

## Planar Biaxial Test System

### System Overview

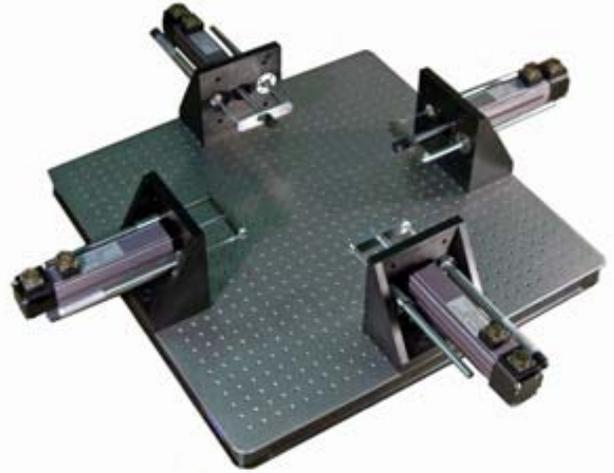
Planar Biaxial systems perform fatigue, dynamic characterization and static tests of products and materials. The four channel test controller measures and controls each of four actuators which can produce equal and opposite motion and loading on two axis perpendicular to each other. Each axis can be controlled in load, strain or position control. Systems are configured to match each customers load and stroke requirements, like all TestResources systems

Each system includes

- Horizontal test table – sized to match sample requirements
- Four actuators on adjustable 90 degree mounting brackets
- Actuators are selected to match load, speed and travel requirements.
- Two load cells and four stroke sensors.
- Power Packs
- Digital Servocontroller with high accuracy signal conditioning
- Multichannel Control Software
- Computer
- Optional Grips
- Optional Biobath for sample immersion in saline or solution at 37C
- Optional video biaxial strain control software (requires camera)

### Highlights

- The system is modular and configurable to load and speed requirements. A single actuator test system can be expanded to add 2, 3 or 4 actuators as needed.
- The Multichannel 2360 controller offers a combination of features that allow high accuracy control and measurement, including high 24 bit resolution, full 100 to 1% expanded sensor ranges, and non-contacting strain control technology. This controller delivers from a very low electronic noise floor with superior accuracy that make it unique for research applications.
- Wide choice of test tables with mounting holes or T slots for standard actuator mounting brackets and fixtures. Actuator mounting brackets enable positioning for different sample lengths and sizes.
- Electrically powered from power packs – 110V or 220V.
- Video strain control options - using a high speed digital camera that produces an analog output of changes in gage length on the sample. The camera does not require special markers.
- The four channels are configurable as one 4 channel station or four independent test stations. The actuators can be switched to use with vertical single or dual column load frames.
- Four actuators are arranged 90 degrees apart. Two master – slave actuators are on one axis and two master – slave actuators are on the other axis. The actuator pair operates in load, strain or position control, ensuring sample center point can be maintained at 0,0 - which is critical in situations where video is used for real time strain control.



### Latest Digital Controller

- The 2360 multichannel servocontroller is a proprietary combination of hardware, firmware and software which requires a PC with USB port.
- High accuracy control based on a use of a high speed DSP combined with high resolution measurement and control electronics.
- The controller is expandable using plug in cards for up to 24 conditioned feedback channels, control to 8 test stations or actuators, and additional data acquisition channels.

### Powerful Multichannel Software

- MS Software enables users to create test setups, generate wave-shapes, monitor feedback data with scopes and displays, set limits, tuning, calibration and report generation.
- GDS Developers Kit enables user-developers to create special applications or software components to run concurrently with MS Control Software. Use Visual Basic or C development tools.
- Applications Test Software is available for standard tests or made-to-order.

## 174LE2-4 Planar Biaxial Servo-All-Electric Test System Attributes

Actuator Model	E213-2	E216	Options
Static Force (Max)	± 500 N (112 lb)	± 1.6 kN (360 lb)	Higher forces
Fatigue Force (Max)	± 250 N (56 lb)	± 1.3 kN (290 lb)	Higher forces
Stroke*	75 mm (3") / actuator	150 mm (6") / actuator	Longer strokes
Velocity (Max)	100 mm/s (4"/s)	200 mm/s (8"/s)	Faster speeds
Test Table Size	30" x 30"	36" x 36"	Larger tables
Power Requirements	220V	220V	110V

- Stroke specifications are for actuator only. When mounted in load frame or mounting bracket, loss of 1" typical. If stroke specification is critical – contact us.
- The lower force resolution is determined by the controller's resolution and the use of small force load cells. Submersible low force load cells are available at full scale ratings less than 100 grams – enabling use of the system for micromechanical applications.
- Multiple configurations available – contact us for one to satisfy your special needs.

### System Components

- Model 2360 - four channel high speed digital servocontroller with data acquisition.
- High Resolution measurement and control of load and position channels
  - User settable expanded ranging from 100% to 1% of full scale
  - 24 bit signal conditioning of load and position ranges
- Multichannel Software
  - Capable of static, dynamic and fatigue tests
  - Independent or synchronized control of each actuator and each axis
  - Customizable waveforms (mix of ramp, sawtooth, sinusoidal, dwell)
  - Load and position control with digital mode switching

### Options

- Auxiliary Data Acquisition
- Global Data Sharing Application Developers Toolkit
- Vic23 Video Real Time Camera
- Biobath saline bath for long term sample immersion at 37C
- Grips