

# FIRING INSTRUCTIONS FOR L&L MANUAL KILNS

## **CAUTION - USE THIS ONLY AS A STARTING POINT IN LEARNING THIS PROCESS**

IMPORTANT NOTE: There are many kinds of loads fired in kilns with infinite variations. There is bisque firing, glaze firing, variations in clay bodies, variations in the wetness of the clay and, of course, many other kinds of firing like glass, crystalline glazes, various industrial processes, etc. This guide is meant ONLY as a starting point. Rely on your own experience and that of other people who know to compliment and expand on this starting point. Unfortunately we can not be your ultimate resource for firing information. If you have further questions please contact your local distributor, Orton Firing Institute or local pottery guilds or organizations.

## **TYPE OF SWITCHES**

Zone Switches on L&L kilns come in two varieties; 4 position switches which have settings for Low, Med, High, and Off, but nothing in between, and Infinite Switches which have Off, then 1, 2, 3 through 11 ending at High - basically an infinite number of choices between Off and High. The 4 position switches were used on our old K Model and H & C Model kilns (typically before 1975). All J Series, Jupiter and DaVinci Series kilns use the Infinite Zone switches.

## **USE PYROMETRIC CONES**

It is always wise to fire the kiln using self-supporting cones that melt at the temperatures your clays mature at, or a pyrometer, or some other way to tell the temperature in the kiln. As you load the kiln, place these cones so they can be seen easily through the peepholes.

## **PYROMETER SYSTEM**

Consider using a Tru-View Pyrometer. This allows you to see what is happening in the kiln as it reaches maturity and allows you to adjust the manual switches with more precision.

## **ONE POTTER'S SUGGESTIONS**

Set the kiln sitter up with one cone # hotter than your self-supporting cones.

If you have an automatic vent like the Vent-Sure use it. If not pop the lid open about 4 or 5 inches with

something non-flammable, and leave all the peephole plugs out. It is important to vent the water vapor and other fumes (such as carbon monoxide) that are generated in the beginning of the firing cycle. Glazes can also give off toxic fumes later in the firing cycle.

Turn on the Dawson Timer. The first time, turn it up very high, and keep track of how long the firing takes, the next time set it for about an hour longer than your first firing took.

Press the Dawson's white or silver button in so it stays in. Turn all the switches to Low or 1. Leave it that way for three hours if you think the clay was dry. Leave it for 8 to 20+ hours if the clay seems at all wet. On L&L Kilns switches have pilot lights next to them. On Low they may be on something like 7 seconds, and off 23 seconds in a 30 second cycle. The closer you turn the switches to High, the longer they will stay on, and the shorter they will stay off in that 30 second cycle. ("30 seconds" is not what it will actually be, but probably something close). When you get to High they will be on all the time.

Assuming the clay was dry, you have left it on for three hours, now, close the lid. Turn the top two switches to 5. Turn the bottom switch to 6.

As soon as you see Red Heat (any visible color) in the kiln, plug the bottom two peepholes. Leave the top one open during the entire firing (if you don't have an automatic vent). If you do have a vent leave it on and the peephole plugged.

As soon as you see quite a bit of Red Heat (about 1400° F if you have a pyrometer), turn the bottom two switches to High, and the top switch to 9. Check the cones you can see through each peephole often.

As you start to see movement in the cones, as their surfaces start to look runny, look closely to see that all three sections of the kiln are doing the same thing, at the same temperature top to bottom. You can fine-tune the switches now to add or subtract a bit of heat from the top or bottom to get to this point. As the cones all slump, turn all your switches off. Also if possible turn the electrical breaker off as well.

Wait for it to completely cool before opening it.

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## **ANOTHER POTTER'S SUGGESTIONS (For a bisque firing)**

Put a ^08 into the kiln sitter, and prop the lid open with a 2" to 3" piece of softbrick. (using a hard post gouges the lid)

0:00: Put the bottom elements on LOW. leave the peepholes in (this prevents a chimney effect from cooling the front of the kiln.) Leave the bottom on LOW for 1 hour.

1:00 Put the middle elements on LOW. Now the bottom and middle are both on LOW. leave the kiln like this for one hour

2:00 hold a small mirror near the front of the open lid. if condensation appears, let the kiln go for another hour. If it does not, drop the lid.

3:00 turn the top element to LOW

4:00 turn all switches 1/3 of the way on (8:00 if you liken it to a clockface)

5:00 turn all the switches to 1/2 on (6:00 on a clockface)

6:00 turn all switches to 3/4 on (3:00 on a clockface)

7:00 turn all switches to HIGH. Dull red heat should begin to appear within the hour. When it does, set the timer on the Dawson to 2 hours.

The kiln should shut off within that two hour period, most likely before the timer runs out.

This firing schedule has worked for the type of work I make on the wheel, my claybodies, the density that I load my kiln, and the dryness of the ware that I feel comfortable loading into the kiln. This is just an example of a typical firing schedule for me, and may need adjusting at different places depending on your own conditions.

## **ANOTHER POTTER'S SUGGESTION**

### **This is from potters.org:**

Load the kiln, place the witness cone packs on each shelf, (at least one must be visible from a peephole,) and put a cone in the sitter. Choose a cone that's about one cone higher than you actually intend to fire. You may need to recalibrate the sitter later, but this will do for a first attempt, since sitter cones often equal a

lower numbered witness cone.

Leave the lid propped open a few inches, and turn your switches to the lowest setting. Leave it that way for a few hours; more if your work is thick. Then shut the lid. Wait an hour or so, then turn the switches to about halfway. Wait another hour or so, then turn it up to the highest setting. (You can do this in smaller increments but more often; it's up to you.) Thicker work must be fired slower.

Keep an eye on your cone packs. With a new kiln, you won't know how long you'll have to wait, but if you have an eye for the color of various temperatures, you'll have some idea of how fast it's firing. When the guide cone(s) drop, start checking on it often.

When the proper cone drops, turn the kiln off or turn the switches to low for a soak - it's up to you. If the sitter turns it off before the witness cones say it's time, just tape the sitter flap up into place again and push the 'on' button. Then wait for the witness cone to tell you when you're finished, and turn it off or soak. Witness cones are ALWAYS more accurate than the sitter.