Confid
ential

M –Project Training Manual

2005. 08. 24.

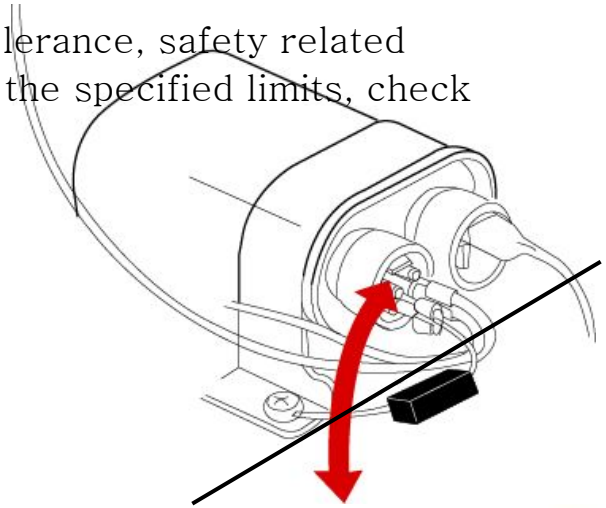
MWO Business Team
R&D Group

1. Precaution

Follow these special safety precautions during repair or inspection. Although the microwave oven
is completely safe during ordinary use, repair work can be extremely hazardous due to possible exposure to microwave radiation, as well as potentially lethal high voltages and currents.

1-1. Special High Voltage Precautions

1. High Voltage Warning : Do not attempt to measure any of the high voltages including the filament voltage of the magnetron. High voltage is present during any cook cycle. Before touching any components or wiring, always unplug the oven and discharge the high voltage capacitor.
2. The high-voltage capacitor remains charged about 30 seconds after disconnection. Short the negative terminal of the high voltage capacitor to the oven chassis. (Use a screwdriver.)
3. High voltage is maintained within specified limits by close tolerance, safety related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.



1. Precaution

1-2. Safety Precaution

Safety Precaution refers to Precaution and Warning and it does not allow to handle, assemble and disassemble products ignoring precautions.

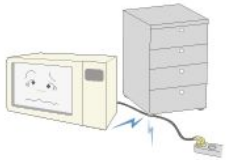
If not follow precautions, users may lose their lives or be injured.

If not follow precautions, users may be injured and lose their property.

Power

Do not use a damaged plug or loose outlet.

Do not grip and pull power cord to unplug. Do not touch a plug with wet hands.



Do not bend the power cord severely or put heavy things on it to avoid damages.

During Use

Do not use the oven on other purpose except cooking.

For nuts, eggs or capped bottles, make a gash on them or remove a cap from a bottle before cooking.

Do not use the oven with the things caught in the door.

1. Precaution

Installation

Avoid installing the oven in which there are much oil smoke, humidity, dust and water(rain fall).

Avoid installing the oven in place close to heating devices.

Avoid putting candle light and light of cigarette on the oven.

Other

Do not disassemble,reassemble and repair by yourself.

In case gas is leaked, do not touch the power plug or the oven but ventilate immediately.

Avoid putting water in a container, medicines, small piece of metal on the oven.

Cleaning

Unplug before cleaning.
Do not spray water directly on the oven and wipe the oven with benzene thinner and alcohol.

Wipe water and dust away from the contact part of the pin of plug
.

Avoid using and storing flammable spray and inflammable materials near the microwave oven.

If the door is damaged or the oven makes noise, smells and smokes, unplug immediately and contact the service center.

Be sure for children not to hang on the microwave oven.

1-3. Precaution before repair

1. In case the oven is operable, the leakage of electronic waves should be inspected before service.
   *If the leakage of microwave exceeds 5mW/cm2, call the service center.
2. Do not connect a power cord which does not have earth terminal.
3. Check if the cabinet is empty inside and there is a space to have a possible access to dangerous electricity before service. (Ex: holes of lamp, ventilating holes etc.).
4. Service engineers are recommended to take off the watch while repairing MWO, and check whether devices to prevent electric shock are properly installed and work well.

1-4. Precaution during repair

1. Do not operate the oven with the door open.
2. Make sure to earth the cavity always before testing all terminals, remove the earthed wires last after the test.
3. Check the lead wire to be disconnected and power off always when inspecting the connection of switches or transformers.
4. Parts should be replaced according to wiring diagram to avoid possible leakage of microwave. Moreover, the parts such as primary and secondary interlock switches, interlock monitor switch should be used according to specific specifications.

1-4. Precaution during repair

5. If the fuse is blown by interlock monitor switch, replace all the following parts.
   Primary switch, Door sensing switch, power relay and interlock monitor switch.
   Check whether the specification of fuse is met.
6. Design Alteration Warning : Use exact replacement parts only which are specified in parts lists and the drawings of this manual. It is very important for interlock switches described
   above.
7. Do not alter or add to the electric or mechanical design in the process of repairing MWO.
   Also, disconnect the power cord always before replacing all parts or reinstalling.
8. Some semiconductor(“solid state”) devices are easily damaged by static electricity.
   Some components are called ESDs(ELECTROSTATICALLY SENSITIVE DEVICES).
   They include the integrated circuits and field effect transistor. Make sure remove static electricity by touching the earth generally before handing all semiconductor compartments or
   assemblies.
9. To replace with parts having the same rating is more important in heat-resisting and electrical insulation. Replacement parts have possible dangers of fire because they do not have safety features unlike original parts against shocks, fires or other dangers.

1-5. Precaution after repair

1. Do not connect the power cord which does not have earthed terminals.
2. Check if the cabinet is empty inside and there is a space to have a possible access to dangerous electricity before service. (Ex: holes of lamp, ventilating holes etc.).
3. Check if the leakage of microwave exceeds 5mW/cm2 before returning the oven to customers.
4. Do not operate the oven by force with the door open.

2. Features and Specifications

2-1.
Features

Satisfaction of performance and speed with Multi Heat Source
Compact Oven with All-In-One function

• Time & Energy Saving
Time and Energy Saving by 4 times faster cooking time compared to Conventional Oven

• All-In-One (MWO, OVEN, Conv., Grill)
All-In-One Cooker with functions of MWO and capabilities of creating food for large sized oven.

• Easy Clean
Easy Clean by Steam Assisted Clean

2. Features and Specifications

2-2. Key Features

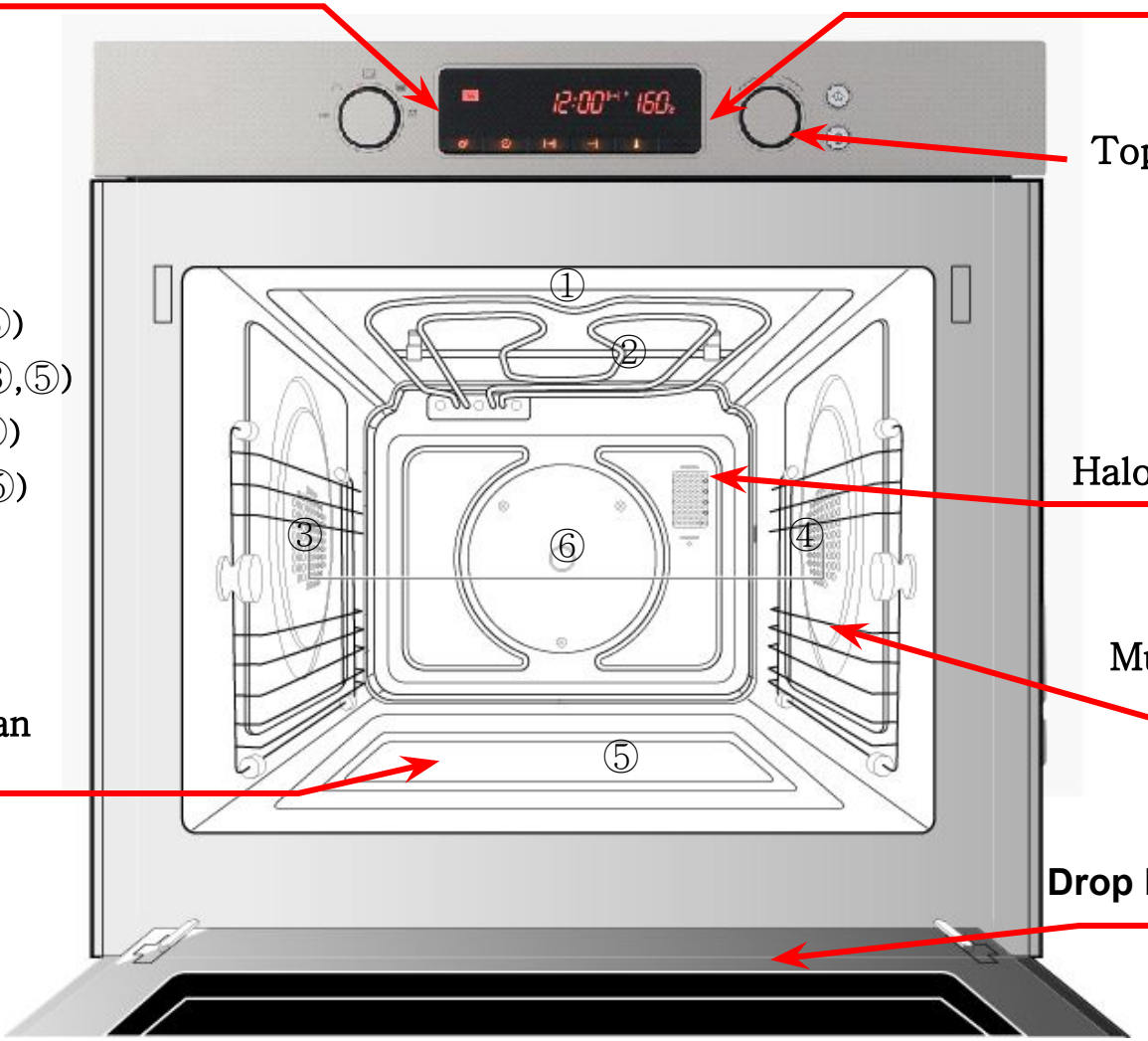
Orange & Blue Display

Tact & Dial Control

Top Control

Multi Heat Sources

- Double Grill (①, ②)
- Conv.1 & Top Grill(②, ③)
- Conv.1 & Bottom Grill (③,⑤)
- Double Convection(③, ④)
- Top & Bottom Grill(②, ⑤)
- Microwave (Stirrer) (⑥)



Halogen Lamp

Multi Rack

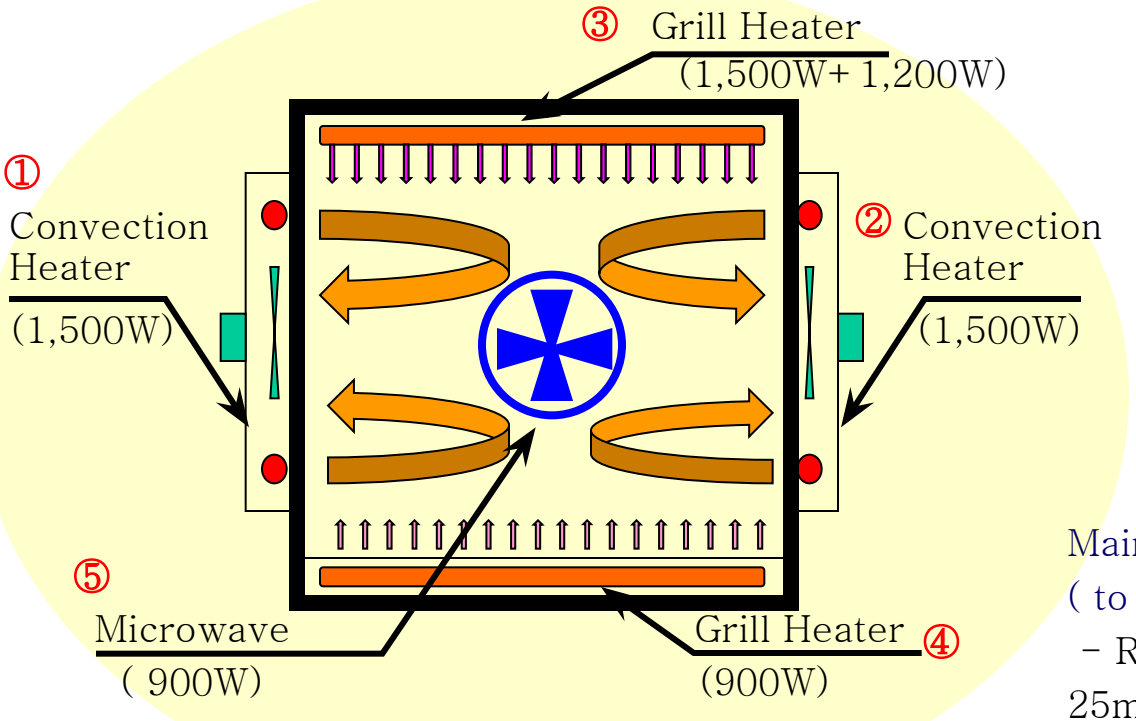
Steam Clean

Drop Down Door

2. Features and Specifications

Speed Cooking by 5 heat sources → 4 times reduction of cooking time with electric oven.

Quicker cooking and more delicious food by using upper and lower grills and convections in both sides.





Combination of heat sources	Cooking functions (Main Item)
⑤	MWO (Power Defrost)
⑤ + ① / ②	Dual Convection (Roast Chicken)
⑤ + ③ /④	Power Grill (Beef steak)
① + ②	Multi Rack Cook (Biscuit)
③ + ④	Even Baking (Cake/Pizza)

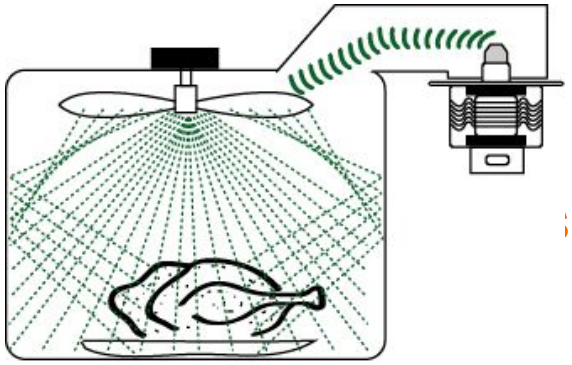
Main] Cooking time comparison (to common oven)

- Roast chicken ; 80mins → 25mins
- Chicken pieces ; 60mins → 20mins
- Baked potatoes ; 55mins → 15mins

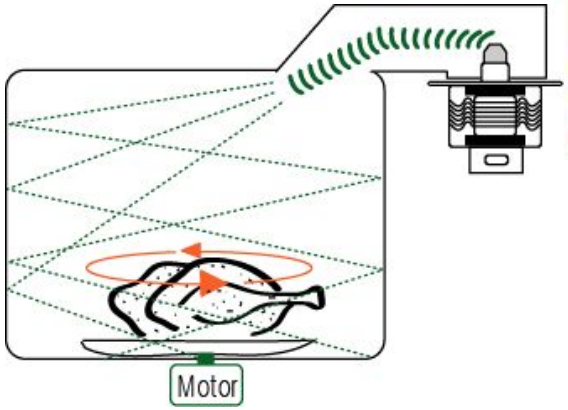
2. Features and Specifications

Distribution Fan (Stirrer) cooking manner → Effective Space Expansion, More sanitary

Extensive cooking space. Easier to clean the even bottom without turntable



[Distribution Fan]



[Conventional: Turntable]

Easy Clean!

2. Features and Specifications

Improved Display Function → Convenience of menu selection

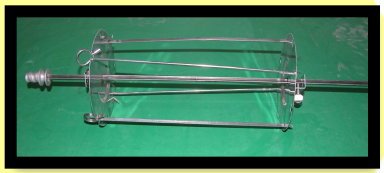
Mode Selection Dial

Time / Menu Selection Dial

Audio Style Icon Layout

- ▶ Pop-up Dial of Clean Look
- ▶ Choice of Audio Style Icon
- ▶ Graphic LED Display to be easy to operate and see condition

Multi-layers cooking → Cooking 3 kinds of food at a time



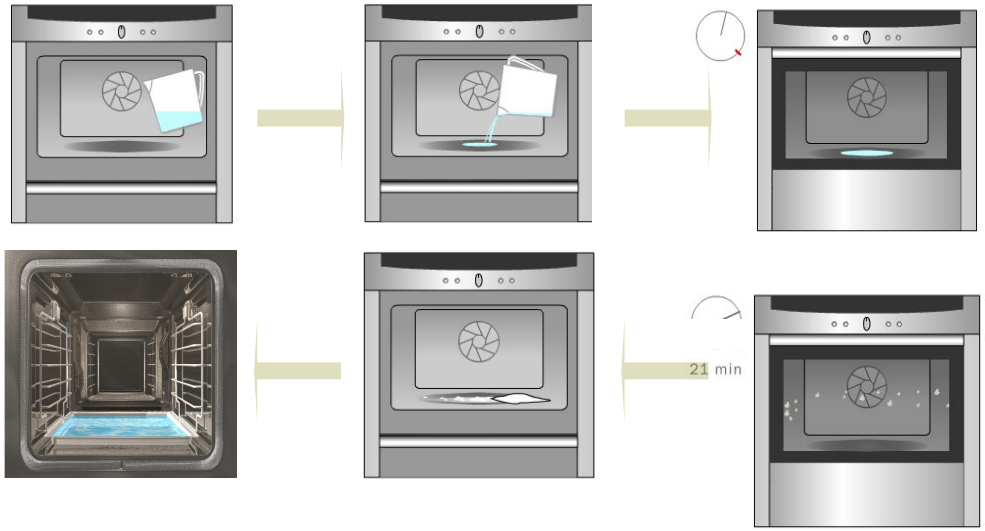
[Rotisserie]

.Barbecue function offer

2. Features and Specifications

Steam Cleaning → Sanitary cooking

- Cleaning particles inside by steam



▶ Self-Cleaning

- Pour 100cc water on the bottom
  → Steam created by high frequency heating.
  → Easy Cleaning
- Cleaning Time Saving
  (15 minutes required)

※ Anti-virus ceramic coating (Sanitation function

No scratches or discoloration. Rarely getting dirty.
Removal of virus, mold and even odor.

2. Features and Specifications

Total solution of cooking with cook top added

- Compact Oven + Cook top + Warmer/Drawer

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▶ Possible compound of cooking appliances to customers' choice.

- Option A : M + Cook top
- Option B ; M + C/top + Warmer

▶ One stop serving & Space saving

- Cooking by Cook top & Oven
  → Warm storing
- Improvement of use of kitchen space by compound of cooking appliances.

2. Features and Specifications

2-3. Specifications

Items	Sub-items		units	spec
General	Capacity		liter	1.5 cu.ft. (42Liter)
	Type	Installation		Built-in
		Heat Source		SPEED COOK
	Power	Power Source		230 V / 50 Hz
		Output Power(Microwave)		900W
		Output Power(Grill)		1200W/1500W , TOTAL: 2700W
		Output Power(Convection)		1500W/1500W TOTAL : 3000W
		Power Consumption(Microwave)		1650W
		Max Output Power		3200W
	Display	Type		Graphic LED
		Language Option		no
	Sensor			Temperature
	Control Method			Tact with Encoder dial
	Door Open Mechanism			Drop Down(Handle)
	MW Distribution Mechanism			Stirrer

2. Features and Specifications

Items	Sub-items		UINTS	SPEC
Features	Cooking Modes	Microwave oven		Yes
		Grill		Yes
		Dual Convection		Yes
		Defrost		Yes
		Convection + Grill		Yes
		Convection + Bottom Heater		Yes
		Grill + Bottom heater		yes
		Speed Cook		yes
	Convection Temperature			40~250℃
	Clock			Yes
	Warm			Yes
	Max Cooking Time			Microwave : 90mins , Oven : 10hrs
	Power Level			YES
	Defrost (speed)			Speed Defrost
	Speed Cook			Speed Cook(12 recipes)
	Setting (My choice)	Weight Option		Yes
		Sound Option		Yes
		Reminder End Signal		Yes
		Clock System Option(12H / 24H)		Yes
		Child Lock		Yes

2. Features and Specifications

Items	Sub-items		UNITS	SPEC
Materials & Finishes	Cabinet Color			STAINLESS
	Door Color			STSS
	Cavity Interior			Ceramic Enamel
	Grill Heater			upper : Sheath(grill 2700W) Lower : Sheath(Hidden 1000W)
	Convection Heater			Sheath(1500W X 2)
	Carton Box			BRN
	Vent filter (for OTR)			NA
Accessory	Rack	Round		No
		Rectangle		2
	Ceramic Tray			Yes
	Steam Clean			Yes
	Quick Guide Label			Yes
	Cook Book			Yes
	Others			None
Physical Specification	Dimension (WxHxD)	Cavity		429mm x 229mm x 430mm
		Outside		595mm x 460mm x 520mm
		Shipping		694mm x 572mm x 624mm
	Weight	Net		37.6 Kg
		Shipping		46 Kg
	Loading Quantity	20ft/40ft		228 sets / 40ft

3. Features and Installation

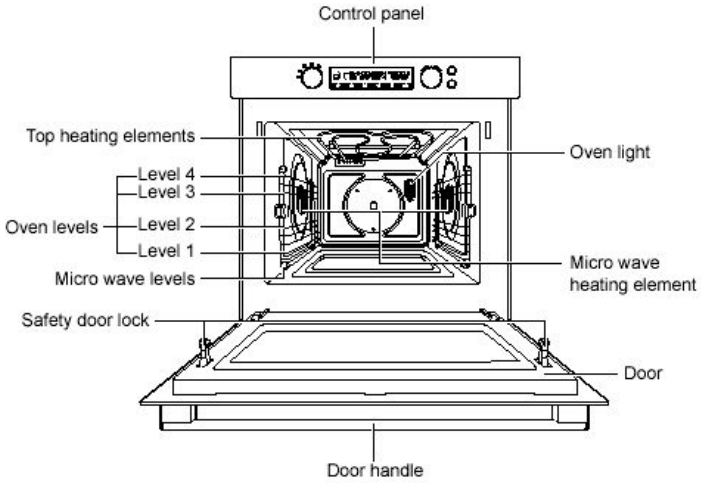
3-1. Functions

** Be aware of the followings first before operating the oven.

1) Use after understanding the contents of user manual and installation manual attached.

2) Be cautious to install the product not to make any scratches on it.

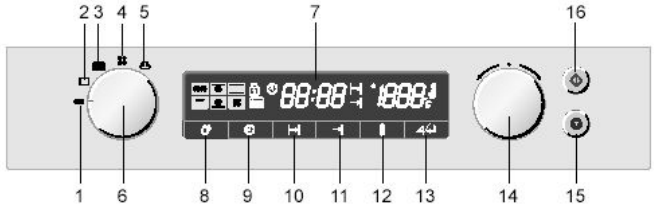
3) Be cautious of hot accessories and the door, use accessories after fully understanding how to use.



- Oven levels are numbered from the bottom up.
- The 3 and 4 levels are mainly used for grill functions.
- The microwave level are mainly used for microwave function.

The cooking fables throughout this operating instructions give you suggested oven (shelf positions), however you can Change these to suit yourself

Control Panel



1. OFF
2. OVEN MODE
3. SPEED COOK MODE
4. DEFROST MODE
5. MICROWAVE MODE
6. MODE SELECT DIAL
7. WINDOW DISPLAY
8. STEAM CLEAN BUTTON
9. CLOCK BUTTON
10. COOK TIME BUTTON
11. END TIME BUTTON
12. TEMP SETTING BUTTON
13. POWER LEVEL/ENTER BUTTON
14. FUNCTION SELECT DIAL
15. STOP/CANCEL BUTTON
16. START BUTTON

Retractable control knobs

- The function selector and rotary knob can be retracted in any position. Simply press the control knob in order to raise or lower it. The control knobs can be turned to the left and right.

3-2. How to install the oven

* Click the icon below to see how to install the oven.

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4. Disassembly and Reassembly

4-1. Preparations

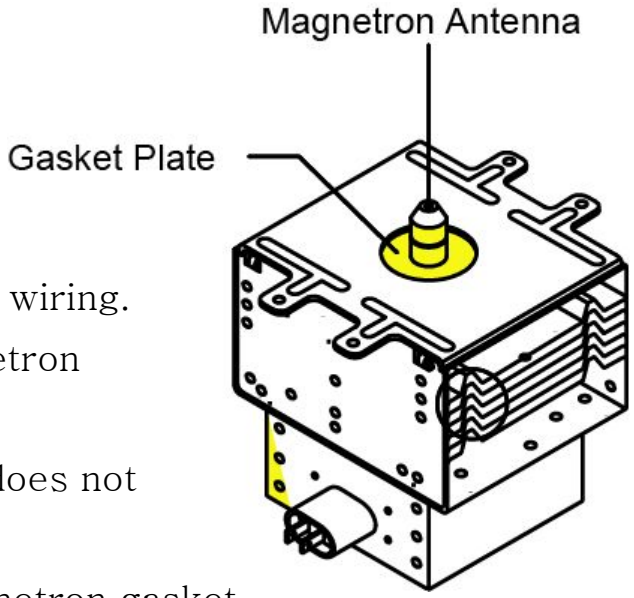
Basically, the followings are required to disassemble and reassemble the oven.

1. Electric driver(Use Plus driver if there is not an electric driver) 2. 8mm vox driver
3. Star driver 4. Jig for assembly and disassembly of door provided by Samsung.

4-2. Replacement of MAGNETRON.

1. Remove 4 screws securing the front side with built-in.
2. Move the oven forward from the built-in shelf.
   (Separate POWER CORD.)
3. Remove 2 screws securing the back cover with star driver.
4. Remove 13 screws securing "Panel Outer" with a driver.
5. Remove one screw securing BKT MGT Cover, then remove wiring.
6. Remove 4 magnetron nuts with 8mm vox driver, take magnetron out of the oven.

* When removing the magnetron, make sure that its antenna does not hit any adjacent parts, or it may be damaged.
* 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. Disassembly and Reassembly

4-3. Replacement of High voltage transformer

1. Follow the order in article 1-4 of 4-2.
2. Discharge High Voltage Capacitor.
3. Disconnect all the leads.
4. Remove 4 securing screws with a electric driver.
   (Plus driver)
5. Reconnect the leads correctly and firmly after replacement.

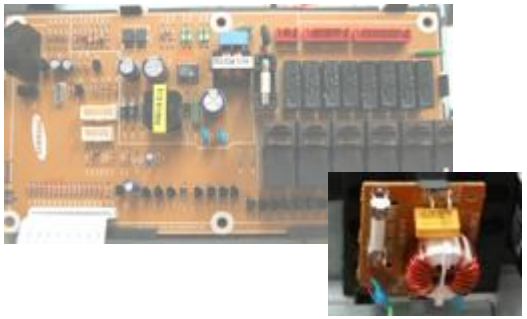
4-4. Replacement of lamp

1. Follow the order in article 1-3 of 4-2.
2. Unlock a lamp cover with hands.
   * Caution : Be cautious because the lamp is hot.
3. Take out the lamp and replace with new one.
4. Lock “Ass’y Lamp Cover” and assemble it.

4-5. Replacement of Main Fuse & Monitor Fuse

1. Follow the order in article 1-4 of 4-2.
2. Remove the fuse from the top of Ass’y P.C.B and main fuse on Noise Filter then replace with new ones.

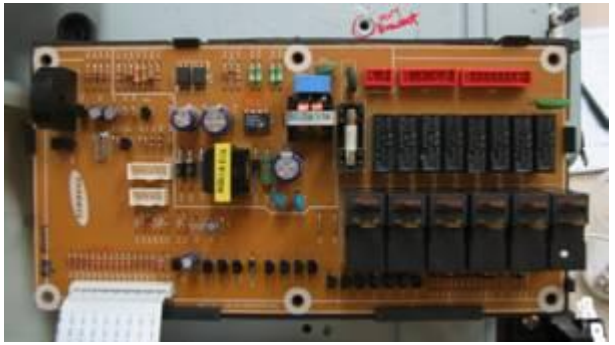
* When 15A fuse blows out by the operation of interlock monitor switch failure, replace the primary interlock switch, door sensing switch, monitor switch and power relay.
* When the above three switches operate properly, check if any other part such as the control circuit board blower motor or high voltage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



4. Disassembly and Reassembly

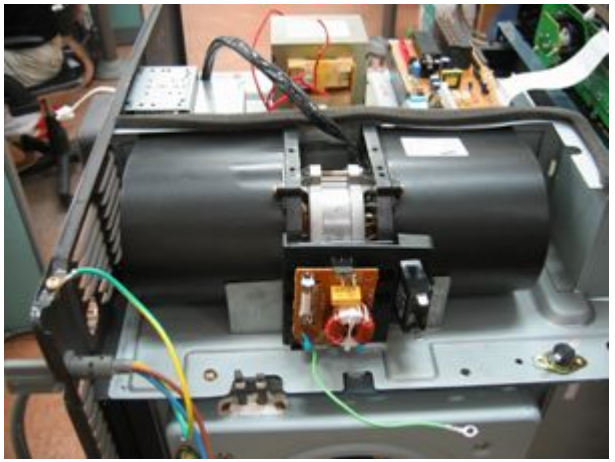
4-6. Replacement of A'SSY Main PCB

1. Follow the order in article 1-4 of 4-2.
2. Remove 2 screws securing Main PCB.
3. Remove after taking apart catching jaw of BKT-Support (mold).
4. Accurately connect according to leads after replacement of Main PCB.



4-7. Replacement of VENT MOTOR

1. Follow the order in article 1-4 of 4-2.
2. Remove 4 screws securing Vent Motor.
3. Remove a screw securing BKT -Vent B.
4. Replace "Vent Motor" after removing leads(connector).
5. Assemble leads and securing screws in their own place after replacing Vent Motor.



4-8. Replacement of Ass'y Damper

1. Follow the order in article 1-4 of 4-2.
2. Remove 2 screws securing Ass'y Damper.
3. Remove leads and then Ass'y Damper.
4. Remove securing screws to replace Damper motor & Micro Switch depending on presence of problems.
5. Assemble Ass'y Damper in Set accurately.
6. Connect the leads correctly and firmly.

4-9. Replacement of Ass'y Casing

1. Follow the order in article 1-4 of 4-2. .
2. Remove 4 screws securing Ass'y Casing.
3. Remove the leads and then Ass'y Casing.
4. Remove the securing screws and nuts to replace Convection motor & Convection Heater depending on presence of problems.
5. Assemble Ass'y Casing in Set accurately.
6. Connect the leads correctly and firmly.

4-10. Replacement of Stirrer Motor

1. Follow the order in article 1-3 of 4-2.
2. Remove 2 screws securing Stirrer Motor.
3. Check problems after removing Stirrer Motor.

** When remounting Stirrer Motor, check if the shaft is correctly inserted into Stirrer holder.

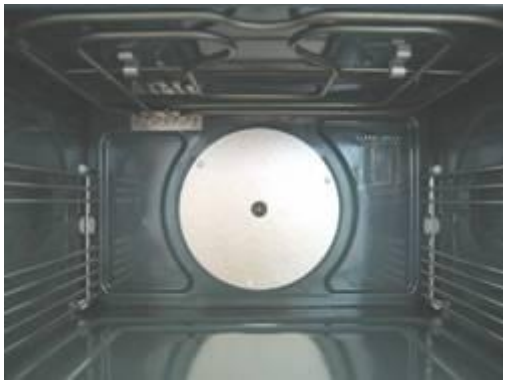
3-1. Remove 3 clips of cover MGT for accurate service.

3-2 Accurately insert a holder of Ass'y Stirrer into the shaft of Stirrer motor.

3-3 Fix Cover MGT in the center of the shaft of Ass'y Stirrer and remount 3 clips.

4. Make sure to inspect operation.

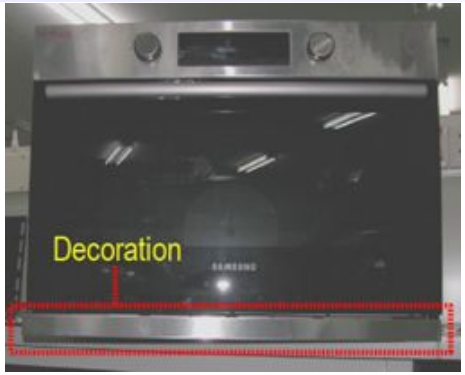
* For poorly remounted, it may cause sparks. (Check remounting again.)



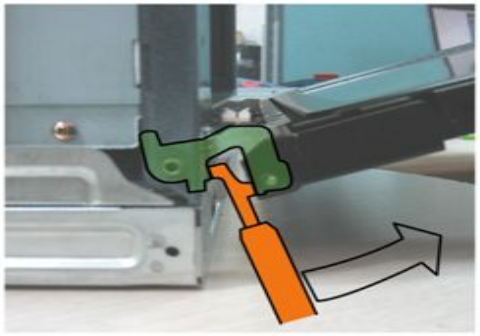
4. Disassembly and Reassembly

4-11. Replacement of Ass'y Door

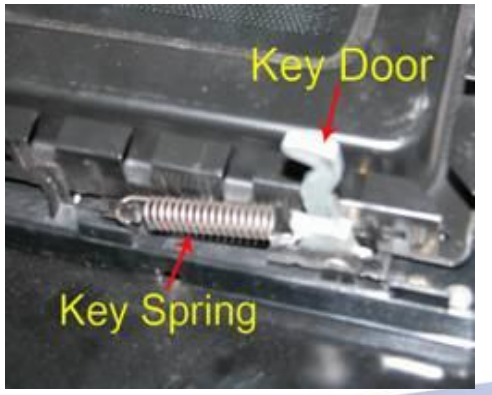
1. Lift up the decoration from the bottom and pull it out to remove at the built-in condition as shown in a picture.



2. Remove as shown in a picture with use of jig provided by Samsung.



3. Remove and replace Key Door & Key Spring as shown in a
   * Do not make a gap between the oven and inside door surface by moving the door. If the door is poorly mounted, microwave energy may be leaked through the gap between the door and the oven.
   * Do do the test of microwave leakage.
4. Remount Ass'y Door with use of door jig, and decoration correctly.



5. Alignment and Adjustments

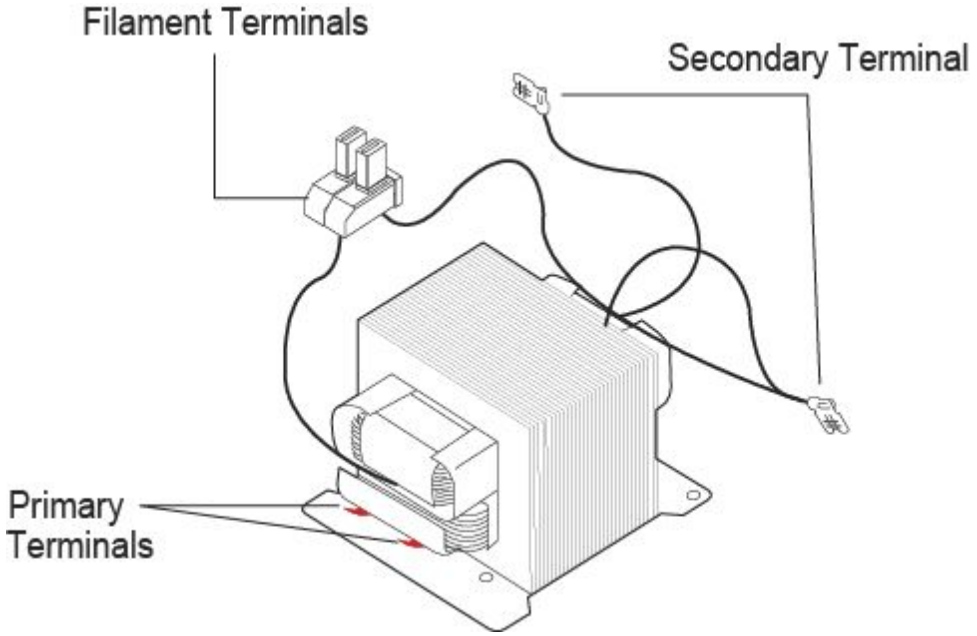
Precaution

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.

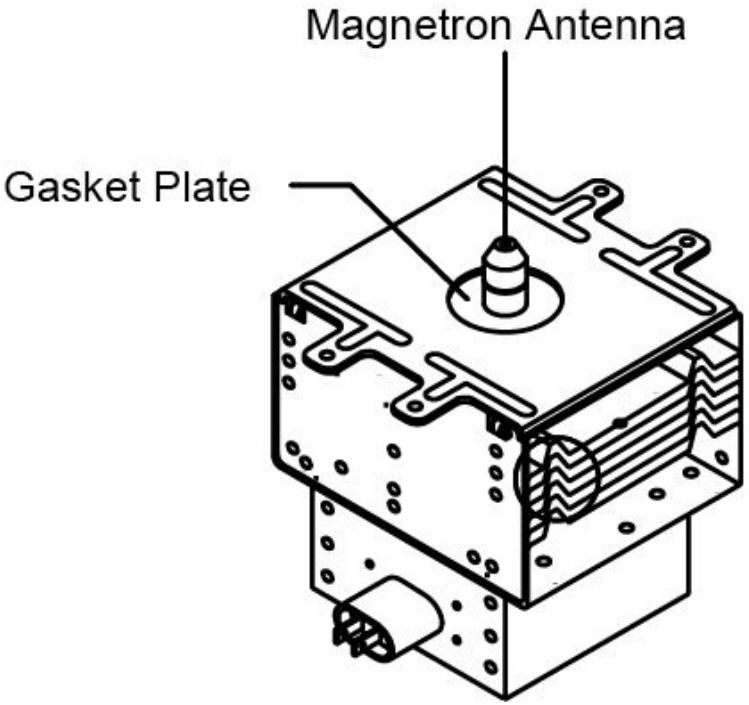
Secondary	142Ω
Filament	0Ω
Primary	1.7Ω



5-2. Magnetron

Continuity checks on magnetron can indicate an open filament and shorted magnetron.

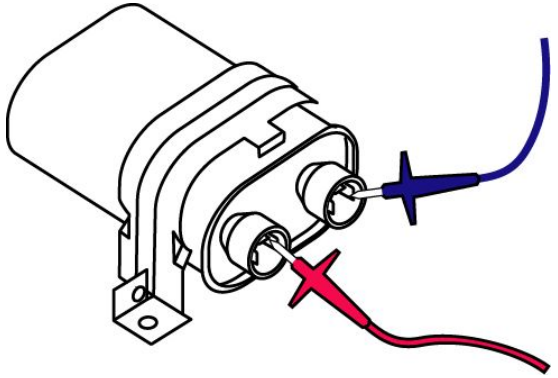
1. Isolate the magnetron as the unit like a picture.
2. A continuity check between input terminals of the magnetron indicates 1Ω and less referring to
   normal, ∞ (unlimited) to short.
3. A continuity check between the case of magnetron and one of input terminals of magnetron indicates ∞ (unlimited) referring to normal, 10Ω and less referring to Short.



5. Alignment and Adjustments

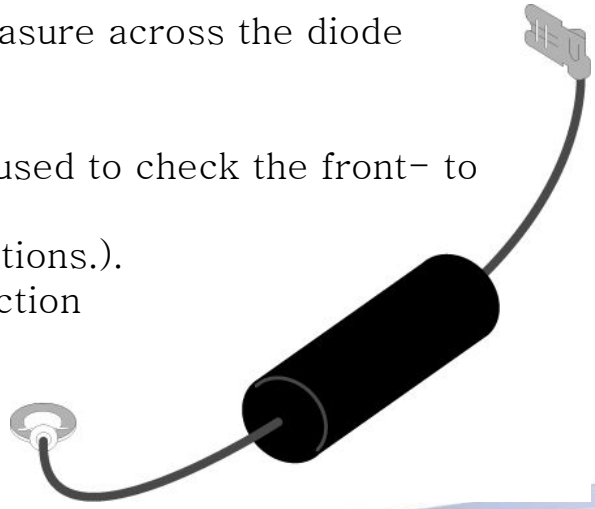
5-3. High Voltage Capacitor

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 9MΩ.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show 9MΩ constantly.
5. Resistance between each terminal and chassis should read infinite.



5-4. 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.
3. 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.).
4. The resistance of a normal diode will be infinite in one direction and several hundred KΩ in the other direction.



5-5. Main relay and power control relay

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

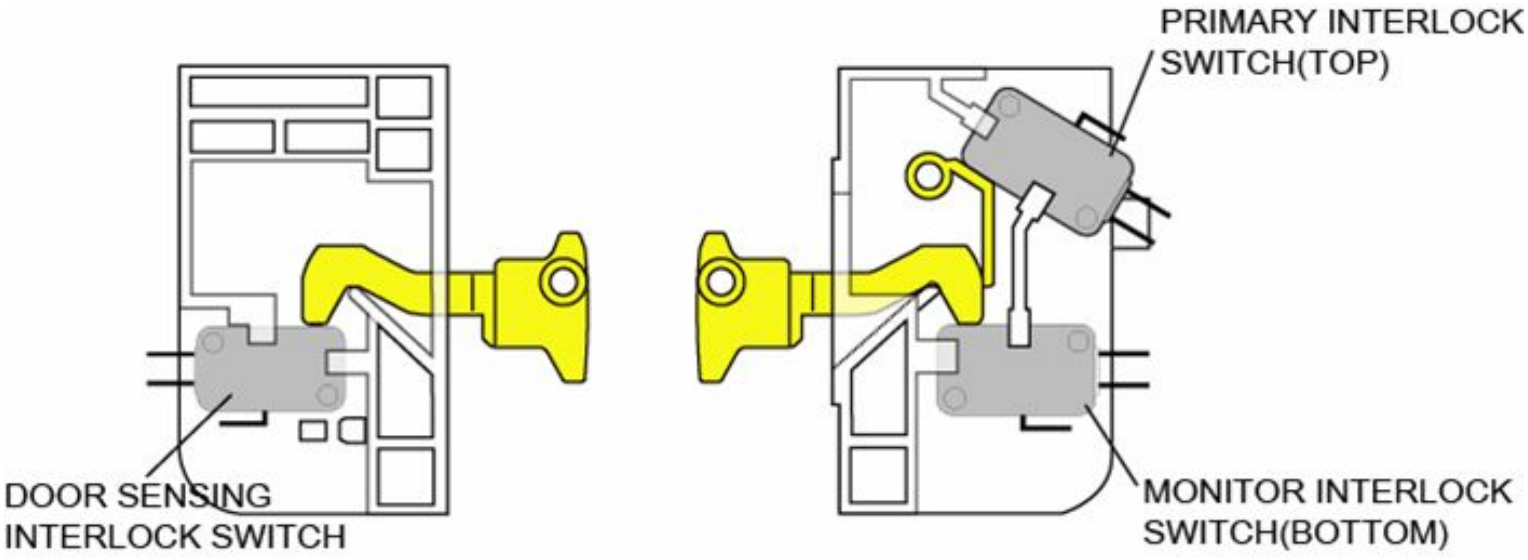
5-6. Adjustment of Primary switch, Door sensing switch and monitor switch

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.

5-7. Adjustment of Primary switch, Door sensing switch and monitor switch



5. Alignment and Adjustments

Caution
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 lead.
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 52 seconds exactly.
   (3 seconds included as a holding time of magnetron.)
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(ΔT).

5-8. Magnetron output measurement

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 lead.
Low voltage will lower the magnetron output.
Make all temperature and time tests with accurate equipment.

Caution
Personnel should not allow exposure to microwave radiation from microwave generator or other parts conducting microwave energy.

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 52 seconds exactly.
   (3 seconds included as a holding time of magnetron.)
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(ΔT).
6. The output power is obtained by the following formula.

$$\text{Output power} = \frac{4.187 \times 1000 \times \Delta T + 0.55 \times Mc \times (T2 - T1)}{49}$$

52 : Heating time(sec)
49 : Counting time(sec)
4.187 : Coefficient for water
1000 : Water(cc)
ΔT : Temperature rise (T2 –T1)
Yo : Room temperature
Mc : Cylindrical borosilicate glass weight

7. Normal temperature rise for this model is 9°C ~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 W(watts) is computed by multiplying the temperature rise (step 5) by a factor of 91 times of centigrade temperature.

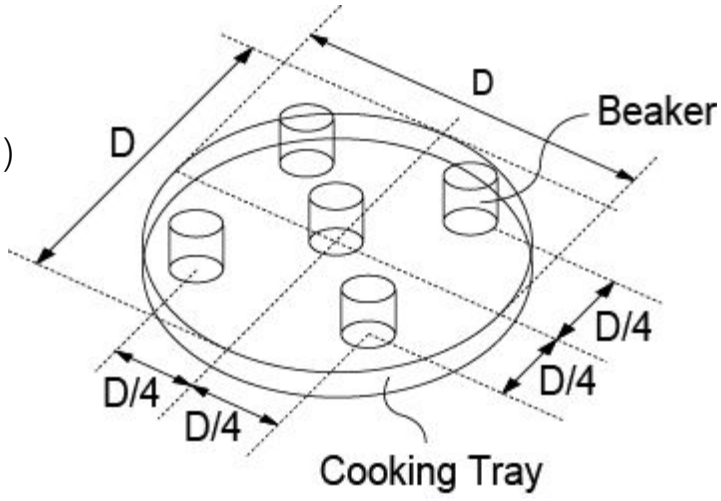
5-9. Microwave heat distribution –Heat Evenness

The microwave heat distribution can be checked indirectly by measuring the water temperature rise at certain positions in the oven.

1. Prepare five beakers made of 'Pyrex', having 100 milliliters capacity each.
2. Measure exactly 100 milliliters off water load with a measuring cylinder, and pour into each beaker.
3. Measure the temperature of each water load.
   (Readings shall be taken to the first place of decimals.)
4. Put each beaker in place on the cooking tray as illustrated in figure below. Start heating.
5. After heating for 2 minutes, measure the water temperature in each beaker.

$$\text{Heat distribution} = \frac{\text{Minimum temperature rise}}{\text{Maximum temperature rise}} \times 100(\%)$$

The result should exceed 65%.



5-10. Procedure for measurement of microwave energy leakage

1. Pour 275±15cc of 20±5°C(68±9°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 5 cm to any metal. If if gets closer than 5 cm, erroneous readings may result.
5. Measured leakage must be less than 4mW/cm2 after repair and adjustment.
   Maximum allowable leakage is 5mW/cm2.
   4mW/cm2 is used to allow for measurement and meter accuracy.

5-10. Procedure for measurement of microwave energy leakage

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 prove 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.

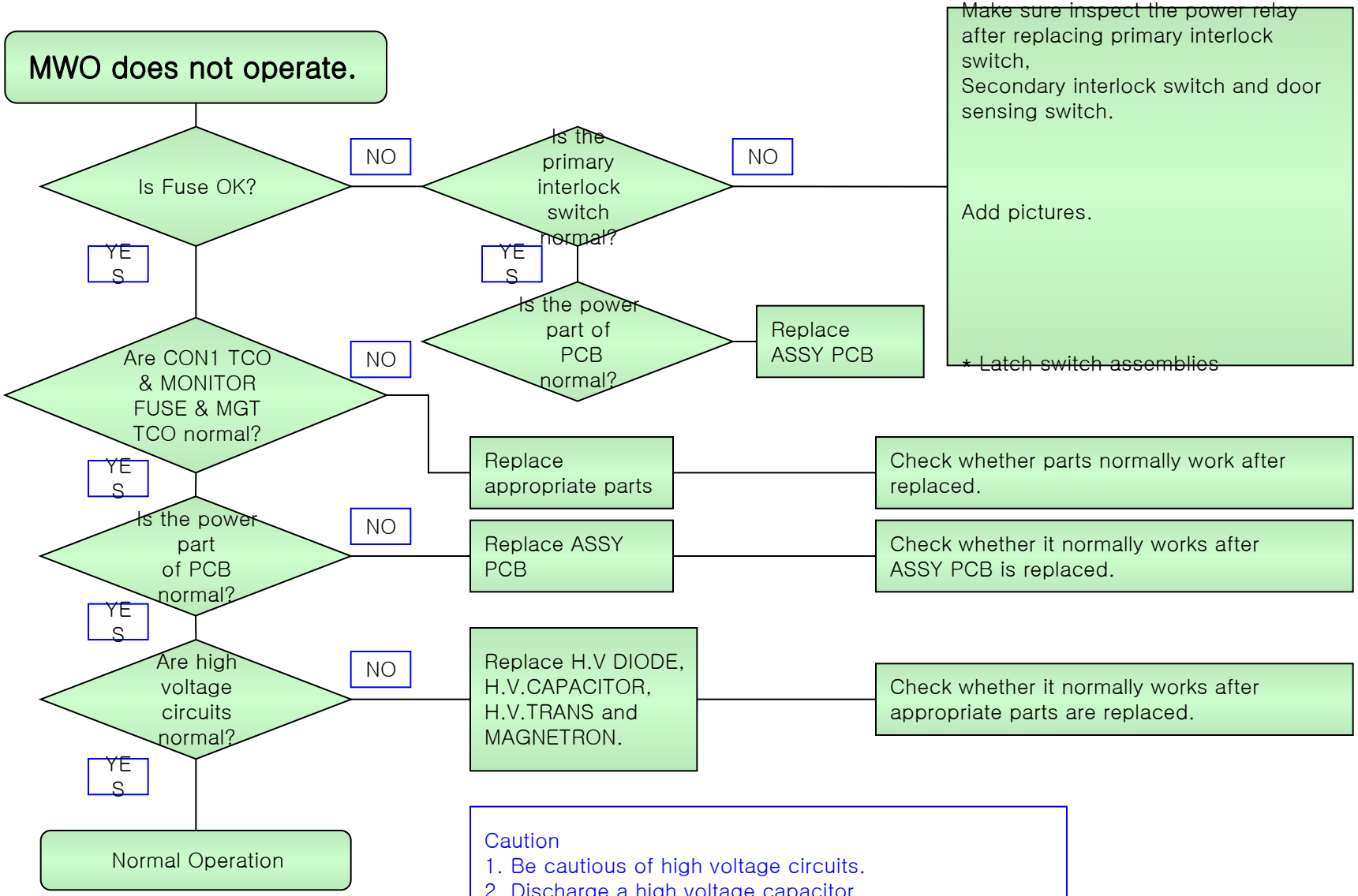
After measuring microwave leakage

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 4mW/cm2 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.

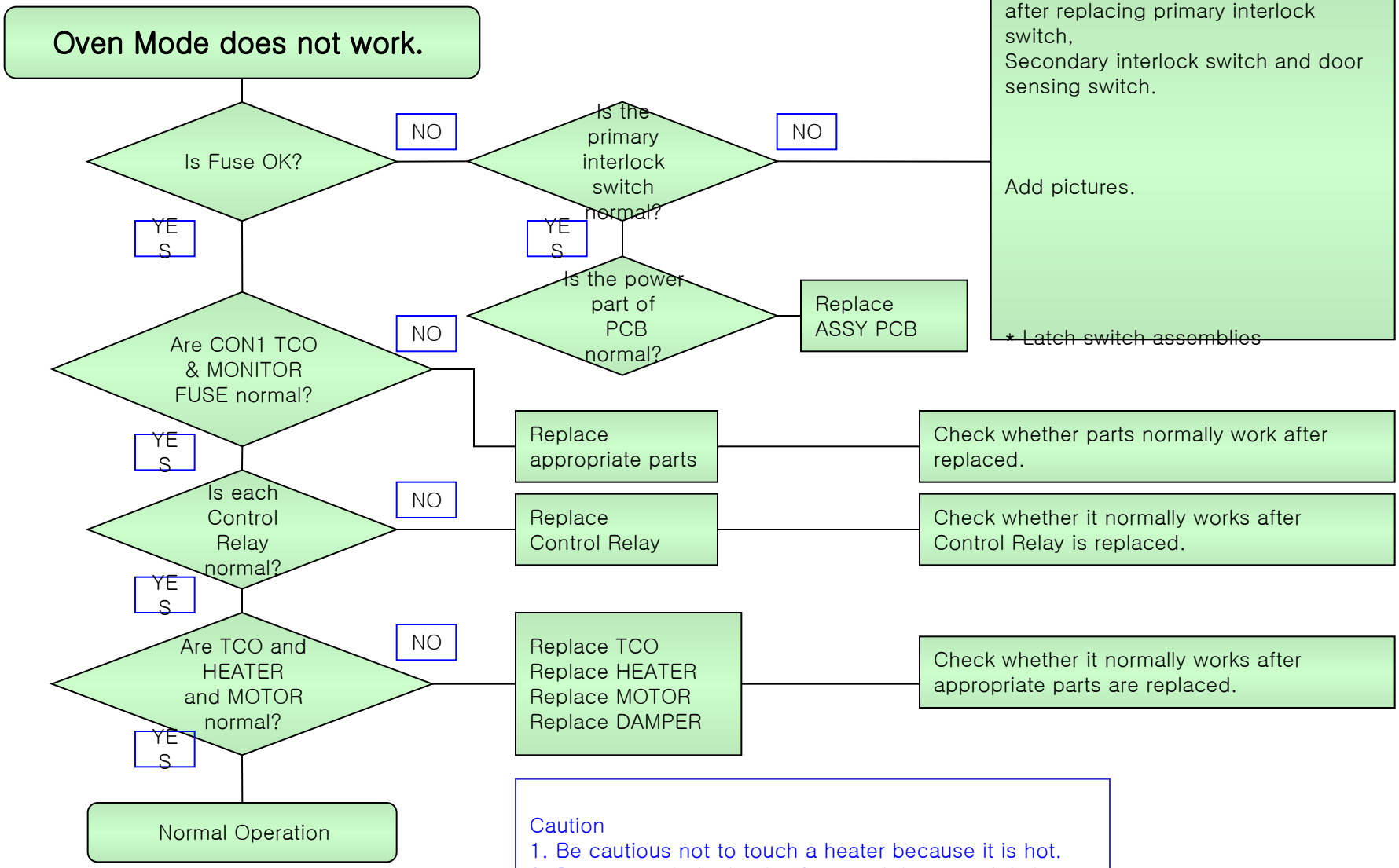
6. Error Code

KEY	General Functions
E21	ERROR BY TEMP SENSOR OPEN In case the value of a temperature sensor is more than 250 ℃ during operation/cancellation.
E22	ERROR BY TEMP SENSOR SHORT In case the value of a temperature sensor is less than 5 ℃ during operation/ cancellation.
E24	ERROR BY OVER TEMP 210℃ AT MWO COOK In case the temperature rises over 210 ℃ during operation of MWO (FIRE sensed.)
E09	ERROR BY DAMPER S/W In case it fails to sense DAMPER whether to open or close for 2 minutes.

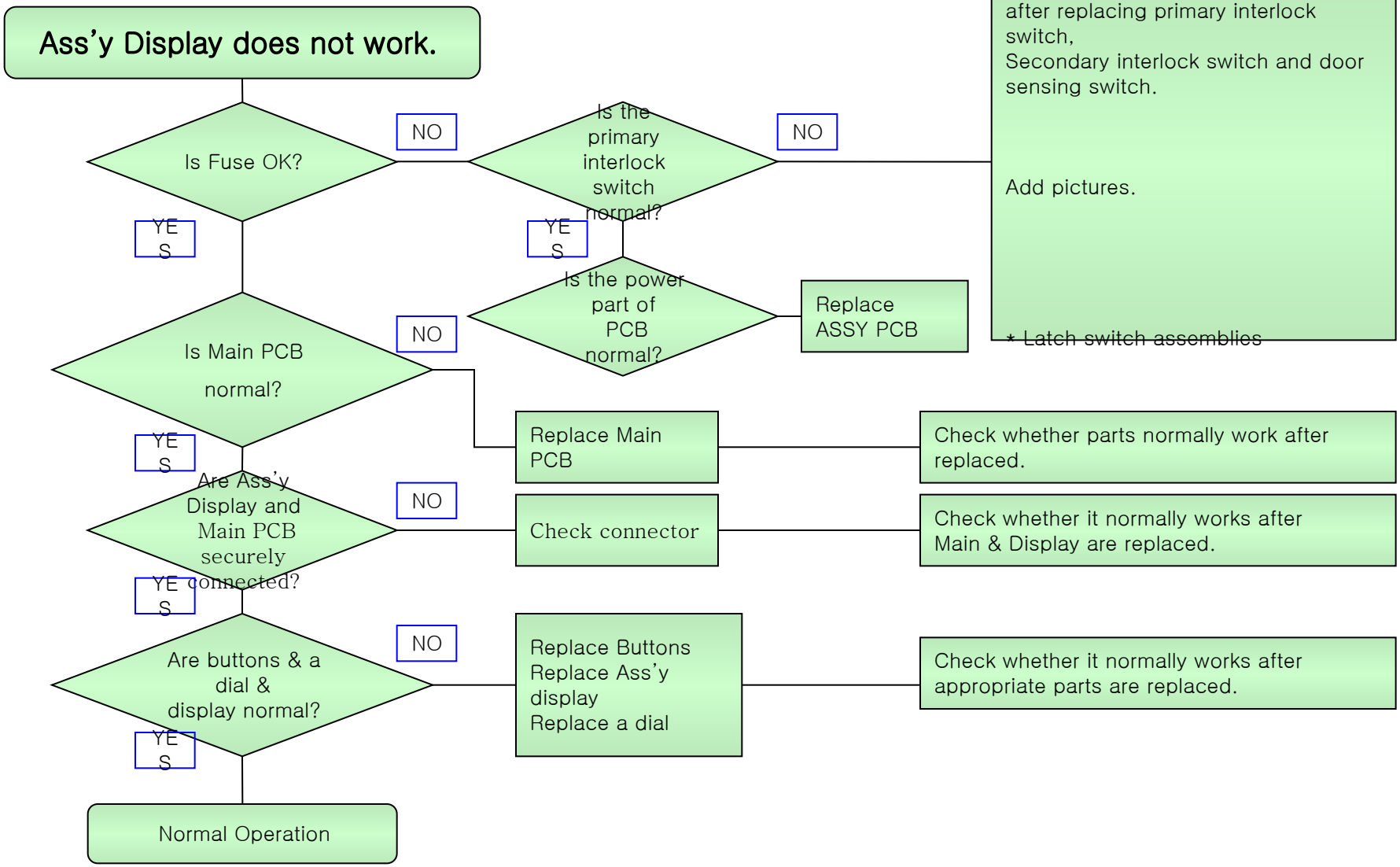
7. Troubleshooting (Microwave Oven)



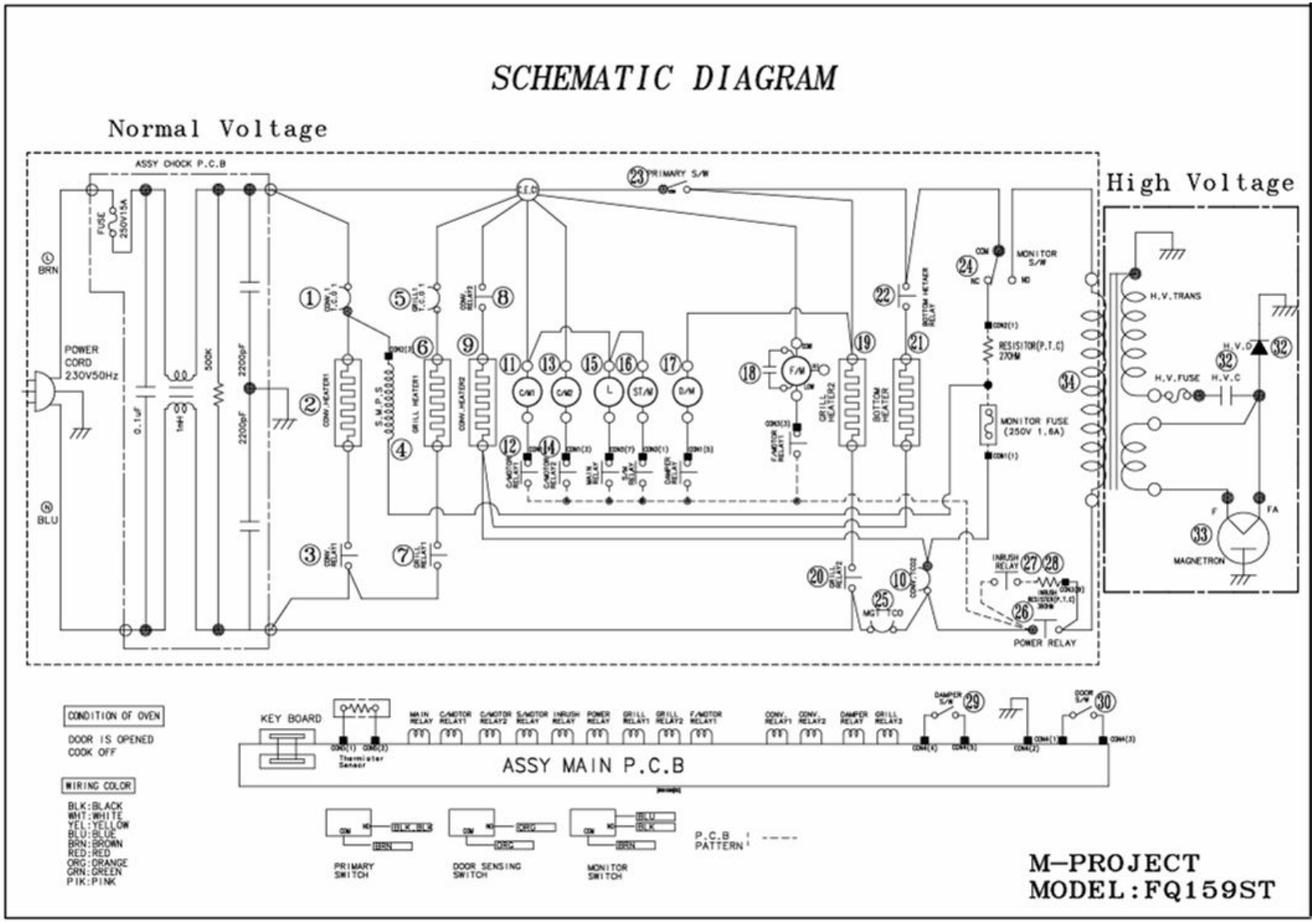
7. Troubleshooting (Oven Mode)



7. Troubleshooting (Ass'y Display)

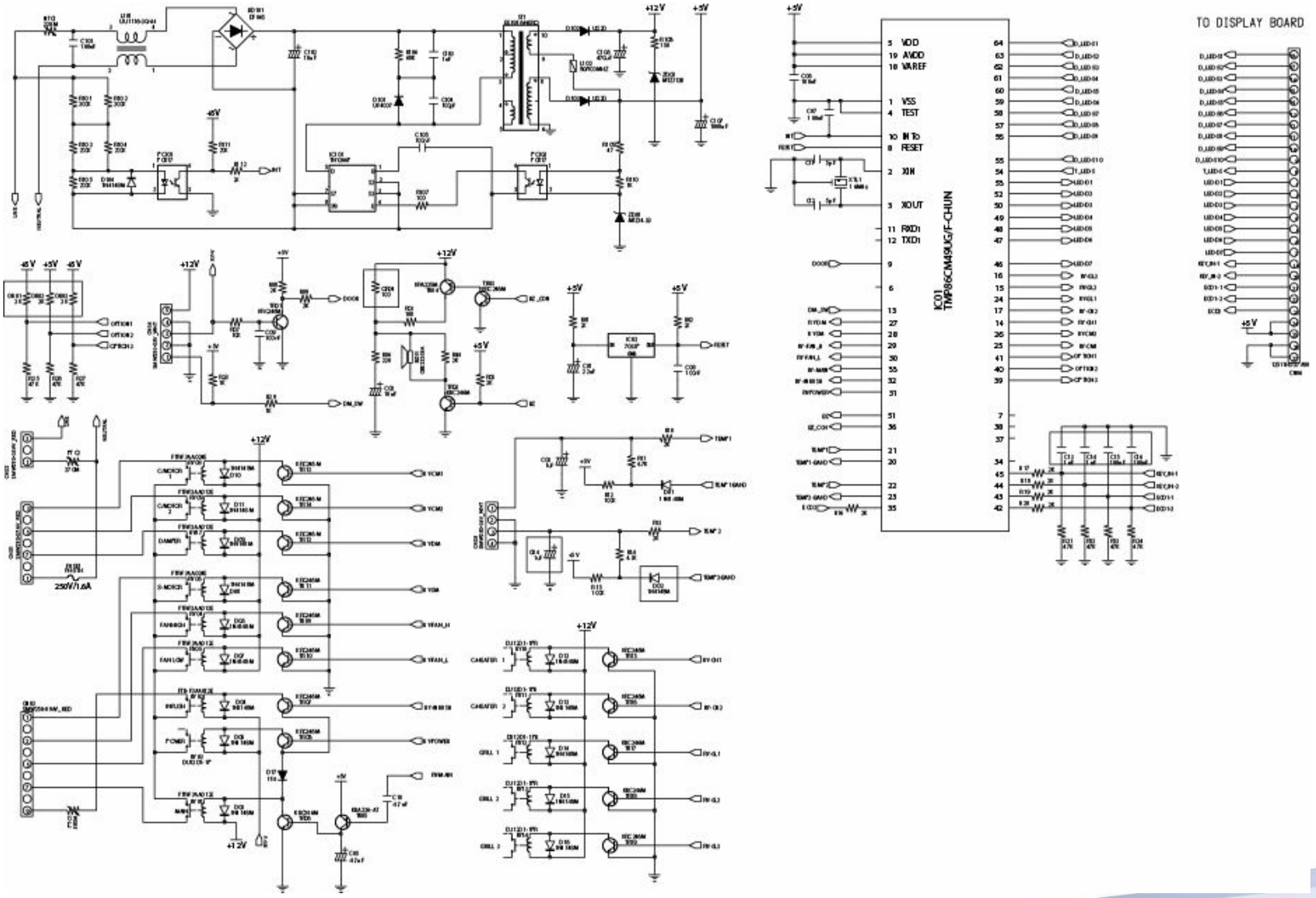


8. SCHEMATIC DIAGRAM



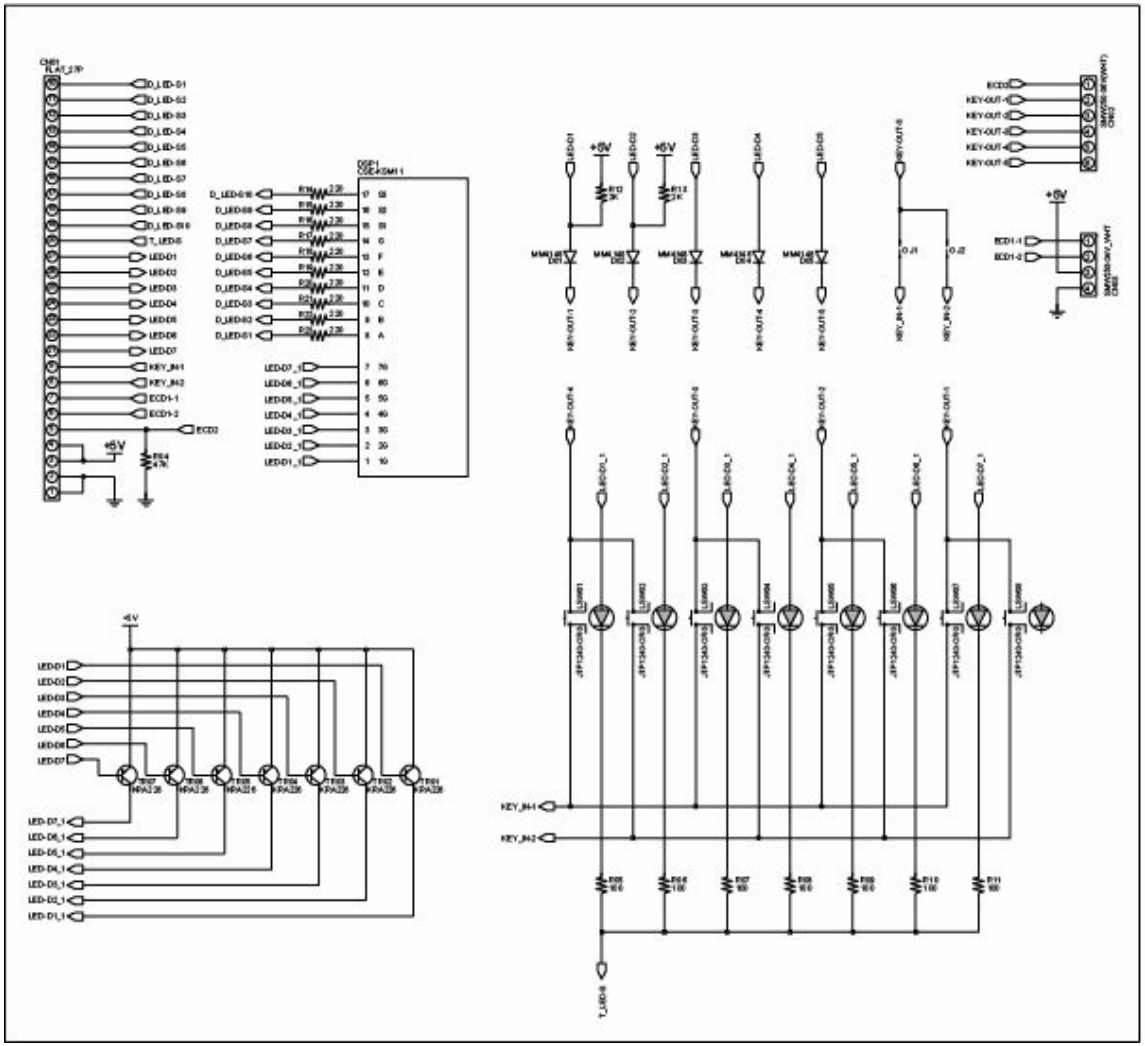
9. PCB DIAGRAM

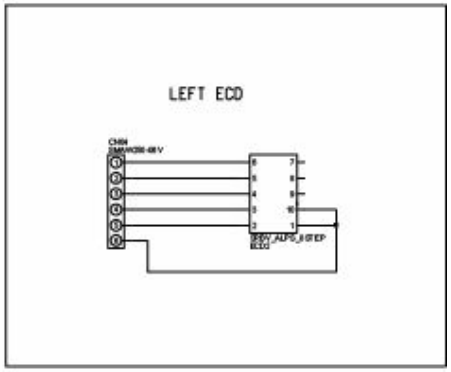
9-1. Main PCB

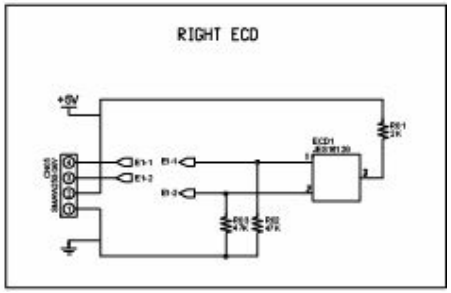


9. PCB DIAGRAM

9-1. Display PCB







10. Checkpoints before service request

10-1. Checkpoints before service request

Symptom	Checkpoints
Brightness of a lamp and operation sound are irregular.	●Check if a metal or aluminum foil touch the inside wall of the oven. ●Check if containers with gold or silver lines have been used.
Sparks while in operation.	●Use the oven with relief because it sparks due to output changes. It does not mean a trouble. ●Output is converted to defrost properly.
Smokes and bad smells are inside the oven.	●Check if food remnants, oils are stuck to the inside or the inside of the door. ●Steam may come out through the vent openings at the rear of the oven during cooking, however, it does not mean a trouble.
Winds come out through the front of the oven while in operation.	● To cool the heat produced in the oven, winds come out through the front while a fan motor is operating. Use the oven with relief because coming microwave does not mean a trouble.

SAMSUNG

Thanks