edibon

Engineering and Technical Teaching Equipment

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION
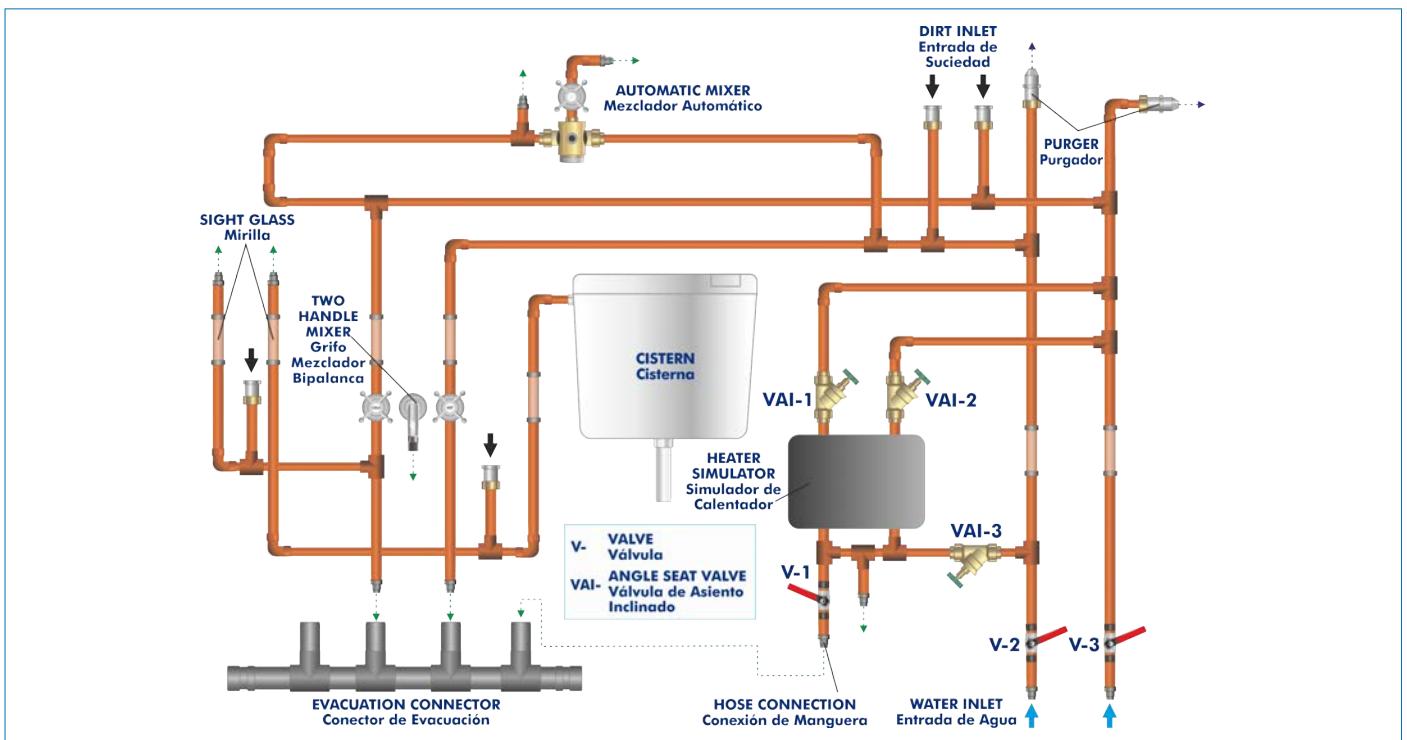
DIRT INLET
Entrada de Suciedad

AUTOMATIC MIXER
Mezclador Automático

PURGER
Purgador

SIGHT GLASS
Mirilla

TWO HANDLE MIXER
Grifo Mezclador Bipalanca

CISTERN
Cisterna

VAI-1   VAI-2

HEATER SIMULATOR
Simulador de Calentador

VAI-3

V-   **VALVE**
       Válvula

VAI-   **ANGLE SEAT VALVE**
       Válvula de Asiento Inclinado

V-1

V-2   V-3

EVACUATION CONNECTOR
Conector de Evacuación

HOSE CONNECTION
Conexión de Manguera

WATER INLET
Entrada de Agua

INTRODUCTION

The supply of drinking water to a house requires three types of systems: cold water, hot water and sanitation, which includes the removal of waste water and rain water. Drinking water enters the house through the supply pipeline, which is the point where the house system is connected to the mains.

Drinking water can be consumed to drink or prepare food without restriction. Drinking water should not contain microorganisms or substances that may cause diseases or harm health.

Cold water systems intended for human consumption consists of several elements, such as tanks, pipes, fittings, etc. that may be in perfect conditions to guarantee safety and hygiene, preventing micro-bacteria development. In this type of system, special attention must be paid to the development of Legionella, a bacteria living in stagnant waters or water with organic matter.

For that reason, it is important to protect drinking water systems, dealing with possible waste in the pipes.

The Pipe Cleaning Training Unit, "TELT", has been designed by EDIBON to study how pipes must be cleaned according to the DIN 1988/83/CE standard, quality guideline related to waters intended for human consumption. It is specially designed for the training of students in the plumbing sector.

GENERAL DESCRIPTION

The Pipe Cleaning Training Unit, "TELT", designed by EDIBON, simulates a real house piping system, so original components used in plumbing systems are employed.

The objective of this unit is to study the cleaning of pipes from the sanitation system, removing possible waste from the drinking water pipes. Among the most common waste there are remnants of sealant, solder, rust, etc.

The panel simulates the real system of a house, so it is composed of original elements found in sanitation systems. The system supplies water to an automatic mixer with temperature safety stop to 70 °C, a two-handle mixer, a toilet tank and possible fittings with hoses.

Water is introduced in the system, using hoses, through cold water intakes, to a minimum pressure of 3 bar. The intakes are connected to a quick-action bleed valve for safety purposes. Part of the water is heated in a boiler simulator that includes a safety valve. Contaminants are introduced in the system through some closable intakes. Besides, the system includes transparent pieces that allow the user to observe the flushing of the pipes from bottom to top.

SPECIFICATIONS

The "TELT" unit consists of:

Anodized aluminum frame and panels made of painted steel.

The unit includes wheels to facilitate its mobility.

Main metallic elements made of stainless steel.

Diagram in the front panel with distribution of the elements similar to the real one.

Ten hose connections with quick-release couplings.

Four closable intakes to pour the contaminants.

Two cold water intakes.

Toilet tank.

Safety elements of the system:

    Bleed valve.

    Hot water safety valve: up to 70 °C.

Thermostatic automatic mixer:

    Minimum flow rate: 300 l/h.

    Maximum pressure: 1 – 5 bar.

    Safety stop for a maximum temperature of 70 °C.

Two-handle mixer.

Hot water boiler simulator.

Sewage line.

Pipes:

    Copper.

    Sections made of PMMA for inside visualization.

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.- Study of pipes flushing techniques according to the DIN 1988/83/CE standard.

2.- Use of original components from plumbing systems.

3.- Understanding the operation of the main elements of a house sanitation system.

4.- Limitations of pipes flushing process.

REQUIRED SERVICES

- Water intake to 3 bar.

DIMENSIONS AND WEIGHTS

TELT:
  -Dimensions: 2000 x 300 x 1300 mm approx.
                 (78.74 x 11.81 x 51.18 inches approx.)
  -Weight: 100 Kg approx.
                 (220 pounds approx.)

TELT/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.
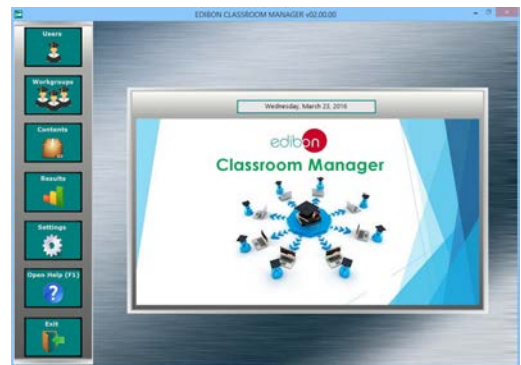
Instructor Software

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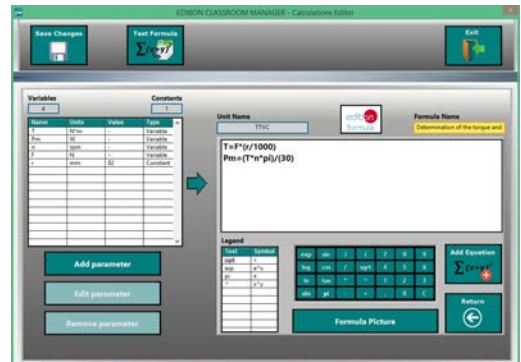
ECAL. EDIBON Calculations Program Package - Formula Editor Screen
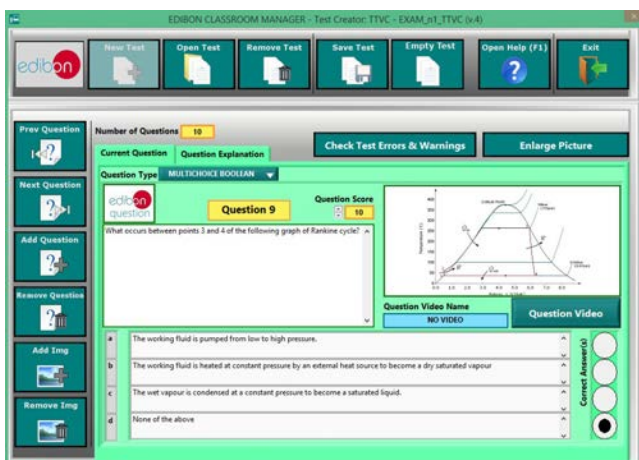
ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question

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

- 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

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

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

EPE. EDIBON Practical Exercise Program Package Main Screen
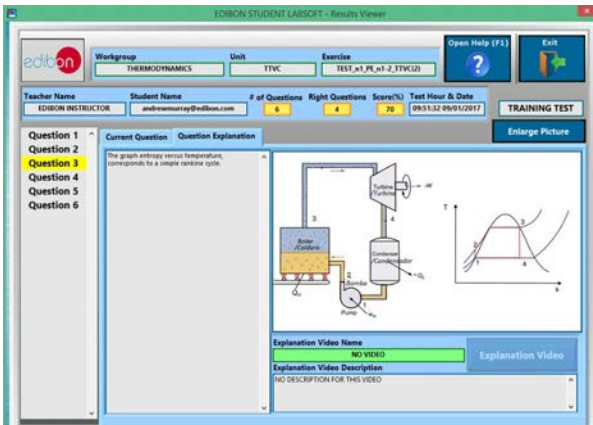
ERS. EDIBON Results & Statistics Program Package - Question Explanation
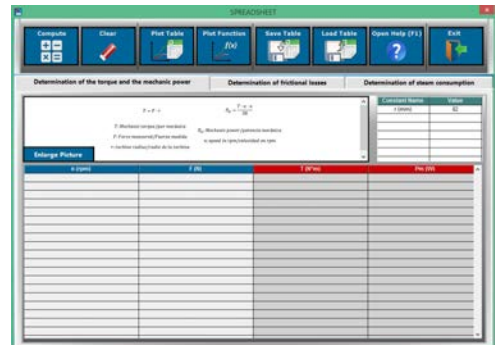
ECAL. EDIBON Calculations Program Package Main Screen

✷ Specifications subject to change without previous notice, due to the convenience of improvement of the product.