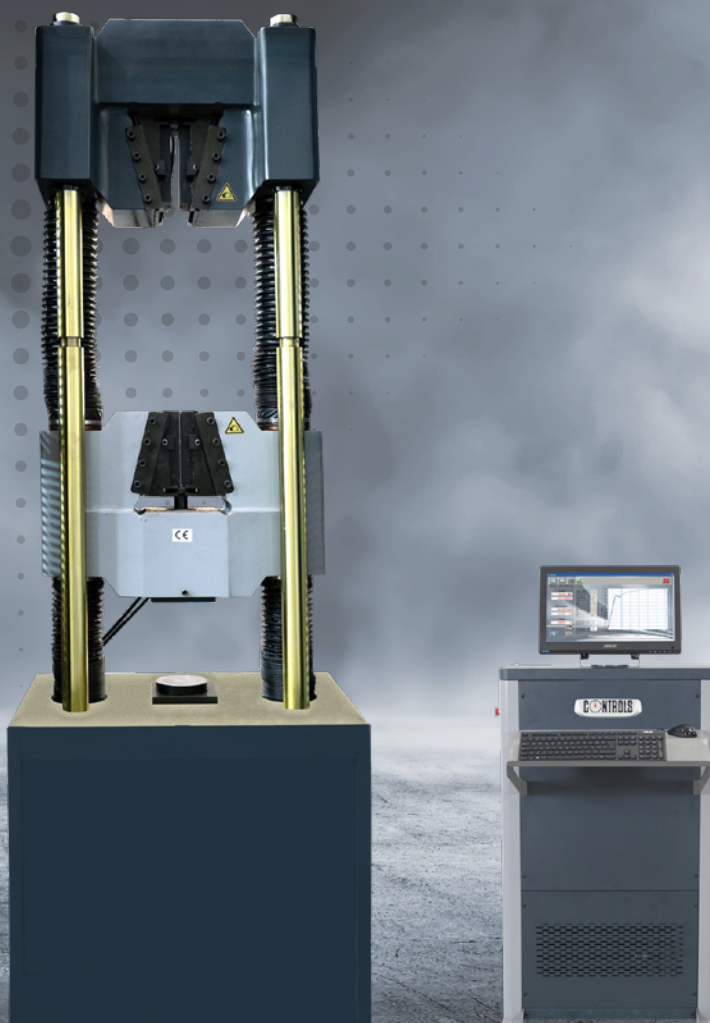


CONTROLS

**CONSTRUCTION
MATERIALS
TESTING**

UTM-HPT2

Universal Testing Machine



www.controls-group.com

Introduction to the UTM-HPT2 Series

The new UTM-HPT2 series includes high precision, reliable and versatile testing machines for several materials as steel rebars, wire strands and concrete. Featuring servo-hydraulic technology and computer-based data processing, these machines handle loads up to 1000 kN for steel and concrete, and up to 2000 kN for more demanding tests.

IDEAL FOR THE CONSTRUCTION INDUSTRY

Particularly suitable, to perform tension/bending/shearing test on steel rounds and flats and strands also, and compression/transverse/splitting tests on concrete.

HIGH PERFORMING ON WIRE STRANDS

Jaws and grips with a renovated design to perform tests on wire strands (only with 1000 kN model).

COMPLETE RANGE

1000kN and 2000kN capacity.

RUGGED SIX COLUMN FRAME

Extremely rigid six column frame (with four fixed columns) with large vertical clearance suitable for tension and compression tests.



FRONT OPEN CROSSHEAD

The jaws and grips can be easily removed by just pulling from the front. Hydraulic gripping system operated by a dedicated push button panel.

HIGH ACCURACY WITH LOAD CELL

High precision load cell (Class 1 according to EN ISO 7500-1).

FULL RANGE OF ACCESSORIES Available to perform various tests, as Tensile test, Transverse test and Bending test apparatus on steel specimens as well as Compression-Flexural and Indirect tensile test on concrete (jigs on request).

SOFTWARE PACKAGES INCLUDED

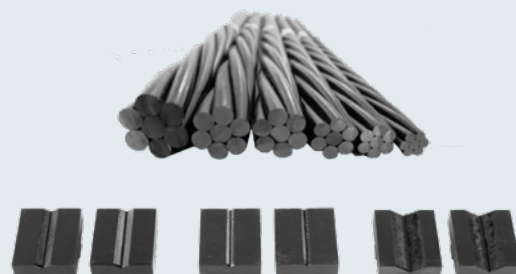
Software packages included to perform a wide range of tests on steel, concrete and other construction material.

Steel strands in construction industry

Steel strands are composed of twisted steel wires used to reinforce concrete in construction.

There are several types of steel strands that are used for different applications (as post-tension structures) to increase performance of buildings.

The New UTM-HPT2 1000kN machine has ad-hoc designed jaws and grips specific for strands.



Technical Features of the UTM-HPT2

1000kN and 2000kN

The heavy-duty six columns UTM-HPT2 is a kind of high precision material test equipment which adopts electro-hydraulic servo control technology, computer data acquisition and processing, which can realize closed-loop control and automatic detection of all the test parameters in real time.

- ✓ **Six-Column Frame:** Extremely rigid structure with large vertical clearance, perfect for tensile tests.
- ✓ **Servo-Hydraulic Control System:** Advanced technology for precise control of applied force.
- ✓ **Movable Crosshead:** Three crossheads (upper, movable middle, and lower) controlled by a piston, with the middle crosshead adjustable via electric motor to set the required vertical daylight.
- ✓ **High-Precision Load Cell:** Class 1 accuracy according to EN ISO 7500-1, ensuring accurate measurements up to 1% of the full scale.

Ad hoc designed jaws and grips ensuring easy sample positioning



Dedicated manual keyboard for controlling the crosshead positioning



Accurate load cell



Rigid metal cover (available on request) to operate in total safe conditions

HPU200 SERIES

Advanced and ergonomic control console

The reliable control console HPU 200 features space-saving ergonomic design has a small footprint and houses the hydraulic power unit, the electronic system and the PC to manage all the control functions.

Automatically performs steel tensile testing, compression, splitting tests.

PC and software enable remote control of the complete system making easier the test set up and execution.

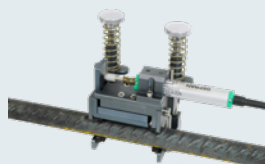


- 131.000 points effective resolution
- Control frequency 250 Hz
- Sampling rate 250 Hz
- Closed-loop P.I.D.control
- 6 channels (one dedicated to crosshead displacement) to measure elongation/displacement/strain with potentiometric, conditioned LVDT and magnetostrictive transducers
- 4 channels for strain measurements with strain gauges
- Digital linearization of the calibration curve (multi-coefficient)
- Dual stage pump: centrifugal low pressure for fast approach automatically switching to radial multi-piston high pressure for loading
- Oil flow control by servo-controlled proportional valve and oil temperature controlled by air cooling system
- Console cabinet lined with soundproofing material for operator's comfort

Universal extensometers

Extensometers are crucial for tensile testing metallic materials, accurately measuring deformation to determine the stress-strain relationship. They monitor material behavior up to the yield point, ensuring precise strength and ductility measurements.

There are two main types: clip-on extensometers, which are easy to install and suitable for gauge lengths of 50 to 200mm but need removal before specimen breakage, and coaxial tube extensometers, which stay positioned throughout the test, allowing for continuous measurement up to fracture.



70-C0954/C1



70-C0961/G

Note: example of extensometers available on request.

Technical Specifications

1000 kN

Piston Travel	250 mm
Set Grips for Round Diameters	6-15 mm, 15-30 mm, 30-45 mm
Set Grips for Flats	0-20 mm, 20-40 mm
Max Adjustable Tensile Daylight	700 mm
Max Compression Daylight	900 mm
Horizontal Daylight	500 mm
Piston Speed Max	180 mm/min
Motorized Crosshead	350 mm/min
Load Resolution	0.01 kN
Crosshead Displacement Resolution	0.01 mm
Machine Class 1 Range	10-1000 kN
Frame Dimensions	1240 x 830 x 3200 mm (3500 at maximum stroke)
Console Dimensions (l x d x h)	800 x 900 x 1550 mm
Frame Weight	About 5000kg
Console Weight	180 kg

2000 kN

Piston Travel	250 mm
Set Grips for Round Diameters	15-30 mm, 30-55 mm, 55-80 mm
Set Grips for Flats	10-40 mm, 40-70 mm
Max Adjustable Tensile Daylight	1000 mm
Max Compression Daylight	800 mm
Horizontal Daylight	730 mm
Piston Speed Max	80 mm/min
Motorized Crosshead	300 mm/min
Load Resolution	0.02 kN
Crosshead Displacement Resolution	0.01 mm
Machine Class 1 Range	20-2000 kN
Frame Dimensions	1370 x 820 x 3150 mm (3450 at maximum stroke)
Console Dimensions (l x d x h)	800 x 900 x 1550 mm
Frame Weight	About 7000 kg
Console Weight	180 kg



Codes

Optional Accessories and Customization Options

The UTM-HPT series is compatible with a wide range of accessories (request) to customize tests according to specific requirements.

Steel:

- Three-Point Bending Tests
- Bolt and Nut Tensile Tests
- Shearing Tests

Concrete:

- Compression Tests on Cubes and Cylinders
- Flexural Tests on Concrete Beams
- Indirect Tensile Tests

Various:

- Rigid Metal Cover
- Compression Tests on Rock, Masonry Units, Refractories
- Wire Rope Tensile Tests

Frame and Description

T10C0X

T10C02	UTM4 1000KN HPU 200 - 380V/50Hz/3ph
T10C03	UTM4 1000KN HPU 200 - 380V/60Hz/3ph
T10C04	UTM4 1000KN HPU 200 - 220V/60Hz/3ph

T20C0X

T20C02	UTM4 2000KN HPU 200 - 380V/50Hz/3ph
T20C03	UTM4 2000KN HPU 200 - 380V/60Hz/3ph
T20C04	UTM4 2000KN HPU 200 - 220V/60Hz/3ph

Accessories

T10C/FG: Rigid metal cover that close the frame including columns for best protection during test execution

T10C/S1: Set of Steel strand Jaw size 9.5-14mm

T10C/S2: Set of Steel strand Jaw size 15-22mm

T10C/22: Aluminium anti-sliding plates wire strands. Set of 50 pcs



Wide range of grips

Grips and accessories included with the machine

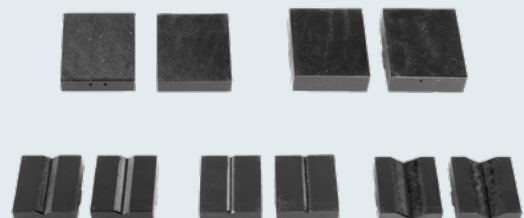
The UTM-HPT2 machine comes with a series of grips for performing tests on round bars and flat plates.

1000kN:

- **Grips for Round Diameters:** from 6 mm to 45 mm.
- **Grips for Flats** : from 0 to 40 mm.

2000kN:

- **Grips for Round Diameters:** from 15 mm to 80 mm.
- **Grips for Flats:** from 10 to 70 mm.



CONTROLS Customer Care

As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

As a valued customer of CONTROLS, you will receive continuous, expert support and advice for your equipment. Furthermore, we can offer full installation and training in the correct operation of your CONTROLS equipment.

For support from our expert Customer Care Team, contact your local CONTROLS office / distributor or email **customercare@controls-group.com**.

For more information, please visit **www.controls-group.com**.

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