



## STANDARD OPERATING PROCEDURE

<b>Department:</b> Quality Assurance	<b>SOP No.:</b>
<b>Title:</b> Servicing & Calibration of Balance (Half Yearly)	<b>Effective Date:</b>
<b>Supersedes:</b> Nil	<b>Review Date:</b>
<b>Issue Date:</b>	<b>Page No.:</b>

### OBJECTIVE

To lay down a procedure to describe the steps to be followed while servicing and calibration of balance.

### SCOPE

Applicable to all balances except analytical balances.

### RESPONSIBILITY

Trained person of External agency: To do servicing and calibration.

Concerned department Executives : To check and ensure the Calibration

### ACCOUNTABILITY

Department Head

### REFERENCES

In- House

### ATTACHMENTS

Attachment I: Balance Calibration Record

### PROCEDURE

- 1.0 Check the cleanliness of the area.
- 2.0 Check that platform and exposed parts of the balance are clean and dry
- 3.0 Check the level of the balance with the help of spirit level. Adjust level, if not leveled.
- 4.0 Switch on the main power supply of the balance.
- 5.0 Following parameters to be checked while performing calibration.
  - Accuracy
  - Linearity
  - Precision
  - Corner Load Test

**FREQUENCY: Every 6 months**

**Note:** If balance is not calibrated on or before due date, stop using the balance till Satisfactory calibration is done.



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### 6.0 Accuracy

- 6.1 Check the accuracy of the balance by using 5 standard stamped weight.
- 6.2 Place standard weight one by one in the center of the platform and record the observations in the balance calibration record.
- 6.3 Acceptance Criteria : Standard Weight  $\pm 2 \times$  Least Count

### 7.0 Linearity

- 7.1 Draw the linearity curve for the above readings and find out the correlation factor. Record the observations in the balance calibration record.(Limit: NLT 0.9999)

### 8.0 Precision

- 8.1 Check the Precision of the balance by using standard weight equivalent to 5 % of maximum capacity.
- 8.2 Repeat the procedure for 5 time and record the readings.
- 8.3 Repeat 8.1 to 8.2 using standard weight equivalent to 50 % of maximum capacity.
- 8.4 Calculate % RSD for both the standard weights. Record the observations in the balance calibration record.
- 8.5 Acceptance Criteria :  
% RSD NMT 0.5 %

### 9.0 Corner Load test

- 9.1 Place standard weight equivalent to 30 % of maximum capacity in four corners and center of the balance and note down the readings in record. Calculate % RSD. Record the observations in the balance calibration record.
- 9.2 Acceptance Criteria:  
Deviation : Standard Weight  $\pm 2 \times$  Least Count  
% RSD : NMT 0.5 %

- 10.0 If all the parameters fall with the acceptance criteria limit, affix the calibration tag as per SOP.
- 11.0 If any of the observation is out of limit, correct and reset the balance
- 12.0 After resetting, Calibrate again all the parameters as mentioned in point 6.0 to 8.0
- 13.0 Switch off the balance at the end of day.



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**Note :** No repairs should be made to any balance by anyone other than a qualified maintenance person.

**14.0 ABBREVIATIONS**

- QA : Quality Assurance
- CC No. : Change Control number
- NMT : Not More Than
- RSD : Relative Standard deviation
- SOP : Standard Operating Procedure



# PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

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### ATTACHMENT I BALANCE CALIBRATION RECORD

Balance			Location	Calibration date	Next Calibration due Date
ID. No	Sr. No.	Capacity			

Standard weights Certified On	Next Due Date

#### 1.0 Accuracy by using standard weight.

Standard weight	Observed weight	Limit*

\* Standard weight  $\pm 2 \times$  Least Count of the balance

#### 2.0 Linearity<sup>+</sup>

Correlation factor:

(Limit: Not less than 0.9999)

+Attach Graph with this record

#### 3.0 Precision:

Standard weight	1	2	3	4	5	Mean	%RSD	Limit
								NMT 0.5 %

#### 4.0 Corner load test: (Weight equivalent to 30 % of the balance capacity)

Standard weight	Left	Right	Front	Back	Center	Mean	%RSD	Limit
								NMT 0.5 %

Done by :  
Date :

Checked by:  
Date :

	Prepared By	Checked By	Approved By	Authorised By
Sign				
Date				
Designation	QA Officer	QA Executive	QA Head	Plant Head