

# MODEL TO320E-FA (3,000kN CAPACITY)

## FA SERIES OF AUTOMATIC COMPRESSION TESTERS



### Equipment Description

The machine at hand is the Model TO320E-DG and has a maximum testing capacity of 675,000 lbf or 3,000kN. This machine is primarily designed for the testing of 150mm (6in) and 300mm (12in) cubes and concrete cylinders that are 300mm (12in) tall and 300mm (12in) diameter.

The Tinius Olsen FA Series of fully automatic compression testers features highly robust frames for exceptional stability when testing concrete cylinders or cubes. These compact testers are made up of three core pieces, namely the heavy duty load frame, hydraulic pump, and control and display systems.

The large lower bearing block includes a bellows, so preventing 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 these machines offer an optional chute for quick removal of completed specimens and rapid cleaning of the test area.

This series also includes the rapid change platen system with which operators can quickly and easily change accessories, quickly 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, specimen debris can be simply pushed or brushed out. An optional stand is also available so these operations can be performed at a safe and comfortable work height.

The digital display has a straightforward design using a membrane keypad and an LCD display to let operators select the test parameters simply and efficiently. This series of machines features a closed loop control system, so that once the pace / loading rate is established, the machine will automatically adjust its pumping rate to maintain the specified rate of loading. As a further convenience, the display stores up to 2000 tests.

### Horizon Software:

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

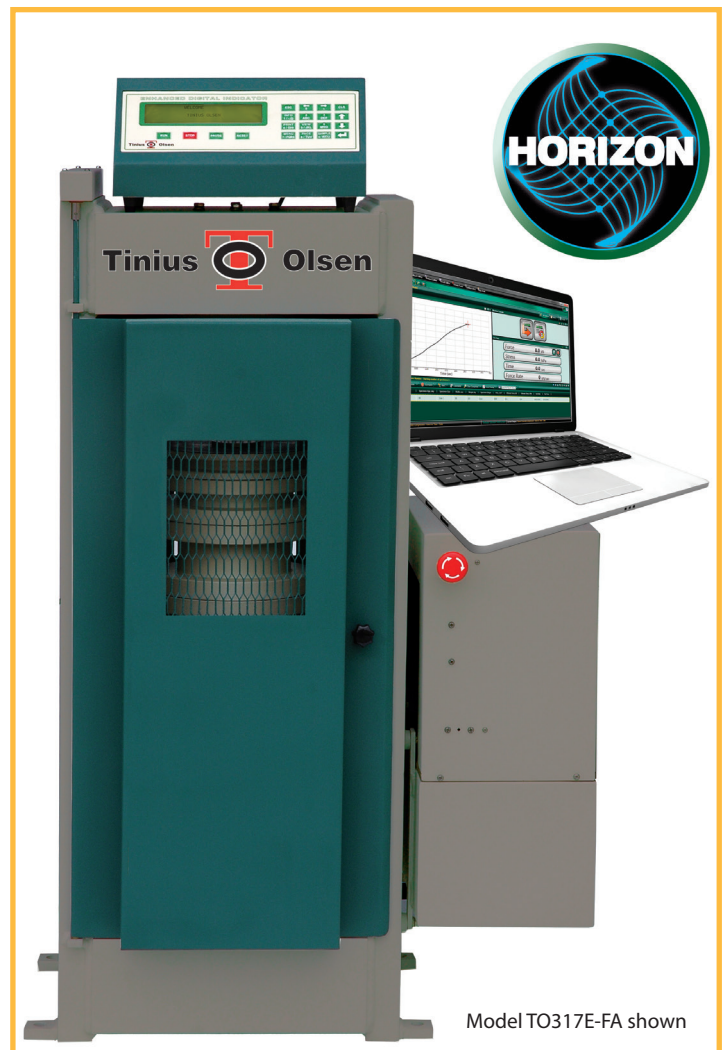
- An intuitive, simple graphical user interface .
- A database of tests and results along with other information about the sample such as age, sample number, and batch name.
- Real-time graph of Load Vs Time.
- Automatic display of a breaking load at the end of the test.

A sophisticated reporting tool is included that can be used to generate reports for individual samples with data in graphical or tabular form.

- Load Vs Time Plot.
- Stress Vs Time Plot.
- Batch Summary Report.

While these machines are ideally positioned to test 2 inch cubes, you can take your testing to another level by adding a flexure testing attachment (model TO33101) that will work with the pumping unit in the TO320E-FA frame. A simple manual valve system needs to be installed and you are ready to test the flexural strength of concrete beams, up to 100kN (22,000 lbf) maximum load.

Alternatively, a different attachment for testing compression of hollow prisms can be attached to the main test frame. This attachment, model TO314-LU-SPL, can test up to 3 stacks of hollow prisms.



Model TO317E-FA shown

### Key Features

- Meets or exceeds ASTM C39, AASHTO T22, equivalent BS and EN specifications
- 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
- LCD display with 4 lines and 40 characters per line
- 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.
- Stored results of approx 2000 tests

### Applicable Standards

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

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# Specifications

## Model TO 320E-FA

<b>Capacity</b>	675,000 lbf / 3,000 kN / 300,000 kg
<b>Horizontal Clearance</b>	12.2 in / 310 mm
<b>Maximum Clearance Between Platens</b>	13.4 in / 340 mm
<b>Piston Stroke</b>	2 in / 50 mm
<b>Platen Size</b>	8.75 in / 222 mm
<b>Display Resolution</b>	0.01 (kN or lbf)
<b>Specimen Size</b>	150 and 300mm (6in and 12in) cubes, or 300mm tall and 300mm (12in) diameter cylinders

### 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



### Supplied As Standard With:

USB cable  
Lower platen  
Spherical seat with upper platen



### Optional Accessories

TO 320-5500 Platen set for 6" x 12" concrete cylinders  
TO 320-5502 Platen set for 4" x 8" concrete cylinders  
TO 320-5504 Platen set for 3" x 6" concrete cylinders  
TO 320-5510 Platen set for 2" cubes  
TO 320-5512 Platen set for 6" cubes  
TO 320-5518 Platen set for blocks up to 12"  
TO 320-5519 Cylindrical Specimen caps - 2 caps per set  
TO 320-5520 Rubber insert for 6" 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 2 in 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, 4" dia - 2 per set  
TO 320-5525 Rubber insert for 4" cap with 60 shore A hardness (bag of 10)  
TO 320-5523 BSEN 12390 stability compliant oil filled ball seat, platens  
TO 320-5527 BSEN 12390 stability compliant oil filled retrofit ball seating  
TO 320-5528 Tensile split strength test attachment  
TO 320-5529 RS 232 cable  
TO 320-5532 Rectangular platen set for prisms, 475 x 250 mm  
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 2 way valve  
TO 33101-ASTM Flexural test frame, 100kN, no pump, using CTM 2 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

### Optional Accessories....continued

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



### Ordering Information:

TO 320E-FA-01 3,000kN compression tester configured for 110 VAC, 60 Hz, 1 ph  
TO 320E-FA-02 3,000kN compression tester configured for 220 VAC, 60 Hz, 1 ph  
TO 320E-FA-03 3,000kN compression tester configured for 220 VAC, 50 Hz, 1 ph