CONTROLS
www.controls-group.com

IPC global A Division of CONTROLS

WF WYKEHAM FARRANCE A Division of CONTROLS

DATA SHEET

Automatic 500/1000kN Testing Machines for Steel and Concrete

Automatic Compact-Line combined machine 500/1000 kN, 500 kN for tensile testing on steel rebars mod.70-S12A02

General description

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 cross-head separation control. See Technical Specifications.

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 are not included and have to be ordered separately (see Accessories).

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.

Main features

- **Fully automatic test cycle with closed-loop digital feedback**
- **High precision displacement transducer included, for automatic control of the test and plot of stress/elongation graph, based on the crossheads separation measurement**
- **No need to use external extensometer to control the test**
- **Best quality/price ratio**
- **Heavy duty high-functionality jaws rated for severe prolonged use for testing up to 26 mm dia. rebars**
- **For tensile tests up to 500 kN on steel and compression tests up to 1000kN on concrete**
- **Double stage hydraulic pump with rapid approach and precise oil flow control**
- **Adopts the latest ES technology for reduction of power consumption**

DATA SHEET

- **Data acquisition and test results elaboration to EN ISO 7500-1, EN ISO 6892-1 (method B) and EN 15630-1 by intuitive and very comprehensive software (included)**
- **Available with stand alone control console or in the integrated Compact-Line version**

Standards

- EN ISO 6892
- EN ISO 7500-1
- ASTM A370
- EN ISO 15630-1

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)

DATA SHEET

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

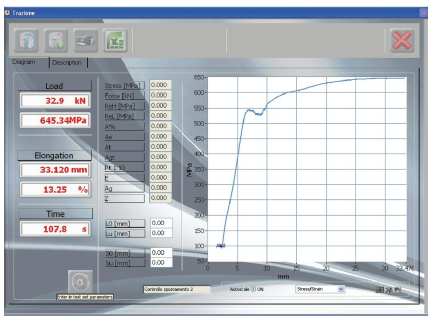
Hydraulics

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

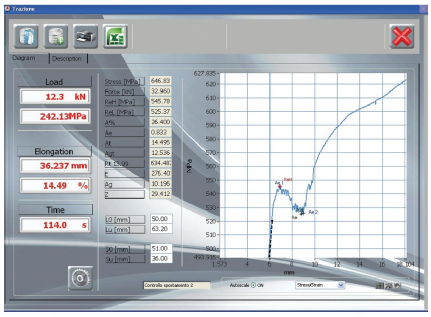
UTS Light data acquisition and processing software (included) for tensile test according to EN Standard allowing:

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 displacment 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



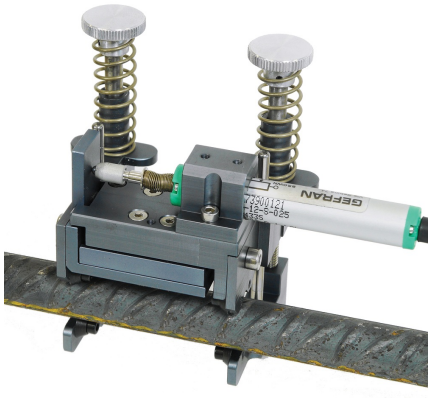
Test execution, UTS Light software

DATA SHEET



Test results, UTS Light software

70-C0961/H



70-C0954/C1

Products

70-S12A02

Automatic Compact-Line combined machine 500/1000 kN, 500 kN for tensile testing on steel rebars up to 26mm diameter and 1000 kN for compression testing on concrete. 230 V, 50-60 Hz, 1 ph.

70-S12A04

Automatic Compact-Line combined machine 500/1000 kN, 500 kN for tensile testing on steel rebars up to 26mm diameter and 1000 kN

for compression testing on concrete. 110 V, 60 Hz, 1 ph.

Accessories and consumables

70-C0954/C1

Electronic universal extensometer to measure the elongation of wires, steel rebars and round steel specimens. To be removed before sample failure. - Measuring base: 50 to 200 mm - Linearity: better than +- 1% - Max. travel: 10 mm

70-S0012/2

Upgrading of the series 70-S11T0x and 70-S12U0x machines with front rigid door

70-C0961/H

Coaxial electronic extensometer for round specimens from 6 to 26 mm dia. Gauge length: 200 mm. Travel: 50 mm.

50-C9080

Distance piece dia 200 x 30 mm

50-C9082

Distance piece dia 200 x 50 mm

50-C9083

Distance piece dia 200 x 68 mm

50-C9086

Distance piece dia 200 x 100 mm.

70-S0012/1

Set of spherical seta and loading platens dia. 220mm for compression test on cylinders up to 160x320mm and cubes up to 150mm. Resulting vertical daylight: 695 mm. Distance pieces not included.

70-S0012/1A

Set of spherical seat with upper loading platen dia.165x30mm and bottom platens dia.250x35 with threaded centering hole. For compression on cylinders up to 160x320. Resulting vertical daylight: 720 mm. Distance pieces not included.