

# The Kiln Corner— Observing A Kiln During Firing

by Arnold Howard

## Why does my kiln make a buzzing sound?

Here are some of the sounds that a kiln makes:

- **The heating elements hum when they turn on.** That is because they vibrate in the brick grooves due to magnetism between the coils. This sound is normal. It diminishes as the kiln gets hotter, because the elements soften.
- **The clicking noise of a switch-operated kiln is also normal.** It is the sound of an infinite control switch cycling on and off. When the clicking turns into a popping noise, the switch is probably about to fail. You should keep a spare on hand.
- **Relays are another source of clicking.** To turn on the elements, a digital controller sends twelve volts to the relays. The relays, in turn, act as switches and send full voltage to the elements. The relays click every time they turn on. A chattering noise, however, indicates that a relay is about to fail.
- **A crackling noise followed by loud POP from the kiln's switch box usually means that a loose electrical connection has just failed.** If you hear crackling, which sounds like sparks, turn off the kiln.

The loose connection creates a tiny electrical arc, which overheats and burns electrical parts. A rapid arcing causes the popping noise. Whenever you change elements or have the switch box open for any reason, check all of the wire connections. Make sure they are tight. (The power must be disconnected, of course.) Tug on the wires. If a wire pulls out of a terminal, replace the terminal with a new one using a good crimping tool. Remove any dust before closing the switch box. When you replace elements, make sure the connections are tight.

## There is a gap between the kiln and the lid near the hinge. Is this normal?

The gap under the lid of a cold kiln at the hinge is normal. As the kiln heats up, the firebricks expand, which causes the body of the kiln to grow taller and close the gap. The gap is designed to help prevent the front of the lid from rising at high temperatures.

## The lid on my kiln is rising at the front during firing. What is the cause?

During firing, the wall bricks expand. This pushes the lid upward. If the hinge does not have sufficient play, the lid will rise at the front. If this happens, please do not put a weight on the lid to hold it down. That will only damage the lid. Instead, check for binding in the hinge.



*Firefly switch replacement C1. Make sure the connections are tight when you replace electrical components.*



*Mercury relay C1. The large mercury relay is almost silent; the small mechanical relay makes a clicking noise. The clicking stops during segments that have a 9999 rate.*

## My front-loading kiln has a gap between the door and the firing chamber. Is that normal?

There should be no gap between the door and the firing chamber at the side toward the door latch. There should be a gap, however, at the hinge side of the door. When the kiln is cold, you should see a gap of about 1/16" between the hinge side of the door and the firing chamber.

As the kiln heats, the firebricks expand. Without a gap, the door will bind at the hinge and cause a gap at the side toward the latch.

## I am concerned about the light that appears under my kiln lid during firing.

The light that you see under the lid is normal as long as the lid is not rising in front. The inner lid surface expands more than the outer cooler surface. Therefore, it bows inward slightly toward the firing chamber. This is normal. For this reason you will see a thin line of light around the lid, since the lid is no longer a flat surface resting on the flat firing chamber sidewalls. Surprisingly, there is very little heat loss from around the edge of the lid. **GPO**

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