Laboratory	**Quality Laboratory, No-10, KEB Road, Newpet, Anekal, Bangalore, Karnataka**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**CC-2853** **Page 1 of 8**
Validity	**26.09.2018 to 25.09.2020** **Last Amended on 12.11.2018**

	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
I.	**DIMENSION (BASIC MEASURING INSTRUMENTS, GAUGES ETC.**			
1.	Plain Plug Gauge[$]	Up to 50 mm 50 mm to 100 mm 100 mm to 200 mm	1.3 μm 1.5 μm 2.0 μm	Using ULM
2.	Setting Plug Gauge[$]	Up to 50 mm 50 mm to 100 mm	1.0 μm 1.3 μm	Using ULM
3.	Cylindrical Measuring Pin[$]	0.1 mm to 20 mm	1.2 μm	Using ULM
4.	Setting Ring Gauge [$]	1.0 mm to 100 mm 100 mm to 275 mm	1.5 μm 2.0 μm	Using ULM
5.	Snap Gauges[$]	4 mm to 100 mm 100 mm to 150 mm	1.7 μm 2.8 μm	Using ULM
6.	Thread Plug Gauges / Wcp / Cp[$] (Major & Effective Dia)	2 mm to 125 mm	2.5 μm	Using ULM
7.	Thread Ring Gauge[$] (Effective Dia)	2 mm to 100 mm	2.5 μm	Using ULM
8.	Plunger / Digital Type Dial Gauge[$] L.C.: 0.0005 mm L.C. 0.001 / 0.002 mm	 Up to 1 mm Up to 50 mm	 1.2 μm 1.5 μm	Using Electronic Dial Gauge Calibrator

Ram Ashray
Convenor

Avijit Das
Program Manager

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9.	Electronic Comparator$ (Plunger / Lever) L.C.: 0.1 μm	Up to 2 mm	0.6 μm	Using Gauge Blocks
10.	Comparator Stand Base$ (Flatness)	250 mm x 250 mm	1.5 μm	Using CMM
11.	Universal Length Measuring Machine $ L.C: 0.1 μm	Up to 100 mm Above 100 Upto 300 mm	0.25+(L/320) μm 0.55+(L/200)μm L is in mm	Using Gauge Blocks
12.	External Micrometer $ L.C. 0.001 mm	Up to 500 mm	(1.8 + 6.5X) μm X in meter	Using Gauge Blocks
13.	Depth Micrometer $ L.C. 0.001 mm	Up to 500 mm	(1.8 + 6.5X) μm X in meter	Using Gauge Blocks
14.	Internal / Stick Micrometer $ L.C. 0.001 mm	Up to 500 mm	(1.8 + 6.5X) μm X in meter	Using ULM - Zeiss
15.	Vernier / Digital / Dial Caliper $ L.C.: 0.01 mm	Up to 1000 mm	(10 + 10X) μm X in meters	Using Gauge Blocks

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16.	Height Gauges $ (Vernier / Digital / Dial) L.C: 0.01 mm	Up to 1000 mm	(8 + 10X) μm X in meters	Using Gauge Blocks
17.	Dial Bore Gauges$ L.C: 0.001 mm	2 mm stroke	3.0 μm	Using ULM
18.	Spirit Level $ Sensitivity Only	1 mm /meter	7.8 μm/m	Using Electronic Level
19.	Gauge Blocks$	0 to 25 mm 25mm to 50 mm 50 mm to100 mm	0.24 μm 0.25 μm 0.40 μm	Using Gauge Block Calibrator
20.	Electronic Probe & DRO$ L.C: 0.1 μm	Up to 25 mm	1.0 μm	Using Gauge Blocks
21.	Dial Gauge Calibrator$ L.C: 0.1 μm	25 mm	0.8 μm	Using Gauge Blocks
22.	Surface Plate $	Up to 10 square meter	$0.8\sqrt{\frac{W+L}{100}}$ μm L & W in mm	Using Electronic Level
23.	Caliper Checker / Vernier Caliper Checker$	Up to 600 mm	5.0 μm	Using CMM
24.	Granite Square / Try Square $ (Squareness)	Up to 800 X 630 mm	4.0 μm	Using CMM

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25.	Taper Plug Gauge[$] Taper Angle Dimension Circularity Straightness	 10° Dimension Circularity Straightness	 5.00 arc of sec 3.14 μm 2.00 μm 2.00 μm	Using CMM
26.	Bevel Protector [$] L.C: 5'	0 - 360°	1 min of arc	Using VMS
27.	Bench Centre[$]	Up to 500 mm	8.0 μm	Using Mandrel
28.	Thread Measuring Wire [$]	Ø 0.17 to 6.35 mm	0.35 μm	Using ULM
29.	Plain Ring Gauge[$]	Ø 1 to 100 mm Above Ø 100 mm to 275 mm	1.5 μm 2.8 μm	Using ULM & Master Ring Gauge
30.	Setting Ring Gauge[$]	Ø 150 to 300 mm	3.0 μm	Using CMM
31.	Lever Type Dial Gauge[$] L.C.. 0.001mm	Upto 1.4 mm	1.5 μm	Using Electronic Dial Gauge Calibrator
32.	Feeler Gauge [$]	Upto 1 mm	1.5 μm	Using ULM
33.	Micrometer Setting Rod [$]	Upto 500 mm	(1 + 7X) μm X in meter	Using ULM
34.	Depth Gauge[$] (Vernier / Digital /Dial) LC: 0.01 mm	Upto 600 mm	10.0 μm	Using Gauge Blocks

	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
35.	3-Point Contact Internal Micrometer$ LC: 0.001 mm	10 mm to 75 mm	3.0 μm	Using Setting Ring Gauge
36.	V – Anvil Micrometer$ LC: 0.001 mm	2.3 mm to 100 mm	3.0 μm	Using Setting Plug & Cylindrical Meas. Pin
37.	Test Mandrel$ (Taper) Taper Angle Dimension Circularity Straightness Runout	Upto 500 mm	 3 Arc of Sec 2.7 μm 1.3 μm 1.7 μm 1.7 μm	Using CMM
38.	Master Cylinder$ Dimension Circularity Straightness Cylindricity Squareness	Upto 300 mm	 2.5 μm 1.3 μm 1.3 μm 1.5 μm 2.0 μm	Using CMM
39.	V – Block$ Parallelism Squareness Symmetricity	Upto 200 mm	 2.5 μm 2.0 μm 1.5 μm	Using CMM
40.	Straight Edge$	Upto 1000 mm	6.0 μm	Using CMM
41.	Angle Plate$ (Squareness)	Upto 600 x 600 mm	6.0 μm	Using CMM
42.	Parallel Block$ (Straightness & Parallelity)	Upto 300 mm	5.0 μm	Using CMM

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43.	Calibration Foils$	10 μm to 2000 μm	1.0 μm	Using ULM
44.	Coating Thickness Gauge$ LC: 0.001mm	1000 μm	4.0 μm	Using Foils
45.	Measuring Scale$ LC: 0.5 mm	Upto 1000 mm	21.0 μm	Using Tape & Scale Measuring Machine
46.	Measuring Tape$ LC: 1 mm	Upto 5,000 mm	(18 + 5X) μm X in meters	Using Tape & Scale Meas. M/c
47.	Pi Tape$ LC: 0.1 mm	Upto 2500 mm	(18 + 5X) μm X in meters	Using Tape & Scale Meas. M/c
48.	Radius Gauge$	Upto 25 mm	4.9 μm	Using VMS
49.	Thread Pitch Gauge$	0.3 to 6.0 mm 47.5ºto 60º	4.0 μm 2.25 Arc Min.	Using VMS
50.	Pistol Caliper$ LC: 0.10 mm	Upto 100 mm	52 μm	Using Gauge Blocks
51.	Grove Dial / Leg Caliper$ (OD) Gauge LC: 0.01 mm	Upto 150 mm	4.0 μm	Using Gauge Blocks
52.	Grove Dial / Leg Caliper $ (ID) Gauge LC: 0.005 mm	Ø 5to 150 mm	4.0 μm	Using Gauge Blocks

	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
53.	Dial Thickness Gauge[$] LC: 0.01 mm	Upto 10 mm	4.0μm	Using Gauge Blocks
54.	Spline Plug Gauge[$]	100 mm	5 μm	Using VMS
55.	Surface Plate[♣]	Upto 10 square meter	0.8 $\sqrt{\frac{W+L}{100}}$ μm L & W in mm	Using Electronic Level
56.	Electronic Height Gague[♣] L.C: 0.0001 mm	Up to 600 mm	5 μm	Using Gauge Blocks
57.	Vision Measuring System[♣] Linear Angle	Upto 300x200 mm Upto 180º	3.5 μm 160 Arc Sec.	Using Glass Scale
58.	Spline Ring Gauge[$]	100 mm	5 μm	Using VMS
59.	Spur/Helical Gears[$] Involute Profile Error Tooth Alignment Error Circular Pitch Error (Adjacent & Cumulative) Radial Run Out	1 – 25 Module	3.3 μm 3.3 μm 3.3 μm 3.2 μm	Using CMM
II.	**TORQUE GENERATING DEVICES**			
1.	Torque Wrench[$]	2 Nm to 1380 Nm	1.0 %	Using Torque wrench Calibrator

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III.	**PRESSURE INDICATING DEVICES**			
1.	Pressure Gauge[$]	0 to 30 bar	0.1% of rdg	Using Pressure Gauge Calibrator
2.	Vaccum Pressure Gauge[#]	0 to (-) 0.7 bar	1.35% of rdg	Using Pressure Gauge Calibrator
3.	Hydralic Pressure Gauge[$]	6.5 to 600 Kg/Cm ^{2}	0.18% of rdg	Using Dead Weight Calibrator
4.	Pneumatic Pressure Gauge[♣]	0 to 30 bar	0.1% Rdg.	Using Pressure Gauge Calibrator
IV.	**DIMENSION (PRECISION INSTRUMENTS)**			
1.	Coordinate Measuring Machine[♣]	Up to 500 mm	1.2+(L/250) μm L is in mm.	Using Gauge Blocks
2.	Length Measuring Machine[♣]	Up to 100 mm Above 100 Upto 300 mm	0.25+(L/320) μm 0.55+(L/200)μm L is in mm	Using Gauge Blocks
3.	Profile Projector[♣]	Magnification Linear Upto 300mm Angle	0.2 % 3.5 μm 160 Arc Sec	Using Glass Scale / Gauge Blocks
4.	Tool Makers Microscope[♣]	Upto 200 mm	2.5 μm	Using Gauge Blocks
5.	Bench Centre[♣] Parallelity Co-Axiality	Upto 500 mm	8.0 μm 7.0 μm	Using Mandrel

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**
[$]Only in Permanent Laboratory
[♣]Only for Site Calibration