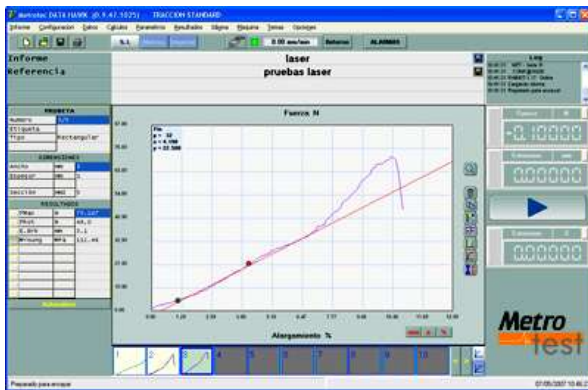


ELECTROMECHANICAL MATERIAL TESTING MACHINES

MTE-10/25/50 models

Dual column desktop material testing machines are designed to test a wide range of materials such as Plastics, Rubber, Adhesives, Foils, Leathers, Textiles, Yarns, Ropes ... in Tension - Compression - Flexion - Shear - Peel - Tear...



Materials Testing Software METROTEST



OPTIONAL: Remote Control Digital Control of Positioning



(Desktop models)

CAPACITIES: 10 - 25 y 50 kN

Load cells available not included in standard delivery:

50kN - 25kN - 10kN - 5kN - 3kN - 1kN - 500N - 250N - 100N - 50N and 10N

- Tension – Compression - Flexion - Shear...
- Accuracy +/- 0,5% (Clase 0,5)
- Electromechanical drive system
- Standard delivery components:

- 1 **METROTEST** Materials Testing Software – Multilingual (English, French, German and Spanish)
- 1 Statistic software pack : Barr graphs, Gauss bell diagram and Comparative of References
- 1 "All-in-One" Touch Screen 22" PC and Printer



ELECTROMECHANICAL MATERIALS TESTING MACHINES, CONTROLLED BY PC

The Electromechanical Materials Testing Machine MTE-10/25/50 models of METROTEC are designed and built based on solid and reliable testing frameworks electromechanical screw balls driving to a very low friction coefficient. The test frame is composed of dual column and screws with recirculation balls drive and with protectors, low friction coefficient and two guide columns, chromed and polished steel. Its system of closed loop control of parameters such as PC test force, deformation of the specimen and stroke, to perform tests with high accuracy over a wide range of materials. The system operates in real time making diagrams and test curves and facilitates the creation of test reports. The closed loop control through **METROTEST** test program makes automatically possible all kinds of tests, including low frequency cyclic tests.

Meets or exceeds the requirements of the following standards: ISO 7500-1, ASTM E4, EN10002-2, BS 1610, DIN51221, ISO 6892.

In the mobile crosshead, a tension/compression load cell is housed, to which the employed test tools are adapted (not including with the test frame). To configure the tests and complete the MTE-10/25/50 Universal Testing Machines, we have optional a wide range of test accessories such as Grips, Extensometers, Bending Bridges, Special Test Devices, etc...

System has a travel limiting upper and lower independently adjustable by the user. Inside the inferior part of the frame includes transmission elements, transformer, electronic control board, servomotor, etc...

The **MATERIALS TESTING MACHINE MTE-10/25/50**, is made up of a robust frame in which the test frame is located. The test frame consists of a low-coefficient of friction actuator and ball screw with a guiding spindle of chromed and rectified steel.

The force measurement is performed through a tensile-compression load cell placed on the movable crosshead. The necessary test tool (not included in the standard supply of the MTE-10/25/50 Universal Testing Machines) are coupled to said load cell.

The test frame allows overloads of 120% of the nominal force without affecting its accuracy of measurement or operation, which give the frame a great robustness and safety of correct operation in the face of intensive work.

It has a system of limiters of upper and lower travel independently adjustable by the user. Transmission elements, transformer, regulating electronics, servomotor, etc. are included inside the base box.

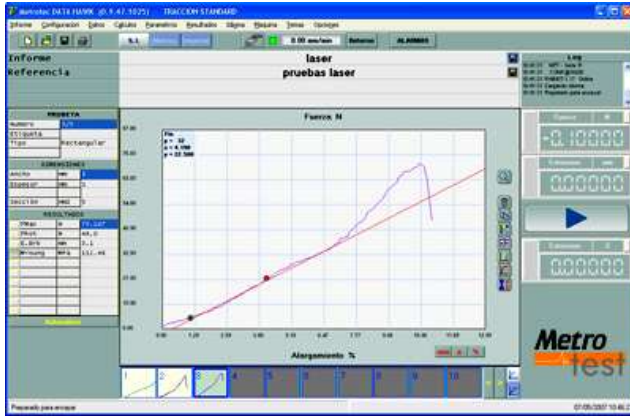
CHARACTERISTICS:









- ✓ Fully computerized: The control and measurement system with specific electronic board used for testing machines, performing the zero tare, and adding a setting which is very reliable.
- ✓ It has a database manager for the test results which stores according to a standard format which facilitates analysis and transfer to other programs.
- ✓ Compliance with test requirements for all types of materials with all international testing standards.
- ✓ With a wide range of functions in the graphics, you can make color changes of the curves, magnifications (zoom), reductions, self-scaling of the curves (which facilitates and shortens the time of a test with a new one Material), displacement of the curves in the axis of deformations, designate standard curve, association of labels to each graph, indication of values digitally on the screen and printing all kinds of test curves.
- ✓ Modular design facilitates software upgrades in the future, etc.



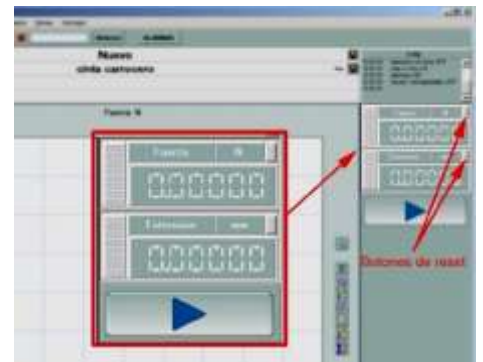
METROTEST MATERIALS TESTING SOFTWARE

The **METROTEST** Testing and Analysis software is very easy and quick to use in order to achieve different functions, adaptable to most operators habits. With all the information in functions such as test sample, choice of sample, setting the test conditions, data processing, analysis of test results ..., very easy to use.

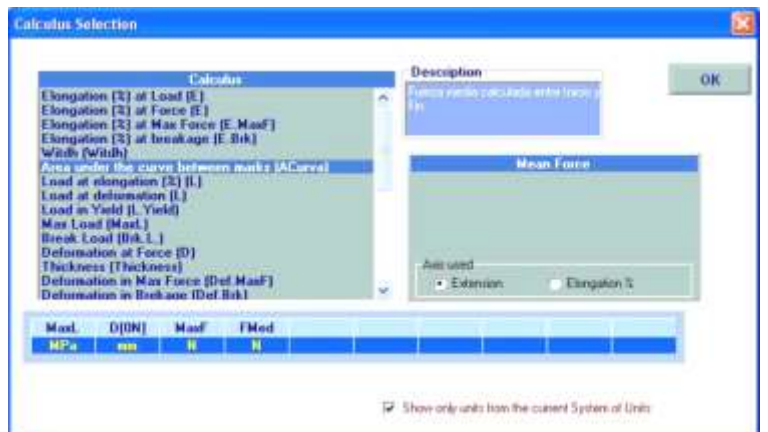


-  Zoom
-  Samples Delete
-  Graphic Copy
-  Change color of the graphic
-  Assign label
-  Show curves
-  Assign standard curve
-  Insert dimensions of the test samples

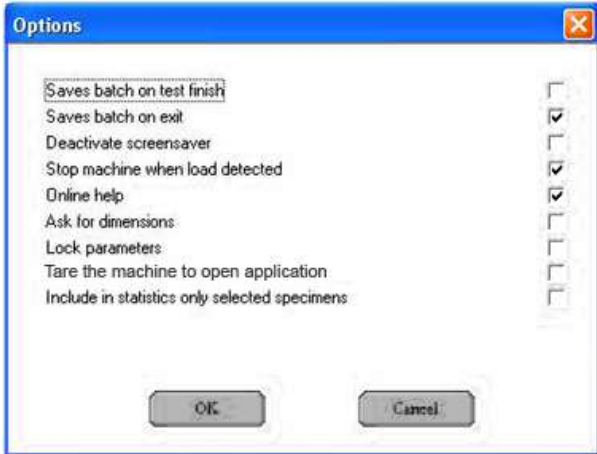
- ✓ Interface designed very clearly, intuitive attractive and with plenty of information on the screen
- ✓ Election of different units for each result
- ✓ Travel of all the points in the graphic, Point by point
- ✓ Association of labels to each graphic
- ✓ Creation and management of patron curves
- ✓ Personalized reports
- ✓ Reports in PDF formats directly without any need of additional software
- ✓ Automatic Self scaling in the graphics
- ✓ Test limits independents to the limit graphics
- ✓ Self-save of the results, sample to sample
- ✓ Visualization of the curve individually or multiple
- ✓ Interface personalized
- ✓ Option of demanding for the dimensions of the sample in the beginnings of each test
- ✓ Information on the screen of all the actions that the software is making (log)
- ✓ Visual parameterization of results.



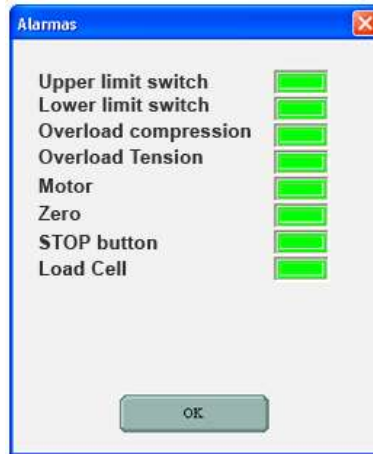
TEST PARAMETERS Menu



CALCULATIONS SELECTION Menu



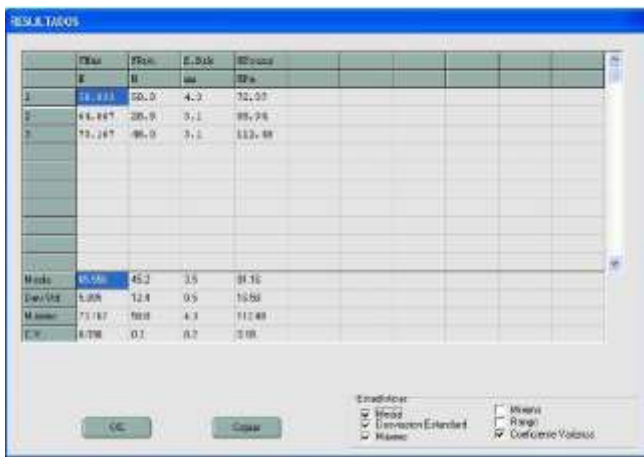
OPTIONS Menu



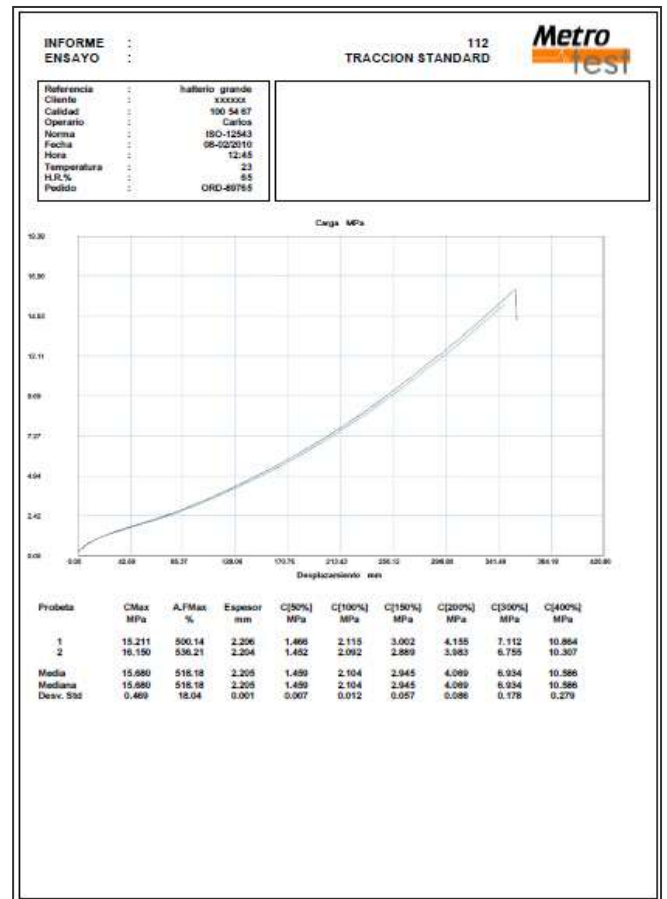
ALARMS Menu



DATA Menu



RESULTS Menu



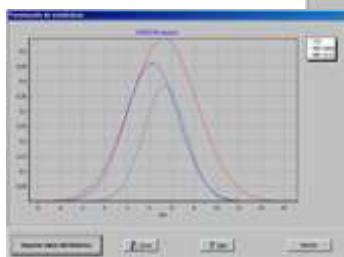
REPORT OF TESTS



Bar Graphs



Tolerance Comparatives



Gaussian Bells

Accessories and Testing Devices - OPTIONAL:

- ✓ Different types of Grips for testing all types of materials (light metal - plastics - rubber - composites - adhesives - wood - tissue...)

Thermal Test Chambers
(-70°C +280 °C)



Flexural / Bending



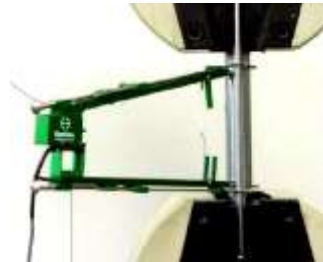
Pneumatic Grips
(Film – Fabrics – Sheets...)



Mordazas 1 Rodillo
(Yarns - Ropes
Ductiles Thin Wires...)



Wedge Grips
(Metals – Plastics - Wires
Cables - Composites...)



EXTENSOMETERS
Small Extensions

EXTENSOMETERS
Great Extensions



FUNCTIONAL TECHNICAL CHARACTERISTICS

UNIT CONTROL

- ✓ PC Control and **METROTEST** Material Testing Software
- ✓ Sample breaking level (% force drop at end of test)
- ✓ Force and Extension Peak Maintenance in Tension or Compression
- ✓ Selection of units of force and deformation
- ✓ External control mode for 15 " Laptop PC
- ✓ RS-232 serial port

FORCE MEASURE

- ✓ Range: 2% to 100% - Accuracy 0.5% of applied force
- ✓ Force Accuracy: Class 0.5 (accuracy $\pm 0.5\%$)
- ✓ Load Reading resolution: 1/200.000 points
 - 1/100.000 in Tension
 - 1/100.000 in Compression
- ✓ Sampling Speed Force Data (internal): 30.000 S/second
- ✓ Units Selection: **Kg - N or Lb**
- ✓ Overload protection (Load Cell)
- ✓ Programmable pre-load
- ✓ High speed converter A/D of 18 bit

STROKE MEASURE

- ✓ Direct measurement from screw balls driving
- ✓ Single measurement range (1 scale)
- ✓ Reading resolution: $\leq \pm 0,05$ mm
- ✓ Self-return accuracy, better than 0.05 mm
- ✓ Selectable Units: Millimeters and Inches
- ✓ Programmable extension limits

SPEED TEST CONTROL

- ✓ Variable speed range (see table)
- ✓ Variable speed return within range (see table)
- ✓ Preset speed Resolution: $< \pm 0.02$ mm / minute
- ✓ Speed accuracy: $< \pm 0.5\%$
- ✓ Pre-load speed variable within the range (see table)
- ✓ Power Protection System
- ✓ Drive by servo motor



Model	MTE/10	MTE/25	MTE/50
Capacities	10 KN (2248 lbf)	25 KN (5620 lbf)	50 KN (11240 lbf)
Resolution in Force with 10/25/50kN load cell	0,1 N (0.22 lbf)	0,25 N (0.06 lbf)	0,5 N (0.11 lbf)
Load measurement accuracy	$\leq \pm 0,5\%$		
Displacement resolution	0,001 mm		
Displacement measurement accuracy	$\leq \pm 0,5\%$		
Mobile crosshead stroke	1100 mm	1000mm	
Standard separation between columns	430 mm		
Speed Range	0,05 – 1000 mm /min.	0,05 – 500 mm /min.	
Maximum distance between fixings test useful	1100 mm	1000 mm	
Power supply	220V / 50Hz - 110V/60Hz Monofásica.		
Consumption	600 w	750 w	1 Kw
Environmental Condition Working	10 °C ~ 35 °C 20% -80%		
Approximate Frame Dimensions	1780 x 850 x 575 mm (W X D X H)	1780 x 850 x 575 mm (W X D X H)	1780 x 850 x 575 mm (W X D X H)
Net Weight approx.	140 Kg	190 Kg	195 Kg
Wooden Box for Transport	2050 x 1100 x 750mm (W X D X H)	2050 x 1100 x 750mm (W X D X H)	2050 x 1100 x 750mm (W X D X H)
Gross Weight Approx.	210 Kg	265 Kg	275 Kg

* TECHLAB SYSTEMS, S.L. reserves the right to do any technique modification without advance notice

Doc. : MTE10/50-1-CAT-I-R6