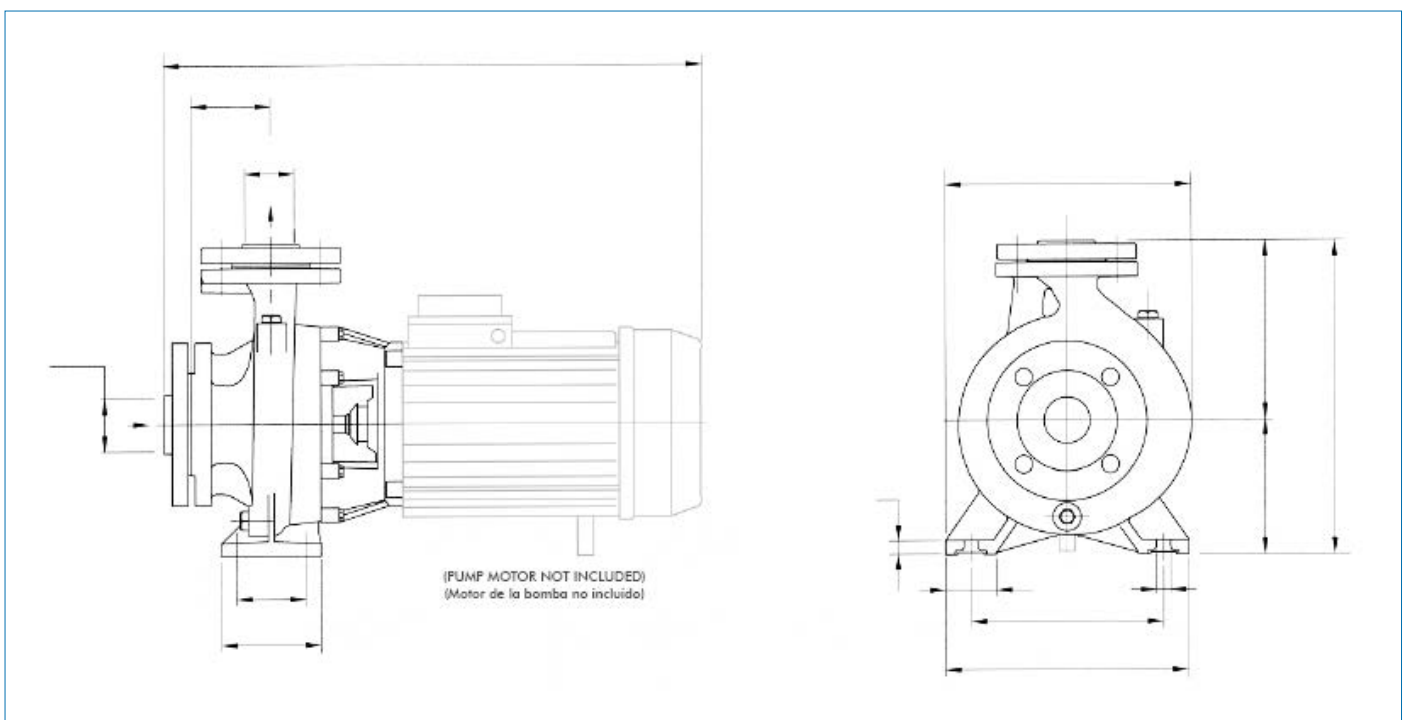




PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



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)



Certificate and Worlddidac Member

INTRODUCTION

There are different fluid driving systems in the industry: pumps for liquids and compressors, fans, turbines, etc. for gases. These types of devices are required when a fluid does not have enough energy (load) to flow from one point of a system to another.

One of the most used devices to make liquids flow is the centrifugal pump, both the single suction and the double suction ones. These types of devices are used to impel different liquids in applications of industrial processes, water treatment, food sector, distillation processes, filtration, etc.

The centrifugal pump impels the fluid thanks to the acceleration suffered when passing through the impeller in motion. This acceleration generated from the center of the impeller outwards is transformed into pressure at its end. At the same time, negative pressures are generated in the fluid suction. In the industry, this type of devices is installed in parallel in most cases, this way frequent maintenance and repairs can be done without stopping the process. This unit allows for studying, understanding and performing these repairs frequently found at industrial level.

The Assembly and Maintenance of a Centrifugal Pump Unit, "AMCP", allows for studying the operation, installation and assembly of this type of devices.

GENERAL DESCRIPTION

The Assembly and Maintenance of a Centrifugal Pump Unit, "AMCP", is a single-stage, normally primed centrifugal pump with spiral housing and enclosed pump impeller with five blades, designed for pure liquids. This unit has been designed to allow the assembly, maintenance, repair and training with a centrifugal pump in technical colleges and in company training centers.

The unit is compact and facilitates both theoretical and practical training. It is supplied as a clearly arranged set consisting of the pump, the case and a set of maintenance and assembly tools. Besides, the shaft of the pump follows the gland sealing principle, allowing the students to understand and study all the components of centrifugal pumps and their operation.

This unit allows several students at the same time, through a systematic process, to assemble or disassemble the pump and to repair it.

The pump is supplied with the corresponding assembly diagrams, two-dimensional plans, identification of the application field, NPSH charts, performances of the pump, operation data, technical name, materials, design according to the norm, plan of the structure and operation manual.

SPECIFICATIONS

Carrying case made of aluminum.

Standard pump according to EN733:

Maximum power: 3000 W.

Maximum speed: 3000 min⁻¹.

Maximum flow rate: 27 m³/h.

Maximum head: 36.8 m.

Intake diameter: DN 50 mm.

Diameter of the impeller: 160 mm.

Delivery diameter: DN 32 mm.

Housing of the pump and impeller: cast iron.

Shaft: AISI 304 steel.

Mechanical seal: ceramic/graphite.

Leak test set:

Manual pump.

Manometer.

Flange connections.

Assembly and disassembly tools set:

Tool case with several compartments.

Four combination wrenches.

Adjustable wrench.

Three-arm puller.

Two straight screwdrivers.

Soft face hammer.

Spare parts: two flat seals and two gland seals.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Identification of a centrifugal pump in an industrial diagram. Introduction to industrial plans understanding (PFD and P&ID).
- 2.- Identification of the main components of a centrifugal pump: impeller, housing, shaft, seals, etc.
- 3.- Operation of a centrifugal pump, analysis of its structure.
- 4.- Study of the tightness with the gland sealing principle.
- 5.- Analysis of frequent failures in a centrifugal pump.
- 6.- Study and assembly of a centrifugal pump.
- 7.- Study and understanding of the maintenance of a centrifugal pump. Repair and disassembly.
- 8.- Study and understanding of the replacement of main components.

DIMENSIONS AND WEIGHTS

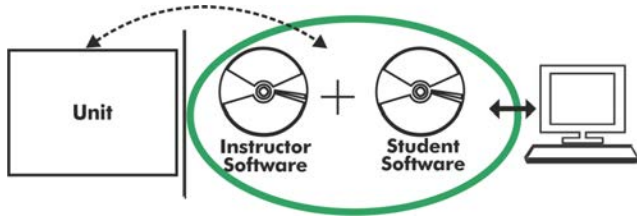
AMCP:

-Dimensions of the case: 700 x 250 x 300 mm approx. (27.55 x 9.84 x 11.81 inches approx.)

-Dimensions of the pump: 50 x 292 mm approx. (1.96 x 11.49 inches approx.)

-Weight: 28 Kg approx. (61 pounds approx.)

AMCP/ICAI. Interactive Computer Aided Instruction Software System:



With no physical connection between unit and computer (PC), 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.

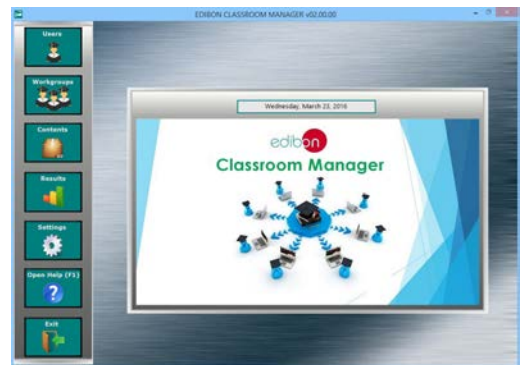
Instructor Software

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

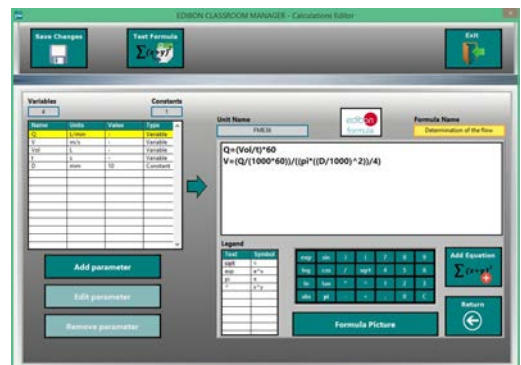
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.

Innovative features:

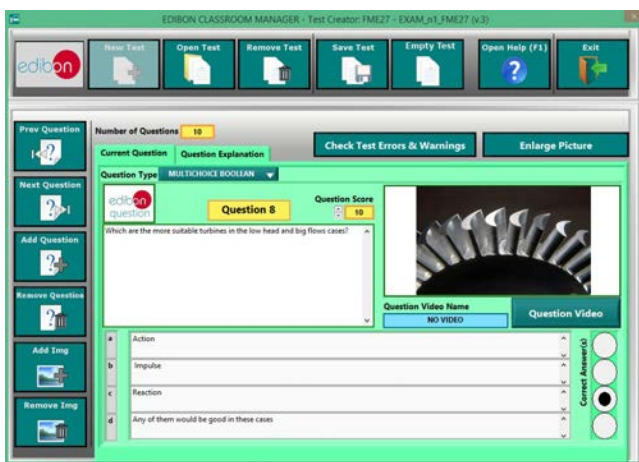
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.
- 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:

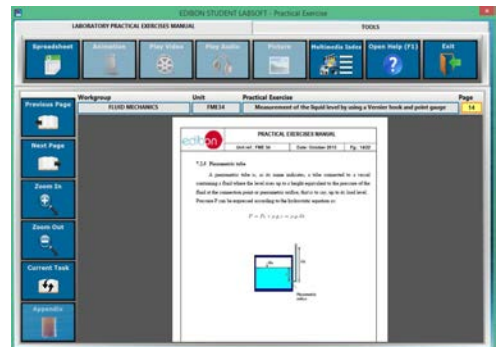
- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.
- Test self-correction.
- Calculations computing and plotting.
- Equation System Solver Engine.
- User Monitoring Learning & Printable Reports.
- Multimedia-Supported auxiliary resources.

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

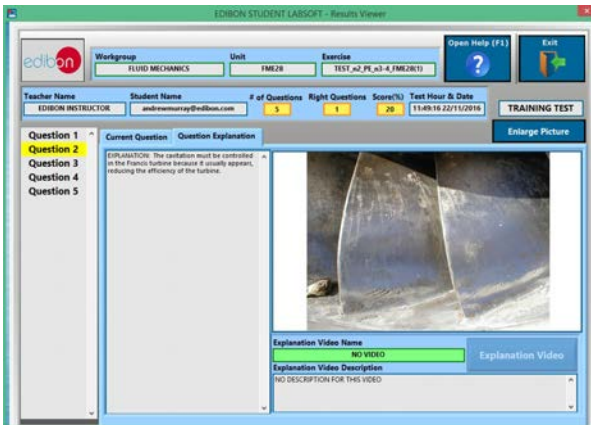
www.edibon.com/en/files/expansion/ICAI/catalog



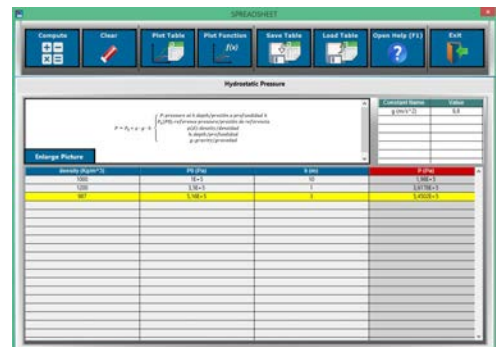
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



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.



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REPRESENTATIVE:

