Curing coating on a steel automotive brake rotor disk

Objective Induction is used in a production-line process to cure a coating material on automotive brake rotors. This treatment improves the appearance of today's more exposed wheel internals and eliminates certain masking parts.

Material Steel automotive brake rotors: 10" (254 mm), and 14" (355 mm) diameters

Temperature 650 ºF (340 ºC)

Frequency 11 kHz

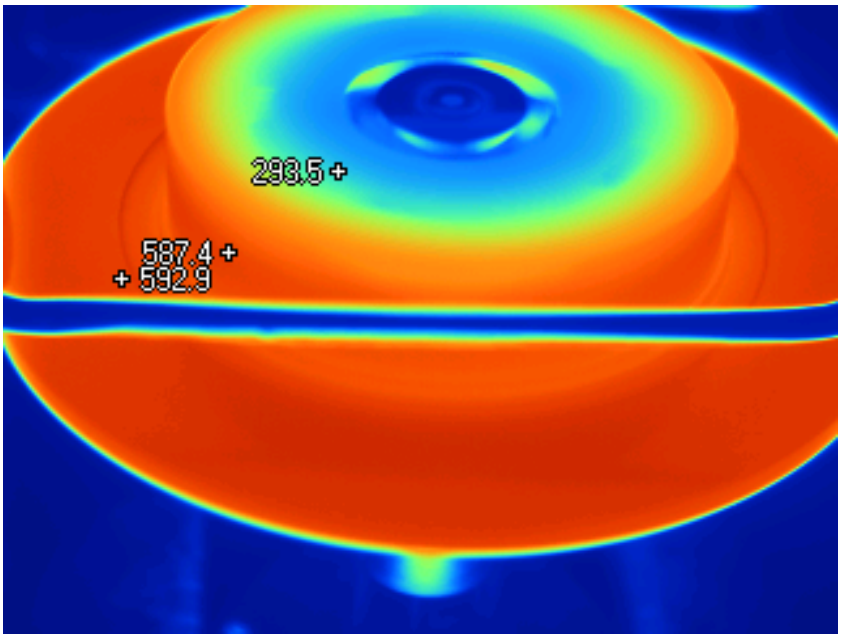
Equipment
- Ambrell 50 kW, 10 kHz induction heating system, equipped with a remote workhead containing one 53 µF capacitor
- An induction heating coil designed and developed specifically for this application to cover the range of wire diameters.

Process A three turn coil is designed to allow the rotor to index through for heating and to provide uniform heating of the paint on the rotor surfaces.

Narrative This new process is used in production to heat-cure a dress coating of paint on the surfaces of automotive brake rotors. The coil is designed to facilitate a process pass-through from a coating station.

Results/Benefits Induction heating provides:
- heating directly into the part, saving energy and time
- convenient production line integration
- improved throughput
- precise control of heating
- uniform distribution of heating

Coil designed to promote uniform heating



Thermal image demonstrates uniform distribution of heating