Dutch Vat for Cheese Production (until 50 l)

DVCP

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION

AM-1
MOTOR
Motor

ST-1
TEMPERATURE SENSOR
Sensor de Temperatura

BOILER WATER OUTLET
Salida de Agua de Caldera

BOILER WATER INLET
Entrada de Agua de Caldera

WHEY OUTLET
Salida del Suero

OVERFLOW
Rebosadero

V-1
VALVE
Válvula

ST-2
TEMPERATURE SENSOR
Sensor de Temperatura

JACKET WATER INLET
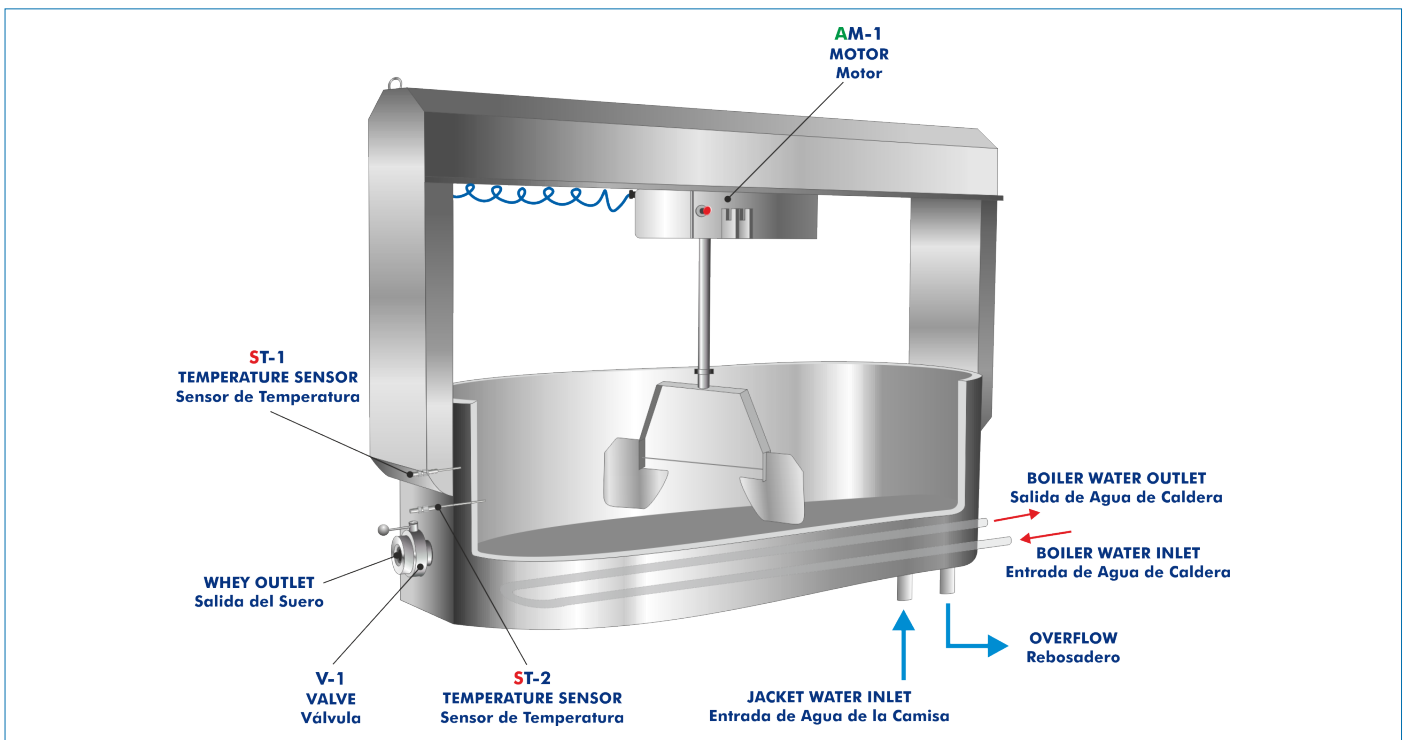Entrada de Agua de la Camisa

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

INTRODUCTION

Cheese is a solid food, of animal origin, made from the curdled milk of some ruminant mammals. The curdling process is carried out by the addition of rennet and acidification. The beneficial bacteria are responsible for acidifying the milk and providing flavor.

Nowadays, cheese is widely spread all over the world, being one of the main dairy products.

Many of the cheese production processes have been industrialized to meet such a huge demand. It was necessary to study and determine parameters in the phases of the transformation of the different types of cheese and adapt the tools to the industry in order to bring this process of traditional origin to the industry.

Dutch Vat for Cheese Production, "DVCP", reproduces a small scale cheese production system to study the whole process in a practical way.

GENERAL DESCRIPTION

The Dutch Vat for Cheese Production (up to 50 l), "DVCP", has a tank with water jacket, coil with inlet and outlet for water from the boiler, jacket water inlet, serum drainage valve and set of accessories for the agitation, cutting and drain of the product.

Pasteurized milk coming from a refrigerated milk tank is poured into the tank of the unit. The milk is heated with a water jacket with a stainless steel coil, using water or steam in a closed circuit.

The equipment includes a bridge with a variator-motor reducer group that allows the displacement of the motor controlled from a control panel, along the equipment in both directions. As a consequence, the milk is stirred and the curd is cut automatically.

Two temperature sensors measure the temperature of the water and the milk. The water is introduced in the jacket through a filling/emptying inlet. This inlet allows, at the same time, the drainage of water from the jacket. The accumulated air and the excess of water in the jacket is removed through the overflow.

Moreover, there is an outlet valve to remove the excess of serum, after the curdling process.

Two transparent housings with safety devices protect the students and allow visibility of the practices and components of the unit.

The vat has a cover with a viewer and light to visualize the interior.

The unit includes a set of accessories for stirring, cutting and draining the product. These accessories are: cutting lyres and agitator, pre-press and lifting plates that can be attached to the mechanized bridge.

SPECIFICATIONS

Metal structure with adjustable legs.

Main metallic elements are made of stainless steel AISI 304L.

Sanitary butterfly valves.

Diagram on the front panel with similar distribution to the elements in the real unit.

Curdling tank: Dutch model, rectangular with semicircular ends. Material: stainless steel, capacity: 50 l. Included:

    Bridge with variator-motor reducer group for cutting and automatic agitation of the curd.

    Water jacket with a stainless steel coil for heating the water in the jacket by means of water or steam from boiler in closed circuit.

    Two temperature sensors to measure water and milk temperature.

    Water inlet for filling and emptying the jacket and whey outlet valve.

    Top cover with visor and light to visualize the inside of the vat.

    Cutting and stirring lyres, and pumping and pre-pressing plates that can be attached to the mechanized bridge.

Control panel for the operation:

    Two displays for milk temperature and heating water.

    Light switch inside the vat.

    Speed variator for the liras and the agitator.

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.- Familiarization with the performance of a curdling tank.

2.- Study of the cultivation volume influence on the curdling process.

3.- Study of the rennet volume influence on the curdling process.

4.- Study of the influence of the curdling step duration on the curdling process.

5.- Study of the influence of velocity during the curdling step on the curdling process.

6.- Study of the influence of temperature during the curdling step on the curdling process.

7.- Study of the influence of the cutting step duration on the curdling process.

8.- Study of the influence of velocity during the cutting step on the curdling process.

9.- Study of the influence of temperature during the cutting step on the curdling process

REQUIRED SERVICES

- Electrical supply: single-phase 200 VAC – 240 VAC/50 Hz or 110 VAC – 127 VAC/60 Hz.
- Hot water or steam supply.

DIMENSIONS AND WEIGHTS

DVCP:

- Dimensions: 1100 x 400 x 1500 mm approx.

  (43.30 x 15.74 x 59.05 inches approx.)

- Weight: 10 Kg approx.

  (22 pounds approx.).

SIMILAR UNITS AVAILABLE

Offered in this catalogue:

- DVCP. Dutch Vat for Cheese Production (until 50 l).

Offered in other catalogue:

- AEQC. Computer Controlled Cheese Vat.
- CCDC. Computer Controlled Teaching Curdling Tank.

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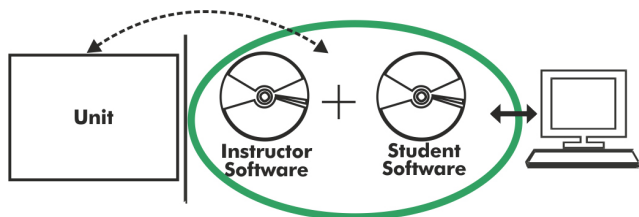
With no physical connection between unit and computer, **this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF).** Both are interconnected so that the teacher knows at any moment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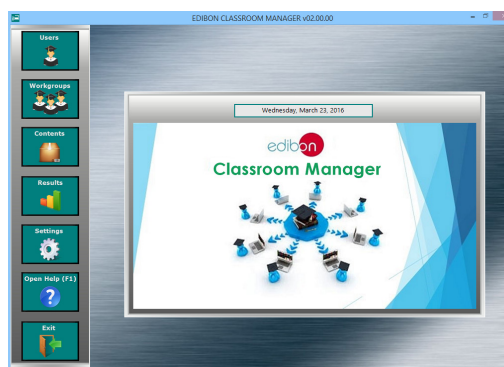
Instructor Software

- 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.
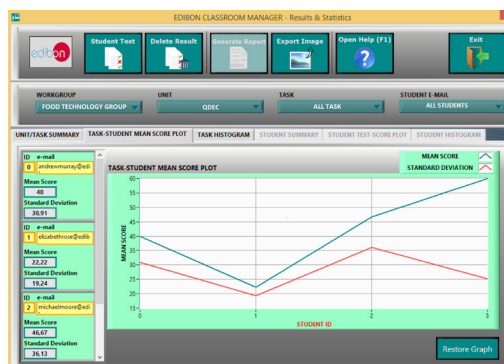- Report generation, User Progression Monitoring and Statistics.

ECM-SOF. EDIBON Classroom Manager (Instructor Software)
Application Main Screen
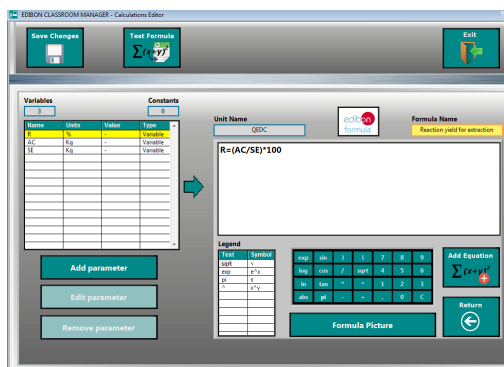
ECAL. EDIBON Calculations Program Package - Formula Editor
Screen
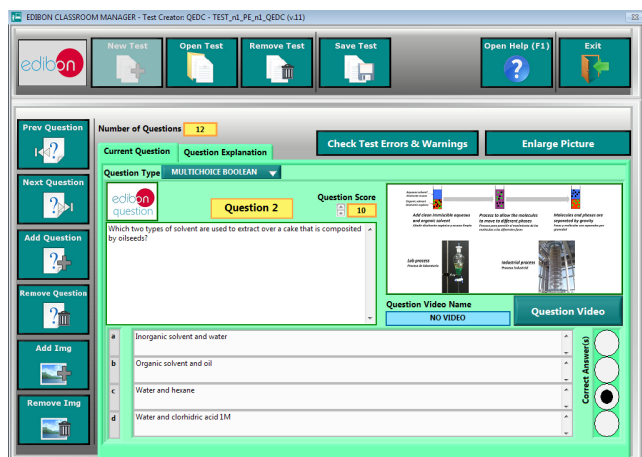
ETTE. EDIBON Training Test & Exam Program Package - Main Screen with
Numeric Result Question

ERS. EDIBON Results & Statistics Program Package - Student
Scores Histogram

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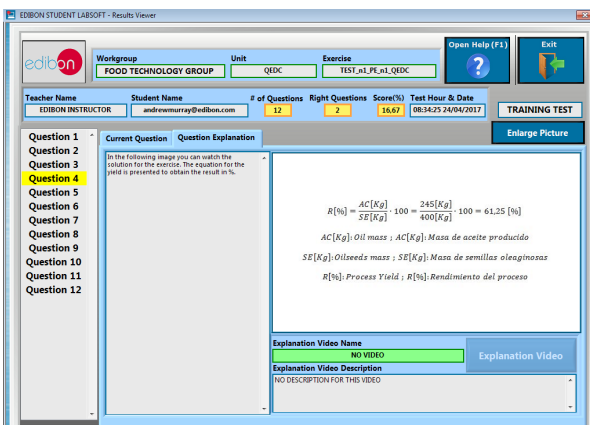
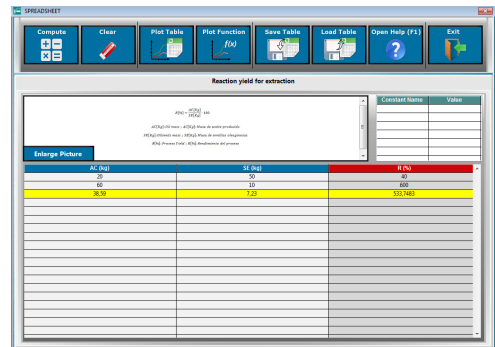www.edibon.com/en/files/expansion/ICAI/catalog

ESL-SOF. EDIBON Student LabSoft (Student Software)
Application Main Screen
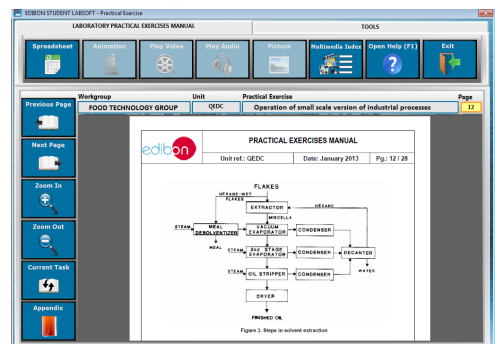
EPE. EDIBON Practical Exercise Program Package Main Screen

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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