

Brazing a Carbide Tip and Magnetic Steel Tube

- Objective:** To braze carbide inserts into magnetic steel tubes; the client is replacing their inconsistent torch process with induction
- Equipment:** Ambrell EASYHEAT[™] 2.4 kW, 150-400 kHz induction heating system with a workhead and coil specifically designed for this application
- Frequency:** 252 kHz
- Material:** Magnetic steel tubes, carbide inserts
- Temperature:** 1200 °F (649 °C)
- Testing:** A custom-designed single position multi-turn helical coil was built to generate the required heat for the application. It took approximately four minutes to heat the assembly to temperature and braze it uniformly. The client processes a low volume of parts and made it clear that their concern was quality and not speed, and consequently, an EASYHEAT 2.4 kW system met their objectives.
- Benefits:**
- **Repeatability:** The client can expect the same result every time with an Ambrell induction heating system, increasing quality when compared to the inconsistent torch heating they were seeing
 - **Safety:** Induction has no open flame, a large advantage when it comes to safety and not introducing unnecessary heat into a work environment
 - **Footprint:** The EASYHEAT 2.4 kW system has a small footprint, so it fits easily into their workflow



Two steel and carbide assemblies after brazing.