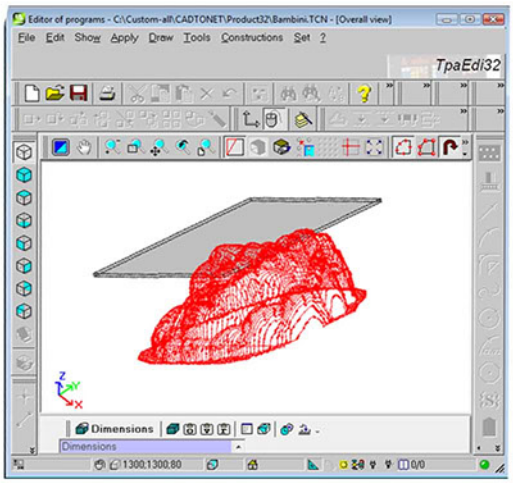
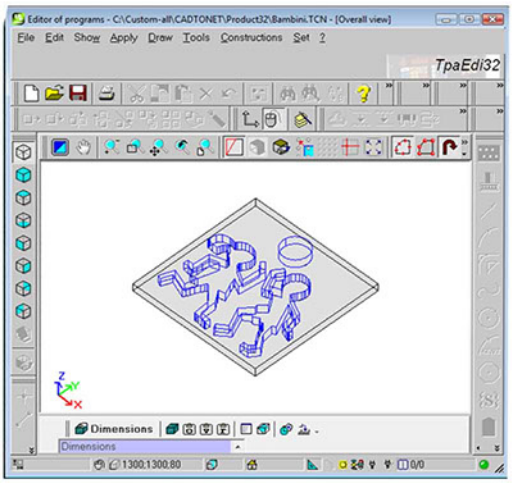
TpaEdi32

GENERAL FEATURES

Made by TPA from 2005, TpaEdi32 is the last generation CAD/CAM programming system for the interface with 3 or 5 axis CNC milling centres.
TpaEdi32 is a programming system and also an integrated environment working both in an environment of design only and on the machine. Wood, marble, metal and plastics are just some of the application fields of TpaEdi32.
The programming system can works in a manner that is independent of the manufacturer machine of its composition, both in work centres and integrated production lines. In the same way TpaEdi32 can totally ignore, integrate and fully or partially apply the plant technology, according to the specific application required.
High performances of a graphic Editor in one only environment for excellent and targeted functionalities of a CAD program are TpaEdi32 essential peculiarity.

- Product scalability at various levels of functionality and configuration
- Interpretation and production of different (DXF, ISO) and customised drawing formats
- Integration of the technology for single or line machine
- Fully customisable working database
- Wide native set of complex workings (drilling, inserting, milling cycles), logical instruction (IF-ELSE-ENDIF cycles; programmable errors; writings of dynamic variables) and macro-programs
- Wide native set of local and global variables
- Multiple options in the configuration of customised information (global variables which can be defined in. name, type, validity interval)





- Facilitated definition of inclined planes
- Activation of special views (tool compensation, logical conditionings, selected elements), visualization and/or lock filters
- Elementary tools: translations, rotations, mirrors, serial repetitions
- Profile manipulation tools: dimensioning, inversion, linearisation, edge adjustment, selective cuts, connections
- Profile manipulation advanced tools: offset, distribution of connection points, depth progression, cuts and selective constructions
- Generation of emptying profiles, writings, Spline curves
- 2D drawing interactive modes through multiple snaps on programmed or graphic representation entities (grids)
- Representation of program list in text format: visualization of structures and logical cycles, facilitated commands for exploration and modifications

code SW1.1.01

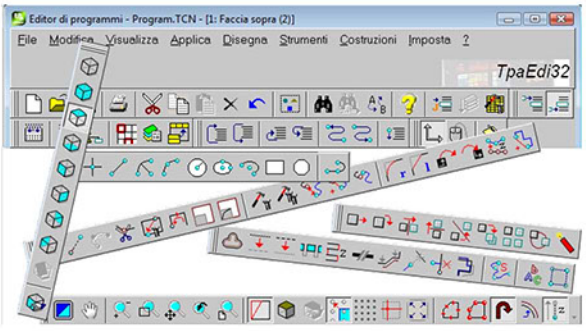
•Creation of sub-programs and execution of multiple and recursive calls up to 4 expansion levels
•Multiple functions for parametric programming: mathematical, trigonometrical, statistical, geometrical and logical functions, string manipulation, acquisition and control of technological information and execution modes
•Creation of customised functions of parametric programming
•Selective commands for modifications, replacements and search
•Assignment of programmed working execution plan (execution sequences) and
- program diagram customisation (according to the execution modes)
- selective assignment of working groups, which can be excluded from the execution (exclusions)
•User interface available in 8 languages (Italian, English, French, German, Spanish, Russian, Czech, Dutch, Polish)

FUNCTIONALITY, CONFIGURATION AND CUSTOMISATION LEVELS

The system supports several functionality levels in order to provide the best ration of performances and cost. A Base functionality provides a good level of completion of a typical environment of graphic Editor, where the function of interactive acquisition for the drawing object is widely available. A Professional functionality adds typical performances of a CAD application and completes the performances of the Editor environment.
The flexibility in the environment configuration allows you to adapt the functions and interface to meet the requirements in the best way.
The final user may add customisations to the configuration by defining new workings, customisation in the graphic presentation and in the working assignment modes.

WORK INTERFACE

Developed in Windows®environment, TpaEdi32 provides a simple and reliable work interface, while ensuring both graphic and functional high customisation possibilities.
The organization studied for the working environment highlights the immediate available view on almost all the commands, in each possible position required. To the classic menu, providing a full set of commands, correspond various bars of graphical buttons, in which the commands are divided into groups you can freely position and view.
TpaEdi32 can work on multiple contemporaneous instances and change the work plant locally: two starts of the application allow you to keep different programs open, to perform data transfer operations between instances, to keep independent debugs active, to open programs in different systems simultaneously.



Thanks to the TpaEdi32 integration you can import programs generated by other CADs and export them to other drawing formats in a complementary way : you can also import and export external modules and integrate them easily.
Native modules work on DXF and ISO formats, and they also include the interface from and to TPA formats of previous products.

ORGANISE A DRAWING

A program is structured by:
•definition of a simple - parallelepiped - or complex geometry, defined by a set of work planes oriented anyway:
•assignment of a variable information set, in number and significance, useful for the definition of the work program;
•definition of the work program, organized in one or more lists of simple or complex elements, each generally defined as working.
A program can be defined fixedly or in a general parametric manner. A parametric program is used as a model to process the parts similar to each other, with differences that may relate to

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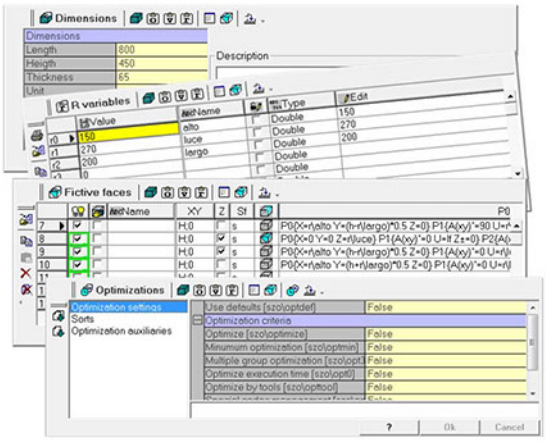
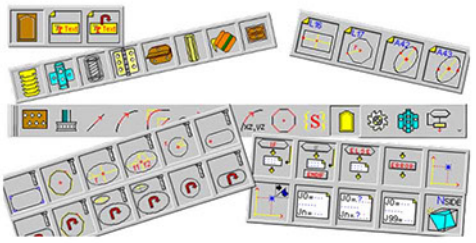


the piece dimensions, the positioning of the worktops, the technology, the distribution of the workings, the diagnostics. There are multiple customisations for the representation of the piece; they provide for the complete assignment of geometric references of each work plane, even the visual characterization of the support in processing (wood, metal, glass).
The management of work plans simplifies the drawing, which can be organized into separate sections, each corresponding to a oriented surface. The work planes can also be created through the application of machining and macro-workings.
In a one only environment you can alternate two-dimensional and three-dimensional representations of the piece, through the application of functional filters as well as numerous graphic support elements: activation of levels and special views, support representations to the paths, grids and graphic accessories.
The navigation in the drawing, according to a working View structure, allows you to adopt the most convenient geometric reference system, and to choose the required levels of graphic and interactive complexity at any time.

WORKINGS



TpaEdi32 has a set of primary workings which is the result of a consolidated experience in the various areas of use and which allows the approach to a wide range of applications, without an immediate need of customisations. The primary database includes a group of Macro-workings, complex workings that make the best use of the program features. The system allows a total redefinition of the applicable machining operations, to cover every kind of need. In the same way, the end-user can create new workings, based on the writing of his own Subprograms.
In the customisation of the work processes, a particular aspect concerns their many properties, each of which is partly native and partly customisable: levels, attributes of a graphic construction, M-functions, identification name and description.

2D CAM

Workings and tools which can be selected from the menu apply procedures of particular geometric or technological valence. Common transformation tools: displacement, rotation, mirrors, scale, repetitions according to defined patterns.
The exploded view of the complex workings allow the total availability and the control over all the programmable entities.
Editing Tools assigned to individual profile elements:
- extension or change of the geometry
- fragmentation or geometric reduction

Special Editing Tools for profiles:
- inversion of the execution

•scaling or stretching
•linearisation of the execution depth
•edge fillets
•selective cut
•opening and closing segments of the profile
•fragmentation or geometric reduction of the segments
•connection of separated
•technological assignment for single or multiple execution.

Generation or change of profiles for:
•offset application
•distribution of connectors
•developments of progressive advancement in depth
•selective duplication of a geometry
•cut or selective constructions.

Emptying processes work on generally closed areas, with respect to isles assigned on multiple layers; they develop in depth progressive emptying processes and recover residual areas.

Development of texts is compatible to the system fonts.

The generation of spline curves enables the selection of different interpolation methods:
•Bézier curves
•Hermite curves.

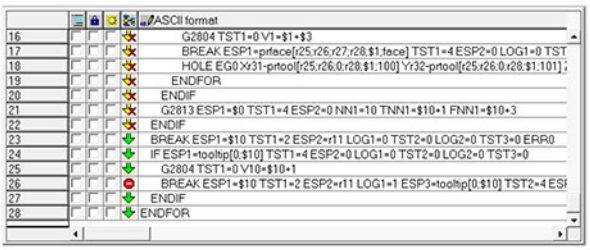
DRAWING AND 3D CAD

The design is simple, intuitive, and articulated. Many features of snap integrate the drawing functions into primary graphic elements (grids) and into scheduled items.

The drawing features interact with the direct programming of the workings, where the placement of the already assigned workings can be interactively modified and new workings can be entered by means of the drawing functionalities.

TEXT STRUCTURE AND PARAMETRIC PROGRAMMING

While offering wide opportunities of interaction and graphic constructions, TpaEdi32 maintains and enhance the text Editor peculiarities of the TPA history, whose origins date back to the products made in the '80s. The possibilities resulting from the parametric programming include the use of the following functions:



•mathematical, trigonometric and statistic
•geometric
•logical
•string manipulation
•acquisition and control of technological information
•control of the executive modes.

Moreover, you can program logical structures and interactive diagnoses in assignment and as a complement of the same parametric forms.

New parametric functions with non-default (mathematic, logical, geometric, technological) valence, which the user applies in a manner entirely integrated with the native functionalities of the product, can be added.

The user can parametrise the application of the workings by assigning each part of it; it is possible to assign positioning, activation and internal development rules.

The parametrisations include the use of customisable information. The user can:
•define the value while implementing the program and
•access the information also during the generation and the execution of the numeric control code (PLC cycles).

A graphic representation is always supported by a text representation of the programmed elements, by drawing particular attention to the visualisation of the program logical structure and navigation.

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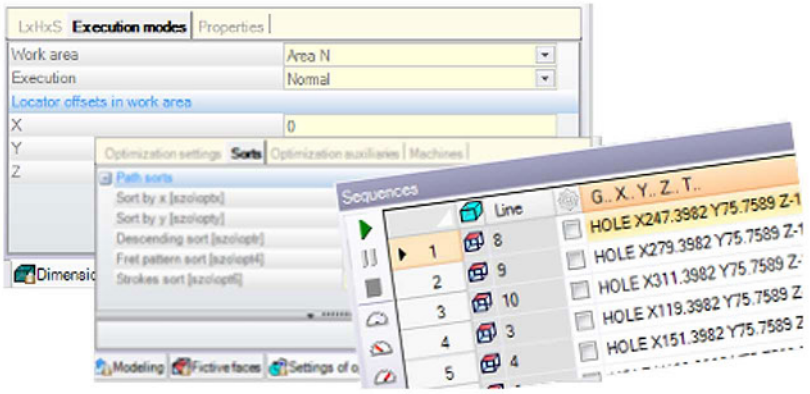
The representation of a program the programming stage may also not correspond to the current development as the execution in the machine: this as an extreme application of the functions of parametric programming and logic structures.

COMMANDS OF GENERAL MODIFICATION

Search and working modification commands are available and they correspond to:
•operating code
•geometrical and technological parameters
•properties
•parametric forms
The search can be applied to a particular view (work plane) or extended to the whole program, where it is possible to work in accordance with the active selections, as well as with the application of viewing and editing filters. Searches and replacements can be carried out step by step or in a comprehensive manner.

CONTROL OF THE EXECUTION PHASE

All the program information which have a parametric valence can be changed during the execution of:
•piece dimensions
•public variables
•execution modes
•assignment of executive filters according to specific properties (exclusions)



A program can assign directly useful information to define the execution mode:
• technology assignments (forcing the choice of the working tools)
•selection and/or control of the execution area (usable area, normal or mirror execution)
•criteria for the optimisation of the execution (change tool optimisation, path sorting, optimisation of the steps)
•restraints in the executive sequence of the workings.