

Universal Testing Machines



## Servohydraulic Testing Machines UMIB Series

▶ Capacity: 600 - 2000 kN



**S.A.E. IBERTEST**

Since 1970  
Made in Spain (EU)

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



## INTRODUCTION

Designed for top demanding test applications: static and low frequency dynamic tests of metallic and non-metallic materials.

Tensile, compression, bending, folding, shearing, etc test can be carried out with the appropriate devices

The design of the machine imposes no limitations of dimensions. Width, depth and height can be defined for each testing case.

Load cells, gripping heads and testing fixtures developed and adapted to each test method

Fullfilling widely the requirements imposed by the international Standards (mainly EN and ASTM) and/or by the Materials Resistance Control of Quality Dpts. of our customers such as Certified laboratories, Universities, Research and Technological centres, etc.

This quality level is reached with a studied combination of accurate design, top quality components and final performance verification.

## MODELS

REFERENCE	MAX LOAD
UMIB - 600 MD2W	600 kN
UMIB - 1000 MD2W	1000 kN
UMIB - 2000 MD2W	2000 kN

*Other capacities on demand*

### NEW: ALL in One touch PC interface

New user interface, with embedded touch screen PC, modern, easier and with improved performances.



A real alternative to conventional table top PC's, combining compact CPU design with TFT touch-screen, with all the performances of traditional desktop PC systems.

The PC "All in One" saves laboratory space and offers a good working position, both WinTest32 software as testing fixtures.



UMIB-600, with actuator fixed under the lower crosshead

### Elements identification

1. Mobile upper crosshead
2. Mobile lower crosshead  
With precision mechanizing for smooth movement along columns, optimum rigidity for frame undeformation and with proper dimensions for piston and testing devices hosting.
3. 4 Chromed high stiffness columns: to assure rigidity, optimum load sharing and axiality
4. Hydraulic gripping heads: with wedge closing system.
5. Load cell: high accuracy, low profile
6. Lateral hydraulic actuators: for crosshead movements
7. Hydraulic blocking system: automatically actioned from the software
8. Mechanical blocking system
9. Columns anchoring system: to assure perfect column alignment, needed for axial loading assurance during test, perfect load sharing and soft movement of crosshead.

## MAIN FRAME

Manufactured according to UNE 7-474, DIN 51221, 51223, 51227, 51228, BS 1610 and EN 10002-2

- › High rigidity four columns testing frame
- › Single testing space with adjustable height
- › Mobile crossheads along the columns, with scrappers.



UMIB-1000, with actuator fixed over the upper crosshead

Double-acting hydraulic piston mounted below the lower crosshead, aligned with the lower tensile gripping head. Guiding system of the piston along the columns, or with an antirotating system placed internally. Piston can be also mounted over the superior crosshead on demand.

To assure correct hoses and wires distribution several fixation elements are spreaded along the frame. Fast plugging connections facilitate first installation.

## CROSSHEAD POSITIONING

Crosshead can be moved by means of hydraulic actuators for adapt the vertical testing space to each specimen. The locking and positioning is remote operated with WINTEST software or handheld control.

Hydraulic blocking system oil non-return security system that avoids leak-tightness problems. Each time machine is powered on, the system recovers the maximum blockage pressure.

Lower crosshead includes manual blocking system.

## DISPLACEMENT MEASUREMENT

By means of wire draw linear position transducer with 1 micron resolution



For controlling piston position, automatic return to start position and stroke control (mm/min).

Once the test is ended, piston returns to initial fixed position to be ready for the next tests, which is really useful for serial/repetitive tests.

This feature can be deactivated using WinTest32 software.

## LOAD MEASUREMENT

By means of an universal full bridge strain gage load cell mounted on the lower base



- › **Robust design** to withstand eventual overloads.
- › **High repeatability and linearity**
- › **High accuracy** to assure machine's Class 0,5 (ISO 7500-1 ) from 1 to 100% of its nominal capacity.
- › **Additional load cells** can be installed, to increase the load measuring capacity and/or for special apps.
- › **Self recognition system for load cells.** Allows control to get auto configured according to capacity and calibration of mounted load cell. Time effective and safety improving (avoids overloads)



## STANDARD TENSILE GRIPPING HEADS

The machine most common tensile gripping-heads, have hydraulic closing system and interchangeable wedge-type jaws.



Hydraulic tensile gripping heads

Due to applied initial clamping force, these wedge type grips are also suitable for testing metallic and non metallic specimens even with high surface hardness.

Includes an remote control unit for independent jaws opening and closing of each gripping head.

Remote control units with improved performance are also available.



Remote Control for opening / closing jaws and piston positioning

Gripping heads are supplied with several sets of interchangeable jaws for round and prismatic specimens testing.



## DEVICES FOR BENDING AND COMPRESSION TESTS

Compression plates and bending test devices, can be directly placed over the gripping heads, minimizing devices change time.

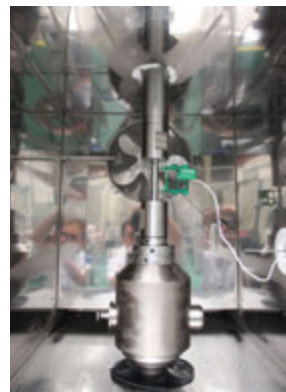


Compression plate mounted on hydraulic grip

## Other tensile devices (optional)

The wedge lock system of the heads allows direct or indirect mounting of many other tensile devices:

We can make special couplings according to specifications of our customers for various applications, only limited by available space and machine testing capacity in load or displacement.



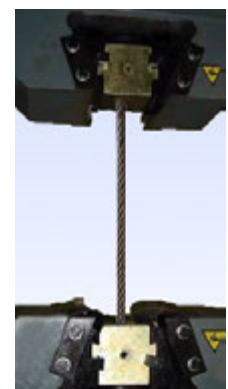
Devices and climatic chamber for low temperature tests.



Tensile of headed specimens



Chain tensile tests



Wire strand specimen tests

## HYDRAULIC SYSTEM

Load application is made by means of a hydraulic piston, located within the machine frame.

To generate the pressure, a servo-hydraulic power unit, is comprised. The high pressure power unit is tight fitted and pollution-proof, with very low noise.

Regulating the flow of hydraulic fluid (and hence the charging rate) is performed by means of a high performance servovalve mounted on a manifold (hydraulic distributors).

The power pack assembly, manifold and servovalve is located inside of a work desk and rests on a set of four bumpers which prevent the transmission of vibrations to the frame.

The working desk is made with aluminum fully paneled in painted steel sheet with epoxy finish for high corrosion resistance.



Control desk

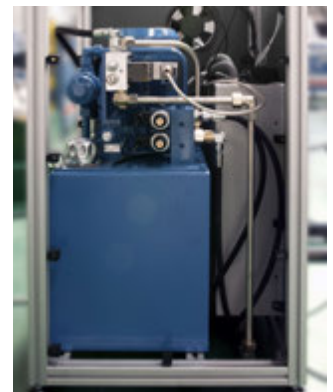
## ELECTRONIC CONTROL SYSTEM

Closed-loop control the speed of load application, commanded by an microprocessed electronic module, model MD2

The module is installed in the operating frame of the machine and its operation is completely independent of the computer that connects via USB 2.0 or Ethernet.

Thus, the user can, if desired, replace the computer on their own without intervention of Service Technical Assistance IBERTEST without adjustments or recalibrate the machine.

The software acquires WINTEST32 these real-time data for graphing, calculations, sample results, etc..



Hydraulic group, inside of the control desk

## CLOSE LOOP CONTROL

Signals coming from different transducers (load cell, encoder, extensometer, etc) are compared with the command value, defined previously on the test parameter via software. The error of the comparison is sent to the servomotor to be corrected, closing the control loop.

The frequency of this loop is 1 kHz (1000 times per second) with MD2 module. (higher frequencies on request).

Close loop control can be defined against any reading channel (load, position or strain).

## TRANSDUCERS AUTOMATIC RECOGNITION

When connecting a load cell or an extensometer, the MD2 module automatically collects its data calibration (linearization, measuring range, units, etc..)

These data are stored in a built-in transducer connector EEPROM memory, which allows the exchange of cells or transducers without losing the calibration data.

The maximum resolution obtainable in each transducer is  $\pm 180,000$  points on each channel.



High performance servovalve MOOG



MD2 electronic control module integrated into the electrical panel inside of the control desk

## Technical specifications

SERIE	UMIB 600	UMIB 1000
Maximum load	600 kN	1000 kN
Load measurement	Universal strain-gage load cell (tension-compression). Additional load cells can be installed	
Load cell Repeatability	Better or equal to $\pm 0.05$ %	
Measuring Range	1 % to 100 % of the load cell nominal capacity ( autoescale)	
Class	0.5 according to ISO 7500	
Strength Resolution	5 dígits with floating coma	
Vertical free clearance, with load cell and standard gripping heads	Adjustable from 0 to 1000 mm	
Number of columns	4  Chromed plated and grounded with adjustable mechanical stops	
Free gap between columns	520 x 250 mm	710 x 405 mm
Mobile Crosshead	Automatic movement by means of lateral hydraulic synchronous jacks. With hydraulic (upper) and mechanic (lower) blocking system	
Displacement measurement	Encoder. Optional piston internal LVDT	
Power supply	Three-phase 380 V plus neutral and earth, 50/60 Hz (to specify)	
Total power	3 kW	4 kW
Emergency stop	" Mushroom " type, placed on the testing frame and working table	
Dimensions: Testing frame (mm)	1020 x 650 x 2450 (h)	1200 x 650 x 2600 (h)
Approx Weight ( without gripping heads )	2100 kg	3500 kg
Dimensions / working table weight	1200 x 800 x 900 mm (width x depth x height)/ 40 kg aprox.	
Foundation	Special foundation must be performed to allow piston hosting and correct leveling. IBERTEST will provide with the drawings and instructions for a correct execution	

**For 2000 kN (please consult)**  
*IBERTEST reserves the right to modify the specifications described without notice.*

## MD CONTROL UNITS . MODULAR SYSTEM

Electronic controller units MD are specially designed for data acquisition and close loop control of testing instruments.

Measuring transducers are plugged to the MD module and the measurement is exported to the computer via USB or Ethernet.

The IBERTEST software WinTest32 makes data collection and shows real-time for drawing graphs and test results calculation.

This new system, based in external modules, substitutes the old electronic cards mounted into the computer, improving the performance, reliability and data acquisition speed.

Due to the external module configuration, the computer can be fast and easily changed by any other suitable PC or laptop, without need to make adjustments or calibrations.

This is very useful in case of eventual breakdown of the computer, or when obsolete computer needs to be changed.



MD2 unit, with safety box, to be placed into the frame or the electrical panel of the machine



MD2 module, side view



MD2 module, rear view

## MD2 MODULAR CONTROL UNIT, FOR STATIC TESTS

**MD2** unit has been designed for **static** machines.

The MD2 can be used either in electromechanical or servohydraulic machines.

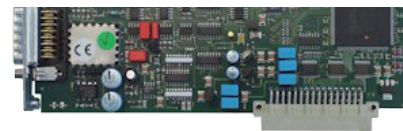
The MD2 unit has the following input channels:

- Load channel. With a resolution of  $\pm 180.000$  steps. For the connection of a load cell or pressure transducer.
- X-Head position channel. For connecting a digital incremental position transducer (encoder) or a resolver (encoder emulator) or position transducers (SSI, draw wire linear transducers, etc.)
- 2 Bus extension slots for data acquisition cards "plug-in" type, for connection of further load cells, extensometers, LVDTs, position transducers, etc.

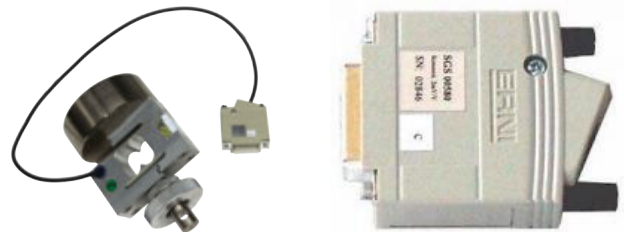
The MD2 unit comprises an analogical  $\pm 10V$  drive channel for a servovalve (hydraulic machines) or a servomotor (electromechanical machines).

MD2 features a high quality build-in electrical safety box, dustproof, ensuring the perfect state of the internal electronics.

This compact box allows to integrate the module within the frame of the machine itself (TESTCOM model) or within the electric panel of the machine (machines EUROTTEST, IBMT4, UMIB, IBMU4).



Data acquisition card with "plug-in" connection to the expansion slots of the modules MD



500 N load cell, S shaped, universal type (tension / compression). Connector with EEPROM memory chip is also showed

The transducers comprises connector-plugs with built-chip EEPROM memory.

The transducer calibration data (unit of measure, range, zero position, linearization, etc.) are stored in the EEPROM memory. Thus, the transducer is automatically recognized as input channel when plugged to the by MD



## PID CONTROL

The MD module uses PID (proportional-integral-derivative) for control loop feedback of the application of force to the test specimen.

The PID controller calculates an error value as the difference between the measured process variable (force, position or strain) and the desired setpoint.

The three signals coming from the PID are combined to generate a new command signal, which is sent to the servovalve or servomotor to eliminate the deviation as fast as possible and assuring the stability of the process.

The process of detection, evaluation and new signal generation is repeated again and again. The time consumed is the **closed loop control** time and the lower the time, the faster the controller.

## 3 CONTROL OPTIONS

MD electronics allows to close the control loop with the applied load (control in kN/s) or with the position (control in mm/s) or with the material deformation (control in mm/s):

### 1. Load control

The MD module receives the signal from the load cell and compares this feedback value with the command value (N/s or kN/s).

### 2. Position control

The MD module receives the signal from machine's position transducer (encoder, resolver, LVDT, etc.) and compares this feedback value with the command value (mm/min).

### 3. Strain control

The MD module receives the signal from machine's deformation transducer (extensometer) and compares this feedback value with the command value (mm/s or mm/min)

## Applications of each type of control

**Load control** is normally used on low load resistance tests materials which undergo deformation just before fracture, such as concrete, cement, ceramics, rocks, adhesives, etc. as well as in metals test on material elastic zone.

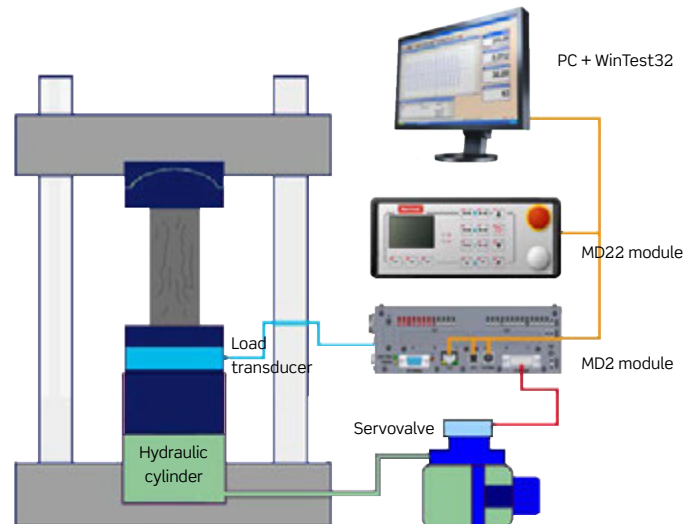
**Position control** is used in materials with high deformation, as rubers, elastomers, etc as well as on metals after elastic range.

**Strain control** is used in fracture tests and for research applications.

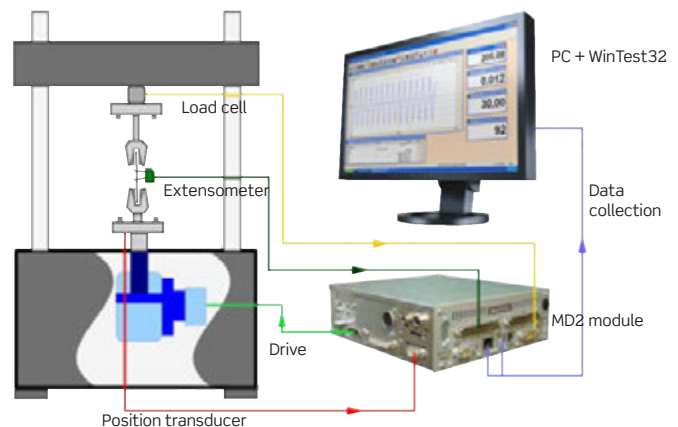
## Automatic and programmable control change.

The IBERTEST WinTest32 testing software allows to define several criteria for changing control automatically (defined variation in the slope of the graphic, certain value of strength, load, position or deformation).

This feature is used in several applications as in metals testing, to allow the control change among behaviour regions of the material (change from elastic to plastic behaviour)



Test control scheme for  
Servohydraulic Compression Testing Machines







Test control scheme for  
Servohydraulic Universal Testing Machines





## Specifications of MD2 and MD22 modules, for static and dynamic tests

MODULE	MD2	MD22
Front View		
Rear View		
Application purposes	Static tests	
Microprocessor	CPU 133 MHz	
Channels	Up to 4	
Resolution	$\pm 180.000$ steps per channel	
Max sampling frequency	1 kHz 1000 reading per sec per channel	
Sincronization	All channels fully synchronous and simultaneous	
Closing loop time	1 milisecond (1000 times per second)	
Drive interface	$\pm 10V$ -Command-Output (generated with $\pm 15$ Bit resolution) I/O's and relays for safety functions	
Expansion possibilities	Up to 8 modules can be connected. 32 total synchronous channels	
PC communication	USB 2.0 full speed and/or Ethernet 10 / 100 Mbit	
Digital Inputs (24 V)	8	
Digital outputs (24 V)	8	
Serial sensor interface	COM1 (internal)	
Debug interface	COM2: 115 kB	
Slot for safety shield	YES	
Power supply	DC. 24 V	
Remote control UCRD-7	YES	NO

## ADVANCED HAND-HELD REMOTE UNIT UCRD-7

### Basic features

1. Operation via function keys and digital control pad "digit-poti", for scrolling, data input and menu navigation.
2. OLED graphics display 128 x 64 dots.
3. Dimensions: L 26 x W 120 x H 200 mm
4. Keys UP/DOWN /STOP for crosshead or actuator movement. More accurate movements are possible using the digital control pad Digi-Poti".
5. Selection of operation mode: via remote control unit or via software.
6. Magnetic backing allows to be placed at an ergonomic position.
7. Grips opening and closing: with upper/lower grips independent operation
8. Extensometer positioning for automatic models
9. Emergency stop, according to CE mark requirements

### Advanced features

UCRD-7 unit can perform several simple predefined tests without need of a computer or additional software.

- › Tensile of metallic materials
- › General tension/compression test
- › Bending
- › Shear
- › Brazilian concrete test
- › Cycles

### Test configuration:

- › Pre-load value and speed to reach preload
- › Maximum stress speed within elastic range.
- › Maximum extension speed within yield range.

### Sample definition:

- › Thickness, width, diameter, initial section ( $S_0$ ), gauge length ( $l_0$ ), parallel length ( $l_c$ )

### Available type of control :

- › Load - Position
- › Load-Extension-Position (only with extensometer)
- › Control mode change during testing

The UCRD-7 can detect end of elastic range, end of yield and breakage, with the following criteria:

- › Defined values: MPa, kN/mm<sup>2</sup>, kN, N
- › Relative drop in relation to  $F_m$ : %
- › Absolute drop: N, kN



### Example: tensile test of metals

#### Results showed/calculated by UCRD-7 :

- › Original cross-sectional area of the gauge length
- › Tensile strength
- › Percentage elongation at maximum load ( $F_m$ )
- › Load at fracture
- › Percentage elongation at fracture load ( $F_b$ )
- › Young's modulus (only with extensometer)
- › Proof stress points: 3 points (only with extensometer)
- › Proof stress point at total elong (only with extensometer)
- › Upper/lower yield stress
- › Percentage reduction of area after fracture
- › Percentage elongation after fracture

# WINTEST32 SOFTWARE FOR MATERIALS TESTING.

## Introduction

32-bit software pack, running under Windows™, specially developed by IBERTEST to be used in universal testing machines.

Thanks to its flexibility and power, you can easily customize software WinTest32, to every need.

Indeed, the system allows user to configure tests according to the major international standards for engineering materials (UNE, ASTM, ISO, ... etc). However, for a small supplement, IBERTEST can adapt WinTest32 software to special needs or for your laboratory.

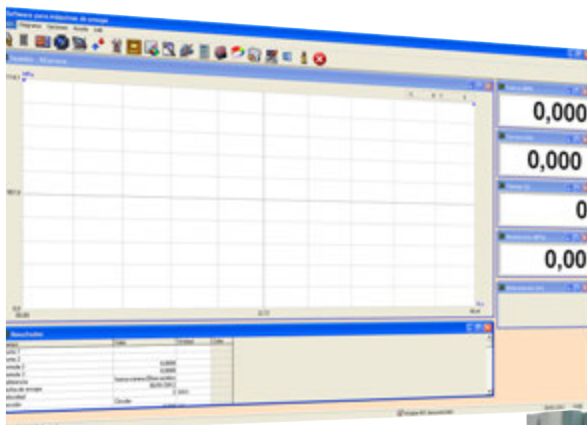
During design phase of WinTest32 software, IBERTEST paid special attention to the ease of use, so the program can be handled even by users with little experience in computers.

The WinTest32 control screen provides toolbar and intuitive menu for quickly identify available actions, to select and configure test parameters without consulting the manual..

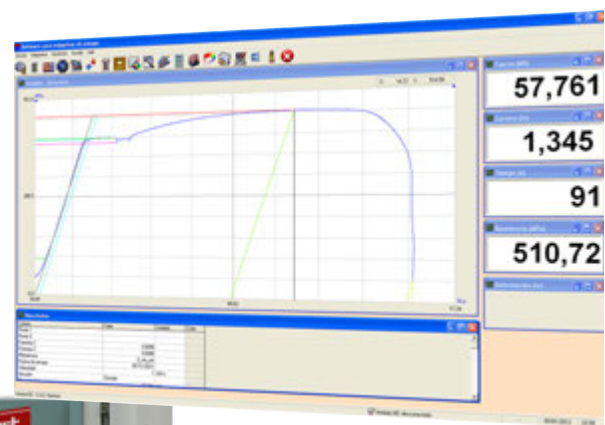


The software shows the user available options and its possible settings at each time, guiding user step by step interactively through test configuration.

Thus, WinTest32 helps user to optimize processes when using materials testing machine, getting the best performance both in the execution of the test and in the results analysis.



Initial control screen



Screen of test results



Using WINTEST32 on a Tocuh Screen "All in One"

## WINTEST32 SOFTWARE PROVIDES COMPLETE CONTROL BEFORE, DURING AND AFTER THE EXECUTION OF THE TEST.

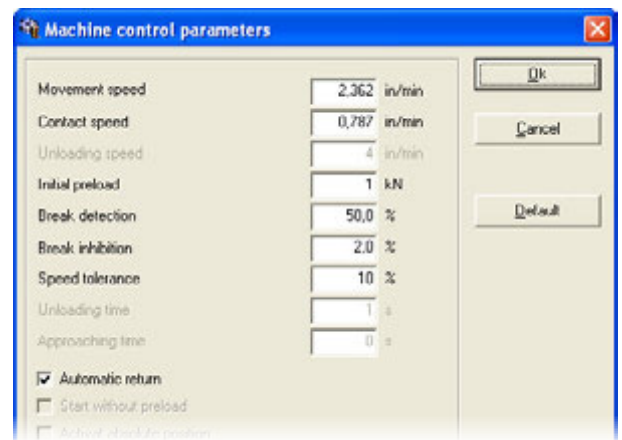
### 1. PRE-TEST CONFIGURATION

To configure tests at your convenience, the software offers many options, such as:

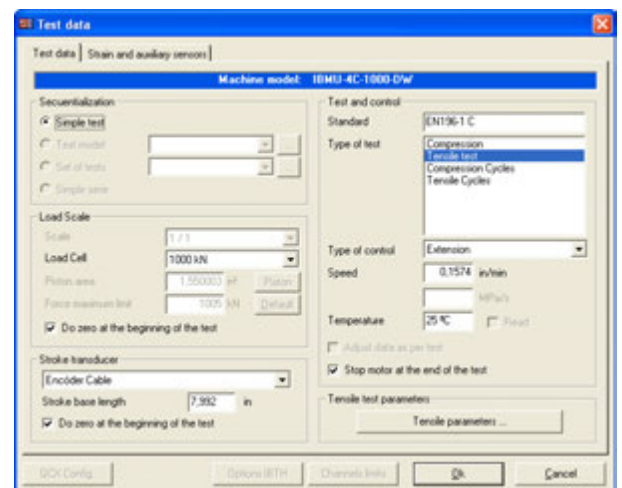
- › *Setting-up of the machine:* Establishment of safety limits, speed of movements, preload, automatic return, etc.
- › *Users management,* with custom options for each operatuser. Provides system security and prevents unauthorized use.
- › *Type of test to perform:* Tensile, compression, bending, cycles, etc. The settings change automatically according to the chosen type of test.
- › *Working method:* *preconfigured* by IBERTEST (according to a Standard Test) or *free configuration* according to the criteria of the user (always within the physical and mechanical limitations of the machine, testing devices and sensors.)
- › *Individual or serial testing.* Serial tests are well suited for example, repetitive tests with machines intended for Production Quality Control.
- › Select the type of automatic control in *stroke, load or strain* (with appropriate optional transducers)
- › Activation of *additional sensors* placed on the machine or in the specimen, such as strain gauges, temperature sensors, etc.<sup>1</sup>
- › Select the type of *diagram* (load-time, load-stroke, etc.). For the *graphical representation* of the test.
- › *Results to display* on screen (in real time) or in the report (after the validation of the test).
- › Automatic execution of calculations derived from the test results (strength, elastic modules, etc.) by means of a software integrated *programmable calculator*.
- › Design of *test reports*, fully customizable. Test reporting is essential for laboratories subjected to Good Laboratory Practices (GLP), or Quality Assurance Systems, as per ISO-EN 17025.

And many more options.

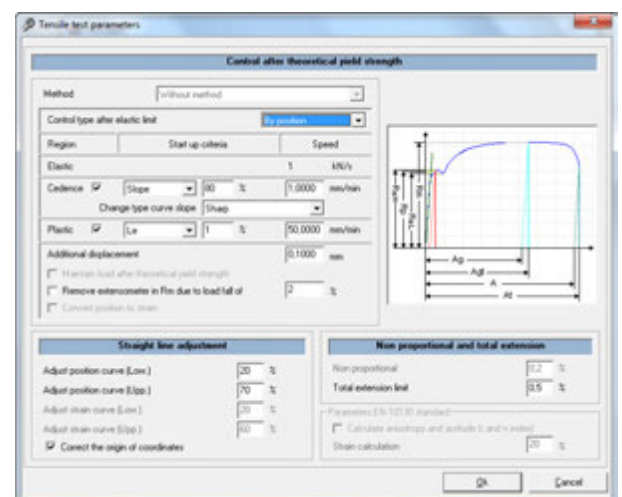
(1): For sensors previously installed into the system.



Testing machine setting-up



Configuration of Tests



Auxiliary window "traction parameters"  
Available when selecting a tensile test.



## 2. SPECIMENS IDENTIFICATION

By means of window: "Specimen Parameters", user has multiple options to label specimens.

- › Name of test / specimen / sample, origin, batch, client, auto-numbering, date, etc.
- › Test material, geometry of the specimen (length, width, diameter), mass, density, etc..
- › Free text. For adding any important info not reflected above.

Some parameters are involved in automatic calculations of test results, while others only will appear in the report (and / or screen of results) as useful background information to aid you in your analysis.

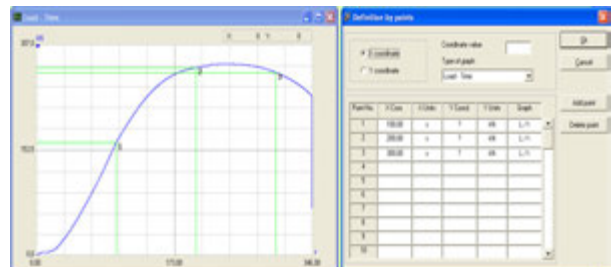
Setting parameters for the test specimen

## 3. TEST DEVELOPMENT

The program performs tests automatically, according to the method and parameters previously introduced in the test configuration.

For test monitoring, PC screen shows shows, in real time, following features:

- › Graphical representation: XY charts of load-stroke, load-strain, stroke-strain, etc.
- › Instant numerical values, obtained by the sensors connected to the system (position, load, strain, etc).
- › Real-time execution and presentation, of the results of the calculations pre-programmed by the user with the integrated programmable calculator.



Location of significant points on the graph of the test

If something goes wrong, the user can stop the test at any time during its execution.

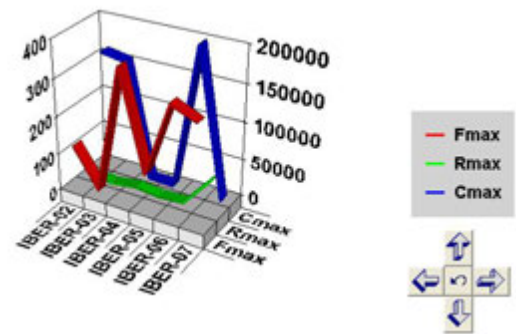
## 4. TEST RESULTS: ANALYSIS AND MANAGEMENT.

Once test is completed, results and the graphical representation are shown in the screen. If user rejects the test, results won't be stored. Before validating the test, you can perform following actions:

- › Select and expand areas of the graph (zoom).
- › Change the type of XY chart.
- › Location and search for singular points of the chart.

The statistical program allows you to compare several tests including consecutive superimpose curves, create 2D and 3D bar and lines diagrams, create bmp images, etc.

The output files can be converted to ASCII or CSV formats to be exported to other systems such as Excel, LIMS, etc.



Test comparison - 3D representation



Example of a test report

## Main Features

<b>Operating system</b>	WinTest32 works with all Microsoft™ Windows® (32 and 64 bits) operating systems (XP, Vista, Windows 7), and shares common features with other Windows® programs (system of menus, toolbars, file management, sizing of windows, colors, etc..)
<b>Help functions (usability).</b>	<p>The icon toolbar can be displayed as reduced version, including only the more common features and larger icons.</p> <p>The program is compatible with touch screen computers.</p> <p>The F1 key activates the help window. Help support includes a complete user manual for each application.</p>
<b>Type of tests</b>	Tensile, compression, flexure (one or two load points), bending, extrusion, penetration, shear, etc., on metallic and nonmetallic materials.
<b>Test models</b>	<p>WinTest32 comprises test models according to most commonly used standards (EN, ASTM, ISO, etc..). The user can configurate similar test models.</p> <p>Under request, we can make modifications to configure your WinTest32 software to your special needs (consult additional cost)</p>
<b>Cyclical testing</b>	<p>WinTest32 allows to create cyclic tests, with rising, keeping or falling of the load applied to the specimen. The change of slope or ramp can be done in response to load, stroke or both figures inclusive.</p> <p>When necessary, the slope changes may be accompanied by the control mode (load or stroke) changes.</p>
<b>Serial testing</b>	<p>Possibility of grouping several tests together, in series and subseries.</p> <p>It is possible to obtain statistical information of the grouped tests parameters.</p>
<b>Multi-frame control</b>	Management of up to six testing zones, in alternately way, using the same PC and the same software. The software shows the available test zones to selecting.
<b>Measurement channels</b>	<p>Simultaneous representation of several measurement channels at once.</p> <p>WinTest can manage up to 16 channels (both deformation or auxiliars). The channels can be configured by the user. To use all features offered by WinTest32, you may need additional hardware.</p>
<b>Calculator programming</b>	<p>The system integrates a programmable formula calculator.</p> <p>In this way, you can combine parameters of the specimen with results or values obtained during the test, in order to obtain derivatives results (modules, strength, unit conversion, etc.) in real time.</p>
<b>File management</b>	Test results automatically recorded on hard disk, and the configuration of the machine at the time of their execution. These tests can be recovered for further analysis.
<b>Data exportation</b>	The output files can be exported in Excel format (csv or xls), allowing these files to be imported for most of the programs, word processors and spreadsheets on the market.
<b>Statistics</b>	<p>Incorporates the possibility of performing statistical analysis on tests previously recorded on hard disk.</p> <p>The statistics can be displayed as graphs, histograms, level with Gaussian distribution, charts, dimensional comparison (both tapes and volumes), test curves comparison by superimposing them on a diagram of coordinates, etc.</p>

### TELEDIAGNOSIS (Optional Service)

TELEDIAGNOSIS is a remote diagnostic service and maintenance support, available for all IBERTEST testing machines equipped with the "W" system for control, programming and data-acquisition by means of computer.

To run TELEDIAGNOSIS a link program is used which establishes a remote connection to the control computer of the machine

When connected, our technicians are able to take control of the testing machine, as if they were in front of it, to act on the problem quickly and effectively, without displacements to your laboratory.

So, intervention from our Technical Service is possible regardless of the location of the machine, as long as an access to a fast Internet (ADSL or similar) is available..

Even on those occasions when the Technical Service must act "in situ", the TELEDIAGNOSIS is helpful to clearly identify the problem and choose the best solution to fix it.

In short, the immediate attention of TELEDIAGNOSIS service minimizes downtimes and avoids delays in the work of laboratory, while reducing or eliminating the overhead of moving the IBERTEST technicians.

During a TELEDIAGNOSIS session, the following actions can be performed:

- › **Software correction and review:** IBERTEST technicians can inspect the file system software WINTEST32 test, wrong configurations, lost files and directories, corrupted files by viruses, etc. Once detected errors, only the appropriate libraries and changes are transferred, without reinstalling complete programs..
- › **Remote handling:** IBERTEST technicians can handle the remote machine in real time to perform maneuvers, tests of mechanical movement, installation of testing transducers and accessories, verification of electrical and electronic systems, on/off alarm and security systems, etc.
- › **Videoconference:** Via web-cam a videoconference between client and our technicians can be maintained, thus we can get invaluable visual-information about the correct operation of the machine's mechanical and hydraulic systems. Also, by written or voice messages, it is possible to exchange views and comments, and give appropriate instructions to the user, when necessary, to perform some physical action in the machine.
- › **Updates.** The WINTEST32 software can be easily updated to its latest version (as long as the computer are able to support it). This allows enjoying the advantages resulting from the continuing work of review and program development.



IBERTEST Spain - Madrid Technical Services



Real time TELEDIAGNOSIS link



End-user laboratory (anywhere in the world)

V2015-2-EN



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