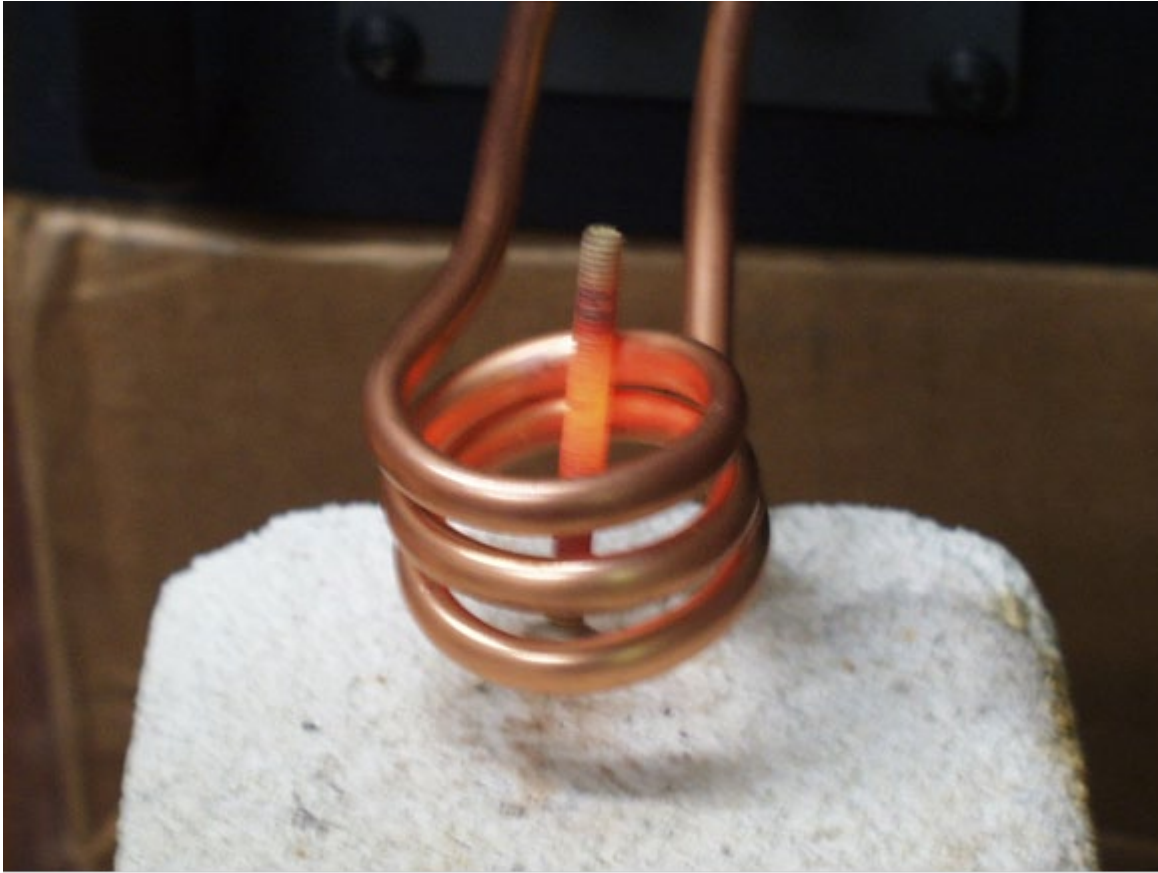


## Application Note

### Annealing Bolt Shafts

- Objective:** To heat 431 Stainless steel bolts to 1,850 °F (1,010 °C) and Inconel and 8740 alloy steel bolts to 1,000 °F (538 °C) for annealing.
- Equipment:** Ambrell EASYHEAT™ 3 kW, 150-400 kHz solid state induction heating power supply with a workhead and coil specifically designed for this application.
- Frequency:** 264-273 kHz
- Material:** Various sizes of 431 stainless steel, Inconel and 8740 alloy steel bolts
- Temperature:** 1000 °F (538 °C) and 1850 °F (1010 °C)
- Testing:** A three-turn helical coil was used to heat the shaft of the bolts for 10 to 12 seconds on the large bolts and 18 to 20 seconds on the smaller bolts using the same coil. This met the client's objectives.
- Benefits:**
- Hands-free heating that involves no operator skill for manufacturing
  - Flameless process
  - Pinpoint accuracy and repeatable cycle after cycle
  - Rapid heating



Shaft of the bolt during heating.