CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Heat Treating Services Unlimited, Inc.
222 LaDean Court, Suite G
Simpsonville, SC 29681

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 03 August 2024
Certificate Number: L2138

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Heat Treating Services Unlimited, Inc.

222 LaDean Court, Suite G
Simpsonville, SC 29681
Neil Revis 864-289-0644

CALIBRATION

Valid to: **August 3, 2024** Certificate Number: **L2138**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Source/Measure	(0 to 4) mA (4 to 20) mA	1.5 µA 3.8 µA	Martel 3001 Calibrator with Agilent 3458A 8.5 Digit Multimeter
DC Voltage – Source/Measure	(0 to 110) mV (0.11 to 1.1) V (1.1 to 11) V	21 µV 6.1 mV 0.72 mV	
Resistance Simulation of RTD Indicators – Source/Measure	Pt 385 100 Ω (0 to 400) °C (400 to 800) °C Pt 385 1 000 Ω (0 to 195) °C	 0.11 °C 0.062 °C 0.22 °C	Martel 3001 Calibrator with Agilent 3458A 8.5 Digit Multimeter
Electrical Simulation of Thermocouple Indicators – Source/Measure [1]	Type B (100 to 593) °C (593 to 849) °C (849 to 1 301) °C Type E (-200 to 0) °C (0 to 982) °C Type J (-100 to 800) °C (800 to 1 200) °C Type K (-100 to 400) °C (400 to 1 372) °C Type N (-100 to 900) °C (900 to 1 300) °C	 0.46 °C 0.44 °C 0.59 °C 0.21 °C 0.31 °C 0.29 °C 0.32 °C 0.28 °C 0.3 °C 0.31 °C 0.3 °C	Thermocouple Half Junction with Agilent 3458A 8.5 Digit Multimeter and Ice point

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicators – Source/Measure [1]	Type R (-20 to 0) °C (0 to 100) °C (100 to 1 750) °C Type S (0 to 200) °C (200 to 1 400) °C (1 400 to 1 752) °C Type T (-200 to 0) °C (0 to 400) °C	 0.42 °C 0.4 °C 0.41 °C 0.42 °C 0.4 °C 0.41 °C 0.29 °C 0.32 °C	Thermocouple Half Junction with Agilent 3458A 8.5 Digit Multimeter and Ice point

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure – Hydraulic [1]	(0 to 10 000) psig	5 psi	Comparison to Fluke 700G Pressure Gage

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Uniformity Survey of Furnaces & Ovens [1]	(0 to 1 093) °C (1 093 to 1 250) °C	1.1 °C 2.7 °C	In accordance with AMS 2750E using a Datalogger and Type K thermocouples
Temperature System Accuracy Tests [1]	Type K (0 to 1 093) °C (1 093 to 1 250) °C Type N (0 to 1 093) °C (1 093 to 1 250) °C	 1.2°C 2.2°C 1.3°C 2.1 °C	Thermocouple Calibrator with reference TC wire in accordance with AMS 2750E

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Timers [1]	Up to 1 min (1 to 30) min (30 to 60) min	2.9 s 4.6 s 4.6 s	Reference Stopwatch

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. This scope is formatted as part of a single document including Certificate of Accreditation No. L2138.

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