

## UNIAXIAL UNCONFINED COMPRESSIVE TESTING MACHINE

### H-TOUCH PRO MAX UNIAXIAL CONTROL UNIT (TOUCH SCREEN)

STANDARDS: ASTM D2166, ASTM D1663, AASHTO T208

Uniaxial Unconfined Compressive Testing Machine is designed to perform Uniaxial Unconfined Compressive Tests to examine the behavior of a soil sample that does not need lateral support under axial load. As a result of this test, the unconfined compressive strength ( $q_u$ ) value and the undrained shear strength ( $c_u$ ) value of cohesive soils are obtained.

The device is composed of a robust and compact two column frame with adjustable upper cross beam driven by an electromechanical ram with a maximum capacity of 50 kN or 100 kN and a data acquisition and processing system.

Two models are available as 50 kN and 100 kN capacity.

The testing speed can be set between 0,5 mm/min to 2 mm/min.

The speed setting of the loading plate is controlled from the digital readout unit.

For safety, the up and down travel of the lower platen is limited the use of limit switches.

The measuring system consists of a 50 kN or 100 kN capacity load cell according to capacity of frame fitted to the upper cross beam to read stability values and the 25 mm Displacement Sensor fitted to the column.



HR-S1000/TS

Supplied complete with HİRATEST H-Touch Pro Max Uniaxial Control Unit, 50 kN or 100 kN capacity Load Cell according to capacity of frame, 25 x 0.01 mm Linear potentiometric displacement transducer with holder, Compression Platens with ball seating assembly, HİRATEST H-GUI Uniaxial Software and LAN Connection Cable.

#### H-TOUCH PRO MAX UNIAXIAL CONTROL UNIT

HİRATEST H-Touch Pro Max Uniaxial Control Unit is designed to control Uniaxial Unconfined Compressive Test Machine by processing of data from displacement transducers which are fitted to the machine.

All the operations of H-Touch Pro Max Uniaxial Control Unit are controlled from the front panel color resistive of TFT-LCD Touchscreen display and function keys.

The Unit can perform Uniaxial Unconfined Compressive Tests as a stand-alone without the use of a PC or with the HİRATEST H-GUI Uniaxial Software and a PC. Control of machine, acquisition of load and displacement data in real time are provided by the unit.

The unit has easy to use menu options.

It displays all menu option listings simultaneously, allowing the operator to access the required option in a seamless manner to activate the option or enter a numeric value to set the test parameters and see all the data while the test running.

#### Main Features of H-Touch Pro Max Uniaxial Control Unit

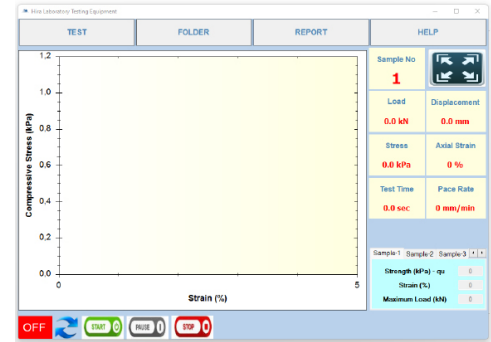
- The unconfined compressive strength ( $q_u$ ) value and the undrained shear strength ( $c_u$ ) value of cohesive soils are obtained.
- Ability to perform displacement-controlled tests
- Real time display of test graph
- 2 analog channels for load cell and displacement sensors
- Multi-language support (English, French, Spanish, Turkish)
- Real-time date/time
- Test results display and memory management interface
- Calibration function for channels
- Programmable digital gain adjustment for load-cell and potentiometric sensors, voltage and current transmitters
- Closed loop PID for steady pace rate
- Connection and control feature via Ethernet
- Free computer software for test control and enhanced report output



HR-S1000/2/TS

## Hardware

- Permanent storage capacity up to 10 0000 test results
- 1/256000 dot resolution for each channel
- 10 data acquisition per second (at sample rate) on each channel
- 2 fully customizable analog channels with 24-bit ADC and PGA-FPGA circuit
- Ethernet port for computer connection
- 800x480 pixel and 65535 color resolution TFT-LCD touchscreen
- 33 Hz control loop
- 32 Bit, 120 MHz ARM CORTEX M3 micro-PROCESSOR (CPU) for data acquisition
- 32 Bit, 400 MHz ARM CORTEX M3 micro-PROCESSOR (CPU) for data display
- Choice of three unit systems: kN, ton or lb
- Additional memory support up to 32 GB via external USB flash drive
- Support for -optionally supplied- integrated thermal printer
- LAN connection for instantaneous transfer of test data to PC.
- USB port support for transfer of test data to a flash drive



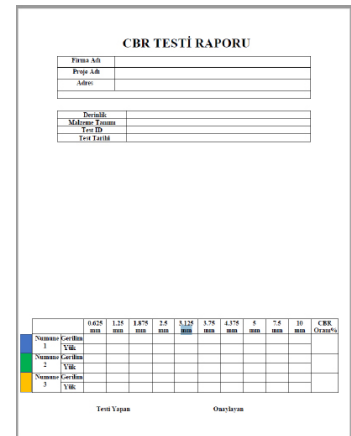
## Software

HIRATEST H-GUI Uniaxial Software has been designed for Uniaxial Unconfined Compressive Test.

The software includes control of machine, acquisition of load, stress, strain and displacement data, generating and saving reports.

The software continuously updates load, stress, strain and displacement till the end of test.

The unconfined compressive strength ( $q_u$ ) value and the undrained shear strength ( $c_u$ ) value of cohesive soils are obtained.



The screenshot shows the 'CBR TEST RAPORU' (CBR Test Report) form. It includes fields for 'Form No', 'Form Adı', 'Adres', 'Durum', 'Malzeme Türü', 'Test ID', and 'Test Tarihi'. Below these fields, there is a table for 'Test Yapan' (Test Operator) and 'Onaylayan' (Approved By). The table has columns for 'Sıra No' (Serial No), 'Durum' (Status), 'Yürürlük' (Validity), and 'CBR' (CBR Value). The table is currently empty.

## Main Features of H-GUI Uniaxial Software

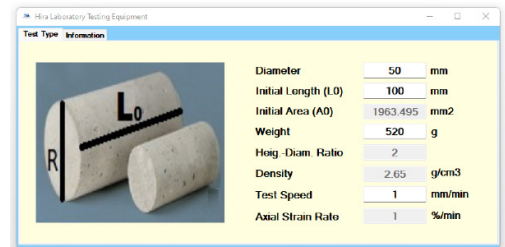
- Multi-language support and user interface
- Refreshing Experiment Graphic Displays on the Screen in Real Time
- Able to save frequently used texts in memory and recall them when necessary
- Modification of test machine parameters using the software

## Technical Specifications:

Product Code	HR-S1000/TS	HR-S1005/TS
Product Name	Uniaxial Unconfined Compressive Testing Machine	
Test Speed	0,5 - 2 mm/min.	
Capacity (kN)	50	100
Dimensions (cm)	47x70x110	52x72x110
Weight (kg)	80	90
Power Supply	220 V, 50-60 Hz, 1 ph	

## Spare Parts & Accessories:

Product Code	Product Name
HR-S1000/F	Uniaxial Unconfined Compressive Testing Frame, 50 kN
HR-S1005/F	Uniaxial Unconfined Compressive Testing Frame, 100 kN
HR-G0981	Load Cell, 50 kN capacity
HR-G0982	Load Cell, 100 kN capacity
HR-G0995	Displacement Sensor, 25 x 0,01 mm
HR-S1000/2/TS	H-Touch Pro Max Uniaxial Control Unit
HR-S1000/3	H-GUI Uniaxial Software
HR-S1010	Compression Platens with ball seating assembly



The screenshot shows the 'Test Type Information' window in the HIRA Laboratory Testing Equipment software. It displays a list of test parameters and their values: 'Diameter' (50 mm), 'Initial Length (L0)' (100 mm), 'Initial Area (A0)' (1963.495 mm²), 'Weight' (520 g), 'Hoig-Diam Ratio' (2), 'Density' (2.65 g/cm³), 'Test Speed' (1 mm/min), and 'Axial Strain Rate' (1 %/min). To the left of the text, there is an image of a cylindrical soil sample with labels 'L0' and 'R'.