

Laboratory Metrology Laboratory, Tata Motors Limited, Plot No.-1, Sector-11, IIE
SIDCUL, Pantnagar Works, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2829 **Page** 1 of 5

Validity 30.08.2018 to 29.08.2020 **Last Amended on** -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I.	DIMENSION (BASIC MEASURING INSTRUMENTS, GAUGE ETC.)			
1.	Caliper (Digimatic/ Vernier/ Dial) ^{\$} L.C. 0.01 mm L.C. 0.02 mm L.C. 0.05 mm	0 to 600 mm	10.3 μ m 15 μ m 35 μ m	Using Caliper Checker
2.	External Micrometer ^{\$} (Length, Flatness) L.C. 0.001 mm L.C. 0.01 mm	0 to 100 mm	2.0 μ m 6.2 μ m	Using Slip Gauge Set
3.	Height Gauge (Digimatic /Vernier/ Dial) (Length) ^{\$} L.C. 0.01 mm L.C. 0.02 mm L.C. 0.05 mm	0 to 1000 mm	11 μ m 17 μ m 40 μ m	Using Check Master
4.	Plunger Dial Gauge ^{\$} L.C. 0.001 mm L.C. 0.01 mm	0 to 25 mm	1.2 μ m 6.0 μ m	Using Dial Indicator Calibrator
5.	Lever Dial Gauge ^{\$} L.C. 0.001 mm L.C. 0.002 mm L.C. 0.01 mm	0 to 1 mm	1.2 μ m 2.0 μ m 6.0 μ m	Using Dial Indicator Calibrator

Rajeshwar Kumar
Convenor

Avijit Das
Program Manager

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6.	Dial Comparator ^s L.C. 0.0005 mm L.C. 0.001 mm	0.1 mm	1.1 μ m 1.2 μ m	Using Dial Indicator Calibrator
7.	Digital Dial Gauge ^s L.C. 0.001 mm L.C. 0.01 mm	Up to 25 mm	1.2 μ m 6.0 μ m	Using Dial Indicator Calibrator
8.	Plain /Setting Plug Gauge ^s (Diameter)	0.17 to 100 mm	2.0 μ m	Using Length Measuring Machine
9.	Plain /Setting Ring Gauge (Diameter) ^s	3 to 100 mm	2.0 μ m	Using Length Measuring Machine
10.	Thread / Wear Check Plug Gauge ^s (Effective Diameter)	M3 to M50	2.0 μ m	Using Length Measuring Machine
11.	Thread /Wear Check Ring Gauge ^s (Effective Diameter)	M5 to M50	2.0 μ m	Using Length Measuring Machine
12.	Dial Bore Gauge L.C.-0.001mm	Upto 1.5mm Travel	2.0 μ m	Using Length Measuring Machine
13.	Radius Gauge ^s (Radius)	Upto 25mm	9.0 μ m	Using Optical Profile Projector
14.	Thread Pitch Gauge ^s (Pitch)	Upto 6 mm	9.0 μ m	Using Optical Profile Projector

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
15.	Feeler Gauge ^{\$} (Thickness)	Upto 2 mm	2.2 μ m	Using Digimatic Micrometer
16.	Standard Measuring Pin ^{\$} (Diameter)	0.17to 25mm	2.2 μ m	Using Length Measuring Machine
17.	Width Gauge ^{\$} (Thickness)	Upto 25mm	2.2 μ m	Using Digimatic Micrometer
18.	V-Block (Flatness, Parallelism, Perpendicularity) ^{\$}	Up to 300 mm	6.5 μ m	Using 3-D CMM
19.	Slip Gauge Block ^{\$} (Centre Length)	0.5 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	0.12 μ m 0.16 μ m 0.26 μ m 0.30 μ m	Using Gauge Block Comparator / Slip Gauge Grade 'K'
20.	Micrometer Setting Master (Length) ^{\$}	Up to 100 mm	2.0 μ m	Using Length Measuring Machine
21.	Try Square ^{\$} (Perpendicularity)	Up to 300 mm	6.5 μ m	Using 3-D CMM
22.	Caliper Checker ^{\$} (length)	Up to 600 mm	6.6 μ m	Using 3-D CMM
23.	Parallel Block ^{\$} (Parallelism)	Up to 600 mm	6.5 μ m	Using 3-D CMM
24.	Snap Gauge ^{\$} (Width)	Up to 100 mm	2.5 μ m	Using Slip gauge Set

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
25.	Foil ^s (Thickness)	Up to 1 mm	2 μ m	Using Length Measuring Machine
26.	Dial Caliper gauge ^s (External) L.C. 0.01 mm L.C. 0.02 mm L.C. 0.05 mm	Up to 100 mm	10 μ m 20 μ m 30 μ m	Using Slip gauge Set
27.	Bevel Protractor ^s (L.C.-5 min) (Angle)	0 to 180°	5 minute	Using Angle Gauge
28.	Blue Contact Gauge ^s (Concentricity)	Up to $\varnothing$ 30 mm	2.0 μ m	Using Roundness Tester
29.	Mandrel ^s (Roundness, Concentricity, Taper , Cylindricity, Total Radial Runout)	Up to $\varnothing$ 50 mm	2.0 μ m	Using Roundness Tester
II.	DIMENSION (PRECISION INSTRUMENTS)			
1.	3-D Coordinate Measuring Machine [#]	Up to 1200 mm	6.0 μ m	Using Check Master
2.	Electronic Height Gauge [#] L.C. 0.0001 mm	Up to 1000 mm	6.0 μ m	Using Check Master, Slip Gauge Set, Long gauge blocks

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III.	TORQUE GENERATING DEVICES			
1.	Torque Wrench* (Adjustable and Click-Type II, Class A, C)	1 Nm to 20 Nm 20 to 675 Nm	2% 1.6%	Using Torque Wrench Calibrator
2.	Torque Meter* (Dial Scale, Type I, Class B)	1 Nm to 20 Nm 20 to 200 Nm	2.0% 2.6%	Using Torque Wrench Calibrator

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

^s 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.

^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.

** Relative accuracy error has not been considered for CMC estimation.

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