



Brazing a carbide shaft to steel tube

Objective Braze a carbide shaft to a steel tube

Material Carbide shaft 1/8" to 1" diameter (varying sizes)
Steel tube 3/8" to 1 1/4" OD
Silver solder braze
Temperature indicating paint

Temperature 1400 °F for 60 seconds

Frequency 220 kHz

Equipment Ameritherm 2.4 kW, 150-400 kHz solid state induction heating system equipped with a remote heat station containing two 0.66 µF capacitors (total 1.32 µF)
A multi-turn helical coil

Process Silver solder is applied to where the carbide shaft and steel tube meet. The clearance between the two parts is approximately .0005". A small piece of solder braze is placed on the part and then the part is heated. It takes about 60 seconds to flow the braze with the best heat migration and solder flow. Even though the part can be heated faster, optimal results are obtained at 60 seconds.

Results/Benefits Induction heating provides even, precise heat. Precise directed heat is required for the solder braze to flow evenly around the part to assure a good joint.

Illustration on next page

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