

Brazing a brass screw cap and a steel tube

Objective To heat a brass hex screw cap and a steel tube to temperature for a brazing application

Material

- Screw cap
 Steel tube
- Steel tube
- Braze rings
- Flux

Temperature 1400 °F (760 °C)

Frequency 109 kHz

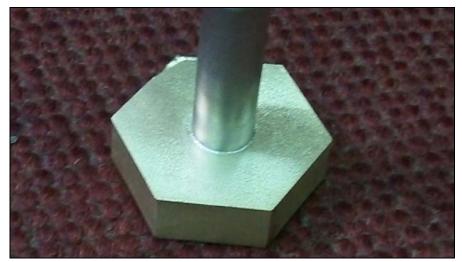
- Equipment
 Ambrell EKOHEAT 15 kW, 50 to 150 kHz induction heating system equipped with a remote workhead containing four 1.5 uf capacitors for a total of 1.5 uf
 - A four-position, two-turn helical induction heating coil designed and developed specifically for this application
 - **Process** White brazing flux was used on the parts. Samples were assembled using the braze rings, a batch of four samples were heated for 60 seconds, the braze flowed, and an aesthetically-pleasing joint was created. The process met the client's time objective of 15 seconds per part. A faster heating time is not recommended due to the limitations of thermal conduction of brass to the center of the part.
- **Results/Benefits** Speed: Induction enabled the brazing process to be completed at a rate of 15 seconds per part
 - Consistency: Induction enables consistent joint quality, which a torch often doesn't deliver
 - Safety: There is no open flame with induction, so it's a safer heating option than other options such as torch heating
 - Efficiency: Induction delivers heat only where it's required, making it more efficient than many competitive heating methods

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Precision Induction Heating



The assembly after the conclusion of the brazing process.

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