

Automatic Compression Machines

The automatic loading control for compression testing machines features full automatic and manual test control functions. The user can easily select a test standard, enter test parameters and touch the start key to begin a test. Once beginning a test, the machine will automatically begin its rapid approach function, tare, make a soft platen-to-sample contact and then shift to required loading rates. When sample failure occurs, the machine will return to the platen at a rest position and display all test results while storing the test data to a memory for later recall.



- 7" high-resolution color touchscreen
- Live readout – both numerical and graphic display
- Provides two load inputs for controlling two separate compression load frames
- Provides two displacement inputs for compressometer and extensometer tests
- Stores up to 1,000 tests with load vs. time graph
- Includes a USB port to transfer data to thumb drive, PC, or tablet
- Ethernet port
- 1 HP hydraulic pump
- Calibration accuracy exceeds ASTM C39 and E4 requirements

How to Set Up a Test

At the Test Standard menu screen select a test from: C39 Cylinder, C78 Beam Third-Point, C293 Beam Center-Point, C109 Cube, C469 Young's Modulus and Poisson's Ratio, C496 Cylinder Split in Tension and Sample Cross-Sectional Area.

Advancing to the Sample Typescreen, the selected sample type will be highlighted. Just set its dimensions, age, load rate control method and anticipated break value in the highlighted fields.

Test Setup Wizard 1:32 PM ID 1

TYPE SAMPLE BREAK

Select Test Type:
Please select the type of test you will be running.

ASTM C39

C78

C293

C469

C496

CROSS-SECTION AREA

C109/C109M

Test Setup Wizard 1:33 PM ID 1

TYPE SAMPLE BREAK

Sample Type
Please complete the specimen characteristic

CYLINDER CUBE BEAM AREA

DIAMETER 4.000 in

LENGTH 8.000 in SAMPLE AGE 28 day(s)

Sample Failure
Please complete the specimen failure characteristics.

RATE UNITS Stress/second

ANTICIPATED BREAKS 5000.0 psi

Advancing to the Test Control Screen, all loading rate test control values have been automatically set for the selected sample type. If required for cylinder testing, select optional load pause function for un-bonded cap alignment for C39 part 7.4.2 requirements. If selected, the test load will pause for cylinder alignment - touch the screen to continue the test.

Test Setup Wizard 1:34 PM ID 1

TYPE SAMPLE BREAK

Test Control
Please setup control parameters for this sample.

PRELOADING RATE 100.0 psi/sec

PRELOAD LIMIT 2000.0 psi

TESTING RATE 35.0 psi/sec

SAMPLE BREAK 75.0 (%)

PAUSE FOR ALIGNMENT CHECK

Tests 1:40 PM ID 1

PREVIOUS TESTS CURRENT TESTS [T6]

Motor Pause

Motor was paused for unbonded cap alignment check.

Resume

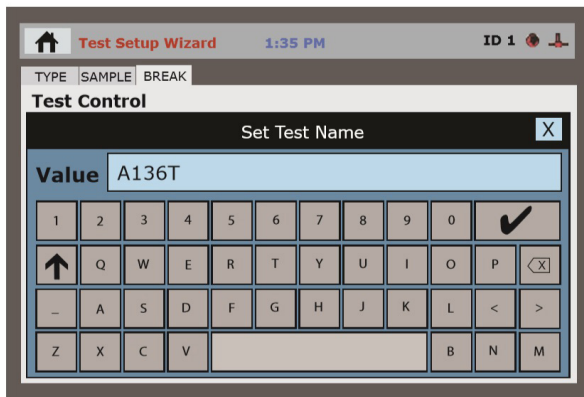
ST psi Target Rate = 0.0 psi/sec

TEST CONTROL

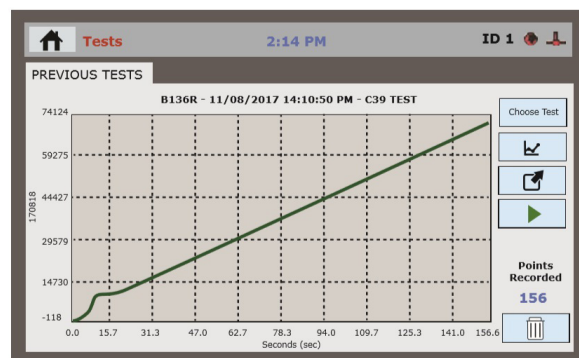
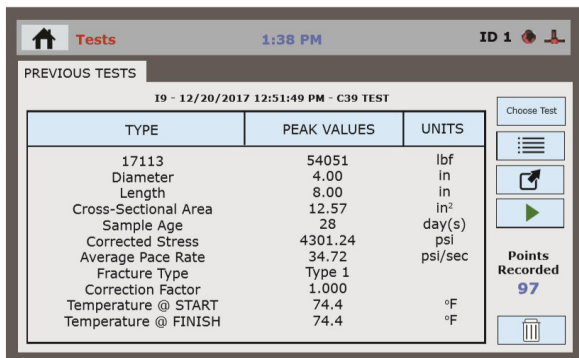
Rapid Test Option

A rapid test option indexes the set sample name automatically by one count for each test. Touch the green start arrow key on the Test Results Data screen to start the test and you are ready to go.

Touch the green start test arrow key and the Test Name screen opens. Set the I.D. number of the test sample and touch check mark to set.



The machine begins to test using the preset loading rates. At sample failure the test stops, automatically retracting the load platen. When testing cylinders, a break-type pattern screen will open - select the break type. Then the Test Results Data screen appears storing the test data and load vs. time graph to memory. You are now ready to start the next test.



Hydraulic Pumping System

The machine is powered by a radial pump with multiple pistons for a smooth and ongoing flow of hydraulic oil into the machine's hydraulic ram assembly. This helps to eliminate load pulsations caused by competitive single piston pumps.

The hydraulic pump has a sealed reservoir with a filtered air breather cap that reduces oil contamination. An oil drain plug is featured in the pump's base that makes changing oil quick and easy. The control box is located on the front surface of the pump and holds all of the electronic components. The box has both an o-ring seal and air filter to protect the components from airborne and oil contamination. Located on the front surface of the control box is an ON/OFF switch, emergency stop switch and a manual load control knob. The manual control knob is activated through the touch screen controller and is used to control the rate of loading for conducting a test.

Safety Features

Featured on the system is a hydraulic safety valve to prevent the machine from operating beyond the maximum capacity. A travel limit switch is also featured to prevent the hydraulic piston from going beyond its maximum travel point.

On all new Test Mark compression testing machines is the automatic loading control feature from 30,000lbs to 800,000lbs capacity. Select from a system mounted on the side of the load frame or a separate control console.

The electronic requirements for a machine is 120V, 60Hz, 1 Phase. Also available upon request is 220V, 50/60Hz.