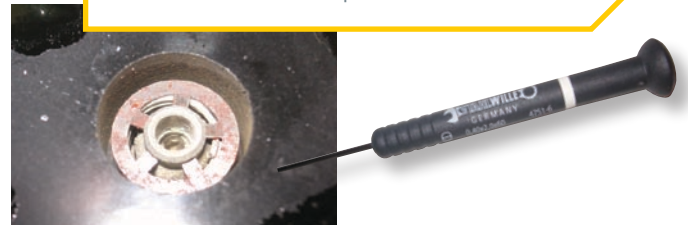


The West Bend No. 1 electric-frying-pan thermostat

About 15 years ago, I bought a Grants electric frying pan on eBay for \$10. Recently, the knob of the pan's West Bend thermostat stopped turning. Knowing that putting pliers to it would only break the knob or strip the knurling, I opted instead to disassemble the unit. The threaded shaft that the knob operated had dried out and seized. Lubricating the threads with Tri-Flow fixed the thermostat. The thermostat also has a neon light that had stopped operating due to age. When I shined a bright light on the failed neon lamp, it started working again because the light preionizes some of the noble gases inside the lamp. The lamp stopped working when I reassembled the unit because it was mostly shielded from ambient light.

Prying off the metal label revealed a dreaded sight: a snap ring designed only to go on, not come off for service. I managed to pry the ring off with a 0.4x2x60-mm, flat-blade Stahlwille screwdriver. A spring holds the knob against the body as the central shaft moves in and out. I glued the label back on with silicone aquarium cement.



A neon light with a series dropping resistor is wired across the two output terminals so that the lamp glows when the thermostat closes and power travels to the pan's heating element.

A loop of wire over one of the three screw bosses serves as a wire-strain relief. The bottom cover has bumps that clamp the wire when it is assembled.

The knob seized because lack of lubrication caused the threads in the metal frame to seize. To free up the threads, I sprayed them with Tri-Flow spray lubricant and carefully worked the knob back and forth in small increments, using pliers when necessary. When the threads were properly lubricated, I could turn the knurled shaft with my fingers.

The steel tube that inserts into the frying pan has a bimetallic element that operates the contact points as it bends with applied temperature.

A bare braided wire allows heat from the barrel contact to dissipate before it reaches the thermostat assembly.

Rotating the temperature knob pushes the lower contact leaf closer to or farther from the bimetallic spring. When the lower leaf is far from the bimetallic spring, it must heat up more to bend far enough to open the contact points.

Applying a few spritzes of DeoxIT liquid on the contacts cleans, protects, and lubricates them when they engage the pins on the frying pan. I found a business card, from an honored competitor, with a good abrasive texture and cut it into strips that I ran between the contact surfaces after I applied the DeoxIT.

