

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015

(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com

(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com



# UNIVERSAL TESTING MACHINE 1000KN CAPACITY



Universal Testing Machine  
6 Pillar Hydraulic Grip  
Range: 1000kN

www.vertexinstruments.com

**MAKE: VERTEX | MODEL: VSLIC-SM1000 | MAKE IN INDIA**

### Product Overview

Electronic universal testing machines are designed for conducting tests on various types of ferrous and non-ferrous materials in

1. Compression
2. Tension
3. Transverse
4. Bending
5. Shear
6. Hardness and many others.

M/s Vertex Scientific & Lab Instruments Co.

Authorised Signatory

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015

(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com

(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com

### The machine comprises of three main parts.

- (A) LOADING FRAME
- (B) HYDRAULIC PUMPING SYSTEM
- (C) ELECTRONIC CONTROL PANEL

**A. LOADING FRAME:** The Loading Frame consists of a central cross head whose position is adjustable through a geared motor depending on the size of the test specimen. The lower table is carried by the piston of the Hydraulic Ram of suitable capacity positioned in the cast iron base of the machine. The upper cross head is carried by four steel columns fixed to the lower table. The machine has six pillars in total for stability and rigidly. Compression, transverse, bending, shear and hardness tests are carried out between the central cross head and lower table while the tension test is carried between the central and upper cross heads. Sensing of load is through a strain gauge-based transducers, while the movement of the lower table (ram Stroke) is measured by rotary encoder.

Safety features like over travel limit for central cross head, over travel limit for ram and over loading of the system are provided as standard with the machines. Hydraulically Operated front-loading grips will be supplied with the machine.

**B. HYDRAULIC PUMPING SYSTEM:** Hydraulic pumping system consists of multi plunger pump powered by a suitable motor operated on 415V, 3Phase, 50Hz. This pump gives a continuous non pulsating oil flow to the ram of the loading frame. Pressure switch is provided for additional safety against over load. Release valve and load control valve is placed at a convenient position for easy operation by the operator. It also has electrical control panel for the movement of the middle cross head and also for ON/OFF of the main pump. Additional switch is provided for fast lift of the ram for initial filling of the gap.

**C. LOAD PACING:** The system is supplied with manual pacing arrangement with status of pace rate is indicated in the digital display unit. Pace rate is achieved manually by controlling the flow control knob and the system is released manually after the peak load is achieved.

### MICROPROCESSOR BASED TOUCH PANEL DISPLAY & DATA ACQUISITION SYSTEM FOR UTM

The two-channel microprocessor-based signal conditioning and touch panel display unit is suitable to measure load, Displacement and Extensometer (Optional) directly indicated in their respective engineering units. Load is indicated in terms kN and Extension/displacement in mm. The load is being measured by the Pressure Transducer and displacement is measured by Rotary encoder/ linear displacement transducer. The system receives the output signal of the both the channels as its input and amplify the same to be displayed on the Touch Panel display at the front panel. The data of both the channels of UTM can be transferred to computer through RS-232/ Ethernet and can be online monitored in the software.

**Ms. Vertex Scientific & Lab Instruments Co.**

Authorised Signatory

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)  
(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015  
(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com  
(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com



### Salient Features of System

1. Menu driven interface.
2. Facility to perform various operations such as TARE, PROGRAMMING, START, STOP etc. from Touch Panel display.
3. Programmable Rate of loading (Pace Rate) and sample parameters (Shape, Dimension etc.) through Touch Panel display.
4. Standalone system to Start and stop of test.
5. Manual Pace Rate control at present value with Pace Deviation Bar.
6. On-line display of Load, Peak Load and Displacement with recording of Peak load along other sample details.
7. Real time plotting of Load v/s Displacement, Load v/s Extensometer curve.
8. Storing of results in user defined file with sample parameter and other details.
9. Real time clock check to keep automatic track of the date, time and runs.
10. Test results can be stored in the electronic unit with unique record. no. and can be retrieved and transferred to USB drive for printing.
11. Transmission of Data to computer through Ethernet/USB/RS232 port <sup>®</sup>

### Application Software

User friendly Software would be provided with the system to acquire and plot data online and then analyse the various result parameters.

### Salient features of the software

1. Windows based & user friendly
2. Saving & Retrieving of Test Files
3. On line display of Load, Displacement & Extensometer (Optional)
4. Start & Stop operation for acquiring data
5. Online Plot of Load v/s Displacement Graph
6. Display of recorded Data on the Screen
7. Storing of Data in Numeric form
8. Plotting of following graphs-Load v/s Time, Displacement v/s Time, Load v/s Displacement,

M/s Vertex Scientific & Lab Instruments Co.

Authorised Signatory

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015

(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com

(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com

Stress v/s Strain.

9. Calculation of various parameters such as load and elongation at yields, peak load and displacement at break, yield stress, Modulus of Elasticity, Ultimate tensile strength, compressive strength etc.
10. Facility to print the data and all the graphs

### Technical Specifications:

1. Electronic Universal Testing Machine With open front-loading jaws (Hydraulic) with software 1000 kN Capacity
2. Max. Capacity (kN) : 1000
3. 1st Measuring range (kN) : 0-200
4. Least Count (N) : 100
5. 2nd Measuring range (kN) : 200-1000
6. Least Count (N) : 1000
7. Clearance for Tension test (mm) : 50-850
8. Clearance for compression test (mm) : 0-850
9. Ram Stroke (mm) : 250
10. Piston speed at no load (mm/min) : 0-80
11. Clearance between columns (mm) : 750
12. Connected Load (K.W.) : 3.5
13. Voltage : 400-440Volt
14. Phase : 3 Phase

M/s Vertex Scientific & Lab Instruments Co.

Authorised Signatory

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015

(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com

(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com

### Standard Accessories supplied with the machine For Tension

- |                           |   |       |
|---------------------------|---|-------|
| 1. Clamping jaws for      | : | 10-25 |
| 2. round specimens(mm)    | : | 25-40 |
| 3. Clamping jaws for flat | : | 0-20  |
| 4. specimens (mm)         | : | 20-40 |
| 5. Width (mm) of specimen | : | 75    |

### Hydraulically Operated front-loading grips will be supplied with the machine For Compression

- |                             |   |     |
|-----------------------------|---|-----|
| 1. Diameter of platens (mm) | : | 200 |
|-----------------------------|---|-----|

### For Transverse

- |                                  |   |                       |
|----------------------------------|---|-----------------------|
| 1. Diameter of rollers (mm)      | : | 50                    |
| 2. Length of Rollers (mm)        | : | 170                   |
| 3. Max. span between the rollers | : | 800 (adjustable) (mm) |

(Supply, Installation & Training)

### SHEAR TEST ATTACHMENT 5,6,10,12,16, 20



### Specifications:

M/s Vertex Scientific & Lab Instruments Co.

1. Shear testing attachment for round metallic specimen with complete set of dies for testing specimen of diameter 5, 6, 10, 12, 16 & 20 mm

(Supply, Installation & Training)

Authorised Signatory

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

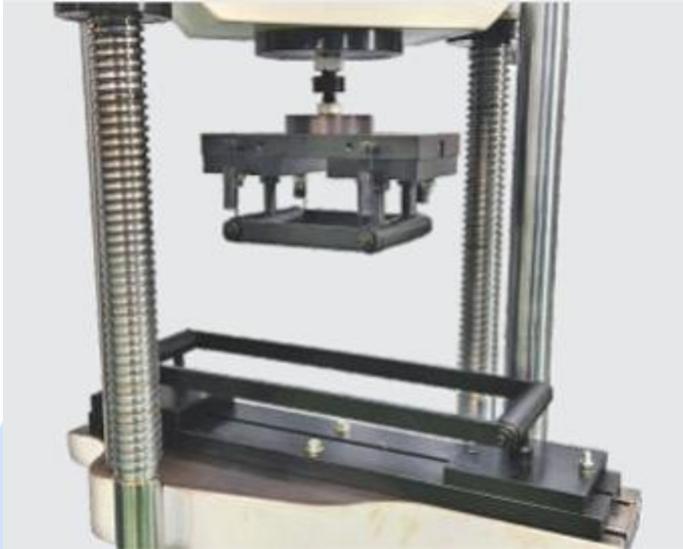
(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(Corp.): A223, Ground Floor, Near by Bank of Baroda ATM, Karam Pura Delhi-110015

(Tel.) +91-9999 5737 81 / +91-9999 5737 85 (Email) info@vertexinstruments.com

(Web) www.vertexinstruments.com / www.vertexscientific.com / www.soiltestinginstrument.com

### 2. Flexure Test Attachment for UTM



A Flexure Test Attachment is used with a Universal Testing Machine (UTM) to measure the flexural strength (bending strength) and flexural modulus of materials when they are bent under load.

M/s Vertex Scientific & Lab Instruments Co.

**VERTEX**<sup>®</sup>  
SCIENTIFIC & LAB INSTRUMENTS CO.

Authorised Signatory

Accurate, Reliable & Extraordinary Testing Solutions