



SOUTHWEST RESEARCH INSTITUTE™

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Institute Quality Systems
Institute Calibration Laboratory
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Certificate #
0972-01

Certificate of Calibration

Submitted By: DIV20
Address: B57
Contact: JIM PRIKRYL
Manufacturer Model: OHAUS TS 400D
Description: BALANCE
Serial No: 2883
Asset No: 002345
Procedure: CLCP-WT-001, DEC/99

Work Order: 444059916
Date Issued: Jul 15, 2004
Calibration Date: Jul 15, 2004
****Calibration Due:** Jan 15, 2005
Calibration Location: B57
Environment: Temp. 74.0°F Hum. 47 %RH
***As Found:** IN TOLERANCE
***As Left:** IN TOLERANCE

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 1999 and ANSI/NC SL Z540-1-1994 which are equivalent to relevant requirements of the ISO 9000-1994 series of standards. This certificate may not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. The results of this calibration relate only to the individual instrument described above. This certificate shall not be used to claim product endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government.

Uncertainty evaluation includes the item under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor of k=2 to approximate a 95% confidence level. See Remarks or attached Calibration Report with the same Work Order number for calibration data.

*The client has sole responsibility for determination of in/out of tolerance or compliance/noncompliance. An in/out of tolerance opinion is provided for your convenience based only on the Test Instrument (TI) reading(s) and limits as reported. The reported uncertainty relates only to the results at the time of calibration and does not imply any short or long term stability of the TI.

**Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

Remarks: None

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
001712	RICE LAKE	100G	WEIGHT, CLASS S	Jun 23, 05
001713	RICE LAKE	200G	WEIGHT, CLASS S	Jun 23, 05
001714	RICE LAKE	200G	WEIGHT, CLASS S	Jun 23, 05

Approved by: Walt Hill
Metrology Group Leader
m:\a2la1.rpt Rev date 11, May 04

Measurements by: Tom Hannon
Metrology Technician

Southwest Research Institute

Calibration Laboratory

Calibration Data Sheet

Found / Left

Work Order 444059916	Mfr. Ohaus	Technician TJH
Asset No. 002345	Model TS400D	Procedure CLCP-WT-001, 12/99
Serial No. 2883	Type Balance	Cal Date 15-Jul-04

Location: Bldg. 57/ Lab 111 Corrosion Lab

Ambient Conditions: 74 F 47 %RH 14.24 PSIA

Operational Check: Limits +/- : 0.05 g Uncertainty: 0.01 g

STD Mass Load	As Found Indication	Instrument Error
400.00 g	400.00 g	0.00 g

Post Calibration Check:

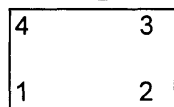
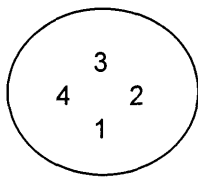
STD Mass Load	Post calibration Indication	Instrument Error	Results
400.00 g	400.00 g	0.00 g	Pass

Repeatability Check: Mass Load: 200.00 g

1	200.00 g	6	200.00 g
2	200.00 g	7	200.00 g
3	200.00 g	8	200.00 g
4	200.00 g	9	200.00 g
5	200.00 g	10	200.00 g

Std Deviation	Tolerance
0.00 g	0.02 g

Off-Centerline Check: Mass Load: 200.00 g Uncertainty: 0.01 g



	Indication	Instrument Error	+/- Limits	Results
1	0.00 g	0.00 g	0.02	Pass
2	0.00 g	0.00 g	0.02	Pass
3	0.00 g	0.00 g	0.02	Pass
4	0.00 g	0.00 g	0.02	Pass

Non-Linearity Check: Range: 400.00 g Uncertainty: 0.01 g

STD Mass Load	Indication	Instrument Error	+/- Limits	Results
0.00 g	0.00 g	0.00 g	0.02	Pass
100.00 g	100.00 g	0.00 g	0.02	Pass
200.00 g	100.00 g	0.00 g	0.02	Pass
300.00 g	100.00 g	0.00 g	0.02	Pass
400.00 g	100.00 g	0.00 g	0.02	Pass

Remarks: Readability is 0.001g (80g) and 0.01g (410g).

END OF REPORT