

## SPRAY COOLED INDUCTION WELDING COILS

*EHE spray cooled induction welding coils provide an economical solution for welding large diameter pipe & structural tubing.*



### Installation

Coils should be installed in accordance with the welder manufacturers instructions. For best electrical efficiency, the coil should be positioned as close as is practical to the weld point, in order to keep the “vee” length short.

With split coils, the two halves should be attached using the bolts or clamps provided. It is essential that the contact surfaces be clean & flat, and that the bolts or clamps are fully tightened. Single turn coils may carry currents in excess of 3000 amps, and any poor electrical connections will result in overheating, arcing & damage to the coil.

Even pressure should be applied across the entire contact area, to prevent “hot spots”. We do not recommend the use of contact lubricants or gells on induction welding coil contact surfaces.

## Coolant supply

Spray cooled coils require less coolant flow than other types. Because all coolant must pass through the spray jets, which may be as small as 0.040" (1.0mm), it is essential that the coolant be filtered. Use of a 50 micron or smaller filter is recommended.

It is also advisable to install a flow switch in the coolant line supplying the coil. This can then be interlocked to the welder control circuit in such a manner that the welder is shut down if there is insufficient flow of coolant to properly cool the coil.

Heating occurs in the coil as a result of the very large current that flows through the coil. A wide band of high conductivity copper is used for the coil itself, to minimize the resistance of the coil, however the resistivity of copper increases with temperature, so the cooler the coil, the less resistive heating that will occur. Use of a chiller to cool the coil coolant to below 50°F will greatly extend the life of the coil, and will pay for its initial cost in a very short time as a result of reduced electrical power consumption.

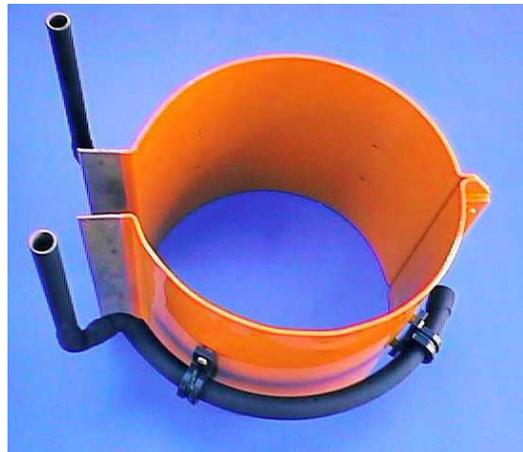
Do not use excessive coolant pressure. There should be sufficient flow to evenly flood the entire outer surface of the coil.

## Maintenance

Spray cooled coils require little or no maintenance. The spray cooling bars are designed to wet the entire outer surface of the coil. Over a period of time, some coolant orifices may become blocked if the coolant is not properly filtered. When this occurs, the cooling bars may be removed & the orifices cleaned using the type of tip cleaners used for oxy/acetylene torches.

## Safety considerations

The frequencies used for induction welding are generally considered to be above those at which electrical shock is fatal, however severe burns will occur as a result of contact with any part of the coil during welder operation.



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