

800LE Series Fatigue Test Systems

Overview

Orthopedic devices implanted in the body undergo static and fatigue tests to mimic ten years of product life to be considered acceptable.

Spinal implants and constructs are tested according to various ASTM and ISO standards and typically require static tension, compression and torsion testing, and fatigue tests. The typical medical device developer needs a versatile proven test system that can do both types of tests and one that can expand to combined axial torsional loading.

800LE test systems are servo-all-electric systems that are rated to produce the high loads needed for static tests and the high (to 15 Hz) speeds needed for fatigue testing of materials, devices and components.

They require single phase 110V or 220V electric power. No special utilities such as pneumatic air, hydraulics or water are needed. TestResources configures each system to match required load and speed requirements.

Each system includes:

- Dual Column Load Frame
- Actuator sized to produce load, stroke and speed
- Load cell and LVDT
- Power Pack
- 2370 Controller (not shown)
- Control Software
- PC with USB port
- Accessories such as Grips, Extensometers, Bathes, Special Software
- Support and Training

Highlights

- Choice of actuators ensures you can meet virtually any test requirement (force, speed, and travel).
- Software makes it possible to program test waveform, control mode, and to build test applications. Designed specially for fatigue and static testing.
- Compact, lightweight load frame requires less than 0.25 m² (0.25 ft²) of desk space. All electric design avoids trouble associated with hydraulics.
- Robust load frame with adjustable height and 405 mm (16") between columns.
- Select stroke needed – 5 inch standard – options to 18 inches.



ASTM F2346 Configuration (model 800L316) – shown with fixtures.

Digital Controller

- Model 2370 Servocontroller is located in a separate enclosure and employs a high speed DSP. Controller is configured with 24 bit conditioners and capable of expansion. Requires PC and includes MTL control software.

Powerful Software

- Windows Control software allows users to create test setups, generate dynamic wave-shapes, monitor feedback data with scopes and displays, set limits, tuning, calibration and report generation.
- Single, Multistation, and Multichannel control software products available.

800LE Servo-All-Electric Test Systems

Typical Configuration for 1 Channel fatigue test system:

Actuator Model	E326	E316	E416
Static Capacity	± 3 kN (675 lb)	± 6 kN (1350 lb)	± 18 kN (4000 lb)
Fatigue Capacity	± 3 kN (675 lb)	± 2.5 kN (500 lb)	± 4.4 kN (1000 lb)
Stroke	125 mm (5 inches)		
Test Range	Static to 15 Hz		
Velocity Max	250 mm/s (10 in/s)	125 mm/s (5 in/s)	125 mm/s (5 in/s)
Performance at 5 Hz (ref)	± 8 mm (0.3 in)	± 4 mm (± 0.15 in)	± 4 mm (± 0.15 in)



Dimensional and Utility Requirements

Load Frame Model	800L
Column Clearance	405 (16 inches)
Frame height (min test space)	980 mm (38.5") H
Test space	0 to 810 mm (32")
Footprint	165 mm (6.5") D x 560 mm (22") W
Weight	36 kg (80 lb)
Power Pack Enclosure	300 mm (12") H x 400 mm (16") W x 250 mm (10") D
Power Requirements	220 VAC single phase or 110V @50% speed

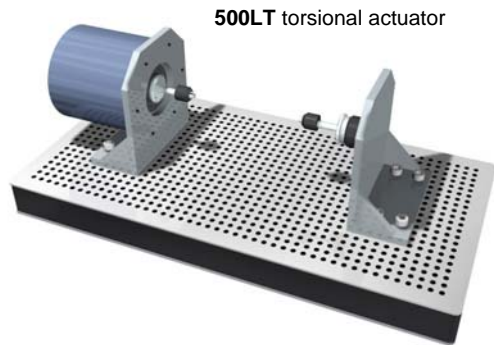
Notes – Specifications are based on typical test samples and may vary depending on actual conditions. Performance curves are available. All speed specifications are based on 208 V Power Pack. Discuss all critical specifications with an application engineer.

Options

- 10 N-m Torsion (Axial Torsion version of 800LE) - **800LE-AT**
- Higher load capacity - **800LE4**
- Torsional system – **800LT**

Accessories

- Grips and fixtures - for regular and irregular specimens.
- Saline baths, environmental chambers and furnaces
- Multistation Control Software



500LT torsional actuator



800LE4 – rated 25 kN
Shown with Heavy Duty
T Slotted baseplate