

Application Note

Soldering Brass and Copper Components

- Objective:** To solder brass and copper components; the client was looking to replace a torch with induction heating.
- Equipment:** Ambrell EASYHEAT™ 10 kW, 150-400 kHz solid state induction heating power supply with a workhead and a four-position multiple turn helical coil specifically designed for this soldering application.
- Frequency:** 160 kHz
- Material:**
- Brass and copper parts and solder wire preforms
- Temperature:** 400 °F (204 °C)
- Testing:** Initial tests were conducted to optimize the power delivered to the part. Temperature indicating paints were used to determine the time to temperature. A solder wire preform was placed on the part to allow for repeatable placement of solder in every joint. Four tops or four bottom joints will be heated at one time within 2-3 minutes for the soldering application.
- Benefits:**
- **Speed:** Heating met the client's time objectives for the soldering application.
 - **Precise, repeatable heating:** Induction is a highly repeatable process so the customer can expect the same result every time and isn't dependent on operator skill as is often the case with torch heating.
 - **Safety:** Induction doesn't have an open flame or introduce unnecessary heat into the work environment.
 - **Energy Efficiency/Green Heating:** Induction only heats up the portion of the part that requires it and uses electricity instead of gas.



The assembly inside the four-position induction coil.