Brazing tube fittings

Objective
Braze ¾” (19mm) tube fittings together, which are magnetic steel assembly components. The client was interested in upgrading from a 2.5 kW system as they need to process larger parts.

Material
- Two magnetic steel components
- Black flux
- Braze rings

Temperature
1400 °F (700 ºC)

Frequency
200 kHz

Equipment
- Ambrell EASYHEAT 5060, 5.0 kW induction heating system, equipped with a remote workhead containing one 1.0μF capacitor.
- A helical induction heating coil designed and developed specifically for this application.

Process
A braze ring was applied, and the steel tubes were put together. The multi-turn helical coil was adjusted to be level with the tubes. The assembly was heated to the desired braze temperature in 20-25 seconds, which achieved the client’s targeted cycle time of less than 30 seconds.

Results/Benefits
- Braze temperature was reached quickly which saves time and energy when compared to other heating methods
- Direct and precise control of heat also saves energy compared to other heating methods
- The 5.0 kW unit enabled this client to braze larger components within the targeted cycle time
- The braze alloy forms a good joint, validating the high quality level that can be achieved via induction
- Can easily be integrated into an automated process
Tube fittings

Tube fittings being brazed together via a circular induction heating coil