



## UNIVERSAL MATERIAL TESTING MACHINES

- MTE-10 model
- MTE-25 model
- MTE-50 model

Electromechanical, with a benchtop double column testing framework, designed to perform tensile, compression, bending, shearing, peeling ... tests of the materials



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**TECHLAB**SYSTEMS

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Universal Materials Testing Machines with a double column testing framework designed to perform Tensile - Compression - Flex - Shear - Peel - Tear tests ... on samples of materials such as Metals, Plastics, Rubber, Adhesives, Textiles, Threads, Ropes ...

## Models MTE-10/25/50

- Maximum force capacity: 10kN / 25 kN / 50 kN (corresponding to the model)
- Range of available load cells not included in the standard supply: 50kN - 25 kN - 10 kN - 5 kN - 1kN - 500N - 250N - 100N - 50N and 10N (maximum capacity of each model)
- Tests - Traction - Compression - Flexion - Shear ...
- Accuracy  $\pm 0.5\%$  (Class 0.5)
- Precise electromechanical drive
- High stiffness test frame
- The testing machine in standard supply is equipped
- With METROTEST Testing Software and PC
- Large workspace in test area
- Ergonomic and precise



## General Information

The MTE-10/25/50 Universal Electromechanical Testing Machines have the most advanced and reliable structure in electromechanical testing framework with 2 ball circulation spindles. The computerized control system allows for closed-loop control of parameters such as test force, specimen deformation and crossbar travel, etc. The system realizes in real time on the PC screen test diagrams, test curves and creation of test reports. Closed-loop control through the METROTEST test program makes it possible to carry out cyclical tests. Through a simple connection with different accessories, the MTE-10/25/50 series machines can test various materials and components to suit your needs in quality control and research.

In the International Standards compliance section, it meets or exceeds the requirements of the following standards: ISO 7500-1, ASTM-E4, EN10002-2, BS 1610, DIN51221, and ISO 6892.

To configure the tests and complete the Universal Testing Machines MTE-10/25/50, we optionally have a wide range of test accessories such as Jaws, Extensometers, Bending Bridges, Special Devices, etc.

The MTE-10/25/50 COMPUTERIZED UNIVERSAL TESTING MACHINES are made up of a robust frame in which the test frame is located. The test frame is made up of 2 drive and re-circulation spindles with protectors, low coefficient of friction and a guide column made of chrome plated and ground steel.

Force measurement is carried out through a compression-tension load cell housed in the mobile crossbar. The necessary test tools (not included in the standard supply of the Universal Testing Machines MTE-10/25/50) are attached to said load cell.

The test framework admits overloads of 120% of the nominal force without affecting its measurement or operating precision, which gives the frame a great robustness and safety of correct operation under intensive work.

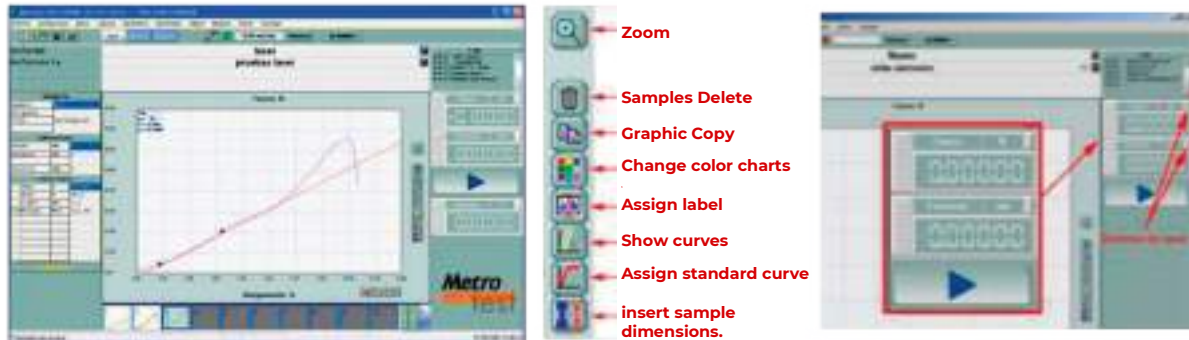
It has a system of upper and lower travel limiters adjustable independently by the user. Inside the base box are included the transmission elements, the transformer, regulation electronics, servo motor, etc.

## Features

- **Fully computerized:** The control and measurement system with a specific electronic card used for testing machines, performing the tare to zero 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 testing requirements for all types of materials with all international testing standards.
- With a wide range of graph functions, curve color changes, magnifications (zoom), reductions, curve auto-scaling can be performed (making it easier and shorter to run a test with a new material), displacement of the curves in the deformation axis, designate standard curve, association of labels to each graph, indication of the values digitally on the screen and printing of all kinds of test curves.
- Modular design makes it easier to upgrade software in the future.

## METROTEST material testing software

**METROTEST** testing program based on WINDOWS MS is easy and fast to use to achieve different functions, adaptable to most operator habits. With all the integrated functions such as test sample information, sample choice, data display, data processing, data analysis, test operations ... easy to use.



- Very clear, intuitive, attractive interface design with information on the screen.
- Choice of different units for each of the results.
- Route of all the points of the graph, point by point.
- Association of labels to each graph.
- Creation and management of standard curves.
- Context sensitive help
- Customizable report
- Reports in PDF format directly without the need for additional software
- Automatic auto scaling on charts
- Test limits independent of graph limits
- Auto-save of results, specimen by specimen
- Single or multiple curve display
- Customizable interface
- Option to request sample dimensions at the beginning of each trial.
- On-screen information of the tasks being carried out by the program (log)
- Visual parameterization of results



Depending on the type of materials and shapes of the test specimens to be tested, we have a wide range of accessories and test tools, such as Grips, Extensometers, Temperature Chambers...

**Ask us about your testing needs!**



**Flexure / Bending**  
Fixtures



**Compression Plates**  
Square - Rectangular -  
Circular



**Wedge-type Grips**  
(Metals - Plastics - Wires -  
Cables - Composites...)



**Self-clamping Grips**  
(Elastomers - Rubber...)



**Pneumatic Grips**  
(Film - Fabrics -  
Sheets...)



**Bollard type Grips**  
(Threads - Ropes - Wires  
Fine Ductile Cables ...)



**Temperature Chambers**  
(-70°C +280 °C))



**Extensometers**  
Small Elongations



**Extensometers**  
High Elongations



## Functional Technical Specifications

### Control unit

- PC Control and METROTEST Testing Software
- Level of breakage of the sample (% of force drop at the end of the test)
- Maintenance of Peak Force / Extension in Tension or Compression
- Selection of force and deformation units
- External control mode by PC All-in-One of 22"
- RS-232 serial port

### Force measurement

- Range: 2% to 100% - Accuracy 0.5% of applied force
- Precision in Forces: Class 0.5 (accuracy  $\pm 0.5\%$ )
- Load reading resolution: 1 / 200,000 points:
  - 1 / 100,000 in Traction
  - 1 / 100,000 in Compression
- Force Data Sampling Rate (internal): 30,000 S / second
- Digital load tare 20% with the Load Cell at its maximum capacity
- Selectable units: kN, N, cN, kgf, gf, lbf.
- Protection system of the Load Cell
- Programmable pre-load
- 18 bit high speed A / D converter

### Measurement of travel (mobile crosshead)

- Direct measurement from the drive spindles
- Single measurement range (1 scale)
- Reading resolution: 0.001 mm
- Auto-return precision, better than 0.05mm
- Selectable units: Millimeters and Inches
- Programmable extension limits

### Speed control

- Servo motor drive
- Variable speed range (see table)
- Variable return speed within range (see table)
- Default speed resolution:  $< 0.02\text{mm} / \text{minute}$
- Speed accuracy:  $\leq \pm 0.5\%$
- Variable Preload speed within the range (see table)
- Current protection system



**Customized MTE-10 Universal Testing Machine**  
with a special design to perform tests on samples and components for automotive industry

- T-Slotted base plate and movable on rails
- Load cell movable on the upper crosshead.

MODEL	MTE-10	MTE-25	MTE-50
Capacity	10 kN	25 kN	50 kN
Force resolution with 5kN Load Cell	0.1 N	0.25 N	0.5 N
Measured force accuracy	≤ ± 0.5 %		
Displacement resolution	0.001 mm		
Travel accuracy	≤ ± 1 %		
Mobile crosshead travel	1100 mm	1000 mm	
Separation between columns	430 mm		
Range Standard Test Speeds	0.05 – 1000 mm /min.	0.05 – 500 mm /min.	
Accuracy of test speed	≤ ± 1 %		
Maximum return speed	1000 mm/min	500 mm/min	
Spacing between fixings (adapters)	1100 mm	1000 mm	
Electric supply	220V / 50Hz - 110V/60Hz single-phase		
Approximate power	600 w	750 w	1 Kw
Working Ambient Temperature and Relative Humidity Condition	10 °C ~ 35 °C   20% -80%		
Dimensions Test Frame approx.	850 x 575 x 1780 mm (Width x Depth x Height)	850 x 575 x 1780 mm (Width x Depth x Height)	850 x 575 x 1780 mm (Width x Depth x Height)
Net Weight approx.	140 Kg	190 Kg	195 Kg
Dimensions Wooden packaging approx.	2050 x 1100 x 750 mm (Width x Depth x Height)	2050 x 1100 x 750 mm (Width x Depth x Height)	2050 x 1100 x 750 mm (Width x Depth x Height)
Gross Weight approx.	210 Kg	265 Kg	275 Kg

#### ESTÁNDAR SUPPLY CONTENT:

- \* MTE-10, MTE-25, or MTE-50 (selected model) Universal Testing Machine
- \* METROTEST Multilingual Testing Software
- \* Management Module with Basic Statistics Packs:  
Bar Charts - Gaussian Bells and Reference Comparison
- \* 1 "All-in-One" Touch Screen PC with 22" monitor

Distributor in Greece:



**T.** 210 72.43.529 - 6979 64.23.95  
**email:** info@apples.com.gr  
**site:** www.apples.com.gr