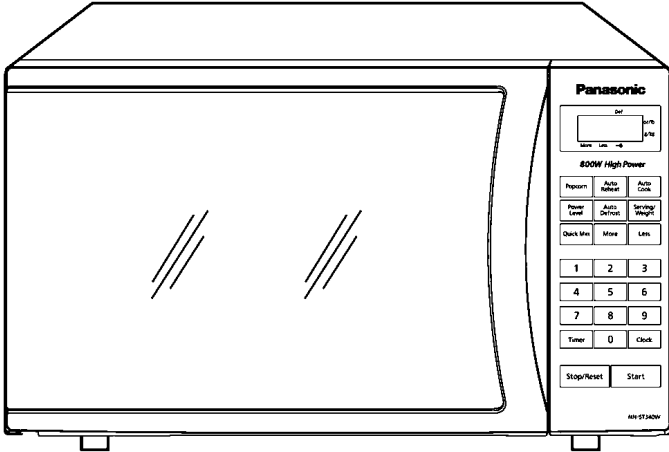


Service Manual

Microwave Oven



NN-ST340W
NN-ST340M

CPH (CANADA)

RPH (MEXICO & LATIN AMERICA)

Specifications:

Model:	NN-ST340W CPH	NN-ST340M RPH
Specifications:		
Power Source:	120V AC Single Phase, 60Hz	
Power Consumption:	1250W	1250W
Output:	800W	800W
Microwave Frequency:	2450MHz	
Timer:	30 Min. / Stage (HIGH Power Level) ~ 3 Stage Maximum 99 Min. 50 Sec. / Stage (Other Power Level) ~ 3 Stage Maximum	
Outside Dimensions:	(19 ¹ / ₄ "(W) x 11"(H) x 16"(D)) 488mm(W) x 279mm(H) x 405mm(D)	
Oven Cavity Dimensions:	(12 ³ / ₈ "(W) x 8 ³ / ₃₂ "(H) x 13 ⁷ / ₈ "(D)) 315mm(W) x 206mm(H) x 353mm(D)	
Net Weight:	Approx. 28 lbs./12.5 kg	
PbF	This product with PbF	
Specifications subject to change without notice.		

Panasonic®

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Your safety and the safety of others are very important.

We have provided important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol. It is used to alert you to potential hazards that can kill or hurt you and others. The safety messages will follow the safety alert symbol and either the word "DANGER", "WARNING" or "CAUTION". These words mean:

⚠ DANGER You can be killed or seriously injured if you don't immediately follow instructions.

⚠ WARNING You can be killed or seriously injured if you don't follow instructions.

⚠ CAUTION You can be exposed to a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

The safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

⚠ WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
 - “Federal Performance Standard 21 CFR Subchapter J”(D.H.H.S): U.S.A. models
 - or “Radiation Emitting Devices Act”(Health and Welfare Canada): Canadian models
 it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the “procedure for measuring radiation leakage.”
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PSTC) Panasonic Service and Technology Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094
Attention: Technical Service Division.
(201)348-7000

IN PUERTO RICO (PPR) Panasonic Puerto Rico, Inc.
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, Puerto Rico 00985
(787)750-4300

IN CANADA (PCI) Panasonic Canada Inc.
5770 Ambler Drive, Mississauga,
Ontario, L4W2T3
(905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a \triangle on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

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

- (A) Do not operate or allow the oven to be operated with the door open.
- (B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
 - (1) Interlock operation
 - (2) Proper door closing
 - (3) Seal and sealing surfaces (arcing, wear, and other damage)
 - (4) Damage to or loosening of hinges and latches.
 - (5) Evidence of dropping or abuse
- (C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
- (D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

⚠ 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). Use eyeware protection.

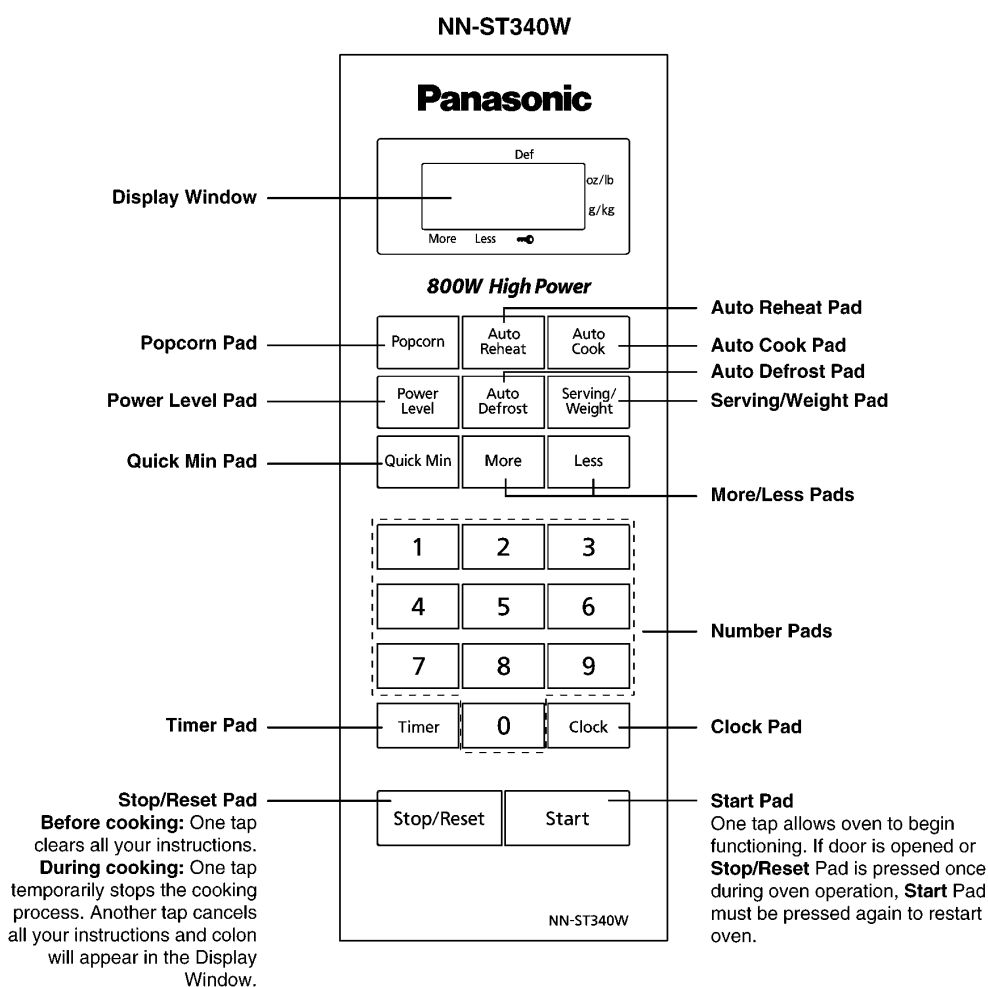
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1 FEATURE CHART

FEATURE	MODEL	NN-ST340W/M
3 Stage Cooking		○
Microwave		○
Auto Weight Cook		○
Auto Weight Turbo Defrost		○
Timer		○
Clock		○
Child Safety Lock		○

2 CONTROL PANEL



Beep Sound:

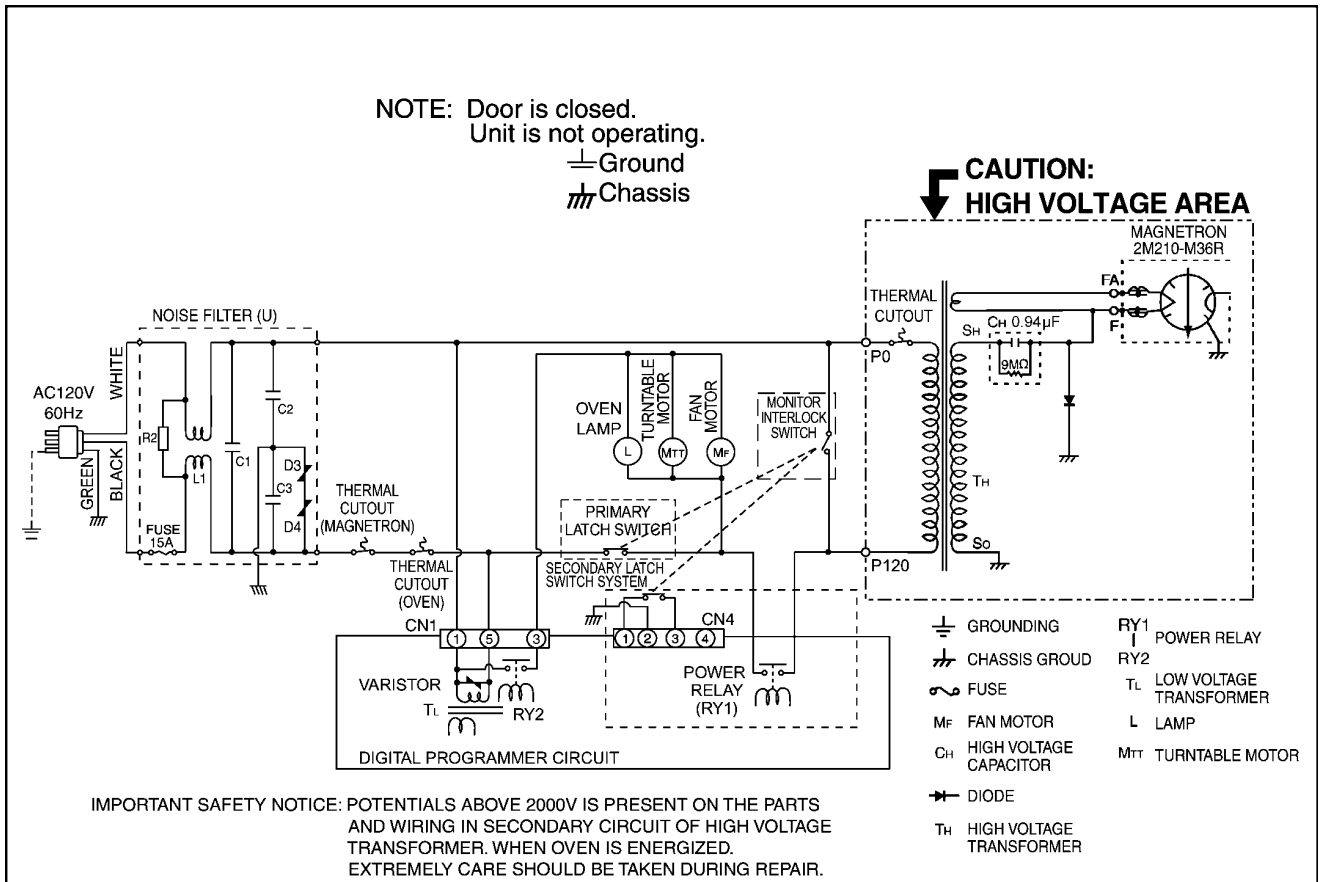
When a pad is pressed correctly, a beep will be heard. If a pad is pressed and no beep is heard, the unit did not or cannot accept the instruction. The oven will beep twice between programmed stages. At the end of any complete program, the oven will beep 5 times.

Note:

If no operation after cooking program setting, 6 minutes later, the oven will automatically cancel the cooking program. The display will return to clock or colon display.

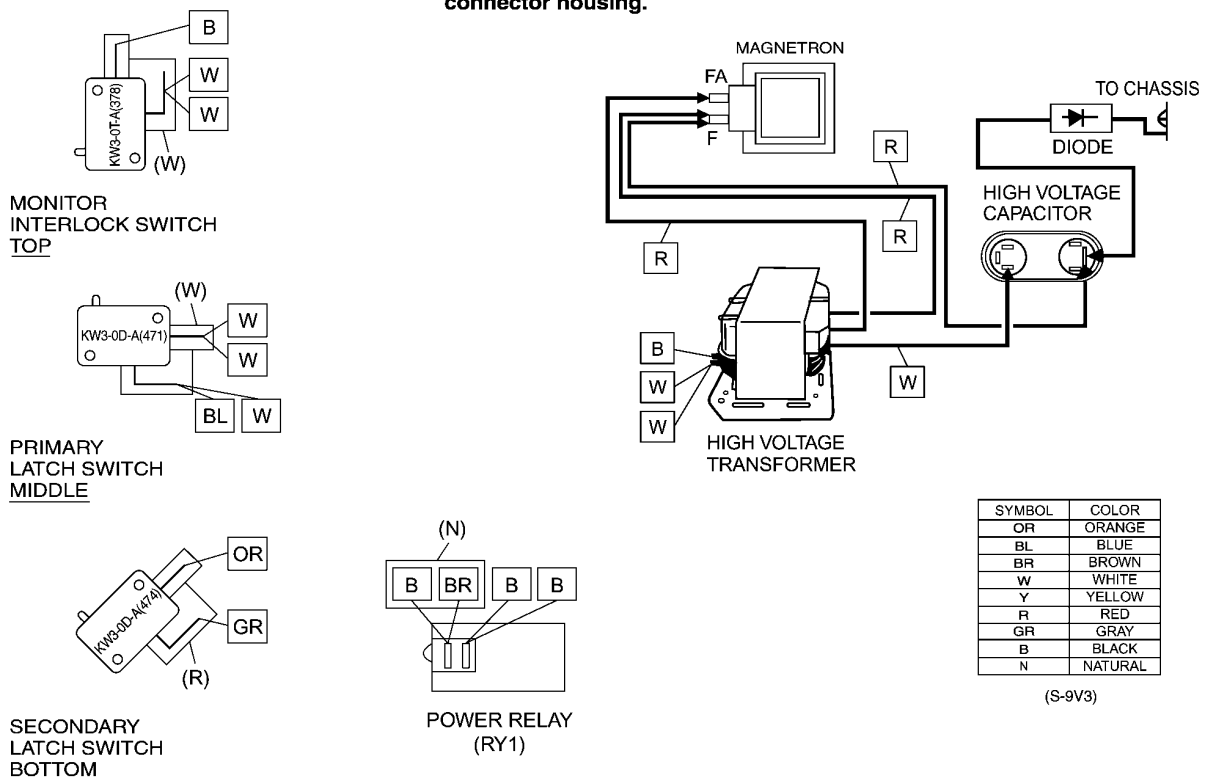
3 SCHEMATIC DIAGRAM

3.1. NN-ST340W CPH





WIRING DIAGRAM

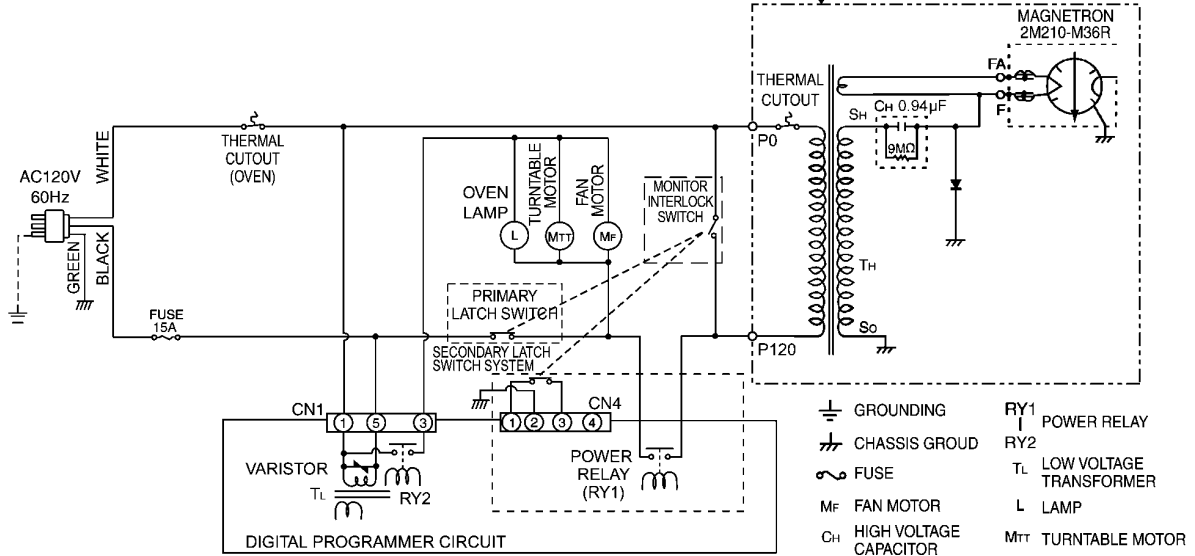
NOTE: * When replacing, check the lead wire color as shown.
* Colors shown by () indicate colors of lead wire connector housing.














3.2. NN-ST340M RPH

NOTE: Door is closed.
Unit is not operating.
 Ground
 Chassis

CAUTION:
HIGH VOLTAGE AREA

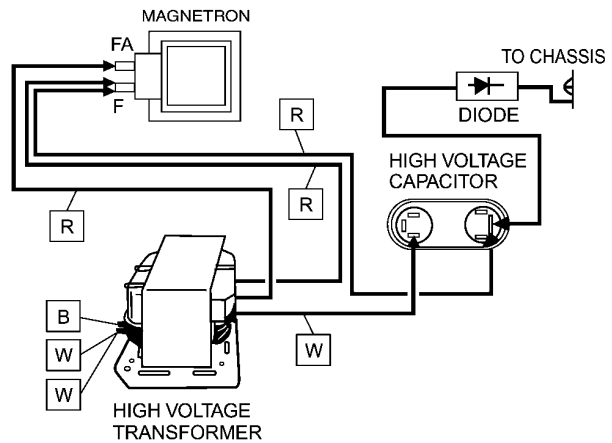
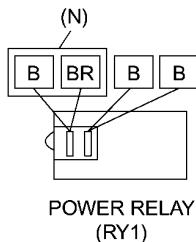
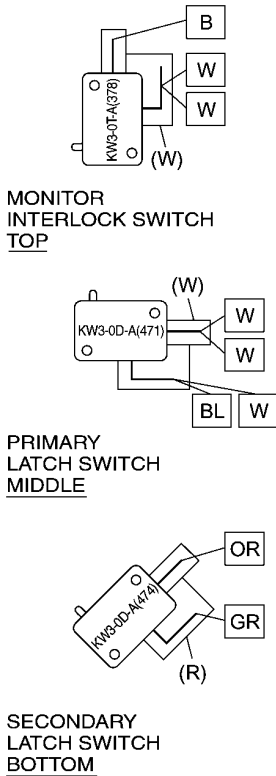


IMPORTANT SAFETY NOTICE: POTENTIALS ABOVE 2000V IS PRESENT ON THE PARTS AND WIRING IN SECONDARY CIRCUIT OF HIGH VOLTAGE TRANSFORMER. WHEN OVEN IS ENERGIZED. EXTREMELY CARE SHOULD BE TAKEN DURING REPAIR.

-  GROUNDING
-  CHASSIS GROUND
-  FUSE
-  DIODE
-  HIGH VOLTAGE TRANSFORMER
-  RY1 POWER RELAY
-  RY2 LOW VOLTAGE TRANSFORMER
-  TL TURNABLE MOTOR
-  L LAMP
-  CH HIGH VOLTAGE CAPACITOR
-  MT TURNABLE MOTOR

WIRING DIAGRAM

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



SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK
N	NATURAL

(S-9V3)

4 DESCRIPTION OF OPERATING SEQUENCE

4.1. 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.

POWER SETTING	OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
		ON(SEC)	OFF(SEC)
800W	100%	22	0
560W	70%	17	5
440W	55%	13	9
240W (DEFROST)	30%	9	13
80W	10%	5	17

4.2. 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	15 min.00 sec.

Auto Reheat

WEIGHT SELECTED	COOKING TIME
1 serving	2 min.00 sec.

Auto Cook

CATEGORY	WEIGHT SELECTED	COOKING TIME
Fresh Vegetables	110g	2 min.40 sec.

5 CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high voltage, high current device. 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.

5.1. 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.

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

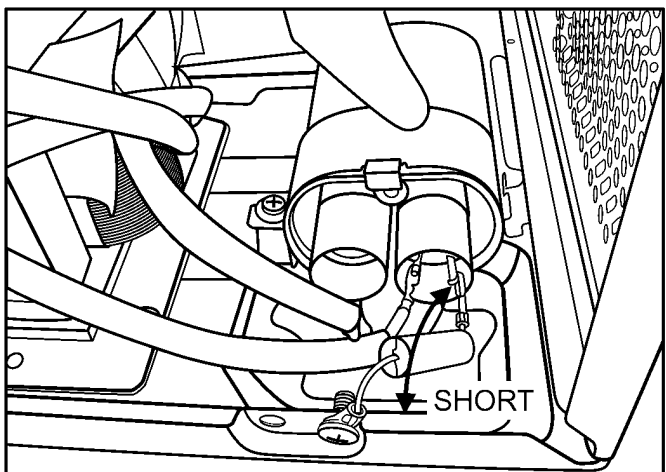
For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated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

⚠ WARNING

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

⚠ WARNING

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



Contact chassis side first then short to the high voltage capacitor terminal.

5.3. Part replacement.

When troubleshooting any part of component is to be replaced, always ensure that the power cord is unplugged from the wall outlet.

5.4. When the 15 Amp fuse is blown due to the malfunction of the monitor interlock switch:

⚠ WARNING

When the 15 Amp fuse is blown due to malfunction of the monitor interlock switch, replace all of the components (Primary latch switch, Secondary latch switch, Monitor interlock switch).

1. This is mandatory. Refer to "Measurements and Adjustments" for the location of 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 deficient in their ability to hold the switches.

5.5. 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 holes or gaps, because such objects may work as an antenna and cause microwave leakage.

5.6. 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.

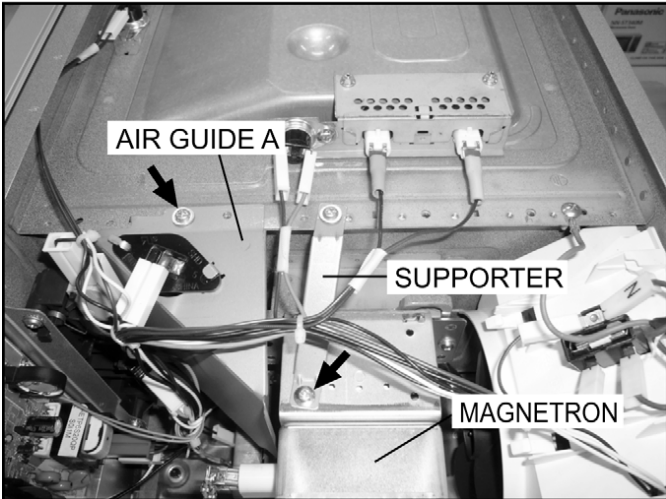
⚠ IMPORTANT NOTICE

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 hinges or magnetron installed incorrectly, the microwave leakage can exceed more than 5mW/cm². After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly installed.

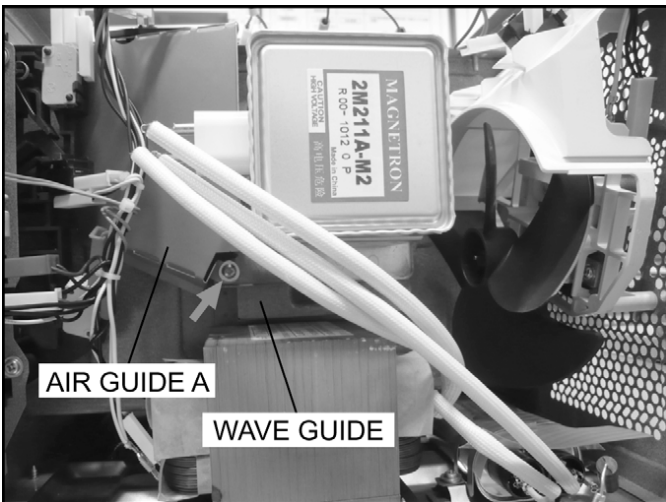
6 DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

6.1. Magnetron

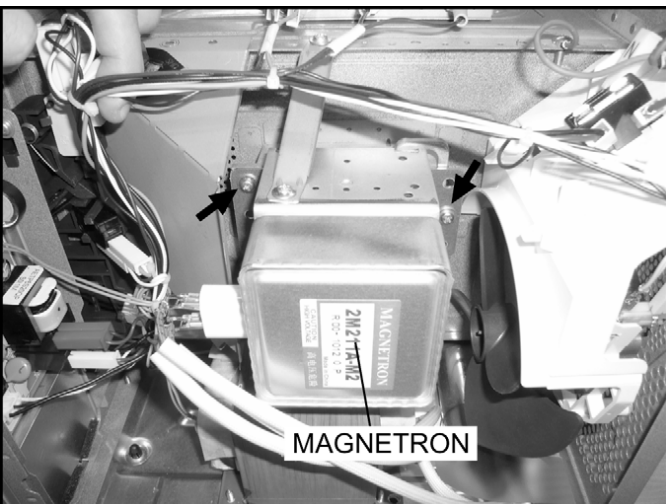
1. Discharge the high voltage capacitor.
2. Remove 1 screw holding supporter on the magnetron.
3. Remove 1 screw holding air guide A on cavity top plate.



4. Remove 1 screw holding air guide A on the wave guide, then remove the air guide A.



5. Remove 2 screws holding the magnetron.



NOTE:

After replacement of the magnetron, tighten mounting screws properly, 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

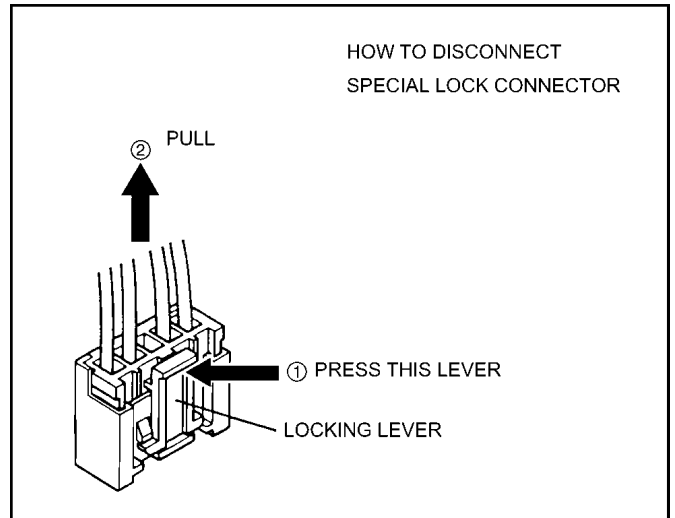
When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "FA terminal" and the lead wire from high voltage capacitor should be connected to "F terminal".

6.2. Digital programmer circuit (D.P.C) & Membrane switch

NOTE:

Be sure to ground any static electric charge built up on your body before handling the D.P.C.

1. Remove 1 screw holding escutcheon base on cavity front plate.
2. Disconnect all connectors from D.P.C. board.



3. Disconnect red case connector from secondary latch switch.
4. Remove 5 screws holding D.P.C. board on escutcheon base.

5. Separate D.P.C board from tabs on the escutcheon base and remove D.P.C board.

To replace membrane key board

6. Remove 1 screw holding back plate and bracket on escutcheon base, then remove back plate and bracket.

7. Use tools such as knife etc. to lift the edge of membrane sheet and peel off escutcheon sheet & key board membrane completely from escutcheon base.

NOTE:

a. 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.

b. When installing the new key board membrane, make sure that the surface of escutcheon base is clean to prevent a malfunction or shorted contacts.

6.3. Low voltage transformer and/or power relays (RY1)

NOTE:

Be sure to ground any static electric charge built up on your body before handling the D.P.C.

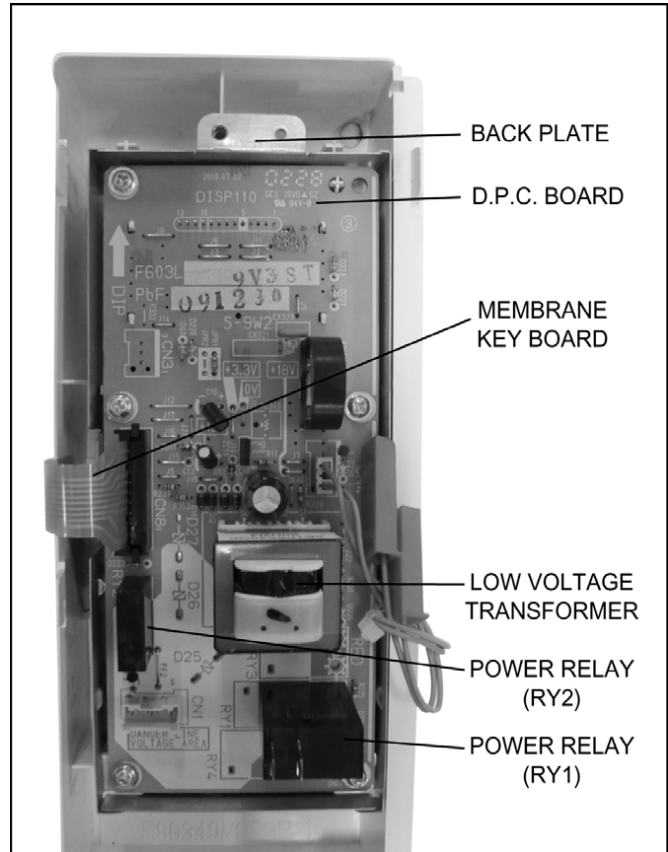
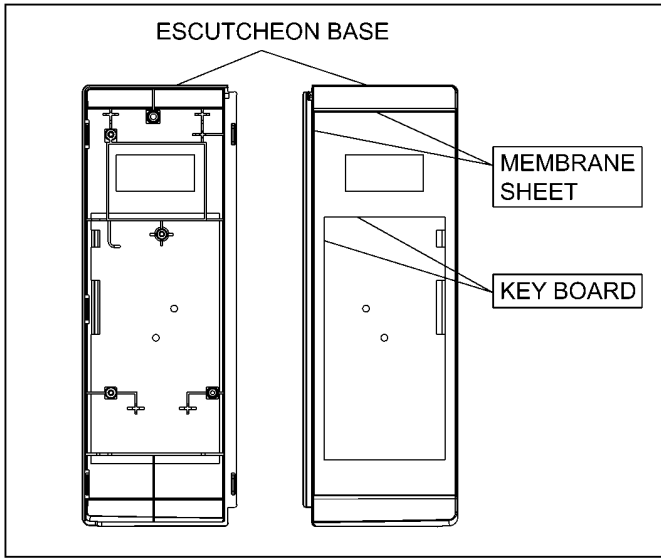
1. Disconnect all connectors from D.P.C. board.
2. Remove 5 screws holding D.P.C. board on escutcheon base.
3. Replace D.P.C. board.

(A) 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:

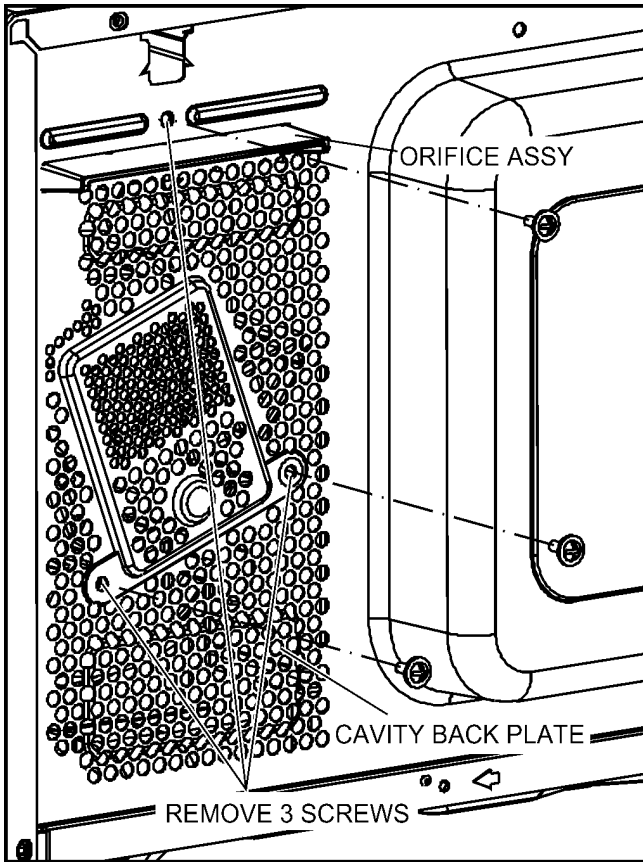
Do not use a soldering iron or desoldering tool of more than 30 watts on D.P.C. contacts.

(B) With all the terminal pins cleaned and separated from D.P.C. contacts, remove the defective transformer/power relays, Replace components making sure all terminal pins are inserted completely resolder all terminal contacts carefully.

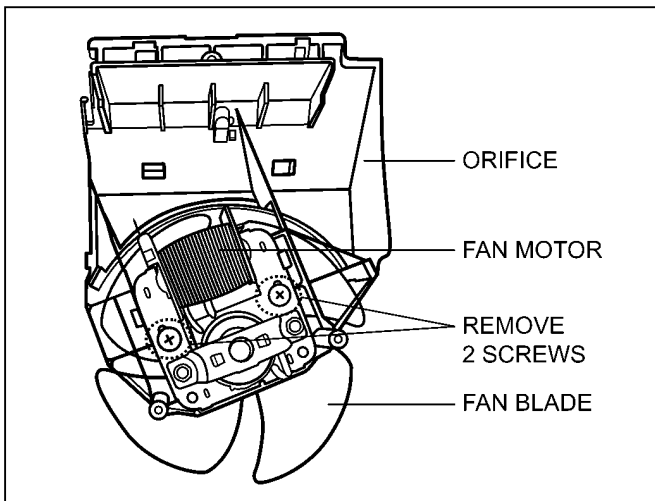


6.4. Fan motor

1. Disconnect 2 lead wires from fan motor terminals.
2. Remove 3 screws holding orifice assy and detach the orifice assy from oven assy.

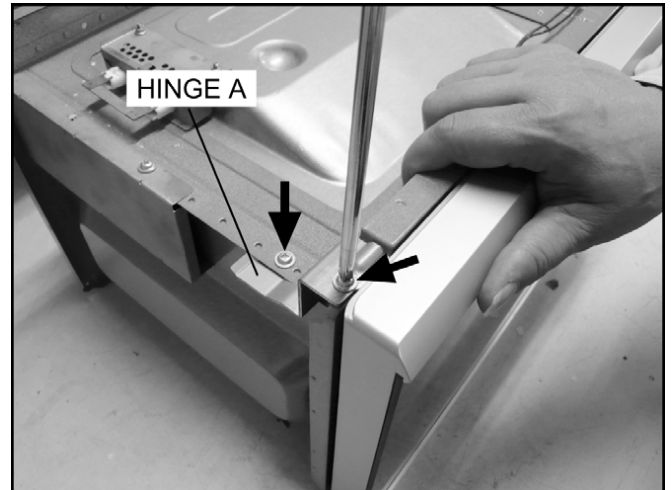


3. Remove fan blade from the motor shaft by pulling it straight out.
4. Remove 2 screws holding fan motor on orifice assy and detach the fan motor from orifice assy.



6.5. Door assembly

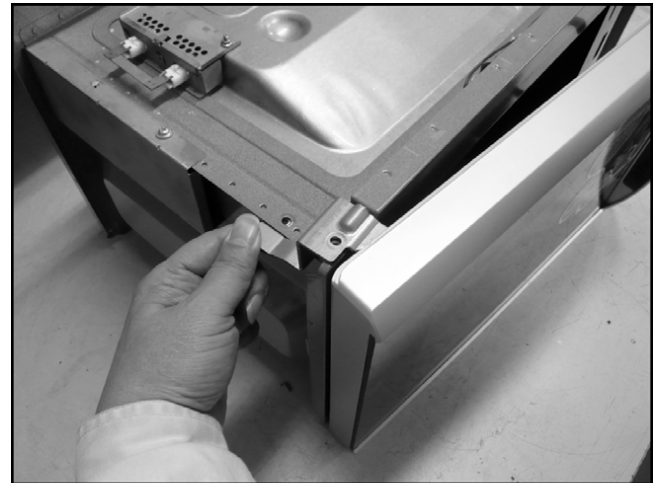
1. Support the door, remove 2 screws holding hinge A.



2. Open the door, remove door(U) and hinge A from cavity.

NOTE:

Support the door before opening.



3. Remove door C from door A (U) & door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
4. Separate door E from tabs on door A (U) and remove door A (U).

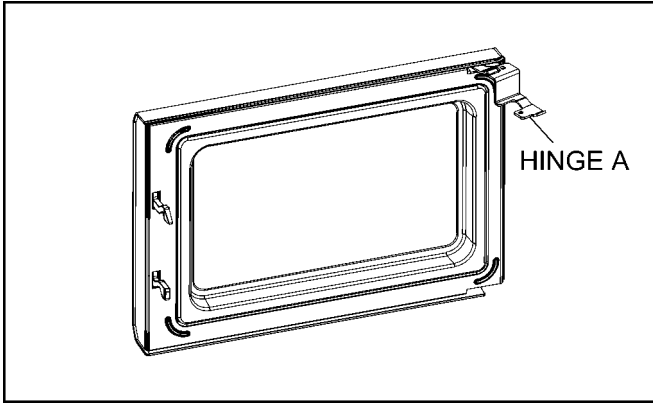
5. Remove door key and door key spring from door E.
6. Replace other components.

To re-install components:

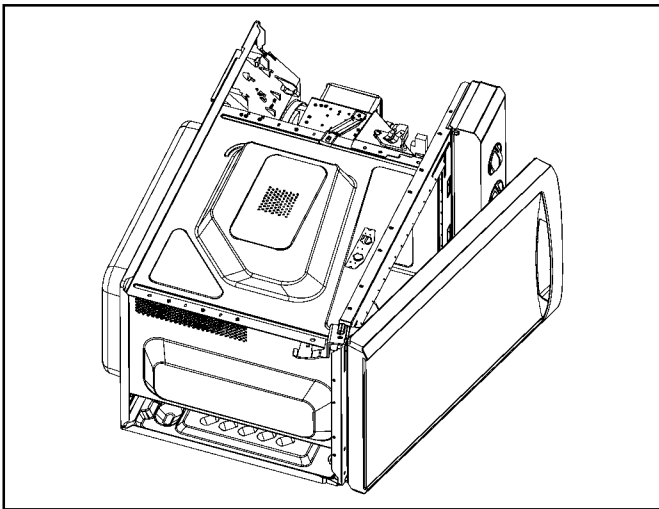
NOTE:

After replacement of the defective component parts of the door, reassemble it properly and adjustment so as to prevent an excessive microwave leakage. Adjustment of the door assembly (Refer page 16).

7. Place the hole of hinge A into the door's upper hinge pin.



8. Use your left index finger to support the door's lower hinge pin while guiding the door's hinge A into the cavity slot. Then lower your finger to seat the door onto the hinge.



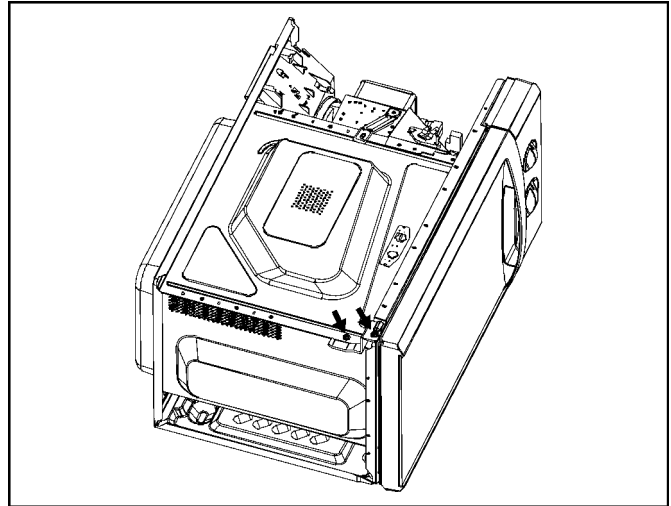
NOTE:

Door alignment is crucial. If door is misaligned, apply pressure until alignment is achieved.

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.

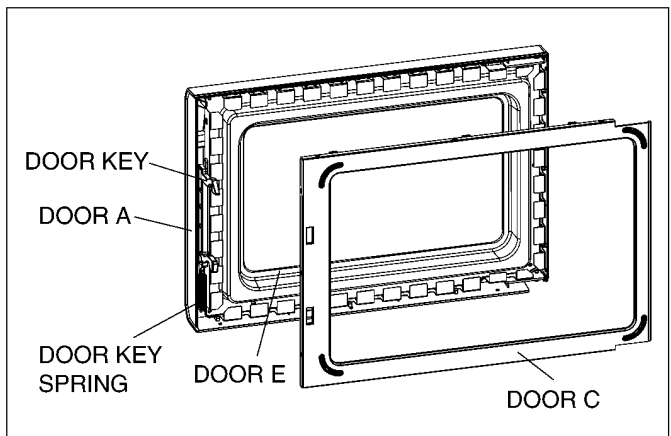
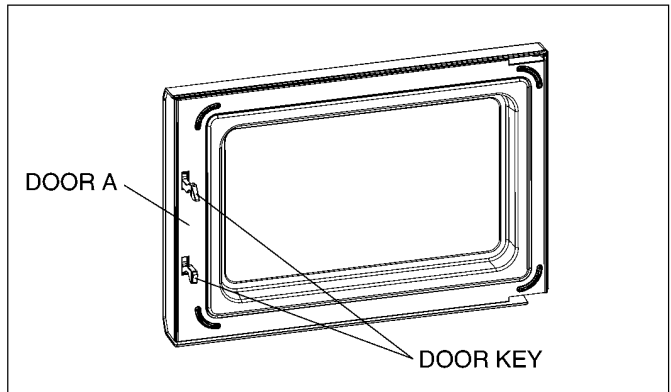
9. Tighten 2 mounting screws.



Be sure the gap between door E and cavity front plate will be 0.3~0.7mm.

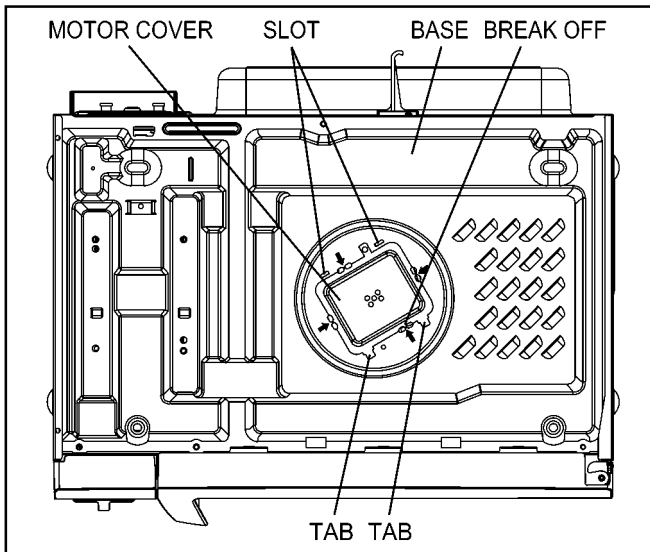
NOTE:

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



6.6. Turntable motor

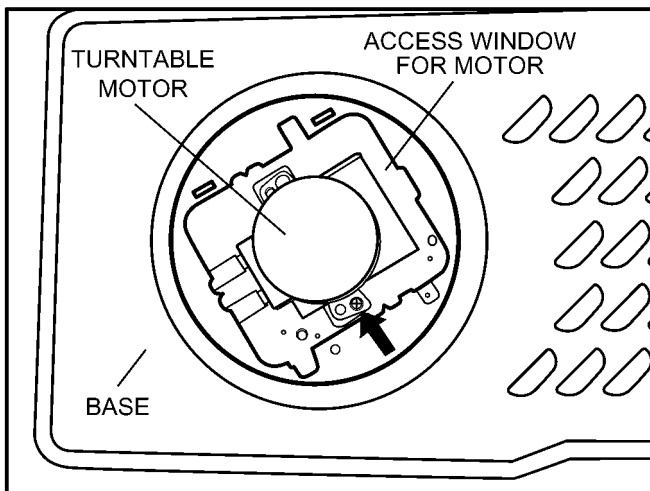
1. Remove the motor cover by breaking off at the 4 spots indicated by arrows with a cutter or the like.



NOTE:

After removing the motor cover, be sure that cut portions are properly trimmed off or bent to the inside so that no sharp edges will be exposed to 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 4mm x 6mm screw.

7 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 power cord and discharge the high voltage capacitor (see page 8).

7.1. Primary, Secondary Latch Switch Interlocks

1. Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
2. 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)
Secondary Latch Switch	$\infty \Omega$ (open)	0 Ω (close)
Power Relay B	$\infty \Omega$ (open)	$\infty \Omega$ (open)

7.2. Monitor Interlock Switch

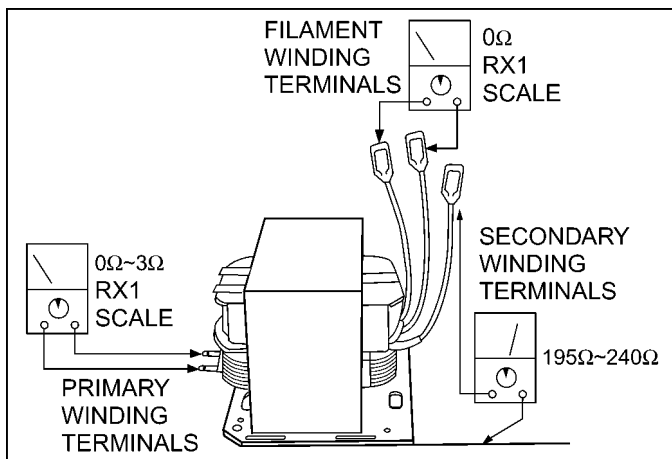
1. Unplug lead wires from H.V.transformer primary terminals.
2. Connect test probes of ohm meter to the disconnected leads of the H.V. Transformer.
3. Test the continuity of Monitor Interlock Switch with door opened and closed positions using lowest scale of the ohm meter.

Normal continuity readings should be as follows.

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

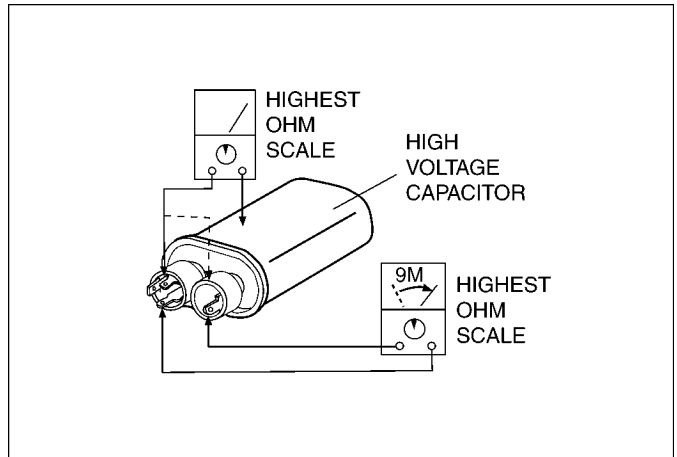
7.3. High voltage transformer

1. Remove connectors from the transformer terminals and check continuity.
2. Normal (cold) resistance readings should be as follows:
 Secondary winding..... Approx. 195 Ω ~240 Ω
 Filament winding..... Approx. 0 Ω
 Primary winding..... Approx. 0 Ω ~3 Ω



7.4. High voltage capacitor

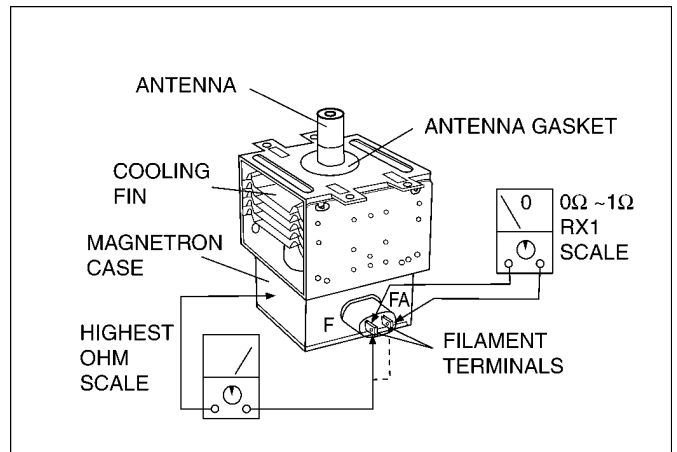
1. Check continuity of capacitor with meter on highest OHM scale.
2. A normal capacitor will show continuity for a short time, and then indicate 9M Ω once the capacitor is charged.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 9M Ω .
5. Resistance between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



7.5. Magnetron

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

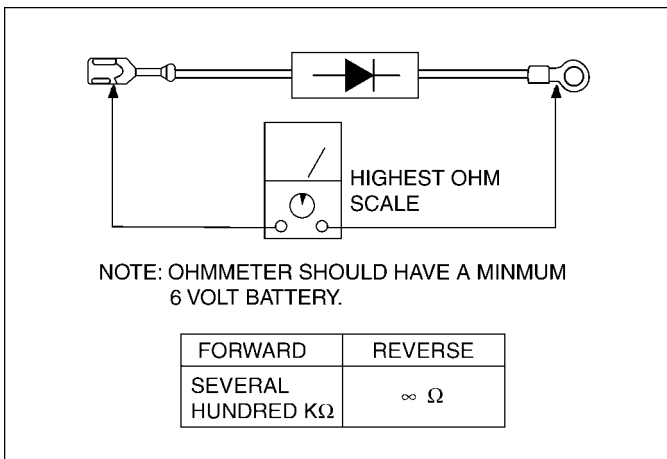
1. Isolate magnetron from the circuit by disconnecting the leads.
2. A continuity check across magnetron filament terminals should indicate one ohm or less.
3. A continuity check between each filament terminal and magnetron case should read open.



7.6. 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-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 K Ω in the other direction.



7.7. Membrane keyboard (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.

8 MEASUREMENTS AND ADJUSTMENTS

⚠ WARNING

- * For continued protection against radiation hazard, replace only with identical replacement parts (For touch models part No. F61425U30XN, Type No. KW3-0D-A(471) for primary latch switch; Part No. F61415U30XN, Type No. KW3-0D-A(474) for secondary latch switch and Part No. J61784T00AP, Type No. KW3-0T-A(378) for monitor interlock switch.)
- * When the 15 Amp. fuse is blown due to the operation of the monitor interlock switch, you must replace power relay RY1 (part No. K6B1AZA00016, Type No.G5G-1A18VDC), the primary latch switch and the monitor interlock switch. Then follow the installation procedures below.
- * Interlock switch replacement: In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
- * Refer to schematic diagram to ensure proper connection.

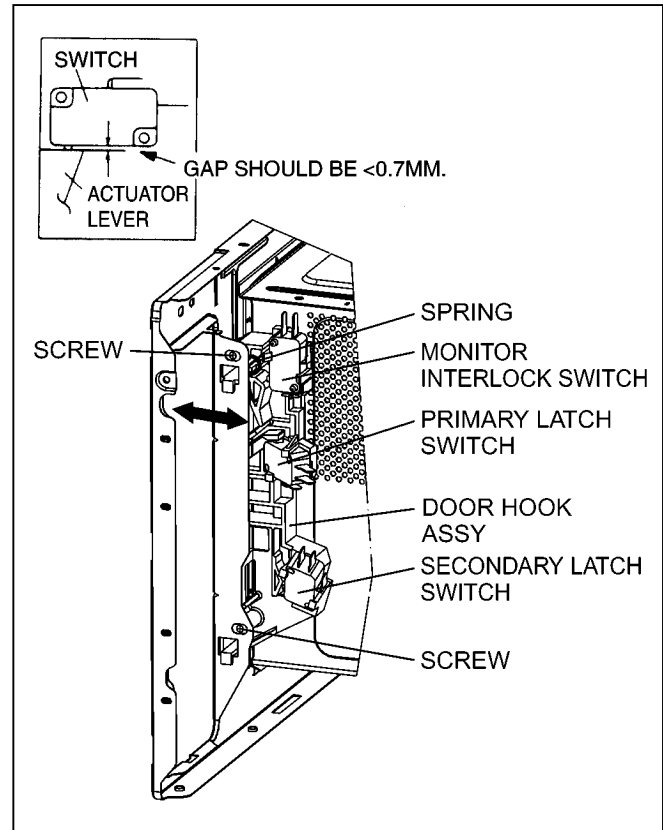
8.1. Adjustment of primary latch switch, secondary latch switch and monitor interlock switch.

1. Mount the Primary latch switch, the Secondary latch switch and the Monitor interlock 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 Monitor interlock 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 monitor interlock switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.



8.2. 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)

9 PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

⚠ WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PSTC, PPR, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

9.1. Equipment

- Electromagnetic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

9.2. Procedure for measuring radiation leakage

Note before measuring:

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
 - To prevent false readings, the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
 - Leakage with the outer panel removed: less than 5mW/cm².
 - Leakage for a fully assembled oven with door normally closed: less than 2mW/cm² (1mW/cm² for Canada).
 - Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door: less than 2mW/cm².
1. Pour 275 ± 15cc (9ozs^s ± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.
 2. Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
 3. When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
 4. Tap the [Start] button or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

9.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

⚠ WARNING

Do not touch any high voltage parts. Doing so can lead to personal injury or death.

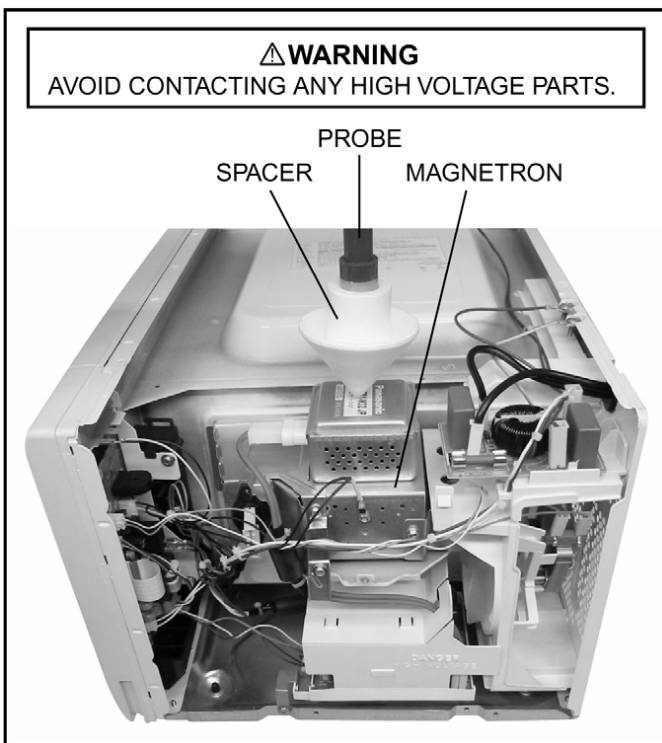
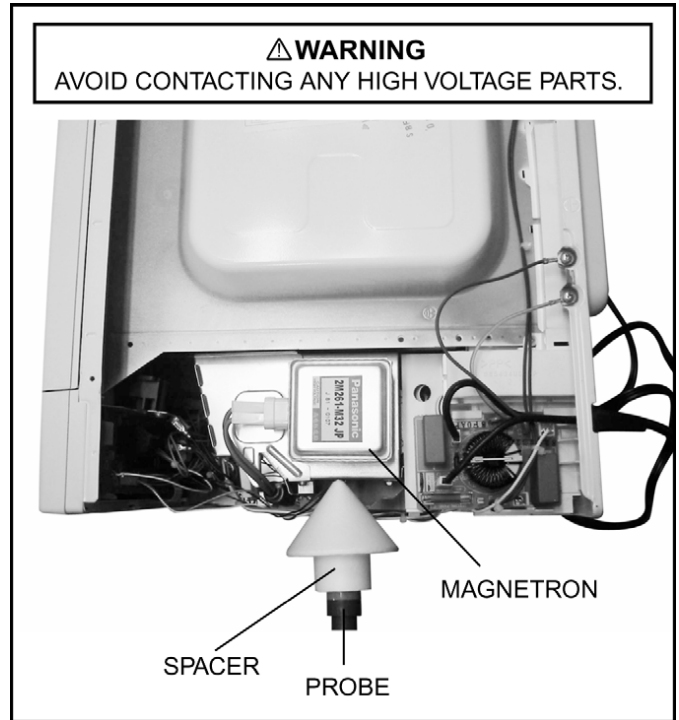
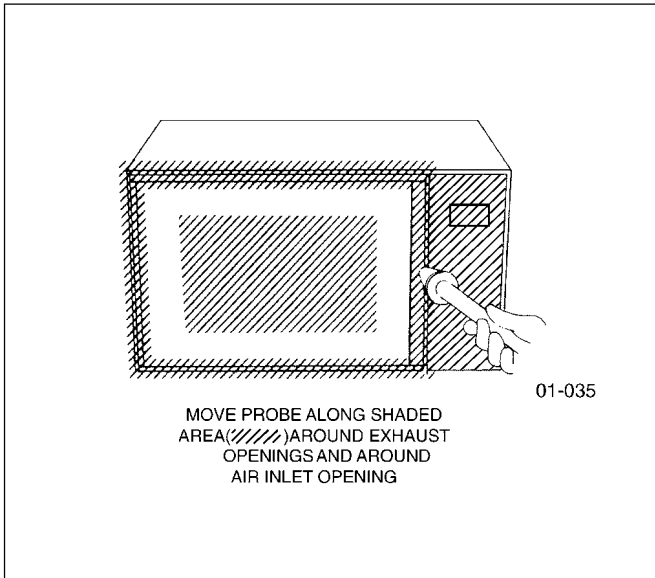
9.2.2. Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening, control panel and air inlet openings.

9.3. Record keeping and notification after measurement

- After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
- A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- Should the radiation leakage be more than 2 mW/cm² (1mW/cm² for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PSTC, PPR or PCI.

9.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.



10 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. 120V 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 monitor interlock switch (NOTE 1) 4. Shorted H.V. capacitor 5. Shorted H.V. transformer (NOTE 2) 6. Shorted diode <p>NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay (RY1 & RY2)'s contacts (between 1 and 2) and if it has continuity, replace power relay B (RY1 & RY2) 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 monitor interlock 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 	<p>Refer to operation procedure.</p> <p>Refer to DPC troubleshooting.</p>
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 Magnetron 4. Open or loose wiring of power relay (RY1) 5. Defective primary latch switch 6. Defective DPC or power relay (RY1) 	<p>Adjust door and latch switches.</p> <p>Check high voltage component according to component test procedure and replace if it is defective.</p> <p>Refer to DPC troubleshooting</p>
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. 	

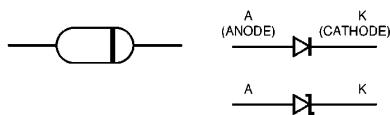
	SYMPTOM	CAUSE	CORRECTIONS
9.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check the grounding lead wire and D.P.C. board.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V. transformer	
11.	Turntable motor does 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.	15A fuse is blown.	1. Shorted lead wire harness 2. Defective monitor interlock 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. Defective power relays 9. Defective DPC	Check adjustment of latch switches and door Replace H.V. Diode Replace Magnetron Replace H.V. Transformer

10.1. Trouble related to Digital Programmer Circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in	1	Fuse pattern of D.P.C.	Normal	→Step2
			Open	Replace D.P.C. or Fuse Pattern
	2	Low voltage transformor (L.V.T.) secondary voltage	Abnormal 0V	L.V.T.
			Normal	→Step3
3	IC1 pin13 voltage	Abnormal	Q10, ZD10	
		Normal=5V	IC1, CX320, Display	
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
No beep sound	1	IC1 pin 62 voltage	Abnormal	IC1
			Normal=5V	BZ210, Q210
Power relay RY2 does not turn on even though the program had been set and the start pad is tapped	1	IC1 pin 28 voltage while operation	Abnormal	IC1
			Normal=5V	→Step2
	2	Collector of Q223 voltage	Abnormal	Q223
			Normal≈0.7V	RY2
No microwave oscillation at any power	1	IC1 pin 27 voltages while operation at high power	Abnormal	IC1
			Normal=5V	→Step2
	2	Collector of Q220 voltage	Abnormal	Q220 and /or Q221, Q222, Q225, Q227
			Normal≈0.7V	→Step3
	3	Short circuit between collector of Q220 and emitter of Q225	Still not turn on	RY1
			RY1 turns on	Q220 and /or Q221, Q222, Q225, Q227
Dark or unclear display	1	Replace display and check operation	Normal	Display
			Abnormal	IC1
Missing or lighting of unnecessary segment	1	Replace IC1 and check operation	Normal	IC1
			Abnormal	Display

10.2. How to check the semiconductors using an OHM meter

Diode

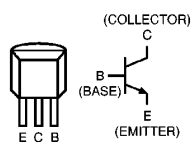


	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

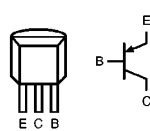
2SC.....
2SD.....



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

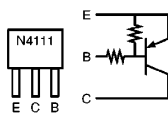
PNP Transistor

2SA.....
2SB.....



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

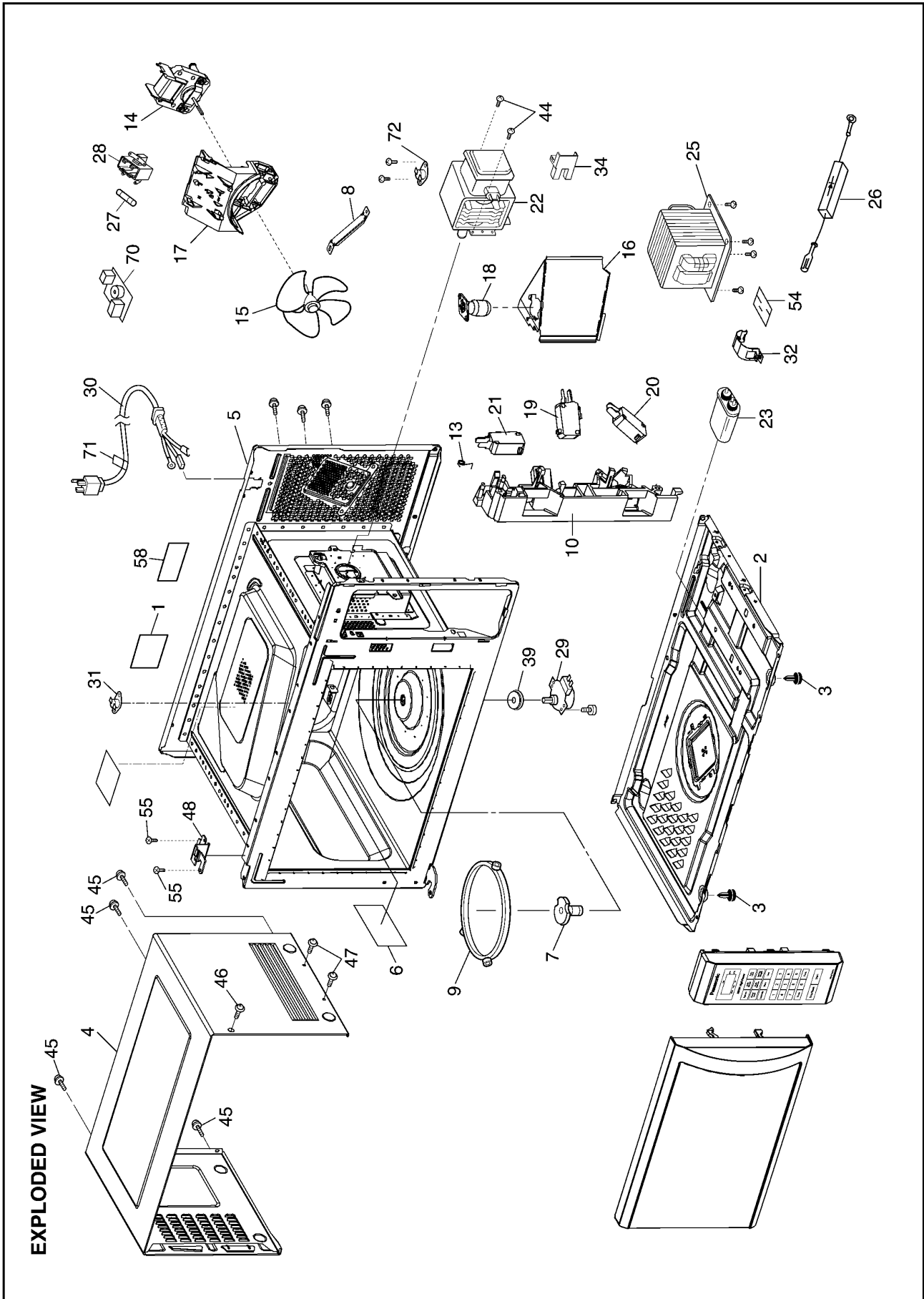
Digital Transistor PNP Transistor



	FORWARD	REVERSE
E-B	10kΩ ~ 30kΩ	10kΩ ~ 30kΩ
C-B	50kΩ ~ 90kΩ	∞
C-E	40kΩ ~ 80kΩ	∞

11 EXPLODED VIEW AND PARTS LIST

11.1. EXPLODED VIEW



11.2. 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:

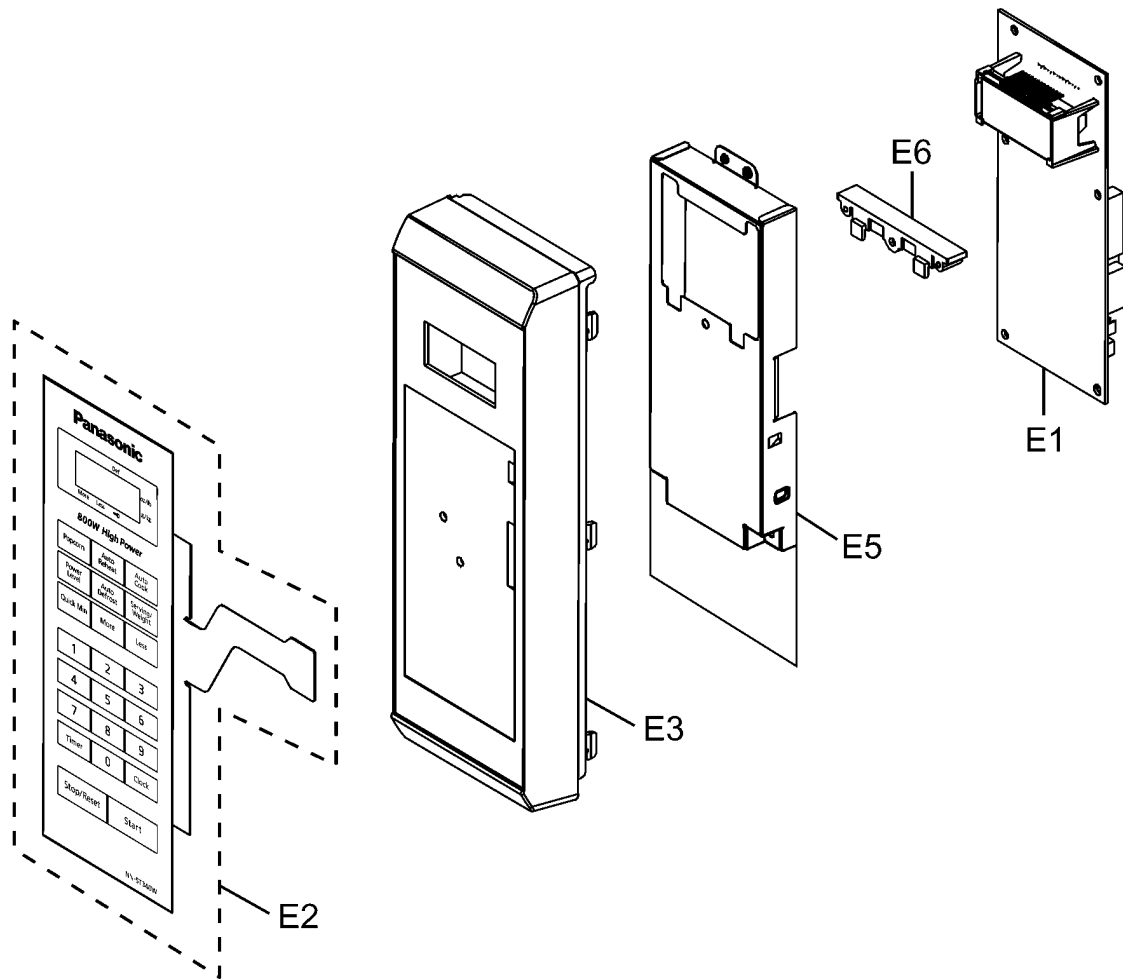
"A" parts are supplied by MOBU (Japan)

"F" parts are supplied by PHAMOS (China)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00079V30HCP	NAME PLATE	1	ST340W CPH
1		F00079V30SRP	NAME PLATE	1	ST340M RPH
2		F10019V00XP	BASE	1	
3		F10084T00APS	RUBBER FOOT	2	
4		F10099V00HXP	CABINET BODY	1	ST340W CPH
4		F10099V00SXP	CABINET BODY	1	ST340M RPH
5	△	F200A9V60AP	OVEN	1	
6		F20559V00XP	COVER	1	
7		F21319W00XP	PULLY SHAFT	1	
8		F20349V00XP	SUPPORTER	1	
9		F290D9W00XP	ROLLER RING (U)	1	
10	△	F30209V00XP	DOOR HOOK	1	
13		F30799V00XP	SPRING	1	
14		F400A9V60AP	FAN MOTOR	1	
15		F4008-1N00	FAN BLADE	1	
16		F40259V00XP	AIR GUIDE A	1	
17		F41449V00XP	ORIFICE	1	
18		F612E9V30AP	INCANDESCENT LAMP (U)	1	
19	△	F61425U30XN	MICRO SWITCH B	1	(PRIMARY LATCH SWITCH)
20	△	F61415U30XN	MICRO SWITCH A	1	(SECONDARY LATCH SWITCH)
21	△	F61789V00XP	MICRO SWITCH	1	(MONITOR INTERLOCK SWITCH)
22	△	2M210-M36R	MAGNETRON	1	
23	△	F60909V30HP	H.V. CAPACITOR	1	(0.94μF/2100V)
25	△	F621B9V30HP	H.V. TRANSFORMER	1	
26	△	F62025G10XN	DIODE	1	
27	△	F62306V60AP	FUSE	1	15A
28		F62319V00XP	FUSE HOLDER	1	RPH
29		F63266S30AP	TURNTABLE MOTOR	1	
30	△	F900C9V30AP	AC CORD W/PLUG	1	
31	△	F61459V00XP	THERMAL CUTOUT	1	130°C OPEN, -20°C CLOSE
32		F60379V00XP	CAPACITOR BRACKET	1	
34		F60706S10XP	INSULATE BRACKET	1	
39		F21766S10XP	SEAL	1	
44		XTWFL4+12T	SCREW	2	FOR MAGNETRON
45		XTWBF4+8D	SCREW	4	FOR CABINET BODY
46		XTC4+10BFN	SCREW	1	FOR CABINET BODY SIDE (UPPER SIDE)
47		XTTFL4+6BN	SCREW	2	FOR CABINET BODY SIDE (LOWER SIDE)
48		F30069V00XP	HINGE A	1	
54		F60709V00XP	INSULATION SHEET	1	
55		XTWFA4+12LR	SCREW	2	FOR HINGE A
58		F00067600CP	CAUTION LABEL	1	CPH
58		F00069660AP	CAUTION LABEL	1	RPH
70		F692Y9V60AP	NOISE FILTER (U)	1	CPH
72	△	F61456S10XP	THERMAL CUTOUT	1	180°C OPEN, 60°C CLOSE (ST340W CPH)
76		F00339V30AP	FUSE LABEL	1	

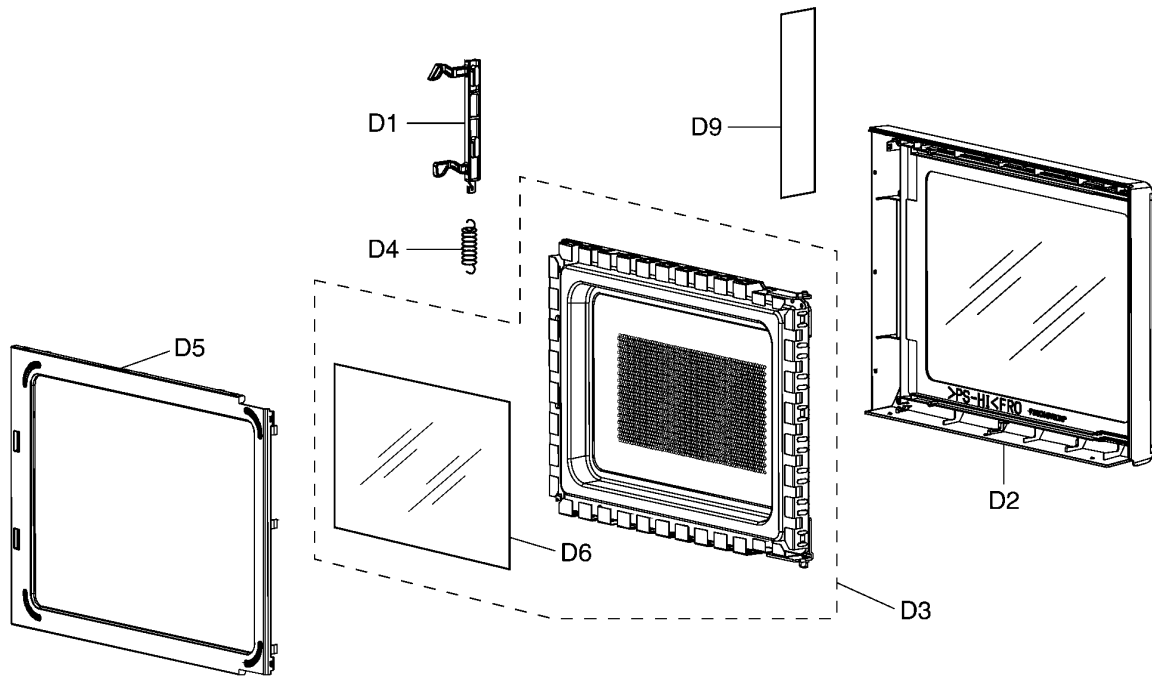
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
77	F00067C50CP	CAUTION LABEL	1	CPH
78	F03349V30CP	MENU LABEL	1	ST340W CPH
78	F03349V30RP	MENU LABEL	1	ST340M RPH

11.3. ESCUTCHEON BASE ASSEMBLY



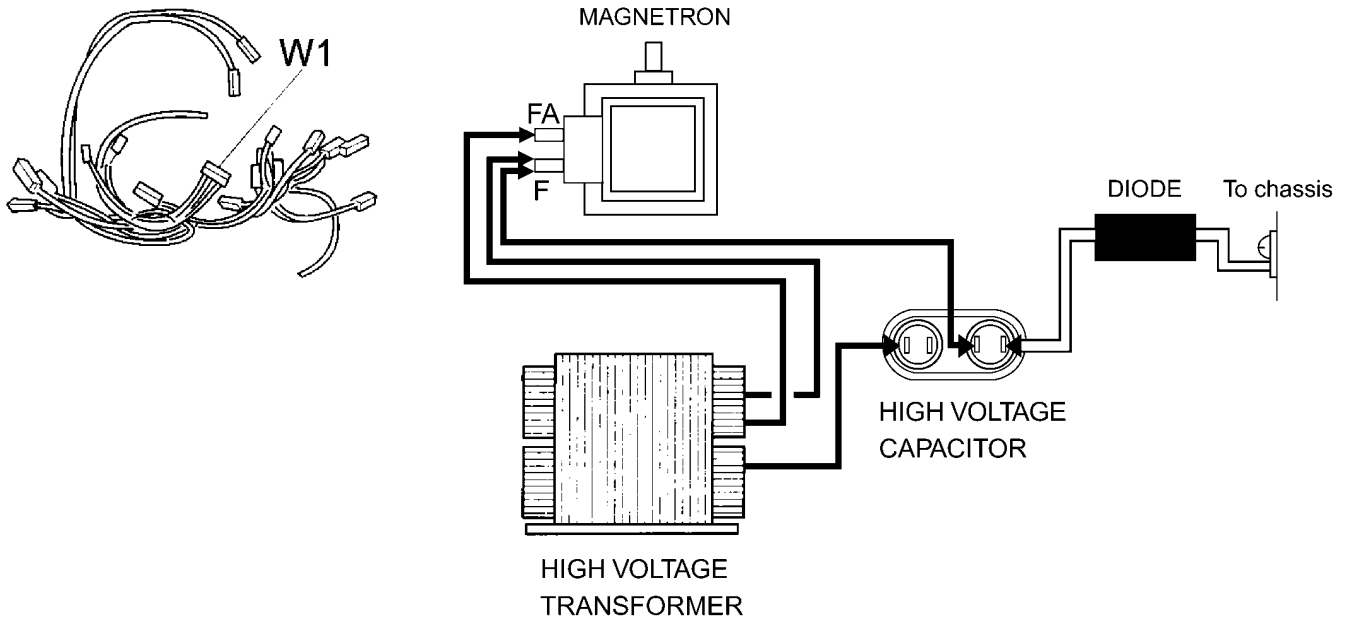
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E1	F603L9V30CP	D.P.CIRCUIT (AU)	1	ST340W CPH
E1	F603L9V30RP	D.P.CIRCUIT (AU)	1	ST340M RPH
E2	F630Y9V30BCP	MEMBRANE SWITCH	1	ST340W CPH
E2	F630Y9V30BRP	MEMBRANE SWITCH	1	ST340M RPH
E3	F80349V30HHP	ESCUTCHEON BASE	1	ST340W CPH
E3	F80349V30SHP	ESCUTCHEON BASE	1	ST340M RPH
E5	F81279V30AP	BACK PLATE	1	
E6	F66139V30HP	BACKSTOP	1	

11.4. DOOR ASSEMBLY



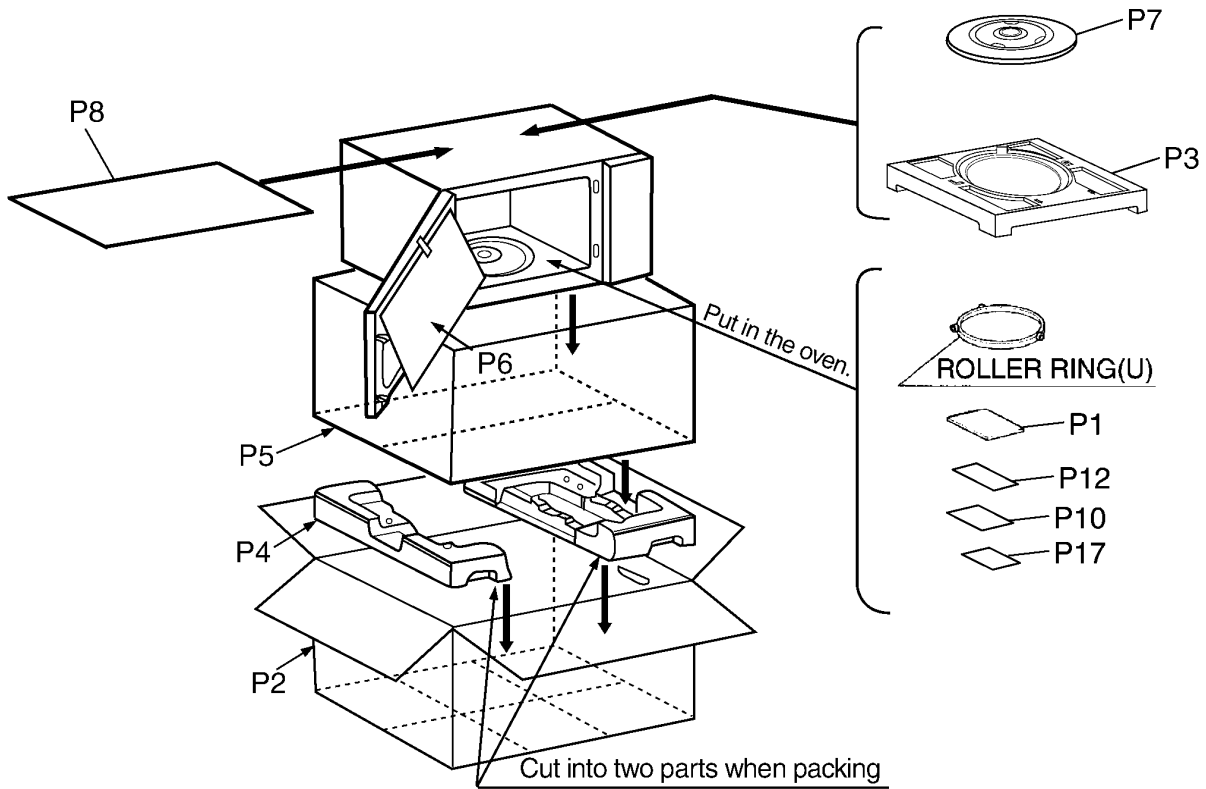
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F30189V00XP	DOOR KEY A	1	
D2	⚠	F302A9V00HXP	DOOR A (U)	1	ST340W CPH
D2	⚠	F302A9V00SXP	DOOR A (U)	1	ST340M RPH
D3	⚠	F302K9V00XP	DOOR E (U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30859V00XP	DOOR C	1	
D6	⚠	F31455G10AP	DOOR SCREEN A	1	ST340W CPH
D6	⚠	F31455G10XN	DOOR SCREEN A	1	ST340M RPH
D9		F04114180CP	HC LABEL	1	CPH
D9		F02459660AP	DHHS LABEL	1	RPH

11.5. WIRING MATERIALS



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	F030A9V30CP	LEAD WIRE HARNESS	1	ST340W CPH
W1	F030A9V30RP	LEAD WIRE HARNESS	1	ST340M RPH

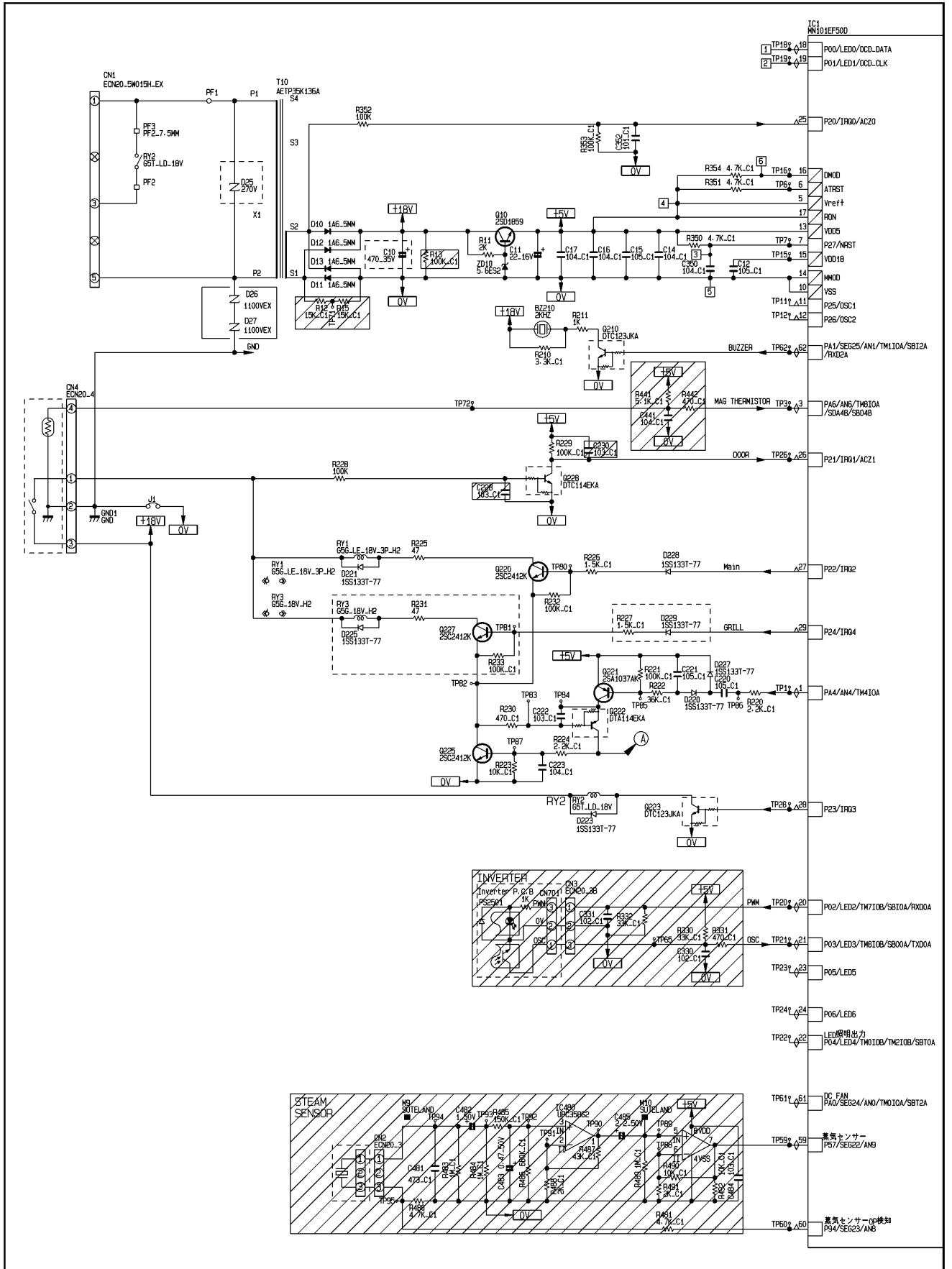
11.6. PACKING AND ACCESSORIES

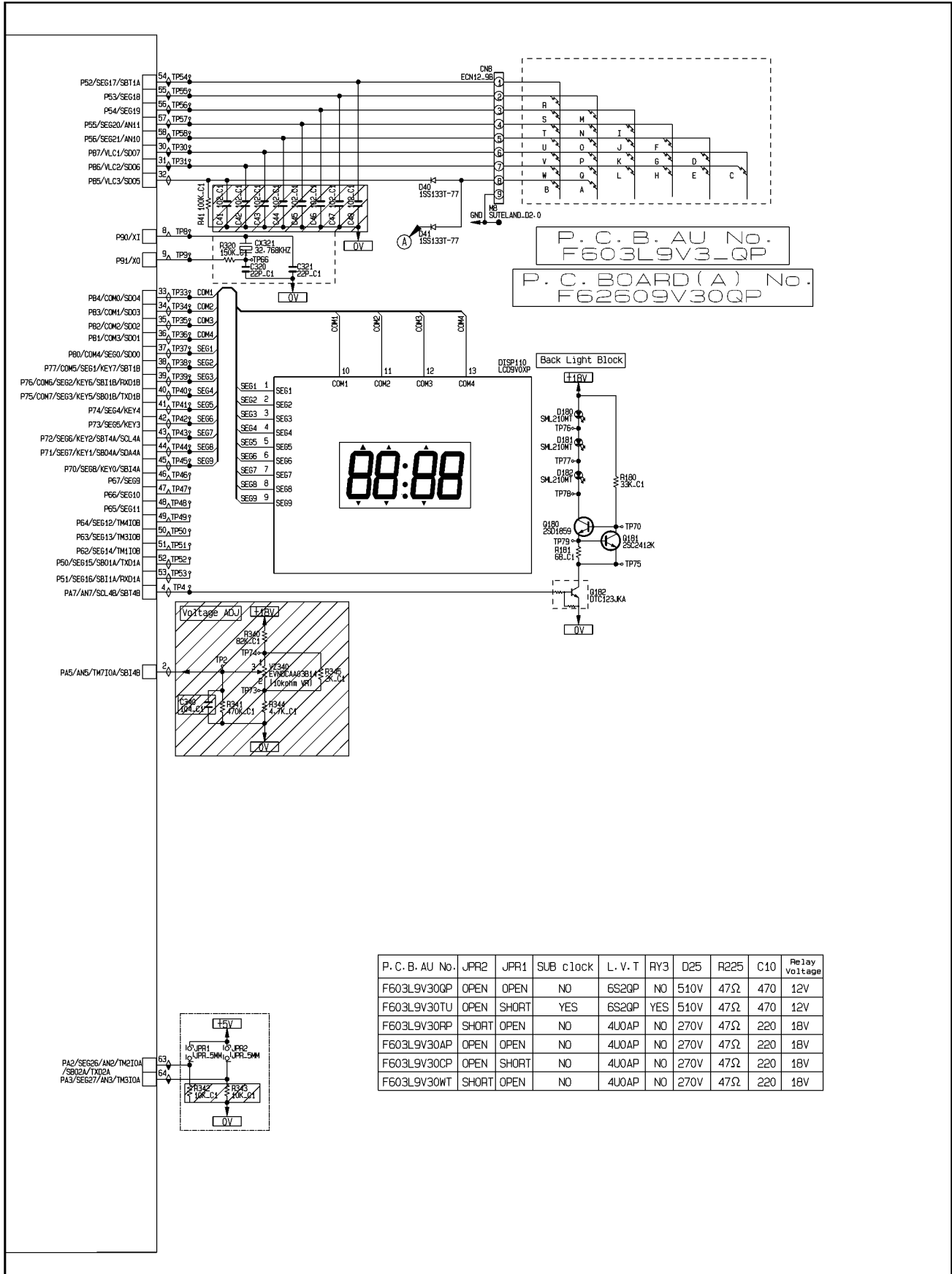


Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	F00039V30CP	INSTRUCTION MANUAL	1	ST340W CPH
P1	F00039V30RP	INSTRUCTION MANUAL	1	ST340M RPH
P2	F01029V30HCP	PACKING CASE, PAPER	1	ST340W CPH
P2	F01029V30SRP	PACKING CASE, PAPER	1	ST340M RPH
P3	F01049V00XP	UPPER FILLER	1	
P4	F01059V00XP	LOWER FILLER	1	
P5	F01068100XN	P. E. BAG	1	
P6	F01075G10XN	DOOR SHEET	1	
P7	F06019W00XP	COOKING TRAY	1	
P8	F01924T00AP	SHEET	1	
P10	F00065G40AP	CAUTION LABEL	1	RPH
P12	F04459V30HCP	OVERLAY	1	ST340W CPH
P17	F01569M50MP	OPERATION PRECAUTION	1	RPH

12 DIGITAL PROGRAMMER CIRCUIT

12.1. SCHEMATIC DIAGRAM





12.2. PARTS LIST

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
BZ210	L0DDEA000014	BUZZER	1	2.0KHz
C10	F2A1V221B280	AL CHEM CAPACITOR	1	220 μ F/35V
C11	F2A1C220B624	AL CHEM CAPACITOR	1	22 μ F/16V
DISP110	AEDDHL9V30QP	LCD	1	
	F66179V30HP	LCD HOLDER	1	
D40,D41,D220,D221,D223,D227,D228	B0AACK000004	DIODE	7	
D10-D13	B0EAKT000025	DIODE	4	
D25	D4EAY271A036	ZENER RESISTOR	1	270V
D26,D27	D4EAY112A036	ZENER RESISTOR	2	1100V
IC1	MN69F009AAB	L.S.I.	1	
Q10,Q180	B1BAAJ000003	TRANSISTOR	2	
RY1	K6B1AZA00016	POWER RELAY	1	
RY2	K6B1AZA00010	POWER RELAY	1	
ZD10	B0BA5R600016	ZENER DIODE	1	
T10	G4C2AAD00006	LOW VOLTAGE TRANSFORMER	1	