The Sharp R-6300 microwave oven

ike people, a consumer product can have dignity and integrity, although those qualities are rare in both. I have always treasured this Sharp microwave oven. The compelling feature of the unit is its analog control paradigm. You turn a dial to the desired minutes of cooking time and press a button. The microwave either times out or turns off when you open the door. There is no programming and no endless typing and poking of buttons to get the oven to operate. Everything about this oven is well-made. You can see quality in things ranging from the large Bakelite contactor relay to the crisp and uniform laminations of the motor stators. The wire routing and retention are impeccable. The designers ensured safety with a redundant door switch that deactivates the magnetron even if the latch switch fails. A resistor bleeds off residual capacitor voltage to protect service people. A schematic is glued to the inside of the cover. These days, it may be possible to buy a commercial microwave with this level of quality and serviceability, but I doubt it. The capacitor has 1972 stamped on it. The oven has worked fine for almost 40 years. I hope it keeps working for a few more. I have not been able to find a duplicate on eBay.

A 120V-ac bulb lights the oven cavity. It is a straightforward operation to remove the bracket and clean the plastic film and perforations.

The unit has three shaded-pole motors. One runs the stirrer fan inside the oven. A Kondo Electric Works motor drives a squirrel-cage fan that blows air through the magnetron. The third motor operates the cook timer.

The thin plastic cover was obstructing the stirrer fan, causing what I had interpreted as a loss of power. This fan is not meant to circulate air. Rather, it reflects and disperses the microwaves so that the food is evenly bathed in radiation. I had pushed the cover into the fan while cleaning it. Removed to show the fan, the rear of the cover is supposed to fit into the channel in the back wall. Careful reassembly will ensure that the fan operates properly.

A Nichicon capacitor smooths the ac output to create dc power for the magnetron. Because energy storage in a capacitor is a function of voltage squared, this 0.47-μF, 2400V capacitor can store an amount of energy similar to that of a 0.1F capacitor at 5V.

The RF waveguide is constructed from deep-drawn aluminum. It sits above the magnetron, next to the cooling duct that vents forced air out of the magnetron.

A high-voltage transformer steps up wall voltage to the thousands of volts the magnetron requires. A rectifying diode assembly sits on top of the transformer. The product contains no PCBs (printed-circuit boards). Rubber boots and plastic covers protect service personnel and curious engineers from electrocution.