

Title: Balance and Scale Calibration Procedure		Procedure No. SOP11C002	Rev. No. 02
Submitted by: Jane Deau	Date: 12/22/98	Approved by: John Q. Public	

READ THE ENTIRE PROCEDURE BEFORE BEGINNING.

1 PURPOSE

This Standard Operating Procedure (SOP) describes the responsibilities of the Metrology Department as they relate to the calibration of all balances and scales. The intent of this SOP is to give the reader an idea of how to format and structure a calibration procedure.

2 SCOPE

This SOP applies to all balances and scales that impact the quality of the goods supplied by Acme Widget Corporation, Eatmorecheese, WI.

3 RESPONSIBILITIES

- 3.1 It is the responsibility of all metrology technicians who calibrate balances and scales to comply with this SOP.
- 3.2 The person responsible for the repair and calibration of the balance or scale will wear rubber gloves and eye protection. The balance or scale must be cleaned and/or decontaminated by the user before work can be accomplished.

4 DEFINITIONS

- 4.1 **MAMS** Metrology Automated Management System. A computerized management program used to manage TMDE.
- 4.2 **NIST** National Institute of Standards and Technology
- 4.3 **TI** Test Instrument.
- 4.4 **TMDE** Test, Measurement, and Diagnostic Equipment.

TEST INSTRUMENT SPECIFICATIONS

Manuf.	P/N	Usable Range	Accuracy
Allied	7206A	500 mg ~ 500 g	$\pm 30 \text{ mg}$ (500 mg ~ 30 g) > 30 g $\pm 0.1\%$ of Rdg
Denver	400	500 mg ~ 400 g	$\pm 20 \text{ mg}$ (500 mg ~ 20 g) > 20 g $\pm 0.1\%$ of Rdg
Ohaus	V02130	50 mg ~ 210 g	$\pm 3 \text{ mg}$ (50 mg ~ 3 g) > 3 g $\pm 0.1\%$ of Rdg

EQUIPMENT REQUIREMENTS (STANDARDS)

Weight Size	Accuracy (mg)	Class
25 Kilograms	$\pm 2.5 \text{ grams}$	F
5 Kilograms	± 12.0	1
50 milligrams	± 0.01	1
1 milligrams	± 0.01	1

EXAMPLE 1

5 PROCEDURE

5.1 General inspection

5.1.1 This is to give the reader an idea of our numbering system how we formatted these procedures.

5.2 Leveling the TI

5.2.1 Be as specific as possible in your instructions.

5.3 Calibrating the "edges" of the weighing pan

5.3.1 Following the example in Figure 1, place a weight equal to approximately 1/2 the capacity of the TI, on "edge" 1 (place the *single* weight 1/2 the distance between the pan center and the usable edge). Record the reading on the calibration worksheet.

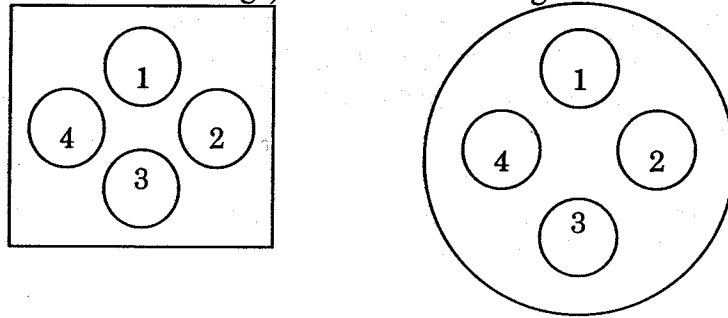


Figure 1

5.4 Calibrating the TI

5.4.1 Tare or zero the TI.

6 RELATED PROCEDURES

6.1 MCW11002 will be used in conjunction with this calibration procedure.

6.2 SOP11A001 - Control and Use of Departmental Procedures, Worksheets and Forms.

7 FORMS AND RECORDS

8 DOCUMENT HISTORY

Rev. #	Change Summary
00	New document
01	Added "edge" calibration verbage.
02	Changed accuracies to be $\pm 0.1\%$ of Reading, and instituted usable range at low and high end of all balances.

DISCONNECT AND SECURE ALL TEST EQUIPMENT

TEST INSTRUMENT CALIBRATION POINTS

Manufacturer	Part Number	Calibration Test Points in Grams
Allied	7206A	.5, 1, 10, 50, 100, 500
Denver/Fisher	400	.5, 10, 20, 50, 100, 400
Ohaus	V02130	.05, .5, 5, 10, 100, 210

EXAMPLE 2

Title: Balance and Scale Calibration Worksheet		Procedure No. MCW11002	Rev No. 01
Submitted by: John Q. Public		Date: 4/21/98	Approved by: Jane Deau

ID #: _____ P/N: _____

Range/Capacity: _____ Accuracy: ± _____

Last Cal: _____ Today's Date: _____ Date Due Cal.: _____

Room No: _____ User Department: _____

Interval: 1 month 3 months 6 months

Edge	Std Weight	TI "As Found" Reading	TI "As Left" Reading
1			
2			
3			
4			
ID No.	Std Weight	TI "As Found" Reading	TI "As Left" Reading

This TI was tested against standard weights traceable to NIST (See the reverse side of this sheet for their accuracy and calibration due dates).

This TI was calibrated in accordance with SOP11C002.

This TI falls within specifications: Yes
 No (If no, an Alert/Action Procedures Form will be completed and attached to this calibration worksheet)

Comments: _____

METROLOGIST: _____ Date: _____

MAMS Updated: Yes No N/A Cosigned/Approved By: _____

EXAMPLE 3