



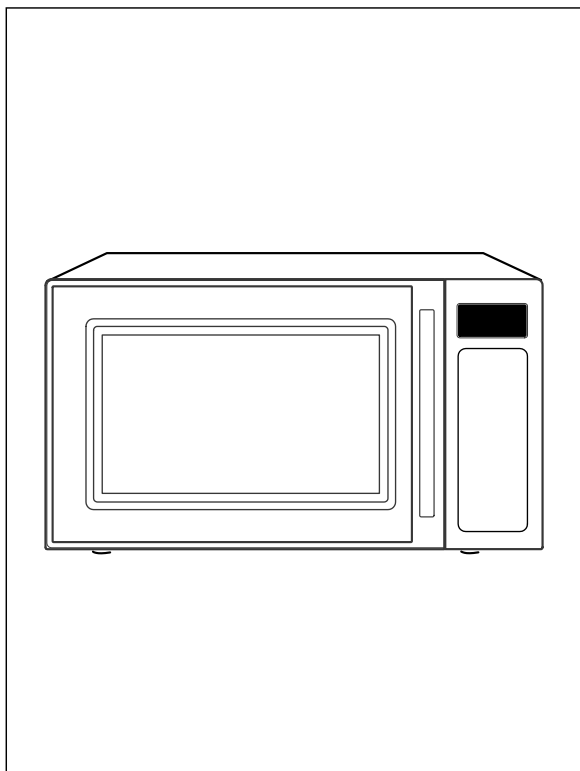
# MICROWAVE OVEN

CE1150R

CE1150R(SILVER)

# ***SERVICE*** Manual

## MICROWAVE OVEN



SRSC

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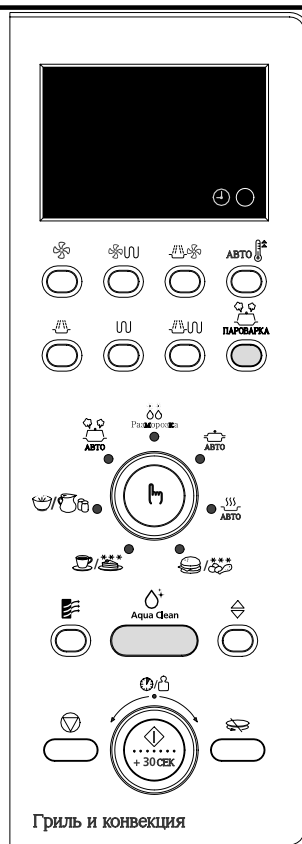


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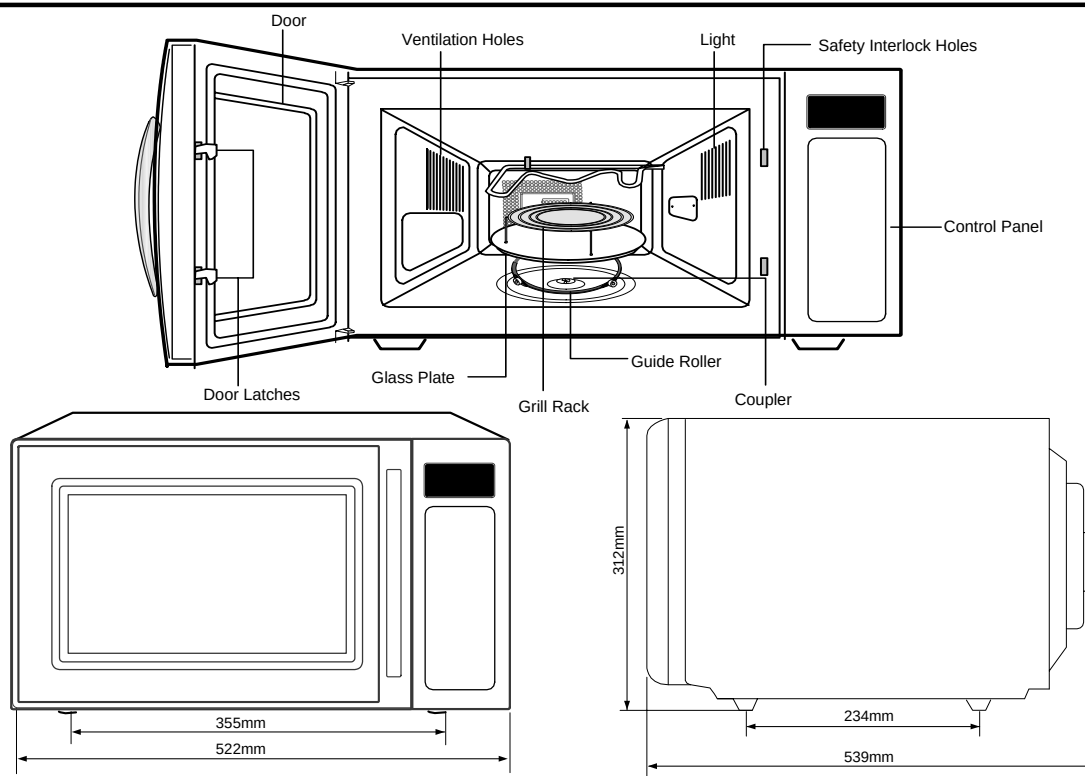
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## 3. Operating Instructions

### 3-1 Control Panel

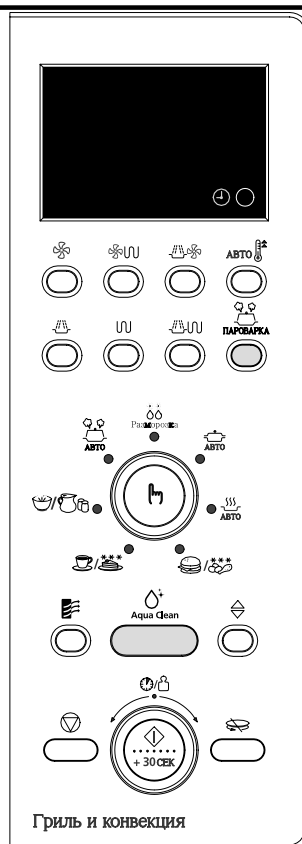


### 3-2 Features & External Views

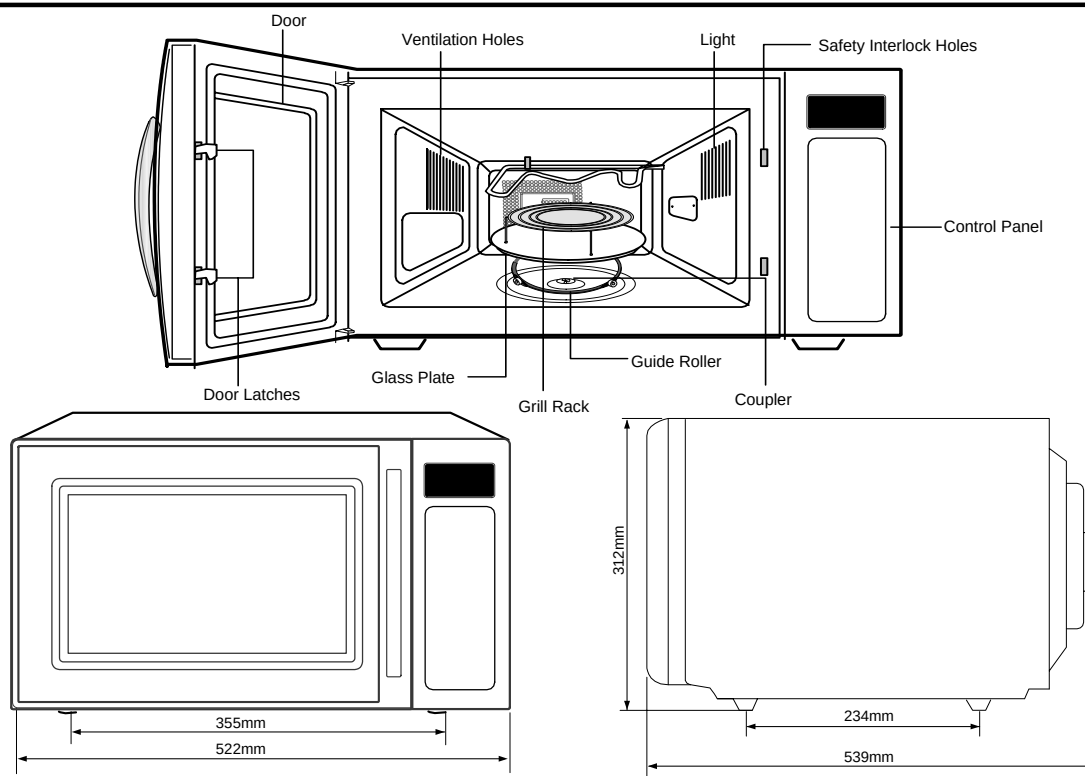


## 3. Operating Instructions

### 3-1 Control Panel



### 3-2 Features & External Views



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## 4. Disassembly and Reassembly

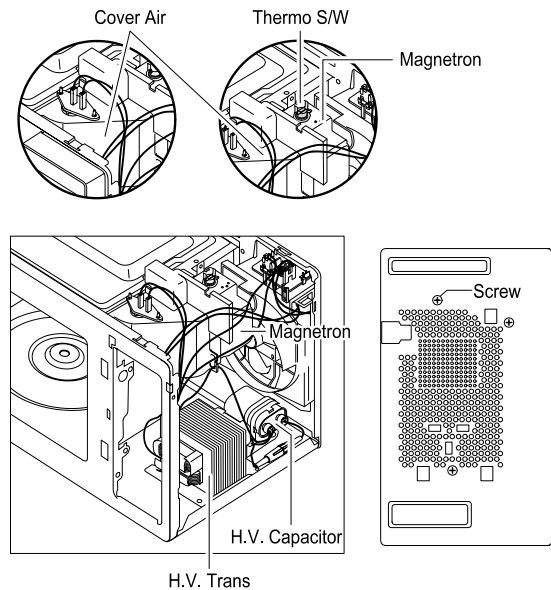
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### 4-1 Replacement of Magnetron, Motor Assembly and Lamp

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Remove the magnetron including the shield case, permanent magnet, choke coils and capacitors (all of which are contained in one assembly).

1. Disconnect all lead wires from the magnetron and lamp.
2. Remove the bracket mounting.
3. Remove the magnetron supporter.
4. Remove the air cover.
5. Remove screws securing the magnetron to the wave guide.
6. Take out the magnetron very carefully.
7. Remove screws from the back panel.
8. Take out the fan motor.
9. Remove the oven lamp by rotating to pull out from hole of air cover.



NOTE1: When removing the magnetron, make sure that its antenna does not hit any adjacent parts, or it may be damaged.

NOTE2: When replacing the magnetron, be sure to remount the magnetron gasket in the correct position and make sure the gasket is in good condition.

### 4-2 Replacement of High Voltage Transformer

---

1. Discharge the high voltage capacitor.
2. Disconnect all the leads.
3. Remove the mounting bolts.
4. Reconnect the leads correctly and firmly.

#### PRECAUTION

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

#### PRECAUTION

There exists HIGH VOLTAGE ELECTRICITY with high current capabilities in the circuits of the HIGH VOLTAGE TRANSFORMER secondary and filament terminals. It is extremely dangerous to work on or near these circuits with the oven energized.

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

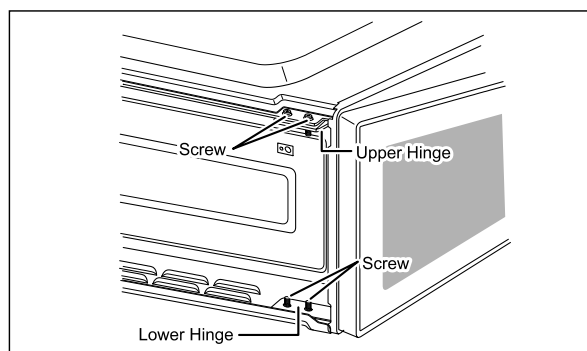
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## 4-3 Replacement of Door Assembly

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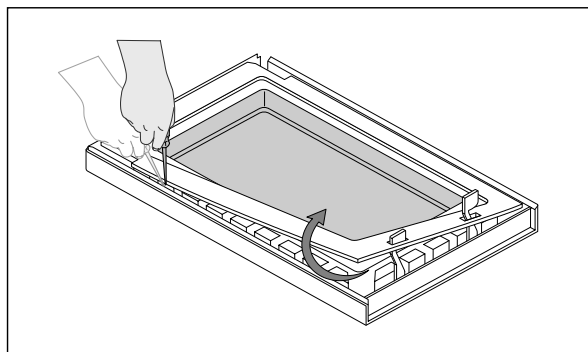
### 4-3-1 Removal of Door Assembly

Remove hex bolts securing the upper hinge and lower hinge. Then remove the door assembly.



### 4-3-2 Removal of Door "C"

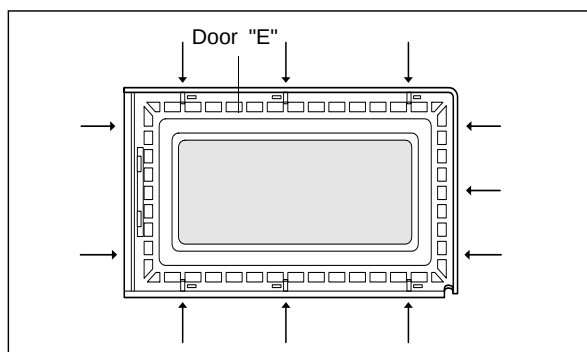
Insert flat screwdriver into the gap between Door "E" and Door "C" to remove Door "C". Be careful when handling Door "C" because it is fragile.



### 4-3-3 Removal of Door "E"

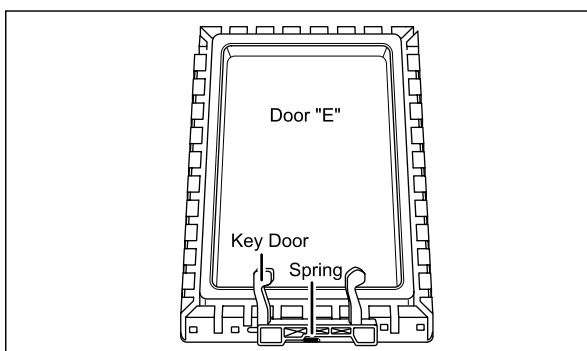
Following the procedure as shown in the figure, insert and bend a thin metal plate between Door "E" and Door "A" until you hear the 'tick' sound.

1. Insertion depth of the thin metal plate should be 0.5mm or less.



### 4-3-4 Removal of Key Door & Spring

Remove pin hinge from Door "E"  
Detach spring from Door "E" and key door.



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### 4-3-5 Reassembly Test

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After replacement of 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.

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 energy may leak from the space between the door and oven.
3. Do microwave leakage test.

### 4-4 Replacement of Fuse

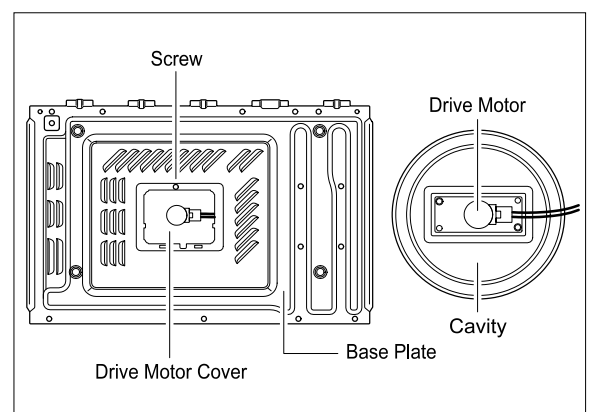
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1. Disconnect the oven from the power source.
2. When 15A fuse blows out by the operation of interlock monitor switch failure, replace the primary interlock switch, door sensing switch, monitor switch and power relay.
3. When the above three switches operate properly, check if any other part such as the control circuit board, blower motor or high voltage transformer is defective.

### 4-5 Replacement of Drive Motor

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1. Take out the glass tray, guide roller and coupler from cavity.
2. Turn the oven upside down to replace the drive motor.
3. Remove a screw securing the drive motor cover.
4. Disconnect all the lead wires from the drive motor.
5. Remove screws securing the drive motor to the cavity.
6. Remove the drive motor.
7. When replacing the drive motor, be sure to remount it in the correct position.
8. Connect all the leads to the drive motor.
9. Screw the drive motor cover to the base plate with a screw driver.





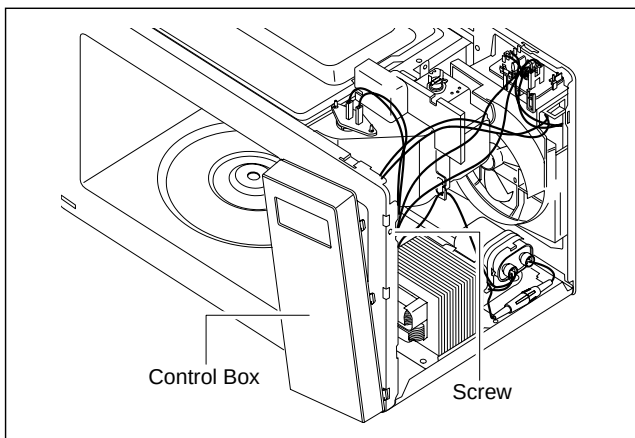
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## 4-6 Replacement of Control Circuit Board

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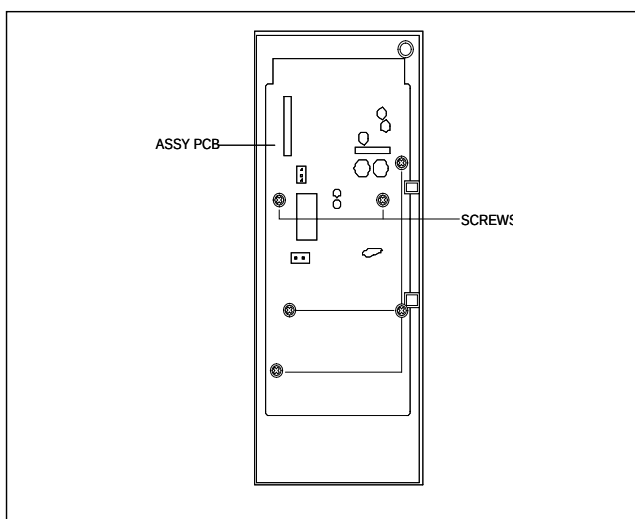
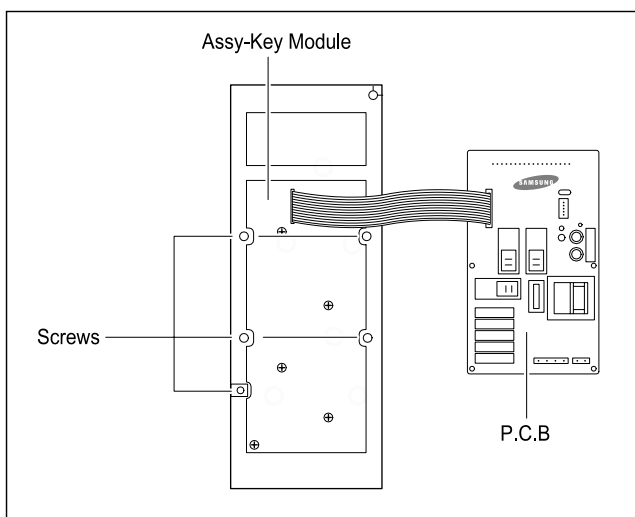
### 4-6-1 Removal of Control Box Assembly

1. Be sure to ground any static electric charge in your body and never touch the control circuit.
2. Disconnect the connectors from the control circuit board.
3. Remove screws securing the control box assembly.
4. Remove the screw securing the ground tail of the keyboard.



### 4-6-2 Removal of Ass'y P.C.B Assembly

1. Remove screws securing the control circuit board.
2. Lift up the control circuit board from the Ass'y control box.



## 5. Alignment and Adjustments

### PRECAUTION

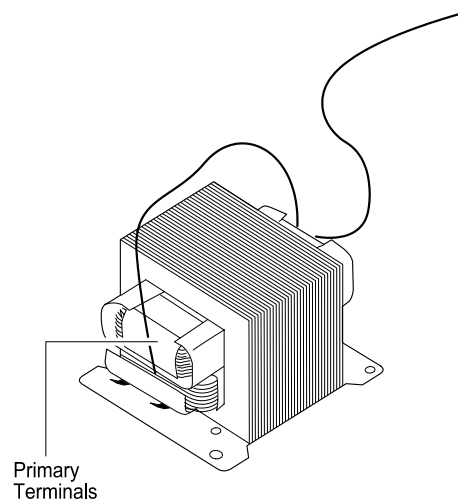
1. High voltage is present at the high voltage terminals during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

### 5-1 High Voltage Transformer

1. Remove connectors from the transformer terminals and check continuity.
2. Normal resistance readings are as follows:

|           |                        |
|-----------|------------------------|
| Secondary | Approx. 137 $\Omega$   |
| Filament  | Approx. 0 $\Omega$     |
| Primary   | Approx. 1.594 $\Omega$ |

(Room temperature = 20°C)



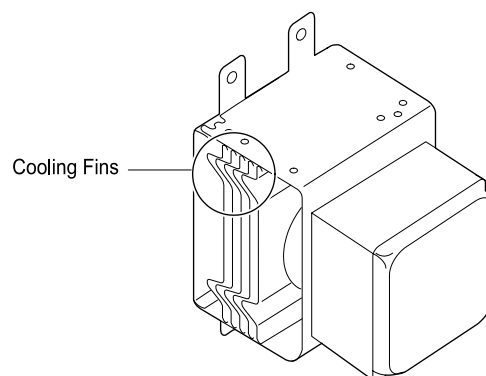
### 5-2 Low Voltage Transformer

1. The low voltage transformer is located on the Assy base plate.
2. Remove the low voltage transformer from the Assy base plate and check continuity.
3. Normal resistor reading is shown in the table.

| Terminals   | Resistance      |
|-------------|-----------------|
| 1~2(Input)  | 290 $\Omega$ .  |
| 3~4(Output) | 4.0 $\Omega$ .. |
| 5~6(Output) | 1.0 $\Omega$ .  |

### 5-3 Magnetron

1. Continuity checks can indicate only an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron :
2. Isolate the magnetron from the circuit by disconnecting its leads.
3. A continuity check across the magnetron filament terminals should indicate one ohm or less.
4. A continuity check between each filament terminal and magnetron case should read open.



## 5-4 High Voltage Capacitor

1. Check continuity of the capacitor with the meter set at the highest resistance scale.
2. Once the capacitor is charged, a normal capacitor shows continuity for a short time, and then indicates  $9M\Omega$ .
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 read infinite.

## 5-5 High Voltage Diode

1. Isolate the diode from the circuit by disconnecting its leads.
2. With the ohm-meter set at the highest resistance scale, measure across the diode terminals. Reverse the meter leads and read the resistance. A 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). The resistance of a normal diode will be infinite in one direction and several hundred  $K\Omega$  in the other direction.

## 5-6 Main Relay and Power Control Relay

1. The relays are located on the PCB Ass'y. Isolate them from the main circuit by disconnecting the leads.
2. Operate the microwave oven with a water load in the oven. Set the power level set to high.
3. Check continuity between terminals of the relays after the start pad is pressed.

## 5-7 Adjustment of Primary Switch, Door Sensing Switch and Monitor Switch

### Precaution

For continued protection against radiation hazard, replace parts in accordance with the wiring diagram and be sure to use the correct part number for the following switches: Primary and secondary interlock switches, and the interlock monitor switch (replace all together). Then follow the adjustment procedures below. After repair and adjustment, be sure to check the continuity of all interlock switches and the interlock monitor switch.

1. When mounting Primary switch and Interlock Monitor switch to Latch Body, consult the figure.

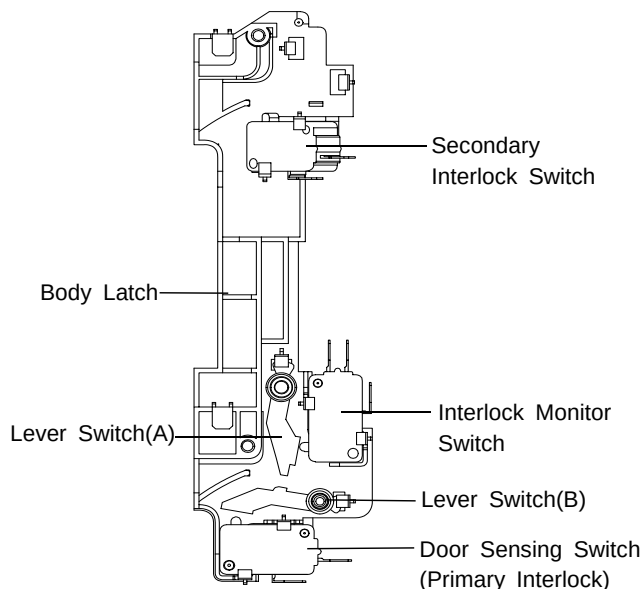
2. No specific adjustment during installation of Primary switch and Monitor switch to the latch body is necessary.

3. When mounting the Latch Body to the oven assembly, adjust the Latch Body by moving it 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 Latch Body to the oven assembly.

4. Reconnect to Monitor switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

5. Confirm that the gap between the switch housing and the switch actuator is no more than 0.5mm when door is closed.

6. **Interlock Switch Replacement** - When replacing faulty switches, be sure switch mounting tabs are not bent, broken or otherwise deficient in their ability to secure the switches in place.



|                        | Door Open | Door Closed |
|------------------------|-----------|-------------|
| Primary switch         | $\infty$  | 0           |
| Monitor switch(COM-NC) | 0         | $\infty$    |
| Door Sensing S/W       | $\infty$  | 0           |

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## 5-8 Output Power of Magnetron

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### CAUTION MICROWAVE RADIATION

PERSONNEL SHOULD NOT ALLOW EXPOSURE TO MICROWAVE RADIATION FROM MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

The output power of the magnetron can be measured by performing a water temperature rise test.

Equipment needed :

\* Two 1-liter cylindrical borosilicate glass vessel (Outside diameter 190 mm)

\* One glass thermometer with mercury column

NOTE: Check line voltage under load. Low voltage will lower the magnetron output. Make all temperature and time tests with accurate equipment.

1. Fill the one liter glass vessel with water.
2. Stir water in glass vessel with thermometer, and record glass vessel's temperature ("T1", 10±1°C).
3. After moving the water into another glass vessel, place it in the center of the cooking tray. Set the oven to high power and operate for 49 seconds exactly. (3 seconds included as a holding time of magnetron oscillation:)
4. When heating is finished, stir the water again with the thermometer and measure the temperature ("T2").
5. Subtract T1 from T2. This will give you the water temperature rise. ( $\Delta T$ )
6. The output power is obtained by the following formula;

$$\text{Output Power} = \frac{4.187 \times 1000 \times \Delta T + 0.88 \times M_c \times (T_2 - T_0)}{46}$$

49 : Heating Time (sec)

4.187 : Coefficient for Water

1000 : Water (cc)

$\Delta T$  : Temperature Rise (T1-T2)

$M_c$  : Cylindrical borosilicate glass weight

$T_0$  : Room Temperature

7. Normal temperature rise for this model is 9°C to 11°C at 'HIGH'.

NOTE 1: Variations or errors in the test procedure will cause a variance in the temperature rise.

Additional power test should be made if temperature rise is marginal.

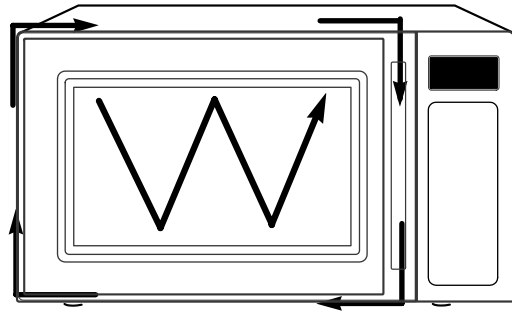
NOTE 2: Output power in watts is computed by multiplying the temperature rise (step E) by a factor of 91 times the of centigrade temperature.

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## 5-9 Procedure for Measurement of Microwave Energy Leakage

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- 1) Pour  $275 \pm 15$ cc of  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ ) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
- 2) Start to operate the oven and measure the leakage by using a microwave energy survey meter.
- 3) Set survey meter with dual ranges to 2,450MHz.
- 4) When measuring the leakage, always use the 2 inch spacer cone with the probe. Hold the probe perpendicular to the cabinet door. Place the spacer cone of the probe on the door and/or cabinet door seam and move along the seam, the door viewing window and the exhaust openings moving the probe in a clockwise direction at a rate of 1 inch/sec. If the leakage testing of the cabinet door seam is taken near a corner of the door, keep the probe perpendicular to the areas making sure that the probe end at the base of the cone does not get closer than 5cm to any metal. If it gets closer than 5cm, erroneous readings may result.
- 5) Measured leakage must be less than  $4\text{mW}/\text{cm}^2$  after repair or adjustment.



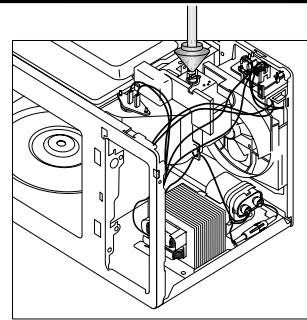
Maximum allowable leakage is  $5\text{mW}/\text{cm}^2$ .  
 $4\text{mW}/\text{cm}^2$  is used to allow for measurement and meter accuracy

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## 5-10 Check for Microwave Leakage

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1. Remove the outer panel.
2. Pour  $275 \pm 15$ cc of  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ ) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
3. Start the oven at the highest power level.
4. Set survey meter dual ranges to 2,450MHz.
5. Using the survey meter and spacer cone as described above, measure near the opening of magnetron, the surface of the air guide and the surface of the wave guide as shown in the following photo.( but avoid the high voltage components.) The reading should be less than  $4\text{mW}/\text{cm}^2$ .



**WARNING**  
AVOID THE HIGH VOLTAGE COMPONENTS

---

## 5-11 Note on Measurement

---

- 1) Do not exceed the limited scale.
- 2) The test probe must be held on the grip of the handle, otherwise a false reading may result when the operator's hand is between the handle and the probe.
- 3) When high leakage is suspected, do not move the probe horizontally along the oven surface; this may cause damage to the probe.
- 4) Follow the recommendation of the manufacturer of the microwave energy survey meter.

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## 5-12 Leakage Measuring Procedure

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### 5-12-1 Record keeping and notification after measurement

- 1) After adjustment and repair of a radiation preventing device, make a repair record for the measured values, and keep the data.
- 2) If the radiation leakage is more than  $4\text{mW}/\text{cm}^2$  after determining that all parts are in good condition, functioning properly and the identical parts are replaced as listed in this manual notify that fact to ;

### CENTRAL SERVICE CENTER

- 5-12-2 At least once a year have the microwave energy survey meter checked for accuracy by its manufacturer.

## 6. Troubleshooting

### PRECAUTION

1. CHECK GROUNDING BEFORE CHECKING FOR TROUBLE.
2. BE CAREFUL OF THE HIGH VOLTAGE CIRCUIT.
3. DISCHARGE THE HIGH VOLTAGE CAPACITOR.
4. WHEN CHECKING THE CONTINUITY OF THE SWITCHES OR TRANSFORMER, DISCONNECT ONE LEAD WIRE FROM THESE PARTS AND THEN CHECK CONTINUITY WITHOUT THE POWER SOURCE ON. TO DO OTHERWISE MAY RESULT IN A FALSE READING OR DAMAGE TO YOUR METER.
5. DO NOT TOUCH ANY PART OF THE CIRCUIT OR THE CONTROL CIRCUIT BOARD, SINCE STATIC DISCHARGE MAY DAMAGE IT.  
ALWAYS TOUCH GROUND WHILE WORKING ON IT TO DISCHARGE ANY STATIC CHARGE BUILT UP.

### 6-1 Electrical Malfunction

| SYMPTOM                                                                                                  | CAUSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CORRECTIONS                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oven is dead.<br>Fuse is OK.<br>No display and no operation at all.                                      | <ol style="list-style-type: none"> <li>1. Open or loose lead wire harness</li> <li>2. Open thermal cutout (Magnetron)</li> <li>3. Open low voltage transformer</li> <li>4. Defective Ass'y PCB</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                | Check fan motor when thermal cutout is defective.<br>Check Ass'y PCB when L.V.T is defective.                                                                      |
| No display and no operation at all.<br>Fuse is blown.                                                    | <ol style="list-style-type: none"> <li>1. Shorted lead wire harness</li> <li>2. Defective primary latch switch (NOTE 1)</li> <li>3. Defective monitor switch (NOTE1)</li> <li>4. Shorted H.V.Capacitor</li> <li>5. Shorted H.V.Transformer (NOTE2)</li> </ol> <p>NOTE 1: All of these switches must be replaced at the same time. (refer to adjustment instructions)<br/>Check continuity of power relay contacts and if it has continuity, replace power relay also.</p> <p>NOTE 2: When H.V.Transformer is replaced, check diode and magnetron also.</p>                                                                                               | Check adjustment of primary, interlock monitor, power relay, door sensing switch.                                                                                  |
| Oven does not accept key input (Program)                                                                 | <ol style="list-style-type: none"> <li>1. Key input is not in-Sequence</li> <li>2. Open or loose connection of membrane key pad to Ass'y PCB</li> <li>3. Shorted or open membrane panel</li> <li>4. Defective Ass'y PCB</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                       | Refer to operation procedure.<br><br>Replace PCB main.                                                                                                             |
| Timer starts countdown but no microwave oscillation.<br>(No heat while oven lamp and fan motor turn on.) | <ol style="list-style-type: none"> <li>1. Off-alignment of latch switches</li> <li>2. Open or loose connection of high voltage circuit especially magnetron filament circuit</li> </ol> <p>NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to lower output and/or intermittent oscillation.</p> <ol style="list-style-type: none"> <li>3. Defective high voltage components H.V.Transformer<br/>H.V. Capacitor<br/>H.V.Diode, H.V.Fuse<br/>Magnetron</li> <li>4. Open or loose wiring of power relay</li> <li>5. Defective primary latch switch</li> <li>6. Defective power relay or Ass'y PCB</li> </ol> | Adjust door and latch switches.<br><br>Check high voltage component according to component test procedure and replace if it is defective.<br><br>Replace PCB main. |

## 6-1 Electrical Malfunction(continued)

| SYMPTOM                                                        | CAUSE                                                                                                                                               | CORRECTIONS                                                                                                                                                         |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oven lamp and fan motor turn on                                | 1. Misadjustment or loose wiring of primary latch switch<br>2. Defective primary latch switch                                                       | Adjust door and latch switches.                                                                                                                                     |
| Oven can program but timer does not start.                     | 1. Open or loose wiring of secondary interlock switch<br>2. Off-alignment of primary interlock<br>3. Defective secondary interlock S/W              | Adjust door and interlock switches.                                                                                                                                 |
| Microwave output is low;. Oven takes longer time to cook food. | 1. Decrease in power source voltage.<br>2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation))<br>3. Aging of magnetron | Consult electrician.                                                                                                                                                |
| Fan motor turns on when plugged in                             | Loose wiring of door sensing switch                                                                                                                 | Check wire of door sensing switch.                                                                                                                                  |
| Oven does not operate and return to the plugged in mode.       | Defective Ass'y PCB                                                                                                                                 | Replace PCB main.                                                                                                                                                   |
| Loud buzzing noise can be heard.                               | 1. Loose fan and fan motor<br>2. Loose screws on H.V.Transformer<br>3. Shorted H.V.Diode                                                            | Tighten screws of fan motor.<br>Tighten screws of H.V.Transformer.<br>Replace H.V.Diode.                                                                            |
| Turntable motor does not rotate.                               | 1. Open or loose wiring of turntable motor.<br>2. Defective turntable motor.                                                                        | Replace turntable motor.                                                                                                                                            |
| Oven stops operation during cooking                            | 1. Open or loose wiring of primary interlock switch<br>2. Operation of thermal cutout(Magnetron)                                                    | Adjust door and latch switches.                                                                                                                                     |
| Sparks                                                         | 1. Metallic ware or cooking dishes touching on the oven wall.<br>2. Ceramic ware trimmed with gold or silver powder also causes sparks.             | Inform the customer.<br>Do not use any type of cookware with metallic trimming.                                                                                     |
| Uneven cooking                                                 | Uneven intensity of microwave due to its characteristics.                                                                                           | Wrap thinner parts of the food with aluminum foil.<br>Use plastic wrap or cover with a lid.<br>Stir once or twice while cooking foods such as soup, cocoa, or milk. |
| Noise from the turntable motor when it starts to operate.      | Noise may result from the motor.                                                                                                                    | Replace turntable motor.                                                                                                                                            |

## 7-1 Exploded Views

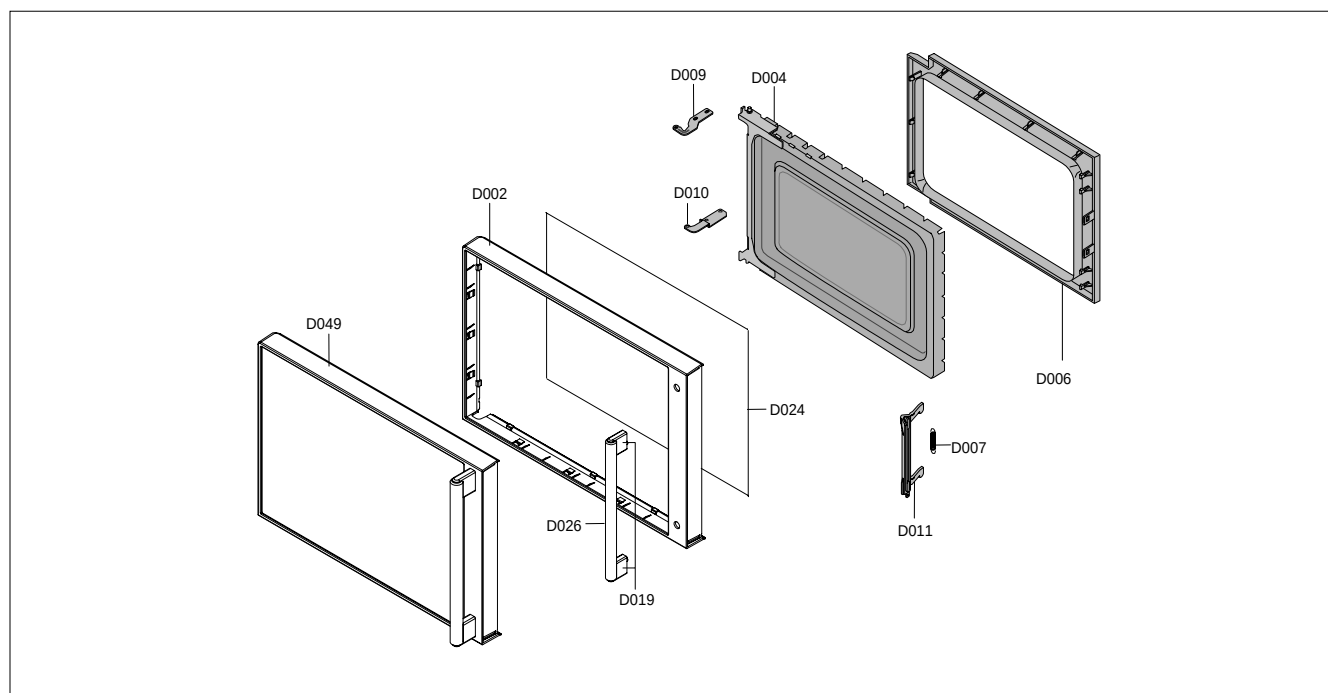




## 7-2 Main Parts List - S.N.A : SERVICE NOT AVAILABLE

| No.  | Code No.      | Description              | Specification                     | Q'ty | Remark |
|------|---------------|--------------------------|-----------------------------------|------|--------|
| B001 | 3405-001034   | SWITCH-MICRO             | 125/250VAC,16A,200GF,SPST-N       | 1    | DOOR   |
| B002 | 3405-001032   | SWITCH-MICRO             | 125/250VAC,16A,200GF,SPDT         | 1    |        |
| B006 | DE72-00137B   | LATCH-BODY               | PG113R,NYLON,WHT,-,-,-,-,-        | 1    |        |
| B010 | DE66-00093B   | LEVER-SWITCH(A)          | PG113R,NYLON,NTR,HANDLE,          | 1    |        |
| B011 | DE66-00094B   | LEVER-SWITCH(B)          | PG113R,NYLON,NTR,HANDLE,          | 1    |        |
| B018 | DE96-00120H   | ASSY BODY LATCH          | PG113R(TBMO/SIDE),NYLON           | 1    |        |
| M001 | DE70-00185N   | PANEL-OUTER              | C115,SECC,T0.6,W405.7,L1090.      | 1    | WHT    |
| M001 | DE70-00185Q   | PANEL-OUTER              | 1.1 AQUA CONV,SECC,T0.6,-,-,PCM,  | 1    | SILVER |
| M002 | DE63-90035H   | CUSHION-RUBBER           | -,DFA20,T2,W190,L200,-,-          | 1    |        |
| M003 | DE61-00438A   | BRACKET-UPPER            | C115,SECC,T0.5,-,-,-,1.1-C        | 1    |        |
| M005 | DE61-70060A   | SPRING-PLATE             | -,SK-5,T0.5,-,-,-,-,-,-           | 1    |        |
| M008 | DE63-20017A   | GASKET-HEATER            | -,BRASS,T1.5,OD30.5,ID22.5        | 1    |        |
| M009 | DE60-40009B   | WASHER-TEFLON            | SLOT,ID22.2,OD28,T1.2,TEFL        | 1    |        |
| M010 | DE61-50021A   | BRACKET-FLANGE           | -,SECC1,T0.8,32,32,-,-            | 1    |        |
| M011 | DE61-50347A   | BRACKET-EARTH            | -,BSS2-A,T1.0,W35,L43,MBGF        | 1    |        |
| M012 | DE61-50027B   | BRACKET-HEATER           | -,SECC,T1.0,W51,L55,CE945         | 1    |        |
| M013 | DE61-50570C   | BRACKET-AIR GUIDE        | CK95,SECC,T0.8,-,-,-,D            | 1    |        |
| M015 | DE39-00022B   | ASSY POWER CORD          | 4819D,CK135,230V50Hz,-,-,-,-      | 1    |        |
| M016 | DE63-00148A   | COVER-BACK               | C115,SECC,T0.5,-,-,-,-,1.1        | 1    |        |
| M017 | DE96-00011A   | ASSY NOISE FILTER        | SN-3WUA,250V15A,3W 15A            | 1    |        |
| M019 | 3601-001197   | FUSE-CARTRIDGE           | 250V,15A,SLOW-BLOW,CERAMI         | 1    |        |
| M023 | DE31-00001D   | MOTOR FAN                | -,SMF-2D3EA,230V50Hz,-,M1D33CE    | 1    |        |
| H018 | DE31-90020A   | BLADE-FAN                | ALSTAR,T0.6,W250,L250,-,-,-       | 1    |        |
| M029 | DE47-20009A   | THERMOSTAT               | PW2N-520PB,160/60,250V/7.5A,H     | 1    |        |
| M034 | DE67-00187A   | COUPLER                  | CE1100,PPS(ESS840),-,-,-,-        | 1    |        |
| M035 | OM75P(31)ERHN | ASSY-MAGNETRON           | OM75P(31)ERHN                     | 1    |        |
| M036 | 4713-001046   | LAMP-INCANDESCENT        | 240V,104mA,25W,ORG,-,-            | 1    |        |
| M037 | DE71-60016D   | COVER-AIR                | CK95,NYLYN#66(TEFRON523),-,-,-    | 1    |        |
| M038 | DE26-00080B   | TRANS H.V                | SHV-EURO2,230V,50HZ,2340V/3.5V    | 1    |        |
| M039 | 2501-001015   | C-OIL                    | 1.0uF,2100V,BK,35X54X80,20mm      | 1    |        |
| M040 | DE61-50106A   | BRACKET-HVC              | -,SECC,T0.8,W31,L125.8,-,-        | 1    |        |
| M041 | DE91-70065A   | ASSY-HVD                 | BMP28,SEMA,12KV,SUMI,-            | 1    |        |
| M043 | DE91-70061A   | ASSY-H.V.FUSE            | THV060T-0800-H,5KV/0.80A,W        | 1    |        |
| M044 | DE26-00101A   | TRANS L.V                | SLV-C115E,230V,50HZ,22V,7.5V,3    | 1    |        |
| M046 | DE60-60025A   | PIN-FOOT                 | PP-JI350,BLK,-,-,-,-,-            | 4    |        |
| M047 | DE61-40065A   | FOOT                     | -,PP,T2x22x17mm,BLK,-,-,-         | 4    |        |
| M048 | DE80-00024E   | BASE-PLATE               | C110/C115,SCP1,T0.6,-,-,-,NC-     | 1    |        |
| M049 | DE31-10170A   | MOTOR SYNCHRONOUS        | M2LJ24Z702,ST-16F,220/            | 1    |        |
| M051 | DE71-00015A   | COVER-CEILING            | CE2933,-,T0.3,W114.2,L121.        | 1    |        |
| M053 | DE97-00441A   | ASSY-GUIDE AIR           | CE1150/CE1160,SENSOR,-,-          | 1    |        |
| M054 | DE32-10013A   | SENSOR THERMISTOR        | PT-312-K2,-,-,-,-,-,-             | 1    |        |
| M058 | DE65-20014A   | CABLE CLAMP              | -,,-,,-,NY-66,-,DA-6N             | 1    | P/CORD |
| M095 | DE47-00001A   | HEATER                   | SHG-2933E,-,-,1300W(1250W),-,230V | 1    |        |
| M113 | DE61-30006A   | SUPPORT-HEATER           | -,ALUMINA,5G,2ND-W/P,-,-,-        | 1    |        |
| P024 | DE32-60013A   | SENSOR GAS               | ST-MWO,-,-,-,-,-,-,-              | 1    |        |
| P129 | DE61-50301A   | BRACKET-COVER            | -,SBHG1-A,RE-707GMS,-,-,-,        | 1    |        |
| T001 | DE74-20015G   | TRAY-COOKING             | 3RD-1.0,T6,1115G,HKS,-,-,-,       | 1    |        |
| T009 | DE97-00136B   | ASSY-WIRE RACK           | CK95,LOW-RACK,-,-,-,-             | 1    |        |
| T010 | DE97-00136E   | ASSY-WIRE RACK           | MG104WA,114,FOOT,VE-TYPE          | 1    |        |
| T017 | DE92-90189T   | ASSY-GUIDE ROLLER        | JES1044,PPS 14.7DI,-,-            | 1    |        |
| W002 | DE96-00292A   | ASSY-WIRE HARNESS-A      | CE1115/XEF,CONVECTIO              | 1    |        |
| W003 | DE96-00296A   | ASSY-WIRE HARNESS-B      | CE1100/XEF,CONVECTIO              | 1    |        |
| W006 | DE39-40409A   | WIRE HARNESS-E           | 230V50HZ,M9G45,CTW,-,-,-          | 1    |        |
| W024 | DE96-00315A   | ASSY-WIRE HARNESS-SENSOR | CE1150/XEF,CONV                   | 1    |        |
| X004 | DE99-00242J   | ASSY-CLEAN WATER BOWL    | CE1150R-S/BWT,SPS(LG SP2306FS)    | 1    |        |
| X021 | DE70-00384A   | PLATE-STEAM              | C115,STS304,-,T0.5,-,-,-,-,-      | 1    |        |
| X022 | DE75-00034A   | BOWL-STEAM               | C115,HEAT-RESISTING PP,-,-,-,-    | 1    |        |
| X024 | DE63-00189A   | COVER-STEAM BOWL         | C115,STS304,T0.5,-,-,-,-          | 1    |        |
| X038 | DE75-00037A   | RACK-STEAM               | C110/C115,PP(HI831),STEAM BOW     | 1    |        |

## 7-3 Door Parts List

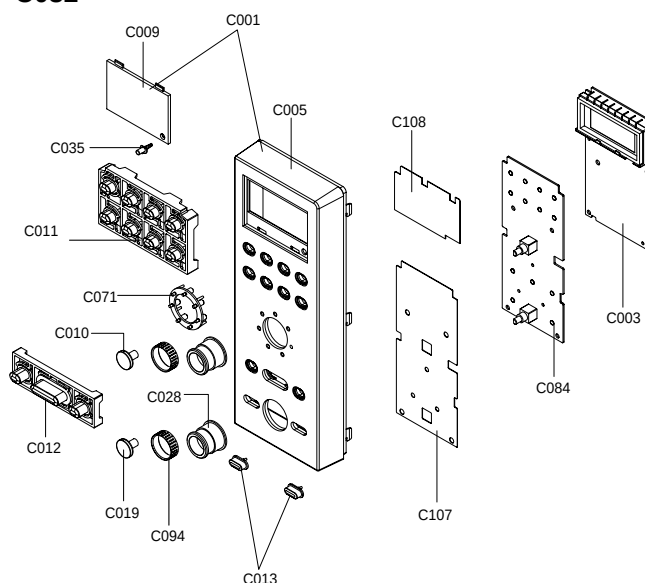


| No.  | Code No.    | Description      | Specification                                    | Q'ty | Remark        |
|------|-------------|------------------|--------------------------------------------------|------|---------------|
| D002 | DE64-00776A | DOOR-A           | C115,PC LEXAN#141,WHT,1.1 CONV,-,                | 1    |               |
| D004 | DE94-00428E | ASSY DOOR-E      | 1.1 AQUA CONV,SEALANT,-                          | 1    |               |
| D006 | DE64-01043A | DOOR-C           | CE1100,PBT,-,-,-,BLK,1.1 AQUA C                  | 1    |               |
| D007 | DE61-00193A | SPRING-KEY       | MW1255,HSWR,PI0.6,-,D5.5,L19,                    | 1    |               |
| D009 | DE61-00246A | HINGE-DOOR UPPER | MW8103SS,SCP1,T2.0,-,-,                          | 1    |               |
| D010 | DE61-00247A | HINGE-DOOR LOWER | MW8103SS,SCP1,T2.0,-,-,                          | 1    |               |
| D011 | DE64-00690A | KEY-DOOR         | TBMO-EURO,NYLON#66,-,-,BLK,-,SI                  | 1    |               |
| D019 | DE64-01067B | HANDLE-DOOR      | 1.1 AQUA CONV,PC LEXAN#141,-,-,-,SIL             | 2    |               |
| D024 | DE64-00984A | SCREEN-DOOR(B)   | C100/C115,TEMP-GLASS,T3.2                        | 1    | WHT           |
| D024 | DE64-00984B | SCREEN-DOOR(B)   | CE1150-SL,TEMP-GLASS,3.2,-,-,-,SILVER,1.1AQUA    | 1    | SILVER        |
| D026 | DE64-00980A | HANDLE-COVER     | C110/C115,PP(HI831),CONV-1.1,STEAM BOWL          | 1    |               |
| D049 | -           | ASSY DOOR        | CE1110/XEU,WHT,SEUK                              | 1    | WHT(S.N.A)    |
| D049 | -           | ASSY DOOR        | CE1150-SL,PC LEXAN#141,-,-,-,SILVER,1.1 AQUA CON |      | SILVER(S.N.A) |

S.N.A : SERVICE NOT AVAILABLE

## 7-4 Control Parts List

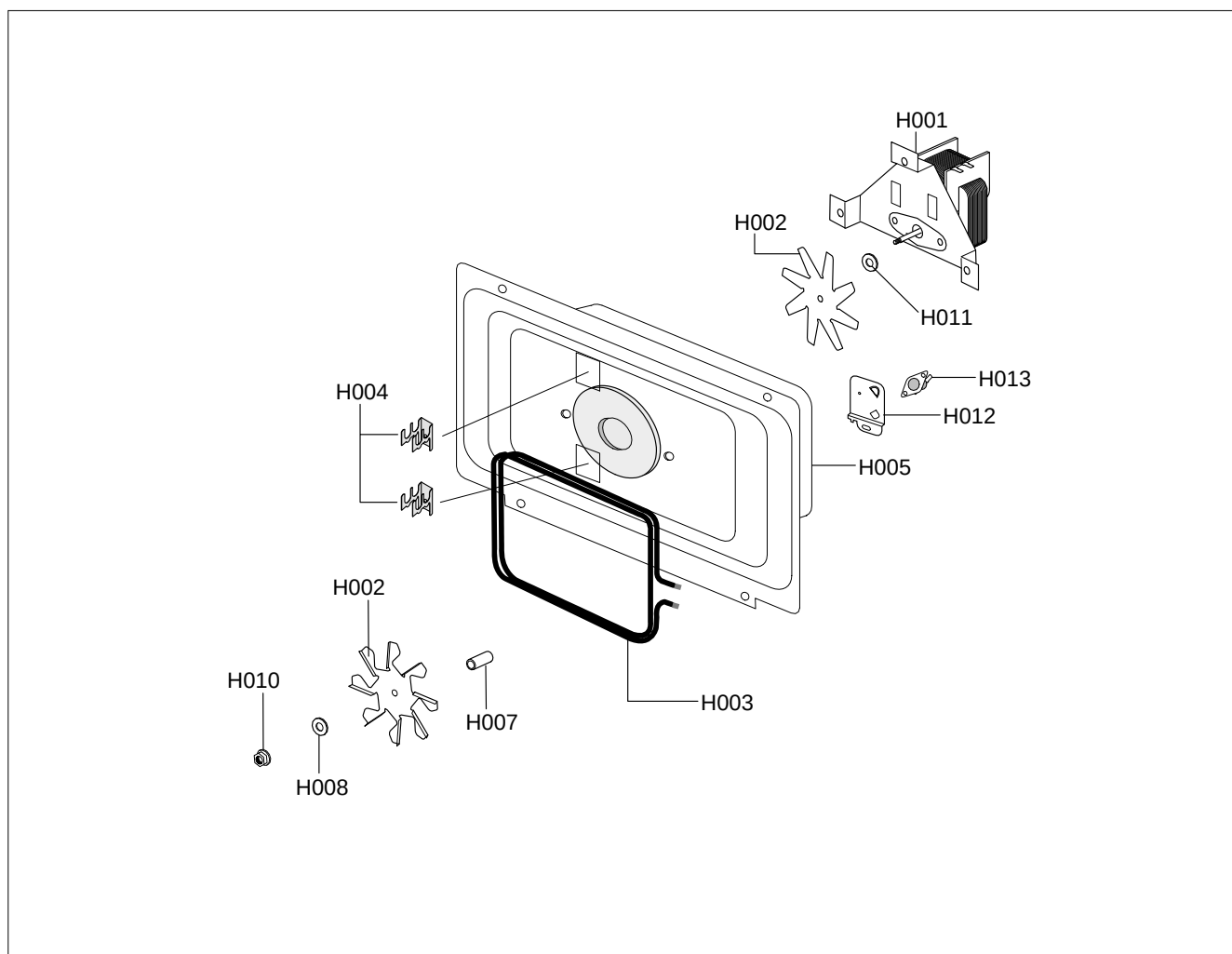
### ASSY- CONTROL BOX - C082



| No.  | Code No.     | Description        | Specification                                 | Q'ty | Remark        |
|------|--------------|--------------------|-----------------------------------------------|------|---------------|
| C001 | DE94-00913C  | ASSY CONTROL-PANEL | -,CE1150R/BWT,WHT,RUSSIA                      | 1    | WHT           |
| C001 | DE94-00913D  | ASSY CONTROL-PANEL | -,CE1150R-SL/BWT,SILVER,RUSSIA                | 1    | SILVER        |
| C003 | RC-CE1150-01 | ASSY PCB PARTS     | CE1151T/XEF,230V50HZ                          | 1    |               |
| C005 | DE64-00779C  | CONTROL-PANEL      | CE1150R/BWT,PC LEXAN#141,-,-,-,WHT,           | 1    | WHT           |
| C005 | DE64-00779J  | CONTROL-PANEL      | CE1150R-S/BWT,PC LEXAN#141,-,-,-,PURE-SILVER, | 1    | SILVER        |
| C009 | DE64-00780A  | WINDOW-DISPLAY     | C115,SAN(CR5381),SMG,1.1                      | 1    |               |
| C010 | DE64-00789B  | BUTTON-SELECT      | CE1150,PC LEXAN#141,-,-,WH                    | 1    | WHT           |
| C010 | DE64-00789D  | BUTTON-SELECT      | CE1150-SL,PC LEXAN#141,-,-,SILVER,-           | 1    | SILVER        |
| C011 | DE64-00781A  | BUTTON-SELECT(A)   | C115,PC LEXAN#141,1.1 C                       | 1    | WHT           |
| C011 | DE64-00781B  | BUTTON-SELECT(A)   | CE1150-SL,PC LEXAN#141,-,-,SILVER,-           | 1    | SILVER        |
| C012 | DE64-00782A  | BUTTON-SELECT(B)   | C115,PC LEXAN#141,1.1 C                       | 1    | WHT           |
| C012 | DE64-00782B  | BUTTON-SELECT(B)   | CE1150-SL,PC LEXAN#141,-,-,SILVER,-           | 1    | SILVER        |
| C013 | DE64-00783A  | BUTTON-SELECT(C)   | C115,PC LEXAN#141,1.1 C                       | 2    | WHT           |
| C013 | DE64-00783B  | BUTTON-SELECT(C)   | CE1150-SL,PC LEXAN#141,-,-,SILVER,-           | 2    | SILVER        |
| C019 | DE64-00789F  | BUTTON-START       | CE1150R/BWT,PC LEXAN#141,-,-,WHITE,-          | 1    | WHT           |
| C019 | DE64-00789E  | BUTTON-START       | CE1150S-S/BWT,PC,-,-,SIL,1.1 AQUA CONVECTION  | 1    | SILVER        |
| C028 | DE64-00787A  | KNOB-COVER         | C115,PC LEXAN#141,1.1 CONV,-,                 | 2    | WHT           |
| C028 | DE64-00787B  | KNOB-COVER         | CE1150-SL,PC LEXAN#141,-,-,-,SILVER,-,-       | 2    | SILVER        |
| C035 | DE64-00946A  | BUTTON-CLOCK       | C115,PC LEXAN#141,-,-,-,-                     | 1    |               |
| C071 | DE63-00150A  | COVER-LED          | C115,ABS CLEAR,1.1 CONV,-,-,-,                | 1    |               |
| C082 | -            | ASSY CONTROL-BOX   | -,CE1150R/BWT,WHT,RUSSIA                      | 1    | WHT(S.N.A)    |
| C082 | -            | ASSY CONTROL-BOX   | -,CE1150R-SL/BWT,SILVER,RUSSIA                | 1    | SILVER(S.N.A) |
| C084 | DE96-00318A  | ASSY-KEY MODULE    | DKM-CE1150,KEY-MODULE                         | 1    |               |
| C094 | DE69-00351A  | BAND-BUTTON DIAL   | FC139ST(FBI),SILICON RU                       | 2    |               |
| C107 | DE01-00141A  | FILM-BOARD         | -,1.1AQUA CONV.,PET,T0.1,-,-,                 | 1    |               |
| C108 | DE01-00142A  | FILM-WINDOW        | -,1.1AQUA CONV.,PET,T0.2,-,-                  | 1    |               |

S.N.A : SERVICE NOT AVAILABLE

## 7-5 Casing Parts List

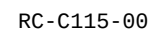


| No.  | Code No.    | Description       | Specification                 | Q'ty | Remark |
|------|-------------|-------------------|-------------------------------|------|--------|
| H001 | DE31-10171A | MOTOR CONVECTION  | SMC-105EA,230V/50HZ,280       | 1    |        |
| H002 | DE31-90019A | BLADE-FAN         | SECC,T0.6,-,-,-,-             | 1    |        |
| H002 | DE31-90020A | BLADE-FAN         | ALSTAR,T0.6,W250,L250,-,-,-   | 1    |        |
| H003 | DE47-70077A | HEATER-CONVECTION | SHC-118E1,-,-,1680W,-,        | 1    |        |
| H004 | DE61-50484A | BRACKET-HEATER    | -,STS430,T0.8,W27.2,L26,C     | 2    |        |
| H005 | DE97-00393A | ASSY-COVER CASING | C110,1.1CU.FT,AQUA CON        | 1    |        |
| H007 | DE72-30016A | BUSH-MOTOR        | -,MSWR3,L11.2,D5.6,RE-1300,-, | 1    |        |
| H008 | DE60-40026B | WASHER-PLAIN      | ID5.5,OD12,T1.0,SBC1,ZNC3,-   | 1    |        |
| H010 | DE60-30016A | NUT-FLANGE        | M4,MSWR10,-,-,-,-,-,-,-       | 1    | SENSOR |
| H011 | DE60-40014B | WASHER-C MOTOR    | M16,T1.0,SECC,ZNC3,-,-,-,     | 1    |        |
| H012 | DE61-50490A | BRACKET-TCO       | -,SECC1,T0.6,34,58,-,-        | 1    |        |
| H013 | DE47-20009A | THERMOSTAT        | PW2N-520PB,160/60,250V/7.5A,H | 1    |        |

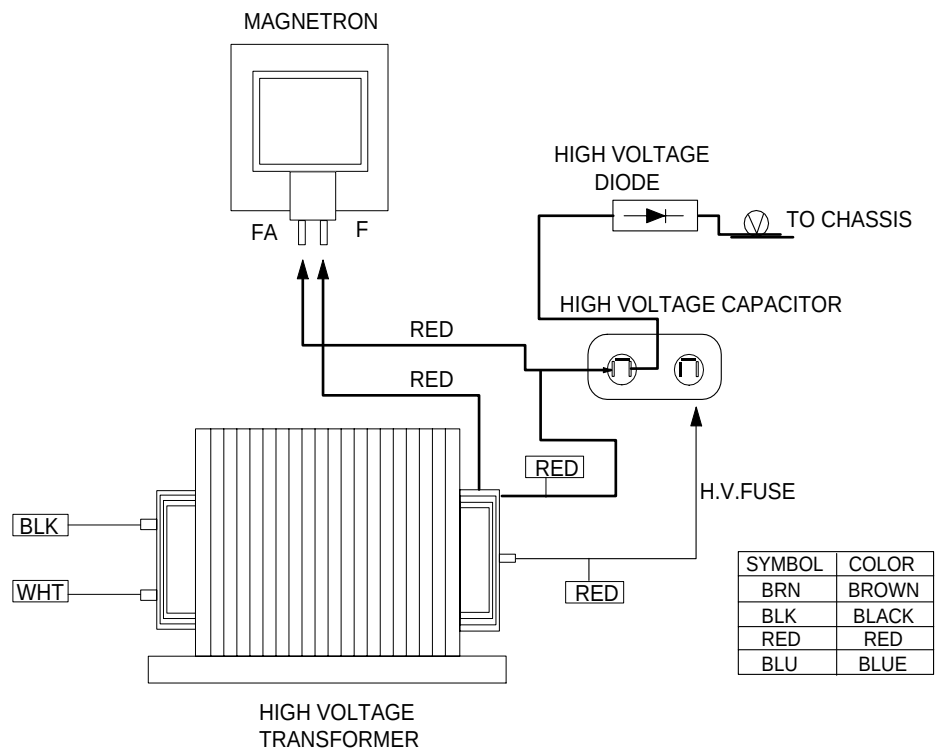
## 7-6 Standard Parts List

| Code No.    | Description         | Specification                         | Q'ty | Remark     |
|-------------|---------------------|---------------------------------------|------|------------|
| DE60-20063A | BOLT-FLANGE         | M4,10,ZPC3,YEL,MSWR,-,-,-,-           | 4    | HING-L/U   |
| DE60-30016A | NUT-FLANGE          | M4,MSWR10,-,-,-,-,-,-                 | 1    | SENSOR     |
| DE60-30016B | NUT-FLANGE          | M4,MSWR10,FEFN,-,-,-,-,-              | 3    | -          |
| DE60-10082H | SCREW-A             | -,-,-,-,2S-4X12,TOOTHED,-,-,-,-       | 5    | P-OUTER    |
| DE60-10018A | SCREW-ASSY MACHINE  | -,WS,MSWR10,SN1,PH,M4X0.7P,-,8,-,-    | 2    | B-EARTH    |
| DE60-10098A | SCREW-ASSY TAP TITE | -,GLD,SWRCH18A,ZPC2,PH,TC,-,M4X8,WT,- | 2    | M-DRIVE    |
| DE60-10045A | SCREW-TAP PH        | -,-,FEFZY,-,PH,M3,-,L6,-,-            | 2    | -          |
| DE60-10052A | SCREW-TAP PH        | -,-,FEFZY,-,PH,M4,-,L8,-,-            | 2    | A-A-RIGHT  |
| DE60-10045A | SCREW-TAP PH        | -,-,FEFZY,-,PH,M3,-,L6,-,-            | 1    | -          |
| DE60-10088A | SCREW-TAP PH        | -,-,FEFZY,PLAIN,PH,M3,-,L8,-,-        | 9    | -          |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 2    | A-A-LEFT   |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 4    | A-C-BACK   |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 3    | A-CASING   |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 1    | A-THERMO-G |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 1    | B-A-GUIDE  |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 2    | B-LATCH    |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 1    | B-UPPER    |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 1    | C-AIR      |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 2    | C-BOX      |
| DE60-10070A | SCREW-TAP TH        | -,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-      | 2    | M-FAN      |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 3    | B-HEATER   |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 2    | C-CEILING  |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 1    | SENSOR     |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 3    | B-C-MOTOR  |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 2    | BKT-HEATER |
| DE60-10122A | SCREW-TAP TH        | -,-,FE,FN,TAP,TH,-,2-4X8,-,-          | 4    | CV-CAS     |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 1    | A-N-FILTER |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 1    | A-P-CORD   |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 3    | B-PLATE    |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 1    | C-B-EARTH  |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 1    | M-D-CONVE  |
| DE60-10012A | SCREW-TAP TITE      | -,SWR10,M4,L10,TH,+,-,3,ZPC2,-        | 1    | B-T-MOTOR  |
| DE60-10034A | SCREW-TH            | -,-,L10,STS304,TH,+,-,M4,-,-          | 1    | SENSOR     |
| DE60-10080B | SCREW-WASHER        | -,2S,SWRCH18A,ZP2,PH,PI5,-,L10,-,-    | 4    | MAGNETRON  |
| DE60-10080B | SCREW-WASHER        | -,2S,SWRCH18A,ZP2,PH,PI5,-,L10,-,-    | 4    | TRANS-HV   |

## 8-1 P.C.B Diagrams ( This Document can not be used without Samsung's authorization. )



## 9-1 Schematic Diagrams ( This Document can not be used without Samsung's authorization. )



## 8-2 P.C.B Parts List

| Code No.    | Description           | Specification                                  | Q'ty | Remark                      |
|-------------|-----------------------|------------------------------------------------|------|-----------------------------|
| 3501-001062 | RELAY-POWER           | 24VDC,523.2MW,16000MA,1FORMA,15MS,10MS         | 1    | RY7                         |
| 3501-001068 | RELAY-POWER           | 24VDC,523MW,16000MA,1FORMA,15MS,10MS           | 1    | RY4                         |
| 3501-001068 | RELAY-POWER           | 24VDC,523MW,16000MA,1FORMA,15MS,10MS           | 1    | RY5                         |
| 3501-001155 | RELAY-MINIATURE       | 24VDC,200MW,3000MA,1FORMA,10MS,10MS            | 5    | RY1,RY2,RY3,RY6,RY8         |
| 3601-001126 | FUSE-CARTRIDGE        | 250V,1.6A,FAST-ACTING,CERAMIC,5x20mm           | 1    | FUSE1                       |
| 3708-000219 | CONNECTOR-FPC/FFC/PIC | 21P,1.25MM,STRAIGHT,SN,ZIF,-,SINGLE            | 1    | CN6                         |
| DE07-00060A | VF DISPLAY            | HNM-17LS01,HNM-17LS01,90*40*9.0,1/18,ND17,NS16 | 1    | DSP1                        |
| DE09-00361A | IC MICOM              | TMP87CM74F-5BE0,CE1150R-SL/BWT,80PIN,+5V,8Mhz, | 1    | IC1                         |
| DE30-20016A | BUZZER                | CBE2220BA,STICK,-,-,-,-,-,-,-,-                | 1    | BZ1                         |
| DE47-40024A | HOLDER-FUSE           | FH-51H,7.5A,-,-,-,-,-,-                        | 1    | FUSE1                       |
| DE61-00504A | HOLDER-DIGITRON       | NEW-WAVE,PP,-,-,-,-,BLK,-                      | 1    | DSP1                        |
| 0401-001083 | DIODE-SWITCHING       | MM4148,100V,150MA,LL-34,TP                     | 16   | D05~D12,D14~21              |
| 0402-001080 | DIODE-RECTIFIER       | GF1G,400V,1A,DO,TP                             | 5    | D01~D03,D13,D22             |
| 0402-001298 | DIODE-BRIDGE          | DF06S,600V,1A,SMD-4,TP                         | 1    | BD1                         |
| 0403-000507 | DIODE-ZENER           | MMSZ5232B,5.6V,5%,500mW,MELF,T                 | 1    | ZD1                         |
| 0403-001288 | DIODE-ZENER           | ZMM55C5V1,4.8-5.4V,500MW,LL-34,TP              | 2    | ZD3,ZD4                     |
| 0504-001008 | TR-DIGITAL            | RN2427,PNP,200MW,2.2K/10K,SOT-23,TP            | 4    | TR10~TR12,TR17              |
| 0504-001080 | TR-DIGITAL            | KRC246S,NPN,200mW,2.2K/10K,SOT-23,TP           | 13   | TR1~TR7,TR9,TR13~16,TR18    |
| 1201-000167 | IC-OP AMP             | KA358,SOP,TP,8P,150MIL,DUAL,100V/MV,PLASTIC,   | 1    | IC5                         |
| 1203-001037 | IC-POSIFIXED REG.     | 78L05,SOT-89,3P,185MIL,PLASTIC                 | 1    | IC4                         |
| 1203-002835 | IC-POSIFIXED REG.     | KIA7805AF,DPAK,3P,6.6X6.1MM,PLASTIC,4.8V/      | 1    | IC6                         |
| 1203-002836 | IC-POSIFIXED REG.     | KIA7824AF,DPAK,3P,6.6X6.1MM,PLASTIC,23/25V     | 1    | IC7                         |
| 1203-002876 | IC-VOL. DETECTOR      | ELM7533CBA-S,SOT-23,3P,2.9X1.5MM,PLASTIC       | 1    | IC2                         |
| 1404-000230 | THERMISTOR-PTC        | 27ohm,20%,-,265V,1.5A,360mA,BK                 | 2    | PTC1,PTC2                   |
| 2007-000033 | R-CHIP                | 0ohm,5%,1/4W,TP,3216                           | 16   | J2~J7,J9,J12~20             |
| 2007-000277 | R-CHIP                | 100Kohm,1%,1/8W,TP,2012                        | 2    | R18,R43                     |
| 2007-000282 | R-CHIP                | 100Kohm,5%,1/8W,TP,2012                        | 1    | R44                         |
| 2007-000300 | R-CHIP                | 10Kohm,5%,1/8W,TP,2012                         | 3    | R13,R14,R19                 |
| 2007-000468 | R-CHIP                | 1Kohm,5%,1/8W,TP,2012                          | 3    | R03,R20,R45                 |
| 2007-000532 | R-CHIP                | 200Kohm,5%,1/8W,TP,2012                        | 1    | R42                         |
| 2007-000546 | R-CHIP                | 20Kohm,5%,1/8W,TP,2012                         | 1    | R05                         |
| 2007-000572 | R-CHIP                | 220ohm,5%,1/8W,TP,2012                         | 6    | R21~R23,R37~R39             |
| 2007-000671 | R-CHIP                | 2Kohm,5%,1/8W,TP,2012                          | 2    | R09,R15                     |
| 2007-000710 | R-CHIP                | 3.9Kohm,5%,1/8W,TP,2012                        | 2    | R04,R16                     |
| 2007-000868 | R-CHIP                | 4.7Kohm,1%,1/8W,TP,2012                        | 1    | R17                         |
| 2007-000931 | R-CHIP                | 470ohm,5%,1/8W,TP,2012                         | 2    | R01,R02                     |
| 2007-000941 | R-CHIP                | 47Kohm,5%,1/8W,TP,2012                         | 19   | R24~R30,R46~R52,R55,R57~R60 |
| 2007-001262 | R-CHIP                | 19.1Kohm,1%,1/8W,TP,2012                       | 1    | R41                         |
| 2007-007219 | R-CHIP                | 26.1Kohm,1%,1/8W,TP,2012                       | 1    | R40                         |
| 2203-000192 | C-CER,CHIP            | 100nF,+80-20%,50V,Y5V,TP,2012,                 | 7    | C01,C08,C09,C11,C12,C24,C25 |
| 2203-000444 | C-CER,CHIP            | 1nF,10%,50V,X7R,TP,2012,-                      | 7    | C14~C20                     |
| 2203-000555 | C-CER,CHIP            | 0.02NF,5%,50V,C0G,TP,2012                      | 1    | C02,C03                     |
| 2203-000889 | C-CER,CHIP            | 4.7nF,10%,50V,X7R,TP,2012                      | 1    | C27                         |
| 2401-000037 | C-AL                  | 470uF,20%,16V,GP,TP,8x11.5,5                   | 1    | C22                         |
| 2401-000151 | C-AL                  | 1000uF,20%,25V,GP,TP,10x20,5                   | 1    | C21                         |
| 2401-000244 | C-AL                  | 100uF,20%,10V,GP,TP,6.3x7,5                    | 1    | C06                         |
| 2401-001428 | C-AL                  | 470uF,20%,50V,GP,TP,10x20,5                    | 1    | C05                         |
| 2401-001573 | C-AL                  | 47uF,20%,50V,GP,TP,6.3x11,2.5                  | 1    | C04,C07                     |
| 2401-002075 | C-AL                  | 4.7uF,20%,50V,GP,TP,5x11,5                     | 1    | C23                         |
| 2404-000151 | C-TA,CHIP             | 1uF,20%,16V,-,TP,3216                          | 1    | C13                         |
| 2404-000232 | C-TA,CHIP             | 4.7uF,20%,10V,-,TP,3216                        | 1    | C28                         |
| 2801-003933 | CRYSTAL-UNIT          | 8MHz,50ppm,28-AAA,12pF,70ohm,TP                | 1    | XTL1                        |
| 3404-001129 | SWITCH-TACT           | 12VDC,50mA,160gf,6.6x6.6x7mm,-                 | 1    | SW1                         |
| 3711-000939 | CONNECTOR-HEADER      | BOX,4P,1R,2.5mm,STRAIGHT,SN                    | 1    | CN11                        |
| 3711-000999 | CONNECTOR-HEADER      | BOX,5P,1R,2.5mm,STRAIGHT,SN                    | 1    | CN1                         |
| 3711-001038 | CONNECTOR-HEADER      | BOX,6P,1R,2.5mm,STRAIGHT,SN                    | 1    | CN4                         |
| 3711-004143 | CONNECTOR-HEADER      | BOX,2P,1R,5MM,STRAIGHT,SN,RED                  | 1    | CN2                         |
| 3711-004200 | CONNECTOR-HEADER      | BOX,4P/7P,1R,2.5MM,STRAIGHT,SN,RED             | 1    | CN3                         |