

Element Re-pinning & Replacement

NOTE: When doing replacement repairs, install the new part in the same position as the old part. Transfer wires one at a time from the old to the new part. Discolored wires, slip-on connectors and lugs must be replaced or cleaned with sandpaper or steel wool until clean and bright. If this is not done, a bad connection will result.

Element Re-Pinning

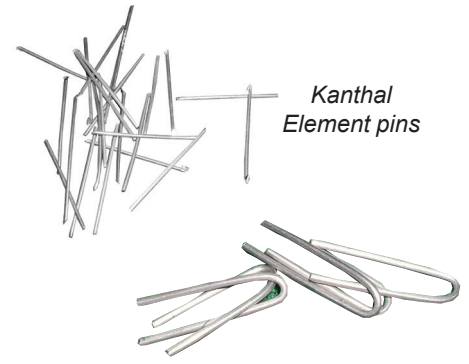
Elements become very brittle after a few firings; so if re-shaping or re-pinning is necessary, heat the element either by turning on the kiln, or heat element with a torch to a dull red glow. Unplug or unwire the kiln, and reposition the hot element using needle nose pliers. A brittle element normally will not break if it is above 500 degrees F.



Inserting element into brick groove



Re-pinning lid element



Kanthal
Element pins

U-Shaped pins are used to pin elements in the lid element troughs of the glass kilns.

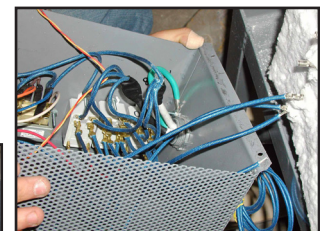
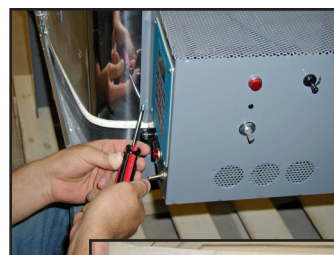
Element Replacement

Elements need replacing when contamination occurs, breakage or age. Each element in the kiln wraps around twice. An element is identified by the kiln model, voltage and where it will be located in the kiln; lid or body for 120 volt kilns; lid, top, bottom, center, floor, or door for 240-208 volt models. Other items used when replacing kiln elements include pins, hi temp connectors and a crimping tool.

Removal of Electrical Box

Before removing the electrical box

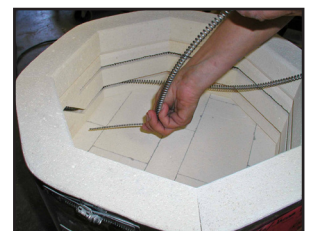
1. Unplug or unwire kiln, if direct wired.
2. Disconnect interbox plugs and receptacles by twisting and unplugging or rotate and remove other rings in order to disconnect interconnections between rings.
3. Remove the screws attaching the electrical box to the heat shield.
4. Pull the box away from the kiln. When removing the electrical box, be careful to pull the box straight out so that the thermocouple or kiln sitter tube does not break the box.



Removing screws attaching electrical box to kiln and gently pulling box away

Replacing Elements

1. Remove all pins holding the defective element in the grooves. Cut the electrical crimps **inside** the electrical box.
2. Gently remove the old element, taking care not to break or chip any bricks. Long needle nose pliers can help in this job.
3. Insert one twisted pigtail of the new element through the terminal brick and then work toward the other end by carefully placing the new element in the trough of the brick. Once fitted inside the trough, make a slight bend at each corner so that the element takes the shape of the kiln. When the entire element is in the trough, it may be necessary to slightly stretch or compress it to obtain the length necessary to allow the pigtail to pass through the brick and the element to sit properly in the brick.



Element pigtail inserted into the hole of the terminal brick

Replacing Elements (continued)

4. Re-pin the element at each corner with Kanthal pins. **The pins should hold the element down while the lip of element groove holds the element in.**
5. Reinstall the porcelain insulators over the twisted pigtail.
6. Pull the pigtail out gently until it is tight, then clip it 5/16 inch beyond the insulator.

High Temperature Connectors



7. Place a high temperature connector in the jaws of the crimping tool and hold it lightly. Reach inside the kiln with the other hand and push the pigtail out. Slip the connector on the pigtail and crimp firmly in two spots.



Crimping high temp connector on pigtail

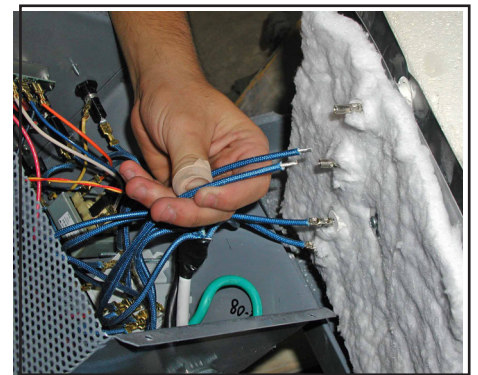


Crimping Tool

High Temp Connector in Jaws of Crimping Tool

8. Strip 5/16 inch from the wires connecting the switch or relay to the elements. Polish with fine sandpaper if the wires are discolored, then firmly re-crimp.

It is important to stress that the wire in a crimped connection be clean and bright. All crimps must be firmly applied.



Lead wires from relay or switch strip and ready to crimp.

Element Replacement Tip for Electric Rakus and TopHats

Heat the elements so that they are pliable. The best way to replace elements in an electric raku kiln is to remove the firing chamber from the frame. Once the firing chamber has been removed from the frame, loosen the stainless steel band, remove the top from the firing chamber and follow the steps for element replacement. After the elements have been installed, replace the lid of the kiln on the firing chamber and reinstall the firing chamber to the kiln frame.



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