

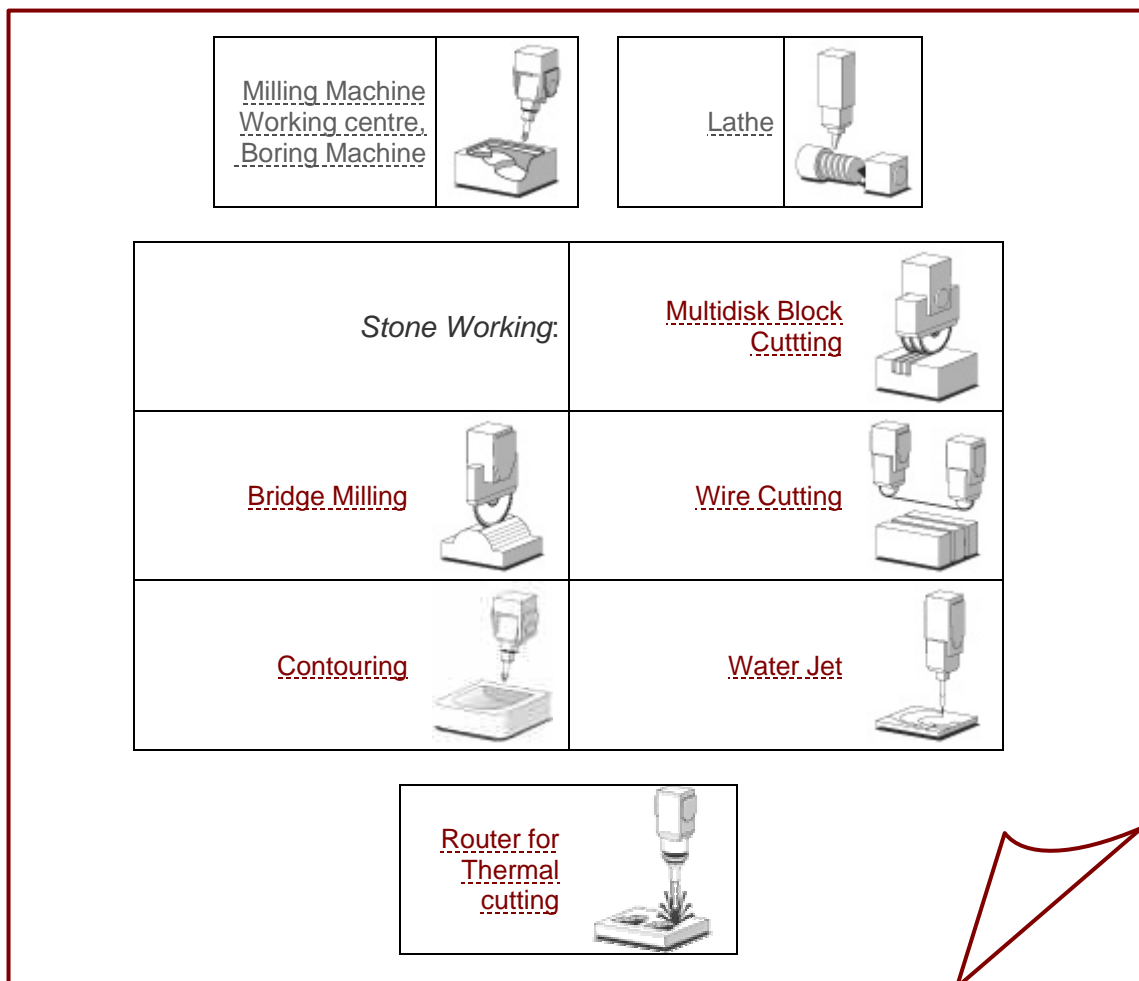
The applicative softwares of ISAC SRL


ISAC srl introduces the main applicative softwares, from times already installed on ISAC Srl solutions, designed for management of plants and tool machines for the working of main raw materials: from metals to stones, from plastic to wood, hide, leather and textile.

Each applicative software can be installed on CNC central unit and/or PAC central unit and it includes a custom graphical interactive interface (CAM), which can interact with third-party CAD-CAM. The custom interface is added to the base interface that is always available for the for the setting up of parameters and start up of machine/plant.

The applicative softwares:

- They have been entirely designed by ISAC with the same development tools available for customers.
- They can be further customized.
- They can be easily adapted for the working in different sector with respect to the one for which they has been developed.



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1.1 MILLING MACHINE

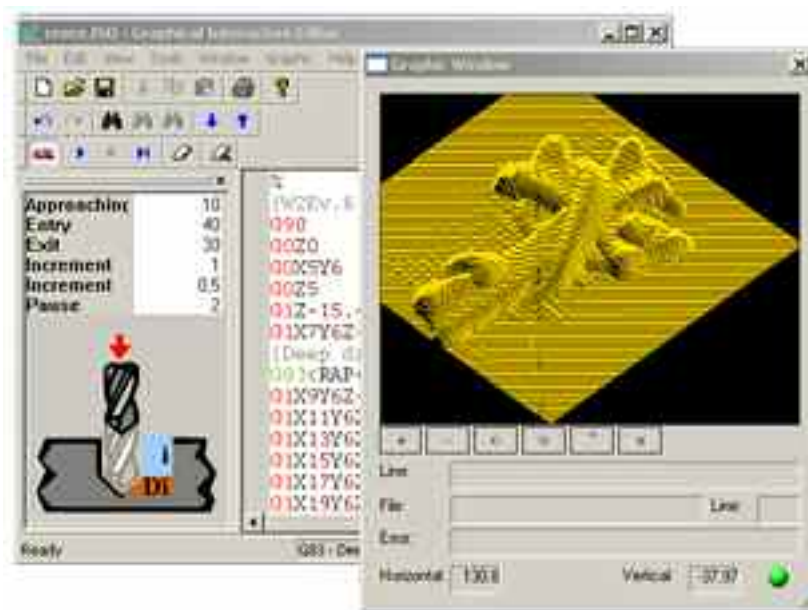
The Milling software is available for **CNC** central unit

The CNC interprets the standard ISO language.

The programming of working, through the integrated CAM interface, is completely interactive.

It is allowed the use of customized third part CAD-CAM directly running on CNC or on an external station, from which the programs can be easily downloaded on the machine, thanks to the several communication interfaces available.

The program test can be done directly on the machine through the Graphical Simulation function or through the Simulation software on the external station.



The complete list of characteristics of base software for Milling Machine is available in General Catalogue.

1.2 LATHE

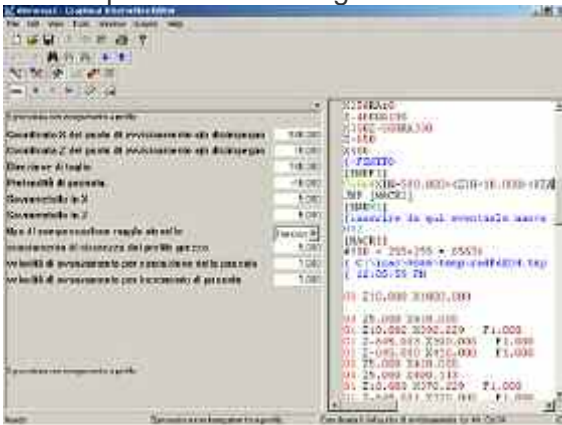
The Lathe software can be installed on **CNC** central Unit

The Lathe Solution offers the main typical functionalities as management of “Rest” (Lunetta) and “lathe centers” (contropunta), management of two turrets, controlling of auxiliary spindle, self-learning of heights, cycles of drilling and turning.

The programming can be performed by means of third-party CAD-CAM: both directly housed on CNC or housed on an external station by importing the programs in ISO 6983 code. that ba La The user interface is equipped with interactive integrated CAD that allows a simply and fast programming for the user.

The integrated CAD includes:

- collection of typical geometrical figures,
- assisted parameter set-up,
- preview of working.



Integrated CAD



Preview of the working

Technical Characteristics

AXES

Control of auxiliary axes for movement of the piece supports: “Rest” (“Lunetta”) and “lathe centers”

Automatic speed adjustment according to the previously selected type of control and to the axis X position of the lathe

Control of a secondary spindle for drilling cycles (Lathe)..

TOOLS

Radius vectorial compensation for lathe tools in one of the 9 planes or quadrants available

Control of two turrets

CNC FUNCTIONALITIES

Automatic adjustment of spindle speed in function of the type of programming: constant velocity cutting, cutting with programmed velocity, or in function of tool removing.

Synchronization between axes movements and adjustment of spindle speed.

TURNING CYCLES

Thread with fixed and variable (increasing/decreasing) pitch.

Cylindrical, conic and frontal thread

Thread macro to execute all types of standard and customized threads with one or more starting point (beginning).

Roughing macro for square profiles

Roughing macro “with following to profile” (for complex profiles)

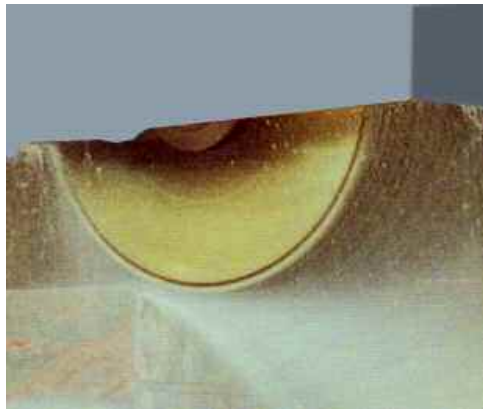
Macro for the machining of grooves

1.3 MULTIDISK BLOCK CUTTING

The applicative software can be installed on **CNC** and **PAC** central unit

The solution includes an interface dedicated and equipped with contextual menus and windows, which allow user to manage the entire working. The “Combing” and “Stripping” cycles are available. The “Combing” allows the contemporary cutting of a number of strips that corresponds to the number of discs. The “Stripping” allows to cut and to detach the cut strips from the remaining material.

The cutting cycles are executed in an entirely customizable manner and between the two cycles the positioning of the material blocks on the cutting area is managed.



Technical characteristics

User interface

It allows the managing of the entire working

It is equipped with contextual menus and windows

Cutting cycles

entirely customized (with positioning of block in cutting area)

“*Combing*”: contemporary cutting of strips of material

“*Stripping*”: cutting and detaching from remaining material

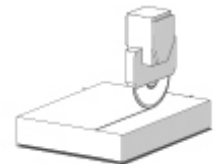
1.4 BRIDGE MILLING

The complete applicative software is available on **CNC** central unit.
The applicative software with functions of Cutting, Smoothing and Profiles is available on **PAC** central unit.

The programming of machining, through the integrated CAM interface, is completely interactive. The user can select directly the machining, among the available typical shapes, and insert parameters by means of assisted procedures. The shape collection can be freely enlarged with the aid of the supplied programming tools. It is allowed the use of specific third-party CAD-CAM installed on board or on an external station, from which the programs can be easily downloaded on the machine, thanks to the various communication interfaces. The program test can be done directly on the machine through the Graphical Simulation function. The CAM interface can be installed also on PC allowing a double environment for programming and for simulation.

Manual cuts

They can be executed by the aid of manipulators in an entirely assisted manner also on machines equipped with orientating and tilting disc.

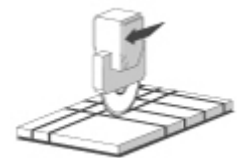


Slab Cutting

The cutting cycles can be programmed directly and easily thanks to compensation algorithms, assisted parameter set-up, selection of cycle in function of the material (marble or granite).

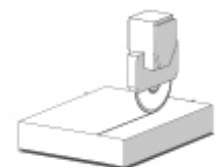
The slab cutting cycles include:

- single cut (also tilted and oblique) and multiple cutting (also tilted);
- cut of tiles with the utility of automatic table rotation;
- cutting of circumferences or arcs of a circumference;
- cutting of polygons.



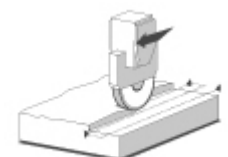
Pedoca cuts

The PEDOCA CUTS, available for CAM interface, allows to make optimized cuts by means of the rotation of cutting head or of table that holds the slab. It provides all aids for importing a .dxf project, the adaptation of the project itself to the piece to work and filing.



Slab Smoothing

With this kind of execution it is possible to smooth out a slab in order to remove any defects deriving from previous working or in order to reduce it to the wanted thickness.

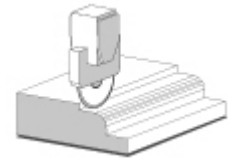


Profiling

The profiling allows to execute standard profiles and free profiles, which can be imported from CAD. There are included the following STANDARD PROFILES.

- semicircle profile: concave/convex complete, concave/convex first half and second half;
- angle profile: concave/convex complete, concave/convex first half and second half.

The FREE PROFILES, which are generated by external CAD, can be imported through DXF file or directly generated directly on machine through the internal CAD.

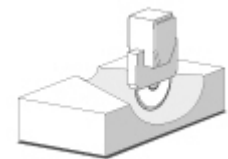


Shaping

The shaping allows to execute standard shapes and free shapes, which can be imported from CAD. There are included the following STANDARD SHAPES:

- cylindrical shape: concave/convex;
- angle shape: concave/convex complete, concave/convex first half and second half;
- taper shape: concave/convex.

The FREE SHAPES, which are generated by external CAD, can be imported through DXF file or directly generated on machine through the internal CAD.



Shoulder working

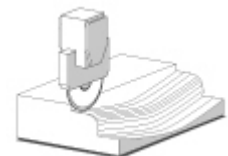
The shoulder working allows to remove crests that are left from previous working of profiling and shaping.



Profiling and Shaping

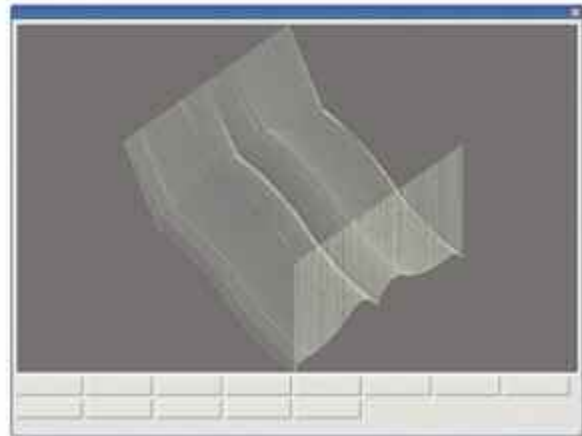
Besides the separated working, the mixed working of profiling and shaping are allowed. The profiling and shaping are made easy by some utilities.

- The inserted geometric parameters are independent from possible modifications of the disc radius. The machine automatically adapts to the radius of the inserted disc: the same profile can be executed with two different discs without modification of geometric parameters.
- The cutting of profiles and shapes is dependent from the type of material to work. The material can be marble or granite.



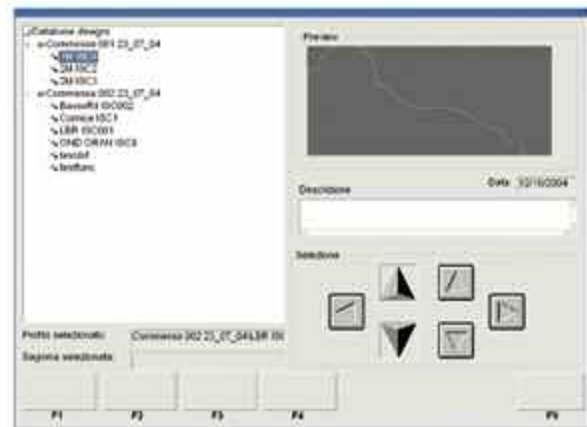
Simulation

The working of a piece generally keeps busy the machine for long time and just for this reason the Graphical Simulation allows to verify in advance generic errors or end-stroke alarms for the axes involved in working.



Drawing Archives

The interface allows to manage a drawing archives, freely organized in job orders, and it makes easy the selection thanks to the shape preview.



Technical characteristics:

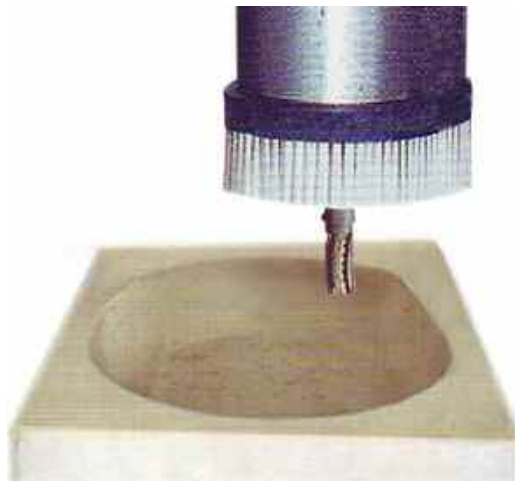
Programming
<ul style="list-style-type: none"> • Through integrated FPCAM interface • Direct in ISO 6983 code • Importing of programs generated by CAD-CAM of third-party
Manual Cuts
with the aid of manipulators in an entirely assisted manner by CNC
with fixed disc or with orientating disc (Oblique cut) and/or tilting disc (Tilted cut)
Slab Cutting
They can be programmed directly with assisted parameter set-up
They are entirely assisted by the CNC: compensation algorithms, selection of cycle in function of the material (marble or granite)
Main Cutting: <ul style="list-style-type: none"> • <i>Single</i> (also Tilted and Oblique), • <i>Multiple</i> (also Tilted), • Cut of <i>tiles</i> with the utility of Automatic Rotation of table, • Cutting of <i>circumferences</i> or <i>arcs of a circumference</i>, • Cutting of <i>Polygons</i>
Slab smoothing: in order to remove any defects, to reduce the thickness
Profiling
<i>standard</i> profiles: semicircle (concave/convex complete, first and second half), angle (concave/convex complete, first and second half)
<i>free</i> profiles generated through CAD
Shaping
<i>standard</i> shapes: cylindrical (concave/convex), angle (concave/convex complete, first and second half), taper (concave/convex)
<i>free</i> shapes generated through CAD
Shoulder working: finish to remove crests
Profiling+Shaping: the mixed working are allowed
Aids for profiling and shaping are available: <ul style="list-style-type: none"> • Selection of the material (marble, granite) • Automatic adapting to the disc thickness
Graphical Simulation: in advance testing of generic errors or end-stroke alarms
Drawing archives
Free organization (also for job orders)
Preview visualization in order to simplify the selection

1.5 CONTOURING MACHINE

The applicative software can be installed on **CNC** central unit.

The programming can be performed through third-party CAD-CAM both installed on board or on external station by importing the programs in 6983 ISO code. The direct programming on CNC is even possible through the graphical interactive editor. Thanks to the standard communication interfaces, which are available on control, and thanks to assisted procedures the user can easily transfer and manage the working programs.

The solution for contouring machines ensures great versatility in employment and easy interaction among between user and machine. Moreover there are available further aids for working such as in plane or in space shape digitalization and the complete tool and tool warehouse management (including wear and working time).



Technical characteristics:

Programming	Through third-party CAD-CAM on board or on external PC Direct on control through Graphical Interactive Editor (GIE)
Manage of working	Digitalization of shapes on plane and on space. Complete controlling of tools (uniform wear, working time, tools magazines)

1.6 WIRE CUTTING

The complete applicative software is available on **CNC** central unit.
The applicative software with function of Block Cutting is available on **PAC** central unit.

The programming can be performed through third-party CAD-CAM both installed on board or on external station by importing the programs in 6983 ISO code. The direct programming on CNC is even possible through the graphical interactive editor. Thanks to the standard communication interfaces, which are available on control, and thanks to assisted procedures the user can easily transfer and manage the working programs.

The optimal working of this cutting technology is guaranteed by the function for the controlling of the wire, which includes the adapting control of the tensioning, the managing of halts in order to eliminate the bending during the trajectory changes and its diameter compensation.

The user interface eases the programming of multiple cutting through the assisted parameters set-up, through the managing of equipment for the fixing of cut slabs.



Technical characteristics:

Programming	Through third-party CAD-CAM on board or on external PC Direct on control through Graphical Interactive Editor (GIE)
Manage of cutting technology	Adapting control of the wire tensioning Manage of halts in order to eliminate the wire bending Compensation of wire diameter
Control of multiple cuts	Guided insertion of parameters, control of fixing equipment and restart of machining.

1.7 WATER JET

The applicative software can be installed on **CNC** central unit.

The programming can be performed through third-party CAD-CAM both installed on board or on external station by importing the programs in 6983 ISO code. The direct programming on CNC is even possible through the graphical interactive editor. Thanks to the standard communication interfaces, which are available on control, and thanks to assisted procedures the user can easily transfer and manage the working programs.

The optimal working of this cutting technology is guaranteed by numerous applications that have been realized from time.



Technical characteristics:

Programming	Through third-party CAD-CAM on board or on external PC Direct on control through Graphical Interactive Editor (GIE)
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1.8 THERMAL CUTTING

The applicative software can be installed on **CNC** central unit.



Easy Programming

The programming of machining is completely interactive through the integrated CAM interface. It is allowed the use of specific third-party CAD-CAM installed on board or on an external station. The integrated CAM interface allows the direct selection of machining among the many available typical shapes and the assisted parameter set-up. The user can freely enlarge the shape collection by means of the supplied programming tools. Besides it offers some aids such as repeating, scale rate, rotation, mirroring, alignment of the single shape and of the imported programs. It allows the interpretation of programs generated by CAD-CAM for different numerical controls. In case of programming on external station, the programs can be easily downloaded on the machine, thanks to the several communication interfaces available. The program test can be done directly on the machine through the Graphical Simulation function or through the Simulation software on the external station.



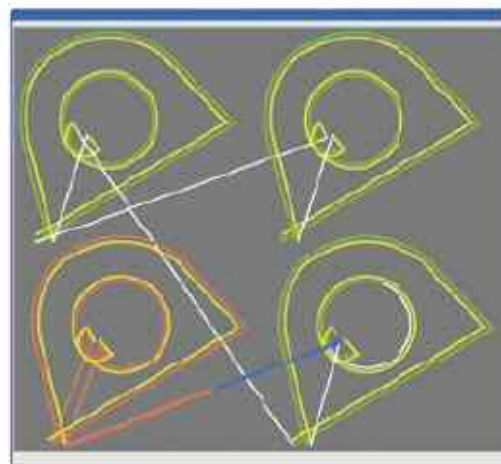
Easy Use

The entire application is designed in order to ease all actions relating to management of the working. The user interface allows the graphical simulation as preview and during the working. It shows both the complete cutting path and the one that has already been cut. The cutting management is made easy thanks to: compensation algorithms, assisted parameter set-up, tracing of the cutting trajectory, self-learning of the dimensions of the sheet, automatic positioning of the torches ...



In order to recover time and material there are available some assisted procedures that are dedicated to the Management of the Interrupted Working, such as: Retrace, to go back along the trajectory and to reposition onto the wanted point, Restart from the Hole (with and without compensation for deformations of the sheet), Restart from Line of Program, either automatic or manual.

The attention always dedicated to the installation and maintenance, assures trustworthy hardware and software, an easy setting up procedure and many tools dedicated to the customising of the logic of the machine. The integrated diagnosis system makes simple locating the failures of devices that are connected to it besides to internal faulty operations.



Control of the manufacture

The connection of the CNC to the firm network (LAN) simplifies the control of production allowing the backup of programs and data, the working program transfer and the collection of all the other data relating to the productivity besides to the software updating. It is possible to connect the CNC with devices dedicated to the product tracking.

Technical characteristics:

PROGRAMMING
Through integrated CAM interface
Through third-party CAD-CAM installed on board or on external station
Direct by ISO 6983
Integrated CAM interface
Library of typical shapes organized in various categories and with the assisted parameter set-up: <ul style="list-style-type: none"> • Geometry of cutting: radius or arc of circle, length of lines, distances... • Definition of cutting: working from external (Filled piece), from inside (Empty piece), in Continually Filled manner, that is the torch stays active between a cut and the following,... • Parameters of cutting: Attack and Detach from the piece (standard or optimized for saving of material), Compensation of cutting width, Radius of Attack, Overlapping of cut ...
Adding of customized shapes through the programming aids (GIE)
Utilities of programming: Repeating (along X and Y), Scale Rate, Rotation, Mirroring, Alignment (along X and Y) ...
Third-party CAD-CAM
ISO Converter function for the interpretation of ISO programs that are generated for other CNCs
PC system for the running of CAD-CAM
TEST OF CUTTING TRAJECTORIES
Directly on board of the control through the Graphical Simulation function
On external developing station (PC) through the CNC simulation software
Graphical Simulation
As preview of working in order to verify the cutting paths, the compensations and the end-strokes of the machine
During the working in order to verify the executed cuts, the cuts to execute besides to the movements of the torch during the Retrace functioning
COMPENSATIONS
Cutting width
Misalignment of the sheets referred to the coordinates of the machine and origin
WORKING TECHNOLOGY
Plasma or Oxy-fuel (with the assisted cutting parameter set-up)
Self-acquisition of the pre-heating time (Oxy-fuel)
MANAGEMENT OF WORKING
Recovery from interrupted cutting (Retrace)
Restarting from hole (with and without compensation for sheet deformation)
Restarting from line of program (automatic and manual)
COMPLEMENTARY FUNCTIONS FOR WORKING
Tracing with inking tool
Torch positioning: management of more torches (and of non active torches) and assisted parameter set-up
Self-acquisition of the dimensions of the sheet to cut
Possibility to change the position of entry hole
MANAGEMENT OF PRODUCTION
Record of times of stopping machining due to: Alarms and Load/Unload of pieces
Possibility to connect devices for the product tracking
BackUp data

1.9 SIMULATION SOFTWARE

ISAC SRL mette a disposizione software di Simulazione per realizzare una postazione di sviluppo e simulazione.

CNC Simulator

TimeX is the Simulator software for CNC: it can be installed on PC and it allows the simulations of axes, of working and the first step of debug of Machine Logic (PLC). Thank to TIMEX, you can reduce considerably the developing times.

[Option Code: OPTIMEX00]

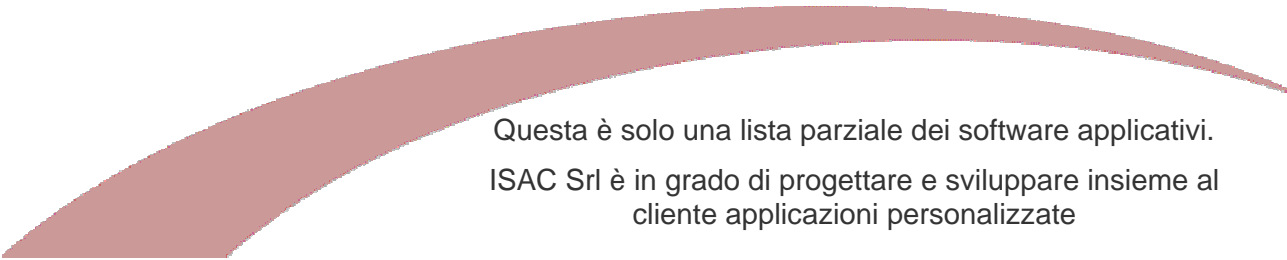
FPCAM simulator.

The complete Bridge Milling Interface can be installed on PC and it realize a second station for developing and simulation of working programs. It also installs the CNC simulator and it makes a complete simulator of application.

[Option Code: OPCAMFP0]

RTPLC Simulator

You can use this implementation for introducing actions and moreover you can use to create the control rule before you have the PAC device or the plant to control. It can be installed on the majority of office PC and laptops and it represents a valid tool to simulate and test the applications installed on PAC solutions. With the software package, which makes a simulation of PLC framework on Pc, you can develop and test the PLC logic, simulate the I/O devices and axes, and develop external applications for auxiliary and operator interface.



Questa è solo una lista parziale dei software applicativi.
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