

Induction Brazing carbide to steel

United Induction Heating Machine Limited

We are experienced in Induction Heating, induction heating machine, Induction Heating equipment. They are widely used in induction heating service, induction heat treatment, induction brazing, induction hardening, induction welding, induction forging, induction quenching, induction soldering, induction melting and induction surface treatment applications
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Objective Braze a carbide sleeve to a steel 'T' shank

Material 2.0" (51mm) OD carbide sleeve, 1.0" (25.5mm) high braze joint, 1.5" (38 mm) steel 'T', 50% silver braze ring

Temperature 1292 °F (700 °C)

Frequency 257 kHz

Equipment • Power of 10 kW induction heating system, equipped with a remote workhead containing two 0.66µF capacitors for a total of 1.32 µF.

- An induction heating coil designed and developed specifically for this application.

Process A pancake/helical combination coil is used to heat the assembly. The coil design allows easy loading and unloading of the parts without having to rotate them.

A few minutes after the start of the heat cycle the heat pattern normalizes and becomes very uniform. For better joint quality a chamfered groove is machined in the steel shank to locate and seat the braze ring. The braze alloy flows into the joint creating a strong, aesthetic bond. The amount of braze alloy heated each cycle is controlled well by the braze ring.

Results/Benefits Induction heating provides:

- Hands-free brazing which requires no special operator skills for manufacturing
- Precise, even heat is applied and is divided equally between the shank and the carbide. This provides an even flow of the braze alloy as the parts reach brazing temperatures

brazing-carbide-to-steel

service@uihm.com

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