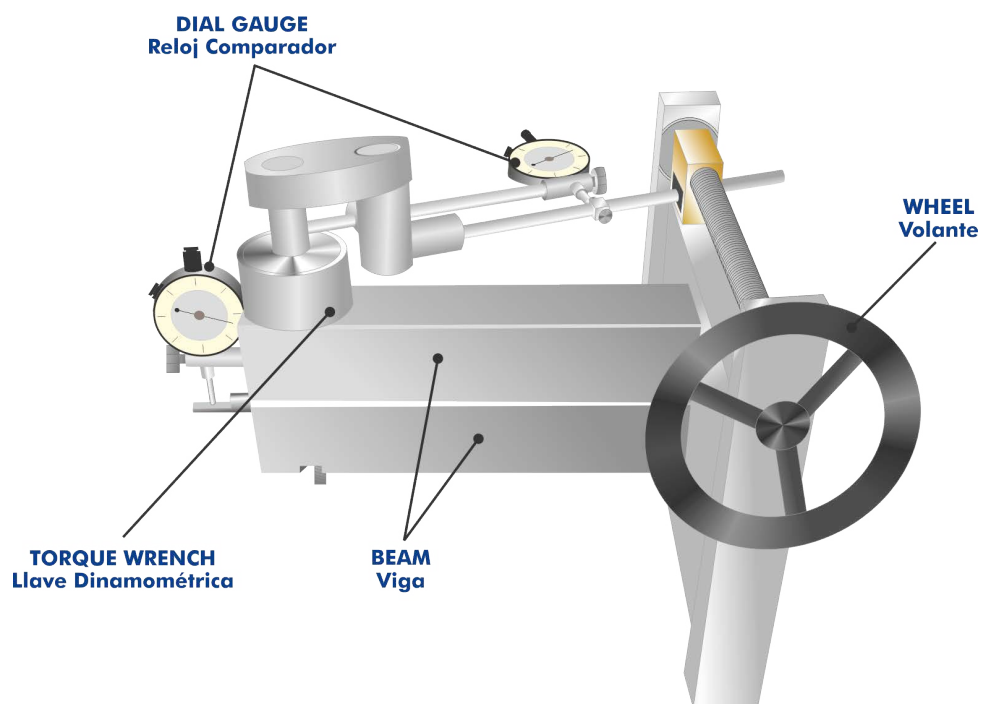




PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



INTRODUCTION

The tightening torque is defined as the force applied to a screw or nut. It is usually measured in units of force and distance of the International System of Units (SI) [Nm]. This force measurement is very useful to know how much tension screws and nuts support or must support in a joint.

The Screw Joint Testing Unit, "MSCT", designed by EDIBON, is a device that allows to measure the tightening torque of a screw with a particular metric, which is related to a strain produced in both bars.

GENERAL DESCRIPTION

The Screw Joint Testing Unit, "MSCT", represents the simulation of a tightening set consisting of a screw and a nut on two rectangular shaped beams.

A very precise torque wrench performs the tightening through a threaded rod and a flywheel. The screw and nut join two steel bodies (rectangular-shaped bars), which are separated at a certain distance. The action of the screw and nut produces an elastic strain in the steel bars generated by the axial tension produced in the screw body. The displacement produced (strain) is collected by a dial indicator enabling the analysis of the torsional torque, with which the tightening has been performed.

The screw head presents an axial bearing that allows friction to be negligible at this point. In this way, you can calculate the friction of the screw thread itself with the nut.

SPECIFICATIONS

Bench-top unit.

Anodized aluminum frame and panels made of painted steel.

Main metallic elements made of stainless steel.

The "MSCT" unit mainly consist of:

- Two rectangular-shaped steel beams.

- Torque wrench with ratchet, tightening range: 0 – 80 N · m.

- Fastener: M8.

- Nut.

- Tightening spindle and flywheel:

 - Maximum tightening torque: 30 N · m.

 - Maximum axial load: 40 kN.

- Box of same-sized spare screws and different materials.

- Two dial indicators: 0 – 20 mm. They measure the strain in beams. Precision: 0.01 mm.

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



MSCT detail

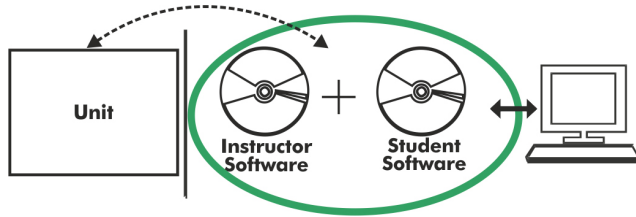
EXERCISES AND PRACTICAL POSSIBILITIES

- | | |
|---|--|
| 1.- Study, definition and understanding of the torsional torque (tightening force). | 4.- Calculation of the axial force exerted by the screw and nut, according to the tightening torque. |
| 2.- Study, definition and understanding of elastic strain in beams. | 5.- Calculation of the axial force made by the screw and force according to the elastic strain. |
| 3.- Analysis and study of friction in the screw thread. | |

DIMENSIONS AND WEIGHTS

MSCT:

- Dimensions: 400 x 300 x 500 mm approx.
(15.74 x 11.81 x 19.68 inches approx.)
- Weight: 25 Kg approx.
(55 pounds approx.)

MSCT/ICAI. Interactive Computer Aided Instruction Software:

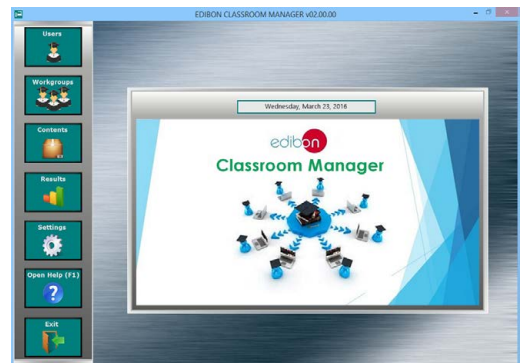
With no physical connection between unit and computer, this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment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

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

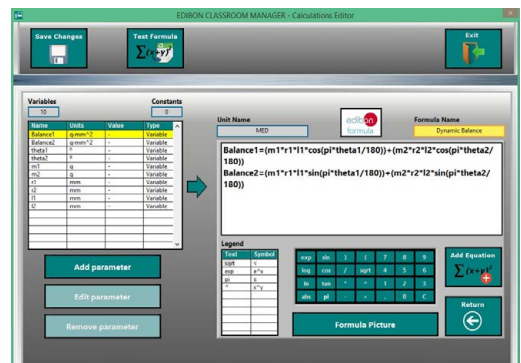
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

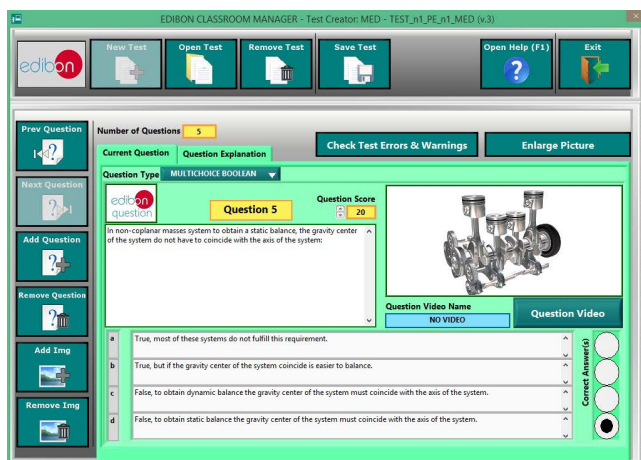
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

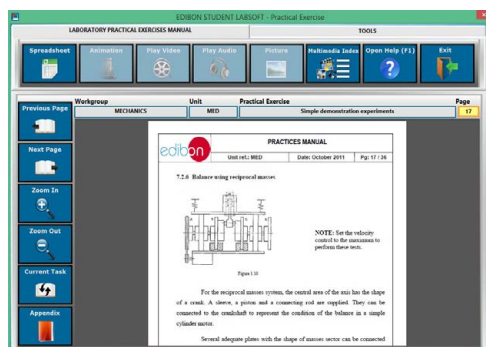
- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.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

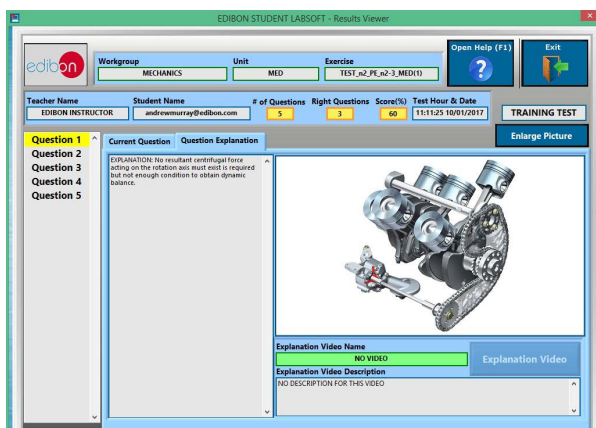
www.edibon.com/en/interactive-computer-aided-instruction-software



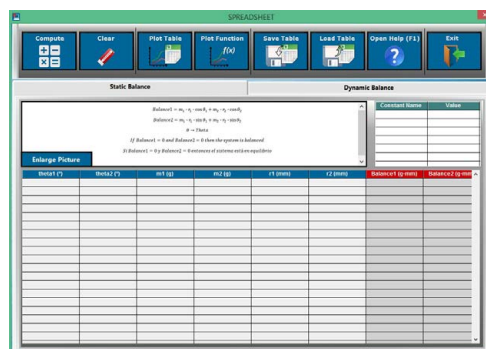
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



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:

