

TENSION AND COMPRESSION TESTER FOR FIELD AND LABORATORY 500/1000 kN CAP.

Introduction

This machine has been designed for use both in the field and laboratory where it is necessary to perform tension tests on steel rebars up to 22 mm dia., compression tests on concrete cubes up to 150 mm and cylinders up to 160x320 mm. Its comparatively lightweight, high degree of accuracy and low cost make this machine ideal for site testing and educational purposes.



70-C0019/B with accessory 70-C0019/41 for compression test on concrete cubes up to 150 mm and cylinders up to 160x320 mm

The 70-C0019 series testers are proposed in two different versions: model 70-C0019 with precision dial gauge with double scale and model 70-C0019/B with Digimax Plus microprocessor digital system with large graphic display 240x128 pixel which can be connected to the electronic extensometer (e.g. 70-C0961 series and 70-C0954/C) for elongation measurements. It is also possible the connection to PC using our software 70-S0010 obtaining the complete stress strain graph conforming to EN 10002. The Digimax Plus can be connected to 24-column serial printer by the RS 232 serial port. Our model 82-P0172 can be conveniently used for these purposes; furthermore it can be easily fitted on top of the Digimax Plus by the support 82-P0172/5.

STANDARD

ASTM C39, E4 - AASHTO T22 - BS 1610 - NF P18-411 - DIN 51220

70-C0019

Tension/compression tester, 500/1000 kN capacity with dual range 300 mm dia. dial gauge, 0-500 and 0-1000 kN.
230 V, 50 Hz, 1 ph.

70-C0019/Z

Same as above but 110 V, 60 Hz, 1 ph.

70-C0019/Y

Same as above but 220 V, 60 Hz, 1 ph.

70-C0019/B

Tension/compression tester, 500/1000 kN capacity, with Digimax Plus microprocessor digital display and processing system.
230 V, 50 Hz, 1 ph.

70-C0019/BZ

Same as above but 110 V, 60 Hz, 1 ph.

70-C0019/BY

Same as above but 220 V, 60 Hz, 1 ph.



70-C0019/B with accessories for tension tests

- Small compact design
- Accepts up to 22 mm dia. rebars, 150 mm cubes and dia. 160x320 mm concrete specimens



70-C0019 with accessories for tension tests

General description

The machine consists of a very rigid frame with double-acting cylinder assembly, and hydraulic power pump. A special flow control valve allows the rate of loading to be preset in accordance to the relevant specifications. Supplied complete with test selector valve for selecting tension or compression mode. Model 70-C0019 is supplied complete with precision test gauge 300 mm dia., calibrated 0-1000 kN for compression and 0-500 kN for tension. Model 70-C0019/B consists of a testing frame and the Digimax Plus microprocessor digital display and processing system. We suggest this more advanced model when monitoring the stress/strain with data processing using electronic extensometer 70-C0961 series or 70-C0954/C, and the other model for field use complete with a mechanical extensometer such as our model 70-C0953.

Specifications

	70-C0019 (C0019/Z-Y)	70-C0019/B (C0019/BZ-BY)
Load capacity in tension (kN)	500	500
Load capacity in compression (kN)	1000	1000
Max. vertical clearance with accessory 70-C0019/41 (mm)	330	330
Max. distance between grips, excluding piston travel (mm)	255	255
Distance between columns (mm)	305	305
Max. ram travel (mm)	100	100
Diameter of load gauge (mm)	300	-
Scale 0-500 kN subdiv. (kN)	1	-
Scale 0-1000 kN subdiv. (kN)	2	-
Resolution digital display	-	1/130000
Accuracy (starting from the first 10% of load range)	± 1%	± 1%
Overall dimensions approx. (mm)	1820x740x420	1820x740x420
Weight approx. (kg)	535	535



70-C0019/B with Digimax Plus Microprocessor digital system. The machine is fitted with the electronic coaxial extensometer for strain measurement. See accessories, cat. 70-C0961/A1 to 70-C0961/C1

MAIN FEATURES OF THE DIGIMAX PLUS (70-C0019/B, BZ, BY VERSIONS)

Hardware

The main characteristics are:

- Chip clock/calendar
- Large permanent memory
- Two RS 232 serial port for connecting PC and printer
- Two channels (one for strain gauge pressure transducer or load cell and one for linear potentiometric transducer)
- Resolution: 1/130000 points per channel
- Graphic display 240x128 pixel
- Dimensions 250x220x150 mm
- Weight approx.: 2 kg.

Internal software (firmware)

The test is menu driven by a 10 buttons membrane keyboards, four of which are interactive with the specific icon of each menu.

The main features are the following:

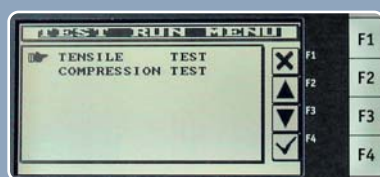
- Language selection: English, French, German, Spanish, and Italian
- Unit selection: kN, t, lbf, mm, in.

For Tensile test:

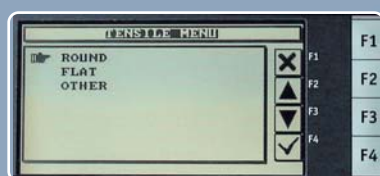
- Simultaneous display of load, stress and, using an extensometer, specimen elongation
- Graph option of test data showing simultaneously load/elongation curve (using an extensometer)
- Elaboration of results after test completion: ReH, ReL or Rp as alternative, final elongation (if possible), adjustable plot scale.

For Compression test:

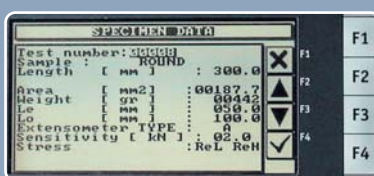
- Simultaneous display of load and stress
- Up to 100 tests stored permanently including settings and results
- Machine calibration via software



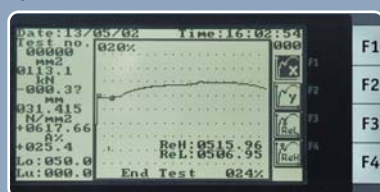
Test selection.



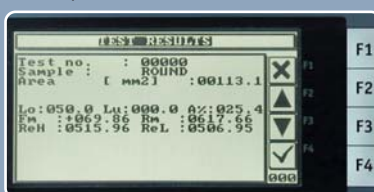
Specimen selection for the tension test.



Data input for tension test.



Display in real time of the stress/strain curve.



Tension test result.

TENSION AND COMPRESSION TESTER FOR FIELD AND LABORATORY 500/1000 KN CAP. (CONTINUED)

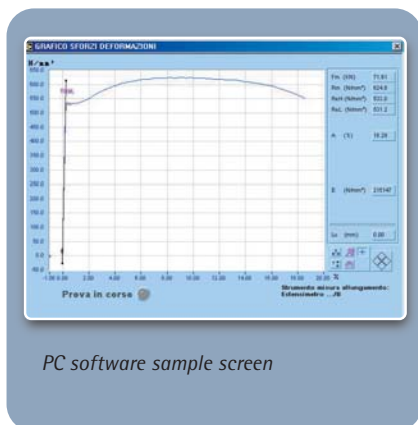
PC SOFTWARE FOR DATA PROCESSING (OPTIONAL)

■ 70-S0010

PC software for data processing

The Digimax Plus can be easily connected to a PC. The special 70-S0010 software, suitable for use with Windows 98 or higher, allows:

- To enter the main characteristics of the specimen, client and test
- A real time serial communication between Digimax Plus and PC
- To display on PC the stress/strain diagram in real time during test execution (tension test only)
- To execute analysis of the diagram and calculate the parameters of the test according to EN 10002
- To display the failure values
- Display data, graphics and tables of the parameters of the test
- To save, also in ASCII format, and print reports, graphics and tables of single or batch test.



PC software sample screen

ACCESSORIES

ACCESSORIES FOR TENSION TESTS

Universal grip assembly for round specimens up to 22 mm dia. and flat specimens up to 15 mm thick and 50 mm wide.

■ 70-U0310

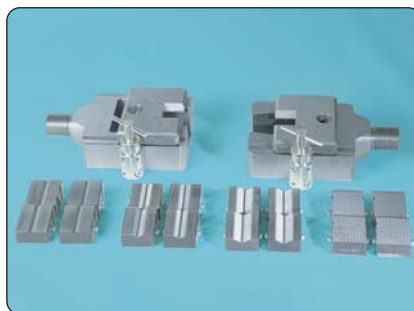
Pair of universal grip holders

■ 70-U0311

Wedge grip for specimens from 6 to 9 mm dia. Four pieces are required per set

■ 70-U0312

Wedge grip for specimens from 10 to 15 mm dia. Four pieces are required per set



70-U310 grip holders with grips 70-U311, U312, U313, U314

■ 70-U0313

Wedge grip for specimens from 16 to 22 mm dia. Four pieces are required per set

■ 70-U0314

Wedge grip for flat specimens up to 50 mm wide by 1 to 15 mm thick, and rounds up to 5 mm dia. Four pieces are required per set

ACCESSORIES FOR COMPRESSION TESTS ON CONCRETE CUBES AND CYLINDERS

■ 70-C0019/41

Set of lower platen and upper platen with spherical seat, 216 mm dia., for testing cylinders up to 160x320 mm and cubes up to 150 mm

Important note.

The maximum vertical daylight using this accessory is 330 mm which is suitable for testing 150x300 mm, 6"x12" and 160x320 mm cylinders. To test cubes the vertical daylight has to be reduced using suitable distance pieces considering that the maximum piston travel is 100 mm.



70-C0019/41 for compression tests on cubes up to 150 mm and cylinders up to 160x320 mm

DISTANCE PIECES

To be introduced between piston and lower platen.

■ 50-C9082

Distance piece 200 mm dia. by 50 mm thickness

■ 50-C9083

Distance piece 200 mm dia. by 68 mm thickness