SARTORIUS ANALYTIC BALANCE MN 1712MP8 SOP

Version: 1.0 **July 2013**

UNIVERSITY OF TEXAS AT ARLINGTON

Nanofabrication Research and Teaching Facility

TABLE OF CONTENTS

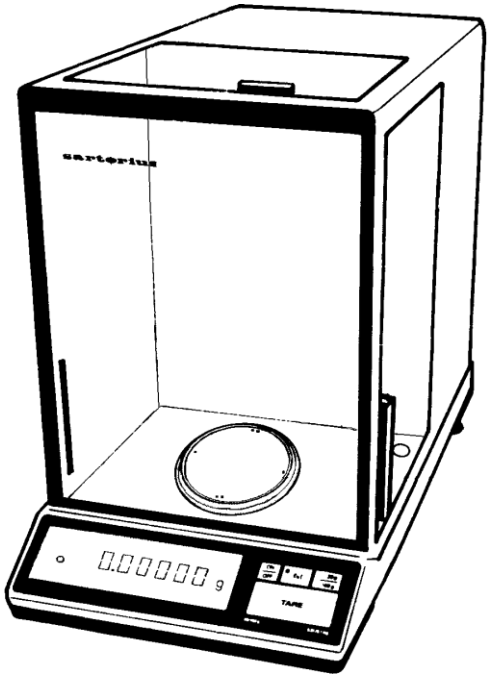
1.0 INTRODUCTION

1.1 Scope

These procedures apply to the Sartorius Analytic Balance MN 1712MP8 located in BAY3. All maintenance should follow the procedures set forth in the manufacturer's maintenance and operations manuals. This document is for reference only. Users must be trained by Nanofab staff before operating this equipment.

1.2 Description

The Sartorius Digital Lab Analytic Balance MN 1712MP8 is a highly accurate and precise top-of-the-line electronic balance for measuring masses. The Sartorius 1712MP8 has two weighing ranges of a Semi-micro range of 0.01g to 30g with readability of 0.00001g and a Macro-range 0.1g to 162g with readability of 0.0001g The balance has a pan diameter of 90mm with pan clearance of 246mm. The balance also is equipped with top and side access doors to facilitate the weighing of masses and to block air flow during measurements. The unit comes with built in calibration weight and Tare functions.



1.3 Safety

1.3.1 This machine is connected to **HIGH VOLTAGE.** Be very careful and remain aware of electrical hazards. If you encounter any electrical malfunctions, contact NanoFAB staff immediately

1.3.2 The USER must be familiar with precautions described in the Material Safety Data Sheet (**M.S.D.S**) for the substance before weighing it.
Many substances are extremely toxic or possibly allergenic and may be liquids or finely divided particles. During a weighing, the USER may be exposed to high concentrations of the pure substance; therefore the USER must carefully consider these possibilities at all times and following the M.S.D.S guidelines Including the use of respirators.

1.3.3 If any substances are spilled, carefully remove the weighing container and gently brush out all of the spilled material from the balance using the soft balance brush. The spilled material must be properly disposed of and must not be swept out onto the balance table where other USERS may be exposed to the chemical. **If you not sure of how to clean up and depose of a spill call Nanofab staff for assistance.**

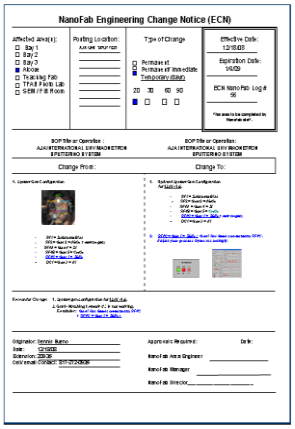
1.3.4 Before weighing your material check the balance pan and table for any spilled material that may have been left by the previous USER and call Nanofab staff to check.

1.3.5 Use extreme care when weighing corrosive materials such as salts, bases and other materials of this nature to prevent this type of material from being spilled on the balance pan or inside the balance housing.

1.3.6 No substances or chemicals are allowed to be transferred within the weighing compartment of the balance. The transfer of material is done outside the weighing compartment ONLY.

The doors of the balance must always be closed when taking measurements.

1.3.7 Read any posted **NanoFAB Engineering Change Notices (ECN)** for any hardware, process or safety changes before running the tool.



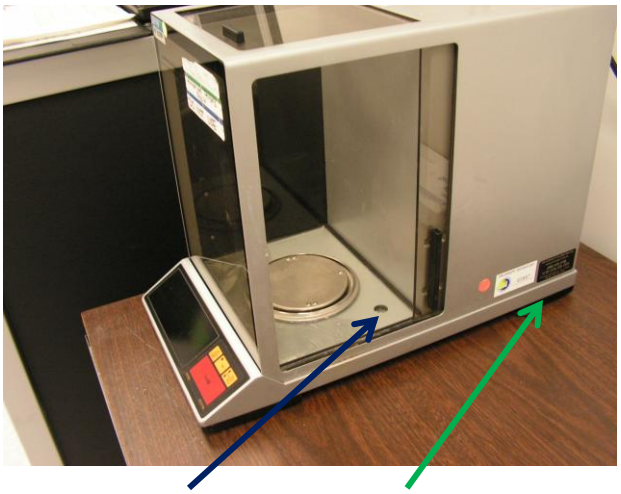
2.0 ***HARDWARE***

2.1 The Sartorius 1712MP8 has two weighing ranges of a Semi-micro range of 0.01g to 30g with readability of 0.00001g and a Macro-range 0.1g to 162g with readability of 0.0001g

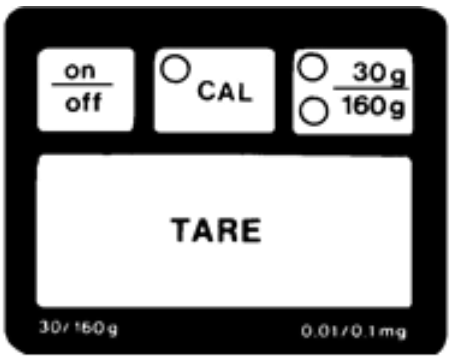
2.2 The balance is equipped with 90mm pan diameter and 246mm clearance above the pan.

2.3 The 1712MP8 has top and side access doors to facilitate the weighing of masses and to block air flow during measurements.

2.4 The 1712MP8 is equipped with leveling screws and a level indicator located at the rear area of the balance.



2.5 The unit comes with a built in calibration weight; **CAL** and **TARE** functions.



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3.0 REQUIREMENTS

3.1 Training

All users must be trained and authorized on the Sartorius Analytic Balance 1712MP8 to use the balance. Training is supplied by a Nanofab staff member please contact the tool owner to schedule training.

3.2 System Restrictions

3.2.1 Do not exceed the weighing range of the balance!

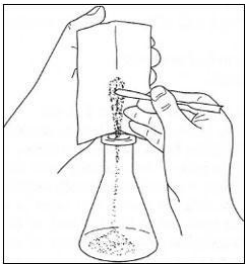
Semi-micro range of 0.01g to **30g** with readability of 0.00001g
Macro-range 0.1g to **162g** with readability of 0.0001g

The MAXIUMUM weight that can be measured is 162 g.

3.2.2 No substances or chemicals are allowed to be transferred within the weighing compartment of the balance. The transfer of material is done outside the weighing compartment ONLY.

3.2.3 Use appropriate weighing containers such as weighing dishes, weighing bottles, weighing boats and weighing paper.
Follow safe and careful material transfer methods such as inserting a filter funnel or a creased weighing paper to avoid spilling and contaminating the weighing compartment or the weighing table!





3.2.4 The balance doors must be **closed** when taking measurements to avoid small air flows and temperature variations. Avoid bumping the table and avoid vibrations during the measurements.

3.2.5 All material measured should be at room temperature before weighing. A hot or cold item will not be as accurate as the actual room temperature weight.

3.2.6 Let the balance electronics be **ON** for at least 30 minutes before measuring your material.

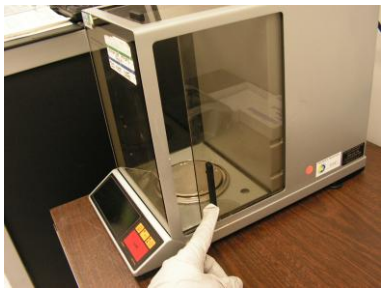
3.2.7 No reservations on the Nanofab Reservation System are required to access this tool. **http://nanofabreservation.uta.edu/**

4.0 OPERATING PROCEDURES

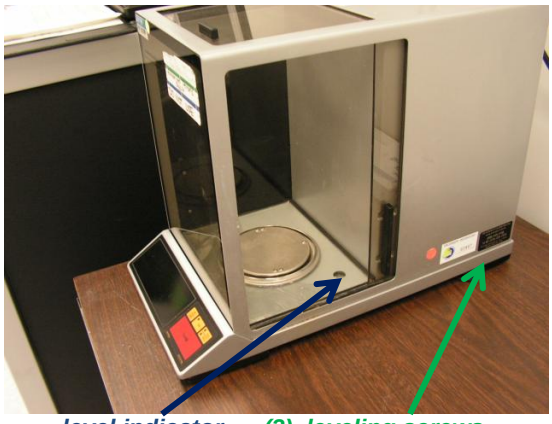
4.1. System Pre-Checks

4.1.1. Check to ensure the Sartorius Analytic Balance power cord is plugged into the wall outlet power.

4.1.2. Inspect the balance pan and weighing compartment to make sure it is clean with no spilled material. If there is spilled material gently brush out all of the spilled material from the balance using the soft balance brush. The spilled material must be properly disposed of and must not be swept out onto the balance table where other USERS may be exposed to the chemical. **If you not sure of how to clean up and depose of a spill call Nanofab staff for assistance**.



4.1.3. Check to ensure the balance is level by looking at the level site glass air bubble. The bubble should be in the center of the black circular marking on the site glass. If the balance is not level adjust the three leveling screws to re-center the air bubble in the middle of the site glass.



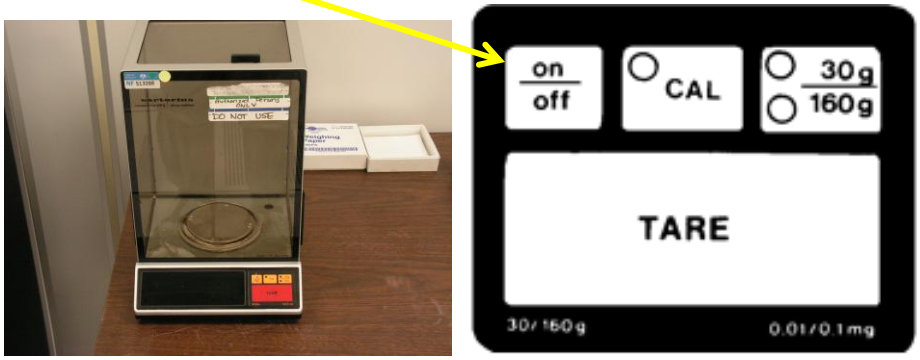
level indicator (3) leveling screws

air bubble in the middle of the site glass

4.2. Operating the Sartorius Analytic Balance 1712MP8

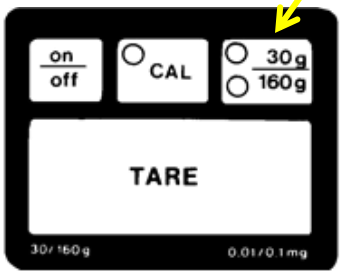
4.2.1. If you have not completed the **System Pre-Checks** in steps 4.1.1 – 4.1.3 then you must complete those before proceeding.

4.2.2. Press the **ON/OFF** button to turn balance **ON.**



4.2.3. Allow the auto check sequence to complete (CH3,CH4…).

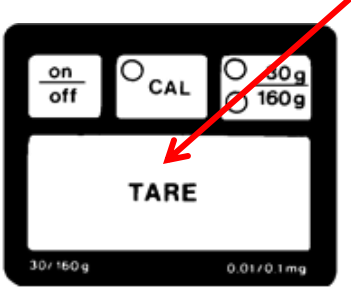
4.2.4. Select the weighing range **30g or 160g** and wait for weight stability symbol "**0.0000 g**" to appear.



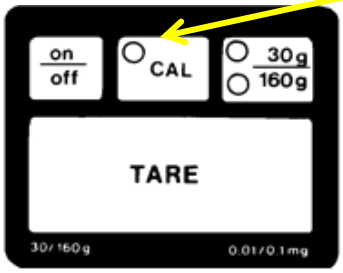
- ***Semi-micro range** of 0.01g to **30g** with readability of 0.00001g*
- ***Macro-range** 0.1g to **162g** with readability of 0.0001g*

- ***The MAXIUMUM weight that can be measured is 162 g.***

4.2.5. With the balance pan empty press **TARE** button and wait for weight stability symbol "**0.0000 g**" to appear again



4.2.6. To calibrate the balance for the weighing range press **CAL** button and the display will show **"C"** during the calibration.



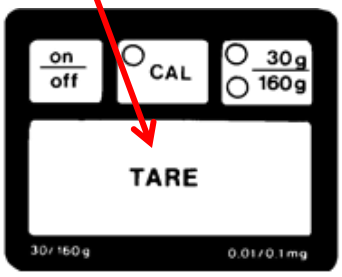
After approximately 2 minutes the calibration will be completed and display will show **"CC"**. Press the **CAL** button again and the balance automatically returns to the weighing mode.

4.2.7. Slide the side door open and place empty beaker or weighing container on pan center and close the side door.

Empty container in pan center.

Close the side door.

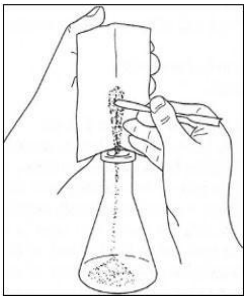
4.2.8. Press the **TARE** button and allow scale display to read "**0.0000 g**".



4.2.9. Open the side door and remove the empty beaker or container. The display should read a negative number.

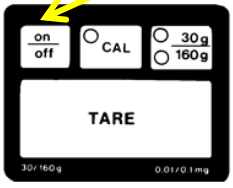
negative number.

4.2.10 Carefully transfer your sample material into the weighing container and place the weighing container(with sample material) on the plate center.
Close the slide door.



The display will now show the **NET** sample weight.
Record the mass measured.

4.2.11 Open the slide door and carefully remove your sample. When you are done measuring your masses Press the **ON/OFF** button to turn balance **OFF.**



4.2.12 Enter the required information in the logbook.

Sartorius Model 1712MP8 Electrical Analytical Balance

Date	Users Full Name	Adviser's Name	Material	Solid (✔)	Liquid (✔)	Powder (✔)	Net Weight (g)	Balance Clean (✔)	Start Time	Stop Time	Time Used	*Comments :*

Comments :

Always clean up powders, crystals and debris after use !