Soldering a steel canister (reservoir) for sealing

**Objective**
Induction offers benefits over a current hand-soldering operation of these beverage dispenser reservoirs.

**Material**
Steel canister (reservoir), 6 inch x 4 inch oval, end plates

**Temperature**
500 °F (250 °C)

**Frequency**
248 kHz

**Equipment**
- Ambrell 2.4kW/300kHz induction heating system, equipped with a remote workhead containing two 0.33μF capacitors for a total of 0.66μF
- An induction heating coil designed and developed specifically for this application.

**Process**
Current hand-soldering process results in uneven, non-uniform joints and requires long production times. Induction delivers uniform, quality joints by generating heat within the end-plate and reservoir walls.
A single-turn helical coil is used to heat the steel canister. The part is placed in the coil and heated for 2 minutes to reflow a solder ring placed inside the canister to make a leak proof joint.

**Results/Benefits**
Induction heating provides:
- heat generated within the part, saving energy and time
- improved throughput since the entire base is soldered at one time
- precise controllable heat
- uniform, high-quality joints
- repeatable results
- even distribution of heating
Canister is staged within single-turn coil; solder flows in the cavity formed with the steel end-plate.