



Soldering a nickel plated steel cover onto a nickel plated steel EMI filter housing

Objective Soldering a nickel plated steel cover onto a nickel plated steel EMI filter housing without damaging the RF circuit

Material 2" x 2" (50.8mm) nickel plated steel cover, 2" x 2" (50.8mm) nickel plated steel box and lead-free solder and flux

Temperature 573 °F (300 °C)

Frequency 229 kHz

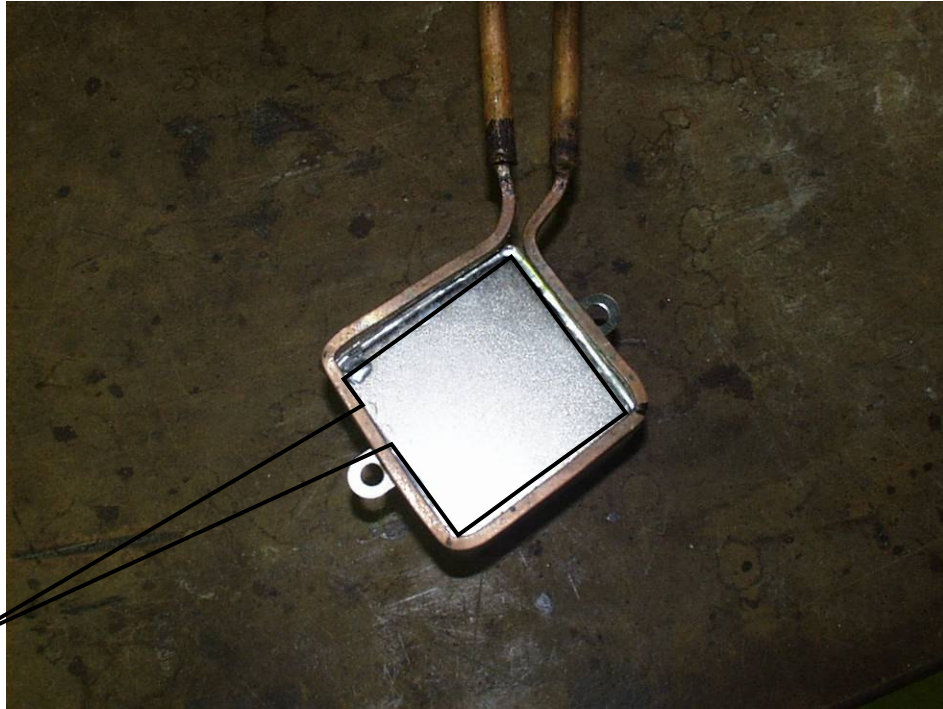
Equipment

- Ambrell 2 kW induction heating system, equipped with a remote workhead containing two 1.2 μ F capacitors for a total of 2.4 μ F
- An induction heating coil designed and developed specifically for this application.

Process A single turn square helical coil is used to solder the cover to the filter box. Solder flux is applied to the filter box and two solder turns (preforms) are placed covering the perimeter of the cover. The assembly is positioned under the coil and power is applied for 7 seconds to solder the seam.

Results/Benefits Induction heating provides:

- Hands-free heating that involves no operator skill for manufacturing
- Repeatable, non-contact clean heating
- Fast precise heating
- Good solder flow without over heating the box and damaging RF circuits.
- Even distribution of heating



Solder preforms
are placed around
the perimeter of
the cover

Filter box in coil after soldering application