

# Kiln Corner

## How to Adjust a Thermocouple

by Arnold Howard

Photography Courtesy  
of Paragon Industries, L.P.

*Though Arnold Howard works for Paragon Industries, L.P., the information here applies to all brands of glass kilns. Feel free to send questions for this column no matter what brand of kiln you own.*

The thermocouple is the small rod that extends into the firing chamber of a digital kiln and is easy to find. It generates a faint electrical signal when exposed to heat. The controller interprets that signal from the thermocouple as a temperature.

### Changing Signal Interpretation

You can't actually adjust the temperature reading of the thermocouple. You can, however, adjust the way your digital controller interprets the signal that it receives from the thermocouple. There are a couple of reasons why you might want to do that.

- You have replaced the thermocouple in your kiln, and the new one does not read exactly the same as the old one.
- Your kiln has a Type-K thermocouple that has drifted in temperature. A Type-K thermocouple can vary as much as 36°F/20°C over its life span. However, this is rarely an issue with glass firings, because the Type-K thermocouple lasts almost indefinitely at the comparatively low glass fusing temperatures.

### Adjusting Readings in Thermocouple Offset

The thermocouple reading is adjusted in Thermocouple Offset. This is the term used by the two most common brands of controllers, Paragon's Orton glass kilns and the Bartlett ceramic kiln.

#### Orton's Sentry 2.0 12-Key Controller

1. From Idle, press the Options key until "TCOS" appears. Then press Enter.
2. Using the 1 and 2 keys, change the temperature setting. An *H* number will cause the kiln to fire hotter; while a *C* number will cause it to fire cooler. The higher the number, the greater the temperature change. Then press Enter. To return to Idle, press Stop.

#### Orton's Sentry Xpress 4.0 3-Key Controller

1. From Idle, press the down arrow key several times until "Strt" appears.
2. Press the up arrow key. "TCOS" will appear.
3. Press the arrow keys to change the controller temperature. A minus number will cause the kiln to fire cooler. Press the START key to return to the Strt display. To return to Idle, press START two more times. Instead of adjusting the Thermocouple Offset, you may prefer to change the temperatures in your firing schedules.



*Keep kiln shelves, dams, and molds  
3/4" away from the thermocouple.*



*As a rule of thumb, the thermocouple should extend into the firing chamber by four times its diameter. Bumping the thermocouple with a shelf and pushing it into the wall of the kiln will cause the kiln to get too hot.*

*Arnold Howard writes instruction manuals and advertisements for Paragon Industries, L.P. His hobbies are glass fusing and karate. He also enjoys studying history and watching classic movies. You can reach Arnold at [ahoward@paragonweb.com](mailto:ahoward@paragonweb.com) with questions for future columns. Sign up for his kiln newsletter at [www.paragonweb.com](http://www.paragonweb.com).*

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