



Brazing stainless steel orthodontic begg brackets

Objective To heat a steel dental assembly to 1400°F (760°C) for brazing

Material Stainless steel plates 0.118" (3mm) square and 0.078" (2mm) high, stainless steel hook, mesh, two pieces of graphite 0.375" (9.5mm) square cross section, 4" (101.6mm) long and white flux for brazing

Temperature 1400°F (760°C)

Frequency 206 kHz

Equipment

- Ambrell 2.0 kW induction heating system, equipped with a remote workhead containing two 0.33μF capacitors for a total of 0.66 μF
- An induction heating coil designed and developed specifically for this application.

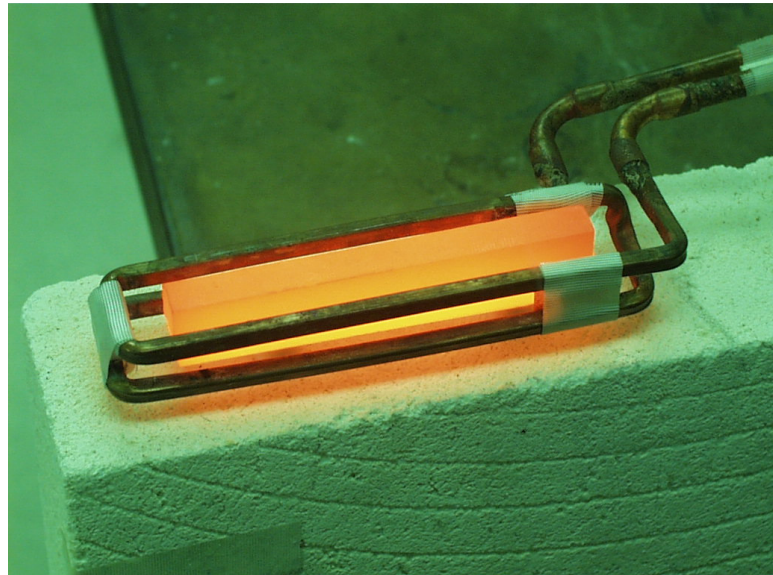
Process A two turn oblong helical coil is designed to heat the steel brackets which are sandwiched between the two pieces of graphite. The heat will be transferred from the graphite to the steel bracket assemblies to reach 1400°F (760°C) in 120 seconds. There is a cool down time of 30-50 seconds before the steel can be removed from the graphite sandwich.

Results/Benefits Induction heating provides:

- Braze flow is consistent and controllable by using braze pieces
- Hands-free heating that involves no operator skill for manufacturing
- Even distribution of heating



Coil and two pieces of graphite used to heat steel assembly



Steel is sandwiched between graphite pieces as they are heated to 1400°F (760°C)