

## Universal Testing Machine 20 Ton & 40 Ton (Computerized)



**Product Categories:** [Engineering Equipment](#), [Strength Of Material Lab](#)

**Product Page:**

<https://www.labappara.com/product/universal-testing-machine-20-ton-40-ton-computerized/>

### Product Description

Universal Testing Machine 20 Ton & 40 Ton (Computerized)

Principle of Operation :

Operation of the machine is by hydraulic transmission of load from the test specimen through pressure transducer to a separately housed load indicator. The system is ideal since it replaces transmission of load through levers and knife edges which are prone to wear and damage due to shock on rupture of test pieces. Load is applied by hydro-statics lubricated ram. Main cylinder pressure is transmitted to the pressure transducer housed in the control panel. The transducer gives the signal to the electronic display unit, corresponding to the load exerted by the main ram. Simultaneously the digital electronic encoder fitted on the straining unit gives the mechanical displacement to the electronic display unit. Both the signals are processed by the micro processor and load and displacement is displayed on the digital readouts simultaneously.

**Machine consists of Straining Unit :**

This consists of a geared motor with chain & sprocket drive and a table coupled with the ram of the hydraulic cylinder, mounted on to a robust base. The cylinder and the ram are individually applied to eliminate hid on The upper cross-head is rigidly fixed to the table by two strengthened columns.

The lower cross-head is connected to two columns which are driven by a motor Axis loading of the ram s ensured by relieving the cylinder ram of any provision side loading by the provision of ball seating

An displacement scale with a minimum graduation of 1 mm, is provided to measure the deformation of the specimen. Tension test is conducted by grepping the test specimen between the upper and lower cross-heads.

Compression transverse, bending shear & hardness tests are conducted between the lower cross-head and the table. The lower cross-head can be raised or lowered rapidly by operating the screwed columns, thus facile rating ease of fixing or the test specimen.

### **Control Panel :**

The control pane consists of power pack complete with drive motor and an oil tank control valves and electronic display unit.

### **Power Pack :**

The Power Pack generates the maximum pressure of 200 kgf/cM. The hydraulic pump provides continuously non-pulsating oil flow Hence the load application is very smooth.

### **Hydraulic Controls :**

Hand operated wheels are used to control the flow to and from the hydraulic cylinder The regulation of the oil flow is infinitely variable Incorporated n the hydraulic system s a regulating valve which maintains a practically constant rate of piston movement Control by this valve allows extensometer readings to be taken.

Features :

Loading accuracy as high as  $\pm 1\%$

Straining at variable sppeds to suit awide range of material

Printer supplied as option to study the behavior of the material.

Motor driven threaded Columns for quick effortless adjustment of middle

cross-head to facilitate rapid fixing of test specimen

Simplicity in reading because of digital readouts

Wide range of standard and special accessories, including load stabilizer

Easy change from plain to threaded and screwed specimens

Large effective clearance between columns enables testing of standard specimens as well as structures

Simple controls for ease of operation.

Robust straining frame of an extremely rigid construction

Safe operation ensured by means of safety devices

Fully enclosed and protected pressure transducer

Optional to transfer data to computer for analysis/storage evaluation on etc.