

Soldering a copper tube to a brass valve [flow valve]

Objective To heat a copper tube and a brass valve to 356 °F for a brazing application

- Material**
- Copper tubes (various sizes)
 - Brass valves (various sizes)
 - Solder
 - General purpose flux

Temperature 358 °F (180 °C)

Frequency 258 kHz

- Equipment**
- Ambrell EASYHEAT 9kW 150-400 kHz induction heating system equipped with a remote work head containing two 1.5 µF capacitors
 - A single-position two-turn C-shaped induction heating coil designed and developed specifically for this application

Process The assembly was placed into the induction heating coil and the power was turned on. After 12 seconds solder was fed to the joint of the assembly. Flux core tin lead solder was used for this application. With a 9kW EASYHEAT, the assembly heated to 358 °F within 12 seconds.

- Results/Benefits**
- **Speed:** The heating process was completed within 12 seconds and proved to be faster than the client's gas torch
 - **Repeatability:** Induction is a repeatable heating process, while gas torches are generally less dependable which can impact part quality
 - **Safety:** Induction does not present a flame, so it helps create a safer, cooler working environment.



The assembly inside the induction heating coil during soldering