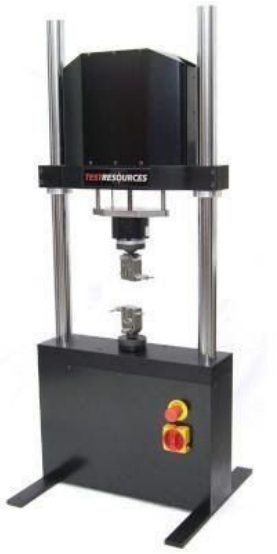
130AT Axial Torsion Test Machine

Forces up to 10 kN (2250 lbf) and Torque Rating to 100 Nm (885 in-lb)

Overview



130AT family electromechanical axial torsional testers deliver relatively low forces and are used for static tension and compression tests combined with a twisting torsional motion at quasi static speeds. The 130AT series tend to be used to serve standard tests prescribed by ASTM or ISO.

The 130AT column spacing enables use of environmental chambers and large test sample test requirements. Maximum force capacity is 10 kN (2250 lbf). The 130AT Family is one of the most affordable axial torsion test machines available. The 130AT design features a torsion motor mounted on the bottom side of the test sample, and a linear actuator mounted on the top side, controlled by a 2 channel Newton software package using encoders for linear and angular position feedback, and a multiaxial load cell to measure force and torque simultaneously. Systems typically include special biaxial test fixtures engineered to match your test samples.

Features

- Electromechanical linear actuators and rotary motors. Capable of cyclic operation. For fatigue applications, see our 830 Family.
- Ideal solutions for test labs where both tension, compression and torsion tests are required.
- Monotonic and Cyclic modes
- 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
- Measurement and control of axial load, torque, axial displacement, and angular displacement.
- Strain channels are available.
- Software options for machine control, data plotting, analysis and data export.
- Multiaxial cells available in multiple force/torque ranges.

Applications

- 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)
    - 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

Load Frames

Family	Frame Type	Column Spacing	Frame Capacity
130AT	Dual Column	405 mm (16 in)	2.2 kN to 10 kN (500 lbf to 2250 lbf)

Linear Actuators

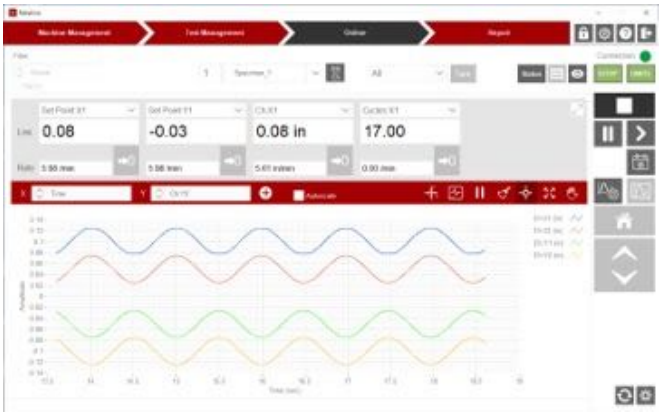
Model	Axial Capacity	Axial Stroke	Speed	Applications
130AT-2250	10 kN (2250 lbf)	150 mm (6 in)	2 inches per min	Static & Cyclic
130AT-500	2.2 kN (500 lbf)	150 mm (6 in)	12 inches per min	Static & Cyclic

Torsion Motors

Model	Torque Capacity	Rotary Travel	Speed	Applications
130-T100	100 Nm (885 in-lb)	CW/CCW/Continuous	4 rpm	Static & Cyclic
130-T20	20 Nm (177 in-lb)	CW/CCW/Continuous	19 rpm	Static & Cyclic

Note: All specifications reflect maximum performance limits. System low force range is based on selected multiaxial load/torque cell. Standard axial torsion load cells available to 0.2 Nm (2 in-lb) & 220 N (50 lbf).

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.