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## 6. Circuit Description

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### 6-1 When food is placed inside oven and door is closed

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1. Low voltage transformer supplies the necessary voltage to the touch control circuit when power cord is plugged in.
2. The primary interlock switch is closed.
3. The interlock monitor switch is opened. This interlock monitor switch blows the 10A fuse and stops magnetron oscillation when the door is opened (abnormal condition).
4. The door key is caught by the door hook, this closes the door sensing switch is closed to send the door-close signal to the touch control circuit.

### 6-2 When cooking, power and time are set by touching the function pads

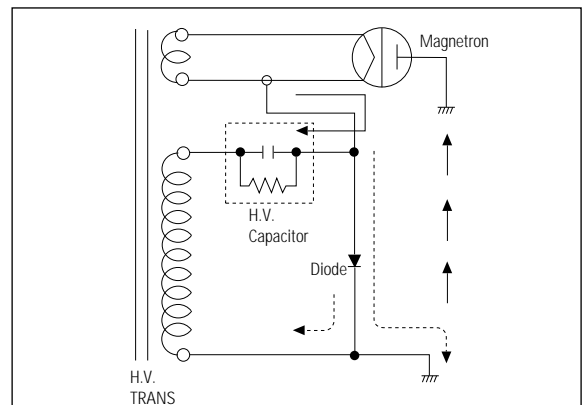
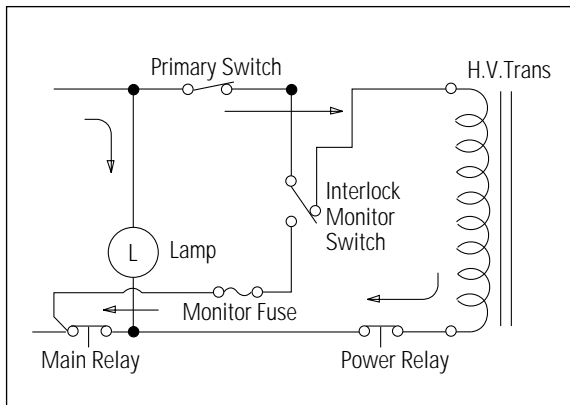
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1. The time appears in the display window.
2. The touch control circuit stores the cooking data at.

### 6-3 When the START pad is touched

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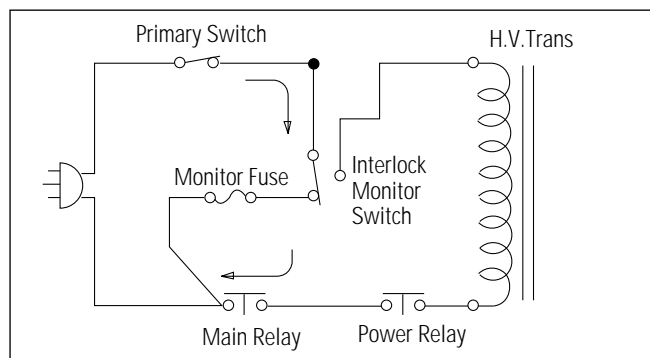
1. The main relay and the power control relay are controlled by the touch control circuit.
2. An oven lamp lights the inside of the oven by (The main relay in the Touch Control Circuit).
3. The fan motor rotates and cools the magnetron by blowing the air from the intake (on the back panel) over the magnetron fins. After cooling the fins, this air is directed into the oven to blow out the vapor.



4. 230V~50Hz AC is applied to the high voltage transformer through the contacts of primary windings (shown by the solid line) just after the power control relay turns ON. (Fig. 1)
5. 3.4V AC is generated from the filament winding of the high voltage transformer. This 3.4V is applied to the magnetron to heat the magnetron filament through two noise preventing choke coils.
6. High voltage (2,230 volts AC) is generated by the high voltage transformer secondary. This secondary voltage is increased by the diode and high voltage capacitor. This resultant DC voltage is then applied to the anode of the magnetron. As shown in Fig. 2, the first half cycle of the high voltage produced in the secondary high voltage transformer charges the high voltage capacitor. The dotted lines indicate the current flow. During operation of the second half cycle, the voltage produced by the transformer secondary (plus the charge of the high voltage capacitor) is applied to the magnetron as shown in the solid line, which causes the magnetron to oscillate. The electrical interference generated by the magnetron is prevented by the 1.6uH choke coils, 500pF filter capacitors and the magnetrons shielded case (so that TV and radio signals are immune).
7. The power control relay is turned on intermittently by the touch control circuit (when the oven is set at any power) except full power. The touch control circuit controls the ON/OFF time of the power control relay in order to vary the output power of the microwave oven from Low to "Full" power. One complete ON/OFF cycle of the power control is 30 seconds.
8. The cooking when the oven is set at any power setting is shown on the display (starts to count down.)

#### 6-4 When the door is opened during cooking

1. The primary interlock switch is opened to cut off the primary voltage of the high voltage transformer. This stops microwave oscillation.
2. The door sensing switch is opened which signals the touch control circuit. The main relay stays on, the power control relay turns off and the display stops counting down.
3. The fan motor and turn-table motor are stopped by operation of the primary interlock switch. The oven lamp lights the inside of the oven again until the door is closed.
4. Upon opening the door, the contacts of the primary interlock switch open and the contacts of interlock monitor switch close.
5. If the contacts of primary interlock switch do not function properly, the monitor fuse blows out because of the large current surge (caused by the monitor switch activation, which stops magnetron oscillation). see Fig. 3



#### 6-5 When the CANCEL pad is touched during cooking

1. Touching the CANCEL pad once stops cooking. Touching on the pad twice cancels all programs stored in the touch control circuit. The time of day reappears on the display window.
2. The oven lamp and cooking indicators turn off.
3. The fan motor stops.
4. The power control relay turns off to cutting the primary voltage to the high voltage transformer (This stops magnetron oscillation).