Brazing temperature sensor assemblies

Objective  Brazing various diameter temperature sensor assemblies

Material  0.188" (4.8mm) -0.25" (6.4mm) diameter assemblies and BAg 7 0.031"(0.8mm) OD brass wire

Temperature  1350 ºF (732 ºC)

Frequency  180 kHz

Equipment  • Ambrell 2.4 kW induction heating system, equipped with a remote workhead containing two 0.66μF capacitors for a total of 0.75 μF.
• Induction heating coil designed and developed specifically for this application.

Process  A five-turn two-position helical coil is used for this brazing application. Each coil acts individually and the coils are not designed to heat simultaneously. The diameter of the assembly determines which coil diameter is used. Each part is heated within a 30 second cycle time. Each part is heated with a different cycle time and power setting to create the brazed joint.

Narrative  This customer is currently using an acetylene torch for this application. The customer would like to use induction to produce consistent results and higher quality brazed joints.

Results/Benefits  Induction heating provides:
• Consistent and repeatable results
• High quality brazed joints
• Hands-free heating that involves no operator skill for manufacturing
• Reduced energy consumption
• Even distribution of heating
0.188” (4.8mm) OD probe in smaller diameter coil for brazing

0.25” (6.4mm) OD probe in larger diameter coil for brazing