



Pre-heating a Truck Axle Seam for Welding

Objective To pre-heat the seam of a truck axle to over 300°F within 15 seconds for a welding application and maintain temperature within the welding zone for 15 seconds after the power is turned off.

Material Steel truck axle; 350° and 400°F temperature indicating paint; 350°, 375° and 400°F temperature indicating “crayons”

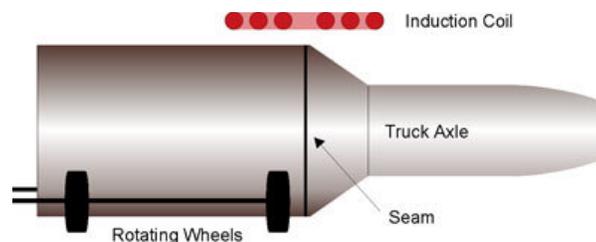
Temperature 350°F

Frequency 135 kHz

Equipment Ameritherm 20 kW power supply, remote heat station with four 1.2 μF capacitors and a specially designed pancake induction coil.

Process A fixture was constructed to rotate the axle 400° in 15 seconds and the induction coil was placed above the axle. The circumference of the axle (beneath the coil) was painted with 350° and 400°F temperature indicating paint. While the axle was being rotated, RF power was applied for 15 seconds. All of the paint melted, confirming that the axle temperature was above 400°F. The RF power was shut off and the temperature “crayons” were immediately placed against the axle to monitor temperature. The 400°F crayon did not melt; the 375°F crayon melted for 15 seconds; the 350°F crayon melted for 30 seconds.

Results The steel axle was heated to over 400°F within 15 seconds and temperatures above 350°F were maintained for 30 seconds after power was turned off, meeting the requirements of the welding application.



Download and print our Applications Lab Process Sheet (<http://www.ameritherm.com/PDFs/4110038b.pdf>). Answer the questions on the form to help us understand your process and performance requirements. Call with the info on the form to see if you should send us your parts for a free evaluation. If you have questions, call or e-mail us (info@ameritherm.com). We'll be in touch!