

Laboratory	Calibration House, 71, Tarani Colony, Near Amir Vila, A. B. Road, Dewas, Madhya Pradesh		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Mechanical Calibration	Issue Date	05.08.2015
Certificate Number	C-0754	Valid Until	04.08.2017
Last Amended on	-	Page	1 of 8

Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
I. DIMENSION			
1. Calipers (Vernier/Dial/Digital) \$ L.C.: 5 μm ^Φ	0 to 1000 mm	13.0 μm	Using Caliper Checker, Gauge Block & Length Bar by Comparison Method
2. Height Gauges \$ (Vernier/Dial/Digital) L.C.: 5 μm ^Φ	0 to 1000 mm	13.1 μm	Using Caliper Checker, Gauge Block, Length Bar & Surface Plate by Comparison Method
3. Depth Gauge \$ (Vernier/Dial/Digital) L.C.: 5 μm ^Φ	0 to 300 mm	14.0 μm	Using Caliper Checker, Gauge Block, Surface Plate & Length Bar by Comparison Method
4. External Micrometer \$ L.C.: 1 μm ^Φ L.C.: 1 μm ^Φ	0 to 100 mm >100 to 600 mm	2.0 μm 11.3 μm	Using Gauge Block & Length by Comparison Method
5. Depth Micrometer \$ L.C.: 10 μm	0 to 300 mm	7.9 μm	Using Gauge Block, Length Bar & Surface Plate by Comparison Method

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Last Amended on	-	Page	2 of 8

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6. Internal Micrometer ^{\$} (Stick Type) L.C.: 10 μm	50 mm to 63 mm	7.5 μ m	Using Comparator & Gauge Block by Comparison Method
Extension Rod of tubular Micrometer	Upto 1000 mm (with interchangeable setting rod not more than 400 mm)	7.8 μ m	
7. Micrometer Setting ^{\$} Standards/ Height Blocks/ Riser Blocks	0 to 100 mm >100 mm to 300 mm >300 mm to 600 mm	1.7 μ m 3.1 μ m 5.0 μ m	Using Length Bar, Gauge Block, Surface Plate & Comparator by Comparison Method
8. Dial Gauge/ Digimatic ^{\$} Indicator (Plunger Type) L.C.: 0.5 μm ^Φ	0 to 50 mm	1.0 μ m 3.7 μ m	Using LMM & Dial Calibration Tester by Comparison Method
9. Dial Gauge ^{\$} (Lever Type) L.C.: 1 μm ^Φ	0 to 1 mm	3.7 μ m	Using Dial Calibration Tester by Comparison Method
10. Bore Gauge ^{\$} (Transmission Accuracy) L.C.: 0.001 μm	1.0 mm (Transmission only)	4.5 μ m	Using Dial Calibration Tester by Comparison Method
11. Pistol Caliper ^{\$} L.C.: 100 μm	0 to 50 mm	59.0 μ m	Using Gauge Blocks by Comparison Method

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Last Amended on - **Page** 3 of 8

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12. Dial Thickness Gauge \$ L.C.: 1 μ m L.C.: 10 μ m	0 to 30 mm 0 to 50 mm	1.1 μ m 5.7 μ m	Using Gauge Block Set by Comparison Method
13. Plain Plug Gauges/ Cylindrical Setting Masters/ Width Gauge/ OD Master/ Paddle Gauge \$	0 to 100 mm >100 mm to 250 mm >250 mm to 450 mm	1.9 μ m 2.6 μ m 5.0 μ m	Using Gauge Blocks, Length Bar & Comparator with Stand by Comparison Method
14. Measuring Pins & Thread Measuring Wires \$	0.1 mm to 20 mm	0.8 μ m	Using LMM by Comparison Method
15. Feeler Gauge/ Shims \$	Upto 2 mm	2.9 μ m	Using External Micrometer by Comparison Method
16. Snap Gauge/ Gap Gauge \$	3 mm to 100 mm >100 mm to 250 mm >250 mm to 450 mm	1.5 μ m 2.6 μ m 5.0 μ m	Using Gauge Blocks & Long Gauge Blocks by Comparison Method
17. Thread Plug Gauge \$ (Only Effective Diameter)	Upto 100 mm >40 mm to 300 mm	4.1 μ m 5.0 μ m	Using FCDM & TMW, LMM & TMW by Comparison Method
18. Taper Thread Plug Gauge \$ (Only Effective Diameter)	Upto 40 mm >40 mm to 200 mm	4.1 μ m 5.0 μ m	Using FCDM & TMW, LMM & TMW by Comparison Method
19. Thread Ring Gauge \$ (Only Effective Diameter)	4 mm to 100 mm >100 mm to 225 mm	2.5 μ m 4.2 μ m	Using LMM, Master Rings by Comparison Method

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Last Amended on	-	Page	4 of 8

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20. Plain Ring Gauge ^{\$}	3 mm to 100 mm >100 mm to 200 mm >200 mm to 300 mm	1.9 μ m 2.3 μ m 2.7 μ m	Using LMM, Master Rings by Comparison Method
21. Angle Plate/ Box Angle Plate/ Square Master ^{\$} Squareness Parallelism	Upto 300 mm Upto 300 mm	7.5 μ m 3.9 μ m	Using Cylindrical Square Master, Electronic Height Gauge, Dial Gauge & Surface Plate by Comparison Method
22. Engineer's Square ^{\$} Squareness Parallelism	Upto 450 mm Upto 450 mm	7.5 μ m 3.9 μ m	Using Cylindrical Square Master, Electronic Height Gauge, Dial Gauge & Surface Plate by Comparison Method
23. V - Block ^{\$} Squareness, Parallelism Symmetricity	Upto 300 mm Upto 300 mm Upto 300 mm	7.5 μ m 3.9 μ m 5.2 μ m	Using Cylindrical Square Master, Electronic Height Gauge, Dial Gauge & Surface Plate by Comparison Method
24. Dial Snap Gauge ^{\$} (Parallelism of anvil faces)	0 to 100 mm	1.7 μ m	Using Gauge Block Set by Comparison Method
25. Inside Dial Caliper/ Two Pin Dial ^{\$} L.C.: 10 μ m L.C.: 25 μ m	Upto 75 mm Upto 150 mm	9.5 μ m 19 μ m	Using Using LMM by Comparison Method

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Last Amended on	-	Page	5 of 8

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26. Bevel Protractor / Combination Set \$ L.C. 1' L.C. 5' L.C. 1°	0-90°-0 0-90°-0 0-90°-0	1 minute 4 minutes 46 minutes	Using Angle Gauges by Comparison Method
27. Taper Plug Gauge \$	Upto 150 mm ½ angle Upto 25 °	2.8 μ m 11 s	Using LMM by Comparison Method
28. Electronic Height Gauge \$ L.C.: 0.1 μ m Φ	0 to 600 mm	4.8 μ m	Using Gauge Block & Length Bar by Comparison Method
29. Dial Calibration Tester \$ L.C.: 0.1 μ m Φ	0 to 25 mm	1.4 μ m	Using Gauge Blocks & Electronic Probe by Comparison Method
30. Caliper Checker/ Step Gauge	Upto 600 mm	4.8 μ m	Using Gauge Block, Length Bar & Electronic Height Gauge by Comparison Method
31. Comparator With Stand \$ (Flatness)	Upto 25 mm traverse	0.9 μ m	Using Gauge Block, Surface Plate & EHG by Comparison Method]
32. Electronic Probe \$ L.C.: 0.1 μ m Φ	Upto 25 mm	0.6 μ m	Using Gauge Block by Comparison Method
33. Scale & Tape Calibrator Machine\$ L.C.: 0.1 μ m Φ	Upto 1000 mm	22.4 μ m	Using Gauge Block, Length Bar & Dial Gauge by Comparison Method

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34.	Vision Measuring \$ Machine/ Microscope (Linear X-Y Axis)	Upto 300 mm	12.5 μ m	Using Measuring Glass Scale by Comparison Method
35.	Spirit Level / Frame Level \$ L.C.: 10 μm/m Φ	Upto 300 mm	8 μ m/m	Using Electronic Level Wyler by Comparison Method
36.	Straight Edge \$	Upto 1000 mm	6.3 μ m	Using Electronic Level Wyler by Comparison Method
37.	Measuring Steel Scale/ Steel Rule \$	Upto 1000 mm Upto 2000 mm	117 \sqrt{L} μ m L is in meter	Using Measuring Scale & Tape Calibrator by Comparison Method
38.	Measuring Tape / Pie Tape \$	Upto 1 m > 1 m to 60 m (With Step of 1 m)	118 μ m 118 \sqrt{L} μ m L is in meter	Using Measuring Scale & Tape Calibrator by Comparison Method
39.	Radius Gauge \$ (Convex & Concave)	R 0.3 mm to R 50 mm	11 μ m	Using Vision Measuring Machine by Comparison Method
40.	Thread Pitch Gauge Flank Angle Pitch \$	55 $^{\circ}$ & 60 $^{\circ}$ 0.3 mm to 6 mm	40 arc s 11 μ m	Using Vision Measuring Machine by Comparison Method
41.	Standard Wire Gauge \$	Upto 10 mm	11 μ m	Using Vision Measuring Machine by Comparison Method
42.	Taper Scale / Taper Bore Gauge \$	Upto 100 mm	11 μ m	Using Vision Measuring Machine by Comparison Method

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43. Linear Glass Scale \$ L.C.: 2 μm ϕ	Upto 20 mm Upto 200 mm	9.40 μm 9.40 μm	Using Vision Measuring Machine by Comparison Method
44. Angular Glass Scale \$ (Graticule)	0 to 360 $^{\circ}$	40 arc s	Using Vision Measuring Machine by Comparison Method
45. Surface Plate * (Flatness)	2000 mm to 2000 mm 3000 mm to 3000 mm	$7\sqrt{\{(L+W) / 125\}} \mu\text{m}$ $0.8\sqrt{\{(L+W) / 125\}} \mu\text{m}$ L & W in mm	Using Spirit Level Using Electronic Level by Comparison Method
46. Electronic Height Gauge * L.C.: 0.1 μm ϕ	0 to 600 mm	4.8 μm	Gauge Block & Length Bar by Comparison Method
47. Bench Centre * (Co-axiality of centres & Parallelism of Axis)	Upto 1000 mm	15.7 μm	Plain Mandrel, Taper Mandrel & Dial Gauge by Comparison Method
48. Profile Projector * Linear X-Y Axis L.C.: 0.0005 μm Angular Measurement L.C.: 1 s of arc Magnification	0 to 300 mm 0 to 360 $^{\circ}$ 10X to 100X	12.6 μm 90 arc of s 1.6%	Using Measuring Glass Scale, Angle Gauge & Digital Caliper by Comparison Method

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II. PRESSURE & VACUUM			
1. Industrial Pressure Gauges ^{\$}	0 to 40 kg/cm ² 40 kg/cm ² to 700 kg/cm ²	0.21 kg/cm ² 3.38 kg/cm ²	Using Digital Pressure Gauge & Hydraulic Comparator Pump by comparison method
2. Vacuum Gauges ^{\$}	-0.66 bar to 0	0.02 bar	Using Digital Pressure/ Vacuum Gauge & Vacuum Comparator Pump by comparison method
III. TORQUE			
1. Torque Wrench ^{\$} (Type – I/ Class B,C) & (Type – II/ Class A,B)	20 Nm to 100 Nm 100 Nm to 2000 Nm	3.37 % rdg. 2.02 % rdg.	Using Electronic Torque Sensor with Indicator & Motorized Wrench Calibration System

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

^{\$}Only in Permanent Laboratory

^{*}Only for Site Calibration

^o 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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