Laboratory	**ASKIB Engineers Private Limited, 86 D, Dr. Suresh Sarkar Road, Kolkata, West Bengal**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Mechanical Calibration**	**Issue Date**	**20.11.2014**
Certificate Number	**C-0251**	**Valid Until**	**19.11.2016**
Last Amended on	**15.12.2014**	**Page**	**1 of 9**

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
I.	**DIMENSION**			
1.	**Outside Micrometer** $ **L. C. : 0.001 mm**	0 to25 mm	4.0 µm	Using Slip Gauge Set
2.	**External Micrometer** $			
	L.C.: 0.001mm	0 to 300 mm	14.0 µm	Using Slip Gauge Set & Standard Length Bar
		300 mm to 500 mm	17.0 µm	
	L.C.: 0.01 mm	500 mm to 1000 mm	28.0 µm	
3.	**Digital Micrometer** $ **L.C.: 0.001 mm**	0 to 300 mm	16 µm	Using Slip Gauge Set & Standard Length bar
4.	**Ball** $ **(Steel & Tungsten Carbide)**	0 to 25 mm	4.25 µm	Using Digital Micrometer
5.	**Internal Micrometer** $ **(Stick) L.C.: 0.01 mm**	50 mm to 500 mm	38.0 µm	Using Slip Gauge Set and Caliper checker
6.	**Depth Micrometer** $			
	L.C.: 0.01 mm	0 to 150 mm	36.0 µm	Using Slip Gauge Set & Standard Length bar
		150 mm to 300 mm	42.0 µm	

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7. Dial Gauge Plunger Type $			
L. C. : 0.01 mm	0 to 25 mm 25 mm to 50 mm	9.0 µm 14.0 µm	Using Dial Gauge Calibrator
L. C.: 0.001 mm	0 to 1 mm	2.0 µm	
8. Digital Dial Gauge $			
L. C. : 0.001 mm	0 to 25 mm	3.6 µm	Using Dial Gauge Calibrator
9. Lever Type Dial Gauge $			
L. C. : 0.002 mmΦ	0 to 2 mm	5.0 µm	Using Dial Gauge Calibration / Slip Gauge Set
10. Vernier Height Gauge $ (Digital/ Dial)			
L. C. : 0.01 mmΦ	0 to 600 mm	25.0 µm	Using Slip Gauge Set & Standard Length Bar
11. Pistol Caliper $			
L. C. : 0.01 mm	0 to 50 mm	127.0 µm	Using Slip Gauge Set
12. Vernier Caliper $ (Digital / Dial)			
L. C. : 0.01 mmΦ	0 to 600 mm	27.0 µm	Using Slip Gauge Set & Standard Length Bar
13. Digital /Vernier Caliper $			
L.C.: 0.01 mm	0 to 600 mm	26.0 µm	Using Caliper Checker

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
14.	**Depth Vernier Gauge** [$] **L.C.: 0.01 mm**	0 to 150 mm 150 mm to 300 mm 0 to 450 mm	29.0 µm 22.0 µm 38.0 µm	Using Slip Gauge Set & Standard Length Bar
15.	**Feeler Gauge** [$]	0 to 1 mm	7.46 µm	Using Digital Dial Gauge
16.	**Dial Thickness Gauge** [$]	0 to 20 mm	14.0 µm	Using Slip Gauge Set
17.	**Setting Rod** [$]	Upto 500 mm	11.54 µm	Using Slip Gauge Set & Comparator Stand/Dial Gauge
18.	**Dial Stand** [$] **(Flatness Only)**	50 mm Base	5.0 µm	Using Digital Dial Gauge
19.	**Thread Pitch Gauge** [$] **Pitch Gauge**	1 mm to 7 mm	44.0 µm 55' Arc	Using Profile Projector
20.	**Step Block For Ultrasonic Machine** [$]	Upto 10 mm	7.74 µm	Using Digital Dial Gauge
21.	**Ultrasonic Thickness Gauge** [$]	Upto 100 mm	125 µm	Using Slip Gauge Set
22.	**Wire Gauge** [$]	-	15.89 µm	Using Profile Projector
23.	**Thickness Foil** [$]	0 to 2mm	17.0 µm	Using Digital Micrometer
24.	**Bevel Protractor** [$] **L.C. : 5'**	0º -180º -0º	8.5'	Using Profile Projector

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
25.	**Plain Plug Gauge** [$]	Upto 100 mm	4.32 µm	Using Slip Gauge & Accessories
26.	**Steel Scale** [$] **L.C.: 1.0 mm**	0 to 1000 mm	579.0 µm	Using Profile Projector
27.	**Flange Micrometer** [$]	Upto 100 mm	17.0 µm	Using Slip Gauge Set
28.	**Angle Gauge** [$]	0º - 90º	10' of arc	Using Profile Projector
29.	**Digital Coating Thickness Gauge** [$] **L.C. : 0.001 mm**	Up to 1.25 mm Up to 2000 µm	17.50 µm 20.0 µm	Using Electronic Dial Gauge with standard thickness foil
30.	**Coating Thickness Gauge, Analog** [$]	Up to 2 mm	20.0 µm	Using Electronic Dial Gauge with standard thickness foil
31.	**Ford Cup** [$] **(Orifice Dia Only)**	4 mm	14.5 µm	Using Profile Projector
32.	**Diamond Indentor** [$]	120º cone & 136º Pyramid	3.75°	Using Profile Projector
33.	**Combination Set** [$]	180º	35' of arc	Using Profile Projector
34.	**Snap Gauge** [$]	0 to 100 mm, 101 mm to 300 mm	18.1 µm 20.0 µm	Using Slip Gauge
35.	**Dial Bore Gauge** [$] **(Transmission only)**	Up to 1 mm	12.0 µm	Using Dial Calibrator

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36.	**Test Sieve** [$]	0.04 to 0.5 mm 0.5 to 1.0 mm 1 to 60 mm	9.0 µm 18.0 µm 180 µm	Using Profile Projector
37.	**Micrometer Head** [$]	25 mm	8.0 µm	Using Slip Gauge Set
38.	**Profile Projector** [$]	Length X axis Length Y Axis Angle	4 µm 6 µm 1' of arc	Using Glass scale & Slip Gauge
39.	**Microscope** [$] **L.C. : 0.001 mm**	Up to 10 mm	568 µm	Using Profile Projector
40.	**Plain Ring Gauge** [$]	Up to 300 mm	12 µm	Using Slip Gauge Set & Accessories
41.	**Cube Mould** [$]	Up to 150 mm	0.2 mm	Using Digital Caliper
42.	**Tri Square** [$] **(Squareness)**	Upto 300 mm	15 µm	Using Master Cylinder with Gauge block set
43.	**Weld Fillet Gauge** [$] **(Length & Angle)**	0 to 35 mm 0 to 90º	500 µm 21.8' of arc	Using Slip Gauge set & Profile Projector
44.	**Gear Tooth Vernier** [$]	0 to 20 mm	50 µm	Using Slip Gauge Set
45.	**Hegman Gauge** [$]	Upto 1 mm	22 µm	Using Digital Dial Indicator
46.	**Sprit Level** [$] **(Sensitivity)**	0.02 mm/m	15 µm/m	Using Micrometer Head With Accessories

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
47.	**Dial Calibration Tester** $	0 to 25 mm	4.0 µm	Using Slip Gauge Set & Digital Dial Gauge
48.	**Glass Scale** $	Upto 10 mm	39.40 µm	Using Profile Projector
49.	**Adjustable Gauge** $	0 to 100 mm 100 mm to 200 mm 200 mm to 300 mm	8.00 µm 10.0 µm 12.0 µm	Using Slip Gauge Set
II.	**DENSITY**			
1.	**Hydrometer** $	0.600 g/ml to 0.650 g/ml 0.650 g/ml to 0.700g/ml 0.700 g/ml to 0.750 g/ml 0.750 g/ml to 0.800 g/ml 0.800 g/ml to 0.900 g/ml 0.900 g/ml to 1.000 g/ml 1.000 g/ml to 1.200 g/ml 1.200 g/ml to 1.400 g/ml 1.400 g/ml to 1.600 g/ml 1.600 g/ml to 1.800 g/ml	0.0081 g/ml 0.0081 g/ml 0.0081 g/ml 0.0081 g/ml 0.0081 g/ml 0.0081 g/ml 0.0083 g/ml 0.0083 g/ml 0.0083 g/ml 0.0083 g/ml	Using Standard Hydrometer
III.	**VOLUME**			
1.	**Volumetric Flask** $	0.1 ml to 1000 ml	0.71 ml	Using Standard weights/ Balance and Pure distilled water
2.	**Measuring Cylinder** $	0.1 ml to 1000 ml	0.6 ml	Using Standard weights/ Balance and Pure distilled water
3.	**Burette** $	0.01 ml to 100 ml	0.6 ml	Using Standard weights/ Balance and Pure distilled water

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
4.	**Beaker** $	5 ml to 1000 ml	0.8 ml	Using Standard weights/ Balance and Pure distilled water
5.	**Pipette** $	0.01 ml to 25 ml	0.6 ml	Using Standard weights/ Balance and Pure distilled water
IV.	**MASS**			
1.	**Single / Double PAN Balance** $	Upto 200 g	0.1 g	Using Standard Weights as per OIML R-76
2.	**Digital Balance** $	Upto 30 kg	20 g	Using Std Weights F1 Class as per OIML R-76
3.	**Weighing Balance** $	10 mg to 4200 g	0.6 g	Using Standard Weights F2 Class as per OIML R-76
4.	**Weights** $ **(Conventional Mass)**	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g	0.1 mg 0.1 mg 0.1 mg 1 mg 1 mg 1 mg 1 mg 8 mg 8 mg 0.2 g 0.2 g 0.2 g 0.2 g 0.2 g 0.8 g 0.8 g 0.8 g	Using Standard F1 Class Weights & Standard Electronic Balance as per OIML R-111

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
V.	**PRESSURE AND VACUUM**			
1.	**Hydraulic Pressure $**			
	Digital / Analogue Pressure Gauge, Pressure Transducer with Indicator	7.5 kg/cm^2 to 70 kg/cm^2 70 kg/cm^2 to 700 kg/cm^2	2.0 % of rdg 1.5 % of rdg	Using Dead Weight Tester
2.	**Digital/ Analogue Pressure $ Gauge, Pressure Transducer with Indicator**	0 to 6 bar 0 to 1000 kg/cm^2	1.75 % of rdg 1.5 % of rdg	Using Digital Pressure Gauge
3.	**Pneumatic $ Pressure Gauge/ Manometer**	1000 mmWc to10000 mmWc	69.5 mmWc	Using Pneumatic DWT
4.	**Vacuum Gauge $**	0 to 700 mmHg	4.13 %	Using Precision Vacuum Gauge
VI.	**FORCE**			
1.	**Uniaxial Static Testing Machines ♣ (UTM, CTM, TTM)**			
	-Tension	1 kN to 50 kN	1.0 % **	Using Force Proving Instruments in tension Mode
	-Compression	5 kN to1000 kN 200 kN to 2000 kN	1.0 %** 2.0 %**	Force Proving Instruments in Compression mode
VII.	**HARDNESS**			
1.	**Rockwell hardness Testing Machines ♣**	HBW HRC	22.5 HRBW 2.0 HRC	Using Reference Blocks by Indirect Method
2.	**Brinell Hardness Testing Machines♣**	HBW 2.5/187.5 HBW 5/750 HBW 10/300	1.93% 1.93% 1.87%	Using Reference Blocks by Indirect Method

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	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
3.	**Vickers Hardness Testing Machines♣**	HV1 HV 5 HV10 HV30	2.0% 2.0% 2.0% 2.0%	Using Reference Blocks by Indirect Method
4.	**Rubber Hardness Tester♣ (Durometer Spring Force) Shore A**	0 to 100 Shore A	0.6 Shore A	Using Digital Weighing Balance
VIII.	**RPM**			
1.	**Non-Contact type♣**	200 rpm to 20000 rpm	1.6 %	Using Digital Tachometer and electric motor
IX.	**ACCOUSTICS**			
1.	**Sound Level Meter $**	94 dB & 114 dB	1.25 dB	Using Sound Calibrator
2.	**Sound Level Calibrator $**	94 dB & 114 dB	1.0 dB	Using Sound Level Meter

*** 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.
****Relative accuracy error has not been considered for CMC estimation.**

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