

eXpert 8000 Series®

Axial-Torsion Materials Testing System Brochure



Reliable Axial-Torsion Testing for Confident Results

The eXpert 8000 Series axial-torsion testing systems are designed for laboratories that need accurate, repeatable evaluation of materials and components **under combined axial and torsional loading**. These systems are commonly used to test fasteners, implants, biomaterials, metals, composites, elastomers, and structural components where **real-world loading conditions** cannot be represented by axial testing alone.

The series includes two purpose-built designs. The eXpert 8600 supports **static axial-torsion testing** for material characterization, strength evaluation, and failure analysis under controlled monotonic loads. The eXpert 8900 is designed for fatigue testing, enabling **cyclic axial-torsion loading** for durability, life-cycle, and performance validation. Together, the eXpert 8000 Series provides a flexible platform that supports research, product development, and quality assurance for a wide range of industries and standards.



► All eXpert 8000 systems can be fitted w/ MTESTQuattro



System Highlights

Rigid, High-Stiffness Frame Design: Heavy-duty load frames with high axial and torsional stiffness minimize compliance and backlash, ensuring accurate force and torque transmission and repeatable results—even for demanding applications.

Fatigue Testing Options Available: The eXpert 8900 configuration supports dynamic and fatigue axial-torsion testing for cyclic loading, durability studies, and life testing of components and materials subjected to real-world conditions.

Configured for Your Application: Each eXpert 8000 is configurable with a wide range of grips, fixtures, torque transducers, load cells, extensometers, and environmental accessories—allowing systems to be tailored to specific standards and test methods.

System Specifications

Specification	Unit	8601 <i>Table-Top</i>	8602 <i>Table-Top</i>	8603 <i>Table-Top</i>	8611 <i>Table-Top</i>	8612 <i>Table-Top</i>	8653 <i>Floor-Standing</i>	8950 <i>Floor-Standing</i>	8951 <i>Floor-Standing</i>	8954 <i>Floor-Standing</i>
		Static	Static	Static	Static	Static	Static	Fatigue	Fatigue	Fatigue
Maximum Force Capacity	<i>lbf</i> <i>kN</i>	225 1.0	500 2.2	1,000 4.5	2,250 10	5,620 25	11,250 50	1,125 5.0	3,930 17.5	22,480 100
Maximum Speed	<i>in/min</i> <i>mm/min</i>	2 50	7 178	20 500	20 500	20 500	20 500	480 12,192	480 12,192	245 6,223
Torque Capacity	<i>in-lbf</i> <i>Nm</i>	8.9 1.0	177 20	443.5 50	443.5 50	884 100	884 100	177 20	177 20	885 100
Maximum Speed	<i>RPM</i>	30	60	50	100	70	70	100	900	350
Total Vertical Test Space ¹	<i>in</i> <i>mm</i>	43 1,090	20 508	20 508	48 1,219	48 1,219	44 1,117	38 965	38 965	48 1,219
Space Between Columns	<i>in</i> <i>mm</i>	12 304	16.4 419	16.4 419	16.8 426	16.8 426	22 558	16.8 427	16.8 427	19 483

1: Total vertical test space is the distance from top surface of base platen to bottom surface of moving crosshead, excluding load cell, grips and fixtures. Larger openings can be accommodated upon request.

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



Load Measurement Accuracy: +/- 0.5% of reading down to 1/500 of load cell capacity. Meets or exceeds ASTM E4, BS/EN/ISO 7500-1: 2004, DIN 51221 and JIS B7721 standards. ADMET self-identifying load cells are offered with all systems.



Strain Measurement Accuracy: +/- 0.5% of reading down to 1/50 of full scale with ASTM E83 class B extensometers. Meets or exceeds ASTM E83 and BS/EN/ISO 9513:2002 standards.



Crosshead Position Accuracy: The greater of +/- 0.01mm or +/- 0.05% of displacement.



MTESTQuattro® Windows-Based Controller and Software

All ADMET Axial-Torsion Materials 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 load, displacement, 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



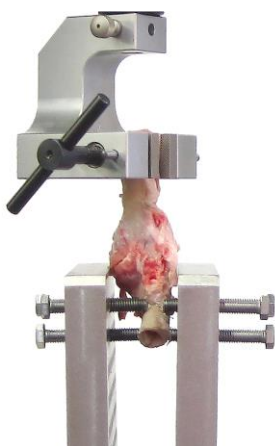
Application Gallery: eXpert 8000 Series



Adhesive Testing



Screw Testing



Tissue Testing



Luer Testing



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

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