Heating four brass inserts prior to insertion into a plastic motor housing

Objective

To heat brass inserts to required temperature for a metal-to-plastic insertion application; the end product is a motor housing

Material

- Customer supplied 0.18” (4.6 mm) O.D. brass insert
- Plastic housing

Temperature

1050° F (566° C)

Frequency

257 kHz

Equipment

- Ambrell EASYHEAT 2 kW/150-400 kHz induction heating system equipped with a remote workhead containing two 0.33 µF capacitors
- A four position, two turn helical induction heating coil designed and developed to generate the required heat for this heat staking application

Process

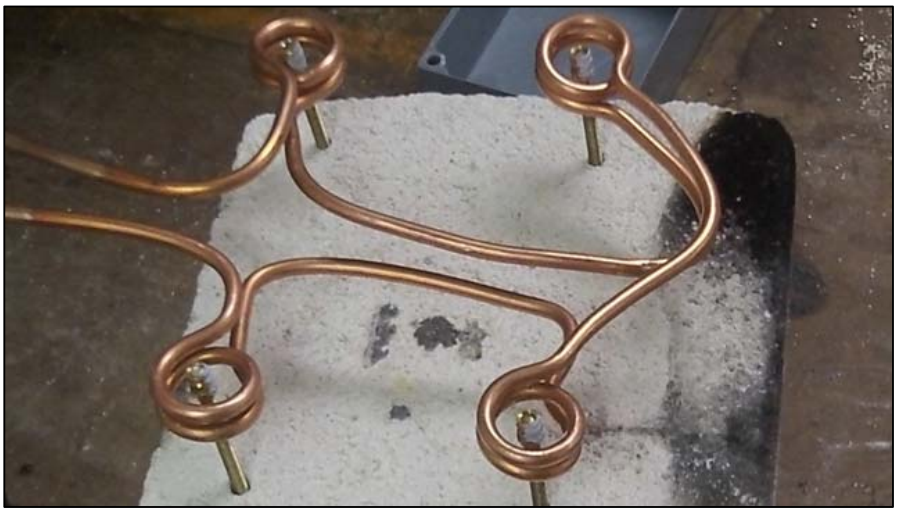
Four inserts were heated in a prototype coil. The inserts were threaded onto brass rods for testing purposes. The parts heated to temperature within 15 seconds.

The production coil will be considerably more sophisticated with the possibility of polyer tubes to provide additional water flow for higher production rates and a plate mounted to the coil to facilitate repeatable, consistent heating.

Results/Benefits

- Speed: The parts heated to required temperature in just 15 seconds
- Repeatability: Induction is a highly repeatable heating method, and a coil plate could offer protection against operator movement/errors
- Integration into Production: The EASYHEAT and its workhead are small, which makes it easy to implement within a production line given the minimal required footprint

Metaltoplastic_16 LSR# S7619 | © 2015 All information subject to change without notice



The brass inserts inside the prototype coil.

A possible plate mounting for the production coil.

Metaltoplastic_16 LSR# S7619 | © 2015 All information subject to change without notice