

Brazing a steel and copper strip to carbide

Objective To heat a steel and copper strip and carbide to temperature for a brazing application.

- Material**
- Steel and copper strip
 - Carbide
 - Braze wire
 - Braze shim
 - White flux

Temperature 1300 °F (704 °C)

Frequency 250 kHz

- Equipment**
- Ambrell EASYHEAT 1 kW, 150 to 400 kHz induction heating system equipped with a remote workhead containing one 0.66 uF capacitors for a total of 0.66 uF
 - A single-position two-turn helical induction heating coil designed and developed specifically for this application

Process The part was fluxed, assembled and put into the coil. A small amount of braze alloy was placed on top of the joint, and the assembly was set on top of a piece of graphite. While the part alone would not heat due to its small size, the graphite susceptor evenly transferred the heat. A very thin brazing wire gauge was used to control the amount of alloy applied in the joint. It is important to hold the part steady and in place while the flux is bubbling.

- Results/Benefits**
- Speed: Heating took less than 30 seconds, which cannot be matched when using a torch
 - Precise, repeatable heating: Induction is a highly repeatable process, unlike torch heating
 - Safety: There is no open flame with induction, which makes it a safer method of heating than torch heating



The assembly inside the helical coil during heating.

Ambrell Companies

Ambrell (U.S.)
www.ambrell.com
+1.585.889.9000

Ambrell, Ltd (U.K.)
www.ambrell.com
+44 (0)1242 514042

Ambrell SARL (France)
fr.ambrell.com
+33 970 440 335

Ambrell B.V. (Europe)
www.ambrell.com
+31 (0)880 150 100