Laboratory	**Apex Calibration Laboratory, Plot No. 6A, Gali No.-3, Basai Enclave, Phase – II, Gurgaon, Haryana**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Mechanical Calibration**	**Issue Date**	**22.05.2016**
Certificate Number	**C-0356**	**Valid Until**	**21.05.2018**
Last Amended on	**06.09.2016**	**Page**	**1 of 5**

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
I.	**DIMENSION (Basic Measuring Instrument, Gauge Etc.)**			
1.	**VERNIER CALIPER[$]** **(Digital/Dial/Vernier)** **L.C. : 0.01 mm**	0 to 150 mm 0 to 200 mm 0 to 300 mm 0 to 600 mm	7.3 μm 8.0 μm 9.0 μm 16.0 μm	Using Caliper Checker & Slip Gauge
2.	**HEIGHT GAUGE[$]** **(Digital/Dial/Vernier)** **L.C. : 0.01 mm**	0 to 300 mm 0 to 600 mm	10 μm 16.20 μm	Using Caliper Checker & Slip Gauge Blocks
3.	**EXTERNAL MICROMETER[$]** **L.C. : 0.001 mm**	0 to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm 100 mm to 300 mm	1.2 μm 1.2 μm 2.0 μm 3.0 μm 5.0 μm	Using Slip Gauge Blocks
4.	**SNAP GAUGE[$]**	Up to 50 mm 50 mm to 100 mm	1.6 μm 3.0 μm	Using Slip Gauge Blocks
5.	**PLAIN PLUG GAUGE[$]**	Up to 25 mm 25 mm to 100 mm	2.6 μm 3.0 μm	Using Digital Indicator & Comparator Stand & Slip Gauge Blocks
6.	**FEELER GAUGE[$]**	Up to 1 mm	2.0 μm	Using Digital Micrometer

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Convenor

Avijit Das
Program Manager

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7.	**PLUNGER DIAL**[$]			
	L.C. : 0.001 mm	0 to 20 mm	1.5 μm	Using Dial Calibration Tester within Micrometer Head
	L.C.: 0.01 mm	0 to 25 mm	6.3 μm	
8.	**LEVER TYPE DIAL GAUGE**[$]			
	L.C. : 0.001 mm	Up to 0.14 mm	2.60 μm	Using Dial Calibration Tester within Micrometer Head
		Up to 1.0 mm	2.60 μm	
9.	**BORE GAUGE**[$]			
	L.C.:0.001 mm	Travel of moving Pin	4.0 μm	Using Dial Calibration Tester within Micrometer Head
10.	**DEPTH VERNIER**[$]			
	L.C.:0.01 mm	0 to 150 mm	8.0 μm	Using Slip Gauge Blocks
11.	**DEPTH MICROMETER**[$]			
	L.C. : 0.001 mm	0 to 25 mm	1.2 μm	Using Slip Gauge Blocks
	L.C.:0.01 mm	25 mm to 100 mm	8.0 μm	
12.	**THREAD PLUG GAUGE/WEAR CHECK PLUG GAUGE**[$]	2.5 mm to 20 mm	2.5 μm	Using Three Measuring Wire Set & External Micrometer
		20 mm to 50 mm	2.5 μm	
13.	**DIAL THICKNESS GAUGE**[$]			
	L.C. : 0.001 mm	0 to 25 mm	1.2 μm	Using Slip Gauge Blocks
14.	**BEVEL PROTECTOR/ COMBINATION SET**[$]			
	L.C.: 5' /1 º	0 to 180 º	16.0 min	Using Angle Gauge Block

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
15.	**'V' BLOCK**[$] **Parallelism** **Symmetry** **Squareness**	100 mm, 150 mm	7 μm	Using Angle Gauge Blocks Slip Gauge Blocks, Mandrels
	Flatness		5'	
16.	**PLAIN RING GAUGE**[$]	8 mm to 200 mm	10.0 μm	Using Single Axis Machine with Fixture
17.	**COATING THICKNESS GAUGE/ DFT METER**[$]	0 to 600 μm	10.0 μm	Using Standard Foils
18.	**STEEL SCALE**[$]	Upto 1000 mm	140 μm	Using Digital Scale Calibrator
19.	**MEASURING TAPE**[$]	Upto 10 m	$140\sqrt{L}$ L is in mm	Using Digital Scale Calibrator
20.	**SURFACE PLATE**[♣]	1000 X 1000	$1.5\sqrt{\frac{L+W}{100}}\mu m$ L & W in mm	By using Straight Edge ('00' Grade) Slip Gauge (M 9'0', M9 '0' Grade)
21.	**LINEAR HEIGHT GAUGE** **2D HEIGHT GAUGE** **L.C.: 0.001 mm**	0 to 600 mm	10.0 μm	Using Slip Gauge Blocks/ Caliper Checker
22.	**RADIUS GAUGE SET**[$]	Up to 25 mm	5.0 μm	Using Profile Projector
23.	**PITCH GAUGE SET**[$]	0 to 6 mm	5.0 μm	Using Profile Projector

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
24.	**COMPARATOR STAND**[$]	300 mm x 200 mm	8.0 μm	Using Surface Plat & Dial Gauge
25.	**TEST SEIVES**[$]	0 to 10 mm 10 mm to 100 mm	5.0 μm 10.0 μm	Using Profile Projector & Digital Caliper
26.	**TRY SQUARE**[$]	90°	3°	Using Digital Dial Gauge
II.	**DIMENSION (Precision Instruments)**			
1.	**PROFILE PROJECTOR**[♣] **L. C.: 0.001 mm** **Angular Scale 1'** **Magnification of Lens**	 0 to 100 mm 0 to 360 ° 10 X	 5.0 μm 6' 0.05 %	Using Scale/Angle Gauges/ Digital Caliper
III.	**ACOUSTICS**			
1.	**SOUND LEVEL METER**[$]	94 dB 114 dB	2.5 dB 3.0 dB	Using Digital Sound Calibrator
IV.	**PRESSURE INDICATING DEVICES**			
1.	**PRESSURE GAUGES,** **PRESSURE** **TRANSMITTER**[♯]	(-) 1 to 40 bar 0 to 100 bar 0 to 700 bar	0.03 bar 1.2 bar 1.5 bar	Using Digital Pressure Calibrator & Pressure Test Pump
V.	**TORQUE MEASURING DEVICES**			
1.	**TORQUE WRENCH**[$] **(Type 1, Class A, B, C)** **(Type II, Class A,B, C)**	 0 to 50 Nm 50 Nm to 100 Nm	 0.72 % 0.47 %	Using Digital Torque Transducer With Indicator

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
VI.	**MOBILE FORCE MEASURING SYSTEM**			
1.	**PUSH GAUGE**[$]	0 to 200 N 0 to 20 kgF	0.33 %	Using Digital Pushpull Gauge Calibrator Load Cell With Indicator by Push Pull Mode
VII.	**WEIGHING BALANCE**			
1.	**WEIGHING BALANCE**[♣]	0 to 20 kg 20 kg to 200 kg	1 g 12 g	Using F1 Class Weights
VIII.	**TORQUE GENERATING DEVICE**			
1.	**TORQUE MEASURING DEVICE**[$]	0 to 10 Nm 0 to 20 Nm 0 to 50 Nm	0.11 % 0.08 % 0.05 %	Using Dead Weight Torque Calibration Systems with Calibrated Lever Arm and Stainless Weights as per BS : 7882:2008

*** Measurement Capability is expressed as an uncertainty (±) 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.

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Convenor

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Program Manager