

## eXpert 1000 Series

Servo Hydraulic Testing Systems

### System Brochure

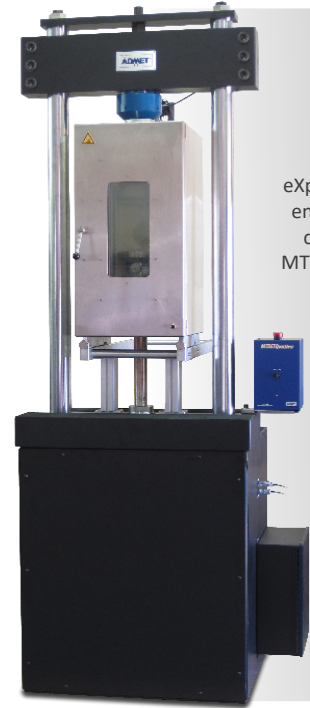


## eXpert 1000 Series Servo Hydraulic Testing Systems

### Static and dynamic servo hydraulic universal testing machines

eXpert 1000 Series machines are designed for performing tension, compression, bend and fatigue tests on metals, composites, medical devices and implants, rebar, sheet materials, strapping, wire and other materials. The eXpert 1600 (static) and 1900 (dynamic) Series servo hydraulic machines employ strain gage load cells for direct measurement of force. No need to compensate for piston friction and other nonlinearities, these frames offer exceptional accuracy and precision while reducing long-term calibration and service costs.

- **eXpert 1600 Series static test systems** are available in capacities from 50kN (11,250 lbf) to 600kN (135,000 lbf). The hydraulic power supply and electronics are integral with the frame thereby saving valuable lab space.
- **eXpert 1900 Series dynamic test systems** are available in capacities from 10kN (2,250 lbf) to 250kN (56,000 lbf). Each eXpert 1900 Series tester is engineered to meet the force-stroke-frequency requirements of each application. Depending on the size of the hydraulic power supply (HPU), the 1900 Series HPU is either integral to the frame or free standing.



eXpert 1654 w/  
environmental  
chamber and  
MTESTQuattro®

### Applications

The eXpert 1000 Series are customized with either the eP2 Digital Controller or the PC-based MTESTQuattro Software Controller in order to analyze data and report the results according to relevant ASTM and ISO testing specifications. The applications for this materials testing system include:

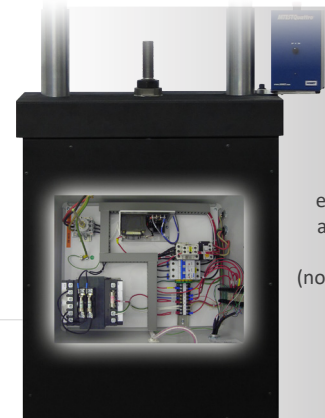
- **Tension, compression, bend, and fatigue testing according to international ASTM and ISO testing standards**
- **Metals, composites, and medical device testing**
- **Dynamic fatigue testing of endosseous dental implants according to ISO 14801**
- **Testing performance of self-tapping medical bone screws according to ASTM F543**
- **Shear strength testing of single-lap-joint adhesively bonded metal specimens by tension loading based on ASTM D1002**
- **Body implants, wire, rebar, strapping, and sheet materials testing**

The eXpert 1000 Series testing machines can also be equipped with a wide variety of accessories ranging from grips, fixtures, and extensometers to environmental chambers, temperature-controlled baths, and deflectometers.

Along with biomedical and metal applications, the eXpert 1000 Series will be customized based on the needs of the customer - a service performed for all ADMET systems.



eXpert 1956  
250kN fatigue  
test system



Integral  
electronics  
and power  
supply  
(not to scale)

#### System Specifications

Model		1654 Static	1655 Static	1657 Static	1658 Static	1911 Fatigue	1954 Fatigue	1956 Fatigue
Load Capacity	lbf	22,500	33,750	67,500	135,000	2,250	22,500	55,000
	kN	100	150	300	600	10	100	250
	kgf	10,000	15,000	30,000	60,000	1,000	10,000	25,000
Maximum Speed	in/min	5.5	5.5	7	4	depends on size of HPU	depends on size of HPU	depends on size of HPU
	mm/min	139.7	139.7	177.8	101.6			
Position Control Resolution	in	0.0001	0.0001	0.0001	0.0001	0.0006	0.0006	0.0006
	mm	0.0025	0.0025	0.0025	0.0025	0.0152	0.0152	0.0152
Power Stroke <sup>1</sup>	in	12	12	12	12	6	6	4
	mm	304.8	304.8	304.8	304.8	152.4	152.4	101.6
Total Vertical Test Space <sup>2</sup>	in	45	45	45	68	48	48	60
	mm	1,143	1,143	1,143	1,727.2	1,219.2	1,219.2	1,524
Space Between Columns	in	19	19	19	19	19	19	19
	mm	482.6	482.6	482.6	482.6	482.6	482.6	482.6
Height	in	97	97	97	108	102	102	102
	mm	2,463.8	2,463.8	2,463.8	2,743.2	2,590.8	2,590.8	2,590.8
Working Height	in	36	36	36	36	36	36	36
	mm	914.4	914.4	914.4	914.4	914.4	914.4	914.4
Width	in	37	37	37	33'	38	38	38
	mm	939.8	939.8	939.8	838.2	965.2	965.2	965.2
Depth	in	29	29	29	36	36	36	36
	mm	736.6	736.6	736.6	914.4	914.4	914.4	914.4
Maximum Power	HP	1	1	2	2	depends on size of HPU	depends on size of HPU	depends on size of HPU
	VA	745.7	745.7	1,491.4	1,491.4			
Voltage	VAC	110-220, 1 $\phi$	110-220, 1 $\phi$	110-220, 1 $\phi$	110-220, 1 $\phi$	220-440, 3 $\phi$	220-440, 3 $\phi$	220-440, 3 $\phi$
	Hz	50,60	50,60	50,60	50,60	50,60	50,60	50,60

#### Notes:

1. Longer or shorter strokes are available upon request.
2. Total vertical test space is the distance from the top surface of the piston rod to the bottom surface of the crosshead when fully extended, excluding load cell, grips and fixtures. Larger or smaller openings can be accommodated by varying the lengths of the strain rods.
3. Multiple Housings

**Load Measurement Accuracy:** +/- 0.5% of reading down to 1/100 of load cell capacity. Meets or exceeds ASTM E4, BSENIS 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 BSENISO9513: 2002 standards.

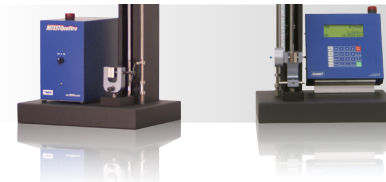


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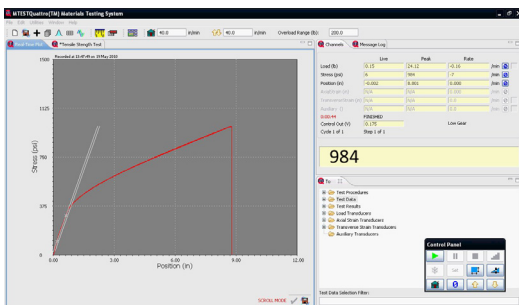
Power, Durability and Performance.

### Controls and Software

All ADMET Testing Machines 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.

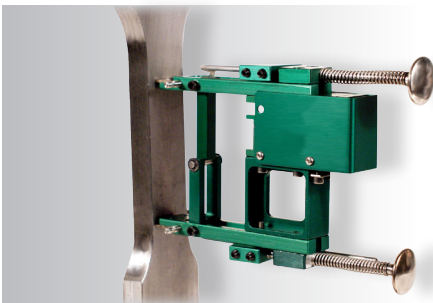


MTESTQuattro® (left)  
eP2 (right)



MTESTQuattro® running on Windows

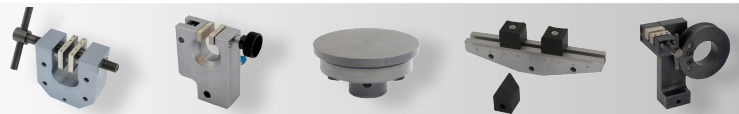
Controller	MTESTQuattro®	eP2 Digital Controller
Interface	PC Software	Touch Panel
Analysis	Extensive calculations library w/ built-in ASTM/ISO specification analysis.	Standard calculation package for basic testing requirements and QC testing.
Test Procedures	Use built-in or create an unlimited number 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.



Extensometers and strain measuring for metals, plastics and other high elongation test specifications. Perform tests to standards ASTM E-8, E-517, E-646, and D-638, ISO 6892, 10275, and EN 1002 Part 1 and 10130

### Accessories - Grips, environmental chambers, extensometers, baths, cutting tools and more.

Systems can be equipped with a variety of grips, fixtures, environmental chambers and temperature controlled baths to accommodate a wide range of testing requirements. For more accurate strain measurements, extensometers or deflectometers can be added to any ADMET testing System.



### Service and Calibration

**Training and Service** - ADMET testing systems are easy to learn and use. 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.

[www.ADMET.com](http://www.ADMET.com)

Call toll-free: (800) 667-3220

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