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GENERAL DESCRIPTION

This unit has been designed to enable the students to observe and study the following phenomena in simply supported beams and cantilever beams:

- Relation between the deflections and the applied loads.
- Effect of the length and the cross section on the beam behaviour. Ex: deflection load ratio.

The "MFV" unit consists of an aluminium and stainless steel structure to carry out experiment with metal beams up to a length of 1 m. Three beams with different cross section are supplied.

The structure makes it easy to study cantilevers holding the beam by one end, or beams simply supported on two points. The MFV unit gives us the possibility of modifying the position of the supporting and holding points.

It has a graduated ruler fixed on the structure that allows to obtain measures easily in different points of the beam.

The weights will be hung from hooks, in order to apply the load on any point in the beam.



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

Bench-top unit.

Structure of anodized aluminium and stainless steel.

Metallic guide with a graduated ruler for positioning the different supports.

2 Removable stainless steel supports.

1 Removable stainless steel cantilever support.

Dial gauge, 0-25 mm range and 0.01 accuracy.

It allows experimentation with beams up to 1000 mm length for their study.

Three test rectangular beams (made of stainless steel) with different cross sections and 1 m. of length are supplied.

The unit allows test as:

- cantilever beam.
- beam fixed at one end and simply supported at the other end.
- simply supported beam.

Adjustable legs for balancing the unit.

In order to carry out some of the practices with MFV unit, 2 set of weights "C type" are 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

Some Practical Possibilities of the Unit:

- 1.- Study of the characteristics of simply-supported and cantilever beams.
- 2.- Determination of the relationship between applied load and deflection.
- 3.- Beam supported on its two ends with a central loading point.
- 4.- Study of the variation of length in deflection.
- 5.- The effect the beam's length has on a centrally loaded beam supported by its two ends.
- 6.- The effect of the cross-section of deflection of beams.
- 7.- The effect the beam's section has on a centrally loaded beam supported on its two ends.
- 8.- Cantilever beam with a load on one of its ends.
- 9.- The effect the beam's length has on a cantilever with a load on one of its ends.
- 10.- The effect of a cross-section in a cantilever with a load on one of its ends.
- 11.- Beam supported by two points and subjected to a different momentum of uniform bending.
- 12.- Study of bending, application of loads at different points with fixed or free ends.

DIMENSIONS AND WEIGHT

-Dimensions: 1200 x 400 x 400 mm. approx. (47.24 x 15.74 x 15.74 inches approx.).

-Weight: 20 Kg. approx. (44 pounds approx.).

REQUIRED ACCESSORIES

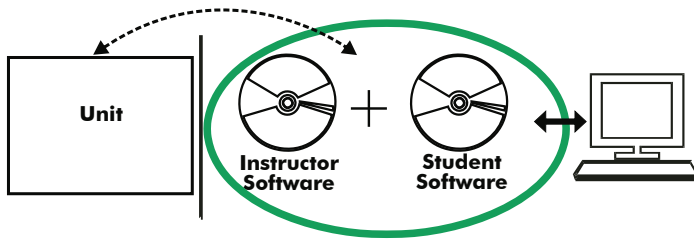
- 2 set of weights "C type" (set C).

Each "C type" set is composed of:

- 1 support hook.
- 6 weights of 100 gr. (0.22 pounds approx.).
- 2 weights of 200 gr. (0.44 pounds approx.).
- 2 weights of 500 gr. (1.10 pounds approx.).
- 1 weight of 1000 gr. (2.20 pounds approx.).

Optional

MFV/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 (MFV/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



MFV/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:

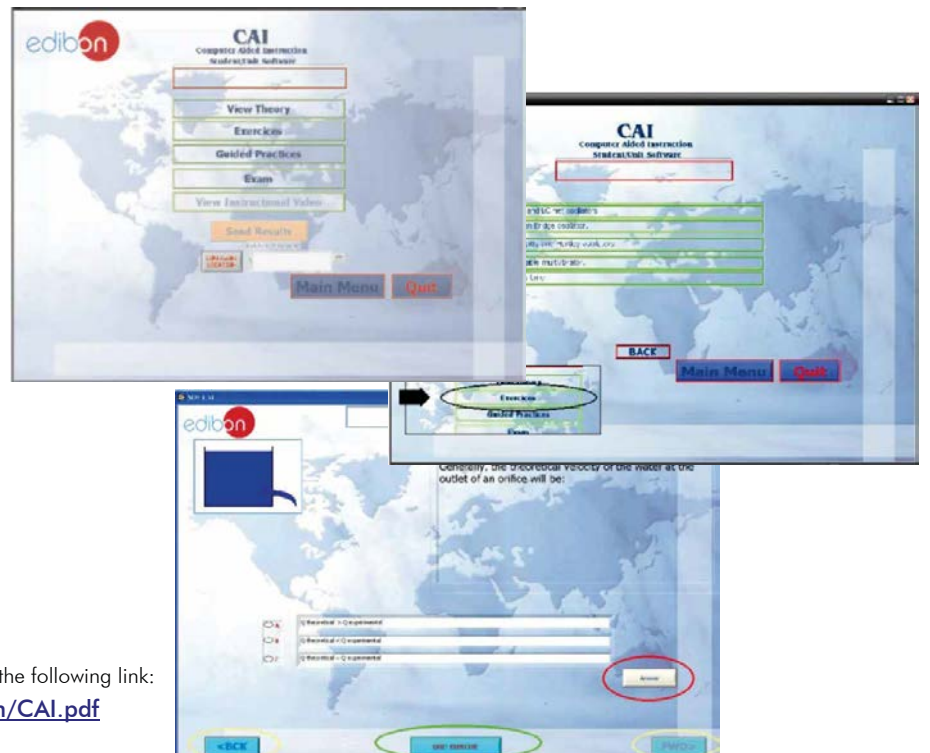
Theory: gives the student the theoretical background for a total understanding of the studied subject.

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.

Student Software



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

MFV/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.

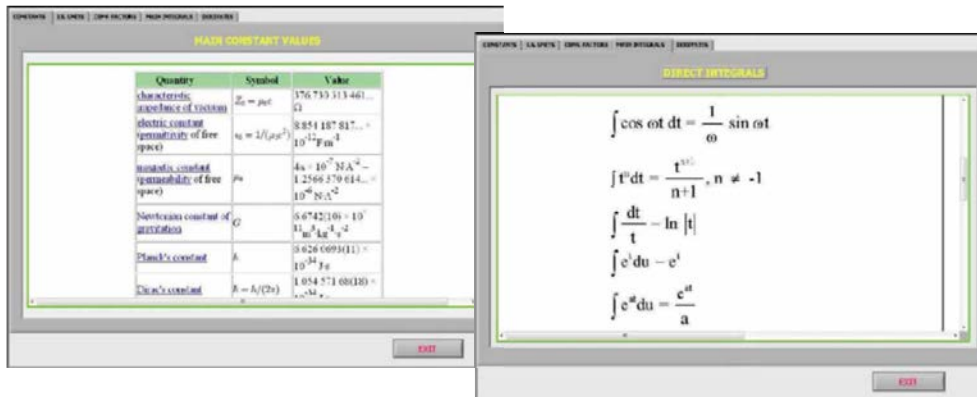
Calculations



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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