Pre-heating single rod for hot heading

**Objective**  
Heat a waspaloy rod to 1500°F (815.5°C) for hot heading application

**Material**  
Waspaloy rod 0.5” (12.7mm)OD, 1.5” (38.1mm) length, ceramic liner

**Temperature**  
1500 °F (815.5°C)

**Frequency**  
75 kHz

**Equipment**  
- Ambrell 20 kW induction heating system, equipped with a remote workhead containing two 1.32µF capacitors for a total of .66µF
- An induction heating coil designed and developed specifically for this application.

**Process**  
A seven turn helical coil is used to heat the rod. The rod is placed inside the coil and power is applied for two seconds providing enough heat to penetrate the inner core. An optical pyrometer is used for close loop temperature control and a ceramic liner is used so the rod does not touch the coil.

**Results/Benefits**  
Induction heating provides:
- Low pressure and minimal residual stress
- Better grain flow and microstructure
- Even distribution of heating
- Improved production rates with minimal defects
Ceramic Liner

Induction Coil