

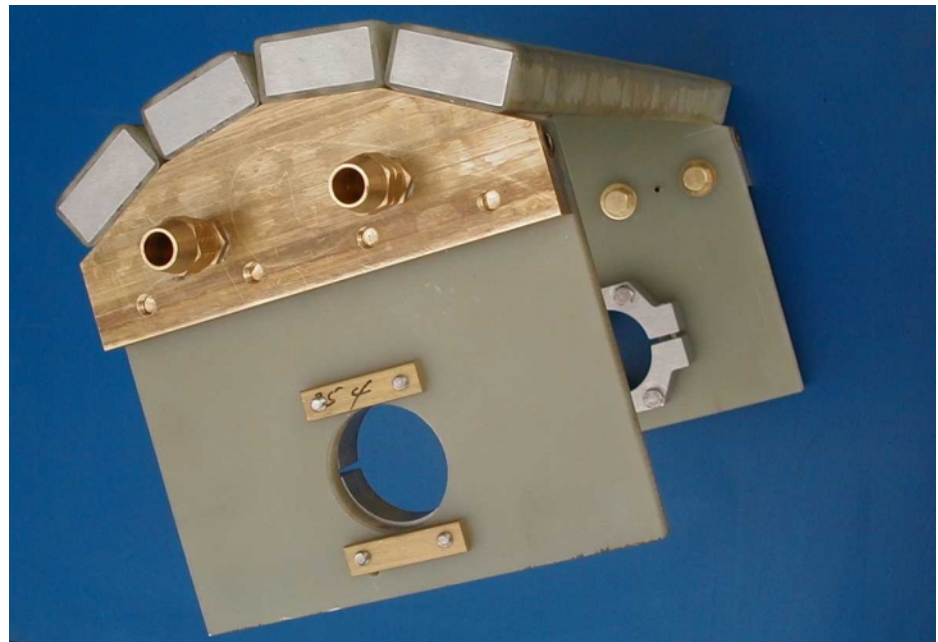
Modular impeder clusters for contact & induction welding

EHE's modular impeder clusters provide an economical answer to HF induction or contact welding of large diameter tube & pipe.

Description

These impeder clusters comprise a pair of manifolds which are mounted on a support bar or pipe, located at the centerline of the tube or pipe being welded. Pairs of rectangular impeders are attached to the outside of these manifolds by means of 4 stainless steel cap screws per impeder. Silicone rubber o-rings are provided to effect a seal between the impeders and the manifolds.

These impeder clusters may be configured for either through flow or return flow coolant systems, and provision can be made to accommodate most types of internal scarfing systems.



Cluster of four impeders for contact welding 16" pipe.

Installation

The installation method will depend upon the design of the support bar or I.D. scarfing system selected. In general, modular impeder clusters are shipped fully assembled but without the impeders. The manifolds may be fitted with spacer plates fabricated from FR4 epoxy/glass board. This material is lightweight & strong and since it is electrically non conductive, it is not subject to eddy current heating.

The clusters should be assembled by placing the manifolds on a flat surface, then attaching the impeders to the outer surfaces in pairs, beginning at the outside. O-rings are provided to seal the coolant ports at each end of the impeders.

Induction welding typically requires 3-4 pairs of impeders (total 6 or 8). Contact welding requires either one or two pairs of impeders. In both cases, the impeders should be positioned symmetrically on the manifolds, and any unused impeder positions must be toward the outsides of the manifolds. Impeders are most effective when they are located close to the open "vee" of the tube. Blanking plugs for any unused ports are available from EHE.

When the impeder clusters have been fully assembled on the bench, they may be tested for leaks, then fitted over the support bar or tube & clamped in place. Some support bars are keyed, or have a flat milled on top. We can supply special clamps to locate on these keyways or flats, and prevent the impeders from rotating relative to the support.



Cooling requirements

The amount of coolant depends on many factors, including welder output power, frequency, coil position & length. All EHE impeders are designed to accept filtered mill coolant or clean water at 40 - 80 PSI, and at a maximum inlet temperature of 80°F. Reducing the inlet temperature will increase the life & performance of the impeders. The manifolds are supplied with couplings sized so that sufficient cooling will occur under "worst case" conditions at the minimum specified pressure & maximum specified temperature. Coupling sizes should not be reduced - if the clusters are shipped with 1/2" couplings, the inlet & return lines should be at least 1/2" in diameter to ensure adequate flow.

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