

UNIVERSAL TENSILE MACHINE (UTM-500kN)

INTRODUCTION

This machine has been designed for use, in the field or laboratory to perform tension tests on steel rebars up to 26 mm dia. and compression tests on cylindrical concrete specimens up to dia. 160x320 mm and cubes up to 150 mm, using the appropriate accessories.

The system includes the UTM AUTO Power and Control System (PCS) for the automatic execution of compression and tensile tests.

FRAME

The frame consists of a very rigid structure with double acting cylinder assembly. It includes tensile grips and it is fitted with a 150 mm travel high precision displacement transducer allowing test execution under crosshead separation control. The machine is supplied complete with a set of tensile holders, 4 wedge grips for flats up to 13 mm thickness, 4 wedge grips for rounds up to 26 mm dia. and 2 sets of grip liners 4 and 8 mm thick

Spherical seat and compression platens for concrete specimens

UTM AUTO POWER AND CONTROL SYSTEM (PCS)

Automatically performs steel tensile and concrete compression tests when connected to the relevant accessories. See Technical specifications.

The UTS Light software (included) is tailored for tensile tests according to EN 6892-1 (method B) and EN 15630-1, being suitable for data acquisition and test results elaboration. See Technical Specifications.

TECHNICAL SPECIFICATIONS

Frame

Load capacity in tension	: 500 kN
Load capacity in compression	: 1000 kN
Tensile jaws including	: 4 wedge grips for flats up to 13 mm thickness, 4 wedge grips for rounds up to 26 mm dia. and 2 sets of grips' liners 4 and 8 mm thick. heavy duty high-functionality jaws rated for severe prolonged use.
Maximum distance between grips (tensile mode)	: approx. 300 mm
Specimen length (tensile mode)	: approx. 500 mm
Max vertical clearance for compression (with 70-S0012/1):	695mm
Max. Ram travel	: 150 mm
Distance between columns	: 310 mm
Overall dimensions approx (w x d x h).	: 1000 x 700 x 1750 mm
Weight approx.	: 550 kg

UTM AUTO POWER AND CONTROL SYSTEM

Hardware and firmware

- 131.000 points effective resolution
- 240 x 128 pixels touch screen graphic display
- Closed-loop P.I.D.control
- 2 channels for load sensors
- 1 channel to measure crosshead separation travel with 150mm high precision displacement transducer (included)
- 1 channel to measure rebars elongation with extensometers (see Accessories)
- Digital linearization of the calibration curve (multi-coefficient)

TENSILE TEST:

Automatic test execution under load/stress control and grips separation control (by using the displacement transducer supplied with the machine) with closed loop PID control Simultaneous display of load, stress and specimen elongation Possibility to overlap two elongation/stress graphs: one obtained with the included displacement transducer measuring crosshead separation travel one obtained with an optional extensometer (coaxial or universal) Graphical test data option showing the load / elongation curve.

COMPRESSION TEST:

Automatic test execution of compression tests with closed loop PID control Simultaneous display of load and stress, load/time graph

HYDRAULICS

Dual stage pump: centrifugal low pressure for fast approach and automatic switching to radial multi-piston high pressure for loading :

DC motor 720 W, 50-60 Hz

Maximum working pressure 700 bar

ES Energy Saving technology

SOFTWARE

UTS Light data acquisition and processing software (included) for tensile test according to EN Standard allowing:

Input of specimen identification, test and name of customer real time downloading of test data simultaneous display of stress/time and stress/elongation by using coaxial extensometer series 70-C0961/xx or universal extensometer series 70-C0954/x (see Accessories) or displacement transducer reading crosshead separation travel (included) elaboration of tension test results once test is completed: ReH, ReL or Rp, final elongation, etc. in conformity to EN ISO 6892-1 (method B) and EN 15630-1 (for steel rebars) when extensometer is adopted unit of measurement: kN, mm, MPa printout of test reports multi-language software



UNIVERSAL COMPRESSION CUM FLEXURE TESTING MACHINE

Max Capacity : 5000 kN

Experiment : To determine the Flexure & Compressive strength.

Year of Purchase: 2013

Cost : 28.61 Lac



DIGITAL UNIVERSAL TESTING MACHINE (TENSILE & COMPRESSION)

Max Capacity : 1000 kN

Experiment : To determine the Tensile & Compressive strength.

Year of Purchase: 2008

Cost : 19.36 Lac