

DATA SHEET

Automax Pro-M Automatic 500/1000kN Testing Machines for Steel and Concrete



Automax PRO-M 500/1000 kN Automatic Testing Machine for steel and concrete mod.70-S12F02/M

General description

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 Automax PRO-M power and control system for the automatic execution of compression and tensile tests.

Frame

The frame consists of a very rigid frame with double acting cylinder assembly.

It includes a set of tensile holders, 4 wedge grips for flats up to thickness of 13 mm, 4 wedge grips for rounds up to 26 mm dia. and 2 sets of grips' 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).

High precision displacement transducer, 150mm travel, is mounted on the piston/cylinder assembly to obtain stress/elongation graph based on the crossheads separation measurement.

Spherical seat and compression platens for concrete specimens are not included and have to be ordered separately (see Accessories)

AUTOMAX PRO-M Automatic power and control system

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

Main features

- **Compact design**
- **Possibility to connect a second frame for concrete compression tests**
- **Heavy duty high-functionality jaws rated for severe prolonged use for testing up to 26 mm dia. rebars**
- **Affordable testing machine for accurate test execution**
- **Ideal for site testing and educational purposes**

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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 thickness of 13 mm, 4 wedge grips for rounds up to 26 mm dia. and 2 sets of grips' liners 4 and 8 mm thick.

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): 900 x 400 x 1750 mm

Weight approx.: 500 kg

AUTOMAX PRO-M AUTOMATIC CONTROL CONSOLE

Hydraulics

DC motor, 720W, 50-60Hz

Maximum working pressure 700 bar

Load/unload electrovalve for test execution via display/PC and automatic stop at specimen failure

Active control of up to 4 frames by selection via display/PC (third and fourth frame as option). See accessories.

ES Energy Saving technology to reduce the power consumption and enable silent operation

Flow-sharing technology to perform loading and unloading cycles at controlled rate

Hardware

524,000 points high-resolution/stability analog channels

6 channels to be factory configured:

2 channels for load sensors

2 channels for load sensors or extensometers

1 channel to measure crosshead separation travel with 150mm high precision displacement transducer (included)

1 channel for extensometer

Control frequency 250 Hz

Sampling frequency 250 Hz

7", 800 x 480 pixel, 16 M colors, icon-driven capacitive sensing touchscreen graphic display

Unlimited storage capacity for test data on internal 16 GB SD card

USB port for test data storage on external USB memory stick and for firmware upgrade

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Ethernet port for PC / Internet /network communication
Optional integrated graphic printer including Load-Time plot (for standard failure tests)
RS 232 port for data downloading in ASCII format

Firmware (50-FW/UTS included)

Execution of compression, flexure, indirect tensile, ACV tests tests in automatic mode with test speed controlled by a closed-loop PID system.

Execution of tensile with:

control up to yield by:

- * Stress (method B)
- * Strain by using extensometer (method A1)
- * Strain by using crosshead (method A2)

Control after yield by grips' separation

Simultaneous display of:

load, stress, actual load rate, load / time graph in standard failure test (compression, flexure, indirect tensile)

load, stress, displacement and % elongation (crossbeam), displacement and % elongation (extensometer, if connected), stress/% elongation graph in tensile tests

Elaboration of tension test results: ReH, ReL or Rp and final elongation A conforming to EN ISO 6892-1 and EN 15630-1

Saving of the specimen failure type (to EN or ASTM) in concrete compression tests results

Download data to internal printer (optional) or to PC via RS 232 port or to USB memory stick

PC / network communication via Ethernet

Multi-coefficient linearization of the calibration curve for better accuracy at low loads thus avoiding the use of a second pressure transducer

Recording facility for up to 9 test profiles for each channel including: type of test (e.g. compression, flexural, indirect tensile, tension), specimen size and shape, test speed and other general information. Each one of the recorded test profiles can be recalled automatically to save time.

Improved PID algorithm and multi PID selection. Up to three different PID settings can be tuned for each channel for a variety of materials (e.g. cylinder with neoprene pads, low strength specimens) and test methods (e.g. ACV, flexure, tension)

Compatible with the newly released DATAMANAGER software and UTS software packages, tailored for construction material testing laboratories, for remote control, real-time data acquisition and results calculation.

Peripheral devices integration with Link-LAB

Automatic load measurement verification procedure, by connecting suitable load cells and our digital readout unit to PC

Language selection (including Cyrillic and Chinese)

Unit selection (kN, ton, lbf)

USB port for firmware upgrade and safe backup of the original configuration data (PID, calibration, etc.), in case of loss and/or data corruption. The restore of the machine to the factory settings is easy avoiding the need of any technical support.

Optional UTS software package for Steel Tensile Testing (82-SW/UTS) allowing:

PC remote control of the test

Test control up to yield by:

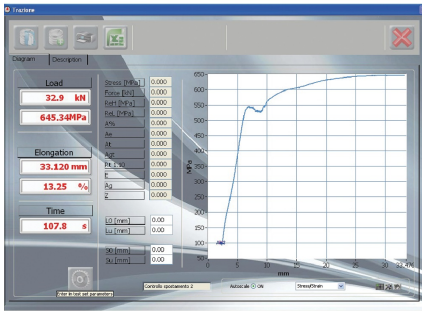
- Stress (method B)
- Strain by using extensometer (method A1)
- Strain by using crosshead (method A2)

Control after yield by grips' separation

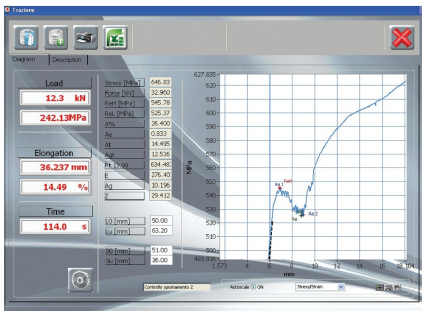
Simultaneous display of: stress/elongation [mm], stress/time; stress/elongation [%] and elongation [mm]/time, with possibility to display multi diagrams

Elaboration of tension test results: ReH, ReL or Rp, fp, Rt, A, At, Ag, Agt, A, At, Ae, E, Z, ft/fy, fy/fynom conforming to EN ISO 6892-1 (methods A1, A2, B) and EN 15630-1

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Test execution, UTS Light software

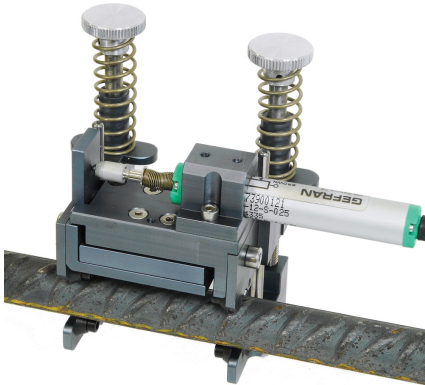


Test results, UTS Light software



70-C0961/H

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70-C0954/C1

Products

70-S12F02/M

Automax PRO_M automatic 500/1000 kN combined system, 500 kN for tensile testing on steel rebars up to 26mm diameter and 1000 kN for compression testing on concrete. 230 V, 50 Hz, 1 ph.

70-S12F04/M

Automax PRO-M automatic 500/1000 kN combined system, 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-S0012/3

High precision, 150 mm travel, displacement transducer to measure the crossheads separation travel

70-S0012/2

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

50-SW/UTS

UTS software package for rebars tensile testing.

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

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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.