

Laboratory **Kosaka Calibration Lab, No. 12, Balaji Nagar, Ambattur, Chennai, Tamil Nadu**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **CC-2611** **Page** **1 of 8**

Validity **03.03.2018 to 02.03.2020** **Last Amended on** **16.03.2018**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I.	Dimension (Basic Measuring Instrument, Gauge etc.)			
1.	Caliper ^s (Mech/Electronic / Digital) LC: 0.01mm	Up to 300 mm 300 mm to 600mm 600 mm to 1000 mm	10.0 µm 14.2 µm 19.0 µm	Using Caliper Checker By Comparison Method
2.	Depth Gauge ^s (Mech/Electronic / Digital) LC: 0.01mm	Up to 150 mm Up to 300 mm Up to 600 mm	7.0 µm 13.3 µm 15.0 µm	Using Gauge, Block By Comparison Method
3.	Height Gauge ^s (Vernier/Dia/ Digital) L.C: 0.01mm	Up to 600 mm 0 to 1000 mm	10 µm 21 µm	Using Caliper Checker By Comparison Method
4.	External Micrometer ^s (Analog/ Digital) L.C: 0.001mm	Up to 100 mm 100 mm to 300 mm 300 mm to 500 mm	1.6 µm 6.2 µm 7.0 µm	Using Gauge Blocks/ Long Gauge Blocks By Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
5.	Depth Micrometer [§] (Analog/ Digital) L.C: 0.01mm	Up to 300 mm	6.2 μ m	Using Gauge Blocks/ Long Gauge Blocks By Comparison Method
6.	Plunger Dial [§] (Analog/ Digital) L.C: 0.001mm	Up to 10 mm	1.7 μ m	Using Electronic probe by comparison method
		Up to 50 mm	2.5 μ m	Using ULM
7.	Lever Dial [§] (Analog/ Digital) L.C: 0.001mm	Up to 2 mm Up to 1 mm	5.2 μ m 1.7 μ m	Using Electronic probe by comparison method
8.	Bore Gauges [§] (Stem / split Type) Transmission Only L.C: 0.001mm	Up to 3mm	3.0 μ m	Using Electronic probe by comparison method
9.	Dial Thickness Gauge [§] LC: 0.001 mm	Up to 10 mm	6.6 μ m	Using Gauge blocks by comparison method
10.	Snap Gauge [§] (Fixed / Adjustable)	3 mm to 100 mm 100mm to 300 mm	1.2 μ m 3.0 μ m	Using ULM by comparison Method
		300mm to 500mm	8.2 μ m	Using 2D by comparison Method

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Convenor

Avijit Das
Program Director

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11.	Blade Micrometer ^s Ball Micrometer Disc Micrometer Point Micrometer LC: 0.001mm	Up to 100 mm	1.5 μ m	Using Gauge Blocks By Comparison Method
12.	Feeler Gauge ^s	0.05 mm to 2 mm	2.4 μ m	Using Digital Micrometer By Comparison Method.
13.	Micrometer Setting Rod ^s	25 mm to 100 mm 100mm to 500 mm	1.5 μ m 3.0 μ m	Using Ulm By Comparison Method
14.	Cylindrical Measuring Pins ^s	0.1mm to 20mm	1.20 μ m	Using ULM By Comparison Method
15.	Plain Plug Gauge ^s	1mm to 100 mm 100mm to 300 mm	1.4 μ m 1.8 μ m	Using ULM By Comparison Method
16.	Plain Setting Ring Gauge ^s	3mm to 100 mm 100mm to 300mm	1.2 μ m 3.0 μ m	Using Ulm & Master Ring Gauge By Comparison Method
17.	Thread Plug Gauge ^s	3mm to 100 mm 100mm to 300 mm	2.1 μ m 3.5 μ m	Using ULM & Thread Measuring Wire By Comparison Method
18.	Thread Ring Gauge ^s	3 mm to 100 mm 100mm to 300 mm	2.0 μ m 4.0 μ m	Using ULM And Master Ring Gauge By Comparison Method
19.	Taper Thread Plug Gauge ^s	6 mm to 100 mm	4.0 μ m	Using ULM By Comparison Method

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20.	Groove Dial Gauge [§] L.C: 0.005 mm ^Φ	5 mm to 55 mm	6.5 μ m	Using gauge Blocks by comparison Method
21.	Thread Pitch Gauge [§]	Up to 25 mm	3.5 μ m	Using VMS by Comparison method
22.	Flush Pin Gauge [§]	Up to 300 mm	5.0 μ m	Using 2D Height gauge by Comparison method
23.	Grid Glass Master [§]	Up to 300 mm	4.2 μ m	Using VMS by Comparison Method
24.	Cylindrical Setting Master [§]	3 mm to 300mm	1.6 μ m	Using ULM by Comparison Method
25.	Radius Gauge [§]	0.6 mm to 25mm	3.1 μ m	Using VMS by Comparison Method
26.	LVDT Probe with DRO [§] LC: 0.0001 mm	Up to 25mm	0.8 μ m	Using K Grade Slip gauge by Comparison Method
27.	Bevel Protector / Combination set [§] LC: 1 arc Min	0 to 360°	7.0 arc min	Using VMS by Comparison method
28.	Thickness Foils [§]	5 mm to 2000 μ m	2.10 μ m	Using ULM by Comparison Method

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29.	Contour Measuring Machine [#]	X-Axis = 100mm Z – Axis – 56mm Radius Error	1.8 μ m 1.8 μ m 1.4 μ m	Using Contour master
30.	V Block ^s Flatness Parallelism Symmetricity	300mm x 300 mm	3.0 μ m 6.0 μ m 6.0 μ m	Using Cylindrical Mandrel with dial Gauge by Comparison Method
31.	Stick Micrometer ^s	50 mm to 500 mm	6.30 μ m	Using ULM by Comparison Method
32.	Dial Calibration Tester ^s L.C.0.0001 mm	Up to 25 mm	1.7 μ m	Using ULM and Electronic probe by Comparison method
33.	Three Point Bore Micrometer ^s L.C.0.001mm	6 mm to 100 mm	4.0 μ m	Using ULM / Master Ring Gauge By Comparison Method
34.	Steel Rule ^s L.C.: 0.5mm	Up to 1000 mm	30.0 μ m	Using VMS By Comparison Method
35.	Long Gauge Block/ Length Bar ^s	100mm to 500 mm	3.8 μ m	Using ULM By Comparison Method
36.	Comparator stand ^s Flatness	300mm x 300 mm	4.0 μ m	Using Height Gauge With Dial Gauge By Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
37.	Slip Gauge Accessories ^s Flatness only	Up to 300 mm	3.0 μ m	Using Optical Flat
38.	Thread measuring Wire ^s	0.17mm to 6.35 mm	1.15 μ m	Using ULM By Comparison Method
39.	Universal Length Measuring Machine [#]	0 to 100 mm 100 mm to 500 mm	0.8 μ m 1.6 μ m	Using O Grade Slip Gauge Block
40.	Surface Plate [#]	2000mm X 2000 mm	$2.5 \sqrt{\frac{L+W}{100}}$ μ m @ Where L=Length in mm W=Width in mm	Using Sprit Level By Comparison Method
41.	Video Measuring System [#]	300mm X 200 mm	4.20 μ m	Using Glass Scale by Comparison Method
42.	Electronic Height Gauge [#]	Up to 600 mm	5.0 μ m	Using Gauge Block and Long Gauge Block Comparison Method
43.	Tools Makers Microscope [*]	Linear – up to 300 mm Angle 0 – 360°	6.5 μ m 3.0 Arc .Min	Using Glass Scale by Comparison Method
44.	Contour Master ^s (Radius Standard)	Radius Error up to 56 mm Linear Error up to 100 mm	1.4 μ m 1.8 μ m	Using Contour Measuring Machine

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45.	Roundness Master and Cylindricity Master [§]	1800 μ m Roundness Straightness Cylindricity	0.07 μ m 1.00 μ m 1.37 μ m	Using Roundness Tester
II. DIMENSION (PRECISION INSTRUMENTS)				
1.	Roughness Standards for Roughness parameter [§]	Ra (600 μ m) Rt Rz Rmax	6.02% 7% 6.71% 7.19%	Using Roughness Tester with Roughness master
2.	Roundness Tester [#]	Roundness Dia 450 mm Magnification Straightness Cylindricity	0.07 μ m 0.40 μ m 1.00 μ m 1.37 μ m	Using Cylindricity master
3.	Roughness Tester [#]	Ra (600 μ m) Rt Rz Rmax Depth	5.92% 7% 6.71% 7.19% 8.5%	Using Roughness master
4.	Profile Projector [#] Linear Magnification Angle	Up to 300 mm 5X to 50X 0 to 360°	6.5 μ m	Using Glass Scale / Angle Gauge By Comparison Method
III. PRESSURE INDICATING DEVICES				
1.	Pressure (Pneumatic) Pressure Gauges [§]	0 to 2 bar	0.003 bar	Using Pressure Calibrator with Uncertainty of 0.00024 bar

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		0 to 20 bar	0.02 bar	Using Pressure Calibrator with Uncertainty of 0.00016 bar
2.	Pressure (Pneumatic) Pressure Gauges [#]	0 to 40 bar	0.03 bar	Using Pressure calibrator With Uncertainty of 0.0052 bar
3.	Pressure (Hydraulic) Pressure Gauge [#]	0 to 700 bar	0.43 bar	Using Digital Pressure calibrator with Uncertainty of 0.091bar

* 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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