



## INTRODUCTION

Material testing allows determining strength of materials, verifying their properties and establishing their behaviour under external influences. Shape and dimensions of a body, specific weight and density, humidity content, etc. are generally determined with physical tests, whereas strength, elasticity and plasticity, ductility, tenacity and fragility, etc. are determined with mechanical tests.

The hardness test is, together with the tension test, one of the most used in metals selection and quality control. Intrinsically, hardness is a surface condition of the material and it does not represent any fundamental property of the mass.

Hardness test is simple, highly efficient, since it does not destroy the sample, and especially useful to evaluate properties of the different microstructural components of the material.

The Brinell Hardness Testing Unit, "EEDB" allows Brinell hardness measurement on different materials.



ISO 9001: Quality Management (for Design, Manufacturing, Commercialization and After-sales service)



European Union Certificate (total safety)



Certificates ISO 14001 and ECO-Management and Audit Scheme (environmental management)



"Worlddidac Quality Charter" and Platinum Member of Worlddidac

## GENERAL DESCRIPTION

The Brinell Hardness Testing Unit, "EEDB", is a hardness tester that determines Brinell hardness in metals, hard alloys, tempered steels, etc. Besides, it can be used with other materials, such as rigid plastics, bakelite, etc.

A penetrating ball of specific diameter is used in the Brinell hardness test to press the surface of the test piece with a specific force. After the test force is held for a determined time, such test force is removed and the average diameters of the indentations on the surface of the specimen are measured with a microscope.

Brinell hardness number is obtained by dividing the force of the test multiplied by the area of the spherical shape marked by the indenter by the diameter of the indentation printed on the specimen.

## SPECIFICATIONS

Brinell hardness testing unit 30kN:

It can work with round, flat or irregular shape test pieces.

Response time control: adjustable between 5 and 60 seconds.

Measurement range: 8-650HBW.

The test load is applied by an electrical motor.

Applied test force: 612.9 N (62.5 Kgf) – 980 N (100 Kgf), 1226 N (125 Kgf) – 1839 N (187.5 Kgf) – 2452 N (250 Kgf) – 4903 N (500 Kgf) – 7355 N (750 Kgf) – 9807 N (1000 Kgf) – 29420 N (3000 Kgf).

Maximum height of the test piece: 220 mm.

Throat depth (distance between the central point of the indenter and the hardness tester body): 135 mm.

Small test piece holder plate: 60 mm diameter.

Large test piece holder plate: 200 mm diameter.

"V" shape test piece holder plate: 80 mm diameter.

Indenters:

Steel ball of 2.5 mm diameter.

Steel ball of 5 mm diameter.

Steel ball of 10 mm diameter.

Four additional balls of each size.

Two testing blocks:

HBW/3000/10 (150 ~ 250).

HBW/750/5 (150 ~ 250).

Portable microscope to read the imprints:

Amplification: 20 X. Minimum division value of the micrometer wheel: 0.005 mm. Reading field effective range: 6 mm.

Spare fuse.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Start-up, Safety, Maintenance and Practice, Manuals.



EEDB detail

## EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- To learn how to use the instrumentation to perform hardness tests.
- 2.- Study and familiarization with Brinell hardness test equipment.
- 3.- Brinell hardness measurement on different materials.
- 4.- To observe the behaviour of diverse materials under different loads applied.
- 5.- To know the types of standard test pieces for these types of tests.
- 6.- To know the types of standard indenters for these types of tests.

## REQUIRED SERVICES

- Electrical supply: single-phase 200 VAC – 240 VAC/50 Hz or 110 VAC – 127 VAC/60 Hz.

## DIMENSIONS AND WEIGHTS

EEDB:

Unit:

- Dimensions: 300 x 500 x 800 mm approx.  
(11.81 x 19.68 x 31.49 inches approx.)

- Weight: 150 Kg approx.  
(330.69 pounds approx.)

Case for elements:

- Dimensions: 350 x 300 x 150 mm approx.  
(13.78 x 11.81 x 5.91 inches approx.)

## SIMILAR UNITS AVAILABLE

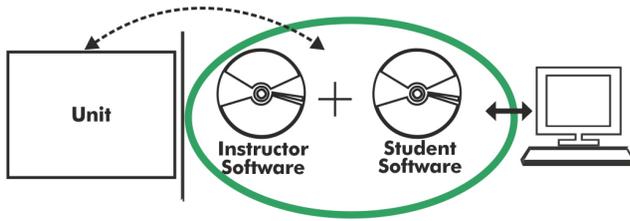
Offered in this catalog:

- EEDB. Brinell Hardness Testing Unit.

Offered in other catalog:

- EBVR. Brinell, Vickers & Rockwell Hardness Testing Unit.

**EEDB/ICAI. Interactive Computer Aided Instruction Software:**



With no physical connection between unit and computer, this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.

Instructor Software

**- ECM-SOF. EDIBON Classroom Manager (Instructor Software).**

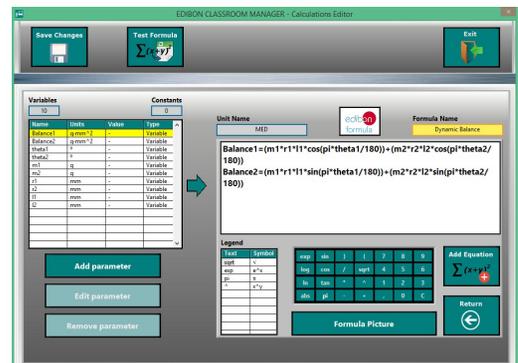
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.

Innovative features:

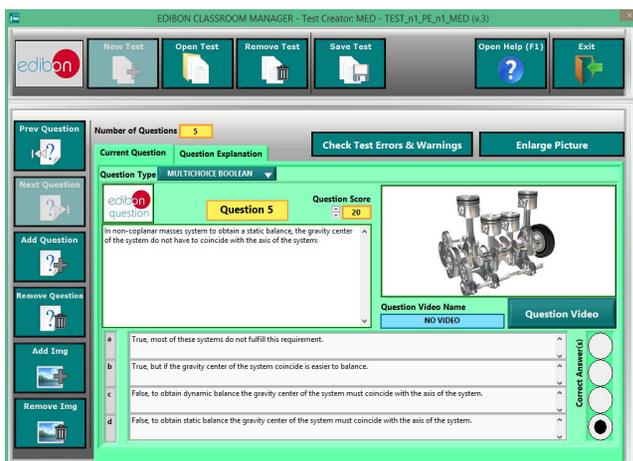
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.
- Updatable Contents.
- Report generation, User Progression Monitoring and Statistics.



ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



ECAL. EDIBON Calculations Program Package - Formula Editor Screen



ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question



ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

Optional  
Student Software

- ESL-SOF. EDIBON Student Labsoft (Student Software).

ESL-SOF is the application addressed to the Students that helps them to understand theoretical concepts by means of practical exercises and to prove their knowledge and progression by performing tests and calculations in addition to Multimedia Resources. Default planned tasks and an Open workgroup are provided by EDIBON to allow the students start working from the first session. Reports and statistics are available to know their progression at any time, as well as explanations for every exercise to reinforce the theoretically acquired technical knowledge.

Innovative features:

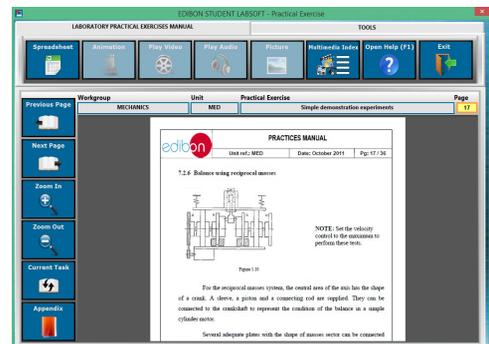
- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.
- Test self-correction.
- Calculations computing and plotting.
- Equation System Solver Engine.
- User Monitoring Learning & Printable Reports.
- Multimedia-Supported auxiliary resources.

For more information see ICAI catalogue. Click on the following link:

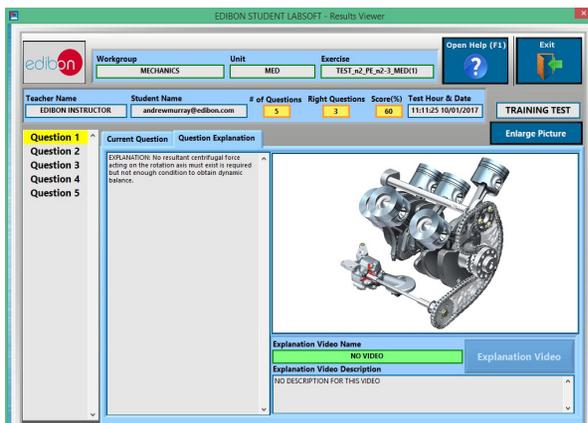
[www.edibon.com/en/files/expansion/ICAI/catalog](http://www.edibon.com/en/files/expansion/ICAI/catalog)



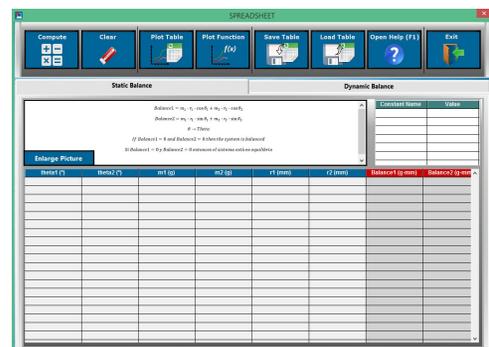
ESL-SOF. EDIBON Student LabSoft (Student Software) Application Main Screen



EPE. EDIBON Practical Exercise Program Package Main Screen



ERS. EDIBON Results & Statistics Program Package - Question Explanation



ECAL. EDIBON Calculations Program Package Main Screen

\* Specifications subject to change without previous notice, due to the convenience of improvement of the product.



C/ Julio Cervera, 10-12-14. Móstoles Tecnológico.  
28935 MÓSTOLES. (Madrid). ESPAÑA - SPAIN.

Tel.: 34-91-6199363 Fax: 34-91-6198647

E-mail: [edibon@edibon.com](mailto:edibon@edibon.com) Web: [www.edibon.com](http://www.edibon.com)

Edition: ED01/21

Date: January/2021

REPRESENTATIVE:

