Document Number: **SASoM/EQUIP/072.v2**

Title: **Use and maintenance of the Sartorius BL610 Balance**

Version: **v2**

Author: **Peter Mullen**

Effective from:	25/11/2018
Valid to:	24/11/2023

SOP History		
Number	Date	Reason for Change
v1	25/11/2013	Original
V2	25/11/2018	Update

1.0 Purpose –

The purpose of this SOP is to outline the principles of the routine use of the Sartorius BL610 pan balance in Laboratory 248 at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to routine use and maintenance of the Sartorius BL610 pan balance balance within the SASoM.

3.0 Responsibilities –

It is the responsibility of all users of the Sartorius BL610 pan balance within the SASoM to comply with this SOP.

4.0 Procedure –

Before the start:

1. Check that the bubble level indicator at the front left of the balance is centred.
2. Adjust the adjustable rear feet at the right and left of the balance so that the bubble is centred in the circle.
3. Press the blue ON/OFF button in the bottom left corner of the display in order to switch on the balance.
4. A diamond shape should appear in the top left of the display screen indicating that the processor is busy. Wait for the auto-check to be completed after which the display should read 0.00g.

5. If a fault is detected during auto-check, a code will be displayed. Note this code, so this can be checked against the user manual or given to the service engineer, if necessary.

User Calibration is not recommended with this balance – calibration will be done annually by a certified engineer.

Validation / confirmation using external weights (to be performed daily):

1. Users should verify that the balance is performing accurately by weighing a separate 'certified' calibration weight prior to weighing a test sample. It is suggested that the 50g calibration weight should be utilised as this represents the nominal value used for calibration.
2. Press the TARE button and wait until the "busy" sign (circle at the left) has disappeared and the display reads 0.00g. Appearance of the gram sign (g) indicates that the balance is ready.
3. Carefully remove the 50g calibration weight from its storage box and place on the centre of the balance pan.
4. Wait until the display shows a constant reading and the gram sign (g) is displayed (approximately 3s) indicating that the balance has come to rest.
5. Record the actual weight on the Balance Calibration Log Sheet (Weight 1).
6. Carefully replace the calibration weight into the storage box from which it came.
7. If the 'Actual Weight' lies within the accepted range (as detailed in the SOP) then the Balance Calibration Log sheet should be recorded as **PASS**. If the 'Actual Weight' lies out with the accepted range the Balance Calibration Log sheet should be recorded as **FAIL** and the balance should be re-calibrated before revalidating.
8. If recalibration does not rectify the problem the balance should not be used until a service has been carried out.

Weighing:

1. Place a weighing boat onto the weighing pan.
2. Press the TARE button and wait until the "busy" sign (circle at the left) has disappeared and the display reads 0.00g. Appearance of the gram sign (g) indicates that the balance is ready.
3. Place the item to be weighed into the centre of the weighing boat.
4. Wait until the display shows a constant reading and the gram sign (g) is displayed (app 3s) indicating that the balance has come to rest.
5. ALWAYS clean the balance as well as the area around the balance of any spillages and dust (visible and invisible) with a damp white tissue and 70% ethanol. When weighing dyes such as crystal violet, bromphenol, SRB, thioflavin etc., use 100% ethanol to remove any stains.
6. Clean stirrers and spatula with excess water and 70% ethanol and return them to the weighing area.
7. Place used weighing boats and weighing paper into the red low chemical hazards bin.
8. Switch off the balance by pressing the ON/OFF button to the left of the display.

5.0 Personal protection –
Howie coat must be worn at all times.

6.0 Training –
All users have to be trained before using the Instrument by a designated person.

7.0 Related documents –

7.1 Equipment manuals

8.2 Risk assessments – RA/GEN/017 & RA/COSHH/003

8.3 Acceptable ranges for Check Weights (appendix 1); Balance Calibration Log (Appendix 2).

Appendix 1:
Acceptable Ranges for Check-Weights.

Balance Type	Check-weight (nominal)	Acceptable Range	Error Range
Sartorius BL610 Pan Balance (0.1-610g in 0.01g)	10g	9.9 - 10.1g	+/- 1%
	20g	19.8 – 20.2g	+/- 1%
	50g	49.5 – 50.5g	+/- 1%
	100g	99.5-100.5g	+/- 0.5%
Sartorius BL610 Analytical Balance (0.1mg-110g in 0.1mg)	50mg	49.9 – 50.1mg	+/- 0.2%
	100mg	99.8 – 100.2mg	+/- 0.2%
	200mg	199.6 – 200.4mg	+/- 0.2%
	500mg	499 – 501mg	+/- 0.2%
	1g	0.998 – 1.002g	+/- 0.2%
	10g	9.8 – 10.2g	+/- 0.2%

Appendix 2:
BALANCE CALIBRATION LOG

Balance ID: Sartorius BL610			**Serial No: 11705420**			
Date	**Weight 1**		**Weight 2**		**Pass/Fail**	**Initials**
	Nominal	**Actual**	**Nominal**	**Actual**		

BalCalLogV1(21Nov2013).

8.0 Approval and sign off –

Author:

Name: Peter Mullen

Position: Research Fellow

Signature: Date:

Management Approval:

Name: Mary Wilson

Position: Laboratory Manager

Signature: Date:

QA release by:

Name: Alex MacLellan

Position: QA Manager

Signature: Date: