

## Application Note

### Brazing Steel Assemblies

- Objective:** To heat steel assemblies for a brazing application; this was a new application for a client that manufactures hydraulic components.
- Equipment:** Ambrell EASYHEAT 5 kW, 150-400 kHz induction heating power supply with a workhead and coil specifically designed for this brazing application.
- Frequency:** 260 kHz
- Material:** Various customer-supplied steel assemblies and braze preforms
- Temperature:** 1400 °F (760 °C)
- Testing:** A custom-designed single position multiple-turn oval split helical coil was built to generate the required heating for this brazing application. Initial tests were conducted to optimize the power delivered to the part. Temperature indicating paints were used to determine the heating time. It was determined that it took 2-3 minutes to heat the sample to temperature and melt the braze alloy.
- Benefits:**
- **Speed:** The client was able to braze their parts at a speed that achieved their objective.
  - **Safety & Efficiency:** Compared to a process such as torch heating, there is no open flame with induction, and it also introduces less heat into the work environment. Induction is also more efficient than most other heating methods such as torch heating.
  - **Repeatability:** The client can expect the same result in the same amount of time every single time with induction heating. This is a significant reason many companies choose induction heating.
  - **Lab Expertise:** THE LAB at Ambrell designed a solution that met the client's goals giving them peace-of-mind prior to investing in a system.



The assembly after brazing.