



INTRODUCTION

A belt is a loop of flexible material used to link two or more rotating shafts mechanically. Belts may be used as a source of motion, to transmit power efficiently, or to track relative movement. Belts are looped over pulleys. In a two pulley system, the belt can either drive the pulleys in the same direction or it may be crossed, so that the shafts have opposite directions. As a source of motion, a conveyor belt is one application where the belt is adapted to carry a load between two points continuously. Belt friction is a term describing the friction forces between a belt and a surface, such as a belt wrapped around a bollard. When one end of the belt is being pulled, only part of this force is transmitted to the other end. The friction force makes tension in the belt be different at both ends.

In practice, the theoretical tension acting on the belt or rope calculated by the belt friction equation can be compared to the maximum tension the belt can support. This helps a designer of such a rig to know how many times the belt or rope must be wrapped around the pulley to prevent it from slipping. Mountain climbers and sailing crews demonstrate a standard knowledge of belt friction when accomplishing basic tasks.



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 Belt Friction Unit, "MCF", allows us to carry out studies and investigations to compare the driving torque for a given degree of overlap of a flat belt (leather or rope) and a V belt.

With this unit the relationship between the tensions in the two sides of a belt can be observed, to evaluate the differences between flat (leather or rope) and V belts and to investigate the effect of the angle lap, among others.

Tension is introduced into the belt by hanging masses or weights. The slipping torque is determined by the addition of suitable masses attached to a cord wrapped round the drum.

SPECIFICATIONS

Bench-top unit with adjustable legs.

Anodized aluminum frame and panels made of painted steel.

The "MCF" unit mainly consists of:

Four pulleys: a flat one and three V pulleys (one of them is correctly fitted and the others are badly fitted).

The pulleys are balanced and mounted on bearings to reduce frictional losses. It has machined grooves to suit the belts.

The angle of overlap can be varied in increments of 10° .

Five belts:

- One V-shaped toothed belt, 10 mm width.
- One V-shaped flat belt, 10 mm width.
- One V-shaped flat belt, 13 mm width.
- One flat belt made of leather.
- One flat belt made of rope.



MCF detail

In order to carry out some of the practices with "MCF" unit, two "B type" set of weights is required. (See "Required Accessories" section)

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.- Investigation of the relationship between the belt tensions and the angle of lap for a flat belt.
- 2.- Comparison of the driving torque for a given angle of lap.
- 3.- Evaluation of the differences between flat belts and V-shaped belts.
- 4.- Evaluation of the differences between V-shaped toothed and flat belts.
- 5.- Determination of the coefficient of friction between the pulley and belt for the belt sections.
- 6.- Verification of the belt tension equation.

Additional practical possibilities:

- 3.- Evaluation of the differences between flat belts and V-shaped belts.
- 4.- Evaluation of the differences between V-shaped toothed and flat belts.

REQUIRED ACCESSORIES (Not included)

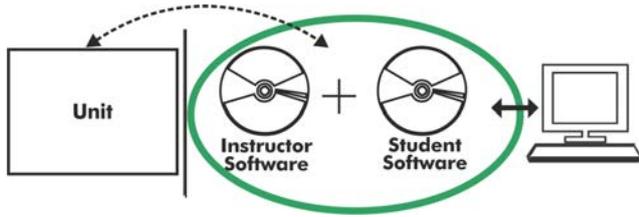
- 2 "B type" set of weights. Each "B type" set included:
 - 6 weights of 200 g. (0.44 pounds)
 - 6 weights of 100 g. (0.22 pounds)
 - 2 weights of 50 g. (0.11 pounds)
 - 2 weights of 20 g. (0.044 pounds)
 - 2 weights of 10 g. (0.022 pounds)
 - 1 support hook of 100 g. (0.22 pounds)

DIMENSIONS AND WEIGHTS

MCF:

- Dimensions: 550 x 500 x 600 mm approx.
(21.65 x 19.68 x 23.62 inches approx.)
- Weight: 15 Kg approx.
(33 pounds approx.)

MCF/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:

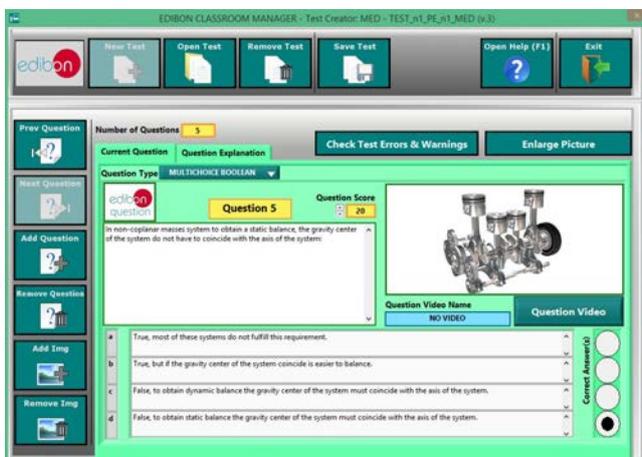
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

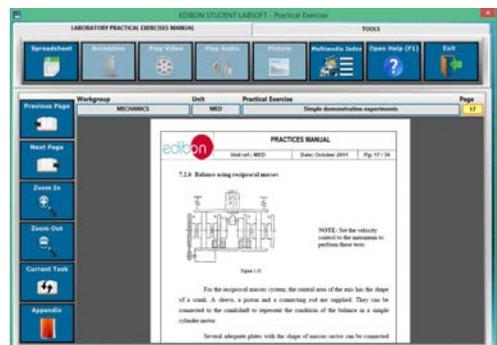
- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.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

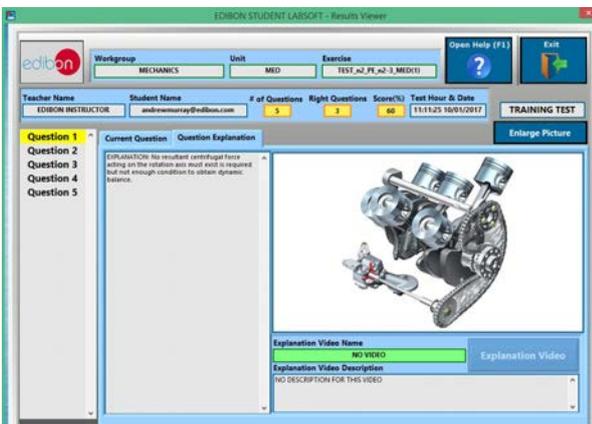
www.edibon.com/en/files/expansion/ICAI/catalog



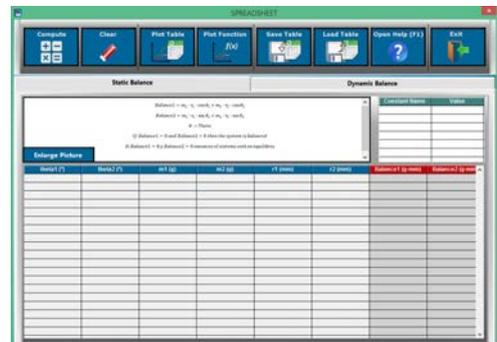
ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen



EPE. EDIBON Practical Exercise Program Package Main Screen



ERS. EDIBON Results & Statistics Program Package - Question Explanation



ECAL. EDIBON Calculations Program Package Main Screen

BDAS. Basic Data Acquisition System and Sensors:

For being used with mechanical modules.

BDAS is designed to monitor the measurements of each mechanical module from a computer.

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



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Edition: ED01/18
Date: June/2018

REPRESENTATIVE:

