



Brazing Diamond Drill Inserts

Objective To braze diamond inserts to a steel drilling ring

- Material**
- steel ring and diamond inserts
 - Braze shim preform
 - Flux

Temperature 1300 – 1350 (700 – 730) °F (°C)

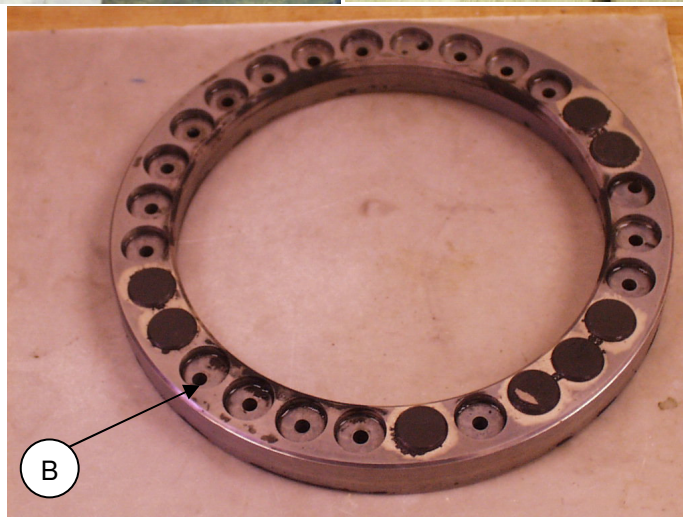
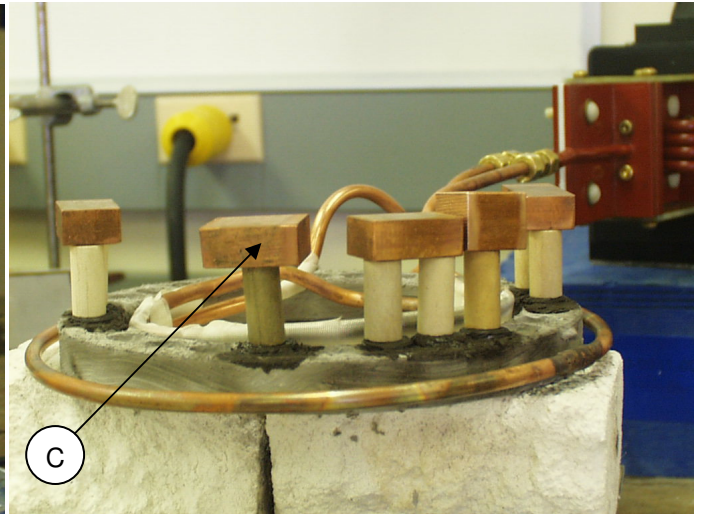
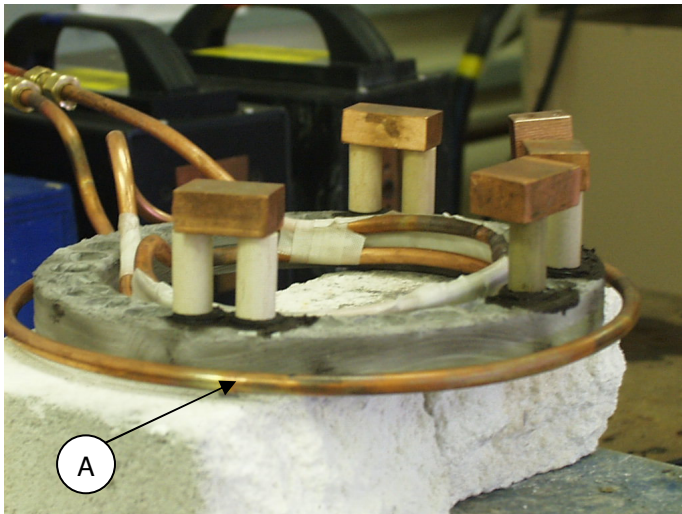
Frequency 298 kHz

Equipment Ameritherm 5 kW, induction heating system, equipped with a remote heat station containing two 0.5 μ F capacitors (total 0.25 μ F)
An induction heating coil designed and developed specifically for this application.

Process A multi-turn, internal-external helical coil (A) is used to generate the required heating pattern. Initial tests on the ring alone determine system tuning. Flux is applied to the part and the braze shims are inserted into the counter-bored holes (B). This is followed by the synthetic diamonds. The part is loaded into the coil and weight is placed onto the diamonds (C). RF power is applied until the braze flows. The power is turned off and the part air cools to room temperature.

- Results/Benefits**
- reduced ring warping compared to furnace heating
 - decreased cycle time due to reduced ramp-up and cool-down times

Download and print our Applications Lab Process Sheet (<http://www.ameritherm.com/PDFs/4110038b.pdf>). Answer the questions on the form to help us understand your process and performance requirements. Call with the info on the form to see if you should send us your parts for a free evaluation. If you have questions, call or e-mail us (info@ameritherm.com). We'll be in touch!



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