

Laboratory TATA Motors – CVBU, Pune-Metrology Laboratory, Pimpri Plant,
Pimpri, Pune, Maharashtra
Location 1: Pimpri Plant, Pimpri, Pune, Maharashtra
Location 2: Chinchwad Plant, Chinchwad, Pune, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2431 (in lieu of C-0067)

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Validity 15.12.2017 to 14.12.2019

Last Amended on -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
LOCATION 1				
I.	DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)			
	Reference Gauges			
1.	Slip Gauge [§]	Up to 25 mm > 25 mm to 50 mm > 50 mm to 100 mm	0.15 μ m 0.22 μ m 0.40 μ m	Using Slip Gauge Calibration Set Up
2.	Setting Ring Gauge [§]	3 mm to 200 mm	2.0 μ m	Using Universal Horizontal Metroscope
3.	Thread Measuring Wires [§]	0.17 mm to 6.35 mm	1.1 μ m	Using Universal Horizontal Metroscope
	Limit Gauges			
4.	Limit Snap Gauge [§]	> 14 mm to 75 mm > 75 mm to 150 mm	1.25 μ m 1.50 μ m	Using Universal Length Measuring System DMS 680
5.	Plain Plug Gauge [§]	Up to 50 mm 50 mm to 100 mm 100 mm to 200 mm	1.25 μ m 1.5 μ m 2.0 μ m	Using Universal Horizontal Metroscope
6.	Thread Plug Gauge [§]	M3 to M200 (Effective Diameter)	3.0 μ m	Using Universal Horizontal Metroscope
7.	Thread Ring Gauge [§]	M4 to M180 (Effective Diameter)	3.0 μ m	Using Universal Horizontal Metroscope

Shally Sharma
Convenor

Avijit Das
Program Director

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
Measuring Instruments				
8.	Caliper ^s (Vernier, Dial, Digital) L.C.: 0.01 mm ϕ	0 to 300 mm 0 to 600 mm 0 to 1000 mm	12.0 μ m 18.0 μ m 20.0 μ m	Using Slip Gauge Set
9.	Micrometer External ^s L.C.: 1 μ m ϕ L.C.: 5 μ m	Up to 100 mm Up to 300 mm 300 mm to 600 mm	2.0 μ m 5.0 μ m 7.0 μ m	Using Slip Gauge Set
10.	Three Point Internal Micrometer ^s L.C.: 1 μ m L.C.: 5 μ m L.C.: 10 μ m	6 mm to 12 mm 11 mm to 100 mm 100 mm to 200 mm	3.0 μ m 3.5 μ m 6.5 μ m	Using Setting Ring
11.	Dial Gauge- Plunger Type ^s L.C.: 0.5 μ m ϕ L.C.: 10.0 μ m	0.025 mm 0 to 1 mm 0 to 10 mm	2.0 μ m 2.0 μ m 3.5 μ m	Using Dial Calibration Tester
12.	Dial Gauge - Lever Type ^s L.C.: 2 μ m L.C.: 10 μ m	0 to 0.20 mm 0 to 0.80 mm	2.0 μ m 3.5 μ m	Using Dial Calibration Tester
13.	Dial Snap Gauge ^s	Up to 150 mm	3.5 μ m	Using Slip Gauge Set
14.	Dial Bore Gauge ^s (Up to 400 mm)	Moving Anvil Range 1.0 mm	3.0 μ m	Using Universal Horizontal Metroscope

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Angle Measurement				
15.	Bevel Protractor [§]	0°- 90°- 0°	5 min. of arc	Using Angle Gauge
16.	Angular Blocks [§] (on 75 mm Length)	360°	15 sec. of arc	Using 3 CMM
17.	Taper Plug Gauge & Taper Ring Gauge [§] (On 35 mm Length)	20° (alpha)	12 sec. of arc	Using 3 CMM
Form Measurement				
18.	Surface Plate [§]	Up to 2500 mm x 1600 mm	$1.0 \times \sqrt{\frac{(L+W)}{130}} \mu\text{m}$ Where L = Length in mm & W = Width in mm	Using Electronic Level (Make-Wyler) Base Length = 130 mm
II. DIMENSION (PRECISION INSTRUMENTS)				
Length Measurement				
1.	Length Bars [§]	Up to 500 mm	2.4 μm	Using 3 Co-ordinate Measuring Machine
Form Measurement				
2.	Roundness Measuring Equipment [§]	Up to 300 \varnothing (Internal/External) Radial & Axial Accuracy of Spindle Axis	0.6 μm	Using Glass Hemisphere
3.	Roundness Master [§]	Up to 0.02 mm	0.62 μm	Using Roundness Measuring Equipment

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Roughness Measurement				
4.	Roughness Measuring Equipment ^s	R _a (0.3 μ m to 6.3 μ m)	7.4%	Using Roughness Ball/Glass standard
5.	Surface Roughness ^s	R _a (0.3 μ m to 6.3 μ m)	7.5 %	Using Roughness Measuring Equipment

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<u>MECHANICAL CALIBRATION</u>				
LOCATION 2				
I. DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)				
Limit Gauges				
1.	Snap Gauge ^s	Up to 75 mm 75 mm to 150 mm	1.3 μ m 1.50 μ m	Using Slip Gauge Set
2.	Plain Plug Gauge ^s	Up to 100 mm	2.0 μ m	Using Dial Comparator with Stand
Measuring Instruments				
3.	Caliper ^s (Vernier, Dial, Digital) L.C. 0.01 mm ϕ	0 to 300 mm 0 to 600 mm	12.0 μ m 18.0 μ m	Using Slip Gauge Set
4.	Micrometer External ^s L.C.: 1 μ m ϕ L.C.: 5 μ m ϕ	Up to 100 mm Up to 300 mm 300 mm to 500 mm	2.0 μ m 5.0 μ m 7.0 μ m	Using Slip Gauge Set
5.	Three Point Internal Micrometer ^s L.C.: 1.0 μ m ϕ L.C.: 5.0 μ m L.C.: 10.0 μ m	6 mm to 12 mm 11 mm to 100 mm 100 mm to 125 mm	3.0 μ m 3.5 μ m 6.5 μ m	Using Setting Ring
6.	Dial Snap Gauge ^s	Up to 150 mm	3.0 μ m	Using Slip Gauge Set

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
7.	Dial Gauge - Plunger Type [§] L.C.: 0.5 μm [¶] L. C.: 10.0 μm	0.025 mm 0 to 1 mm 0 to 10 mm	2.0 μm 2.0 μm 3.5 μm	Using Dial Calibration Tester
8.	Dial Gauge-Lever Type [§] L.C.: 2 μm L.C.: 10 μm	0 to 0.20 mm 0 to 0.80 mm	2.0 μm 3.5 μm	Using Dial Calibration Tester
9.	Dial Bore Gauge [¶] (Up to ϕ 400 mm) L.C.: 1 μm	Moving Anvil Range 1.0 mm	3.5 μm	Using Dial Calibration Tester
Angle Measurement				
10.	Bevel Protractor [§]	0°- 90°- 0°	5 min of arc	Using Angle Gauge Set
II. DIMENSION (PRECISION INSTRUMENTS)				
Roughness Measurement				
1.	Roughness Measurement Equipment [§]	R _a (0.30 μm to 6.3 μm)	6.1 %	Using Roughness Glass Standard.
2.	Surface Roughness Master [§]	R _a (0.30 μm to 6.3 μm)	7 %	Using Roughness Measuring Equipment

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

[§] Only in Permanent Laboratory

[¶] 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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