

Laboratory Perfect Enterprises, S.No. 81/5, Kiran Industrial Estate, J Block, Shed No. 1, Shivane, Pune, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

Discipline Mechanical Calibration **Issue Date** 24.06.2015

Certificate Number C-0541 **Valid Until** 23.06.2017

Last Amended on 29.06.2015 **Page** 1 of 3

| Quantity Measured/ Instrument | Range / Frequency | *Calibration Measurement Capability (\pm) | Remarks |
|---|------------------------------|--|--|
| I. TORQUE | | | |
| 1. Torque Wrench \$ Type I & II | (0 to 3000) Nm | 0.66 % | Using Digital Torque Wrench Tester |
| 2. Torque Multiplier \$ | 3400 Nm | 1.05 % | Using Mechanical Torque Wrench Tester & Standard Torque Wrench |
| II. PRESSURE / VACUUM | | | |
| 1. Pressure Gauge, Pressure Switch & Pressure Recorder \$ | (0 to 35) kg/cm ² | 0.12 bar | Using Dig. Test Gauge & Comparison Test Pump |
| | (0 to 700) bar | 1.75 bar | Using Dig. Test Gauge & Comparison Test Pump |
| | (0 to 1000) bar # | 1.5 bar | Using Dig. Pressure Indicator & Comparison Test Pump |
| 2. Vacuum Gauge # | 0 to (-)650 mmHg | 2.47 mmHg | Using Dig. Test Gauge & Comparison Test Pump |
| III. DIMENSION | | | |
| 1. Vernier Caliper \$ L.C.: 0.01 mm Φ | (0 to 600) mm | 15.0 μ m | Using Caliper Checker , |
| 2. Plunger Dial \$ L.C.: 0.001 mm Φ | (0 to 50) mm | 3.0 μ m | Using Dial Calibration Tester |
| 3. External Micrometer \$ L.C.: 0.001 mm Φ | (0 to 400) mm | 5.1 μ m | Using Slip Gauge Box |
| 4. Height Gauge \$ L.C.: 0.01 mm Φ | (0 to 600) mm | 14.2 μ m | Using Surface Plate , Caliper Checker |

Ram Ashray
Convenor

Avijit Das
Program Manager

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| 5. Depth Vernier \$ L.C.: 0.01 mm Φ | (0 to 300) mm | 14.0 μ m | Using Surface Plate , Slip Gauge box |
| 6. Depth Micrometer \$ L.C.: 0.001 mm Φ | (0 to 100) mm | 4.0 μ m | Using Surface Plate , Slip Gauge box |
| 7. Lever Dial \$ L.C.: 0.01 mm L.C.: 0.002 mm L.C.: 0.001 mm | (0 to 0.80) mm (0 to 0.14) mm (0 to 0.20) mm | 3.2 μ m 2.4 μ m 3.0 μ m | Using Comparator Stand , Dial Calibration Tester |
| 8. Bore Gauge \$ (For Transmission Error) | Upto 400 mm | 3.0 μ m | Using Comparator Stand Dial Calibration Tester |
| 9. Plug Gauge \$ | (0 to 250) mm | 3.5 μ m | Using Comparator Stand Dial Calibration Tester |
| 10. Snap Gauge \$ | (0 to 150) mm | 3.0 μ m | Using Slip Gauge Box. |
| 11. Measuring Pins \$ | (1 to 20) mm | 2.0 μ m | Using Comparator Stand with Dial Gauge, Slip Gauge Box |
| 12. Feeler Gauge/Foils \$ | (0.01 to 1) mm | 2.22 μ m | Using Comparator Stand with Dial Gauge, Slip Gauge Box |
| 13. Electronics Height Gauge * L.C.: 0.0001 mm Φ | (0 to 600) mm | 14.5 μ m | Using Caliper Checker Slip Gauge Box |

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|----------------------------------|---|--|---|
| IV. MASS | | | |
| 1. Weighing Balance * | (0 to 200) g d = 0.1 mg ^Φ | 0.45 mg | Using set of Weights F1 Class by Procedure based on OIMIL R-76 & LAB 14 |
| | (0 to 20) kg d = 10 mg ^Φ | 30 mg | Using set of Weights M1 Class by Procedure based on OIMIL R-76 & LAB 14 |

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

\$Only in Permanent Laboratory

*Only for Site Calibration

^Φ Laboratory can also calibrate instruments/devices of coarser resolution / least count within the accredited range using same reference standard/ master equipment under the scope of accreditation.

The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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