

FA SERIES – 500kN

Fully Automatic Concrete Compression Testers



Model TO-317E-FA

Features and benefits

- Automatic stress determination and display.
- Interlocked safety doors with mesh window as standard.
- Overload and over-travel safety protection.
- Self-aligning platen with fast accessory change capability.
- Multi unit force and stress in English, Metric or SI.
- Peak force and stress results.
- Automatic pace rate control.
- Menu driven interface.
- Automatic data logging.
- EDI – stored results of approximately 2000 tests. Four-line LCD display with 40 characters per line.
- Touchscreen-based EDI – internal storage of 200 tests and direct to USB thumb drive storage.

The Model TO-311E-FA Fully Automatic Concrete Compression Tester has a maximum testing capacity of 110,000lbf or 500kN. This machine is primarily designed for the testing of 2in (50mm) and 70.6mm concrete cubes.

The FA Series features highly robust frames for exceptional stability when testing concrete cylinders or cubes. These compact testers have three core pieces: the heavy duty load frame, hydraulic pump, and control and display systems.

The large lower bearing block includes a bellows to prevent leaks caused by dust and debris getting into the loading piston. The other advantage of this large bearing block is that it allows for a large front entrance opening and plenty of ready access for loading and removing specimens. Additionally the machines offer an optional chute for quick removal of completed specimens and cleaning of the test area.

This series also includes a rapid change platen system to quickly and easily change accessories, switching between cylinder, block, cube and beam specimen testing.

The interlocked safety doors on the front and back of the machine prevent the possibility of injury during the test, and a chute is secured to the back of the machine so that once the test is complete, debris can be simply pushed or brushed out. An optional stand is also available so that these operations can be performed at a safe and comfortable work height.

While these machines are ideally positioned to test 2in cubes, testing can be taken to another level by adding a flexure testing attachment (Model TO-33101) that will work with the pumping unit in the TO-311E-FA frame. Once a simple manual valve system has been installed, it is possible to test the flexural strength of concrete beams, up to 100kN (22,000lbf) maximum load.

Alternatively, a different attachment for testing the compression of hollow prisms can be attached to the main test frame. This attachment, Model TO-314-LU-SPL, can test up to three stacks of hollow prisms.

There are two controller options:

- EDI, a straightforward design using a membrane keypad and an LCD display to let operators select the test parameters simply and efficiently. The display stores up to 2000 tests.
- A more advanced system with 10in TFT resistive touchscreen display. Easy to read and operate, it features simple and logical input screens and displays a real-time graph of test load vs time.

The FA series of machines can be connected to a PC running Tinus Olsen's Horizon software via a USB port. This software gives users far more control and reporting capabilities. See the next page for more information.

APPLICABLE STANDARDS

- ASTM C39, AASHTO T22, EN 12390-3, -4, -5, and other ASTM, BS and EN specifications depending on platens and accessories chosen.

Specifications



OPTIONS AND ACCESSORIES

- **TO-320-5500** Platen set for 6 x 12in concrete cylinders
- **TO-320-5502** Platen set for 4 x 8in concrete cylinders
- **TO-320-5504** Platen set for 3 x 6in concrete cylinders
- **TO-320-5510** Platen set for 2in cubes
- **TO-320-5512** Platen set for 6in cubes
- **TO-320-5518** Platen set for blocks up to 12in
- **TO-320-5519** Cylindrical Specimen caps – two caps per set
- **TO-320-5520** Rubber insert for 6in cap with 60 shore A hardness (bag of 10)
- **TO-320-5521** Compression frame jig assembly (without platens)
- **TO-320-5521/01** 50mm square platen set for TO 320-5521
- **TO-320-5521/02** 2in square platen for TO 320-5521
- **TO-320-5521/03** 40mm square platens
- **TO-320-5522** Flex jig/attachment
- **TO-320-5524** Cylindrical specimen cap, 4in diameter – two per set
- **TO-320-5525** Rubber insert for 4in cap with 60 shore A hardness (bag of 10)
- **TO-320-5523** BS EN 12390 stability compliant oil filled ball seat, platens
- **TO-320-5527** BS EN 12390 stability compliant oil filled retrofit ball seating
- **TO-320-5528** Tensile split strength test attachment
- **TO-320-5532** Rectangular platen set for prisms, 475 x 250mm
- **TO-320-5534** Platen set, 165mm dia, with concentric rings in upper platen
- **TO-31727-1** Strain measurement attachment
- **TO-33101-BS** Flexural test frame, 100kN, no pump, using CTM two-way valve
- **TO-33101-ASTM** Flexural test frame, 100kN, no pump, using CTM two-way valve
- **TO-343** Mold in cast iron for 100mm cube
- **TO-344** Mold in cast iron for 150mm cube
- **TO-344-20** Mold in cast iron for 200mm cube
- **TO-417** Mold in cast iron for 50mm cube
- **TO-414** Mold in steel for 70.6mm cube
- **TO-417-CI** Three-gang mold in cast iron for 50mm cube
- **TO-417-3-NB** Three-gang mold in Navy Brass for 50mm cubes-per ASTM
- **21001104** Civil Engineering primary platform for Horizon software
- **21001146** Civil Engineering (Concrete) library for Horizon software

TO-311E-FA SPECIFICATIONS

Capacity	110,000lbf/500kN/50,000kg
Horizontal clearance	10in/260mm
Maximum clearance between platens	15in/390mm
Piston stroke	2in/50mm
Platen size	5.5in/140mm
Display resolution	0.01 (kN or lbf)
Specimen size	50mm and 70.6mm cubes

Notes:

1. Conforms to all relevant European CE Health and Safety Directives EN 50081-1, 580081-1, 73/23/EEC, EN 61010-1
2. Specifications are subject to change without notice
3. Appropriate brick platens can be supplied as an option.
4. A set of spacers to suit stated specimen sizes are supplied with the machine

HORIZON SOFTWARE



The FA series can be connected to a PC running Tinius Olsen's Horizon software via a USB port to give users far more control, reporting capabilities and features:

- Intuitive, simple graphical user interface.
- Database of tests and results along with other information about the sample such as age, sample number, and batch name.
- Real-time graph of Load vs Time.
- Automatic display of breaking load at the end of the test.

A sophisticated tool can be used to generate reports for individual samples with data in graphical or tabular form, such as Load vs Time Plot, Stress vs Time Plot and Batch Summary Report.

SUPPLIED AS STANDARD

- USB cable
- Five spacers
- Lower platen
- Spherical seat with upper platen

ORDERING INFORMATION

- **TO-311E-FA-01** 500kN compression tester configured for 110VAC, 60Hz
- **TO-311ET-FA-01** 500kN compression tester configured for 110VAC, 60Hz with touchscreen EDI
- **TO-311E-FA-02** 500kN compression tester configured for 220VAC, 60Hz
- **TO-311ET-FA-02** 500kN compression tester configured for 220VAC, 60Hz with touchscreen EDI
- **TO-311E-FA-03** 500kN compression tester configured for 220VAC, 50Hz
- **TO-311ET-FA-03** 500kN compression tester configured for 220VAC, 50Hz with touchscreen EDI