

REPLACEMENT OF HEATING ELEMENT PANELS Models HTE88-1212-1414, DU614-1020-1224 Ceramic Fiber Boards

The heating module and its heating element panels consist of ceramic fibers compressed and formed into the shape of the flat boards or special forms. The raw material from which the ceramic fiber is derived is Koaline, a naturally occurring high purity alumina-silica fireclay. This averages 2.8 microns with an average length of 1 inch. This method of manufacturing causes the fibers to thoroughly interlace to provide good strength. The melting point is in excess of 3400 degrees F.

The board or forms consist of the ceramic fibers and appropriate quantities of organic and inorganic binders. Because of its composition and the method of manufacturing, the ceramic board or forms, exhibit excellent volume stability at elevated temperatures, is extremely resistant to thermal shock and is a highly efficient insulator.

During initial firing of the furnace the organic binder will burn out. This occurs at temperatures ranging from approximately 500 degrees to 1000 degrees F. This causes the board or forms to lose some of their initial strength, so care must be used when handling the element panels and the outer casing when replacing heating elements.

This material is a product developed for use in the aerospace industry and has proved to be extremely valuable in energy conservation.

Step 1- Disconnect power source to furnace before starting to service unit.

Step 2-Remove back screen.

Step 3-Loosen locknut and remove thermocouple. If you have old heating panels with threaded terminal rods, you must replace the entire set of panels. They cannot be interchanged or mixed with the new style of panels. Remove the copper buss bars, power leads and terminal studs and discard. The copper buss bars will be replaced with high temperature wire jumpers supplied with the new set of panels.

Step 4-Remove the self-tapping screws in the 4 corners of the back board. Remove back board. This exposes the outside 1" insulation spacer panel (not required on all models).

Step 5-Remove the rear non heating chamber back board by grasping the panel and withdrawing it evenly and slowly from the set of terminal studs. This will expose the heating panels.

Step 6-If the furnace has an atmosphere chamber, remove it through the front of the furnace. Proceed to remove the old heating panels by sliding them outward starting with the top panel and then the sides, and finally the bottom. If the panels are the old style (1" thick), also remove the 1" insulating boards that are left within the sides of the opening. **The new replacement panels are 2" in thickness, eliminating the need for the insulating boards.**

Step 7-Now holding the panels with both hands, place the bottom panel in position, then the left side, the right side, and finally the top panel, as shown in figure (1).

Step 8-Be sure to replace the hearth support brick(s) (shown in figure 2) prior to replacing the back panel. Cut the rear non-heating panel to fit within the 4 heating panels.

Mark and drill the holes for the panel lead wires to protrude through. You are now ready to replace the 1" insulation spacer board.

Step 9-Replace the rear back up panel. Do not overtighten the self tapping screws as the corners from the board may break.

Step 10-Slip one kearney nut over each lead wire. If replacing buss bars, cut the high temperature wire to the required lengths per diagram enclosed with the shipment. Very carefully loop it from one terminal to the other, installing within the kearney nuts, and tighten down on the panel rods, as shown in figure (3).

Step 11-Replace the thermocouple and tighten down on the set screw. Reinstall the protective mesh screen.

Step 12-Restore the power to the furnace by closing the field installed disconnect.

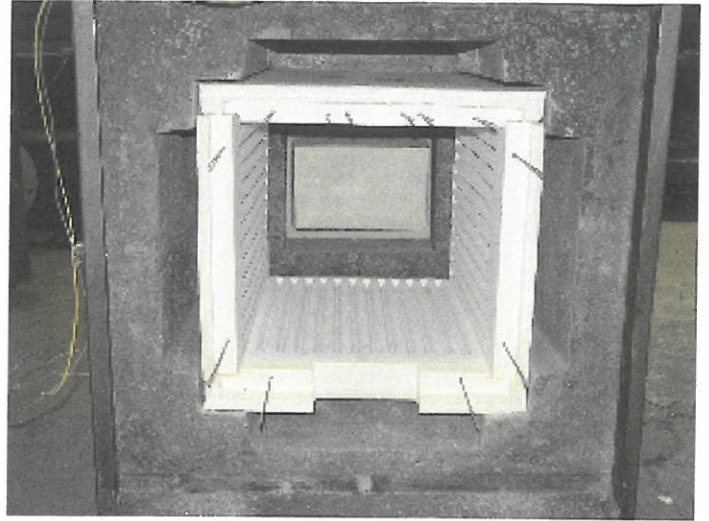


Figure 1

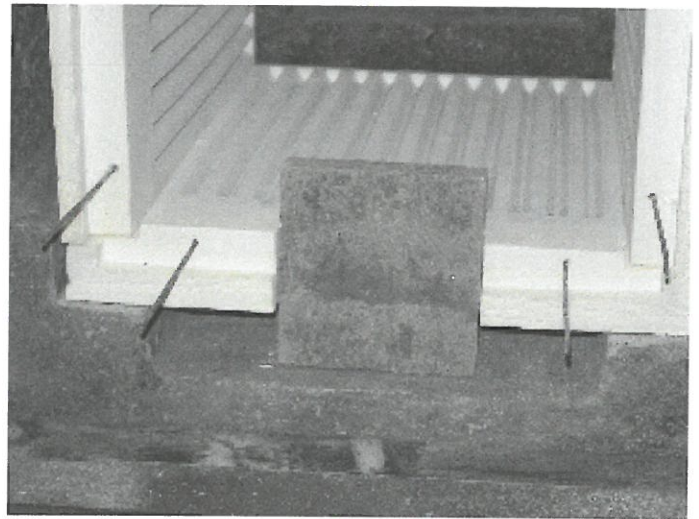


Figure 2

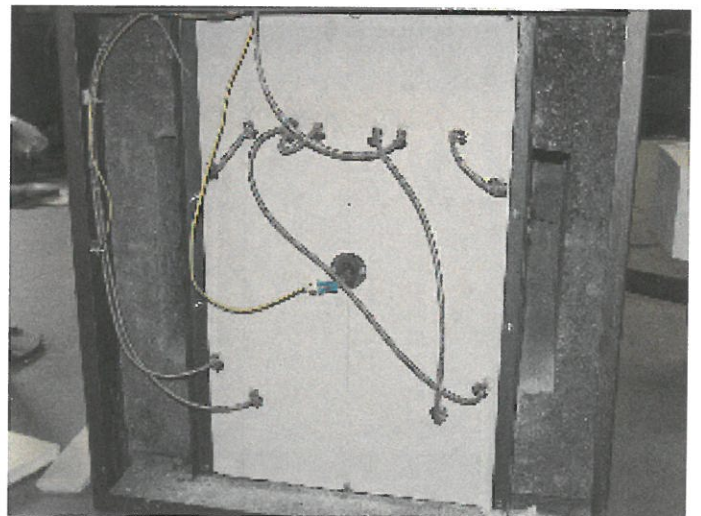


Figure 3