Laboratory	**Ideal Instruments, 8/7, Shanti Nagar, Landewadi, Bhosari, Pune, Maharashtra** **Location 1: 8/7, Shanti Nagar, Landewadi, Bhosari, Pune, Maharashtra** **Location 2: S. No. 62/1, Building No. A-6, Flat No. 8, Morya Nagari, Kondhwa Bk., Pune, Maharashtra**
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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
LOCATION : 1				
I.	**DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)**			
1.	Calipers[$] L.C.: 0.01 mm	Up to 600 mm Up to 1000 mm	13 μm 20 μm	Using Caliper Checker/ Long Slip Gauge by Comparison Method IS 3651(Part-II) 1985
2.	Height Gauge[$] L.C.: 0.01 mm	0 to 600 mm 0 to 1000 mm	17 μm 18 μm	Using Caliper Checker/ Long Slip Gauge by Comparison Method IS 2921
3.	Depth Gauge[$] L.C.: 0.01 mm	0 to 300 mm	17μm	Using Caliper Checker & Slip Gauge by Comparison Method IS 4213
4.	External Micrometer[$] L.C.: 0.001 mm	Up to 50 mm 50 mm to 300 mm	1.8 μm 3.3 μm	Using Slip Gauges by Comparison Method IS 2967
5.	Micrometer Setting Rods[$]	Up to 125 mm >125 mm to 275 mm	1.8 μm 5.0 μm	Using Slip Gauges & Electronic Probe by Comparison Method IS 3179
6.	Depth Micrometer[$] L.C.: 0.001 mm	Up to 300 mm	5.5 μm	Using Slip Gauges by Comparison IS 2967

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
7.	Dial Gauge[$] All Plunger Type L.C.: 0.001	0 to 10 mm 0 to 50 mm	3.2 μm 3.4 μm	Using Dial Calibration Tester, Slip Gauges comparator Stand by Comparison Method IS 2092
8.	Dial Gauge[$] All Lever Type L.C.: 0.001	Up to 2 mm	2 μm	Using Dial Calibration Tester by Comparison Method IS 11498
9.	Bore Gauge[$] (For Transmission)	Up to 2 mm	3.9 μm	Using Dial Calibration Tester by Comparison Method
10.	Dial Thickness Gauge[$] L.C.: 0.001	Up to 25 mm	2.0 μm	Using Slip Gauges by Comparison Method IS 2092
11.	Plain Plug Gauges[$] OD Master / Height Gauge	Up to 60 mm >60 mm to 300 mm	3.0 μm 5.8 μm	Using Slip Gauges & Electronic Probe by Comparison Method IS 3455
12.	Measuring Pins[$]	Up to 60 mm	1.2 μm	Using Slip Gauges & Electronic Probe by Comparison Method IS 11103
13.	Thread Measuring Wire[$]	0.17 mm to 6.35 mm	1.1 μm	Using Slip Gauges & Electronic Probe by Comparison Method IS 6311

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Program Manager

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
14.	Snap Gauges[$]	Up to 150 mm >150 mm to 300 mm	2.0 μm 4.5 μm	Using Slip Gauges by Comparison Method IS 3455
15.	Dial Snap Gauge[$]	Up to 200 mm	3.0 μm	Using Slip Gauges by Comparison Method IS 14271
16.	Dial Calibration Tester[$] Analog/Digital/ Electronic	Up to 25 mm	1.1 μm	Using Slip Gauges & Electronic Probe by Comparison Method Comparison IS 9463
17.	Bevel Protractor [$] Angle Protractor L.C.: 5’	0 to 360 °	4 min.	Using Angle Gauges by Comparison Method IS 4239
18.	Combination Square Set[$] L.C.: 5°	0 to 360 °	35 min.	Using Angle Gauges by Comparison Method IS 4239
19.	Thread Plug Gauge[$]	Up to 100 mm	4.5μm	Using FCDM with Electronic Probe Cylindrical Setting Master & Thread Measuring Wires by Comparison Method IS-2334, IS- 4218, IS-14962
20.	Taper Thread Plug Gauge[$]	Up to 100 mm	5.3 μm	Using FCDM with Electronic Probe Cylindrical Setting Master & Thread

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
				Measuring Wires by Comparison Method ANSI/ASME B1 205 IS 8999 IS 9121
21.	Internal Caliper[$] L.C.: 10 µm	Up to 200 mm	7.0 µm	Using Slip Gauges by Comparison Method
22.	Feeler Gauge/ Coating Thickness Foils (Shims) [$]	Up to 1 mm	3.0 µm	Using Digital Micrometer by Comparison Method IS 3179
23.	Coating Thickness Gauge[$]	0 to 1000 mm	5.0 µm	Using Coating Thickness Foils by Comparison Method IS 3179
24.	Comparator Stand [$] (Only Flatness)	Up to 100 mm >100 mm to 300 mm	1.6 µm 2.5 µm	Using Electronic Probe by Comparison Method IS 7599
25.	Pistol Caliper[$] L.C.: 0.01 mm	Up to 50 mm	71.0 µm	Using Slip Gauges by Comparison Method IS 2092
26.	V-Block[$] Parallelism, Squareness, Symmetricity	Up to 150 mm	9.6 µm	Using Mandrels, Surface Plate & Plunger Dial by Comparison Method IS – 2948/IS-2103
27.	Surface Roughness Tester[$]	Ra up to 3 µm R max, Rz: Up to 10 µm	8.8 %	Using Surface Roughness Master by Comparison Method

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
28.	Spirit Level[$] L.C.: 10 µm/mtr.	± 120 µm/mtr.	9.7 µm/mtr.	Using Electronic Probe by Comparison Method IS 5706
29.	Angle Plate[$] Parallelism, Squareness	Up to 300 mm	5.0 µm 11.0 µm	Using Surface Plate & Plunger Dial by Comparison Method IS-4960, 6232
30.	Engineers Square[$] Parallelism Squareness	Up to 300 mm	5.0 µm 11.0 µm	Using Surface Plate & Plunger Dial by Comparison Method IS-2103
31.	Electronic Height Gauge[♣] L.C.: 0.01 µm	0 to 1000 mm	10.0 µm	Using Slip Gauges by Comparison Method
32.	Surface Plate[♣]	3000 mm x 2000 mm	$2.1\sqrt{\frac{L+W}{125}}$ µm	Using Precision Spirit Level by Comparison Method IS - 12937
II.	**DIMENSION (PRECISION INSTRUMENTS)**			
1.	Profile Projector[♣] Linear Scale Angular Scale Magnification	Up to 200 mm Up to 360° 10 x to 1000 x	12 µm 2.0 min 1.0 %	Using Glass Scale Angle Gauges & Slip Gauge & Dial Vernier by Comparison Method

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
LOCATION : 2				
I.	**DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)**			
1.	Calipers[$] All Type L.C.: 0.01 mm	0 to 600 mm 0 to 1000 mm 0 to 2000 mm	12 μm 20 μm 31 μm	Using Caliper Checker, Slip Gauges, Long Slip Gauge by Comparison Method IS 3651(Part-II) 1985
2.	Height Gauge[$] All Type L.C.: 0.01 mm	0 to 600 mm 0 to 1000 mm	17 μm 18 μm	Using Caliper Checker & Slip Gauges by Comparison Method IS 2921
3.	Depth Gauge[$] L.C.: 0.01 mm	0 to 300 mm 0 to 600 mm 0 to 1000 mm	17 μm 22 μm 24 μm	Using Long Slip Gauge, Caliper Checker & Slip Gauges by Comparison Method IS 4213
4.	External Micrometer [$] L.C.: 0.001 mm L.C.: 0.01 mm	Up to 100 mm >100 mm to 300 mm >300 mm to 500 mm >500 mm to 1500 mm	1.8 μm 3.3 μm 10.0 μm 20.0 μm	Using Slip Gauges, Long Slip Gauges by Comparison Method IS 2967
5.	V-anvil Micrometer [$] L.C.: 0.001 mm	0 to 100 mm	3.9 μm	Using Setting Master/ Pin by Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
6.	Depth Micrometer [$] L.C.: 0.001 mm	Up to 300 mm	5.5 μm	Using Long Slip & Slip Gauges by Comparison Method IS 2967
7.	Internal Micrometer [$] L.C.: 0.001 mm	50 mm to 1350 mm	17 μm	Using Slip Gauges, Long Slip Gauges, Plunger Dial by Comparison Method IS 2966
8.	Three Point Internal Micrometer / Bore Gauge[$] L.C.: 0.001 mm	3 mm to 200 mm	5.0 μm	Using Master Ring Gauge by Comparison Method
9.	Dial Gauge[$] All Plunger type L.C.: 0.001 mm L.C.: 0.01 mm	0 to 1 mm 0 to 50 mm 0 to 100 mm	1.6 μm 3.0 μm 9.9 μm	Using Dial Calibration Tester, ULM by Comparison Method IS 2092
10.	Dial Gauge[$] All Lever Type L.C.: 0.001 mm	Up to 2 mm	2.0 μm	Using Dial Calibration Tester by Comparison Method IS 11498
11.	Bore Gauge [$]	Transmission only	3.2 μm	Using Dial Calibration Tester by Comparison Method IS 2092
12.	Dial Thickness Gauge[$] L.C.: 0.001 mm	0 to 25 mm	2.0 μm	Using Slip Gauges by Comparison Method IS 2092

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
13.	Internal Caliper[$] L.C.: 0.01 mm	0 to 200 mm	7.0 μm	Using Slip Gauges ULM by Comparison Method
14.	Pistol Caliper[$] L.C.: 0.1 mm	0 to 50 mm	60.0 μm	Using Slip Gauges by Comparison Method IS 2092
15.	Dial Snap Gauge[$]	Up to 200 mm	3.0 μm	Using Slip Gauges by Comparison Method IS 14271
16.	Steel Scale[$] L.C.: 1 mm	0 to 1 m	130 μm	Using Tape-Scale Calibration Machine by Comparison Method IS 1481
17.	Measuring Tape[$] L.C.: 1 mm	Up to 50 m	130 √ L (L is in m)	Using Tape-Scale Calibration Machine by Comparison Method
18.	Taper Scale[$]	0 to 30 mm	125	Using Tape-Scale Calibration Machine by Comparison Method
19.	PI Tape[$] L.C.: 1 mm	Up to 10 m	390 √ L (L is in m)	Using Tape-Scale Calibration Machine by Comparison Method
20.	Coating Thickness Gauge[$]	0 to 750 μm	3.9 μm	Using Coating Thickness Foils by Comparison Method IS 4213

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
21.	Ultrasonic Thickness[$] Gauge/D Meter	0 to 200 mm	115 µm	Using Slip Gauges by Comparison Method
22.	Surface Roughness Tester[$]	Ra Up to 3 µm R max Up to 10 µm	8.8 %	Using Roughness Tester by Comparison Method
23.	Spirit Level[$] L.C.: 10 µm/m	± 120 µm/m	9.7 µm/m	Using Electronic Probe & Indexing Table with Sine Bar by Comparison Method IS 5706
24.	Comparator Stand[$] (Only Flatness)	Up to 100 mm >100 mm to 300 mm	1.6 µm 2.5 µm	Using Electronic Probe by Comparison Method IS 7599
25.	V-block [$] Parallelism Squareness Symmetricity	Up to 300 mm	7.0 µm	Using Mandrels, Surface Plate & Plunger Dial, Height Gauge by Comparison Method IS 2948
26.	Parallel Blocks[$] Parallelism, Squareness	Up to 150 mm	7.0 µm	Using Electronic Height Gauge, Surface Plate by Comparison Method IS 2103
27.	Engineers Square[$] Squareness, Parallelism	Up to 300 mm	11.0 µm 4.3 µm	Using Master Engineers Square, Height Gauge, Surface Plate by Comparison Method IS 2103

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
28.	Dial Calibration Tester[$]	0 to 25 mm	1.1 µm	Using Slip Gauges, Electronic Probe by Comparison Method IS 9483
29.	Micrometer Head[$] Analog/Digital/ Electronic L.C.: 0.1 µm	0 to 50 mm	1.1 µm	Using ULM by Comparison Method IS 9483
30.	Bevel Protractor[$] Angle Protractor L.C.: 1'	0 to 360 °	4 min	Using Angle Gauges by Comparison Method IS 4239
31.	Combination Square Set [$] L.C.: 1°	0 to 360 °	35 min	Using Angle Gauges by Comparison Method
32.	Tape Scale Calibration Machine[$]	0 to 1000 mm	37	Using Long Slip Gauge by Comparison Method
33.	Micrometer Setting[$] Rods/Length Bar	Up to 100 mm >100 mm to 300 mm >300 mm to 1000 mm >1000 mm to1350 mm	1.0 µm 2.0 µm 4.0 µm 16 µm	Using Slip Gauges, Electronic Probe by Comparison Method IS 3179
34.	Plain Plug Gauge[$] OD Master/Height Block	Up to 60 mm >60 mm to 300 mm >300 mm to 500 mm	1.5 µm 3.0 µm 7 µm	Using ULM by Comparison Method IS 3455
35.	Cylindrical setting Pin[$]	Up to 20 mm	1.2 µm	Using FCDM, Electronic Probe, Slip Gauge by Comparison Method IS 11103

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
36.	Thread Measuring Wire[$]	0.17 mm to 6.35 mm	1.1 µm	Using Slip Gauges, Electronic Probe by Comparison Method IS 6311
37.	Snap Gauge[$]	Up to 150 mm >150 mm to 300 mm >300 mm to 500 mm	2.0 µm 4.5 µm 6.0 µm	Using Slip Gauge by Comparison Method IS 3455
38.	Thread Plug Gauge[$]	Up to 100 mm >100 mm to 300 mm	2.5 µm 3.5 µm	Using ULM, Thread Measuring Wire by Comparison Method IS 2334, IS-4218, IS-14962
39.	Plain Ring Gauge[$]	Up to 100 mm >100 mm to 200 mm	2.0 µm 4.0 µm	Using ULM, Master Ring Gauge by Comparison Method
40.	Thread Ring Gauge[$]	Up to 100 mm >100 mm to 200 mm	2.0 µm 4.0 µm	Using ULM, Master Ring Gauge by Comparison Method
41.	Feeler Gauge[$]	Up to 2 mm	1.0 µm	Using Electronic Probe by Comparison Method
42.	Coating Thickness Foils[$] (Shims)	Up to 2 mm	1.0 µm	Using Electronic Probe by Comparison Method IS 3179

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
43.	Surface Roughness[$] Specimen	Ra up to 3 µm R max Up to 10 µm	9.4 %	Using Surface Roughness Tester by Comparison Method IS 4290-1992

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

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