

Universal Strength Machine



1.0 Product Information:

1.1 General Information

Universal Strength machine is equipped with a loading mechanism and sensing mechanism which are controlled by Microcontroller or PLC and observed on LCD display. By default it can measure Compression strength of an AFS (Dia. 2"X2") or Metric (Dia. 50mmX50mm) Specimen.

With Help of attachment it can also measure

- High Compression Strength (Refer 4.2.1)
- Shear Strength (Refer 4.2.2)
- Splitting Strength (Refer 4.2.3).
- Tensile Strength (Refer 4.2.4).
- Transverse Strength (Refer 4.2.5).
- Twin Transverse Strength (Refer 4.2.6).
- Deformation (Refer 4.2.7).

1.2 General Usage

Keep the specimen in between compression pads or accessory & press of start button, within few seconds the equipment shows the reading.

1.3 Product Data

Product Name:	Universal Strength Machine
Product Code:	VUD
Order Reference Code:	V0000031
Electrical Supply Required:	230v 50Hz A.C. (Default) 110v 60 Hz A.C (Optional) Single Phase, Stabilized with Over/ Under Voltage cut-off.
Electrical Plug:	M type : 15 Amp Plug

Typical Maximum Current:	5.5 A at 230V
Compressed air Supply:	Not Required
Communication:	• RS485 MODBUS RTU • RS232 Serial • Ethernet (Optional) • CloudSync using V-Sync
Dimensions:	545 X 320 X 610 mm (WXBXH)
Packing Dimensions:	650 mmx 420mm x 760 mm (WXBXH) Typical
Net Weight:	Approximately 46 kg
Gross Weight:	Approximately 56 kg
Colour:	Factory Default
Measuring Range:	Direct Load: 300 Kg Compression: 15 Kg/cm ² Shear/Splitting: 12 Kg/cm ² Tensile : 60 Kg/cm ² Transverse: 600 Kg/cm ² Deformation: 10mm
Traceable to:	NABL Standards
Least Count:	Direct Load: 0.1 Kg Compression: 0.05 Kg/cm ² Shear/Splitting: 0.05 Kg/cm ² Tensile : 0.05 Kg/cm ² Transverse: 1 Kg/cm ² Twin Transverse: 0.05 Kg/cm ² Deformation: 0.01 mm
Specimen Requirements:	Required
Operating Temperature:	0-50°C
Testing Standards:	BIS: Standard AFS: Optional
Calibration Frequency:	22500 nos. of Testing Cycles or Once in Year

2.0 Scope of Supply

2.1 Inclusions in Supply Scope

- Universal Strength Machine.
- Compression pad set.
- Calibration certificate.
- Instruction manual.

2.2 Exclusions in Supply Scope

- Data interfacing accessories.
- Anything that is not covered under Supply scope.

3.0 Recommended Pre-requisite Equipment

[Sand Splitter](#) : To get representative sample ➤

Specimen preparation equipment's to make a standard AFS or Metric specimen.

4.0 Accessories

4.1 Calibration Kits

There are two types of calibration kits to choose from:

VKSL: For Low Strength

[VKSH: For High Strength](#) ↗

4.2 Attachments

1. [VUHD: High Dry Strength Attachment](#) ↗
2. VHS: Shear Strength Attachment
3. [VSA: Splitting Strength Attachment](#) ↗
4. [VAS: Tensile Strength Attachment](#) ↗
5. [VTS: Transverse Strength Attachment](#) ↗
6. VTT: Twin Transverse Shear Attachment
7. VDSD: Deformation Attachment

5.0 Alternative Equipment

1. [Universal Strength Machine Hydraulic VUN \(For Educational Purposes\)](#) ↗
2. Universal Strength Machine VUM

6.0 Installations Instructions

Required Levelled (2mm) and sturdy platform.
(Equipment should be away from external source of vibration or electromagnetic interference.) Other Installation instruction shall be provided along with the equipment.

7.0 Consumables

NA

8.0 Hazards

Squeezing Hazard: Do not insert hand or limb in between the pads when in operation.

9.0 Additional Information

[Link to Web-Page](#) ↗

[Link to Video of Demo](#) ↗

Disclaimer: Specifications and design of equipment may change without prior notice.