

Laboratory Q-Tech Engineering Services, S-134, C/o, Precision Engineering Works, MIDC, Bhosari, Pune, Maharashtra

Accreditation Standard ISO/IEC 17025:2005

Discipline Mechanical Calibration **Issue Date** 14.05.2015

Certificate Number C-0917 **Valid Until** 13.05.2017

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Quantity Measured / Instrument	Range/ Frequency	* Calibration Measurement Capability (\pm)	Remarks
I. DIMENSION			
1. EXTERNAL MICROMETER^{\$}			
L.C. 1 μm^{Φ}	Up to 100 mm >100 mm to 300 mm	1.4 μm 3.0 μm	Using Slip Gauge Blocks Gr '0' / Long Slip Gauges, by Comparison Method
2. DEPTH MICROMETER^{\$}			
L.C.: 10 μm	Up to 300 mm	8.8 μm	Using Slip Gauge Blocks Gr '0', by Comparison Method
3. INTERNAL MICROMETER^{\$}			
L.C.: 10 μm	Up to 600 mm	8.2 μm	Using Slip Gauge Blocks Gr '0', by Comparison Method
4. CALIPER^{\$}			
(Vernier /Dial/Digital)			
L.C.: 0.01 mm ^{Φ}	Up to 600 mm	15.0 μm	Using Slip Gauge Blocks Gr '0' & Caliper Checker , Long Slip Gauge, by Comparison Method
5. HEIGHT GAUGE^{\$}			
(Vernier /Dial/Digital)			
L.C. : 0.01 mm ^{Φ}	Up to 600 mm	13.0 μm	Using Slip Gauge Blocks Gr '0' & Caliper Checker , Long Slip Gauge, by Comparison Method
6. DEPTH GAUGE^{\$}			
(Vernier /Dial/Digital)			
L.C.: 0.01 mm ^{Φ}	Up to 300 mm	15.0 μm	Using Slip Gauge Blocks Gr '0' & Caliper Checker, by Comparison Method

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7. PLUNGER DIAL GAUGE / COMPARATOR ^{\$} L.C.: 0.001 mm L.C.: 0.001 mm ^Φ	Up to 1 mm Up to 25 mm	1.2 μ m 2.6 μ m	Using Electronic Dial Calibration Tester by Comparison Method
8. LEVER DIAL GAUGE ^{\$} L.C.: 0.001 mm ^Φ L.C.: 0.01 mm	Up to 0.2 mm Up to 1 mm	1.8 μ m 5.9 μ m	Using Electronic Dial Calibration Tester by Comparison Method
9. BORE GAUGE ^{\$}	Transmission only 0 to 2 mm	4.0	Using Electronic Dial Calibration Tester by Comparison Method
10. DIAL SNAP GAUGE ^{\$}	Up to 150 mm	3.9	Using Slip Gauge Block Gr '0', by Comparison Method
11. DIAL THICKNESS GAUGE / PISTOL CALIPER ^{\$} L.C.: 0.01 mm L.C.: 0.1 mm	Up to 30 mm Up to 50 mm	5.9 μ m 60 μ m	Using Slip Gauge Block Gr '0' by Comparison Method
12. BEVEL PROTRACTOR/ ANGLE PROTRACTOR / COMBINATION SET ^{\$} L.C.: 5' ^Φ	Up to 360°	3.6'	Using Angle Gauge Block Gr '0' by Comparison Method
13. PLAIN PLUG GAUGE / SETTING PLUG GAUGE / OD MASTER / HEIGHT MASTER / WIDTH GAUGE / PLAIN MANDRILL ^{\$}	Up to 50 mm > 50 mm to 100 mm > 100 mm to 300 mm	1.6 μ m 2.0 μ m 4.0 μ m	Using Slip Gauge Block Gr '0' & Comparator with Stand, by Comparison Method

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14. SNAP GAUGE / GAP GAUGE ^{\$}	Up to 100 mm > 100 mm to 200 mm > 200 mm to 300 mm	1.5 μ m 3.0 μ m 5.0 μ m	Using Slip Gauge Block Gr '0', by Comparison Method
15. THREAD PLUG GAUGE ^{\$} Effective Dia. / Major Dia.	Up to 100 mm	3.4 μ m	Using FCDM with Electronic probe by Comparison Method
16. TAPER THREAD PLUG GAUGE ^{\$} Effective Dia. / Major Dia.	Up to 100 mm	4.8 μ m	Using FCDM with Electronic probe, by Comparison Method
17. FEELER GAUGE SET ^{\$}	Up to 1 mm	3.0 μ m	Using Digital Micrometer, By Comparison Method
18. CYLINDRICAL SETTING MASTER ^{\$}	Up to 100 mm	2.0 μ m	Using Slip Gauge Block Gr '0' & Comparator with Stand, by Comparison Method
19. MEASURING PIN/ THREAD MEASURING WIRE ^{\$}	Up to 20 mm	1.5 μ m	Using Slip Gauge Block Gr '0' & Comparator with Stand, by Comparison Method
20. MICROMETER SETTING STICKS ^{\$}	Up to 100 mm > 100 mm to 300 mm > 300 mm to 600 mm	2.0 μ m 3.7 μ m 7.8 μ m	Using Slip Gauge Block Gr '0', Comparator with Stand, Single Axis Measuring M/C, by Comparison Method
21. PLAIN RING GAUGE ^{\$}	Up to 100 mm > 100 mm to 300 mm	6.0 μ m 6.5 μ m	Using Electronic Height Gauge 2D, by Comparison Method
22. COATING THICKNESS GAUGE ^{\$}	Up to 2000 μ m	5.0 μ m	Using Master Thickness Foils, Comparison Method,

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	Quantity Measured / Instrument	Range/ Frequency	* Calibration Measurement Capability (±)	Remarks
23.	COATING THICKNESS FOILS ^{\$}	Up to 2 mm	1.5 µm	Using Electronic Probe with Comparator stand, by Comparison Method
24.	DIAL CALIBRATION TESTER ^{\$} (Micrometer Lead Type) L.C.: 0.0002 mm ^Φ	Up to 25 mm	2.4 µm	Using Electronics Probe, by Comparison Method
25.	ELECTRONIC PROBE / COMPARATOR ^{\$} L.C.: 0.0001 mm ^Φ	Up to 25 mm	0.7 µm	Using Slip Gauge & Comparator with stand, by Comparison Method
26.	COMPARATOR STAND ^{\$} (Flatness of base)	Up to 150 mm	3.7 µm	Using Single Axis Measuring M/C, by Comparison Method
27.	INSIDE DIAL CALIPER / TWO PIN DIAL ^{\$} L.C.: 0.01 mm ^Φ	Up to 100 mm	7.0 µm	Using Digital Micrometer, by Comparison Method
28.	V BLOCK / PARALLEL BLOCK ^{\$} Parallelism /Symmetricity Squareness	Up to 150 mm	7.0 µm 16.0 µm	Using Electronics Height Gauge 2D, Surface Plate & Plain Mandrill, by Comparison Method
29.	ENGINEERS SQUARE ^{\$} Parallelism/ Straightness/ Flatness Squareness	Up to 300 mm	6.2 µm 16.0 µm	Using Electronic Height Gauge 2D, Surface Plate, by Comparison Method

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30. ANGLE PLATE / BOX PLATE ^{\$} Parallelism / Flatness/ Squareness	Up to 300 mm	6.2 μ m 16.0 μ m	Using Electronic Height Gauge 2D, Surface Plate, by Comparison Method
31. 'V' ANVIL MICROMETER ^{\$} L.C.: 0.001 mm ^Φ	Up to 100 mm	6.0 μ m	Using Setting Master, by Comparison Method
32. CALIPER CHECKER / STEP GAUGE ^{\$}	Up to 600 mm	9.6 μ m	Electronic Height Gauge 2D, Surface Plate, 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.

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