



## Surface hardening of steel screws

**Objective** Rapid surface hardening of steel screws

**Material** Steel screws .25" (6.3mm) diameter

**Temperature** 932 °F (500 °C)

**Frequency** 344 kHz

**Equipment**

- Ambrell 10 kW induction heating system, equipped with a remote workhead containing two 0.3μF capacitors for a total of 0.17μF
- An induction heating coil designed and developed specifically for this application.

**Process** A three turn channel coil is used to heat 9 screws at a time. Power is applied for 3 seconds to reach 932 °F (500 °C) and achieve the required hardness. The screws travel through the coil head down in an automated system at a rate of 200 screws per minute

**Results/Benefits** Induction heating provides:

- Precise application of heat
- Faster process time and production rates
- Ability to incorporate into existing production lines
- Repeatable, consistent results





Screws heating in coil