

Brazing two fittings and a helical tube to create a mount

Objective To heat two fittings and a small helical tube (a steady mount for a compressor) to 1350 °F (732 °C) for brazing

Materials

- Stainless steel fittings
- Stainless steel small helical tube
- Braze
- Flux

Temperature 1350 °F (732 °C)

Frequency 50 kHz

Equipment

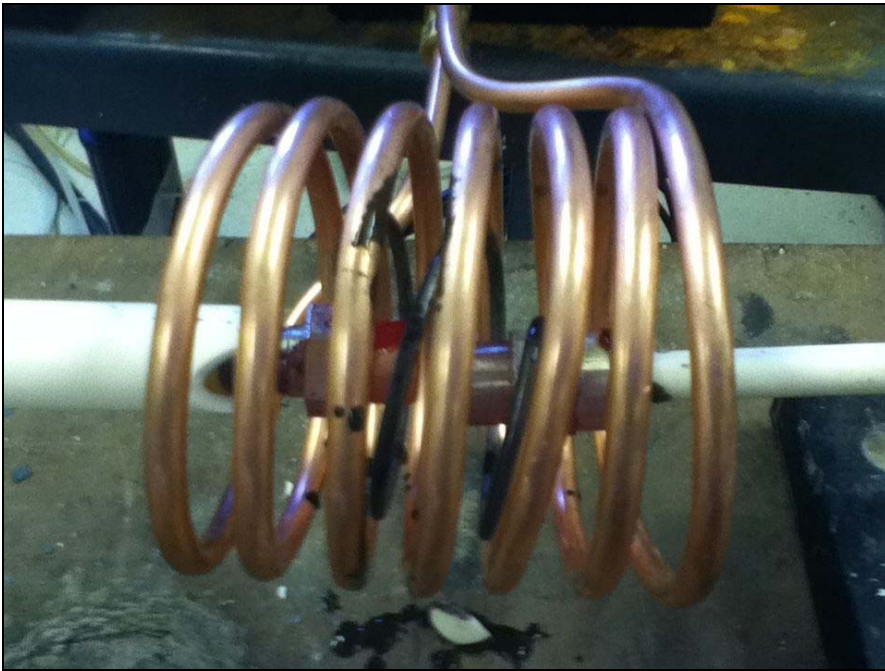
- Ambrell EKOHEAT 10/100c, 10 kW 50-150 kHz induction heating system equipped with a remote heat station containing three 1.0 µF capacitors
- A single position seven-turn helical coil designed and developed for this application

Process The parts were fluxed and assembled. Two braze pre-forms were created. The assembly was placed into the coil and the power was turned on. After 45 seconds the braze alloy had flowed into the joint, which created a good fillet and a leak-proof joint.

The part was cooled and then tested to verify the tube had not been blocked. Milk of Magnesia is effective in stopping the braze flow from blocking the tube.

Results/Benefits

- **Quality:** The client had been using a torch, and was dealing with inconsistent results that impacted part quality
- **Speed:** Induction heats the assembly more quickly than the torch
- **Production rate:** Faster heating leads to a superior production rate
- **Efficiency:** Induction is more energy-efficient than a torch
- **Worker safety:** Induction means there aren't the safety risks that come with an open flame



The part inside the induction heating coil



The part after brazing