

### 200Q Universal Electromechanical Test Machine

#### High Elongation Materials Testing

Tension & Compression

Max Forces to 500 lb (6.6 kN)

Max Travel to 55" (1.4 m)

Servocontrolled – Dual segment control modes

High Accuracy & Resolution



200Q Series  
225 or 500 lb



200Q225-55  
55" Travel

#### Choices & Options

- **Crosshead Travel** – standard 31" (775 mm) or 55" (1400 mm)
- **Force Capacity** – 225 lb (1 kN) or 500 lb (2.2 kN)
- **Controllers** -- Standalone P or Q Controllers or PC based R Series
- **Load Cell** – many to choose from - full scale rating
- **Testing Accessories** – grips, fixtures, chambers and engineered solutions

## Modular Systems Approach

TestResources test systems are configured to serve every customer's unique circumstances and test requirements. Each system consists of a load frame or test table, actuator, load and position transducer, controller, and test software. Due to our structure, modules can be swapped or re-configured as requirements change.

### Q Controller \* 2 Segments \* Cyclic Mode \* 6 Setups

The Q controller includes basic control features and more. They serve testing requirements where one or two segments of constant speed, crosshead travel rate, or loading rate are required for the test – including ramp and hold tests such as stress relaxation and creep.

Data can be acquired during the second segment for adhesive tack tests and bend tests. Servocontrol makes sure that when test forces increase, speed stays constant. The test stops automatically based upon the specimen break, test duration, or if stop is pushed. The Q measures and can limit force and position and features limit switches to protect actuator travel. High resolution 24 bit A/D converter provides high quality load data while a high accuracy encoder measures position change. The controller memory captures, displays and exports test data to an optional PC using our optional software program to plot data. The Q includes a long list of data calculations to improve operator efficiency.

Dual Segment control provides true hold force, and cyclic mode cycles between either two load values or two position values for millions of cycles.

**Spring testing** and absolute height measurement are possible with the Absolute Zero function. The platens of the test machine automatically move till they reach a preset force value, then retract to the user set Home position. The controller then determines zero position to be used for subsequent measurements. Springs, shock absorbers, bottle top push On/Pull Off and insertion and extraction of electrical connectors are easily tested using this feature.

Six test methods can be stored in nonvolatile memory for later recall and execution. Test control, analyses, engineering units, data acquisition, and alarm functions are all stored within the specific test method.

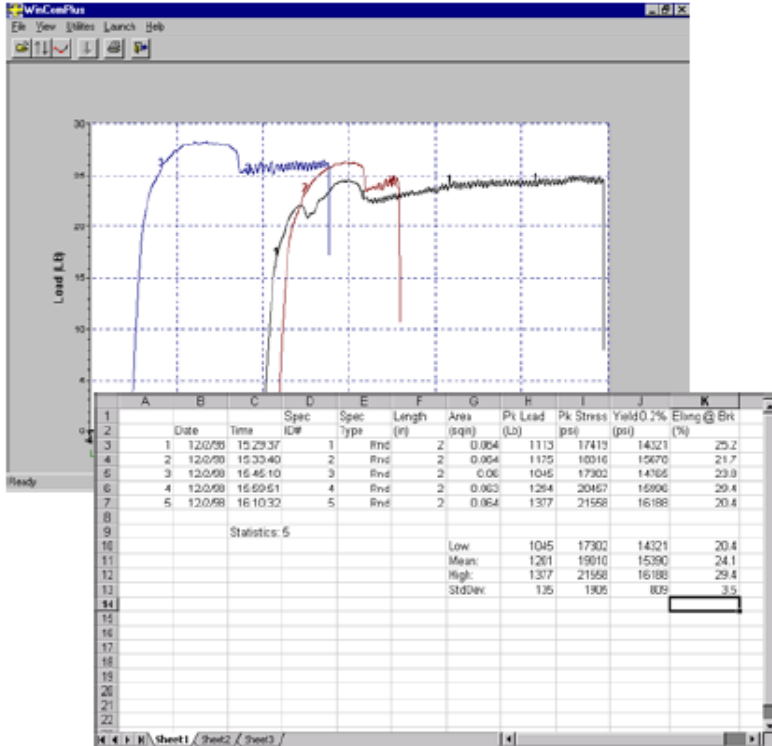
## Q Controller Overview

- Displays load, position, and position rate during the test. Displays activated results when the test finishes.
- Save and recall six test methods.
- Password protected supervisor/operator modes protects test methods from inadvertent change.
- Set high and low limits to enable pass/fail indication at test completion.
- Calculate high, low, mean and standard deviation for a group of tests.
- Store up to 300 results to memory – including date, time, specimen ID plus all calculated parameters.
- Select data log rates from 0.5 to 1,000 samples per second to match long and short tests.
- English, Metric and SI engineering units.
- All test methods have one pre-test control segment which can be used as a pre-load function.
- Load calibrations exceed ASTM E4, BS EN ISO 7500-1: 2004, DIN 51221 and JIS B7721 standards.
- 2 segment profiles - user defined position rate and end channel - either load, position, time or sample break.
- Cycle between segments function to perform cyclic tests between load or displacement limits.
- Use with self identifying or standard load cells

Calculated Analyses include



- Maximum -- Load, Load/Width, Stress
- Minimum -- Load,
- Average -- Load 1 between Displacement, Load 2 at Load-Displacement,
- Load -- at break, at displacement, Load1 at displacement, Load2 at displacement, Load3 at displacement
- Displacement -- at break, at load,
- Percent -- Elongation, Disp1 at Load 1, Disp2 at Load 2, Disp3 at Load 3,
- Modulus - Offset Yield, Modulus of Elasticity, Shear Modulus – note need for application caution.
- Stiffness, Energy between Displacements, Free Height, Static & Kinetic Friction
- Custom analyses made to order.



## Software to plot and export data

Software products are available to capture and document machine data as well as calculated results and raw load-displacement-time data. Single or multiple curves can be plotted on the same set of graph axes. The data is also available to common plotting programs such as Excel via ASCII data format.

## 200Q Series Single Column Systems

Model	200Q225	200Q225-55	200Q500	200Q500-55
Load Rating	225 lb (1 kN)	500 lb (2.2 kN)	500 lb (2.2 kN)	500 lb (2.2 kN)
Max Travel	31" (775 mm)	55" (1400 mm)	31" (775 mm)	55" (1400 mm)
Max Speed	40 ipm (1000 mm/m)	20 ipm (500 mm/m)	20 ipm (500 mm/m)	20 ipm (500 mm/m)
Load Accuracy	+/- 0.5% of reading to 1/500 of load cell --- Meets ASTM E4, BS EN ISO 7500-1: 2004, DIN 51221			