

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
 - 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



The assembly after the conclusion of the brazing process.