



Inserting threaded brass parts into plastic thermostat housing

Objective Inserting brass threaded inserts into 7 locations on a plastic thermostat housing

Material Brass inserts 1/4" (6.3mm) diameter, plastic thermostat housing

Temperature 700 °F (371°C)

Frequency 194 kHz for single hole, 180 kHz for two place coil & 204 kHz for 3 place coil

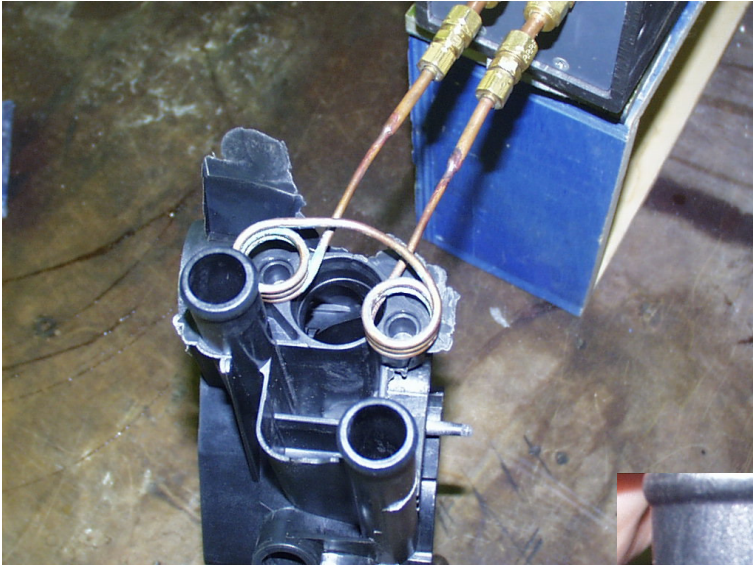
Equipment

- Ambrell 3.5 kW induction heating system, equipped with a remote workhead containing one 1.25µF capacitor
- An induction heating coil designed and developed specifically for this application.

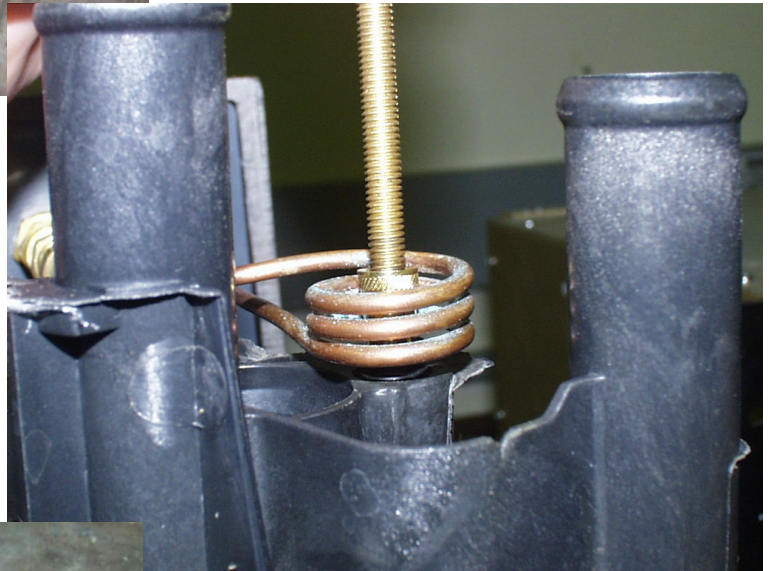
Process This application has three different coils for varying hole patterns. A three turn oblong coil is used to heat 2 brass inserts in close proximity. The inserts are heated in the coil above the insertion hole for 10 seconds to reach 700 °F (371°C). The inserts are then pushed into the holes for placement. The second hole pattern requires a two place, three turn coil and the third pattern requires a three place, three turn coil. All three applications reach 700 °F (371°C) in 10 seconds and can be heated using three 3.5kW units.

Results/Benefits Induction heating provides:

- Hands-free heating that involves no operator skill for manufacturing
- Simplified fixturing
- Faster production time
- Even distribution of heating



Heating two inserts
with a two place coil



Threaded insert is heated and
guided into hole with brass rod



Oblong coil for heating two inserts in close proximity
and three place coil for heating three inserts