

# Testing Machine Upgrades

by ADMET

***Retrofits bring new life to your existing test systems and save you thousands of dollars over the cost of a new machine***

- Increase the accuracy and capability of your testing machine so that you can perform the tests that you need and some that you haven't thought of.
- Ensure that your tests are performed according to standards and that your results are calculated quickly and error free.
- Generate reports quickly, confidently and in the format that you need.
- Streamline operations and simplify training.

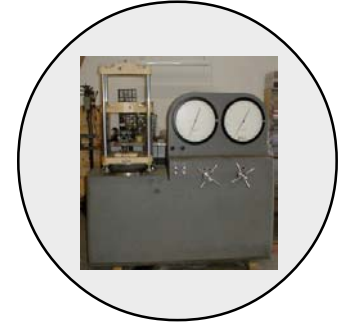
ADMET retrofits electromechanical and hydraulic testing machines from ATS, Baldwin, Instron Corp., MTS, Riehle, SATEC, Shimadzu, Tinius Olsen, United and more. We'll add MTESTWindows or a digital controller, a new servo hydraulic power unit or servo motor and make it run like never before. Our retrofit solutions range from adding a digital indicator and pressure transducer to converting a manually operated machine to full computer automatic control. We have a staff of experienced engineers that will help you select the retrofit solution that meets your needs. And, as technology advances, you can be sure that we will not leave you behind.



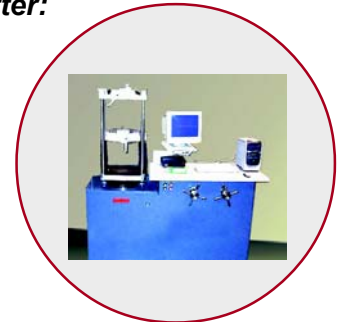
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***'Measure the Difference'***

**Before:**



**After:**



60K Tinius Olsen upgraded with ADMET's MTESTWindows Materials Testing System.



60K Baldwin upgraded with new servo-hydraulic power unit and ADMET's MTESTWindows Materials Testing System.



Instron Corp Model 1125 with MTESTWindows

# Retrofit Options

Performance

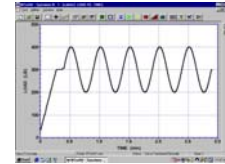
## Upgrade to Servo Automatic Control

- The *Precise Digital Controller* and *MTESTWindows™* can be installed on servo equipped electromechanical and electrohydraulic testing machines.
- *MTESTWindows™* features monotonic, cyclic and segmented profiles under load, position or strain control. Also included is a *Proportional-Integral-Derivative Control* algorithm with software selectable control modes that can be changed on the fly. These features allow you to specify a method for all of your testing needs.
- The *Precise* allows up to a 2 segment control profile under load, position or strain control. This is useful in running procedures in accordance with ASTM specifications for the elastic portion of the test curve then switching to an accelerated rate after sample yield until sample break is achieved.

- *ADMET products* can interface to virtually any servo equipped testing machine.
- If you have a manually operated testing machine, *ADMET* offers new servo-hydraulic power units, servo-hydraulic manifolds, and servo motor/amplifier packages so that your machine is capable of performing tests not previously possible.



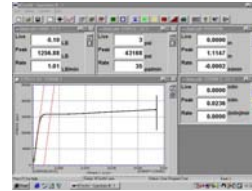
Precise Digital Controller for Servo Control



MTESTWindows for Servo Control

## Data Acquisition Upgrade

- Indicate load, load rate, stress, stress rate, position, position rate, axial strain, axial strain rate.
- Real-time plotting of test data.
- Calculate key test parameters such as Peak Load/Stress, Offset Yield, Yield EUL, Modulus of Elasticity, Percent Elongation at Break and more.
- Calculate poisson's ratio and r-value with optional transverse strain input.
- Generate hardcopy printouts of Group Test Reports and Single Test Reports which include an XY plot.
- Perform all commonly used mechanical tests.
- Save and recall three test procedures for accurate and repeatable testing.



MTESTWindows Materials Testing System

- Password protected supervisor/operator modes allow test procedures to be locked under password so they cannot be changed inadvertently.
- Calibrate multiple load cells and extensometers with piecewise linear fit between points for maximum accuracy. All calibrations are password protected.



Precise Digital Controller

- Calibrations exceed ASTM E4/E83 accuracy requirements and feature high resolution and fast sampling rates in a simple proven design.
- Includes signal conditioning and excitation for a strain gauge load cell, pressure transducer or extensometer and a digital position encoder. Optionally, an LVDT conditioner can be supplied for AC extensometers.

## Replace Dial Gauges with Digital Indicator

- Indicate Load, Stress, Displacement, Load Rate and Displacement Rate.
- Calculate Peak Load, Peak Stress, Modulus of Rupture, Yield by Halt of the Pointer, and Average Test Rate.
- Store up to 350 test results to permanent memory. Test results include date, time, specimen number, specimen geometry plus all calculate test results.
- Select between English, Metric and SI engineering units.
- Transmit results to a printer or remote computer through the serial communications port.
- Generate Load/Stress vs. Time curves on a remote computer by transmitting raw XY data to *ADMET's WinCOM Plus* Data communications program.
- Store up to four load cell calibrations for multiple load cell systems. The load calibration algorithm allows up to 5 calibration points per cell with piecewise linear fit between points. Accuracy exceeds ASTM E4 Standards and in general is better than 0.5% from 1% of full scale to full scale. *Simplify Calibration*



Gauge Buster Load/Stress Indicator



pi Peak Load Indicator

Price

Give us a call at 781-769-0850 to find out how much we can save you over the cost of a new machine; or fill out the following two pages and fax to 781-769-0884. We will promptly supply you with a quote.

## Testing Machine Retrofit Evaluation Form

Fax 2 pages to: ADMET at 781-769-0884

Rev. 2

### Section 1.0

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Company: \_\_\_\_\_ Email: \_\_\_\_\_

Address1: \_\_\_\_\_

Address2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Type of Retrofit:

- a) Keep current machine controls and add a Digital Indicator or MTESTWindows
- b) Update machine to servo control and add a Digital Indicator or MTESTWindows

### Section 2.0 - Hydraulic Testing Machine (Skip Section 2 and fill out Section 3 for electromechanical machine)

Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Age: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Machine Capacity: \_\_\_\_\_

Piston Diameter: \_\_\_\_\_ Piston Stroke: \_\_\_\_\_

Is the hydraulic console fixed to the machine?:  yes  no

Is the machine currently servo controlled?:  yes  no

Does the machine use hydraulic grips?:  yes  no

Does the machine have a transducer to measure piston position?:  yes  no

If yes: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_

Does the machine have an electric motor to move the crosshead?:  yes  no

If yes: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_

Motor: Voltage: \_\_\_\_\_ Current: \_\_\_\_\_ Horsepower: \_\_\_\_\_

### Section 3.0 Electromechanical Testing Machines (Skip Section 3 and fill out Section 2 for hydraulic machine)

Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Age: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Machine Capacity: \_\_\_\_\_

Speed Range(s): \_\_\_\_\_ How many gear ratios on the machine: \_\_\_\_\_

Motor Manufacturer: \_\_\_\_\_ Motor Model#: \_\_\_\_\_

Motor Ratings: Voltage: \_\_\_\_\_ Current: \_\_\_\_\_ Horsepower: \_\_\_\_\_

Motor Tachometer:  yes  no Type: Analog: \_\_\_\_\_ Encoder: \_\_\_\_\_

Motor Amplifier Mfg: \_\_\_\_\_ Motor Amplifier Model#: \_\_\_\_\_

How does the machine measure the position of the crosshead?

Motor Encoder  Crosshead Encoder  Crosshead Potentiometer  Screw Drive Encoder

Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_

Complete sections 4 and 5 on following page prior to faxing.

**Section 4.0**

Functions present on control panel (check all that apply)

- ON/OFF  E-Stop  Up/Down Jog  Load Cell Select  Auto/Manual  Speed Potentiometer
- Other: \_\_\_\_\_

What Power is available in your facility?

- 120 VAC 1ph  220 VAC 1 ph  208 VAC 3 ph  220 VAC 3 ph  440 VAC 3 ph

Is the machine in good working order or is something damaged?: \_\_\_\_\_

Other Information: \_\_\_\_\_

**Section 5.0 Transducers and Test Methods**

**Load Measuring Transducers**

What type of transducer is used to measure force?  Pressure Transducer  Load Cell

Transducer 1: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Capacity: \_\_\_\_\_

Transducer 2: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Capacity: \_\_\_\_\_

Transducer 3: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Capacity: \_\_\_\_\_

Transducer 4: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Capacity: \_\_\_\_\_

**Strain Measuring Transducers (Extensometers)**

Transducer 1: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Gage: \_\_\_\_\_ Range: \_\_\_\_\_

Transducer 2: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Gage: \_\_\_\_\_ Range: \_\_\_\_\_

Transducer 3: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Gage: \_\_\_\_\_ Range: \_\_\_\_\_

Transducer 4: Manufacturer: \_\_\_\_\_ Model#: \_\_\_\_\_ Gage: \_\_\_\_\_ Range: \_\_\_\_\_

**Test Procedures**

Types of materials being tested: \_\_\_\_\_

ASTM/DIN/etc. specifications being followed: \_\_\_\_\_

Other specialized test procedures: \_\_\_\_\_