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VYANKATESH ENG. WORKS

Mfg. of Universal, Impact, Hardness, Electronic Testing M/c & its Spares Undertake
Servicing & Calibration of above Testing Machines

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Universal Testing Machine UTE-6 Pillar.



Features :

- Hydraulic front loading wedge action grips
- Loading Accuracy as high + 1%
- Straining at variable speeds to suit a wide range of materials.
- Printer & PC Graphs enables to study the behavior of the material
- Continuous roll autographic recorder supplied as standard to enable study of the behavior of materials
- Motor driven threaded columns for quick effortless adjustment of lower cross-head-to facilitate rapid fixing of test specimen.
- High reading accuracy due to large size and design of dial.
- Wide range of standard and special accessories, including load stabilizer.
- Easy loading of specimens.
- Large effective clearance between columns enables testing of standards specimens as well as structures.
- Simple controls for easy of operation.
- Robust staining frame of an extremely rigid construction.

- Safe operation ensured be means of safety devices.
- Fully enclosed and protected pressure transducer
- RS 232 serial port to transfer data to computer for analysis/storage, evaluation etc.
- Manual control & release valve operation

Application :

VEW Electronic Universal Testing Machine is designed for testing metals and other materials under tension, compression bending, transverse and shear loads. Hardness test on metals can also be conducted.

Principal of Operation :

Operation of the machines is by hydraulic transmission of load from the test specimen to a separately housed load indicator. The hydraulic 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.

The Load is applied by a hydrostatically lubricated ram. Main cylinder pressure is transmitted to the cylinder of the pendulum dynamometer system housed in the control panel. The tansducer gives the signal to the electronic display unit, corresponding to the load exerted by the main ram.simultaneously the digital electronic fitted on the straining unit gives the mechanical displacement to the electronic display unit. Both the signals are processed by the microprocessor and load & displacement is displayed.

Machine consists of :

Straining Unit

This consists of a hydraulic cylinder motor with chain and 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 lapped to eliminate friction. The upper cross-head is connected to two screwed columns which are driven by a motor. Axial loading of the ram is ensured be reveling the cylinder and ram of of any possible side loading by the provision of ball seatings.

An elongation scale with a minimum graduation of 1 mm, is provided to measure the deformation of the specimen.

Tension test is conducted by gripping the test specimen between the upper and lower cross-heads, Compression, transverse, bending, shear and 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 facilitating ease of fixing of the test specimen.

Control Panel :

The control Panel consists of a power pack complete with drive motor and an oil tank, control valves a pendulum dynamometer a load indicator system and an autographic recorder.

Power Pack :

The power pack generates the maximum pressure of 200 kgf/cm² 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 oil flow is infinitely variable incorporated in the hydraulic system is a regulating valve which maintains a practically constant rate of piston movement. Control by this valve allows extensometer readings to be taken.

Load Indicator System :

This system consists of a large dial and a pointer. A dummy pointer is provided to register the maximum load reached during the test. Different measuring ranges can be selected by operating the range selection knob. An overload trip switch is incorporated which automatically cuts out the pump motor when the load range in use is exceeded.

Pendulum Dynamometer:

This unit permits selection of favorable hydraulic ratios producing relatively small frictional forces. Pressurized oil in the loading cylinder pushes up the measuring piston proportionately and actuates the special dynamometer system. The piston is constantly rotated to eliminate friction. The dynamometer

system is also provided with an integral damper and ensures high reliability of operation. The load transmitted to the dynamometer is transferred through a pendulum to the load indicator.

Autographic Continuous Roll Load Elongation Recorder :

This unit is of the pen and drum type and is supplied as standard. The horizontal motion of the pen produces the load ordinate of the diagram and the drum rotation produces the extension ordinates in the ratio of either 1:5 or 1:10.

Accuracy & Calibration :

All VEW Electronic Universal Testing Machines are closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Every machine is then calibrated over each of its measuring ranges in accordance with the procedure laid down in BS : 1610 : Part 1 :1992 and IS 1828 : (Part 1) : 1991.

VEW Electronic Universal Testing Machines comply with Grade "A" of BS : 1610 : Part 1:1992 and class 1 of IS 1828 : (Part1) : 1991 An accuracy of + 1.0% is guaranteed from 20% from 20% of the load range selected to full load. Below 20% of the selected range, the maximum permissible error is 0.2% of the full load reading.

• Clamping jaws for round specimens of Diameters.	mm	10-20 20-30	10-20 20-30	10-25 25-40	10-25 25-40 40-55	10-25 25-45 45-70	20-40 40-60 60-80	25-50 50-70 70-90
• Clamping jaws for flat specimens of thickness.	mm	0 - 10 10 - 20	0 - 10 10 - 20	0 - 15 15 - 30	0 - 15 15 - 30	0 - 22 22 - 44 44 - 65	0 - 20 20 - 45 45 - 70	0 - 25 25 - 50 50 - 75
Width	mm	50	50	65	70	70	90	100
For Compression Test								
Pair of compression plates of dia.	mm	120	120	120	120	160	220	220
For Transverse Test								
Table with adjustable rollers width of rollers.	mm	160	160	160	160	160	200	200
Diameter of Rollers	mm	30	30	30	50	50	70	70
Maximum clearance between supports	mm	500	500	500	600	800	900	1000
Radius of punch tops.	mm	6, 12	6, 12	12, 16	16, 22	16, 22	30, 40	50, 75

Special Accessories :

- Load Stabilizer
- Printer
- Plotter
- Brinell Test Attachment
- Electronic Extensometer
- Piston Movement Resolution of 0.01 mm
- Electronic Load Pacer
- Shear Test Attachment
- Software Packages
- Mechanical Extensometer
- Wide range accessories offered on request at additional cost.
- Due to constant R& D specifications & features are subject to change without notice.
- The dimensions given above are approximate.

Accuracy and Calibration :

All VEW Electronic Universal Testing Machines are closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Every machine is then calibrated over each of its measuring ranges in accordance with the procedure laid down in British standards. 1610 : Part1 : 1992 and IS : 1828 : Part1 : 1991.

Electronic Universal Testing Machine comply with Grade "A" of BS : 1610 : Part1 : 1992 and class 1 of IS-1828-Part-1:1991. An accuracy of $\pm 1\%$ is guaranteed from 2% to 100% of the capacity of the machine.

Below 20% of the selected range, the maximum permissible error is 0.2% of the full load reading.