

Laboratory Met-Heat Services, 857/2, G.I.D.C. Industrial Estate, Makarpura,
Vadodara, Gujarat

Accreditation Standard ISO/IEC 17025:2005

Discipline Mechanical Calibration **Issue Date** 26.09.2015

Certificate Number C-0428 **Valid Until** 25.09.2017

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
I. DIMENSION			
1. CALIPER[§] (Vernier/Dial/Digital) L.C.: 10 μ m ^Φ	0 to 1000 mm 0 to 2000 mm	21 μ m 51 μ m	Using Gauge Block Set External Micrometer & Caliper Checker By Comparison Method
2. DEPTH GAUGE[§] (Vernier/Dial/Digital) L.C.: 10 μ m L.C.: 20 μ m ^Φ	0 to 300 mm 0 to 600 mm	17 μ m 22 μ m	Using Depth Micro Checker, Length Bar & Surface Plate By Comparison Method
3. INSIDE DIAL CALIPER[§] L.C.: 25 μ m L.C.: 50 μ m	Upto 35 mm >35 mm to 120 mm	22 μ m 41 μ m	Using Gauge Block & Accessories Set By Comparison Method
4. EXTERNAL MICROMETER[§] L.C.: 1 μ m ^Φ L.C.: 10 μ m	0 to 200 mm >200mm to 600 mm >600 mm to 1000 mm	5.2 μ m 16 μ m 20 μ m	Using Gauge Blocks Set & Length Bar By Comparison Method
5. MICROMETER SETTING ROD[§]	Upto 175 mm >175 mm to 575 mm >575 mm to 975 mm	7 μ m 10.4 μ m 16.7 μ m	Using Gauge Blocks Plunger Dial Gauge, Length Bar & Comparator Stand By Comparison Method
6. DEPTH MICROMETER[§] L.C.: 10 μ m	0 to 300 mm	8.2 μ m	Using Depth Micro Checker & Gauge Block Set By Comparison Method

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7. DIAL GAUGE ^s (Plunger Type) L.C.: 1 μm^{ϕ} L.C.: 10 μm	0 to 25 mm 0 to 100 mm	3 μm 13.3 μm	Using Single Axis Measuring Machine By Comparison Method
8. DIAL GAUGE ^s (Lever Type) L.C.: 1 μm L.C.: 2 μm^{ϕ}	0 to 0.14 mm 0 to 0.18 mm	3 μm 3 μm	Using Single Axis Measuring Machine By Comparison Method
9. BORE GAUGE WITH DIAL ^s (For Transmission Accuracy) L.C. : 1.0 μm^{ϕ}	Upto 2.0 mm	3 μm	Using Single Axis Measuring Machine By Comparison Method
10. DIAL THICKNESS GAUGE ^s L.C.: 10 μm	Upto 25 mm	11 μm	Using Gauge Block Set
11. HEIGHT GAUGE ^s (Vernier/Dial/Digital) L.C.: 10 μm^{ϕ} L. C. : 20 μm	0 to 600 mm 0 to 1000 mm	21 μm 29 μm	Using Caliper Checker, Length Bar & Surface Plate By Comparison Method
12. PLUG GAUGE ^s	Upto 225 mm	6.5 μm	Using Gauge Block Set & Dial with Comparator Stand by Comparison Method

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13. CYLINDRICAL MEASURING PIN \$	Upto 20 mm	3.4 μ m	Using Single Axis Measuring Machine by Comparison Method
14. PLAIN RING GAUGE \$	Upto 125 mm	5.2 μ m	Using Single Axis Measuring Machine & Master Ring by Comparison Method
15. SNAP / GAP GAUGE \$	>3 mm to 360 mm	8.4 μ m	Using Gauge Block Set by Comparison Method
16. FEELER GAUGE \$	Upto 1 mm	4.9 μ m	Using External Micrometer by Comparison Method
17. THREAD PLUG GAUGE\$ (Effective Diameter)	1 mm to 150 mm	4.5 μ m	Using Single Axis Measuring Machine, Gauge Block & Thread Measuring Wires
18. THREAD RING GAUGE\$ (Effective Diameter)	6 mm to 100 mm	4.5 μ m	Using Single Axis Measuring Machine & Master Ring Gauge
19. PISTOL CALIPER \$ L.C. 0.1 mm	Upto 70 mm	86 μ m	Using Slip Gauge by Comparison Method
20. BEVEL PROTRACTOR / ANGLE PROTRACTOR \$ L.C. 5 '	upto 360°	4' of arc	Using Angle Gauge by Comparison Method
21. COMBINATION SQUARE SET \$ L.C. 1°	Upto 360°	35' of arc	Using Angle Gauges by Comparison Method

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22. STEEL SCALE \$	Upto 1000 mm	$240 \sqrt{\frac{L}{1000}} \mu\text{m}$ (Where L in mm)	Using Scale & Tape Calibrator by Comparison Method
23. MEASURING TAPE \$	Upto 100 m	$240 \sqrt{\frac{L}{1000}} \mu\text{m}$ (Where L in mm)	Using Scale & Tape Calibrator by Comparison Method
24. SURFACE PLATE#	Upto 3000 mm x 2000 mm	$1.7 \times \sqrt{\frac{L+W}{125}} \mu\text{m}$ (Where L & W in mm)	Using Electronic level by Comparison Method
25. STRAIGHT EDGE# (For Straightness)	Upto 1000 mm	$1.7 \times \sqrt{\frac{L+W}{125}} \mu\text{m}$ (Where L & W in mm)	Using Electronic Level by Comparison Method
26. MASTER FOIL OF COATING THICKNESS GAUGE \$	Upto 1200 μm	4.9 μm	Using External Micrometer
27. COATING THICKNESS GAUGE \$	Upto 1200 μm	15 μm	Using Master Foils by Comparison Method
28. MASTER BLOCK FOR ULTRASONIC THICKNESS GAUGE\$	Upto 100 mm	6.3 μm	Using Digital Outside Micrometer, Gauge Block, Dial & Comparator Stand by Comparison Method

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29. ELECTRONIC EXTENSOMETER * L.C. 0.001 mm	1 mm Traverse 50 mm Gauge Length	6.9 μ m	Using Electronic Probe With DRO by Comparison Method

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

\$Only in Permanent Laboratory

*Only for Site Calibration

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

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.