Heat an Inconel tube for a swaging application

**Objective**  An inconel tube is pre-heated prior to a swaging operation

**Material**  3” Inconel blanks, ~.5” dia; optical pyrometer

**Temperature**  1800 °F (815 °C)

**Frequency**  105 kHz

**Equipment**  
- Ambrell 15c 15kW induction heating system, equipped with a remote workhead containing three 1.0μF capacitors for a total of 3 μF
- An induction heating coil designed and developed specifically for this application.

**Process**  A 12-turn helical coil is used for the required heat pattern. With the application of 11kW of RF energy, the tube is heated to the required temperature 10 seconds. (For a 5-second cycle time, or for a larger part diameter, a 30 kW power supply is recommended.)

**Narrative**  A need to increase volume and quality of parts production led to the choice of an induction process over flame. Handling is minimized and continuity is assured with the precision delivery of heating only where required.

**Results/Benefits**  Induction heating provides:
- Hands-free heating that involves no operator skill for manufacturing
- Even distribution of heating
- Localized application of energy
Inconel rod heated prior to swaging