



## Soldering brass end cap on heat exchanger

**Objective** To solder a brass end cap to a series of copper tubes

**Material** Preassembled heat exchanger with copper tubes and 2 brass end caps 2.36" (60mm) OD, 0.08" to 0.12" (2 to 3mm) thick at both ends, liquid solder

**Temperature** 302°F (150°C)  
482°F (250°C)

**Frequency** 237kHz

**Equipment**

- Ambrell 10 kW induction heating system, equipped with a remote workhead containing one 1.0μF capacitor
- An induction heating coil designed and developed specifically for this application.

**Process** A dual four turn pancake coil is used to solder 2 brass caps per cycle. Liquid solder is squirted onto the end cap and is heated for 18 seconds at 302°F (150°C) to burn off the flux. Then the heat is increased to 482°F (250°C) for 15 seconds to solder the parts.

**Results** Induction heating provides:

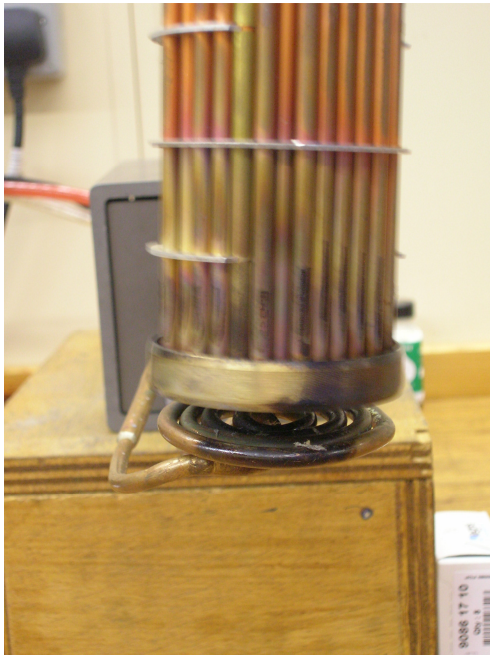
- Even distribution of heating
- Compared to hot plate, induction heating is able to heat two parts in 30 seconds vs. one part in 60 seconds
- Increased production
- No discoloration with the slow heating process



**Brass end cap**



**Preassembled unit**



**Heating of end cap  
for soldering**



**Soldered end cap and coil**