This document describes the new features and improvements introduced in the LASER TYPE Version V14 software.

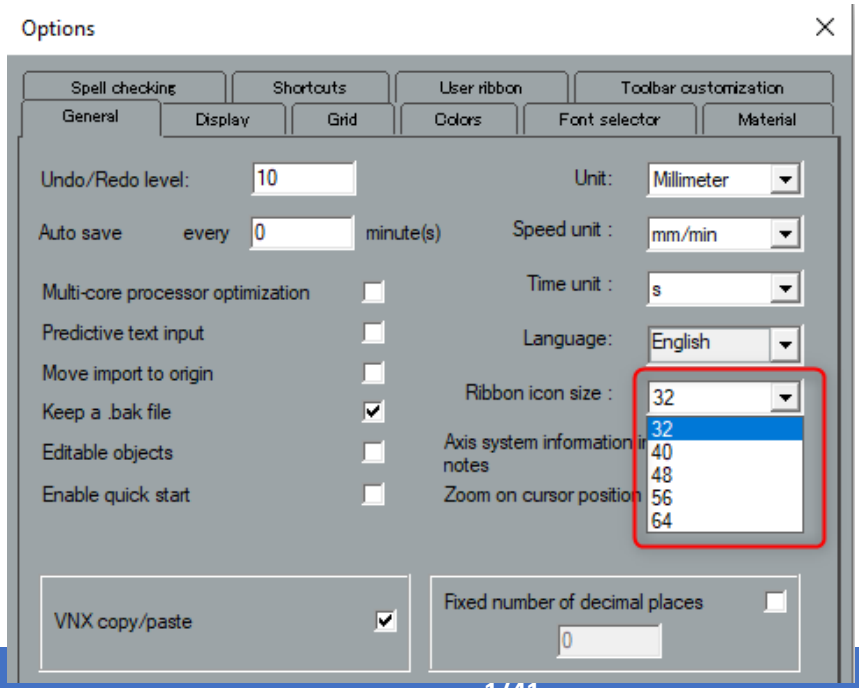
With this new version, our team has strived to give you more tools to control the design as well as new parameters for our laser toolpaths for increased productivity and flexibility.

LASER TYPE is now organized under 3 logical and distinct module names: CAD 2D drawing (**LASER CAD**), CAD 3D design (**LASER ART**) and CAM (**LASER CAM**).

LASER CAD

1. SVG ICONS, NEW INTERFACE

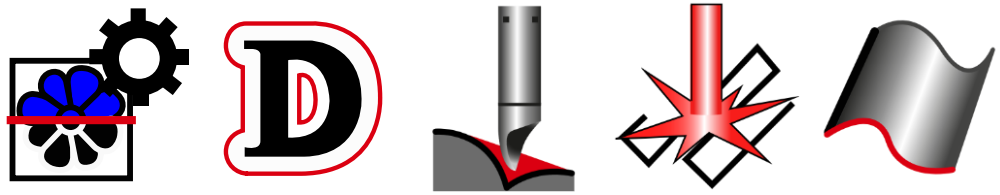
All LASER TYPE icons are now in SVG vector format. This format allows you to have sharp icons whatever the size of your screen. The size of the icons to be displayed is set in the **"OPTIONS"**



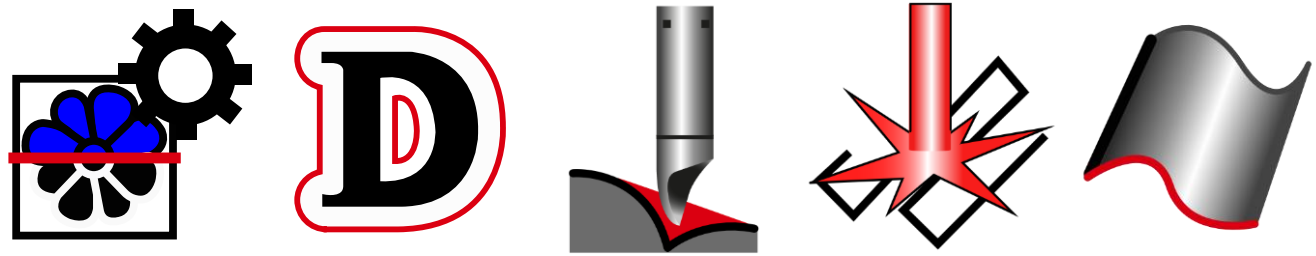
The icons in the different sizes remain clear: the resolution of your screen will be considered.

: 100 %

: 200 %



: 300 %



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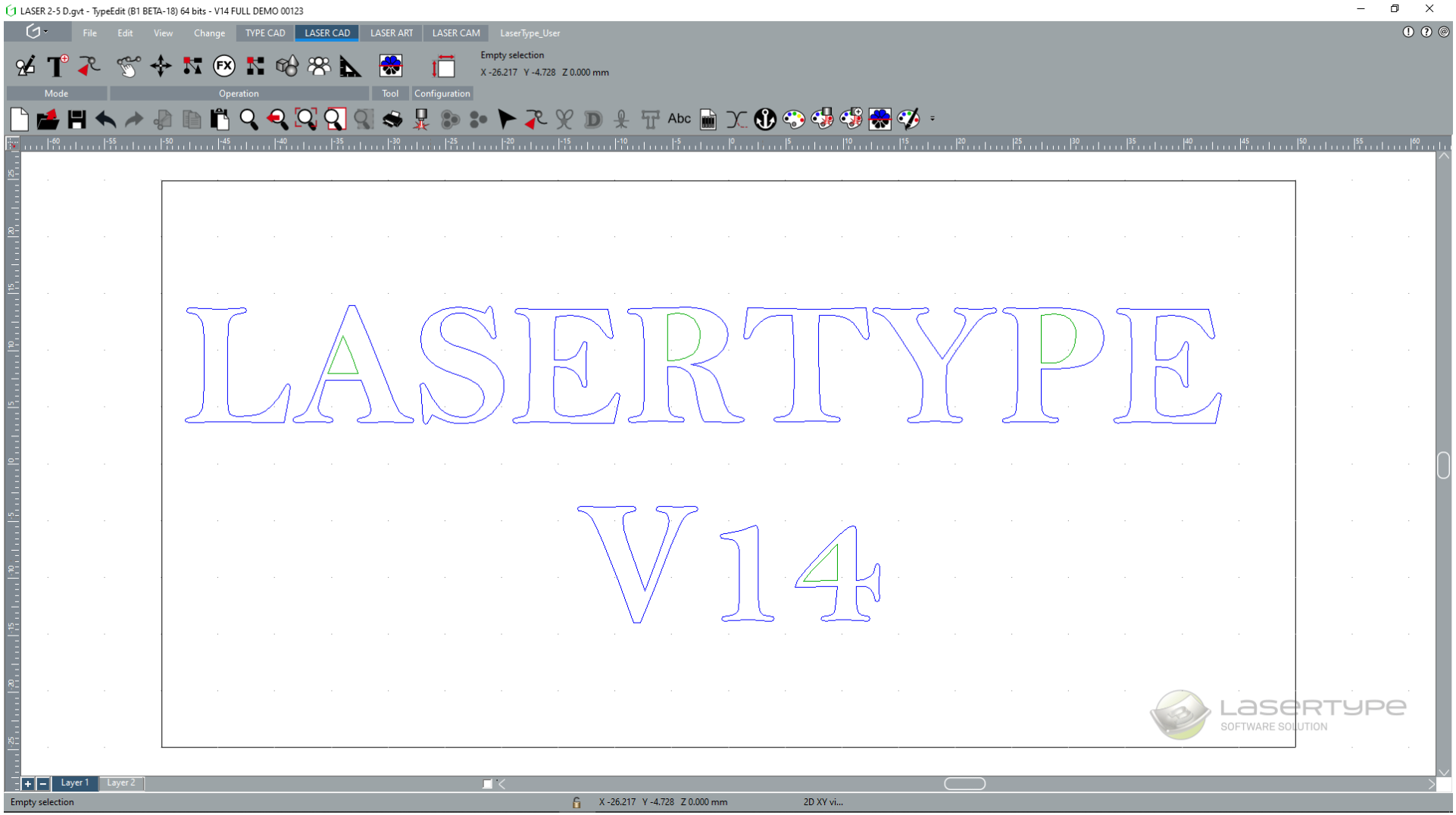
We also took the opportunity to change and modernize the interface by making it simpler, more ergonomic and relaxing with a darker environment while keeping the efficiency you knew.



2. 64 Bit and Unicode

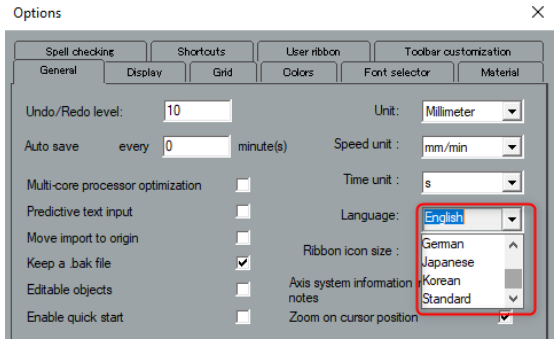
The introduction of 64 bits will offer the possibility to manage much more data, such as importing a larger vector file, calculating a toolpath with more vectors, or creating a 3D TYPE ART model with better resolutions.

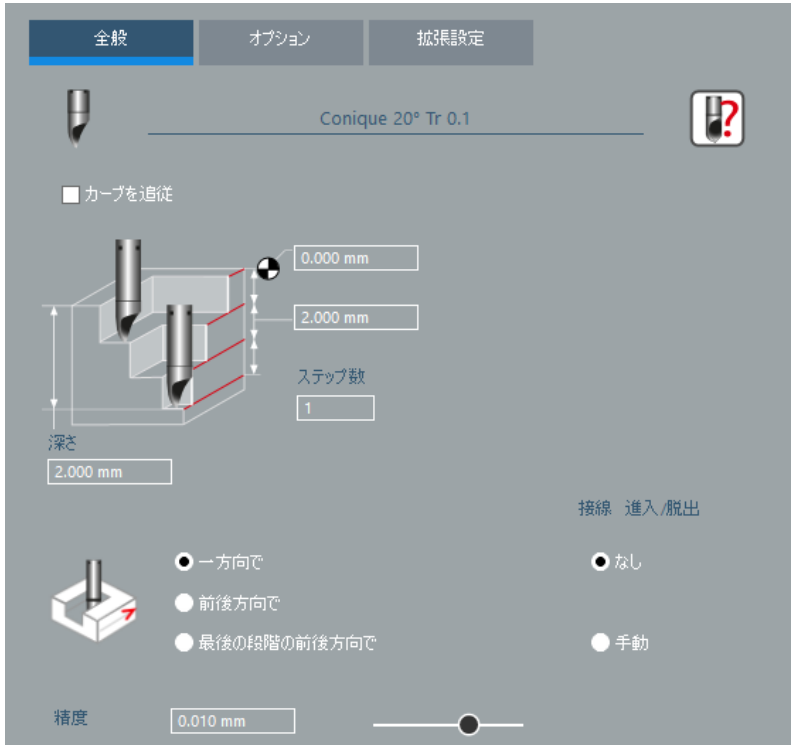
⚠ Note: 64-bit does not imply faster calculations but only the management of more data. The master is also 64 bit.

Unicode compatibility will give more flexibility to all our customers using languages such as Russian, Japanese, Korean, Chinese, etc.

It is no longer necessary to change the Windows Regional Options and restart your PC. You just need to change the language in the **“OPTIONS”** and restart your software.

The file names, the imported or written texts and the interface texts will be totally managed, the display will be correct and in the specifics of your language of use.



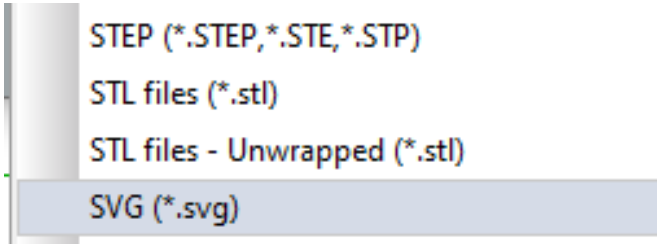


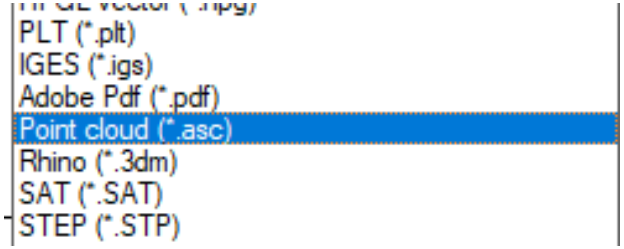
3. EXPORT

A. NEW : IMPORT

As for each version, we improve our import speeds, vector formats such as DXF, DWG, PDF are even faster and thanks to our new library, more entities can be imported and recognized by the software.

It is now possible to import the *.SVG (Scalable Vector Graphics) format which is widely used in many web applications to display vectors.





B. NEW : EXPORT cloud of points

To make our 3D model, TYPE ART, even more compatible with third-party software, you can now export them as cloud of points with only X, Y, Z coordinates. With this format, we assure you no distortion of our model.

X	Y	Z
38.0387	48.1342	-1.7442
38.0945	48.1342	-1.7159
38.1503	48.1342	-1.6876
38.2061	48.1342	-1.6592

4. NEW : unifie extension format

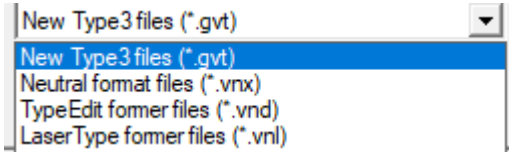
We decided to reunite the extensions of our files between TYPE EDIT (*.VND) and LASER TYPE (*.VNL). The new format, from version V14 is now *.GVT.

The immediate gain for you who have the 2 software solutions is the possibility to open any file whatever your initial creation software. Drag and Drop in the window also works and will open the file.

⚠ Note1 : V14 can open both VND and VNL files and save them in the new GVT format.

⚠ Note2 : older versions of TYPE EDIT or LASER TYPE continue to open their respective formats but will not be able to open a GVT file.

In conclusion : *VND et *.VNL ➔ *.GVT



5. Languages

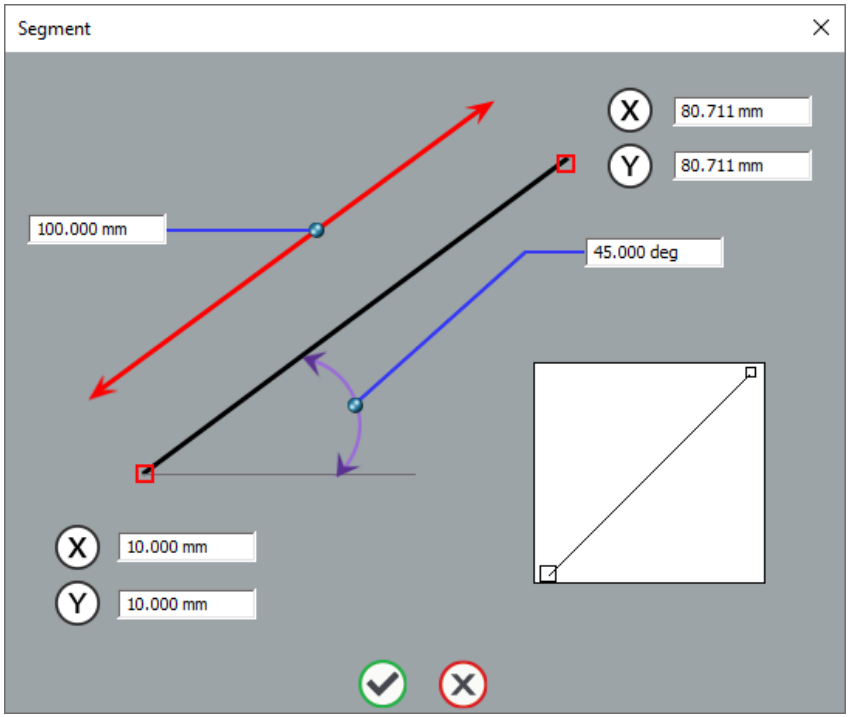
The available languages are the following from build A :

- French, English, German, Spanish, Italian, Russian, Japanese, Korean, Chinese, Republic Czech, Hungary,

6. NEW : "LINE" function

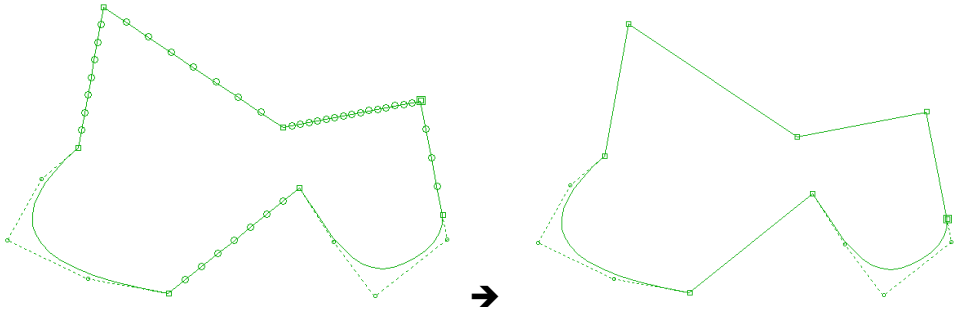
This very basic function was missing from our geometrical shape's catalog. You can find it in the "Geometric Shapes" toolbar.» .

Here it is with its parameters, by clicking on F2 at the same time as the icon. You can enter the length / angle and the start and end points. Freehand drawing with 2 clicks is also possible. A preview of the line.



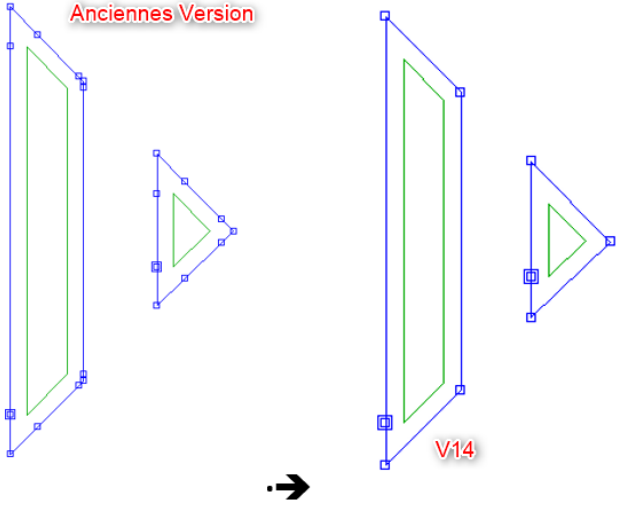
7. NEW: Function "DELETE ALIGNED POINTS". ”

This is a very interesting function that allows, as its name suggests, to delete aligned points. It can be found in the "Special Effects" toolbar. FX



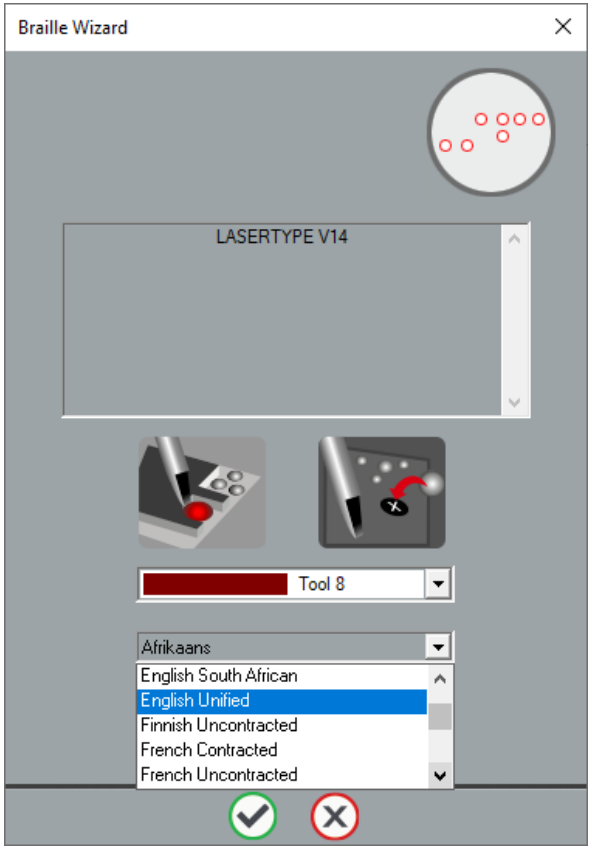
All intermediate aligned points between two ends will be erased according to a tolerance. Very useful after a vectorial import whose curves are all segmented. The goal is to minimize the number of points for machining or 3D construction.

⚠ Note : Our "Knives", "Offset" and "Offset to follow" functions also benefit from this approach.



8. NEW : BRAILLE function

This Braille wizard has been developed to simplify the process for you. Just type your text and select one **of the 53 Braille** possibilities according to the country. The function can be found in the "Specific functions" toolbar.



Braille is a writing/reading system made up of tactile dots used by people who are visually impaired or blind.

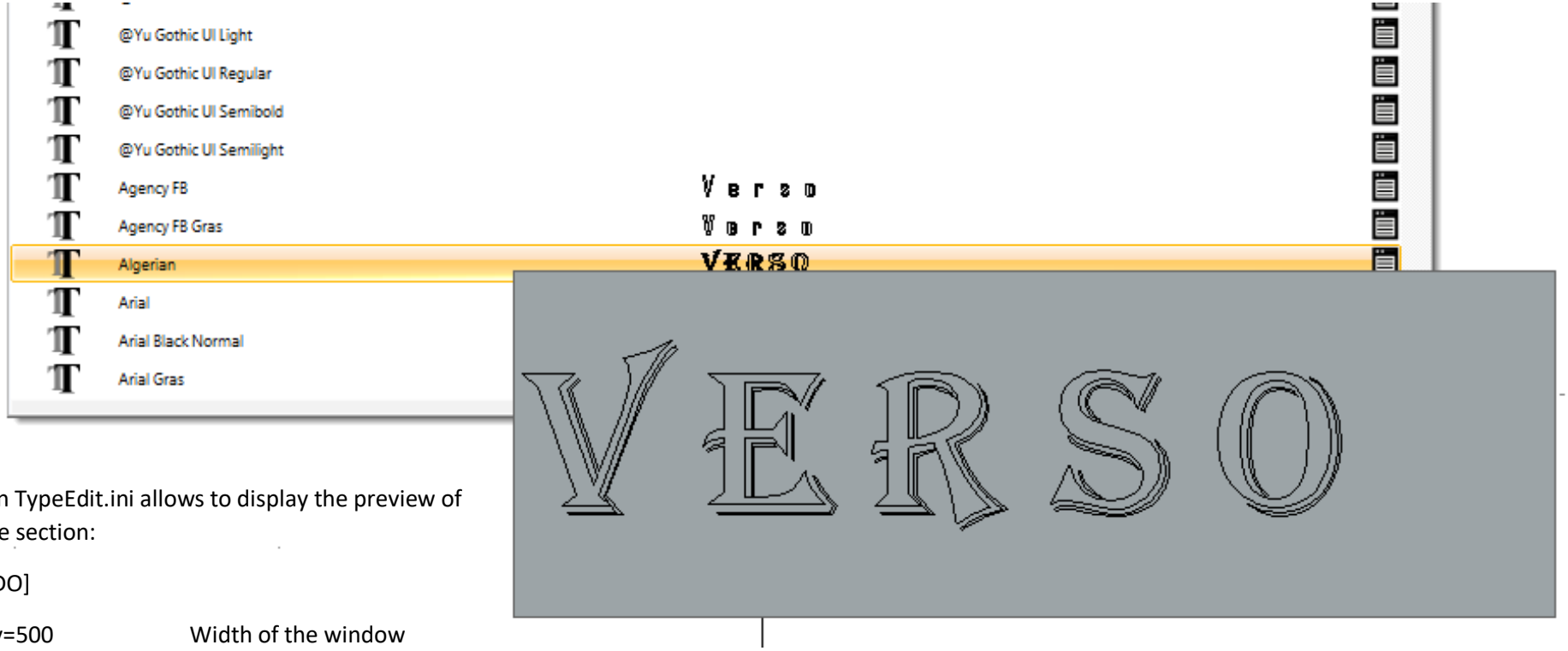
Each Braille character or cell is obtained from 2 columns of 3 dots each. By combining relief and flat dots, 64 cells are obtained from 6 dot locations.

Braille Wizard transcribes a word into Braille equivalent according to the standards in force in the selected country.

The Braille Wizard uses the TTF NH-Braille font to display the cells. If the font is not installed on your computer, a message will warn you when you run LASER TYPE.

9. IMPROVEMENT: EXAMPLE TEXT DISPLAY Bigger

The font selection display is much larger for a better visualization of the shapes. If you need to recognize the font used for your curves then this new display will help you.



Parameters in TypeEdit.ini allows to display the preview of the text in the section:

[FONT_RAPIDO]

WidthDisplay=500	Width of the window
FontHeightFamille=18	Height of font families
FontHeight=12	Font height

⚠ : You can enlarge the height of the window manually.

LASER ART

In this 3D module, TYPE ART, we have worked a lot to make the design more interactive by totally modifying the display but also introduce, progressively, the possibility to visualize the result during the creation with a "Calculate" button.

In addition, with 64-bit compatibility, the resolution of our 3D models has been doubled by default.

1. NEW : Curve sweeping

This is a new possibility of curve sweeping, which LASER TYPE offers you, among already 6 other existing methods, in our catalog. This new sweeping makes it possible to obtain even more astonishing results, even impossible to obtain with other methods or applications, especially in angular corners.

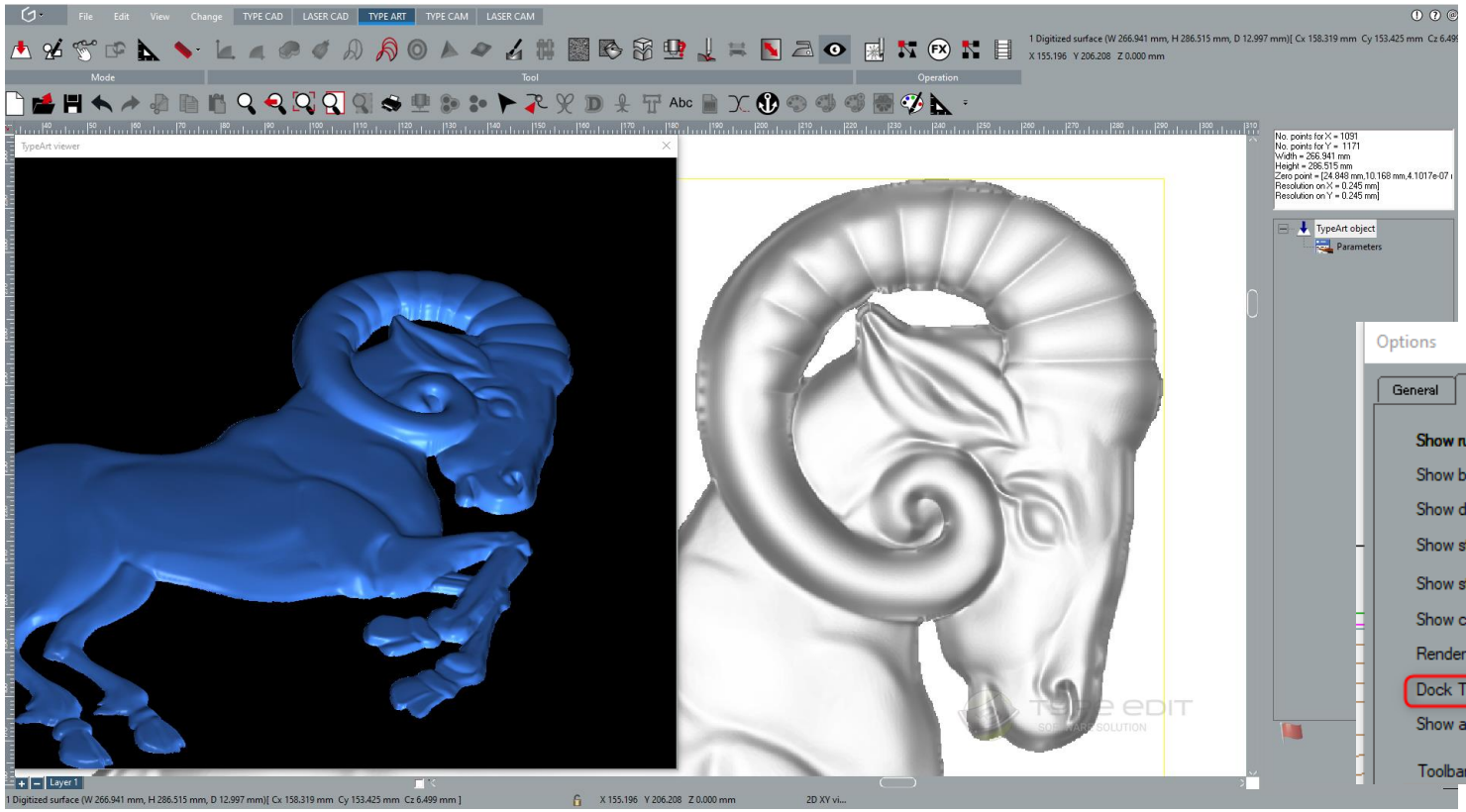
Take a look or admire, earlier, in the corners the effect obtained. The junction is perfect and harmonious.

The operation is quite simple to use, you must select the support then the section before starting the function. Sweeping follows the contour directions (clockwise or counterclockwise).

2. NEW : 3D VIEWER

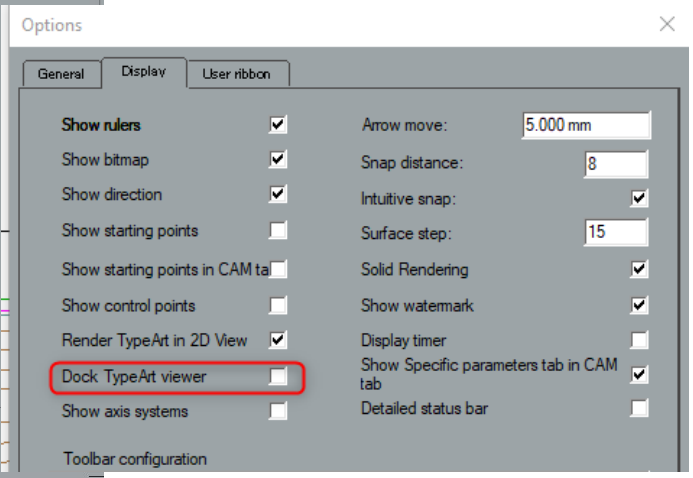
A new 3D viewer freshly developed by our teams to give you a more concrete reality of your 3D modeling under LASER TYPE.

A new window opens automatically as soon as you are in the 3D TYPE ART module. It is independent or not according to the Options and you can move it and/or resize it as you wish. If, in addition, you have a second screen, your working comfort will be improved because you can on one side select curves and launch functions while monitoring the 3D result on the other screen simultaneously.



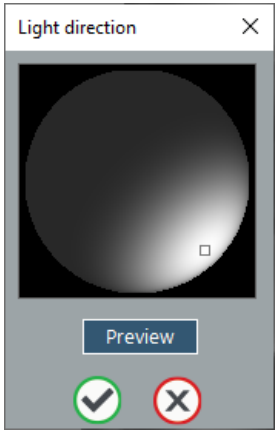
We use dynamic rendering in OpenGL

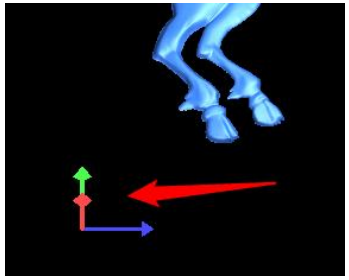
Locking the 3D rendering window is possible in **“Displays Options”**



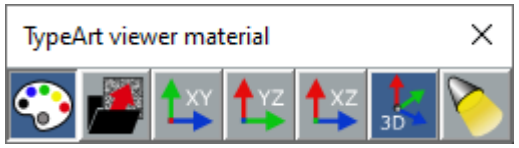
The Rendering parameters :

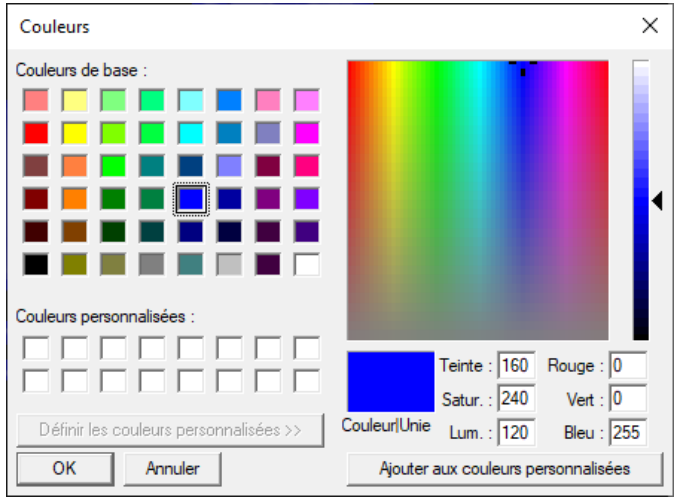
A. Modify the color in a palette as well as the associated parameters such as opacity, scattering coefficients, specular, etc.
B. Load an image that will be bump mapped on your model.
C. Quickly change the basic views: XY, YZ, XZ and 3D
D. Changing the position of the lighting

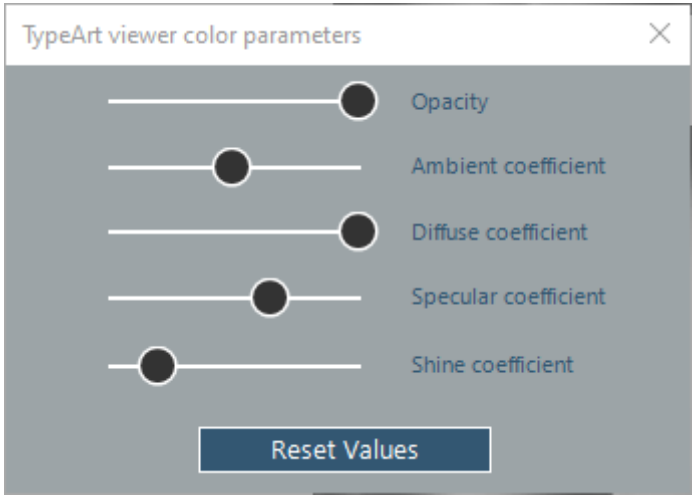




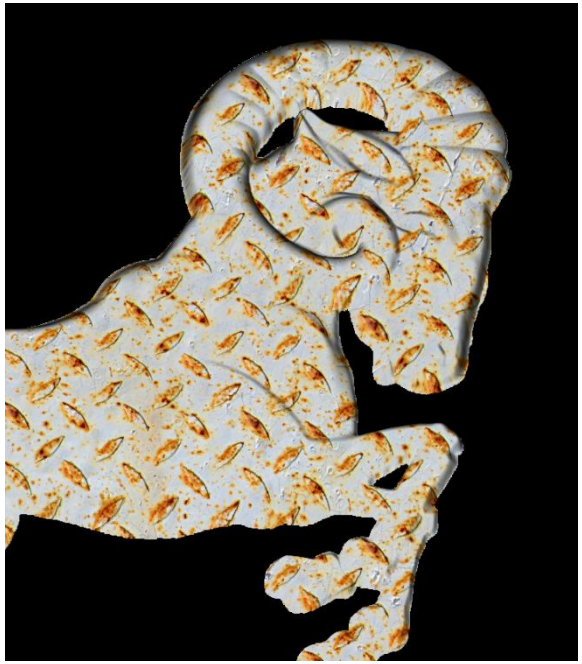
A local reference system locates you in the 3D space.





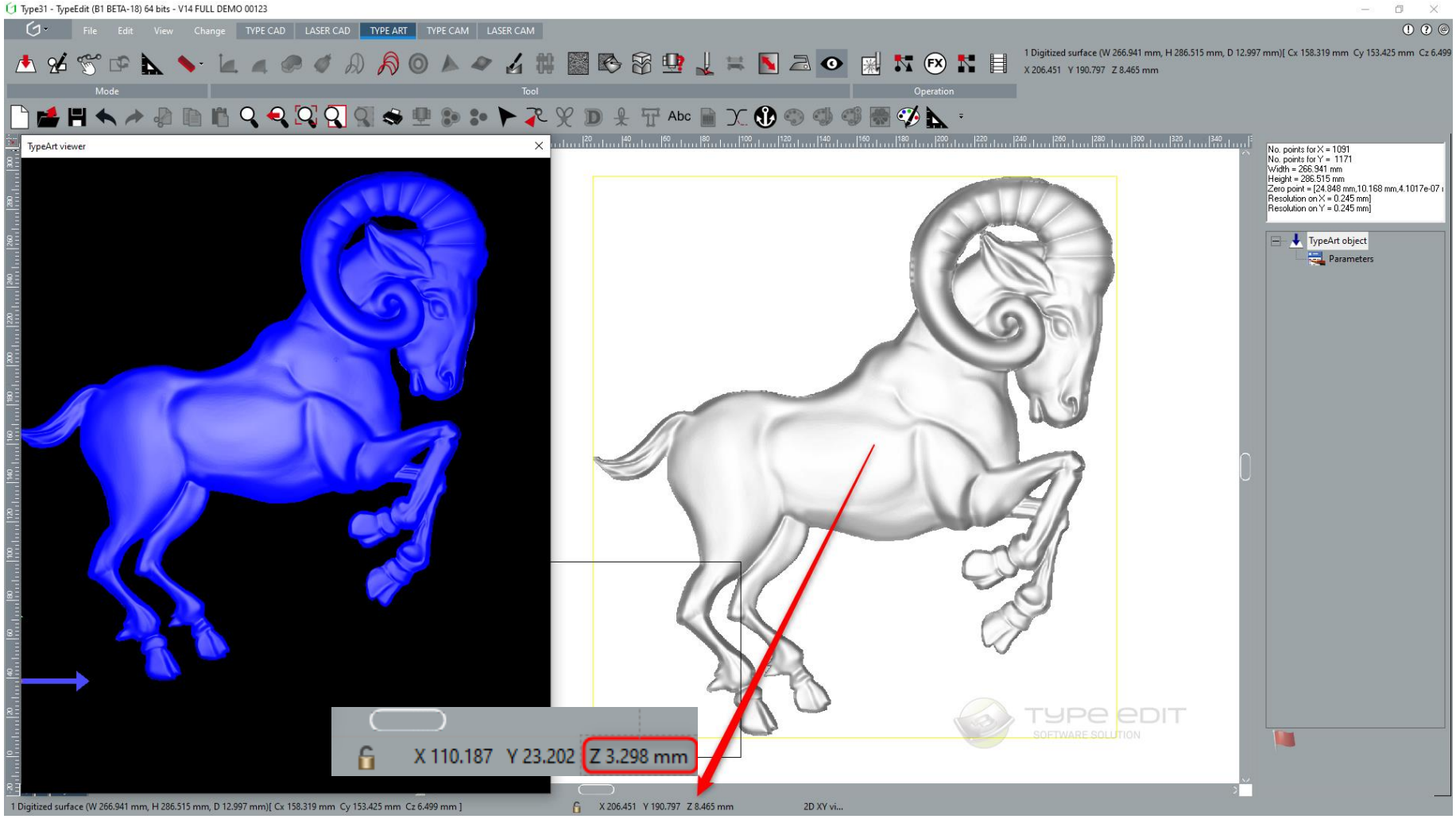


Example of images proposed during the installation, but you can of course use your own, please take images of good resolutions and square images to avoid distortions:



3. NEW : Z position of the 3D model

On the 2D view on the right, only, move your mouse over your shape to know the Z value. An important information to control the depth of your model at any time.



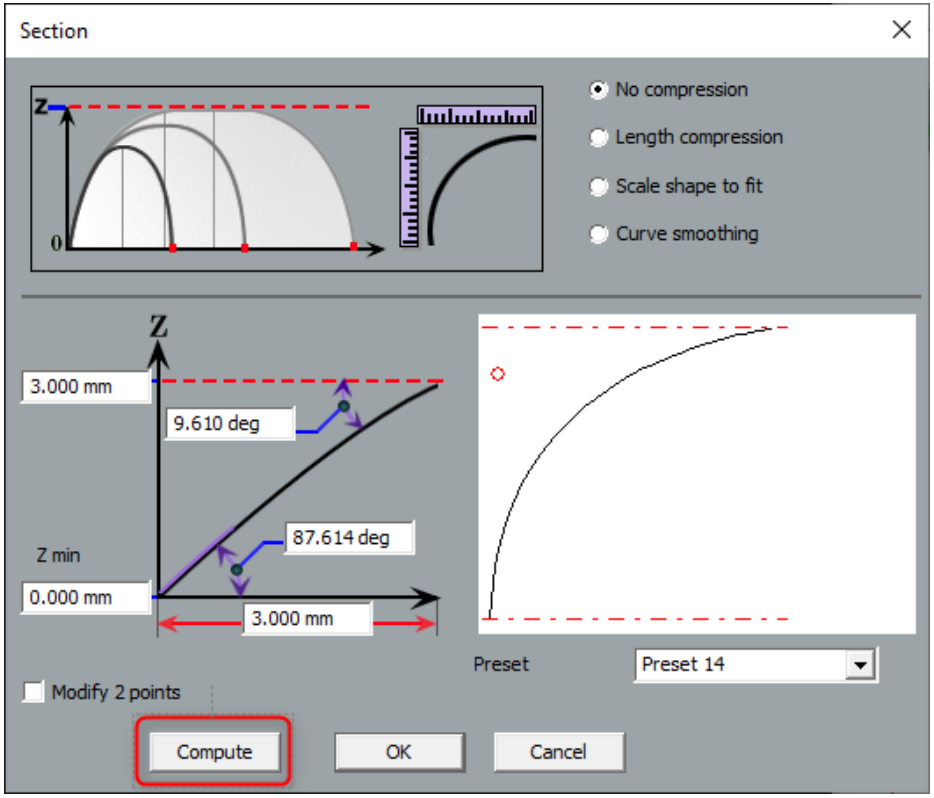
4. COMPUTE « button »

The main idea is to visualize the result in the Viewer or 2D view before leaving the function.

Operating principle on the Symmetric Curve function.

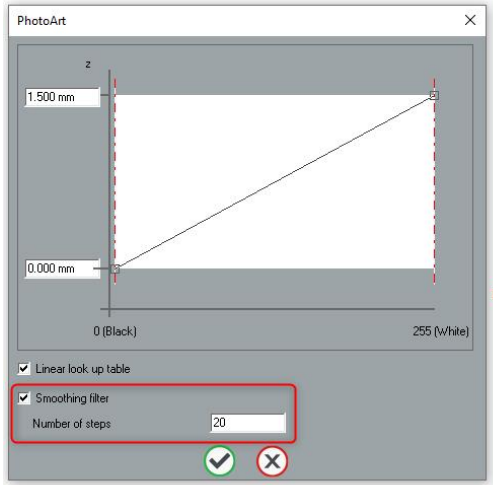
Select the curves then launch the function. Choose the parameters then click on **" Compute "**, the result is displayed on the 3D Viewer as well as the 2D view. The result is suitable for you then press on "OK" to validate. If not, you must undo the action to cancel your parameters and then modify the combination mode or choose other values and then **" Compute "**. You can then modify the parameters ad infinitum to really get what you have in mind.

We will gradually bring this approach to all functions in the TYPE ART module.

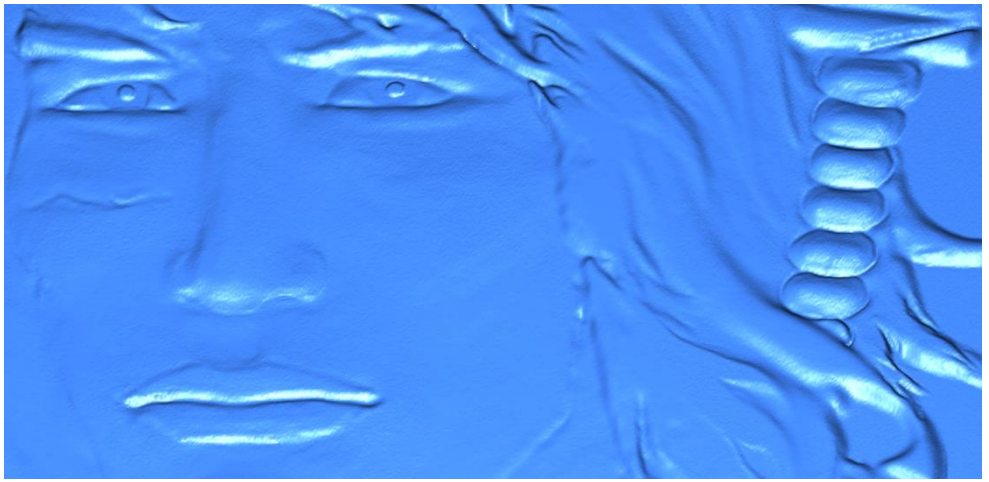


5. “SMOOTH” option during grayscale conversion

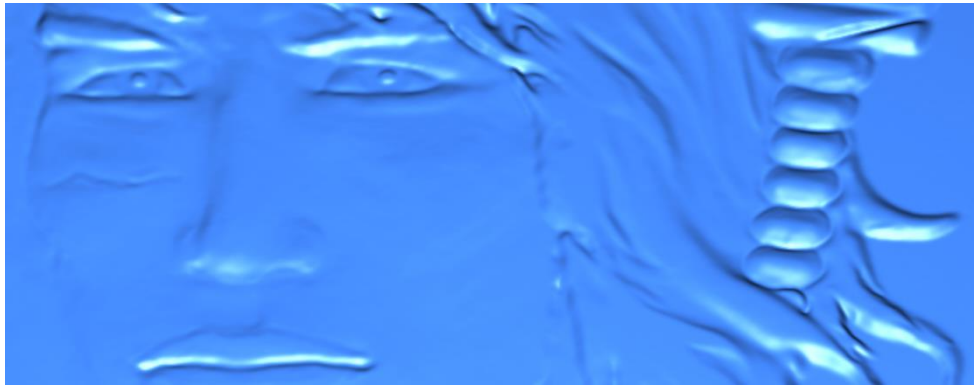
When you convert a grayscale image into a 3D model, it is now possible to apply a " smoothing " to reduce the grains.



Without Smoothing

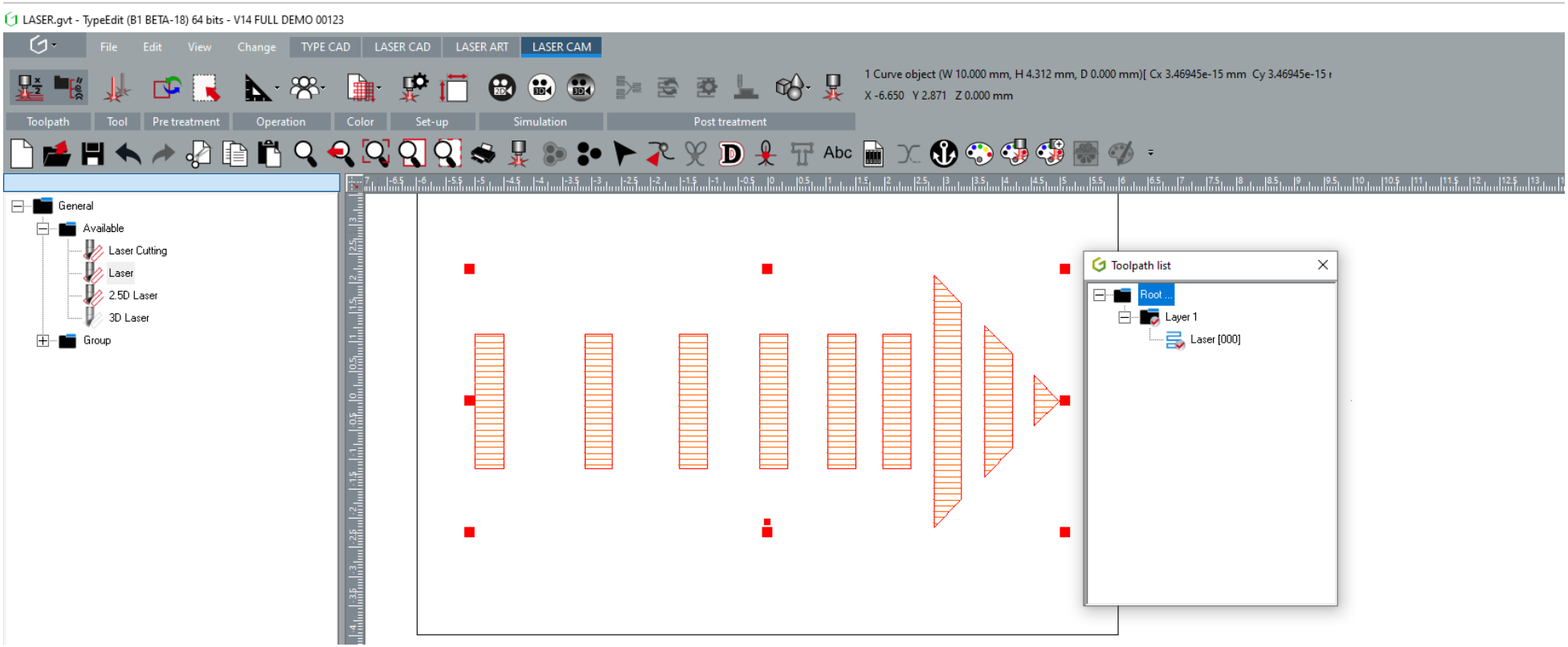


With Smoothing



LASER CAM

In the LASER CAM module, we have completely redesigned the interface. A completely new reorganization of the parameters, especially in the "Cutting" path. These are the same icons for Lead In / Out and loops as in TYPE CAM. Beyond the interface, our development team has also added several additional functionalities unique in the LASER field for laser paths. This is one of the reasons why our toolpaths tend to become more and more "Smart", more optimized, with more possibilities and efficiencies.

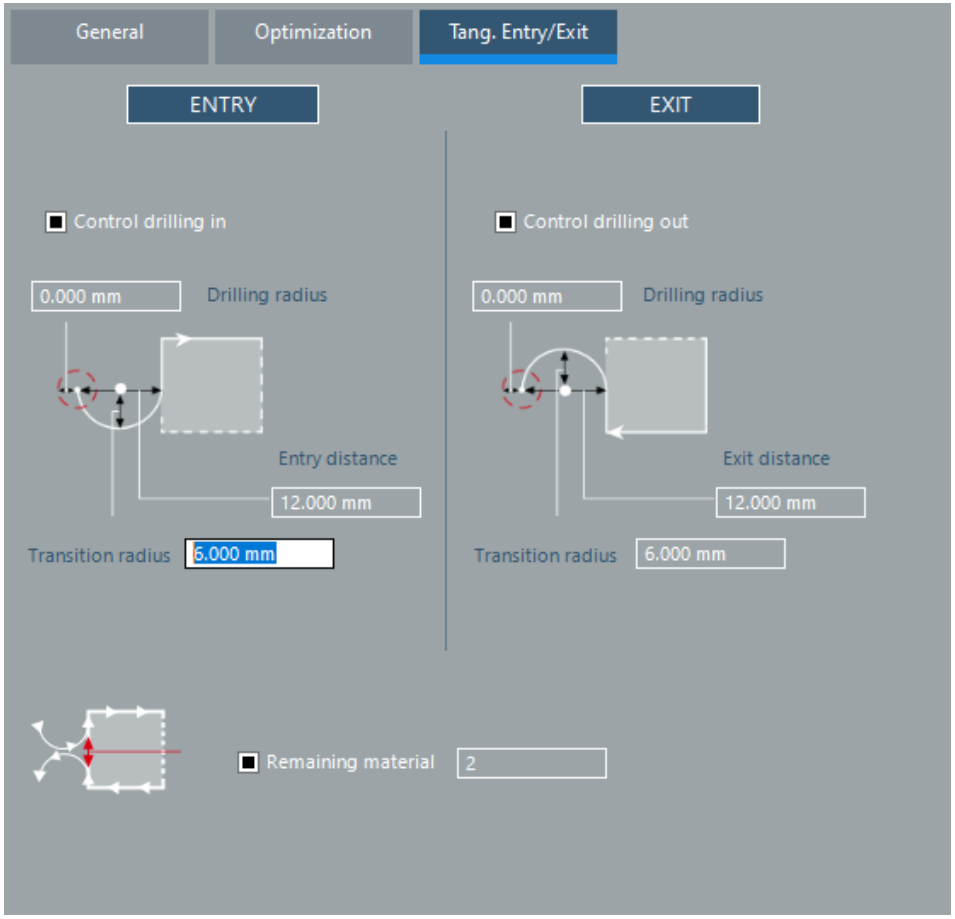


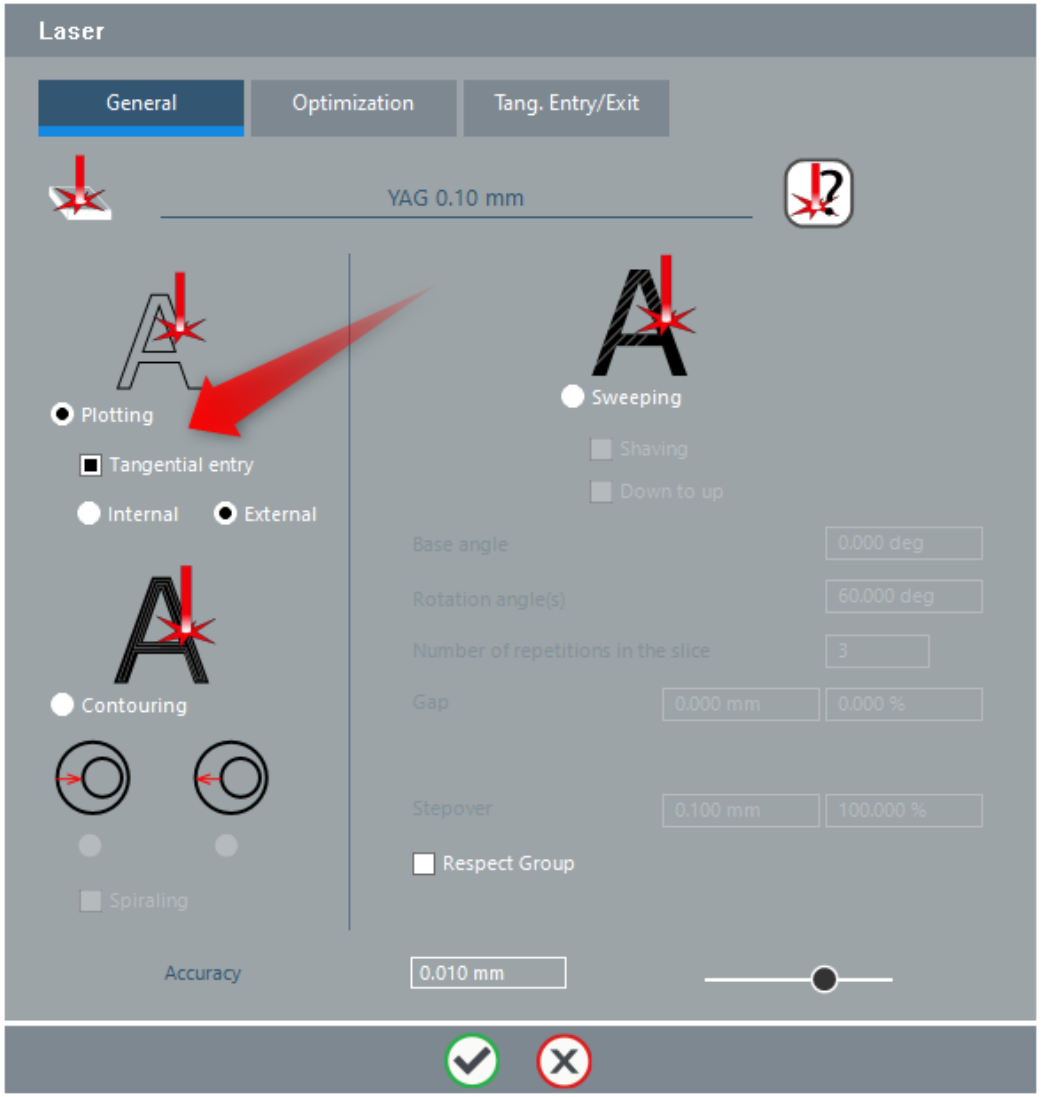
1. LASER 2D

A new interface, streamlined, harmonized and clearly more efficient :

A. Laser 2D : PLOTTING

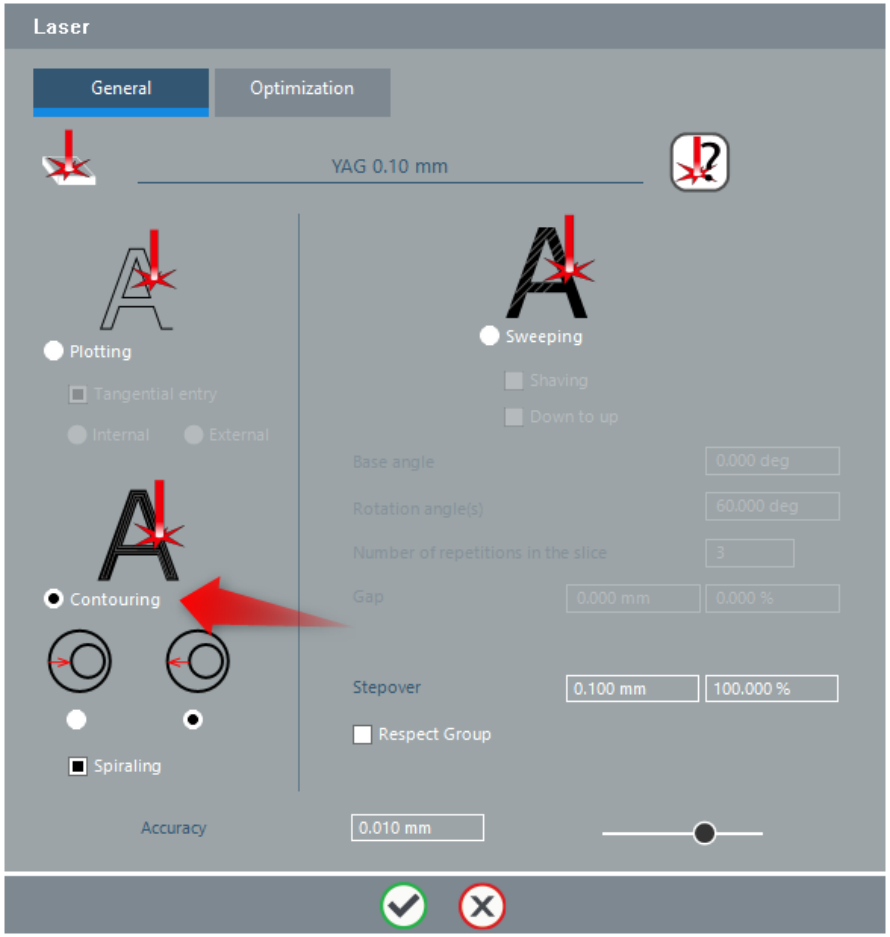
In the " **Plotting** " mode, simplification, and harmonization of the interfaces with LASER CAM especially on the Tangential Inputs/Outputs.

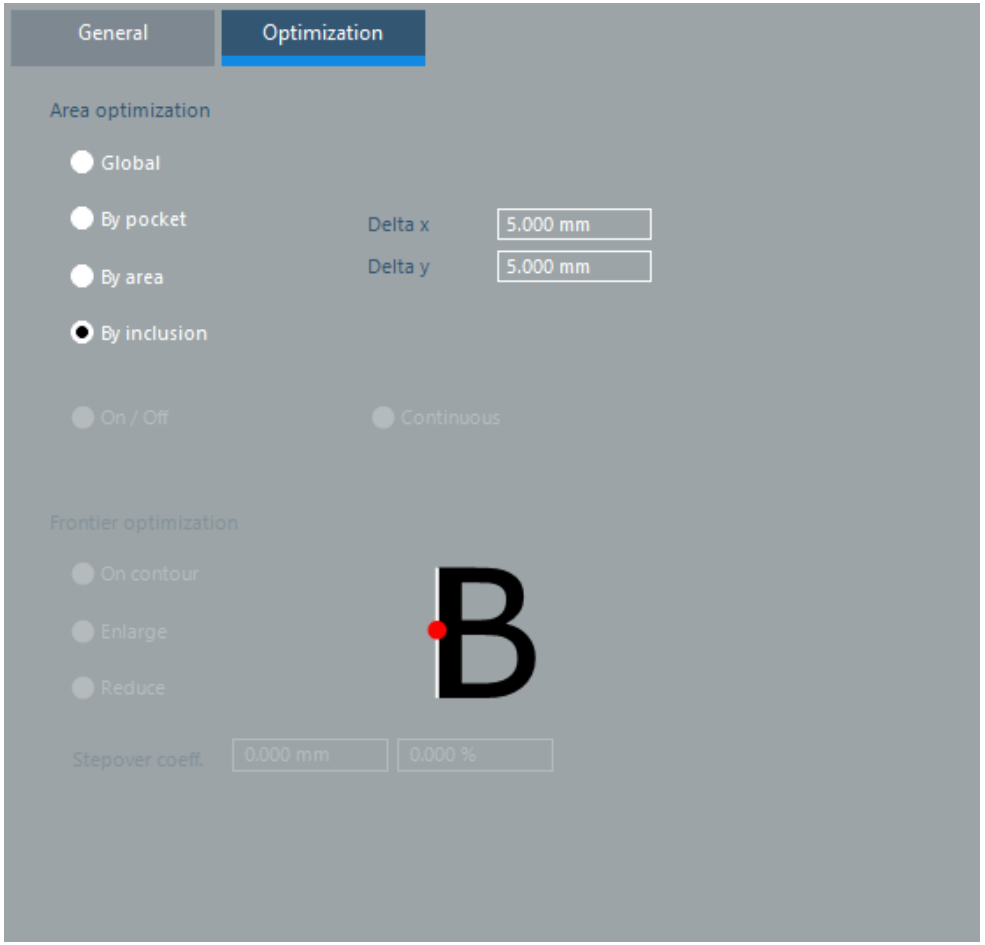




B. Laser 2D : ENGRAVING

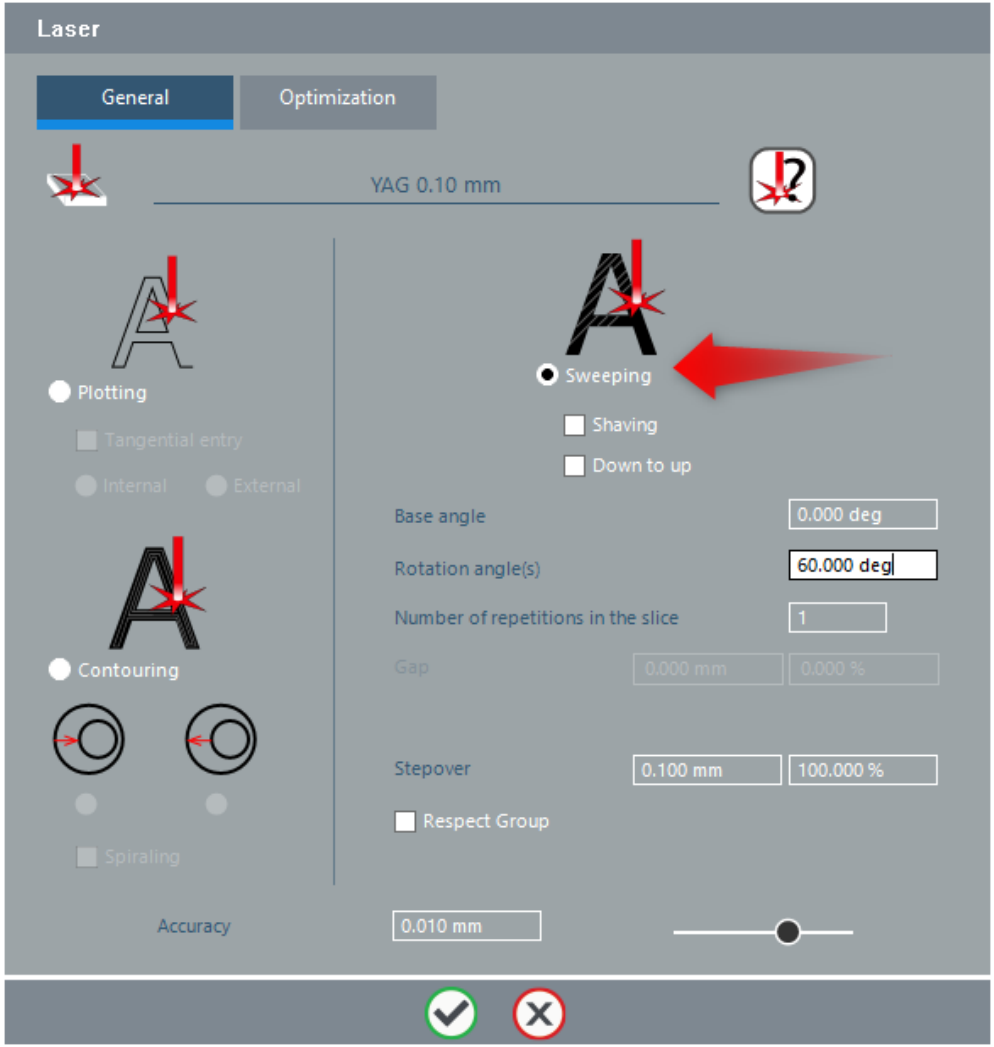
In the " Engraving " mode almost no change except in the interface.



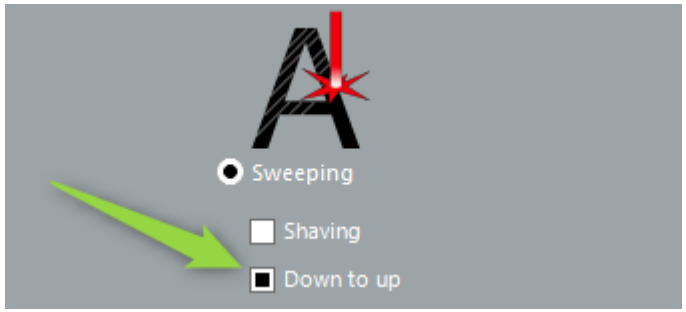


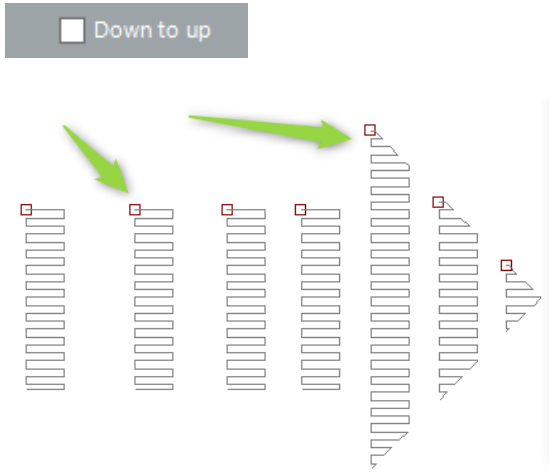
C. Laser 2D : SWEEPING : NEW

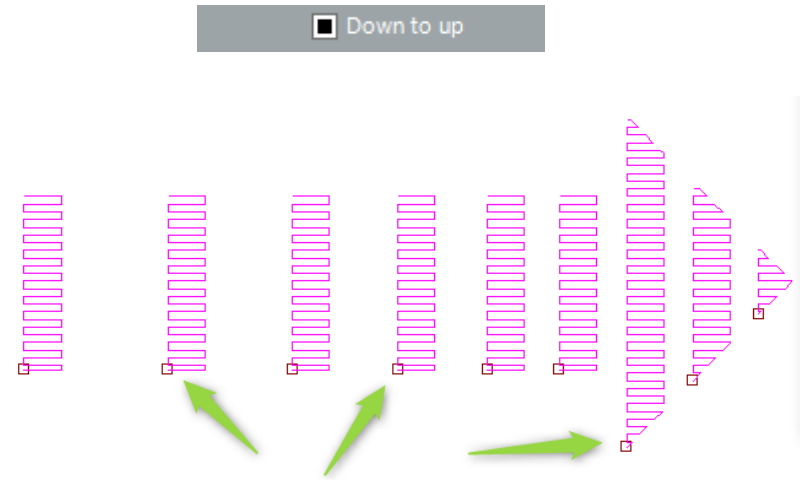
D. Several operating possibilities are introduced in the 2D " Sweeping " mode which will allow to meet new needs.



- A notion to start the laser shots "From up to down" (default operation in the old versions) and "From down to up" (a new feature from V14). This option allows, depending on the position of the suction, to start the shots from the bottom or from the top and thus evacuate the residues correctly in the direction of the vertical Y axis.



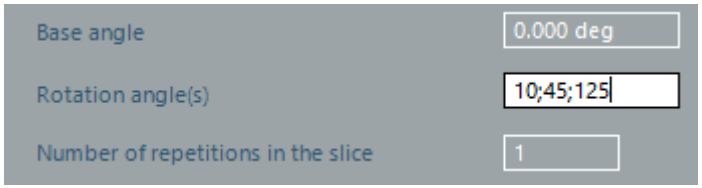


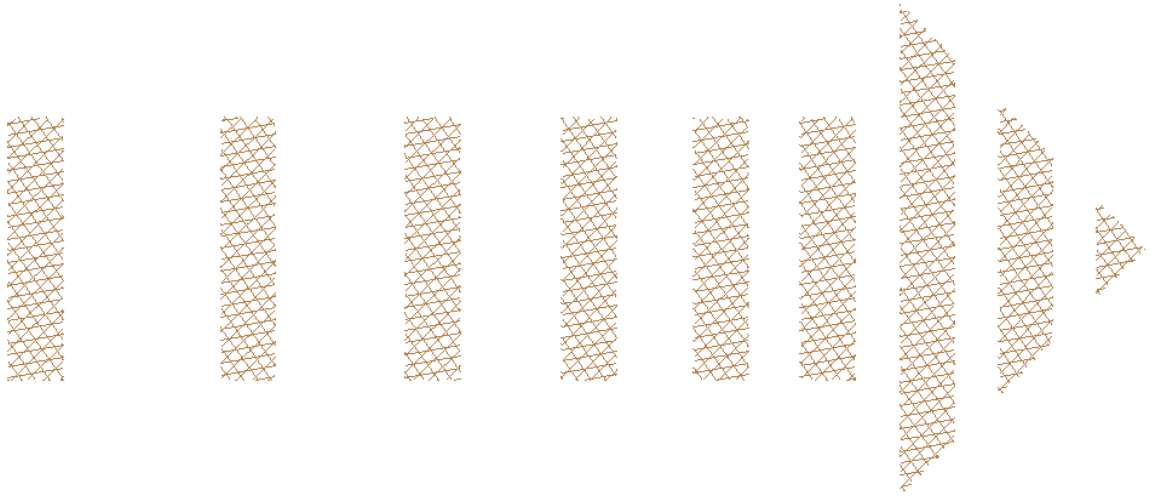


NOTE : the squares represent the starting points of the laser shots.

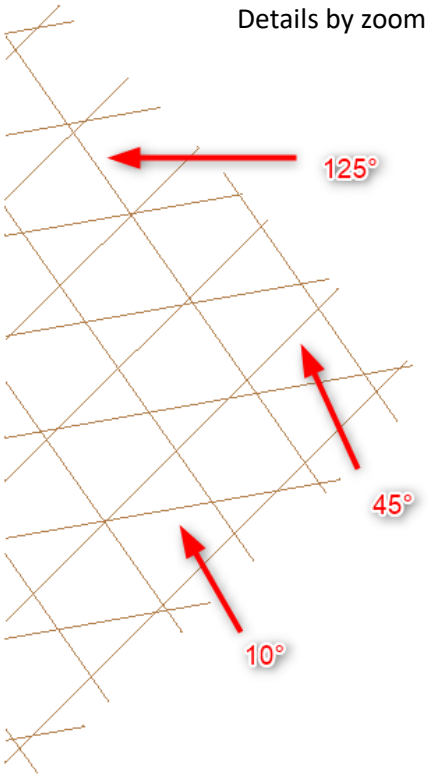
- Possibility to have a list of manual angles in the field **" Rotation Angle ".**

The laser will first make 10° on all the contours, then go to 45° and finish with 125° in the example below.
This possibility offers a great flexibility of marking compared to before where only one marking angle was possible.



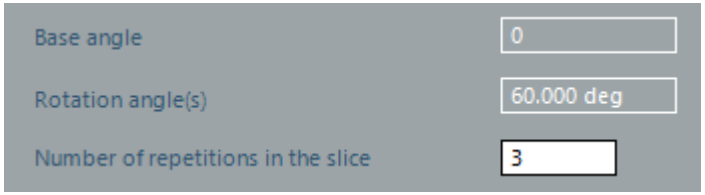


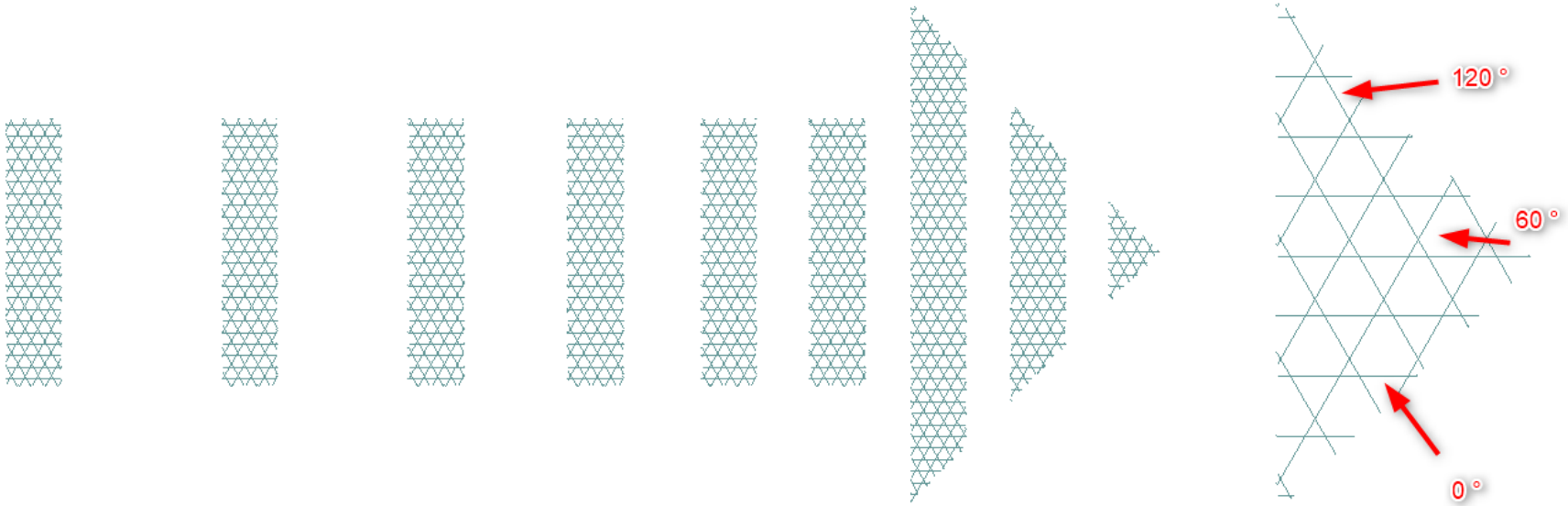
Details by zooming



- Finally, the possibility to make an increment with regular angle rotation.

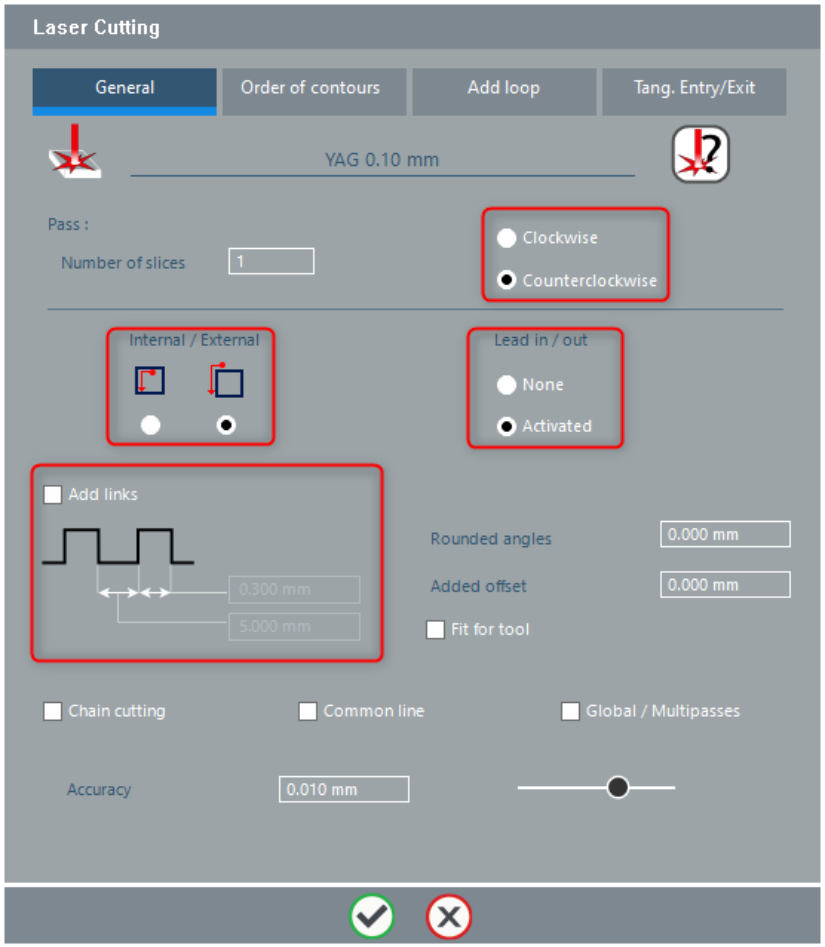
For this function, a base angle (0°), then an increment (60°) and finally the number of rotations (3) must be defined.
The laser will start firing at 0° and then add the increment of 60°, so 0°+60°= 60° , then add another 60° : 60° + 60° = 120°.
The result is therefore 0° then 60° and finally 120° on all the selected contours. You can define the number of repetitions in the slice.



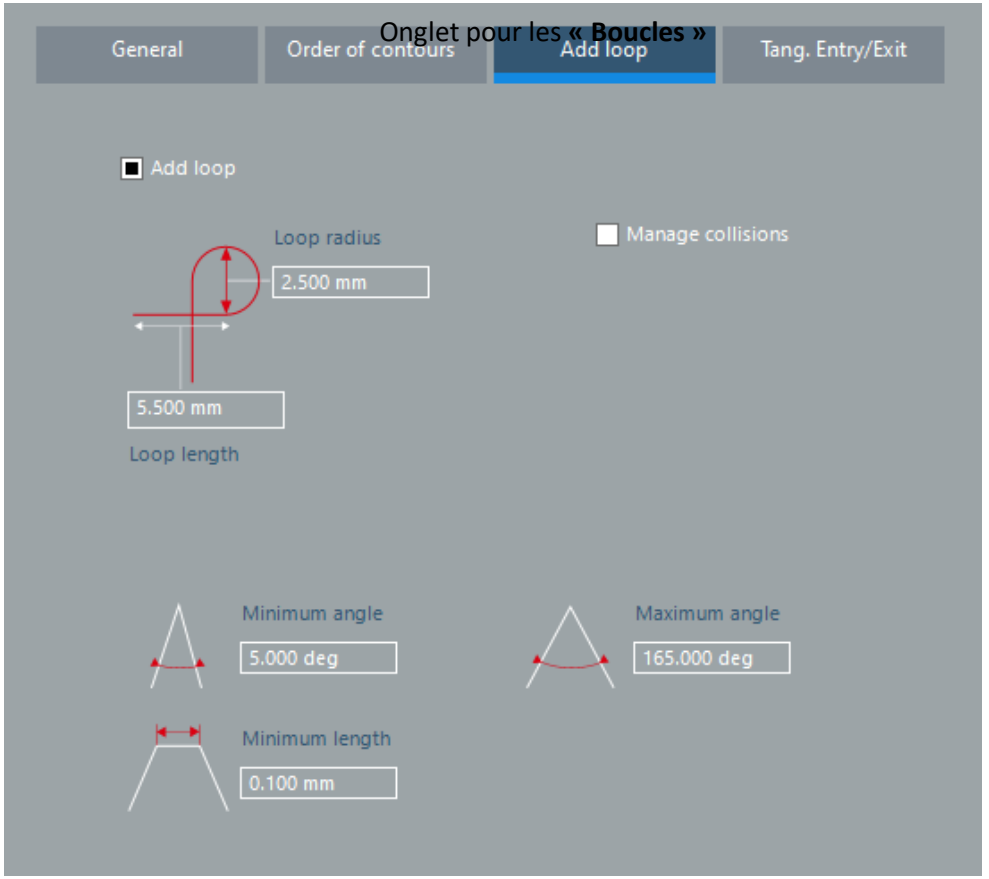


2. CUTTING 2D

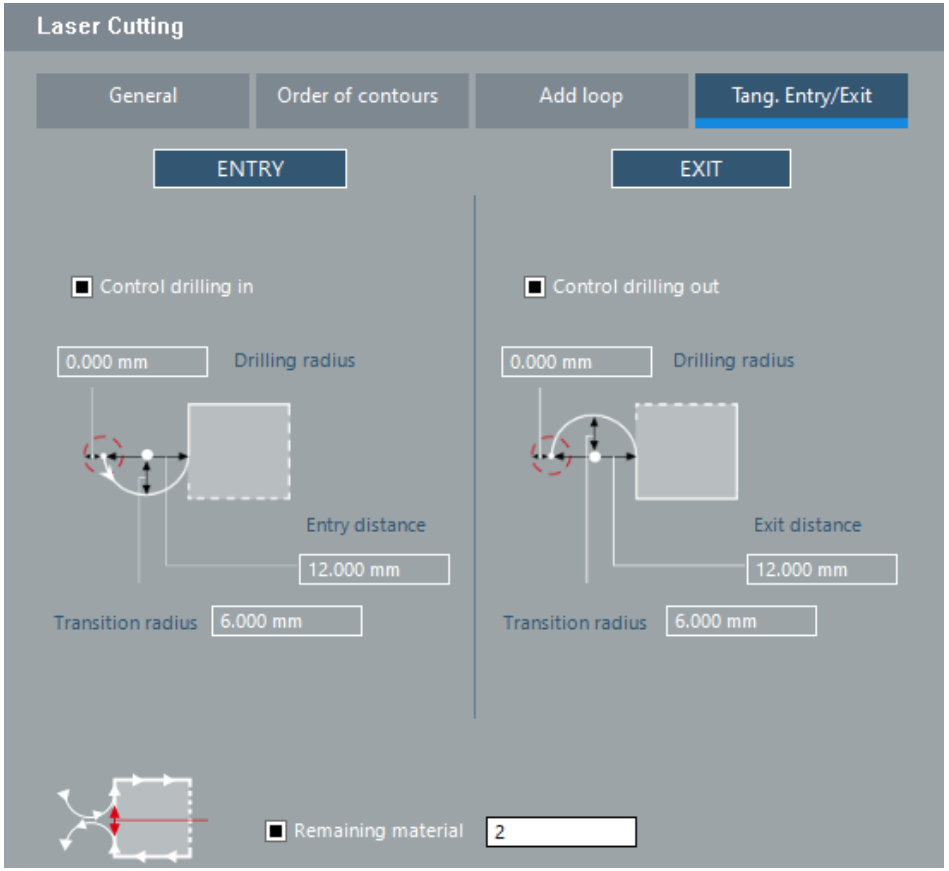
On this toolpath, we have simplified and harmonized the interface to make them more readable by inserting animations and / or images of illustrations.
The behavior remains the same as before :



Onglet pour les « **Boucles** »



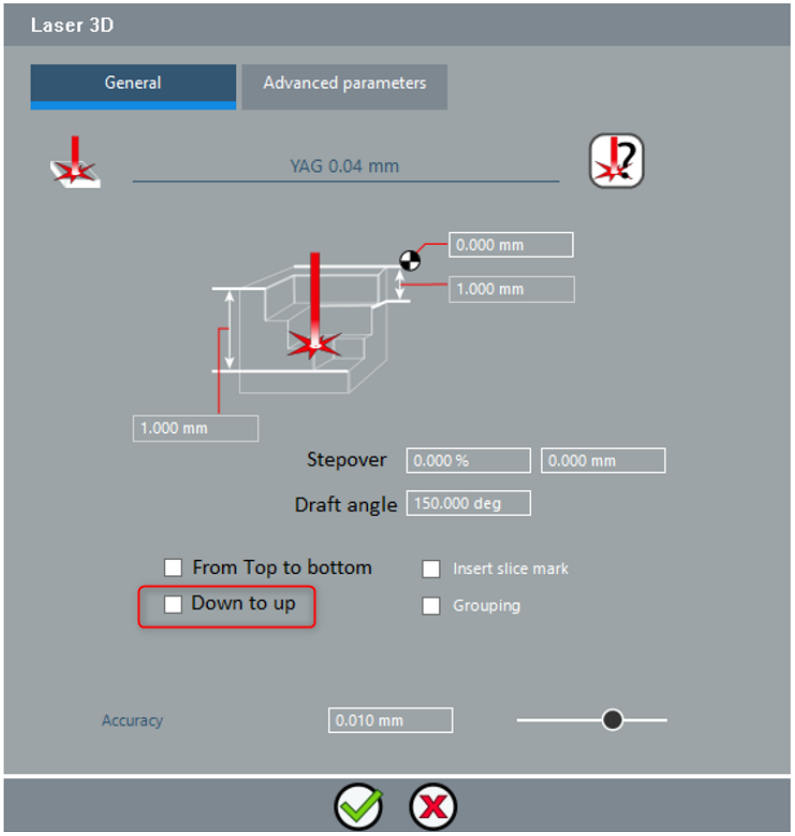
The **"Tangential Inputs/Outputs"** tab and the **“Sorting Order”**



3. LASER 2.5D

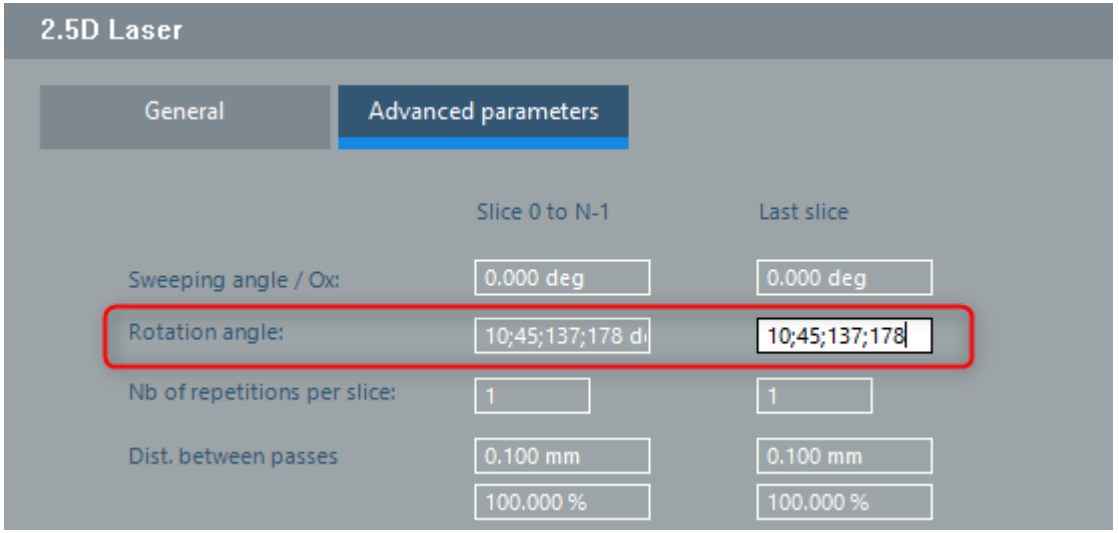
Two new approaches are introduced which are described in the 2D path in sweeping mode.

- Possibility to pull the laser "from the down to the up" in the direction of the vertical Y-axis.



- And the possibility to have a list of "**Manual angles**" in the "**Advanced Settings**" tab.**».**

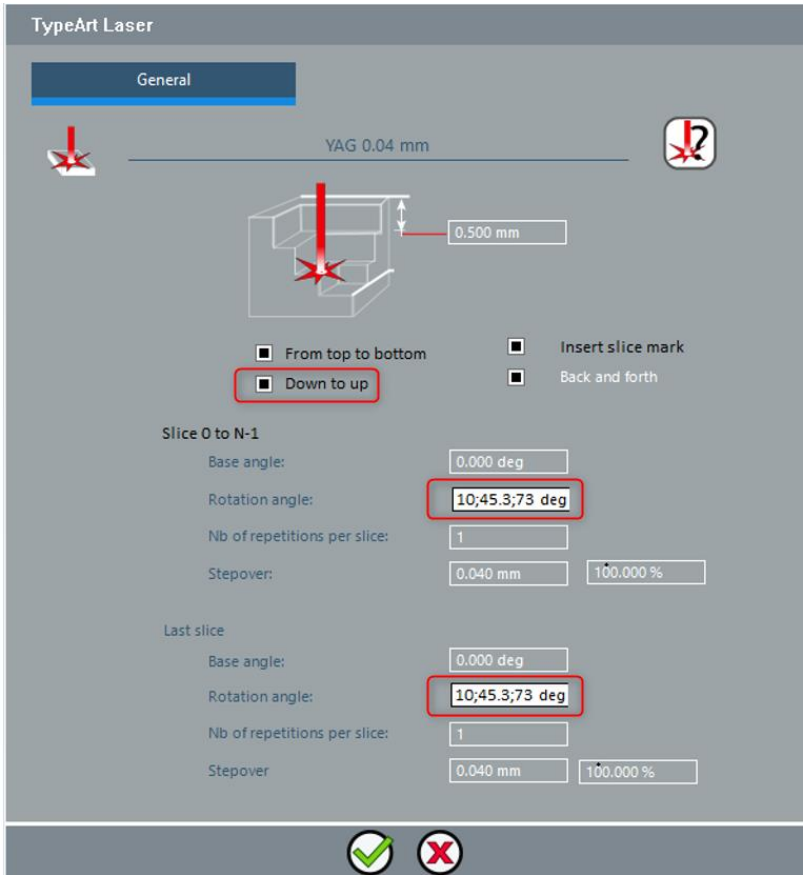
  In " **Rotation Angle** ", list your angles with the separator **" ; "**. The laser will execute them in this precise order.



4. LASER ART

2 new approaches are introduced in V14. They are described in the 2D path in Scan mode.

- - Possibility to pull the laser " **Down to Up** " in the direction of the vertical Y-axis.
- - And the possibility to have a list of " **Manual angles** ", in " **Rotation Angle** " : list your angles with the separator " **;** ". The laser will run in this order.



1. NEW: COLOR FOR CAM IN LASER MODE

The Approach to Color for CAM is totally and completely renewed. It will allow greater ease of use and access to all the possibilities of CAM. As soon as the function is launched, the Environment changes and a resizable "Parameters" window opens.

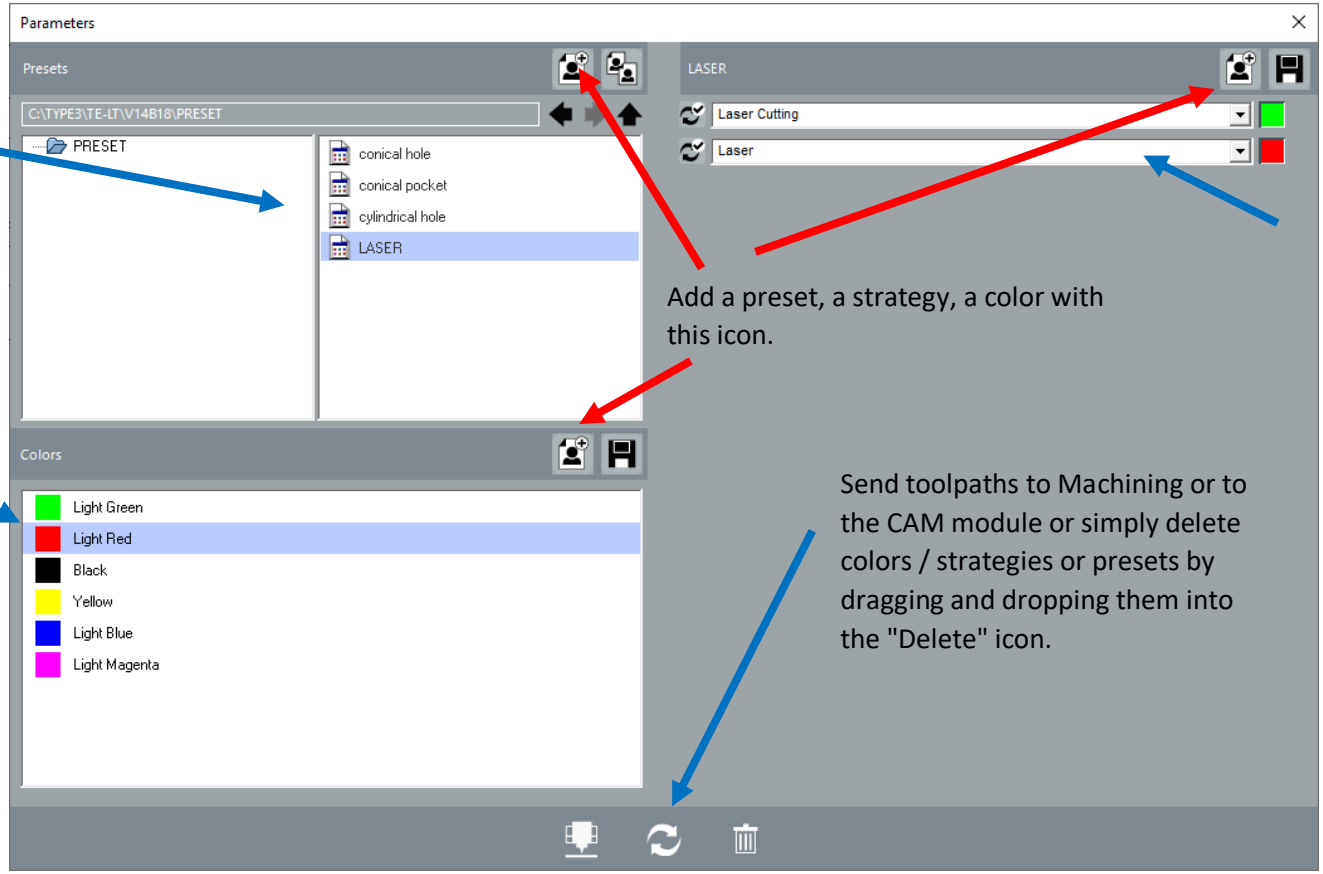
:

The **"Settings"** window

The list of presets is always visible and available. Simply organize your presets. You can add / delete and save them.

The color list has been simplified but you can still add your own color codes and save them. Changing the name or position is of course possible.

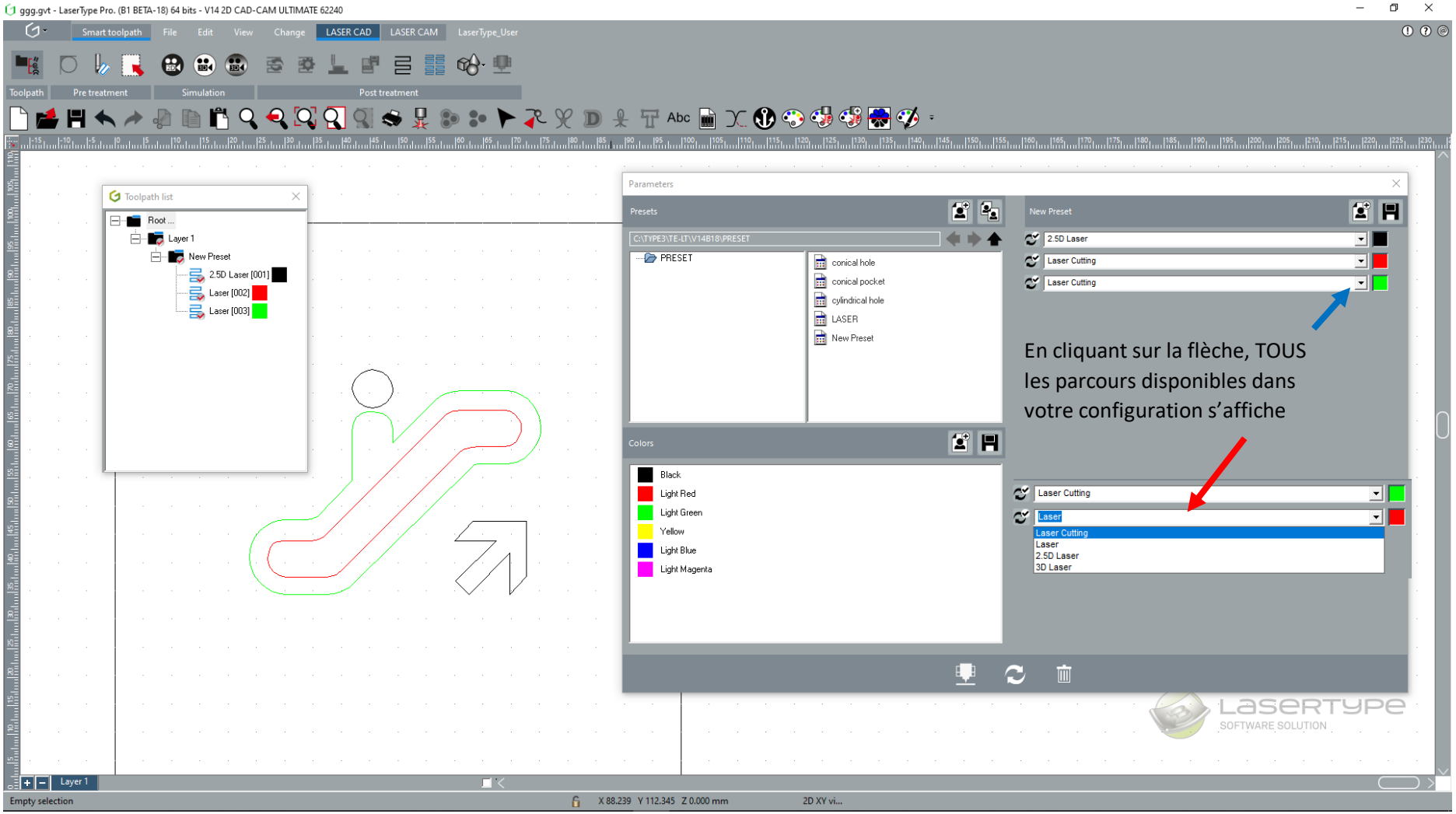
Finally, the software automatically detects the colors contained in your selection.



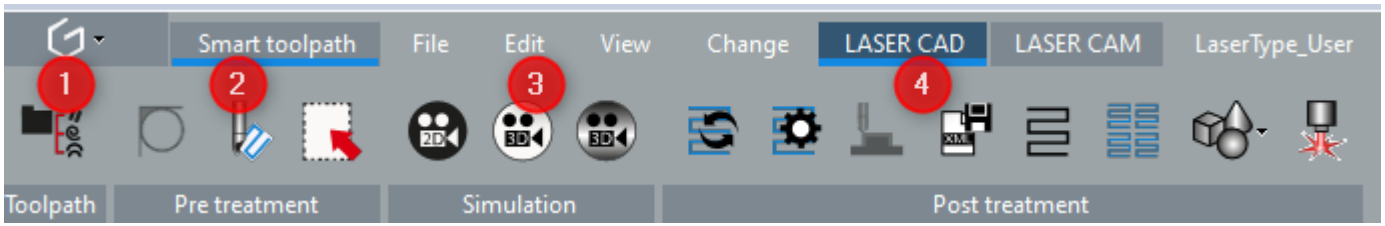
For each color in the selection, you can associate a machining strategy. And decide for each strategy whether or not the calculation will be used.

You can also organize the machining order by moving each strategy wherever you want.

The complete environment



Here is the description of this environment which will allow you to prepare your machining process.



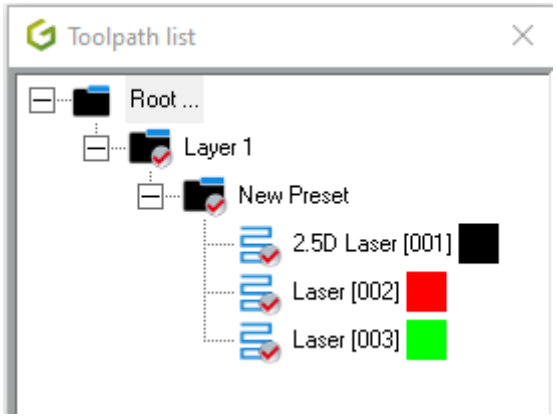
1. List of toolpaths
2. Pre-treatment
3. Simulation
4. Post-treatment

1. **List of toolpaths**

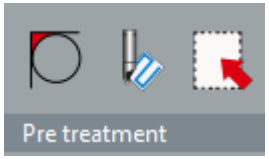
Once you have started the calculation in the CAM module, the list of toolpaths is displayed in the planes where the curves are located.

You can manage the toolpath list (by renaming, deleting, etc.) as in the CAM module.

The color to the right of each toolpath indicates the color of the contour.

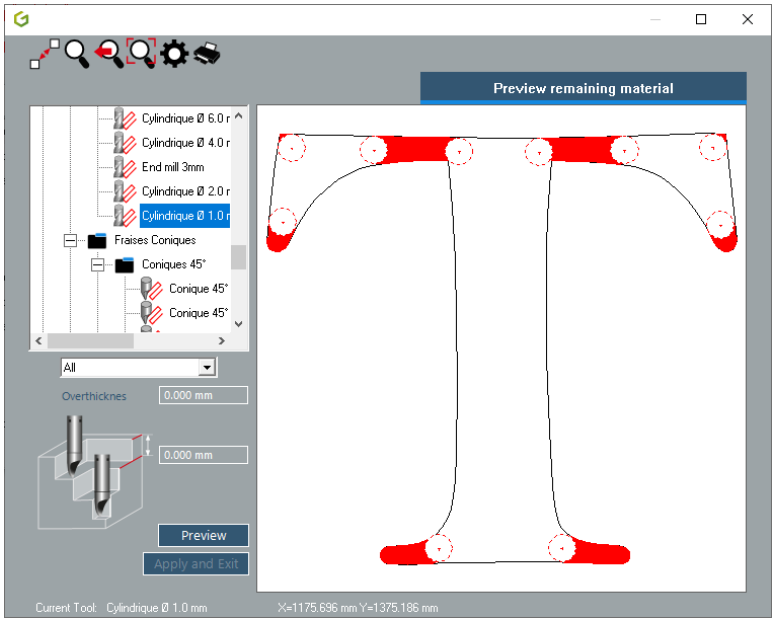


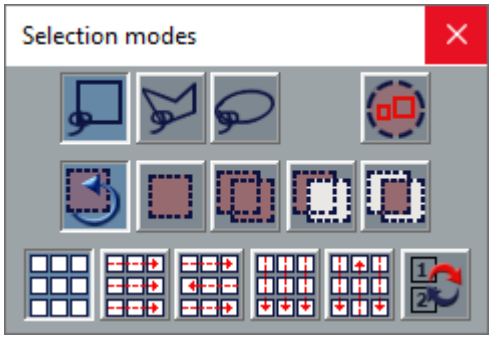
2. Pre-treatment



3 actions are possible:

- See the areas where the selected tool cannot pass,
- Simulate with a given tool with a depth,
- Selection and sorting of contours to optimize your toolpaths

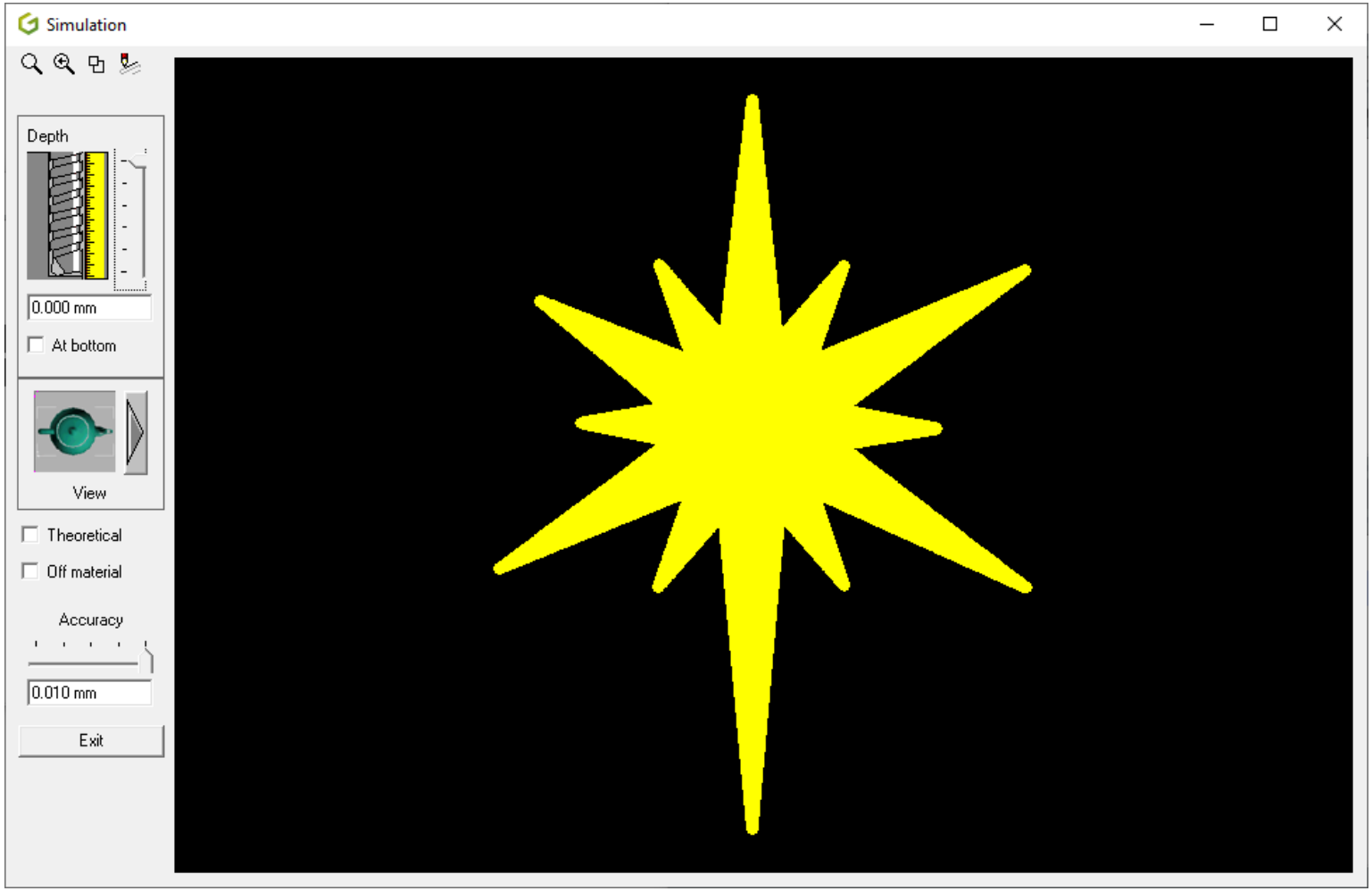




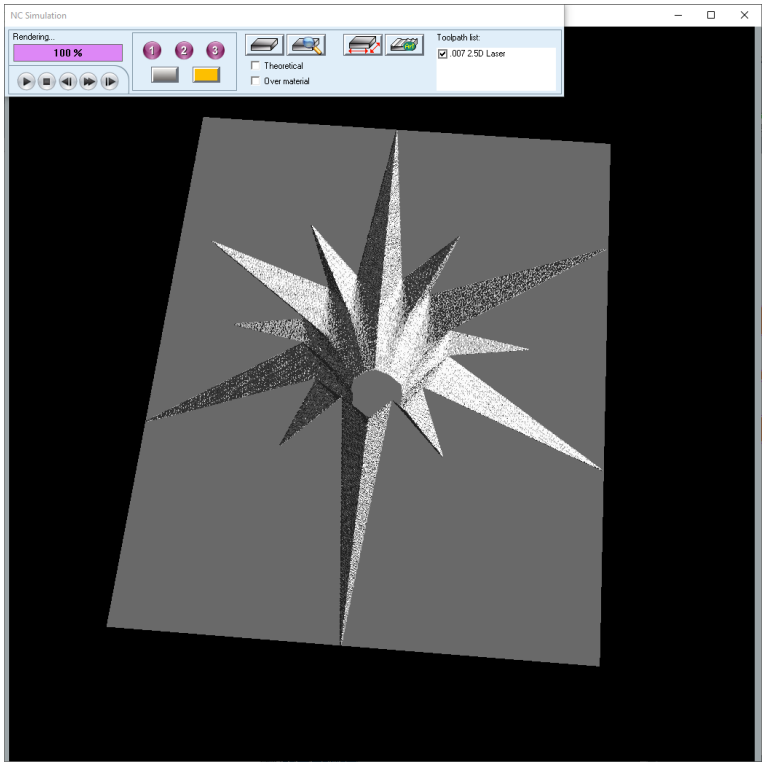
2. **Simulation 2D & 3D**

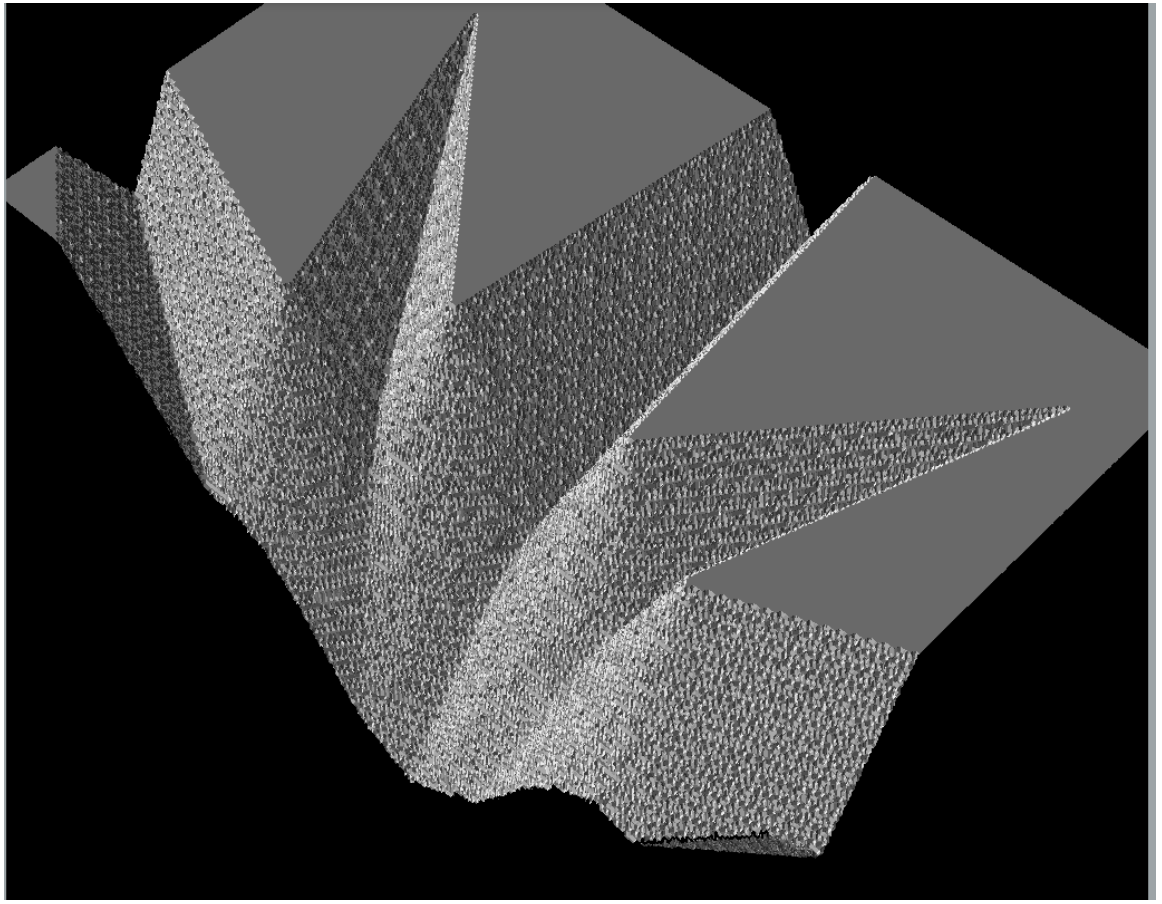
Select your toolpaths to simulate then simply choose a 2D or 3-D simulation.

Simulation 2D

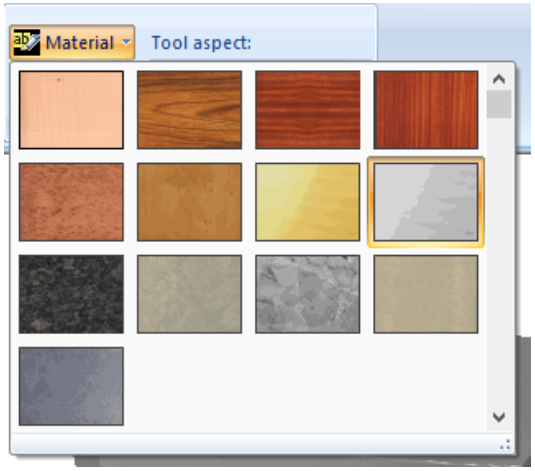


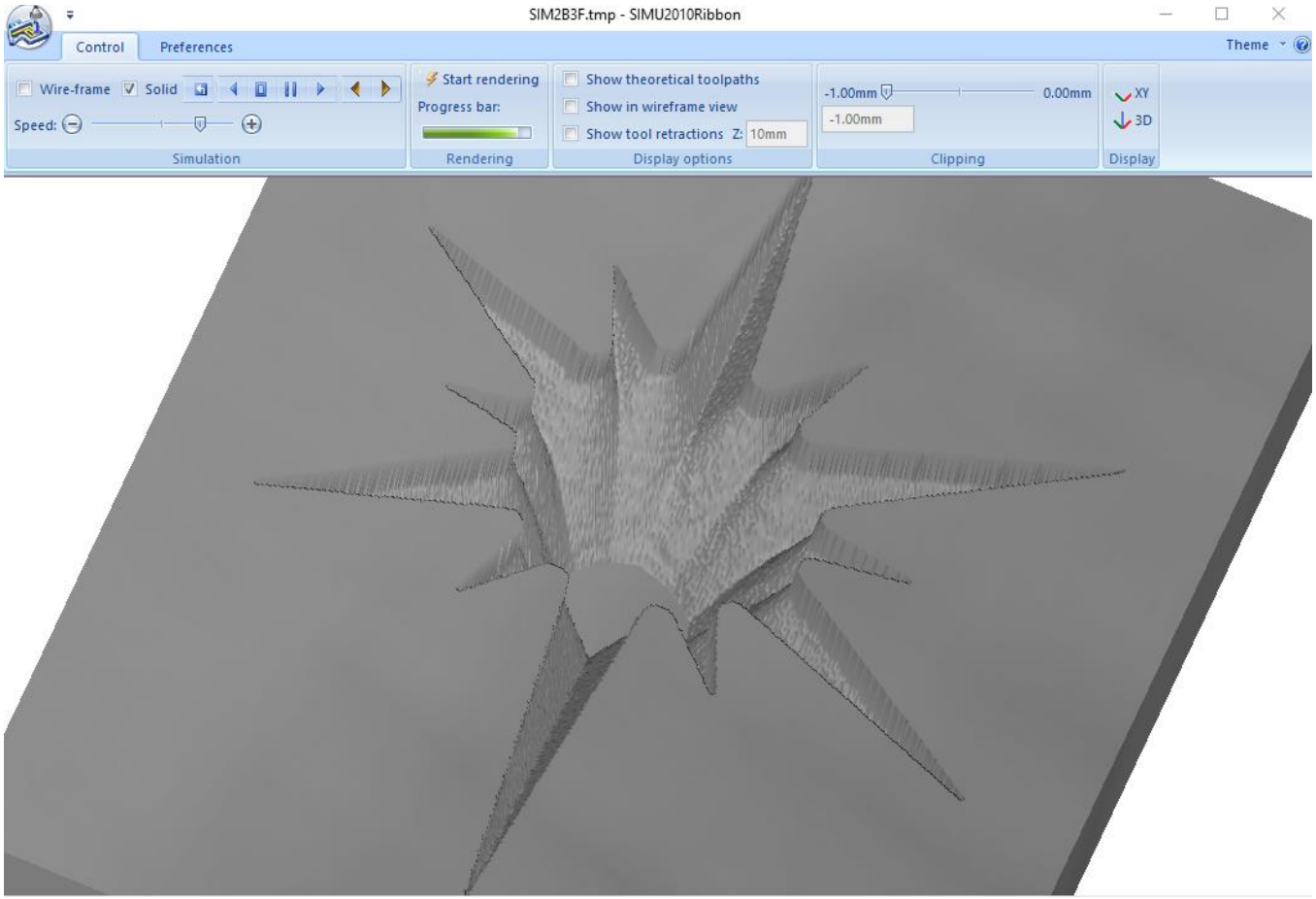
Precise 3D simulation, you will get details you will have with the real tools on your machine.

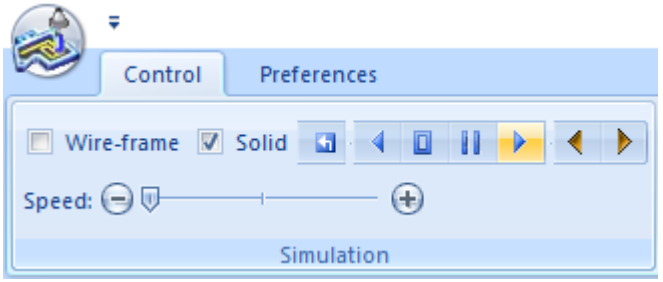




Dynamic 3D simulation, with the possibility to load materials such as wood or metal. Thanks to the commands, go step by step to make sure that the machining is correct or go back, speed up or pause. Anything is possible







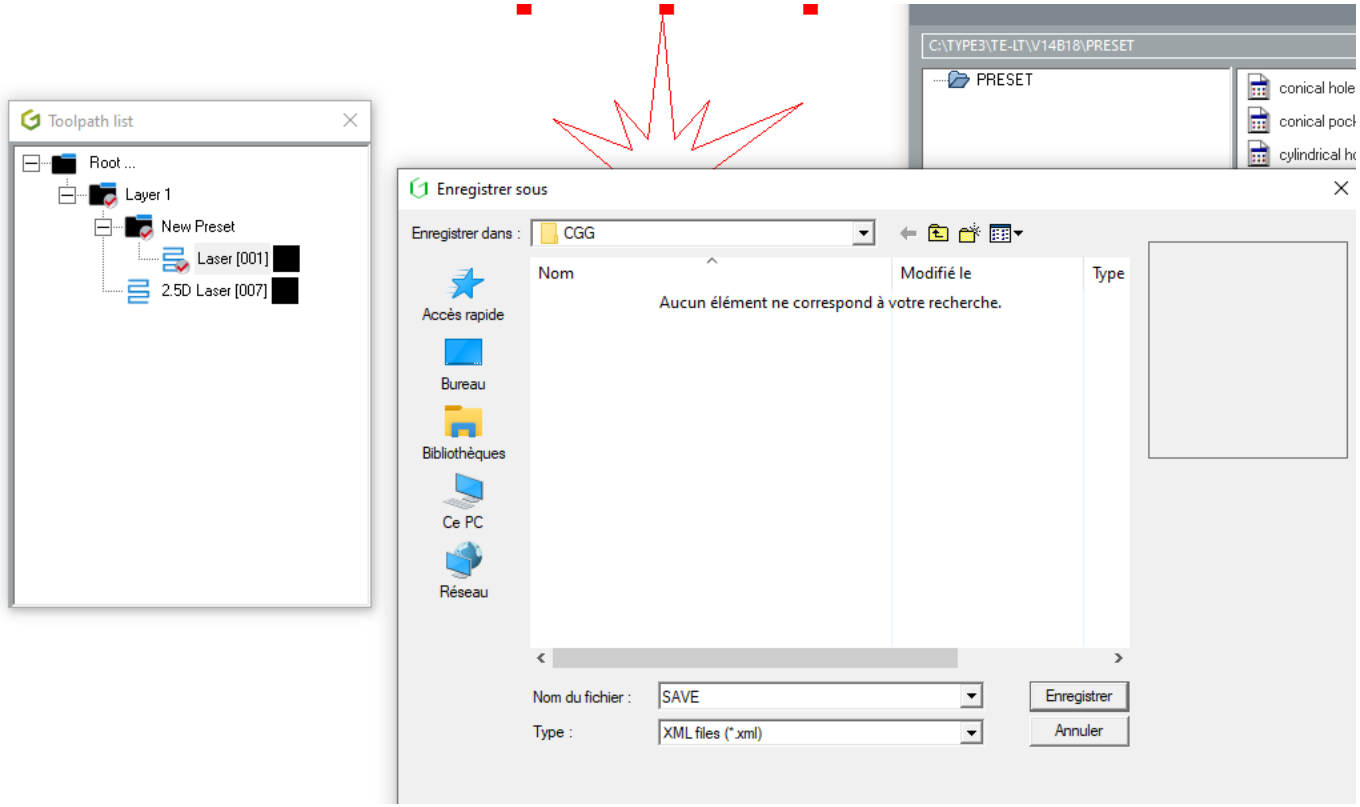
3. **Post treatment**

7 actions are possible :

- Recalculate a toolpath with the same contours, for example by modifying the tool or the depth,
- Modify a toolpath with different contours,
- Save machining strategies in XML format for use in a script,
- Edit the toolpath in the form of curves,
- Multi copy of a toolpath,
- Use projection and/or wrapping tools,
- Finally, start machining

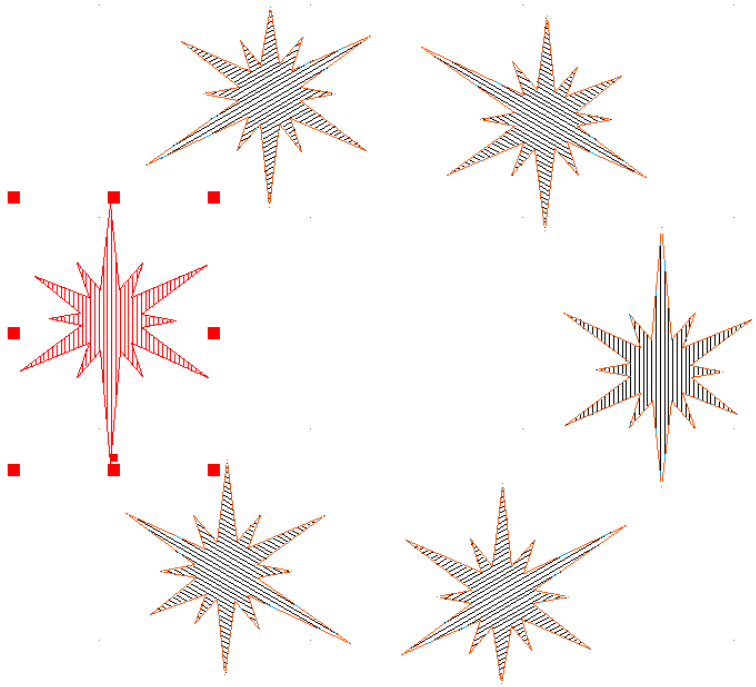
A. Saving paths in XML

Select a tool path and then click on the Save as XML icon. Fill in the name. The created XML file can be used later in the scripts.



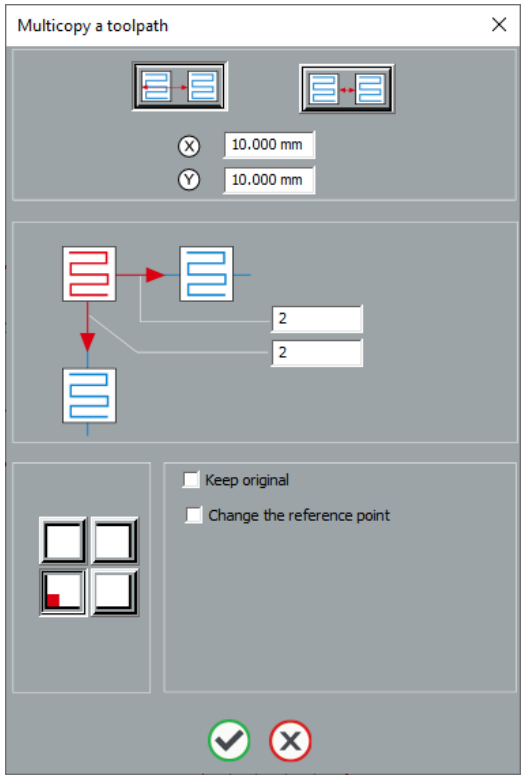
B. Editing the toolpath in vector geometry

With LASER CAM, you can edit the toolpath as vectors and then make checks in point mode, circular duplications or other interesting actions in LASER CAD.



C. Multi copy of a toolpath

This very interesting function allows you to duplicate a toolpath in matrix form. You can specify the number of copies in row / column as well as the spacing between the parts. Keep or not the original and change the reference point for the duplication.



D. Use projection and/or wrapping tools

Depending on your configuration, you will also be able to use the projection and/or wrapping tools:

Note : Please have a look at the help to see how these functions work, which allow you to place any toolpath on any surface.

E. Start Lasering

This is the last step which consists of creating the code and sending it to the machine. You can manage the safety distance between 2 objects, make shifts according to the origin of your machine, make mirrors, or activate specific commands for your machine.