

THE “HB” MODULE - *Design*

The design centers on several parameters, the first being the supplying of the amount of heat to overcome the steady state heat losses, or the satisfying of a client’s predetermined required load. The hopper is drawn to scale and all stiffeners located, and the placement of manways, poke tubes, strike plates, vibrators, etc. Beginning at the bottom of the hopper we size in the largest practical heater we can between the stiffeners. This practice is continued until the system is satisfied. A watt density is selected, unless client specified, and fed into the computer program uniquely designed for us. The drawings are done using CAD and the program is self-checking.

As far as possible, our aim is to make each individual heater suitable for direct supply (480/575V), and to reduce to an absolute minimum the number of series connections and the amount of heaters in series. Should a heater fail it does not adversely effect 3, 4 or more heaters in the series chain. Small heaters we have to connect in series primarily because we cannot “pack” enough resistance into the heaters using foil elements. If we use fine small csa wire elements then very high resistances are obtainable, but the loss of mechanical strength in the element makes them prone to high rates of failure
i.e. Briskheat.

Part of our design is the length of the leads. A suitable location for the junction box is found and we determine the length of leads to reach the box. To this length we add 4’0”, being 2’0” if the box is off the hopper and 2’0” for wiring in the box. No one has complained yet of short leads.

All heating modules have a reference letter and number on the back of the casing. This relates to the drawings and the heater’s location on the hopper. At the end of the cold leads we apply wire markers having the same identifying reference as the module. Without seeing the module, an installer can quickly identify the heater.

To further aid the installer, all mounting channels are stenciled with the reference letter of the heater it fits to. All “A” heaters have “A” channels, “B” heaters have “B” channels, etc. Further simplification is done by the schematics showing the heater references and the same reference is shown on the terminal blocks in the junction boxes.