Brazing steel bits for an aerospace industry application

Objective

To heat multiple size/style drill bits to 1300 ºF (704 ºC) for a brazing application

Materials

- Steel bits
- Wire
- Braze rings
- Flux

Temperature

1300 ºF (704 ºC)

Frequency

219 kHz

Equipment

- Ambrell EASYHEAT 8310, 10kW 150-400 kHz induction heating system equipped with a remote heat station containing two 1.0 µF capacitors
- A single-position channel coil designed and developed for this application

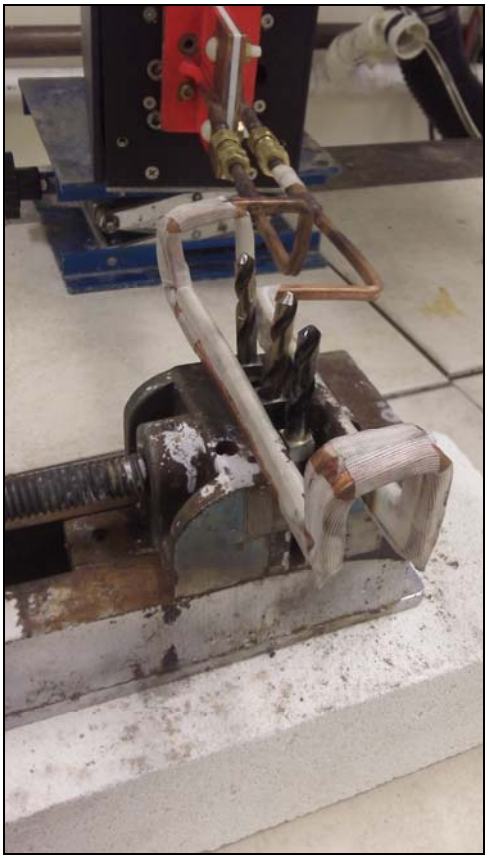
Process

The steel bits were pre-fluxed and braze rings were placed around the joint area of each part. The parts were heated to temperature and braze began to flow. The parts were then cooled and rinsed with hot water.

The parts heated to temperature within 30 seconds. Up to five parts can be heated at the same time with this process.

Results/Benefits

- Speed: The client wanted the parts to be heated within 30 seconds, and induction achieved that objective
- Increased production: The client wanted to heat three parts concurrently, and this process allowed up to five parts to be heated concurrently
- Repeatability: The process is repeatable which means the client can expect consistent results with each part, which wasn't achieved when they were using a torch
- Safety: Induction heating doesn't present an open flame like a torch does



Three steel bits in a channel coil

The three steel bits after brazing