



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

Title: Procedure for Tank Calibration

SOP No.:		Department:	Production	
		Effective Date:		
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1.0 OBJECTIVE:

To lay down a procedure for Tank calibration by using Dip scale/touch scale.

2.0 SCOPE:

This SOP is applicable for Tank calibration by using Dip scale/touch scale.

3.0 RESPONSIBILITY:

Officer / Executive- Production

4.0 ACCOUNTABILITY:

Head Production

5.0 ABBREVIATIONS

BPCR Batch Production & Control Record
Kg Kilogram
Ltd. Limited
PL Production Liquid
Pvt. Private
SOP Standard Operating Procedure
SS Stainless Steel

6.0 PROCEDURE :

6.1 Materials and Equipment required for calibration:

- Standard calibrated Scale
- Purified Water
- Electronic Weighing Balance
- SS Vessel

6.2 CALIBRATION OF TANKS: 1000 LITER

6.2.1 Check the Status of Calibration of Weighing Balances to be used.

6.2.2 Check the Weighing Balance for Zero error before weighing.

6.2.3 Weigh the 24.94 Kg of Purified Water (equivalent to 25 liter PW of 0.9976 specific gravity at 25°C) in the dried and cleaned Container.

6.2.4 Transfer the weight water i.e. 25.00 Ltr into the Vessel to be calibrated.

6.2.5 Hang the calibrated dip scale at specific marked position of tank manhole. Note Down the dip scale level (Water Level in **Annexure-VI**) in tank.



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6.2.6 Repeat the procedure by gradually increasing the water in multiplication of 25 liter up-to 1000 liter volume as per tank capacity and record the water level (Dip Scale) for each interval.

6.3 CALIBRATION OF MANUFACTURING (JACKETED) TANKS: 2000 LITER

6.3.1 Check the Status of Calibration of Balances to be used.

6.3.2 Verify the Balance before the Calibration of Vessels.

6.3.3 Tare the weight of empty container in calibrated weighting Balance

6.3.4 Weigh the 249.400 Kg (49.880 Kg x 5) eq. to 250 ltr. of Purified Water in the Container.

6.3.5 Transfer the 249.400 Kg (49.880 Kg x 5) eq. to 250 ltr of Purified Water one by one in the Manufacturing tank (jacketed) to be calibrated. After words increase the volume by adding 50 liter purified water gradually up-to 2000 liter volume capacity of the tank and record the Dip scale reading for each interval.

6.3.6 Hang the separated specific calibrated dip scale at specific marked position of manufacturing tank (jacketed) manhole. Note Down the hang dipped scale level (Water Level in Centimeter) in manufacturing tank as shown as **Annexure-III**.

6.4 CALIBRATION OF HOLDING TANK (NON JACKETED): 2000 LITER

6.4.1 Check the Status of Calibration of Balances to be used.

6.4.2 Verify the Balance before the Calibration of Vessels.

6.4.3 Tare the weight of empty container in calibrated weighting Balance.

6.4.4 Weigh the 199.520 Kg (49.88Kg x 4) eq. to 200 ltrs of Purified Water in the Container.

6.4.5 Transfer the 199.520 Kg (49.880 Kg x 4) eq. to 200 ltr of Purified Water one by one in the holding tank (non-jacketed) to be calibrated. After words increase the volume by adding 100 liter purified water gradually up-to 2000 liter volume capacity of the tank and record the touch scale reading for each interval.

6.4.6 Hang the calibrated touch scale at specific marked position of holding tank main hole. Note Down the touch scale level (Water Level to specific point of main hole in Centimeter) in tank as Shown as **Annexure-IV**.

6.5 CALIBRATION OF MIXING/HOLDING TANKS: 600 LITER (NON JACKETED)



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6.5.1 Check the Status of Calibration of Balances to be used.

6.5.2 Verify the Balance before the Calibration of Vessels.

6.5.3 Weigh the 49.88 Kg eq. to 50.00 ltrs. of Purified Water in the Container.

6.5.4 Transfer the 49.88 Kg eq. to 50.00 ltrs. Kg of Purified Water one by one in the Vessel to be calibrated.

6.5.5 Hang the calibrated Touch scale at specific marked position of Mixing/Holding tank main hole. Note Down the touch scale level (Water Level to specific point of main hole in Centimeter) in tank as shown as **Annexure-V**.

6.6 CALIBRATION OF TANK:

6.6.1 If any modification done in existing tank.

6.6.2 After relocation of tank.

6.6.3 Any incident takes place at any condition and tank shape gets affected.

7.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Volume Calibration Record of 2000 Litre Mfg. Tank	
Annexure-II	Volume Calibration Record of 2000 Litre Holding Tank (Non jacketed)	
Annexure-III	Volume Calibration Record of 600 Litre Mixing/Holding Tank (Non jacketed)	
Annexure-IV	Volume Calibration Record of 1000 Litre Tank	

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



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10.0 REVISION HISTORY:

CHANGE HISTORY LOG

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



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ANNEXURE – I

VOLUME CALIBRATION RECORD OF 2000 LITRES MFG.TANK

Area: Mfg. Area

Vessel ID No. :

Vessel Capacity: 2000 Liters

Dip Scale ID :

S.No.	Purified Water (In Liter)	Height (Dip scale reading) Water Level / Dip scale level (In Centimeter)
1.	250	26.6
2.	300	30.2
3.	350	33.8
4.	400	37.4
5.	450	41.0
6.	500	44.6
7.	550	48.2
8.	600	52.0
9.	650	55.4
10.	700	59.0
11.	750	62.4
12.	800	65.8
13.	850	69.2
14.	900	72.6
15.	950	76.0
16.	1000	79.4
17.	1050	83.2
18.	1100	87.0
19.	1150	90.6
20.	1200	94.2
21.	1250	97.8
22.	1300	101.4



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S.No.	Purified Water (In Liter)	Height (Dip scale reading) Water Level / Dip scale level (In Centimeter)
23.	1350	105.0
24.	1400	108.6
25.	1450	112.2
26.	1500	115.8
27.	1550	119.4
28.	1600	123.0
29.	1650	126.6
30.	1700	130.2
31.	1750	133.8
32.	1800	137.4
33.	1850	140.6
34.	1900	143.4
35.	1950	147.0
36.	2000	150.8



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ANNEXURE – II

VOLUME CALIBRATION RECORD OF 2000 LITRES HOLDING TANK (NON JACKETED)

Area: Holding Area

Vessel ID No. :

Vessel Capacity: 2000 Liters

Touch Scale ID :

Total Tank Height = 148 cm incl. base curve

Total Tank Height = 131 cm excluding base curve (only cylindrical shape)

S.No.	Volume (Purified Water) (In Liter)	Height (Touch scale reading) From Water Level to specific point of tank main hole (in centimeter)
1.	200	127.6
2.	300	121.4
3.	400	115.8
4.	500	110.0
5.	600	104.6
6.	700	98.8
7.	800	93.0
8.	900	87.2
9.	1000	81.6
10.	1100	75.8
11.	1200	70.2
12.	1300	64.6
13.	1400	58.8
14.	1500	53.0
15.	1600	47.4
16.	1700	41.8
17.	1800	36.2
18.	1900	30.4
19.	2000	24.6



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ANNEXURE – III

VOLUME CALIBRATION RECORD OF 600 LITRE MIXING /HOLDING TANK (NON JACKETED)

Area: Holding area

Vessel ID No.:

Vessel Capacity: 600 Liters

Touch Scale ID:

Total tank height = 101 cm incl. base curve

S.No.	Volume (Purified Water) (In Liter)	Height (Touch scale reading) From Water Level to specific point of tank main hole (in centimeter)
1.	50	94.4
2.	100	86.6
3.	150	78.6
4.	200	70.4
5.	250	62.4
6.	300	54.4
7.	350	46.4
8.	400	38.4
9.	450	30.4
10.	500	22.4
11.	550	14.4
12.	600	6.4



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ANNEXURE – IV VOLUME CALIBRATION RECORD OF 1000 LITRES TANK

Area: Primary Syrup Preparation/Mfg. Area

Vessel ID No.:

Vessel Capacity: 1000 Liters

Dip Scale ID:

S.No.	Purified Water (In Liter)	Height (Dip scale reading) Water Level / Dip scale level (In Centimeter)
1.	150	23.0
2.	200	27.0
3.	250	31.6
4.	300	36.4
5.	350	39.8
6.	400	44.0
7.	450	47.8
8.	500	52.6
9.	550	56.0
10.	600	60.4
11.	650	64.8
12.	700	68.8
13.	750	72.8
14.	800	76.8
15.	850	80.8
16.	900	84.8
17.	950	87.8
18.	1000	91.0