Brazing Hydraulic Hose Assemblies

Objective To heat a steel hydraulic hose fitting in an inert atmosphere to 2200°F within 7 seconds for brazing without any carbon build-up.

Material Three-opening steel hydraulic fitting, pure copper braze paste

Temperature 2200°F

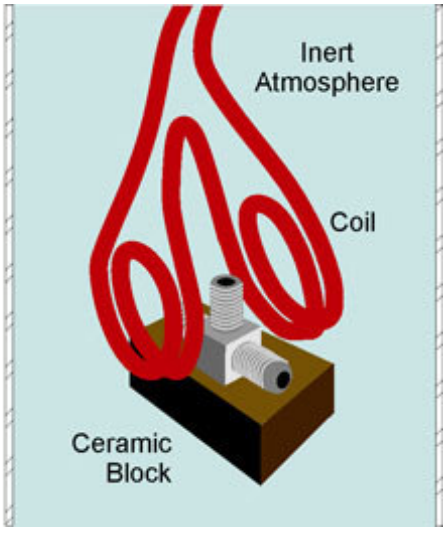
Frequency 283 kHz

Equipment Ameritherm 3.5 kW, remote heat station containing one 1.0 µF capacitor and a specially designed induction coil.

Process A specially designed, four-turn split helical coil was used to provide optimal heating to the joint area of the hydraulic fitting. The testing was done in the ABS Mark 2 containing a mixture of 95% Argon and 5% Hydrogen gas. RF power from the Ameritherm 2kW heated the steel assemblies to 2200°F within 7 seconds. An infrared pyrometer was used to measure the temperature of the part. After the copper braze flowed, the parts were allowed to cool and were removed from the bell jar.

Results Successful results were achieved at 2200°F within 7 seconds. The copper braze material flowed well and the joints were clean. For this type of brazing, the size of the power supply is dependent on the desired time-to-temperature.

Hydraulic Fitting



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