

Laboratory	Dimensions, #128, 19th Cross, 8th Main, CHBS Layout, Vijayanagar, Bangalore		
Accreditation Standard	ISO/IEC 17025:2005		
Discipline	Mechanical Calibration	Issue Date	21.07.2015
Certificate Number	C-0314	Valid Until	20.07.2017
Last Amended on	26.10.2015	Page	1 of 8

Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
I. DIMENSION			
1. SLIP GAUGE ^{\$}	0.5 mm to 25 mm > 25 mm to 50 mm > 50 mm to 100 mm	0.22 μ m 0.25 μ m 0.41 μ m	Using Slip Gauge Calibrator & K Grade Gauge Block set by Comparison Method
2. ELECTRONIC HEIGHT GAUGE [#] L.C 0.0001 mm ^Φ	0 to 600 mm 0 to 1000 mm	5.5 μ m 7.7 μ m	Using Grade '0' Slip Gauge by Comparison Method
3. ELECTRONIC / LVDT PROBE ^{\$} L. C.: 0.0001 mm ^Φ L. C.: 0.001 mm ^Φ	0 to 50 mm 0 to 10 mm	1.1 μ m 1.5 μ m	Using Universal Length Measuring System
4. PROFILE PROJECTOR / TOOL MAKERS MICROSCOPE / OPTICAL MICROSCOPE [#] Linear Angular Magnification	L.C.:0.001 mm 100 X	3.2 μ m 5 minute 0.68 %	Using Glass Scale Using Angle Scale Using Reticule
5. CALIPER CHECKER / DEPTH MICROMETER CHECKER ^{\$}	0 to 300 mm 0 to 600 mm	5.2 μ m 6.5 μ m	Using Electronic Height Gauge
6. DIAL CALIBRATION TESTER/MICROMETER HEAD ^{\$} L. C.: 0.001 mm ^Φ	0 to 25 mm	2.3 μ m	Using LVDT Probe by Comparison Method

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Certificate Number	C-0314	Valid Until	20.07.2017
Last Amended on	26.10.2015	Page	2 of 8

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7.	RADIUS GAUGE^{\$}	Upto 25 mm	10 μ m	Using Profile Projector by Comparison Method
8.	THREAD PITCH GAUGE^{\$}	Pitch Angle	6.0 μ m 6 minute	Using Profile Projector by Comparison Method
9.	BEVEL PROTRACTOR COMBINATION SET^{\$} L.C.: 5 minute L.C.: 1°	0 – 90° - 0 0 – 180°	5 minute 30 minute	Using Profile Projector by Comparison Method
10.	SIEVES ^{\$} (Wire Mesh)	0.03 mm to 1 mm 1 mm to 100 mm	7 μ m 9 μ m	Using Profile Projector by Comparison Method
11.	PLAIN PLUG / PIN GAUGE /THREAD MEASURING WIRES^{\$}	Upto 10 mm >10 mm to 200 mm	1.7 μ m 2 μ m	Using Universal Length Measuring System by Comparison Method
12.	PLAIN RING GAUGE^{\$}	3 mm to 75 mm >75 mm to 200 mm	2.2 μ m 3.4 μ m	Using Universal Length Measuring System by Comparison Method
13.	SNAP GAUGE / GAP / LIMIT GAUGES^{\$}	Upto 100 mm >100 to 200	2.0 μ m 2.3 μ m	Using Universal Length Measuring System by Comparison Method
14.	FEELER GAUGE / CALIBRATION FOILS^{\$}	Upto 2 mm 2 to 10 mm	1.8 μ m 2.5 μ m	Using Universal Length Measuring System by Comparison Method
15.	THREAD PLUG GAUGE^{\$} (Effective & Major Dia)	Upto 30 mm 30 mm to 200 mm	2.5 μ m 2.62 μ m	Using Universal Length Measuring System by Comparison Method

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Last Amended on	26.10.2015	Page	3 of 8

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16.	THREAD RING GAUGE^{\$}	3 mm to 16 mm 16 mm to 200 mm	2.6 μ m 5.6 μ m	Using Universal Length Measuring System by Comparison Method
17.	EXTERNAL MICROMETER^{\$} (Vernier/Digital/Dial/ Flange/Point/Pitch) L. C.: 0.001 mm^Φ	0 to 150 mm 150 mm to 300 mm 300 mm to 1000 mm 1000 mm to 1500 mm	3.84 μ m 4.21 μ m 9.9 μ m 12.4 μ m	Using Grade '0' Slip Gauges by Comparison Method
18.	DEPTH MICROMETER^{\$} (Vernier/Digital/Dial) L. C. : 0.001 mm^Φ	0 to 25 mm	2.3 μ m	Using Grade '0' Slip Gauges by Comparison Method
19.	INTERNAL MICROMETER^{\$} L. C. : 0.001 mm^Φ	0 to 100 mm 100 mm to 500 mm	3 μ m 4 μ m	Using Grade '0' Slip Gauges by Comparison Method
20.	SETTING / EXTENSIONS RODS / ANVILS^{\$}	Upto 100 mm 100 mm to 500 mm 500 mm to 1000 mm	6.2 μ m 6.8 μ m 8.91 μ m	Using Grade 0 Slip Gauges / ULMS & Electronic Height Gauge
21.	VERNIER CALIPERS^{\$} (Analog/Digital/Dial) L.C.:0.01 mm L.C.: 0.01 mm^Φ L.C.: 0.02 mm L.C.: 0.02 mm	0 to 300 mm 0 to 1000 mm 0 to 600 mm 0 to 2000 mm	8 μ m 14 μ m 15 μ m 24 μ m	Using Grade '0' Slip Gauges by Comparison Method

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Last Amended on	26.10.2015	Page	4 of 8

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22. DEPTH VERNIER ^{\$} (Analog/Digital/Dial) L. C. : 0.01 mm ^Φ	0 to 300 mm 0 to 600 mm 0 to 1000 mm	11 μ m 12 μ m 13 μ m	Using Grade 0 Slip Gauges by Comparison Method
23. VERNIER HEIGHT GAUGE ^{\$} (Analog/Digital/Dial) L. C.: 0.01 mm ^Φ	0 to 600 mm 0 to 1000 mm	10 μ m 11 μ m	Using Grade 0 Slip Gauges by Comparison Method
24. GROOVE DIAL/LEG/DIAL CALIPER GAUGE/PISTOL (ID & OD) GAUGE ^{\$} L. C. : 0.001 mm ^Φ	Up to 150 mm	1.5 μ m	Using Grade 0 Slip Gauges Slip Gauge Accessories by Comparison Method
25. ENGINEER SQUARE / ANGLE PLATE ^{\$} Squarness Parallelism	Up to 500 mm	12.5 μ m 6.6 μ m	Using Electronic Height Gauge & Granite Square by Comparison Method
26. " V " BLOCK ^{\$} Squarness Parallelism Symmetricity	150 x 150 x 150 mm (L x B x H)	8.0 μ m 6.0 μ m 6.0 μ m	Using Electronic Height Gauge Granite Square Slip Gauge by Comparison Method

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Certificate Number	C-0314	Valid Until	20.07.2017
Last Amended on	26.10.2015	Page	5 of 8

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27. DIAL GAUGE - PLUNGER TYPE^s (Analog/Digital) L. C. : 0.0005 mm^Φ L. C. : 0.001 mm L. C. : 0.01 mm	0 to 12 mm 0 to 51 mm 0 to 100 mm	2.8 μm 2.9 μm 6.4 μm	Using Dial Calibration Tester with Electronic Probe by Comparison Method
28. DIAL GAUGE - LEVER TYPE^s L. C. : 0.001 mm^Φ L. C. : 0.002 mm	0 to 0.14 mm 0 to 0.2 mm	2.8 μm 2.96 μm	Using Dial Calibration Tester with Electronic Probe by Comparison Method
29. BORE GAUGE ^s L. C. : 0.001 mm	Transmission 2 mm	6.5 μm	Using Dial Calibration Tester with Electronic Probe Plunger Dial
30. 3 POINT MICROMETER^s L. C. : 0.001 mm^Φ	0 to 100 mm	4.79 μm	Using Setting Rings
31. COATING THICKNESS GAUGE^s	Up to 2 mm	3 μm	Using Thickness Foils
32. SPIRIT LEVEL / ELECTRONIC LEVEL^s	0.02 mm/m & 0.05 mm/m	6.7 μm/m	Using Electronic Level by Comparison Method
33. SURFACE PLATE[#]	4 m x 2 m	$1.74 \sqrt{\frac{L+W}{B}}$ L, W & B in m	Using Electronic Level by Comparison Method
34. TAPE / SCALE / PI TAPE^s	0 to 1 m	114 μm	Using Scale Calibrator by Comparison Method

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Last Amended on	26.10.2015	Page	6 of 8

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35.	PARALLELS BLOCK^{\$}	Up to 250 mm	6.1 µm	Using Electronic Height Gauge
36.	HARDNESS INDENTERS^{\$}	120°	15 minute	Using Profile Projector
II. ACOUSTIC				
1.	SOUND LEVEL CALIBRATOR^{\$}	94 dB & 114 dB	1.49 dB	Using Sound Level Meter
2.	SOUND LEVEL METER^{\$}	94 dB & 114 dB	1.31dB	Using Sound Level Calibrator
III. ACCELERATION AND SPEED				
1.	RPM – CONTACT TYPE^{\$}	6 rpm to 10000 rpm	2.2 rpm	Using DPI 620 with photo sensor by Comparison Method
2.	RPM – NON CONTACT TYPE^{\$}	6 rpm to 60000 rpm	1.2 rpm	Using Pulse Generator with DPI 620 by Comparison Method
3.	RPM – CONTACT TYPE[*]	60 rpm to 60000 rpm	0.29 %	Using DPI 620 with photo sensor by Comparison Method
4.	RPM – NON CONTACT TYPE[*]	60 rpm to 60000 rpm	0.29 %	Using Pulse Generator with DPI 620 by Comparison Method
IV. PRESSURE & VACUUM				
1.	LOW PRESSURE / DIFFERENTIAL PRESSURE GAUGES / TRANSMITTERS / TRANSDUCERS[#]	± 25 mbar ± 700 mbar	0.012 mbar 0.44 mbar	Using Digital Pressure Calibrator by Direct Method

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Last Amended on	26.10.2015	Page	7 of 8

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2.	DIGITAL /DIAL / PRESSURE GAUGES PRESSURE TRANSMITTERS / TRANSDUCERS WITH INDICATOR[#]	0 to 20 bar 0 to 70 bar 0 to 700 bar 0 to 2200 bar	0.007 bar 0.026 bar 0.311 bar 1.373 bar	Using Digital Pressure Calibrator by Direct Method
3.	DIGITAL / DIAL / VACUUM GAUGES VACUUM TRANSMITTERS^{\$}	(-) 1 bar to 0 bar	0.001 bar	Using Digital Pressure Calibrator by Direct Method
4.	DIGITAL /ANALOG BAROMETER/ABSOLUTE PRESSURE GAUGES/ TRANSMITTERS/ TRANSDUCERS[#]	30 mbar to 2000 mbar 0.030 bar abs to 7 bar abs	0.37 bar 0.004 bar	Using Digital Pressure Calibrator by Direct Method
V. TORQUE				
1.	TORQUE WRENCH TORQUE INDICATOR TORQUE TOOL ELECTRIC^{\$}	1 Nm to 10 Nm 20 Nm to 200 Nm 200 Nm to 2000 Nm	0.13 Nm 5.40 Nm 7.21 Nm	Using Digital Torque Indicator with Sensor by Comparison Method
2.	TORQUE TOOL* (Electric / Pneumatic)	1 Nm to 10 Nm 20 Nm to 200 Nm	0.13 Nm 5.40 Nm	Using Digital Torque Indicator with Sensor by Comparison Method
VI. FORCE				
1.	PUSH PULL GAUGES^{\$}	2 N to 1000 N	0.95 % rdg	Using Load Cell with Digital Indicator by Direct Comparison Method

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Last Amended on	26.10.2015	Page	8 of 8

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2.	DUROMETER [§]	Shore A Shore D	0.97 % 0.98 %	Using Load Cell with Digital Indicator by Direct Comparison Method
VII. HARDNESS				
1.	ROCKWELL HARDNESS TESTING MACHINES [¶]	HRA HRB HRC	0.91 HRA 1.33 HRB 0.84 HRC	Using Standardised Test Blocks by indirect Method
2.	VICKERS HARDNESS TESTING [¶]	HV 5	10.7 HV 5	Using Standardised Test Blocks by indirect Method

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

[§] Only in Permanent Laboratory

[¶] Only for Site Calibration

[Ⓢ] 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.

[#] The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.