the stopper hinge top from door plate.
- (7) Remove the spring and the hook.
- (8) Remove barrier screen outer from door frame.
- (9) Reverse the above steps for reassembly.

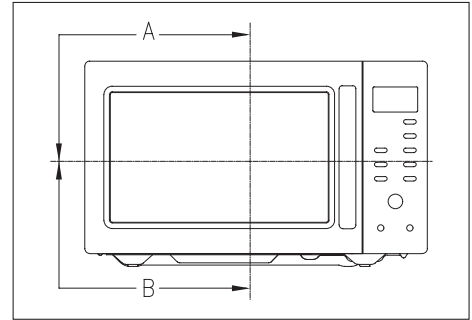
4. Method to reduce the gap between the door seal and the oven front surface.

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

- Loosen two 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.

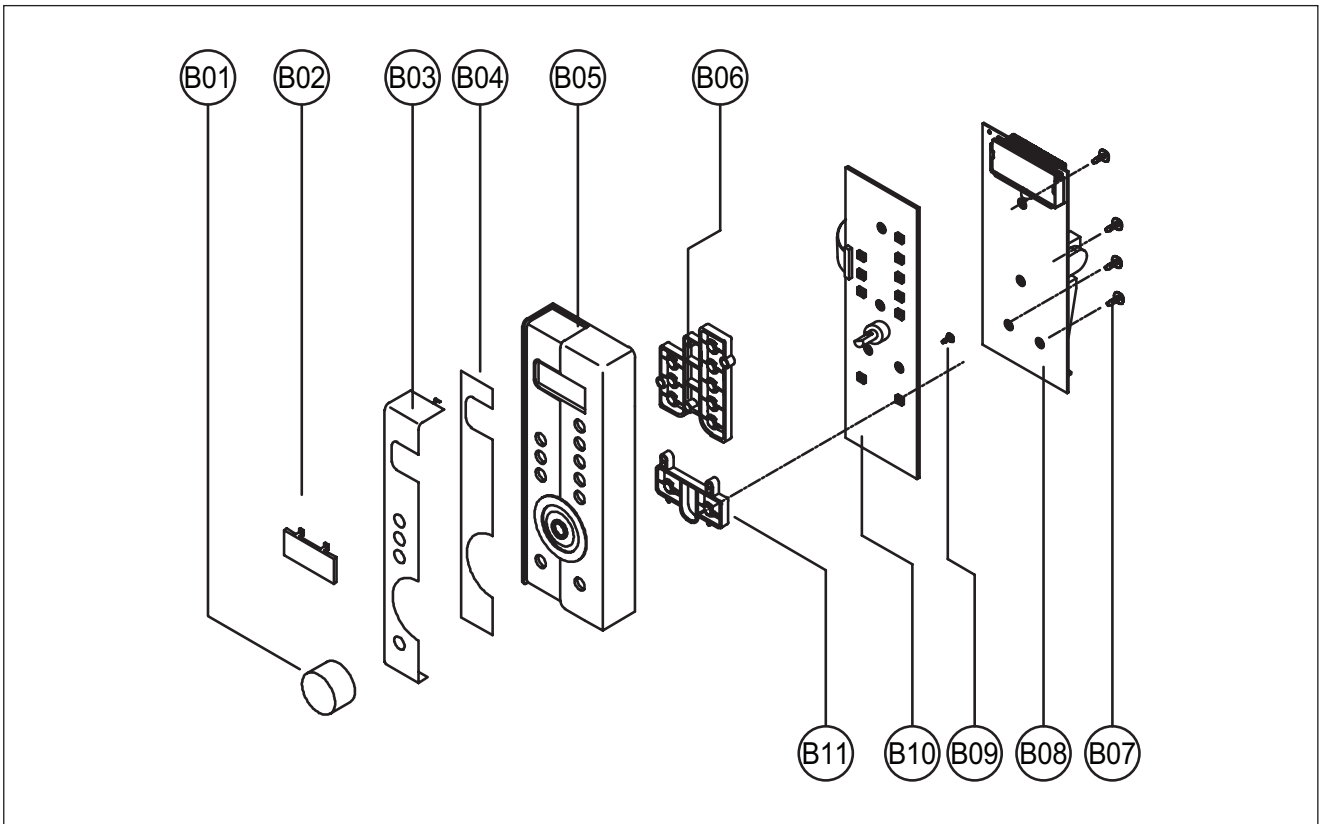


NOTE : A small gap may be acceptable if the microwave leakage does not exceed 4mW/cm².

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5. To remove control panel parts.

1) KOC-9N4T7S,9N4T7S24

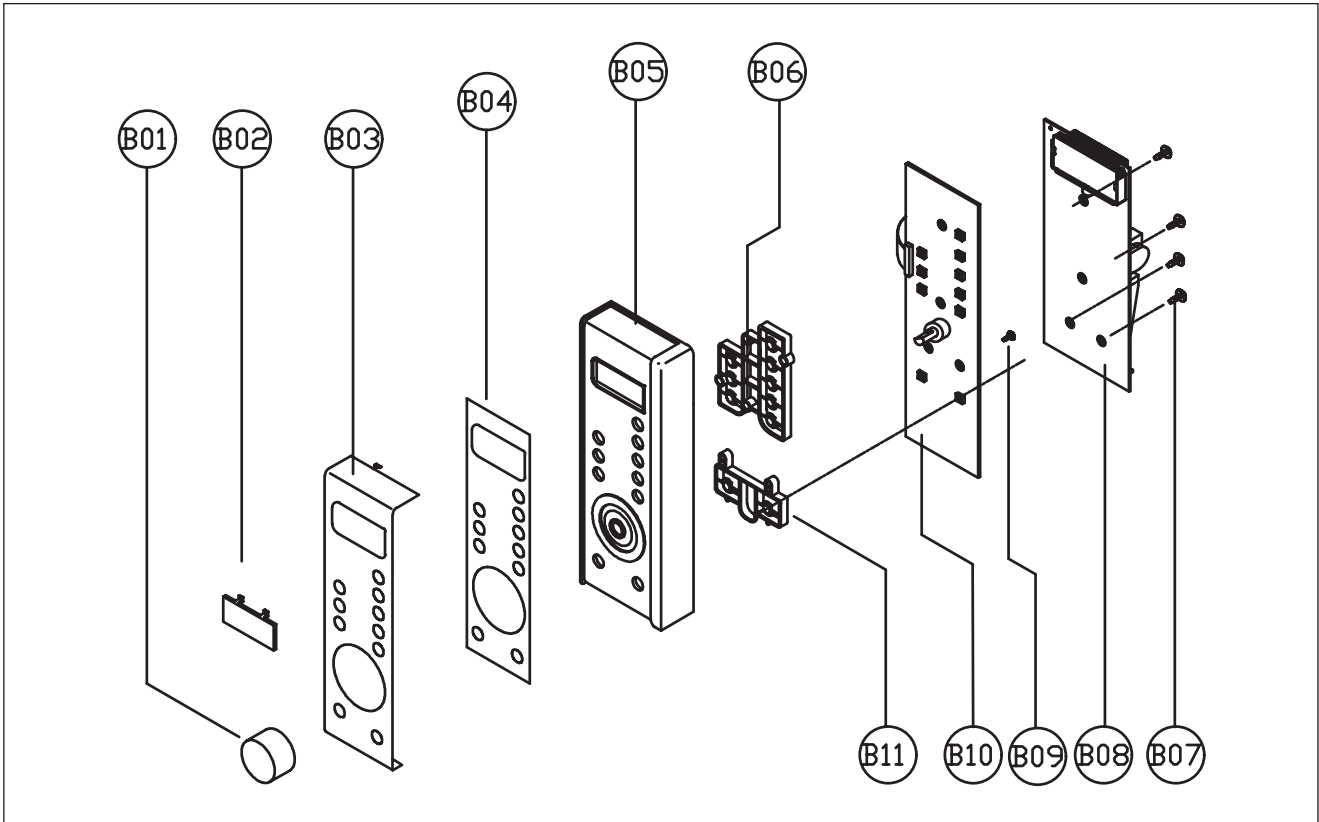


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3513406330	KNOB VOLUME	ABS SG-175 SG-0760D	1	
B02	3515501820	WINDOW DISPLAY	PMMA	1	
B03	3511608100	DECORATOR C-PANEL	SUS430 T0.5 H/L	1	
B04	3516003940	SPECIAL DOUBLE TAPE	SI-161 T0.15	1	
B05	3516725220	CONTROL-PANEL	ABS XR-401 SG-0320G	1	
B06	3516909080	BUTTON FUNCTION-A	ABS SG-175 SG-0760D SPRAY	1	
B07	71222401211	SCREW TAPPING	T2S TRS 4*12 MFZN	4	
B08	PKMPMSA200	PCB MAIN AS	KOC-9N4T7S	1	
B09	7121301011	SCREW TAPPING	T2S PAN 3*10 MFZN	5	
B10	PKBPMSA200	PCB SUB AS	KOC-9N4T7S	1	
B11	3516909090	BUTTON FUNCTION-B	ABS SG-175 SG-0760D SPRAY	1	

- (1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- (2) Remove four screws(B07) which secure the PCB Main ASS'Y.
- (3) Pull out the Main PCB assembly(B08).
- (4) Remove four screws(B09) which secure the PCB Sub ASS'Y.
- (5) Pull out the Sub PCB assembly(B10).
- (6) Pull out the Knob volume(B01) from the Sub PCB assembly.
- (7) Pull out ten buttons from the control panel.
- (8) Pull out Decorator control panel(B03) from the control panel.
- (9) Pull out Window display(B02) from the control panel.
- (10) Reverse the above steps for reassembly.

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2) KOC-9N5T7S,9N5T7R,9N5T7S21

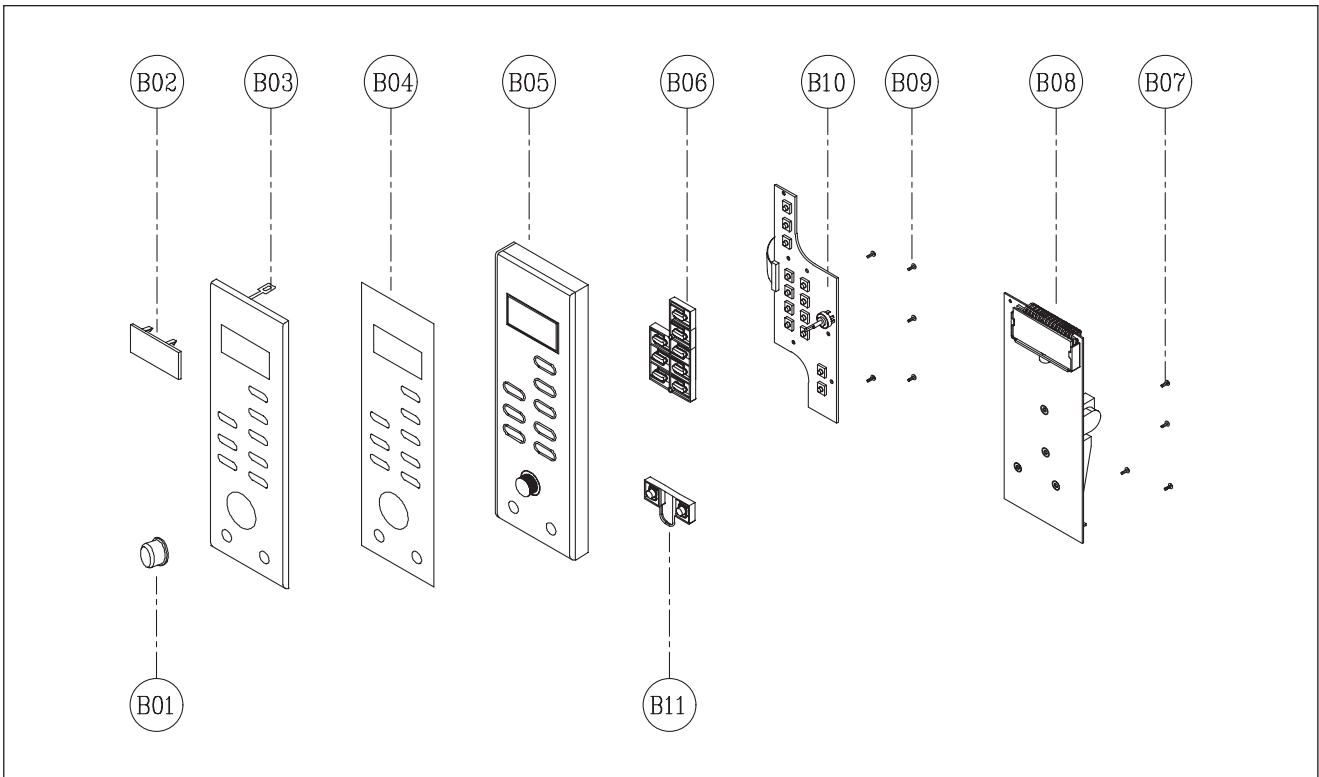


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3513406330	KNOB VOLUME	ABS SG-175 SG-0760D	1	
B02	3515501820	WINDOW DISPLAY	PMMA	1	
B03	3511608110	DECORATOR C-PANEL	SUS430 T0.5 H/L	1	
B04	3516005600	SPECIAL DOUBLE TAPE	HOSTIC 550M(D)TO.15	1	
B05	3516725260	CONTROL-PANEL	ABS XR-401 SG-0320G	1	
B06	3516909080	BUTTON FUNCTION-A	ABS SG-175 SG-0760D SPRAY	1	
B07	71222401211	SCREW TAPPING T2S	TRS 4*12 MFZN	4	
B08	PKMPMSA200	PCB MAIN AS	KOC-9N4T7S	1	KOC-9N5T7S, 9N5T7S21
	PKMPMSA220	PCB MAIN AS	KOC-9N5T7R	1	KOC-9N5T7R
B09	7121301011	SCREW TAPPING	T2S PAN 3*10 MFZN	5	
B10	PKBPSA200	PCB SUB AS	KOC-9N4T7S	1	
B11	3516909090	BUTTON FUNCTION-B	ABS SG-175 SG-0760D SPRAY	1	

- (1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- (2) Remove four screws(B07) which secure the PCB Main ASS'Y.
- (3) Pull out the Main PCB assembly(B08).
- (4) Remove four screws(B09) which secure the PCB Sub ASS'Y.
- (5) Pull out the Sub PCB assembly(B10).
- (6) Pull out the Knob volume(B01) from the Sub PCB assembly.
- (7) Pull out ten buttons from the control panel.
- (8) Pull out Decorator control panel(B03) from the control panel.
- (9) Pull out Window display(B02) from the control panel.
- (10) Reverse the above steps for reassembly.

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3) KOC-9N7T7S,9N7T7S21,9N7T7SA2

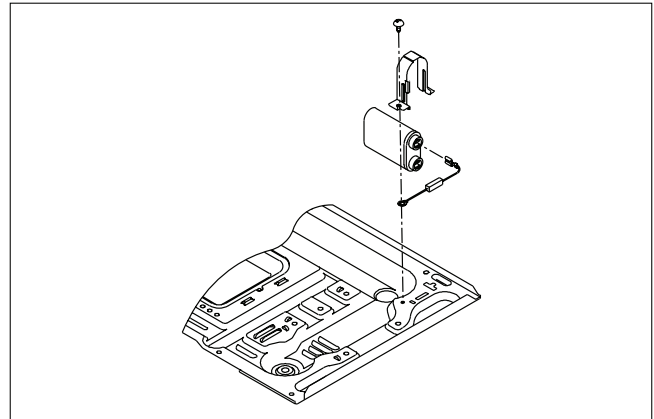


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
B01	3513408410	KNOB VOLUME	ABS SG-175 SG-0760D	1	
B02	3515501820	WINDOW DISPLAY	PMMA	1	
B03	3511614700	DECORATOR C-PANEL	STS430 T0.5 H/L	1	
B04	3516006200	SPECIAL DOUBLE TAPE	KOC-9N7T7S	1	
B05	3516732700	CONTROL-PANEL	ABS SG-0760D, SG-175	1	
B06	3516913610	BUTTON FUNCTION-A	ABS SG-175 SG-0760D SPRAY	1	
B07	7122401211	SCREW TAPPING	T2S TRS 4*12 MFZN	4	
B08	PKMPMSA200	PCB MAIN AS	KOC-9N4T7S	1	KOC-9N7T7S, 9N7T7S21
	PKMPMSB910	PCB MAIN AS	KOC-9N7T7SA2	1	KOC-9N7T7SA2
B09	7121301011	SCREW TAPPING	T2S PAN 3*10 MFZN	5	
B10	PKBPMSA200	PCB SUB AS	KOC-9N4T7S	1	
B11	3516913710	BUTTON FUNCTION-B	ABS SG-175 SG-0760D SPRAY	1	

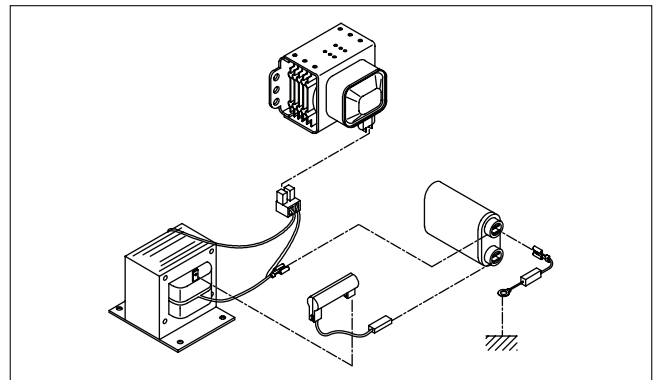
- (1) Remove the screw which secure the control panel, push up two snap fits and draw forward the control panel assembly.
- (2) Remove four screws(B07) which secure the PCB Main ASS'Y.
- (3) Pull out the Main PCB assembly(B08).
- (4) Remove four screws(B09) which secure the PCB Sub ASS'Y.
- (5) Pull out the Sub PCB assembly(B10).
- (6) Pull out the Knob volume(B01) from the Sub PCB assembly.
- (7) Pull out ten buttons from the control panel.
- (8) Pull out Decorator control panel(B03) from the control panel.
- (9) Pull out Window display(B02) from the control panel.
- (10) Reverse the above steps for reassembly.

6. To remove high voltage capacitor.

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

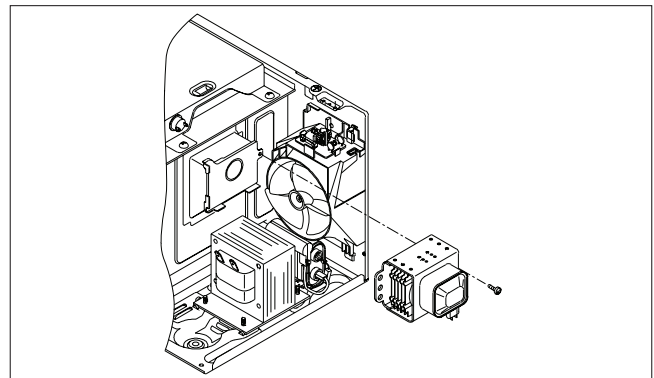


◆ High voltage circuit wiring

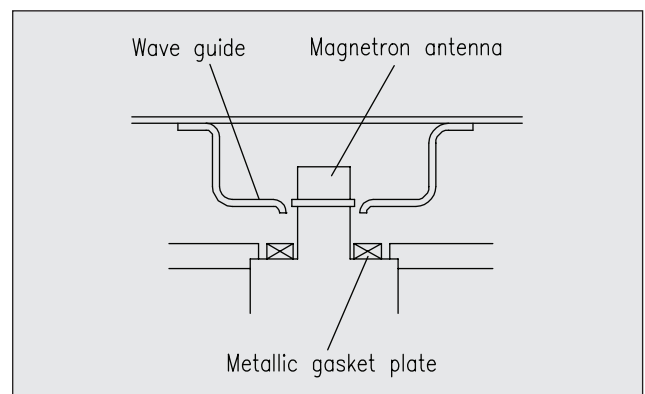
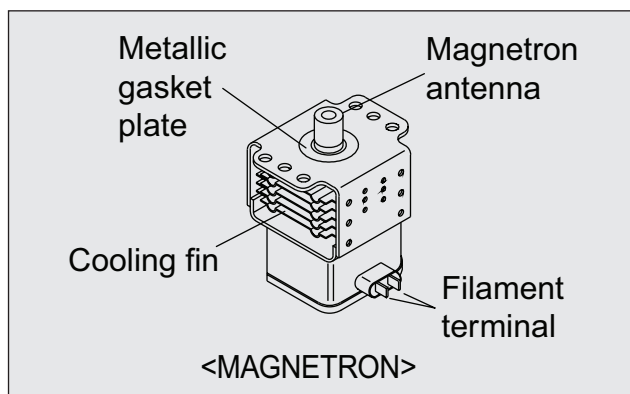


7. To remove magnetron.

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

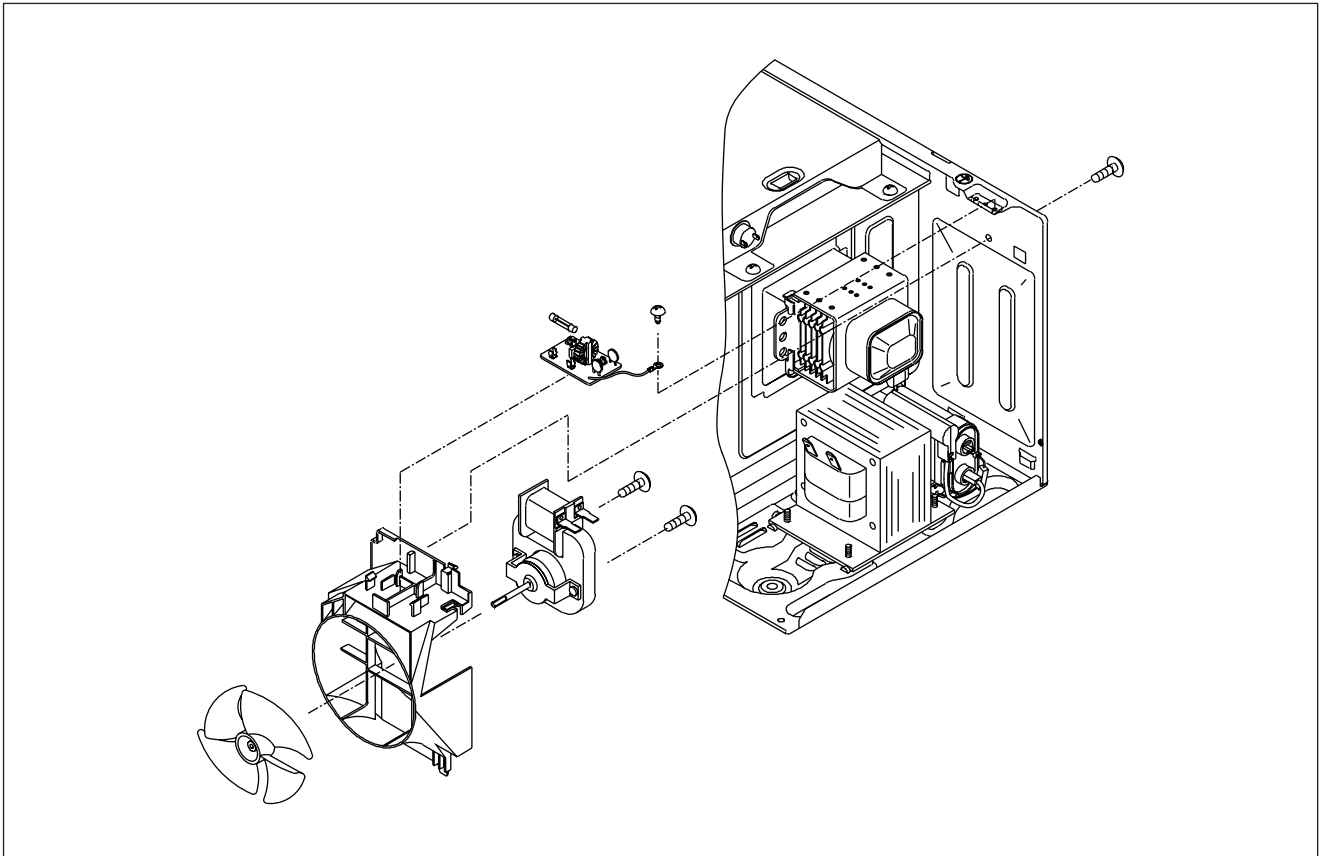


CAUTION : Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed $4\text{mW}/\text{cm}^2$ for a fully assembled oven with door normally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



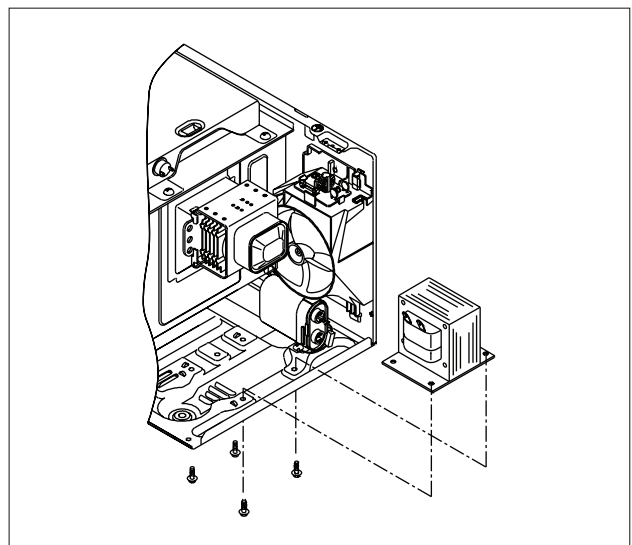
8. To remove wind guide assembly.

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



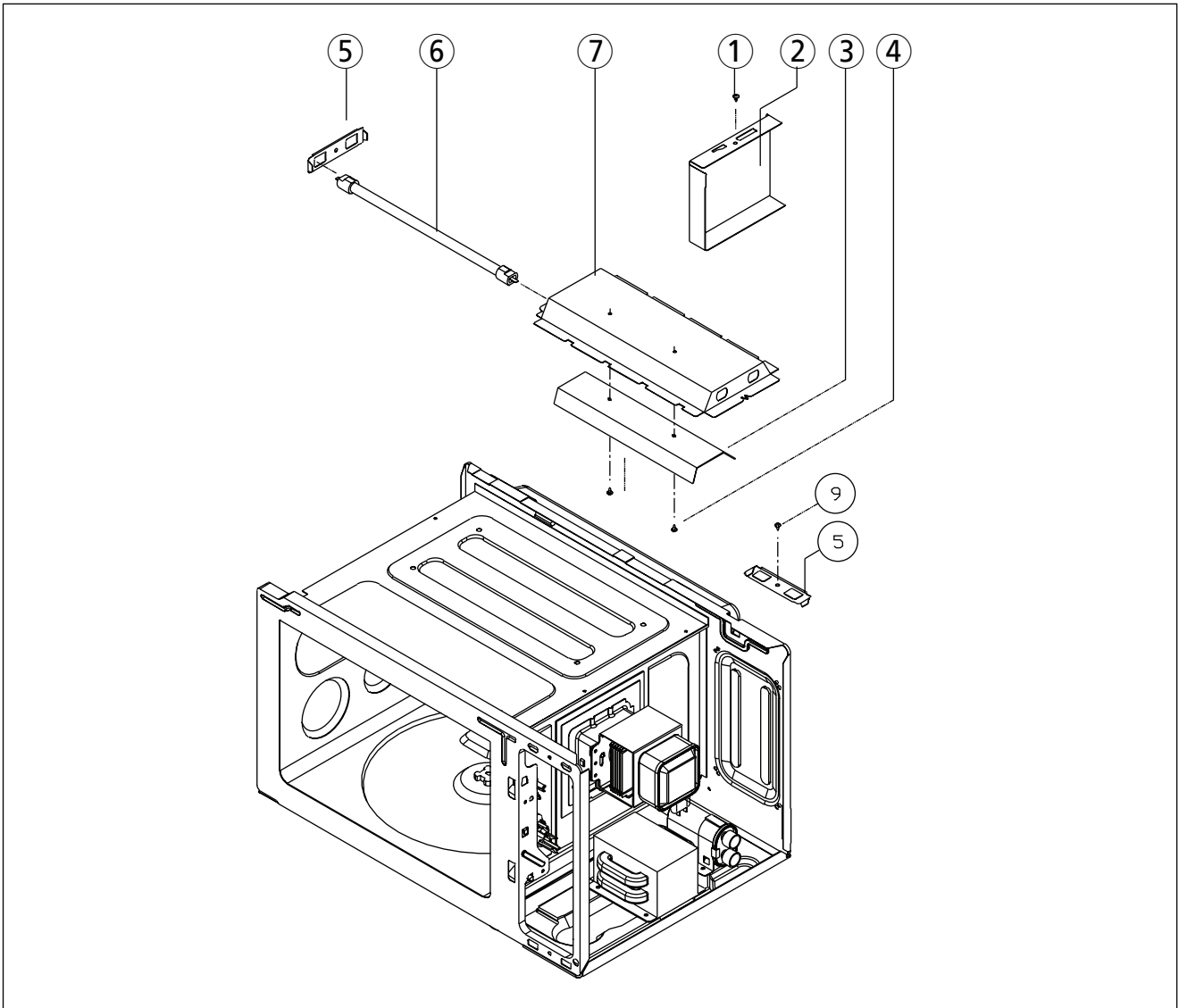
9. To remove H.V.transformer.

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



✓ **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

10. To remove Top heater assembly parts.

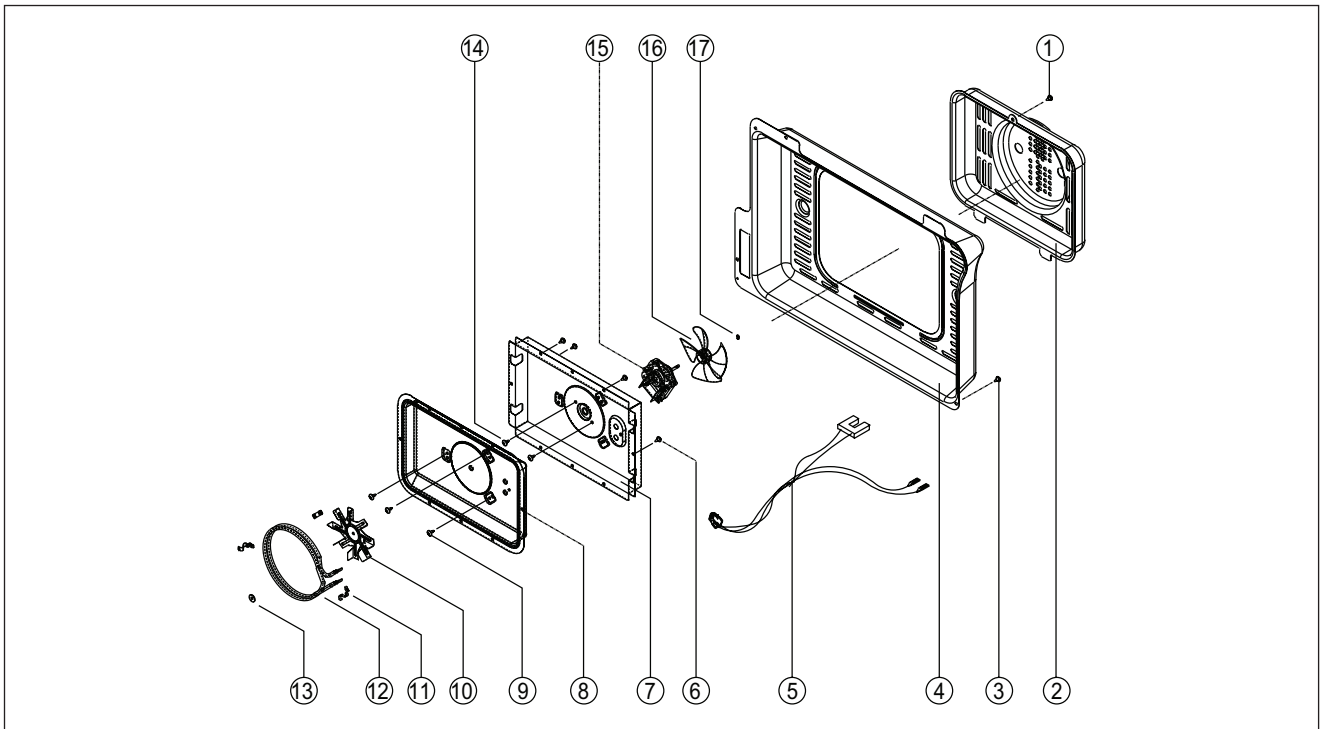


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
1	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	1	
2	3512520500	GUIDE AIR OUTLET	SA1D T0.5	1	
3	3512804900	HEATER REFLECTOR	STS430 T0.5	1	
4	7112401011	SCREW TAPPING	T1 TRS 4X10 MFZN	2	
5	3510607700	BRACKET HEATER *T	SA1D T0.5	2	
6	3512805800	HEATER MIRACLON	230V 800W 270MM	1	
7	3511410300	COVER HEATER *T	SA1D T0.5	1	

- 1) Remove a screw ① and pull out Guide air outlet ②.
- 2) Remove screws ⑨ and pull out braket heater *T ⑥.
- 3) Pull out heater miraclon ⑦.
- 4) Remove two screws ④.
- 5) Pull out the heater reflector ③ from cover heater *T ⑧.
- 6) Reverse the above steps for reassembly.

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11. To remove Rear heater assembly parts.

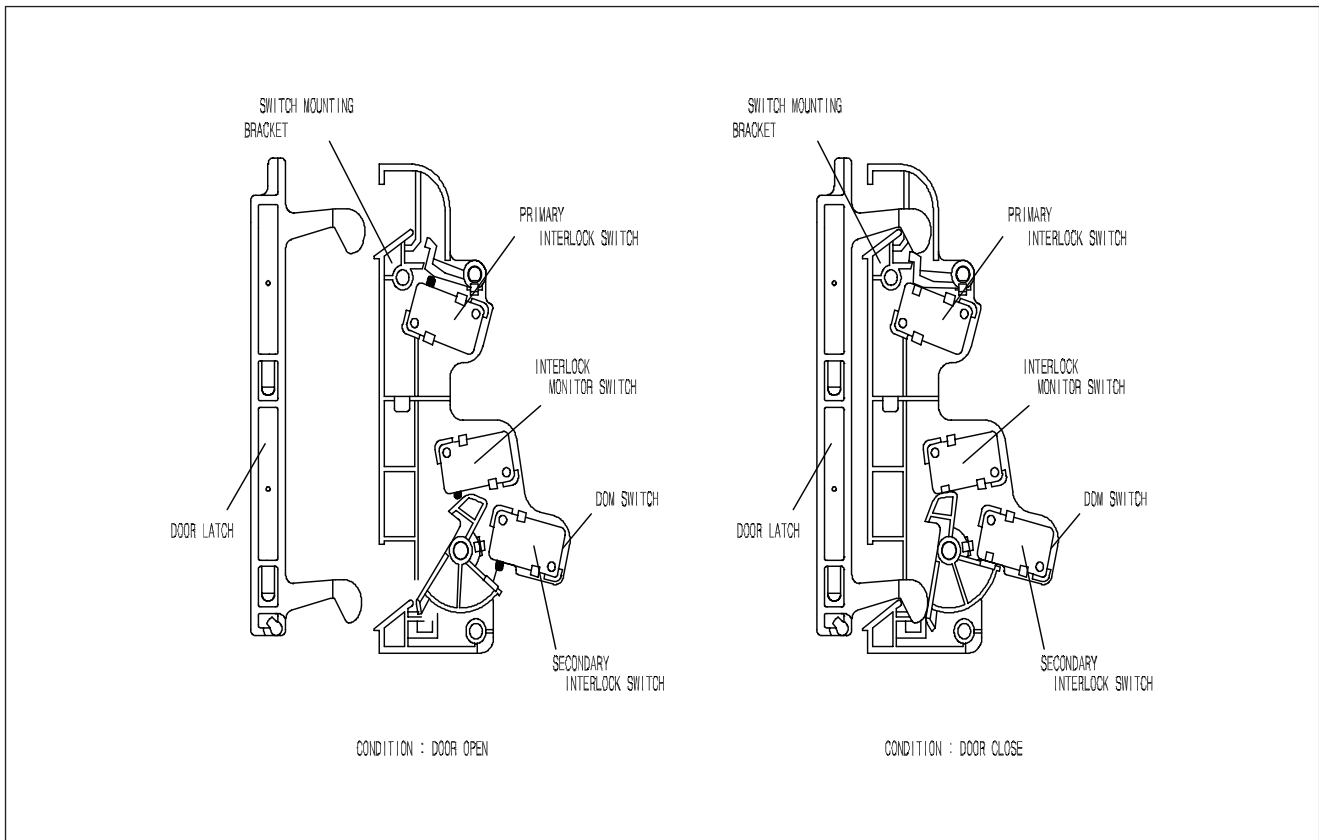


REF NO.	PART CODE	PART NAME	DESCRIPTION	Q TY	REMARK
1	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
2	3511407300	COVER MOTOR*B	SA1D-80 T0.5	1	
3	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
4	3511407900	COVER*B	SA1D-80 T0.5	1	
5	3512767611	HARNESS CONVECTION	KOC-924T0S ALTERNATE	1	
6	7113400814	SCREW TAPPING	T1 BIN 4*8 MFNI	4	
7	3513303400	INSULATOR HEATER*B	SBHG-1 T0.5	1	
8	3511409800	COVER HEATER*B	SA1D-80 T0.5	1	
9	7113400814	SCREW TAPPING	T1 BIN 4*8 MFNI	3	
10	3511800700	FAN CONVECTION	SA1D-80 T0.5	1	
11	3513002300	HOLDER HEATER	SUS 304 T0.5	3	
12	3512801800	HEATER	230V 1400W 1R18344	1	
13	7400104011	WASHER PLAIN	PW-1-4 MFZN	1	
14	7601400811	SCREW MACHINE	PAN 4*8 SW MFZN	2	
15	3963514330	MOTOR SHADED POLE	230V 50Hz MW10CA-T03	1	
16	3511800900	FAN	PBT	1	
17	7402704600	RING C	CR-5 SK5	1	

- 1) Remove a screw ① and pull out Cover motor *B ②.
- 2) Remove a screw ③ and pull out Cover *B ④.
- 3) Pull out the Harness convection-B ⑤.
- 4) Remove four screws ⑥ and then pull out the Rear heater assembly.
- 5) Remove a Nut ⑬ and the pull out the Fan convection ⑩.
- 6) Remove three screws ⑨ and then separate the Cover heater *B ⑦ and the Insulator heater *B ⑧.
- 7) Pull out the Heater ⑫ from the Cover Heater *B ⑦.
- 8) Remove two screw ⑭ and then separate the Insulator heater *B ⑧ and Motor shaded pole ⑮.
- 9) Remove the C-Ring ⑰ and then pull out the Fan ⑯ from Motor shaft.
- 10) Reverse the above steps for reassembly.

7. 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 one mounting screw.
- Adjust interlock switch assembly position.
- Make sure that lock lever moves smoothly after adjustment is completed.
- Tighten completely two mounting screws.

NOTE :

Microwave emission test should be performed after adjusting interlock mechanism.

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

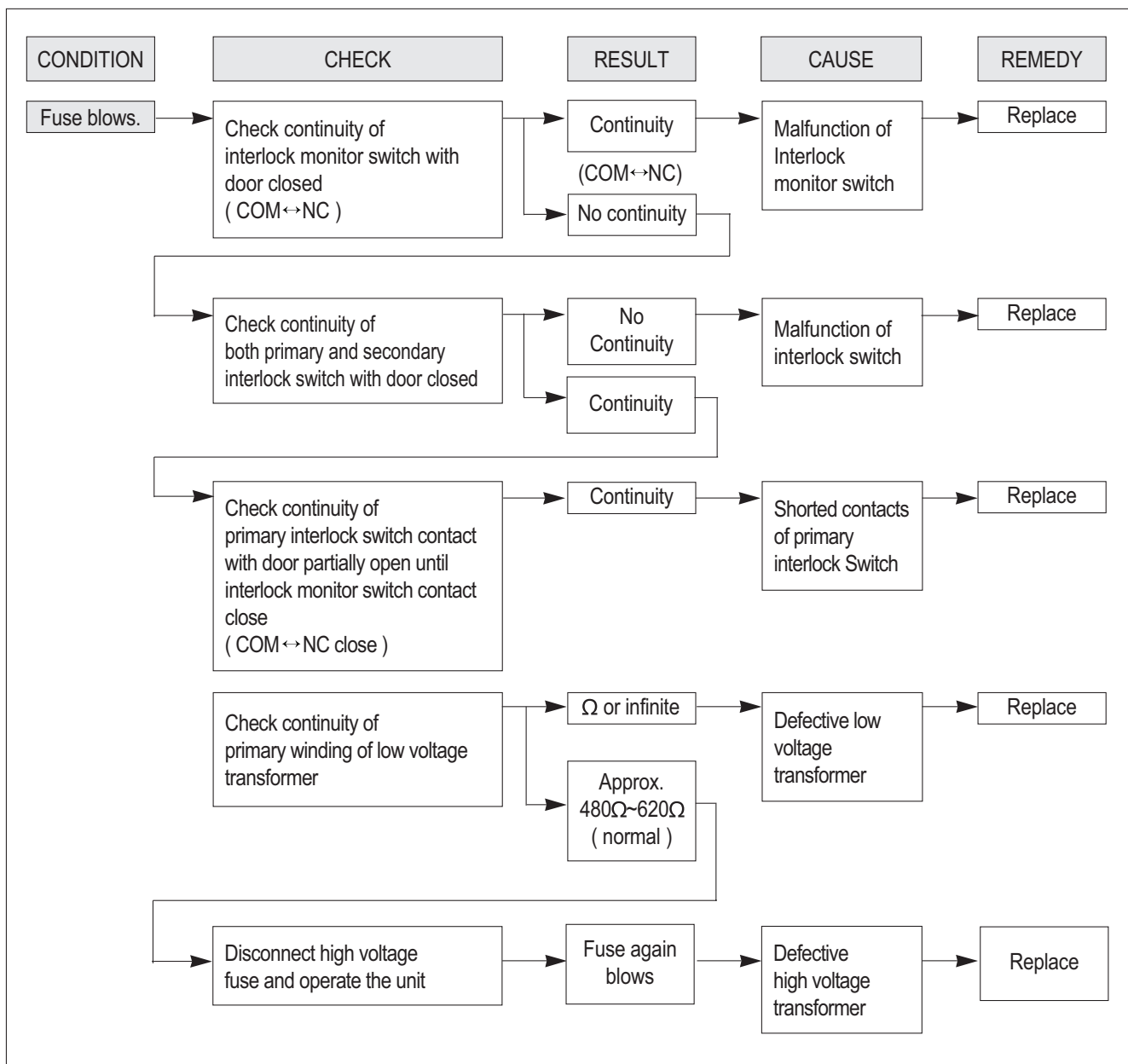
8. TROUBLE SHOOTING GUIDE

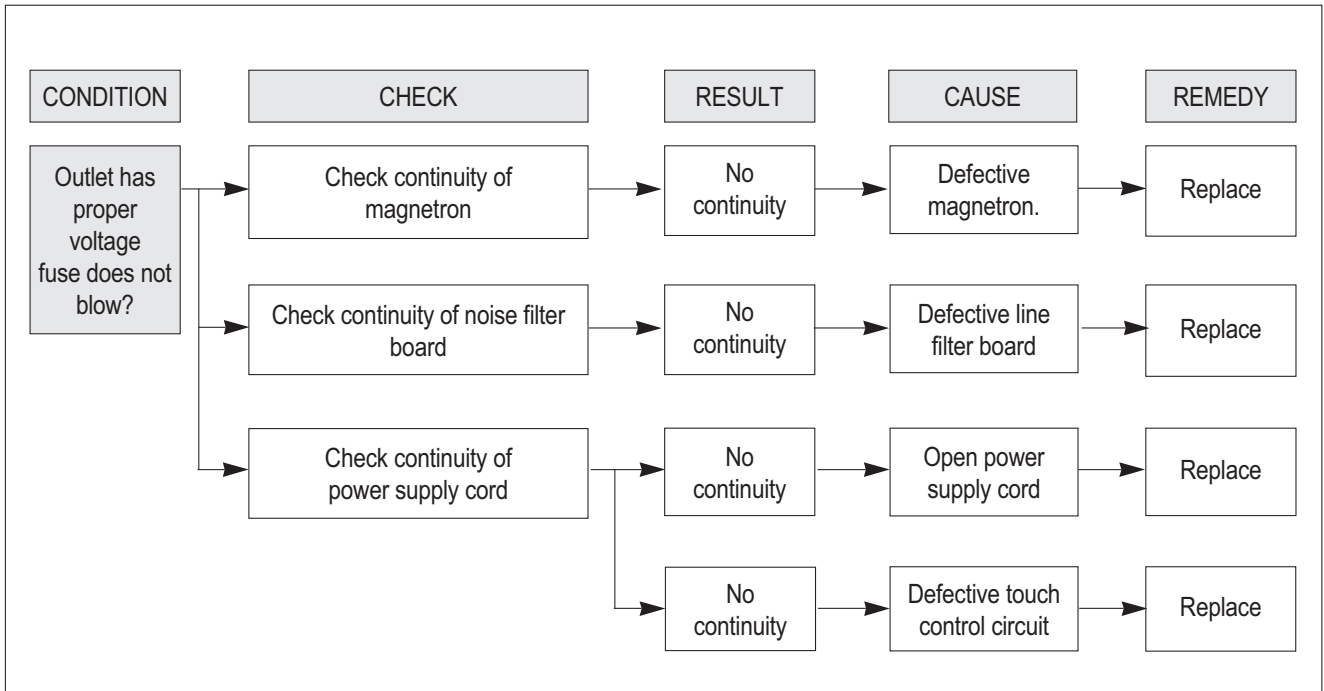
Following the procedure below to check if the oven is defective or not.

- 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 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.

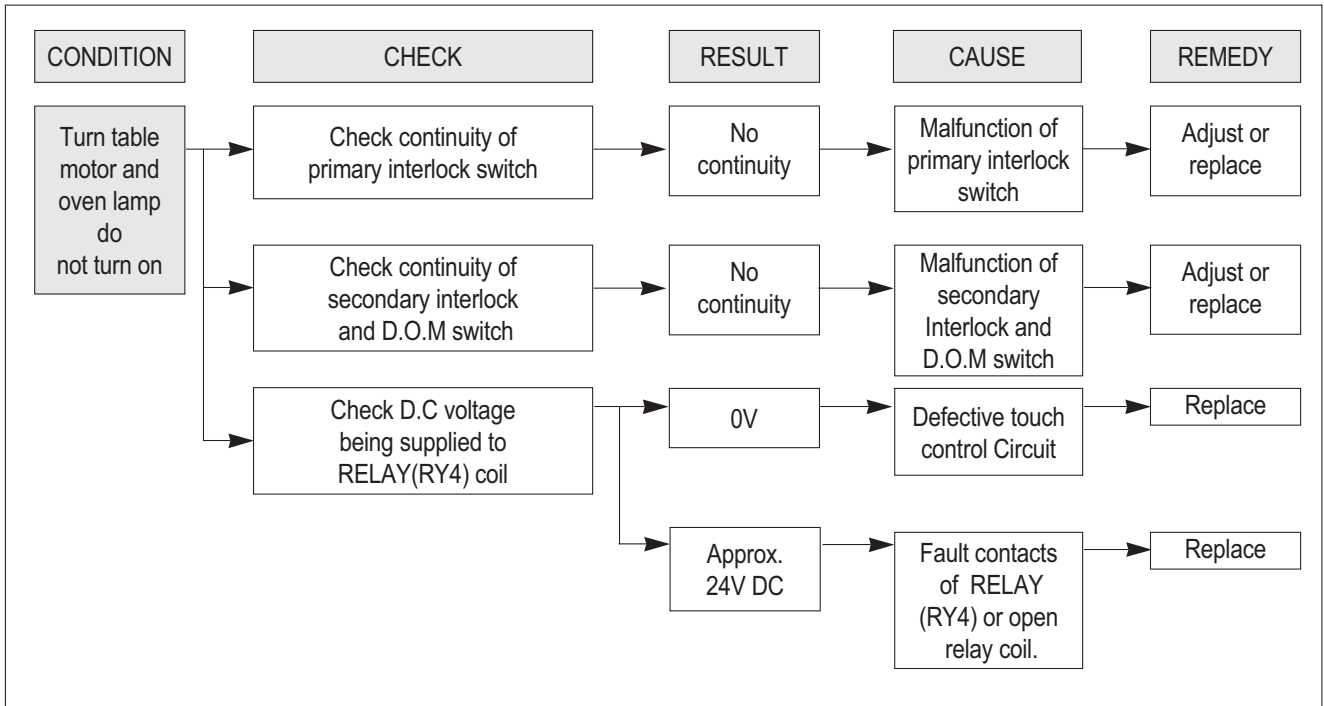




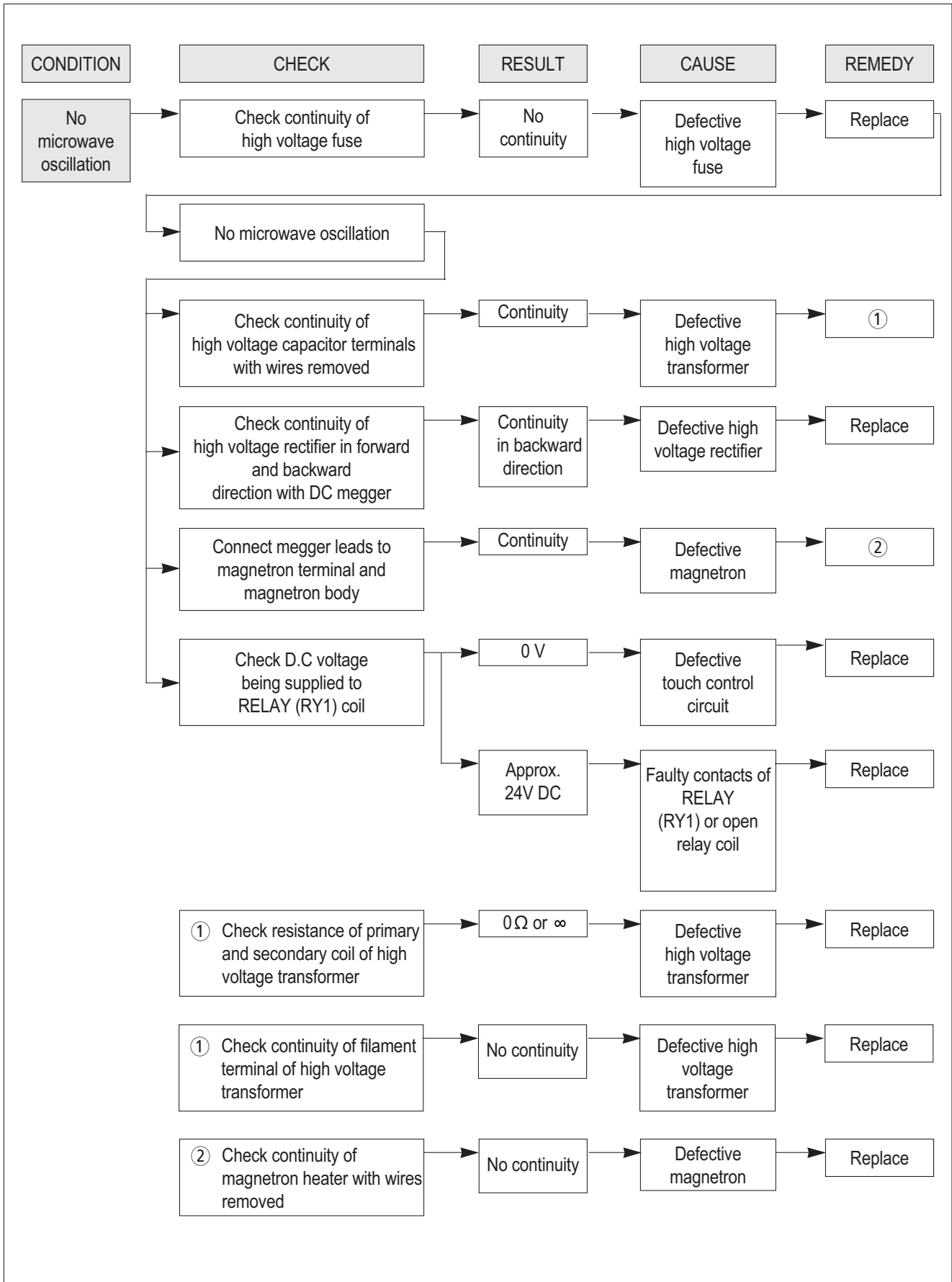
NOTE : All these switches must be replaced at the same time, please refer to (7.Interlock mechanism and adjust) for adjustment instructions

(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.

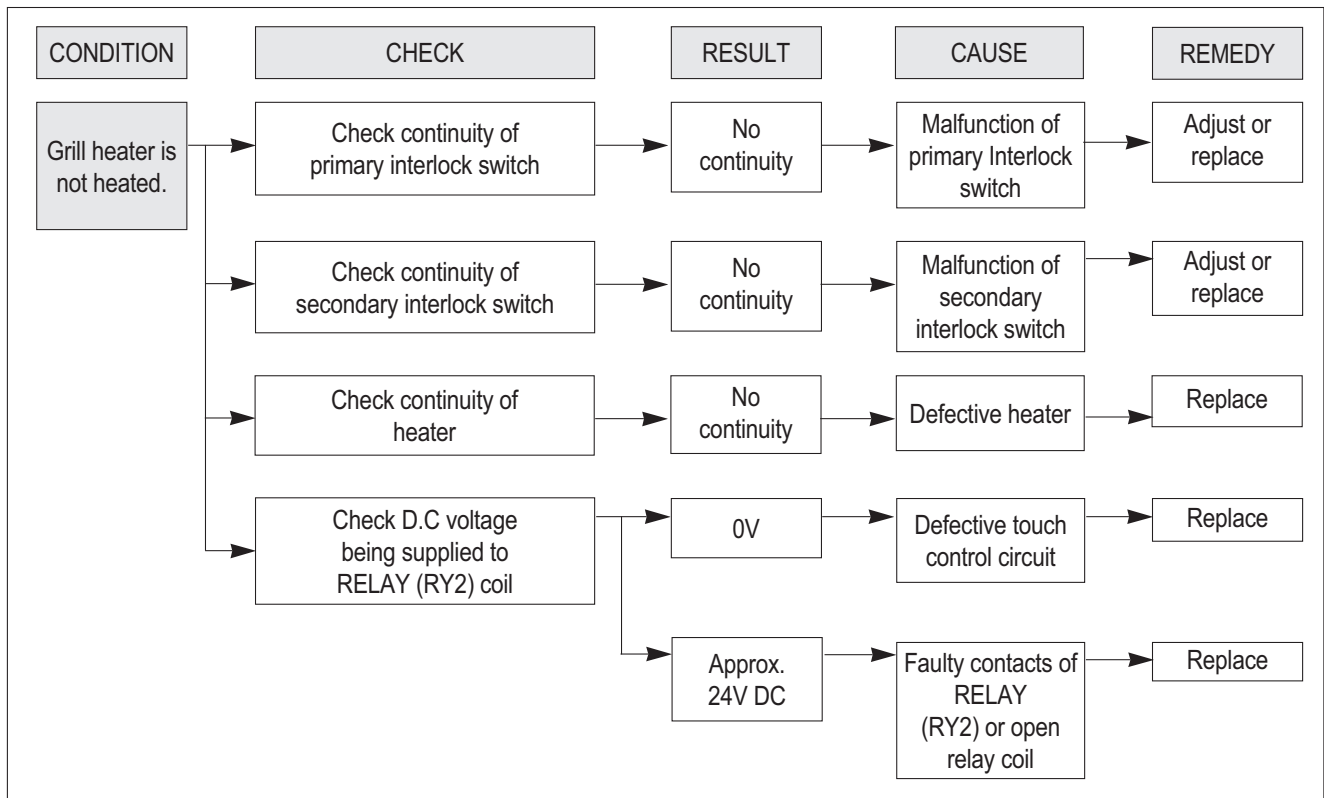


TROUBLE 3) No microwave oscillation even though fan motor rotates.



(TROUBLE 4)

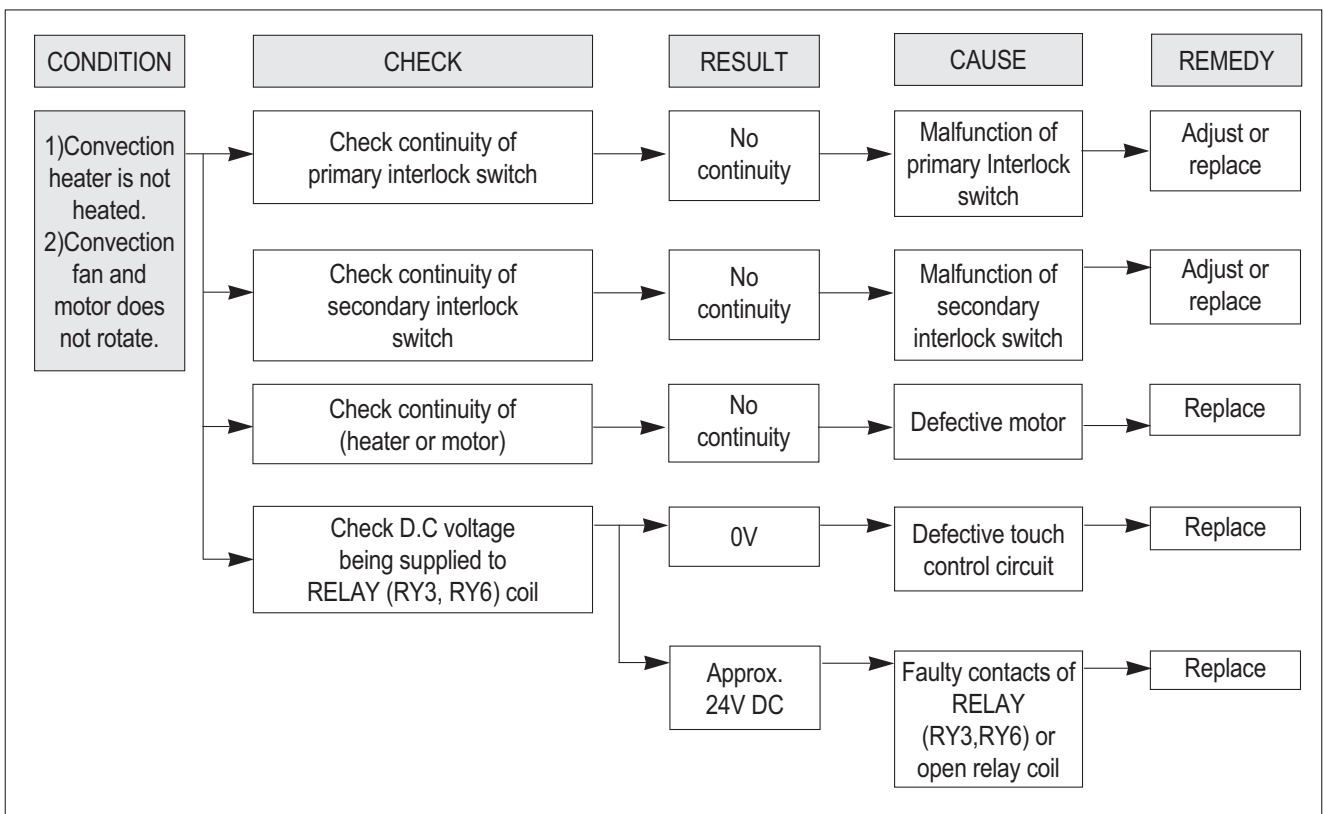
Grill heater (upper heater) is not heated; food will not become hot.



(TROUBLE 5)

1) Convection heater is not heated; food will not become hot.

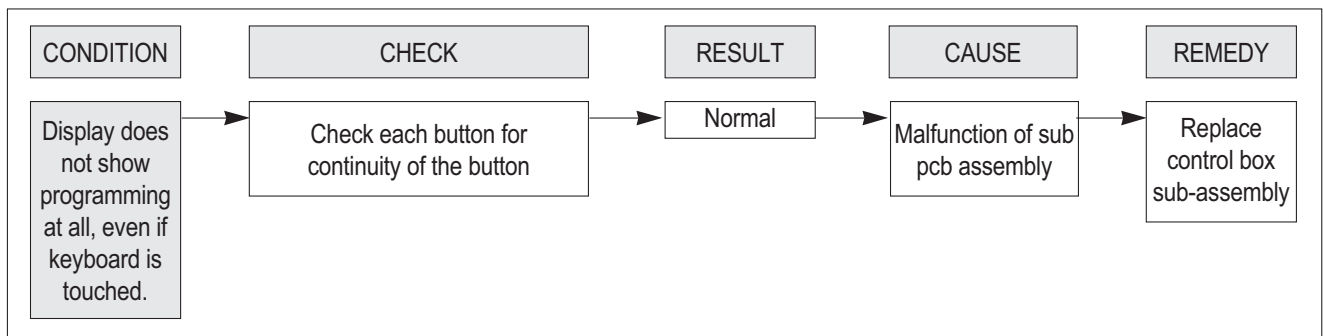
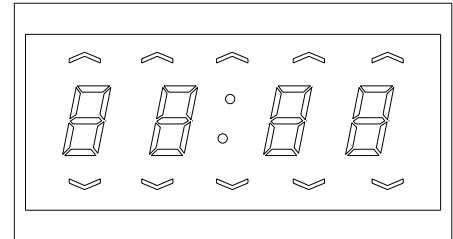
2) Convection fan motor does not rotate.



(TROUBLE 6)

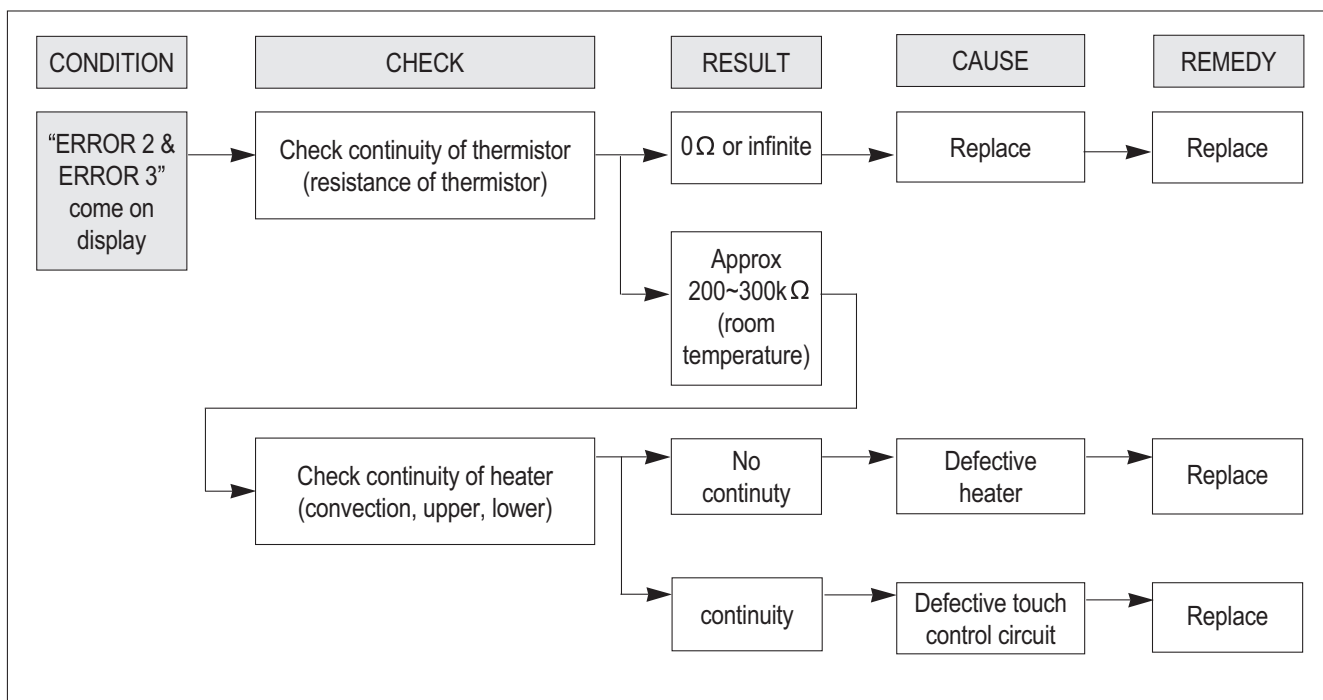
The following visual conditions indicate a probable defective touch control Circuit or button P.C.B. assembly

1. Incomplete segments.
 - 1) segment missing
 - 2) partial segments missing
 - 3) digit flickering other than normal fluorescent slight flickering
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 does not count down or up with time cooking or clock operation.
5. Oven is programmable and cooks normally but no display shows.
6. Display obviously jumps in time while counting down.
7. Display counts down noticeably too fast while cooking.
8. Display does not show the time of day when clear button is touched.
9. Oven lamp and turn table motor do not stop although cooking is finished.
Check if the RELAY(RY4) contacts close and if they are close, replace touch control circuit.



(TROUBLE 7)

When "ERROR 2 ERROR 3" come on display.



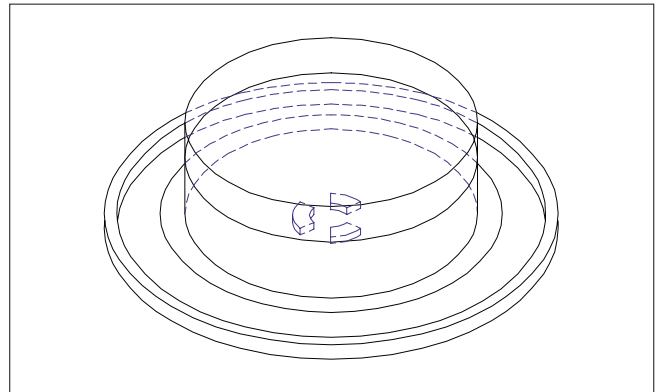
9. MEASUREMENT AND TEST

1. MEASUREMENT OF THE MICROWAVE POWER OUTPUT

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

PROCEDURE

1. A cylindrical container of borosilicate glass is used for the test. It has a maximum thickness of 3mm, an external diameter of approximately 190mm and a height of approximately 90mm.
The mass of the container is determined.
2. At the start of the test, the oven and the empty container are at ambient temperature. Water having an initial temperature of $10^{\circ}\text{C} \pm 1^{\circ}\text{C}$ is used for the test. The water temperature is measured immediately before it is poured into the container.
3. A quantity of $1000\text{g} \pm 5\text{g}$ of water is added to the container and its actual mass obtained.
The container is then immediately placed in the centre of the oven shelf, which is in its lowest normal position.
The oven is operated and the time for the water temperature to attain $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ is measured. The oven is then switched off and the final water temperature is measured within 60s.



NOTE 1 - The water stirred is before its temperature is measured.

NOTE 2 - Stirring and measuring devices are to have a low heat capacity.

4. The microwave power output is calculated from the formula

$$P = 4,187 \cdot m_w (T_2 - T_1) + 0.55 \cdot m_c(T_2 - T_0)/t$$

where

- P is the microwave power output, in watts ;
- m_w is the mass of the water, in grams ;
- m_c is the mass of the container, in grams ;
- T_0 is ambient temperature, in degrees Celsius ;
- T_1 is the initial temperature of the water, in degree Celsius ;
- T_2 is the final temperature of the water, in degrees Celsius ;
- t is the heating time, in seconds, excluding the magnetron filament heating-up time.

* The microwave power output is stated in watts, rounded off to the nearest 50W

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 $20 \pm 2^{\circ}\text{C}$ ($68 \pm 3.6^{\circ}\text{F}$)

* Heating time for power output: ($T_2 = T_0$)

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

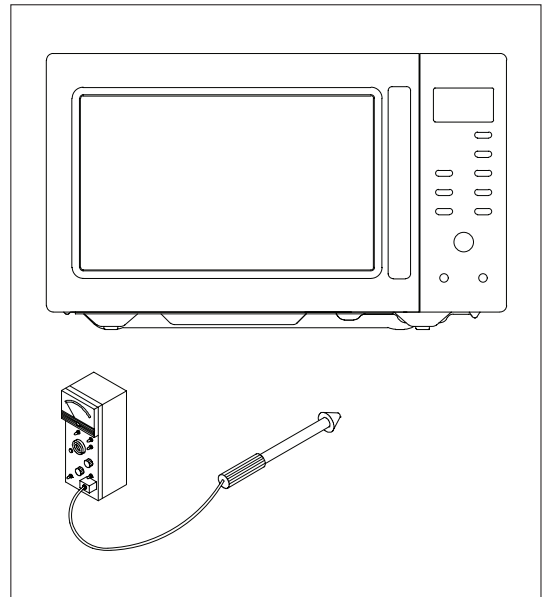
2. MICROWAVE RADIATION TEST

WARNING

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. 95 mm(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/Cm².
 - 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. $100\Omega \pm 10\%$
 - Filament winding ... Approx. 0Ω
 - Primary winding ... Approx. 1.2Ω

2. High voltage capacitor

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

3. High voltage diode

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

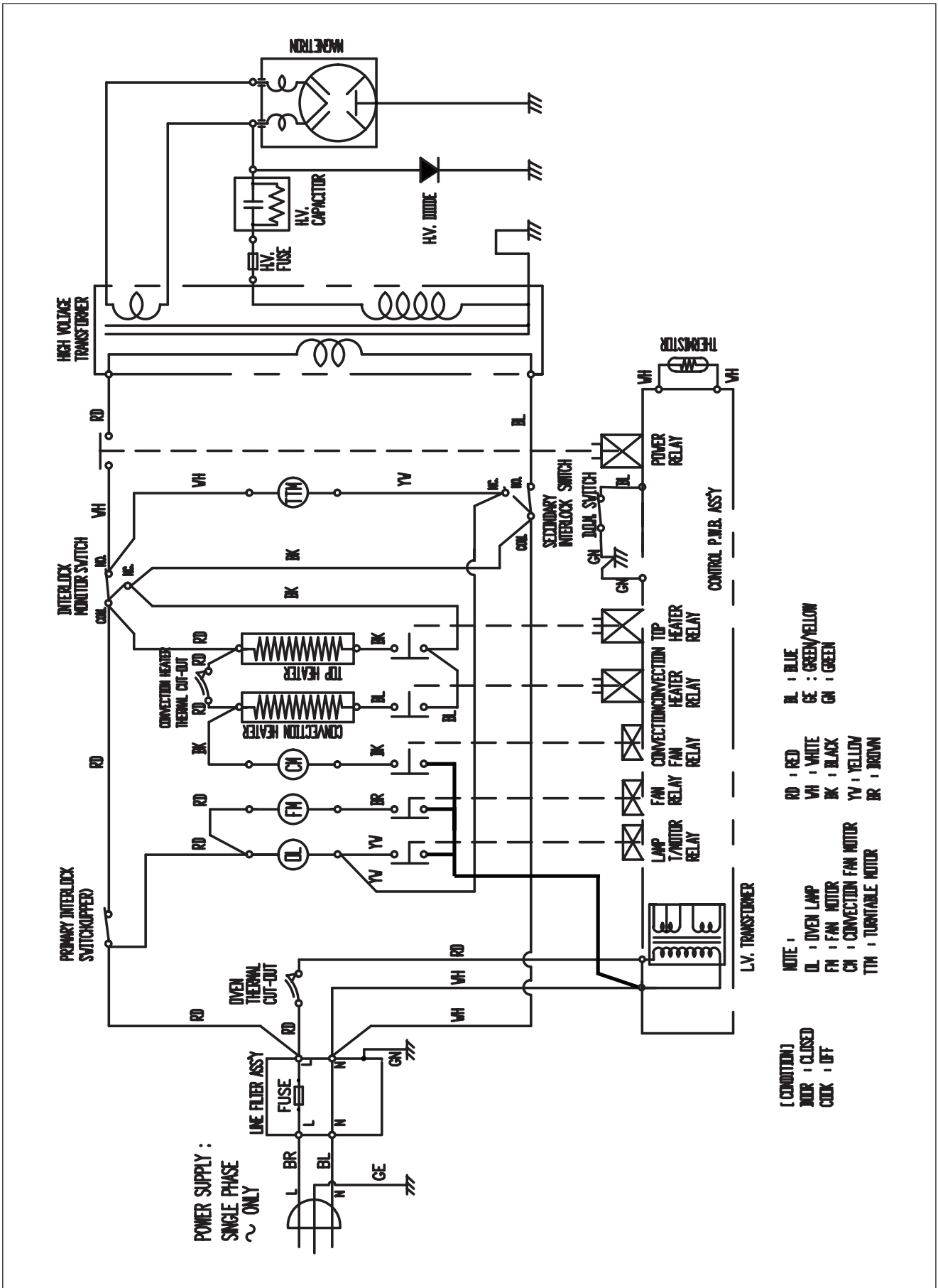
If the fuse in the primary and monitor switch circuit is blown when the door is opened, check the primary and monitor switch before replacing the blown fuse. In case the fuse is blown by an improper switch operation, replace the defective switch and fuse at the same time. Replace just the fuse if the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

4. COMPONENT ACTION

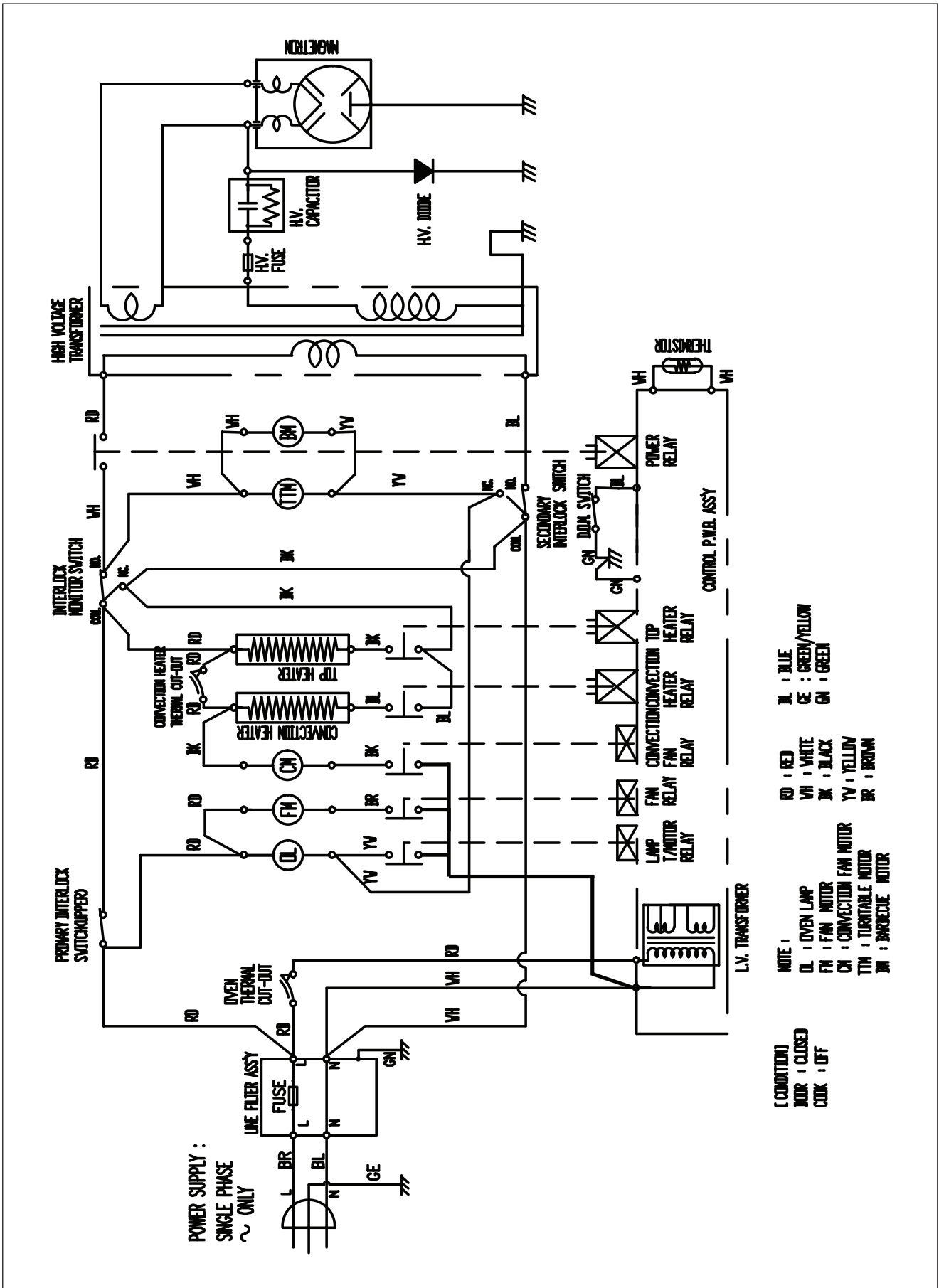
COOKING MODE		MAGNE- TRON	UPPER ELEMENT	REAR ELEMENT	CONVEC- TION FAN
MANUAL MODE	M/W	●			
	GRILL		●		
	COMBI	●	●	●	●
	CONVECTION		●	●	●
AUTO MODE	ROAST PORK	●	●	●	●
	ROAST BEEF	●	●	●	●
	ROAST CHICKEN	●	●	●	●
	BAKED FISH	●	●	●	●
	FRESH VEGETABLES	●			

10. WIRING DIAGRAM

1) KOC-9N4T7S,9N4T7S24,9N5T7S,9N5T7R,9N5T7S21,9N7T7S,9N7T7S21



2) KOC-9N7T7SA2



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So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center

NO	PART CORD	PART NAME	DESCRIPTION	Q'TY	REMARK
A00	3511714530	DOOR AS	KOC-924T9A	1	KOC-9N4T7S, 9N5T7S,9N5T7S21
	3511725530		KOC-9N4T7S24	1	KOC-9N4T7S24
	3511725510		KOC-9N7T7S	1	KOC-9N7T7S, 9N7T7S,9N7T7SA2
B00	PKCPSWA200	CONTROL-PANEL AS	KOC-9N4T7S	1	KOC-9N4T7S, 9N4T7S24
	PKCPSWA230		KOC-9N5T7S	1	KOC-9N5T7S, 9N5T7S21
	PKCPSWA220		KOC-9N5T7R	1	KOC-9N5T7R
	PKCPSWB900		KOC-9N7T7S	1	KOC-9N7T7S
	PKCPSWB910		KOC-9N7T7SA2	1	KOC-9N7T7SA2
F01	3516003700	SPECIAL SCREW	TT3 HEX 4X8 FLG MFZN	2	
F02	3512521000	GUIDE ROLLER AS	KOC-1B0K0S	1	
F03	3517205200	TRAY METAL	SPP T0.6	1	
F04	3517202611	TRAY RACK AS	KOC-961C0S 117MM	1	
F05	3517401900	COUPLER	PTFE	1	
F06	3511408300	COVER WAVE GUIDE	MICA T0.35	1	
F07	3516117001	CAVITY AS	KOC-9N4T7S	1	
F08	3510607700	BRACKET HEATER *T	SA1D-80 T0.5	1	
F09	3512805800	HEATER MIRACLON	230V 800W 270MM	1	
F10	3511410300	COVER HEATER *T	SA1D-80 T0.5	1	
F11	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
F12	3512520500	GUIDE AIR OUTLET	SA1D-80 T0.5	1	
F13	3512804900	HEATER REFLECTOR	STS430 T0.5	1	
F14	7113400814	SCREW TAPPING	T1 BIN 4X8 MFNI	2	
F15	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
F16	3510607700	BRACKET HEATER *T	SA1D-80 T0.5	1	
F17	7121400611	SCREW TAPPING	T1 PAN 4*6 MFZN	1	
F18	3518903000	THERMOSTAT	OFF:140 ON:125 H #187	1	
F19	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	2	
F20	35113V5QJ5	CORD POWER AS	3X1.5 80X80 120-RTML RUBBER	1	
F21	3511800100	FAN	P.P GF20	1	
F22	3963513010	MOTOR SHADED POLE	230V 25W MW15CA-B01	1	
F23	3512515300	GUIDE WIND	PP	1	
F24	3518605001	NOISE-FILTER	DWLF-M05	1	KOC-9N4T7S, 9N4T7S24,9N5T7S, 9N5T7S21,9N7T7S, 9N7T7S21,9N7T7SA2
	3518605500		DWLF-M07	1	KOC-9N5T7R

NO	PART CORD	PART NAME	DESCRIPTION	Q'TY	REMARK
F25	7S312X40A1	SCREW SPECIAL	T1 TRS 4X10 SE MFZN	1	
F26	7121403011	SCREW TAPPING	T2S PAN 4X30 MFZN	2	
F27	3510805200	CABINET AS	KOC-910K0S	1	
F28	7S312X40A1	SCREW SPECIAL	T1 TRS 4X10 SE MFZN	4	
F29	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
F30	3511407300	COVER MOTOR *B	SA1D-80 T0.5	1	
F31	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
F32	3511407900	COVER *B	SA1A-80 T0.5	1	
F33	3511800900	FAN	PBT	1	
F34	3512767611	HARNESS CONVECTION	KOC-924T0S ALTERNATE	1	
F35	7400104011	WASHER PLAIN	PW-1-4 MFZN	1	
F36	3963514330	MOTOR SHADED POLE	230V 50HZ MW10CA-T03	1	
F37	3518902900	THERMOSTAT	OFF:140 ON:125 V #187	1	
F38	7121300611	SCREW TAPPING	T2S PAN 3X6 MFZN	1	
F39	3513303400	INSULATOR HEATER *B	SBHG-1 T0.5	1	
F40	3511409800	COVER HEATER *B	SA1D-80 T0.5	1	
F41	3511800700	FAN CONVECTION	SA1D-80 T0.5	1	
F42	3512801800	HEATER	230V 1400W 1R18344	1	
F43	3513002300	HOLDER HEATER	SUS304 T0.5	3	
F44	7402704600	RING C	CR-5 SK5	1	
F45	3512780901	HARNESS MAIN	KOC-9N4T7S	1	
F46	3516004000	SPECIAL SCREW	T2 BOLT FLANGE 5X12 DACRO	1	
F47	3518003700	MAGNETRON	2M218JFL 6CF	1	
F48	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	2	
F49	3513601600	LAMP	BL 240V 25W T25 C7A H187	1	
F50	3513702100	LEVER SW MICRO	POM,KOG-846T0S	1	
F51	4415A17352	SW MICRO	VP-533A-OF SPNO #187 200G	1	
F52	3513816000	LOCK	PP	1	
F53	3513700800	LEVER LOCK	POM	1	
F54	4415A66910	SW MICRO	VP-531A-OF/SZM-V16-FA-61	2	
F55	3518571000	SWITCH PUSH	MP101C	1	
F56	7S422X4081	SCREW SPECIAL	TT3 TRS 4X8 SE MFZN	1	
F57	3513003200	HOLDER HV CAPACITOR	SECC T0.6	1	
F58	3518400400	DIODE HV	HVR-1X-3AB 12KV #187	1	
F59	3518302301	CAPACITOR HV	2100VAC 1.10UF #187 80MM	1	
F60	3518701400	FUSE HV	5KV 0.7A	1	
F61	3518122000	TRANS HV	R1S591 ES00	1	
F62	3516003700	SPECIAL SCREW	TT3 HEX 4X8 FLG MFZN	4	
F63	3512101400	FOOT	DASF-310	4	
F64	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	5	

NO	PART CORD	PART NAME	DESCRIPTION	Q'TY	REMARK
F65	3510313600	BASE	SBHG T0.8	1	
F66	7272400811	SCREW TAPTITE	TT3 TRS 4X8 MFZN	1	
F67	3515202800	STOPPER HINGE *U AS	KOR-121M0A	1	
F68	7121400611	SCREW TAPPING	T1 PAN 4*6 MFZN	1	
F69	3966031110	MOTOR SYNCRO	220/240V 50/60 SM16 HK36M6F	1	
F70	3514801400	SENSOR TEMPERATURE	PTM-K312-D7	1	
F71	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	
F72	3517605700	UTENSIL BAR AS	KOC-910K0S01	1	KOC-9N7T7SA2 ONLY
F73	441BE15203	MOTOR SYNCRO	GM-20-24FDB2	1	KOC-9N7T7SA2 ONLY
F74	3512300301	GASKET	C2700W T1.0	1	KOC-9N7T7SA2 ONLY
F75	7113400814	SCREW TAPPING	T1 BIN 4*8 MFNI	1	KOC-9N7T7SA2 ONLY
F76	3512521200	GUIDE ROTARY	TEFRON	1	KOC-9N7T7SA2 ONLY
F77	7112401011	SCREW TAPPING	T1 TRS 4*10 MFZN	1	KOC-9N7T7SA2 ONLY

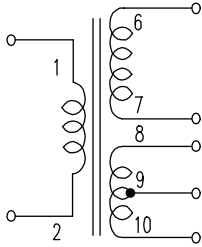
12. PRINTED CIRCUIT BOARD

CIRCUIT CHECK PROCEDURE

1. Low voltage transformer check

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

Measuring condition: Input voltage: 230V / Frequency: 50Hz



Terminal	Voltage(load)	Voltage(no load)
6-7	AC 17.0 V	AC 19.9 V
8-9	AC 1.3 V	AC 1.6 V
9-10	AC 1.3 V	AC 1.6 V

NOTE

1. Secondary side voltage of the low voltage transformer changes in proportion to fluctuation of power source voltage.
2. 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	IC1 PIN 26, 27	5VDC \pm 5%
2	IC1 PIN 28	
3	IC1 PIN 8 OR 9	

- Check method

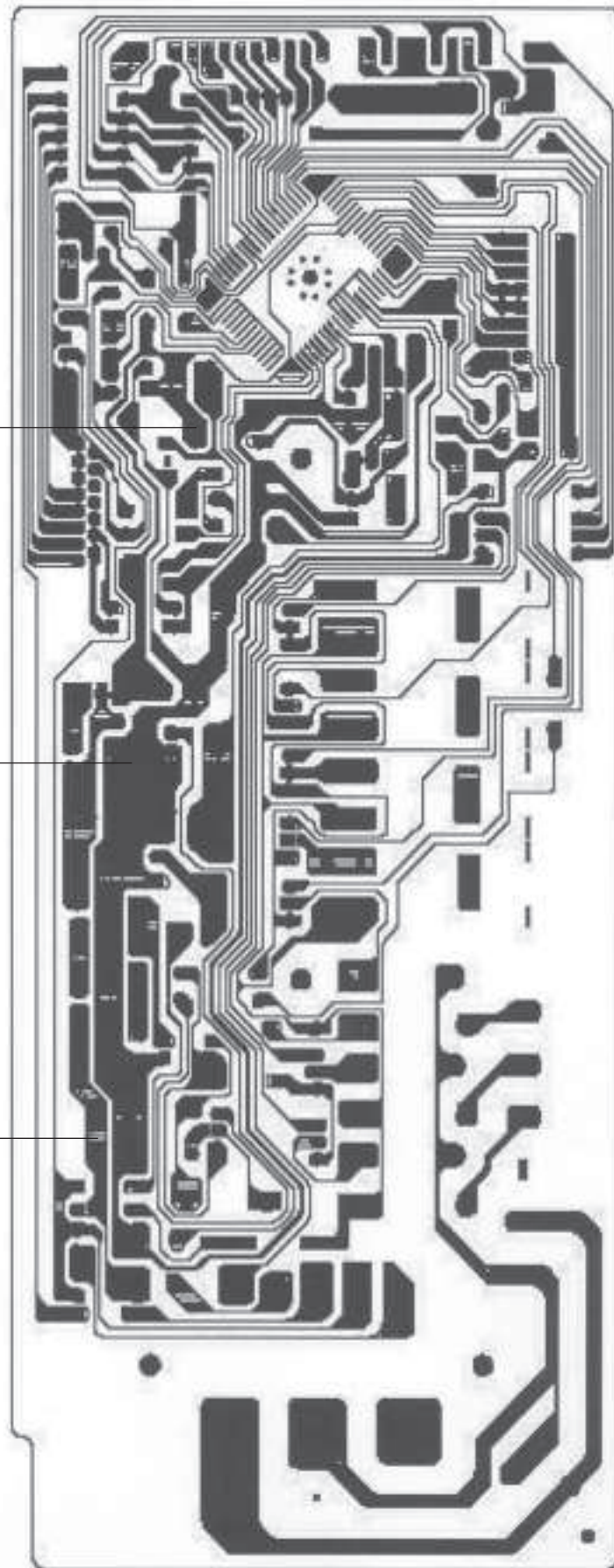
NO	MEASURE POINT	WAVE FORM	REMEDY	REMARK
1	MP1	DC 5V \pm 5%	Replace ZD3, EC1	NO LOAD
2	MP2	DC 24V \pm 20%	Replace D18-21, EC5	NO LOAD

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

MP1

GND

MP2

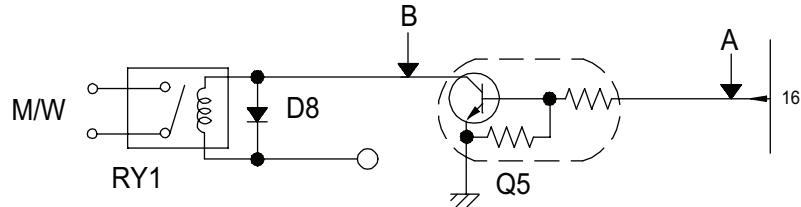


MEASUREPOINT

3. Case of no microwave oscillation

1) When touching M/W button, oven lamp turns on and Fan motor and turntable rotate, and cook indicator in display comes on.

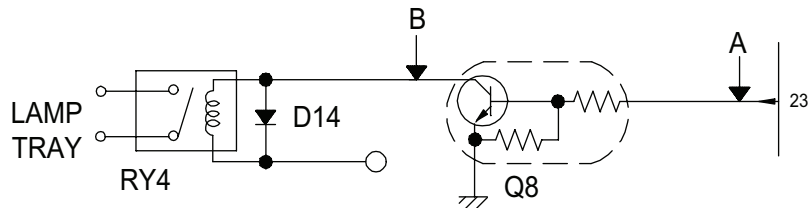
*Cause: **RELAY 1** does not operate.



STATE	POINT A	POINT B
RELAY 1 ON	+5V DC	GND
RELAY 1 OFF	GND	+24V DC

2) When touching M/W button, oven lamp does not turn on and turntable motor does not rotate but cook indicator in display comes on.

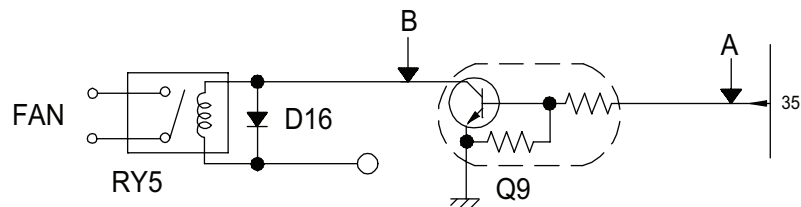
*Cause: **RELAY 4** does not operate.



STATE	POINT A	POINT B
RELAY 4 ON	+5V DC	GND
RELAY 4 OFF	GND	+24V DC

3) When touching M/W button, oven lamp turn on and turns on and fan motor does not rotate but cook indicator in display comes on.

*Cause: **RELAY 5** does not operate.

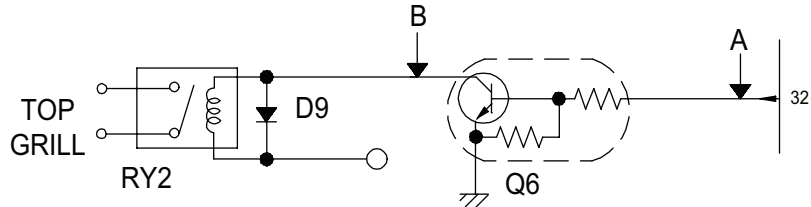


STATE	POINT A	POINT B
RELAY 5 ON	+5V DC	GND
RELAY 5 OFF	GND	+24V DC

4. Case of no heating of top grill

When touching GRILL or COMBI button, oven lamp turns on and fan motor and turntable rotate, and cook indicator in display comes on.

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

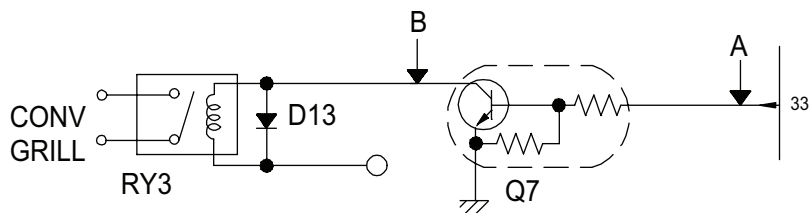


STATE	POINT A	POINT B
RELAY 2 ON	+5V DC	GND
RELAY 2 OFF	GND	+24V DC

5. Case of no heating of convection grill

When touching CONVECTION button, oven lamp turns on and Fan motor and turntable rotate and cook indicator in display comes on.

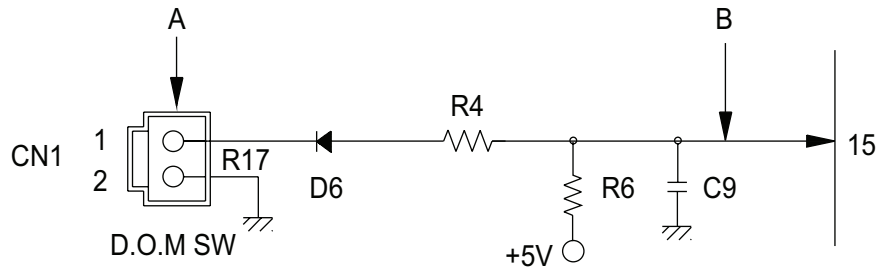
*Cause: **RELAY 3** does not operate.



STATE	POINT A	POINT B
RELAY 3 ON	+5V DC	GND
RELAY 3 OFF	GND	+24V DC

6. Case of no stopping of the count down timer

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



STATE \ POINT	A	B
DOOR OPEN	OPEN	+5V DC
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.

PCB ASS'Y PART LIST

NO	LOC	PART CODE	NAME	SPECIFICATION	Q'TY	REMARK
1	BZ1	3515600100	BUZZER	BM-20K (BUJEON)	1	
2	CN1	30166M7020	WAFER	MOLEX 35313-0210	1	
3	CN2	4CW215SBD0	CONN WAFER	HLEM15S-1 1		
4	CN3	30166M5030	WAFER	MOLEX 35312-0310 (WHITE)	1	
5	CN4	4CW3061MX0	CONN WAFER	MOLEX 35328-0610	1	
6	DP1	DSVM5MS06-	DIGITRON	SVM-5MS06(S/S)	1	
7	DPH	3513002000	HOLDER VFD	PP 1		
8	EC5	CEXF1V102V	C ELECTRO	35V RSS 1000MF (13X25) TP	1	
9	IC1	150S924TRV	IC MICOM	HMS81C2020A-	1	
10	LVT1	5EPV041410	TRANS POWER	DMR-210FS 1		
11	RY1	5SC0101124	SW RELAY	G5G-1A-DT 1C 1P DC24V	1	
12	RY2	5SC0101124	SW RELAY	G5G-1A-DT 1C 1P DC24V	1	
13	RY3	5SC0101124	SW RELAY	G5G-1A-DT 1C 1P DC24V	1	
14	RY4	5SC0101129	SW RELAY	CS11-24SH 1C 1P	1	
15	RY5	5SC0101129	SW RELAY	CS11-24SH 1C 1P	1	
16	SJ1	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	KOC-9N5T7R ONLY
17	SJ4	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	KOC-9N7T7SA2 ONLY
18	SJ5	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
19	SJ7	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
20	SJ8	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
21	CR1	5P4R00MTS-	RESONATOR CERA	CRT 4.00MS	1	
22	EC1	CEXE1H100A	C ELECTRO	50V RS 10MF (5X11) TP	1	
23	EC2	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP	1	
24	EC3	CEXF1H221V	C ELECTRO	50V RSS 220MF (10X16) TP	1	
25	EC4	CEXF1H221V	C ELECTRO	50V RSS 220MF (10X16) TP	1	
26	Q01	TZRC106M--	TR	KRC106M(AUTO)	1	
27	Q02	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)	1	
28	Q04	TZTC3198GR	TR	KTC3198GR (1815GR)	1	
29	Q05	TZRC106M--	TR	KRC106M(AUTO)	1	
30	Q06	TZRC106M--	TR	KRC106M(AUTO)	1	
31	Q07	TZRC106M--	TR	KRC106M(AUTO)	1	
32	Q08	TZRC106M--	TR	KRC106M(AUTO)	1	
33	Q09	TZRC106M--	TR	KRC106M(AUTO)	1	
34	Q10	TZRC106M--	TR	KRC106M(AUTO)	1	
35	RA1	RA-88X104J	R ARRAY	8P(7) 1/8 100K OHM J	1	
36	RA2	RA-87X104J	R ARRAY	7P(6) 1/8 100K OHM J	1	
37	RA3	RA-88X104J	R ARRAY	8P(7) 1/8 100K OHM J	1	
38	BOARD	3514330100	PCB MAIN	M254	1	

NO	LOC	PART CODE	NAME	SPECIFICATION	Q'TY	REMARK
39	C01	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
40	C02	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
41	C03	CCZF1H102Z	C CERA	HIKF 50V 1000PF Z AXIAL	1	
42	C04	CCZF1H102Z	C CERA	HIKF 50V 1000PF Z AXIAL	1	
43	C05	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
44	C06	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
45	C07	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
46	C08	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
47	C09	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
48	C10	CCZF1H102Z	C CERA	HIKF 50V 1000PF Z AXIAL	1	
49	C11	CCZF1H102Z	C CERA	HIKF 50V 1000PF Z AXIAL	1	
50	C12	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL	1	
51	D01	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
52	D02	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
53	D03	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
54	D04	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
55	D05	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
56	D06	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
57	D08	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
58	D09	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
59	D10	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
60	D11	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
61	D12	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
62	D13	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
63	D14	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
64	D15	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
65	D16	DZN4148---	DIODE	1N4148 AUTO 52MM	1	
66	D18	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
67	D19	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
68	D20	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
69	D21	DZN4004A--	DIODE	KN4004A AUTO 52MM	1	
70	J01	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
71	J02	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
72	J03	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
73	J04	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
74	J05	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
75	J06	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
76	J07	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	

NO	LOC	PART CODE	NAME	SPECIFICATION	Q'TY	REMARK
77	J08	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
78	J09	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
79	J10	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
80	J11	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
81	J12	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
82	J13	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
83	J14	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
84	J15	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
85	J16	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
86	J17	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
87	J18	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
88	J19	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
89	J20	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
90	J21	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
91	J22	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
92	J23	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
93	J24	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
94	J25	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
95	J26	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
96	J27	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
97	J28	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
98	J29	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
99	J30	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
100	R01	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
101	R02	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	1	
102	R03	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	1	
103	R04	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	1	
104	R05	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	1	
105	R06	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	1	
106	R07	RN-4Z1203F	R METAL FILM	1/4 120K OHM F	1	
107	R08	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	1	
108	R09	RD-AZ105J-	R CARBON FILM	1/6 1M OHM J	1	
109	R10	RN-4Z1002F	R METAL FILM	1/4 10K OHM F	1	
110	R11	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	1	
111	R12	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
112	R13	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	1	
113	R14	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
114	R15	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	1	

NO	LOC	PART CODE	NAME	SPECIFICATION	Q'TY	REMARK
115	R16	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
116	R17	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	1	
117	R18	RD-4Z689J-	R CARBON FILM	1/4 6.8 OHM J1		
118	R19	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
119	R20	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	1	
120	R21	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	1	
121	R22	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	1	
122	R23	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	1	
123	R24	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
124	R25	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
125	R26	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
126	R27	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
127	R28	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
128	R29	RD-2Z201JS	R CARBON FILM	1/2 200 OHM J SMALL	1	
129	R30	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	1	
130	R31	RD-2Z270JS	R CARBON FILM	1/2 27 OHM J SMALL	1	
131	ZD1	DZUZ3R3BSB	DIODE ZENER	UZ-3.3BSB(3.32-3.53V)	1	
132	ZD2	DZUZ3R9BSB	DIODE ZENER	UZ-3.9BSB(3.92-4.14)	1	
133	ZD3	DZUZ5R6BSB	DIODE ZENER	UZ-5.6BSB(5.46-5.70V)	1	
134	ZD4	DZUZ24BSB-	DIODE ZENER	UZ-24BSB(22.75-23.73V)	1	
135	CN101	4CW215RBD0	CONN WAFER	HLEM15R-1	1	
136	SW109	5S10302005	SW ROTARY	EC12E24204A8	1	
137	WF1	WSJ-159007	WIRE FLAT	15/90 WH C	1	
138	SW101	5S50101Z93	SW TACT	KPT-1115AM	1	
139	SW102	5S50101Z93	SW TACT	KPT-1115AM	1	
140	SW103	5S50101Z93	SW TACT	KPT-1115AM	1	
141	SW104	5S50101Z93	SW TACT	KPT-1115AM	1	
142	SW105	5S50101Z93	SW TACT	KPT-1115AM	1	
143	SW106	5S50101Z93	SW TACT	KPT-1115AM	1	
144	SW107	5S50101Z93	SW TACT	KPT-1115AM	1	
145	SW108	5S50101Z93	SW TACT	KPT-1115AM	1	
146	SW110	5S50101Z93	SW TACT	KPT-1115AM	1	
147	SW111	5S50101Z93	SW TACT	KPT-1115AM	1	
148	BOARD	3514330200	PCB SUB	M255	1	
149	J101	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
150	J102	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
151	J103	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	
152	J103	85801052GY	WIRE COPPER	1/0.52 TIN COATING	1	



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