

LIST OF EQUIPMENT FOR TENDER(2021-2022)  
GOVT. POLYTECHNIC AMBIKAPUR(C.G.)  
MECHANICAL ENGG. DEPARTMENT

**Lab Title – Central Workshop**

S.N.	Name of the Equipment to be procured	Specification ( Enclosure Reference)	Qty	Rate	Total Cost
1	<b>CNC lathe production m/c tool Room</b>	automatic tool changer ,chuck capacity-200mm ,between centers 760mm, maximum cutting die 400mm,maximum cutting length spindle 750mm,max. speed 2500rpm,max. motor rating 7 H.P. max. torque 135 Nm@350rpm spindle nose A2-S,spindle bore 60mm,swing diameter A) over front open 400mm, b)over cross slide 240mm, travel and feed rate x axis 200mm , x axis max. thrust 13772N, x axis rapid 1.9 m/min, z axis 760mm,z axis thrust 4886N, z axis rapid 3.8m/min, max operating width 2210 mm max operating depth 1829 mm, standard feature-vector dual drive speed with Industrial keyboard and five console station compatible input output data transfer to this machine , With power supply 230 V, 50 hertz, switch mode power supply, with filter, regulating and noise protection arrangement having smps. 4 station auto tool turret, full chip and coolant enclosure, tool post tool holder, coolant pump kit, tool kit containing different tools such as tool bits, boring , drilling , threading, knurling , grooving etc. <b>(latest version)</b>			
2	<b>Universal Wood Working Machine</b>	Surface - 260 mm, thickness - 260x160 mm, circular saw dia - 300 mm, moulding capacity - 20-60 mm, moter power required – 2 HP 1440 rpm.			

**Lab Title – SOM**

S.N	Name of the Equipment to be procured	Specification ( Enclosure Reference)	Qty	Rate	Total Cost
1	<b>FATIGUE TESING MACHINE</b>	<p>This machine is used to test the fatigue strength of materials and to draw S-N diagram by research institutes, laboratories, material manufactures and various industries. This is a rotating beam type machine in which load is applied in reversed bending fashion. The standard 8 mm dia. specimen is held in special holders at its ends and loaded such that it experiences a uniform bending moment. The specimen is rotated at 4200 rpm by a motor. A completer cycle of reversed stresses in all fibers of the specimen is produced during each revolution. The bending moment is applied with a lever system and can be easily changed by moving a weight over the lever. Total number of revolutions at which the specimen fails are recorded by a Digital counter. An interlocking system puts off the motor at specimen failure. Machine meets requirements of IS 5075 - 1969</p> <p>1.Light weight, compact size, simple design. 2.Table model, no need of foundation. 3.Simple lever system of changing load. 4.Accurately calibrated as per IS 5075. 5.Calibration in Nm available on request.</p> <p><b>TECHNICAL SPECIFICATIONS</b></p> <p>1.Maximum Bending moment kg cm 200 2.Bending moment adjustable kg cm 25 – 20 3.Ranges I-kg cm 25 – 125 II-kg cm 125-200 4.Gripping dia of specimen mm -12 5.Testing dia of specimen mm 8 6.Rotating speed rpm 4200 7.Accuracy of applied bending moment. 8.Digital counter No. of digits 8 9.Power required HP 0.5 10.Main supply 3ph, 440,V50 Hz , A.C. 11.Overall Size ( approx ) mm 1000 L. X. 12.Weight ( approx ) kg120</p>			
2	<b>ROCKWELL HARDNESS TESTER</b>	<p>Test loads 60, 100 &amp; 150 kgf for trsts on Rockwell A, B, C, scale. Automatic Zero setting dial gauge. Load selection just by dialing externally. Capacity – Throat 133 mm Max. test height 230 mm Confirm to IS : 3804, BS : 891 &amp; ASTM : E –18</p>			
3	<b>COMPUTERISE D DIGITAL ROCKWELL CUM BRINELL HARDNESS TESTING MACHINE</b>	<p><b>Principal :</b> Rockwell, Rockwell superficial &amp; Rockwell cum Brinell tests consists of forcing an indenter (Diamond or Ball) into the surface of a test piece in two steps i.e. first with preliminary test force and thereafter with additional test force and then measuring depth of indentation after removal of additional test force (Remaining preliminary test force active) for measurement of hardness value.</p> <p>This machines are suitable for Rockwell, Rockwell superficial &amp; Rockwell cum Brinell tests. These are motorized digital Hardness testers having LCD display for easy hardness measurement. The results are displayed in 0.1 Rockwell unit for more accurate measurement.</p> <p>Hardness Testing Machines come with much improved design &amp; look with following major design changes.</p>			

This is motorized machine having automatic loading/unloading cycle suitable for production testing.

The machine body is having a taper front look and a large size read-out in the front. The machine is looking good. The paint shade do not fade and machine looks like new over year.

The elevating screw of machine is guided in a hardened and ground bush, not allowing movement of elevating screw more than 0.05 mm when raised to full height. The accessory is retained for years together due to hardened bush.

A hardened and ground stepped bush is fixed on top of main screw for location and rest surface. This guarantees no change in results due to rough handling of test table or test piece. It means a trouble free long life machine accuracy.

An anti-friction linear bearing with almost no clearance is provided for a perfect vertical movement of loading plunger with minimum friction. This enables testing of small dia. Pin or ball upto 3 mm dia. These models are provided with automatic working cycle and digital LCD display with

0.1 Rockwell resolution. This insures productivity with better accuracy.

IS:1586:2005 for Rockwell and superficial test. and IS : 2281 -2005, ASTM : E 10

for Brinell test.

Standard Accessories :

Model	
Testing Table 50mm dia.	1
Testing Table 38mm dia. with 'V' groove for round jobs 6-45 mm dia.	1
Diamond indenter - Rockwell	1
Steel Ball Indentor 1/16" with 5 spare balls	1
Test Block Rockwell "C"	1
Test Block Rockwell "B"	1
Test Block HB 2.5/187.5	1
Brinell Microscope	1
Allen Spanners	4
Wooden Box for Std. Accessories	1
Steel Ball Indentor 2.5 & 5mm with 5 spare balls	1
Power Cable	1
Instruction Manual	1

**Technical Data :**

Model	Unit	
Major Load	(kgf)	60, 100, 150, 187.5, 250
Minor Load	N (kgf)	98.07 ( 10)
Max. Test height	mm	300
Depth of throat	mm	135
Net wt. Approx.	kg.	120

**Motorized Digital Hardness Tester :**

		<table border="1"> <tr> <td><b>Model</b></td> <td></td> </tr> <tr> <td>Type</td> <td>Digital Rockwell &amp; Brinell</td> </tr> <tr> <td>Operation Cycle</td> <td>Automatic Load/Dwell/Unload</td> </tr> <tr> <td>Preliminary Test Force</td> <td>98.07N (10kgf)</td> </tr> <tr> <td>Additional Test Force</td> <td>50, 90, 140, 177.5, 240 kgf)</td> </tr> <tr> <td>Total Test Force</td> <td>60, 100, 150, 187.5, 250 kgf)</td> </tr> <tr> <td>Set Position</td> <td>With LCD bar indicator</td> </tr> <tr> <td>Resolution</td> <td>0.1 Rockwell</td> </tr> <tr> <td>Optional</td> <td>Serial PC interface &amp; windows software</td> </tr> </table> <p><b>Note : For Brinell scale - manually select (187.5 or 250 kgf) with respected ball indenter. At that time take reference of set point only. Apply the load, then measure the impression dia by Brinell microscope only. (No Brinell scale display on screen).</b></p>	<b>Model</b>		Type	Digital Rockwell & Brinell	Operation Cycle	Automatic Load/Dwell/Unload	Preliminary Test Force	98.07N (10kgf)	Additional Test Force	50, 90, 140, 177.5, 240 kgf)	Total Test Force	60, 100, 150, 187.5, 250 kgf)	Set Position	With LCD bar indicator	Resolution	0.1 Rockwell	Optional	Serial PC interface & windows software									
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4	Fatigue Testing Machine	<p><b>Type : Computerized</b>  <b>Actuator : Mechano-pneumatic (0-65)</b>  <b>Display: Display of all parameters on computer screen i.e., Force, Cycles, CPM, Graphical display of test details Part no., Part name, Date, Time etc.</b>  <b>Data recording : Available</b>  <b>Data printing : Available</b>  <b>Computer : Original INTEL with color monitor, Deskjet printer, UPS</b>  <b>Air requirement"" : 4-7 Bar</b>  <b>Standard Accessories:-</b>  <b>The unit is complete with the following Computer, printer, UPS, compatible software and workstation cabinet.</b>  <b>Two set of holding fixtures for two different kind of test specimens</b>  <b>Works calibration certificate" with traceability to National physical Laboratory of India</b></p> <table border="1"> <tr> <td>Measuring Range Δ, Δ±"</td> <td>5 kN</td> <td>10 kN</td> </tr> <tr> <td>Sensitivity</td> <td>0.01 kN</td> <td>0.01 kN</td> </tr> <tr> <td>Load Control</td> <td>0 to 5kN (Variable)""</td> <td>0 to 10kN (Variable)""</td> </tr> <tr> <td>Loading Frequency (Hz)</td> <td>0-5 Hz (variable)</td> <td>0-5 Hz (variable)</td> </tr> <tr> <td>Stroke</td> <td>15 mm</td> <td>10 mm</td> </tr> <tr> <td>Motor</td> <td>7 HP</td> <td>10 HP</td> </tr> <tr> <td>Weight approx.</td> <td>890 kg</td> <td>940 kg</td> </tr> <tr> <td>Power supply</td> <td colspan="2">415V, 3Phase, 50Hz</td> </tr> </table>	Measuring Range Δ, Δ±"	5 kN	10 kN	Sensitivity	0.01 kN	0.01 kN	Load Control	0 to 5kN (Variable)""	0 to 10kN (Variable)""	Loading Frequency (Hz)	0-5 Hz (variable)	0-5 Hz (variable)	Stroke	15 mm	10 mm	Motor	7 HP	10 HP	Weight approx.	890 kg	940 kg	Power supply	415V, 3Phase, 50Hz				
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