

## VERTEX SCIENTIFIC & LAB INSTRUMENTS CO.

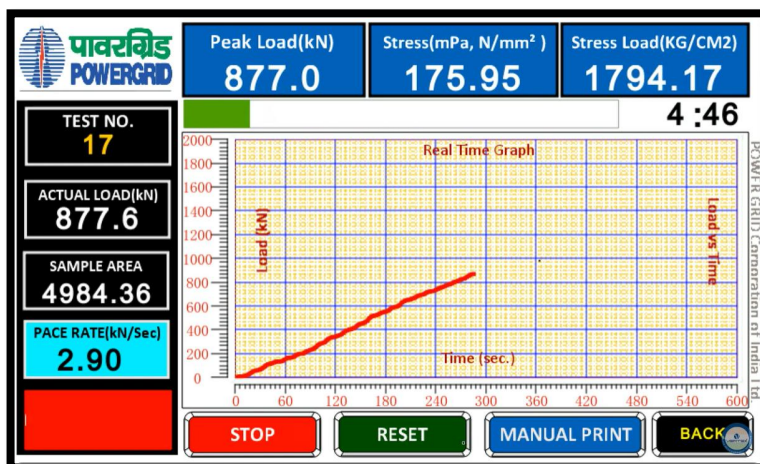
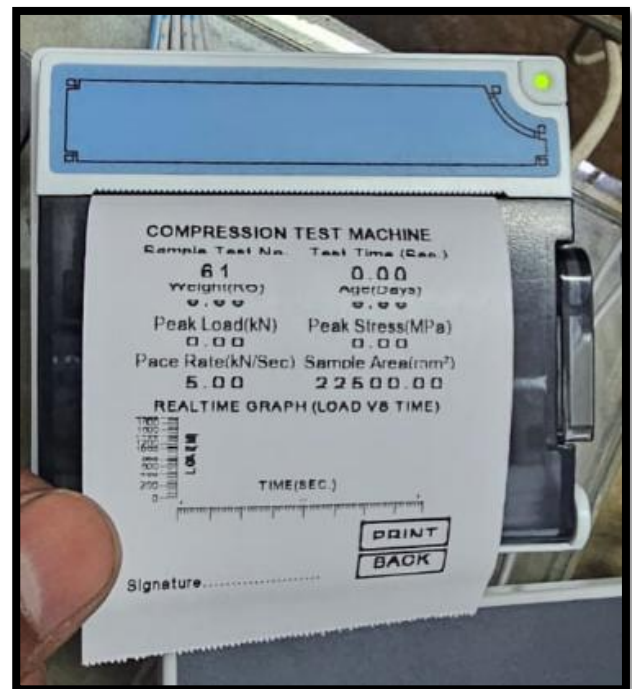
(Regd.) : 38/A, Street No.3 Ambedkar Nagar, Haider Pur, Delhi-110088(India)

(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

## Semi-Automatic Compression Testing Machine (7Inch Touch Screen & Thermal Printer)



MAKE: VERTEX | MODEL: VSIC-C283.2000

www.vertexinstruments.co

## Compliance with following International Standards

IS: 14858 - 2000 and IS 516

Our CTM Machine features advanced Hydraulic technology for precise force measurement and a stable plate model for accurate load centering. With **MANUAL PACE RATE CONTROL**, you can easily adjust testing speeds across a wide range of conditions, ensuring versatility in all your testing needs. Safety and efficiency are integrated with an auto-stop function and a digital display that shows **load readings in both KN and N/mm<sup>2</sup>**, automatically calculated for ease and accuracy. Ideal for any construction project, this machine helps maintain the highest quality standards.

## Introduction:

1. The digital compression testing machine has been designed to meet the need for a simple, economic and reliable means to test concrete for its compressive strength
2. The design expressive of simplicity, both of construction and operation, makes the machine easy to use and maintain.
3. The digital machines are provided with a MANUAL pace rate controller, to enable maintain a constant rate of loading.

## Principle of Operation - Compression Testing Machine

Operation of the machine is by hydraulic transmission of load from the test specimen through a 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 a hydrostatically 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 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 on digital readouts simultaneously.

## Accuracy and Calibration

All VERTEX Compression Testing Machine 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. Electronic Universal Testing Machine comply with the grade "A" of BS:1610 Part 1:1992 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 range.

### Salient Features of VERTEX - Digital CTM Machine:

1. 7Inch Touch Screen Full HD 1080 Pixel, displaying - Actual Load / Peak load, Realtime Graph, Bar-Graph, Rate of loading and Calculated load in  $N/mm^2$  (as soon as sample fails)
2. Four column high stiffness and high stability fully welded construction of the load frame.
3. Direct reading of compressive strength in  $N/mm^2$  &  $KG/cm^2$ .
4. Peak hold facility.
5. Thermal Printing Facility Inbuild Machine.
6. Can manually control pace rate from 1 KN/Sec to 20 KN/sec.
7. Pace rate indication in KN/Sec.
8. Emergency stop button
9. Capable of selecting different test parameters like pace rate, sample size, and area from computer (software).
10. Bar Graph indication to control the pace rate
11. Built in memory for last 100000 readings
12. Automatic internal calibration (without Proving ring)
13. Capable of printing direct reports from the computer.
14. Safety cut out for overload and electrical short circuit.
15. Safety door on the front side for operator safety.
16. Compact Pumping unit with manually variable rate of loading.

### Salient features of data manager PC software (Optional).

1. Two-way communication i.e. machine operates from computer and from the touch screen controller both (Stat, stop, save data and save graph)
2. Graph Shows **Load(kN) vs Time (Sec.)**, **Stress( $N/mm^2$ ) vs Time (Sec.)** & **Load(kN) vs Stress( $N/mm^2$ )**.
3. Results directly saved in excel, word & PDF file
4. Capable to save customer name, other details of customer, ageing of cube moulds, identification mark of the cube mould, date and time of testing
5. Capable to print direct report from the computer
6. Capable to select different test parameters like pace rate, sample size and area from the computer (software)

### Scope of supply:

1. High strength rigid structure (Loading Frame)
2. Pumping unit (Oil source cabinet)
3. Digital Load indicator
4. High precision pressure transmitter



5. Pair of compression platens
6. High pressure hose pipe
7. Computer Software CD(Optional)
8. NABL Calibration Certificate

### Construction - Compression Testing Machine

Heavy duty spherical seat, allowing initial free alignment at the initial contact with the specimen and automatic jamming up to the end of test.

Surface hardness of platen is 55 HRC, flatness tolerance 0.03mm. Traceable certificate of surface hardness available on request.

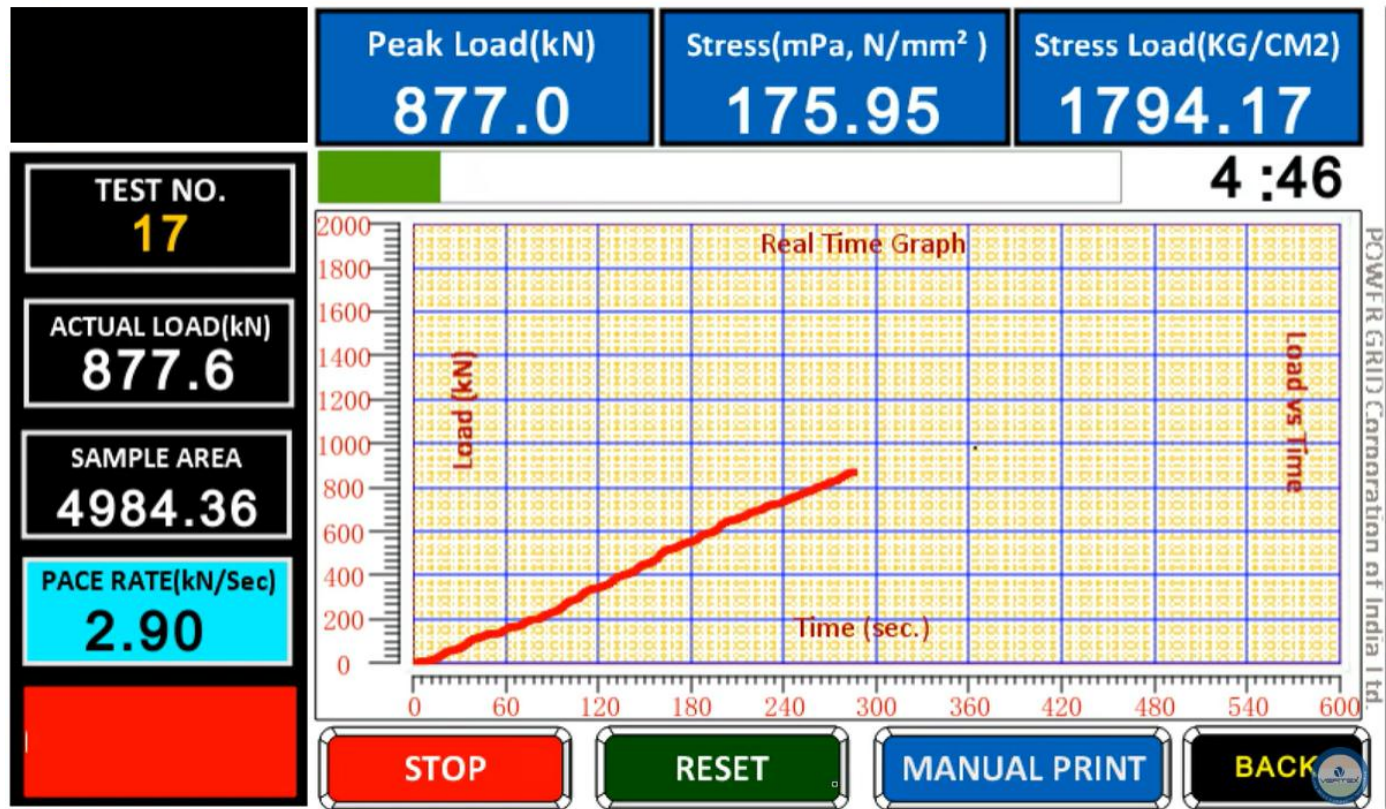
### Technical Specifications - Compression Testing Machine

Model	VSLIC-C283.1000	VSLIC-C283.1500	VSLIC-C283.2000	VSLIC-C283.3000
Max. Capacity	1000 kN	1500 kN	2000 kN	3000 kN
Upper & Lower Compression Plates	Ø300 mm	Ø300 mm	Ø300 mm	Ø300 mm
Horizontal Clearance	380 mm	380 mm	380 mm	380 mm
Vertical Clearance	430 mm	430 mm	430 mm	430 mm
Piston	165 mm	205 mm	210 mm	260 mm
Max. Piston Stroke	50 mm	50 mm	50 mm	50 mm
Power Input	230 V, 1 Ph, 50 Hz.			
Thermal Printer Facility	Yes	Yes	Yes	Yes
Computer Software	(optional)	(optional)	(optional)	(optional)
Machine Weight	550 kg	610 kg	650 kg	950 kg

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**7 INCH TOUCH SCREEN(HMI) WITH PLC BASED MACHINE.**



**20x4(s) Character LCD Display with Blue Backlight ASCII Alphanumeric Character.**

Test Report Result  
Compression Testing Machine  
DATE: 28/5/2025  
TIME: 14:44:15  
Test No. = 4  
Test Time = 11  
Sample Area = 22500.00 mm<sup>2</sup>  
Ref. Pace Rate = 5.25 kN/Sec  
Sample Weight = 8.50 Kg  
Concrete Grade(M) = 45  
Sample Age = 22 Days  
Peak Load = 280.0 kN  
Peak Stress = 12.44 MPa  
Peak Stress = 126.90 KG/Cm<sup>2</sup>  
Signature.....

**Test Result Print from Thermal Printer**

**COMPUTER SOFTWARE LAYOUT(Optional)**

Digital Compression Testing Machine

File Settings Report Calculator Exit

Peak Load (kN) : 0.00      Stress (N/mm<sup>2</sup>) : 0.00      Test Time (Sec.) : 0.0      Pace Rate (kN/Sec.) : 0.00

0.00      0.00      0.0      0.00

Type of Test : ----  
Test S.No. : 5  
Test Date : ----  
Test Time : ----  
Client Name : ----  
Test Report No. : ----  
Test Standard : ----  
Sample Name : ----  
Sample Width : 0.00 mm  
Sample Thickness : 0.00 mm  
Sample Area : 0.00 mm<sup>2</sup>  
Peak Load : 0.00 kN  
Peak Stress : 0.00 N/mm<sup>2</sup>  
Avg. Pace Rate : 0.00 kN/Sec.

Load vs Time    Load vs Stress    Stress vs Time



Communication Offline

Reset    Start    Stop

**Enter New Sample Test Details**

Sample Test Details

Test Report No.

Buyer Name

Test Standard

Sample

Test Type

Flat    Round

Width  mm

Length  mm

Sample Details

Area  mm

Temperature  °C

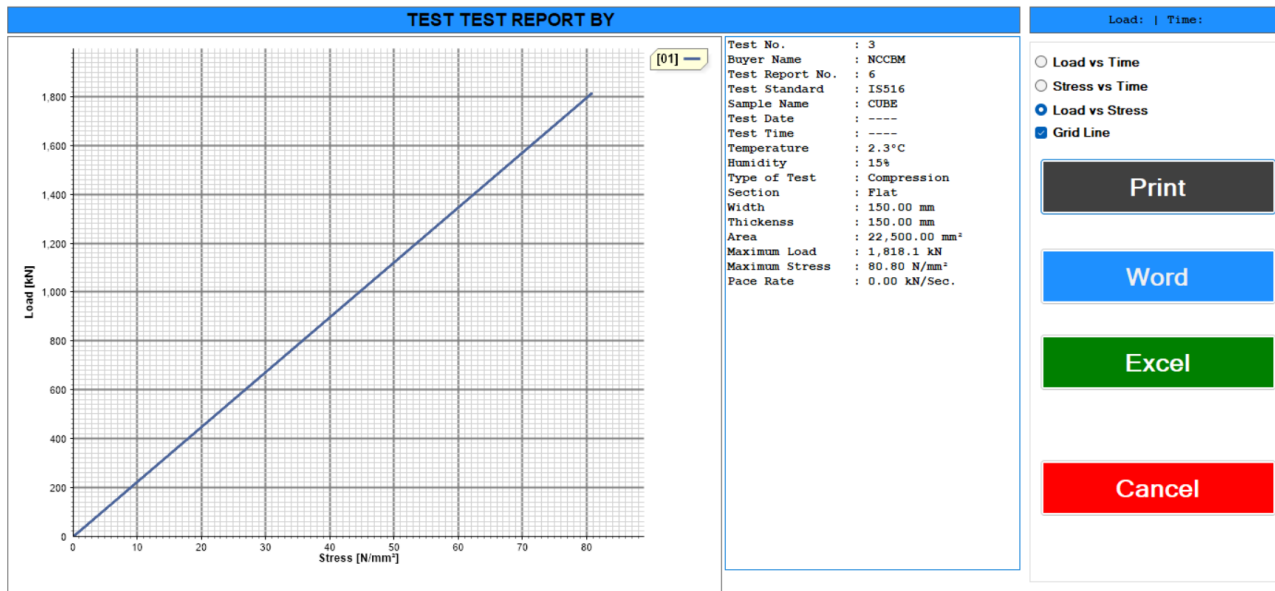
Humidity  %

SAVE    UPDATE    Cancel



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Remarks : .....

Tested By : ..... Checked/Witnessed By : .....

### Note:

1. Use of 3 KVA three phase servo-controlled stabilizer is essential to protect the machine against voltage fluctuations. Warranty voids in case of any damage due to power fluctuation.