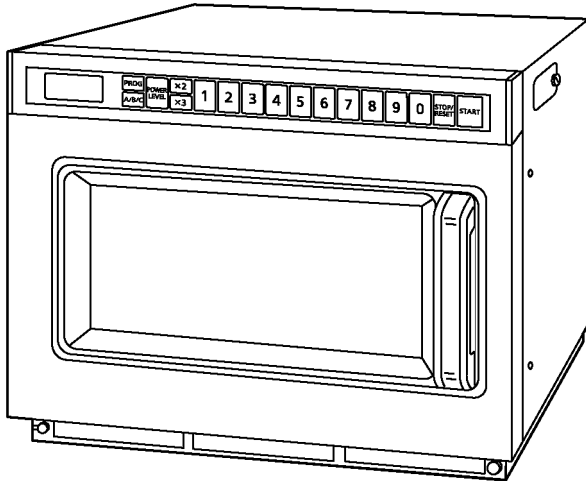


# Service Manual

## Commercial Microwave Oven



Model No. **NE-1252**

Model No. **NE-1752**

Model No. **NE-1772**

Model No. **NE-2152**

Model No. **NE-12521**

Model No. **NE-12523**

Model No. **NE-17521**

Model No. **NE-17523**

Model No. **NE-17723**

Model No. **NE-21521**

Model No. **NE-21523**

### **⚠ 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.

### **IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by **⚠** in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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# 1 Safety Precautions

## WARNING

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## 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 be 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. Panasonic Consumer Marketing Company  
(PCMNA) of North America, Division of Panasonic  
Corporation of North America  
One Panasonic Way, Secaucus,  
New Jersey 07094  
Call 1 877 266 6836

IN PUERTO RICO PSC  
(PSC)

San Gabriel Industrial Park  
65th Infantry Ave. Km. 9.5.  
Carolina, Puerto Rico 00985  
(809) 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  on the replacement parts list. It is essential that these critical parts should be replaced with 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.

## 2 Specifications

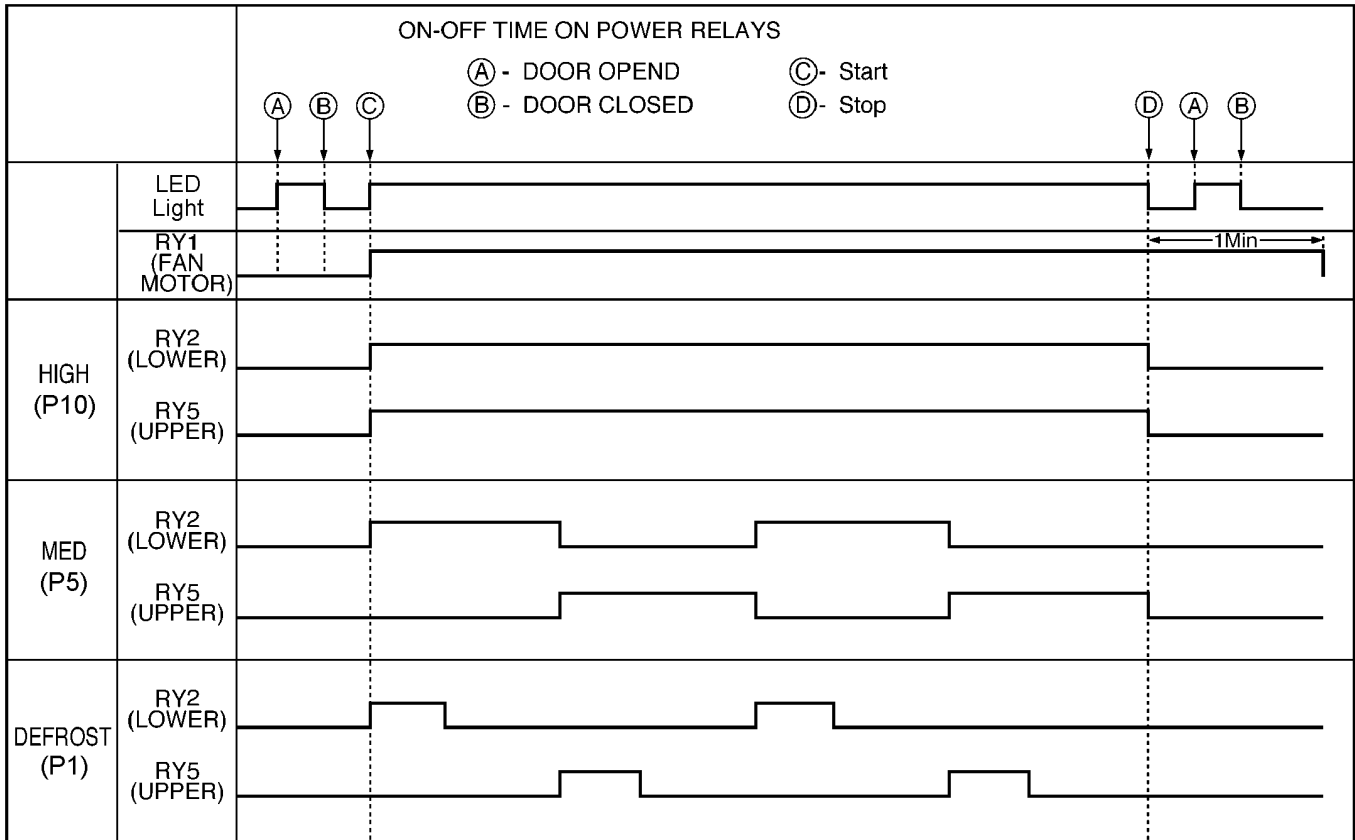
Models:		NE-12521 NE-12523	NE-1252	NE-17521 NE-17523 NE-17723	NE-1752 NE-1772	NE-21521 NE-21523	NE-2152
Power Source:		120 V AC Single Phase 60 Hz			208/230 V AC Single Phase 60 Hz		
Power Requirement:		1990 W, (17.3A)	1970 W, (17.1A)	2650 W, (13.6A) 208 V	2610 W, (13.5A) 208 V	3160 W, (16.3A) 208 V	3120 W, (16.1A) 208 V
				2650 W, (12.2A) 230 V	2610 W, (12.2A) 230 V	3160 W, (14.9A) 230 V	3120 W, (14.7A) 230 V
*High frequency Output:	HIGH (P10)	1200 W		1700 W		2100 W	
	MED (P5, P4)	Approx. 55%~45%		Approx. 55%~45%		Approx. 55%~45%	
	DEFROST (P1)	340 W		340 W		340 W	
Microwave Frequency:		2,450MHZ					
Timer:		Maximum programmable time for single stage heating P10-P2 power = 15 min. P1 (DEF) = 30 min.					
Outside Dimensions:		16 5/8 inch (W) X 20 inch (D) X 13 1/4 inch (H) 422 mm (W) X 508 mm (D) X 337 mm (H)					
Inside Dimensions:		13 inch (W) X 12 7/32 inch (D) X 6 7/8 inch (H) 330 mm (W) X 310 mm (D) X 175 mm (H)					
Weight:		56 lbs/25.5 kg		60 lbs/27.5 kg		66 lbs/29.5 kg	
*Output power: IEC705-88 Test procedure							
Specifications subject to change without notice.							

### 3 Technical Descriptions

#### 3.1. Description of operating sequence

##### Variable power cooking control

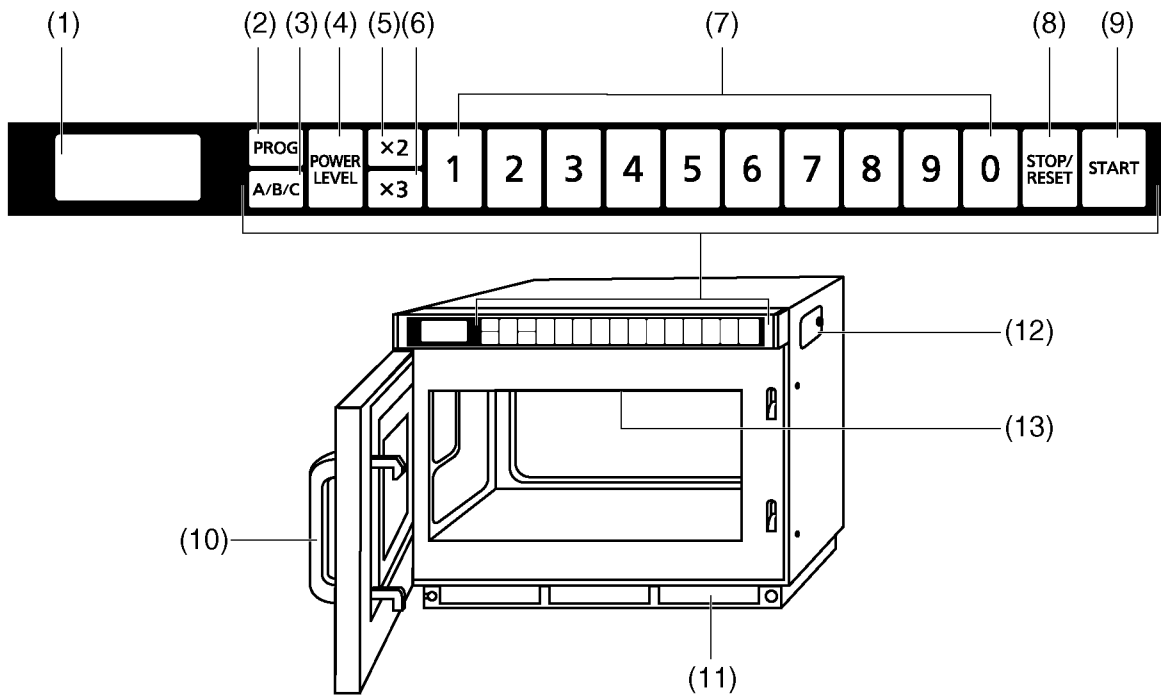
The coil of power relays are energized intermittently by the digital programmer circuit, when the oven is set to MEDIUM or DEFROST power position. The digital programmer circuit controls the ON-OFF time of each power relay contacts in order to vary the output power of the microwave oven. One complete ON and OFF cycle of the power relay is 44 seconds. The relation between indications on the control panel and the output power of the microwave oven is as shown in **Figure**.



96-002M

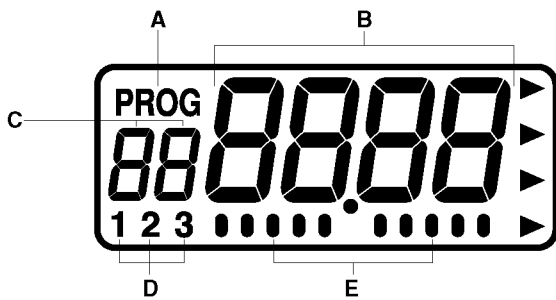
# 4 Location of Controls and Components

## 4.1. Outline diagram



- (1) Digital Display Window (see below)
- (2) Program pad
- (3) Shift (A/B/C) pad
- (4) Power Level Selector pad
- (5) Double Quantity pad
- (6) Triple Quantity pad
- (7) • Number/Memory pads
- Time input

- (8) Stop/Reset pad
- (9) Start pad
- (10) Door Handle
- (11) Air Filter
- (12) SD Memory Card Cover\*
- (13) Splatter Shield (top of inner cavity)



- A – Program Display
- B – Heating Time Display (min. sec. hour)
- C – • Memory pad Number Display
- Heating Stage Indicator
- D – Pattern of buzzer sound settings
- E – • Calling Programmed Heating: Stage Number Indicator
- Programmed Heating in Progress: Operation Indicator
- Beep tone settings: Scale Indicator

# 5 Installation Instructions

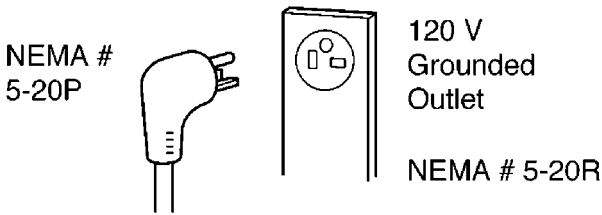
## 5.1. Wiring requirements and power source voltage selection

### Wiring Requirements

No other appliance should share the circuit with the microwave oven. If it does, the branch circuit fuse may overload and either cause the oven to heat slower than expected or blow the fuse.

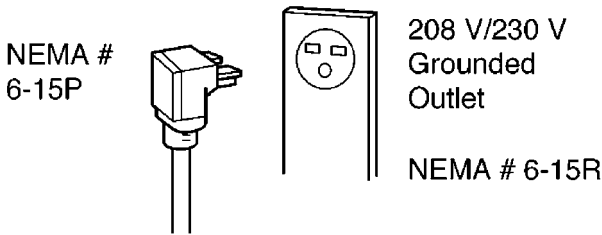
1. For Model NE-12521/NE-12523/NE-1252  
The oven must be on a SEPARATE, 20 Amp, 60 Hz-120V GROUNDED CIRCUIT.

### NE-12521/ NE-12523/ NE-1252



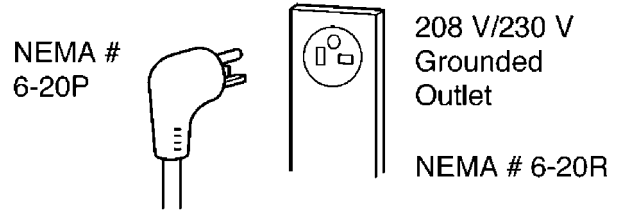
2. For Model NE-1752/NE-1772/NE-17521/NE-17523/NE-17723  
This oven must be on a separate, 60 Hz GROUNDED CIRCUIT-minimum 15 amps.

### NE-1752/ NE-1772/ NE-17521/ NE-17523/ NE-17723



3. For Model NE-21521/NE-21523/NE-2152  
This oven must be on a separate, 60 Hz GROUNDED CIRCUIT-minimum 20 amps.

### NE-21521/ NE-21523/ NE-2152



### Power Source Voltage Adjustment

For 208V/230V models

The microwave oven automatically detects 208 V and 230 V-240 V. Insert the plug, and if the Digital Display Window goes blank 10 seconds after use, unplug and insert the plug again.

# 6 Operating Instructions

## 6.1. Operation procedure

### 1. Manual heating for single stage

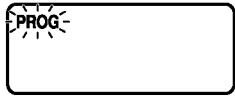
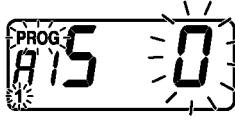
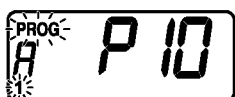
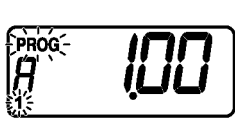


OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	
3. Tap <b>POWER LEVEL</b> pad once. (Set to P10 power)	
4. Set desired heating time by tapping number pads <b>2,0,0</b> . (Set to 2 minutes)	
5. Tap <b>START</b> pad.	
6. When the times is up, you hear 3 beeps sound.	
7. Open the door and take out the water load. The display goes back to previously setting time.	
8. Close the door. 1 minute later, display will return blank.	

### 2. Manual heating for 2nd or 3rd stage

OPERATION	DISPLAY
1. Follow step 1 to 4 single stage.	
2. Tap <b>POWER LEVEL</b> pad twice. (Set to P5 power)	
3. Set the desired heating time by tapping number pads <b>1,0,0</b> . (Set to 1 minute)	
4. Tap <b>START</b> pad . (1st stage)	
5. When the 1st stage time is up, you hear 1 beep sound. (2nd stage)	
6. When the times is up, you hear 3 beeps sound.	
7. Open the door and take out the water load. The display goes back to previously setting time.	
8. Close the door. 1 minute later, display will return blank.	

**NOTE: For a 3rd stage heating cycle, select a further power level and time between steps 3 and 4 above.**

### 3. Memory setting for single stage


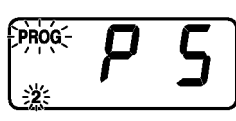
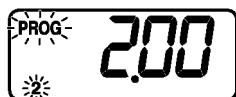

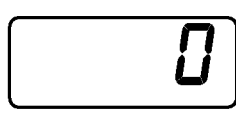
OPERATION	DISPLAY
1. Open the door and Leave it open. Touch <b>PROG</b> pad.	
2. Tap shift pad <b>A/B/C</b> once, and press Number pads <b>1</b> and <b>5</b> . NOE: Previously selected power and time will appear.	
3. Tap <b>POWER LEVEL</b> pad once. (Set to P10 power)	
4. Set the desired heating time by tapping number pads <b>1</b> , <b>0</b> , <b>0</b> . (Set to 1 minute)	
5. Touch <b>PROG</b> pad again.	
6. 3 seconds after, "0" will appear in the display window.	

TO PROGRAM MEMORY AREA B: Follow steps 1 above. Touch the Memory Shift pad **A/B/C** twice and a small **B** will appear beneath the flashing **PROG**.

Touch the memory pad you wish to program, and the previously selected time and power level will appear in the display window.

**NOTE: Once the Memory area B has been selected it cannot be changed back to Memory area A. If you do not require Memory area B, cancel it by touching the cancel pad and begin again.**

### 4. Memory setting for 2nd or 3rd stage

OPERATION	DISPLAY
1. Follow steps 1 to 4 for memory setting for single stage.	
2. Tap <b>POWER LEVEL</b> pad twice. (Set to P5 power)	
3. Set the desired heating time by tapping number pads <b>2</b> , <b>0</b> , <b>0</b> . (Set to 2 minutes)	
4. Touch <b>PROG</b> pad again. Heating is displayed by adding single and 2nd stage heating time.	
5. 3 seconds after, "0" will appear in the display window.	

**NOTE: For a 3rd stage heating cycle, select a further power level and dial in a time, between steps 3 and 4 above.**

## 5. Memory pad heating

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	
3. Tap shift pad <b>A/B/C</b> once, and press Number pads <b>1</b> and <b>5</b> .	
4. Tap <b>START</b> pad. (1st stage)	
5. (2nd stage)	
6. When the time is up, you hear 3 beeps sounds.	
7. Open the door and take out the water load.	
8. Close the door. Display will return blank after 1 minute.	

**NOTE: When program is locked, heating can be started automatically by tapping memory pad.**

## 6. Programming Double or Treble Quantity Pad

OPERATION	DISPLAY
1. The display window must be blank before programming can begin.	
2. Press the <b>PROG</b> pad.	
3. Press shift pad <b>A/B/C</b> and press Number pads <b>1</b> and <b>5</b> . The pad number and previously selected time and power will appear.	
4. Press <b>X2</b> pad. The previously programmed magnification number appear. ex. <b>1.6</b> means 1.6 times. <b>NOTE : When you want program for treble quantity heating, press X3 pad.</b>	
5. Set the desired magnification by pressing the appropriate number pad. ex. 1.5 times: press <b>1</b> and <b>5</b>	
6. Press the <b>PROG</b> pad again.	
7. After 3 seconds "0" will appear in the display.	

## 7. Memory Pad Heating for Double or Treble Quantity Heating

OPERATION	DISPLAY
1. Open the door place a water load in the oven and close the door.	
2. Press the <b>X2</b> pad. <b>NOTE : When you want treble quantity heating, press X3 pad.</b>	
3. Press the desired memory pad. ex. memory A15 (program No.A-15)	
4. Press <b>START</b> pad .	
5. When the time is up, you will hear 3 beeps sound.	
6. Open the door and remove the water load.	
7. Close the door 1 minute later, display will return blank.	

## 8. To Read the Cycle Counter

OPERATION	DISPLAY
1. Open the door and leave it open.	
2. While pressing <b>START</b> pad, press Number pad <b>3</b> .	
3. While pressing <b>START</b> pad, tap <b>POWER LEVEL</b> pad. Display will now show the total cumulative number of times the oven has been used. ex. 99999→99,999 times.	
4. 3 seconds later, "0" will appear in the display.	

**NOTE: Total cumulative number includes programming memory heating and manual heating number of times has been used. Cooking times over 99,999 times will be back 0.**

## 9. To Activate Program Lock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle. Do not open the door.	
2. While pressing <b>START</b> pad, tap <b>PROG</b> pad until the display show "PROG", "P" and "L". (for more than 2 seconds)	
3. Program lock feature now activated.	

### 10. To Release Program Lock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle. Open the door and leave it open.	
2. While pressing <b>START</b> pad, press and hold <b>PROG</b> pad until the display will show "PROG" and "P". (for more than 2 seconds)	
3. Program lock feature is now deactivated.	

### 11. To Select Beep Tone Options

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacles.	
2. Open the door and leave it open.	
3. Press <b>PROG</b> pad.	
4. Press <b>START</b> pad. The display will change from "3bEEP" to "0bEEP" each time when the pad is pressed.	
5. Press <b>PROG</b> pad again.	
6. Close the door. 1 minute later display window will go blank.	

To select length of tone at end of heating cycle there are 3 options.

- 3 beeps (factory setting)
- 60 seconds of short beeps.
- Beep sounds for 5 seconds, and 3 beeps 30 seconds later and 60 seconds later again.

OPERATION	DISPLAY
1. Complete steps 1-4 above. Do not close the door.	
2. Press <b>START</b> pad within 3 seconds after pressing <b>PROG</b> pad at the step 4 above.	
3. Press <b>PROG</b> pad again. 3 seconds later, the display will "0".	
4. Close the door 1 minute later display will go blank.	

# 7 Test Mode

## 7.1. Component test procedure

### CAUTION

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.

### 7.1.1. High voltage transformer

1. Remove connections from the transformer terminals and check continuity.
2. Normal (cold) resistance readings should be as follows:  
 Secondary winding Approx.  $80\Omega$ - $120\Omega$   
 Filament winding Approx.  $0\Omega$   
 Primary winding Approx.  $0\Omega$ - $3\Omega$

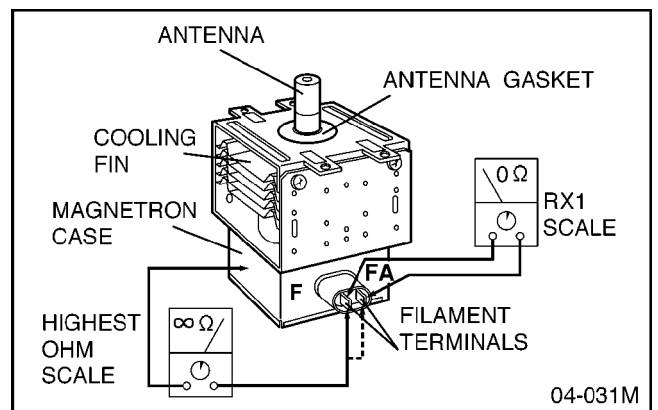
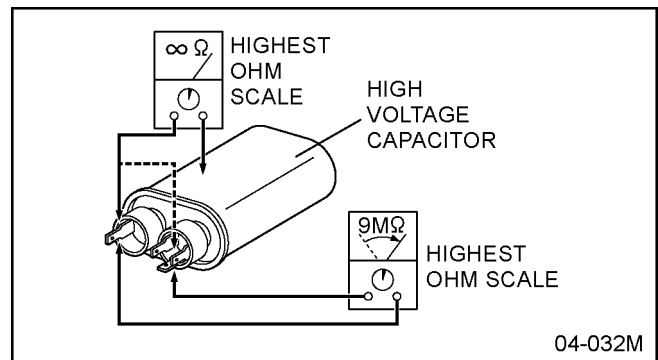
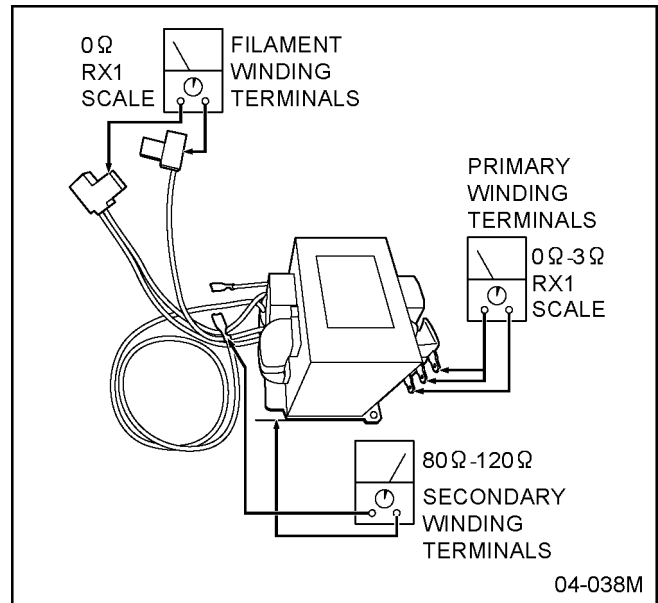
### 7.1.2. High voltage capacitor

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  $9M\Omega$  once the capacitor is charged.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant  $9M\Omega$ .
5. Resistance between each terminal and chassis should be infinite.

### 7.1.3. 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.



### 7.1.4. Diode

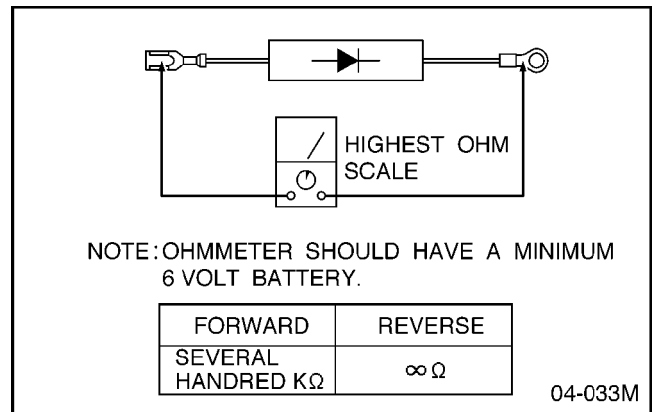
1. Isolate the diode from the circuit by disconnecting the leads.
2. With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used 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 $\Omega$  in the other direction.

### 7.1.5. 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.

### 7.1.6. Temp sensor (Thermal protector)

A temp sensor is mounted on exhaust guide. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.  
The thermal protector will operate at 257°F (125°C).  
The device is connected to the DPC on touch control models.  
When the thermal protector exceeds its temperature it will turn off the power to oven cavity and display will go to reset mode.  
The cooking program can be reset after cool-down.  
THERMISTOR RESISTANCE VALUE  
30K-120K at 10°C-30°C (50°F-86°F)



# 8 Troubleshooting Guide

## 8.1. 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 whenever working close to or replacing the magnetron.

### 8.1.1. Check the grounding

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

### 8.1.2. If the door lock, the door switch, the door seal or the door develops a malfunction, be sure not to operate the oven until complete repairs are made.

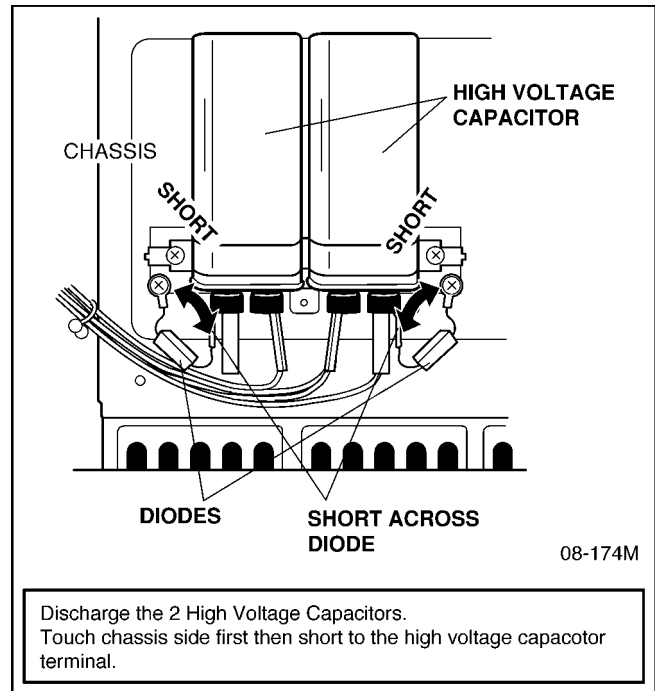
If the oven is operated with any of these parts in imperfect condition, hazardous microwave leakage might occur.

### 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.

### 8.1.3. 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, wait 30 seconds and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated jumper lead wire or an insulated handle screwdriver discharge.



### Important Note

1. High voltage above 250 volts exist on following parts during operation.
  - \* Magnetron
  - \* High Voltage Transformer
  - \* High Voltage Diode
  - \* High Voltage CapacitorExtra attention and caution should be used during repair or troubleshooting procedures.
2. If the microwave oven is operated with an incorrectly installed door hinge or magnetron, it can cause microwave leakage of over  $5\text{mW}/\text{cm}^2$ . It is absolutely necessary to check if magnetron and door hinges are correctly and safely installed after repairs or replacement.

### WARNING

Never touch any circuitry either your hand insulated tools while oven is energized.

### 8.1.4. When parts must be replaced, always remove the power plug from the outlet, and discharge the high voltage capacitor.

### WARNING

When the 15 Amp. fuse is blown due to the operation of the Interlock Monitor Switch, you must replace the Secondary & Primary Interlock Switches, the Monitor Switch (Short switch), Power Relay and the 15 Amp. 250V. fuse.

### **8.1.5. Confirm after repair**

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwave 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.

### **8.1.6. Avoid inserting nails, wire, etc. through holes in 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.

**CAUTION  
MICROWAVE RADIATION**

Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating device if it is improperly used or connected. All input and output microwave connections, waveguides, flanges, and gaskets must be secure. Never operate the device without a microwave energy absorbing load attached. Never look into an open waveguide or antenna while the device is energized.

**CAUTION**

High voltage parts may become exposed when outer cabinet is removed.

## 8.2. Troubleshooting guide

### CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the 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 open or the connector cannot be removed.
5. Be sure to ground any static electric charge built up in your body, before handling the D.P.C.
6. A 120/208/230V AC s present at the shaded area of the power supply circuit boards (PCB DU and PCB MU).  
When troubleshooting, be cautions of possible electrical shock hazard.

First of all operate the microwave oven following the correct operating procedures described on pages 7 of this service manual in order to find the exact cause of any trouble.

**NOTE:** If the unit shows faulty symptom as shown below, check the parts listed in possible cause column depending on failure indication e.g. F81, F82 in the display.

### [TROUBLE 1] Oven does not operate at all or oven does not start cooking.

DISPLAY	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE INDICATION
F33	Open or Short temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure 3. Loose connector CN16	It is appeared when failure occurred.
F44		1. Shorted membrane switch 2. Digital programmer circuit failure	It is appeared 2 minutes after failure occurred.
F01 ( Wish continuous ) beep sounds )	Exhaust temperature exceeds 120°C	1. Burning food in the oven due to over cook	It is appeared when exhaust temperature exceeds above 120°C.
F05	Memory failure	1. Digital programmer circuit failure	
F81	No voltage supply to high voltage transformer (upper)	1. Relay failure (RY-2, RY-3, or RY-4) 2. 15A fuse open 3. Digital programmer circuit failure	It is appeared when failure occurred.
F82	No voltage supply to high voltage transformer (lower)	1. Relay failure (RY-5, RY-6, or RY-7) 2. 15A fuse open 3. Digital programmer circuit failure	It is appeared when failure occurred.
F86	Shorted contacts of Power Relay	1. Relay failure (RY-2, RY-3, or RY-4) 2. Digital programmer circuit failure	It is appeared when failure occurred.
F87	Shorted contacts of Power Relay	1. Relay failure (RY-5, RY-6, or RY-7) 2. Digital programmer circuit failure	It is appeared when failure occurred.

## 9 Disassembly and Assembly Instructions

### CAUTION

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

### 9.1. Replacement of magnetrons (Upper and Lower)

#### Upper magnetron

1. Discharge electric charge remaining on the high voltage capacitors.
2. Remove the entire rear panel by removing screws as shown.
3. Disconnect all lead wires from magnetron and thermal cutout.
4. Remove the 4 screws holding magnetron.
5. Remove 2 screws holding thermal cutout.
6. Remove the mounting bracket from magnetron and install it on the new magnetron.

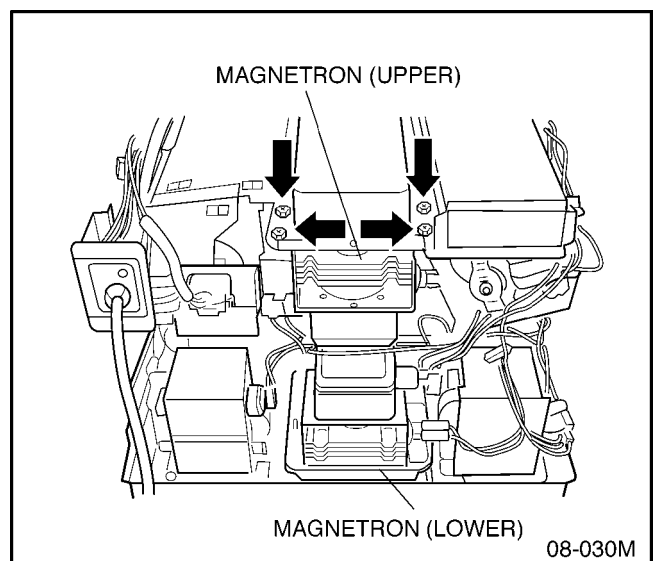
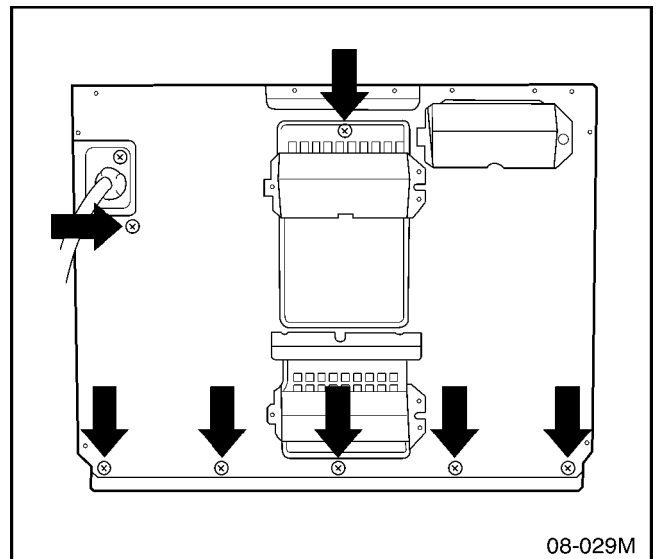
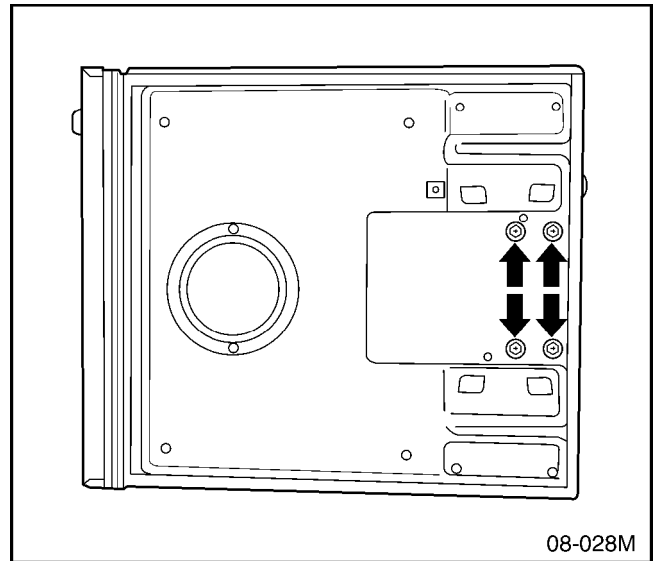
#### Lower magnetron

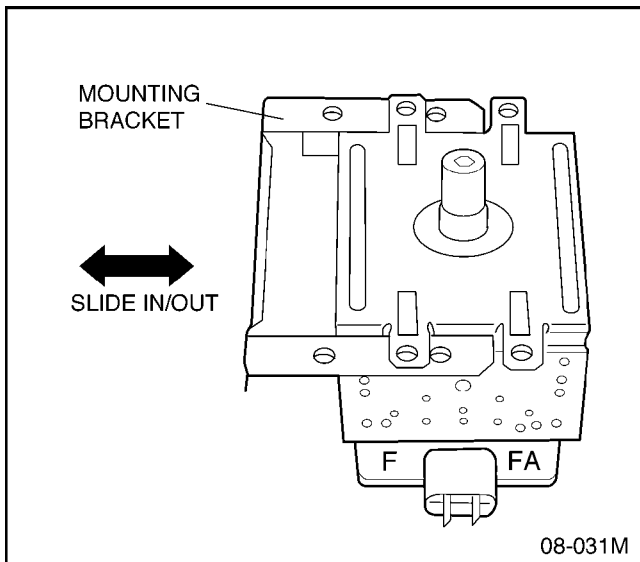
1. Discharge electric charge remaining on the high voltage capacitors.
2. Remove the entire rear panel by removing screws as shown.
3. Carefully place the unit on its left side (H. V. Capacitor side).
4. Remove the cover by removing 2 screws.
5. Remove the 4 screws holding magnetron by inserting screwdriver through the 4 openings on bottom plate.
6. Remove 2 screws holding thermal cutout.
7. Remove the mounting bracket from magnetron and install it on the new magnetron.

**NOTE:** To prevent microwave leakage, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron.

### 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 with blue connector should be connected to "FA terminal" and white or pink one should be connected to "F terminal".





### Removal of Positive Lock connector

The positive lock connector is a specially designed loose free connector and you will find this connector in many lead wire connections. To remove this connector, pull the lead wire by pressing an extruded lever in the center of receptacle terminal as shown.

## 9.2. Replacement of power relay circuit board (PCB MU)

**NOTE:** Be sure to ground any static electric charge built up on your body, before handling the power relay P. C. B..

1. Disconnect all lead wires from power relay circuit board.
2. Remove the power relay P. C. B. together with its mounting bracket by first removing the 1 bracket holding screw.
3. The power supply P. C. B. can be separated from mounting bracket by removing the 2 screws.

## 9.3. Replacement of digital programmer circuit board (PCB AU)

1. Disconnect 2 flat cables from PCB A(U).
2. Disconnect all of the connector from PCB A(U).
3. Remove 2 screws holding PCB A(U) to detach it from its mounting bracket.

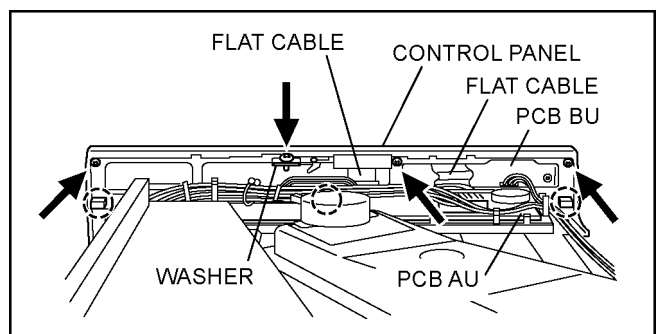
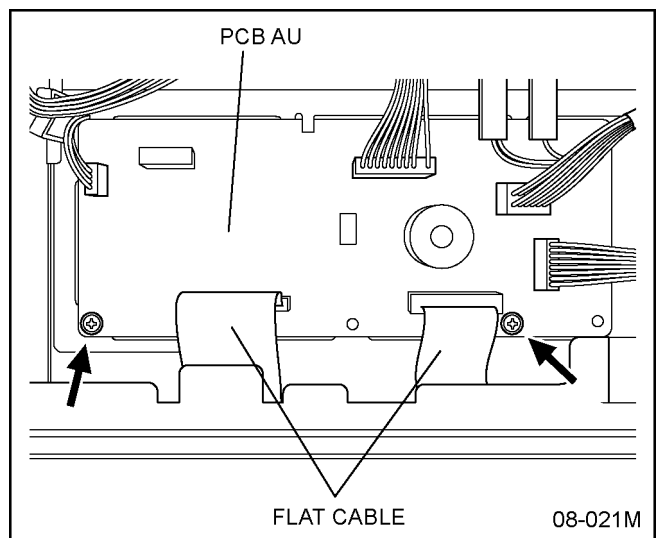
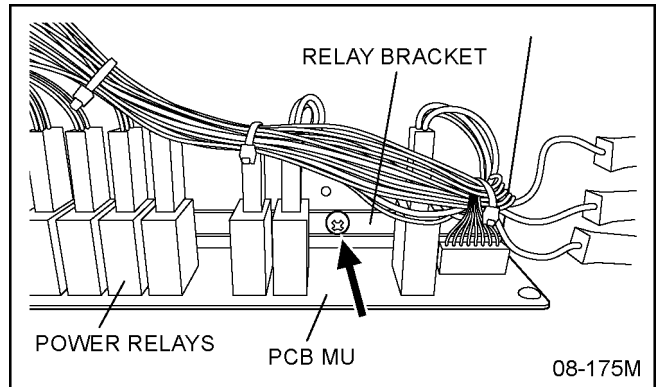
**NOTE1:** Please use care in handling the D. P. C. board to avoid damage.

**NOTE2:** After replacing the PCB AU with new one, set the power voltage (208V or 230V) up as below procedure.

1. Open the door and leave it open.
2. While pressing START pad, close the door and open it again.
3. Press SHIFT [A/B/C] key within 10 second after opening the door.
4. Press X2 or X3 key to set the voltage up.
  - When X2 key is selected, [208] will appear, and [230] appears when X3 key is pressed.
5. Press PROG pad to set the voltage up.
  - After 3 seconds, the power voltage selected will disappear and 0 appears in the display window.
  - It has been just completed.

## 9.4. Replacement of PCB BU (for display tube) and membrane switch

1. Remove the grounding screw for membrane switch.
2. Disconnect 2 flat cables of membrane switch and PCB B(U) from PCB A(U).
3. Remove 3 screws holding control panel and detach it from the unit.
4. Remove 2 screws to detach PCB B(U) from the control panel.
5. Detach escutcheon A from escutcheon base by releasing hooks, and also remove membrane switch from it.



## 9.5. Replacement of upper antenna

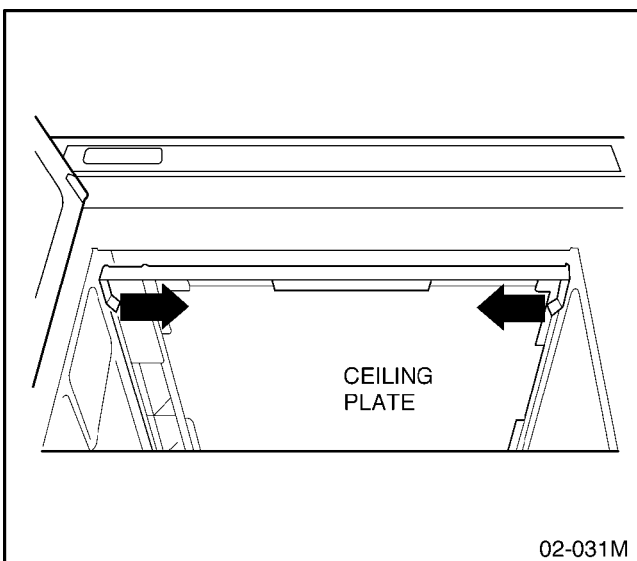
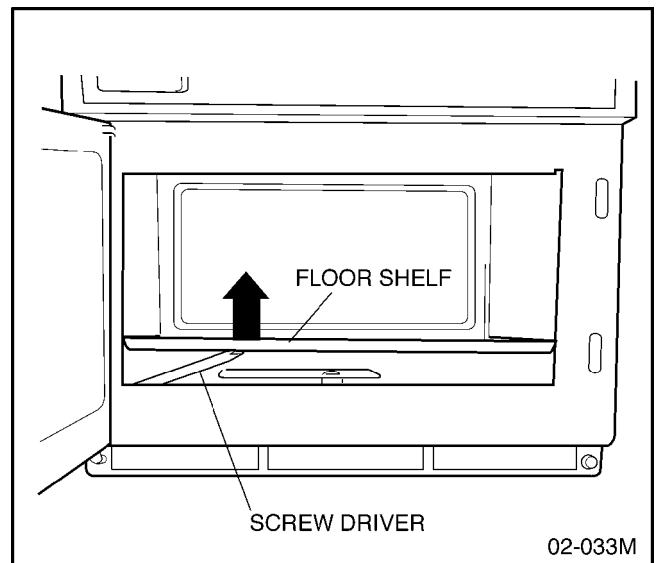
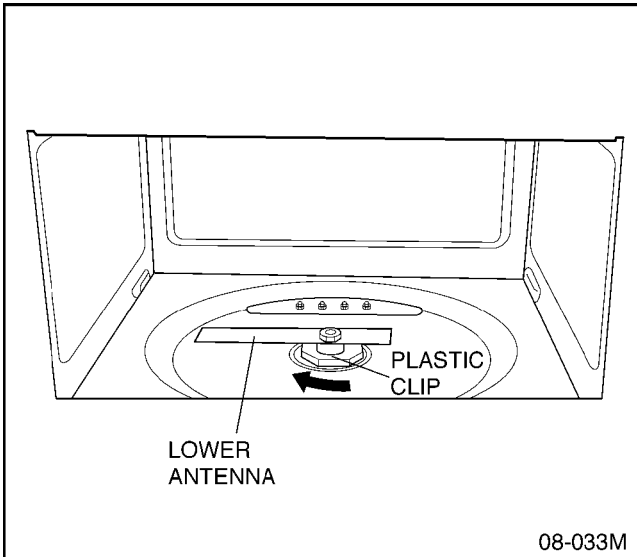
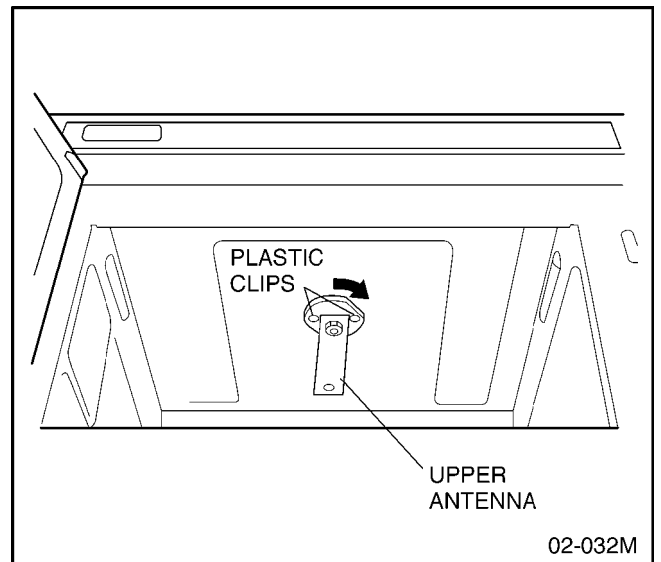
### CAUTION

The upper and lower rotating antennas are different type and are not interchangeable each other. Care should be taken not to reverse the top and bottom antennas.

1. Remove ceiling plate by gently moving the left and right tabs inward while pulling the plate down and outward.
2. Using a small flat screwdriver or the like, remove two plastic clips located on the antenna ring. Next turn the antenna ring approx. 1/8 turn clockwise to unhook the tabs and pull off.

## 9.6. Replacement of floor shelf and lower antenna

1. To remove the floor shelf, insert a screwdriver through the small opening on the left side of the oven cavity and carefully lift the floor shelf.
2. For removal of lower antenna, use the same procedure as upper antenna.



## 9.7. Replacement of temperature sensor (Thermal protector)

1. Cut 2 lead wires at the top of sensor terminals.
2. Remove 2 screws holding temp sensor and replace with new one.
3. Solder the lead wires securely to the sensor terminals.

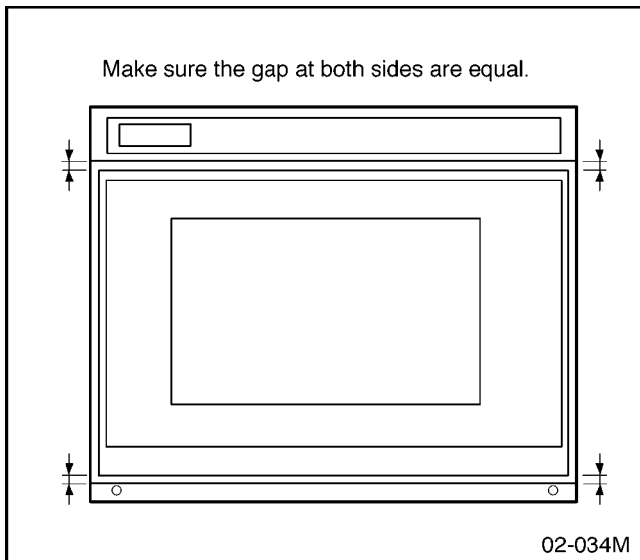
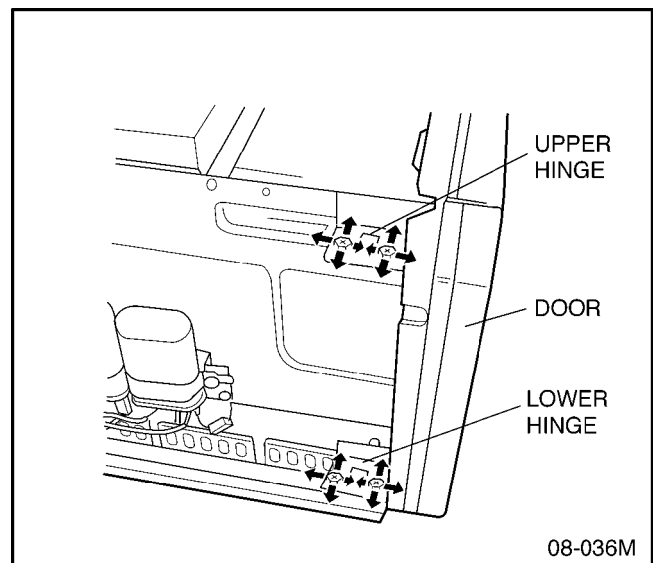
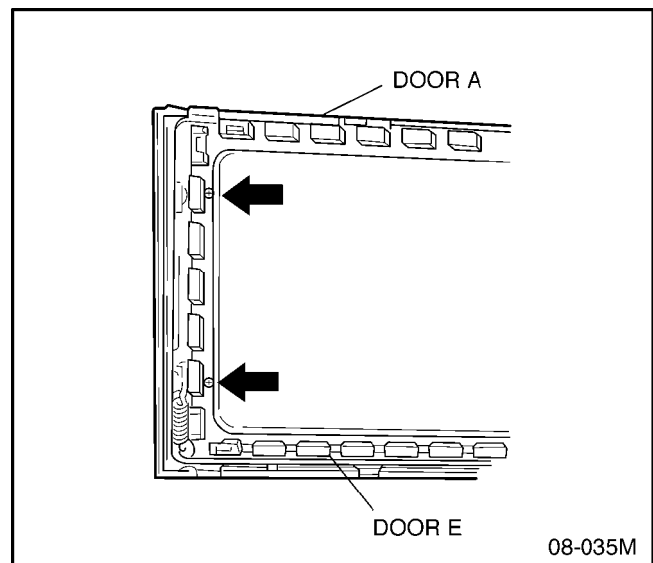
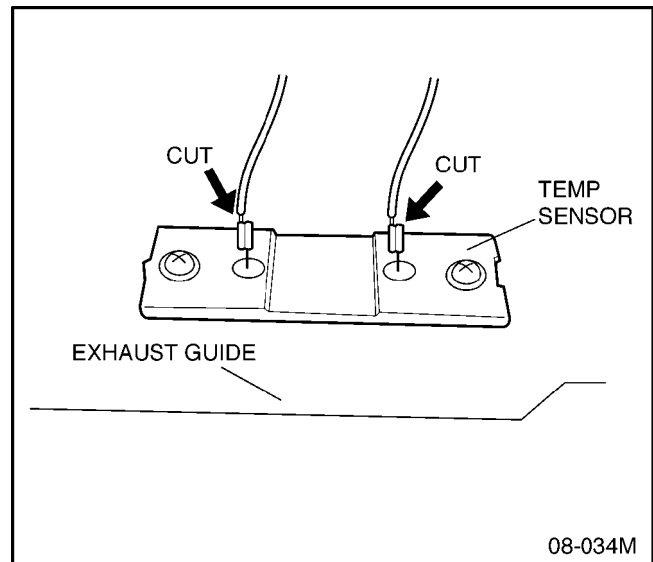
## 9.8. Disassembly of door assembly

1. Remove each 2 bolts holding upper and lower hinges.
2. Open the door and while pulling the door outward, work upper and lower hinges out through the holes of the front surface of oven.
3. Remove door C (check cover) from door E by carefully pulling outward starting from the upper right hand corner.
4. Remove 2 screws holding door handle and separate door A from door E by carefully freeing catch hooks.
5. Remove door key, door key lever, door key spring and handle pins from door E.
6. Assemble the door by taking the above steps in a reverse order.

### Replacement

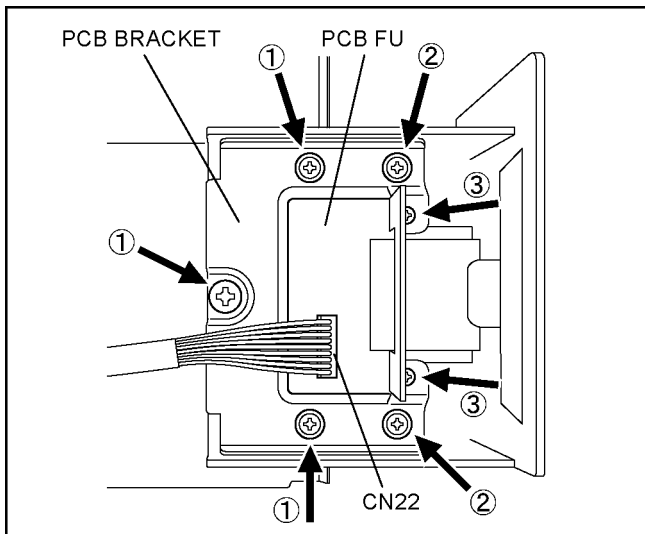
1. When mounting the door to the oven be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
2. Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave may leak from the clearance between the door and the oven.

**NOTE:** Please refer to [10.1. Measurements and adjustments].



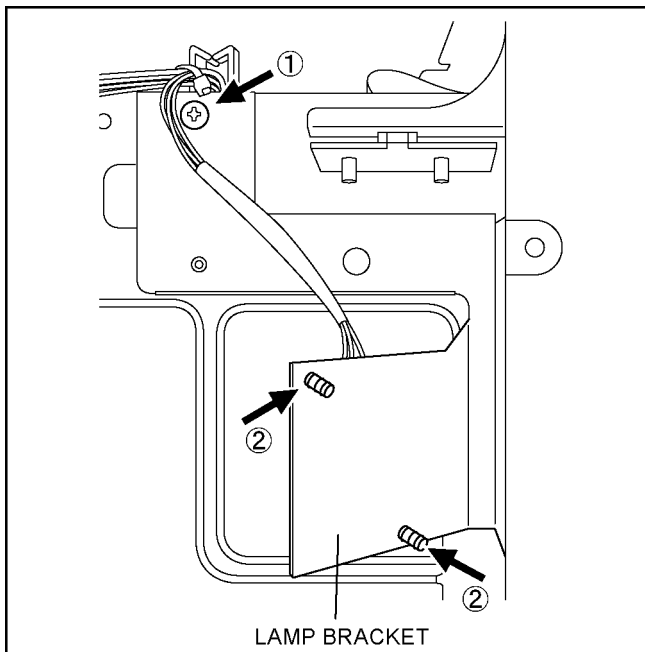
## 9.9. Replacement of PCB FU (SD card)

1. Disconnect CN22 connector from PCB F(U).
2. Remove 3 screws holding SD card unit.
3. Remove 2 screws holding PCB bracket.
4. Remove 2 screws holding PCB F(U).



## 9.10. Replacement of PCB HU (LED light)

1. Disconnect CN17 connector from PCB H(U).
2. Remove 1 screw holding PCB bracket.
3. Remove 2 screws holding PCB H(U).



# 10 Measurements and Adjustments

## 10.1. Measurements and adjustments

### WARNING

For continued protection against excessive radiation emission, replace only with identical replacement parts. When the 15 Amp. fuse is blown due to the operation of the Interlock Monitor Switch, you must replace.

- (A) TYPE V-16G-3C26 (ANE61424L0AG) for Secondary Interlock SW. (LATCH SW A) and TYPE V-15G-3C26 (ANE6142-F60) for Primary Interlock SW. (LATCH SW. B)
- (B) TYPE V-16G-2C25 (ANE61784L0AG) for Monitor SW. (SHORT SW.).
- (C) TYPE G5G-1A for Power Relay. (RY2-7)
- (D) TYPE TLC RATED 250V, 15A fuse, (A62303A60AP).

### 10.1.1. Installation of Safety switch A, Safety switch B and Short switch

- When mounting Safety switch A, Safety switch B and short switch to door hook assembly, mount the Safety switch A, Safety switch B and the short switch to the door hook assembly as shown. (in Figure).

**NOTE: No specific adjustment during installation of Safety switch A, Safety switch B and short switch to the door hook is necessary.**

- When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in (Figure) 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 it completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
- Reconnect the short switch, safety switches A & B and check the continuity of the monitor circuit and all latch switches again.

### 10.1.2. Measurement of microwave output

The power output 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.

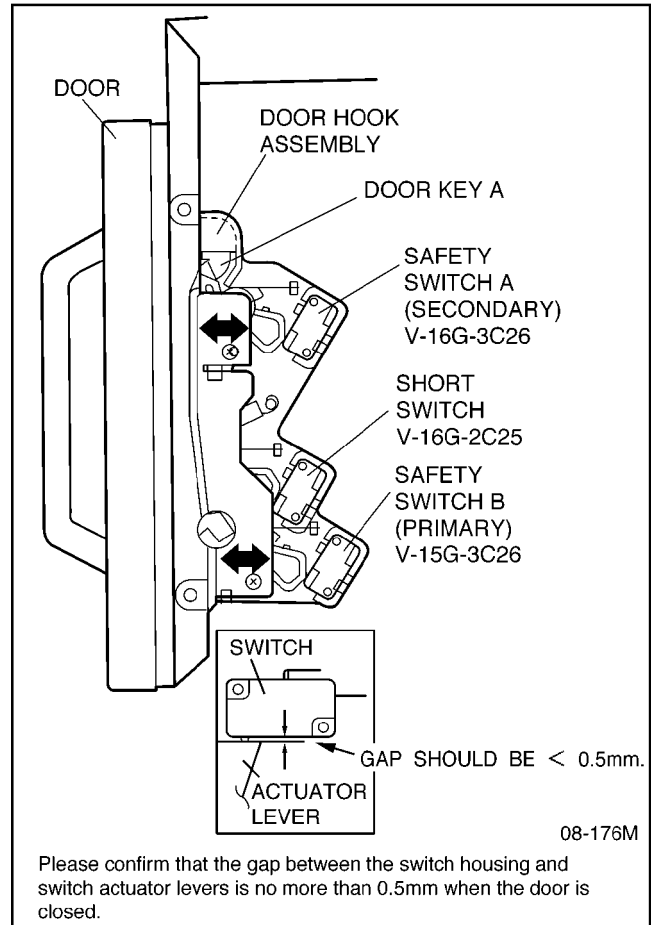
Necessary Equipment:

- \*1 liter beaker
- \*Glass thermometer (Celsius scale)
- \*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.**

- Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beaker's temperature (recorded as T1)
- Place the beaker on the center of ceramic shelf.
- Set the oven to High power and heat it for exactly one minute.
- Stir the water again and read the temperature of the bea-

ker (recorded as T2). The normal temperature rise (T2-T1) at High power output for each model is as shown in table.



**TABLE (1 ℓ -1 min. test)**

RATED OUTPUT	TEMPERATURE RISE
1200 W (IEC705)	Min. 10.6°C
1700 W (IEC705)	Min. 15.3°C
2100 W (IEC705)	Min. 18.1°C

## 10.2. Procedure for measuring microwave energy leakage

### WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm<sup>2</sup> (1 mW/cm<sup>2</sup> for Canada) inform PCMNA, PSC, 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/cm<sup>2</sup> while in the customer's home. 2 mW/cm<sup>2</sup> stated here is our own voluntary standard. (1 mW/cm<sup>2</sup> for Canada)

### 10.2.1. Equipment

Note before measuring.

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

### WARNING

Avoid contacting any high voltage parts.

11. 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 and air inlet openings.

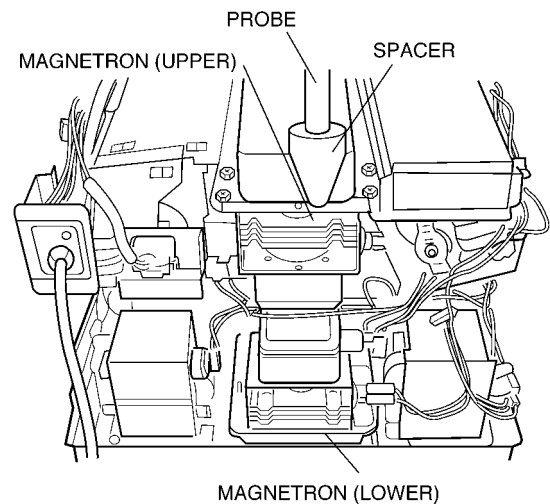
### 10.2.2. Record keeping and notification after measurement

1. 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.
2. Should the radiation leakage be more than 2 mW/cm<sup>2</sup> (1 mW/cm<sup>2</sup> 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 PCMNA, PSC, or PCI.

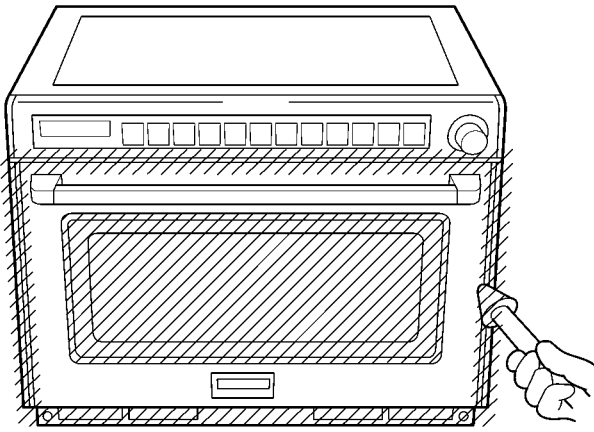
### 10.2.3. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

### WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.



08-176M

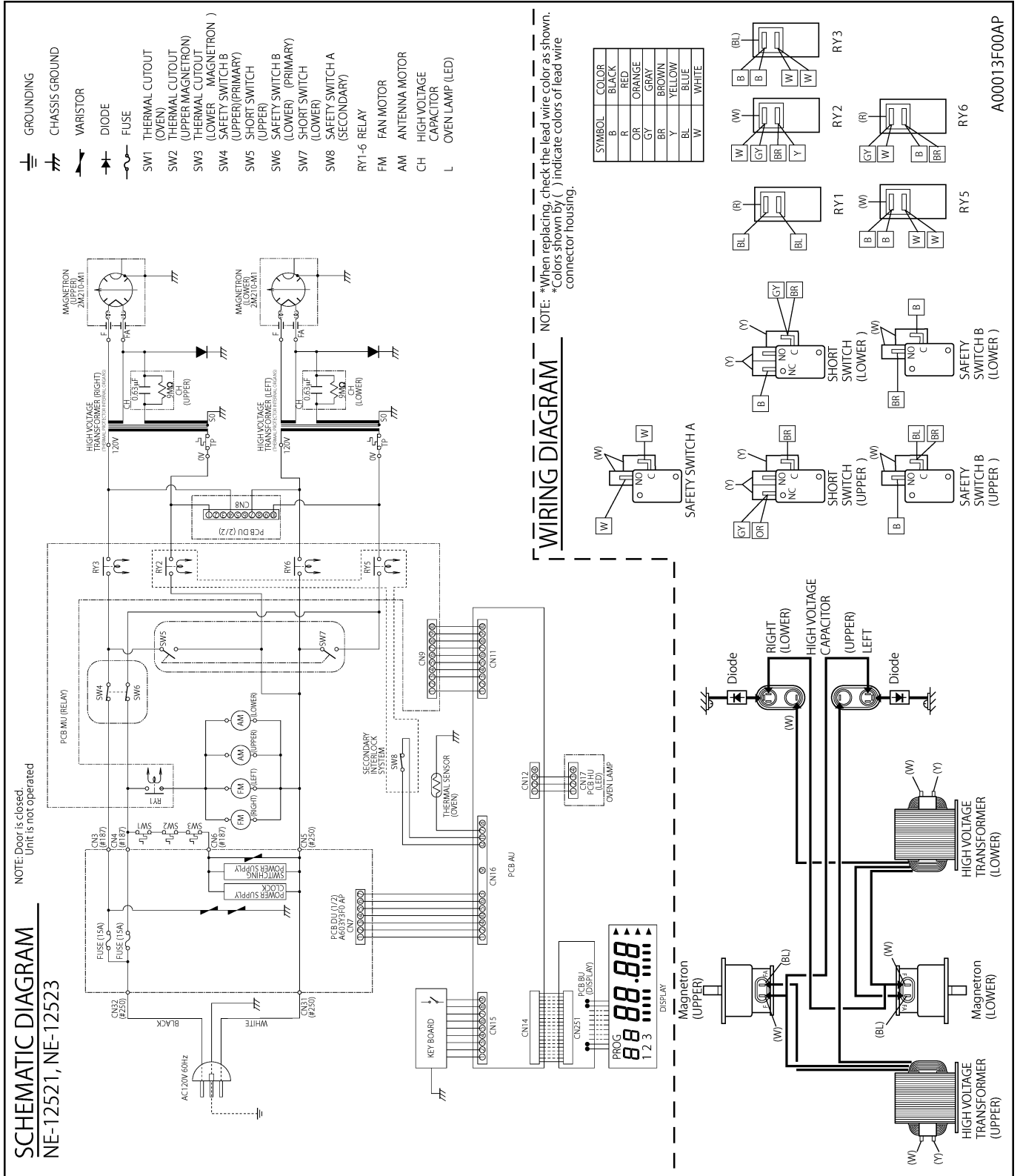


08-177M

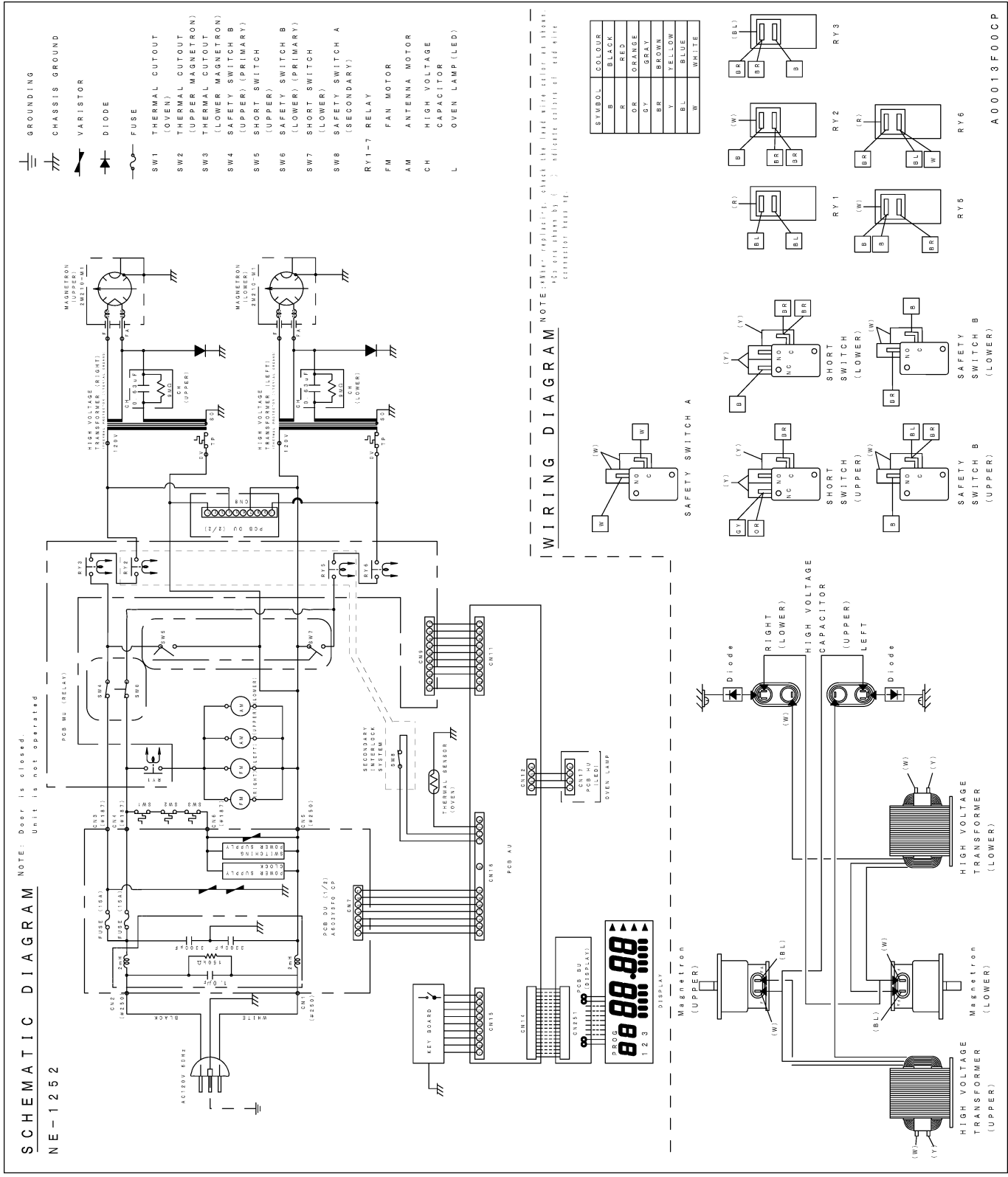
MOVE PROBE ALONG SHADED  
AREA (/////) AROUND EXHAUST  
OPENINGS (as shown) AND AROUND  
AIR INLET OPENING

# 11 Schematic Diagram

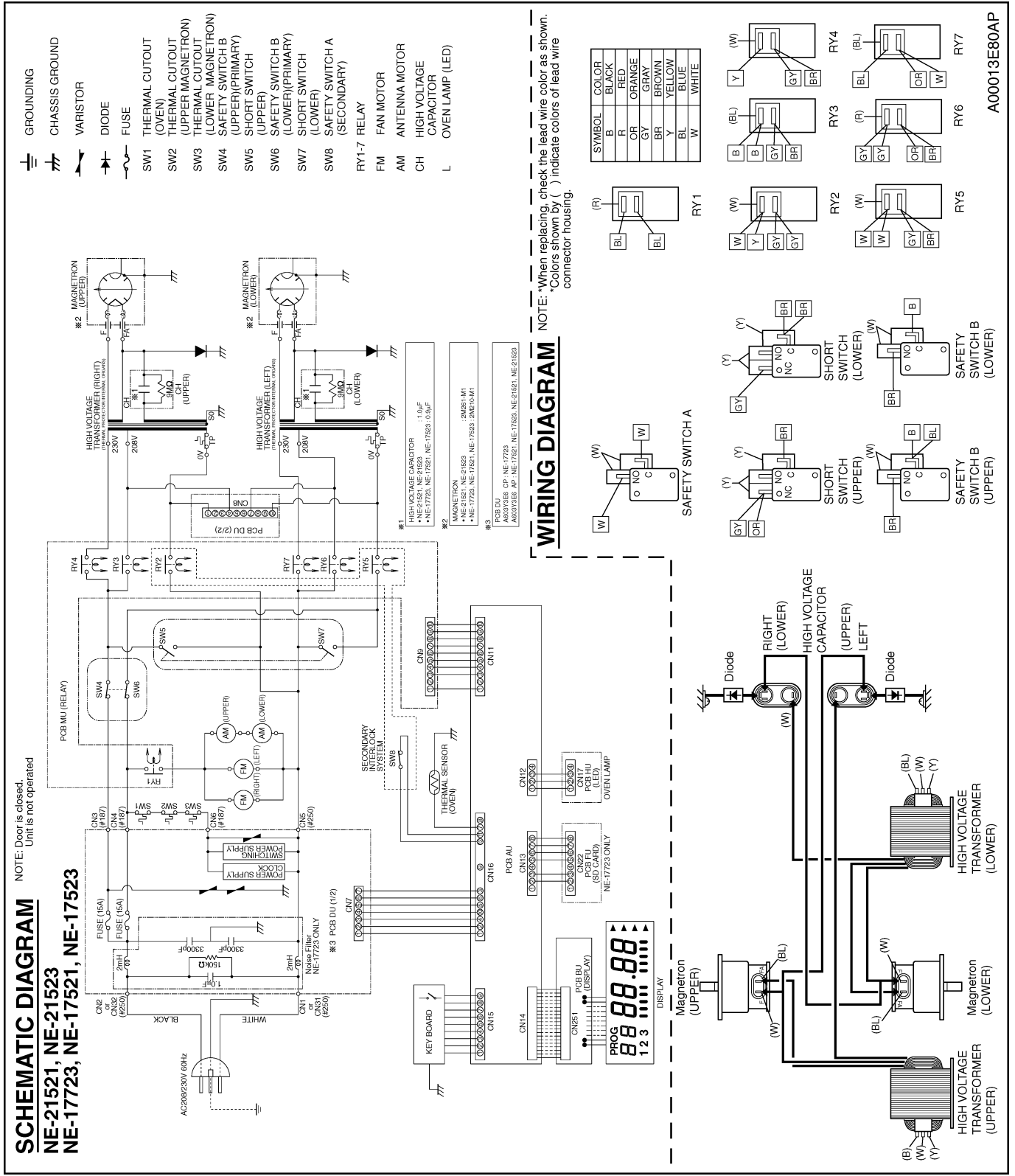
## 11.1. NE-12521, NE-12523



# 11.2. NE-1252



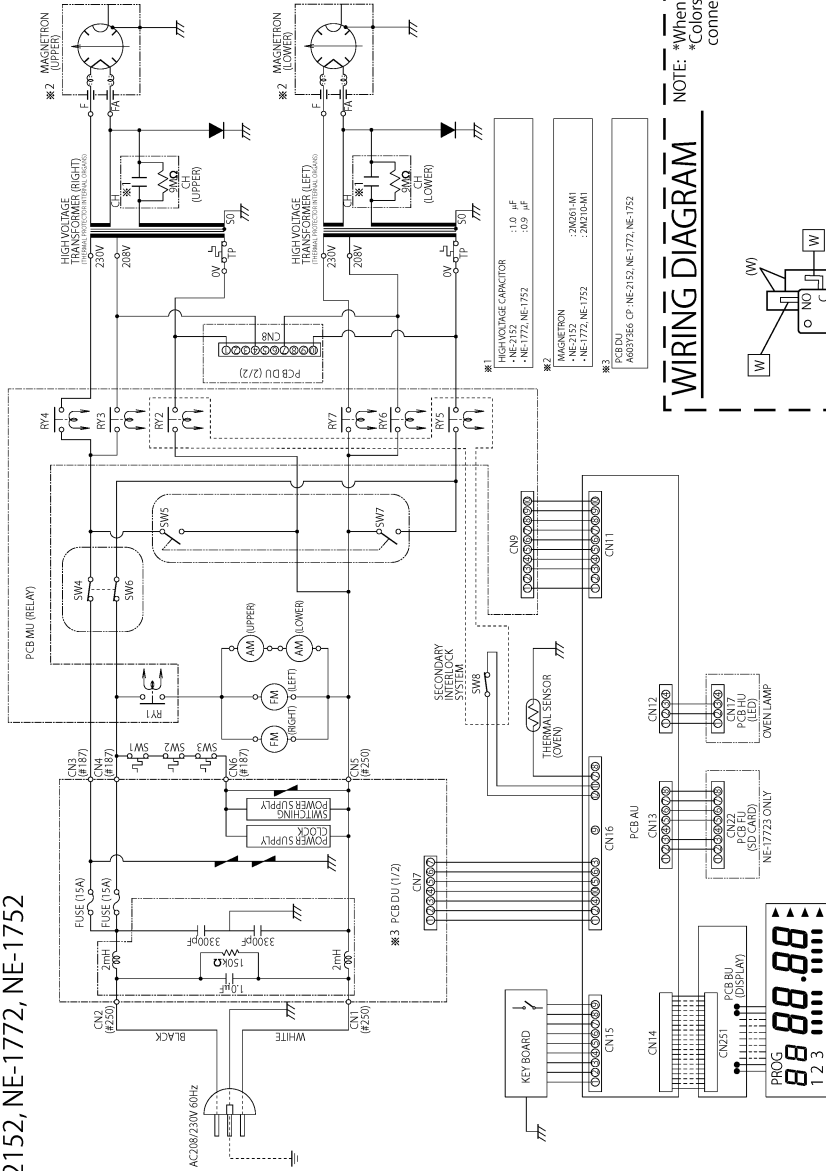
# 11.3. NE-17521, NE-17523, NE-17723, NE-21521, NE-21523



# 11.4. NE-1752, NE-1772, NE-2152

## SCHEMATIC DIAGRAM NE-2152, NE-1772, NE-1752

NOTE: Door is closed.  
Unit is not operated

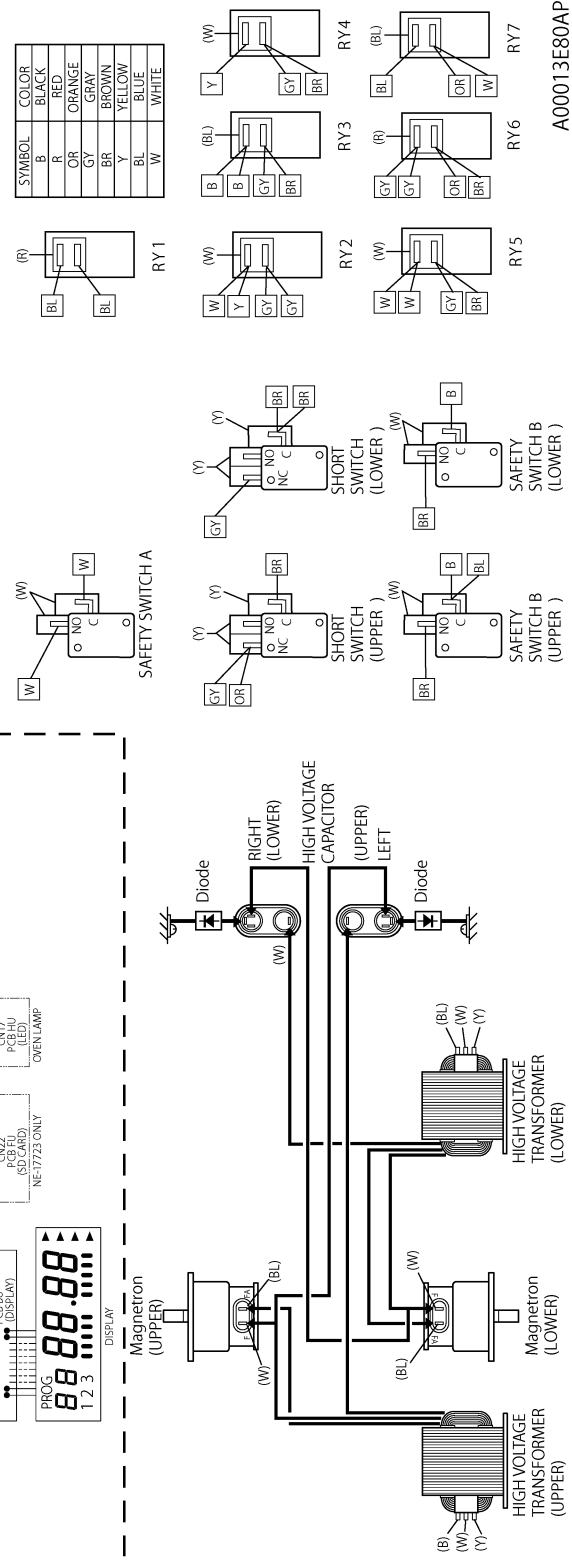


- GROUNDING
- CHASSIS GROUND
- VARIATOR
- DIODE
- FUSE
- SW1 THERMAL CUTOUT (OVEN)
- SW2 THERMAL CUTOUT (UPPER MAGNETRON)
- SW3 THERMAL CUTOUT (LOWER MAGNETRON)
- SW4 SAFETY SWITCH B (UPPER) (PRIMARY)
- SW5 SHORT SWITCH (UPPER)
- SW6 SAFETY SWITCH B (LOWER) (PRIMARY)
- SW7 SHORT SWITCH (LOWER)
- SW8 SAFETY SWITCH A (SECONDARY)
- RY1-7 RELAY
- FM FAN MOTOR
- AM ANTENNA MOTOR
- CH HIGH VOLTAGE CAPACITOR
- L OVEN LAMP (LED)

- #1 HIGH VOLTAGE CAPACITOR  
1.0 μF  
NE-2152 : 2MCD-0-M1  
NE-1772, NE-1752 : 2MCD-0-M1
- #2 MAGNETRON  
3MCD-6-M1  
NE-1772, NE-1752 : 2MCD-0-M1
- #3 PCB DU  
A4003866-CP-NE-2152, NE-1772, NE-1752

### WIRING DIAGRAM

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

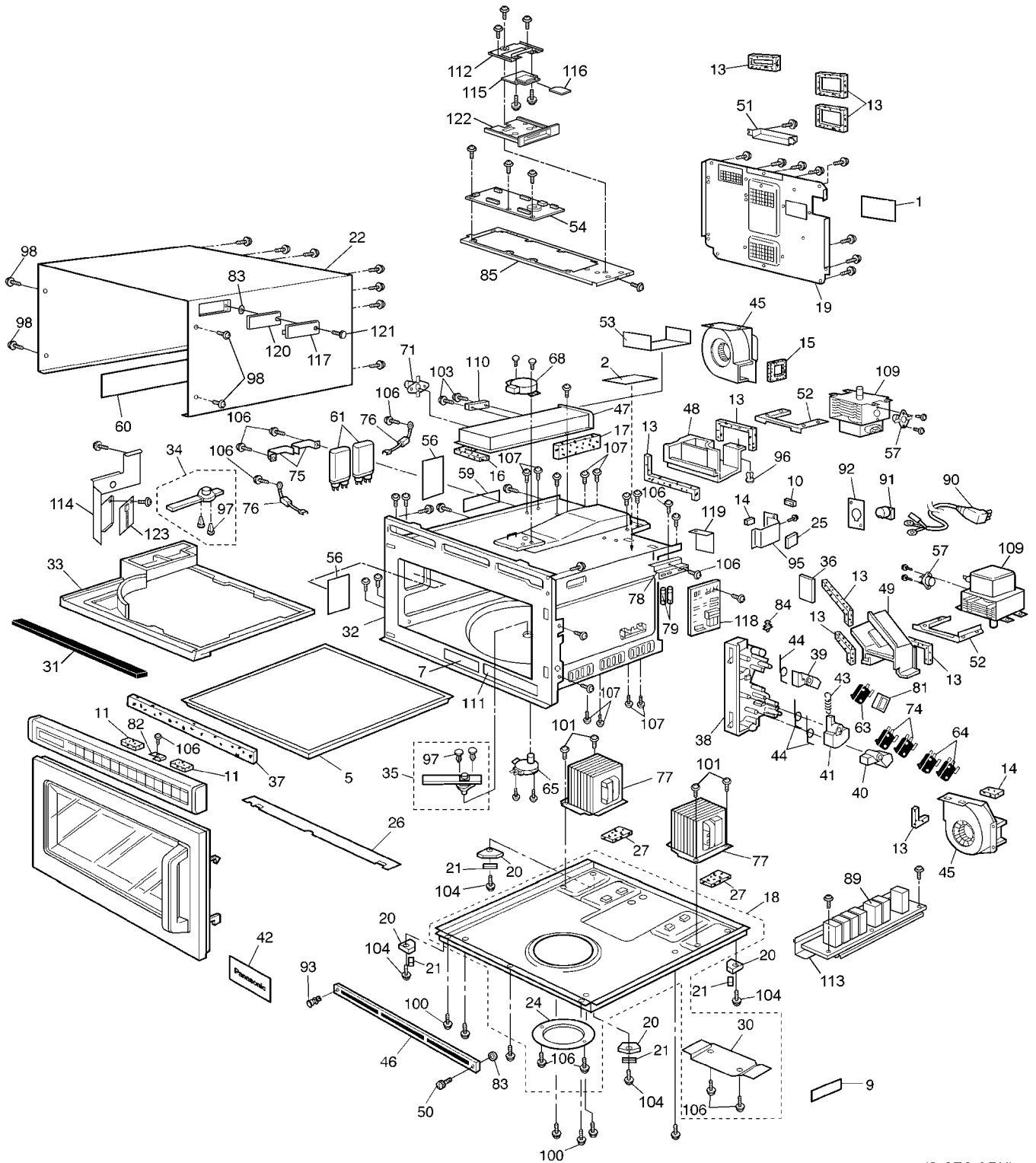


SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GY	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE

A00013E80AP

# 12 Exploded View and Replacement Parts List

## 12.1. Exploded view and parts list



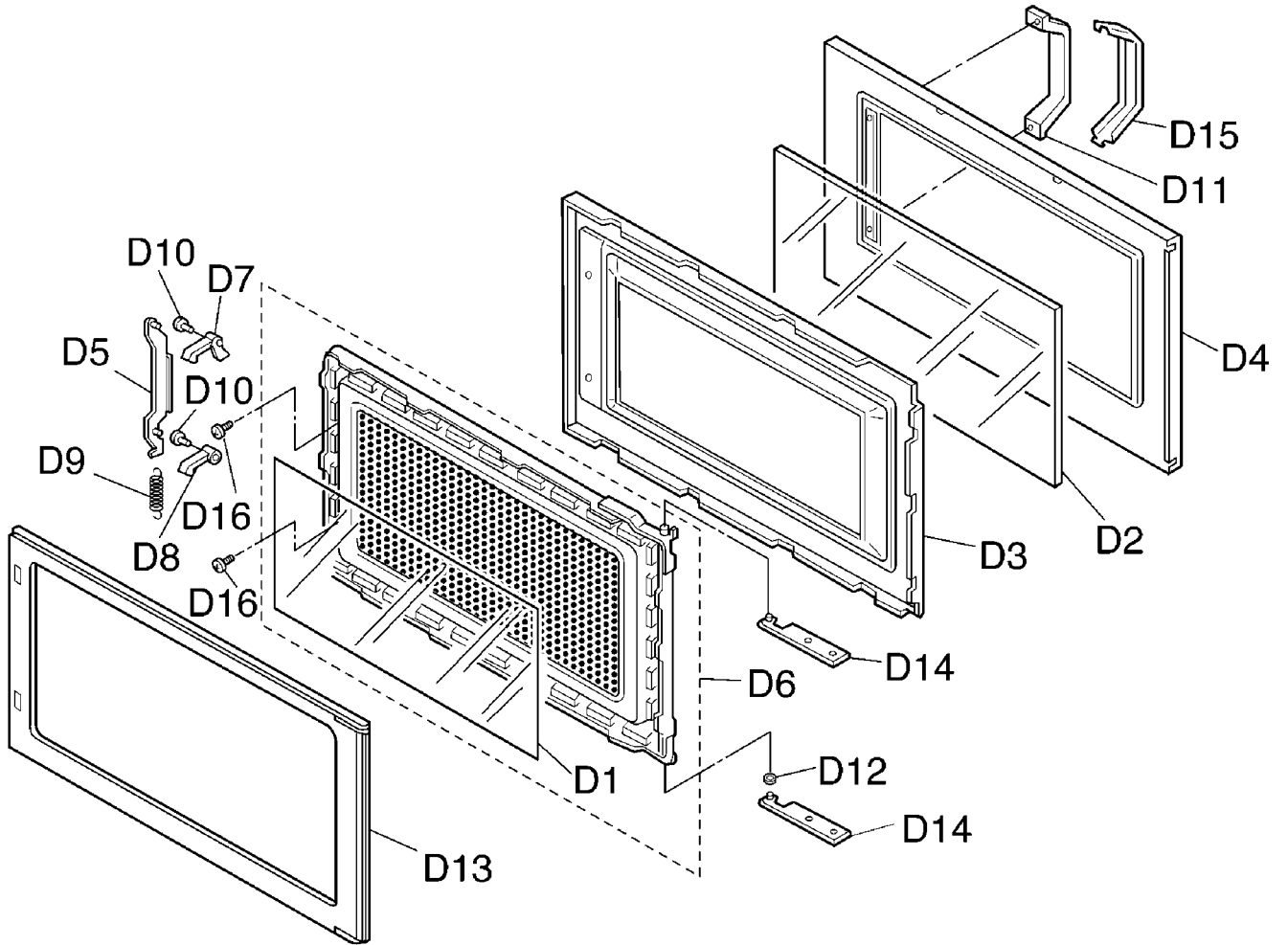
(S-3E8-APH)

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
	1	ANE00068U0CP	WARNING LABEL	1	NE-1252CPH,NE-1752CPR,NE-1772CPR ,NE-2152CPR
	1	A00063E80AP	WARNING LABEL	1	NE-12521APH, NE-12523APH, NE-17521APR, NE-17523APR, NE-17723APR, NE-21521APR, NE-21523APR
	2	A00333E80AP	FUSE LABEL	1	
	5	ANE010T8U0AP	SHELF	1	
	7	ANE01728U0CP	CAUTION LABEL	1	
△	9	A05243F00AP	NAME LABEL	1	NE-12521APH
△	9	A05243F40AP	NAME LABEL	1	NE-12523APH
△	9	A05243E80AP	NAME LABEL	1	NE-17521APR
△	9	A05243F30AP	NAME LABEL	1	NE-17523APR
△	9	A05243E90AP	NAME LABEL	1	NE-17723APR
△	9	A05243E60AP	NAME LABEL	1	NE-21521APR
△	9	A05243F20AP	NAME LABEL	1	NE-21523APR
	10	ANE0901000CD	CUSHION RUBBER A	1	
	11	ANE000Z000AD	CUSHION RUBBER A	5	
	13	ANE000Z000AA	CUSHION RUBBER C	10	
	14	ANE000Z000AD	CUSHION RUBBER C	4	
	15	ANE000Z000AB	CUSHION RUBBER C	1	
	16	ANE0962000AP	CUSHION RUBBER D	1	
	17	ANE0962000AV	CUSHION RUBBER D	6	
	18	A100A-3280	BASE	1	
	19	A100Q3E80AP	BACK PANEL	1	
	20	A1007-3280	FOOT	4	
	21	A1008-3280	RUBBER FOOT	4	
	22	A10093E80AP	CABINET BODY	1	NE-12521APH, NE-12523APH, NE-1252CPH, NE-17521APR, NE-17523APR, NE-1752CPR, NE-21521APR, NE-21523APR, NE-2152CPR
	22	A10093E90AP	CABINET BODY	1	NE-17723APR, NE-1772CPR
	24	ANE10288U0AP	ANTENNA MOTOR COVER	1	
	25	ANE10498U0AP	CUSHION RUBBER	1	
	26	ANE11268U0AP	BASE BRACKET	1	
	27	A10623E80AP	CUSHION RUBBER B	2	
	30	ANE11668U0AP	BASE METAL	1	
	31	ANE11748U0AP	SPACER	1	
△	32	A200A-3850	OVEN	1	
△	33	A2011-3470	CEILING PLATE	1	
	34	A202K-3850	ANTENNA	1	(UPPER)
	35	A202V3310GP	ANTENNA B	1	(LOWER) NE-12521APH, NE-12523APH, NE-1252CPH, NE-17521APR, NE-17523APR, NE-1752CPR, NE-17723APR, NE-1772CPR
	35	A202V-3850	ANTENNA B	1	(LOWER) NE-21521APR, NE-21523APR, NE-2152CPR
	36	ANE21208U0AP	SPACER	1	
	37	A8251-3180	SPACER	1	
△	38	A3020-3850	DOOR HOOK A	1	
△	39	A3136-3470	HOOK SPACER A	1	
△	40	A3137-3850	HOOK SPACER B	1	
△	41	A3138-3470	HOOK SPACER C	1	
	42	A31863F00AP	DOOR PANEL	1	NE-12521APH
	42	A31863F40AP	DOOR PANEL	1	NE-12523APH
	42	A31863F00CP	DOOR PANEL	1	NE-1252CPH
	42	A31863E80AP	DOOR PANEL	1	NE-17521APR
	42	A31863F30AP	DOOR PANEL	1	NE-17523APR
	42	A31863E80CP	DOOR PANEL	1	NE-1752CPR
	42	A31863E90AP	DOOR PANEL	1	NE-17723APR
	42	A31863E90CP	DOOR PANEL	1	NE-1772CPR
	42	A31863E60AP	DOOR PANEL	1	NE-21521APR
	42	A31863F20AP	DOOR PANEL	1	NE-21523APR
	42	A31863E60CP	DOOR PANEL	1	NE-2152CPR
	43	ANE32398U0AP	SPRING	1	
	44	ANE32628U0AP	SPRING	3	
	45	A400A3F00AP	FAN MOTOR	2	NE-12521APH, NE-12523APH, NE-1252CPH
	45	A400A3E80AP	FAN MOTOR	2	NE-17521APR, NE-17523APR, NE-1752CPR, NE-17723APR, NE-1772CPR, NE-21521APR, NE-21523APR, NE-2152CPR
	46	A400B-3280	AIR FILTER FLAME	1	
	47	A4024-3180	EXHAUST GUIDE A	1	
	48	ANE40258U0AP	AIR GUIDE A	1	
	49	ANE40268U0AP	AIR GUIDE B	1	
	50	A4091-3290	SCREW	1	FOR AIR FILTER FLAME
	51	A41073980AP	EXHAUST GUIDE B	1	
	52	ANE50328U0AP	MAGNETRON BRACKET	2	
	53	A50493E80CP	FIRE BARRIER	1	NE-1252CPH, NE-1752CPR, NE-1772CPR, NE-2152CPR

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
	54	A603L3E80AP	D.P.CIRCUIT (U)	1	NE-17521APR,NE-17523APR,NE-1752CPR
	54	A603L3E90AP	D.P.CIRCUIT (U)	1	NE-17723APR,NE-1772CPR
	54	A603L3F00AP	D.P.CIRCUIT (U)	1	NE-12521APH,NE-12523APH,NE-1252CPH
	54	A603L3E60AP	D.P.CIRCUIT (U)	1	NE-21521APR,NE-21523APR,NE-2152CPR
	56	ANE60408U0AP	OVEN LAMP SHEET	2	
△	57	ANE61458U0AP	THERMAL CUTOUT	2	150 °C 10A, MAGNETRON
	59	ANE60708U0BP	INSULATION SHEET A	1	
	60	A60713310BP	INSULATION SHEET B	1	
△	61	A63903F00AP	H.V.CAPACITOR	2	NE-12521APH,NE-12523APH,NE-1252CPH
△	61	A63903E80AP	H.V.CAPACITOR	2	NE-17521APR,NE-17523APR,NE-1752CPR,NE-17723APR,NE-1772CPR
△	61	A63903E60AP	H.V.CAPACITOR	2	NE-21521APR,NE-21523APR,NE-2152CPR
△	63	ANE6142-F60	MICROSWITCH	1	(V-15G-3C26) PRIMARY LATCH SWITCH
△	64	ANE61424L0AG	MICROSWITCH	2	(V-16G-3C26) SECONDARY LATCH SWITCH
	65	A6144-3E20	ANTENNA MOTOR	1	(LOWER) (2.5W)
	68	A6144-3E10	ANTENNA MOTOR	1	(UPPER) (2.5W)
△	71	A61454050AP	THERMAL CUTOUT	1	105 °C 15A, EXHAUST GUIDE
△	74	ANE61784L0AG	MICRO SWITCH	2	(V-16G-2C25) SHORT SWITCH
	75	ANE61888U0AP	CAPACITOR BRACKET	2	
△	76	A62024000AP	DIODE SI	2	NE-12521APH,NE-12523APH,NE-1252CPH,NE-17521APR,NE-17523APR,NE-1752CPR,NE-17723APR,NE-1772CPR
△	76	A6202-3280	DIODE SI	2	NE-21521APR,NE-21523APR,NE-2152CPR
△	77	A621B3F00AP	H.V. TRANSFORMER	2	NE-12521APH,NE-12523APH,NE-1252CPH
△	77	A621B3E80AP	H.V. TRANSFORMER	2	NE-17521APR,NE-17523APR,NE-1752CPR,NE-17723APR,NE-1772CPR
△	77	A621B3E60AP	H.V. TRANSFORMER	2	NE-21521APR,NE-21523APR,NE-2152CPR
	78	ANE62298U0AP	MOUNTING BRACKET	1	
△	79	A62303A60AP	FUSE	2	(15A)
	81	A62383230GP	SPACER	1	
	82	ANE64086Q0AP	WASHER	1	
	83	A6408-3280	WASHER	2	
	84	ANE65448U0AP	SPACER A	1	
	85	A6585-3B10	P.C.B. HOLDER	1	
△	89	A608B3E60AP	PCB M(U)	1	FOR POWER RELAYS
△	90	A900C3E80AP	AC CORD W/PLUG	1	NE-17521APR,NE-17523APR,NE-1752CPR,NE-17723APR,NE-1772CPR
△	90	A900C3F00AP	AC CORD W/PLUG	1	NE-12521APH,NE-12523APH,NE-1252CPH
△	90	A900C3E60AP	AC CORD W/PLUG	1	NE-21521APR,NE-21523APR,NE-2152CPR
	91	ANE9027510RN	CORD BUSHING	1	
	92	ANE9035P60AP	CORD BRACKET	1	
	93	ANE9035P60AP	CLIP (BLACK)	1	
	95	ANE91448U0AP	BRACKET	1	
	96	ANE91628U0AP	CLIP B	1	
	97	ANE91658V0AP	CLIP	4	
	98	XTC4+10BC	SCREW	4	(4X10) FOR CABINET BODY
	100	XTC4+12BKJ	SCREW (BLACK)	2	(4X12) FOR BASE
	101	XTEA5+10BJ	SCREW	4	(5X10) FOR H.V. TRANSFORMER
	103	XTWANE3+8EX	SCREW	2	(3X8) FOR TEMP SENSOR
	104	XTW3+8BJ	SCREW	4	(3X8) FOR FOOT
	106	XYD4+EE12FJ	SCREW	11	(4X12) FOR DIODE, CAPACITOR BRACKET, AC CORD, MOTOR COVER, BASE METAL ETC..
	107	XYEA5+C16TJ	SCREW	8	(5X16) FOR MAGNETRON
△	109	2M210-M1K1	MAGNETRON	2	NE-12521APH,12523APH,17521APR,NE-17523APR,NE-17723APR
△	109	2M210-M1J1	MAGNETRON	2	NE-1252CPH, NE-1752CPR,NE-1772CPR
△	109	2M261-M1J1Y	MAGNETRON	2	NE-21521APR,21523APR,2152CPR
△	110	A601L5150AP	TEMP SENSOR	1	
	111	ANE0245X00AP	DHHS LABEL	1	NE-12521APH,NE-12523APH,NE-17521APR,NE-17523APR,NE-17723APR,NE-21521APR,NE-21523APR,NE-1252CPH,NE-1752CPR,NE-1772CPR,NE-2152CPR
	111	A04115020CQ	CSA LABEL	1	NE-1252CPH,NE-1752CPR,NE-1772CPR,NE-2152CPR
	112	A8032-3D00	SD BRACKET	1	NE-1772CPR,NE-17723APR
	113	A692R3F00AP	RELAY BRACKET U	1	NE-12521APH,NE-12523APH,NE-1252CPH
	113	A692R3E60AP	RELAY BRACKET U	1	NE-17521APR,NE-17523APR,NE-1752CPR,NE-17723APR,NE-1772CPR,NE-21521APR,NE-21523APR,NE-2152CPR
	114	A6603-3E10	LAMP BRACKET	1	FOR LED LIGHT PCB
	115	A605Q-3E40	PCB F(U)	1	NE-17723APR,NE-1772CPR
	116	RP-SDS128CS9	SD CARD	1	NE-17723APR,NE-1772CPR
	117	A1026-3290	COVER	1	FOR SD SLOT, NE-17723APR,NE-1772CPR
△	118	A603Y3E60AP	PCB D(U)	1	NE-17521APR,NE-17523APR,NE-21521APR,NE-21523APR,
△	118	A603Y3E60CP	PCB D(U)	1	NE-1752CPR,NE-17723APR,NE-1772CPR,NE-2152CPR
△	118	A603Y3F00AP	PCB D(U)	1	NE-12521APH,NE-12523APH,

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
△	118	A603Y3F00CP	PCB D(U)	1	NE-1252CPH
	119	A61713A80BP	INSULATION SHEET D	1	
	120	A1221-3290	CUSHION RUBBER	1	FOR SD SLOT, NE-17723APR,NE-1772CPR
	121	A4898-3B40	SCREW	1	FOR SD SLOT COVER, NE-17723APR,NE-1772CPR
	122	A8357-3D00	ESCUTCHEON	1	FOR SD UNIT, NE-17723APR,NE-1772CPR
	123	A605S3E60AP	PCB H(U)	1	FOR LED LIGHT

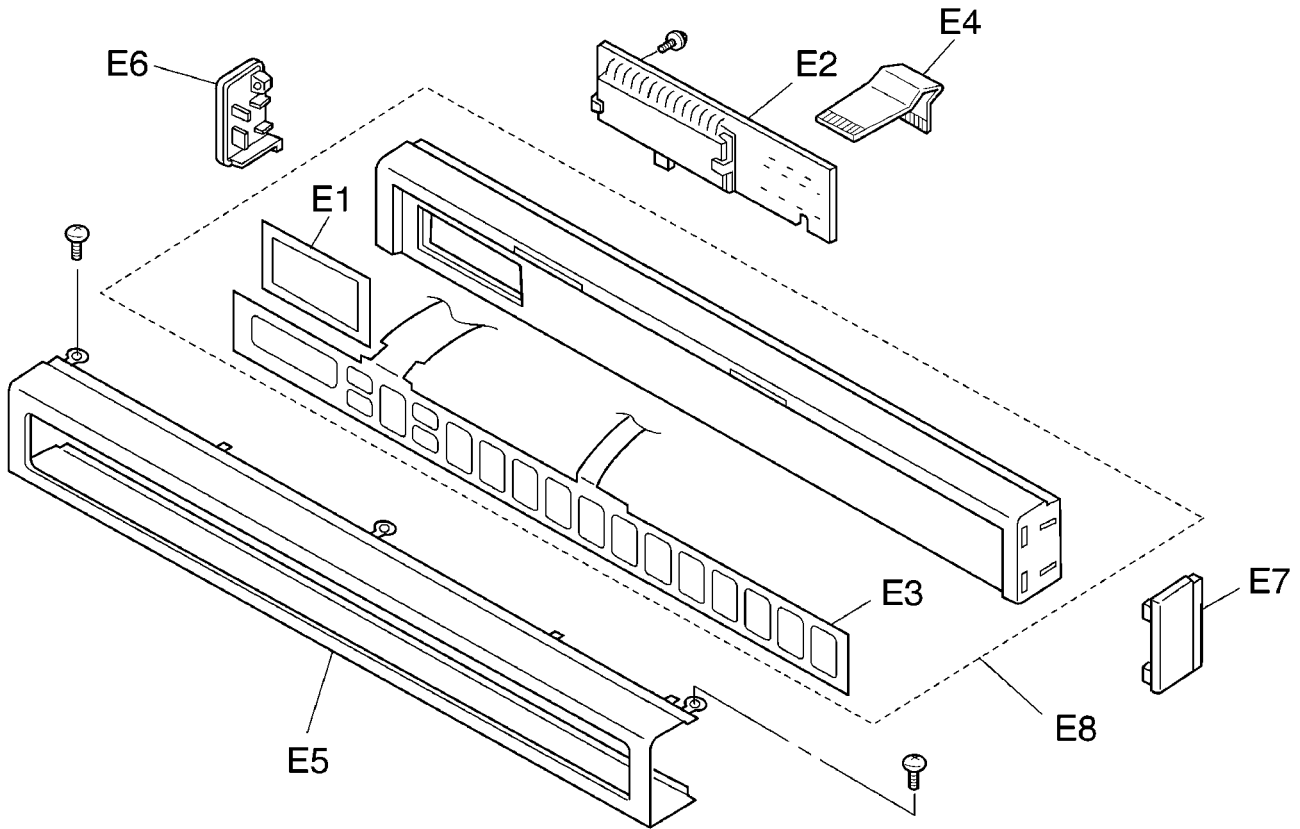
## 12.2. Door assembly



(S-396 APH)

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
⚠	D1	A3145-3500	DOOR SCREEN A	1	
	D2	ANE31468U0AP	DOOR SCREEN B	1	
	D3	ANE30038U0AP	DOOR FRAME (U)	1	
⚠	D4	ANE301A8U0AP	DOOR A	1	
	D5	A301H-3850	DOOR KEY LEVER B	1	
⚠	D6	A301Q-3500	DOOR E (U)	1	
	D7	A3018-3850	DOOR KEY A	1	
	D8	A3019-3850	DOOR KEY B	1	
	D9	ANE30218U0AP	DOOR KEY SPRING	1	
	D10	ANE30562Q0AP	HANDLE PIN	2	
	D11	A30703170GP	HANDLE PEICE A	1	
	D12	ANE3081P60AP	DOOR HINGE SPACER	1	
⚠	D13	ANE30858U0AP	DOOR C	1	
⚠	D14	ANE30078U0AP	HINGE	2	
	D15	ANE31348U0AP	HANDLE PEICE B	1	
	D16	XYEA4+C16TSJ	SCREW	2	(4X16)

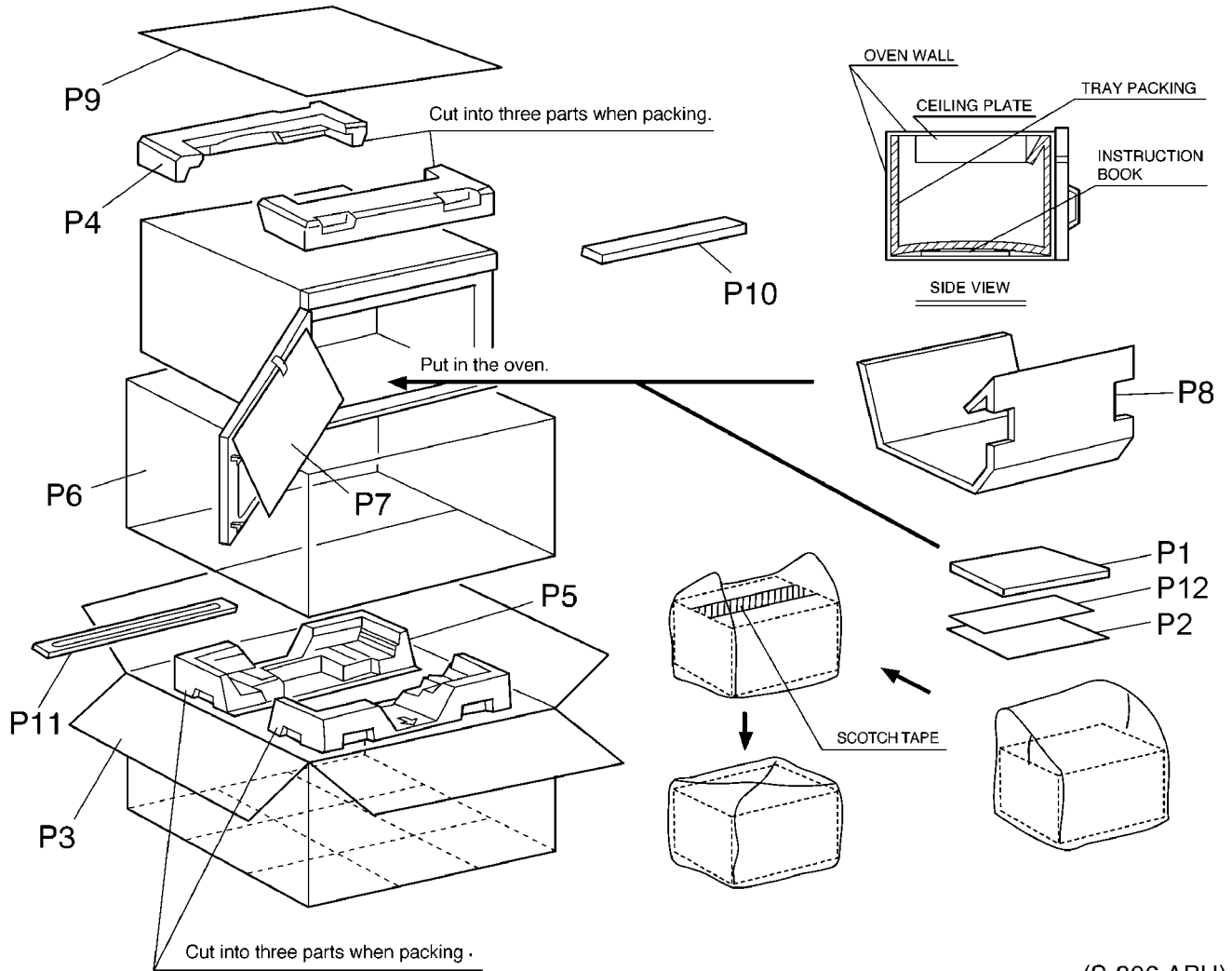
### 12.3. Escutcheon base assembly



(S-396 APH)

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
	E1	A83373E80AP	ESCUTCHEON SHEET	1	
	E2	A603M-3B10	PCB B (U)	1	FOR DISPLAY TUBE
	E3	A6479-3B10	MEMBRANE SWITCH	1	
	E4	A6590-3E10	FLAT CABLE	1	
	E5	ANE80018U0AP	ESCUTCHEON A	1	
	E6	A80023E20P3	ESCUTCHEON B	1	
	E7	A80063E20P3	ESCUTCHEON D	1	
	E8	A800L3E80AP	ESCUTCHEON BASE	1	

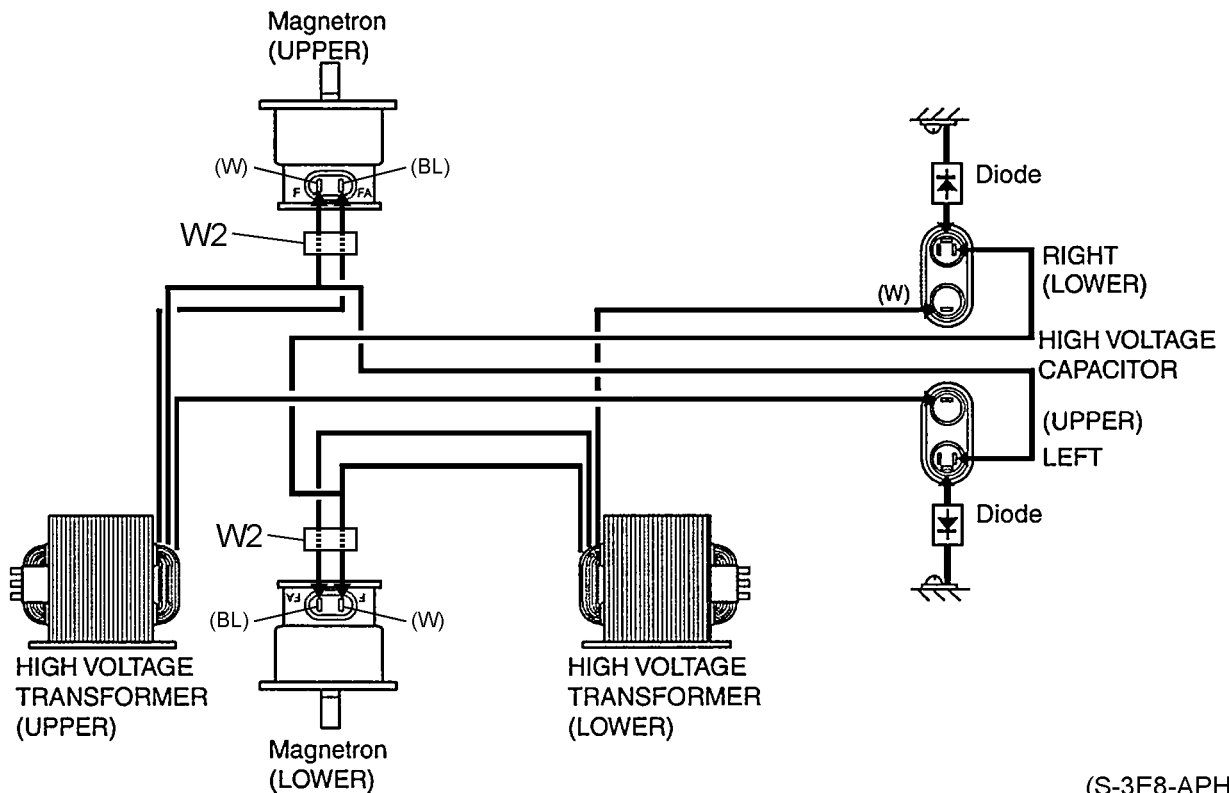
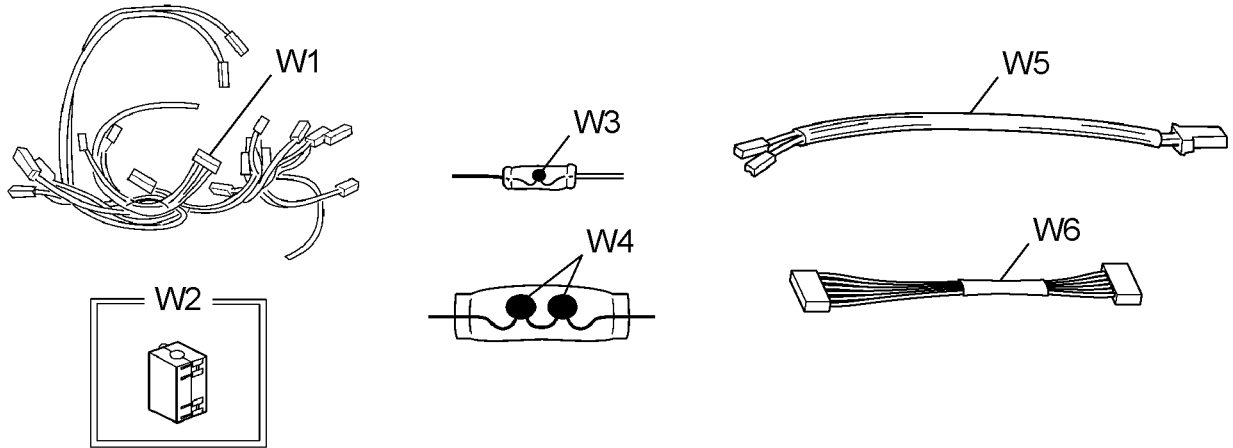
## 12.4. Packing and accessories



(S-396 APH)

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
⚠	P1	A00033E80CP	INSTRUCTION BOOK	1	NE-1252CPH, NE-1752CPR, NE-1772CPR, NE-2152CPR
⚠	P1	A00033E80AP	INSTRUCTION BOOK	1	NE-12521APH, NE-12523APH, NE-17521APR, NE-17523APR, NE-17723APR, NE-21521APR, NE-21523APR
	P2	A04203E80AP	OPERATING GUIDE	1	NE-12521APH, NE-12523APH, NE-17521APR, NE-17523APR, NE-17723APR, NE-21521APR, NE-21523APR
	P2	A04203E80CP	OPERATING GUIDE	1	NE-1252CPH, NE-1752CPR, NE-1772CPR, NE-2152CPR
	P3	A01023F00AP	PACKING CASE PAPER	1	NE-12521APH
	P3	A01023F40AP	PACKING CASE PAPER	1	NE-12523APH
	P3	A01023F00CP	PACKING CASE PAPER	1	NE-1252CPH
	P3	A01023E80AP	PACKING CASE PAPER	1	NE-17521APR
	P3	A01023F30AP	PACKING CASE PAPER	1	NE-17523APR
	P3	A01023E80CP	PACKING CASE PAPER	1	NE-1752CPR
	P3	A01023E90AP	PACKING CASE PAPER	1	NE-17723APR
	P3	A01023E90CP	PACKING CASE PAPER	1	NE-1772CPR
	P3	A01023E60AP	PACKING CASE PAPER	1	NE-21521APR
	P3	A01023F20AP	PACKING CASE PAPER	1	NE-21523APR
	P3	A01023E60CP	PACKING CASE PAPER	1	NE-2152CPR
	P4	A01043980AP	UPPER FILLER	1	
	P5	A01053980AP	LOWER FILLER	1	
	P6	A01065200AP	VINYL COVER	1	
	P7	ANE01072Q0AP	DOOR SHEET	1	
	P8	A01083310GP	TRAY PACKING	1	
	P9	A01263960AP	REINFORCE MATERIAL	1	
	P10	A01453230BP	DOOR SHEET B	1	
	P11	A1134-3280	FOOT BRACKET	1	
	P12	ANE00878U0AP	MEMO CARD	1	

## 12.5. Wiring material



(S-3E8-APH)

Safety	Ref. No.	Part No.	Part Name & Description	Pcs/set	Remarks
⚠	W1	A030A3F00AP	LEAD WIRE HARNESS	1	NE-12521APH, NE-12523APH
⚠	W1	A030A3F00CP	LEAD WIRE HARNESS	1	NE-1252CPH
⚠	W1	A030A3E80AP	LEAD WIRE HARNESS	1	NE-17521APR, NE-17523APR, NE-1752CPR, NE-17723APR, NE-1772CPR, NE-21521APR, NE-21523APR, NE-2152CPR
	W2	A50966520UP	FERRITE CORE	2	NE-1252CPH, NE-1752CPR, NE-1772CPR, NE-2152CPR
	W3	ERZC10DK471U	VARISTOR	1	
	W4	ERZV10D112	VARISTOR	2	
	W5	ANE0352-3280	LEAD WIRE	1	FOR ANTENNA MOTOR
	W6	A03823E90AP	LEAD WIRE	1	FOR PCB A(U), PCB F(U), NE-17723APR, NE-1772CPR