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Shrink fitting an aluminum hub: steel bushing insertion

Objective
To heat an aluminum hub to enable the insertion of a steel bushing for a shrink fitting application

Materials
- Aluminum hub
- Steel bushing

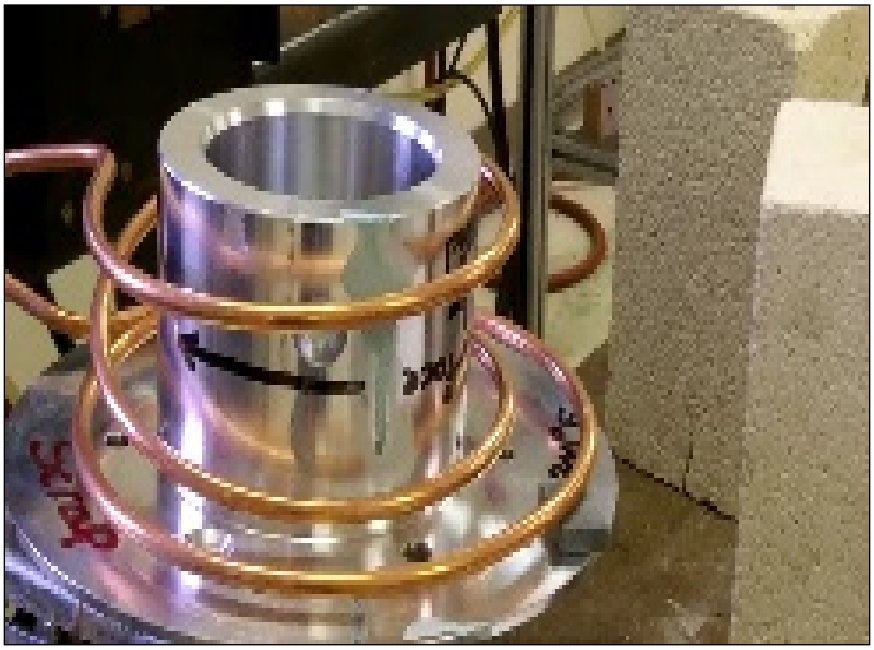
Temperature
300 ºF (149 ºC)

Frequency
121 kHz

Equipment
- Ambrell EKOHEAT 30 kW, 50-150 kHz induction heating system equipped with a remote workhead containing eight 1.0 µF capacitors
- A single position three-turn pancake combination coil designed and developed for this application

Process
The part was painted with temperature indicating paint that would melt to a clear color once it achieved the targeted temperature. The aluminum hub was then placed into the coil and the power was turned on. After 60 seconds the temperature indicating paint had melted and the part had reached the targeted shrink fitting temperature.

Results/Benefits
- Speed: The client currently uses an electric oven and the heating time is two hours, so the time savings with induction is very significant.
- Energy efficiency: Induction is fast and it's instant on/off, presenting significant energy savings over an electric oven
- Footprint: Induction requires a more modest footprint than an electric oven requires



The aluminum hub inside the induction coil