

DATA SHEET

Element Cages

Electric furnaces have several problems arising from the exposure of the elements. These are overcome by muffles, but they drastically reduce thermal efficiency.

Joy Lloyd solved all the problems with his ingenious invention of element cages. These are intricate structures of silicon carbide, more complex than any refractory structure made previously.



The coiled Kanthal element is 90% open to direct radiation. It is held in place in any orientation of the furnace. The furnace has extremely low thermal mass and heats up rapidly and very efficiently. The insulation is ceramic fibre blanket so that the weight of the furnace is so low that it is portable.



Lloyd furnaces can even be used on a desktop. A treadle can be used to lift out the crucible.

We make ultra-thin walled crucibles to make the best use of the speed and efficiency of element cages.



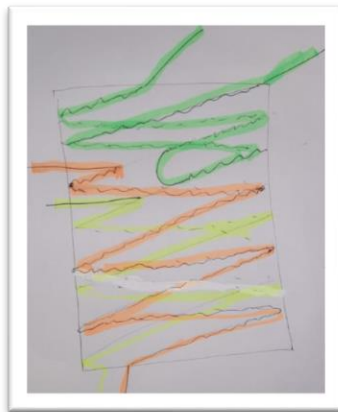
Element Cages are generally custom designed to fit a crucible and built by the customer. See 082 808 4757

We make large robust element cages in a permanent mould developed for the Pebble Bed project.

They are 300mm ID 360mm tall.



They have a double helix and work with 3 elements in the following configuration.



The cage costs R8844 + VAT (2020 price) and the 3 elements cost R1506 for 3 + VAT. The elements are connected to the supply cables with line taps. The connection must be outside of the ceramic fibre insulation and the element trails must be wrapped with fine copper wire before clamping the supply cables with line taps



The Lloyd furnace must have a lid, otherwise lots of heat is lost by convection. The base must also be insulated, and this must include as air gap of at least 25mm.