



PHARMA DEVILS

ENGINEERING DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Engineering	SOP No.:
Title: Calibration of Pressure Gauge/Vacuum Gauge	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

1.0 OBJECTIVE:

To lay down the procedure for Calibration of Pressure Gauge/Vacuum Gauge.

2.0 SCOPE:

This standard operating procedure (SOP) is applicable for Calibration of Pressure Gauge/Vacuum Gauge.

3.0 RESPONSIBILITY:

Executive Engineering will perform the Calibration and prepare the data sheet.

Manager Engineering will check the data sheet and calibration certificate.

Manager QA will verify & approved the data and calibration certificate

4.0 PROCEDURE:

4.1 Instruments used

4.1.1 Master Pressure Transmitter with Indicator.

Make: Wika.

4.1.2 Pressure Comparator Jig.

Make: Wika.

4.2 Procedure For Calibration

4.2.1 Refer SOP No:..... for calibration due date of field instruments.

4.2.2 Informs to concern department supervisor for the calibration of pressure gauge/ vacuum gauge.

4.2.3 Remove the under calibration pressure gauge and fix it on the one arm of pressure comparator jig and fix the master pressure transmitter with indicator to another port.

4.2.4 Note down following data in calibration certificate.

Nomenclature.

Location.

ID.

Range.

Least count.

Ambient Temperature (°C).

RH.

4.2.5 Apply pressure from the comparator jig to the master pressure transmitter with indicator and under calibration pressure gauge.

4.2.6 Note down the observations in calibration certificate.

4.2.7 Note down five readings of the master pressure indicator and under calibration pressure gauge in increasing and decreasing order of the full scale.

4.2.8 Calculate the % accuracy at full-scale deflection of gauge under calibration by using formula.

S

% Accuracy at FSD = $\frac{S}{F.S.} \times 100$

F.S.



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S = Deviation from standard.

F.S = Full scale deflection.

- 4.2.9 Note down % accuracy of F.S.D. in calibration certificate of master gauge and under calibration gauge.
4.2.10 Fill up the calibrated tag and attached with calibrated gauge.
4.2.11 Reinstall the pressure /vacuum gauge at its specified location.

4.3 Acceptance Criteria:

- 4.3.1 Pressure / vacuum gauge = 3% OF F.S.D.

5.0 SAFETY AND PRECAUTIONS:

Not Applicable

6.0 REVISION HISTORY:

Revision No.	Reason for Revision	Superseded from & date
00	New	-----

7.0 REFERENCES:

IS 3624 - 1987 for Pressure / Vacuum Gauge.
Manual of comparator jig.

8.0 ABBREVIATIONS:

SOP: Standard Operating Procedure.
FSD: Full Scale Deflection.
RH: Relative Humidity
ID: Identification Number
QA: Quality Assurance

9.0 ANNEXURE:

Annexure I: Calibration certificate.



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ANNEXURE I

Calibration Certificate of Vacuum Gauge

Certificate No.:	Calibration On:
Tested at:	Next Due On:

ITEM DETAILS

Nomenclature: Pressure/Vacuum gauge.	Location:
ID:	Ambient Temperature:
Range:	RH. :
Least Count:	

STANDARDS USED FOR CALIBRATION

S.No	Nomenclature	Certificate No	Trace ability to	Validity
1	Pressure comparator jig			
2	Pressure Transmitter with Indicator.			

OBSERVED READINGS

S.No	Standard Gauge/Bar (Kg/cm ²)/mm of Hg		Gauge Under Calibration/Bar (Kg/cm ²)/ mm of Hg		Accuracy (in % Of FSD)	
	Increasing	Decreasing	Increasing	Decreasing	Increasing	Decreasing
1.						
2.						
3.						
4.						
5.						

Reference used: IS 3624 - 1987 for Pressure / Vacuum Gauge

REMARKS: 1. Maximum accuracy of this gauge is within / outside specified limit.
2. All measurement standards used for calibration are traceable to National Standards with unbroken chain.

Calibrated By:

Certified By: