2 mechanical manufacturing



ODISEA-A

WinUnisoft Control



ECLIPSE-H

WinUnisoft Control



ASSEMBLY AND MECHANICAL MAINTENANCE

Multicontrol NC-PC integral machines

FLEXIBLE

Machine Tool professionals are among the most sought after by companies. The competencies behind the qualifications in this field are complex and range from the interpretation of plans to working in Industry 4.0 environments.

Our classroom proposal is based on the combination of CNC machines, mechanical design software and NC programming Alecop software, generating an efficient and motivating environment for students and tutors.

All this equipment has the following educational aims:

- CNC Programming.
- Operator skills.
- Implementation and maintenance of CNC machines.

CLASSROOM

WinUnisoft+





VIRTUAL MACHINES









BABYPLAST



Characteristics

- Machines of different sizes and features.
- Control of machines via PC, using multi-panel software (Fanuc, Fagor, Siemens).
- Software for CNC programming and simulation in different programming languages.
- Virtual machines.
- Assembly and mechanical maintenance kits.

As well as our trainers, we distribute all the necessary material and equipment to complete your classroom/workshop.

Integral equipment

Adjustment
Bench grinders
Sharpeners
Welding drills
Saws
Tracing table
Pneumatics
CAD
Utensils and tools
Safety equipment
...

ODISEA-A

CNC machining centre with industrial control



A vertical milling machine, controlled by an industrial CNC, **ODISEA-A goes one step further in bringing our training equipment closer to today's industrial world.**

The machine provide a close-to-reality experience while remaining a safe, informative training solution for students. Optional inclusion of relevant accessories can turn the unit into a full machining centre that can be integrated into a flexible system.



Technical characteristics

Longitudinal X travel	200 mm
Transversal Y travel	200 mm
Vertical Z travel	200 mm
Measurements of the work table	450 x 180 mm
Maximum spindle-table distance	320 mm
Spindle motor	Three-phase asynchronous 1.5 kW
Spindle taper	ISO 30
Spindle motor rotation speed	50-4,000 rpm
Axes advance motors	Brushless de 0,2 kW.
Maximum advance of axes	2,500 mm/min.
Electronic resolution	0.001 mm
Door opening	Automatic
Supply voltage	230 V 50/60 Hz
Dimensions of machine	1,460 x 910 x 1,870 mm
Approximate weight	400 Kg

Axes

- Double-nut, pre-tensioned ground spindles, IT5 quality
- Linear guide rails with ball recirculation.
- 1.8º step motor.

Head

- High precision bearings with 2 rows of angular contact balls.
- Max. torque: 7 Nm at 2,000 rpm.

Guard

- Pneumatically operated.

Electronic handwheel



Optional accessories

- 8 position tool changer.
- Parts securing device. (Manual or pneumatic jaws).
- ISO-30 tool holder cones. Collets and mills.
- Cooling system.
- Silent compressor.







Customizable machine

- Machining center with integrated safety devices.
- 8-tool automatic changer.
- CNC Industrial FAGOR 8058.
- Manual set.





WinUnisoft SOFTWARE

WinUnisoft+ software realistically emulates the most well-known industrial CNC brands (Fagor, FANUC and SIEMENS)

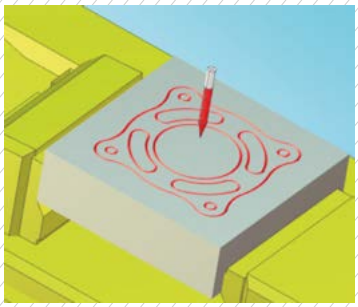


This software allows to simulate and execute the machining of a CNC program, ISO code edited or defined by a CAD/CAM system, analysing possible errors.

The main features of WinUnisoft+ are:

- Control of machine drives.
- Assisted graphic programming for all ISO functions supported by the chosen control emulator.
- Simulation of different tool geometries.
- 3D simulation views of the workpiece, tool and paths.
- Launch program in automatic mode or block to block.
- Collision detection of the tool with the workpiece and the jaw chuck.
- Report generation.

Apart from its performance, the excellent graphic quality of the graphic 3D simulator, makes a fast comprehension possible of the performed machining operations on the workpiece.



More information in the WinUnisoft+ part.

ECLIPSE-H

CNC lathe with industrial control



ECLIPSE-H lathe, controlled by FAGOR 8058 industrial CNC, allows one more step in To bring our teaching equipment closer to the industrial reality. The integration of the industrial CNC offers a feeling very close to the real experience while remaining a Safe and didactic solution for students. The optional addition of the right add-ons allows the equipment to become a complete machining center.



Technical characteristics

Swing diameter	230 mm
Distance between centres	530 mm
Longitudinal Z travel	275 mm
Transversal X travel	96 mm
Spindle motor	Three-phase asynchronous 1.5 kW
Spindle rotation speed	50 - 4,000 rpm
X,Z axes motors	0.2 kW Brushless.
Quick advance	2,500 mm/min
Tool holder turret	8 pos (12 x 12 mm)
Electronic resolution	0.001 mm
Door opening	Manual/Automatic
Power supply	230 V 50/60 Hz
Installed power	1.9 kW
Dimensions	1,350 x 600 x 1,540 mm
Approximate weight	300 Kg.

Axes

- Rectified spindles with double nut, prestressed, IT5 quality.
- Linear guide rails with ball recirculation.
- 1.8º step motor.

Head

- High precision bearings with 2 rows of angular contact balls.
- Max. torque.: 7Nm a 2,000 rpm.

Electronic handwheel



Optional accessories

- Manual 60 mm tail stock travel, CM2 morse taper.
- Cooling system.
- Pneumatic 110 mm diameter chuck.
- Tool holder turret with VDI quick change system.
- Automatic access door operated by pneumatic cylinder (for use in CFF).
- Tool holders and carbide inserts.
- Winunisoft editing and simulation software.






Standard configuration

- Integral fairing with built-in safety devices.
- CNC industrial FAGOR 8058
- Manual jaw plate with a diameter of 125 mm.
- 8-tool automatic changer
- Set of manuals.





WinUnisoft SOFTWARE

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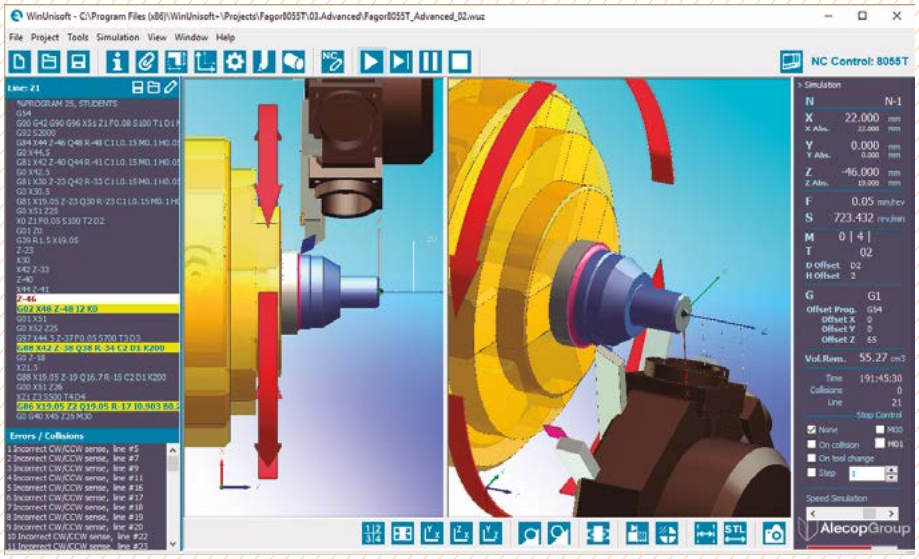
Apart from its performance, the excellent graphic quality of the graphic 3D simulator, makes a fast comprehension possible of the performed machining operations on the workpiece.



More information in the WinUnisoft+ part.

WinUnisoft+

Programming, simulation and control of machines



Learn how to develop your own mechanization projects using the controller of your choice: FAGOR, FANUC and SIEMENS, then complete the job using ALECOP CNC machines.

This software package, which is the leader in its sector, is intuitive, easy to operate and produces excellent results.

One simulator – Multiple controls. FAGOR-FANUC-SIEMENS





WinUnisoft+ has been designed to train in programming of numerical control units and virtually approaches industrial reality with authentic looking control emulation.

It makes it possible to edit and simulate the CNC programs, and furthermore define tool definitions and other necessary parameters for work piece machining on a lathe or milling machine.

The excellent graphic quality of its simulator makes it possible a quick understanding of the different operations performed during machining.

SIEMENS
- SINUMERIK 840D-T/M

FANUC
- FANUC Series 0i T/M

FAGOR
- FAGOR 8055/65- T/M

Optimize your learning-time

ONE software to effectively learn multiple control types

- WinUnisoft+ has a very short learning-curve.
- Your students can be practising with different control emulators and programming in multiple languages in a unique and effective environment.
- WinUnisoft+ has been conceived to greatly speed-up the learning process.
- Using industrial control simulators for programming means too much time dedicated to learning how to run each one of them.

Integrated into the process

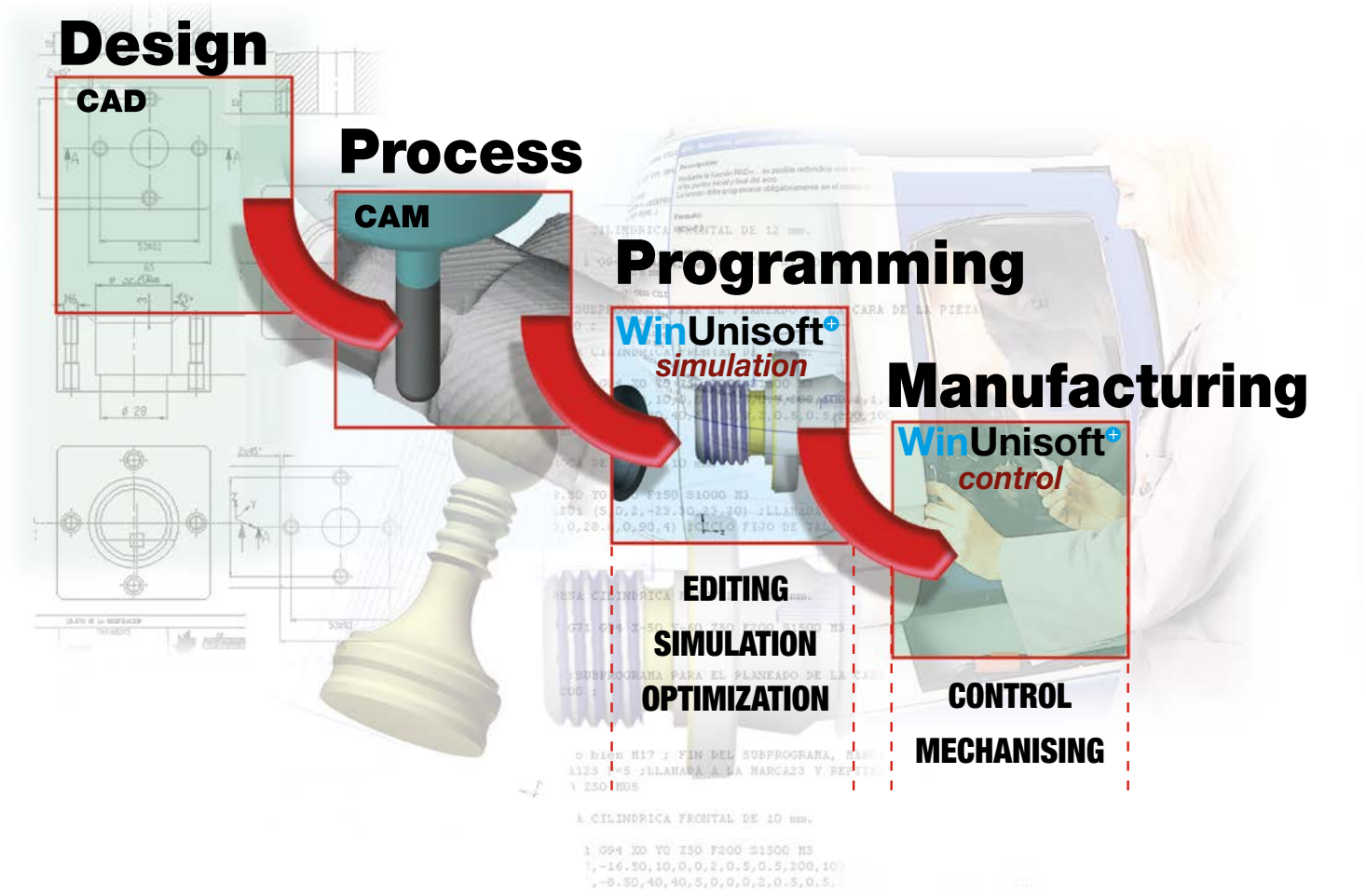
In the process of teaching and learning it is essential to have tools that allow simulation and adaptation of machining programs prior to their actual execution in help avoid problems and reduce the time the machines are used.

Through the use of WinUnisoft+ software, learners can:

- Get to know, understand and master the different programming languages used by the various CNCs.
- Have a first approach to the use of an industrial control thanks to the realistic emulators.
- Make modifications to programs generated by CAD/CAM tools.
- Create their own machining programs.
- Master the basic concepts of machining.

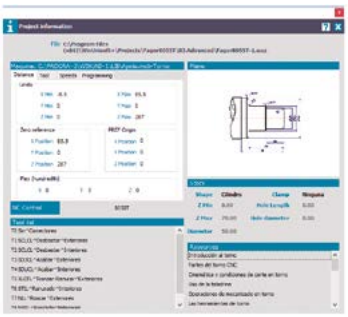
Simulation and control

WinUnisoft+ will operate in Simulation mode when working with a PC not connected to a machine and in Control mode when connected to an ALECOP machine.



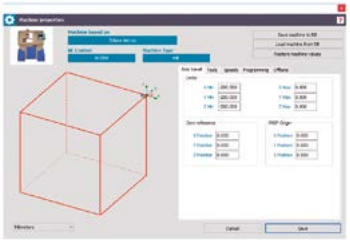
Simulation mode

Project based learning

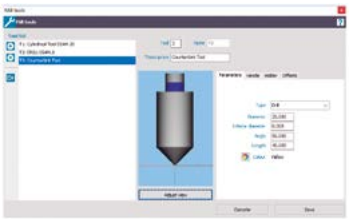


Unlike industrial simulators, where work only takes place with the machining program, with WinUnisoft+ the exercises are based on what is known as the "Machining project".

Each exercise is a project and the main goal of the student is to realise the drawing in simulation mode before to mechanizing it.



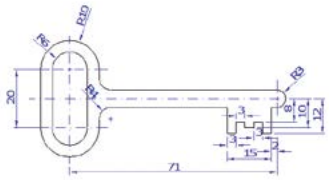
- The main interface of WinUnisoft+ is the 3D Simulator.
- The control emulator can be accessed at anytime.
- The job can be completed using the didactic resources each project provides.
- Assistance is provide throughout the programming.
- The finished piece can be measured to check the program and chosen parameters.



Save time with ready-to-use projects

Includes lathe and milling machine projects with different training levels.

- It is very easy to setup your own projects, but WinUnisoft+ comes with a wide library of pieces.
- Ready to use.
- Different levels from basic to expert.



Control mode

Learning by doing

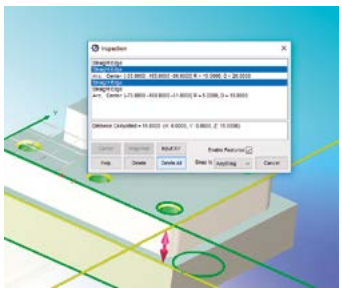
Start controlling the machine using the control of your choice. The main goal is to get the workpiece mechanized.

- The main interface of WinUnisoft+ the Control Emulator.
- The 3D simulator can be accessed anytime.
- Control of the machine is assisted by the user guides and Help in WinUnisoft+.
- Setup of the machine and tool parameters using the control menus or the Assistants in WinUnisoft+.
- Programs can be written using assisted programming or just loaded from the network or a pendrive.
- Running the programs will mechanize the workpiece.

The learning becomes meaningful when you are controled with a challenge.

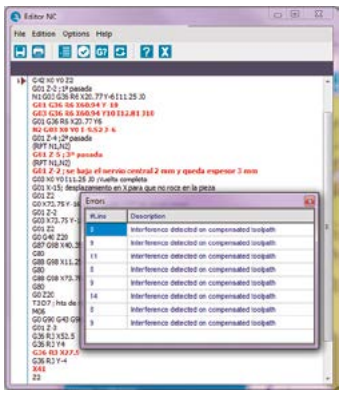


Designed for learning



WinUnisoft has been specifically designed for use in the teaching and learning process without ignoring the technological contents. The program has been provided with specific features that allow students to acquire knowledge very quickly.

- Graphic help menu for programming all ISO functions.
- Adaptation of the software parameters to any tool machine.
- Definition of different types of workpieces and holding systems.
- Simulation in various 3D views with representation of the tool and workpiece.
- Graphic editor of cutting tools with a wide range of predefined shapes.
- Sectioned display of the work-piece from different angles.
- Collision detection of the tool and the handle with the part and the jaw chuck.
- Inspection and measurement of the shape of the part. Detection of basic shapes (arcs, angles, etc.).
- Report wizard with email.
- Control emulators.







Learning resources

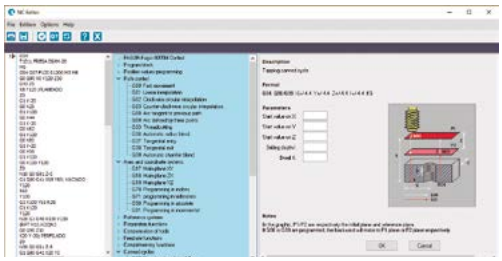
The software includes all the contents the student will need to learn the basics of CNC machine use and numerical control programming.

Our proposal includes:

- Programming guides for all the included languages.
- ALECOP PC controlled CNC machines with WinUnisoft working in control mode.
- ALECOP industry NC controlled CNC machines.



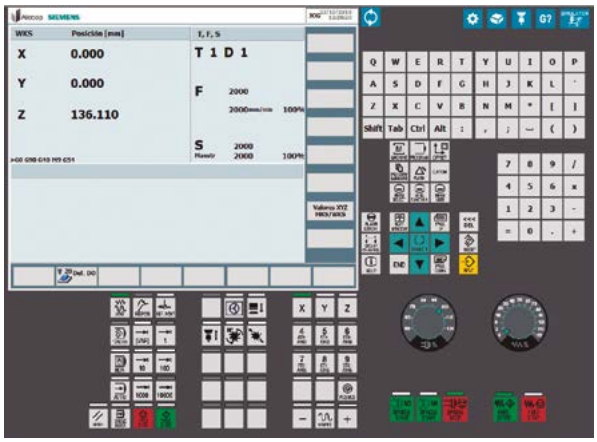




Control emulators

WinUnisoft has six control emulators that allow the student to learn the real procedures on using CNC machines.

Each emulator has the most characteristic functions to control the machine, and at the same time provides help, if needed, on programming, setting up tools, and setting other mechanizing parameters.



CNC classroom solution

Using the machines and the WinUnisoft software you can configurate a CNC Classroom with unlimited programming stations.



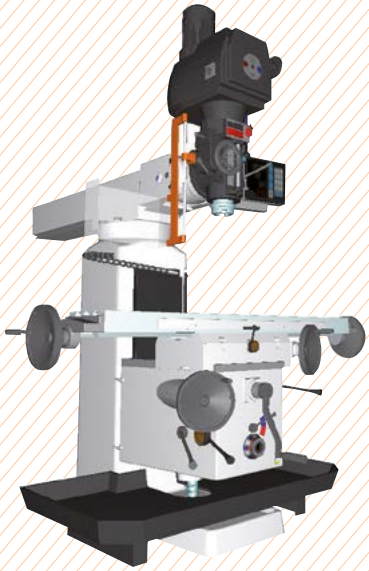
Using the features of a local network the teacher can share projects created in the machine with WinUnisoft. The students can use the simulation of WinUnisoft on their PCs to work with the same machine/tools/workpiece configuration and create their own programs.

The composition could include:

- Programming workstations with WinUnisoft working in simulation mode.
- PC controlled machines with WinUnisoft working in control mode.
- CAD/CAM software.

Virtool

Interactive virtual environment for training in the use of tool machines.



System based on interactive 3D graphs and virtual reality techniques which offer innovative possibilities for training.

VIRTOOL Machine is a software designed and developed for training in the preparation and use of swarf start up machines, both conventional and CNC.

With VIRTOOL Machine, students can carry out initial training with a virtual machine which will considerably reduce necessary work time when they move on to a real machine and will help them acquire and reinforce the basic concepts for preparation and machining on conventional and CNC machine-tool.





The virtual machines work just like the real machines. Each virtual machine, in 3D, is distributed with practice cases or case studies supported by a full set of theoretical content.

Learning by doing

The application is based on problem-based learning and enables independent study. Its advanced educational design is a result of the latest studies conducted in this field and the most up-to-date technology. (PBL Problem Based Learning, Self-Training, Learning by Doing).

Machines available 24 hours

It makes it possible to work on machines with low availability for an unlimited time.

Safe and indestructible machines

Reduces the risk of accidents and damage to the equipment during the training process.

Reduces the cost of the learning process

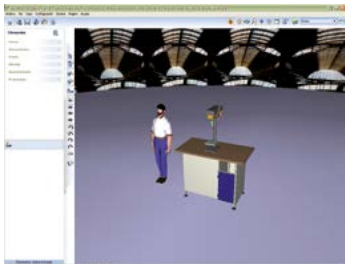
Reducing the time needed at machines and allowing a truly efficient learning process with less need for support from a teacher.

One machine, one student

It makes the work in the classroom and workshop more flexible, difficult to achieve when working in classrooms where there are only real machines.





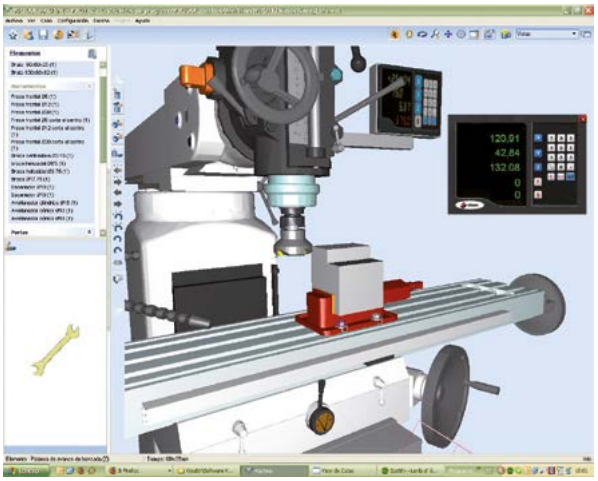


Working with a VIRTOOL Machine

The practical activity library, distributed with every virtual machine, is divided into case studies. The classification of cases dealt with is very complete and ranges from the identification of tools to the machining of complex parts, covering the handling of CNC controls.

With VIRTOOL Machine, the user/student performs the learning activities by solving case studies in a virtual environment. Users have all the information required for the case studies for each machine:

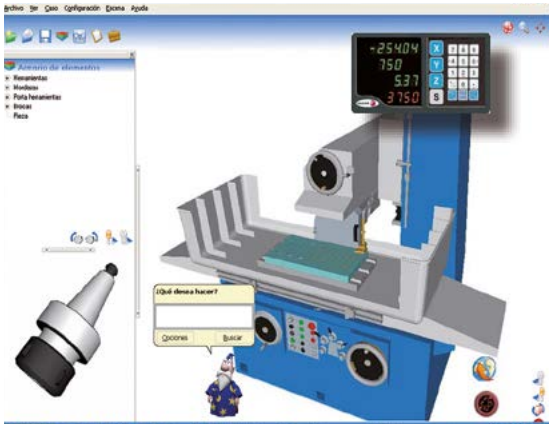
- A full description.
- Back-up materials.
- Instructions are constantly provided and errors notified, helping students to successfully solve all the case studies.
- Online reports can be obtained for student assessment by the tutors.



Interaction with the machine

It is performed through a series of operations which allow the student to machine complex parts:

> **Select:** It allows user to identify elements.
> **Assemble:** It allows the user to assemble an element on the machine or on another element shown in the scenario window.
> **Dismantle:** It allows the user to dismantle, dismount or release an element from the scenario.
> **Close:** It allows the user to tie or fix an element to another on the machine, using a tool if necessary.
> **Open:** It allows the user to release or loosen an element on the machine, using the appropriate manual tool.
> **Move:** To move the mobile elements sequentially or continuously.
> **Machining.**
> **Turn the part.**
> **Dimension viewer:** Activates a dimension viewer that works like the real thing.
> **CNC:** Activates the numerical control simulator for CNC machines. This control is handled and interacts with the machine in the same way as the real control.



Moving in the 3d world or scenario

It is very simple and intuitive. It even includes pre-set displays to resort to if in need of a specific element.

VIRUFRE universal milling machine



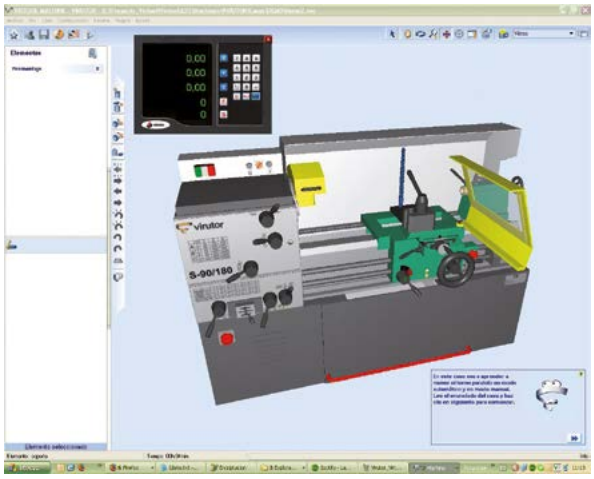


It is the VIRTOOL machine milling machine and with its set of exercises or case studies the student will be able to develop certain skills.

Each case study has a specific aim, studying everything from the machine components to the virtual performance of complex machining processes, highlighting:

- Identification of the machine parts.
- Understanding the dynamics of the machine.
- Types of fastenings and their elements.
- Assembly and adjustment of components.
- Identify and assemble tool holders, tools and auxiliary elements.
- Preparation for machining.
- Handling of the machine.
- Perform basic machining processes.
- Execution of machining processes.
- Complex machining processes.

VIRUTOR Parallel lathe

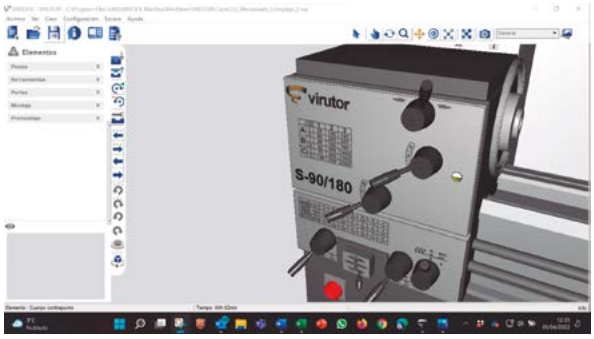


Virutor is the VIRTOOL conventional parallel lathe.

With this and the library of case studies it includes, the following is covered:

- Identification of the machine parts.
- Handling of the machine (movement of carriages, spindle movements).
- Identification and assembly of tools and tool holders.
- Types of fastenings, selection and assembly of parts.
- Calculation and establishment of cutting conditions.
- Safety elements.
- Identification and performance of machining processes.
- Execution of machining processes.





Licences system

Configure your own CLASSROOM



Configure your training classroom according to your needs at any given time. Choose and combine from the different protection methods available:

> **Web protection with three models.**

- Temporary 1 year license.
- Unlimited Time License.

- In this way you can adapt your resources to your requirements at all times and offer your students the possibility to acquire the product for their training period.
- Each machine is licensed separately.

Babyplast 6/12

Plastics injection machine



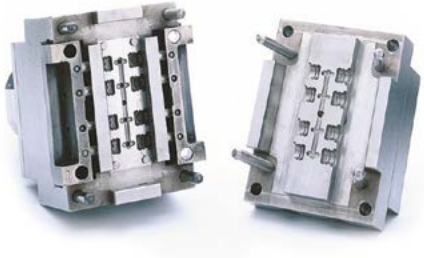
An industrial machine adapted for training. Ease in implementation, simple programming via touch screen, proportional control on all axes, highly reliable and low maintenance.

Technical characteristics

Piston diameter (mm):	10	12	14	16	18
Injection pressure (KG/cm):	2,650	1,830	1,340	1,030	815
Closing force: 62.5 KN					
Opening force: 4 KN					
Opening travel: 30 -110 mm					
Expulsion Force: 7.5 KN					
Expulsion travel: 45 mm					
Hydraulic Pressure: 130 bar					
Oil tank capacity: 16 litres					
Cycle on empty: 2.4"					
Installed power: 2.95 kW					
Mould thickness: 70:135 mm					
Memorisation of parameters: 100 moulds					
Refrigeration open water circuit					
Refrigeration (optional): closed table-cooling circuit					
Weight: 165 Kg					
Dimensions: 1,100 x 500 x 700 mm					
Supply: 3x 380 Vac (3 phases+neutral+earth)					

Babyplast is the result of over 10 years' experience in the field of micro-injection. It is specially adapted for training.

- Very easy programming through menus identifiable by icons.
- Synoptics, indicating the status of the sensors and actuators in real-time, allowing the monitoring of production.
- Compact, silent and clean.
- Easy to maintain: modular conception.



An industrial machine



- BABYPLAST 610 is a bench press which makes it possible to inject the majority of thermoplastic materials on the market: PP, PA, ABS, PS, PBT, POM, PPS.
- Totally hydraulic machine with supply unit, pump and deposit built in.
- Display manometers: injection pressure, mould closing pressure.
- Microprocessor of the control unit with colour touch screen.
- USB Connectivity and Ethernet.
- Five piston sizes for perfect adaptation to planned production.
- Control of all movements in closed loop by proportional control.
- It has two programmable outlets for managing cores, air streams, etc.
- Four heating areas with digital PID regulators.
- Control of cooling of four areas by flow meter.

An original mould system

- The housing and plates system is an integral part of the machine.
- Only the imprint block is interchangeable.
- The traditional structure of the mould is respected.
- The advantages of this device are:
  - Reduced cost of moulds.
  - Low production cost.
  - Precision of the parts produced.



Maximum security



- Emergency stop using push-button.
- Protective screen with detectors.
- Hydraulic safety which blocks any risk of movement when the guard is open.
- Protection of hot areas.
- Part recovery box and ramp for purge outlet.
- CE and CEM certification.

Assembly and mechanical maintenance

These assembly, repair and maintenance kits will allow students to know the main mechanical systems. Thanks to the cutting of each system it is possible to study each one of the different components and their operation.

The material is supplied placed and protected in a box for transport along with the necessary tools for its use.



MM01 – MOUNTING KIT: BALL GRAPH AND CLOSING VALVE Ref.: ZZM0156

The assembly, repair and maintenance MM01 kit allows to analyse the differences of a ball valve in front of a shut-off valve. Thanks to the cutting of each system it is possible to study each one of the different components and their operation. The material is supplied placed and protected in a box for transport along with the necessary tools for its use.



MM02 – MOUNTING KIT: PLUNGER COMPRESSOR Ref.: ZZM0157

The assembly bench MM02 contains everything necessary to introduce the student to a project of assembly of a compressor of plunger, object under study. The kit is supplied with two piston compressors: one under service conditions and one disassembled. In addition, the necessary tools are included for the assembly of the latter, so that is possible the analysis of the cutting at any time in front of the complete assembly. The bank also has drawers where to store the material, a front panel in which to place the necessary didactic material.

Other kits:

MM03: Assembly and Maintenance: Centrifugal Multi-Steel Pump
MM04: Assembly and Maintenance: Screw Pump
MM05: Assembly and Maintenance: Diaphragm Pump
MM06: Assembly and Maintenance: Plunger Pump
MM07: Assembly and Maintenance: Gear Pump
MM08: Mounting Kit: Hydrodynamics Slide Bearing
MM09: Mounting Kit: Shut-off Valve
MM10: Mounting Kit: Combined Gear
MM11: Kit Gate Flat Wedge Flap and Titled Seat Valve