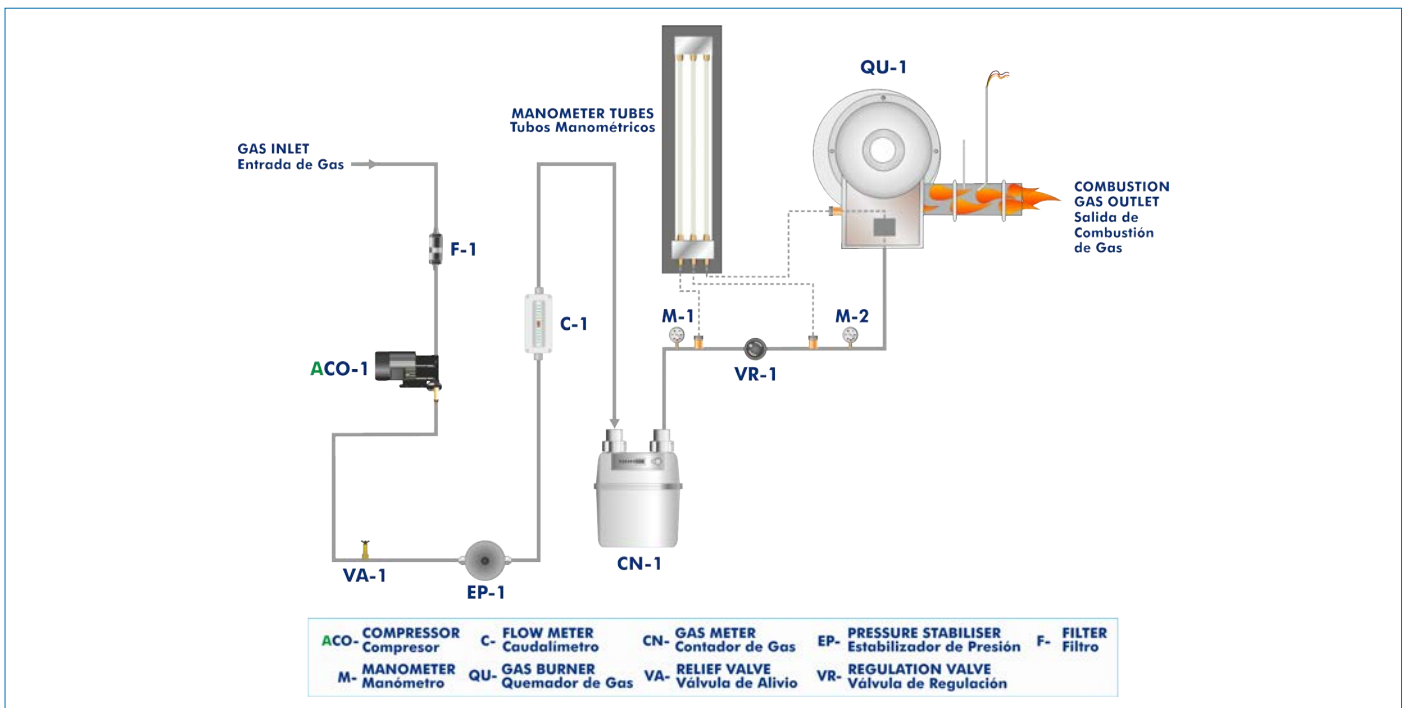




PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



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 machines and types of devices in the heat generation field, both at industrial and domestic level, used to heat from tap water to solids and some gases. This type of devices uses different heat generation systems, from electric systems to combustion with different types of fuels: paraffin, diesel oil, pellets, coal and gas, among others.

Forced air gas burners have a powerful fan inside that ensures the exhaust of the combustion gases to the outside. This system is safer and allows the heater installation in confined or poorly ventilated spaces. It is important to study and understand this system in order to carry out the repair of faults in domestic installations.

GENERAL DESCRIPTION

The Forced Air Gas Burner Trainer, "GBT", designed by EDIBON, is a compact teaching unit with wheels to facilitate its mobility. It represents a controlled gas system that supplies a forced air gas burner. It allows the study of the arrangement, measuring elements and safety devices required by a forced air gas burner system.

The unit works with air, simulating the operation of the burner, so it can be safely used in a classroom or laboratory. It includes a compressor that supplies the air required to work with the unit.

The main element of the unit is a commercially available forced air gas burner that includes the required safety systems: gas pressure, flame detection, thermostat, pressure switch, flame safeguard, etc. All the states of the burner and the sequences of the burner start control can be displayed in a front panel with LEDs and, thus, monitor the burner flame safeguard service.

The unit allows for regulating the supply gas flow with a pressure regulator and the intake gas flow to the burner through a control valve, as well as setting the nominal load of the burner and calculating the gas flow rate and operating volume. The unit includes a flow meter, a pressure regulator and a real gas meter for those purposes. There are analog manometers and tube manometers to observe the most important operating pressures.

The unit has a HMI screen in the back side that allows the selection of errors in the burner sequence, programming it to simulate these errors when it is started. With this system the student can observe the different breakdowns and learn how to identify them.

The unit can be used by several students at the same time. They can act on the elements of the line; carry out maintenance and tune-up operations and fault finding and repair.

SPECIFICATIONS

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.

Components of the gas line:

Relief valve.

Pressure regulator. Range: 0.4 – 0.04 bar.

Home gas meter. Maximum flow: 6 Nm³/h.

Flow control valve.

Compressor:

Diaphragm pump. Power: 62 kW.

Maximum flow rate: 95 l/min.

Maximum pressure: 0.4 bar.

Gas burner:

Forced air gas burner. Thermal power: 5 – 45 kW.

Inlet valve of the gas burner.

Filter.

Forced air fan.

Flame detector.

Thermostat.

Air minimum pressure switch.

Gas minimum pressure switch.

Measurements:

Pressure manometers:

Analog manometer and tube manometer in the gas line.

Analog manometer and tube manometer in the gas burner inlet.

Tube manometer for minimum inlet pressure.

Air flow meter. Range: 0 – 35 l/min.

Additional tools:

Flat-blade screwdriver to regulate the pressure regulator.

Star screwdriver to regulate the pressure switches.

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.



GBT detail

EXERCISES AND PRACTICAL POSSIBILITIES

- | | |
|--|---|
| <ol style="list-style-type: none">1.- Identification and management of the components required for a real gas line.2.- Study and analysis of the tune-up operations for the forced air gas burner.3.- Study of the ignition procedure and the nominal load adjustment of a gas burner.4.- Study and analysis of the gas flow rate and the operating volume.5.- Substitution procedure of the main components for a real gas line.6.- Faults study, analysis and repair. | <p>Additional practical possibilities:</p> <ol style="list-style-type: none">7.- Pressure regulation through the pressure stabilizer.8.- Gas leak detection. |
|--|---|

REQUIRED SERVICES

- Electrical supply: single-phase, 220 V/50 Hz or 110 V/60 Hz.

DIMENSIONS AND WEIGHTS

- GBT:
- Dimensions: 1550 x 900 x 1800 mm approx.
(61.02 x 35.43 x 70.86 inches approx.)
 - Weight: 80 Kg approx.
(176 pounds approx.)

GBT/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.

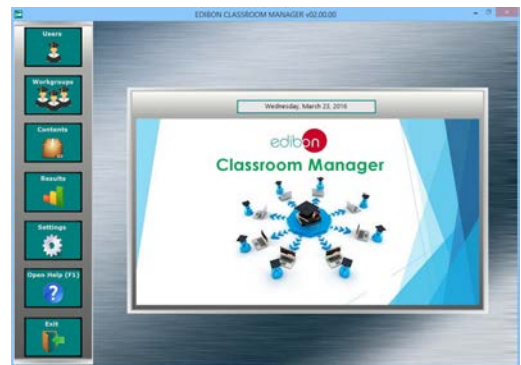
Instructor Software

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

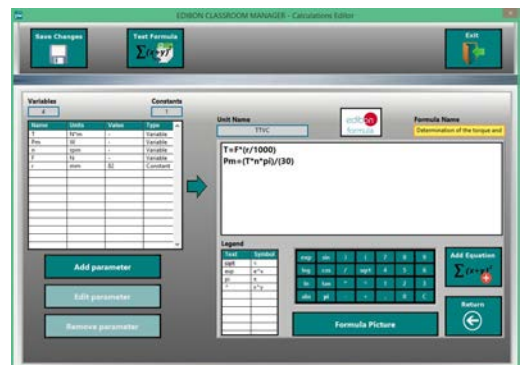
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

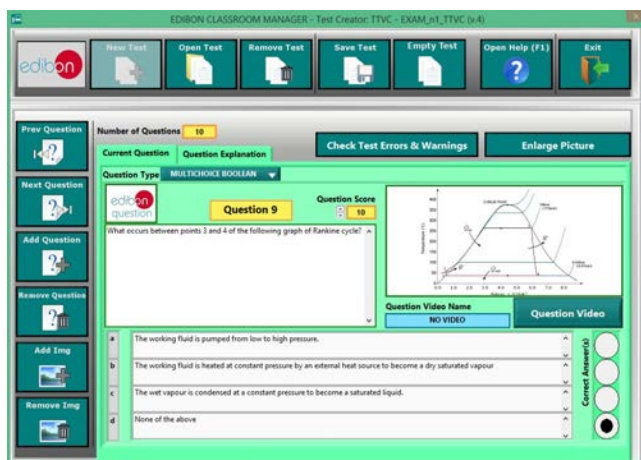
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

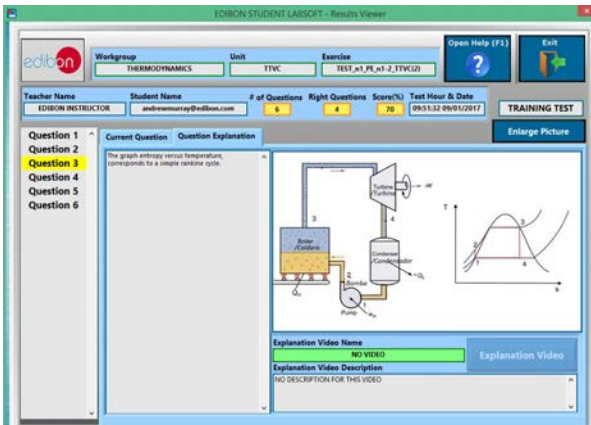
www.edibon.com/en/files/expansion/ICAI/catalog



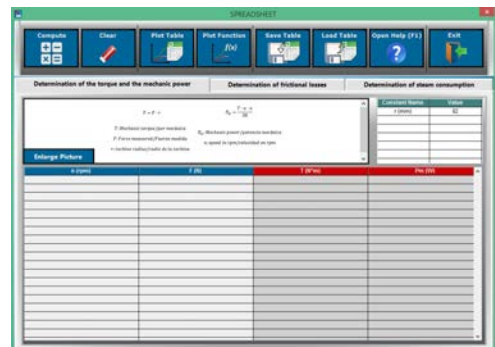
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



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:

