

## Application Note

### Bonding a plastic sleeve to a stainless-steel handle

- Objective:** To heat the end of a stainless-steel handle with a plastic sleeve coated with heat adhesive for a bonding application in the food industry.
- Equipment:** Ambrell EASYHEAT™ 1.2 kW, 150-400 kHz solid state induction power supply with a workhead and coil specifically designed for this application.
- Frequency:** 170 kHz
- Material:** 1" (25 mm) OD stainless steel handle, 0.30" (7.6 mm) thick, covered with a plastic sleeve that is coated with a heat adhesive between the tube & plastic cover.
- Temperature:** 250 °F (121 °C)
- Testing:** A three-turn helical coil is used to heat the handle assembly. The assembly is placed in the coil and heat is applied for 10 seconds at the end of the handle to reach the required temperature of 250 °F (121 °C) to adhere the plastic sleeve to the handle.
- Benefits:**
- **Speed:** Induction met the client's time requirements and is often faster than other heating methods.
  - **Repeatability:** The client can expect the same result in the same amount of time every single time with induction heating.
  - **Precision:** Induction was able to heat the portion of the part that required heating at the required temperature.



Stainless steel tube with a plastic sleeve.