Debonding urethane from a steel insert (doffer pad)

Objective
Remove urethane from steel insert (doffer pad)

Material
0.125” (3.2mm) urethane coated steel disc (doffer pad)

Temperature
>800 °F (>427 °C)

Frequency
207 kHz

Equipment
- Ambrell 10 kW induction heating system, equipped with a remote workhead containing two 1.0uF capacitors for a total of 0.5uF.
- An induction heating coil designed and developed specifically for this application.

Process
A three-turn pancake style coil is used to debond urethane from the steel disc. The part is placed onto two 0.10” (2.5mm) thick ceramic rods on top of the coil and heated for 15 seconds. The urethane begins to debond from the steel and is removed from the steel by hand.

Narrative
This company is currently using a mesh rack in a burn off oven. The customer would like to use induction as a different method.

Results/Benefits
Induction heating provides:
- Hands-free heating that involves no operator skill for manufacturing
- Reduced energy consumption
- Consistent and repeatable results
- Even distribution of heating
Part on top of coil with 0.10” (2.5mm) gap

Debonded parts