

## **Brazing a Copper Tube and Brass Fitting**

- Objective:** To heat a copper tube and brass fitting for a brazing application in the fuel containment industry.
- Equipment:** Ambrell EASYHEAT<sup>™</sup> 5 kW, 150-400 kHz induction heating system with a workhead and coil specifically designed for this application
- Frequency:** 280 kHz
- Material:** Copper tube, brass threaded fitting, brass flare fitting
- Temperature:** 1300 °F (704 °C)
- Testing:** A custom-designed single position multi-turn helical coil was built to generate the required heating for the application. Temperature indicating paint was then applied to the part, which dissolves when the part reaches the target temperature. It took 30 seconds to heat the threaded fitting assembly to temperature and 45 seconds to heat the flare fitting assembly to temperature. The braze joints were made with white flux applied and braze alloy rings on the parts.
- Benefits:**
- **Repeatability:** The client can expect the same result every time with an Ambrell induction heating system, increasing quality
  - **Speed:** The client requested a system that would meet their time objectives which the EASYHEAT easily did, boosting the client's throughput
  - **Footprint:** An EASYHEAT and its workhead require a minimal footprint, saving the client valuable floor space compared to heating alternatives
  - **Safety:** Induction has no open flame, a large advantage when compared to torch heating



The copper tube and brass fitting after brazing with induction from Ambrell.