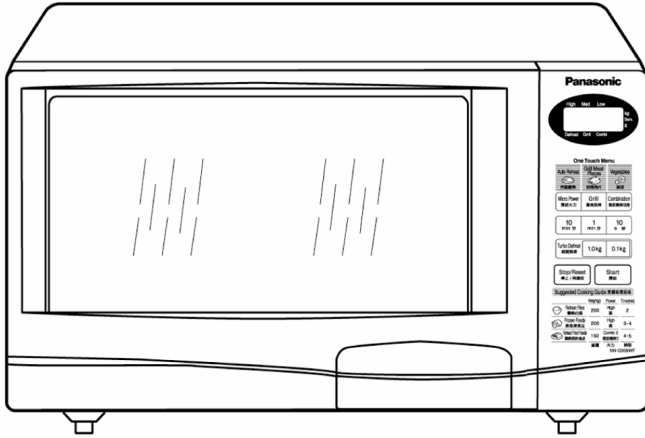


Service Manual

Microwave Oven

NN-G335WF

TUE (India)



Specification

Model		NN-G335WF
Power Source:		220V AC Single Phase, 50Hz
Power Consumption:	Microwave	1200W
	Heater	1130W
Output:	Microwave	800W
	Heater	1100W
Microwave Frequency:		2450MHz
Timer:		29min.90sec
Outside Dimensions:		364mm(D) x 482mm(W) x 284mm(H)
Oven Cavity Dimensions:		330mm(D) x 325mm(W) x 191mm(H)
Weight:		11.5kg
PbF		This product with PbF
Specifications subject to change without notice.		

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
3. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

This service manual covers products for following markets.
 When troubleshooting or replacing parts, please refer to the country/area identifications shown below for your applicable product specification.

TUE For India

CAUTION

About lead free solder (PbF)

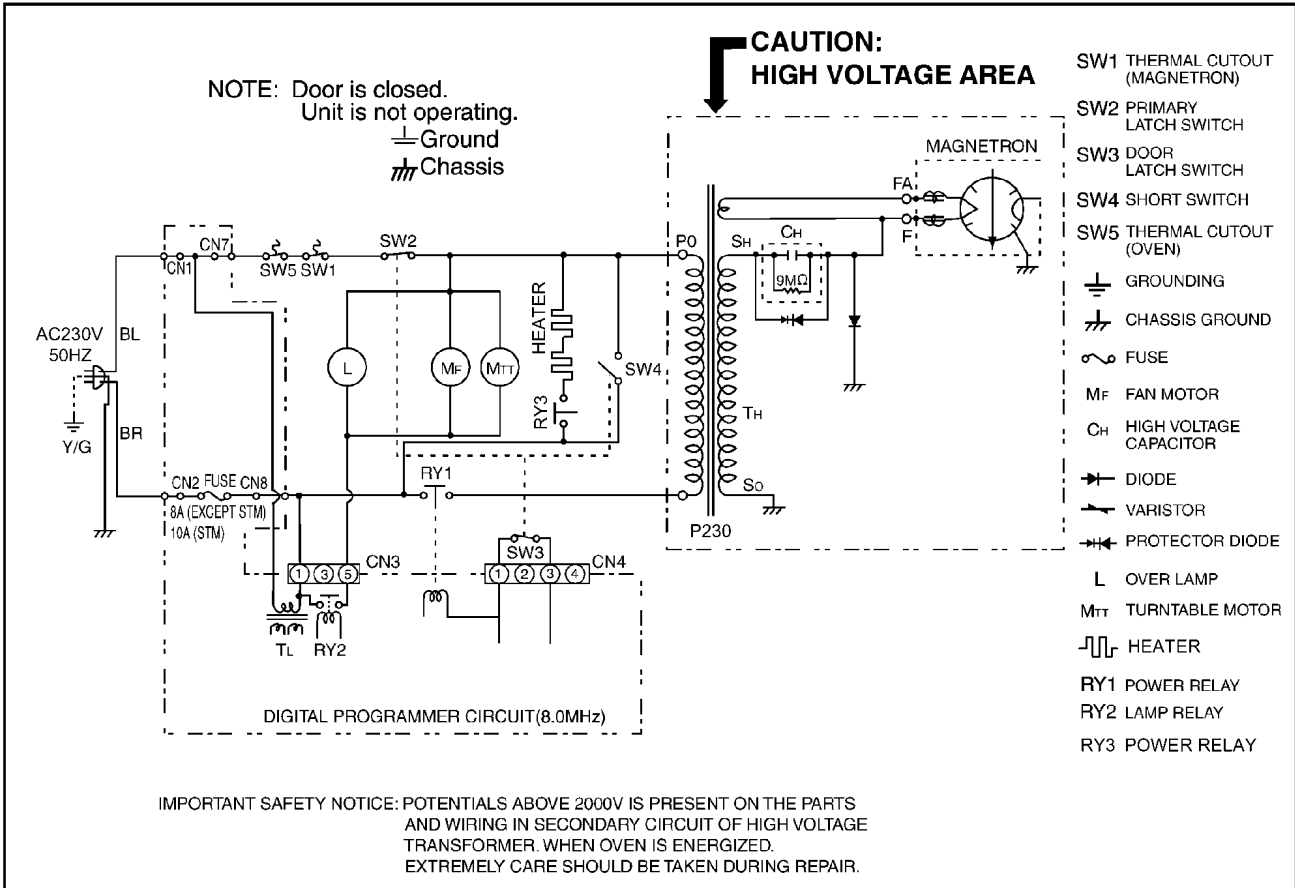
Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

- Caution:**
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40°C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10°C.
 - Pb free solder will tend to splash when heated too high (about 600°C).

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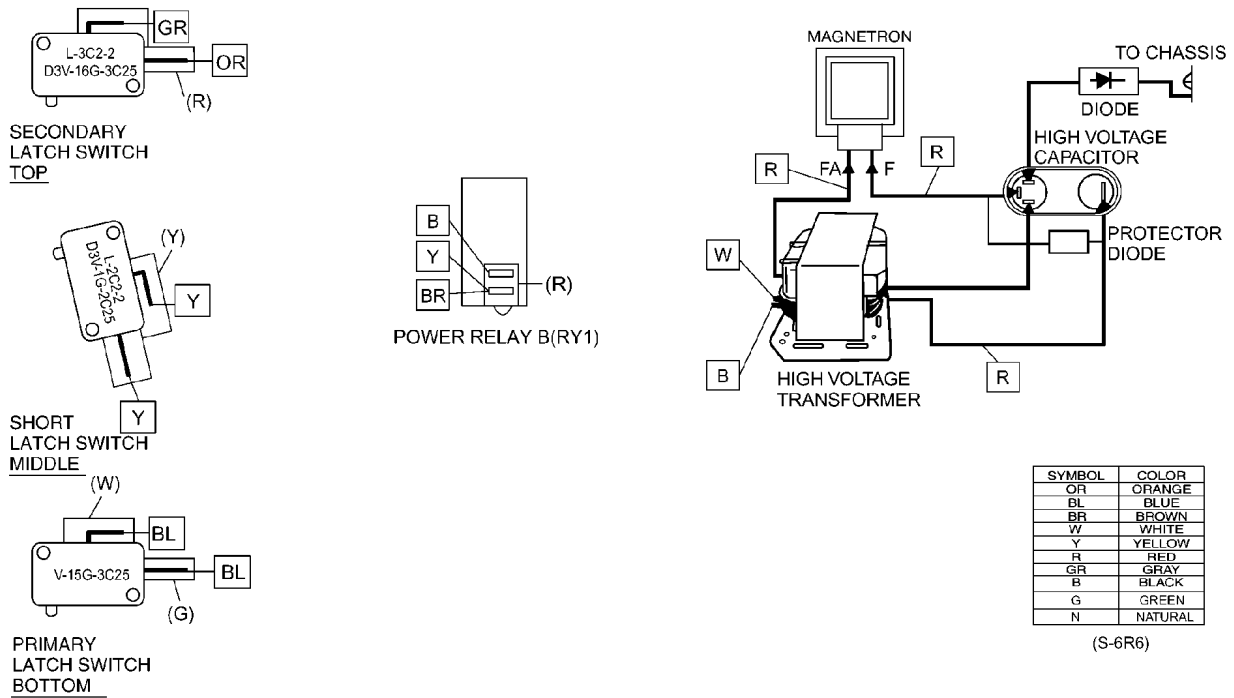
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1 SCHEMATIC DIAGRAM



WIRING DIAGRAM

NOTE: * When replacing, check the lead wire color as shown.
* Colors shown by () indicate colors of lead wire connector housing.



2 DESCRIPTION OF OPERATING SEQUENCE

2.1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE:

The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

POWERSETTING	OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
		ON(SEC)	OFF(SEC)
HIGH	100%	22	0
MEDIUM-HIGH	70%	17	5
MEDIUM	50%	13	9
MEDIUM-LOW	30%	8	14
LOW	15%	5	17
DEFROST	30%	8	14

2.2. Turbo Defrost, Auto Reheat, Auto Cook control

When those Auto Control feature is selected and the Start Pad is tapped:

1. The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving or weight by categories.
2. When cooking time in the display window has elapsed, the oven turns off automatically by a control signal from the digital programmer circuit.

Turbo Defrost

WEIGHT SELECTED	COOKING TIME
1.0KG	9 min.36 sec.

Auto Reheat

WEIGHT SELECTED	COOKING TIME
2 SERV	3 min.10 sec.

Auto Cook

CATEGORY	WEIGHT SELECTED	COOKING TIME
Vegetable	100g	1 min.50 sec.

3 CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

⚠ CAUTION

Servicemen should remove their watches and rings whenever working close to or replacing the magnetron.

3.1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be grounded when used. It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

3.2. Warning about the electric charge in the high voltage capacitor

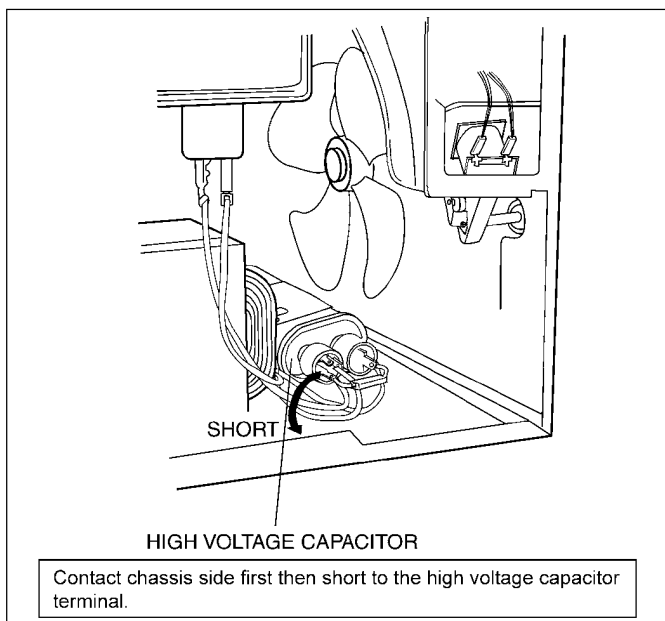
For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated handle screwdriver to discharge.

⚠ WARNING

There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized. DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

⚠ WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.



3.3. When parts must be replaced, unplug the power cord from the wall outlet.

3.4. When the 8 Amp fuse is blown due to the malfunction of short switch:

⚠ WARNING

When the 8 Amp fuse is blown due to malfunction of the interlock monitor switch, you must replace all of the components (Primary latch switch, Door switch, Short switch).

1. This is mandatory. Refer to "Measurements and Adjustments" for these switches.
2. When replacing the fuse, confirm that it has the appropriate rating for these models.
3. When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

3.5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

3.6. Verification after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwave energy might leak if screws are not properly tightened.
2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
3. Check for microwave energy leakage.

⚠ CAUTION OF MICROWAVE RADIATION OF LEAKAGE

USE CAUTION NOT TO BECOME EXPOSED TO RADIATION FROM THE MICROWAVE MAGNETRON OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

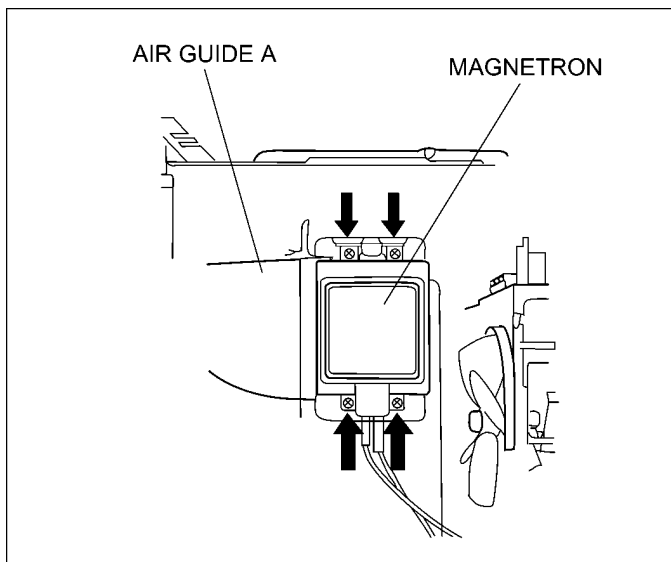
⚠ IMPORTANT NOTICE

1. The following components have potentials above 2000V while the appliance is operated.
 - * Magnetron
 - * High voltage transformer
 - * High voltage diode
 - * High voltage capacitor
 Pay special attention to these areas.
2. When the appliance is operated with the door hinge or magnetron adjusted incorrectly, the microwave leakage can exceed more than 5mW/cm². After repair or exchange, it is very important to check that magnetron and the door hinge is correctly installed.

4 DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

4.1. Magnetron

1. Discharge the high voltage capacitor.
2. Remove 1 screw holding air guide A & reinforce bracket.
3. Disconnect 2 high voltage lead wires from magnetron filament terminals.
4. Remove 4 screws holding the magnetron.



NOTE:

After replacement of the magnetron, tighten mounting screws properly in an X pattern, making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.

CAUTION

When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "F terminal" and the lead wire from high voltage capacitor should be connected to "FA terminal".

4.2. Digital Programmer Circuit (DPC) and membrane key board.

NOTE:

Be sure to ground any static electric charge built up in your body before handling the DPC.

1. Release 1 flat cable from D.P.C board holding on the oven cavity.
2. Remove 1 screw holding escutcheon base and slide the escutcheon base upward slightly.
3. Remove 1 screws holding D.P.C board.
4. Separate D.P.C board from tabs on the escutcheon base and remove D.P.C board.
5. Remove rubber connector.
6. Separate display from tabs on the escutcheon base and remove display.

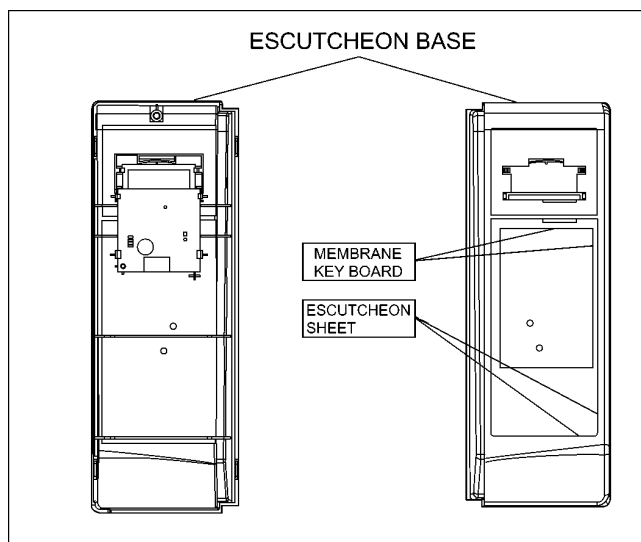
To replace membrane key board

7. Push the upper part of key board (display window portion) from back of escutcheon base, and peel off escutcheon sheet & membrane key board completely from escutcheon base.

NOTE:

1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.
2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Alignment position of membrane key board is as follows;

Membrane key board: Right and upper edges
Escutcheon sheet: Right and upper edges



4.3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE:

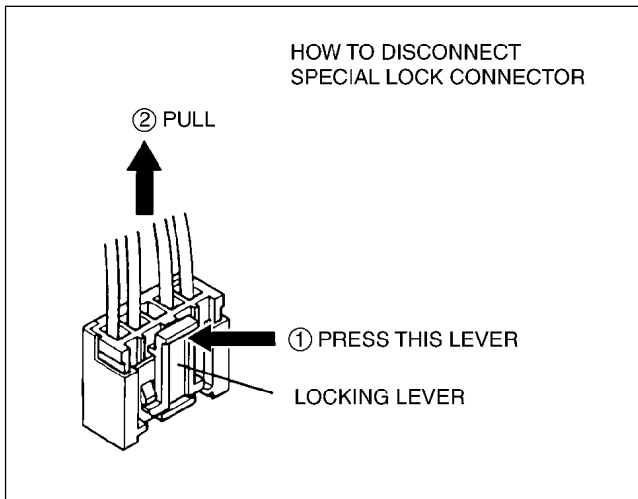
Be sure to ground any static electric charge built up in your body before handling the DPC.

1. Disconnect all connectors from D.P.C..
2. Remove 2 screws holding D.P.C. board on the oven cavity.
3. Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.

NOTE:

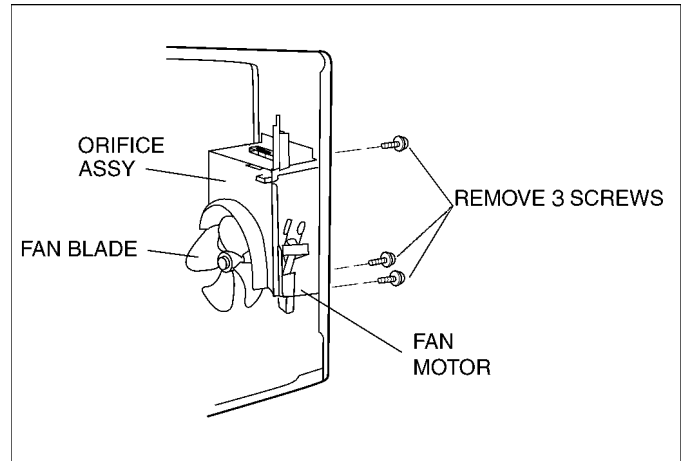
Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.

4. With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays. Replace components, making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



4.4. Fan motor

1. Disconnect 2 lead wires from fan motor terminals.
2. Remove 1 screw holding diode (U) on side of the oven.
3. Disconnect 2 H.V. lead wires which linking to H.V. transformer from H.V. capacitor terminals.
4. Remove 3 screws holding orifice assy and detach the orifice assy from oven assy.
5. Remove fan blade from the motor shaft by pulling it straight out.
6. Remove 2 screws holding fan motor on orifice assy and detach the fan motor from orifice assy.



4.5. Door assembly

1. Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
2. Separate door E from tabs on door A and remove door A.
3. Remove door screen B from door A.
4. Remove handle spring which hitching door handle, separate door handle from door A by pulling outward door handle slightly, moving it towards the side of door A and out.
5. Open Door E at the opening angle of approximately 10° (**Note: The door cannot be removed if the opening angle is greater than 10°**).
6. Remove the door E from its hinges by pushing the door E's bottom upward and out.
7. Remove door key and door key spring from door E.
8. Replace other components.

To re-install components:

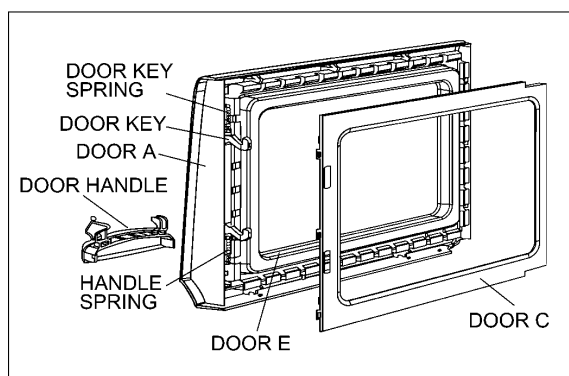
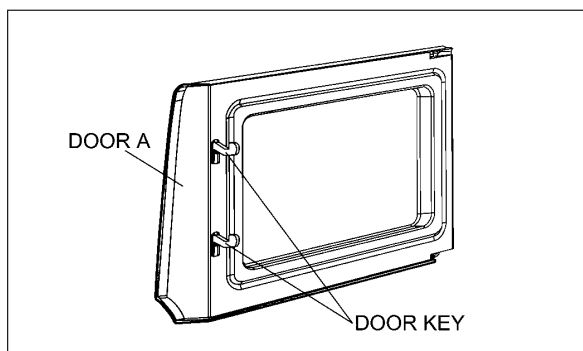
1. Place the door's lower hinge pin into the bottom hinge hole.
2. Use your left index finger to support the door's lower hinge pin while guiding the door's upper hinge pin into the top hinge hole.
3. Lower your finger to seat the door onto the hinges.

NOTE:

Adjust so that the upper portion of the door will touch firmly to the oven cavity front plate, without pushing the door. If the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.

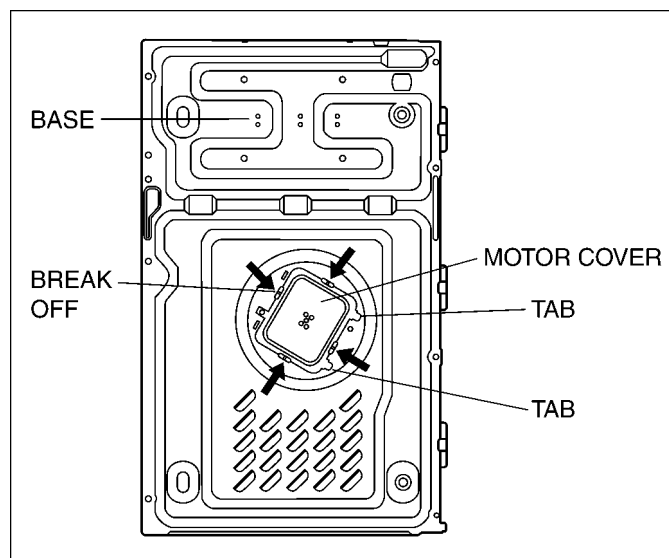
NOTE:

Always perform the microwave leakage measurement test after installation and adjustment of door assembly.



4.6. Turntable motor

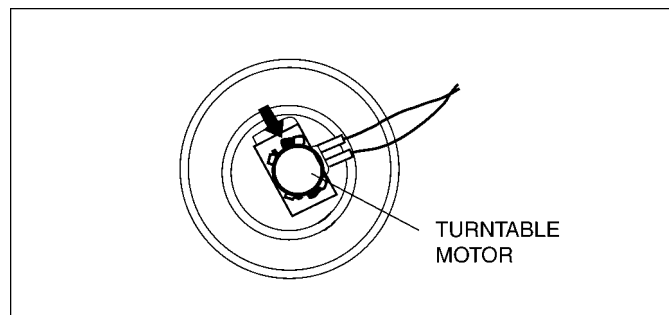
1. Remove the motor cover by breaking off at the 4 spots indicated by arrows with a cutter or the like.



NOTE:

After removing the motor cover, be sure that cut portions are properly trimmed off or bent to inside so that no sharp edges will be exposed to the outside.

2. Disconnect 2 lead wires connected to the turntable motor.
3. Remove the turntable motor by removing 1 screw.

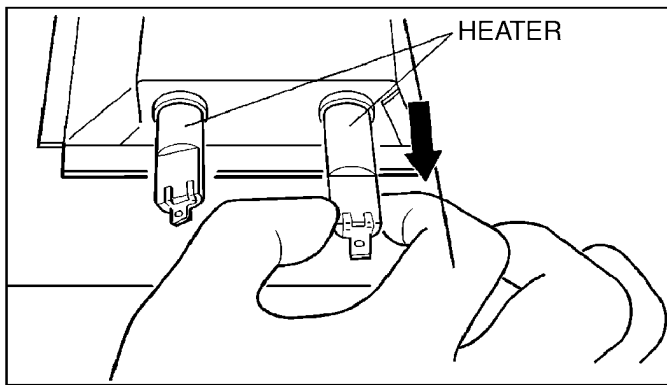
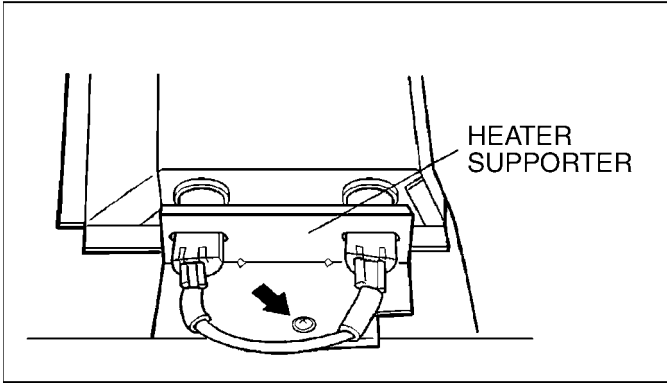


NOTE:

After reinstalling the new turntable motor and reconnecting the 2 lead wires, reinstall the motor cover by rotating it around 180°, tucking the 2 tabs under the base into the 2 provided slots, then screw the single tab to the base using a screw.

4.7. Quartz heater

1. Disconnect lead wires from heater terminals.
2. Remove 1 screw holding heater supports.
3. Remove the heater by pulling it out.



5 COMPONENT TEST PROCEDURE

⚠ WARNING

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

5.1. Primary, Secondary Latch Switch Interlocks

1. Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
2. Unplug lead connectors to primary Latch switch and Door Switch.
3. Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

	Door Opened	Door Closed
Primary Latch Switch	$\infty \Omega$ (open)	0 Ω (close)
Door Switch	$\infty \Omega$ (open)	0 Ω (close)
Power Relay B	$\infty \Omega$ (open)	$\infty \Omega$ (open)

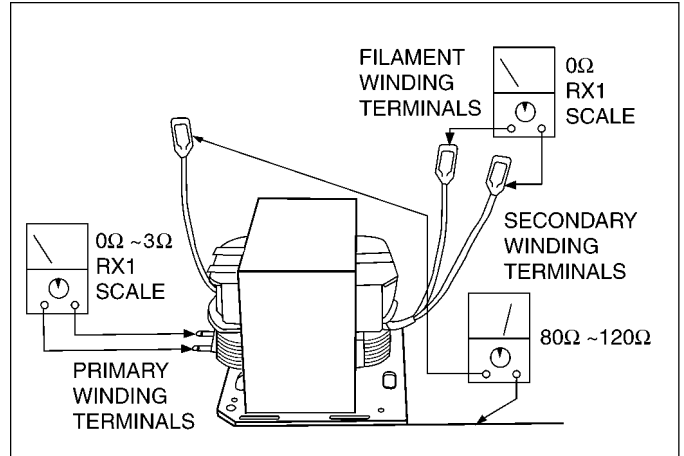
5.2. Short Switch & Monitor

1. Unplug lead wires from H.V. transformer primary terminals.
2. Connect test probes of ohm meter to the disconnected leads of the H.V. Transformer.
3. Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω (close)	$\infty \Omega$ (open)

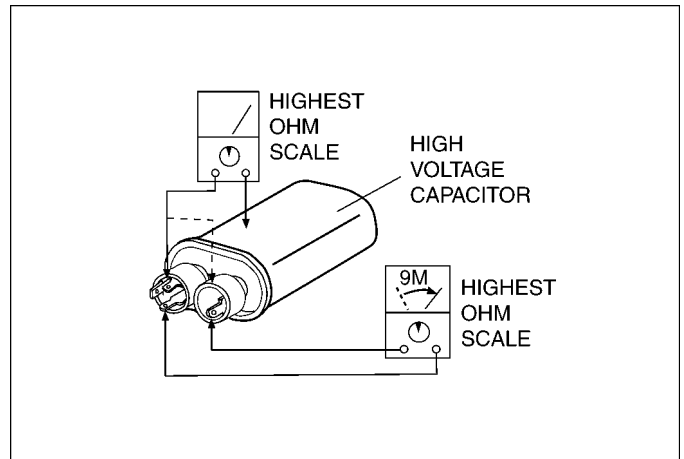
5.3. High voltage transformer

1. Remove connectors from the transformer terminals and check continuity.
2. Normal (cold) resistance readings should be as follows:
Secondary winding..... Approx. 80 Ω ~120 Ω
Filament winding..... Approx. 0 Ω
Primary winding..... Approx. 0 Ω ~1 Ω



5.4. High voltage capacitor

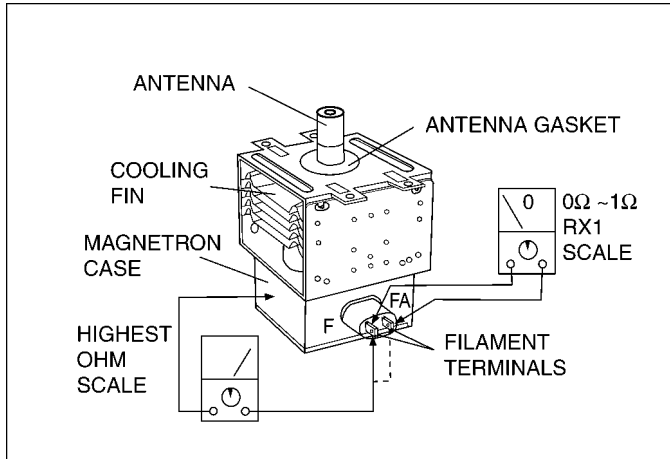
1. Check continuity of capacitor with meter on highest OHM scale.
2. A normal capacitor will show continuity for a short time, and then indicate 9M Ω once the capacitor is charged.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 9M Ω .
5. Resistance between each terminal and chassis should be infinite.



5.5. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron:

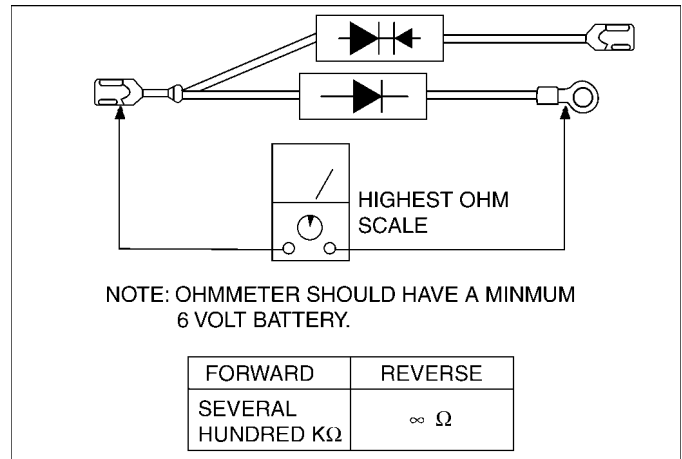
1. Isolate magnetron from the circuit by disconnecting the leads.
2. A continuity check across magnetron filament terminals should indicate one ohm or less.
3. A continuity check between each filament terminal and magnetron case should read open.



5.6. Diode (U)

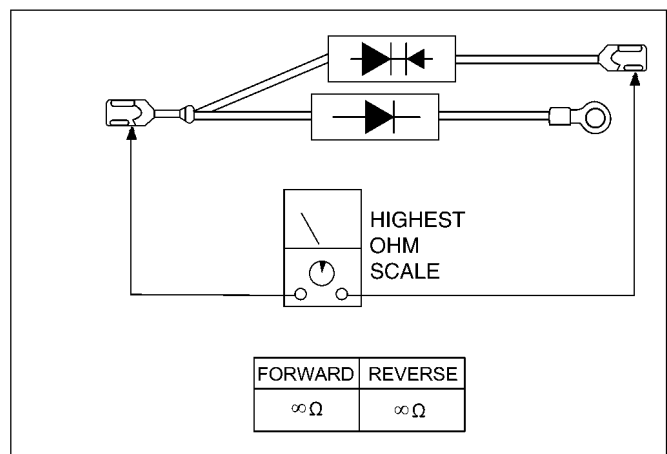
1. Isolate the diode (U) from the circuit by disconnecting the leads.
2. With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be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



3. With the ohmmeter set on the highest resistance scale, measure the resistance across the protector diode terminals. Reverse the meter leads and again observe the resistance reading.

A normal protector diode's resistance will be infinite in both directions. It is faulty if it shows continuity in one or both directions.



5.7. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

6 MEASUREMENTS AND ADJUSTMENTS

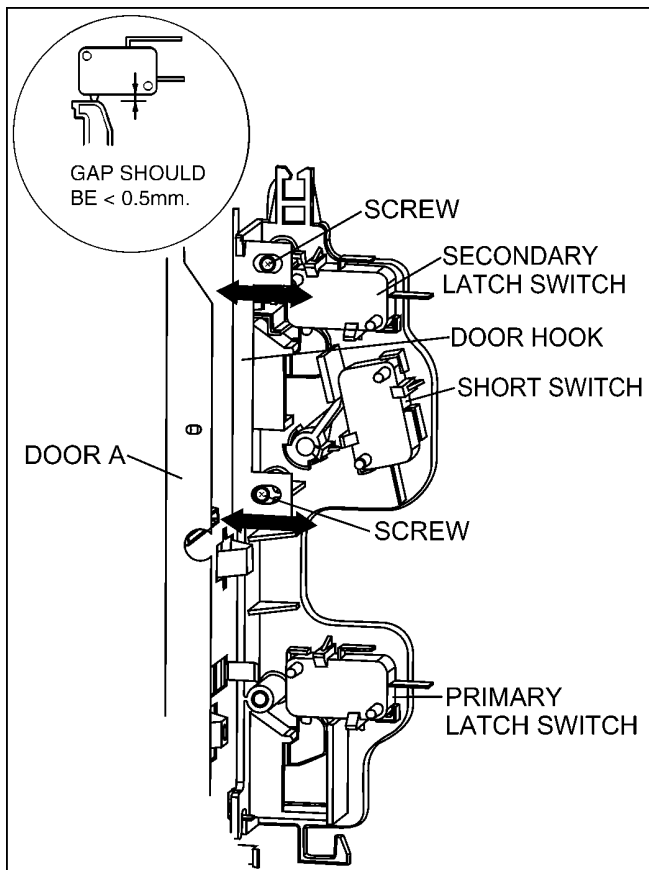
6.1. Adjustment of Primary latch switch, Secondary latch switch and Short switch.

1. Mount the Primary latch switch, the Secondary latch switch and the Short switch to the door hook assembly as shown in illustration.

NOTE:

No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.

2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.



6.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

- 1 liter beaker
- Glass thermometer
- Wrist watch or stopwatch

NOTE:

Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray. Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model is as shown in table.

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
800W	Min.12.6°F(7.0°C)

7 TROUBLESHOOTING GUIDE

⚠ DANGER: HIGH VOLTAGES

1. Ensure proper grounding before troubleshooting.
2. Be careful of high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be damaged or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel. Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 230V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the oven's malfunction.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	<ol style="list-style-type: none"> 1. Open or loose lead wire harness 2. Open thermal cutout 3. Open low voltage transformer 4. Defective DPC 	Check fan motor if thermal cutout is defective.
2.	No display and no operation at all. Fuse is blown.	<ol style="list-style-type: none"> 1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Shorted H.V. capacitor 5. Shorted H.V. transformer (NOTE 2) 6. Shorted diode (U) <p>NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay B (RY1)'s contacts (between 1 and 2) and if it has continuity replace power relay B (RY1) also.</p> <p>NOTE 2: When H.V. transformer is replaced, check diode and magnetron also.</p>	Check adjustment of primary, secondary latch switch and short switch including door.
3.	Oven does not accept key input(Program)	<ol style="list-style-type: none"> 1. Key input is not proper in-sequence 2. Open or loose connection of membrane key pad to DPC (Flat cable or rubber connector) 3. Shorted or open membrane key board 4. Defective DPC 	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Fan motor turn on when oven is plugged in with door closed.	<ol style="list-style-type: none"> 1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch 	Adjust door and latch switches.
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	<ol style="list-style-type: none"> 1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit <p>NOTE: Large contact resistance will cause lower magnetron filament voltage and cause magnetron to lower output and/or be intermittent.</p> <ol style="list-style-type: none"> 3. Defective high voltage component H.V. transformer H.V. capacitor H.V. diode (U) Magnetron 4. Open or loose wiring of power relay B (RY1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY1) 	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting
6.	Oven can program but timer does not start count-down.	<ol style="list-style-type: none"> 1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch 	Adjust door and latch switches.
7.	Microwave output is low. Oven takes longer time to cook food.	<ol style="list-style-type: none"> 1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation) 3. Aging change of magnetron 	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	<ol style="list-style-type: none"> 1. Shorted primary latch switch. 	

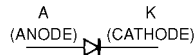
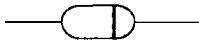
	SYMPTOM	CAUSE	CORRECTIONS
9.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check the grounding lead wire and D.P.C. board.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V. transformer	
11.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
12.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout	Adjust door and latch switches.
13.	Heater does not turn on.	1. Open or loose wiring of heater 2. Defective heater 3. Defective power relay 4. Defective DPC	Check adjustment of latch switches and door
14.	8A fuse is blown.	1. Shorted lead wire harness 2. Defective short switch 3. Defective primary latch switch 4. Shorted H.V. capacitor 5. Shorted H.V. diode 6. Defective magnetron 7. Shorted H.V. transformer 8. Shorted diode (U) 9. Defective power relays 10. Defective DPC	Check adjustment of latch switches and door Replace H.V. Diode and protector diode (*NOTE) Replace Magnetron and protector diode (*NOTE) Replace H.V. Transformer and protector diode (*NOTE)
		NOTE : Be sure to replace protector diode together with those H.V. components. In this case, only D2 of protector diode may be shorted due to faulty H.V. component. Therefore, if protector diode is not replaced together, high voltage transformer will be damaged (over heated).	

7.1. Trouble related to Digital Programmer Circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in	1	Fuse pattern of DPC	Normal	→ STEP2
			Open(NOTE)	Shorted circuit of ZNR, L.V.T,Oven Lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step3
	3	IC-1 pin 23 voltage (Emitter of Q10)	Abnormal	ZD10,Q10
			Normal=3.3V	IC1,CX320 Display
<p>NOTE</p> <p>Procedure of fuse pattern repairing is as follows:</p> <p><u>1. When the fuse pattern (PF2) opens.</u></p> <p>(1) Remove jumper wire (PF1).</p> <p>(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC.</p> <p><u>2. When the fuse pattern (PF4) opens.</u></p> <p>(1) Remove jumper wire (PF3).</p> <p>(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC.</p> <p>NOTE:*At the time of these repairs, made visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).</p> <p>If any abnormal condition is detected, replace the defective parts.</p>				
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 29 voltage	Abnormal	IC-1
			Normal	BZ210, Q210
Power relay A(RY-2) does not turn on even though the program had been set and the start pad in tapped	1	IC-1 pin 1 voltage while operation	Abnormal	IC-1
			Normal=5V	→ Step 2
	2	Short circuit between collector and Emitter of Q225	Still not turn on	RY-2
			RY-2 turns on	Q225
No microwave oscillation at any power	1	IC-1 pin 4 voltages while operation at high power	Abnormal	IC-1
			Normal=5V	→ Step 2
	2	Transistor Q223 & Q224	Abnormal	Q223 and (or) Q224
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY

7.2. How To CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



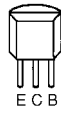
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

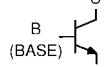
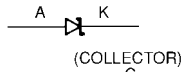
NPN Transistor

2SC.....

2SD.....



E C B



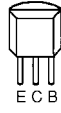
(EMITTER)

	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

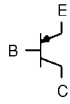
PNP Transistor

2SA.....

2SB.....



E C B



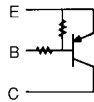
	FORWARD	REVERSE
E-B	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor

PNP Transistor



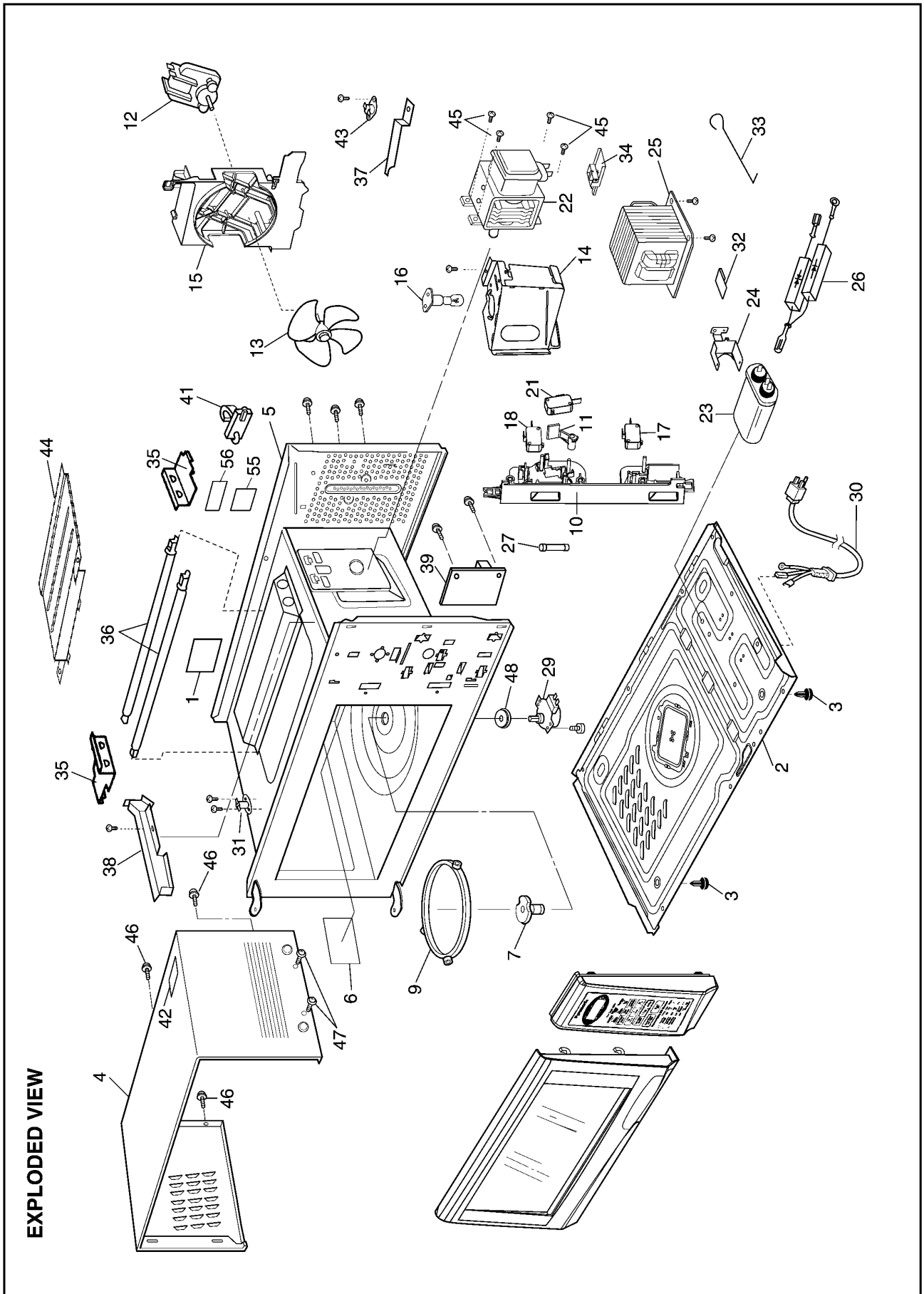
E C B



	FORWARD	REVERSE
E-B	10k Ω -30k Ω	10k Ω -30k Ω
C-B	50k Ω -90k Ω	∞
C-E	40k Ω -80k Ω	∞

8 EXPLODED VIEW AND PARTS LIST

8.1. EXPLODED VIEW



8.2. PARTS LIST

NOTE:

1. When ordering replacement part(s), please use part number(s) shown in this part list.

Do not use description of the part.

2. Important safety notice:

Components identified by mark have special characteristics important for safety.

When replacing any of these components, use only manufacture's specified parts.

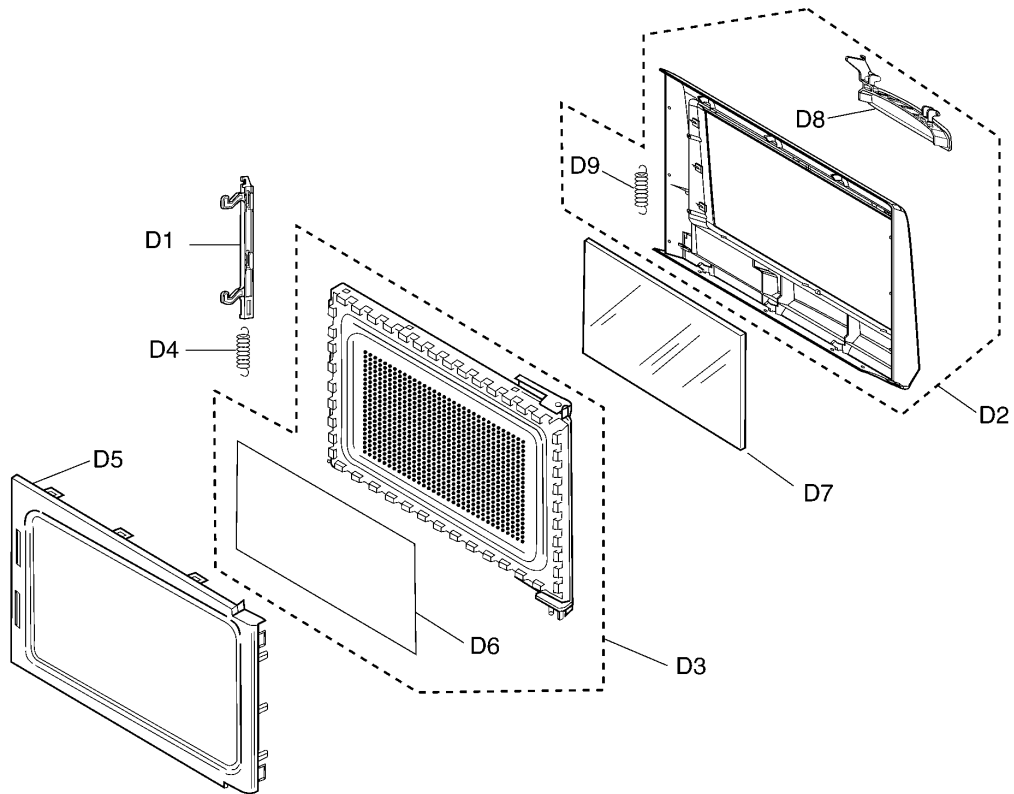
NOTE:

"A" parts are supplied by MOBU (Japan)

"F" parts are supplied by PHAMOS (China)

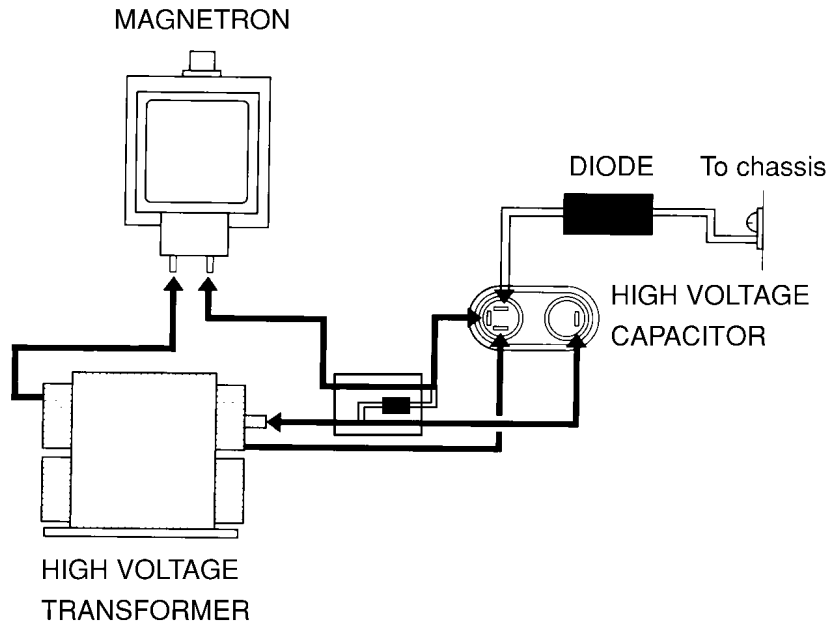
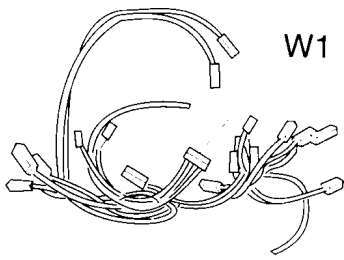
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F01576R60HTU	NAME PLATE	1	
2		F10016S10XPG	BASE	1	
3		F10084T00AP	RUBBER FOOT	2	
4		F110D6N60HXP	CABINET BODY (U)	1	
5	△	F200A6R60HP	OVEN (U)	1	
6		F20556S10XP	COVER	1	
7		F21316E70XP	PULLY SHAFT	1	
9		F290D6S10XP	ROLLER RING (U)	1	
10	△	F30206S10XP	DOOR HOOK	1	
11		F31365Q00AP	HOOK LEVER A	1	
12		F400A6S10XP	FAN MOTOR	1	
13		F4008-1E60	FAN BLADE	1	
14		F40256S10XP	AIR GUIDE A	1	
15		F41446S10XP	ORIFICE	1	
16		F612E8F60QP	INCANDESCENT LAMP (U)	1	
17	△	F61425U30XN	MICRO SWITCH	1	PRIMARY LATCH SWITCH
18	△	F61415U30XN	MICRO SWITCH	1	SECONDARY LATCH SWITCH
21	△	F61785U30XN	MICRO SWITCH	1	SHORT SWITCH
22	△	2M211A-M1JP	MAGNETRON	1	
23	△	F60906N60XP	H.V.CAPACITOR	1	
24		F60376S10XP	CAPACITOR BRACKET	1	
25	△	F621B8H30HP	H.V.TRANSFORMER	1	
26	△	F605V8L50AP	DIODE (U)	1	
27	△	F62306S10XP	FUSE	1	8A
29		F63266S30XP	TURNTABLE MOTOR	1	
30	△	F900C6R60TU	AC CORD W/PLUG	1	
31	△	F61456N00AP	THERMAL CUTOUT	1	-20°C ON,120°C OFF
32		F60366S10XP	CAPACITOR INSTALLATION BRACKET	1	
33		F11656S10XP	REINFORCE BRACKET	1	
34		F60706S10XP	INSULATE BRACKET	1	
35		F64605G50XN	HEATER MOUNTING PLATE	2	
36		F630G6B90XN	HEATER (AU)	2	
37		F66266R60XP	THERMAL CUTOUT MOUNTING	1	
38		F40268920XN	AIR GUIDE B	1	
39		F603Y6R60XP	D.P.CIRCUIT (DU)	1	
41		F11407000AP	STOPPER	1	
42		F01506W50XP	NO TOUCHING LABEL	1	
43	△	F61455G60XN	THERMAL CUTOUT	1	70°C ON,150°C OFF
44		F22175G60APG	INSULATION PLATE	1	
45		XTWFL4+12T	SCREW	4	FOR MAGNETRON
46		XTWFA4+12D	SCREW	3	FOR CABINET BODY
47		XTTFL4+6BN	SCREW	2	FOR CABINET BODY SIDE
48		F21766S10XP	SEAL	1	
55		F00066V00HP	CAUTION LABEL	1	
56		F00068H00YT	CAUTION LABEL	1	

8.3. DOOR ASSEMBLY



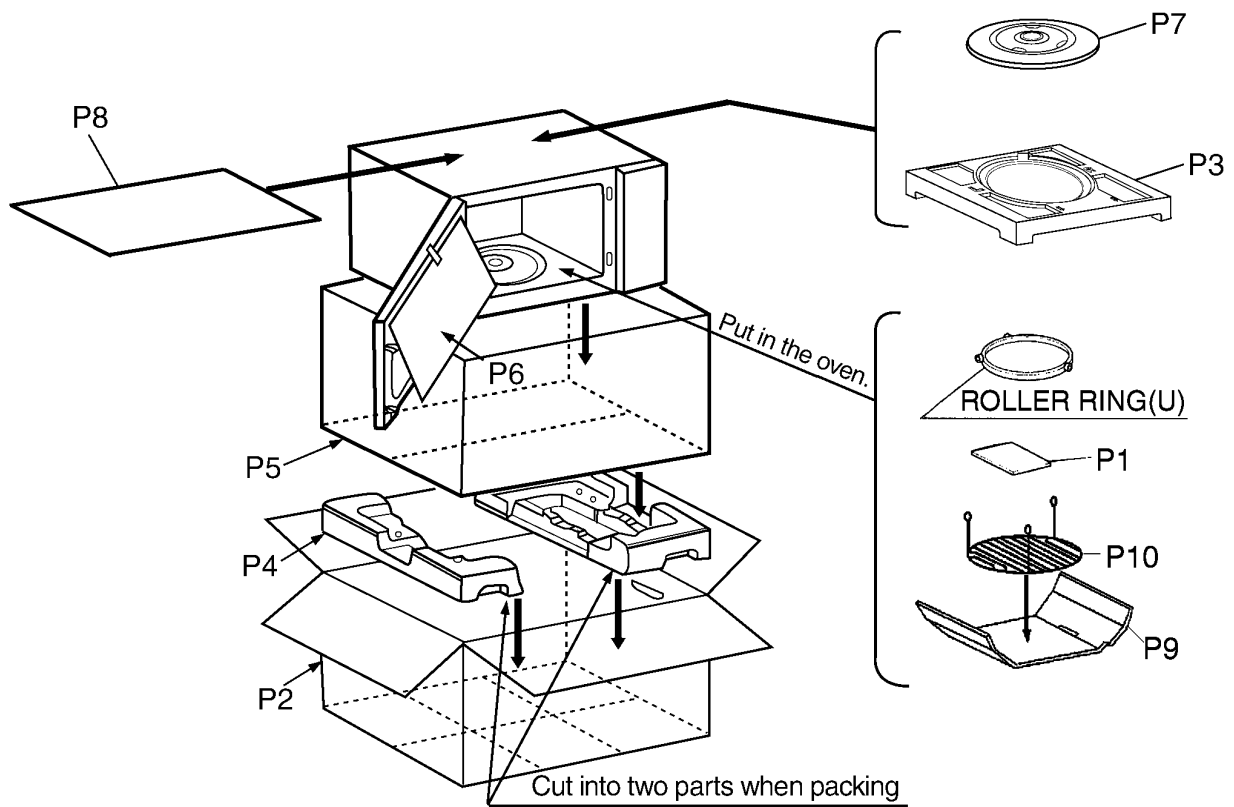
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F30186S10XP	DOOR KEY A	1	
D2	⚠	F301A6S10HXP	DOOR A (U)	1	
D3	⚠	F302K6S40XP	DOOR E (U)	1	
D4		F30216S10XP	DOOR KEY SPRING	1	
D5	⚠	F30856S10XP	DOOR C	1	
D6		F31455G10XN	DOOR SCREEN A	1	
D7		F31466S10XP	DOOR SCREEN B	1	
D8		F30126S10KXP	DOOR HANDLE	1	
D9		F30216S10XP	HANDLE SPRING	1	

8.4. WIRING MATERIALS



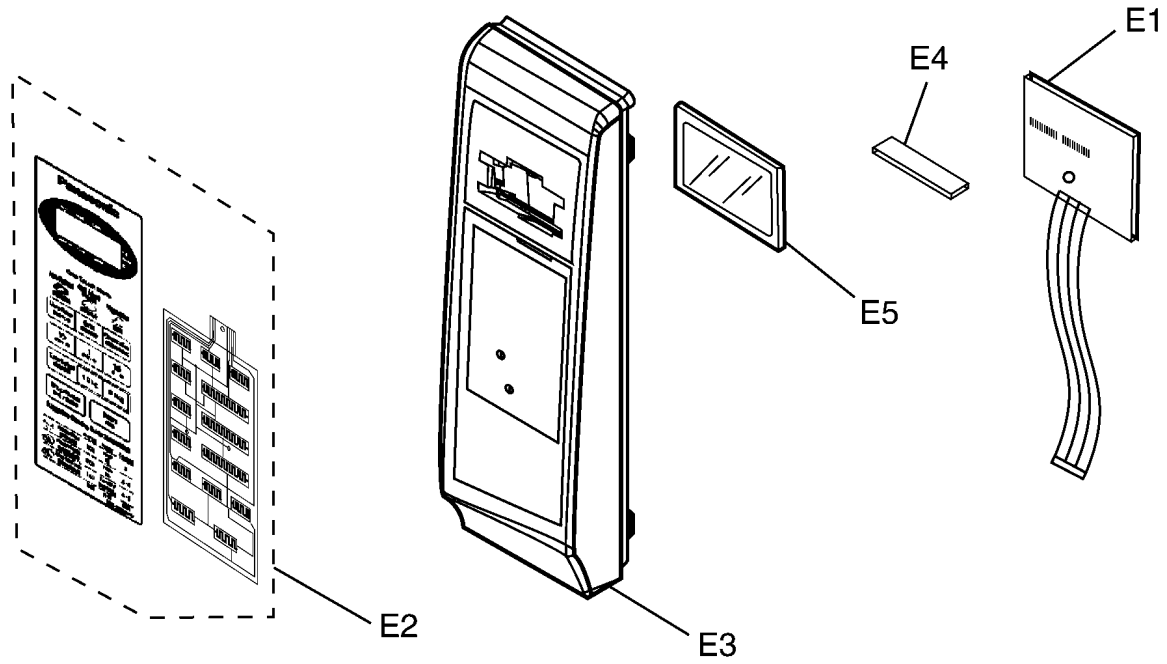
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	F030A6R60XP	LEAD WIRE HARNESS	1	

8.5. PACKING AND ACCESSORIES



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	F00036R60HP	INSTRUCTION MANUAL	1	
P2	F01026R60HYT	PACKING CASE, PAPER	1	
P3	F01048L50XP	UPPER FILLER	1	
P4	F01056S10XP	LOWER FILLER	1	
P5	F01068100XN	P.E BAG	1	
P6	F01075G10XN	DOOR SHEET	1	
P7	F06016D00XN	COOKING TRAY	1	
P8	F01924T00AP	SHEET	1	
P9	F01085G50XN	TRAY PACKING	1	
P10	F060V5G50XN	OVEN RACK	1	

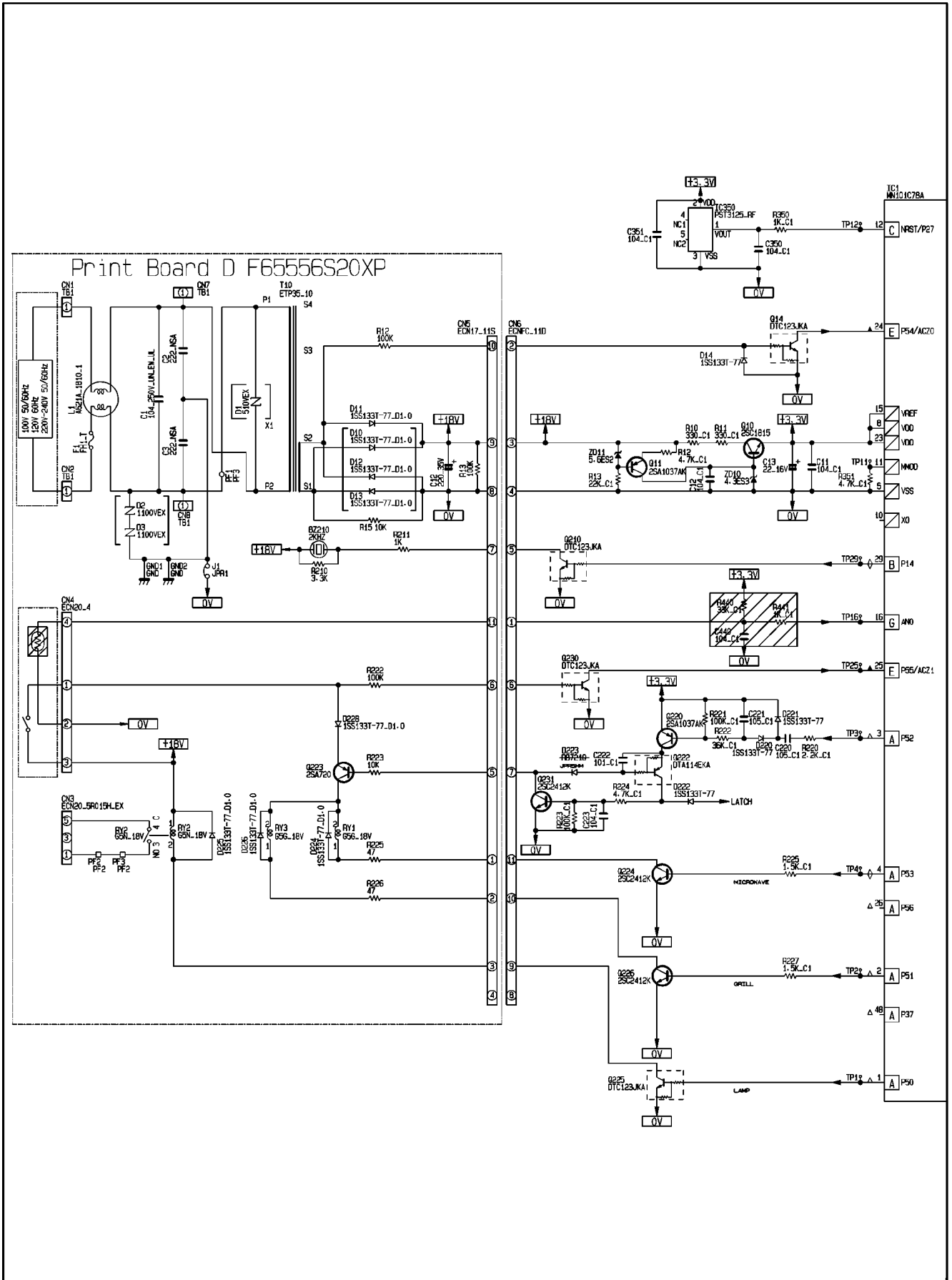
8.6. ESCUTCHEON BASE ASSEMBLY

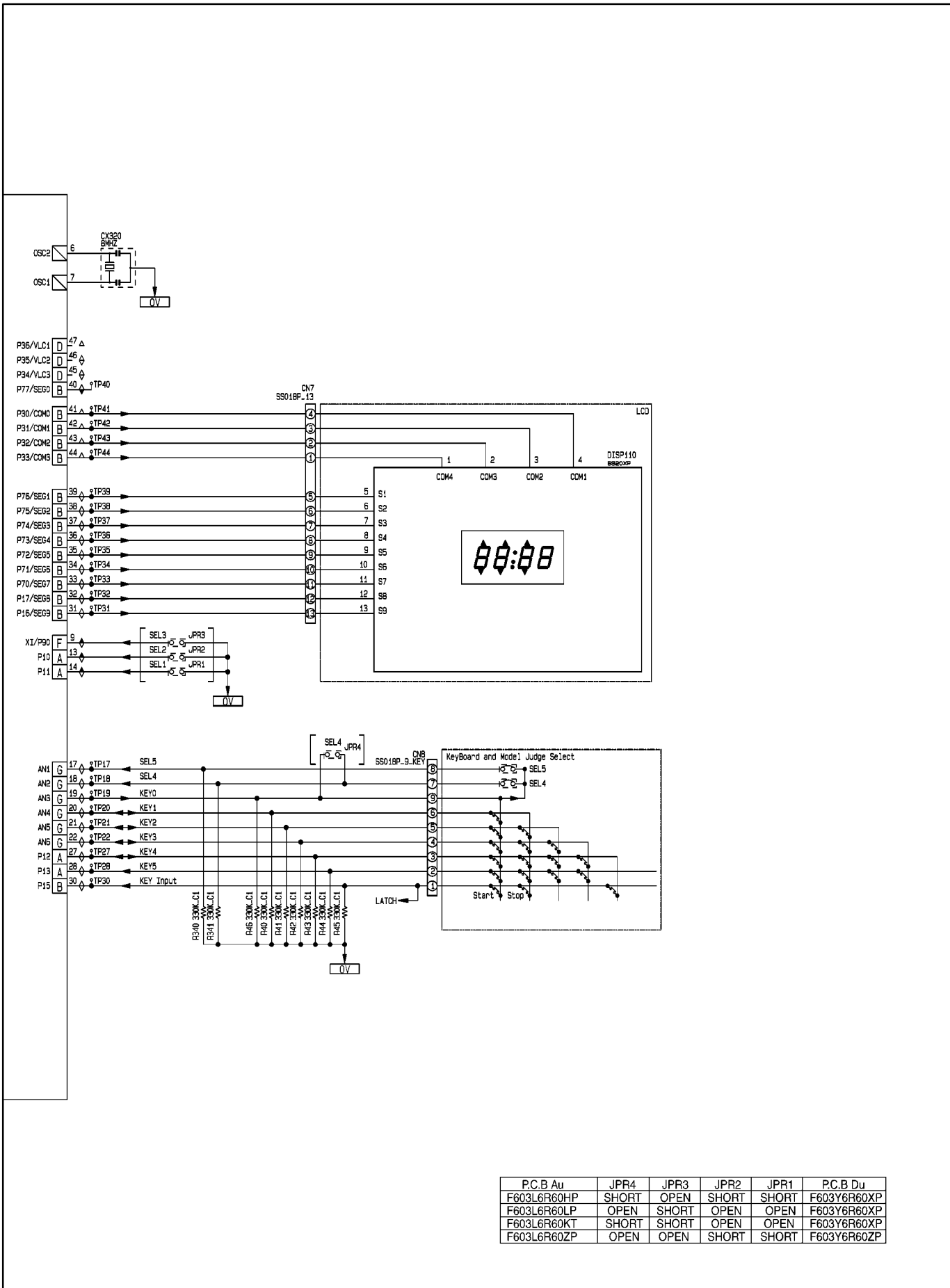


Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E1	F603L6R60HP	D.P.CIRCUIT (AU)	1	
E2	F630Y6R60HTU	MEMBRANE SWITCH (U)	1	
E3	F80346S20HXP	ESCUTCHEON BASE	1	
E4	F67006S20XP	RUBBER CONNECTOR	1	
E5	L5AAAEC00062	DISPLAY	1	

9 DIGITAL PROGRAMMER CIRCUIT

9.1. SCHEMATIC DIAGRAM





9.2. PARTS LIST

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310	L0DDEA000014	BUZZER	1	2.0KHz
C15	F2A1C220B624	AL CHEM CAPACITOR	1	22 μ F/16V
CX320	H2B800400007	CERAMIC RESONATOR	1	8.00MHz
D14,D220-D225,D228	MA2C19600E	DIODE	8	
IC1	MN101C78ADG	L. S. I.	1	
IC350	C0EBE0000401	CMOS CHIP	1	
Q10	B1BAAJ000003	TRANSISTOR	1	
Q223	B1ACGF000004	AUDION	1	
D1	D4EAY511A036	ZENER RESISTOR	1	510V
D26,D27	D4EAY102A036	ZENER RESISTOR	2	1000V
R311	D0AE102JA155	CARBON RESISTOR	1	1K Ω ,1/4W,5%
R15,R223	D0AE103JA155	CARBON RESISTOR	2	10K Ω ,1/4W,5%
R12,R13,R222	D0AE104JA155	CARBON RESISTOR	3	100K Ω ,1/4W,5%
R210	D0AE332JA155	CARBON RESISTOR	1	3.3K Ω ,1/4W,5%
R225	D0AE470JA155	CARBON RESISTOR	1	47 Ω ,1/4W,5%
RY1	K6B1AGA00140	POWER RELAY	1	
RY2	K6B1AZA00011	POWER RELAY	1	
T10	G4C2AAH00001	LOW VOLTAGE TRANSFORMER	1	
ZD10	B0BA4R400002	ZENER DIODE	1	
ZD11	B0BA5R600016	ZENER DIODE	1	
F1	F62316S30XP	FUSE HOLDER	1	