STANDARD OPERATING PROCEDURE	
Department: Production (External Preparation)	**SOP No.:**
Title: Load Cell Verification and Calibration	**Effective Date:**
Supersedes: Nil	**Review Date:**
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1.0 OBJECTIVE:
To lay down a procedure for Verification and Calibration of Load Cell.

2.0 SCOPE:
This SOP is applicable to Verification and Calibration of Load Cell used in Production Area.

3.0 RESPONSIBILITY:
Officer / Executive-Production & IPQA

4.0 ACCOUNTABILITY:
Head – Production

5.0 ABBREVIATIONS:

Kg	kilogram
Ltd.	Limited
No.	Number
Pvt.	Private
QA	Quality Assurance
SOP	Standard Operating Procedure

6.0 PROCEDURE:

6.1 PERFORMANCE VERIFICATION OF LOAD CELL:

6.1.1 Load cell performance shall be verified daily before starting the manufacturing operation.

6.1.2 Verify the Load cell performance by placing 10 Kg and 100 Kg standard (Class-M1) weight on manufacturing vessel and record the Value shown in Display.

6.1.3 Record the observation in **Annexure-I**.

6.1.4 **Acceptance criteria:** Tolerance limit for load cell is ± 0.1% of standard weight used or least count which is higher.

6.1.5 **Frequency:** Daily / Before Commencement of Every Batch.

6.2 LOAD CELL CALIBRATION THROUGH AUTO CAL PROGRAMMING MODE:

6.2.1 Make the tank empty to be calibrated.

6.2.2 Ensure that during calibration there should not be any extra load on the tank and flow chart: proceed as per below

6.2.3 Calibration of load cell shall be performed for min, middle and max working capacity.

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6.2.4 Load cell shall be calibrated by using the purified water of equivalent weight at room temperature.

6.2.5 Before placing standard weight, ensure the Pins and position of load cell is correct and no other material interfering with load cell.

6.2.6 Switch on the panel.

6.2.7 Press ▢ ⟶ key and hold for 3 sec.

6.2.8 Press © key once.

6.2.9 Press ▢ ⟶ key.

6.2.10 Press the Enter key and select S**et Spam**

6.2.11 Press enter key ▭ ⟶ till PLC display comes again enter, FULL LOAD Message displayed with 0000600 kg.

6.2.12 Put the value as 0000025, 0000050, 0000075……. successively up-to maximum capacity 0000250/0000500 equivalents to the purified water added into the multi-mixer tank respectively.

6.2.13 Weight 25kg of purified water in cleaned container on other calibrated weighing balance at room temperature and then transferred the weighed water into the multi-mixer tank carefully by manually or through the transferred pump.

6.2.14 Add successively 25 Kg. of weighed purified water into the multi-mixer tank up to the maximum working capacity (250 kg/500kg) by following sequential step.

6.2.15 Press Enter Key ▭ ⟶, and save the readings.

6.2.16 Calibration completed and press © key to exit.

6.2.17 **Acceptance criteria:** Tolerance limit for load cell is ± 0.1% of standard weight used or least count which is higher.

6.2.18 **Frequency:** Monthly ±3 working days or after major break down or when ever required.

6.2.19 After successful calibration, perform the daily verification of load cell as per section 6.1 and record the observation in **Annexure-I**.

6.2.20 If observations during calibration and verification are out of Tolerance Limit, affix **"Under Maintenance"** tag, sign & date and discontinue use of Load cell.

6.2.21 Inform maintenance department for corrective action.

6.2.22 After rectification, calibrate the load cell again and record the observation in **Annexure-II**.

6.2.23 After calibration, Verify the Load cell and record as per **Annexure-I**.

6.2.24 In case of Load cell failure material will be added in manufacturing tank through weighing by balances.

7.0 ANNEXURES:

ANNEXURE NO.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Load Cell Verification Record	
Annexure-II	Load Cell Calibration Record	

ENCLOSURES: SOP Training Record

8.0 DISTRIBUTION:

- Controlled Copy No. 01 Quality Assurance
- Controlled Copy No. 02 Production
- Master Copy Quality Assurance

9.0 REFERENCES:

Not Applicable

10.0 REVISION HISTORY:

CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By

PHARMA DEVILS

PRODUCTION DEPARTMENT

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ANNEXURE-I
LOAD CELL VERIFICATION RECORD

Name of Instrument	Instrument ID No.	Verification Range	Working Range	Least Count	Frequency of Verification	Location
Load cell		10.0 kg to 100.0 kg	10.0 kg to 250.0 kg / 500.0 kg	0.5kg	Daily / Before Commencement of Every Batch.	

Zero Display found ☐ OK ☐ Not OK

Verification			Reading		* Acceptance Criteria	Error (+/-)	Done By production (Sign/date)	Checked By QA (Sign/date)	**Remark
S. No.	Done On	Due On	Standard	Observed					
			10.0 kg		9.5 kg to 10.5 kg				
			100.0 kg		99.5 kg to 100.5 kg				
			10.0 kg		9.5 kg to 10.5 kg				
			100.0 kg		99.5 kg to 100.5 kg				
			10.0 kg		9.5 kg to 10.5 kg				
			100.0 kg		99.5 kg to 100.5 kg				
			10.0 kg		9.5 kg to 10.5 kg				
			100.0 kg		99.5 kg to 100.5 kg				
			10.0 kg		9.5 kg to 10.5 kg				
			100.0 kg		99.5 kg to 100.5 kg				

*Acceptance criteria: ± 0.1% of standard weight used or least count whichever is higher.

**write “OK” if found satisfactory and write “Not OK” if found not satisfactory

PHARMA DEVILS

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ANNEXURE-II
LOAD CELL CALIBRATION RECORD

Vessel ID		**Vessel working Capacity**	250kg / 500 kg
Department		**Location**	
Least Count	0.5 kg	**Frequency**	Monthly ± 3 working days
Calibration date		**Next Calibration due Date**	

Zero Display found ☐ OK ☐ Not OK

S.No.	Standard Weight (A)	Qty. of water to be weighed on balance and then to be added to tank	Wt. of water displayed on PLC after transferred to the tank in kg (B)	Difference (A-B)	*Acceptance limit (Difference NMT ±0.5kg)	Done By production (Sign/Date)	Checked By QA (Sign/Date)	**Remark
1	25 kg	25 kg						
2	50 kg	25 kg						
3	75 kg	25 kg						
4	100 kg	25 kg						
5	125 kg	25 kg						
6	150 kg	25 kg						
7	175 kg	25 kg						
8	200 kg	25 kg						
9	225 kg	25 kg						
10	250 kg	25 kg						
11	275 kg	25 kg						
12	300 kg	25 kg						
13	325 kg	25 kg						
14	350 kg	25 kg						
15	375 kg	25 kg						
16	400 kg	25 kg						
17	425 kg	25 kg						
18	450 kg	25 kg						
19	475 kg	25 kg						
20	500 kg	25 kg						

*Acceptance criteria: ± 0.1% of standard weight used or least count whichever is higher (equivalent to 0.5kg for 250kg & 500kg capacity tank having least count 0.5kg).

**write “OK” if found satisfactory and write “Not OK” if found not satisfactory