

## Application Note

### Press Fitting Steel Sleeves

- Objective:** To shrink fit (press fit) a steel sleeve; the client is a diversified equipment manufacturer and was looking to replace an oven with induction heating.
- Equipment:** Ambrell EASYHEAT 2.4 kW, 150-400 kHz solid state induction heating power supply with a workhead and coil specifically designed for this application.
- Frequency:** 220 kHz
- Material:** Steel sleeves
- Temperature:** 900 °F (482 °C)
- Testing:** A custom-designed multiple-turn helical coil was built to generate the required heating for the application. Initial tests were conducted to optimize the power delivered to the part. Temperature indicating paint was used to determine the heating pattern and the time to temperature. They wanted to beat the current oven heating time of ten minutes per sleeve, which induction easily accomplished, with it being achieved in less than half the time.
- Benefits:**
- **Speed:** Induction is typically a faster heating method for shrink fitting than alternative heating option like oven heating.
  - **Efficiency:** Induction offers instant on/instant off heating and only heats the portion of the part that requires it, making it an efficient option for heating. An oven heats the entire part.
  - **Floor Space:** The client will save considerable floor space with an induction heating system, and it requires much less of a footprint than an oven.



The steel sleeve assembly, with a component of it in the coil, prior to press fitting.