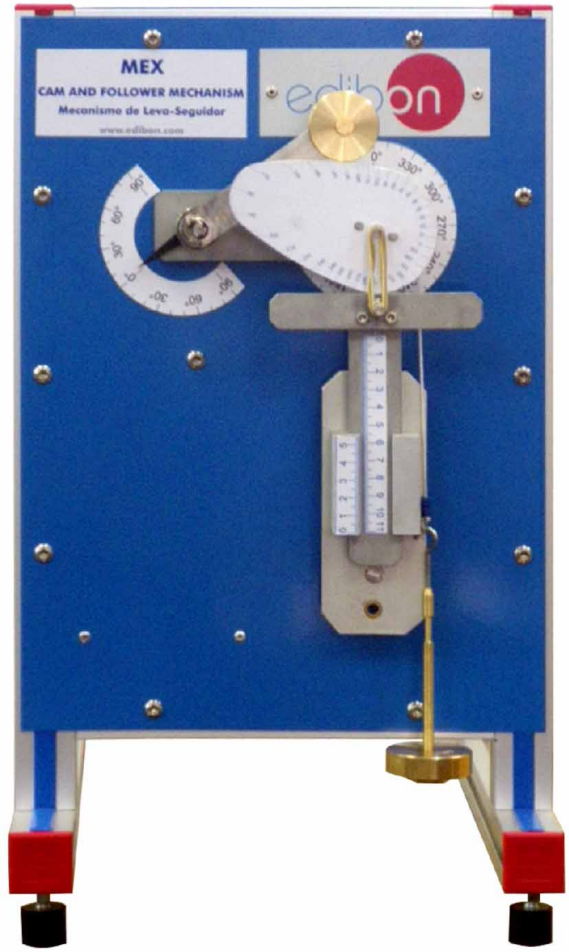
Technical Teaching Equipment

Cam and Follower Mechanism

MEX



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Products
Products range
Units
7.-Mechanics & Materials

GENERAL DESCRIPTION

The MEX unit allows to study the cam-follower and eccentric-follower mechanisms. For that purpose, several plate cam models, an eccentric and several roller-shaped and flat-shaped followers models are supplied.

The objective of a cam or eccentric is to give a reciprocating motion of a specified character to a part of a mechanism, called follower.

A plate cam, also called disc cam, consists of a plate which rotates around an axis perpendicular to its plane. Its profile is designed to give a reciprocating or oscillating motion to a follower, which touches the edge of the cam.

The unit comprises three followers which depend on the geometrical characteristics of the edge in contact with the cam, two of them are roller-shaped followers with different diameters, to study the influence of the diameter, and the other one is flat-shaped. Such followers constitute cam-follower mechanisms, which transform the circular motion of the cam into a linear or angular motion of the follower. One or the other motion will depend on the configuration of the mechanism and, specifically, on the position of the follower with regard to either the cam or eccentric profile.

The MEX mechanism can also measure the turning force of every cam or eccentric provided, that is to say, by means of weights the force needed to be overcome in order to rotate the cam at several angular positions can be measured.

ISO 9000: Quality Management
(for Design, Manufacturing, Commercialization and After-sales service)

European Union Certificate
(total safety)

Certificates ISO 14000 and **ECO-Management and Audit Scheme**
(environmental management)

Worlddidac Quality Charter Certificate
(Worlddidac Member)

SPECIFICATIONS

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

This unit is mainly composed of:

Four cams (aluminum) of different shapes.

One eccentric (aluminum).

Two roller-shaped followers (brass) with different diameter, constituting mechanisms which transform the circular motion of the cam into the angular motion of the follower.

One flat-shaped follower (aluminum), constituting a mechanism which transforms the circular motion of the cam into a linear motion.

In order to carry out some of the practices with MEX unit 1 set of weights "B type"is required. (See required accessories)

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.- Demonstration of the action of a plate cam and an eccentric with different geometrical profiles and various types of followers.

- Demonstration of the conversion of the circular motion of a plate cam into the angular motion of a roller follower.

- Demonstration of the conversion of the circular motion of a plate cam into the linear motion of a flat follower.

2.- Study of the influence of the roller follower's diameter in the conversion of the circular motion of the plate cam into the angular motion of a roller follower.

3.- Determination and graphical illustration of the relationship between the displacement of the follower and the angular displacement of the cam for several types of cams and followers.

4.- Measurement of the force needed to be overcome in order to rotate a cam at different angular positions.

Other possible practices:

5.- More advanced exercises may include the determination of the velocity and acceleration by graphical differentiation and comparison with values obtained by the equations of motion.

DIMENSIONS & WEIGHT

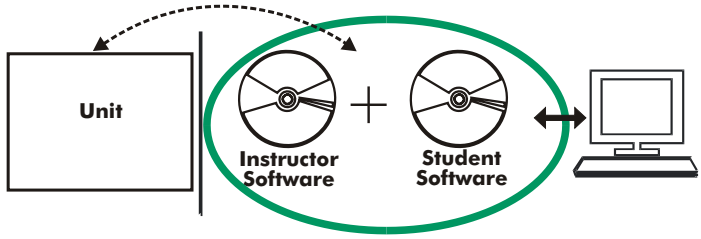
- Dimensions: 370 x 400 x 510 mm. approx. (14.57 x 15.75 x 20.08 inches approx.).
- Weight: 10 Kg. approx. (22 pounds approx.).

REQUIRED ACCESSORIES

For some practices (as practice number "4" indicated above) is required:

- 1 Set of weights "B type" (set B), composed of:
  - 6 weights of 200 gr. (0.44 pounds).
  - 6 weights of 100 gr. (0.22 pounds).
  - 2 weights of 50 gr. (0.11 pounds).
  - 2 weights of 20 gr. (0.044 pounds).
  - 2 weights of 10 gr. (0.022 pounds).
  - 1 support hook of 100 gr. (0.22 pounds).

MEX/CAI. Computer Aided Instruction Software System:



With no physical connection between unit and computer, **this complete package consists on an Instructor Software (INS/SOF) totally integrated with the Student Software (MEX/SOF).** Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students. These, on the other hand, get a virtual instructor who helps them to deal with all the information on the subject of study.

INS/SOF. Classroom Management Software (Instructor Software):

The instructor can:

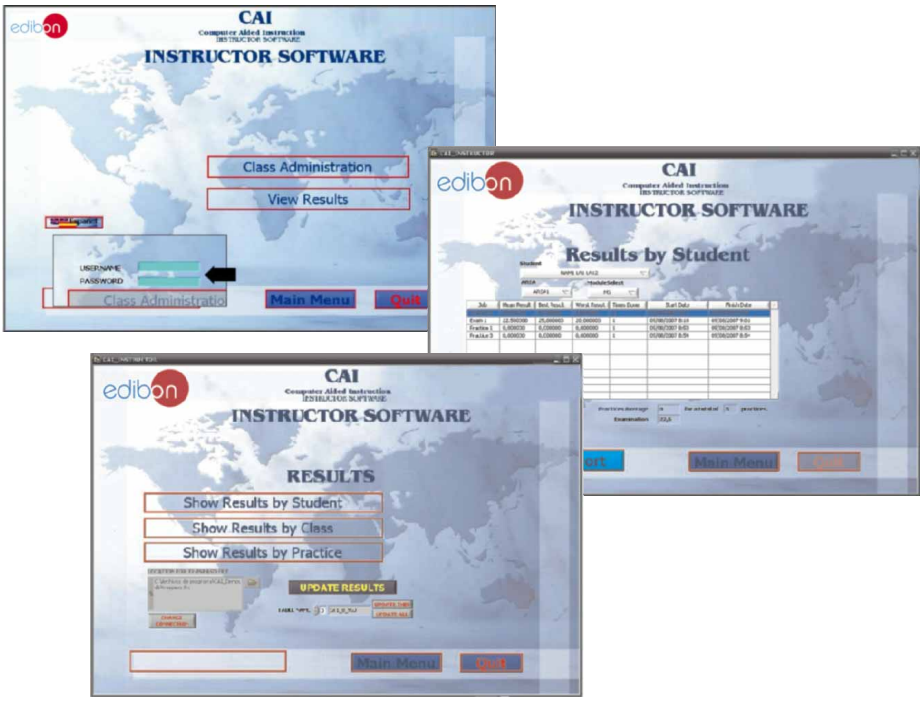
- Organize Students by Classes and Groups.
- Create easily new entries or delete them.
- Create data bases with student information.
- Analyze results and make statistical comparisons.
- Print reports.
- Develop own examinations.
- Detect student's progress and difficulties.

...and many other facilities.

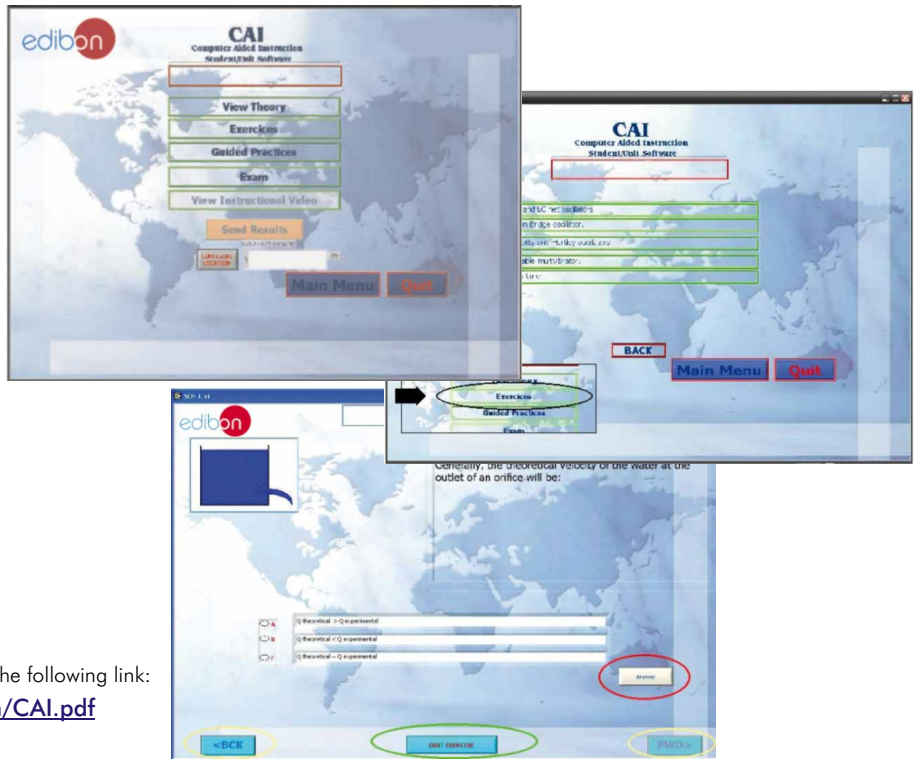
This software, working in network configuration, allows controlling all the students in the classroom.

Example of software screens

Instructor Software



Student Software



MEX/SOF. Computer Aided Instruction Software (Student Software):

It explains how to use the unit, run the experiments and what to do at any moment.

- This software contains:

  Theory: gives the student the theoretical background for a total understanding of the studied subject.

  Exercises: divided by thematic areas and chapters to check out that the theory has been understood.

  Guided Practices: presents several practices to be done with the unit, showing how to complete exercises and practices.

  Exams: set of questions presented to test the obtained knowledge.

For more information see **CAI** catalogue. Click on the following link:
www.edibon.com/products/catalogues/en/CAI.pdf

MEX/CAL. Computer Aided Learning Software (Results Calculation and Analysis):

This Computer Aided Learning Software (CAL) is a Windows based software, simple and very easy to use, specifically developed by EDIBON.

CAL is a class assistant that helps in making the necessary calculations to extract the right conclusions from data obtained during the experimental practices.

CAL will perform the calculations.

CAL computes the value of all the variables involved.

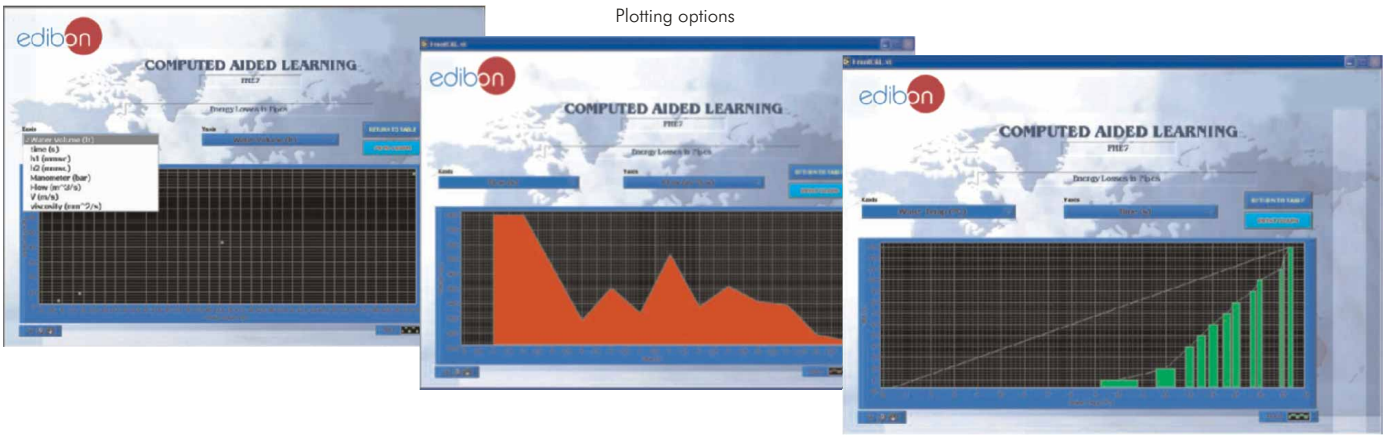
It allows to plot and print the results. Between the plotting options, any variable can be represented against any other.

Different plotting displays.

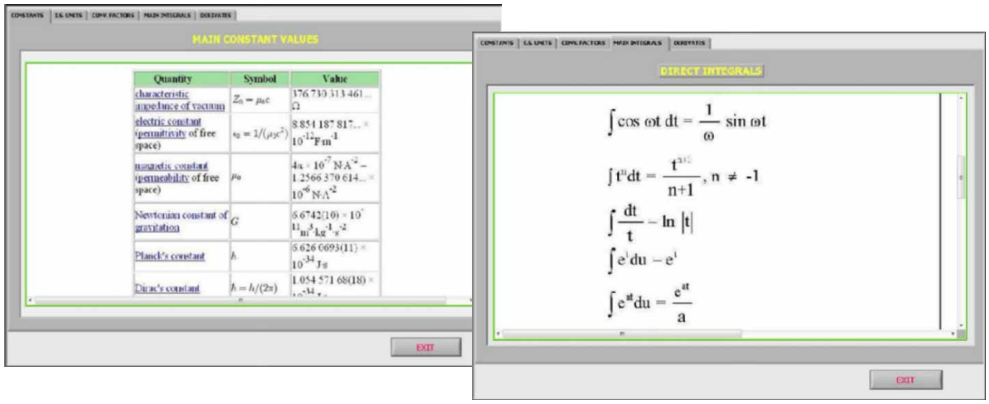
It has a wide range of information, such as constant values, unit conversion factors and integral and derivative tables.

Calculations

Plotting options



Information of constant values, unit conversion factors and integral and derivative tables



For more information see **CAL** catalogue. Click on the following link:
www.edibon.com/products/catalogues/en/CAL.pdf

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

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