

**The LNM Institute of Information Technology, Jaipur**  
**Department of Mechanical-Mechatronics Engineering**

<b>Name of Laboratory:</b>	<b>Measurement Instrumentation &amp; control Lab</b>
<b>Year of Establishment:</b>	<b>2017</b>
<b>Faculty In-charge:</b>	<b>Dr. Vikram Sharma</b>
<b>Technical Staff:</b>	<b>Bhagwan Singh &amp; Udayveer singh</b>

<b>Sr.No</b>	<b>Name of Equipment</b>	<b>Generic purpose of equipment</b>	<b>Make</b>	<b>Model/version</b>	<b>Year of Purchase</b>	<b>Cost</b>
<b>1</b>	<b>Surface Roughness Tester</b>	<b>Surface roughness measurement. Can measure the surface roughness in-terms of Ra, Rt, Rz etc.</b>	<b>Mitutoyo (Japan)</b>	<b>SJ210</b>	<b>2017</b>	<b>Rs.1,36,000/-</b>
<b>2</b>	<b>Temperature measuring Set up</b>	<b>Heating source up to 100<sup>0</sup> digital temperature. J type thermocouples</b>	<b>ADVANCETECH</b>	<b>TSS/JU/2017/15</b>	<b>2017</b>	<b>24725</b>
<b>3</b>	<b>Force Measuring set up</b>	<b>Load cell with capacity of 5kg Load cell input connection and test point, 5V operated system, Test point to measure different signal and voltage</b>	<b>ADVANCETECH</b>	<b>TSS/JU/2017/15</b>	<b>2017</b>	<b>33359</b>
<b>4</b>	<b>Torque Measuring set up</b>	<b>Very compact and rugged for heavy duty application, compensated for axial and bending moments for good accuracy</b>	<b>ADVANCETECH</b>	<b>RS232/RS485/USB</b>	<b>2017</b>	<b>103021</b>

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5	Linear air track apparatus	To study the motion, conservation momentum, collision via using manual & magnetic method	SICO	TSS/JPR/2017/04	2017	19623
6	Dial gauge calibration set up	To dial gauge calibrate range 0-25mm, L.C .001	Mitutoyo (Japan)	10446066L2603T	2017	152460
7	Height gauge	To measuring height of object	Mitutoyo (Japan)	HS 30	2017	19300
8	Autocollimator	Magnification 10x or more		TSS/JPR/201704	2017	52000
9	Profile Projector	Compact, lightweight & table Top with easy operations. 300mm dia. screen with 90° cross line and chart holders Screen Graduated to 360° with vernier reading 1 minute. Objective Lens magnification 10x, projection Lens of 100x magnification for 300mm dia screen profile projector	RADICAL	RPP-3000 CE	2017	98500
10	Floating Carriage Micrometre	To measuring minor dia. & major dia. Effective dia.	YUZUKI	TSS/JPR/2017/04	2017	48125
11	Sine bar 200mm		CRYSTAL	CAT No. AA6010 S.No.643	2017	4815
12	3-D Coordinate Measuring machine	Measuring range X-500, Y-500 & Z-400mm, interface card for encoders & probe, Full Operating software, Renishaw probing, TP8 probe, calibration sphere 30mm	ACCURATE	Tutor/MFGPR/1617/0521	2017	1175000

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13	<b>Gear tooth Vernier</b>	measure in .001" or 0.02mm the thickness of <b>gear teeth</b> at the pitch line (the chordal thickness of the <b>teeth</b> ) using the distance from the top of a <b>tooth</b> to the chord measuring	YUZUKI	Range(mm) 1-20mm	2017	6124
14	<b>Slip gauge</b>	Measure tolerances in the range of 0.001 to 0.0005 mm very accurately.	YUZUKI	Calibration grade 83 pieces 160756/DN861	2017	9750
15	<b>Straight edge Qty. 02</b>	A straightedge or straight edge is a tool used for drawing straight lines, or checking their <b>straightness</b> . If it has equally spaced markings along its length, it is usually called a ruler.	SAGAR	Size 1.6'	2017	954
16	<b>Ring Gauge Qty. 02</b>	A <b>ring gauge</b> , or <b>ring gage</b> , is a cylindrical <b>ring</b> of a thermally stable material, often steel, whose inside diameter is finished to <b>gauge</b> tolerance and is used for checking the external diameter of a cylindrical object.	YUZUKI	Range 25mm	2017	1750
17	<b>Filler Gauge Qty. 02</b>	Mostly used in engineering to measure the clearance between two parts. They consist of a number of small lengths of steel of different thicknesses with measurements marked on each piece.	INDIAN	Set 15 blade .02"-.025"	2017	380
18	<b>Snap gauge Qty. 02</b>	A <b>snap gage</b> is a form of go/no go <b>gauge</b> . It is a limit <b>gage</b> with permanently or temporarily fixed measurement aperture(s) (gaps) which is used to quickly verify whether an outside dimension of a	AEROSPACE	25mm (25H7)	2017	8280

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		part matches a preset dimension or falls within predefined tolerances.				
19	V- Block	A <b>vee block</b> (or <b>V-block</b> ) is a square or rectangular precision-made <b>block</b> used to securely hold a cylindrical workpiece on a milling machine or drill press. They are called <b>vee blocks</b> because they have at least one centrally located v-shaped groove upon which parts are positioned.	SAGAR	Sn. 221 magnetic with 100 mm Length	2017	2655
20	Pitch Gauge Qty. 02	Used to measure the <b>pitch</b> or lead of a screw thread. ... This tool is not used as a precision measuring instrument, rather it allows the user to determine the profile of the given thread and quickly categorize the thread by shape and <b>pitch</b> .	SAGAR	Screw pitch gauge 1mm/with Worth	2017	640
21	Go & No Go gauge Qty. 02	<i>Go/no go</i> gauge. A <i>go-no</i> gauge (or <i>go/no-go</i> ) refers to an inspection tool used to check a work piece against its allowed tolerances. Its name is derived from two tests: the check involves the work piece having to pass one test ( <i>go</i> ) and fail the other ( <i>no-go</i> ).	SAGAR	SET	2017	9120
22	Surface Plate	<b>Surface plate</b> forms the basis of the measurement. <b>Surface plates</b> are widely used in where the inspection is carried out. Feb 13, 2018	LUTHRA	Grade as per IS:2285-2003	2017	22500
23	Electrical Comparator	It <i>uses</i> gear system together with a rack and pinion. An <i>Electrical</i>	YUZUKI	ST 703	2017	14375

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		<i>comparator</i> employs <i>electrical</i> means to get the magnification.				
24	<b>Mechanical Comparator</b>	It is used for linear measurements by the relative contact method.	<b>YUZUKI</b>		<b>2017</b>	<b>9375</b>
25	<b>Micro Weight balance</b>	<i>Micro balances</i> can take a precise measurement of weight of an object of relatively small mass, such as a million parts of a gram. Comparatively, a standard analytical <i>balance</i> is 100 times less sensitive.	<b>CITIZEN</b>	<b>CX165</b>	<b>2017</b>	<b>150000</b>
26	<b>Micrometre Qty. 02</b>	A <b>micrometre</b> can measure the depth, length and thickness of whatever object fits between its anvil and spindle. It is commonly used in mechanical engineering and machining applications.	<b>Mitutoyo (Japan)</b>	<b>MDC 255X</b>	<b>2017</b>	<b>15800</b>
27	<b>Vernier calliper Qty. 02</b>	<i>Vernier Callipers</i> are precision instruments that measure the distance between two opposite sides of a circular or straight object. <i>Vernier Callipers</i> for students- Educational Purpose. Steel Sector. Medical Sector. Scientific ...	<b>Mitutoyo (Japan)</b>	<b>530-312</b>	<b>2017</b>	<b>4840</b>
28	<b>Depth gauge Qty. 02</b>	<b>Vernier Depth Gage</b> is an extremely useful tool for measuring the depths of holes, slots and recesses. It features an extra wide base for proper contact. Highly accurate for <b>use</b> in tool rooms and inspection departments, on jigs, die works or fixtures. Designed for measuring <b>depth</b> of holes, slots and recesses.	<b>Mitutoyo (Japan)</b>	<b>167038 SN.527</b>	<b>2017</b>	<b>15400</b>

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29	<b>Bevel Protector</b>	- The <i>bevel protractor</i> solves this problem by having a movable arm that can extend to measure through 360 degrees. In addition, the <i>bevel protractor</i> is more accurate than a regular <i>protractor</i> : it can measure within 5 minutes (a minute is 1/60th of a degree). Unscrew the large clamp on the front of the <i>protractor</i> .	<b>Mitutoyo (Japan)</b>	950-317 (P360)	2017	19900
30	<b>Dial gauge Qty. 02</b>	<b>Dial indicators</b> are one of the primary measuring tools <b>used</b> in precision engine building. They are typically <b>used</b> to measure deck clearances, crankshaft thrust and straightness, lifter travel and other measurements that involve the distance between two surfaces or small amounts of component travel.	<b>Mitutoyo (Japan)</b>	204-65	2017	3780

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2. MIC\_Temperature Measuring set up



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3. MIC\_ Force Measuring set up





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4. MIC\_Torque Measuring set up



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5. MIC\_Linear air track apparatus



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6. MIC\_dial gauge calibration set up



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7. MIC\_ Height gauge



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8. MIC\_Auto-collimator



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9. MIC\_Profile Projector



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10. MIC\_ Floating Carriage Micrometre



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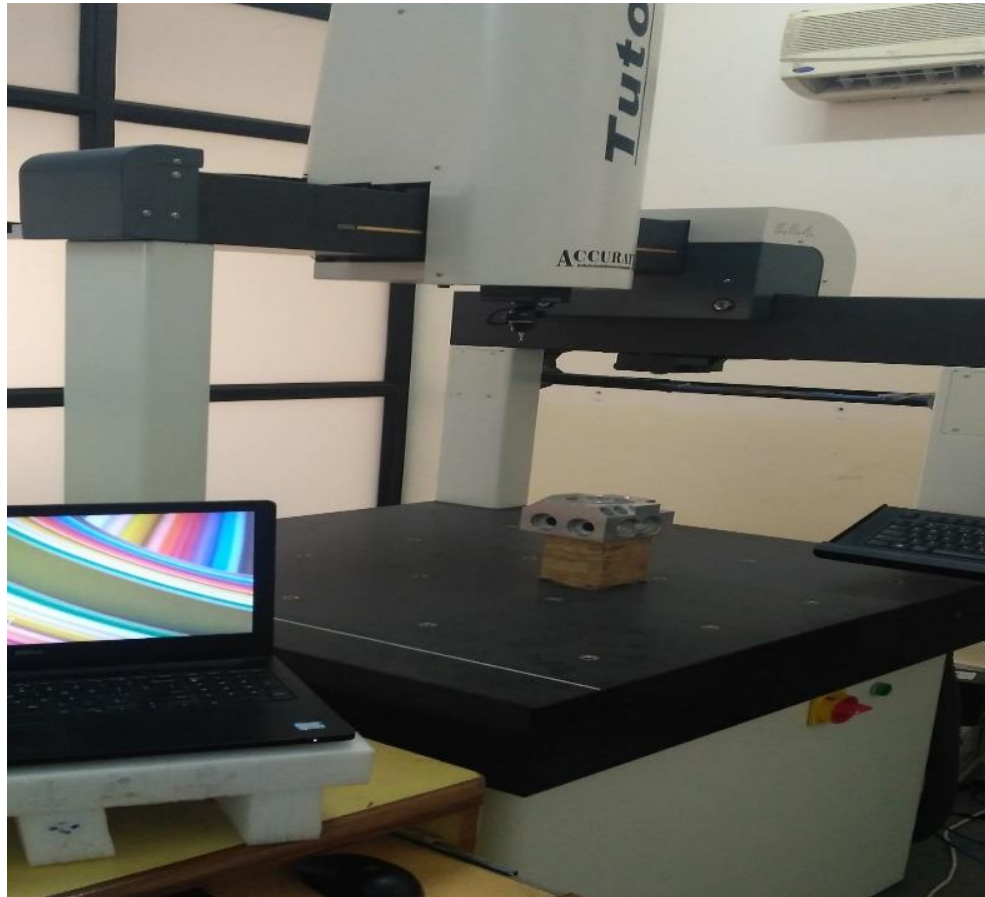
11. MIC\_Sine bar





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12. MIC\_3-D Coordinator measuring machine

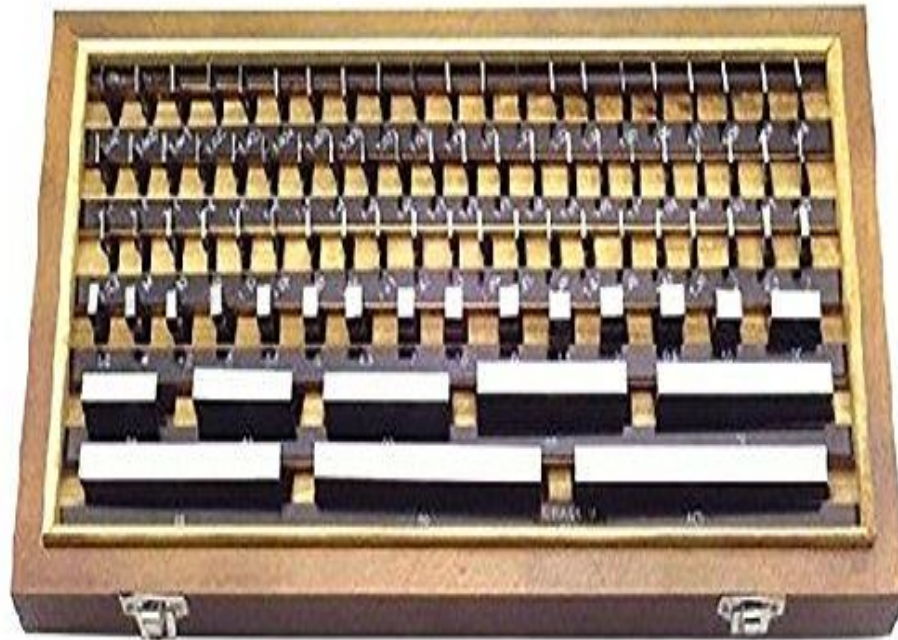


13. MIC\_ Gear tooth Vernier



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14. MIC\_Slip gauge



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15. MIC\_ Straight edge



16. MIC\_ Ring Gauge Qty. 02



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17. MIC\_ Filler gauge

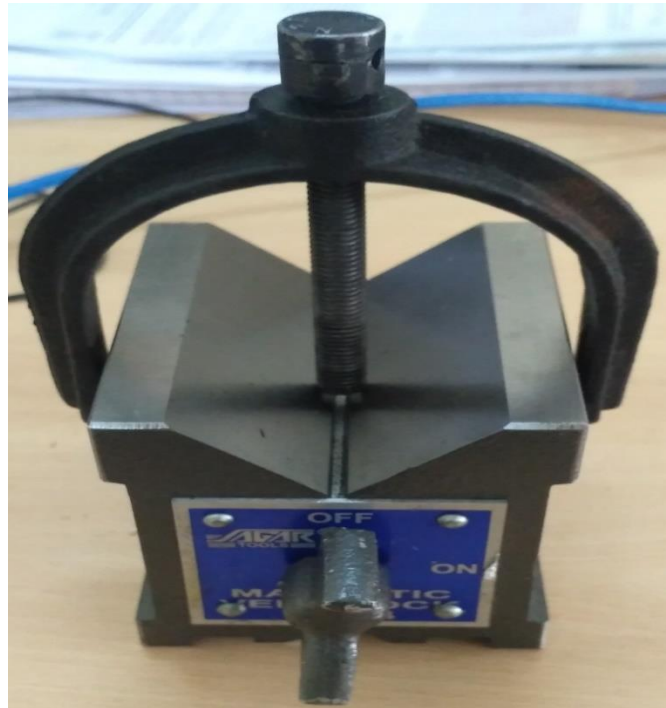


18. MIC\_Snap gauge



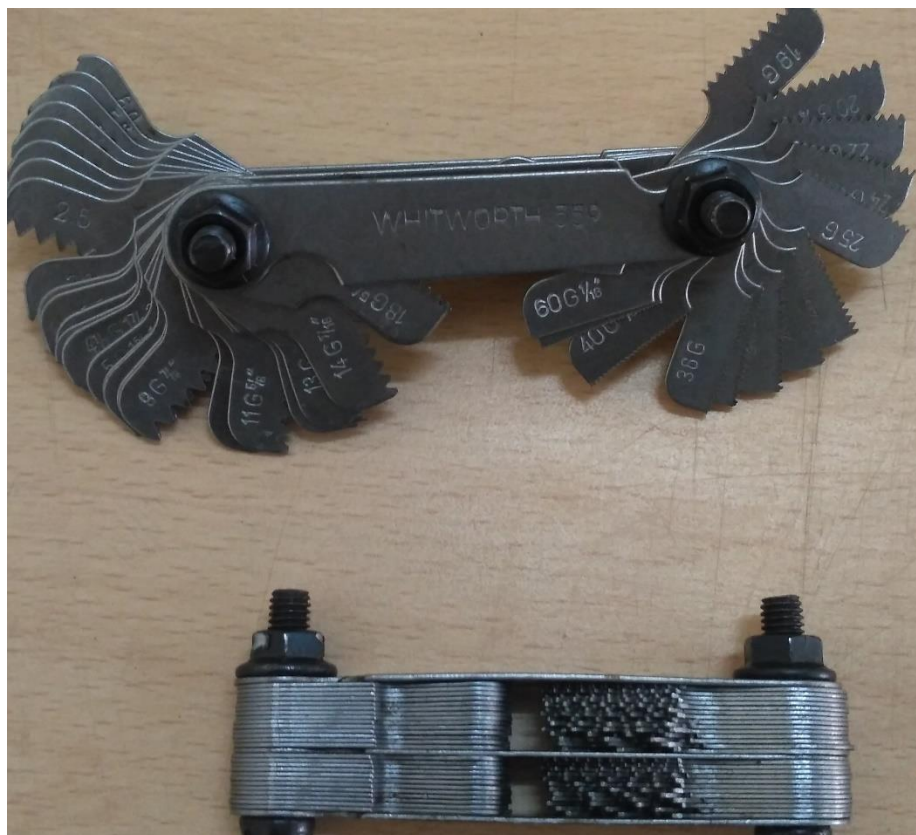
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19. MIC\_VEE Block





20. MIC\_ Pitch gauge





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21. MIC\_GO & NOGO



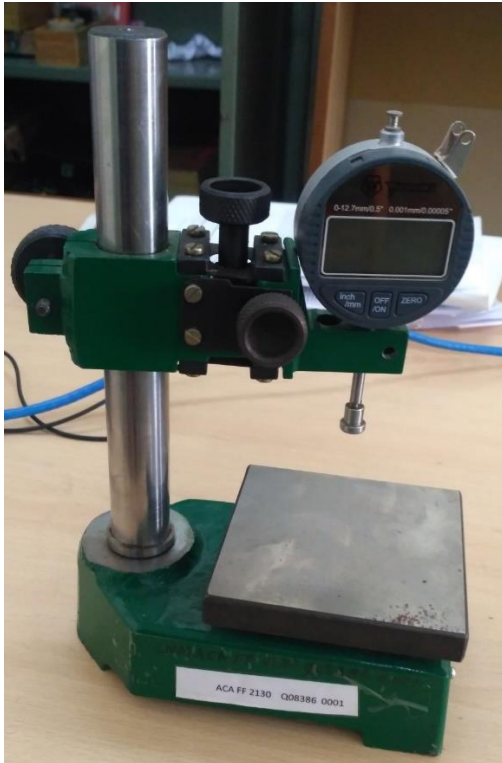
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22. MIC\_Surface Plate



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23. MIC\_ Electrical Comparator



24. MIC\_ Mechanical comparator



25. MIC\_ Micro Weight Balance



26. MIC\_ Micrometre



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27. MIC\_ Vernier calliper



28. MIC\_ Depth Gauge





29. MIC\_Bevel Protector



30. MIC\_Dial Gauge

