# TEXAS DEPARTMENT OF AGRICULTURE

**COMMISSIONER SID MILLER**

**Metrology Laboratory - 1258 CR 226 / P.O. Box 1518 - Giddings, Texas 78942**

**Phone: (979) 542-3231 - Fax: (888) 205-7741**


**Test Number**
G-000006342

# CALIBRATION CERTIFICATE

## FOR

16-1000 lb, 20-50 lb
2-Test Kit

## SUBMITTED BY

Bastrop Scale Company
P.O. Drawer 2100
Bastrop, Texas 78602

The standards and measurements of the Texas Department of Agriculture, Giddings Metrology Laboratory, are traceable to the SI and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of the uncertainty reported by this laboratory. The data below applies only to the artifacts identified in this report at the time of test. Only compliance with tolerance specifications were evaluated.

**Test Date:** 12/14/2017
**Calibration Due:** 12/31/2018

**Received Date:** 12/13/2017
**Condition Received:** Acceptable

**Temperature Range:** 18 °C to 27 °C
**Relative Humidity Range:** 40 % to 60 %
**Procedure:** NISTIR 6969, SOP No. 8, Modified Substitution
**Balances:** CCE36-SN:28601985, MSA225S-SN:28512376, CCE2004-SN:28601871, CCE5003-SN:21411465 CCE60K2-SN:26803155, CCS600K-SN:21405144
**Mass Standards:** Giddings Metrology Laboratory Mass Echelon III Standards

The expanded standard uncertainty includes the standard uncertainty reported for the standard, the standard uncertainty for the measurement process, and a component of uncertainty to account for any observed deviations that have a significant effect on the calibration. No component is included in the expanded uncertainty for the effects of magnetism. The expanded uncertainty given is in compliance with BIPM JCGM 100:2008, Guide to the Expression of Uncertainty in Measurement (GUM), 2008, with a variable *k* representing a 95.45 % confidence level. Class F tolerance values are taken from NIST HB 105-1.



Note:
A positive correction indicates that the weight is heavier than the stated nominal value.
A negative correction indicates that the weight is lighter than the stated nominal value.

Conversions:

| | | | |
|---|---|---|---|
| milligram (mg) to kilogram (kg): | kg | = | mg / 1000000 |
| milligram (mg) to gram (g): | g | = | mg / 1000 |
| milligram (mg) to pound (lb): | lb | = | mg x 0.00000220462262184877 6 |
| milligram (mg) to ounce (oz): | oz | = | mg x 0.00003527396194958041 |

Philip Lockwood
Manager for Metrology Laboratory
Agency Representative

Daniel Gibbons
Metrologist
Legal Signatory

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The artifacts described below have been compared to the standards of the State of Texas and were found to have the following mass corrections:

Temperature Range: 18 °C to 27 °C
Relative Humidity Range: 40 % to 60 %
SOP Used: NISTIR 6969, SOP No. 8, Modified Substitution

| Nominal Value | Serial / ID # | | As Found Mass Correction ( mg ) | As Left Mass Correction ( mg ) | | Expanded Uncertainty ( mg ) | Tolerance Class | Tolerance ( mg ) |
|---|---|---|---|---|---|---|---|---|
| 1000 lb | 97622 | - | -27800 | -27800 | | 7100 | F | 45000 |
| 1000 lb | 97629 | - | -35800 | 2200 | ❖ | 7100 | F | 45000 |
| 1000 lb | 97921 | - | -21800 | -21800 | | 7100 | F | 45000 |
| 1000 lb | 97927 | - | -26800 | -26800 | | 7100 | F | 45000 |
| 1000 lb | BS105 | - | -21800 | -21800 | | 7100 | F | 45000 |
| 1000 lb | BS108 | - | -29800 | -29800 | | 7100 | F | 45000 |
| 1000 lb | BS100 | - | -25800 | -25800 | | 7100 | F | 45000 |
| 1000 lb | BS107 | - | -31800 | -31800 | | 7100 | F | 45000 |
| 1000 lb | 97925 | - | -32800 | -32800 | | 7100 | F | 45000 |
| 1000 lb | 97928 | - | -2800 | -2800 | | 7100 | F | 45000 |
| 1000 lb | 97926 | - | -14800 | -14800 | | 7100 | F | 45000 |
| 1000 lb | 97802 | - | -2800 | -2800 | | 7100 | F | 45000 |
| 1000 lb | BS104 | - | -38800 | 3200 | ❖ | 7100 | F | 45000 |
| 1000 lb | BS106 | - | -31800 | -31800 | | 7100 | F | 45000 |
| 1000 lb | BS103 | - | -15800 | -15800 | | 7100 | F | 45000 |
| 1000 lb | BS102 | - | -35800 | 1200 | ❖ | 7100 | F | 45000 |
| 50 lb | BS141 | - | -2190 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS70 | - | -2050 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS32 | - | -3080 | 20 | ❖ | 280 | F | 2300 |
| 50 lb | BS19 | - | -2110 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS63 | - | -740 | -740 | | 280 | F | 2300 |
| 50 lb | BS618 | - | -2550 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS123 | - | -3100 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS20 | - | -2070 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS16 | - | -1790 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS140 | - | -4370 | -20 | ❖ | 280 | F | 2300 |
| 50 lb | BS40 | - | -4780 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS51 | - | -2750 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS142 | - | -2400 | -10 | ❖ | 280 | F | 2300 |
| 50 lb | BS39 | - | -3870 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS34 | - | -6970 | -10 | ❖ | 280 | F | 2300 |

❖ *denotes a weight that was adjusted IAW NISTIR 6969, SOP 8.*

■ *denotes a weight that was rejected.*

The expanded uncertainty given is in compliance with BIPM JCGM 100:2008, Guide to the Expression of Uncertainty in Measurement (GUM), 2008, with a variable *k* representing a 95.45 % confidence level.



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| Nominal Value | Serial / ID # | | As Found Mass Correction ( mg ) | As Left Mass Correction ( mg ) | | Expanded Uncertainty ( mg ) | Tolerance Class | Tolerance ( mg ) |
|---|---|---|---|---|---|---|---|---|
| 50 lb | BS115 | - | -2040 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS122 | - | -3250 | 0 | ❖ | 280 | F | 2300 |
| 50 lb | BS37 | - | -3290 | 10 | ❖ | 280 | F | 2300 |
| 50 lb | BS117 | - | -2870 | 10 | ❖ | 280 | F | 2300 |
| 50 lb | BS1A | - | -630 | -630 | | 280 | F | 2300 |
| 5 lb | BS90 | - | -42 | -42 | | 28 | F | 230 |
| 5 lb | BS90 | * | 40 | 40 | | 28 | F | 230 |
| 5 lb | BS90 | ** | 15 | 15 | | 28 | F | 230 |
| 5 lb | BS90 | *** | -43 | -43 | | 28 | F | 230 |
| 5 lb | BS90 | **** | -59 | -59 | | 28 | F | 230 |
| 5 kg | BS126 | - | 15 | 15 | | 59 | F | 500 |
| 4 kg | BS126 | - | -28 | -28 | | 47 | F | 400 |
| 3 kg | BS126 | - | 78 | 78 | | 36 | F | 300 |
| 1 lb | BS90 | - | 25.3 | 25.3 | | 8.4 | F | 70 |
| 1 lb | BS90 | * | 8.8 | 8.8 | | 8.4 | F | 70 |
| 1 lb | BS90 | ** | 21.2 | 21.2 | | 8.4 | F | 70 |
| 1 lb | BS90 | *** | 1.0 | 1.0 | | 8.4 | F | 70 |
| 1 lb | BS90 | **** | 0.8 | 0.8 | | 8.4 | F | 70 |
| 8 oz | BS90 | - | 11.2 | 11.2 | | 5.4 | F | 45 |
| 2 kg | BS126 | - | 31 | 31 | | 23 | F | 200 |
| 500 g | BS126 | - | 13.7 | 13.7 | | 8.4 | F | 70 |
| 300 g | BS126 | - | 7.4 | 7.4 | | 8.4 | F | 60 |
| .2 lb | BS90 | - | 5.2 | 5.2 | | 2.1 | F | 18 |
| .2 lb | BS90 | * | 6.0 | 6.0 | | 2.1 | F | 18 |
| .1 lb | BS90 | - | 3.3 | 3.3 | | 1.1 | F | 9.1 |
| .05 lb | BS90 | - | 2.08 | 2.08 | | 0.53 | F | 4.5 |
| 200 g | BS126 | - | 1.0 | 1.0 | | 4.7 | F | 40 |
| 50 g | BS126 | - | 3.1 | 3.1 | | 1.2 | F | 10 |
| .02 lb | BS90 | - | 0.77 | 0.77 | | 0.21 | F | 1.8 |
| .02 lb | BS90 | * | 0.65 | 0.65 | | 0.21 | F | 1.8 |
| .01 lb | BS90 | - | 0.45 | 0.45 | | 0.18 | F | 1.5 |

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|---|---|---|---|---|---|---|---|
| .005 lb | BS90 | - | 0.55 | 0.55 | 0.15 | F | 1.2 |
| .002 lb | BS90 | - | 0.22 | 0.22 | 0.10 | F | 0.87 |
| .002 lb | BS90 | * | 0.29 | 0.29 | 0.10 | F | 0.87 |
| .001 lb | BS90 | - | 0.241 | 0.241 | 0.083 | F | 0.70 |
| 20 g | BS126 | - | 0.72 | 0.72 | 0.47 | F | 4.0 |
| 20 g | BS126 | * | 0.55 | 0.55 | 0.47 | F | 4.0 |
| 10 g | BS126 | - | 0.34 | 0.34 | 0.23 | F | 2.0 |
| 5 g | BS126 | - | 0.00 | 0.00 | 0.18 | F | 1.5 |
| 2 g | BS126 | - | 0.35 | 0.35 | 0.13 | F | 1.1 |
| 2 g | BS126 | * | 0.37 | 0.37 | 0.13 | F | 1.1 |
| 1 g | BS126 | - | 0.08 | 0.08 | 0.11 | F | 0.90 |

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