

INTRODUCTION

Heating refers to the method or system used to supply heat to a person or a space with the aim of keeping or raising its temperature.

Applied to buildings, heating covers the group of devices and accessories installed to reach and keep thermal comfort conditions during cold seasons, so it is part of air-conditioning systems.

Heating systems are divided into three parts: a heat generation system, it may be a fuel boiler, a system of heating elements or natural or residual calorific energy use; a distribution system, through pipes where the working fluid flows, normally water or air; and a discharge system with radiators, underfloor heating, etc.

There are two types of heating systems, according to their extension: central heating and space heating. In the first case, heat is generated in one place and it is distributed through pipes to the rooms to be heated. In the second case, only one apparatus generates and emits heat in a room.



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

GENERAL DESCRIPTION

The Radiators Training Unit, "TRT", has been designed to study hot water heating systems. These systems are called that way because they use water as working fluid between the generation system, usually a boiler, and the emitters, such as radiators, used in the spaces to be heated. The generated hot water is transported through pipes.

The unit simulates a heating system. It consists of four radiators with a thermostatic valve each to control the temperature and close the flow of water when a specific temperature is reached, a bleed valve to purge air from the pipes and a lockshield valve.

Hot water enters the system through hot water connections with quick-release couplings. The hot water entering the radiators is measured with rotameters. Cold water is used as coolant. It enters the system through connections with ball valves and is used to dissipate the heat generated.

SPECIFICATIONS

Anodized aluminum frame and panels made of painted steel.

The unit includes wheels to facilitate its mobility.

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

Heating system:

Four radiators:

Heat exchanger with 10 plates.

Each radiator includes:

Thermostatic valve to control the temperature of the radiators.

Bleed valve to purge air from the system.

Lockshield valve.

Four automatic air vents.

Five rotameters:

Four of them with a range of 30 – 300 l/h.

One of them with a range of 50 – 1000 l/h.

Four water connections:

Two DN 15 cold water connections with ball valves and quick-release fittings.

Two DN 15 boiler water connections with gate valves (regulating valves) with quick-release fittings.

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

EXERCISES AND PRACTICAL POSSIBILITIES

1.- Study and understanding of a hot water heating system.

2.- Study of the operation of a thermostatic valve.

3.- Study of the operation of an adjustable lockshield valve.

4.- Study of the characteristic curves of pipes under different operation conditions.

REQUIRED SERVICES

- Hot and cold water supply.

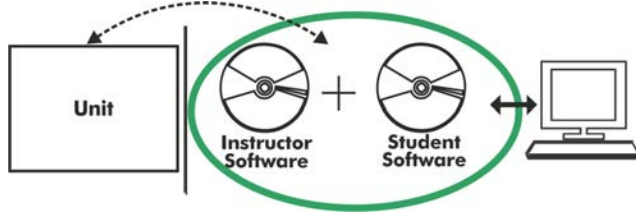
- Drain.

DIMENSIONS AND WEIGHTS

TRT:

-Dimensions: 1700 x 700 x 1900 mm approx.
(66.92 x 27.55 x 74.80 inches approx.)

-Weight: 90 Kg approx.
(198.41 pounds approx.)

TRT/ICAI. Interactive Computer Aided Instruction Software System:

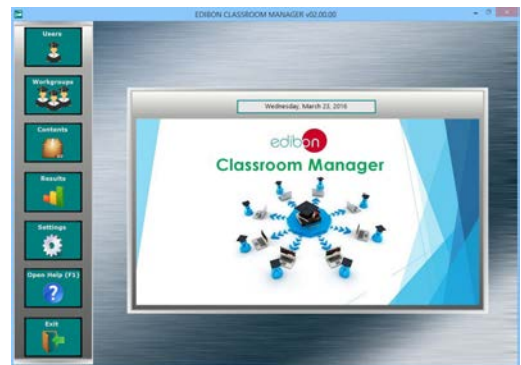
With no physical connection between unit and computer, this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.

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

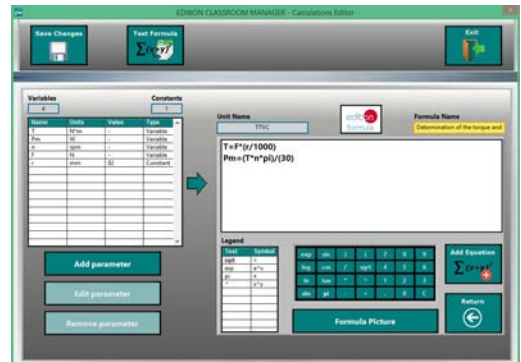
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

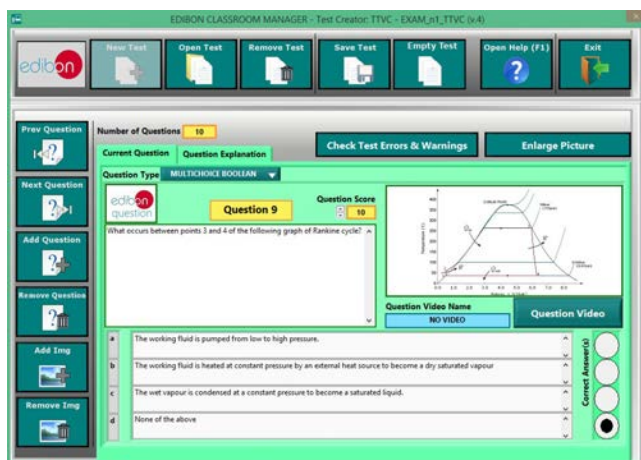
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

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:

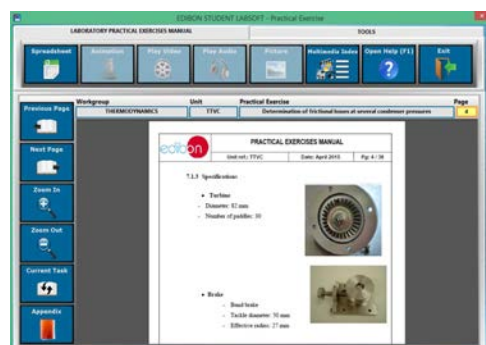
- **Student Log-In & Self-Registration.**
- **Existing Tasks checking & Monitoring.**
- **Default contents & scheduled tasks available to be used from the first session.**
- **Practical Exercises accomplishment by following the Manual provided by EDIBON.**
- **Evaluation Methods to prove your knowledge 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:

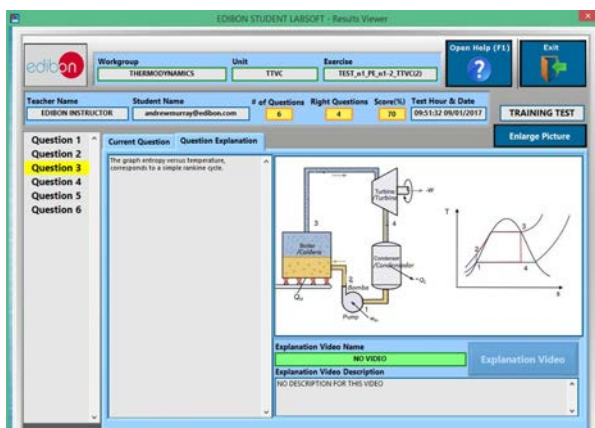
www.edibon.com/en/files/expansion/ICAI/catalog



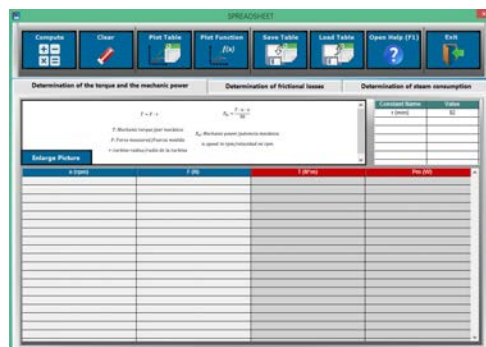
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



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:

