CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board
500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

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

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations to which this accreditation applies.

L2138
Certificate Number

ANAB Approval

Certificate Valid: 06/16/2018-08/03/2021
Version No. 003 Issued: 06/16/2018

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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).

ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Heat Treating Services Unlimited, Inc.

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

CALIBRATION

Valid to: **August 3, 2021** Certificate Number: **L 2138**

Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
DC Current – Source and Measure	(0 to 4) mA (4 to 20) mA	1.5 µA 3.8 µA	Martel 3001 Calibrator with Agilent 3458A Multimeter
DC Voltage – Source and 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 and Measure	PT 385 100Ω (0 to 400) °C (400 to 800) °C PT 385 1 000Ω (0 to 195) □C	 0.11 °C 0.062 °C 0.22 □C	Martel 3001 Calibrator with Agilent 3458A Multimeter
Electrical Simulation of Thermocouple Indicators – Source/Measure[1]	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 Type R (-20 to 0) °C (0 to 100) °C (100 to 1 750) °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 0.42 °C 0.4 °C 0.41 °C	Thermocouple Half Junction with Agilent 3458A 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 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 0.29 °C 0.32 °C	Thermocouple Half Junction with Agilent 3458A 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	5.0 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	(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	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]	(0 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. Heat Treating Services Unlimited, Inc. has resident technicians in Detroit, MI as well as Wichita, KS.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L2138.

Vice President