edib**on**

Engineering and Technical
Teaching Equipment

INTRODUCTION

Pure simple harmonic motion is produced by the Scotch Yoke Mechanism, "MYE", when driven by an eccentric or crank.

Its early application was on steam pumps but it is not suitable for high speeds due to the backlash in the Scotch yoke. It is now mainly used in computing type applications where harmonic motion is required.

GENERAL DESCRIPTION

The Scotch Yoke Mechanism, "MYE", designed by EDIBON, is an example of slider-crank mechanism. The unit is a mechanism for converting the linear motion of a slider into rotational motion or vice versa.

It is made of aluminum and consists of a rotary element, called crank, with a graduated disc. This element and a piston are linked to a vertical pivot. The rotating motion of the crank generates the alternative linear motion of the piston.

It is a reversible system, if the piston 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 to measure the linear motion of the connecting rod.

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

SPECIFICATIONS

The unit is a bench top-unit with an anodized aluminum profile structure, and painted steel panel.

The main metallic elements are made of anodized aluminum.

This unit is composed of:

Rotary element (crank) with a graduated disc to read the angle.

Piston with a millimeter scale to measure the linear motion.

Vertical pivot links the rotary element (crank) and the piston.

Manuals: 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.- Study of the conversion of smooth rotary motion into purely harmonic reciprocating motion.

2.- Demonstrating the behaviour of a simple crank-driven Scotch yoke mechanism.

3.- Plotting the relation between the linear displacement of the Scotch yoke and the angular displacement of the crank.

4.- Determining the velocity and acceleration of the Scotch yoke by graphical differentiation.

5.- Comparing the values obtained by the equations of motion.

DIMENSIONS AND WEIGHTS

MYE:
-Dimensions: 400 x 300 x 100 mm approx. (15.74 x 11.81 x 3.93 inches approx.)
-Weight: 2 Kg approx. (4.4 pounds approx.)

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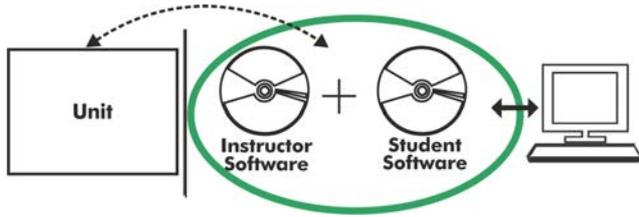
With no physical connection between unit and computer, **this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF).** Both are interconnected so that the teacher knows at any moment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

<u>Instructor Software</u>

- 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.
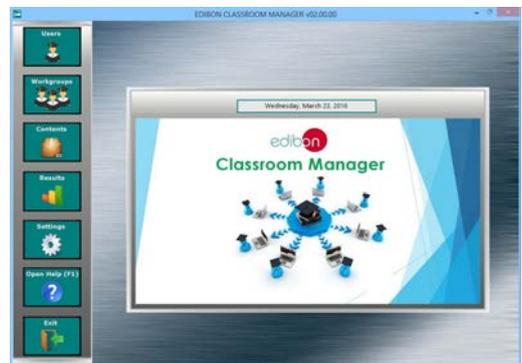
ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen
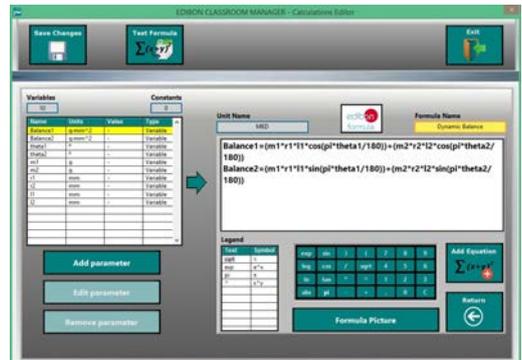
ECAL. EDIBON Calculations Program Package - Formula Editor Screen
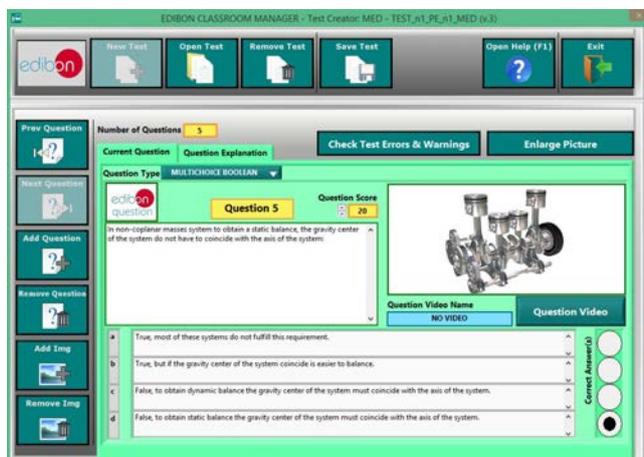
ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question
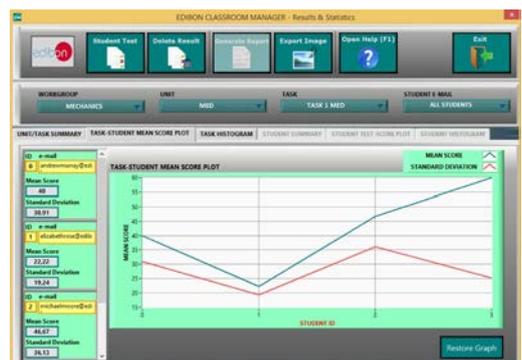
ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

## - 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

ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen
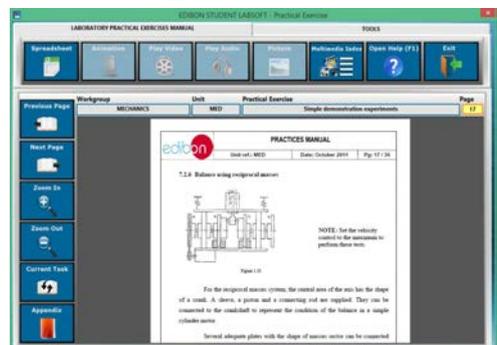
EPE. EDIBON Practical Exercise Program Package Main Screen
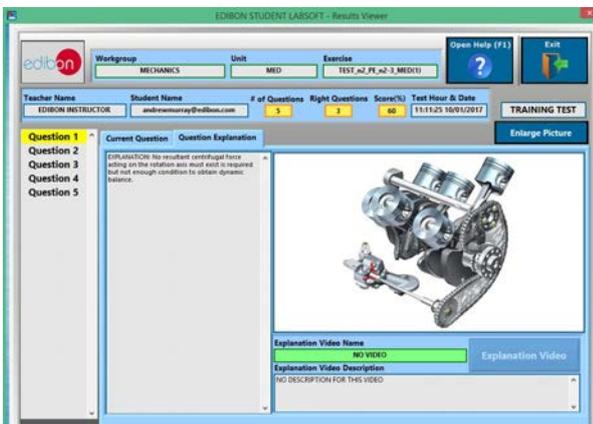
ERS. EDIBON Results & Statistics Program Package - Question Explanation
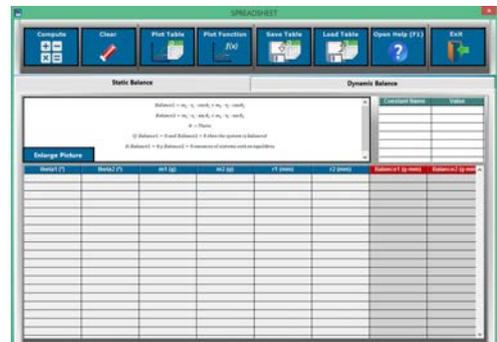
ECAL. EDIBON Calculations Program Package Main Screen

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

INTERNATIONAL

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REPRESENTATIVE: