

Universal Test Machines with 300AT Series Torsional Add-on

Axial Forces ranging from 5 kN to 300 kN (1125 lbf to 67,000 lbf)

Torsion Ratings ranging from 20 Nm to 300 Nm (177 in-lb to 2655 in-lb)

Overview

The 300AT Series Torsion Channel Add-on package expands a universal test machine into a system that performs both torsion and combined axial-torsion (biaxial) tests. 300AT add-ons deliver great versatility at an affordable price for anyone that seeks the benefits of a universal test machine combined with torsion and biaxial test applications.

Because of its modular design, the 300AT can be integrated to the universal test machine before or later as a field installed upgrade. Three torsion capacities are available between 20 Nm (177 in-lb) and 300 Nm (2655 in-lb).

Our 300AT series universal test machines are rated 5 kN and 300 kN (1,125 lbf and 67000 lbf). The 300AT series is ideal for performing static tension and/or compression applications.

This is a typical universal test machine that is specifically designed with axial torsion functionality which makes it extremely versatile. In addition to torsion and combined axial torsion applications, these universal test machines perform the full gamut of mechanical tests including tensile, compressive, bend, bond, flexural, fracture, peel, shear, tear, stress relaxation, and short term creep tests.



Features

- Expands UTM to enable torsion and combined axial-torsion tests.
- Newton Controller software package extension includes
 - Torsion Software Package or
 - Axial Torsional Static Software Package
- Measure and control axial position and angular position.
- Measure and control Axial load, Torsion or both simultaneously.
- Controls constant linear and angular speeds, constant load and torque rates, displacement and angular position, load and torque control
- Removable Torque Box includes torsional servomotor and encoder.



Applications

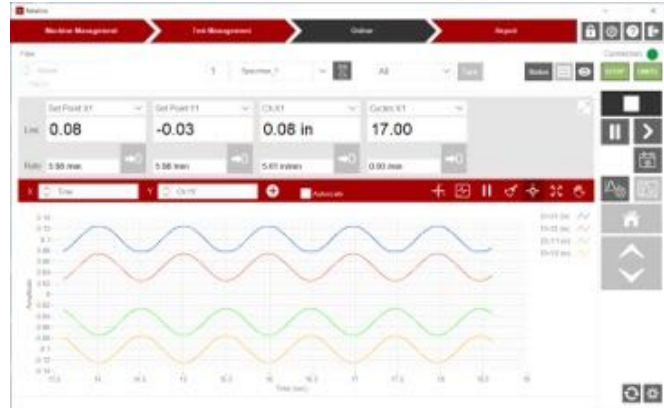
- Tensile, compression, torsion and combined axial and biaxial tests
- Materials and product tests
- Destructive and proof load tests
- Biomedical
 - Adhesive properties of biomaterials
 - Orthopaedic Medical Devices
- Engineering Teaching
 - Constitutive modeling
 - Thin walled tubing
 - Engineering Mechanics
 - Biomedical
- Wire
- Tools
- Fasteners
- Shafts
- Consumer Products
- Electronics
- Research labs and applications
- Simulating real life stresses
- Product durability under biaxial loading
- Combining different test modes to speed development



Specifications

Model	310AT	311AT	312AT	313AT	314AT	315AT	316AT
Load Capacity	5 kN (1125 lbf)	10 kN (2250 lbf)	25 kN (5625 lbf)	50 kN (11250 lbf)	100 kN (22500 lbf)	150 kN (33750 lbf)	300 kN (67000 lbf)
Torsion Capacity	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)	20 to 300 Nm (177 to 2655 in-lb)
Frame Type	Tabletop	Tabletop	Tabletop	Tabletop	Floorstanding	Floorstanding	Floorstanding
Speed Type	Static	Static	Static	Static	Static	Static	Static
Applications	UTM with torsion	UTM with torsion	UTM with torsion	UTM with torsion	UTM with torsion	UTM with torsion	UTM with torsion

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.