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## Hot Face Repair - Coffin Style Kilns

Repairing the hot face in all Denver coffin style kilns can be done in the same manner. It is easiest, especially on the larger units, if you have two people. Some preparations will help in making the job easier.

Here are some things that you should have ready:

- An area large enough to lay the element rack once it has been removed from the kiln.
- A drill
- A  $\frac{1}{4}$ " bit and a  $\frac{3}{16}$ " bit
- A straight screwdriver
- A pair of pliers
- A  $\frac{5}{16}$ " nutdriver or wrench
- A  $\frac{7}{16}$ " nutdriver or wrench
- A pair of wire snippers
- Some patience... (always a virtue)

Then:

- Disconnect all power to the kiln.
- With  $\frac{5}{16}$ " wrench, remove the screws from the electrical cover on the lid and lay the cover to the side to expose the electrical connections to the elements.
- Label the wires so that they go back where they were.
- Disconnect the wires from the elements using the screwdriver and pliers. (On some of the older models there was a crimping system used. These crimps should be replaced with copper clamp type lugs.)
- Now you can lay the electrical cover completely out of the way.
- Open the kiln lid and from the top, start removing the  $\frac{7}{16}$ " nuts that hold the rack in place. Be very careful not to let it fall into the kiln. (It probably won't, but you should be aware of it.)
- Gently lower the rack from the lid, being careful not to twist, torque or let it spread such that the mullite tubes would fall. Lay it down in the area that you made to work.
- Remove all ceramic insulators from the lid.
- Open the lid until there is some slack on the spring(s) (*N/A on KL-27*). Unhook the spring(s) from the eyebolts in the back and gently lower the lid back shut. Be careful though, the larger lids can be very heavy.
- Locate and remove the pop rivets securing the stainless steel using the  $\frac{3}{16}$ " drill bit.
- Remove the screws from the lid portion of the piano hinge in back.
- Remove the Springbar (*N/A on model KL-27*) from the top of the lid using the  $\frac{5}{16}$ " nut driver.
- You can now lift the lid off the kiln and carry it to your work area. Lay the lid on the table with the top down.
- Locate and remove the screws in the stainless steel that wraps around the lid. At this point you can pull the wrapper off of the edge.

- Usually the only thing that needs to be replaced in a hot face repair is the first layer of fiber board. If the damage is extensive you may need to replace both layers. In either case, remove the damaged fiber board and replace it with the new.
- Starting at one corner, begin working the stainless trim back onto the edge. This can be a little bit of work getting it all squashed together far enough on some of the larger kiln lids. Re-install the screws securing the corners of the stainless trim.
- Turn the lid over and with a small screwdriver, re-align the holes that the pop rivets holding the stainless were in. Replace the pop rivets or use screws big enough for the threads to catch.
- Prop the lid up off the work surface a little to allow for drilling the holes through the hot face. All of the holes in the lid that element rack pins or element twisted tails coming through must get a 1/4" hole drilled in them. Center the drill bit as best you can in the hole and drill all the way through new hot face board.
- Turn the lid over again. It is now time to put the element rack back into the lid. Prop the lid up from the work area again, this time about 3" up. Some fire bricks or some 2 x4 scraps on edge work well.
- Being very careful not to twist or torque the unit, turn the element rack over and install it in the lid. Work the element tails into their holes first and then start the rack pins through theirs. As the rack drops through the lid, put a couple of the nuts and washers back on each end to hold it in place while you re-install the lid.
- Return the lid to the kiln making certain that you lower it straight down on to the kiln.
- Replace the hinge on the back.
- Replace the ceramic insulators. Pack some ceramic fiber blanket down into the tubes around the rack legs to stop any chimney effect from coming through the lid.
- Replace all securing nuts and washers. Re-do all electrical connections and replace cover.
- Reconnect electricity and test for proper connections.