

Rheostats and Temperature Controllers

Plugging a soldering iron into a rheostat (or temperature controller) does NOT reduce the temperature. It reduces the amount of electricity coming in but doesn't change the temperature the iron will heat up to. It will just take longer to heat up. It's the same as the tap on your sink. Turning the tap down will make the water come in slower, but the water will still fill up your sink. It'll just take longer to fill up.

The reason some users believe rheostats "control" the temperature is that it is possible to reduce the amount of electricity coming in enough that the amount of heat being lost into the air is enough that the iron can't heat up to full capacity. That's especially a problem with the Weller 100 iron where the temperature is controlled by the tip. If your tip wants to heat up to 700 deg, but you aren't providing enough electricity for it to do that, the iron's heating element is running constantly. This will assuredly produce premature burn out.

The main reason I strongly recommend against using rheostats is they prevent the iron from providing an dependable temperature. The greatest advantage to the Weller 100 is that every time you use it, you can be confident it will heat up to the same temperature - and every time you leave it rest to reheat, it will heat back up to that same dependable temperature. It's reliable. Incoming electricity isn't reliable. It can vary as much as 10% at different times of day or on different days. If you're running the electricity through a rheostat, you'll be getting a temperature variance as great as 10%. That means that today you'll be soldering at 700 degrees, then tomorrow your iron might only supply 630 degrees, then the following day go up to 770 degrees. It's difficult enough to learn to get smooth even soldering without having to relearn how your iron works every different time you use it.