

**Laboratory** Autocal Solutions Pvt. Ltd., Plot No. BG-74, Gala No. 1 & 2, Jai Tulja Bhavani Indl. Premises, Telco Road, MIDC – Bhosari, Pune, Maharashtra

**Accreditation Standard** ISO/IEC 17025: 2005

**Discipline** Mechanical Calibration **Issue Date** 11.09.2015

**Certificate Number** C-1267 **Valid Until** 10.09.2017

**Last Amended on** - **Page** 1 of 5

Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b>I. DIMENSION</b>			
<b>1. CALIPER<sup>#</sup></b> (Vernier/Dial/Digital) L. C. : $10\mu\text{m}^{\text{D}}$	0 to 600 mm	16 $\mu\text{m}$	Using Caliper Checker & External Micrometer by Comparison Method
<b>2. DEPTH GAUGE<sup>#</sup></b> (Vernier/Dial/ Digital) L. C. : $10\mu\text{m}^{\text{D}}$	Upto 600 mm	14 $\mu\text{m}$	Using Caliper Checker, Gauge Block Set & Surface Plate by Comparison Method
<b>3. HEIGHT GAUGE<sup>#</sup></b> (Vernier/Dial/Digital) L. C. : $10\mu\text{m}^{\text{D}}$	Upto 600 mm	15 $\mu\text{m}$	Using Caliper Checker & Surface Plate by Comparison Method
<b>4. EXTERNAL MICROMETER<sup>#</sup></b> L. C. : $1\mu\text{m}^{\text{D}}$	Upto 100 mm	2 $\mu\text{m}$	Using Gauge Block Set by Comparison Method
<b>5. DEPTH MICROMETER<sup>#</sup></b> L. C. : $10\mu\text{m}^{\text{D}}$	Upto 100 mm	9.2 $\mu\text{m}$	Using Caliper Checker, Gauge Block Set & Surface Plate by Comparison Method
<b>6. MICROMETER SETTING ROD<sup>#</sup></b>	Upto 75 mm	2.3 $\mu\text{m}$	Using ULM by Comparison Method
<b>Ram Ashray</b> Convenor		<b>Avijit Das</b> Program Manager	

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<b>Last Amended on</b>	<b>-</b>	<b>Page</b>	<b>2 of 5</b>

	<b>Quantity Measured/ Instrument</b>	<b>Range / Frequency</b>	<b>*Calibration Measurement Capability (±)</b>	<b>Remarks</b>
<b>7.</b>	<b>DIAL GAUGE<sup>#</sup> (Plunger Type) L. C. : 1µm L. C. : 10 µm</b>	0 to 1 mm 0 to 25 mm	1.0 µm 6.0 µm	Using ULM by Comparison Method
<b>8.</b>	<b>DIAL GAUGE<sup>#</sup> (Lever Type) L.C.: 0.001mm L.C.: 0.002mm L.C.: 0.01mm</b>	0 to 0.14 mm 0 to 0.18 mm 0 to 1.0 mm	1.3 µm 1.8 µm 5.81 µm	Using ULM by Comparison Method
<b>9.</b>	<b>PLAIN PLUG GAUGE/OD MASTER<sup>#</sup></b>	1 to 40 mm > 40 mm to 300 mm	2.5 µm 5.7 µm	Using ULM by Comparison Method
<b>10.</b>	<b>CYLINDRICAL MEASURING PINS<sup>#</sup></b>	Upto 20 mm	1.0 µm	Using ULM by Comparison Method
<b>11.</b>	<b>PLAIN RING GAUGE<sup>#</sup></b>	3 mm to 40 mm > 40 mm to 200 mm	2.3 µm 4.3 µm	Using ULM & Master Ring Gauge by Comparison Method
<b>12.</b>	<b>THREAD PLUG GAUGE <sup>#</sup> (Effective Diameter)</b>	3 mm to 40 mm > 40 mm to 200 mm	2.7µm 4.3 µm	Using ULM Master Setting Disc & Thread Measuring Wires by Comparison Method
<b>13.</b>	<b>THREAD RING GAUGE<sup>#</sup> (Effective Diameter)</b>	4 mm to 40 mm > 40 mm to 200 mm	2.3 µm 4.3 µm	Using ULM & Master Setting Ring by Comparison Method
<b>14.</b>	<b>SNAP GAUGE <sup>#</sup></b>	3 mm to 40 mm > 40 mm to 100 mm	3.6 µm 3.6 µm	Using ULM & Master Setting Ring by Comparison Method

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**Last Amended on** - **Page** 3 of 5

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15. DIAL THICKNESS GAUGE <sup>#</sup> L.C: 10.0 $\mu$ m	Upto 10 mm	8.0 $\mu$ m	Using Gauge Block set (By Comparison Method )	
16. FEELER GAUGE <sup>#</sup>	Upto 1 mm	5.0 $\mu$ m	Using Digital Micrometer By Comparison Method	
<b>II. MASS</b>				
1. WEIGHTS <sup>#</sup> (CONVENTIONAL MASS)	1 mg	0.02 mg	Using Weights of Accuracy Class E 2 & Precision Balances by Substitution Method ABBA Cylce based on OMIL R 111-2004	
	2 mg	0.02 mg		
	5 mg	0.02 mg		
	10 mg	0.03 mg		
	20 mg	0.05 mg		
	50 mg	0.05 mg		
	100 mg	0.06 mg		
	200 mg	0.07 mg		
	500 mg	0.07 mg		
	1 g	0.03 mg		
	2 g	0.04 mg		
	5 g	0.07 mg		
	10 g	0.07 mg		
	20 g	0.08 mg		
	50 g	0.10 mg		
	100 g	0.16 mg		
	200 g	0.21 mg		
	500 g	0.03 g		Using Weights of Accuracy Class F1 & Precision Balances by Substitution Method ABBA Cycle based on OMIL R 111-2004
	1 kg	0.03 g		
	2 kg	0.03 g		
	5 kg	0.03 g		
	10 kg	0.11 g		
	20 kg	0.12 g		

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**Last Amended on** - **Page** 4 of 5

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2. <b>WEIGHING MACHINE<sup>#</sup></b> d = 0.01 mg	(0 to 200) g	0.11 mg	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)
d = 1 mg	(0 to 2)kg	5 mg	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)
d = 100 mg	(0 to 5) kg	120 mg	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)
d = 10 mg d = 100 mg	(0 to 20) kg	21 mg 120 mg	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)
d = 1 g d = 5g	(0 to 100) kg	2 g 16 g	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)
d = 1 g	(0 to 200) kg	15 g	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)

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3. <b>SPRING BALANCE / MECHANICAL BALANCE<sup>#</sup></b> L. C. : 1 g <sup>Φ</sup>	0 to 240 kg	2 g	Using Weights of Accuracy Class E2 & F1 based on OIML R 76 (2006)

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

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

Φ 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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