



## DESCRIPTION

This unit has been designed to show experimentally that in a cantilever beam subject to transverse loads, at any cross section of the beam:

- The shear force is the algebraic sum of the transverse components of the forces to one side of the section.
- The bending moment is the algebraic sum of the moments of the forces to one side of the section.

Several experiments will be carried out in order to determine the magnitudes of these moments and shear forces, while observing the bending process in a beam.

The "MMF" unit is formed by an aluminium and steel structure that allows us to perform a mechanical study of different structures.

An articulated structure makes it possible to convert the application of one vertical force into both a bending moment and a shearing force on the beam. Both effects are created by the use of a set of weights that balance the system using a double-pulley system.

The different points in which the force can be applied make it possible to study the different reactions of the beam, allowing us to compare the experimental and theoretical results.



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.

Constructed on aluminium profiles with painted (epoxy paint) steel panels.

Double - pulley system which allows us to achieve equilibrium of the bending moment on the beam.

Double - pulley system which allows us to achieve equilibrium of the shear force on the beam.

Different application points for the loads.

"MMF" unit uses a rule made in methacrylate that allows us to equilibrate the system with the absence of weights before beginning each experiment.

3 Hooks to hang weights are provided to carry out the experiments.

In order to carry out some of the practices with MMF unit, 1 set of weights "B 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 cantilever beams subject to loads at different points.
- 2.- Demonstration of the shear force as the algebraic sum of the transverse components of the forces on one side of the section.
- 3.- Study of the equilibrium and the applied balancing forces when the applied masses are varied.

## DIMENSIONS AND WEIGHTS

- Dimensions: 400 x 216 x 350 mm. approx. - Weight: 8 Kg. approx.

## REQUIRED ACCESSORIES

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

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



C/ Del Agua, 14. Polígono Industrial San José de Valderas.  
28918 LEGANÉS. (Madrid). SPAIN.  
Phone: 34-91-6199363 FAX: 34-91-6198647  
E-mail: edibon@edibon.com WEB site: [www.edibon.com](http://www.edibon.com)

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