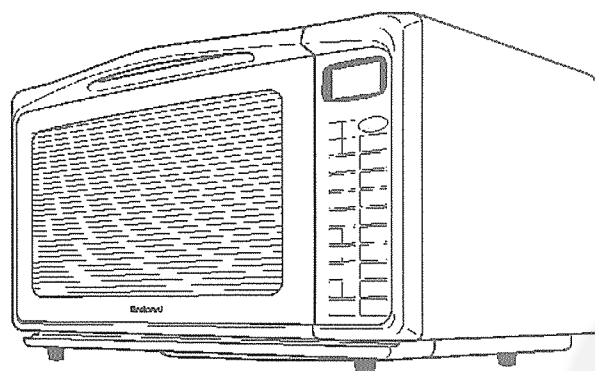


Service Manual

Microwave Oven

INVERTER

SYSTEM INSIDE



NEW H.V.

NN-V688W
NN-V688WS
NN-V698J
NN-V698JS

99年 / 月 5 日 No.

| | | |
|----|----|----|
| 承認 | 検印 | 作成 |
| | | |

Specifications

| | | KNQ MNQ | YNQ | SNM | HNE TNE XNE | WNT | LNK |
|--|-------------------------|---|----------|----------|-------------|-------|-------|
| Power Source: | (V) | 240V | 230-240V | 220V | 220V | 110V | 220V |
| | (Hz) | 50 Hz | 50 Hz | 50/60 Hz | 50 Hz | 60 Hz | 60 Hz |
| Power Requirement: | Microwave | 1260 W | | | | | |
| | Heater | 1340 W | | | | | |
| Output: | Microwave IEC-705-88 | 1000 W for HNE, KNQ, LNK, MNQ, SNM, TNE, WNT, YNQ models 900 W for XNE model | | | | | |
| | Heater | 1300 W | | | | | |
| Microwave Frequency: | | 2,450 MHz | | | | | |
| Timer: | | 30 MIN (HIGH) / 99 min. 99 sec. | | | | | |
| Outside Dimensions: | | 312 mm (H) X 520 mm (W) X 400 mm (D) | | | | | |
| Oven Cavity Dimensions: | | 206 mm (H) X 373 mm (W) X 373 mm (D) | | | | | |
| Weight: | | Approx. 14.0 kg | | | | | |
| Specifications subject to change without notice. | | | | | | | |

⚠ WARNING

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

WARNING

* This product should be serviced only by trained, qualified personnel.
This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.

HNE.....For Hong Kong

TNE.....For Thailand, Indonesia

MNQ.....For Malaysia

YNQ.....For Singapore

LNK.....For Philippines

KNQ.....For Kuwait, Doha, Qatar, Oman,

Bahrain, Pakistan

SNM.....For Saudi Arabia

XNE.....For China

WNT.....For Taiwan

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB; However, this PCB drives the magnetron tube with extremely high voltage and high current.

IT HAS: 1. Very high voltage and high current circuit.

It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.

2. Aluminum heat sink is very hot in high voltages and heat energy.

3. Very high voltage may remain in circuitry even when oven is off. High voltages may remain in the capacitors on the board.

DO NOT: *1. Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage may remain in circuit.

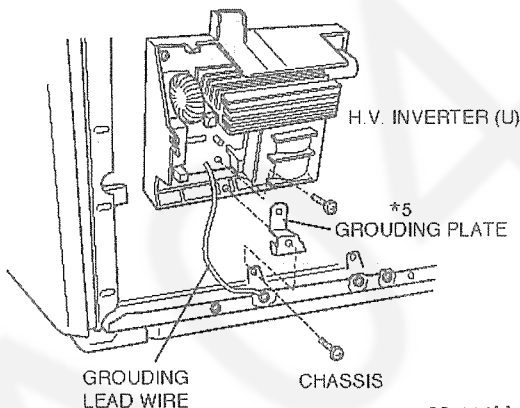
*2. Do not touch aluminum heat sink because it is very hot in high voltage and also very hot in high heat energy.

*3. Do not try to repair Inverter PCB because it is very dangerous to repair it. Replace as whole High Voltage Inverter Circuit (U) unit and return fully re-packed with original shipping box and shipping materials.

*4. Do not try to adjust or tamper preset volume on the Inverter board because it is very dangerous to adjust without proper test equipment.

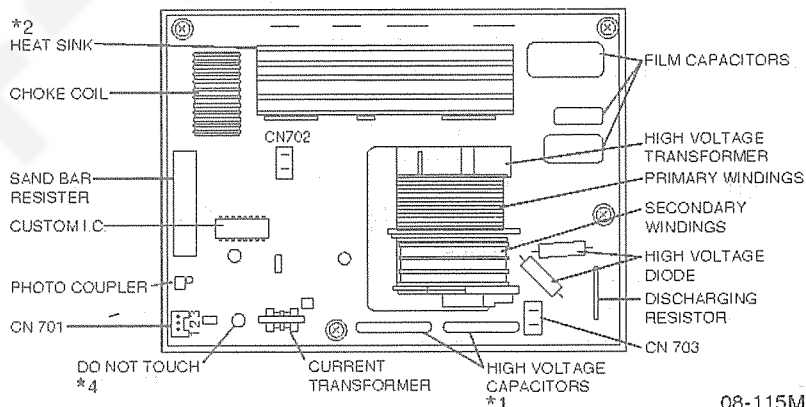
*5. Do not test oven while Inverter grounding strip or screws are loose. It is very dangerous to operate the H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.

NEW H.V.


DANGER
HIGH
VOLTAGE


08-114M

INVERTER POWER SUPPLY DIAGRAM



08-115M

DO NOT REPAIR. REPLACE WHOLE H.V. INVERTER (U)

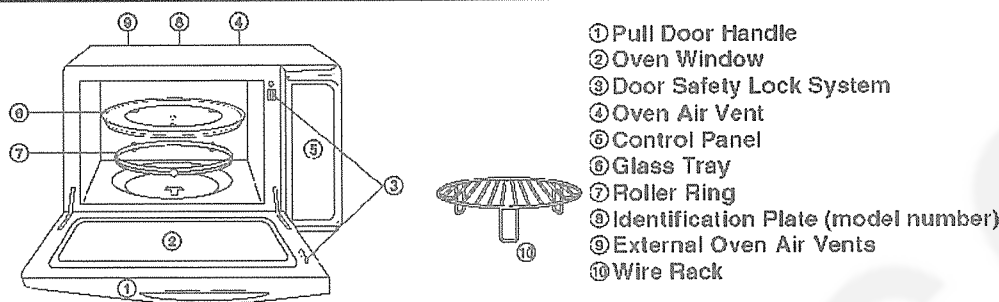
CONTENTS

| Page | Page |
|---|------|
| 1 CONTROL PANEL | 4 |
| 2 OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE | 5 |
| 3 SCHEMATIC DIAGRAM (KNQ, MNQ, SNM, YNQ) | 7 |
| 4 SCHEMATIC DIAGRAM (HNE, LNK, TNE) | 8 |
| 5 SCHEMATIC DIAGRAM (XNE) | 9 |
| 6 SCHEMATIC DIAGRAM (WNT) | 10 |
| 7 DESCRIPTION OF OPERATING SEQUENCE | 11 |
| 7.1. Variable power cooking control | 11 |
| 7.2. Grill cooking | 11 |
| 7.3. Combination cooking | 11 |
| 7.4. Auto Defrost, One Touch Menu and Auto Reheat Control | 11 |
| 7.5. One touch cooking (Auto sensor cooking) | 12 |

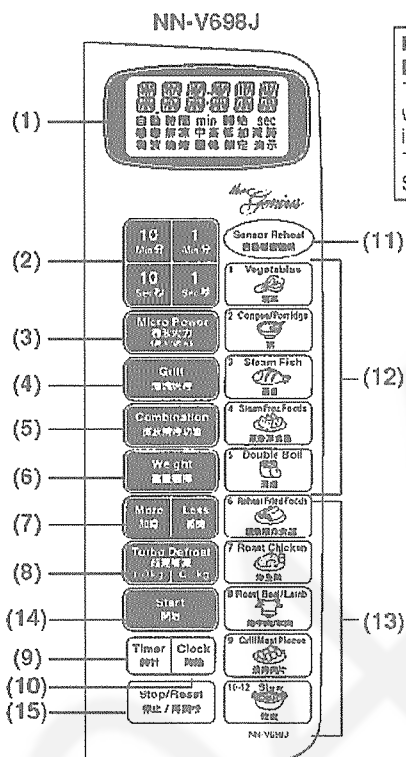
| | | | |
|--|----|--|----|
| 7.6. Auto Sensor Reheat | 12 | 10.3. Magnetron (NEW H.V.) | 20 |
| 8 CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING | 13 | 10.4. Membrane key board (Membrane switch assembly) | 20 |
| 8.1. Check the grounding | 13 | 10.5. Inverter Power Supply (U) (NEW H.V.) | 21 |
| 8.2. Inverter Warnings (NEW H.V.) | 13 | 10.6. Inverter Power Supply (U) (NEW H.V.) | 21 |
| 8.3. When parts must be replaced, remove the power plug from the outlet. | 14 | 10.7. Steam Sensor and Digital Programmer Circuit | 21 |
| 8.4. When the 10A 250V fuse is blown due to the operation of short switch: | 14 | 11 MEASUREMENTS AND ADJUSTMENTS | 22 |
| 8.5. Avoid inserting nails, wire, etc. through any holes in the unit during operation. | 14 | 11.1. Adjustment of Primary latch switch, Secondary latch switch and short switch | 22 |
| 8.6. Confirm after repair | 14 | 11.2. Measurement of microwave output | 22 |
| 9 DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE | 15 | 12 TROUBLESHOOTING GUIDE (NEW H.V.) | 23 |
| 9.1. Magnetron | 15 | 13 HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER | 27 |
| 9.2. High Voltage Inverter Power Supply (U) (NEW H.V.) | 15 | 14 INTRODUCING OF TEST JIGS | 28 |
| 9.3. Digital programmer circuit (DPC) and membrane key board. | 16 | 15 EXPLODED VIEW AND PARTS LIST | 30 |
| 9.4. Door assembly | 17 | 16 PARTS LIST | 31 |
| 9.5. Turntable motor | 19 | 17 DOOR ASSEMBLY | 33 |
| 9.6. Quartz heater | 19 | 18 ESCUTCHEON BASE ASSEMBLY | 34 |
| 10 COMPONENT TEST PROCEDURE | 20 | 19 PACKING AND ACCESORIES | 35 |
| 10.1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay 1) Interlocks. | 20 | 20 WIRING MATERIAL | 36 |
| 10.2. Short Switch / Monitor Circuit | 20 | 21 REF NO. 41 NOISE FILTER (U) | 37 |
| | | 22 DIGITAL PROGRAMMER CIRCUIT(NN-V698J,NN-V698JS) | 38 |
| | | 23 DIGITAL PROGRAMMER CIRCUIT (NN-V688W,NN-V688 WS) | 40 |
| | | 24 DIGITAL PROGRAMMER CIRCUIT | 42 |

1 CONTROL PANEL

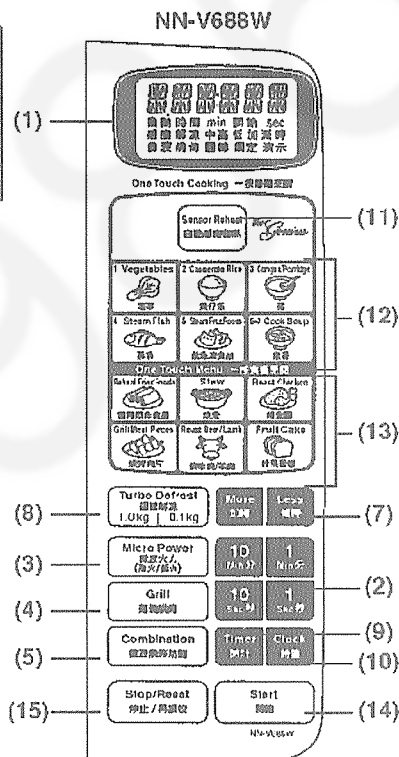
Feature Diagram



Control Panel



Display Window:
Energy Saving Light
The light in the display window will no longer be illuminated after 10 seconds. To illuminate press Start or Stop/Reset Pad once.



- (1) Display Window
- (2) Time Pads
- (3) Microwave Power Pad
- (4) Grill Pad
- (5) Combination Pad
- (6) Weight Pads
- (7) More/Less Pads
- (8) Turbo Defrost Pad
- (9) Timer Pad
- (10) Clock Pad

- (11) Sensor Reheat Pad
- (12) Sensor Cook Pads
- (13) One Touch Menu Pads
- (14) Start Pad:

Pull Door Handle:

Pull to open the door. Opening the door during cooking will stop the cooking process without cancelling the program. Cooking resumes as soon as the door is closed and Start Pad is pressed. The oven light will turn on and stay on whenever the door is open. It is quite Safe to open the door at any time during a cooking program and there is no risk of microwave exposure.

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 has not accepted the instruction. The oven will beep twice between programmed stages. At the end of any complete program, the oven will beep five times.

One tap allows oven to opened or functioning. If door is opened or Stop/Reset Pad is tapped once during oven operation, Start Pad must again be pressed to restart oven.

(15) Stop/Reset Pad:

Before cooking: One tap clears your instructions.

During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day will appear in the display.


2 OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

To turn off:





Press 3 times

1. To Set Clock

| OPERATION | SCROLL DISPLAY |
|---|---|
| 1. Plug the power supply cord into wall outlet. | WELCOM TO WORD PROMPTING |
| 2. Press Clock pad. |  --SET TIME |
| 3. Enter tim of day (TOD) by pressing appropriate Time pads. | 1 1 : 2 5 --PRESS CLOCK |
| 4. Press Clock pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes. | 1 1 : 2 5 |




2. Time Cooking for Two Stage

| OPERATION | SCROLL DISPLAY |
|--|--|
| 1. Place a water load in the oven. | |
| 2. Press Micro Power pad once to set High power. (1st stage) | HIGH  --SET TIME |
| 3. Set for 5 seconds by pressing 1 sec pad 5 times. |  5 SEC --PRESS START HIGH |




To turn off:




Press 3 times

| OPERATION | SCROLL DISPLAY |
|---|---|
| 4. Press Micro Power pad 4 times to set Medium power. (2nd stage) | MEDIUM  --SET TIME |
| 5. Set for 1 minute by pressing 1 Min pad once. | 1 0 0 MIN SEC --PRESS START MEDIUM |
| 6. Press Start pad. |  5 SEC |
| 7. When 1st stage cooking time has elapsed. oven automatically switches to 2nd stage cooking. |  1 0 0 MIN SEC |
| 8. When 2nd stage cooking time has elapsed. oven beeps 5 times and shuts off. | ENJOY YOUR MEAL |

3. Turbo Defrost

| OPERATION | SCROLL DISPLAY |
|--|--|
| 1. Set the weight for 1 kg by pressing 1.0kg pad. | 1.0kg  ** --PRESS START |
| 2. Press Start pad. |  11 00 MIN SEC  ** |
| 3. Press Stop/Reset pad twice. Oven shuts off. Time of day or colon appears in the display. | |

4. One Touch Cooking

| OPERATION | SCROLL DISPLAY |
|--|--|
| 1. Press STEW pad. | |
| | --PRESS START |
| 2. Press Start pad. |  15 00 MIN SEC |
| 3. When cooking time has elapsed. Oven beeps 5 times and shuts off. | ENJOY YOUR MEAL |

5. To set Child Safety Lock

| OPERATION | SCROLL DISPLAY |
|---|----------------|
| 1. Press Start pad 3 times continuously. "LOCK" appears in the display. | * LOCK |

6. To Reset Child Lock

| OPERATION | SCROLL DISPLAY |
|--|----------------|
| 1. Press Stop/Reset pad 3 times continuously. Time of day or colon appears in the display. | 11:25 |

7. Demonstration Mode






The demonstration mode designed for retail store display. It is not designed for home use. Cooking will not operate during demonstration mode.

To set demonstration mode

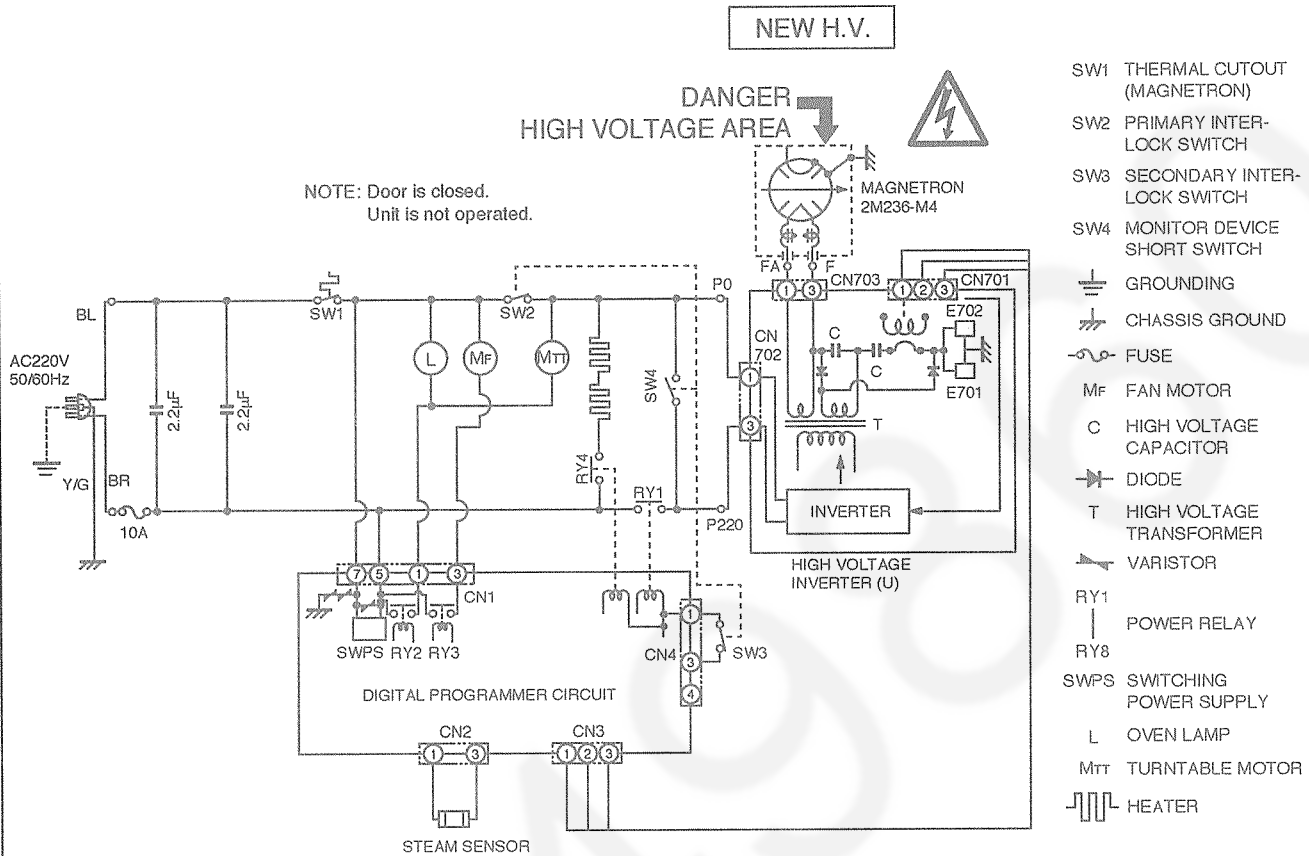
| OPERATION | SCROLL DISPLAY |
|--|--|
| 1. Press Clock pad 3 times continuously. Note. To cancel demonstration mode. press Clock pad 3 times continuously. | WORD PROMPTING DEMO MODE --PRESS ANY KEY |

8. Sensor Cooking

NOTE: Make sure that the outer panel is installed before Sensor Cooking Test, since Auto Sensor function does not operate properly without the outer panel.

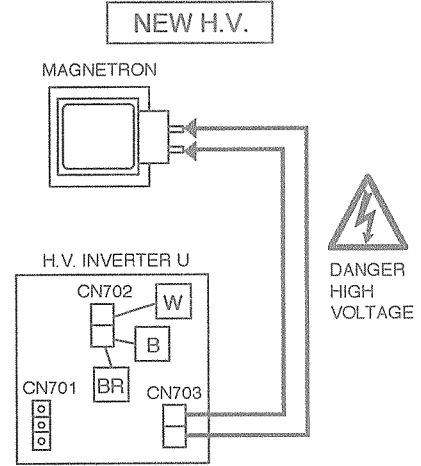
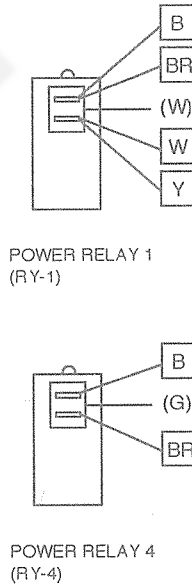
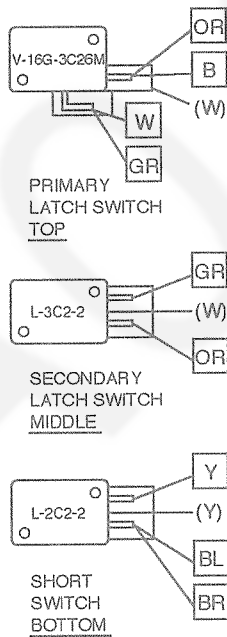
| OPERATION | SCROLL DISPLAY |
|---|---|
| 1. Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a oven glassware or ceramic utensil, place the oven glassware or ceramic utensil in the center of the oven. | |
| 2. Tap Sensor Reheat pad. | SENSOR REHEAT --PRESS START  |
| 3. Tap Start pad. |  AUTO  |
| 4. The steam sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped. Sensor Brown Cooking (T1) automatically switches to time cooking (T2). "AUTO" disappears with beep sounds and the remainder of cooking time appears in display window. NOTE: Cooking time will vary depending on the water temperature, the shape of beaker or the power source voltage. |  MIN 6 SEC  MIN 21 SEC |
| 5. When the balance of cooking time has elapsed, oven stops and beeps five times. | ENJOY YOUR MEAL |

4 SCHEMATIC DIAGRAM (HNE, LNK, TNE)



WIRING DIAGRAM

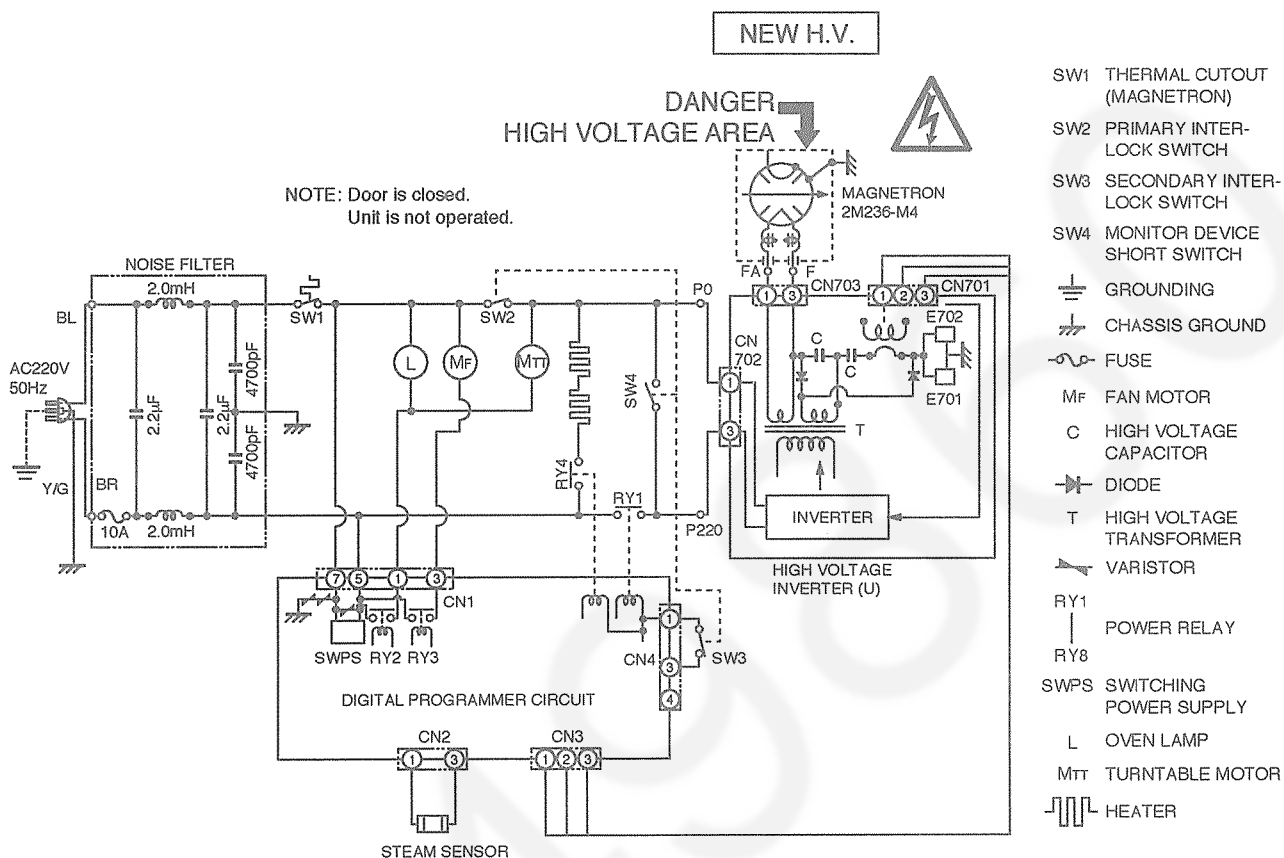
NOTE: *When replacing, check the lead wire colour as shown.
*Colours shown by () indicate colours of lead wire connector housing.



| SYMBOL | COLOUR |
|--------|--------|
| OR | ORANGE |
| BL | BLUE |
| BR | BROWN |
| W | WHITE |
| Y | YELLOW |
| R | RED |
| GR | GRAY |
| B | BLACK |

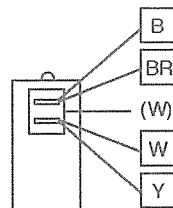
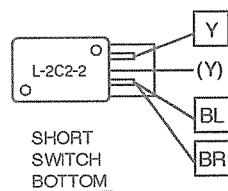
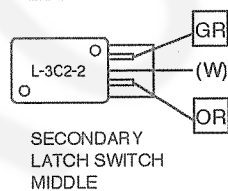
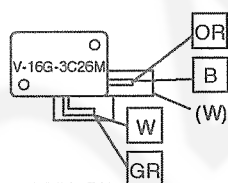
S-4J0 HNE
M100

5 SCHEMATIC DIAGRAM (XNE)

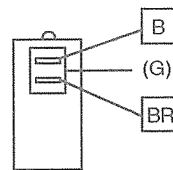


WIRING DIAGRAM

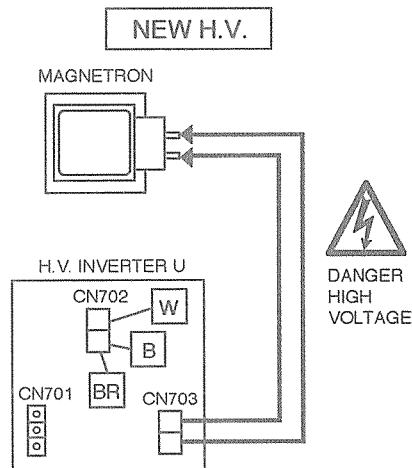
NOTE: *When replacing, check the lead wire colour as shown.
*Colours shown by () indicate colours of lead wire connector housing.



POWER RELAY 1 (RY-1)



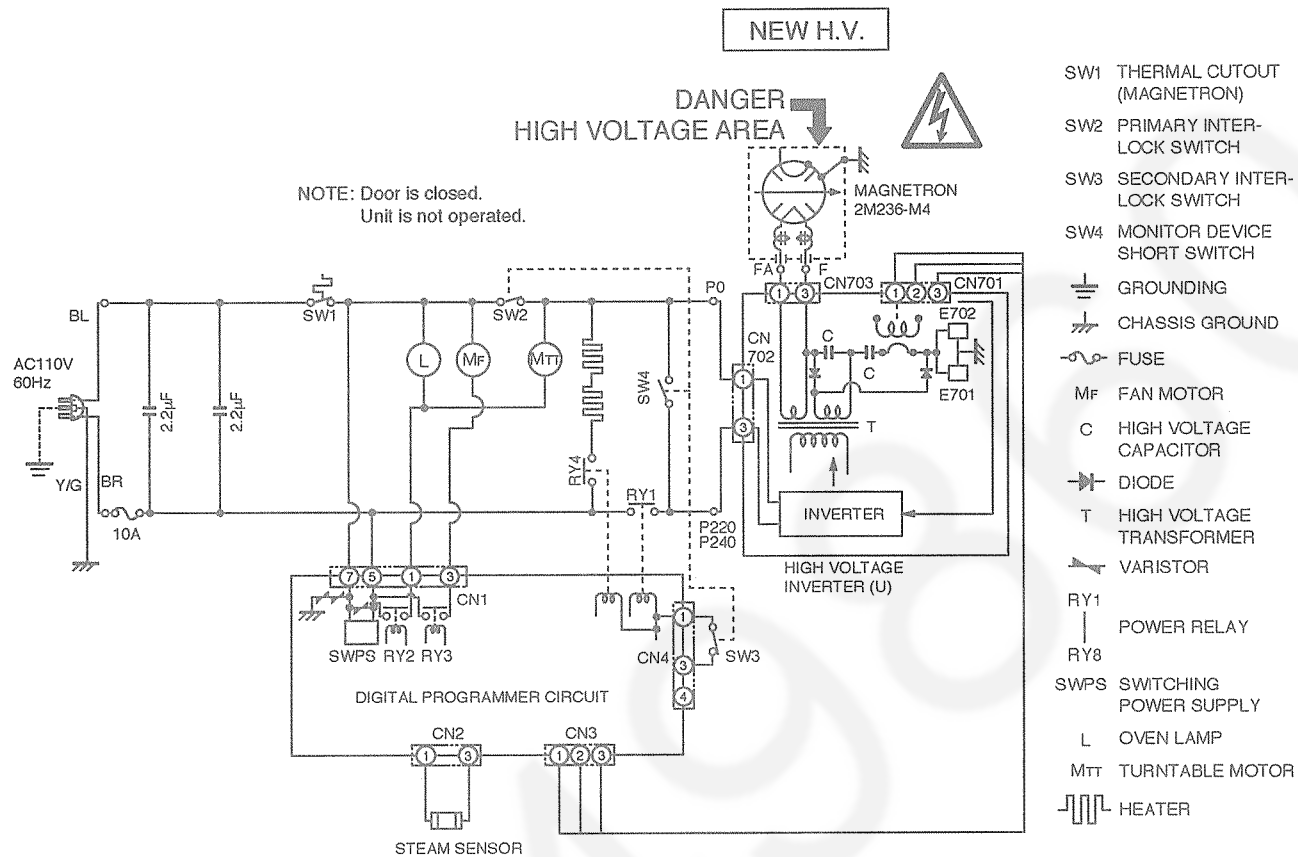
POWER RELAY 4 (RY-4)



| SYMBOL | COLOUR |
|--------|--------|
| OR | ORANGE |
| BL | BLUE |
| BR | BROWN |
| W | WHITE |
| Y | YELLOW |
| R | RED |
| GR | GRAY |
| B | BLACK |

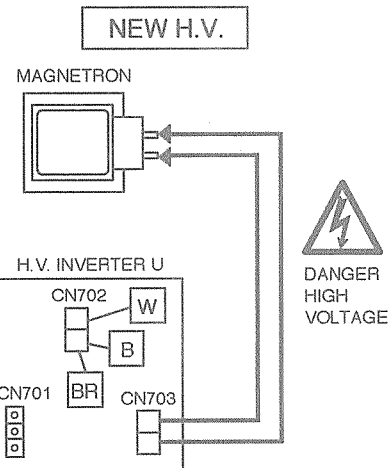
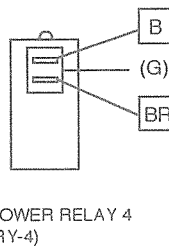
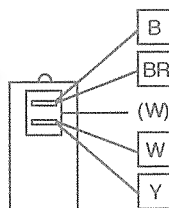
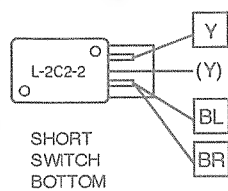
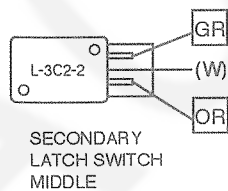
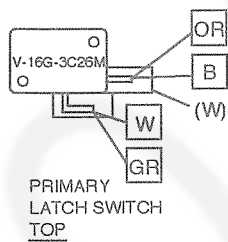
S-4J0 XNE
M101

6 SCHEMATIC DIAGRAM (WNT)



WIRING DIAGRAM

NOTE: "When replacing, check the lead wire colour as shown."
"Colours shown by () indicate colours of lead wire connector housing."



| SYMBOL | COLOUR |
|--------|--------|
| OR | ORANGE |
| BL | BLUE |
| BR | BROWN |
| W | WHITE |
| Y | YELLOW |
| R | RED |
| GR | GRAY |
| B | BLACK |

S-4J0 WNT
M102

7 DESCRIPTION OF OPERATING SEQUENCE

7.1. Variable power cooking control

HIGH VOLTAGE INVERTER POWER SUPPLY (U) controls output power by the signal from Digital Programmer Circuit (DPC). Power relay 1 stays on but the inverter drive signal to control its output power.

NOTE 1: 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.

NOTE 2: If microwave cooking is over 8 minutes with HIGH power, fan motor rotates for 1 minute after cooking to cool oven and electric components.

7.2. Grill cooking

The digital programmer circuit generates the power relay 4 control signal at ON time during grill cooking.

7.3. Combination cooking

Combination cooking is accomplished by microwave and grill cooking. The digital programmer circuit controls ON-OFF time of power relay 1 and 4 as shown in the table.

NOTE: After grill and combination cooking, fan motor rotates for 1 minute to cool oven and electric components.

7.4. Auto Defrost, One Touch Menu and Auto Reheat Control

When those auto control feature is selected and Start pad is pressed:

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

NOTE: After one touch menu and auto reheat cooking, fan motor rotates for 1 minute to cool oven and electric components.

| POWER SETTING | OUTPUT POWER(%) APPROX. | RY-1 | INVERTER CONTROL SIGNAL |
|---------------|-------------------------|---------|-------------------------|
| HIGH | 100 % | stay ON | stay ON |
| MEDIUM-HIGH | 70 % | stay ON | stay ON |
| MEDIUM | 55 % | stay ON | ON/OFF |
| MEDIUM-LOW | 30 % | stay ON | ON/OFF |
| LOW | 10 % | stay ON | ON/OFF |
| DEFROST | 30 % | stay ON | ON/OFF |

| GRILL NO. | HEATER (RY-4) | |
|-----------|---------------|-----------|
| | ON (SEC) | OFF (SEC) |
| 1 | 33 | 0 |
| 2 | 26 | 7 |

| Combination No. | HEATER (RY 4) | | Microwave (RY 1) | |
|-----------------|---------------|-----------|------------------|-----------|
| | ON (SEC) | OFF (SEC) | ON (SEC) | OFF (SEC) |
| 1 | 27 | 6 | 6 | 27 |
| 2 | 21 | 12 | 12 | 21 |
| 3 | 14 | 19 | 19 | 14 |

Turbo Defrost

| WEIGHT SELECTED | COOKING TIME |
|-----------------|-----------------|
| 1.0 kg | 11 min. 00 sec. |

One Touch Menu

| CATEGORY | COOKING TIME |
|----------------|-----------------|
| Vegetable Stew | 10 min. 00 sec. |
| Meat Stew | 8 min. 00 sec. |

7.5. One touch cooking (Auto sensor cooking)

Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.

All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As a food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult Variable Power Microwave Cookbook for procedures.

Explanation of the Auto Sensor Cooking process

1. During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 seconds is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
2. **T1 time** The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
3. **T2 time** When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

Balance of cooking time (T2 time)

The balance of cooking time which is called T2 time, can be calculated by the following formula.

T2 time (in sec.) = T1 time X K factor

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varies resulting in T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Vegetables:

$$\begin{aligned}
 T2 &= T1 \times K \\
 &= 2 \text{ min. and } 40 \text{ sec.} \times 0.1 \\
 &= 160 \text{ sec.} \times 0.1 \\
 &= 16 \text{ sec.}
 \end{aligned}$$

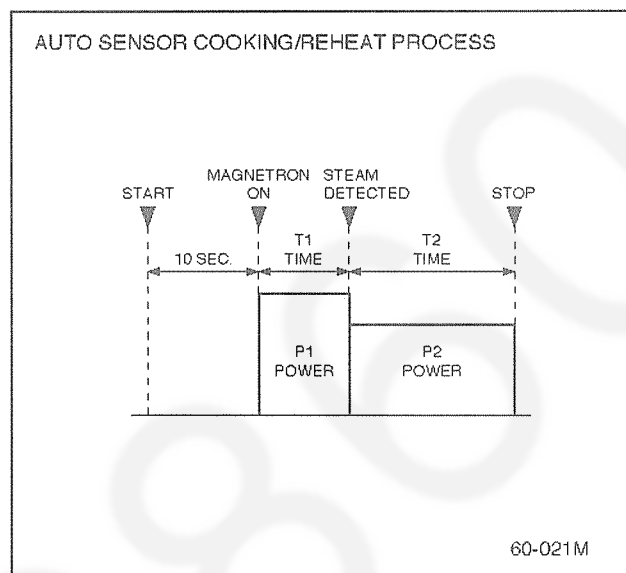
7.6. Auto Sensor Reheat

Auto Sensor Reheat is a quick and easy way to reheat

refrigerator and room temperature foods.

Simply press the reheat pad. There is no need to select power level and cooking time.

NOTE: The Auto Sensor Reheat process is same as Auto Sensor Cooking process.



One Touch Cooking (Auto Sensor Cook)

| Category | P1 Power | P2 Power | K factor Standard |
|------------|----------|----------|-------------------|
| Vegetables | HIGH | LOW | 0.1 |

Sensor Reheat

| Category | P1 Power | P2 Power | K factor Standard |
|---------------|----------|----------|-------------------|
| Sensor Reheat | HIGH | M. HIGH | 0.1 |

8 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. Check the grounding

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

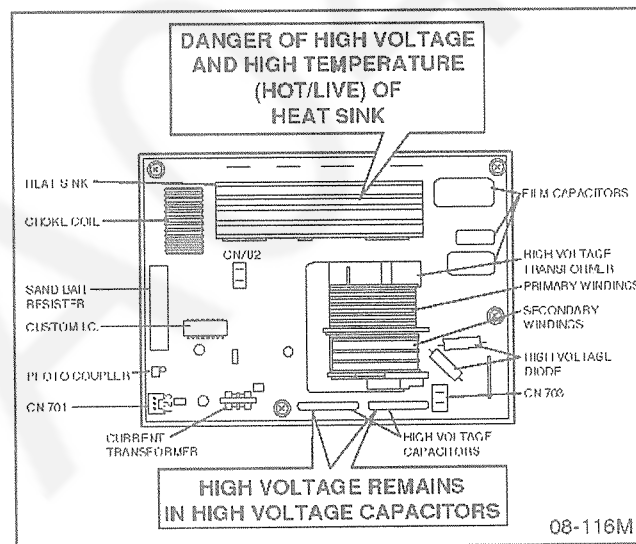
8.2. Inverter Warnings (NEW H.V.)

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

This High Voltage Inverter Power Supply circuit handles very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however the current is extremely large and so danger exists by its high current and high voltages.

The aluminum heat sink is also energized with high voltage (HOT), so do not touch when AC input terminal is connected to the power line because one of the IGBT switching power devices (Collector) is directly connected to the Aluminum heat sink.

The Aluminum heat sink may be HOT by heat energy; therefore, extreme care should be taken during servicing and replacing.

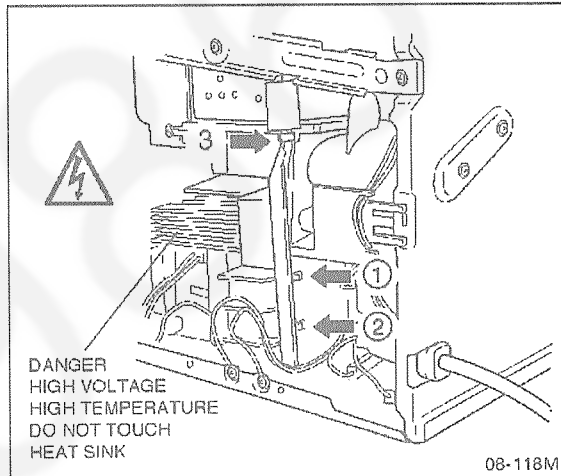


08-116M

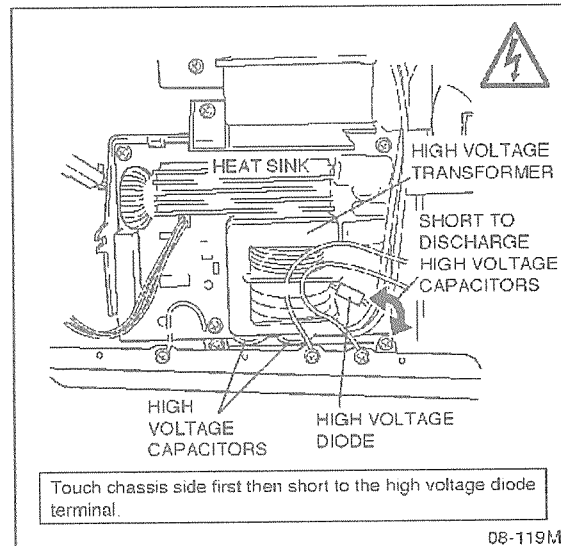
WARNING OF DISCHARGING HIGH VOLTAGE CAPACITORS

Warning about the electric charge in the high voltage capacitors. For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and remove air guide cover then short the Inverter high voltage diode terminal to the chassis ground with an insulated handle screwdriver to discharge. Please make sure to touch chassis ground side first then short to the output terminals.



08-118M



08-119M

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the primary, and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with oven energized.

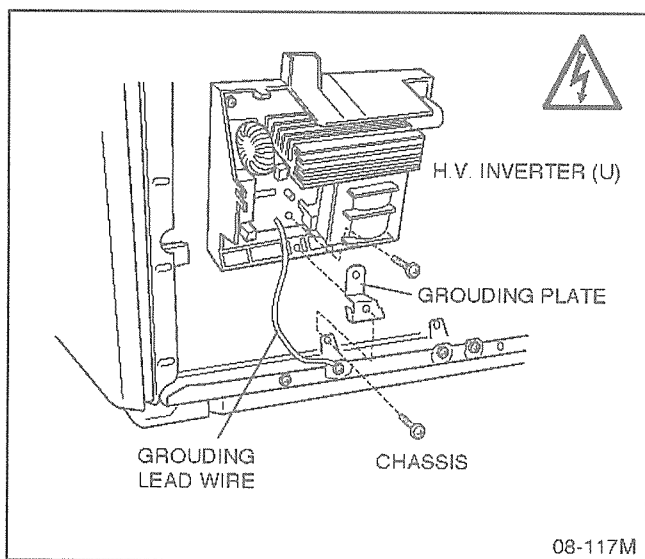
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

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

WARNING OF INVERTER POWER SUPPLY (U) GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. This High Voltage Inverter Power Supply circuit board must have a proper chassis ground by the grounding bracket to the chassis ground; otherwise, this H.V. Inverter circuit board will expose very high voltage and cause extreme DANGER! Be sure to have proper grounding by the grounding plate and screws.



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

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

8.6. Confirm after repair

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

CAUTION MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE

1. The following components have potentials above 250V while the appliance is operated.
 - * Magnetron
 - * Heat sink of H.V. INVERTER (U)
 - * High voltage transformer (H.V. INVERTER (U))
 - * High voltage diode (H.V. INVERTER (U))
 - * High voltage capacitors (H.V. INVERTER (U))
 Pay special attention on these portions.
2. When the appliance is operated with the door hinge or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm². After repair or exchange, it is very important to check if magnetron and the door hinge is correctly fixed.

8.3. When parts must be replaced, remove the power plug from the outlet.

8.4. When the 10A 250V fuse is blown due to the operation of short switch:

WARNING

When the 10A 250V. fuse is blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay 1 (RY1) when the continuity check reads shorted contacts (1-2).

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

9 DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

9.1. Magnetron

1. Discharge the high voltage capacitor.
2. Remove 2 screws of bracket.
3. Remove 3 screws of air guide.
4. Disconnect 2 high voltage lead wires from magnetron filament terminals.
5. Remove a screw holding thermal cutout.
6. Remove 2 screws holding thermal cutout bracket.
7. Remove 4 screws holding 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

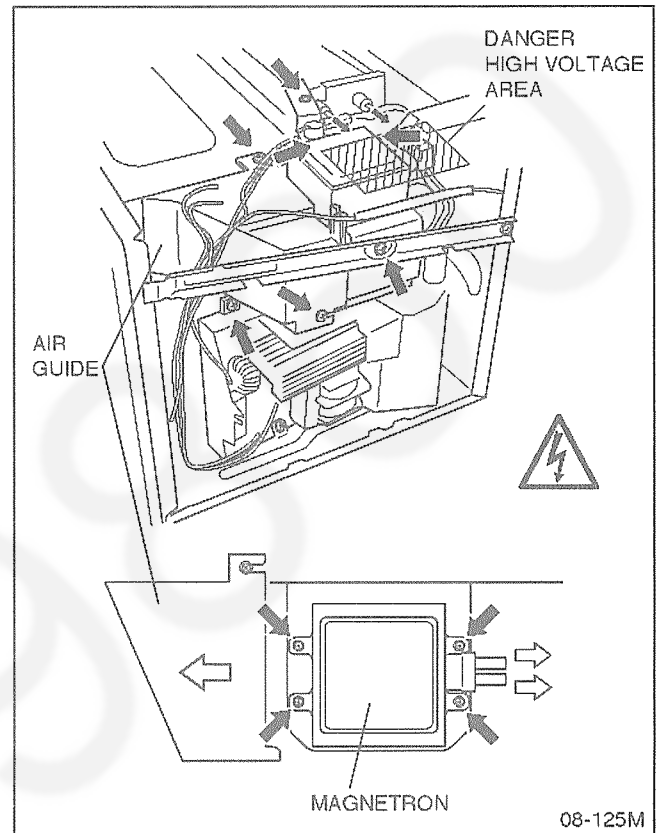
When replacing the magnetron, be sure the antenna gasket is in place.

NOTE

Magnetron used for this model is unique type for inverter power supply system. Make sure to use the one as listed in the part list.

NOTE: Magnetron used for this modes is unique type for inverter power supply system. Make sure to use the one as listed in the part list.

15. Tighten a screw to secure grounding lead wire.
16. Connect CN701, CN702 and CN703 lead wires.

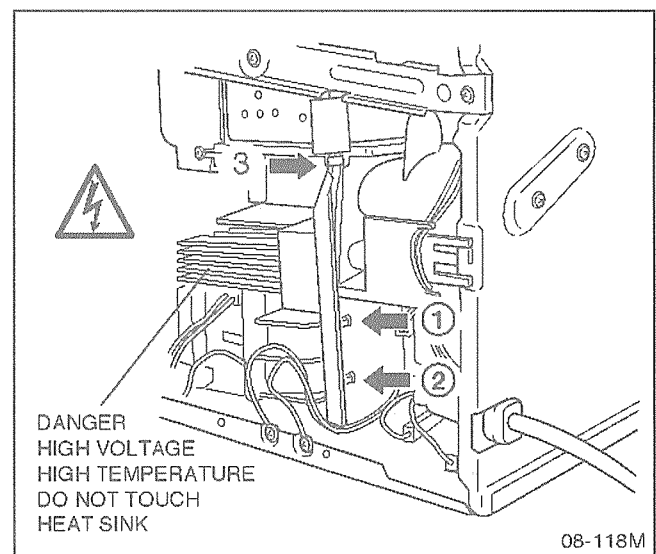


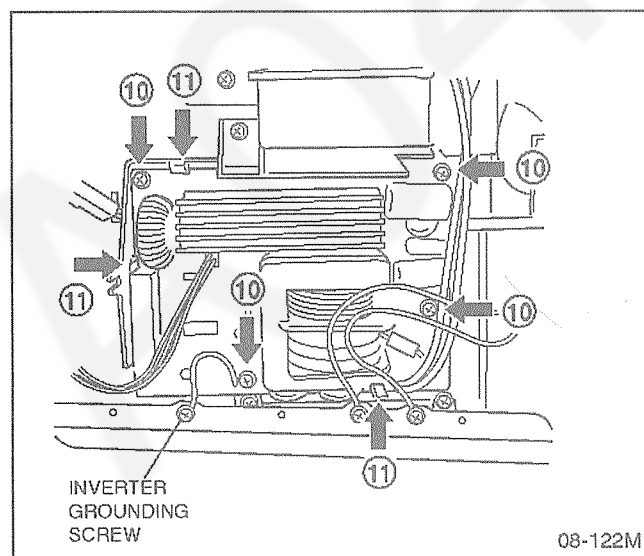
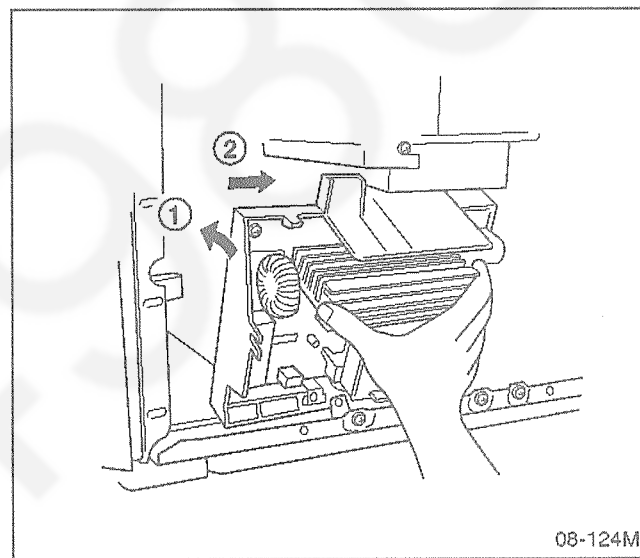
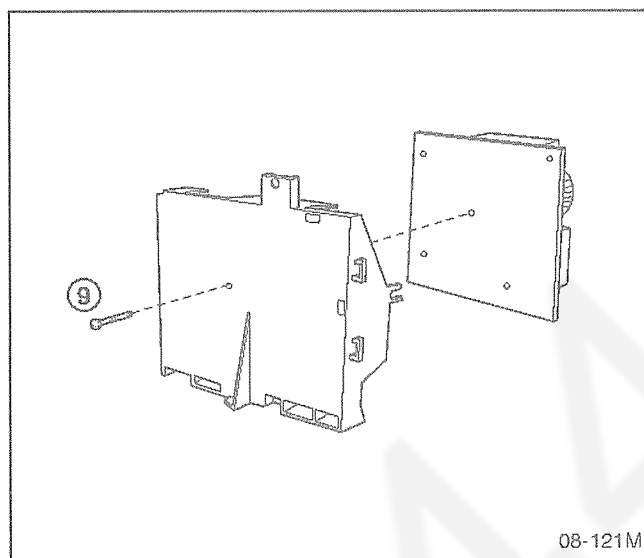
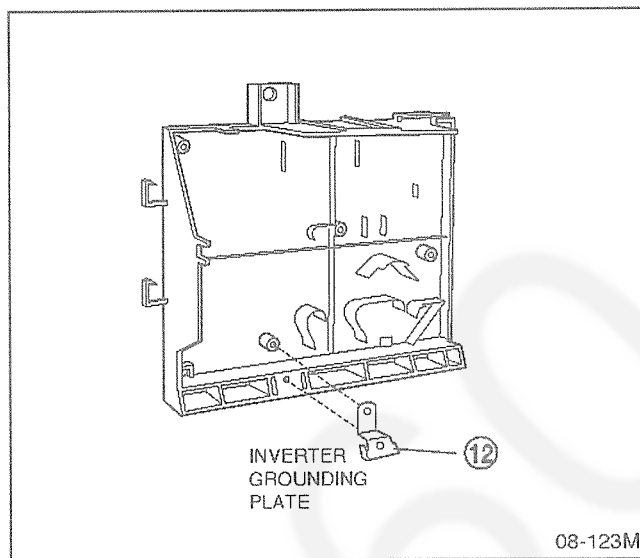
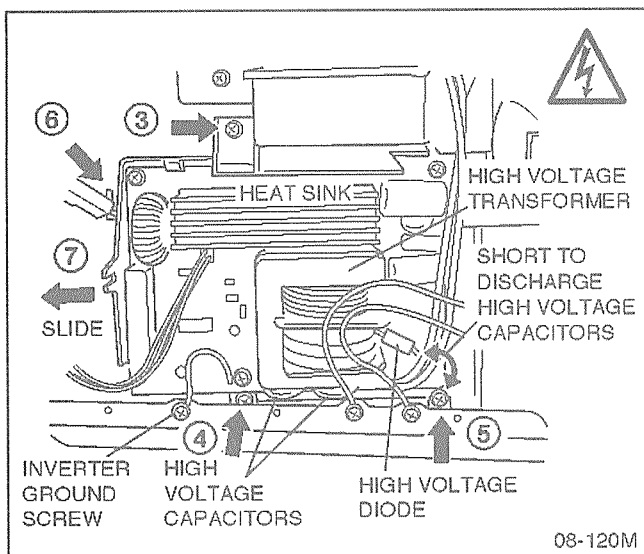
9.2. High Voltage Inverter Power Supply (U) (NEW H.V.)

1. Release 2 clips of air guide 1, 2.
2. Release wire holder holding high voltage leads 3.
3. Discharge high voltage.
4. Remove a screw holding grounding/earthing lead wire to chassis.
5. Remove screws 3, 4 and 5.
6. Remove turntable motor lead wires from its hook 6.
7. Slide inverter (U) to left to release it from chassis.
8. Unplug CN701, CN702 and CN703 connectors.

NOTE: Do not pull by lead wires but make sure to pull housing case unless PCB or lead wire may break.

9. Remove a screw 9 holding high voltage transformer to its bracket from back.
10. Remove 4 screws 10 holding H. V. Inverter (U).
11. Release 3 tabs 11 to remove H. V. Inverter (U).
12. Make sure to place grounding plate 12 in its place when replacing H. V. Inverter (U).
13. When installing H. V. Inverter (U), make sure to insert 2 tabs on rear side. First place H. V. Inverter (U) approx. 2 cm left side and then slide right to correct position to secure grounding screws.
14. Tighten 3 screws to secure H. V. Inverter (U) with bracket.





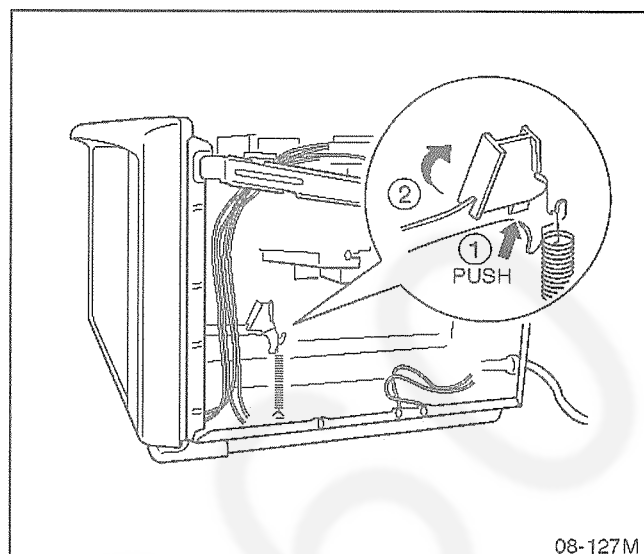
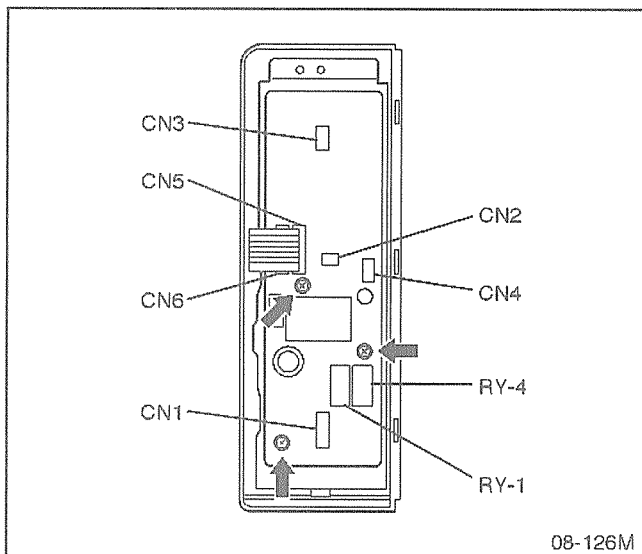
9.3. Digital programmer circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body, before handling the DPC.

1. Disconnect all connectors from D.P.C.
2. Remove 2 screws holding escutcheon base and slide the escutcheon base upward slightly.
3. Release CN5 and CN6 connector's lock of DPC by pushing both levers to inside and pull them upward, and remove flat cable of membrane key board.
4. Remove 3 screws holding DPC.

To replace membrane key board

5. Remove escutcheon bracket from escutcheon base by freeing 4 catch hooks on the escutcheon base.
6. On some models, the key board is not replaced with individual parts. Instead, the entire escutcheon base assembly must be replaced. Refer to parts list.



9.4. Door assembly

1. Remove H. V. Inverter (U) refer to previous column 2.
2. Remove door spring right side.
NOTE: Please hold door unless door become fall down.
3. Remove door arm lever by pushing tab and turn clock wise.
4. Remove door spring left.
5. Loose 2 screws holding left hinge.
6. Slide out left hinge to release hinge pin of the door.
7. Slide out door arms from the oven to disconnect door assembly.
8. Remove door arms from the door assembly.

To remove door C

9. Release catch hooks from hinge pin side.

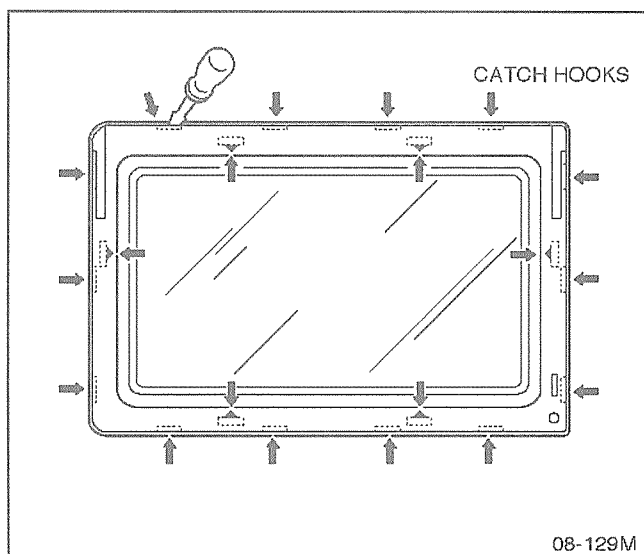
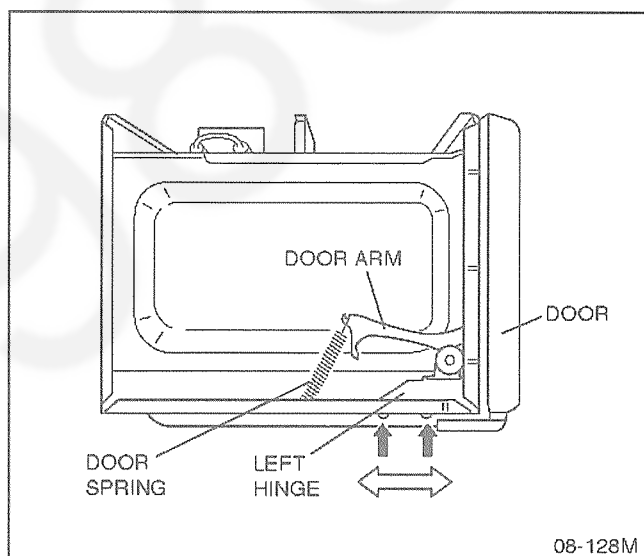
To remove door E

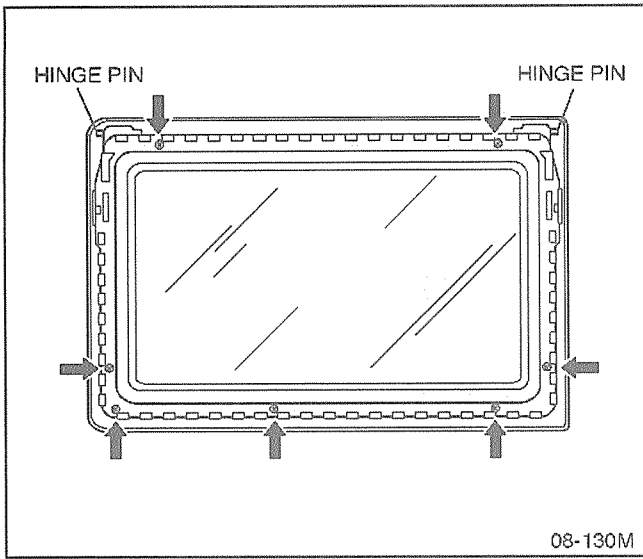
10. Remove screws holding door E to door A assembly.

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent an excessive microwave leakage. Adjustment of the door assembly.

11. When mounting the door to the oven, be sure to adjust the door parallel to the oven face plate by moving hinges back or front.

NOTE: Upper portion of door A should firmly touch to oven face plate without pushing.

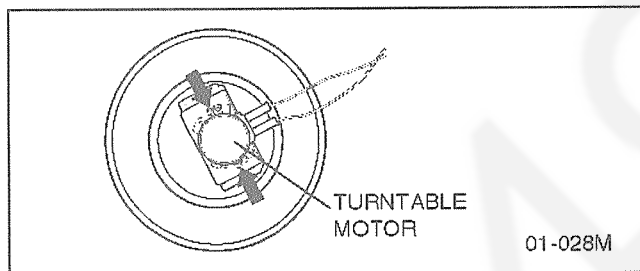
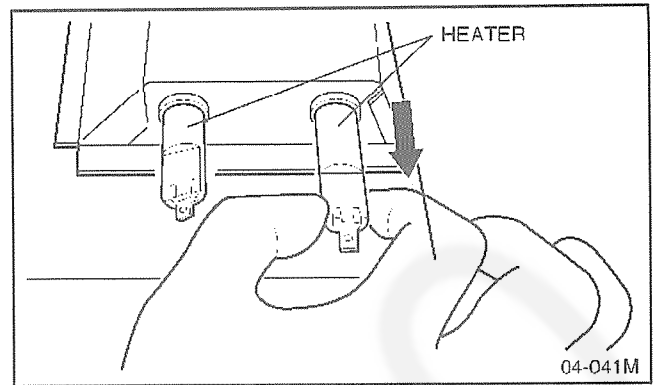
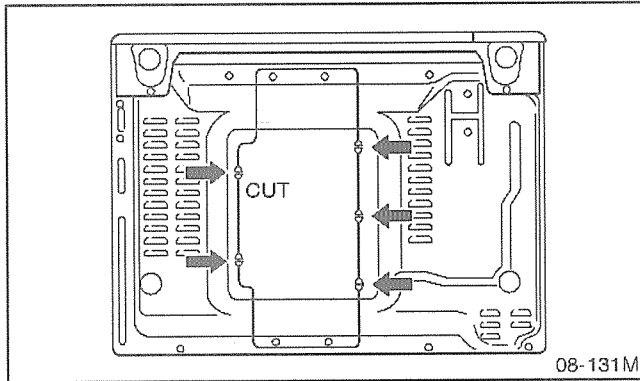




9.5. Turntable motor

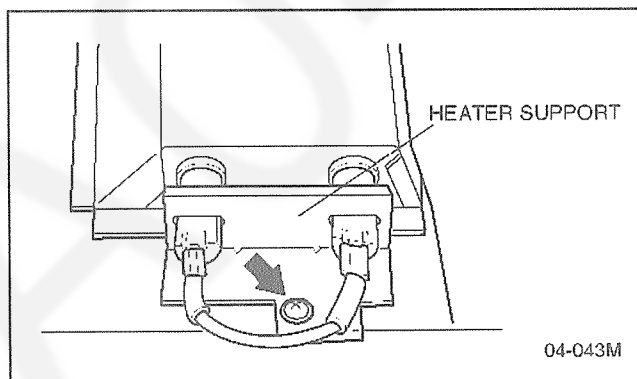
1. Breaking off at 5 spots indicated by allow with a cutter or like.
2. Remove 2 screws holding motor cover.
3. Disconnect 2 lead wires from turntable motor.
4. Remove 2 screws holding turntable motor.

NOTE: Make sure to remove sharp barrs at 5 spots to avoid possible injury.



9.6. Quartz heater

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



10 COMPONENT TEST PROCEDURE

DANGER [NEW H.V.]

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink 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.

10.3. Magnetron (NEW H.V.)

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.

NOTE

Magnetron used for this model is unique type for inverter power supply system. Make sure to use the one as listed in the part list.

10.1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay 1) Interlocks.

1. Unplug the lead connectors to Power Relay 1 and verify continuity of the power relay 1 1-2 terminals.
2. Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
3. Test the continuity of switches at door opened and closed positions with ohm meter (low scale).

Normal continuity readings should be as follows.

| | Door Opened | Door Closed |
|------------------------|------------------------|------------------------|
| Primary Latch Switch | $\infty \Omega$ (open) | 0 Ω (close) |
| Secondary Latch Switch | $\infty \Omega$ (open) | 0 Ω (close) |
| Power Relay 1 | $\infty \Omega$ (open) | $\infty \Omega$ (open) |

10.4. Membrane key board (Membrane switch assembly)

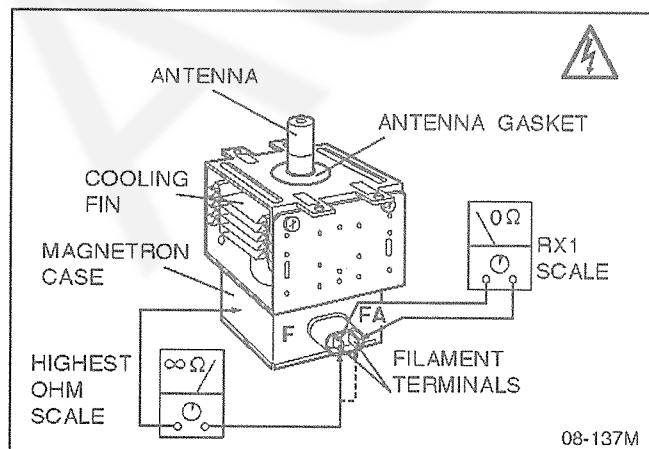
Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

10.2. Short Switch / Monitor Circuit

1. Unplug lead wires from H. V. Inverter primary terminals.
2. Connect test probes of ohm meter to the disconnected leads which were connected to H. V. Inverter.
3. Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.

Normal continuity readings should be as follows.

| Door Opened | Door Closed |
|-------------|-----------------|
| 0 Ω | $\infty \Omega$ |

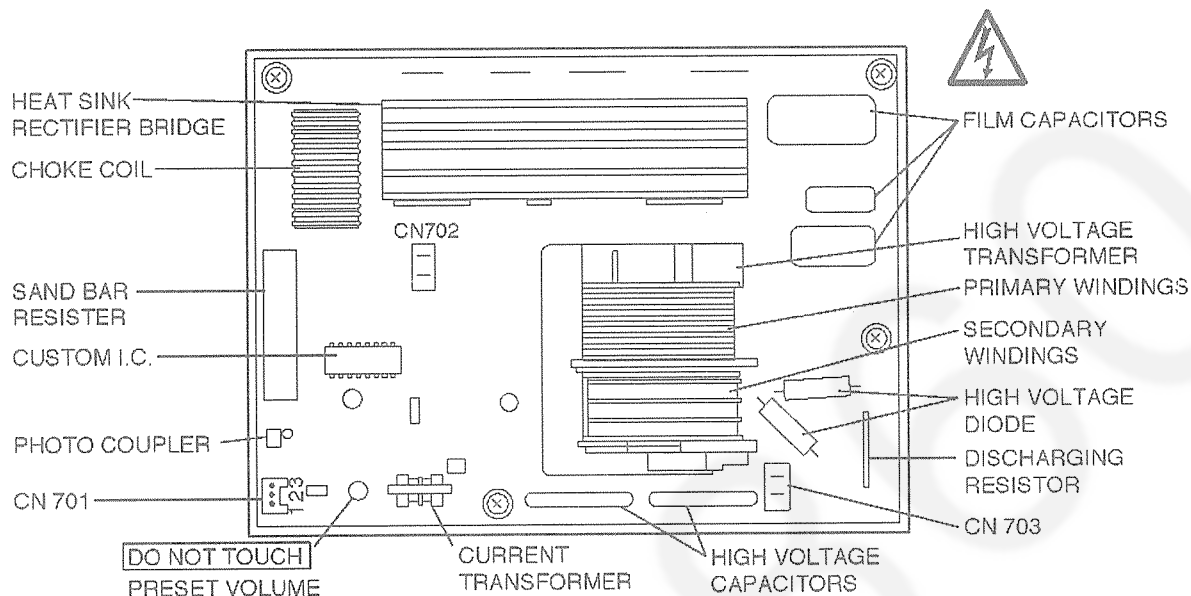


10.5. Inverter Power Supply (U) (NEW H.V.)

DO NOT try to REPAIR this H. V. Inverter power supply (U).

Replace as whole H. V. Inverter (U) Unit.

Refer to warning on page 2.



08-132M

10.6. Inverter Power Supply (U) (NEW H.V.)

DANGER HIGH VOLTAGE

Test if failufe codes of H97 or H98 appears by doing the following procedure. It is recommended to used an AC line input current Ampare meter for testing.

Test 1

- Place 1 liter of water load into oven cavity.
- Unplug 2 pin H. V. lead wire connector CN703 from magnetron tube.
- Program oven at High power for 1 minute and press start.
 - After approx. 15 seconds, oven displays H98 and stops oven.
 - During oven operation, input current is approx. at 0.5 to 1.0A (1.0 to 1.7A for 110V mode). If input current is OK, please proceed to test 2.

| | INPUT AMPARE | FAILURE CODE |
|--------------|--|--------------|
| Unplug CN703 | 0.5 to 1A for 220/230/240V model 1.0 to 1.7A for 110V model | H98 |

Test 2

Continued from Test 1

- Unplug 3 pin connector, CN701 CN703 remain unplug.
- Set oven at High power for 1 minute and start.
 - After approx. 25 seconds, oven displays H97 and stops oven.
 - During oven operation, input current should be less than 0.4A(0.4 to 0.8A for 110V model).

| | INPUT AMPARE | FAILURE CODE |
|--------------|---|--------------|
| Unplug CN701 | less than 0.4A for 220/230/240V model less than 0.4 to 0.8A for 110V model | H97 |

If both 1 and 2 are OK, the Inverter Power Supply (U) can be determined OK.

10.7. Steam Sensor and Digital Programmer Circuit

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.

- Place a water load (150 cc) in the oven.
- Tap Sensor Reheat pad.
- Tap Start Pad.
- Steam Sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped.
- T1 time cooking automatically switches to remaining time cooking (T2).
- The remaining cooking time (T2) appears in display window. If the following cooking time appears, Steam Sensor function is normal.

| T1 TIME | T2 TIME (Remaining cooking time) |
|------------------------|-------------------------------------|
| 1 Min. 30 Sec. ~ 4 Min | 6 Sec ~ 21 Sec. |

11 MEASUREMENTS AND ADJUSTMENTS

11.1. Adjustment of Primary latch switch, Secondary latch switch and short switch

1. When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.
- NOTE:** No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.
2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in table so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
 3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

11.2. Measurement of microwave output

The output power of 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 accurate as possible.

1. 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)
2. Place the beaker on the center of glass cook plate. Set the oven for High power and heat it for exactly one minute.
3. When one minute is elapsed, open the door and take out

beaker.

4. Stir the water again and read the temperature of the beaker (recorded as T2).
5. The normal temperature rise at High power position for each models is as shown in table.

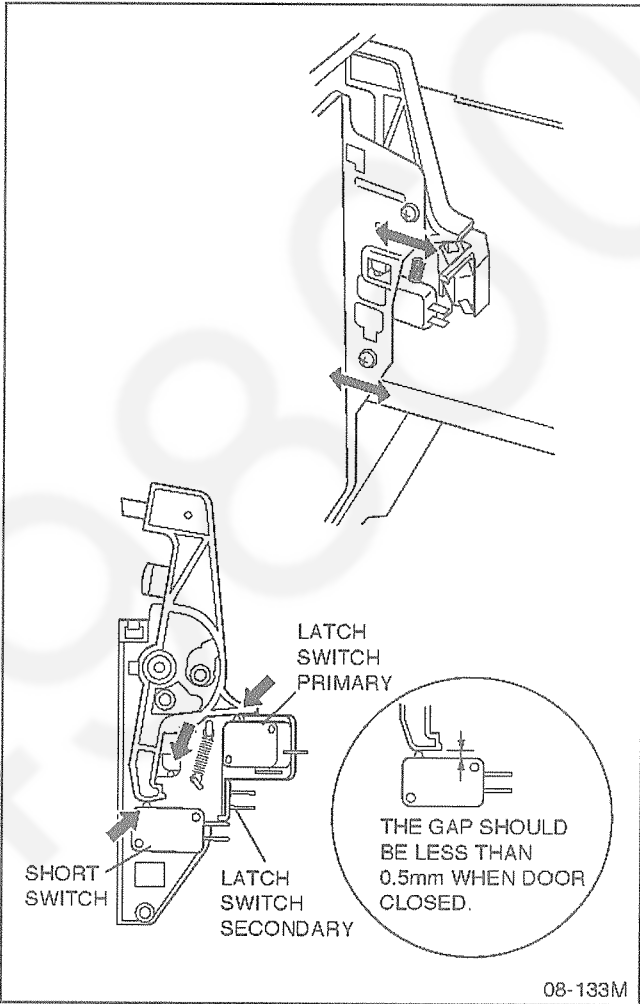


TABLE (1ℓ-1 min. test)

| OUTPUT | TEMPERATURE RISE |
|--------|------------------|
| 900W | Min. 8.0°C |
| 1000W | Min. 8.6°C |



12 TROUBLESHOOTING GUIDE (NEW H.V.)

DANGER

1. **DO NOT try to REPAIR this H.V.Inverter power supply (U). Replace as whole H.V.Inverter (U) Unit.**
2. **DO NOT RE-ADJUST PRESET VOLUME on the H.V.Inverter (U).** It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very large current with very high voltage. Off alignment of inverter board operation will be dangerous.
3. Ensure proper grounding before checking for trouble.
4. Be careful of the high voltage circuitry, taking necessary precautions when troubleshooting.
5. Discharge high voltage remains in the H. V. Inverter (U).
6. When checking the continuity of the switches or the H.V.Inverter, 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.
7. 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.
8. 110/220/230/240V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of Digital Programmer Circuit. 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.

(Trouble 1)

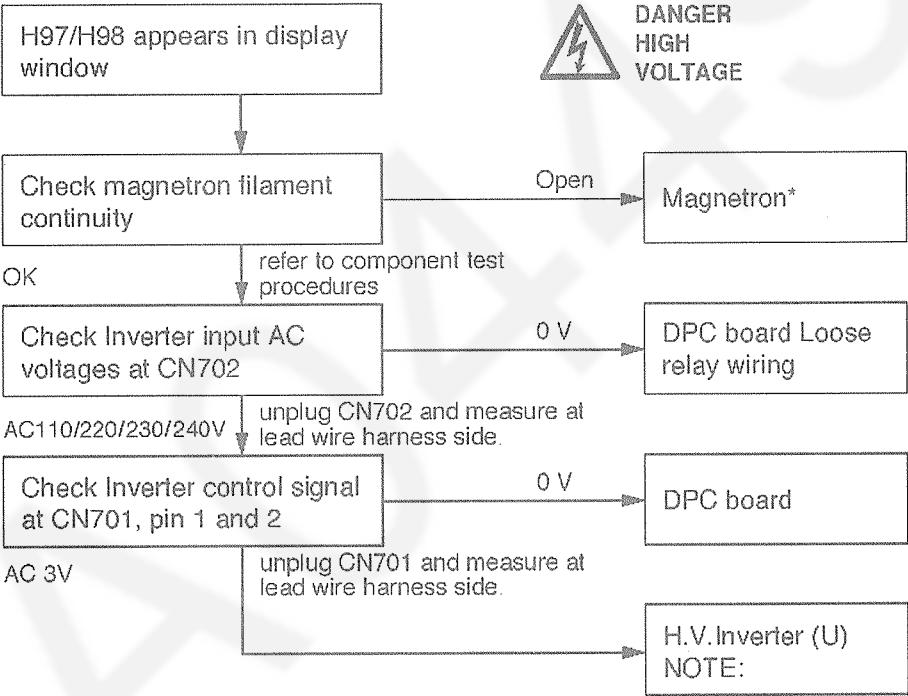
| | SYMPTOM | CAUSE | CORRECTIONS |
|----|--|---|--|
| 1. | Oven is dead. Fuse is OK. No display and no operation at all. | 1. Open or loose lead wire harness 2. Open thermal cutout (Magnetron) 3. Defective DPC | Check fan motor when thermal cutout is defective. |
| 2. | No display and no operation at all. Fuse is blown. | 1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) NEW H.V.  4. Defective H.V.Inverter power supply (U) Refer to component test procedure | Check adjustment of primary, secondary latch switch and short switch including door. |
| | | NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay 1's contacts (between 1 and 2) and if it has continuity, replace power relay 1 also. | |
| 3. | Oven does not accept key input (Program). | 1. Key input is not in sequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC | Refer to operation procedure. Refer to DPC troubleshooting. |
| 4. | Oven lamp and fan motor turn on when oven is plugged in with door closed. | 1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch | Adjust door and latch switches. |
| 5. | Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on) H97/H98 may appears | 1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent. 3. Defective high voltage component NEW H.V.  H.V.Inverter (U) Magnetron 4. Open or loose wiring of power relay 1 5. Defective primary latch switch 6. Defective power relay 1 or DPC | Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting. |

| | SYMPTOM | CAUSE | CORRECTIONS |
|-----|---|---|---|
| 6. | Oven can program but timer does not start countdown. | 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. | 1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit (Intermittent oscillation) 3. Aging change of magnetron | Consult eletrician. Refer to output test procedures by water temperature raising test. |
| 8. | Loud buzzing noise can be heard. | 1. Loose fan and fan motor | |
| 9. | Turntable motor does not rotate. | 1. Open or loose wiring of turntable motor 2. Defective turntable motor | |
| 10. | Oven stops operation during cooking. | 1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout (Magnetron) | Adjust door and latch switches. |
| 11. | Oven returns to plugged in mode after 10 seconds elapses on the Auto sensor cooking mode. | 1. Open or loose wiring of sensor terminal from DPC 2. Open steam sensor 3. Defective DPC | |

Troubleshooting of H.V.Inverter Circuit (U) and Magnetron **NEW H.V.**

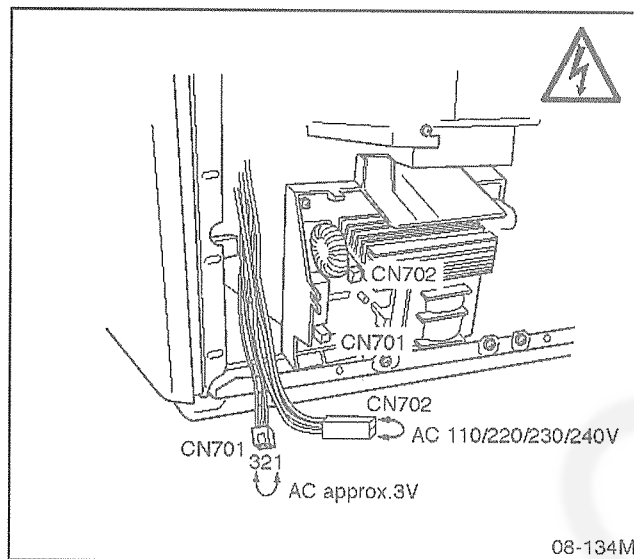
This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97 and H98 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97 and H98.

H97 or H98 appears in display window a short time after start key is pressed and there is no microwave oscillaiton.



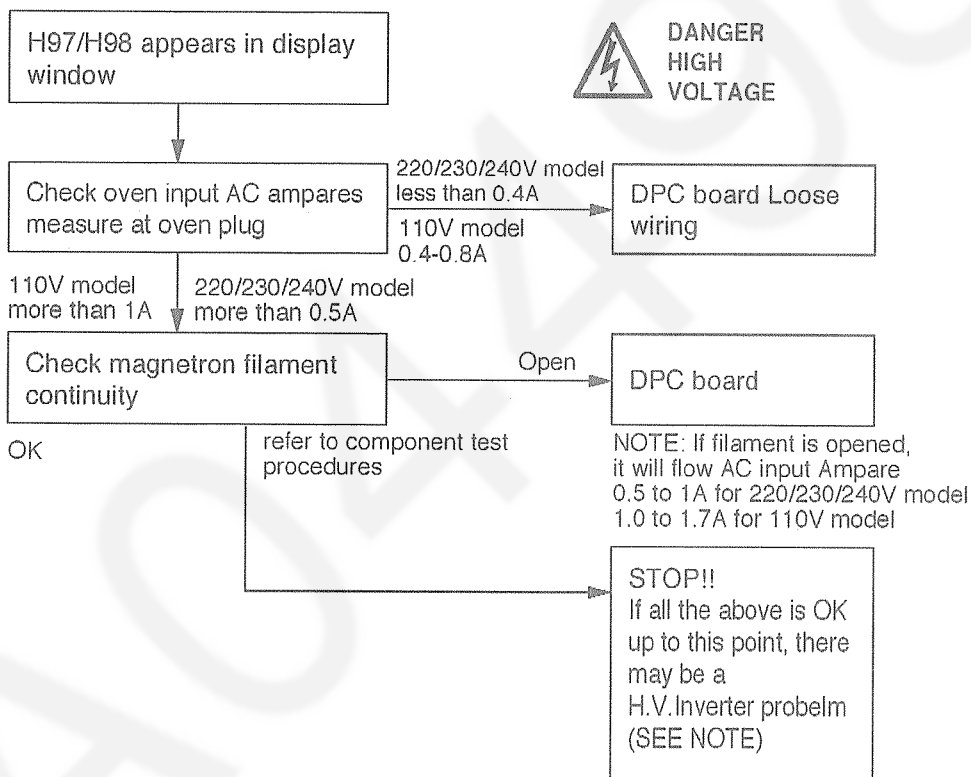
NOTE: DO NOT try to REPAIR this H.V.Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

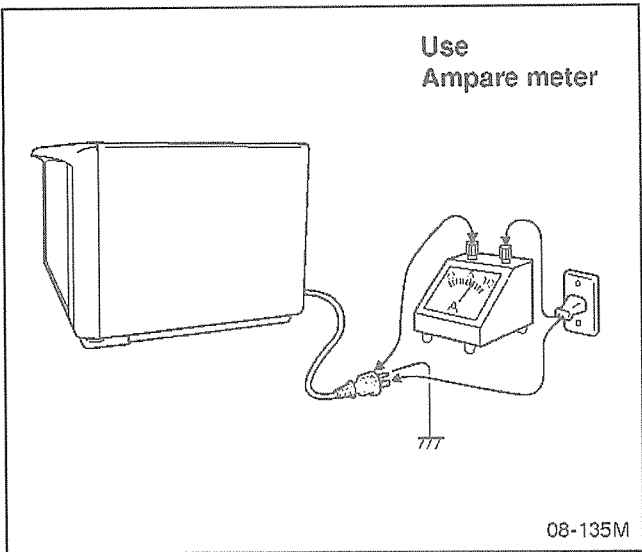


Alternative way to troubleshoot oven with AC Ampare meter used. **[NEW H.V.]**

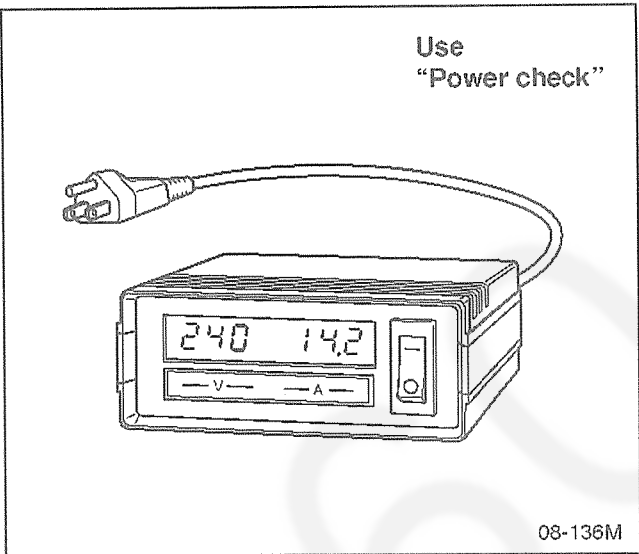
H97/H98 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampare meter used for troubleshooting.



NOTE: DO NOT try to REPAIR this H.V. Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of Inverter board operation is dangerous. Operating a misaligned inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.



OR

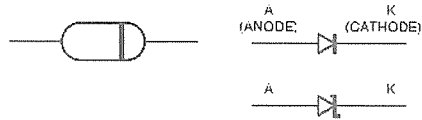


(Trouble 2) Trouble related Digital programmer circuit

| STMTPTOM | STEP | CHECK | RESULT | CAUSE/CORRECTIONS |
|--|------|--|-------------------|--------------------------|
| No display when oven is first plugged in | 1 | Fuse resistor R13 1Ω | Normal | STEP 2 |
| | | | Open | Shorted circuit of IC-12 |
| | 2 | IC-1 pin 3 voltage (Output terminal) | Abnormal | IC-1 |
| | | | Normal ≅ 5V | → IC-1, CX1, DISPLAY |
| No key input | 1 | Membrane switch continuity | Abnormal | Membrane switch |
| | | | Normal | IC-1 |
| No beep sound | 1 | IC-1 pin 8 voltage | Abnormal | IC-1 |
| | | | Normal | BZ, Q310 |
| Power relay A (RY-2) does not turn on even though the program has been set and the start pad is tapped | 1 | IC-1 pin 70 voltage while operation | Abnormal | IC-1 |
| | | | Normal ≅ 5V | → Step 2 |
| | 2 | Short circuit between pin 6 and pin 16 of IC-220 | Still not turn on | RY-2 |
| | | | RY-2 turns on | IC-2 |
| No microwave oscillation at any power setting | 1 | IC-1 pin 11 voltages while operation at high power | Abnormal | IC-1 |
| | | | Normal 5... ≅ 5V | → Step 2 |
| | 2 | Q220 transistor | Abnormal | Q220 |
| | | | Normal | IC-220, RY-1 |
| Dark or unclear display | 1 | Replace display and check operation | Normal | DISPLAY |
| | | | Abnormal | IC-1 |
| Missing or lighting of unnecessary segment | 1 | Replace IC-1 and check operation | Normal | IC-1 |
| | | | Abnormal | DISPLAY |

13 HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



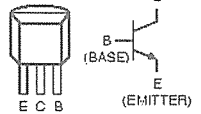
| | FORWARD | REVERSE |
|-----|---------|----------|
| A-K | SMALL | ∞ |

Transistor

NPN Transistor

2SC.....

2SD.....

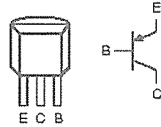


| | FORWARD | REVERSE |
|-----|----------|----------|
| B-E | SMALL | ∞ |
| B-C | SMALL | ∞ |
| C-E | ∞ | ∞ |

PNP Transistor

2SA.....

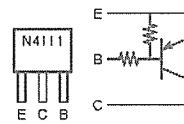
2SB.....



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

Digital Transistor

PNP Transistor

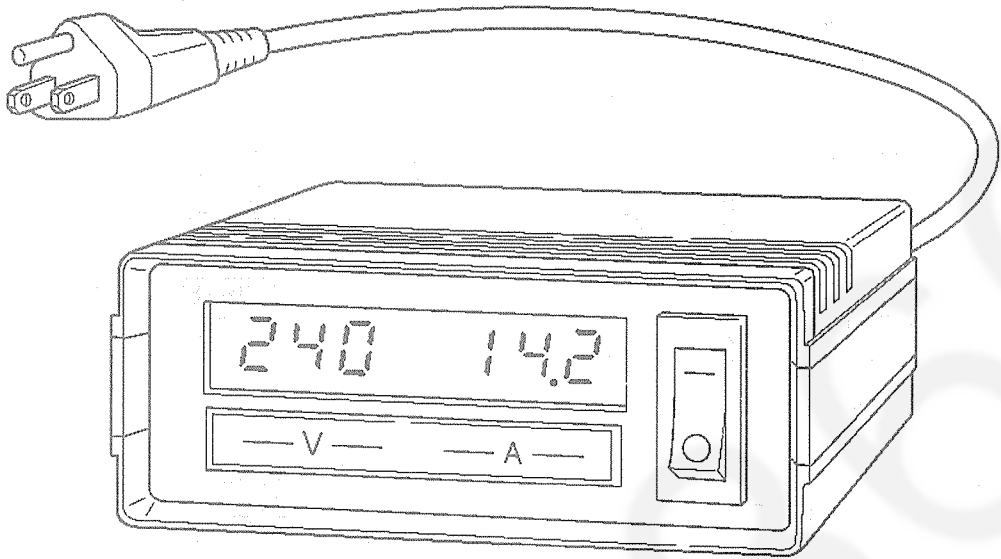


| | FORWARD | REVERSE |
|-----|-----------------------------|-----------------------------|
| E-B | 10k Ω ~ 30k Ω | 10k Ω ~ 30k Ω |
| C-B | 50k Ω ~ 90k Ω | ∞ |
| C-E | 40k Ω ~ 80k Ω | ∞ |

14 INTRODUCING OF TEST JIGS

1. "Power Check" (Microwave Oven Tester)

This tester can be measure both line voltage and amperes at a time for easy and quick testing microwave oven.



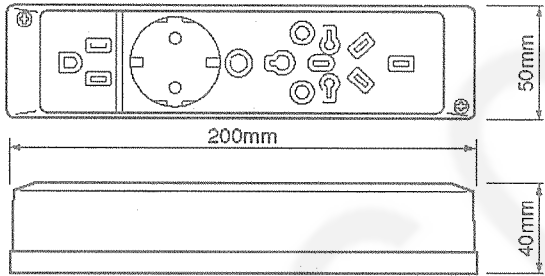
Specifications

| | |
|--|--|
| Dimensions | 133 mm (W) X 150 mm (D) X 57 mm (H) |
| Operating/ Measureing Voltage | 100 -240 V 50/60 Hz |
| Measureing Ampares | 0.1 -15.0 A (up to 20 A for short time operation) |
| Plug and Outlet type | See below |
| Specifications subject to change without notice. | |

Part number/Plug and Outlet type

| Part No. | Plug | Outlet |
|-------------|------|--------|
| A600Z0000AP | | |
| A600Z0000GP | | |
| A600Z0000QP | | |

2. Universal outlet

| Part No. | Available Outlet Type |
|----------|--|
| WCF5901H |  |

3. Stainless steel ruler (150mm) Part No. A130005-150

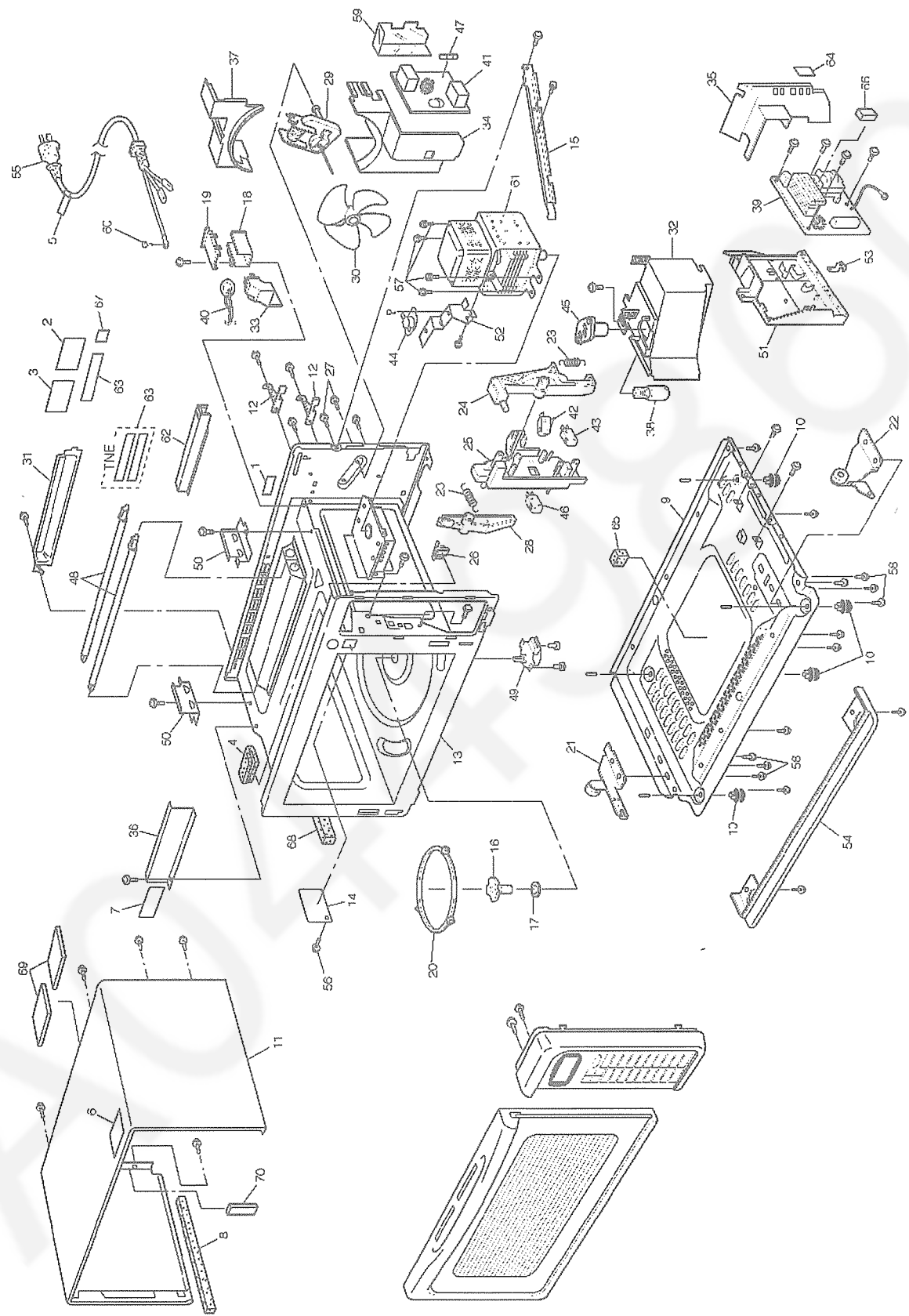
It is convenient to use for adjustment of door. Also it is convenient to use for removing door C.

4. Flourescent light bulb (4W) Part No. A600Z-FL4W

This is convenient for check whether microwave is oscillate or not in a second.

WARNING: Use it with full one litter of water load and make sure less than 10 seconds oscillation on each time. Longer operation will cause over heat and burn the light bulb shortly.

15 EXPLODED VIEW AND PARTS LIST



(S-4J0 XNE)

16 PARTS LIST

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

Do not use description of the part.

Important safety notice:

Components identified by Δ mark have special characteristics important for safety.

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

Alphabet marks in Remarks columns (i.e. HNE etc.) indicate parts applicable to only specified country models as follows.

HNE: For Hong Kong, WNT: For Taiwan, XNE: For China,

KNQ: For Kuwait, Doha, Qatar, Oman, Baharain, Pakistan, LNK: For Philippines,

MNQ: For Malaysia, SNM: For Saudi Arabia,

TNE: For Thailand, Indonesia, YNQ: For Singapore

Parts without these marks can be used for all models.

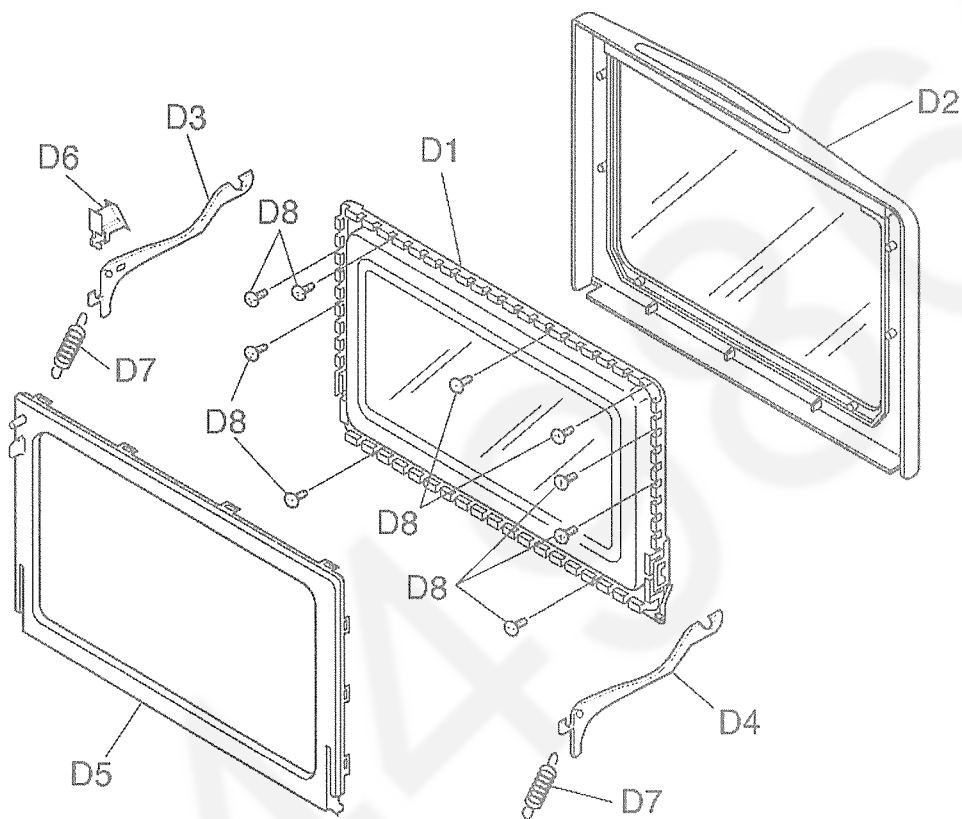
| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|---|
| 1 | ANE00057J0XN | EARTH LABEL | 1 | NN-V688W TNE NN-V698J TNE/WNT |
| 2 | A00065460JP | CAUTION LABEL | 1 | NN-V668W KNQ/SNM NN-V688W NN-V698J HNE/KNQ/MNQ/SNM/TNE/YNQ |
| 2 | A00063310WN | CAUTION LABEL | 1 | NN-V698J WNT |
| 2 | A00067680XN | CAUTION LABEL | 1 | NN-V668WS NN-V688WS NN-V698JS |
| 3 | A00065540MN | CAUTION LABEL | 1 | NN-V688W YNQ NN-V698J YNQ |
| 4 | ANE0921000AH | CUSHION RUBBER C | 1 | NN-V668W NN-V668WS NN-V688W HNE NN-V688WS NN-V698J NN-V698JS |
| 5 | ANE0239L00XN | CORD CAUTION LABEL | 1 | NN-V668W NN-V698J KNQ/SNM |
| 6 | A02448970KK | BODY CAUTION LABEL | 1 | NN-V668W |
| 6 | A02448980XN | BODY CAUTION LABEL | 1 | NN-V668WS NN-V688W NN-V688WS |
| 6 | A02444J00XN | BODY CAUTION LABEL | 1 | NN-V698J HNE/LNK/MNQ/TNE/YNQ/WNT NN-V698JS |
| 6 | A02444J00KK | BODY CAUTION LABEL | 1 | NN-V698J KNQ/SNM |
| 7 | A04906520BP | HEATER LABEL | 1 | NN-V668W KNQ NN-V688W MNQ/YNQ NN-V698J KNQ/MNQ/YNQ |
| 8 | ANE0962000AR | CUSHION RUBBER D | 1 | |
| 9 | A10014J00XN | BASE | 1 | |
| 10 | ANE1008-3W0 | RUBBER FOOT | 4 | |
| 11 | A10094J10HXN | CABINET BODY | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS |
| 11 | A10094J00XN | CABINET BODY | 1 | NN-V698J NN-V698JS |
| 12 | A11405840GP | STOPPER | 2 | |
| 13 | A200A4J20XN | OVEN | 1 | NN-V668W NN-V668WS (NOTE 1) |
| 13 | A200A4J00XN | OVEN | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS (NOTE 1) |
| 14 | A2011-1640 | COVER | 1 | |
| 15 | A20344J00XN | BRACKET | 1 | |
| 16 | A21315870GP | PULLEY SHAFT | 1 | |
| 17 | ANE2177-F80 | WASHER | 1 | |
| 18 | A22134J00XN | SENSOR BRACKET A | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| 19 | A22144J00XN | SENSOR BRACKET B | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| 20 | A290D5080GP | ROLLER RING (U) | 1 | |
| 21 | A300B-1640 | LEFT HINGE | 1 | |
| 22 | A300U-1640 | RIGHT HINGE | 1 | |
| 23 | A3097-1660 | SPRING | 2 | |
| 24 | A3102-1830 | LATCH SWITCH LEVER A | 1 | |
| 25 | A3103-1830 | LATCH SWITCH BRACKET | 1 | |
| 26 | A3105-1830 | LATCH BRACKET | 1 | |
| 27 | XTWANE4+8SW | SCREW | 2 | (4X8) FOR FAN MOTOR |
| 28 | A3249-1830 | LATCH SWITCH LEVER B | 1 | |
| 29 | A400A4760JP | FAN MOTOR | 1 | NN-V668W KNQ NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/KNQ/MNQ/TNE/YNQ NN-V698JS (26W) |
| 29 | A400A9760JP | FAN MOTOR | 1 | NN-V668W SNM NN-V698J LNK/SNM |
| 29 | A400A5180AP | FAN MOTOR | 1 | NN-V698J WNT (27W) |
| 30 | A4008-1640 | FAN | 1 | |
| 31 | A40244J00XN | EXHAUST GUIDE A | 1 | |
| 32 | A40254J00XN | AIR GUIDE A | 1 | |
| 33 | A40264J00XN | AIR GUIDE B | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| 34 | A40304J00XN | AIR GUIDE B | 1 | |
| 35 | A40314J00XN | AIR GUIDE C (U) | 1 | |
| 36 | A41074J00XN | EXHAUST GUIDE B | 1 | |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|--|
| 37 | A41444J00XN | ORIFICE | 1 | |
| 38 | A60304080BP | INCANDESCENT LAMP | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/KNQ/LNK/MNQ/SNM/TNE/YNQ NN-V698JS (20W/240V) |
| 38 | ANE6030540AP | INCANDESCENT LAMP | 1 | NN-V698J WNT (125V/20W) |
| 39 | A606Y4J20QP | H.V. INVERTER (U) | 1 | NN-V668W KNQ NN-V688W MNQ/YNQ NN-V698J KNQ/MNQ/YNQ |
| 39 | A606Y4J00XN | H.V. INVERTER (U) | 1 | NN-V668W SNM NN-V668WS NN-V688W HNE/TNE NN-V688WS NN-V698J HNE/LNK/SNM/TNE NN-V698JS |
| 39 | A606Y4J00WN | H.V. INVERTER (U) | 1 | NN-V698J WNT |
| 40 | A607S4J00XN | STEAM SENSOR | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| 41 | A607X4J20HN | NOISE FILTER (U) | 1 | NN-V668W KNQ/SNM NN-V688W NN-V698J |
| 41 | A607X4J00XN | NOISE FILTER (U) | 1 | NN-V668WS NN-V688WS NN-V698JS |
| 42 | A6142-1450 | MICROSWITCH | 1 | (V-16G-3C26-M) PRIMARY LATCH SWITCH |
| 43 | A61425180AP | MICROSWITCH | 1 | (L-3C2-2) SECONDARY LATCH SWITCH |
| 44 | A61458960HN | THERMAL CUTOOUT | 1 | |
| 45 | A61524000AP | SOCKET | 1 | NN-V668W NN-V668WS NN-V688W MNQ/TNE/YNQ NN-V688WS NN-V698J KNQ/LNK/MNQ/SNM/TNE/WNT/YNQ NN-V698JS |
| 45 | A61524650APS | SOCKET | 1 | NN-V688W HNE NN-V698J HNE |
| 46 | A61785180AP | MICRO SWITCH | 1 | (L-2C2-2) SHORT SWITCH |
| 47 | A62304210BP | FUSE | 1 | (10A) |
| 48 | A630G6520BP | HEATER A | 2 | NN-V668W KNQ NN-V688W MNQ/YNQ NN-V698J KNQ/MNQ/YNQ |
| 48 | A630G6520HN | HEATER A | 2 | NN-V668W SNM NN-V668WS NN-V688W HNE/TNE NN-V688WS NN-V698J HNE/LNK/SNM/TNE NN-V698JS |
| 48 | A630G4J00WN | HEATER A | 2 | NN-V698J WNT |
| 49 | A63268960JP | TURNTABLE MOTOR | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/KNQ/LNK/MNQ/SNM/TNE/YNQ NN-V698JS (3W) |
| 49 | A63264080AP | TURNTABLE MOTOR | 1 | NN-V698J WNT (3W) |
| 50 | A64604J00XN | HEATER MOUNTING PLATE | 2 | |
| 51 | A65854J00XN | P.C.B. HOLDER | 1 | |
| 52 | A66264J00XN | THERMAL CUTOOUT MOUNT | 1 | |
| 53 | A66624J00XN | GROUHDING PLATE | 1 | |
| 54 | A80234J00XN | SASH | 1 | |
| 55 | A900C4J00HN | AC CORD W/PLUG | 1 | NN-V668W KNQ/SNM NN-V688W HNE/MNQ NN-V698J HNE/KNQ/MNQ/SNM (220-240V) |
| 55 | A900C4J00XN | AC CORD W/PLUG | 1 | NN-V668WS NN-V688WS NN-V698JS (220V) |
| 55 | A900C4J00ZF | AC CORD W/PLUG | 1 | NN-V688W TNE NN-V698J TNE (220V) |
| 55 | A900C4J00LN | AC CORD W/PLUG | 1 | NN-V698J LNK (220-230V) |
| 55 | A900C4J00AP | AC CORD W/PLUG | 1 | NN-V698J WNT (110V) |
| 55 | A900C4J00MK | AC CORD W/PLUG | 1 | NN-V688W YNQ NN-V698J YNQ (220V-240V) |
| 56 | XPTANE4+6SX | SCREW | 1 | (4X6) FOR COVER |
| 57 | XTWANE4+10RU | SCREW | 4 | (4X10) FOR MAGNETRON |
| 58 | XTWANE4+12LR | SCREW | 4 | (4X12) FOR HINGE |
| 59 | A11274J00XN | BARRIER SHEET | 1 | |
| 60 | XYCA4+BE12 | SCREW | 1 | (4X12) FOR EARTH |
| 61 | 2M236-M42FS | MAGNETRON | 1 | |
| 62 | A64504J00XN | EXHAUST GUIDE B | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| 63 | A01574J20SN | NAME LABEL | 1 | NN-V668W SNM |
| 63 | A01574J00SN | NAME LABEL | 1 | NN-V698J SNM |
| 63 | A01574J20KN | NAME LABEL | 1 | NN-V668W KNQ |
| 63 | A01574J20XN | NAME LABEL | 1 | NN-V668WS |
| 63 | A01574J10HN | NAME LABEL | 1 | NN-V688W HNE |
| 63 | A01574J10MN | NAME LABEL | 1 | NN-V688W MNQ |
| 63 | A01574J10XN | NAME LABEL | 1 | NN-V688WS |
| 63 | A01574J10TN | NAME LABEL | 1 | NN-V688W TNE (THAI & ENGLISH) |
| 63 | A01574J10YN | NAME LABEL | 1 | NN-V688W YNQ |
| 63 | A01574J00HN | NAME LABEL | 1 | NN-V698J HNE |
| 63 | A01574J00KN | NAME LABEL | 1 | NN-V698J KNQ |
| 63 | A01574J00LN | NAME LABEL | 1 | NN-V698J LNK |
| 63 | A01574J00MN | NAME LABEL | 1 | NN-V698J MNQ |
| 63 | A01574J00XN | NAME LABEL | 1 | NN-V698JS |
| 63 | A01574J00TN | NAME LABEL | 1 | NN-V698J TNE (THAI & ENGLISH) |
| 63 | A01574J00YN | NAME LABEL | 1 | NN-V698J YNQ |
| 64 | A00564J00XN | H.V. CAUTION LABEL | 1 | |
| 65 | A10494J00XN | CUSHION RUBBER | 1 | |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|---------------------------------------|
| 66 | A10624J00XN | CUSHION RUBBER | 1 | |
| 67 | A02840000MK | NUMBER LABEL | 1 | NN-V688W YNQ NN-V698J YNQ |
| 68 | ANE0927000BV | CUSHION RUBBER B | 1 | |
| 69 | A12214J00XN | BODY CUSHION RUBBER | 2 | |
| 70 | A11744J00XN | BODY SPACER | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS |
| 70 | A11744J00HN | BODY SPACER | 1 | NN-V698J NN-V698JS |

NOTE 1: Please order name label together (Except WNT model.)

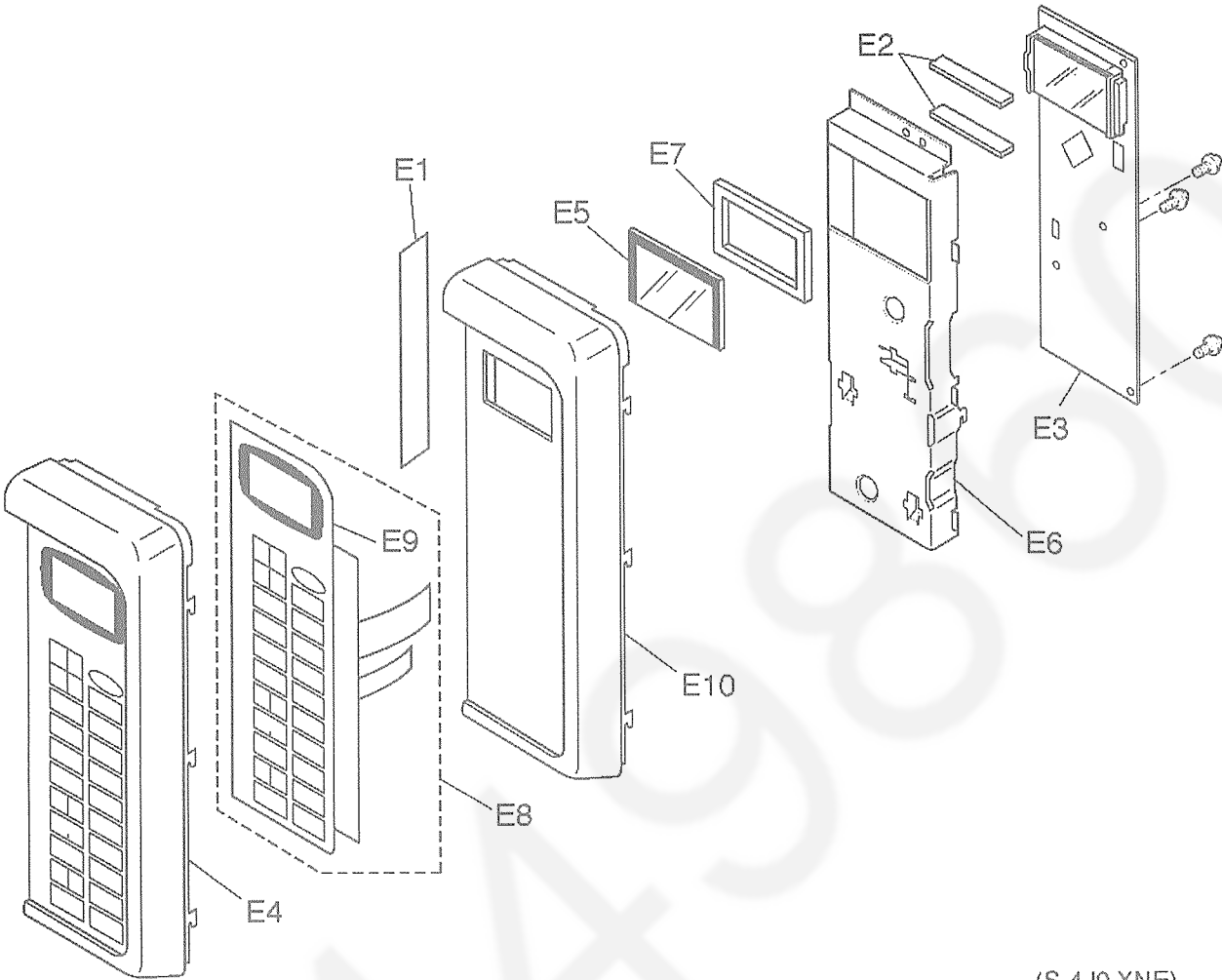
17 DOOR ASSEMBLY



(S-4J0 XNE)

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|---------------------------------------|
| D1 △ | A302K4J00XN | DOOR E (U) | 1 | |
| D2 | A302A4J10HXN | DOOR A (U) | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS |
| D2 | A302A4J00NXN | DOOR A (U) | 1 | NN-V698J NN-V698JS |
| D3 | A3044-1640 | RIGHT DOOR ARM | 1 | |
| D4 | A3054-1640 | LEFT DOOR ARM | 1 | |
| D5 △ | A30854J00XN | DOOR C | 1 | |
| D6 | A3252-1450 | DOOR ARM SPACER | 1 | |
| D7 | A3230-1600 | DOOR SPRING | 2 | |
| D8 | XTN3+7Q | SCREW | 9 | (3X7) |

18 ESCUTCHEON BASE ASSEMBLY



(S-4J0 XNE)

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|--------------------------------|
| E1 | A00074J00WN | NAME LABEL | 1 | NN-V698J WNT |
| E2 | A64584J00XN | DISPLAY TUBE COVER | 2 | |
| E3 | A603L4J20KN | D.P.CIRCUIT (U) | 1 | NN-V668W KNQ RTL (W/COMPONENT) |
| E3 | A603L4J20SN | D.P.CIRCUIT (U) | 1 | NN-V668W SNM RTL (W/COMPONENT) |
| E3 | A603L4J20XN | D.P.CIRCUIT (U) | 1 | NN-V668WS RTL (W/COMPONENT) |
| E3 | A603L4J10HN | D.P.CIRCUIT (U) | 1 | NN-V688W HNE RTL (W/COMPONENT) |
| E3 | A603L4J10MN | D.P.CIRCUIT (U) | 1 | NN-V688W MNQ RTL (W/COMPONENT) |
| E3 | A603L4J10XN | D.P.CIRCUIT (U) | 1 | NN-V688WS RTL (W/COMPONENT) |
| E3 | A603L4J10TN | D.P.CIRCUIT (U) | 1 | NN-V688W TNE RTL (W/COMPONENT) |
| E3 | A603L4J10YN | D.P.CIRCUIT (U) | 1 | NN-V688W YNQ RTL (W/COMPONENT) |
| E3 | A603L4J00HN | D.P.CIRCUIT (U) | 1 | NN-V698J HNE RTL (W/COMPONENT) |
| E3 | A603L4J00KN | D.P.CIRCUIT (U) | 1 | NN-V698J KNQ RTL (W/COMPONENT) |
| E3 | A603L4J00LN | D.P.CIRCUIT (U) | 1 | NN-V698J LNK RTL (W/COMPONENT) |
| E3 | A603L4J00MN | D.P.CIRCUIT (U) | 1 | NN-V698J MNQ RTL (W/COMPONENT) |
| E3 | A603L4J00SN | D.P.CIRCUIT (U) | 1 | NN-V698J SNM RTL (W/COMPONENT) |
| E3 | A603L4J00XN | D.P.CIRCUIT (U) | 1 | NN-V698JS RTL (W/COMPONENT) |
| E3 | A603L4J00TN | D.P.CIRCUIT (U) | 1 | NN-V698J TNE RTL (W/COMPONENT) |
| E3 | A603L4J00WN | D.P.CIRCUIT (U) | 1 | NN-V698J WNT RTL (W/COMPONENT) |
| E3 | A603L4J00YN | D.P.CIRCUIT (U) | 1 | NN-V698J YNQ RTL (W/COMPONENT) |
| E4 | A800A4J00NHN | ESCUTCHEON ASSEMBLY | 1 | NN-V698J HNE/LNK/MNQ/TNE/YNQ |
| E4 | A800A4J00NKN | ESCUTCHEON ASSEMBLY | 1 | NN-V698J KNQ/SNM |
| E4 | A800A4J00NXN | ESCUTCHEON ASSEMBLY | 1 | NN-V698JS |
| E4 | A800A4J00NWN | ESCUTCHEON ASSEMBLY | 1 | NN-V698J WNT (NOTE 2) |
| E5 | A80024J00XN | ESCUTCHEON B | 1 | |
| E6 | A81274J00XN | BACK PANEL | 1 | |
| E7 | A82844J00XN | CUSHION RUBBER | 1 | |
| E8 | A630Y4J10NHN | MEMBRANE SWITCH (U) | 1 | NN-V688E HNE/MNQ/TNE/YNQ |
| E8 | A630Y4J10XN | MEMBRANE SWITCH (U) | 1 | NN-V688WS XNE |

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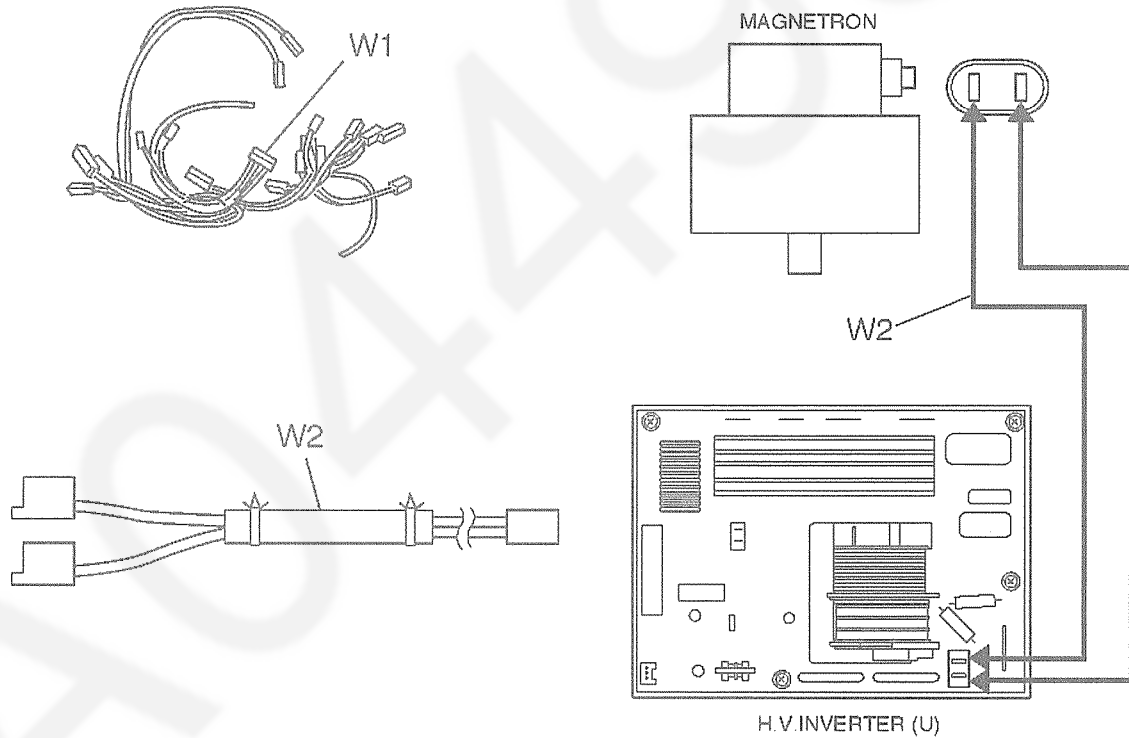
19 PACKING AND ACCESORIES



| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|-------------|-------------------------|---------|---------------------------------------|
| P1 | A000B5820KN | COOK BOOK | 1 | NN-V668W KNQ/SNM NN-V698J KNQ/SNM |
| P1 | A000B4J00MN | COOK BOOK | 1 | NN-V688W NN-V698J HNE/LNK/MNQ/TNE/YNQ |
| P1 | A000B5750WN | COOK BOOK | 1 | NN-V698J WNT |
| P2 | A00034J00KN | INSTRUCTION BOOK | 1 | NN-V668W KNQ/SNM NN-V698J KNQ/SNM |
| P2 | A00034J10XN | INSTRUCTION BOOK | 1 | NN-V668WS NN-V688WS |
| P2 | A00034J00HN | INSTRUCTION BOOK | 1 | NN-V688W NN-V698J HNE/LNK/MNQ/TNE/YNQ |
| P2 | A00034J00XN | INSTRUCTION BOOK | 1 | NN-V698J WNT NN-V698JS |
| P3 | A00147530XN | PL CAUTION LABEL | 1 | NN-V668WS NN-V688WS NN-V698JS |
| P4 | A91644000XN | EARTH LEAD | 1 | NN-V698J TNE/WNT NN-V688W TNE |
| P5 | A00324040XN | EARTH CAUTION LABEL | 1 | NN-V688W TNE NN-V698J TNE |
| P6 | A01024J20KN | PACKING CASE PAPER | 1 | NN-V668W KNQ |
| P6 | A01024J20SN | PACKING CASE PAPER | 1 | NN-V668W SNM |
| P6 | A01024J20XN | PACKING CASE PAPER | 1 | NN-V668WS |
| P6 | A01024J10HN | PACKING CASE PAPER | 1 | NN-V688W HNE |
| P6 | A01024J10MN | PACKING CASE PAPER | 1 | NN-V688W MNQ |
| P6 | A01024J10XN | PACKING CASE PAPER | 1 | NN-V688WS |
| P6 | A01024J10TN | PACKING CASE PAPER | 1 | NN-V688W TNE |
| P6 | A01024J10YN | PACKING CASE PAPER | 1 | NN-V688W YNQ |
| P6 | A01024J00HN | PACKING CASE PAPER | 1 | NN-V698J HNE |
| P6 | A01024J00LN | PACKING CASE PAPER | 1 | NN-V698J LNK |
| P6 | A01024J00MN | PACKING CASE PAPER | 1 | NN-V698J MNQ |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|--------------|-------------------------|---------|---|
| P6 | A01024J00SN | PACKING CASE PAPER | 1 | NN-V698J SNM |
| P6 | A01024J00KN | PACKING CASE PAPER | 1 | NN-V698JS |
| P6 | A01024J00KN | PACKING CASE PAPER | 1 | NN-V698J KNQ |
| P6 | A01024J00TN | PACKING CASE PAPER | 1 | NN-V698J TNE |
| P6 | A01024J00WN | PACKING CASE PAPER | 1 | NN-V698J WNT |
| P6 | A01024J00YN | PACKING CASE PAPER | 1 | NN-V698J YNQ |
| P7 | A01044J00KN | UPPER FILLER | 1 | NN-V668W KNQ/SNM NN-V698J KNQ/SNM |
| P7 | A01044J00KN | UPPER FILLER | 1 | NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/LNK/MNQ/TNE/YNQ/WNT NN-V698JS |
| P8 | A01054J00KN | LOWER FILLER | 1 | NN-V668W KNQ/SNM NN-V698J KNQ/SNM |
| P8 | A01054J00KN | LOWER FILLER | 1 | NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/LNK/MNQ/TNE/YNQ/WNT NN-V698JS |
| P9 | A01065540AQ | VINYL COVER | 1 | |
| P10 | ANE0107-500 | DOOR SHEET | 1 | |
| P11 | A01084J00KN | TRAY PACKING | 1 | |
| P12 | A442B5750WN | PLUG | 1 | NN-V698J WNT |
| P13 | A01134J00KN | TRAY STYROL | 1 | |
| P14 | A01264J00KN | REINFORCE MATERIAL | 1 | NN-V668W KNQ/SNM NN-V668WS NN-V688WS NN-V698J KNQ/SNM/WNT NN-V698JS |
| P15 | A06024J00KN | OVEN RACK | 1 | |
| P16 | A0192-1100 | PACKING | 1 | |
| P17 | A02337530KN | CCEE LABEL A | 1 | NN-V668WS NN-V688WS NN-V698JS |
| P18 | A02347530KN | CCEE LABEL B | 1 | NN-V668WS NN-V688WS NN-V698JS |
| P19 | A04454J00HMN | MENU LABEL | 1 | NN-V688W MNQ NN-V698J MNQ |
| P19 | A04454J00HTN | MENU LABEL | 1 | NN-V698J TNE |
| P20 | A06014J00KN | COOKING TRAY | 1 | |
| P21 | A01174J00KN | TRAY PACKING | 1 | NN-V668W KNQ/SNM NN-V698J KNQ/SNM |

20 WIRING MATERIAL



(S-4J0 XNE)

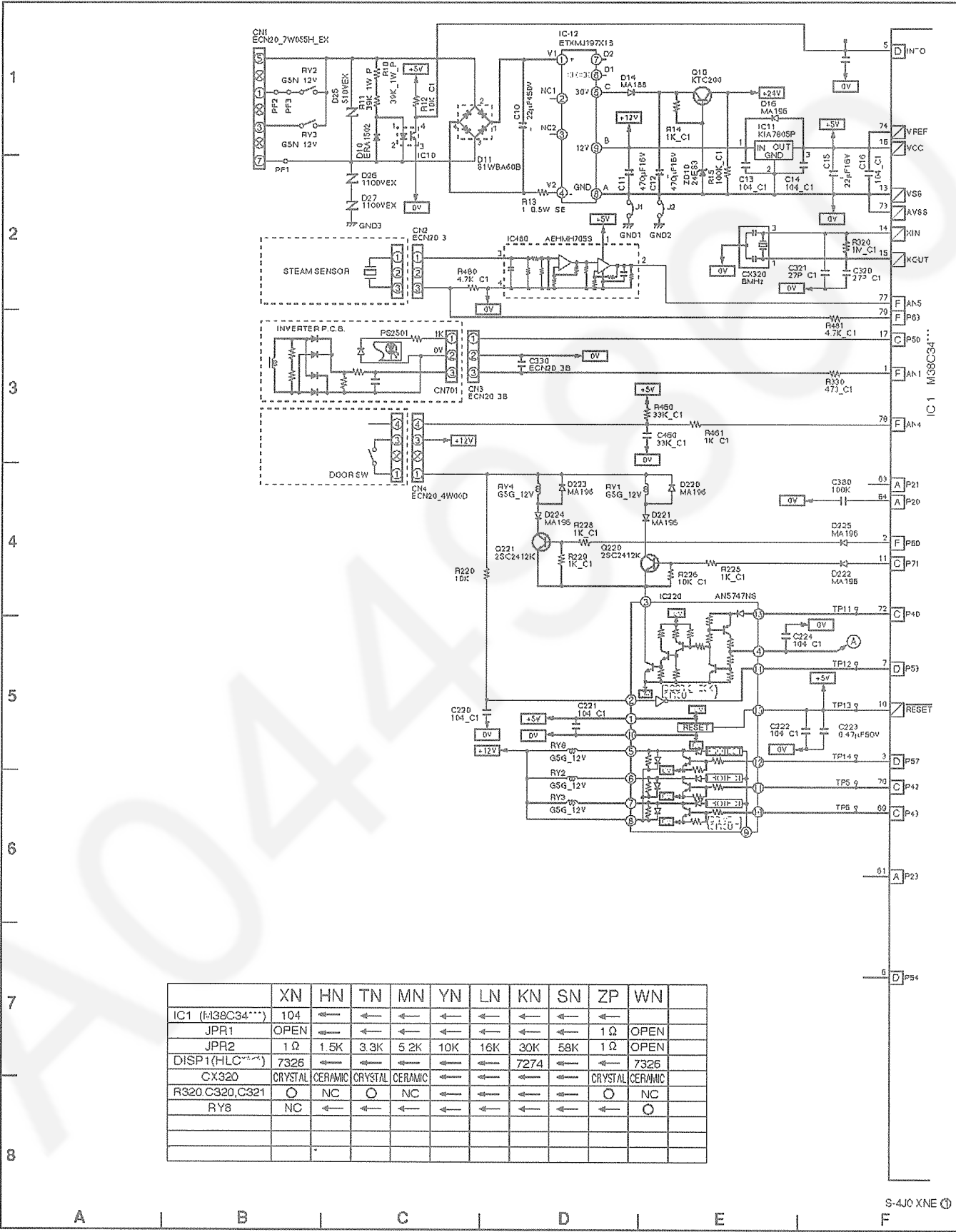
| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|----------|-------------|-------------------------|---------|--|
| W1 | A030A4J00KN | LEAD WIRE HARNESS | 1 | NN-V668W SNM NN-V668WS NN-V688W HNE/TNE NN-V688WS NN-V698J HNE/LNK/SNM/TNE NN-V698JS |
| W1 | A030A4J00KN | LEAD WIRE HARNESS | 1 | NN-V668W KNQ NN-V688W MNQ/YNQ NN-V698J KNQ/MNQ/YNQ |
| W1 | A030A4J00WN | LEAD WIRE HARNESS | 1 | NN-V698J WNT |
| W2 | A030E4J20KN | LEAD WIRE | 1 | |

21 REF NO. 41 NOISE FILTER (U)

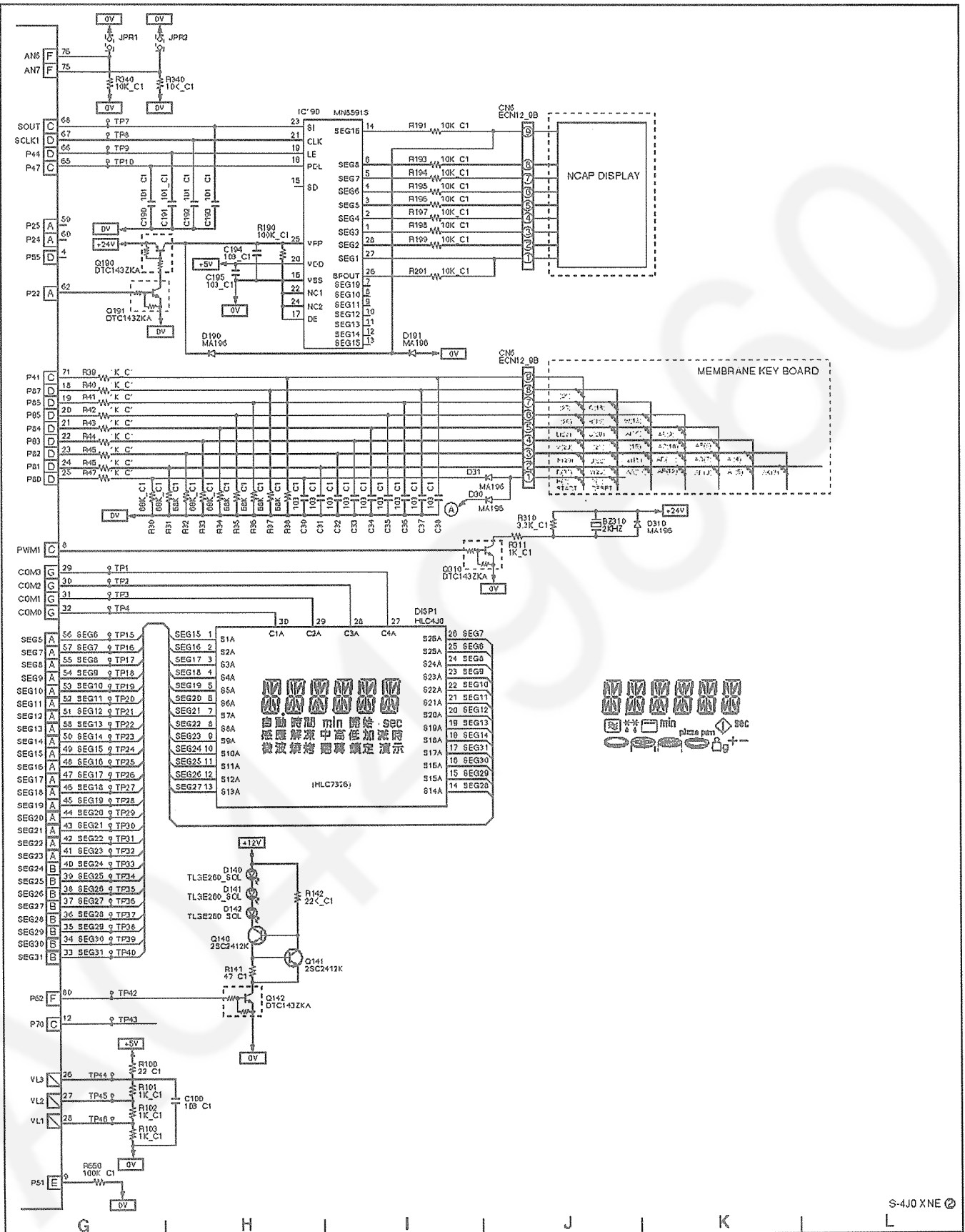
| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|-------------|--------------|-------------------------|---------|---------|
| C1 2 | AECQJ5225KX1 | CERAMIC CAPACITOR | 2 | 2.2MF |
| F1 | A62316010BP | FUSE HOLDER | 2 | |

22 DIGITAL PROGRAMMER CIRCUIT(NN-V698J,NN-V698JS)

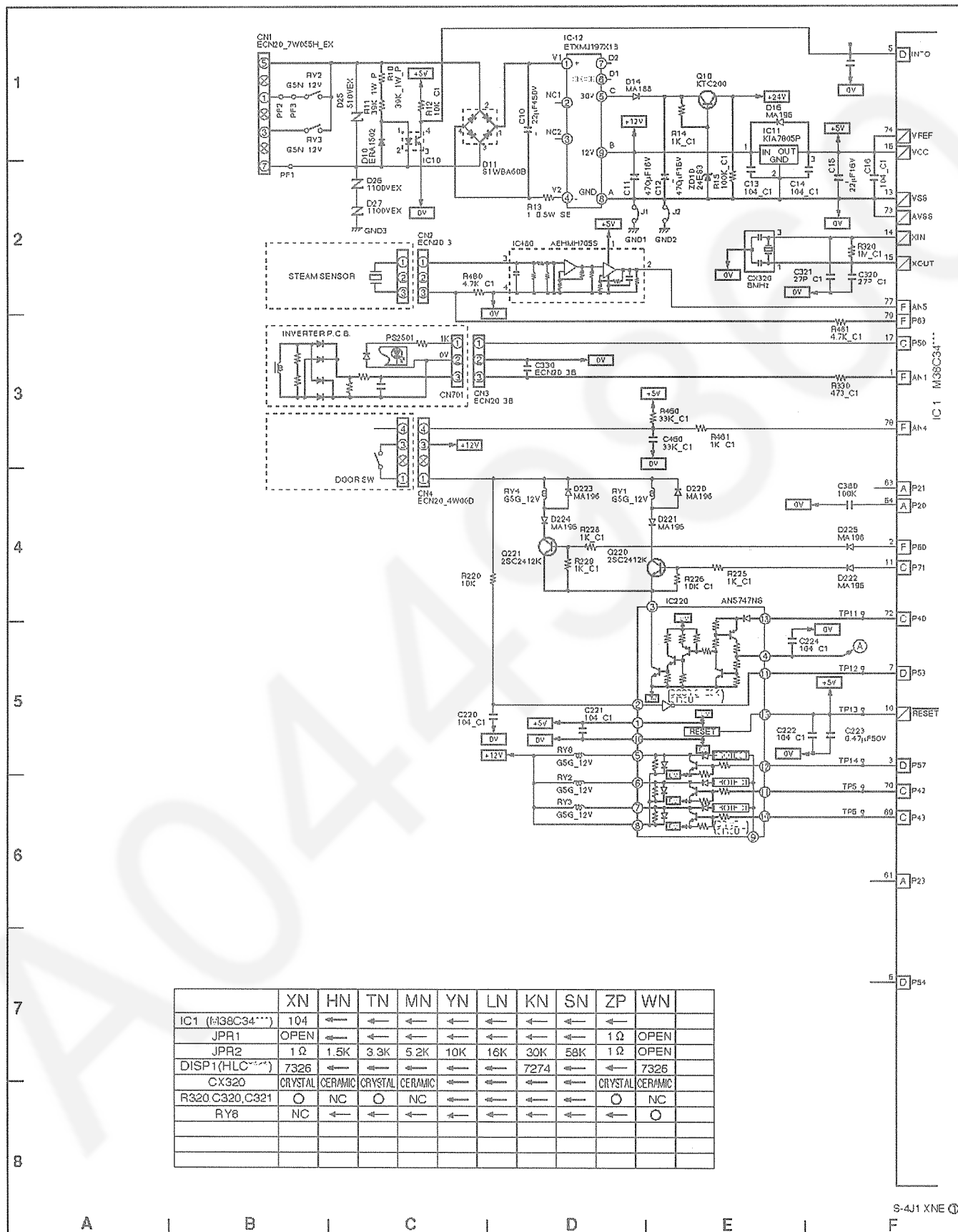
SCHEMATIC DIAGRAM

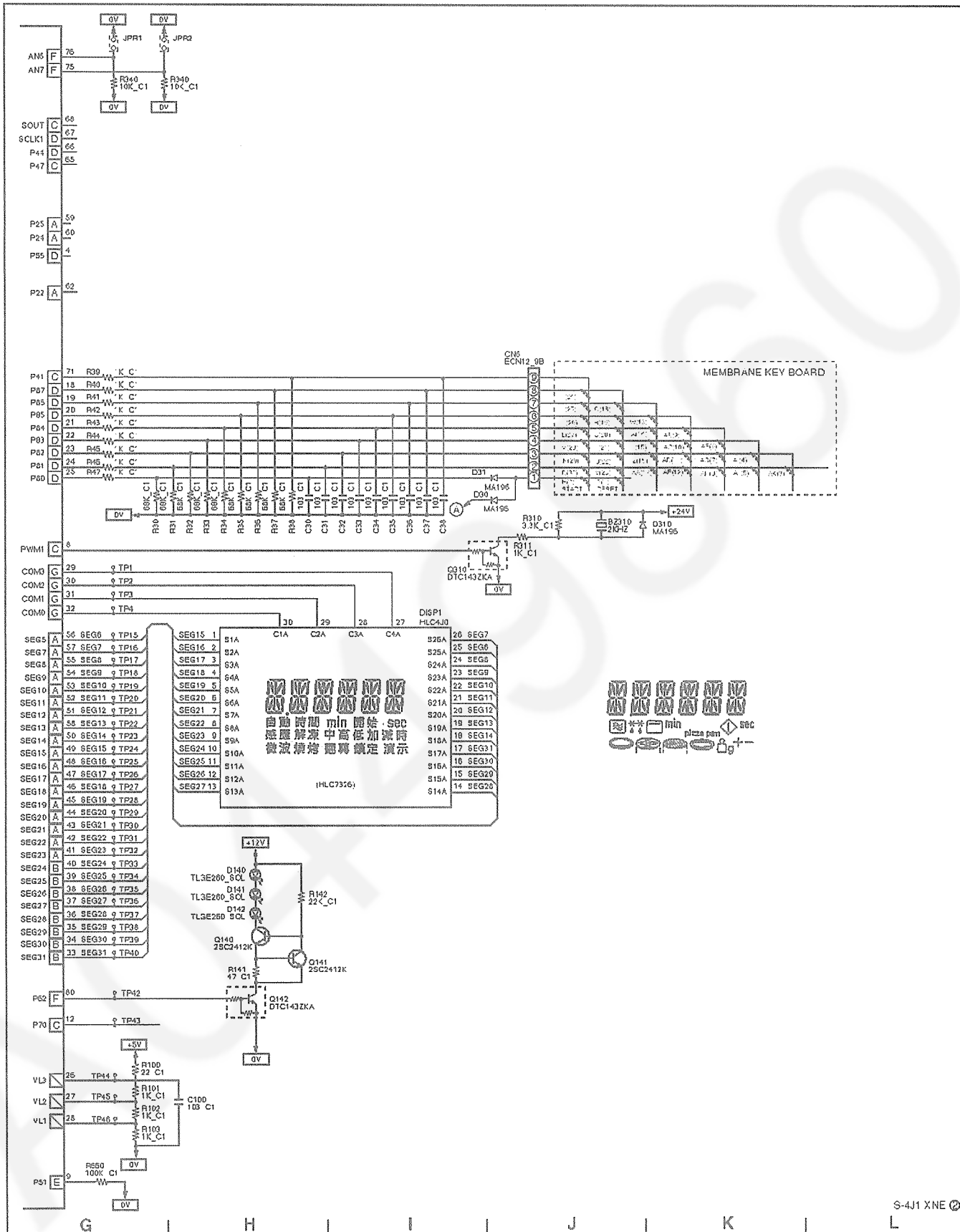


| | | | | | | | | | | | |
|-----------------|---------|---------|---------|---------|-----|-----|-----|-----|-----|---------|---------|
| | XN | HN | TN | MN | YN | LN | KN | SN | ZP | WN | |
| IC1 (M38C34***) | 104 | ← | ← | ← | ← | ← | ← | ← | ← | | |
| JPR1 | OPEN | ← | ← | ← | ← | ← | ← | ← | 1 Ω | OPEN | |
| JPR2 | 1 Ω | 1.5K | 3.3K | 5.2K | 10K | 16K | 30K | 58K | 1 Ω | OPEN | |
| DISP1 (HLC***) | 7326 | ← | ← | ← | ← | ← | ← | ← | ← | 7326 | |
| CX320 | CRYSTAL | CERAMIC | CRYSTAL | CERAMIC | ← | ← | ← | ← | ← | CRYSTAL | CERAMIC |
| R320 C320, C321 | ○ | NC | ○ | NC | ← | ← | ← | ← | ← | ○ | NC |
| RY8 | NC | ← | ← | ← | ← | ← | ← | ← | ← | ○ | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |



23 DIGITAL PROGRAMMER CIRCUIT (NN-V688W, NN-V688WS)





24 DIGITAL PROGRAMMER CIRCUIT

PARTS LIST

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|--|--------------|---------------------------|---------|--|
| BZ310 | AEFB22EP20TL | BUZZER | 1 | 2.0KHZ |
| C10 | ECA2WHG220E | ELECTROLYTIC CAPACITOR AL | 1 | 22MF/450V/105°C |
| C11 | EEUFC1C471B | PHOTO COUPLER | 1 | 470MF/16V/FC |
| C12 | ECA1HHG220B | ELECTROLYTIC CAPACITOR AL | 1 | 22MF/50V/105°C |
| C13 14 16 195 220 221 222 224 | AECU1F104Z25 | CERAMIC CAPACITOR | 8 | NN-V698J NN-V698JS 0.1MF/25V |
| C13 14 16 220 221 222 224 | AECU1F104Z25 | CERAMIC CAPACITOR | 7 | NN-V668W NN-V668WS NN-V688W NN-V688WS 0.1MF/25V |
| C15 | ECEA1CKA220B | ELECTROLYTIC CAPACITOR AL | 1 | 22MF/16V |
| C17 30 31 32 33 34 35 36 37 38 100 194 330 | AECU1F103Z50 | CERAMIC CAPACITOR | 13 | NN-V698J NN-V698JS 0.01MF/50V |
| C17 30 31 32 33 34 35 36 37 38 100 330 | AECU1F103Z50 | CERAMIC CAPACITOR | 12 | NN-V668W NN-V668WS NN-V688W NN-V688WS 0.01MF/50V |
| C190 191 192 193 | AECU1C101J50 | CERAMIC CAPACITOR | 4 | NN-V698J NN-V698JS 0.0001MF/50V |
| C223 | ECEA1HKAR47B | ELECTROLYTIC CAPACITOR AL | 1 | 0.47MF/50V |
| C320 321 | ECUV1H270JCV | CERAMIC CAPACITOR | 2 | NN-V668W ZPE NN-V668WS NN-V688W TNE NN-V688WS NN-V698J TNE NN-V698JS 27PF |
| C380 | ERDS2TJ104T | CARBON FILM RESISTOR | 1 | 100KΩ 1/4W 5% |
| C460 | ERJ3GSYJ333V | CARBON FILM RESISTOR | 2 | 33K 1/16W 5% |
| CN1 | AEEMMD05507W | CONNECTOR | 1 | 7PIN |
| CN2 | AEEMMF00703W | CONNECTOR | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS 3PIN |
| CN3 | AEEMMF00703B | CONNECTOR | 1 | 3PIN/BLUE |
| CN4 | AEEMMF00D04W | CONNECTOR | 1 | 4PIN |
| CN5 6 | AEEM09FDZBTM | CONNECTOR | 2 | NN-V698J NN-V698JS |
| CN6 | AEEM09FDZBTM | CONNECTOR | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS |
| CK320 | AEFOT8R00TWT | RESONATOR | 1 | NN-V668W KNQ/SNM NN-V688W HNE/MNQ/YNQ NN-V698J HNE/KNQ/LNK/MNQ/SNM/WNT/YNQ 8MHZ |
| CK320 | AEYKAT49-8MA | RESONATOR | 1 | NN-V668WS NN-V688W TNE NN-V688WS NN-V698J TNE NN-V698JS 8MHZ |
| D10 | AEDNERA1502 | DIODE SI 1.0A | 1 | ERA1502 |
| D11 | AESTS1WBA60B | DIODE SI 1.0A | 1 | |
| D14 | MA188- (TA5) | DIODE SI 0.2A | 1 | MA188 |
| D16 30 31 190 191 220 221 222 223 224 225 310 | AESS1N4148M | DIODE SI 0.1A | 12 | NN-V698J NN-V698JS 1N4148M |
| D16 30 31 220 221 222 223 224 225 310 | AESS1N4148M | DIODE SI 0.1A | 10 | NN-V668W NN-V668WS NN-V688W NN-V688WS 1M1842BM |
| D25 | ERZV10D511CS | VARISTOR | 1 | V10511U |
| D26 27 | ERZV10D112C1 | VARISTOR | 2 | V10112U |
| D140 141 142 | AESQTLGE260 | LED | 3 | |
| DISP1 | AEFRHLC4F5S | DISPLAY | 1 | NN-V668W NN-V698J KNQ/SNM HLC7274 |
| DISP1 | AEDDHLC4J0XN | DISPLAY | 1 | NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/LNK/MNQ/TNE/WNT/YNQ NN-V698JS HLC7326 |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|--|--------------|-------------------------|---------|---|
| IC1 | AEIC8C34A104 | IC | 1 | NN-V668W NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/KNQ/LNK/MNQ/SNM/TNE/YNQ NN-V698JS |
| IC1 | AEIC38C34J0W | IC | 1 | NN-V698J WNT |
| IC10 | AEICP25011HL | IC | 1 | PS2501-1 HL 4P |
| IC11 | AEICKIA7805P | IC | 1 | KIA7805P |
| IC12 | ETMMJ197X1BG | IC | 1 | NN-V668W NN-V668WS NN-V688W NN-V698J NN-V698JS |
| IC190 | MN8591S-T1 | IC | 1 | NN-V698J NN-V698JS MN8591S |
| IC480 | AEHMH705S | IC | 1 | NN-V688W NN-V688WS NN-V698J NN-V698JS |
| JPR1 | ERD25VJ1R0T | CARBON FILM RESISTOR | 1 | NN-V668W NN-V668WS NN-V688W NN-V698JS 1Ω 1/4W 5% |
| JPR1 2 | ERD25VJ1R0T | CARBON FILM RESISTOR | 2 | NN-V698W 1Ω 1/4W 5% |
| JPR2 | ERD25VJ163T | CARBON FILM RESISTOR | 1 | NN-V668W KNQ NN-V698J LNK 16KΩ 1/4W 5% |
| JPR2 | ERD25VJ303T | CARBON FILM RESISTOR | 1 | NN-V668W SNM NN-V698J KNQ 30KΩ 1/4W 5% |
| JPR2 | ERD25VJ683T | CARBON FILM RESISTOR | 1 | NN-V668W ZPE NN-V698J SNM 68KΩ 1/4W 5% |
| JPR2 | ERD25VJ152T | CARBON FILM RESISTOR | 1 | NN-V688W HNE NN-V698J HNE 1.5KΩ 1/4W 5% |
| JPR2 | ERD25VJ622T | CARBON FILM RESISTOR | 1 | NN-V688W MNQ NN-V698J MNQ 6.2KΩ 1/4W 5% |
| JPR2 | ERD25VJ332T | CARBON FILM RESISTOR | 1 | NN-V688W TNE NN-V698J TNE 3.3KΩ 1/4W 5% |
| JPR2 | ERD25VJ103T | CARBON FILM RESISTOR | 1 | NN-V688W YNQ NN-V698J YNQ 10KΩ 1/4W 5% |
| Q10 | AESCKTC200 | TRANSISTOR SI 625MW | 1 | KTC200 |
| Q140 141 220 221 | 2SC2412KT146 | TRANSISTOR SI | 4 | 2SC2412K |
| Q142 191 310 | AESC43ZKE | TANSISTOR SI 300MW | 3 | NN-V668W NN-V668WS NN-V698J NN-V698JS |
| Q142 310 | AESC43ZKE | TRANSISTOR SI 300MW | 2 | NN-V688W NN-V688WS |
| Q190 | AESA14EKE | TRANSISTOR SI 300MW | 1 | NN-V698J NN-V698JS |
| R10 11 | ERG1SJ393P | RESISTOR | 2 | 39KΩ 1W 5% |
| R12 191 193 194 195 196 197 198 199 226 229 340 341 | ERJ3GSYJ103V | RESISTOR | 13 | NN-V698J NN-V698JS 10K 1/16W 5% |
| R12 226 229 340 341 | ERJ3GSYJ103V | RESISTOR | 5 | NN-V668W NN-V668WS NN-V688W NN-V688WS 10K 1/16W 5% |
| R13 | ERX12SJ1R0E | RESISTOR | 1 | 1Ω 1/2W 5% |
| R14 39 40 41 42 43 44 45 46 47 101 102 103 201 225 228 311 461 | ERJ3GSYJ102V | RESISTOR | 18 | NN-V698J NN-V698JS 1K 1/16W 5% |
| R14 39 40 41 42 43 44 45 46 47 101 102 103 225 228 311 461 | ERJ3GSYJ102V | TRANSISTOR | 17 | NN-V668W NN-V668WS NN-V688W NN-V688WS 1K 1/16W 5% |
| R15 190 650 | ERJ3GSYJ104V | TRANSISTOR | 3 | NN-V698J NN-V698JS 100K 1/16W 5% |
| R15 650 | ERJ3GSYJ104V | TRANSISTOR | 2 | NN-V668W NN-V668WS NN-V688W NN-V688WS 100K 1/16W 5% |
| R30 31 32 33 34 35 36 37 38 | ERJ3GSYJ683V | TRANSISTOR | 9 | 68K 1/16W 5% |
| R100 | ERJ3GSYJ220V | RESISTOR | 1 | 22Ω 1/16W 5% |
| R141 | ERJ3GSYJ470V | RESISTOR | 1 | 47Ω 1/16W 5% |
| R142 | ERJ3GSYJ223V | RESISTOR | 1 | 22K 1/16 5% |
| R220 | ERDS2TJ103T | CARBON FILM RESISTOR | 1 | 10KΩ 1/4W 5% |
| R310 | ERJ3GSYJ332V | RESISTOR | 1 | 3.3K 1/16W 5% |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set | Remarks |
|--------------|--------------|-------------------------|---------|--|
| R320 | ERJ3GSYJ105V | RESISTOR | 1 | NN-V668WSNN-V688W TNE NN-V688WS NN-V698J TNE NN-V698JS 1M 1/16W 5% |
| R330 | ERJ3GSYJ471V | RESISTOR | 1 | 470Ω 1/16W 5% |
| R480 481 | ERJ3GSYJ472V | RESISTOR | 2 | NN-V688W NN-V688WS NN-V698J NN-V698JS 4.7K 1/16W 5% |
| RY1 4 △ | AEGG5G1A12 | POWER RELAY | 2 | NN-V668W NN-V668WS NN-V688W NN-V688WS NN-V698J HNE/KNQ/LNK/MNQ/SNM/TNE/YNQ NN-V698JS G5G-1A |
| RY1 4 8 △ | AEGG5G1A12 | POWER RELAY | 3 | NN-V698J WNT G5G-1A |
| RY2 3 △ | AEBGG5N1A12 | POWER RELAY | 2 | G5N-1A12V |
| ED10 | AESZMTZJ24C | ZENER DIODE | 1 | MTZJ24C |