

Application Note

Sealing an Aluminum Cap Seal on a Plastic Jug

- Objective:** To heat one aluminum cap seal on a plastic jug for a cap sealing application. The client is replacing past systems that no longer work for their process.
- 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:** 315 kHz
- Material:** Aluminum foil
- Temperature:** 250 °F (121°C)
- Testing:** A custom-designed single position multiple-turn helical coil was built to generate the required heating for this cap sealing application. Initial tests were conducted to optimize the power delivered to the part. The induction coil was located approximately 1/8" (3.2 mm) away from the cap. It took one second to heat the aluminum inside the cap hot enough to adhere to the plastic jug. Several jugs, pictured on page two of this application note, were sealed and sent back to the customer for evaluation.
- Benefits:**
- **Speed:** The process prescribed by THE LAB achieved their heat time requirements.
 - **Quality:** The process also achieved their quality objectives.
 - **Footprint:** EASYHEAT systems require a minimal footprint, saving the client floor space.
 - **Efficiency:** Induction is an energy efficient method for sealing that only delivers heat as necessary.



The jugs after the cap sealing application.