

# Induction Heating Steel Dogbone Specimen

United Induction Heating Machine Limited

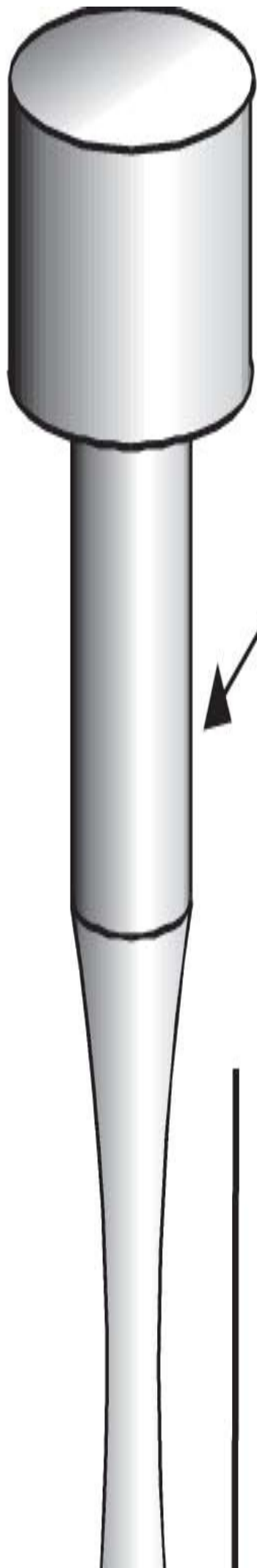
We are experienced in Induction Heating, induction heating machine, Induction Heating equipment. They are widely used in induction heating service, induction heat treatment, induction brazing, induction hardening, induction welding, induction forging, induction quenching, induction soldering, induction melting and induction surface treatment applications  
<http://www.uihm.com>

**Heating Steel Dogbone Specimen Objective:** To heat a magnetic steel dogbone specimen to 12000F as quickly as possible and sustained for tensile testing. Heating should take place using a helical coil placed square in relation to the long axis of the gage area. Also, thermal and mechanical loading need to be controlled through the use of a temperature sensor output. **Material:** 1008 Steel Dogbone Test Specimen measuring 4 3/4 long, 11/16 in diameter at the ends, and 0.406 in diameter in the middle of the gage section. **Temperature:** 12000F **Application:** The UIHM Laboratory Staff chose to use the Power of 15KW, 15KW output solid state induction power supply along with a seven (7) turn helical coil, a Mirage Infrared Thermometer, and a 4-20 mA input device for enhanced voltage ramp to achieve the following results: # 12000F was reached throughout the gage area in 6.1 seconds. # Temperature was sustained using the closed loop system provided by the Mirage Infrared Thermometer. # Even and uniform heating was achieved through the use of the seven (7) turn helical coil. **Equipment:** Power of 15KW, 15kW output solid state induction power supply including one (1) remote heat station containing two (2) capacitors totaling 0.66  $\mu$ F, a seven (7) turn helical coil with a 1 1/4 ID and measuring 1 1/2 OAL, a 4-20 mA output device to facilitate voltage ramping, and an optical thermometer. **Frequency:** 231 kHz **Heating Dogbone Specimen**

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approximately 4"



Steel Dogbone  
Test Specimen