

R Series Mechanical Test System

Tension & Compression

Up to 20,000 lb (90 kN) Load Capacity

Servocontrolled

High Accuracy & Resolution



100R Single Column Test System

- 100 Series Load Frame
- DA Actuator
- R Controller with R Software
- Load Cell
- Grips and fixtures – optional



800R Dual Column Test System

- 800 Series Load Frame
- DA Actuator
- R Controller with R Software
- Load Cell
- Grips and fixtures – optional



150R Horizontal Test System

- 150 Series Test Table
- DA Actuator
- R Controller with R Software
- Load Cell
- Grips and fixtures – optional



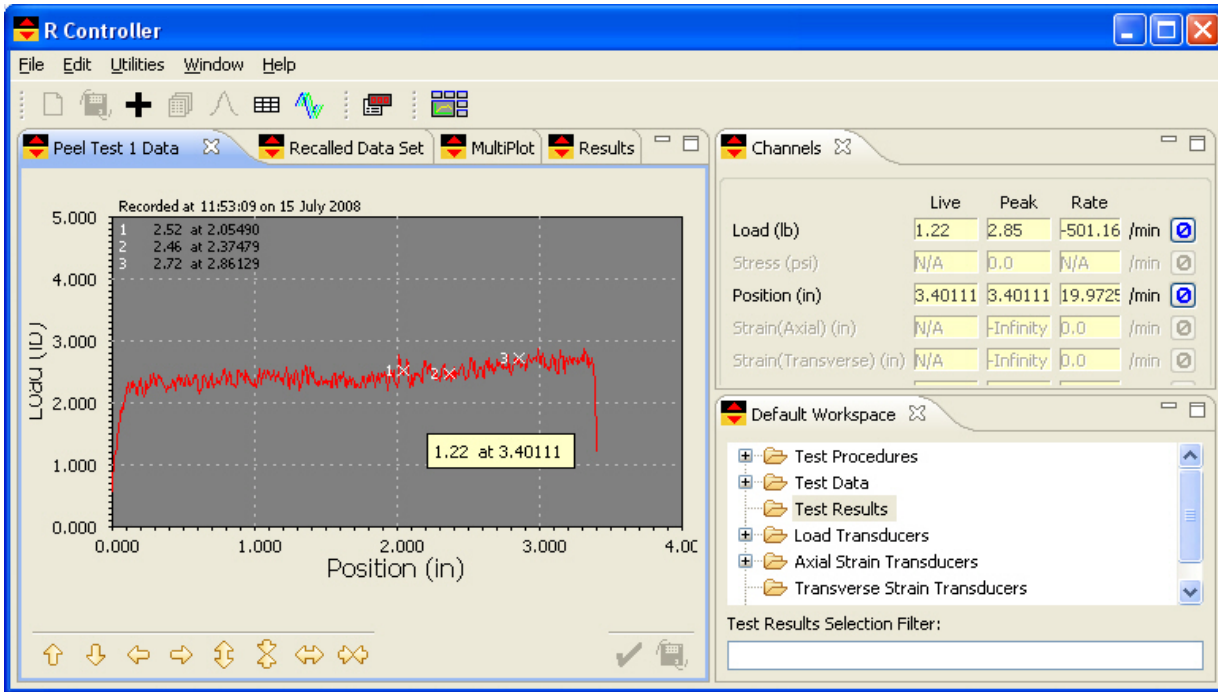
Choices

- Load frame width and height
- Actuator speed, force, and travel
- Accessories

Modular Systems Approach

TestResources test systems are configured to match each customer's test requirements. A common single actuator test system will consist of a load frame or horizontal test table, a linear or torsional actuator, load, strain, or position transducers, controller, and software. Due to a modular product structure, system modules can be swapped or re-configured during as requirements change.

R Servocontrol Hardware and Software



The R Controller is an integrated hardware and software package that enables test machine users to develop, maintain, and execute classical tension, compression, stress-strain, stress relaxation, creep, and cyclic tests on servocontrolled test machines. During the test, data is collected from transducers, results plotted and displayed in real time, analyzed and a custom report generated. Each test procedure may be saved and rerun as desired.

Virtually all mechanical quasistatic or dynamic test may be performed. Even limited fatigue testing is possible since the controller is capable of producing sinusoidal load and position controlled tests. Customized test involving a mix of monotonic, cyclic and segmented control profiles and blocks of repeated profiles – e.g. ramp, hold, sine wave cyclic, hold, sawtooth cyclic profile under the control of choice can be faithfully reproduced.

R controlled test systems are ideal for quasistatic mechanical tests, and proven easy to learn and use. The product is well suited for labs where operators or tests change day to day. PC based controls improve test data quality and efficiency because test setups and test data are saved, built upon or available for re-analysis. The R is a good fit for high throughput test labs and research labs where flexibility is needed. Create, save and recall your special test methods. Protect different set up modes with a password as desired.

The R package also includes many calculated routines for established test analyses and procedures.

Produce full single test reports or test reports covering multiple tests. Generate load - deflection (XY) plots to match ASTM, JIS, SAE, TAPPI, Euro Norm and other standard requirements. Data and plots can be presented in a single test report or a group of like tests can be combined to generate a statistical summary for each analysis result. The multiple test report stores a group of tests to the same file and provides a statistical

summary for each analysis parameter. A plot with multiple XY curves overlaid on the same set of graph axes is optional. Store test data and results to hard disk in ASCII delimited format for easy import into popular spreadsheet and database programs.

English, Metric and SI units and large easy-to-read numeric displays present friendly live, peak and rate readings.

R hardware features high speed (to 1000 samples per second) data acquisition and control so it can be used in high speed dynamic tests. Control is based on PID algorithms for high precision load, strain or stroke control. Up to 5 channels of sensors are available to collect data or provide control of load, encoder position, LVDT, strain, or auxiliary use (10V DC). R hardware (reference A300 or A400) uses proven noise reduction techniques to lower the noise floor to effective resolution of one part in a million.

Wide Choice of Servoactuators

The R controller features a configuration with 10V output to drive compatible servoactuators. This feature expands the number of actuators available to include higher forces with separate power packs.

Actuators for standard Quasistatic tests

D's are compatible with the 100, 150 and 800 Series Load Frames and Test Tables, and include servomotor, encoder, linear bearings, and integrated limit detection to protect the actuator in case of over travel conditions. They may be used in horizontal and vertical modes and are ideal for slower tests (Quasistatic) common to material and product testing applications. They are available in a variety of speeds, travels and load ratings.

D Series Actuators

Actuators	Units	DA250	DA500	DA1000	DA1400	DA1020	DA100
Max Load	lb (kN)	250 (1.1)	500 (2.2)	1000 (4.4)	1400 (6.2)	1000 (4.4)	20 (4)
Max Speed	ipm (mm/m)	25 (625)	7 (625)	2.2 (55)	0.9 (23)	15 (375)	180 (4500)
Min Speed	micron/min	30	8	2.5	1.5	30	-
Head Stroke	6" or 12" or special						
Accuracy	+/- 0.5% of reading to 1/500 of load cell - Meets ASTM E4, BS EN ISO 7500-1: 2004, DIN 51221						

E Series Actuators

Actuators	Units	E2500	E7500	EF
Max Load	lb (kN)	2500 (11 kN)	7500 (33 kN)	20 Kip (90 kN)
Max Speed	ipm (mm/m)	40 ipm	40 ipm	60 ipm
Head Stroke	6" or 12" or special			
Accuracy	+/- 0.5% of reading to 1/500 of load cell - Meets ASTM E4, BS EN ISO 7500-1: 2004, DIN 51221			

TestResources offers over 30 high speed actuators not shown, so please contact an application engineer to serve any needs for more speed or force capacity.

Load Frames & Test Tables

Model	Type	Max Force	Vertical Space	Centerline Clearance	Baseplate
100-36	Single Column Vertical	1350 lb (7 kN)	31" (775 mm)	3" (75 mm) – 5" option	12" X 12"
100-XX	Single Column Vertical	1350 lb (7 kN)	As required	3" (75 mm) – 5" option	12" X 12"
150-36	Horizontal Test Table	250 lb (1.1 kN)	11" Wide	3" (75 mm) – 5" option	11" x 36"

100	Made to requirements	1350 lb	As required	As required	AR
800	Dual Column Vertical	3300 lb (15 kN)	As required	16" Wide	6.5" x 22"
801	Dual Column Vertical	3300 lb (15 kN)	As required	20" Wide	6.5" x 26"
802	Dual Column Vertical	3300 lb (15 kN)	As required	24" Wide	6.5" x 30"
80X	Dual Column Vertical	3300 lb (15 kN)	As required	As required	6.5" x 40"
813	Dual Column Vertical	7500 lb (33 kN)	As required	22" between columns	-
820	Dual Column Vertical	20 kip (90 kN)	As required	22" between columns	-

Load Cells – many choices available.

Call us – take the next step – As a supplier of modular test systems, the next step is to call TestResources for application engineering support. We have so many choices it can be a challenge to configure a system. Our staff is capable of providing the optimal system and giving you alternative paths to serve your needs.

Standard Configurations

100RXX – Single Column Machine

- 100-36 Single Column 31" Load Frame
- DA Series Actuator (250 to 1125 lb)
- R Controller (Load, Position, Aux CH)
- Load Cell

800RXX – Dual Column Machine

- 800-16 Dual Column Load Frame
- DA Series Actuator (250 to 1125 lb)
- R Controller (Load, Position, Aux CH)
- Load Cell

Example Applications



800RE3 – static and cyclic tests on ceramics within a 1000C furnace



110RE2 – for static and cyclic tests on biomaterials within a saline 37C biobath.



100R250 – biomaterials and tissue engineering research in biological