

Metal to Plastic by Induction Bonding

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
<http://www.uihm.com>

Objective To heat a steel magnetic steel post to 300°F for a bonding application.

Material Magnetic steel posts Plastic handle

Temperature indicating paint

Temperature 300°F (149°C)

Frequency 288 kHz

Equipment Power of 6 kW, 100-400 kHz induction heating power supply, equipped with a remote heat station containing a 0.66 μ F capacitor.

A folded pancake induction heating coil designed and developed specifically for this application.

Process Initial tests were conducted on parts without any plastic

assembly. Temperature indicating paint is used to determine time to temperature and the heating pattern on the post.

The plastic handle is slid on to the picks or mirror. The assembly is placed inside the induction heating coil and

heated. Parts are cooled in position before being removed from the coil.

To heat one end, vertical positioning is optimal (shown). A dual coil design for simultaneous heating of both ends requires horizontal positioning.

Results/Benefits Time and current required for parts:

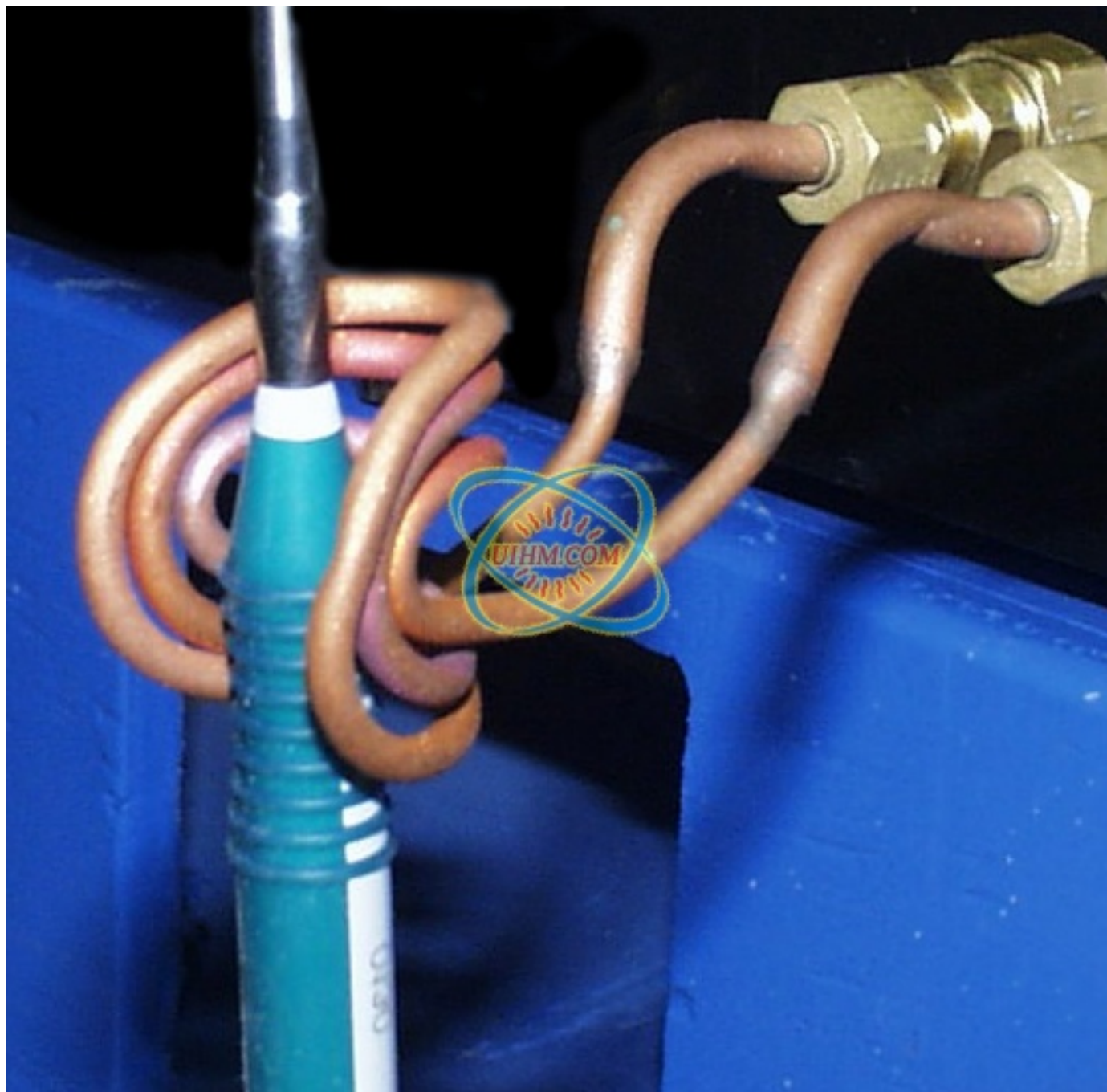
Mirror: 265 A @ 7.5 sec

Big hook: 205 A @ 7.00 sec

K Curve: 120 A @ 5.00 sec

Curve: 120 A @ 5.00 sec

Reliable bonds are produced when the diameters of the preassembled parts are consistent with little clearance before they are heated.



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