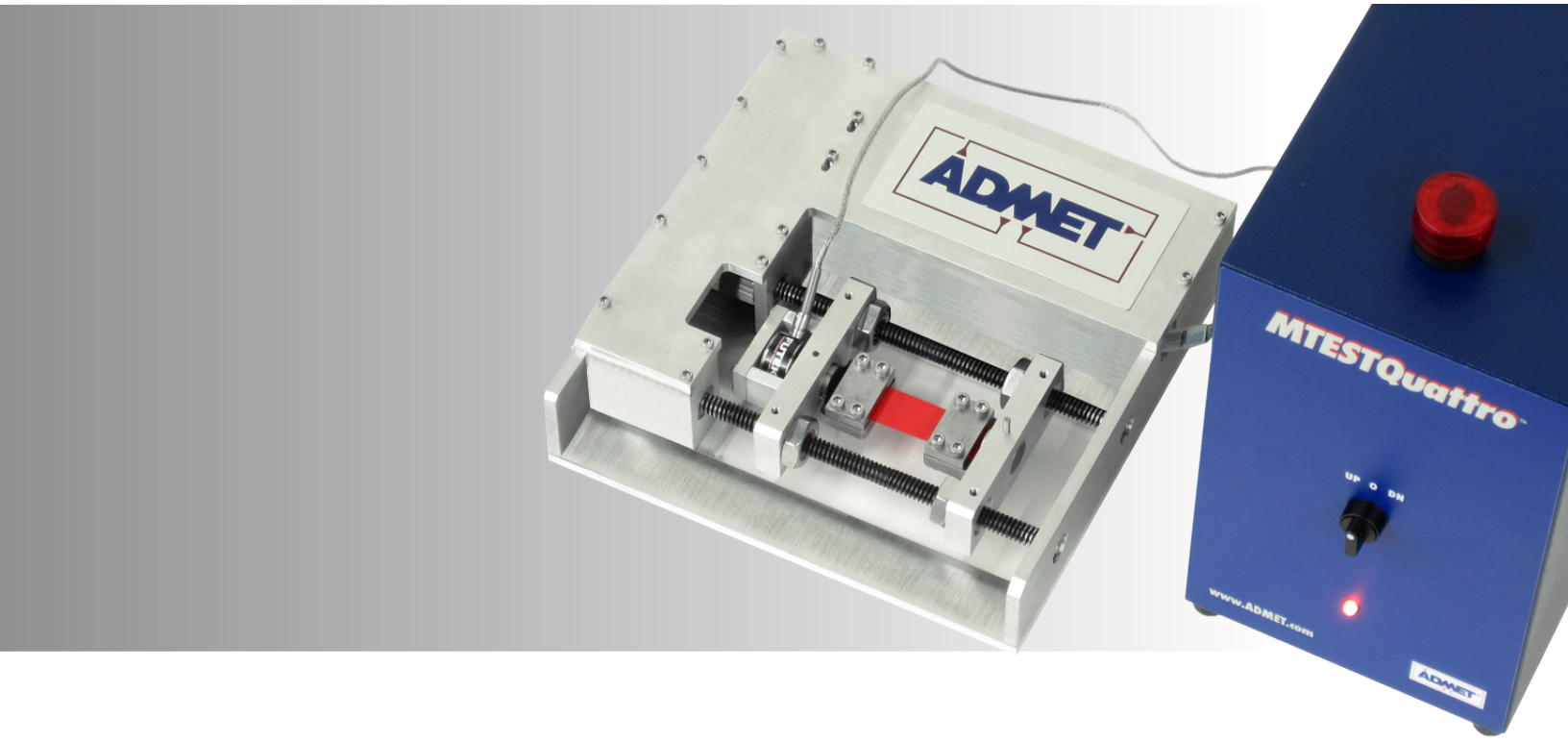
eXpert 4000 Series MicroTest Systems

System Brochure

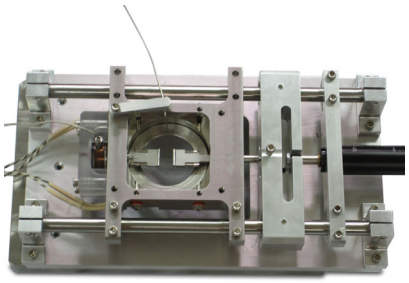


eXpert 4000 Series MicroTest Systems

An Innovative Material Testing System for small, low force tension, compression and bend testing.

Many industrial sectors are driving innovations in new materials from biomaterials, bone, fibers, threads, thin films, wire and more. However, that innovation requires measuring the mechanical properties of miniature samples. Few materials testing systems are able to measure very low forces and small displacements on samples that can often be difficult to hold. Furthermore, many researchers also have a need to record microscopic material behavior while the sample is subjected to forces. This is the market opportunity that ADMET identified for their line of eXpert 4000 series Microtest Systems.

eXpert 4000 series vertical 45N MicroTester equipped with the eP2 Digital Controller and 50g load cell for measuring the stiffness of biologic materials.



eXpert 4000 series horizontal 45N MicroTester equipped with a heated fluid bath and spring loaded pin grips for testing mouse tendons. The base of the MicroTester is compatible with the XYZ stage of an imaging system for high magnification viewing of material behavior.

Applications - Equipped with a powerful digital closed-loop controller, these systems are adaptable to a variety of high magnification imaging systems, thus, enabling simultaneous measurement of macroscopic mechanical properties while viewing microscopic material behavior. With force capacities up to 5kN and a wide variety of grips, fixtures, heating and cooling chambers and fluid baths, the eXpert 4000 MicroTest systems are well suited for testing small sized samples of tissue, bone, biomaterials, fibers, threads, gels, thin films, metals, wire and more. ADMET's advanced controllers allow for static tension and compression tests plus more sophisticated sinewave and complex cyclic fatigue tests.

DESIGN FEATURE	SPECIFICATION
Force Capacity	• Actuator designs from 45N to 5kN • Minature load cells with micronewton resolution
Stroke and Distance between Crossheads	• Adapted to the intended application, ADMET adjusts the stroke and crosshead spacing to match specimen size and maximum elongation. Displacement measurements with nanometer resolution are offered
Crosshead Action and Maximum Speed	• One moving crosshead or two crossheads moving in opposing directions • Dual opposing crosshead movement is desirable if you want the centroid of the test specimen to remain stationary for imaging purposes • Wide range of crosshead speeds
Horizontal or Vertical Orientation	• Both configurations are available • Can be sized to mount on an XYZ stage to enable speciman imaging at high magnification while under load
Specimen Environment	• Environmental chambers and heated fluid baths available • Note we also offer a separate innovative new product,the BioTense Bioractor for performing long-term mechanical tests on biologic materials in a perfusion bioreactor

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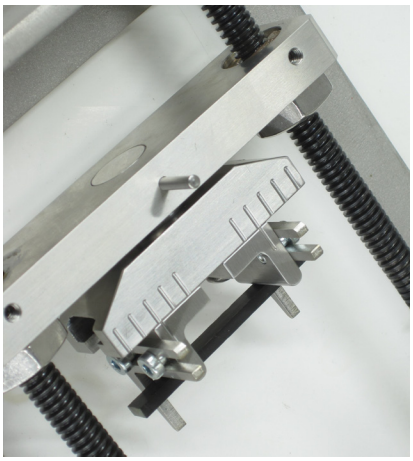
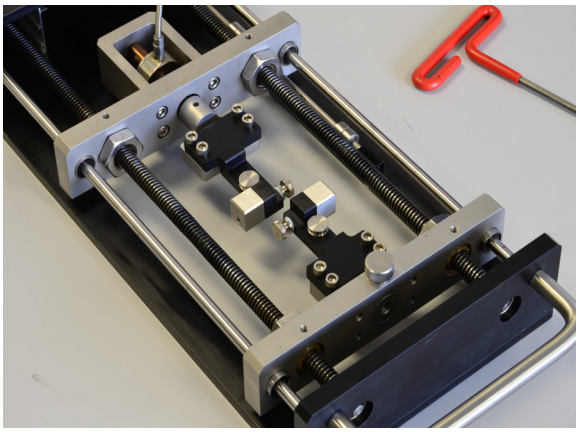
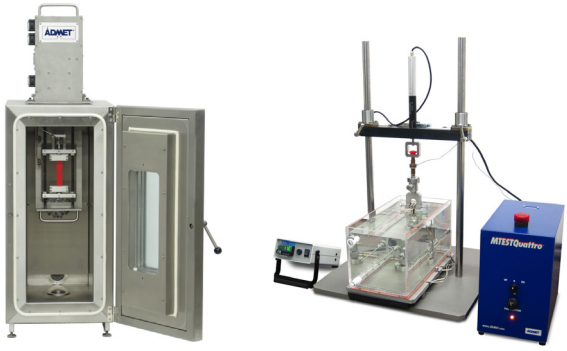
Clamps, Fixtures and Grips - A wide range of miniature clamps, fixtures and grips are available for testing materials and devices in tension compression and flexure. Custom dies are also available for producing miniature test samples of almost any size and shape.



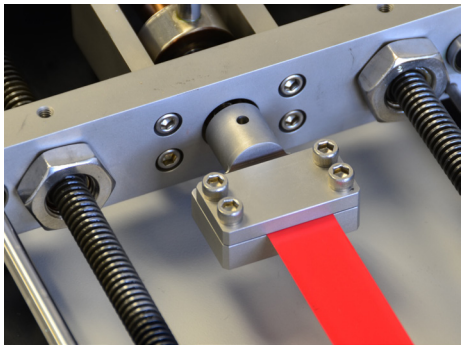
Bend fixture for horizontal MicroTest System.



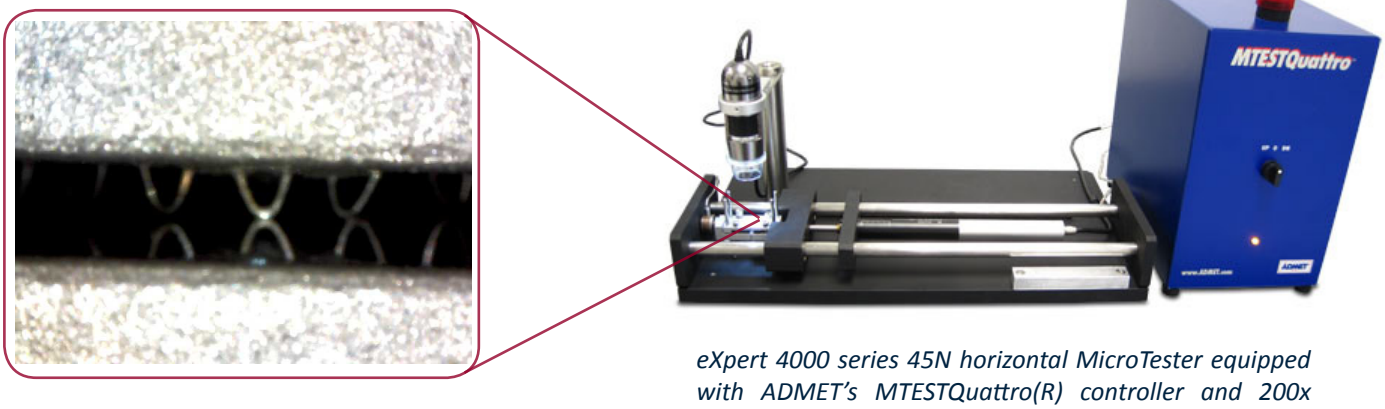
eXpert 4000 series 450N MicroTester with dual opposing moving crossheads and miniature thread grips.



Optional heating and cooling chambers (left) and heated fluid baths (right) are available for the eXpert 4000.



Manual screw clamp grips for flat samples. Offered with smooth or serrated faces.



A USB microscope was incorporated to record weld breaks to ensure the tests were run properly.

eXpert 4000 series 45N horizontal MicroTester equipped with ADMET's MTESTQuattro(R) controller and 200x microscope for testing the strength of individual stent welds. A custom grip assembly was engineered to quickly load each test sample, isolate a weld and clamp the surrounding wire.

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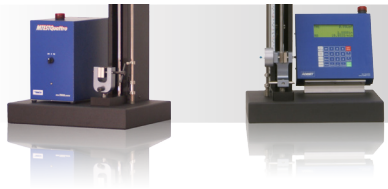
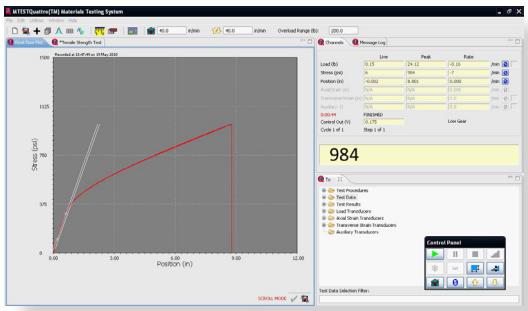
Controls and Software

All ADMET Testing Systems can be equipped with one of two closed loop servo controllers. MTESTQuattro®, our most advanced testing system, is a PC-based unit that offers a wide range of flexibility in control, data acquisition, analysis, and reporting. The eP2 Digital Controller, a standalone touch panel unit, offers a balance between performance and simplicity. Both controllers feature 8 kHz servo update periods and programmable log rates to 1 kHz.



MTESTQuattro® (left)
eP2 (right)



MTESTQuattro® running on Windows

Controller	MTESTQuattro®	eP2 Digital Controller
Interface	PC Software	Touch Panel
Analysis	Extensive calculations library w/ built-in ASTM/ISO specification analysis.	Standard calculation package for basic testing requirements and QC testing.
Test Procedures	Use built-in or create an unlimited number of simple to complex procedures.	Save up to six test procedures in eP2.
Reporting	Store and organize all data. View and print user customizable test reports with chart and tables.	Post test, view current results on eP2 screen and send data to PC for reporting using optional GaugeSafe software.

Service and Calibration

Training and Service - ADMET testing systems are easy to learn and use. We provide introductory on-line training as well as on-site training. Our manuals, tutorials, and trouble shooting guides are updated regularly. We provide free phone and email product support through the life of the system. ADMET's on-site service and calibration team includes over 100 individuals in over 40 locations in the USA.

Calibration - Customers can setup calibration contracts with ADMET or a private party. All services are A2LA accredited and meet ISO/IEC Guide 17025 and ANSI/NCSL Z540.

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