



Certificate of Mass Calibration

Montana Department of Labor & Industry Metrology Laboratory
 2801 N Cooke St. Helena, Montana 59601
 (406)449-2582 FAX (406)443-8163

Company Name & Address: Bob Bourgeois National Cash Register 7169 US Hwy 89 Belt, MT 59412	Date of Test: 2/21/2017	Test Number: 2017-036
	Kit Number 1100	

All results contained within this report only relate to the item(s) listed in this report. This calibration report must not be used to claim product endorsement by the State of Montana or any other government agency.

Date these weights were received: 2/17/2017
 Description and condition of artifacts received: Items were scratched but in good condition overall.

Environmental Conditions at Time of Test:

Temperature °C		Pressure mmHg	Relative Humidity %	
Start	End	Duration of Test	Start	End
20.70	21.60	657.35	54.60	55.60

Conventional Mass Value: Assumed Density of Artifacts: 7.84 g/cm³

Nominal	Serial No.	As Found ± (g)	As Left ± (g)	Uncertainty ± (g)	NIST 105-1 Class F ± (g)	k factor
10 lb	1100	0.217	0.217	0.016	0.45	2.13
10 lb *	1100	0.218	0.218	0.016	0.45	2.13
5 lb	1100	0.143	0.143	0.016	0.23	2.13
2 lb	1100	0.015	0.015	0.016	0.091	2.13
2 lb *	1100	0.048	0.048	0.016	0.091	2.13
1 lb	1100	0.0271	0.0271	0.0021	0.070	2.13
0.3 lb	1100	0.0111	0.0111	0.0027	0.027	2.13
0.2 lb	1100	0.0061	0.0061	0.0019	0.018	2.13
0.2 lb *	1100	0.0054	0.0054	0.0019	0.018	2.13

Standards and Procedures used for testing:

The Standards used for this comparison are continuously monitored by a measurement control program for ensuring continued accuracy and traceability within the level of uncertainty reported. These standards were calibrated by a nationally accredited laboratory on 10/2009 (Reports on File) and are traceable to the SI. The test number listed above is traceable to National Standards through an unbroken chain of comparison each having stated uncertainties. This information is on file and available upon request.

Procedure Used: SOP-7

All procedures used in this laboratory are in accordance to National Institute of Standards and Technology Intermediate Report (NISTIR) 6969, issue February 2012, and the *Quality Assurance of Metrological Measurements*.

Traceability Statement:

The equipment in this report has been compared to the standards of the State of Montana. The States equipment complies with the specifications and tolerances listed in NIST 105-1 Class F tolerances. The standards of the State of Montana are traceable to the SI through the National Institute of Standards and Technology.

Uncertainty Statement:

The expanded uncertainty presented in this report is consistent with the 1993 *ISO Guide to Expression of Uncertainty in Measurement* and follows *NISTIR 6969*, issue February 2012, SOP-29. The reported uncertainty is calculated by combining the uncertainty of the standard used, with the uncertainty of the measurement process in a root sum square formula using a calculated *k* factor, for a confidence level of 95.45%.

State Metrologist: *Dave Fraser*

David Fraser

Email: dafraser@mt.gov

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Bob Bourgeois	2/21/2017	2017-036
National Cash Register		Kit Number
7169 US Hwy 89		1100
Belt, MT 59412		

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Nominal	Serial No.	As Found (g)	As Left (g)	Uncertainty ± (g)	NIST 105-1 Class F ± (g)	k factor
0.1 lb	1100	0.0034	0.0034	0.0010	0.0091	2.13
0.1 lb *	1100	0.0030	0.0030	0.0010	0.0091	2.13
0.05 lb	1100	0.00034	0.00034	0.00053	0.0045	2.13
0.02 lb	1100	0.00031	0.00031	0.00034	0.0018	2.13
0.02 lb *	1100	0.00039	0.00039	0.00034	0.0018	2.13
0.01 lb	1100	0.00060	0.00060	0.00027	0.0015	2.13
0.005 lb	1100	-0.00071	-0.00071	0.00031	0.0012	2.13
.003 lb	1100	-0.00034	-0.00034	0.00014	0.00099	2.13
.002 lb	1100	-0.00024	-0.00024	0.00014	0.00087	2.13

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State Metrologist: Dave Fraser

David Fraser

Email: dafraser@mt.gov

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National Cash Register		
7169 US Hwy 89	Kit Number	
Belt, MT 59412	1100	

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Conventional Mass Value: Assumed Density of Artifacts: 7.84 g/cm³

Nominal	Serial No.	As Found (g)	As Left (g)	Uncertainty ± (g)	NIST 105-1 Class F ± (g)	k factor
.001 lb	1100	0.00010	0.00010	0.00014	0.0007	2.13

Standards and Procedures used for testing:
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State Metrologist: Dave Fraser

Email: dafraser@mt.gov
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United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Montana

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.


The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

Mass Echelon III	Volume Transfer, II
30 kg to 1 mg	1500 gal to 5 gal
3000 lb to 0.001 lb	100 gal to 25 gal LPG
8 oz to 0.03125 oz	
Weight Carts	
5000 lb to 2000 lb	



2017


Georgia L. Harris, Acting Chief
NIST Office of Weights and Measures

Effective Dates: 2017-01-01 to 2017-12-31

Bauske, Shelly A.

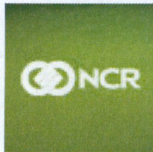
From: Boykin, Dave <Dave.Boykin@ncr.com>
Sent: Friday, February 24, 2017 6:53 AM
To: Bauske, Shelly A.
Cc: Brandau, Sven; Trbojevic, Milos; Fields, David L
Subject: RE: Calibration Report
Attachments: SN 1100 Calibration Report 2-21-17.pdf

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Shelly,

Attached is a new calibration report for David Ferre's weight kit. Let me know if you have any questions.

Thanks,



David Boykin
Project/Program Management Senior Analyst
NCR Corporation - NCR Services - Regulatory & Security Compliance
office: 770.288.1556 | fax: 678.329.5705
dave.boykin@ncr.com | www.ncr.com

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From: Boykin, Dave
Sent: Thursday, February 09, 2017 9:38 AM
To: 'Bauske, Shelly A.' <sbauske@nd.gov>
Cc: Brandau, Sven <Sven.Brandau@ncr.com>; Trbojevic, Milos <Milos.Trbojevic@ncr.com>
Subject: RE: Calibration Report

Shelly,

Thanks for the update. I actually spoke to David Ferre on Monday concerning his weight kit and he will schedule an appointment when he returns home.

Thanks,



David Boykin
Project/Program Management Senior Analyst
NCR Corporation - NCR Services - Regulatory & Security Compliance
office: 770.288.1556 | fax: 678.329.5705
dave.boykin@ncr.com | www.ncr.com

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From: Bauske, Shelly A. [<mailto:sbauske@nd.gov>]
Sent: Wednesday, February 08, 2017 4:56 PM
To: Boykin, Dave <Dave.Boykin@ncr.com>
Subject: Calibration Report

Hi David

I'll be mailing you your Registered Service Company Permit tomorrow. Just a reminder that the metrology for one of your weight kits is expiring on February 17 and the other one is expiring on March 21.

If you have any questions, please contact me. Thank you.

Shelly Bauske
Public Service Commission
600 E Boulevard Ave Dept 408
Bismarck ND 58505-0480
701-328-4070
701-328-2410 (fax)
sbauske@nd.gov

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