

Product Code

UTM-4000	Hydraulic Universal Testing Machine, 600 kN, 220-240V
UTM-4000/110	Hydraulic Universal Testing Machine, 600 kN, 110V
UTM-4001	Frame for 600 kN Hydraulic Universal Testing Machine
UTM-4003	Hydraulic Grips Jaw Faces Set for Round Specimens
UTM-4004	Hydraulic Grips Jaw Faces Set for Flat Specimens
UTM-0500	Extensometer for Universal Testing Machine, 50 mm Gauge Length (Accuracy 0.01 mm)
UTM-0510	Extensometer for Universal Testing Machine, 100 mm Gauge Length (Accuracy 0.01 mm)
UTM-0520	Extensometer for Universal Testing Machine, 50 mm Gauge Length (Accuracy 0.001 mm)

Standards

EN ISO 15630-1, EN ISO 6892-1, EN ISO 7500-1

UTM 4000 Universal Hydraulic Tensile Test Machine is designed to test the ferrous materials for structural values such as yield strength and tensile strength. Apart from tensile tests, Universal Test Machines can also be used for compression tests up to the capacity of the machine.

Maximum security is maintained on 600kN capacity Universal Test Machine by limit switch on the lower grip and piston as well as the safety check valves on the hydraulic system. Hydraulic power unit works silently.

0-40 mm flat and 8-32 mm round samples can be tested with a user friendly hydraulic jaws that comply with standards.

Load cell is used for load measurements. Strain measurement is done by the electronic displacement transducer built in the machine if required external extensometer fitted to the specimen also can be used for strain measurement. Strain measurements can be done directly from the extensometer fitted to the specimen.

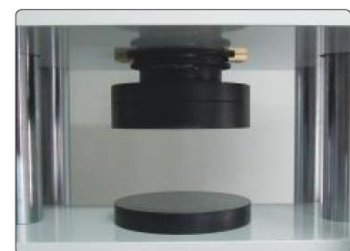
Tests can be done fully automatic by digital control unit or computer. Machine complete the test with the set pace rate and turns to start position automatically.

UTM-4000 Hydraulic Universal Testing Machine, features two test spaces for tension tests and compression tests. User can quickly change between tension and compression testing without having to remove heavy fixtures. This flexible design also helps to ensure safety, reduces operator effort and improves productivity.

The distance between the grips can be set by motor driven hand set system. With open front hydraulic wedge grips user can load specimen easily.



test space for tension tests



test space for compression tests



BPS INSTRUMENT

TENSILE TESTING MACHINE

BC 100 TFT Graphic Display Data Acquisition and Control Unit

BC100 TFT Graphic Display Data Acquisition and Control Unit is designed to control the machine and processing of data from load-cells, pressure transducers or displacement transducers which are fitted to the machine.

All the operations of BC100 are controlled from the front panel consisting of a 800x480 pixel 65535 color resistive touch screen display and function keys. 4 analogue channels are provided for load-cells, pressure transducers or displacement transducers.

BC100 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. The BC100 digital graphic display is able to draw stress vs. strain graph.

BC100 unit offers many additional unique features. You can save more than 10000 test results in its internal memory. BC100 unit has support for various off-the-shelf USB printers, supporting both inkjet and laser printers. Thanks to its built-in internet protocol suite, every aspect of BC100 device can be controlled remotely from anywhere around the world.

Main Features

- Automatically calculates % strain, breaking point, stress.
- Automatically calculates yield point and calculated diameter
- Can control 2 frames
- Can make test with displacement and load control.
- Real time display of test graph.
- CPU card with 32-bit ARM RISC architecture
- Permanent storage capacity up to 10000 test results
- 4 analog channels (one for load cell, one for displacement transducer, one for extensometer and one is free for extra compression frame)
- Programmable digital gain adjustment for load-cell, pressure transducers, strain-gauge based sensors, potentiometric sensors, voltage and current transmitters
- 1/256000 points resolution per channel
- 10 data per second sample rate for each channel
- Ethernet connecting for computer interface
- 800x480 resolution 65535 color TFT-LCD industrial touchscreen
- 4 main function keys
- Multi-language support
- 3 different unit system selection; kN, Ton and Lb
- Real-time clock and date
- Test result visualization and memory management interface
- Remote connection through ethernet
- USB flash disc for importing test results and for firmware
- USB printer support for inkjet and laser printers (ask for compatible models)
- Camera support for real-time video recording during test (ask for compatible models)
- Free of charge PC software for the test control and advanced report generation

HYDRAULIC GRIPS

Hydraulically operated grips completely stop the possibility of sample sliding from the grips enabling for correct and definite strain measurements. Hydraulic grips are very safe and user friendly. Hydraulic grips come with grip sets for pulling 8 – 32 mm diameter cylinder samples. The hydraulic grips have an independent hydraulic power unit with a working pressure of 400 bars. Jaw faces for flat samples should be ordered separately.



Technical Specifications

Capacity		600 kN
Test Speed		2mm/min - 25mm/min
Load Measurement Accuracy		± %1
Displacement Measurement Resolution		0,01 mm
Columns Diameter	Lower	70 mm
	Upper	70 mm
Vertical Test Distance	Tension	Minimum 40 mm Maximum 320 mm
	Compression	Maximum 110 mm
Distance Between Columns		450 mm
Piston Stroke		150 mm
Max Pressure	Grips	350 bar
	Load	200 bar
Weight		1850 kg
Height		2700 mm
		at the max stroke
		2850 mm

Data Acquisition & PC Software

The Universal Testing machine can be controlled (Start, Stop commands) by a computer with the software (given free of charge by UTEST). This software provides data acquisition and management for compression, tensile and splitting tensile test throughout the test execution. The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Therefore, test parameters can be set and details about the test carried out such as client details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.

Following tests can be done with the UTEST software.

Standard Code	Description
EN 15630-1 and EN ISO 6892-1	Tensile Test of Reinforcing Ribbed Steel Bars
EN ISO 6892-1	Tensile Test of Metallic Materials

Universal Test Software is developed for testing tensile strength of Reinforcing Ribbed Steel Bars and Welded fabric for the Reinforcement and Prestressing of Concrete. The software includes control of machine, data acquisition, saving them and preparing reports. The user can prepare his own report and also can send the results to Microsoft Excel environment. The software accepts sample's weight, length, diameter and gauge length as input, and then the user can give start test command to the machine. The samples calculated diameter gives user a perspective about the density of rebar prior to the test. The software continuously updates load, stress and elongation percentage till the break point. When the test is completed the yield point is calculated and indicated on the graph. Each report is a group of 42 samples where 14 different diameters had been entered. The software is prepared as making at least 3 samples for each diameter. This gives user a total report about all the batch. The report includes all standard limits and one can easily check whether the sample can be acceptable. These limits are minimum yield, minimum tensile, minimum break elongation value, Tensile per yield ratio etc. The user can zoom on the graph for further inspection. Break elongation value can be synchronized with the manual measurement after the test has been completed for the users that do not use extensometer.

