

eXpert 3000 Series®

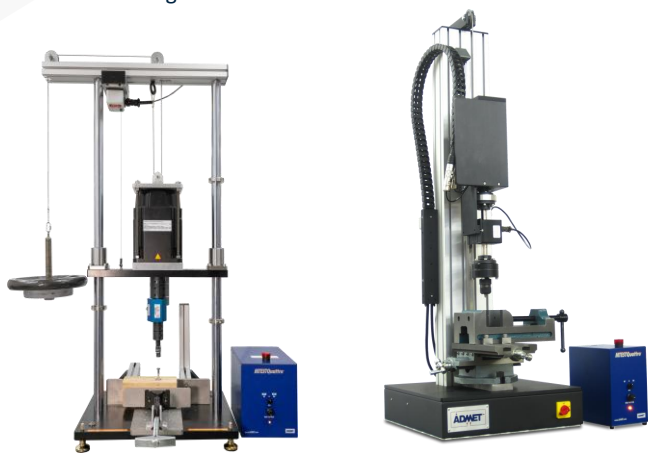
Static and Dynamic Torsion Testing Systems



Reliable Torsion Testing Results You Can Trust

When your quality program or R&D plans depend on **consistent, repeatable torsional measurements**, ADMET Torsion Testing Systems deliver results you can rely on—shift after shift. Engineered for **static and dynamic torsion testing**, these systems provide precise torque and angular displacement control to support **incoming inspection, in-process validation, and final quality assurance**. Designed for ease of use and standards compliance, ADMET torsion systems generate **traceable, audit-ready data** operators, quality engineers, and auditors can trust.

Backed by ADMET's **lifetime technical and application support**, they are built to support long-term production and QA environments—not just short-term testing needs.



▶ eXpert 3000 systems can be configured as single- or dual-column and vertical or horizontal, depending on the test requirements

System Highlights



Stable Static and Dynamic Performance: Designed for smooth torque application during static tests and controlled cycling during fatigue testing. Closed-loop control maintains stable loading, reducing variability across operators and test runs.



High-Accuracy Torque and Angle Measurement: Configured with high-accuracy torque transducers and high-resolution rotary encoders to measure applied torque and angular displacement directly at the specimen. This enables accurate determination of torsional stiffness, yield, failure, and breakaway torque.

Purpose-Built Test Frames: Rigid load frames designed for torsional loading, supporting precise torque application with minimal backlash. Systems are available in multiple torque ranges to accommodate low-torque components through higher-capacity production testing.

System Specifications

Design Feature	Specification
Torque Capacity	- Systems configurable across a wide range of torque capacities (5 to 300 N-m) - Interchangeable high-accuracy torque transducers available to match test requirements
Angular Stroke and Resolution	- Angular rotation range adapted to specimen geometry and test method - High-resolution rotary encoders available for precise angular displacement measurement
Rotational Control and Speed	- Single-ended or opposing rotation configurations available Closed-loop control for smooth, stable torque application - Wide range of rotational speeds supported
Test Orientation and Mounting	Horizontal or vertical torsion configurations available upon request - Fixtures and mounts available to support alignment and auxiliary measurements
Specimen Environment	- Environmental chambers available for temperature-controlled testing - Optional accessories to support testing in conditioned or specialized environments
★ While we have a library of past designs available, ADMET's eXpert 3000 series Torsion Testing Systems are engineered-to-order. Send your specification or test requirement, and we will offer a system designed specifically for your needs at a reasonable price.	



The eXpert 3000 series torsion testing machines feature a variety of grips and fixtures to accommodate testing of orthopedic devices such as bone screw testing, spinal constructs, and intramedullary rods. Common standard test methods include

ASTM F1717, ASTM F2077,
ASTM F543, ISO 6475, and ASTM F1264.

Measurement Performance – ADMET offers best-in-class accuracies for repeatable and reliable testing



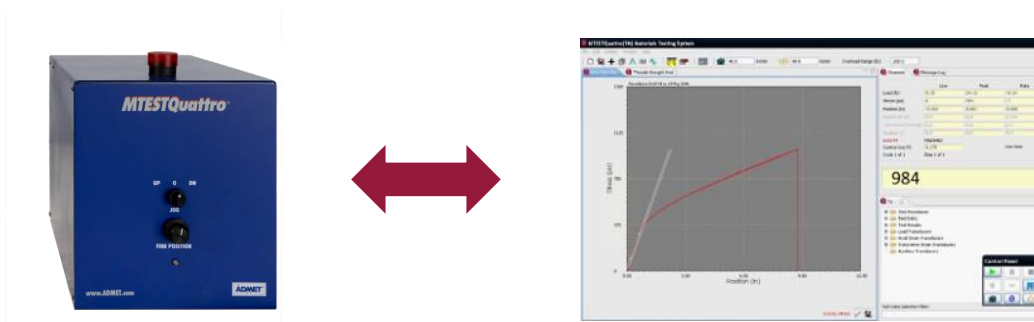
Torque Measurement Accuracy: +/- 0.5% of reading down to 1/500 of load cell capacity. Meets or exceeds ASTM E2624. ADMET self-identifying torque cells are offered with all systems.



Angle Measurement Accuracy: Custom Angle Measurement Solutions are available for nearly any sample geometry or fixturing. Most angle measurement options from ADMET are offered with 0.01° resolution or better.

MTESTQuattro® Windows-Based Controller and Software

ADMET Torsion Testing Machines come equipped with **MTESTQuattro®**, our most advanced test controller, which is a PC-based unit that offers a wide range of flexibility in control, data acquisition, analysis, and reporting. This controller features 8 kHz servo update periods and programmable log rates to 1 kHz and is manipulated by a state-of-the-art Windows-based software.



Interface Area	MTESTQuattro® Control System Capabilities
Interface and Usability	- Native Windows-based software with intuitive, graphical user interface - Designed for both novice users and advanced researchers - Customizable layouts with real-time plots, numeric displays, and system status indicators
Analysis	- Extensive built-in calculations library - Full support for ASTM, ISO, and EN specification analysis - User-defined calculations for custom research protocols • Real-time and post-test data analysis
Test Methods	- Built-in method creation tools with unlimited user-defined test procedures - Supports torque, angular displacement, torsional strain, and multi-channel control modes - Multi-step and multi-axis test sequencing - Save, reuse, and modify test templates for consistent results
Multi-Axis Control	- Synchronized control of multiple actuators and feedback channels - Independent or ratio-based control across axes - Real-time closed-loop control for complex biaxial and multi-degree-of-freedom testing
Data Acquisition	- High-speed, synchronized data acquisition across all channels - Real-time plotting of force, displacement, strain, and auxiliary inputs - Configurable sampling rates and trigger conditions
Reporting	- Store, organize, and manage test data within the software - Fully customizable test reports with charts, tables, and calculated results - Print-ready and digital report output
Data Export and Integration	- Export data to common formats (CSV, Excel®, MATLAB®) - Supports integration with external sensors and devices - Digital and analog I/O for environmental chambers and accessories
Safety and System Control	- User-defined limits, interlocks, and emergency stop logic - Real-time monitoring of system status and fault conditions - Designed for safe operation during unattended or automated testing

Service and Training

ADMET strives to make its materials testing products powerful and easy-to-use. Free technical support is standard with the purchase of any ADMET product. We also offer an array of services to help you use your ADMET system to its fullest potential.

Available Services

- ✓ On-site installation and training.
- ✓ Custom analysis and report generation.
- ✓ Creation of, or connectivity to, your in-house database program.
- ✓ Online training with WebEx.
- ✓ On-Site ISO/IEC 17025:2017 Calibration Services.
- ✓ Preventative Maintenance Planning.
- ✓ Install, Operational Qualification (IQ/OQ) Documentation.

ISO/IEC 17025:2017 On-Site Calibration Services

ADMET provides a full range of calibration and maintenance services designed to fit your needs and budget. Our in-house calibration and service team has deep, hands-on knowledge of ADMET systems and is equipped to support you in any situation. Customers who require accredited calibrations in their laboratories or production facilities can establish calibration contracts with ADMET, ensuring automatic service at customer-defined calibration intervals. Proven maintenance programs help minimize downtime on production testing equipment, and each contract can be customized to match your specific equipment and operational requirements.

As a matter of course, we provide all calibration passwords to you at the time of your instrument or machine purchase. This enables you to choose who performs calibration and maintenance on your systems.

ASTM Calibration Standards offered:

- ASTM E4 – Tension/Compression Force Verification
- ASTM E2309 – Crosshead Displacement Verification
- ASTM E2658 – Crosshead Speed Calibration
- ASTM E83 – Extensometer Verification and Classification
- ASTM E2624 – Torque Calibration



Submit An Inquiry At:
calibration@admet.com



Application Gallery: eXpert 3000 Series



ASTM A938 Torsion Testing
of Metallic Wire Samples



ASTM F1717 Torsion Testing
of Spinal Implants



All ADMET systems and software are designed, engineered, and manufactured in the United States.

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