



## GENERAL DESCRIPTION

The MBD Unit, designed by EDIBON, is an example of slider-crank mechanism, which is one of the most important and more numerous mechanisms.

This is a mechanism able to transform rotational motion of a piston into linear motion of a crankshaft. Its greatest application is in internal combustion engines.

It is assembled in an anodized aluminum profile structure, with steel painted panel.

This mechanism is made of aluminum and consists of a rotary element (graduated disc), called crank, connected to a rigid bar, called connecting rod. When rotating the crank, the connecting rod moves backwards and forwards. The rotating motion of a crank or crankshaft generates the alternative linear motion of a piston or plunger.

It is a reversible system, if the connecting rod generates the input motion (for example, a piston in a car's engine), the crank rotates.

The input angle is set on the ball bearing mounted crank disc and it is read on an angle measuring scale. A millimeter scale is fitted for the linear motion of the connecting rod.

The MBD unit includes two connecting rods of different length so that they can be compared.

This unit is supplied with the following manuals: Required services, Assembly and Installation, Starting-up, Security, Maintenance and Practices Manual.

## EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Demonstration of the action of a simple in-line slider-crank mechanism.
- 2.- Study of the relationship between the linear displacement of the sliding block (connecting rod) and the angular displacement of the rotary element (crank).
- 3.- To illustrate graphically and study the effect of changing the length of the connecting rod.
- 4.- Determination of the velocity and acceleration of the sliding block by graphical differentiation and compared with the values obtained by equations of motion or by velocity and acceleration diagrams.

## DIMENSIONS AND WEIGHTS

MBD:

- Dimensions: 400 x 300 x 100 mm. approx.  
(15.75 x 11.81 x 3.94 inches approx.)
- Weight: 3 Kg. approx.  
(6.6 pounds approx.)



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



European Union Certificate (total safety)

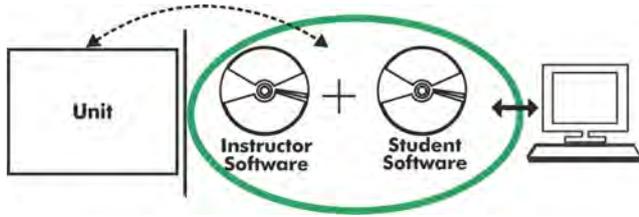


Certificates ISO 14001 and ECO-Management and Audit Scheme (environmental management)



Certificate and Worlddidac Member

**MBD/ICAI. Interactive Computer Aided Instruction Software System:**



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.

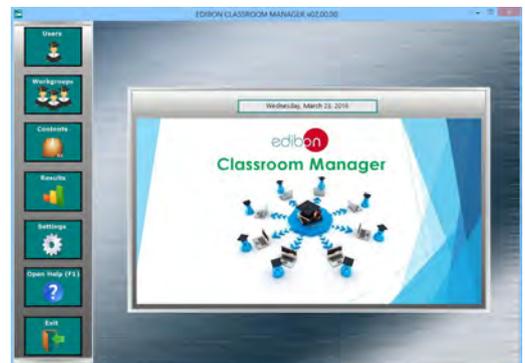
Instructor Software

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

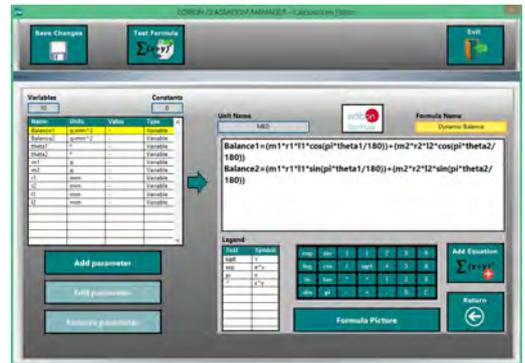
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

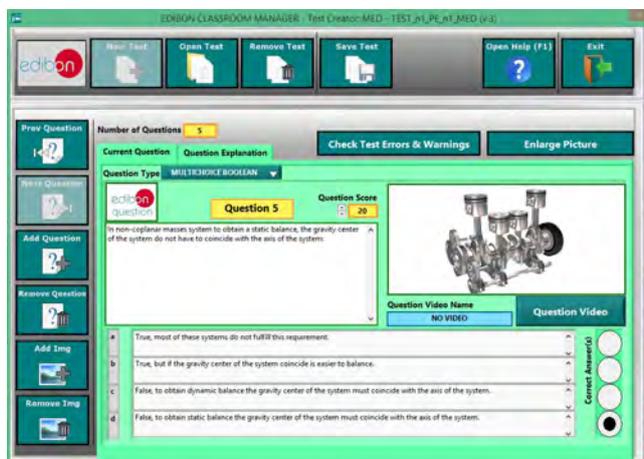
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

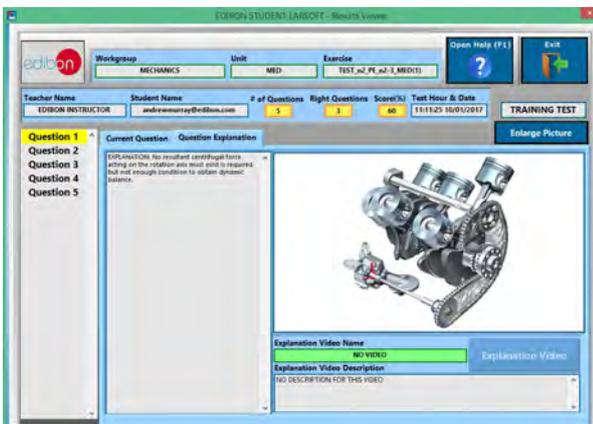
[www.edibon.com/en/files/expansion/ICAI/catalog](http://www.edibon.com/en/files/expansion/ICAI/catalog)



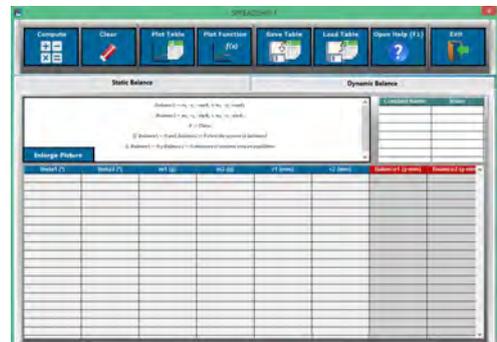
ESL-SOF. EDIBON Student LabSoft (Student Software)  
Application Main Screen



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.



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REPRESENTATIVE:

