edibon

Engineering and Technical
Teaching Equipment

Simple Hydraulic Unit

MSH

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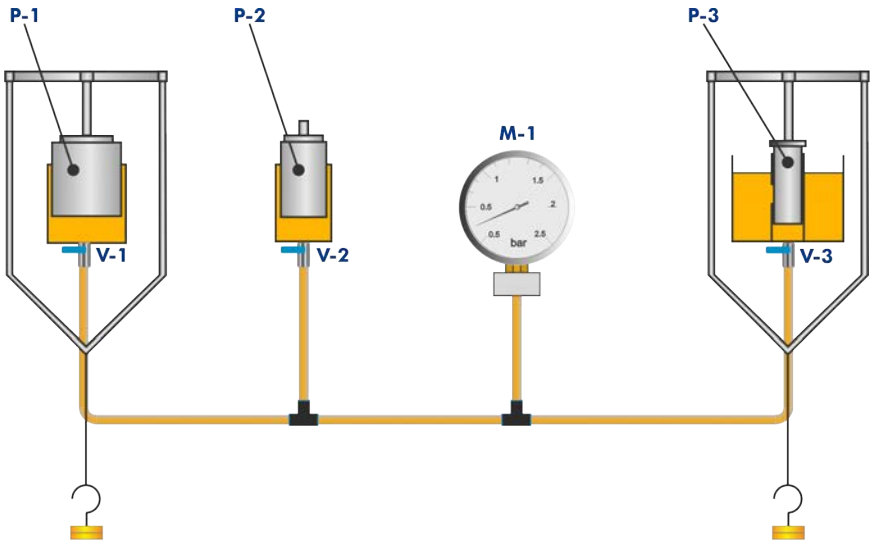
↳PRODUCTS
↳7.- MECHANICS

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



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)

"Worlddidac Quality Charter" and Platinum Member of Worlddidac

INTRODUCTION

A hydraulic unit uses a fluid under pressure to drive machinery or move mechanical components. Hydraulic units are used in all types of industrial environments large and small, as well as in buildings, construction equipment and vehicles.

The Simple Hydraulic Unit, "MSH", has been designed to demonstrate how a fluid can be used to transmit a force and to study the relationships between the force on the pistons, the cross-sectional area of the pistons and the fluid pressure in the unit.

GENERAL DESCRIPTION

The Simple Hydraulic Unit, "MSH", has been designed for studies related to mechanical engineering and motor vehicles. It is used to demonstrate how a liquid can be used to transmit a force.

The unit can also be used to conduct experiments to study the relationships between the force on the pistons, the cross-sectional area of the pistons and the fluid pressure in the unit.

The unit consists of three cylinders and pistons whose cross sections are in the ratio 1, 2 and 6. These three cylinders and the pressure gauge are connected in parallel. With the ON/OFF keys included in the circuit, any of the cylinder units can be isolated from the unit.

Load hangers are supplied.

SPECIFICATIONS

Bench-top unit.

Anodized aluminum frame and panels made of painted steel.

Main metallic elements made of stainless steel.

The "MSH" unit mainly consists of:

- Three pistons of different area:
  - Piston 1. Cross-sectional area: 300 mm^2.
  - Piston 2. Cross section area: 600 mm^2.
  - Piston 3. Cross section area: 1800 mm^2.
- Three valves to isolate each piston.
- Pressure gauge, range: 0 – 2.5 bar.
- Two load hangers, weight: 230 gr.

In order to carry out the practices with "MSH" unit, two "C type" sets of weights are required. (See "Required Elements (Not included)" section).

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

MSH detail

EXERCISES AND PRACTICAL POSSIBILITIES

1.- Study of a hydraulic unit.
2.- Analysis of the force transmitted by a hydraulic unit.
3.- Study of the operation of a hydraulic piston.
4.- Use of a fluid to transmit a force.
5.- Study of the relations between:
The force on the pistons.
The transversal area of the pistons.
The pressure of the fluid in the unit.

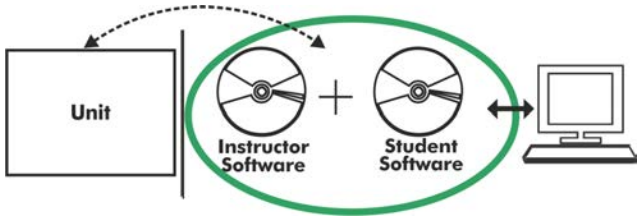
DIMENSIONS AND WEIGHTS

MSH:
-Dimensions: 700 x 650 x 950 mm approx.
(27.55 x 25.59 x 37.40 inches approx.)
-Weight: 25 kg approx.
(55 pounds approx.)

REQUIRED ELEMENTS (Not included)

- 2 "C Type" Sets of weights. Each "C Type" set includes:
1 Weight of 1000 gr (2.20 pounds approx.)
2 Weights of 500 gr (1.10 pounds approx.)
2 Weights of 200 gr (0.44 pounds approx.)
6 Weights of 100 gr (0.22 pounds approx.)
1 Support hook of 500 gr (1.10 pounds approx.)

MSH/ICAI. Interactive Computer Aided Instruction Software:



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

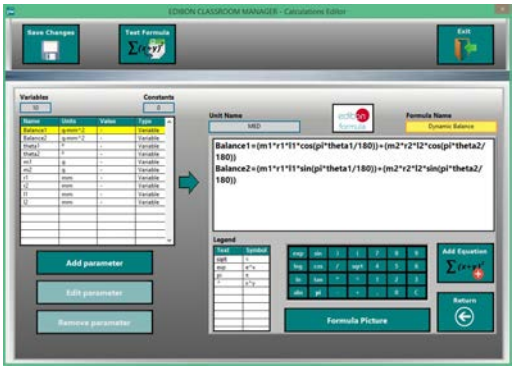
- ECM-SOF. EDIBON Classroom Manager (Instructor Software).

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.

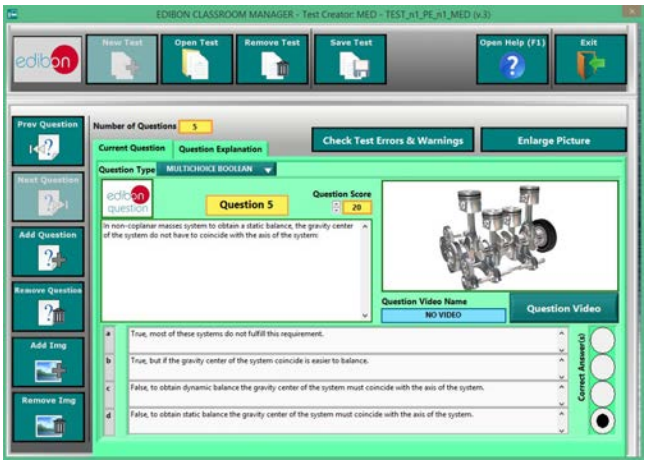
Innovative features:

- **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

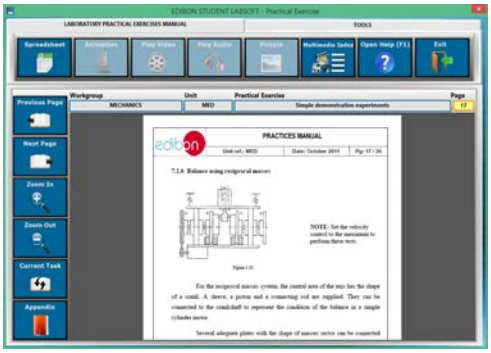
- ESL-SOF. EDIBON Student Labsoft (Student Software).

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.**

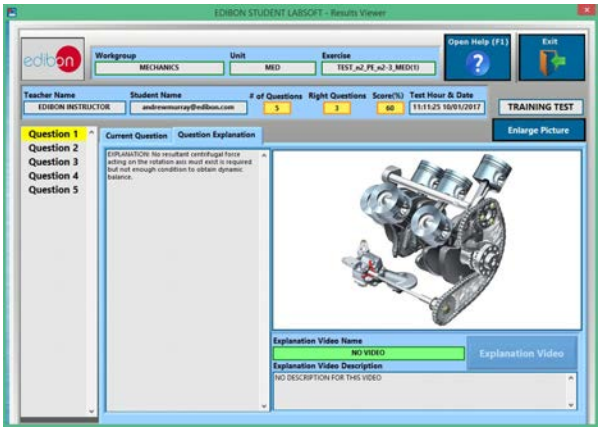
ESL-SOF. EDIBON Student LabSoft (Student Software) Application Main Screen



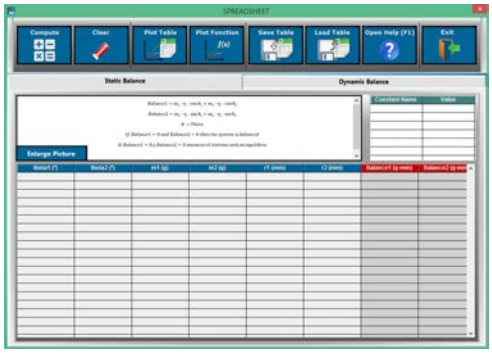
EPE. EDIBON Practical Exercise Program Package Main Screen

For more information see **ICAI** catalogue. Click on the following link:

www.edibon.com/en/files/expansion/ICAI/catalog



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: