



## Anneal an oval cut out on a stainless steel tube prior to extrusion

**Objective** To anneal a ¼" area around an oval cutout on a stainless steel tube prior to extrusion

**Material** .75" (19mm), 1.5" (38.1mm) and 4" (101.6mm) diameter steel tubes

**Temperature** 1900 °F ( 1038 °C)

**Frequency** 300 kHz

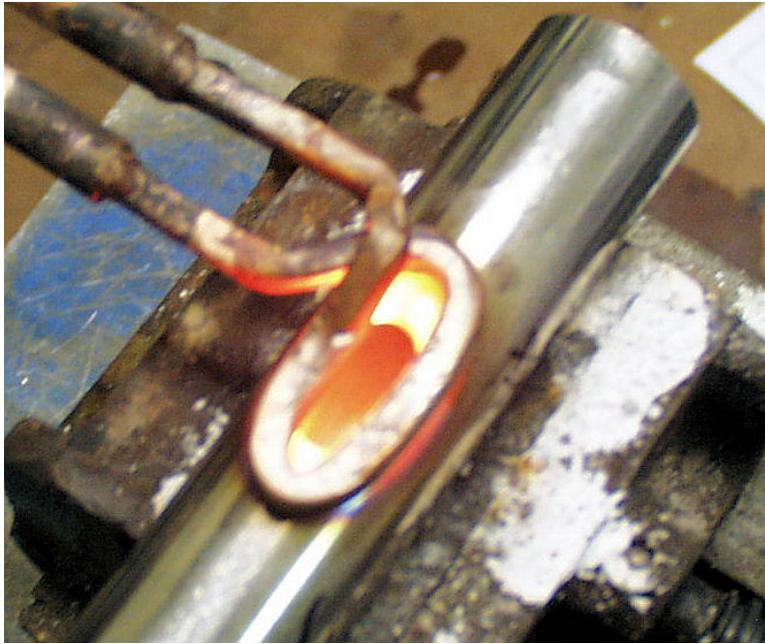
**Equipment**

- Ambrell 10kW induction heating system, equipped with a remote workhead containing one 1.0µF capacitor.
- An induction heating coil designed and developed specifically for this application.

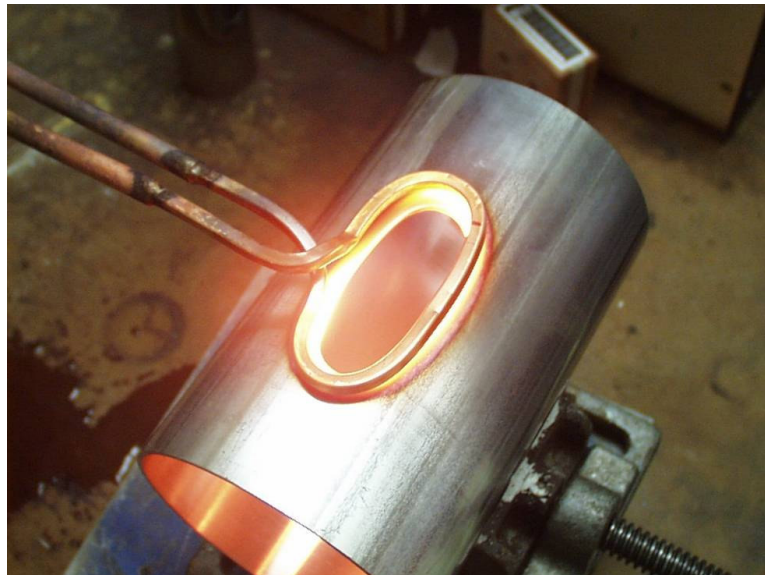
**Process** A single turn helical coil is used on the 4" (101.6mm) diameter tubes and a two turn helical coil is used on the smaller diameters. The coil is placed over the oval cutout and power is supplied for 15 seconds to anneal a .25 (6.35mm) diameter around the cutout.

**Results/Benefits** Induction heating provides:

- Precise and controllable placement of heat to anneal only the required area
- Faster process than flame
- Repeatable results
- Hands-free heating that involves no operator skill for manufacturing



Smaller diameter tube heated



4" (101.6mm) diameter tube heated