

DIGITAL CBR TEST MACHINE

H-TOUCH PRO MAX CBR CONTROL UNIT (TOUCH SCREEN)

STANDARDS: EN 13286-47, BS 1377:4, ASTM D1883, AASHTO T193, NF P94-078, UNI CNR 10009

The Digital CBR Test Machine is designed for performing laboratory evaluation of the CBR value of highway sub-bases and sub-grade and determination of the strength of cohesive materials.

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.

The CBR Test Machine designed to load the penetration piston into the soil sample at a constant rate to measure the applied load and piston penetration at predetermined intervals.

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

Two test speeds are provided 1.0 mm/min for BS and 1.27 mm/min. for ASTM/EN/AASHTO Tests.

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.

Supplied complete with HIRATEST H-Touch Pro Max CBR 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, CBR Penetration Piston, HIRATEST H-GUI CBR Software and LAN Connection Cable.



HR-S5000/TS

H-TOUCH PRO MAX CBR CONTROL UNIT

HIRATEST H-Touch Pro Max CBR Control Unit is designed to control CBR Test Machine to perform according to ASTM/EN/AASHTO and BS standards by processing of data from displacement transducers which are fitted to the machine. All the operations of H-Touch Pro Max CBR Control Unit are controlled from the front panel color resistive of TFT-LCD Touchscreen display and function keys.

The Unit can perform CBR tests as a stand-alone without the use of a PC or with the HIRATEST H-GUI CBR 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 CBR Control Unit

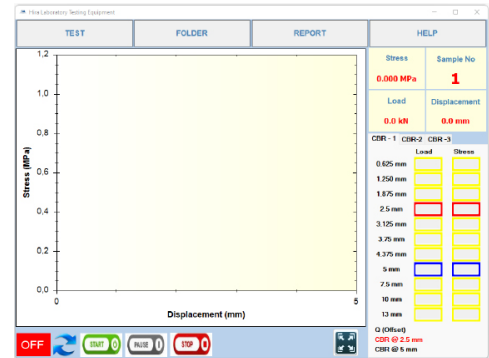
- Calculates corrected CBR value at 2.5 and 5 mm.
- The digital unit saves the load value at user defined displacement values such as 0.625, 1.25, 1.875, 2.5, 3.75, 5, 7.5, 10, 12.5 mm.
- The % CBR at 2.5 mm and % CBR at 5 mm is also automatically calculated and saved.
- Ability to perform displacement-controlled 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-S5000/2/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



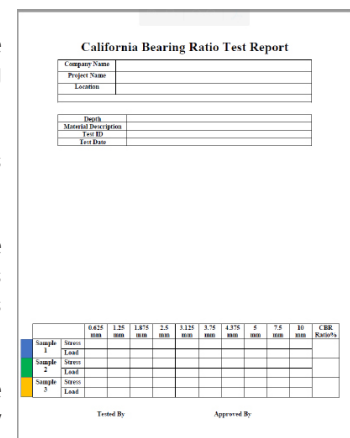
Software

HİRATEST H-GUI CBR Software has been designed for EN/ASTM/AASHTO/BS CBR Tests. The software includes control of machine, acquisition of load and displacement data, generating and saving reports.

The software prepares a summary result for the user that will only need some specific loads such as at 0.625, 1.25, 1.875, 2.5, 3.125, 3.75, 4.375, 5, 7.5 and 10 mm.

The software continuously updates load, stress and displacement till the end of test. Software can automatically draw the best tangent line and perform the upward concave correction as suggested by ASTM D 1883. The corrected stress values are then calculated respect to this offset.

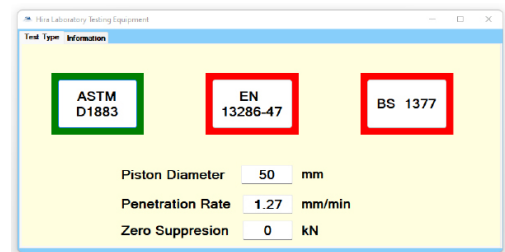
The CBR value at 2.5mm and 5.0mm are calculated by using the standard load values at those penetrations. On the general information tab, by entering necessary information, dry density calculations can be made through the software.



The screenshot shows a 'California Bearing Ratio Test Report' form. It includes fields for Company Name, Project Name, Location, Depth, Material Description, Test ID, and Test Date. Below these is a table for recording test results with columns for Sample, Stress, and Load at various penetration depths (0.625, 1.25, 1.875, 2.5, 3.125, 3.75, 4.375, 5, 7.5, 10 mm) and CBR values. There are also fields for 'Tested By' and 'Approved By'.

Main Features of H-GUI CBR 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	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-S5000/TS	Digital CBR Test Machine, 50 kN capacity	47x70x110	80	220 V, 50 Hz, 1 ph
HR-S5000/60Hz/TS	Digital CBR Test Machine, 50 kN capacity	47x70x110	80	220 V, 60 Hz, 1 ph
HR-S5010/TS	Digital CBR Test Machine, 100 kN capacity	52X72X110	90	220 V, 50 Hz, 1 ph
HR-S5010/60Hz/TS	Digital CBR Test Machine, 100 kN capacity	52X72X110	90	220 V, 60 Hz, 1 ph

Spare Parts & Accessories:

Product Code	Product Name
HR-S5000/F	CBR Testing Frame, 50 kN capacity
HR-S5010/F	CBR Testing Frame, 100 kN capacity
HR-G0981	Load Cell, 50 kN capacity
HR-G0982	Load Cell, 100 kN capacity
HR-G0995	Displacement Sensor, 25 x 0,01 mm
HR-S5000/2/TS	H-Touch Pro Max CBR Control Unit
HR-S5000/3	H-GUI CBR Software
HR-S5000/1	CBR Penetration Piston