Brazing a copper pivot assembly

Objective  Brazing a copper pivot assembly

Material  
Two copper uprights 2” (5cm) wide x 4” (10.2cm) high, copper base 3” (7.6cm) x 2” (5cm) and .5” (1.3mm) thick with 2 channels for the uprights to the slide into, braze shims and black flux

Temperature  1350 ºF (732 ºC)

Frequency  190 kHz

Equipment  
• Ambrell 10 kW induction heating system, equipped with a remote workhead containing two 1.0µF capacitors for a total of 0.5µF
• An induction heating coil designed and developed specifically for this application.

Process  A three turn helical coil is used to heat the base of the assembly. The copper uprights and two braze shims are placed in the grooves in the base and black flux is applied. The assembly is placed in the coil and power is applied for 4 minutes to braze both the uprights in place.

Results/Benefits  Induction heating provides:
• Rapid localized heat which can minimize oxidation and reduce cleaning after joining
• Consistent and repeatable joints
• Hands-free heating that involves no operator skill for manufacturing
• Even distribution of heating
Pivot assembly in coil for brazing application