

240AT Axial Torsional Test Machine

Forces up to 4.4 kN (1000 lbf) and Torque Rating to 20 Nm (177 in-lb)

Overview

The design features a mechanically stiff load frame with torsion motor either mounted on the moving crosshead or baseplate mounted, controlled by a Newton software package, two channel power pack, encoders for position feedback, and a multiaxial load cell. Ideal for high elongation materials such as rubber, elastomer, plastic, etc. as well as tensile, compression, torsion and combined biaxial tests. The 240AT load frame is compact and lightweight and applies to situations where table space is limited. The 240 family has multiple frames featuring high travels, high speeds, and is a premium UTM package. Best value axial torsion tester.

Features

- Compact tabletop system - frame requires less than 0.15 m² (1.5 ft²) of desk space
- Efficient mechanical design provides a highly stiff load frame to ensure top performance and longevity
- Ball screw drive and superior fit and finish for precise alignment and accurate test results
- High speed motors provide superior control for a wider range of suitable testing speeds
- Electrically powered, no special mechanical or electrical facility requirements needed
- User settable mechanical limit switches provide additional protection for your samples and accessories
- Critical components are enclosed for long life, even in a dusty environment
- Monotonic and cyclic modes
- Software options for machine control, data plotting, analysis and data export
- Choice of software package:
 - Universal Materials & Products Software Package
 - Torsion Software Package
 - Axial Torsional Static Software Package
 - Axial Torsional Fatigue Software Package
- High accuracy, high resolution and high speed data capture
- Axial load, torque load, axial displacement, angular displacement and strain channels



Applications

- High elongation for materials such as rubber, elastomer, plastic
- Tensile, compression, torsion and combined biaxial tests
- Materials and product tests
- Destructive and proof load tests
- Biomedical
 - Luer fittings - leakage and separation forces (ISO 80369, ISO 594)
 - Metallic Medical Bone Screws (ASTM F543)
 - Syringes (ISO 7886-1, ISO 8537-C, ISO 11040-4, ISO 11608-5)
 - Child-Proof Pharmaceutical Bottles (ASTM D7860)
 - Adhesive properties of biomaterials
- Simulating real life stresses
- Thin walled tubing
- Consumer products, packaging, electronics
- Product durability under biaxial loading
- Combining different test modes to speed development
- Engineering mechanics teaching
- Validation of constitutive models

Specifications

Model	240AT-250-T20	240AT-1000-T20
Axial Capacity	1.1 kN (250 lbf)	4.4 kN (1000 lbf)
Max Speed (Full Load)	762 mm/min (30 in/min)	2159 mm/min (85 in/min)
Crosshead Travel	1040 mm (41 in)	1040 mm (41 in)
Crosshead Travel (with Torsion motor installed)	540 mm (20 in)	540 mm (20 in)
Torsion Capacity	20 Nm (177 in-lb)	20 Nm (177 in-lb)
Max Speed (Full Load)	19 RPM	19 RPM
Multiaxial Cell (Typical)	250 lb/125 in-lb or 500 lb/250 in-lb	1000 lb/500 in-lb

Newton Axial Torsion Controls serve a broad set of diverse needs in axial-torsional, and other biaxial actuator testing applications. The following software packages are supported with controller hardware that can be configured for up to four actuators, including 5000 hz data acquisition rates, multiple encoder channels, 24 bit wheatstone bridges, automatic load sensor recognition, with a convenient operator pendant for local control of the test machine.



Newton Software Package Options

Universal Materials & Products Software serves the full range of static and cyclic uniaxial tension and compression tests. This entry level package performs common two step tests, with a wide range of analyses, and ISO and ASTM standard test methods.

Torsion Software converts the same controller hardware and controls and measures data from the torsion channel, making it possible to perform torsion only tests. This path enables torsion testing using an axial universal test frame equipped with a torsion motor and torque cell.

Axial Torsional Static Software for static test machines - enables all test modes: axial, torsion, and combined axial torsion loading.

Axial Torsional Fatigue Software for fatigue test machines - enables all test modes: axial, torsion, and combined axial torsion loading - both static and fatigue.

Popular Axial Torsion Software Add-on Options

- **TestVideo** Module video capture and playback of tests with data synchronization.
- **TestCreator** Module creates custom multiple segment profiles for product and component testing.
- **TestCalc** Module helps create custom analyses and calculations.
- **TestComply** Module ensures compliance to FDA Title 21 CFR for compliance requirements (IQ/OQ/PQ)
- **Newton Expansion Card** Expand to meet instrumentation requirements including wheatstone bridges, data acquisition channels, and analog outputs.

*Specifications are subject to change at any time.