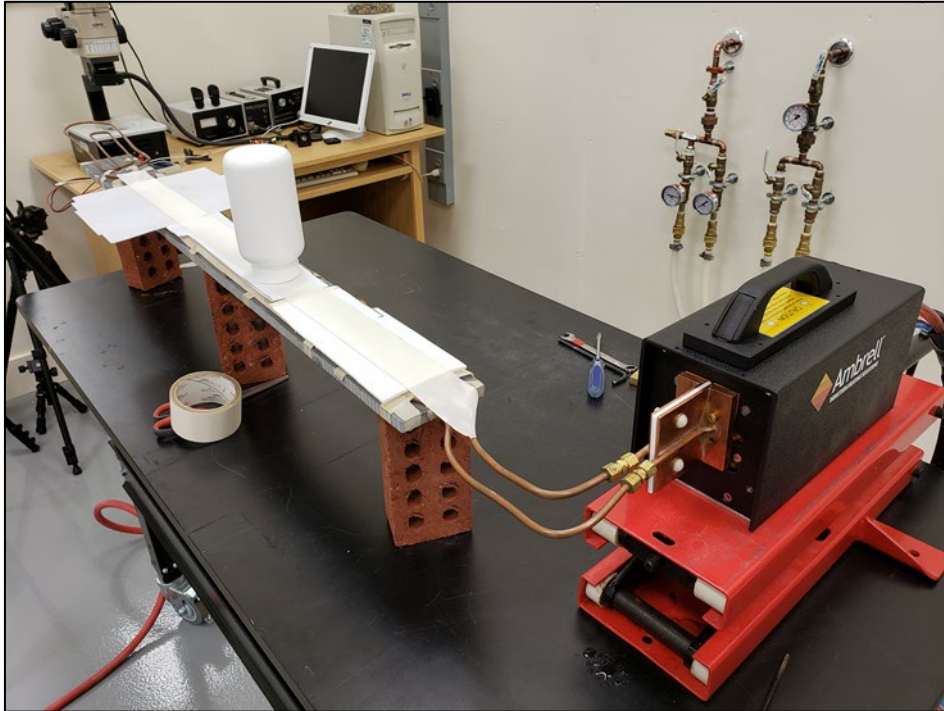


Application Note

Bonding Aluminum Foil to a Plastic Bottle (Cap Sealing)

- Objective:** To heat aluminum foil inside a plastic bottle for a bonding/cap sealing application; this application is for the food industry.
- Equipment:** Ambrell EASYHEAT™ 4.2 kW, 150-400 kHz solid state induction power supply with a workhead and coil specifically designed for this application.
- Frequency:** 150 kHz
- Material:** Aluminum foil sandwiched between the bottle and cap
- Temperature:** 150 °F (66 °C)
- Testing:** A custom-designed single position multiple-turn pancake coil was built to generate the required heating for the application. Initial tests were conducted to optimize the power delivered to the part. Once a satisfactory pattern was achieved with the proper coil design, parts were traversed over the coil at a rate of about 45 bottles per minute. It was confirmed that the aluminum heated sufficiently to create a bond between the foil and the bottle, meeting the client's objective.
- Benefits:**
- **Speed:** Induction met the client's time requirements and is generally faster than other heating methods.
 - **Throughput:** Induction's fast heating is conducive to production lines in the food industry thanks to its rapid heating and versatility.
 - **Repeatability:** The client can expect the same result in the same amount of time every single time with induction heating.



The setup for this bonding application test in THE LAB.