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Certificate Of Calibration

Calibrated for :P & B Testing
6645 West Tidwell
Houston Texas,77092

| | | | |
|-----------------|-----------------|-----------------------|------------|
| Report No: | 132802 | Calibration Interval: | 1 Year |
| PO. No.: | 86958 | Calibration Date: | 04/30/2025 |
| Company No: | 28 | Calibration Due Date: | 04/30/2026 |
| Description: | Detroit Brinell | Serial No: | 28 |
| Model No: | LONG STROKE | Manufacturer: | Detroit |
| Temperature: | 74°F | Humidity : | 48.00 %RH |
| Cal. Procedure: | CP-02 | | |

The standards used in this certification have measurement traceability to the International System of Units (SI), through National Metrology Institutes (NIST, PTB, NIM). The certifications were performed I.A.W Thermo-Temp, Inc. Quality Manual. The work instruction used for this calibration is indicated above. The certification was performed in accordance with one or more of the following specifications: ASTM E10-08, ASTM E103, ASTM E110. All uncertainties calculated in accordance with ASTM E10-08 are only a reference for the customer, and not considered an Accredited report. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor K = 2, providing a level of confidence of approximately 95 %. The results of this certification apply to only the equipment listed on this report, and do not carry any implication regarding long-term stability of the instrument.

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Asset Requirements:

STANDARDS USED FOR CALIBRATION

| Manufacturer | Serial Number | Model Number | Calibration Due | Report Number |
|----------------------|---------------|--------------|-----------------|---------------|
| Sun-Tec | 240904-11 | HBW | | 240904-11 |
| Sun-Tec | 250128-5 | HRBw | | 250128-5 |
| Sun-Tec | 20121459 | SBS-20 | 09/03/2025 | 132855 |
| Morehouse Instrument | 70281 / HD115 | 3000 KGF | 09/09/2026 | 132703 |
| Starrett | ST2232349 | 796.1 | 05/30/2025 | 130338 |

NOTES:

CALIBRATION RESULTS AS FOUND/AS LEFT CONDITION

| INDIRECT METHOD - TESTBLOCK 1 | | | | | | | | | |
|-------------------------------|-------|-------------------|-------------|----------------------|--------|--------|-----------|---------|---------|
| Test Block | | | | ACTUAL READINGS(mm) | | | | | AVERAGE |
| HBW | BALL | FORCE | INDENTATION | | | | | | |
| 207.00 | 10.00 | 3000.00 | 4.20 | 4.20 | 4.21 | 4.21 | | | 4.21 |
| | | REPEATABILITY(mm) | | TEST BLOCK | | 4.20 | ERROR | | 0.01 |
| | | 0.01 | | | | | TOLERANCE | | 6.21 |
| | | Tolerance | 6.20 | ACTUAL READINGS(HBW) | | | | AVERAGE | |
| | | UNCERTAINTIES | | 206.53 | 205.50 | 205.50 | | | 205.84 |
| | | mm | HBW | TEST BLOCK | | 207.00 | ERROR | | 1.16 |
| | | 0.0146 | 1.4702 | | | | | | |

| INDIRECT METHOD - TESTBLOCK 2 | | | | | | | | | |
|-------------------------------|-------------------|---------|-------------|----------------------|--------|--------|-----------|---------|---------|
| Test Block | | | | ACTUAL READINGS(mm) | | | | | AVERAGE |
| HBW | BALL | FORCE | INDENTATION | | | | | | |
| 401.00 | 10.00 | 3000.00 | 3.05 | 3.05 | 3.05 | 3.05 | | | 3.05 |
| | REPEATABILITY(mm) | | | TEST BLOCK | | 3.05 | ERROR | | 0.00 |
| | 0.00 | | | | | | TOLERANCE | | 12.03 |
| | Tolerance | | 12.00 | ACTUAL READINGS(HBW) | | | | AVERAGE | |
| | UNCERTAINTIES | | | 400.83 | 400.83 | 400.83 | | | 400.83 |
| | mm | | HBW | TEST BLOCK | | 401.00 | ERROR | | 0.17 |
| | 0.0130 | | 3.5000 | | | | | | |

| DIRECT METHOD | | | | | | | |
|---------------------|--------------------------|-----------------------|--------|--------|-------|--|---------|
| APPLIED LOAD IN KGF | INDENTER BALL SIZE IN mm | ACTUAL READINGS IN mm | | | | | AVERAGE |
| 3000.000 | 10.00 | 0.3420 | 0.3420 | 0.3410 | | | 0.342 |
| = 0.342 | | Proving Ring | | 0.3420 | Error | | 0.000 |

| INDENTER BALL VERIFICATION (Batch ID#083012-RB) | | | | | | |
|---|-----------------------|--------|--------|--|--|---------|
| INDENTER BALL SIZE IN mm | ACTUAL READINGS IN mm | | | | | AVERAGE |
| 10.0000 | 9.9990 | 9.9990 | 9.9980 | | | 9.9987 |

| Calibration Performed By: | | | Certificate Authorized By: | | |
|---------------------------|------------|---|----------------------------|----------|---|
| Jeromy Holman | Technician |  | Ashley Holman | 5/1/2025 |  |
| Name | Title | Signature | Quality Control | Date | Signature |

Buck Snider