SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510
Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834

ACCREDITED
Calibration Laboratory
Certificate #0972-01

Certificate of Calibration

Cost Center: DIV20
Mail Stop: B51
Customer: DON BANNON
Manufacturer/Model: OHAUS / TS400D
Description: BALANCE
Serial Number: 2883
Asset Number: 002345
Procedure: BALANCES & SCALES - 1 DEC 06

Work Order: 303088772
Date Issued: 2-Jul-2009
Date Calibrated: 2-Jul-2009
*** Date Due :** 2-Jan-2010
**** Results:** FOUND-LEFT
Temperature: 73°F
Humidity: 54 %

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, 2005, ANSI/NCSL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. **Data type found in this certificate or attached measurement report must be interpreted as: Found-left - adjustment and/or repair was not performed, As-found - data is before unit is adjusted and/or repaired, As-left - data is after adjusted and/or repaired was performed. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance.

Measurement uncertainty calculated in accordance with the method described in the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM), for a confidence level of approximately 95 percent using a coverage factor of $k=2$.

Remarks:

Standards Used

Asset #	Manufacturer	Model	Description	Cal Date	Due Date
001704	RICE LAKE	1G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001705	RICE LAKE	2G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001706	RICE LAKE	2G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001707	RICE LAKE	5G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001708	RICE LAKE	10G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001709	RICE LAKE	20G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001710	RICE LAKE	20G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001711	RICE LAKE	50G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001712	RICE LAKE	100G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001713	RICE LAKE	200G	WEIGHT, CLASS 1	5-Aug-2008	5-Aug-2009
001714	RICE LAKE	200G	WEIGHT, CLASS S	5-Aug-2008	5-Aug-2009

Walt Hill
Laboratory Manager

Carlos Mendoza
Metrology Technician

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Calibration Laboratory
Measurement Report

Work Order:	303088772	Mfr:	Ohaus	Technician:	com
Asset No:	002345	Model:	TS400D	Type Data:	Found-left
Serial No:	2883	Type:	Balance	Cal Date:	2-Jul-09
Remarks:					

Function/Range	Applied	TI Reading	Difference	± Limit		Result	% Limit
Corner Load	grams	grams	grams	grams			
Front	400	400.00	0.00	0.02		Pass	0%
Rear		400.00	0.00			Pass	0%
Left		400.00	0.00			Pass	0%
Right		400.00	0.00			Pass	0%
Repeatability							
40 gram Range							
1	40	40.000					
2		40.000					
3		40.000					
4		40.000					
5		39.999					
6		39.999					
7		39.999					
8		39.999					
9		40.000					
10		39.999					
Std Deviation		0.0005		0.002		Pass	25%
400 gram Range							
1	200	200.00					
2		200.00					
3		200.00					
4		200.00					
5		200.00					
6		200.00					
7		200.00					
8		200.00					
9		200.00					
10		200.00					
Std Deviation		0.0000		0.014		Pass	0%

40 gram Range

Function/Range	Applied	TI Reading	Difference	± Limit	± Uncertainty	Result	% Limit
Linearity	grams	grams	grams	grams	grams		
	0	0.000	0.000	0.002	0.0012	Pass	0%
	4	4.000	0.000			Pass	0%
	8	8.000	0.000			Pass	0%
	12	12.000	0.000			Pass	0%
	16	16.001	0.001			Pass	50%

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Measurement Report

Work Order:	303088772	Mfr:	Ohaus	Technician:	com
Asset No:	002345	Model:	TS400D	Type Data:	Found-left
Serial No:	2883	Type:	Balance	Cal Date:	2-Jul-09

Function/Range	Applied	TI Reading	Difference	± Limit	± Uncertainty	Result	% Limit
40 gram Range	grams	grams	grams	grams	grams		
Linearity *(cont.)*	20	20.001	0.001	0.002	0.0012	Pass	50%
	24	24.000	0.000			Pass	0%
	28	27.999	-0.001			Pass	50%
	32	32.000	0.000			Pass	0%
	36	35.999	-0.001			Pass	50%
	40	39.999	-0.001			Pass	50%
Linearity	0	0.000	0.000	0.002	0.0012	Pass	0%
400 gram Range	40	39.999	-0.001			Pass	50%
	80	80.00	0.00	0.02	0.012	Pass	0%
	120	120.00	0.00			Pass	0%
	160	160.00	0.00			Pass	0%
	200	200.00	0.00			Pass	0%
	240	240.00	0.00			Pass	0%
	280	280.00	0.00			Pass	0%
	320	320.00	0.00			Pass	0%
	360	360.00	0.00			Pass	0%
	400	400.00	0.00			Pass	0%

END OF REPORT