

ExPress Servo-Hydraulic Testing Machines



ExPress 50KN



ExPress 300KN

- Available in capacities from 50KN (11,250 lbf) to 600KN (135,000 lbf), ExPress machines are designed for performing tests on wire, strapping, fasteners, sheet materials, bar stock, rounds, metals, composites and other materials.
- With a wide selection of grips and fixtures, the ExPress testing machines are capable of performing tests in tension, compression and flexure.

The ExPress line of machines are a bold new approach to servo-hydraulic machines for static testing. Manufactured to exacting standards, these machines are accurate, tough and cost less than conventional hydraulic testing machines.

ExPress frames employ strain gage load cells for direct measurement of force. No need to compensate for piston friction and other non-linearities, these frames offer exceptional accuracy and precision while reducing long-term calibration and service costs.

ExPress frames feature a simple design based upon off-the-shelf components for lower cost, faster delivery and long-term availability. Our conservative design is based upon continuous testing to maximum load for years of maintenance free operation. The hydraulic power supply and electronics are integral with the frame thereby saving valuable lab space.

Equipped with a powerful digital closed-loop controller and display for QC/production applications, the ExPress machines are affordable, and are easy to learn and apply. For more demanding applications, ADMET's popular MTESTWindows Materials Testing System can be provided for greater productivity and testing power.



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TEST WITH CERTAINTY. TEST WITH ADMET.

ExPress Features:

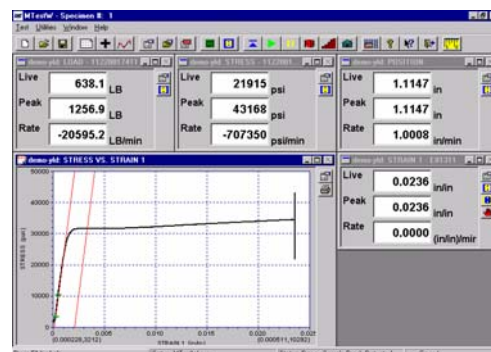
- Efficient hydraulic pumping unit and fast acting servo valve provides precise, repeatable control.
- Dual-acting piston provides flexibility for tension, compression and flexure testing.
- Integral operator station with emergency stop button, manual jog controls, load cell and extensometer connections, digital closed loop control and data acquisition electronics.
- Two fast acting digital controllers are available for accurate and repeatable testing. Both controllers feature a 32-bit microprocessor operating at 16MHz, 20-bit resolution on analog input channels and a fast acting servo-update loop for precise control. The 20-bit resolution allows all inputs to operate on a single range, simplifying operation and calibration.



Precise Digital Controller

The Precise Controller is a stand-alone unit that combines load, axial strain and position measurements with data analysis and report generation for common tension, compression and flexure tests. The Precise Controller features a keypad, an upper LCD character display for user input and indication, a lower graphical display for viewing live stress vs. strain curves plus push-buttons for test start and return to home. The Precise has the ability to perform closed loop load, position or strain controlled tests to sample break or to a user defined setpoint. Test results including date, time, specimen number, peak load, ultimate tensile strength, offset yield strength, modulus of elasticity, elongation at break plus raw data can be printed locally or exported to a Windows based computer.

The most powerful and versatile ExPress controller features **MTESTWindows**, ADMET's popular PC/Windows based materials testing system. Standard with MTESTWindows are inputs for load, crosshead position and axial strain. A comprehensive set of monotonic, segmented or cyclic servo control profiles under load, position or strain control is available which provides the capability to perform virtually any type of test. Test reports featuring test and specimen information, results and a stress vs. strain curve can be printed or readied for email. A statistical summary for a group of like tests can also be generated. All results or raw data can be exported to a database or spreadsheet program for further review.



MTESTWindows Live Screen

ADMET Testing Systems - Backed by superior engineering and a willingness to work with you the customer to ensure that you get what you want.



ExPress 100KN with optional safety cage and locking disconnect.

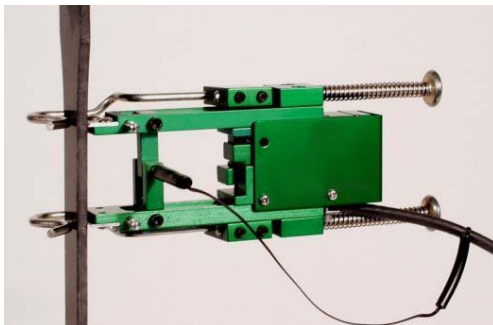


Example of quick change tooling used for performing moment tests.

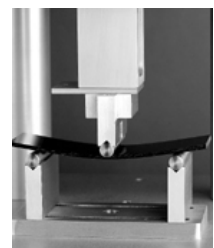
A leading sensor manufacturer approached ADMET about their need to test devices under 30, 60 and 90 degree moment forces as well as under axial loading. ADMET engineered custom quick change fixtures to accommodate the customer's varied testing requirements and modified the load frame to accommodate the off center loading. ADMET also custom engineered modifications to meet the customer's safety requirements including a safety-interlocked enclosed testing area and power lockouts.

Extensometers and strain measuring for metals, plastics and other high elongation test specifications.

Connect to the Precise Controller or MTESTWindows Materials Testing System and perform tests to standards such as ASTM E-8, E-517 and E-646, D-638, ISO 6892 and 10275, and EN 10002 Part 1 and 10130.



Grips and fixtures for all your materials and product testing needs.



ExPress Technical Specifications

| Model | | 50KN | 100KN | 150KN | 300KN | 600KN |
|--|--------|---------|---------|-----------------|-----------------|------------------|
| Load Capacity | lbf | 10,000 | 20,000 | 30,000 | 60,000 | 120,000 |
| | kN | 50 | 100 | 150 | 300 | 600 |
| | kgf | 5,000 | 10,000 | 15,000 | 30,000 | 60,000 |
| Maximum Speed | in/min | 9 | 4.5 | 19 ¹ | 11 ¹ | 4.9 ¹ |
| | mm/min | 228 | 114 | 482 | 279 | 124 |
| Minimum Speed | in/min | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | mm/min | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 |
| Maximum Force at Full Speed | lbf | 10,000 | 20,000 | 30,000 | 60,000 | 120,000 |
| | kN | 50 | 100 | 150 | 300 | 600 |
| Position Control Resolution | in | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| | mm | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| Power Stroke ² | in | 12 | 12 | 12 | 12 | 12 |
| | mm | 305 | 305 | 305 | 305 | 305 |
| Total Vertical Test Space ³ | in | 38.5 | 38.5 | 38.5 | 36 | 34 |
| | mm | 978 | 978 | 978 | 914 | 863 |
| Crosshead Thickness | in | 3.5 | 4 | 5 | 6 | 8 |
| | mm | 89 | 101 | 127 | 152 | 203 |
| Column Diameter | in | 2 | 3 | 3 | 3 | 3 |
| | mm | 50.8 | 76.2 | 76.2 | 76.2 | 76.2 |
| Space Between Columns | in | 20 | 19 | 19 | 19 | 24 |
| | mm | 508 | 508 | 508 | 508 | 609 |
| Height | in | 82 | 83 | 85 | 86 | 93 |
| | mm | 2,083 | 2,108 | 2,159 | 2,184 | 2,362 |
| Width (Frame Only) | in | 30.5 | 30.5 | 30.5 | 30.5 | 35 |
| | mm | 775 | 775 | 775 | 775 | 889 |
| Depth | lbf | 29 | 29 | 29 | 29 | 34 |
| | kgf | 737 | 737 | 737 | 737 | 864 |
| Weight | lbf | 800 | 1,000 | 1,500 | 2,000 | 3,300 |
| Maximum Power | VA | 560 | 560 | 745 | 745 | 745 |
| Single Phase Voltage | VAC | 110,220 | 110,220 | 110,220 | 110,220 | 110,220 |
| | Hz | 50,60 | 50,60 | 50,60 | 50,60 | 50,60 |

Load Measurement Accuracy: +/- 0.5% of reading down to 1/100 of load cell capacity. Meets or exceeds ASTM E4, BSENISO7500-1 : 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.

Notes:

- 1) Machines use a two stage pump (ie. high flow at low forces and low flow at high forces). The published rates are at low forces. At higher forces the maximum rate will be 1/5 the published.
- 2) Longer or shorter strokes are available upon request.
- 3) Total Vertical Test Space is the distance from the top surface of the piston rod to the bottom surface of the crosshead, excluding load cell, grips and fixtures. Larger or smaller openings can be accommodated by varying the lengths of the strain rods.