



## Curing a coating on both sides of an aluminum piston

**Objective** Curing a coating on both sides of an aluminum piston at a rate of 1" (25.4mm) per second

**Material** 4 aluminum pistons weighing 1lb (.45kg) each, 3.75" (95.25mm) dia and 2.5" (63.5mm) high

**Temperature** 225 °F (107.2 °C)

**Frequency** 6 kHz

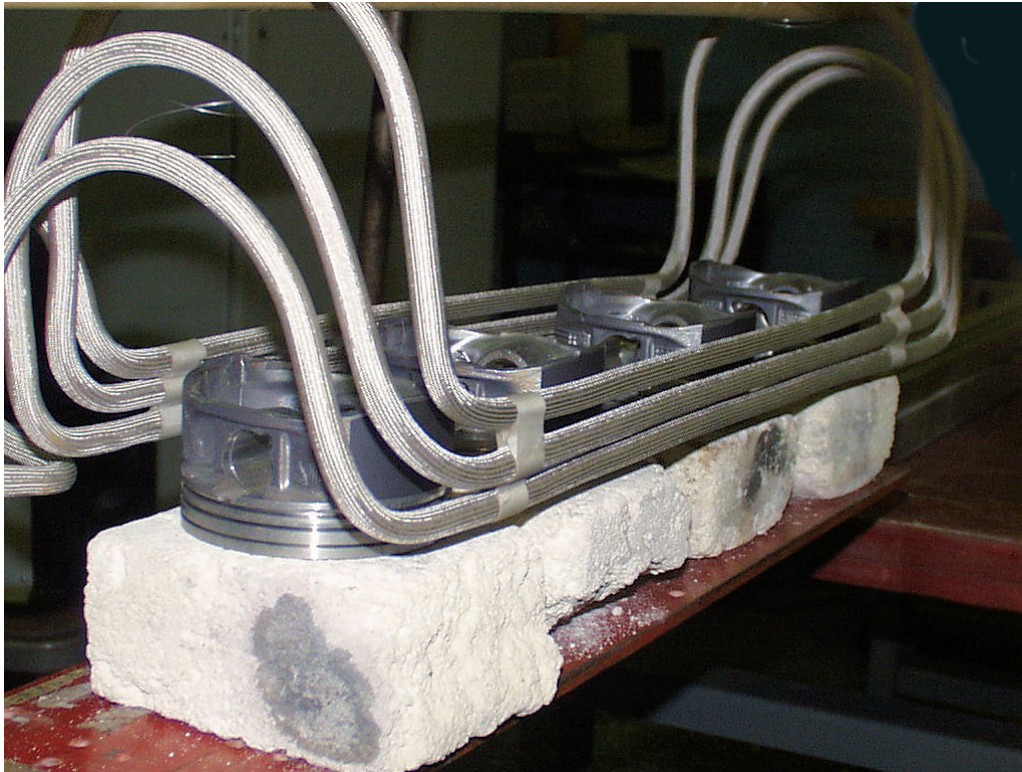
**Equipment**

- Ambrell 50 kW induction heating system, equipped with a remote workhead containing three 26.8µF capacitors for a total of 80µF
- An induction heating coil designed and developed specifically for this application.

**Process** A three turn channel coil 19" (48.26cm) long is used to anneal 4 pistons running through the coil with a distance of 6" (15.24cm) between centers. The parts run at a rate of 1" (25.4mm) per second and the 4 parts reach 225 °F (107.2 °C) and are annealed in 40 seconds.

**Results/Benefits** Induction heating provides:

- Hands-free heating that involves no operator skill for manufacturing
- Ideal for in-line production processes because of its ability to produce repeatable, rapid and accurate heating cycles
- Improved throughput



4 pistons passing though the coil for annealing