

Laboratory Creative Calibration Centre, Plot No.-3802, Laxman Vihar, Phase-I, Gurgaon, Haryana

Accreditation Standard ISO/IEC 17025: 2005

Discipline Mechanical Calibration **Issue Date** 25.03.2015

Certificate Number C-0539 **Valid Until** 24.03.2017

Last Amended on 21.07.2015 **Page** 1 of 10

Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
I. DIMENSION			
1. HEIGHT GAUGE^s (Digital/Dial/Vernier) L.C: 0.01 mm ^o	0 to 300 mm	8.1 μ m	Using Slip Gauge Blocks & Accessories & Caliper Checker
	0 to 600 mm	12 μ m	
2. LINEAR HEIGHT GAUGE/ 2D HEIGHT GAUGE^s L.C.: 0.0001 mm ^o	0 to 300 mm	3.8 μ m	Using Slip Gauge Blocks & Accessories & Caliper Checker
	300 mm to 600 mm	11 μ m	
3. CALIPER^s (Digital/Dial/Vernier) L.C: 0.01 mm ^o	0 to 300 mm	8.4 μ m	Using Slip Gauge Blocks & Accessories & Caliper Checker
	0 to 600 mm	12 μ m	
4. EXTERNAL MICROMETER^s L.C: 0.001 mm	0 to 25 mm	0.9 μ m	Using Slip Gauge Blocks & Accessories
	25 mm to 100 mm	1.8 μ m	
	100 mm to 300 mm	2.2 μ m	
L.C: 0.01 mm	0 to 100 mm	6 μ m	
	100 mm to 300 mm	7 μ m	
5. INTERNAL MICROMETER^s L.C: 0.01 mm	5mm to 300 mm	7 μ m	Using Slip Gauge Blocks & Accessories

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6.	DEPTH GAUGE/ DEPTH MICROMETER/ MICROMETER HEAD/ DEPTH CALIPER^{\$} L.C: 0.01 mm	0 to 300 mm	7 μ m	Using Slip Gauge Blocks & Accessories
7.	LEVER DIAL / PUPPY DIAL^{\$} L. C : 0.01mm	0 to 1.4 mm	1 μ m	Using Single Axis Measuring Machine
	L. C : 0.001/0.002mm	0 to 0.14 mm	1.5 μ m	
8.	PLUNGER DIAL GAUGE INDICATOR^{\$} L. C. : 0.001mm	0 to 25 mm	1 μ m	Using Single Axis Measuring Machine
	L. C. : 0.01mm	0 to 100 mm	1.6 μ m	
9.	DIAL BORE GAUGE^{\$} L.C : 0.001 mm Transmission Only	2 mm	1.1 μ m	Using Single Axis Measuring Machine
10.	DIAL THICKNESS GAUGE/ DIAL SNAP GAUGE/PISTOL CALIPER^{\$} L.C : 0.001 mm^o	0 to 100 mm	1 μ m	Using Slip Gauge Blocks
11.	OUTSIDE CALIPER GAUGE^{\$} L.C.: 0.01 mm	0 to 100 mm	6 μ m	Using Slip Gauge Blocks

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12.	INSIDE CALIPER GAUGE[§] L.C. : 0.01 mm	0 to 100 mm	6 μ m	Using Slip Gauge Blocks & Accessories
13.	ELECTRONIC PROBE[§] L.C. : 0.001 mm	0 to 25mm	0.8 μ m	Using Slip Gauge Blocks
14.	SINGLE AXIS MEASURING MACHINE[§]	0 to 100 mm	0.9 μ m	Using Slip Gauge Blocks
15.	DIAL CALIBRATION TESTER[§] L.C.: 0.0001mm^Φ	0 to 25mm	1.3 μ m	Using Slip Gauge Blocks
16.	SURFACE ROUGHNESS TESTER[§]	Ra 3 μ m	0.35 μ m	Using Roughness Specimen
17.	SNAP GAUGE/ LENGTH GAUGE / FLAKINESS GAUGE/ ELONGATION GAUGE[§]	0 to 100 mm 100 mm to 300 mm	2 μ m 4 μ m	Using Slip Gauge Blocks & Accessories
18.	FEELER GAUGE/ STANDARD FOILS[§]	Upto 2 mm	1.2 μ m	Using Single Axis Measuring Machine
19.	WIDTH GAUGE/ FLUSH PIN GAUGE[§]	Upto 100 mm	1.2 μ m	Using Single Axis Measuring Machine
20.	PLAIN PLUG GAUGE/ SETTING PLUGS/ AIR PLUG GAUGE/ CYLINDERING SETTING MASTER/ MEASURING PIN[§]	Upto 100 mm 100 mm to 300 mm	1.2 μ m 4.0 μ m	Using Single Axis Measuring Machine, Plunger Dial, Slip Gauge Blocks

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21.	THREAD MEASURING WIRE/ THREE WIRE UNIT^{\$}	Upto 6.3 mm	1.0 μ m	Using Single Axis Measuring Machine
22.	STEEL/ CARBIDE BALL^{\$}	Upto 75 mm	1.2 μ m	Using Single Axis Measuring Machine
23.	PLAIN RING GAUGE/ SETTING RINGS/ AIR RING GAUGE^{\$}	3 mm to 100 mm 6 mm to 300 mm	1.4 μ m 4 μ m	Using Single Axis Measuring Machine Slip Gauge Blocks & Accessories
24.	THREAD PLUG GAUGE/ WEAR CHECK PLUG^{\$}	Upto 75 mm	3.2 μ m	Using 3 Wire Pin & Digital Micrometer
25.	THREAD RING GAUGE/ WEAR CHECK RING^{\$}	3 mm to 100 mm	1.4 μ m	Using Single Axis Measuring Machine
26.	SPLINE /SERRATION PLUG GAUGE^{\$} (Over Pins Diameter)	Upto 75 mm	4.1 μ m	Using Digital Micrometer & Measuring Pins
27.	SPLINE /SERRATION RING GAUGE^{\$} (Between Pins Diameter)	Upto 100 mm	3.4 μ m	Using Slip Gauge Blocks & Measuring Pins
28.	CHAMFER GAUGE^{\$} DIAMETER ANGLE LENGTH	Upto 75 mm	2.2 μ m 3' 9 μ m	Using Digital Micrometer & Profile Projector
29.	LENGTH BAR/ MICROMETER SETTING ROD/ RISER BLOCK/ SETTING MASTER^{\$}	0 to 300mm 30mm to 600mm	4 μ m 10 μ m	Using Slip Gauge Blocks, Accessories, Caliper Checker & Lever Dial

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30.	CALIPER CHECKER/ STEP GAUGE / DEPTH MICROCHECKER/HEIGHT MASTER[§]	0 to 300 mm 300 mm to 600 mm	4.1 μm 10 μm	Using Slip Gauge Blocks, Accessories, Caliper Checker & Lever Dial
31.	BEVEL PROTECTOR/ COMBINATION SET/ ANGLE PROTECTOR[§] L.C.: 5' L.C.: 1°	0° to 90° to 0° 0° to 180° to 0°	4' 35'	Using Angle Gauge Blocks
32.	V-BLOCK PARALLELISM FLATNESS SYMMETRY SQUARENESS[§]	Upto 150 mm	4 μm 2 μm 4 μm 8 μm	Using Granite Square, Slip Gauge Blocks, Lever Dial & Test Mandrels
33.	ANGLE PLATE/BOX PLATE / ENGINEERS SQUARE/ TRY SQUARE SQUARENESS PARALLELISM[§]	Upto 300 mm	7 μm 4 μm	Using Granite Square, Slip Gauge Blocks, & Lever Dial
34.	PROFILE PROJECTOR[§] LINEAR SCALE: L.C: 0.001mm ANGULAR SCALE : L.C. : 1' MAGNIFICATION LENS	0 to 250 mm 0 to 360° 10X	4 μm 2' 0.06 %	Using Slip Gauge Blocks, Angle Gauge Blocks & Digital Caliper
35.	SURFACE PLATE[§]	630 x 630 mm	$0.7 \sqrt{\left(\frac{L+W}{125}\right)} \mu\text{m}$ Where L & W in mm	Using Electronic Level

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36. COMPARATOR STAND ^{\$} (Flatness)	300 x 300 mm	3 μ m	Using Lever Dial
37. TEST MANDREL DIAMETER VARIATION PARALLELISM ^{\$}	Upto 75 x 500 mm	2.2 μ m 3 μ m	Using Digital Micrometer & Lever Dial
38. SPRIT LEVEL ^{\$} Sensitivity:0.01mm/m Sensitivity:0.02mm/m	2mm/m	7 μ m/m 8 μ m/m	Using Electronic Level
39. MEASURING TAPE/ CIRCUMFERENCE TAPE/ Pi TAPE ^{\$}	0 to 50 m	$0.12 \times \sqrt{\left(\frac{L}{200}\right)} \mu\text{m}$ Where L &W in mm	Using Profile Projector
40. STEEL SCALE ^{\$}	0 to 3000mm	$0.12 \times \sqrt{\left(\frac{L}{200}\right)} \mu\text{m}$ Where L &W in mm	Using Profile Projector
41. TAPER STEEL SCALE ^{\$}	0 to 15 mm	0.12 μ m	Using Profile Projector
42. RADIUS GAUGE/ RADIUS CHART/RADIUS OF COMPONENT ^{\$}	Upto 100 mm	10 μ m	Using Profile Projector
43. ANGLE GAUGE/ ANGLE OF COMPONENT ^{\$}	Upto 360°	3'	Using Profile Projector

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44. GLASS SCALE / EYE PIECE ^s (Linear Angular) L.C.:0.01mm L. C. : 1 mm L.C.: 0.5mm L. C. : 1°	0 to 1 mm 0 to 400 mm 0 to 400 mm 0 to 360°	7.4 μ m 10 μ m 14.5 μ m 4'	Using Profile Projector
45. TEST SIEVE ^s (Aperture Size)	Upto 5mm 5mm to150mm	5 μ m 15 μ m	Using Profile Projector Using Digital Caliper
46. PITCH GAUGE/PITCH OF COMPONENTS PITCH LENGTH ANGLE ^s	Upto 20 mm	7 μ m 3'	Using Profile Projector
47. RECEIVING & PROFILE GAUGES ^s	Upto 250 mm Upto 360°	9 μ m 3'	Using Profile Projector, Slip Gauge Blocks, Lever Dial, Digital Micrometers
48. COATING THICKNESS GAUGE ^s (Ferrous & Non Ferrous)	0 to 100 μ m 0 to 1200 μ m	1.5 μ m 3 μ m	Using Standard Foils
49. SURFACE PLATE [*]	Upto 4000 x 4000 mm	$0.7 \sqrt{\left(\frac{L+W}{125}\right)}$ μ m Where L & W in mm	Using Electronic Level
50. BENCH CENTRE [*] (Co-Axiality of Centre)	Upto 300 mm	8 μ m	Using Mandrels & Lever Dial
51. AIR GAUGE UNIT [*]	80 μ m	2 μ m	Using Standard Rings

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52. PROFILE PROJECTOR* VISION MEASURING MACHINE/ MEASURING MICROSCOPE LINEAR SCALE: L.C: 0.001mm ANGULAR SCALE : L.C. : 1' MAGNIFICATION	0 to 300 mm 0 to 360° 10X to 100 X	7 μ m 1' 0.04 %	Using Slip Gauge Blocks, Angle Gauge Blocks & Digital Caliper
II. ACCELERATION & SPEED			
1. TACHOMETER/ STROBOSCOPE/ TACHOMETER CALIBRATOR/ RPM METER#	60 rpm to 999 rpm 999 rpm to 99999 rpm	0.2 % 0.05 %	Using Digital Tachometer
III. ACOUSTICS			
1. SOUND LEVEL METER#	94 dB 114 dB	0.6 dB 1.3 dB	Using Sound Level Calibrator
2. SOUND LEVEL CALIBRATOR\$	94 dB 114 dB	0.6 dB 1.3 dB	Using Sound Level Meter
IV. MASS			
1. SPRING BALANCE \$ d=100g d=200g	0 to 100kg	50g 140g	Using F2 Class Weights

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2. WEIGHTS^s (M ₁ Class and Coarser)	1mg	0.04mg	Using F ₂ Class Weights & Precision Balance
	2mg	0.04mg	
	5 mg	0.04mg	
	10 mg	0.04mg	
	20 mg	0.04mg	
	50 mg	0.04mg	
	100 mg	0.04mg	
	500 mg	0.04mg	
	1g	0.07mg	
	2 g	0.07mg	
	5 g	0.07mg	
	10 g	0.07mg	
	20 g	0.07mg	
	50 g	0.07mg	
	100g	0.44mg	
	200g	0.44mg	
	500g	80mg	
	1kg	80mg	
	2kg	80mg	
	5kg	80mg	
10kg	822mg		
20kg	822mg		
50kg	822mg		
3. WEIGHING BALANCE[#] (Class III & IV)	Upto 200 g	7 mg	Using F2 Class Weights as per OIML R 76
	>200 g to 5 kg	0.4 g	
	>5 kg to 50 kg	4 g	
4. WEIGHING BALANCE[*] (Class IV)	>50 kg to 300 kg	33 g	Using F2 & M1 Class Weights as per OIML R 76

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V.	VOLUME			
1.	VOLUMETRIC GLASSWARE[§]	10 μ l to 100 μ l 1ml to 50 ml 100 ml to 200 ml 500 ml to 5000 ml 10 l to 15 l	0.23 μ l 50 μ l 0.2 ml 0.5 ml 2 ml	Using F2 Class Weights & Precision Balance
VI.	FORCE			
1.	TENSILE TESTING MACHINE	0.5 kN to 2.5 kN	0.8 %	Using Load Cell of Class 1
VII.	TORQUE			
1.	TORQUE WRENCHES/ SCREW DRIVER[§] (TYPE: I & II CLASS : A,B,C,D,E,G)	Upto 500 Nm	2.94 % of rdg	Using Torque Wrench Calibration System
VIII.	PRESSURE & VACUUM			
1.	PRESSURE GAUGE/ PRESSURE TRANSDUCER/ PRESSURE TRANSMITTER[*]	0 to 3 kg/cm ² 30 kg/cm ² to 400 kg/cm ²	3.1 % of rdg 0.93 % of rdg	Using Digital Pressure Gauge

* 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.

^Ø 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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