



BPS INSTRUMENT

TENSILE TESTING MACHINE

Product Code

UTM-6000	Hydraulic Universal Testing Machine, Servo Controlled, 600 kN,
UTM-6001	Universal Testing Machine Frame, 600 kN, 380 V, 50-60 Hz, 3 Ph
UTM-7000	Hydraulic Universal Testing Machine, Servo Controlled, 1000 kN,
UTM-7001	Universal Testing Machine Frame, 1000 kN, 380 V, 50-60 Hz, 3Ph
UTM-8000	Hydraulic Universal Testing Machine, Servo Controlled, 2000 kN,
UTM-8001	Universal Testing Machine Frame, 2000 kN, 380 V, 50-60 Hz, 3 Ph
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 6892-1, EN ISO 15630-1, EN ISO 7500-1

GENERAL DESCRIPTION

UTM-6000, UTM-7000 and UTM-8000 computer controlled servo hydraulic universal testing machines are suitable to test various metallic and non-metallic materials and can carry out tension, compression, flexural and bending tests. The capacity of UTM-6000 is 600kN, of UTM-7000 is 1000kN and UTM-8000 is 2000kN. On all models load cell is used for load measurement to achieve best load accuracy during test. The load accuracy of the systems is $\pm 1\%$ down to 2% of the full capacity. Strain measurements are done by the electronic displacement transducers built in the machine. Displacement or strain measurement can be also done external extensometer fitted to the specimen. The accuracy of the strain measurement on frame is 12.5 microns.

UTM-6000, UTM-7000 and UTM-8000 systems are guaranteed to meet EN ISO 6892-1, EN ISO 15630-1, EN ISO 7500-1, ISO 679, ISO 1920-4, ASTM E 290 and other international and national standards. Servo hydraulic universal testing systems can carry out tension test, compression test, bend test and flexure test by two pace rate type including load control and displacement control. Those two control parameters can be switched during the test. According to the preset condition, the systems can realize constant-rate loading, loading according to preset curve, testing with constant-rate displacement.

With powerful testing software, UTM-6000, UTM-7000 and UTM-8000 systems can acquire, dispose automatically testing data, display real-time stress-strain curve, load-deformation curve, load-time curve and other related curves, at the same time, can save, output, print test report and data with customized format. With the help of advanced Material Testing Software the machine can be widely used in ultimate R&D department, Universities and Academies, Quality control and Inspection department, calibration centers/laboratories and industry.

LOADFRAME

Load frames used on Hydraulic Universal Testing Machines has a motor driving system to set distance between grips for test set up has a rugged six column construction for exceptional load frame rigidity. All models feature two test spaces for tension test and compression/flexure and bending test. User can quickly change between tension and compression/flexure and bending 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 for different specimens. With an open front hydraulic wedge grips user can change jaw faces and load specimen easily.

All frames are supplied complete with jaw faces, compression platens and bending fixtures.

UTEST

MATERIAL TESTING EQUIPMENT



UTM-7000



Compression Platens



Testing Grips

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 standart limits and one can easily check whether the sample can be acceptable. These limits are



- **Foreign Language Support and Customizable User Interface**

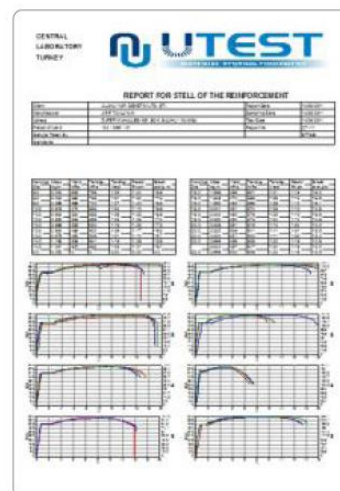
All contents of experimental data and additional information can be organized by user. Software can be performed in x different languages.

- **Capability to Save 24 test results of different specimens in one test folder**

Test results, graphics and properties of 24 different specimens can be saved in one folder. Old test folders can be reviewed and be edited easily. Advanced Graphic User Interface Software.

- **Graphical data on the screen is refreshed simultaneously during test procedure**

Load values can be monitored in high resolution graphics at every 100 milliseconds. User can highlight all 24 different specimen curves or preferred ones in different colors on the graphics. Zooming in-out and dragging can be done easily by mouse. Peak values of curves can be marked on the graphics and user can get load value of any point on the graph via high resolution.



- **Able to save frequently used texts in memory and recall them when necessary**

Frequently used information like name and location of the laboratory, type and dimensions of mostly used specimens are held in memory and can be written automatically by right clicking on information boxes and selecting frequently used text in menu.

- **Capable to Access and use previously done test data**

User can access any data of previously completed tests and use in his/ her new report since most of the tests have same structure and properties.

- **Able to edit test parameters of the testing equipment through Software**

All test parameters supported by testing equipment can be changed remotely via software. All test parameters specified by user are downloaded to the device before initialing the test procedure. By this way predefined device parameters will not cause errors in test results.

- **Graphical outputs and reports can be saved as a MS Excel worksheet**

Test result parameters and graphics are transferred to MS Excel worksheet properly to give user a chance to edit any data and graph easily.

- **Maximum Flexibility to edit report and graph templates**

User can design his/her custom report template and graphic scheme in MS Excel. In software part, user will define which data will be screened in which cell on the worksheet. Therefore, he/she will be able to monitor test results in his/her specific design.

Technical Specifications

	UTM-6000	UTM-7000	UTM-8000
Maximum Load	600kN	1000kN	2000kN
Load Measurement Accuracy	1% from 2% of max capacity	1% from 2% of max capacity	1% from 2% of max capacity
Deformation Measurement Accuracy	12.5µm	12.5µm	12.5µm
Control Mode (Pace Rate Type)	Displacement Control, Load Control, Stress Control	Displacement Control, Load Control, Stress Control	Displacement Control, Load Control, Stress Control
Max Vertical Test Space Between Grips	750 mm	750mm	1000 mm
Max Vertical Test Space Between Platens	620 mm	620 mm	850 mm
Max Horizontal Test Space	475 mm	565 mm	840 mm
Piston Stroke	250 mm	250 mm	250 mm
Testing Speed	0-50 mm/min (Displacement)	0-50 mm/min (Displacement)	0-50 mm/min (Displacement)
Crosshead Speed	200 mm/min	200 mm/min	280 mm/min
Grips for Flat Specimen (2 set)	Thickness 0-30 mm	Thickness 0-40 mm	Thickness 10-70 mm
Grips for Round Specimen (2 set)	Diameter 13-40 mm	Diameter 20-60 mm	Diameter 20-80 mm
Compression Platen Size	128 mm diameter	148 mm diameter	200mm diameter
Power Supply	380 V AC, 50 Hz, 2.5 kW Frame 220 V AC 50 Hz Power pack	380 V AC, 50 Hz, 3.5 kW 220 V AC 50 Hz Power pack	380 V AC, 50 Hz, 3.5 kW 220 V AC 50 Hz Power pack
Load Frame Dimensions	770x600x2150 mm	900x650x2400 mm	1300x900x3300 mm
Power Pack Dimensions	570x800x1020 mm	570x800x1020 mm	570x800x1020 mm
Weight	2600 kg / 250 kg	3700 kg / 250 kg	8800 kg / 250 kg