Backflow Prevention Training Unit

INTRODUCTION

In some industrial processes, special care is required in the circulation of a fluid. This is the case of drinking water circuits, in which a backflow of water containing dirt is a problem.

For this type of process there is a type of valves that prevents the backflow of the fluid, known as check valves or non-return valves. They are devices of automatic actuation that work depending on the direction of circulation or the pressure of the system. When the direction of the fluid is the required the valve remains open, while at the moment when the fluid changes the direction of circulation it automatically closes. The valve opens again when there is pressure in the direction of circulation, which means that the fluid circulates correctly.

There are different types of non-return devices, among which are double check valves, reduced pressure assembly, pressure vacuum breaker, etc.

GENERAL DESCRIPTION

The Backflow Prevention Training Unit, "BFPT", allows verifying the operation of multiple non-return devices.

The system contains the most common backflow prevention devices used in the industry. The main objective is to recognize each element and study its function.

It is a unit designed to allow both a group of students and two to work, since it has a circuit on each side of the structure. Both circuits contain the same elements and their operation is the same.

Each circuit is composed of a water storage tank and a circulatory water pump that allows the flow of fluid through the circuit, driving from the tank and returning the water to it.

The water flows through the pipes crossing different backflow preventers such as standard check valves, two types of double check valve assemblies, two types of reduced pressure assembly, pressure vacuum breakers and gate valves.

In addition, it has ball valves to regulate the passage of fluid through the different pipes.

There is the possibility of forcing the change of flow direction to check the proper operation of each element included in the circuit.

SPECIFICATIONS

Bench-top unit.

Anodized aluminum frame and panels made of painted steel.

Main metallic elements made of stainless steel.

This unit includes wheels for its mobility.

Two standard check valves.

Two double check valves.

Four double check valve assemblies.

Four reduced pressure assemblies.

Eight pressure vacuum breakers.

Ball valves to regulate the pass of the fluid.

Gate valves.

Heavy duty BFP.

Standard duty BFP.

Two water pumps:

    Power: 70 W.

    Elevation max.: 6 m.

Two water storage tanks.

Cables and Accessories, for normal operation.

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.- Test the water circuit with backflow prevention devices.

2.- Study of the circuit changing the direction of the flow.

3.- Show flow indicator and drain return.

4.- Study of the operation of a gate valve.

5.- Study of the differences between a standard and double check valve.

6.- Study of the differences between a double check valve assembly and a reduced pressure assembly.

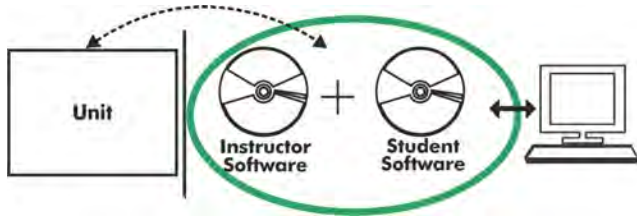7.- Demonstration of the operation of ball valves to change the flow.

REQUIRED SERVICES

- Electrical supply: single phase, 200 VAC- 240 VAC/50 Hz o 110 VAC – 127 VAC/60 Hz, 1 kW.

DIMENSIONS AND WEIGHTS

BFPT:

    - Dimensions: 1900 x 2500 x 800 mm approx.

        (74.80 x 98.42x 31.49 inches approx.)

BFPT/ICAI. Interactive Computer Aided Instruction Software System:

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.
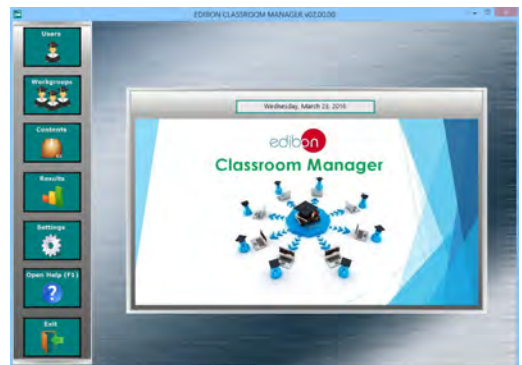
Instructor Software

## - 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
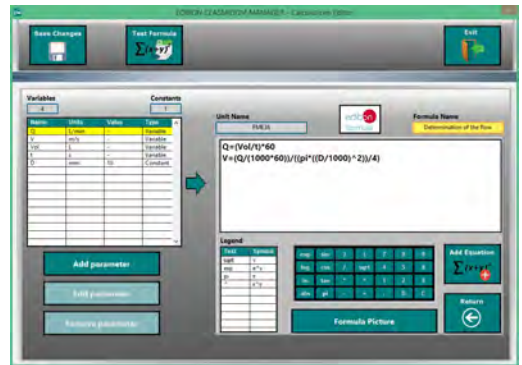
ECAL. EDIBON Calculations Program Package - Formula Editor Screen
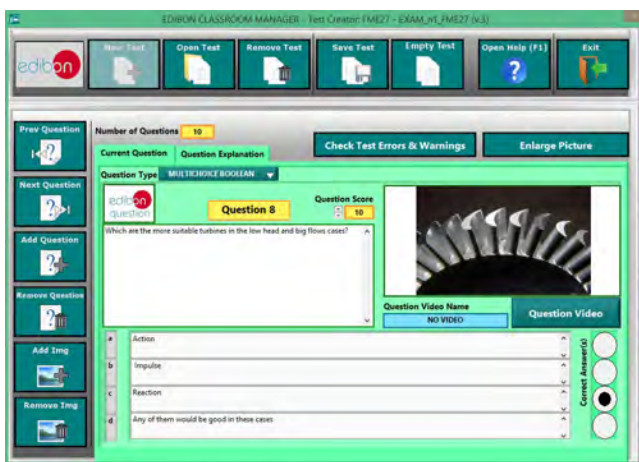
ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question

ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

- 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:
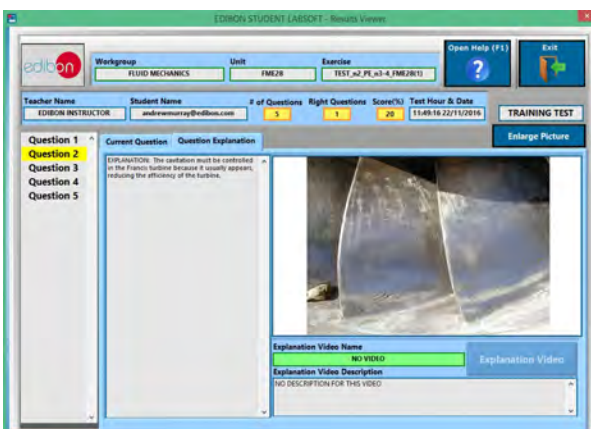
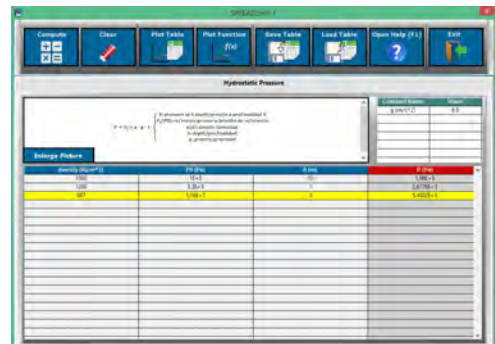**www.edibon.com/en/files/expansion/ICAI/catalog**

ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen
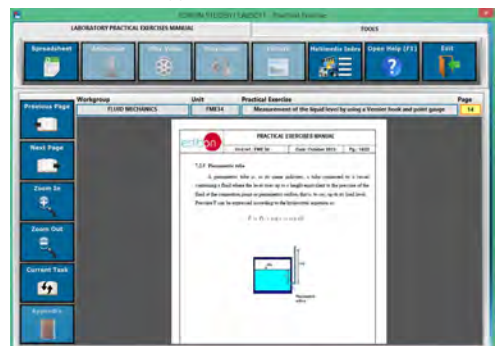
EPE. EDIBON Practical Exercise Program Package Main Screen

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: