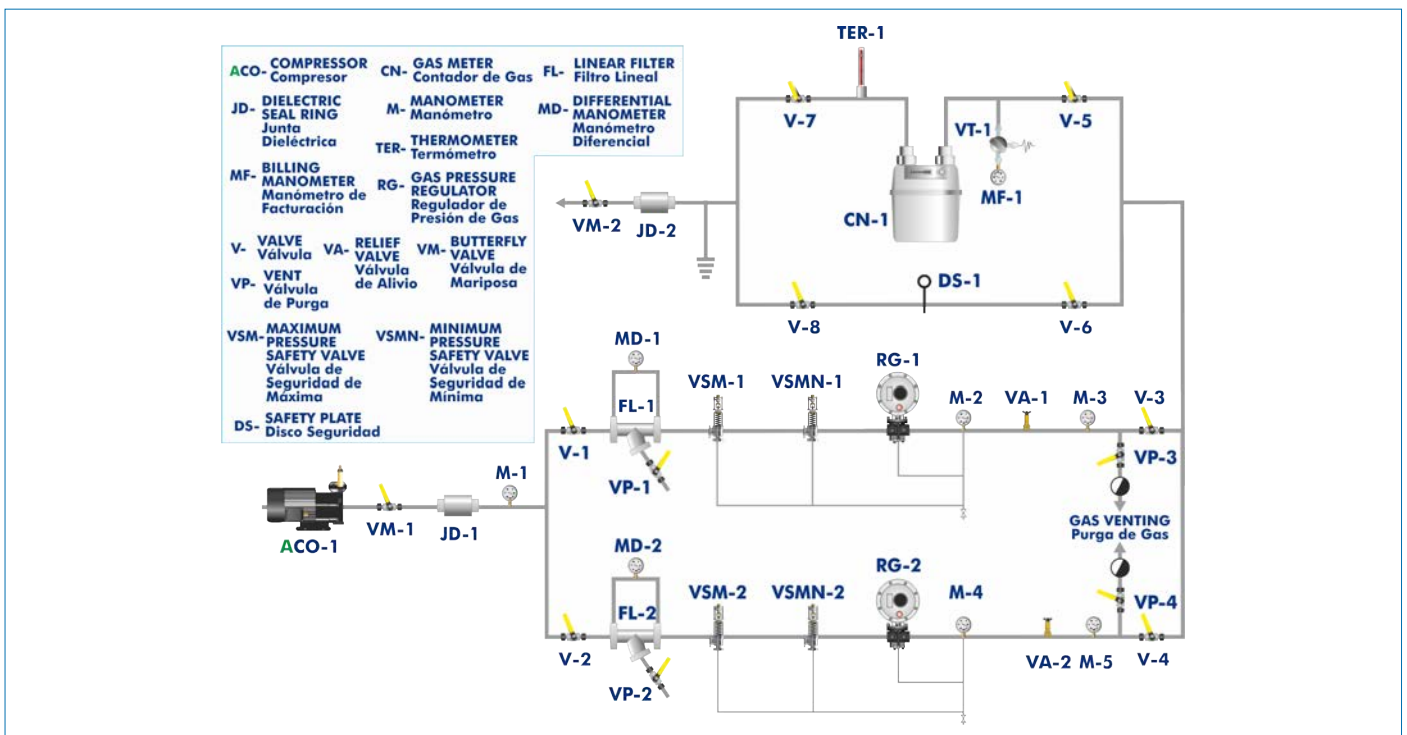




## PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



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

The gas lines that provide a service to homes, offices and home devices are supplied by a turbine that impels the gas through the piping, providing the pressure required to make the gas flow. The gas supply must have specific conditions: pressure within a certain range, correct temperature and controlled level of cleanliness. Likewise, the chemical composition of natural gas must be controlled. Finally, the amount of consumed gas and the calorific value must be known in order to bill the consumed fuel.

Measurement and regulation stations are located at delivery spots (supply line outlets), being their function to regulate the gas supply pressure to the turbine to keep always a constant pressure and to measure the amount supplied to the installation. This type of stations is also found before distribution points to homes, offices and small industries in order to supply the gas at the service pressure.

The Measurement and Regulation Station Trainer, "MRST", allows for studying the operation, requirements, installation and assembly of this type of stations. It also allows the understanding of the construction methods and guides the student in the protection of piping and welds required by the regulations and by the utilities according to good practice.

## GENERAL DESCRIPTION

The Measurement and Regulation Station Trainer, "MRST", designed by EDIBON is a totally accessible bench-top unit.

The unit works with an air compressor that simulates the gas flowing inside the pipes (air testing), allowing to check the tightness of the station. This unit includes all the components required in this type of stations: two filters to remove any solid particle from the gas, two pressure reducing valves (pressure regulators), a gas meter, two triggers (safety valves), two different gas lines (pipes), pressure taps and connection push-in fittings. The station is regulated by several valves (butterfly valves and ball valves) installed in the corresponding gas lines. It also includes the safety systems required in a real regulation station.

Furthermore, checking the pressures and the valves of the regulation station is also possible. The unit is mounted with DN25 and DN32 pipes and flanges.

## SPECIFICATIONS

Main metallic elements made of stainless steel.

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

### Main components of the station:

Air compressor:

Maximum flow rate: 350 l/min.

Maximum pressure: 10 bar.

Ten cut-off valves (butterfly and ball) approved for gas.

Two line filters: DN25/PN16.

Four pressure triggers:

Two maximum pressure triggers: 400 - 800 mbar.

Two minimum pressure triggers: 8 - 45 mbar.

Gas meter. Maximum flow: 10 m<sup>3</sup>/h.

Five pressure manometers:

High pressure manometer: 0 - 16 bar.

Four low pressure manometers: 0 - 0.6 bar.

Two differential manometers: 0 - 1000 mbar.

Billing manometer.

One thermometer: -10 – 50 °C.

Two relief valves: 16 - 2100 mbar.

Two dielectric joints: PN10.

Two pressure regulators: 0.5 bar.

### Assembly and disassembly tools set:

Tool case with several compartments.

Six combination wrenches.

Two flat screwdrivers.

Soft face hammer.

Spare gaskets for all the connections.

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.- Identification of the components of a regulation station (PDF and P&ID). | 7.- Gas filters replacement in a measurement and regulation station. |
| 2.- Study of the regulation systems, pressure triggers and relief valves.    | Additional practical possibilities:                                  |
| 3.- Checking the tightness of the regulation station.                        | 8.- Study of the protection systems for pipes and welds.             |
| 4.- Start-up procedure for a regulation station.                             | 9.- Study of current regulations.                                    |
| 5.- Maintenance procedure for a measurement and regulation station.          | 10.-Construction method for regulation stations.                     |
| 6.- Gas meter replacement in a measurement and regulation station.           |  |

## DIMENSIONS AND WEIGHTS

MRST:

- Dimensions: 1000 x 2000 x 1500 mm approx.  
(39.37 x 78.74 x 59.05 inches approx.)
- Weight: 100 Kg approx.  
(220 pounds approx.)

**MRST/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.

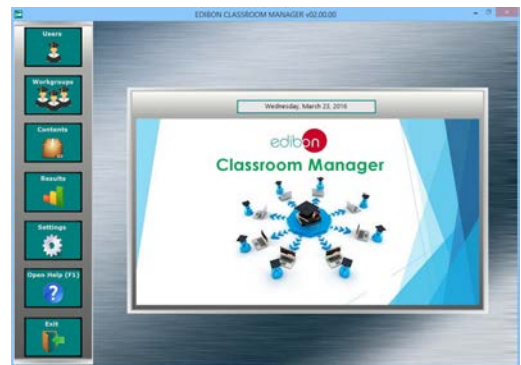
Instructor Software

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

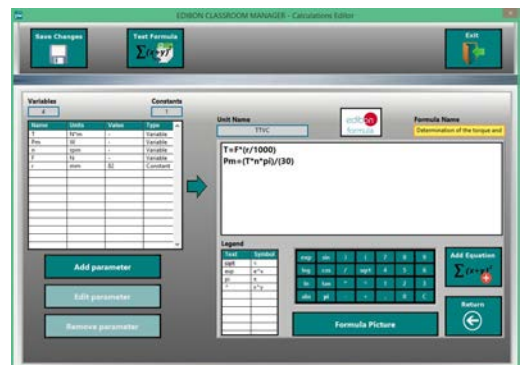
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

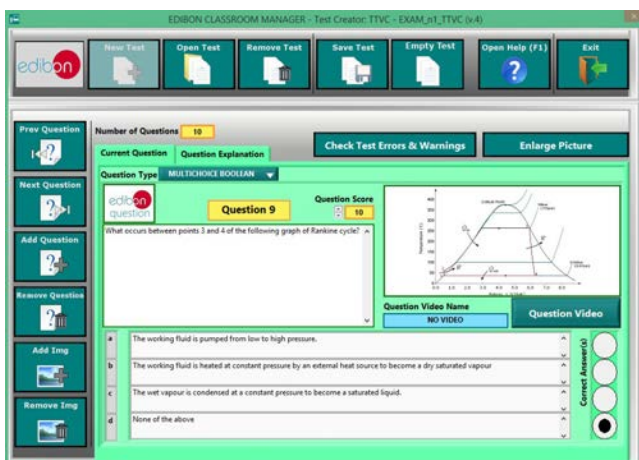
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

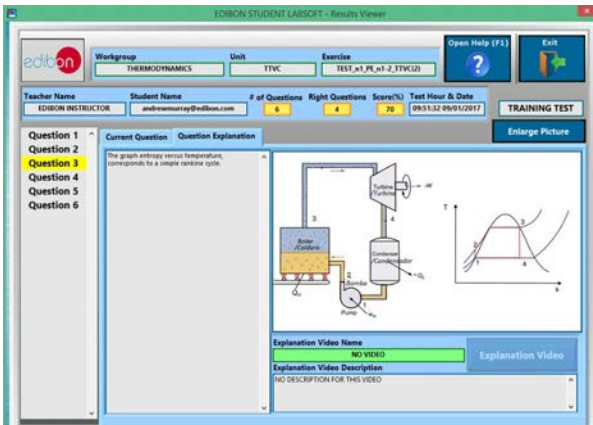
[www.edibon.com/en/files/expansion/ICAI/catalog](http://www.edibon.com/en/files/expansion/ICAI/catalog)



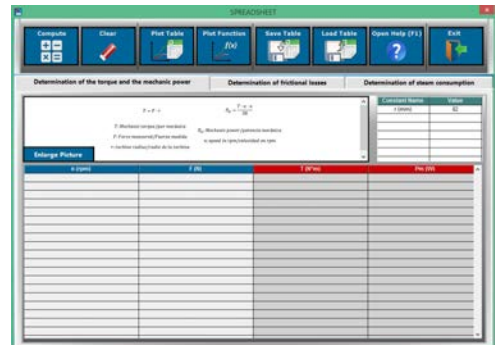
ESL-SOF. EDIBON Student LabSoft (Student Software)  
Application Main Screen



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:

