











































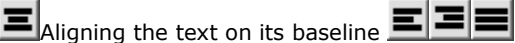












# GravoStyle 5 User Manual






































































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## Welcome!

### **First contact**

1. Configure your screen for correct display.
2. Run the program:  click the icon set on **Desktop**.
3. Key in your name in the **License Owner dialog box**: this allows you to customize your user rights to the program, which are activated by the dongle plugged into your computer.
4. Add and designate your active target machine: its engraving area defines the maximum surface area of the plate that you are going to engrave.
5. Customize your program: open the Options dialog box.
6. Click the **General tab**.
7.  Click your measuring **Unit**, and then on your **Language**.
8.  Click in the Options dialog box.
9. A message will warn you that the program has to be restarted for it to be displayed in your language:  click.
10. Run the program.

 **If you are not very familiar with the Windows operating system, look up topic [About Windows programs](#).**



## GravoStyle 5 Need Help?

This **electronic documentation**, which is always available, provides targeted, user-friendly help as you work with the program.

View the **Contextual Help** to see how to use a tool bar or a dialog box, for example.

Help offers information about the current screen, or the task you are performing.

Read the **On-line Help** using its highly flexible browsing tools.

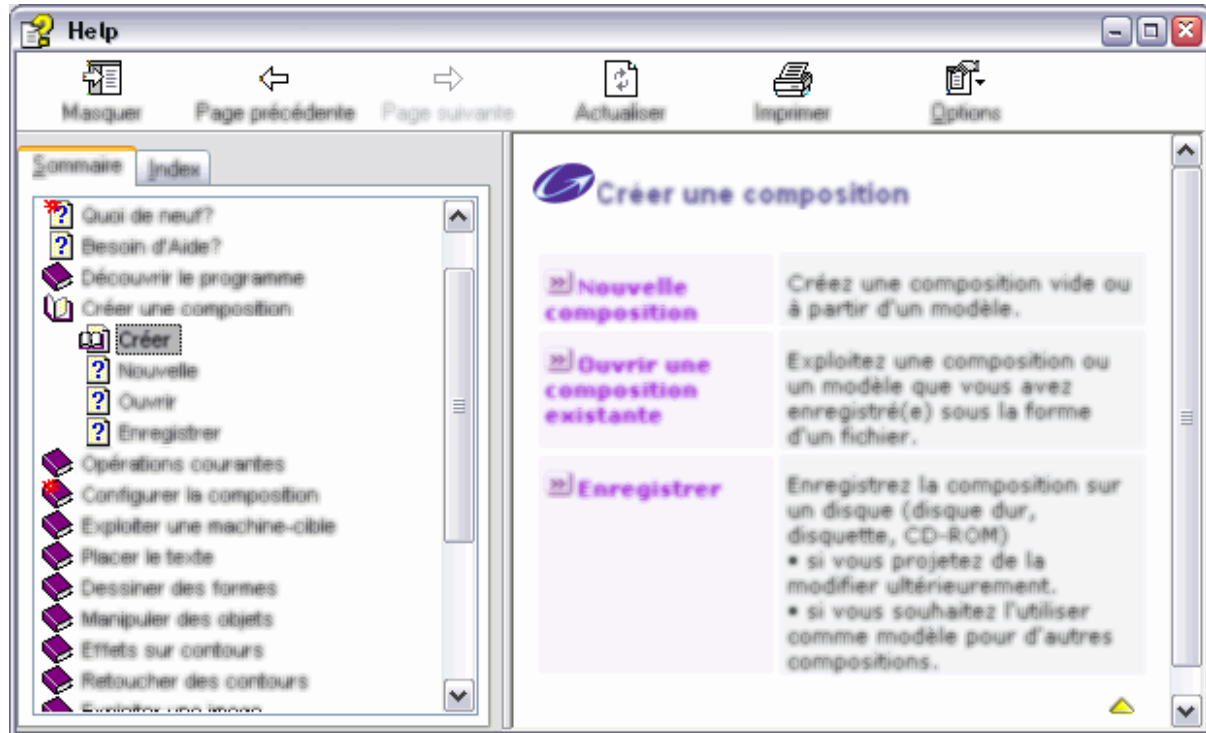
Colors, animations, and dynamic links enhance the help screens.

1. Click the tool bar/dialog box.










2. Press: the topic that contains the information is displayed in the **Help window**.

Click command **Contents** in menu ?Help: the Welcome topic is displayed in the **Help window**.



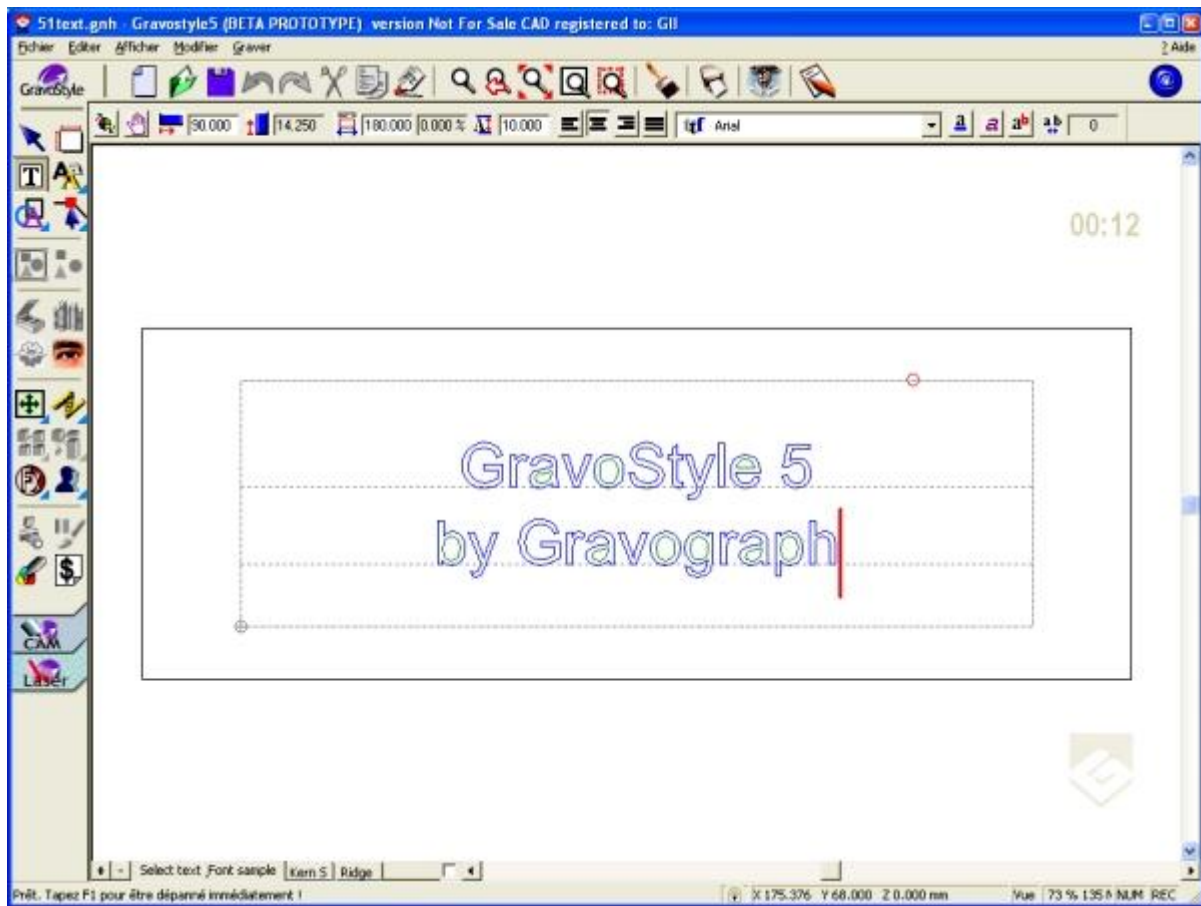
## GravoStyle 5

# Discover GravoStyle 5

-  **Window**
-  **Menus**
-  **Toolbars**
-  **Tool palettes**
-  **Work modes**
-  **Produce a composition**
-  **Program Levels/Options**



## GravoStyle Window



When many document or program windows are open, quickly locate GravoStyle window thanks to the Gravograph logo displayed in the bottom right corner.

## ◀ GravoStyle 5 Menus

Click a menu for more information.

### » ?Help

Contents Search Use Help	Consulting on-line Help
About	Commanding and integrating a program option or level

### » File

New Open Save Save as	Creating a composition Opening a .gnh file Saving while working Saving a composition
Open a model	Creating a composition from a template
Save a model	Saving a composition as a template
Find Information	Finding a .gnh file Information about the current composition
Import Export	Importing objects in composition Exporting objects to an external program
Insert object	Retrieving a bitmap image saved with vectorial contours
Vectorize / Vectorize Parameters Scan / Select scanner	Vectorizing an image Digitizing an image
Print Print preview Print parameters	Printing the composition
Recent files	List of the last four files opened
Exit	Close the window and exit the program

### » Edit

Undo Redo	To cancel/restore a procedure
Cut Copy Paste Delete	Placing objects
Select all	Selecting objects
Pointer position Snap mode View object Mouse use	Work area
Clear Undo Memory	Deleting the saved cancellations
Options	Customize the program

<b>&gt;&gt; View</b>	
2D XY View 2D YZ View 2D XZ View 3D engraving View 3D ISO View View	View in the work area
Zoom Last Zoom Max Zoom Zoom material Zoom selection	Zoom tools
Redraw Quick Redraw	Redisplaying the composition
Wire direction	Viewing draw direction
Wire color Fill color	Display mode for engraving paths
Arrow direction	Viewing draw direction
<b>&gt;&gt; Modify</b>	
Text▶	Using the Advanced Text functions (non-horizontal text, font editor, etc.)
Shapes▶	Drawing geometric shapes
Align	Aligning objects
Effects▶	Applying effects to objects
Duplicate▶	Duplicating an object
Transform▶	Transforming an object
Tasks▶	Creating professional objects
Material	Configuring the composition
Guide lines	Managing guide lines
Symbols	Placing objects from program library
PhotoStyle	Processing a bitmap image using PhotoStyle
Bitmap Editor	Retouching a bitmap image
Wysiwyre	Displaying 2D render on material
<b>&gt;&gt; Machining</b>	
Setup machines	To add a target machine
Tool database	To manage engraving tools
Machining	To open the Machining dialog box



## ◀ GravoStyle 5 Toolbars

### >> Main Bar



**New**



**Open**



**Save**



**Undo**



**Redo**



**Copy**



**Paste**



**Cut**



**Zoom area**



**Last zoom**



**Max zoom**



**Zoom material**



**Zoom selection**



**Redraw**



**Print**



**Comments about the composition**



**Web links**



**Engraving dialog box**

Create a new composition, or use a composition that you have saved as a file.  
Save the composition regularly to avoid the accidental loss of your work.

Each action you perform is saved in the program's Undo/Redo memory. You can therefore cancel or restore a series of steps to return to a specific stage of preparing a composition.

Call up these commands to insert an object from another composition or from an external document into the composition.

Use these commands to improve the composition's display quality and size.

Regularly force the redisplay of the composition on-screen.



















































Produce a paper printout for a pre-engraving presentation (test or engraving check).

Attach your personal notes to the current composition.

Contact us via Internet.

Set and transfer the engraving parameters to your machine.

>> **Toolbox**

Working modes	Creating objects	Handling objects
 <b>Material mode</b>   <b>Selection mode</b>   <b>Text mode</b>   <b>Drawing mode</b>   <b>Point mode</b> 	 <b>Advanced Text</b>   <b>Symbols</b>   <b>Tasks</b> 	 <b>Group</b>   <b>Ungroup</b>   <b>Align</b>   <b>Transform</b>   <b>Measure</b>   <b>Duplicate</b>   <b>Effects</b> 
Engraving	Using a bitmap image	Engraving environment
 <b>Wysiwyre</b>   <b>Engraving quotation</b>   <b>Assign a toolpath</b> 	 <b>PhotoStyle</b>   <b>Bitmap Editor</b>   <b>Scanner</b>   <b>Vectorize</b> 	 <b>GravoStyle for IS machines</b>   <b>Laser for L-Solution machines</b>   <b>CAM for IS machines</b> 

 **Functionality available in Discovery level**

 **Functionality available in Graphic level**



## ◀ GravoStyle 5 tool palettes

### Organizing tool palettes

1. In the Options dialog box, click the **Display tab**.
2. In the **Toolbar configuration** zone, click

**Activate automatic reorganization**

The exclusive palette mode displays access first to the useful tools.

Click any working mode in the toolbox (text, drawing, points, selection):

- the linked palette will open.
- useless palettes are closed to avoid toolbar clutter.
- palettes you docked in the program window remain at screen.

Disable this automatic management to open or to close palettes at need.

Restore default config.]

to mask everything.

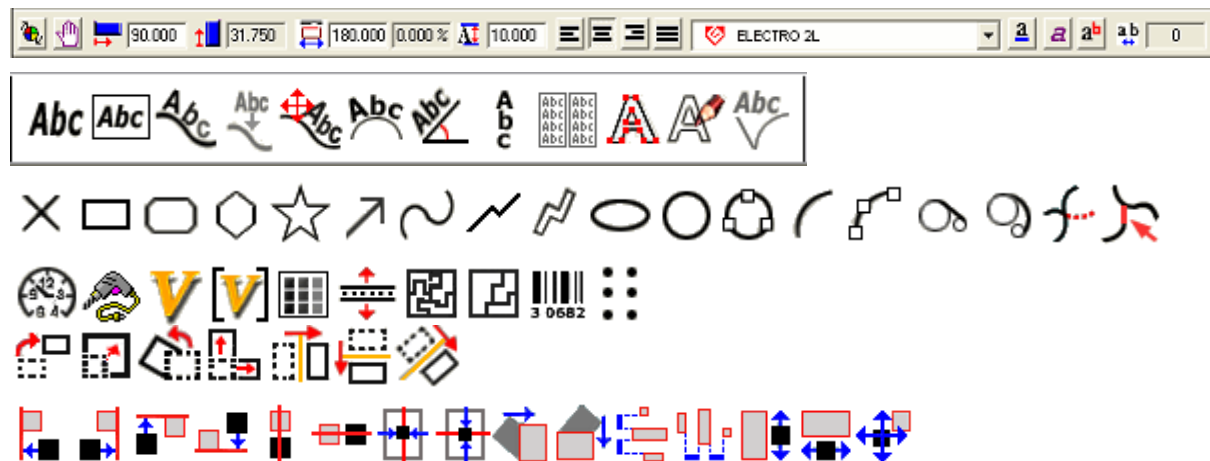
Save user's config.]

to memorize the display and position for palettes you have opened.

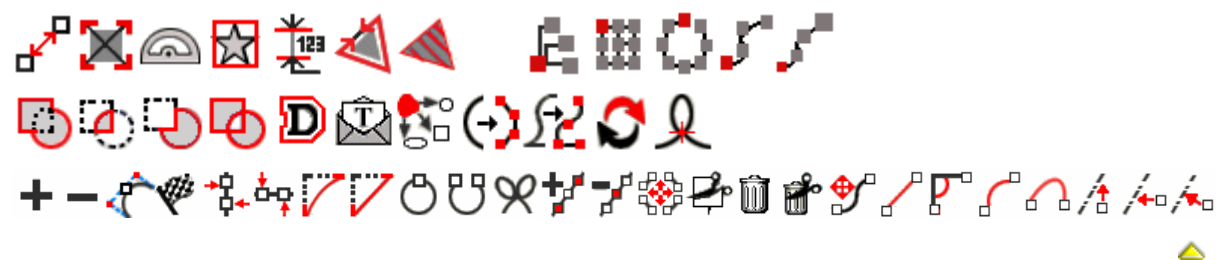
Restore user's config.]

to display and position palettes according to your configuration.

### 🔔 Palettes available in Discovery level



### 🔔 Palettes available in Graphic level



## ◀ Activating a GravoStyle 5 working mode

While you are working, you will frequently switch from one mode to another, depending on the procedure you want to perform.

1. Select the mode that allows you to execute the procedure of your choice from the table below.
2. Click the question "**What can I do...**": the specific topic for the working mode displays.
3. From the list of procedures authorized by the mode, click the one you need.



**Material mode** is used to configure the composition (origin, orientation, surface, margins).

[»»](#) What can I do in Material mode?



**Text mode** is used to place and type lines of text in the composition.

[»»](#) What can I do in Text mode?



**Drawing mode** is used for drawing geometric shapes in the composition.

[»»](#) What can I do in Drawing mode?



**Selection mode** is used to select and manipulate objects placed in the composition.

[»»](#) What can I do in Selection mode?



**Point mode** is used to retouch the vectored contours of the objects placed in the composition.

[»»](#) What can I do in Point mode?



## ◀ Producing a composition

### What are the main steps to produce a composition?

» Define a target machine	Create and design the machine that will execute the engraving.
» Create a composition	Create a new composition, or base a new composition on an existing one.
» Configure the composition	If the composition and plate have the same rectangular surface, the configuration could apply to either one, without any changes being required. As soon as the plate has a different shape or dimensions, configure the composition to adapt it to the plate's profile.
» Place objects	Enhance the composition with text, geometric shapes, or images.
» Common tasks	Memorize these actions you will regularly carry out when working on the composition.
» Engrave the composition	Once the composition is finished, it is engraved onto the plate. Set the parameters and tools involved in executing the engraving, then transfer the composition from the program to your machine.



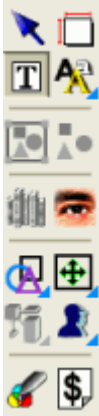
**Never unplug the dongle when you are working with the program.**



## ◀ GravoStyle 5 Levels

To meet the requirements of your new engraving applications, **order and activate in GravoStyle 5 the option or the level of your choice.**

### Discovery



This first level displays **GravoStyle graphic environment** to engrave with rotative tool on IS machines.

From text layout to machining, the basic **toolbox** offers the functions required to produce a plate.

### Discovery features **(non-contractual list)**

 Standard functions for all levels +  Options	
Standard functions	<b>Create a composition</b> <b>Zoom/Redraw - Undo/Redo - Save - Print</b> <b>Information about current work - Invoicing help</b> <b>Call out the program support - Customize program</b>
Configuring the composition	<b>Dimensions and margins - Origin - Orientation - Cylinder parameters</b> <b>Long plate <a href="#">option</a></b>
Setting a line of text	<b>Automatic/manual mode</b> <b>Position between margins</b> (alignment, distance to margins, height, length, line spacing, baseline, etc.)
Setting text attributes	<b>Font - Width - Rotation - Spacing - Underline - Slant/Italics -</b> <b>Index/Exponent - Auto-kerning - Styles</b>
Typing text	Text from right to left - <b>Level 1 Braille text</b> <b>Font Editor <a href="#">option</a></b> <b>Engraving Fonts <a href="#">option</a>: Pack #1 - Pack #2 - Pack #3 - Asia Pack</b>
Designing advanced text	<b>Text in a rectangle - Slant/Diagonal Text</b> <b>Vertical text - Text in Columns - Text in arc</b>
Placing objects	<b>Simple shapes</b> (markers, rectangles, arrows, lines, curves, polygons, circles, arcs, etc.) <b>Symbols - Import</b> (BMP, TIFF, WMF, PNG, EPS, HPGL, DXF, IGES, ISO, etc.) <b>Drilling points - List of names/Incrementations</b> <b>Matrix <a href="#">option</a></b> <b>Dial <a href="#">option</a></b>
Manipulating objects	<b>Select</b> <b>Copy/Cut/Paste - Delete - Group/Ungroup</b> Set on <b>Grid/Guide lines/Layers - Transform - Align</b> <b>Export 2D</b> ( HPGL, DXF, IGES)
Using a bitmap image	<b>PhotoStyle/Bitmap editor <a href="#">option</a></b>
Engraving the composition	<b>Setting a target machine</b> - Drivers for GII & NH machines <b>Tool engraving properties - Transfer for engraving</b> <b>Wysiwyre render on material</b> <b>Number of machines Increment <a href="#">option</a></b>

## Graphic



You will work with

- the advanced **toolbox**.
- three **environments** dedicated to specific engraving fields.

To work in the environment of your choice, click the related **tab** in the toolbox:

- **the color of the program's interface** changes (window, dialog boxes, menus)
- **functions** specific to the environment are available in menus and toolbars.

When you exit the program, the active environment is memorized for the next run.



**You can use either GravoStyle or Laser functions to design a composition. But you must activate the environment dedicated to your machine to drive the physical execution of the engraving.**



### GravoStyle (active by default)

Composition and engraving with rotative tool on IS machines



### Advanced machining

Management of the toolpaths assigned to objects designed in GravoStyle environment



### Laser option

Composition and engraving with laser beam on L-Solution machines

## Graphic features (non-contractual list)



Setting text attributes	Uppercase/Lowercase
Typing text	Font Editor option Engraving Fonts option: Pack #1 - Pack #2 - Pack #3 - Asia Pack
Designing advanced text	Text on curve
Placing objects	Matrix series Braille Level 2 option Dial option Bar code option
Manipulating objects	Duplicate - Measure - Convert to curves Effects on curve objects (intersection, subtraction, joining, segmentation, overlap markers, offset, envelop) Editing vectorial contours Material Auto-Optimization option Material Pro-Optimization option
Using a bitmap image	Scanner/Vectorizing PhotoStyle/Bitmap editor option
Engraving the composition	Basic 2D filling Laser engraving with L-Solution machines Advanced management of engraving paths Number of machines Increment option Post-processors for other vendors machines option





## Using a target machine

### Installing your target machine

To **transfer the composition to** the engraving machine plugged into your computer, establish a software connection between GravoStyle and this **target machine**.

 **Creating a target machine**

 **Adding a target machine to Windows**

 **Configuring an existing target machine**

 **Set the properties of a target machine in Windows**



## ◀ Installing a new target machine


**i** We suggest adding a **Binary** target machine. This format optimizes calculation, the transfer period, and checking of data received by the machine.






Open the **Machines dialog box**: click the **Setup machines** command in the Engraving menu.

**Close** When you close the Machines dialog box, a message will ask if the default target machine's dimension area become the **default dimensions**.



**Yes** Click to assign these dimensions to each blank composition.

### Creating a target machine


 The new target machine is featured in the list of the machines installed in the **Machines dialog box**. It is automatically designated as the target machine by default.

- A.  Click opposite the **Add a machine** icon.
- B.  Click opposite the **type** of your machine.
- C.  **Right-click** the machine **model** in the list of available machines.
- D. Click the **Add this machine** command in the contextual menu.
- E. Double-click on **Add to Windows** in the **Configure output dialog box** and **add the target machine to Windows**: the target machine appears in the **List of installed printers**.  
 Click.
- F. Type the **Name** of the target machine in the **Machine Properties dialog box**.  
 Click.


### Designate by default

1.  **Right-click** a target machine.
2.  Click the **Set as default** command in the contextual menu: the default target machine becomes active in the **Material dialog box**.

### Properties

1.  **Right-click** a target machine.
2. Click the **Properties** command in the contextual menu.
3. Configure the target machine in the **Machine Properties dialog box**.

### Delete

1.  **Right-click** a target machine.
2. Click the **Delete** command in the contextual menu.

**i** To use more than 4 machines, use the **Number of machines increment option**.

**i** To use a machine that is not a GravoGraph brand machine, check that you have the **Graphic level**, and use the **Post-processors for others tables option**.



## ◀ Adding a target machine to Windows

Install the target machine as a printer (the order of the procedures varies depending on the Windows system install on your computer).

 The **installed machine** features in the  **Printers** folder and its name is displayed in the **Configure output dialog box**.

1. Install the target machine. The **Add printer Wizard** opens when you double-click **Add to Windows** in the **Configure output dialog box**.
2.  Click in the **Add printer Wizard**.
3. Click  **Local printer** ( **unlicked Plug & Play box**).  
 Click.
4. Click the **Port** which the cable linking the computer and the machine is plugged into.  Click.

**LPT** if the connection is hooked up using a Gravograph parallel cable plugged into the machine's parallel port and into one of the computer's LPT ports.


**COM** if the connection is hooked up using an adapted Gravograph serial cable plugged into the machine's serial port and into one of the computer's COM ports.





**Configure the serial link.**

**FILE** if the engraving is saved in the form of a file for subsequent transfer to your machine.

5. Select the **Windows driver** used to communicate with the target machine.

 **You are adding a target machine for the first time.**

 **It is possible that Windows will ask you to insert a specific Microsoft installation CD-ROM. To install the driver, follow the instructions displayed.**

 **You have already added a target machine referenced by the "Generic/Text Only" driver.**

Click **Generic Manufacturer**, then on the **Generic Printer/Text Only** driver.

Click.

Once you have clicked, Windows will install the driver.










a.  Click the **Generic Manufacturer**, and then on the **Generic Printer/Text Only** driver.  
 Click.

b. Click  **Keep the existing driver**.  
 Click.

6. Type the machine's name under **Printer name**.  Click.
7. Click  **No** to avoid designating this machine as the default printer.  
 Click.
8. Click  **Do not share this printer**.  
 Click.
9. Click  **No** to avoid printing the test page.  
 Click.
10. **Continue installing the target machine.**



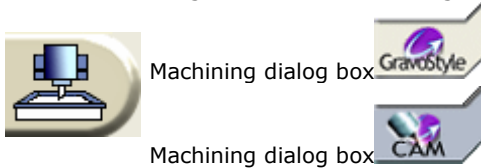
## ◀ Configuring an existing target machine




<p>The properties of the target machine, which are displayed in the <b>Machine Properties dialog box</b>, are provided by the <b>post-processor</b>, which is regularly updated at the factory.</p>	<ol style="list-style-type: none"> <li>1. Open the <b>Machines dialog box</b>: lick the <b>Setup. machines</b> command in the Engraving menu.</li> <li>2.  <b>Right-click</b> a target machine.</li> <li>3. Click the <b>Properties</b> command in the contextual menu.</li> </ol> <p><b>Name</b> To rename the target machine, type the <b>new name</b>.</p> <p><b>Overall dimensions</b> Minimum and maximum engraving areas and thicknesses</p> <p><b>Standard point</b> XYZ coordinates and position for the work area origin in the engraving area.</p>
<p><b>Associating a target machine in Windows</b></p> <p>Designate the target machine, which will start engraving right after a <b>transfer in Port mode</b>.</p>	<ol style="list-style-type: none"> <li>1.  Click in the <b>Machine Properties dialog box</b>.</li> <li>2. Click  <b>Use Windows spooler</b> in the <b>Configure output dialog box</b>.</li> <li>3. Click the machine in the <b>List of installed printers</b>. If it is not featured in, <b>add the target machine to Windows</b>.</li> <li>4.  Click.</li> </ol>
<p><b>Modifying the post-processor (for advanced users only)</b></p>	<p> <b>This procedure automatically renders your warranty with your GravoGraph distributor null and void.</b></p> <ul style="list-style-type: none"> <li>✓ Set the parameters in the <b>Machine Properties dialog box</b>.</li> <li>✓  Click to edit the post-processor.</li> </ul>
<p><b>Selecting an output other than physical engraving</b></p>	<ol style="list-style-type: none"> <li>1.  Click in the <b>Machine Properties dialog box</b>.</li> <li>2. Click the output in the <b>Configure output dialog box</b>. <ul style="list-style-type: none"> <li> <b>In a file:</b> You are saving the engraving data in the Draws folder, as a file for subsequent transfer to the IS machine. Type the name of the current composition, followed by the extension .Uxx (xx is the number of the file created).</li> <li> <b>Automatic files</b></li> </ul> </li> </ol>



## Setting the properties of a target machine in Windows

1.  Select the target machine to be configured in the



2.  Click: the print manager window for the machine opens.
3. Click the **Properties** command in the **Printer** menu.
4. Modify the properties of your choice in the target machine's **Properties dialog box**.
5.  Close the printer's Properties dialog box.
6.  Close the print manager window.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**

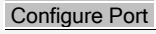

### Configuring the serial link

Synchronize the serial link parameters between the computer and the engraving machine each time you

- **add a target machine** using a COM port.
- select this target machine to engrave the composition.




**If the serial parameters for the computer and the engraving machine are different, errors may occur during transfer, which will alter the execution of the engraving.**


- a. In the target machine's **Properties dialog box**, click the **Ports** tab.
- b. In the list of ports, click the **COM port** which the cable linking the computer and the machine is plugged into.
- c.  Click.
- d. In the **COM Properties dialog box**, click the **Parameters** tab.
- e. Key in the serial parameters for the machine (see the Gravograph user manual).
- f.  Click.

### Designate the type of data transferred to the machine

#### Windows 98

- a. In the **Properties dialog box**, click the **Details** tab.
- b.  Click.
- c. Click the **RAW** default data type.

#### Windows 2000




- a. In the **Properties dialog box**, click the **Advanced** tab.
- b.  Click.
- c. Click the **RAW** default data type.













## Creating a composition

### Creating a composition

 <b>New composition</b>	Create a blank composition or a composition based on a model.
 <b>Open an existing composition</b>	Use a composition or a model that you have saved in the form of a file.
 <b>Saving the current composition</b>	Save the composition to a disk (hard drive, diskette, CD-ROM) <ul style="list-style-type: none"><li>• if you plan on modifying it subsequently.</li><li>• if you want to use it as a model for other compositions.</li></ul>

#### What are the composition formats you can open or save?

		File types	Definition
		<b>GravoStyle (*.gnh)</b>	Composition created and saved in the program
		<b>Neutral (*.vnx)</b>	Neutral file created and saved in GravoStyle or Type3 whatever the version
		<b>GravoStyle98 (*.vnd)</b>	Composition created and saved in the GravoStyle 98 for Windows 95/NT program




## New composition

 **Creating a new composition closes the current composition.**








**Save the new composition** under a valid name.


### Blank Composition

 **A blank composition is automatically created each time you run the program.**

1. Activate the **New** command:

  Click in the main tool bar.


   Use the keyboard shortcut.

 Select the **New** command in the **File menu**.




2. **Configure the composition.**

### Creating from a model


The new composition is created from a copy of the model selected.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**


1. Open the **Open a Model dialog box**:


   Use the keyboard shortcut.


 Select the **Open a Model** command in the **File menu**.

2. Locate the spot where the file is located ( **DRAWS** is the default folder).

3. Select the **.vnm file** to be opened: you will see the preview and comments for the model selected.

 Click the filename. To search quickly, click in the list and type the first character of the name.

 Type its name in the **Name** box.

4.  Click. The new composition contains all the objects placed in the base model.

Each text display font that is missing is replaced by the default font.



## Opening an existing composition


What is involved is a composition or a model that you have saved as a file for subsequent use.

 **Creating a new composition closes the current composition.**


**Opening one of the last four files opened**

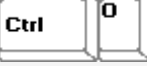
Click its name in the **Recent File List** of the **File menu**.


**Opening a composition or a model**


 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**

1. Open the **Open dialog box**:


 Click in the main tool bar.

 Use the keyboard shortcut.


 Select the **Open** command in the **File menu**.


2. Locate the spot where the file to be open is ( **DRAWS** is the default folder).

3. Select the **file** to be opened: you will see the preview and comments for the file selected.

 Click the **file name**.

To search quickly, click in the list and type the first character of the name.

 Type its name in the **Name** box.

4.  Click: the file name will be displayed in the title bar.


Each text display font that is missing is replaced by the default font.





## Saving the composition

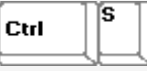

### Saving as a composition





The composition is saved as a **file** with the same name, in **.gnh** format.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**

1. Open the **Save As dialog box**:


  Click in the main tool bar.

  Use the keyboard shortcut.

2. Locate the folder where the file will be saved ( **DRAWS** is the default folder).
3. Type your Comments.
4. Designate the **File Type** (\*.gnh default).  
To create a neutral format file, click type \*.vnx.
5. Type the name of the composition in the **Name** box.
  -  To replace an existing file, click its name in the list.
  -  To save a new file, delete the "\*" character and key in a new name.
6.  Click: the file name will be displayed in the title bar.

### Saving as a model

The model is saved from a copy of the current composition, as a **file** with the same name, in **.vnm** format.







 **To edit a model, use the Open command.**

1. Open the **Save a Model dialog box**: select the **Save a Model** command in the **File menu**.
2. Execute [steps 2 to 6](#) of the **Saving as a composition** procedure.



## Common tasks

# GravoStyle5 Common tasks





<b>&gt;&gt; Keyboard shortcuts</b>	A keyboard shortcut is a combination of key strokes that you type to execute a standard command.
<b>&gt;&gt; Zoom/Redisplay</b>	Use these commands to improve the composition's display quality and size.
<b>&gt;&gt; Undo/Redo</b>	Each procedure that you carry out is saved in the program. You can therefore cancel or restore a series of procedures so you can return to a specific stage of preparing a composition.
<b>&gt;&gt; Save</b>	Save the composition regularly: <ul style="list-style-type: none"><li>• to avoid accidentally losing your work.</li><li>• to save the last changes made.</li></ul>
<b>&gt;&gt; Information</b>	Update the features of the current composition (comments, working time, etc)
<b>&gt;&gt; Print</b>	Produce a paper output for a presentation before engraving (test or engraving note).
<b>&gt;&gt; Engraving Quotation</b>	Assess the engraving price for a selection of objects or the whole plate.
<b>&gt;&gt; Software support</b>	How to find technical assistance or sales information?
<b>Running</b>	<ol style="list-style-type: none"><li>1.  Click <b>Start</b> in the Windows task bar.</li><li>2.  Click command <b>Programs</b> in the Start menu.</li><li>3.  Click group <b>GravoStyle</b> in the Programs menu.</li><li>4.  Click in the group.</li></ol>
<b>Exiting</b>  <b>Before exiting, save the composition.</b>	 <ul style="list-style-type: none"><li>✓ Use the keyboard shortcut.</li><li>✓ Select the <b>Exit</b> command in the File menu.</li></ul>



## ◀ G5 Hotkeys






### File menu

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


Keys	Command	Main bar
Ctrl N	New	
Ctrl O	Open	
Ctrl S	Save	
Ctrl I	Import	
Ctrl E	Export	
Ctrl P	Print	
Alt F4	Exit	

### Edit menu ▲



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Keys	Command	Main bar
Ctrl Z	Undo	
Ctrl A	Redo	
Ctrl X	Cut	
Ctrl C	Copy	
Ctrl V	Paste	
Del	Delete (DEL)	
Ctrl L	Select all	
F2	Pointer position	
F3	Snap mode	
F4	View object	
F5	Mouse buttons	
F10	Options	


View menu 

Keys	Command	Main bar
Ctrl 	Redraw	
Ctrl 	Quick redraw	
Ctrl 	Contour direction	
Ctrl 	Wire contours	
Ctrl 	Filled contours	





















Machining menu 

Keys	Command	Main bar
Ctrl 	Engraving	

## ?Help menu

Keys	Command	Main bar
F1 	Help	

## Text functions



Keys	Command	Text Palette
	Distance to top margin	
	Distance to left margin	
	Text alignment	
	Maximum available length	
	Italics text	
	Underlined text	
	Exponent text	
	Height	
Ctrl 	To increase the spacing between two characters	
Ctrl 	To decrease the spacing between two characters	



## Zoom/Redisplay

### Redraw

Due to a large number of changes being made, the composition has become illegible.

- ✓  Click in the main toolbar.
- ✓  Use the keyboard shortcut.
- ✓ Click the **Redraw** or **Quick redraw** command in the **View menu**.



### Zoom using the mouse's right button

1. **Configure the right button for the zoom.**
2. Using the mouse's **right** button,
  - click to double the size of the image on-screen.
  - double-click to display the work area.

### Zoom tools

Check the % zoom level % in the status bar.

Slide the pointer so that the whole area to be enlarged is framed.

Back to the previous zoom level

View all the objects in the work area

View the whole composition

Select objects before clicking the tool.


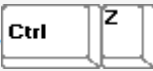
Click in the main toolbar **or** in the **View menu**.



## Undo/Redo a procedure


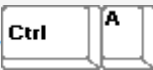
### You have just made a mistake.

Cancel the procedure using the Undo command.

- ✓  Click in the main toolbar.
- ✓  Use the keyboard shortcut.
- ✓ Click the **Undo** command in the **Edit menu**.
- ✓ Right-click if your mouse is configured to trigger the Undo command.

### You have accidentally cancelled a procedure.


Restore it immediately using the Redo command.

- ✓  Click in the main toolbar.
- ✓  Use the keyboard shortcut.
- ✓ Click the **Redo** command in the **Edit menu**.

### Managing cancellations

Each procedure that you carry out is saved in the program's **Undo memory**.

You can therefore cancel or restore a series of procedures to return to a specific stage of preparing a composition.

-  **The Edit menu states the last procedure, which you can:**
- cancel using the **Undo** command.
  - restore using the **Redo** command.

To set the number of procedures saved in the Undo/Redo memory, key in the **Number of cancellations** in the Options dialog box's General window.


If your computer's RAM is less than or equal to 32 MB:

- Limit the number of cancellations to 3.
- Regularly click the **Clear Undo Memory** command in the **Edit menu**.



**Another way of cancelling a series of procedures is to return to the last saved version of the composition.**

This can be done if you have saved the current composition.

1. Open the **Open dialog box:**  click in the main toolbar.
2. A message will ask if you want to save the latest changes carried out: click **No**
3. Open the composition again: click its name in the **Recent File List** of the **File menu**.

You will recover the last saved version of the composition.



## Save

Save items regularly in order to keep the latest changes made to the composition. If you lose the composition accidentally, saving also allows you to recover most of your work.

- i** **A message will ask if the latest changes should be saved each time**
- you create a new composition.
  - you open a composition.
  - you exit the program.

### Personal Save

Always save

- if you produce a lengthy or complex composition.
- if you have to put your work on hold.
- if you want to update the relevant file to include the latest changes.



Click in the main toolbar.



Use the keyboard shortcut.

If you have already saved the composition, the related file is updated to include the latest changes. Otherwise, **save the composition.**

### Automatic Save

- i** **This function does not replace your personal saves; as a matter of fact, the latest automatic save does not necessarily include the latest changes made to the composition.**

The active composition is automatically saved every 20 minutes. You can also adjust the automatic save period to a greater or lesser interval.

### You have just lost the composition.

Due to a loss of power, a defect in your computer, or a program operating anomaly, you have abruptly exited the program.

### How can your work be recovered?

Restart the program: a message will ask whether you want to recover the composition.

**You saved just before exiting the program:**



Click and open the relevant .gnh file for your composition.

**You did not save anything:**



Click: the last automatically-saved version will be opened. You will have to redo all the procedures that were not saved.



## Editing the information about the current composition



Save the composition to keep the latest features.

### Work time

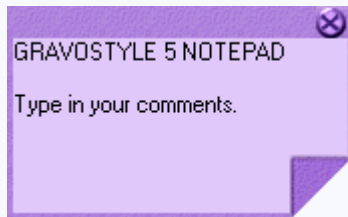
Control the time you spend on plate production (hours/minutes/seconds).


00:18

Tick option in the Options dialog box's **Display** window.


Displayed in GravoStyle window top right corner, job timer is automatically reset for each new composition.

### Comments



-  Click in the main toolbar.
- Type your comments about the current job (ideas, instructions, technical data).



-  Click to close the window.

### Additional features

You will see the work time and the comments about the composition, plus:

<b>Creation date</b>	First file saving date
<b>Edition date</b>	Last file saving date
<b>Creator</b>	Type the operator's name.
<b>Customer</b>	Type the recipient's name.

Open the **Information dialog box**: select the **Information** command in the **File menu**.





## Printing the composition



**Before printing, check that your computer and printer are correctly connected and that the printer is powered up.**

1. Run the printing:

Type the hotkey.

Click in the main toolbar.

Select the **Print** command in the File menu.

2. Set the print parameters:

<b>Print range</b>	Click <input checked="" type="radio"/> <b>All</b> <input type="radio"/> <b>Selection:</b> the objects selected <input type="radio"/> <b>Pages:</b> if the printing covers several pages, type the number of the first ( <b>From</b> ) and last ( <b>to</b> ) pages.
<b>Quality</b>	Click a value falling between your printer's minimum and maximum resolution.
<b>Copies</b>	Key in a number of copies between 1 and 99. If a copy has more than one page, click the <input checked="" type="checkbox"/> <b>Group</b> box to print one copy at a time.
<input type="checkbox"/> <b>Print to file</b>	a. Click to retain a print file or to perform delayed printing. b. Save the printing in a .prn format file.
<input type="checkbox"/> <b>Info</b>	Click to print information about the document at the bottom of the page (work directory, name of the composition, print scale).
<b>Print position</b>	Click one of the 5 available positions <input checked="" type="radio"/> <b>Center/Top/Bottom/Left/Right</b> . Tick box <input checked="" type="checkbox"/> <b>Mirror</b> to print a reversed image.
<b>Print size</b>	Click <input checked="" type="radio"/> <b>Adjust to page:</b> the printing is adjusted to the page dimensions. <input type="radio"/> <b>Scale:</b> the printing is resized according to the percentage entered.
<b>Collate</b>	Click the printing mode for layers: <input checked="" type="radio"/> <b>All layers one page</b> <input type="radio"/> <b>Current layer</b> <input type="radio"/> <b>One layer one page</b>
<input type="button" value="Setup"/>	Click to configure your printer.

3. **Preview** Click to display the print preview.

<b>Print</b>	To run the printing
<b>Prev Page</b> <b>Next Page</b>	To scroll through the pages
<b>One page/Two pages</b>	To display a single or double page
<b>Zoom in</b> <b>Zoom out</b>	To enlarge or reduce the view Click in the preview to reduce or increase the print size.
<b>Close</b>	To close the print preview

4. **Print** Click.



## Invoicing help

1. Select the lines of text to be engraved.

2.  Click in the toolbox.

3. Key in the **Price of Plate** and the **Price per Character** to obtain the **Total price**.

<b>Nb of Characters</b>	Multiplied by character price, used to calculate the price of the text selected.
-------------------------	--

<b>Total price</b>	Sum between plate price of and price of the text selected.
--------------------	--

4.  Click.




## ◀ Calling out Software support

### Contact Gravograph by email.

#### About dialog box displays

- your dongle's features that will be systematically attached to your mail to identify your program version.
- the terms of the operating licence that protects use of the program.




 Click in the main toolbar.

- ✓ Click the **About** command in the **Help menu**.

**Codes** To meet the requirements of your new engraving applications, upgrade GravoStyle by integrating a **specific option or a higher program level**.

#### Ordering a level/option



Your distributor will forward you the codes that allow you to activate the option/level ordered into the program.

1.  Designate the Gravograph distributor you contact in the **About dialog box**.
2.  Click.
3. Type the list of the options or the level you want in the **Content of your message**.
4.  Click to email your request.



#### Activating a level/option






**Only modify the codes for running a program option or level that has been purchased legally from Gravograph.**


1. Type each **Code** in the **About dialog box**. For example, if you have two codes, only fill in the first two boxes.
2.  Click.
3.  Click.

 To have details about new program features and upgrades, send a sales request.

1.  Designate the Gravograph distributor you contact.
2. Click to email your request.
3. Type the **Content of your message**.
4.  Click.

 If you find no solution to a problem arose while using the program, call out the technical assistance.

1.  Designate the Gravograph distributor you contact.
2. Click to email your request. Files describing the program configuration will be attached.
3. Type the **Content of your message** that explains the problem encountered.
4.  Click.

 Click to open your dongle's features in Word: you can edit and print this document.



**When you have no Web connection, type your request at the end of the document, print and fax it to your Gravograph distributor.**





## Material mode

### Working in Material mode

Active for each blank composition, this mode is basically used to configure the composition according to the profile of the piece to be engraved.

Set your specifications according to the constraints hereunder:

- Dimensions in relation to the surface, the volume and the profile of the piece (plate, non-rectangular shape, cylinder)
- Margins delimiting the engraving zone in the composition

- Machine choice (maximum engraving area, maximum strokes and clearances)
- Engraving orientation (upside or reversed in relation to the material, 180° or 90° rotation)
- Engraving origin linked to the accessory used to clamp the piece on the machine (table, vice or cylinder engraving)
- Parameters for cylinder engraving (piece diameter, type of cylinder attachment)

The **dynamic assistance** helps you to optimize the composition configuration for safer machining.

- For example it indicates the maximum number of plates in engraving area for **Matrix serie**.
- It suggests different solutions to correct possible composition overflows outside the engraving area (changing origin or orientation, choosing a machine with a larger engraving area, automatic activation of long plate mode).

1. Open the **Material dialog box**:



✓ Click in the toolbox.

✓ Click the **Material** command in the Modify menu.

2. **Set the composition's dimensions and margins.**



3. **Set the composition's engraving properties.**



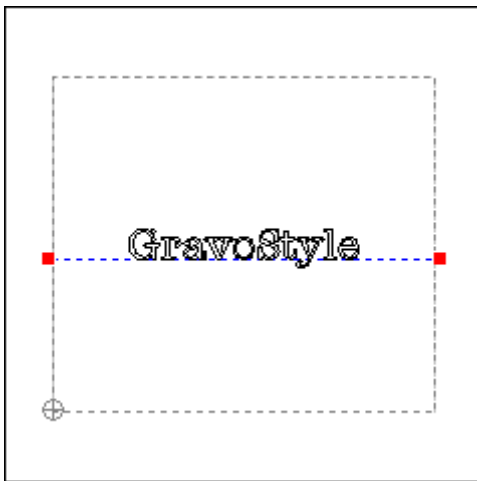
4. **Check that the composition's configuration is correct.**



5. Click.



## ◀ Entering the dimensions and margins



The exterior frame delimits the composition's surface area, in accordance with its **dimensions**.  
The dotted frame represents the margins that separate the zone reserved for the text from the border designed to immobilize the plate.

You can customize the color of the composition and the margins.



**If the new dimensions/margins decrease the length of a line of text in relation to that of the text typed in, the text will automatically be compressed.**



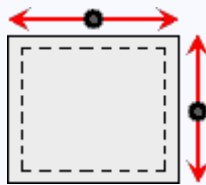
Click the **Dimensions and margins tab** in the Material dialog box.

### Material's dimensions



**If one of the composition's dimensions exceeds the height of the engraving area, the other has to be less than the engraving area's length (limit of the tool's movement on the X axis). A message will ask you to confirm dimensions selected that are greater than the engraving area's dimensions.**

**Yes** Click if you are configuring a composition on a cylinder or a long plate.



1.



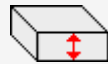
Key in a length no greater than the length of the engraving area.

2.



Key in a height no greater than the length of the engraving area.

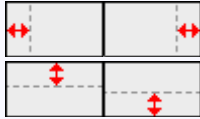
3.



Key in a thickness no greater than the depth of the engraving area.

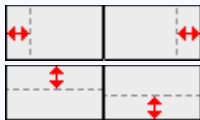
## Composition's margins

### Proportional margins



### Margins equal to the left margin

### Different Margins



## Customizing the standard dimensions and margins

The default dimensions equal

- the dimensions of the default target machine's area.
- 1,000 x 1,000 mm, if you have not created a target machine.



**If you place the text in manual mode, all the margins will be cleared.**

Click box  **Margins auto-correction.**

The left and right margins are each equal to 15% of the composition's length.

The top and bottom margins are each equal to 10% of the composition's height.

1. Click box  **Same margins.**



2. Key in the left margin.

1.  Check that no boxes are clicked.

2. Key in each margin.

The distance between the left and right margins has to be between 0.01 mm and the length of the composition.

The distance between the top and bottom margins has to be between 0.01 mm and the height of the composition.

1. Click the **Material** tab in the Options dialog box.

2. Key in the dimensions and margins as described above.



Click in the main toolbar to create a blank composition from latest default dimensions and margins.



## Engraving properties

### ◀ Defining the composition's engraving properties



1. Click the **Engraving properties** tab in the Material dialog box.
2. Set the engraving properties below.




3. **Check that the composition's configuration is correct.**



Designate the active target machine which will actually engrave the current composition. Its engraving area delimits the composition's maximum surface area.  
 Click if there isn't one. **Add this target machine**, and then designate it in the Material dialog box.

#### » Designate as default target machine

Click box  **Set as default machine** if you perform engraving regularly using the active target machine.

 The machine selected automatically becomes the default target machine in the **Machines dialog box**.



When you click to validate your composition's configuration, a message will ask if the default target machine's area has to delimit the maximum surface area for each blank composition.

The dimensions of the engraving area will become the **default dimensions** in the **Options dialog box**.



Designate **the engraving orientation**  normal or  rotated.



Set the **engraving origin**  center or  upper left-hand corner.



If needed, set the **parameters for engraving on cylinder**.



## ◀ Setting the composition's origin



1. Click the **Engraving properties** tab in the Material dialog box.
2. Select the **origin** depending on the composition's position in the engraving area. Click a **fixed** origin (center or left) or on a **floating** origin (center or left).

The composition's origin will become floating when it does not match any fixed origins. This is the case when:

- The plate's footprint does not make it possible to fix it at the center or in the left-hand corner of the engraving area.
- The composition's position on the plate offsets its origin in relation to the center or the left-hand corner of the engraving area.



### **Machine center**

The center of the composition matches the **center of the engraving area**. This fixed origin is recommended for **engraving on a self-centering vice**. This accessory makes it possible to center the plate in the engraving area.



### **Machine's left corner**

The upper left-hand corner of the composition matches the **upper left-hand corner of the engraving area**. This fixed origin is recommended for engraving on **plates at low pressure, or t-slot or clamping tables**, as this accessory makes it possible to set the plate in the upper left-hand corner of the engraving area.



### **Floating center**

Key in the **XY coordinates for the center** of the composition in the engraving area (the default value is zero).



### **Floating left corner**

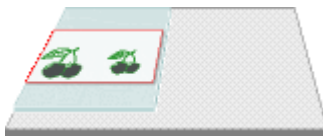
Key in the **XY coordinates for the upper-left hand corner** of the composition. Default settings:

- The X coordinate equals half of the length of the engraving area.
- The Y coordinate equals half of the height of the engraving area.



**You can only select a floating origin if the composition's surface area is less than the engraving area.**

**Check that the floating origin's position does not place the composition outside the engraving area. If this is detected during transfer for engraving, a message displays asking you to correct the floating origin's XY coordinates.**



### **✓ Correct floating origin**

The upper left-hand corner of the composition (red frame) remains within the engraving area (gray surface). The plate (green surface) is fixed onto the upper left-hand corner of the engraving area.



### **✗ Incorrect floating origin**

The upper left-hand corner of the composition is outside the engraving area. Only the portion of the composition inside the engraving area will be engraved onto the plate.



## Designating the composition's orientation



1. Click the **Engraving properties** tab in the Material dialog box.
2. Click the **orientation** suited to the **material** being engraved and the **composition's dimensions**.

Any orientation is possible, provided each dimension is less than or equal to the height of the engraving area.



The other dimension will not exceed the height of the engraving area.

**Normal** if the **length** of the composition exceeds the height of the engraving area.

**90°-rotation** if the **height** of the composition exceeds the height of the engraving area.

<p><b>Upside</b> to directly engrave the material's surface.</p>				
<p><b>Reversed</b> to engrave materials that have a transparent upper layer (Gravoglas 2).</p>				



## ◀ Setting the parameters for engraving on a cylinder

 Consult the Gravograph manuals enclosed with your machine and the cylinder engraving accessory.



### Set the dimensions and margins.



**If one of the composition's dimensions exceeds the height of the engraving area, a message will ask you to confirm dimensions selected that are greater than the engraving area's dimensions.**

**Click to configuring the composition on a cylinder.**



1. Click the **Engraving properties** tab in the Material dialog box.
2. Set the composition's **floating origin** (default setting: center). Key in only its X coordinate in the engraving area. The Y coordinate, which equals half the height of the engraving area, remains fixed.



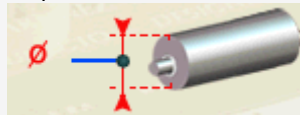
3.  Click to activate the **cylinder engraving**.

4. Select the engraving accessory in the **Cylinder engraving dialog box**.



**TC** for the cylinder attachment  
**TS** for the pen attachment

5. Key in the **diameter of the cylinder**.



It has to be between the minimum et maximum diameters accepted by the accessory selected.

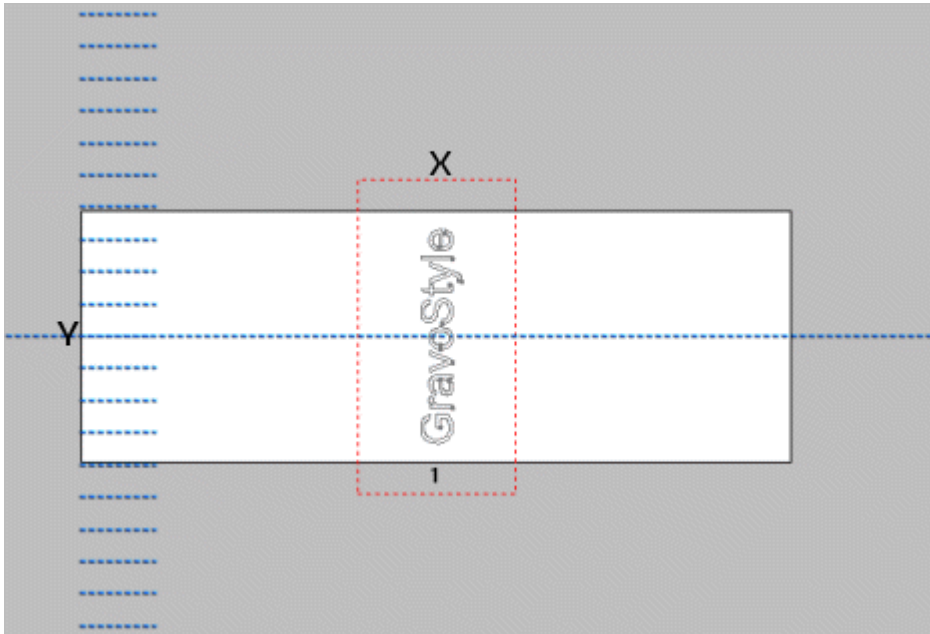


6.  Click.

**TS** **TC** The name of the active accessory will be displayed as a button in the **Machining dialog box**.

**Preview** Click to open the engraving preview. The following are displayed using blue dotted lines

- the **axis of symmetry** of the cylinder attachment, for which the 0 point is centered on the height of the engraving area (Y coordinate).
- the **successive rotations** of the cylindrical part, at a rate calculated based on the part's diameter.



## ◀ Checking the composition's configuration

1. Configure the composition.



2. Click the **Engraving properties** tab in the Material dialog box.

3. Note the comments in the **Info zone** and act accordingly:



Your configuration is correct: the composition (red frame) remains in the engraving area (gray surface).



The composition is physically outside the engraving area. However, its surface area does not exceed the engraving area.

- ✓ Correct the composition's **orientation** or **origin**.
- ✓ Configure the composition
  - **for cylinder**, if your machine is equipped with this accessory.
  - **for long plate**.



It is impossible to engrave: the composition's surface area exceeds the engraving area in both length and height.

- ✓ Correct the **composition's dimensions**.
- ✓ Designate a **target machine** that offers a larger engraving area.

### Maximum number of plates

If you are producing a **Matrix series**, this value indicates the total number of elementary plates that you can engrave in the engraving area according to the standard plate's configuration.





## Text mode

# **T** Working in Text mode

This mode becomes active whenever you create a blank composition. You can type text right away.

1. **T** Click in the toolbox to activate Text mode.
  2. **Activate the mode you will be using to place text.**
  3. For each line of text, set the following in the **Text palette** or in the **Rapido**:
    - » **the parameters used to position it in the composition**
    - » **the attributes that determine the text's appearance (underlining, italics, exponent)**
  4. **Type the text.**
    - » **You can also use the Advanced Text functions (non-horizontal text, Font Editor, etc.).**
- i** **Shifting into Text mode results in all the text belonging to the last Text object modified being selected automatically.**



## Placing text in automatic/manual mode

### Automatic mode (active default setting)

Remain in automatic mode so you can quickly frame the horizontal text in the composition.

The margins delimit the zone reserved for a **paragraph** of horizontal lines of text, systematically distributed and centered between the top and bottom margins.

 **Once manual mode is activated, automatic mode can no longer be reestablished.**



 **Shifting from automatic mode to manual mode converts each existing line of text into an independent Text object.**


### Manual mode


Activate the manual mode to

- place several Text objects over the entire surface area of the composition.
- create non-horizontal text using the **Advanced Text functions** (text in an arc, vertical text, etc.).

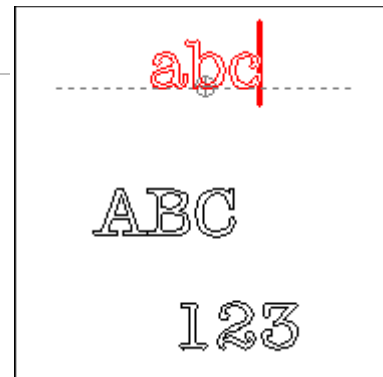
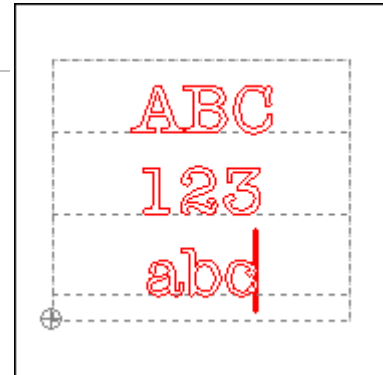
The margins are cleared. For each text object, either key in these line parameters or position the line in the composition with the mouse.

  Click in the Text palette.

 Click **Auto/Manual** in the **Modify/Text menu**.


 **Abc** Click in the Advanced Text palette.

**Yes** Click to confirm the activation of the manual mode.

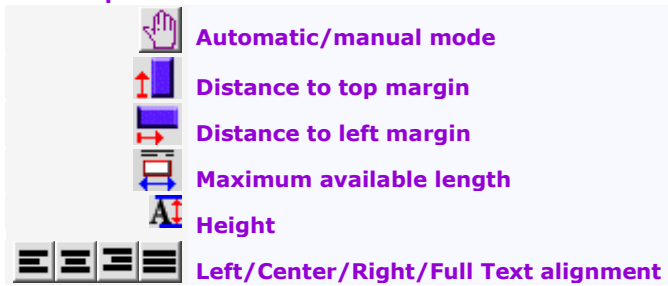


## ◀ Text palette

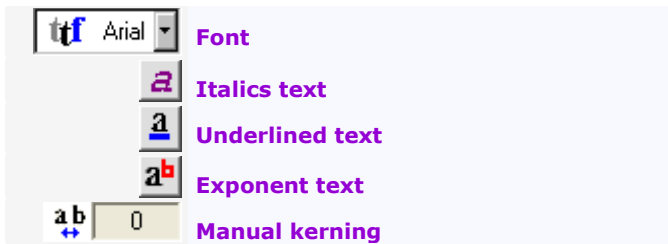
This palette offers the line parameters and text attributes commonly used to place and present a line of text.

 Click to use advanced functions in **powerful Rapido palettes.**

### >> Line parameters



### >> Text attributes



## ◀ Rapido palettes







These four palettes add advanced text attributes and line parameters.

1.  Click in the Text palette.
2. Click the **Display/Hide Rapido** command in the **Modify/Text menu**.

In the selector, click the relevant color to display a palette.











**Green Rapido: basic attributes and parameters**

-  **Font**
-  **Text alignment**
-  **Text height**
-  **Character width**
-  **Italics/Slant text**
-  **Active font content**








**Yellow Rapido: advanced text attributes**

-  **Character rotation**
-  **Character spacing coefficient**
-  **Position of the underlining**
-  **Text entry from right to left**
-  **Uppercase/Small caps/Lowercase**
-  **Index or exponent text**
-  **Text on or under the baseline**
-  **Auto-kerning**



**Blue Rapido: advanced line parameters**

-  **Distance to top margin**
-  **Distance to left margin**
-  **Maximum available length**
-  **Constant/Proportional/Typographical Line spacing**
-  **Compression auto. per line or all lines equal**



**Red Rapido: Styles**



## Position between margins

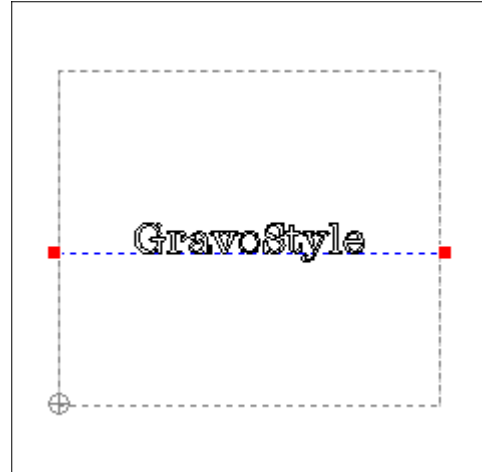
### **T** Positioning a line of text

The **line parameters** define the position of a line of text between the margins.

The default sets the characters in a line of text on a **horizontal baseline** ■■■■■■

The length of the baseline is equal to the distance between the left and right margins:

- Its left end is on the left margin.
- Its right end is on the right margin.
- The active parameters apply to a new line of text.
- To modify the parameters of an existing line, click the line first.
- If the new parameters increase the length of the text typed in relation to the length of the baseline, the text is automatically compressed.



Set basic line parameters in the Text palette.

- >> Text alignment
- >> Distance to left margin
- >> Maximum available length
- >> Height

Set advanced line parameters in the Rapido.

- >> Distance to top margin
- >> Position of the text on its baseline
- >> Line spacing



**The line parameters react differently depending on whether you place the lines of text**



in automatic mode.



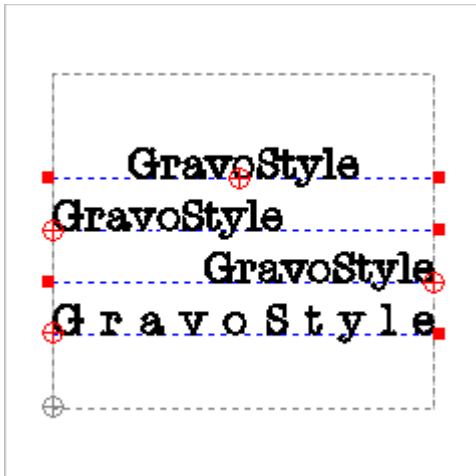
in manual mode.



These parameters also apply to lines of text presented on a non-horizontal baseline (text in arc, vertical text, etc.).




## ☰ Aligning the text on its baseline ☰☰☰



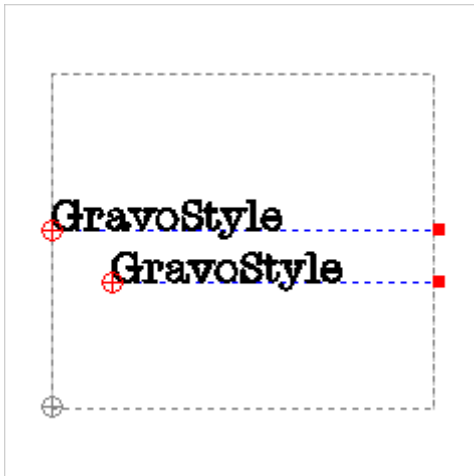
☒ Line parameter **F4** designates the point on the baseline where the text is aligned (default setting: centered).

- ☰ **Center** alignment: the text is displayed on both sides of the center of the baseline.
- ☰ **Left** alignment: the text is aligned with the left side of the baseline.
- ☰ **Right** alignment: the text is aligned with the right side of the baseline.
- ☰ To stretch the text from one end of the baseline to the other, click **Full** alignment.


- ☑  Press until the required button is depressed in the Text palette.
- ☑ Click the alignment selected in the Green Rapido.







## Defining the distance from a line of text to the left margin







Line parameter **F3** sets the position of alignment point F4 between the left and right margins.

 By modifying distance F3, you move:

-  the center of the baseline 
-  the left end of the baseline
-  the right end of the baseline

### Entering distance F3 in the Text palette

- Click the icon to designate the calculation mode for distance F3:

-  from the left margin (default mode)
-  from the right margin
-  from the left edge
-  from the right edge of the composition



- Select the numeric value in the editing box.
- Key in a value that falls between the left margin and the distance from the left edge to the right margin of the composition. Validate.



### Setting distance F3 in the composition

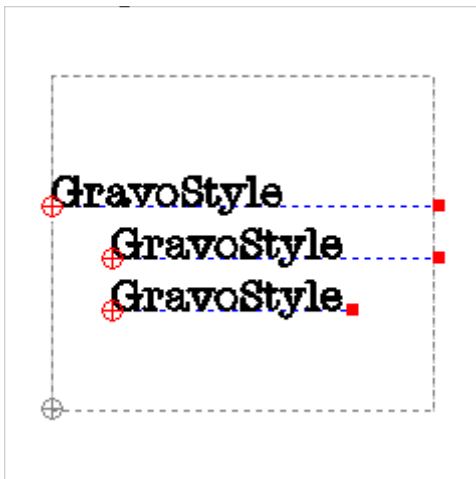
Key in the X coordinate for the alignment point.


**or**

- Display the rulers.
- Using the shifting index displayed in the horizontal ruler as a reference, click the position of the alignment point. The X coordinate will be displayed in the status bar.






## Defining the maximum available length for a line of text





Line parameter **F5** displays the length of the baseline or the **maximum available length** for typing text . This value is recalculated depending on distance F3. By modifying the maximum available length, you move



-  the ends of the baseline in relation to its center
-  the right end in relation to the left end
-  the left end in relation to the right end

### Entering length F5 in the Text palette or in the Blue Rapido

1.  Select the numeric value in the editing box.
2.  Key in an F5 length that is at most equal to the default length. Validate.



### Forcing auto-compression

Automatic compression occurs as soon as the length of the typed text exceeds the length of the baseline. This event is indicated by a beeping sound and a negative coefficient, which is displayed in **red**.

This default coefficient is zero. This variation in the character width and spacing is proportional to the text height.

1. Select the lines of text.
2. In the Blue Rapido, click the appropriate compression mode button. Validate.



### Compression per line

By default, the automatic compression coefficient remains specific to each line of text.



### Compression all lines equal

The maximum automatic compression coefficient applies to all lines.



## Defining the height of a line of text




The parameter F12 is measured from the baseline to the top of the character; the foot of each lowercase letter placed beneath the baseline is generally not taken into account. The default setting for value F12 is 10 mm.

As the **text height** can vary, the **line height** is equal to the height of the largest uppercase character.

### Entering height F12 in the Text palette or in the Green Rapido



1. Select the numeric value in the editing box.
2.  Key in a value between 0.01 mm and the available height. Validate.




The available height is the space remaining between the top and bottom margins, in relation to the heights of the existing lines.



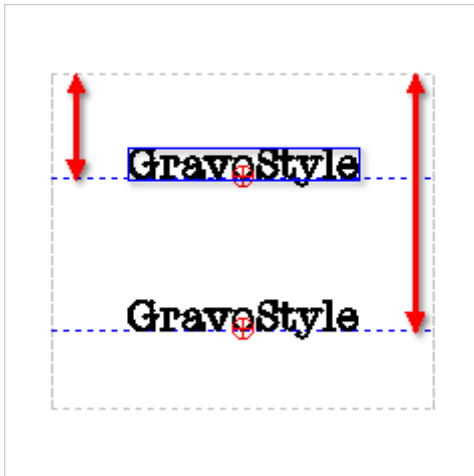
The available height is the distance from the baseline to the top margin.


### Customizing the default height

1. In the Options dialog box, click the **Text attributes** tab.
2.  Key in a value between 0.01 mm and the available height in the composition. Validate.



## Defining the distance from a line of text to the top margin



 Line parameter **F2** defines the position of alignment point F4 between the top and bottom margins.

The default setting for value F2 is equal to distance F2 for the preceding line, increased by the space produced by the proportional line spacing.



Activate manual mode to define distance F2.

### Entering distance F2 in the Text palette

1. Click the icon to designate the calculation mode for distance F2



from the top margin (default mode)



from the bottom margin



from the top edge



from the bottom edge of the composition



2. Select the numeric value in the editing box.

3. Key in a value such as the distance from the baseline to the top margin, which should be at least equal to the **line height** envisaged. Validate.

### Setting distance F2 in the composition

Key in the Y coordinate for the alignment point.

**or**

1. Display the rulers.
2. Using the shifting index displayed in the vertical ruler as a reference, click the position of the alignment point. The Y coordinate will be displayed in the status bar.



## ◀ Positioning the text on its baseline

Rapido



The default setting is for the text to rest on the baseline; there is no offset between the baseline and text.

Click the position needed in the Yellow Rapido. Validate.



**Text on the baseline**

Rapido



**Text under the baseline**

To set the offset proportional to the line height, key in a coefficient value of -100% to +100%. Validate.

## ◀ Setting the line spacing in a paragraph

You can set the distance between the baselines for two consecutive lines of text.

1. Click a line spacing mode in the Blue Rapido.
2. Key in the line spacing coefficient. Validate.

**i** A coefficient that is too low may cause overlapping between the foot of each of the lowercase letters placed beneath the baseline and the text on the following lines.



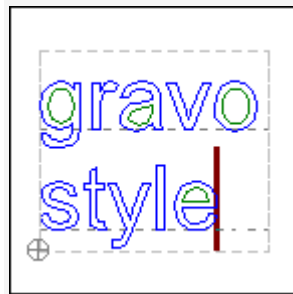
The line spacing coefficient can be reduced to free up the space required for a new line.



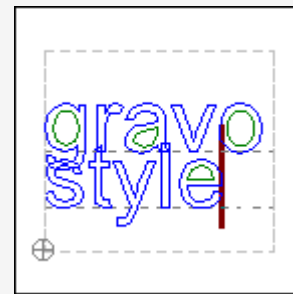
### Proportional line spacing (active default setting)

The line spacing is proportional to the average height of two consecutive lines. The default line spacing coefficient is 75%.

In the Blue Rapido, key in a line spacing coefficient value of 0% to 400%.



75%



0%



### Constant line spacing

The line spacing is a set distance, which is set by default at 75% of the height of the first line.

In the Blue Rapido, key in a value that is less than the distance between the top and bottom margins.

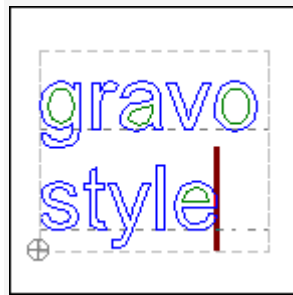


### Typographic line spacing

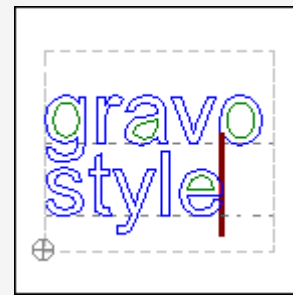
The line spacing is proportional to the average height of two consecutive lines. The default line spacing coefficient is 100%.

Adapted to True Type fonts, this mode eliminates the risk of 2 consecutive lines overlapping. The line spacing calculation takes account of the actual height of the characters (including ascenders and descenders).

In the Blue Rapido, key in a line spacing coefficient value of 0% to 400%.



100%



0%



## Type

### Typing text

The cursor, which is represented by a red vertical line, indicates your position in the text.

 [Typing characters](#)

 [Moving around in the text - Selecting text](#)

 [Editing text](#)

 [Spell checking](#)

 [Text in Braille](#)




#### Using text from an external document

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This method eliminates any need for you to type the text in GravoStyle. The only drawback is that it cancels the text attributes which you redefine.






















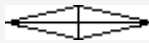
1. In your word processing software, open the document that contains the text to be recovered.
2. Select and copy the text.
3. Click the composition.

4.  Click in the composition on the spot where you want to insert the text selected.

5. Paste the text:  click in the main toolbar.




















## ◀ Typing characters

 <p><b>Text Balloon</b></p> <p>This balloon allows you to zoom in on the text you are typing.</p>	<ol style="list-style-type: none"> <li>1. Click the <b>Text attributes</b> tab in the Options dialog box.</li> <li>2. Actuate the <b>Bubble time</b> function for a set period             <ul style="list-style-type: none"> <li>• of between 1 and 6,000 ms.</li> <li>• of 0 to deactivate the balloon.</li> </ul> </li> </ol>
<p><b>Text entry from right to left</b></p>	 Click in the Yellow Rapido to activate the function.
 <b>Inserting with the mouse</b>	<ol style="list-style-type: none"> <li>a.  Display the content of the active font by clicking in the Green Rapido.</li> <li>b. Click in a line of text.</li> <li>c.  Click.</li> </ol>
 <b>Typing an upper case letter</b>	With the  key depressed, type the character.
 <b>Typing in upper case mode</b> <p>Press the key again to type in lower case mode.</p>	
 <b>Typing figures using the numeric keypad</b> <p>Press the key again to deactivate the function.</p>	
 <b>Typing a character in the upper left-hand corner of a key</b>	With the  key depressed, type the character.
 <b>Typing a character in the lower right-hand corner of a key</b>	With the  key depressed, type the character.
 <b>Typing an accented character</b>	Type the accent and then the character. For example: to type ö,   then 
 <b>Typing a tab</b>	 Unengraved character 



## ◀ Moving around in/Selecting text

















### **T** Moving around in text

 <b>Using the mouse</b>	Click the new position for the pointer (distinct line of text, start of line, end of line, or between two characters).
 <b>from one character to another</b>	 
 <b>from one line to another</b>	 
 <b>to the start of the line</b>	
 <b>to the end of the line</b>	
 <b>to the end of a Text object</b>	 
 <b>to the end of a Text object</b>	 

### **T** Selecting text

Place the pointer at the start of the selection.



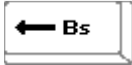

Selected text is red and grey-highlighted to prevent any confusion with text that has been assigned the **red path color**.

 <b>To select a word</b>	
Double-click that word.	
 <b>To select a series of characters in a paragraph</b>	
Slide the text pointer from the first to the last character.	
The selection may extend over several lines.	
 <b>To select the character preceding the pointer</b>	With the  key depressed, press 
 <b>To select the character that follows the pointer</b>	With the  key depressed, press 
 <b>To select all the characters preceding the pointer</b>	With the  key depressed, press 
 <b>To select all the characters that follow the pointer</b>	With the  key depressed, press 








## Editing text

Place the pointer where you want to edit the text.

<b>Inserting the text</b>	Type the text.
<b>Inserting a line in the middle or at the end of a paragraph</b>	
<b>Deleting the character in front of the pointer</b>	
<b>Deleting the character behind the pointer</b>	
 <b>Unknown character</b>	<ol style="list-style-type: none"> <li>1. Delete this character: the key or the combination of keys pressed does not match any character in the font selected.</li> <li>2. Display the font's content.</li> <li>3. If the active font contains the character sought after, click the character to insert it in the text.</li> </ol> <p>Otherwise, select another font.</p>

Select the text, if a series of characters are involved (a word or line).

<b>Replacing the text selected</b>	Type the new text.
<b>Copying/Cutting</b> Duplicate the text in the composition.	<ol style="list-style-type: none"> <li>1. Copy the selection:  click in the main toolbar.</li> <li>2. Click the spot where you want to paste the selection.</li> <li>3.  Click.</li> </ol>
<b>Cutting/Pasting</b> Move the text in the composition.	<ol style="list-style-type: none"> <li>1. Cut the selection:  click in the main toolbar.</li> <li>2. Click the spot where you want to paste the selection.</li> <li>3.  Click.</li> </ol>
<b>Delete</b>	<ul style="list-style-type: none"> <li>✓ Click the <b>Delete</b> command in the Edit menu.</li> <li>✓  Press the key.</li> </ul>



## ◀ Using the Spell-checker



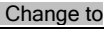




1. In the Options dialog box, click tab **Spell-Checker**.
2. Click the language of the **Dictionary used** to check the text.

3.  Click.

4. Select the text to be checked.

5.  Click in palette Advanced Text.

The **Spelling dialog box** opens when an error is found: each unknown word is displayed in box **Not in the dictionary**.

	Click to skip the correction.
	Click to add the unknown word to the dictionary.
	Click to replace the unknown word with the word in box <b>Change:</b>  Type in the correct.  Click a word from the list of <b>Suggestions</b> .
	Click to display a new list of suggestions.
	Click to close the dialog box.



## ◀ Typing text in Level 1 Braille



Braille is a system of writing and reading embossed points by hand which is used by people with poor eyesight. Each Braille character or cell is obtained from a combination of 6 embossed points. The number and the position of the points differentiate one cell from another.

### Typing text in Level 1 Braille

Each character typed comprises a cell in the Braille font selected.

**If they do not appear in the font menu, install these fonts in Windows.**

1. Select a font

**Braille, NHBraille for California and USA, Simbraille**  
**Braille**

2. Type the text. You can manipulate this **Text object** as you please.
3. Display the engraving paths.

### » Writing in Level 2 Braille

This option allows you to type and translate a word into its Braille equivalent in compliance with US A.D.A. standards.



## Appearance

### **T** Choosing the text's appearance

The text attributes determine the appearance of the characters.

You can apply attributes specific to certain characters in the same line of text.

- The active attributes are applied to the text subsequently typed.
- To modify the existing text attributes, select the text.
- If the new attributes increase the length of the text typed in relation to the baseline, the text is automatically compressed.

**Set the basic attributes in the Text palette.**

- >> **Font**
- >> **Exponent text**
- >> **Underlined text**
- >> **Italic text**

**Set the advanced attributes in the Rapido.**

- >> **Character width**
- >> **Character spacing**
- >> **Character rotation**
- >> **Index text**
- >> **Uppercase/lowercase**
- >> **Auto-kerning**

**Applying a style.**

Associate several text attributes to create and save **styles** common to several lines of text.





### Selecting the active font

If the list does not contain the font needed, **install a Gravograph font.**

#### Gravograph

Gravograph characters, which were designed for engraving, have open contours.



SL513 fonts group the international characters available in the Gravograph fonts.

#### True Type


True Type characters are made from closed contours, that delimit full surfaces to be hollowed out during engraving.

#### Vision Numeric

Asian fonts for the People's Republic of China, Japan and Korea




-  Click to pull down the font menu in the Text palette or in the Green Rapido.
-  Click the **folder** that the font needed belongs to.
- Click the **font** in the pull-down alphabetical list. For a fast search, type the first letter of the font name.

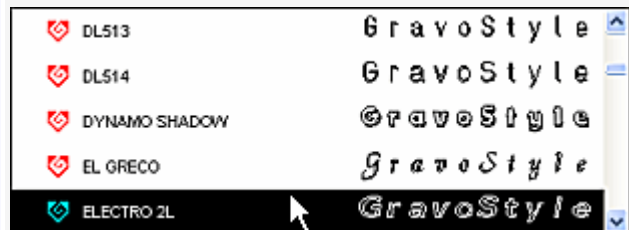
### Choosing a font when typing text

 By default, the first nine characters are displayed opposite the font name. If the option is active, the text typed in the Options dialog box appears as a sample. Select the text in the composition to be displayed as a sample in the font menu.



Your text is shown as example for each font that contains the characters selected.



- Tick the preference **Text sample in Font selector tab from** Options dialog box.
-  Close dialog box.
-  Select the text.
-  Pull down font menu in Text palette or in Green Rapido.



### Active font content

-  Click in the Green Rapido. You can select another font.
- Select the category of characters to be displayed (**Latin** is the default category). The categories suggested belong to the Windows classification for UNICODE characters.
- To zoom in on a character, place the pointer on it.
-  Click to exit the preview.

**Customizing the default font**

The default font is the active font for each new composition. It is displayed at the end of the fonts menu. The default font replaces the missing fonts so that the text can be displayed when a composition is opened.

1. Click the **Text attributes** tab in the Options dialog box.
2. Select a font.

**Customizing the font menu****Displaying font sample**

Click the **Font selector** tab in the Options dialog box.

1. Click to display the  **Fonts sample** after each font name.
2. Type the text displayed as an example.

**Displaying current fonts**

Click option

**Last fonts used** to display the last fonts used. Key in a **Number of fonts** falling between 1 and 5.

**Favorite fonts** to display a set of fonts regularly used:

click each font to be selected.


For a fast search, click in the list and type the first character in the name.



## Underlined text




### Applying the text attribute

✓  Click in the Text palette.

✓  Press the key.

### Modify the position of the underlining

The underlining is placed underneath the baseline at a distance proportional to the height of the underlined text. The default setting for the space between the underlining and the baseline is zero.

1.  Click in the Yellow Rapido.
2. Key in a coefficient from -250% to +250%. Validate.




## Italics/Slant text

*Rapido*

*Rapido*


### Applying the text attribute

✓  Click in the Text palette.

✓  Press the key.

### Customizing the default slant


The text's default slant is 15°.

1.  Click in the Green Rapido.

2. Key in a slant angle from -80° to +80°. Validate.

### Customizing the default slant

1. Click the **Text attributes** tab in the Options dialog box.

2.  Key in a slant angle from -80° to +80°. Validate.




## Exponent/Index text

Rapido

Rapido


### Implementing exponent text

 **The Exponent attribute automatically cancels the Index attribute and vice versa.**

 Click in the Text palette or in the Yellow Rapido.

 Press the key.


### Switching to index text

 Click in the Yellow Rapido.


### Customizing exponent/index text


The default exponent/index text height is 50% of the F12 value entered.


Click the **Text attributes** tab in the Options dialog box.

 Key in a coefficient no greater than 100%.

The default distance between the baseline and the exponent/index text is 50% of its height.

 Key in a coefficient

 from 0% to 100%

 from -100 to 0%




## ◀ Character width

..... Rapido Rapido .....


### Applying the text attribute

The character width is proportional to the text height. The default coefficient is 100%.

 In the Green Rapido, key in a coefficient from -1,000% to +1,000%. Validate.

### Customizing the default width

1. Click the **Text attributes** tab in the Options dialog box.


2.  Key in a coefficient from -1,000% to +1,000%. Validate.



## ◀ Character spacing



The character spacing is proportional to the text height. The default spacing coefficient is 100%.

1.  Click in the Yellow Rapido.
2. Key in a coefficient falling between 0% and 500%. Validate.




## ◀ Character rotation

Rapido


Rapido

### Applying the text attribute

The default rotation angle is zero. All the characters are flat on the baseline.

 In the Yellow Rapido, key in an angle from 0° to 360°. Validate.

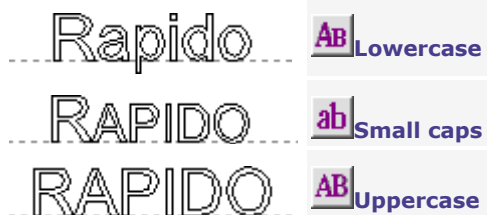
### Customizing the default rotation angle

1. Click the **Text attributes** tab in the Options dialog box.
2.  Key in an angle from 0° to 360°. Validate.

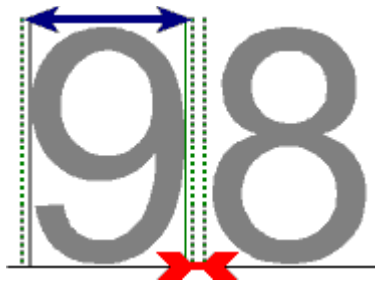


## ◀ Uppercase/Lowercase Function

Click the type of case in the Yellow Rapido:




## Auto-kerning between characters




Each font has a standard auto-kerning table that defines the space for different pairs of characters. The space between two characters depends on

- the width and the spaces to the left and right of each character (distance in blue).
- the space created by automatic or manual kerning (distance in red).

### Auto-kerning

 When several spacing modes are applied in the same line of text, the button is shaded gray.

1. Select the text whose spacing you want to correct.

2.  In the Yellow Rapido, click as needed to select the kerning mode. The buttons with a red dot indicate a mode in which auto-kerning is active.

3.  Validate.

GRAVOSTYLE



**Applying auto-kerning**

GRAVOSTYLE



**Cancelling auto-kerning**

CRAVOSTYLE



**Applying auto-kerning and removing the spaces to the left and right of the character**

This mode allows characters to be linked, particularly for jeweller fonts (Vanessa for example).

CRAVOSTYLE



**Cancelling auto-kerning and the spaces to the left and right of the character.**

G R A V O S T Y L E  
M M M M M M M M M M




**Applying a fixed footprint, calculated based on the uppercase M**



This mode allows the characters to be aligned vertically between 2 consecutive lines of text.

**Spacing 2 characters by hotkeys (manual kerning proportional to the height of the first character)**



Text palette displays the final number of spaces added or deleted.

1.  Select the character for which you want to set the spacing with the next character.

2. Type  or  to add or to delete as many spaces as Control +/- number keyed in Text Attributes tab from Options dialog box.



## ◀ Styles



Click in the Text palette.

Click the **red button** in Rapido selector to display the **Red Rapido**.



### Creating a style

1. Define all the text attributes that you want to apply.
2. Key in the style name in the editing zone.
3. **Save** Click.

### Creating a style

The last style used is active.

1. Click the style.
2. **Apply** Click.

### Applying the current style

1. Select the text that has the style to be applied.
2. Click.
3. Slide the pointer over the text you want to change the style of.
4. Click once again to deactivate the current style.

### Deleting a style

1. Click.
2. **Delete** Click. Validate.



## Advanced Text

### Using the Advanced Text functions


Click a function in the Advanced Text palette or in the **Modify/Text menu**.

 **Free horizontal text**

 **Text in a rectangle**

 **Slant/Diagonal Text**

 **Vertical text**

 **Text on a curve**

 **Text in an arc**

 **Text in Columns**

 **Convert to curves**

 **Font Editor**

 **Spell-Checker**

These functions offer new line parameters which enable the text to be presented on a non-horizontal baseline. To modify the parameters of an existing line, click the line first.

This function allows text to be converted into geometrical shapes.

This option makes it possible to create your own fonts based on a standard Gravograph font or a set of logos.

When the text has been keyed in, ask the spell-checker to look for typographical errors. If it detects a possible mistake, you can correct it, and then continue checking.

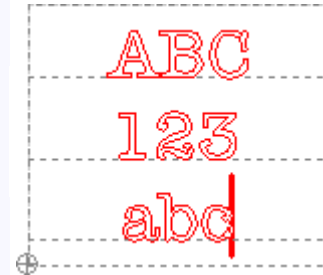










## Designing text in a rectangle

You can key in text within a rectangle that has dimensions you define.



**The line parameters are calculated in relation to the edges of the rectangle, and not in relation to the composition.**



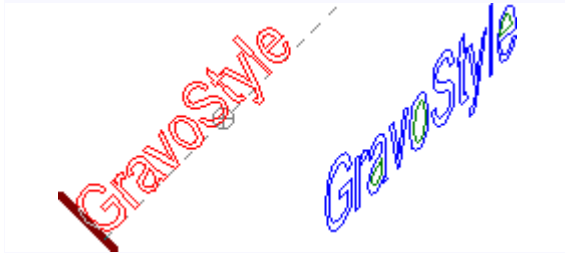
1.  Switch to manual mode: click in the Advanced Text palette.
2.  Confirm the mode change.
3.  Click in the **Advanced Text palette**.
4. Shape the rectangle:
  - ✓  Slide the pointer and release it when the rectangle reaches the desired size and position.
  - ✓  Open the **Rectangle dialog box**:
    - a.  Click the **position of the center of gravity**.
    - b.  Enter the **coordinates of the center of gravity** in the work area.
    - c.  Enter the **width and the height** of the rectangle.
5. Type the text: you will obtain a Text object consisting of one paragraph.





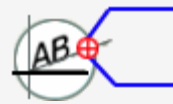
## Designing slant/diagonal text

### New line of text

To select the text, slide the text pointer, following the slant of the baseline.



1.  Switch to manual mode: click in the Advanced Text palette.
2.  Yes Confirm the mode change.
3. Open the **Slant/diagonal text dialog box**:  click in the **Advanced Text palette**.
4. Provide the alignment point's position:



- a. Key in the **X** coordinate between the left and right margins; this value is entered in distance F3.
  - b. Key in the **Y** coordinate between the top and bottom margins; this value is entered in distance F2.
5. Key in an angle value from  $-180^\circ$  to  $+180^\circ$ .



This parameter, which has a default setting of zero, determines the direction and the end of the baseline.

6. Click the text orientation:



To slant the text using the same angle




To restore horizontal text



7.  Click.
8. Type the text: you will obtain a Text object consisting of one paragraph.

### Cancelling slant/diagonal text

1. Click a line of slant/diagonal text.
2.  Click in the Advanced Text palette.
3. In the **Slant/diagonal text dialog box**, key in an angle of 0.



4.  Click.

**Other line parameters in the Text palette:**

The default setting is for the ends of the baseline to be on the margins that cut through this line.

**Aligning the text**



The text is displayed on both sides of the center of the baseline.



Left alignment – the text is placed up against the left end.



Right alignment - the text is placed up against the right end.

**Distance F3**



Alignment point's **X** coordinate

**Distance F2**



Alignment point's **Y** coordinate

**Length F5**



If you modify this parameter, you will move



the ends of the baseline



the right end



the left end

**Height F12**



Check that the line height is less than the distance from the baseline to the closest margin.



## Designing vertical text

### New line of text

To select the text, slide the text pointer from the top to bottom.



1. Switch to manual mode: click in the Advanced Text palette.
2.  Yes Confirm the mode change.
3. Open the **Vertical Text dialogue box**: click in the **Advanced Text palette**.
4. Provide the alignment point's position:
  - a. Key in the **X** coordinate between the left and right margins; this value is entered in distance F3.
  - b. Key in the **Y** coordinate between the top and bottom margins; this value is entered in distance F2.
5.  Click.
6. Type the text: you will obtain a Text object consisting of one paragraph.

### Other line parameters in the Text palette:

#### Aligning the vertical text

The default setting is for the ends of the baseline to be on the top and bottom margins.



The text is centered on the baseline.

Top alignment – the text is placed up against the top.

Bottom alignment - the text is placed up against the bottom.

**Distance F3**

Alignment point's **X** coordinate

**Distance F2**

Alignment point's **Y** coordinate

**Length F5**

If you modify this parameter, you will move

the ends of the baseline

the bottom

the top

**Height F12**


Check that this value is less than the length resting on the baseline in relation to the character heights keyed in.


 **How to design vertical text on a non-vertical baseline**

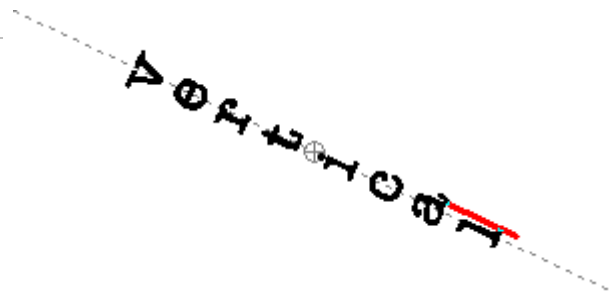
**T** Click on a line of vertical text.

**Slanted baseline**

---


1.  Click in the Advanced Text palette.
2. Key in an angle value from  $-180^{\circ}$  to  $+180^{\circ}$  in the **Slant/diagonal text dialog box**.


3.  Click: the baseline will pivot, while the text will remain vertical.

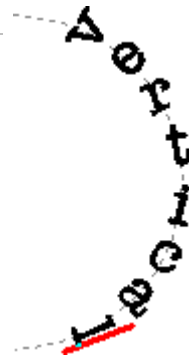


**Baseline in an arc**

---

1.  Click in the Advanced Text palette.
2. Key in the **parameter for the text in an arc** in the Arc dialog box.

3.  Click: the text will remain vertical in relation to the baseline.



## Designing text on a curve

You will obtain a Text object with a single line.

To select the text, slide the text pointer along the baseline. If you edit the shape, the text will follow its new line.

1. Draw the shape that will be used as the baseline (a curve, rectangle, or ellipse).
2. Check that the direction of this contour matches the display desired for the text. If needed, invert the contour's direction.




The text is displayed clockwise on the outside of a closed contour drawn in a clockwise direction.





The text is displayed counterclockwise on the inside of a closed contour drawn in a counterclockwise direction.




The text is displayed on an open contour, running from the **start point** to the end point.

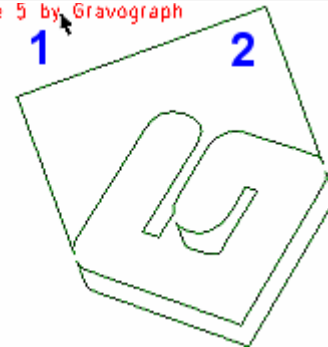
3.  Switch to manual mode: click in the Advanced Text palette.
4.  Yes Confirm the mode change.

 Existing line of text


5. With the  key depressed, click the line of text, then click the shape.

6.  Click in the **Advanced Text palette**.

GravoStyle 5 by Gravograph



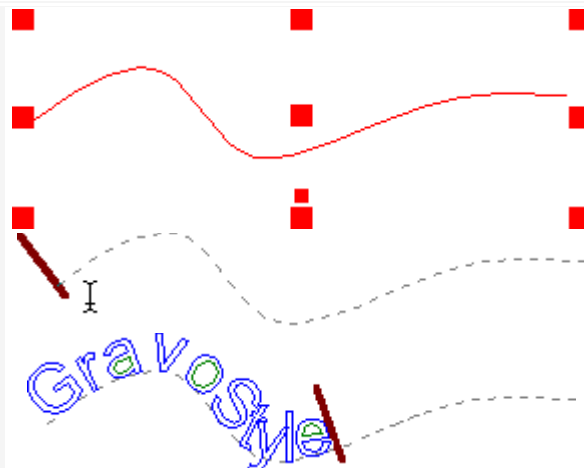
G5

 New line of text




5.  Click in the **Advanced Text palette**.

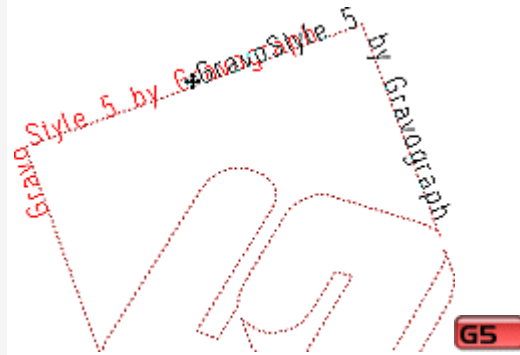
6. Click the baseline dotted.

7. Type the text.









 **Moving text along curve**

1. Click a line of text on a curve.
2.  Click in the **Advanced Text palette**.
3. Move the text:
  -  Slide the text along the curve.
  -  Open the **Positioning text on curve dialog box**: key in the distance to shift the text in relation to
    - the curve start point.**
    - the current text start point.**



**Aligning the text**

- **on an open contour**
  -  against the left end of the contour
  -  against the right end of the contour
  -  centered on the contour
- **on a closed contour**
  -  to the left of the **start point**
  -  to the right of the start point
  -  centered on the top, opposite the start point

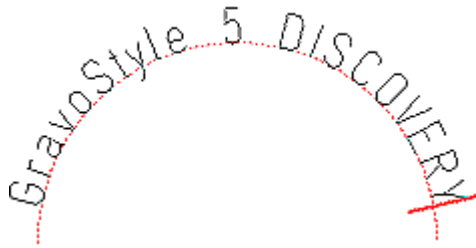


## Text in an arc



### Designing text in an arc


#### New line of text

To select the text in an arc, slide the text pointer along the curve of the arc.



#### Cancelling text in an arc

1.  Switch to manual mode: click in the Advanced Text palette.
2.  Yes Confirm the mode change.
3. Open the **Arc dialog box:**  click in the **Advanced Text palette**.
4. **Construct the arc** of a circle to be used as a baseline (the small square window displays a preview of the arc constructed).
5. Set the following line parameters:
  - >> **Orientation of text in arc**
  - >> **Start angle – End angle**
6. Type the text: you will obtain a Text object with a single line.

1. Click a line of text in an arc.
2.  Click in the Advanced Text palette.
3. In the **Slant/diagonal text dialog box**, key in an angle of 0.
4.  Click.

#### Other line parameters in the Text palette:

##### Justifying text in an arc clockwise



- The text is centered on the apex of the arc.
- The text is placed up against the start angle.
- The text is placed up against the end angle.

**Distance F3** 

X coordinate for the apex or the center of the arc

**Distance F2** 

Y coordinate for the apex or the center of the arc

**Length F5** 

To set length F5 available for the text, modify the start or end angle.

**Height F12** 

Check that the line height is lower than

- the distance from the arc's circumference to the closest margin, if the text is written outside the arc.
- the arc's radius, if the text is written inside the arc.



## ◀ Constructing the baseline for text in an arc

Regardless of the procedure selected for constructing the arc, you will obtain an arc or a circle with

- a direction that determines the **orientation of the text**.
- an aperture that is defined by the **start and end angles**.

**① Entering the chord and the height of the arc leads to the corresponding center and radius being calculated and vice versa.**  
**If you define an arc by its chord and its height, access to its center and its radius will be prohibited, and vice versa.**



**Reset** Click to cancel the values entered and restore access to all the dialog box parameters.

### Constructing an arc by its chord and height

The chord is the distance between the two ends of the arc.

The height is the distance from the center of the chord to the arc's apex.

The chord and the height of the arc are measured from the arc's apex, which is pinpointed in relation to the composition's left and upper edges.

1. Provide the position of the **apex of the arc** in the Text palette:
  - a.  Key in distance F2.
  - b.  Key in distance F3.
2. Key in the arc's chord and the height in the Arc dialog box:
  - a. Key in a **chord**
    - that is at most equal to double the distance from the center of the chord to the closest margin (left or right).
    - zero, so you obtain a circle.
    - equal to double the height, so you obtain a semi-circle.
  - b. Key in a **height** that is at most equal to the distance from the center of the chord to the closest margin (top or bottom).

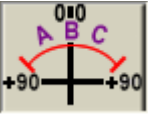


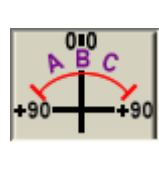

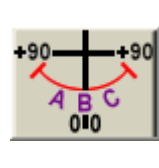
### Constructing an arc by its center and radius

The center of the arc is located in relation to the composition's left and upper edges. The radius is the distance from the center of the arc to each point in its circumference.

1. Provide the position of the **center of the arc** in the Arc dialog box.
  - a. Key in an x coordinate that is at most equal to the distance between the right margin and the left edge. This value is entered in distance F3.
  - b. Key in an y coordinate that is at most equal to the distance between the bottom margin and the upper edge. This value is entered in distance F2.
2. Key in a **radius**, that is not zero, which at most is equal to the distance from the center of the arc to the closest margin.



## Placing text in an arc



<b>Orientation</b>	<b>Text displayed</b>	<b>clockwise</b>	<b>counterclockwise</b>
<p>In the Arc dialog box, click the <b>Orientation</b> that matches</p> <ul style="list-style-type: none"> <li>the display direction for the text in an arc.</li> <li>its position in relation to its baseline.</li> </ul>	<b>outside the arc</b>		
<p><b>Start angle – End angle</b></p> <p>The arc begins on the start angle and stops on the end angle. These angles determine the arc's aperture and length. They are calculated automatically in accordance with the arc's construction and the <b>text orientation</b>.</p> <p>Key in a negative value (0 to -180°) or a positive value (0 to +180°) in the Arc dialog box.</p>	<p><b>Start = -90°</b> <b>End = +45°</b></p>		
	<p><b>Start = +90°</b> <b>End = -45°</b></p>		



## Text in columns



### Designing text in columns

1. **Abc** Switch to manual mode: click in the Advanced Text palette.
2. **Yes** Confirm the mode change.
3. Click in the composition.
4. Open the **Text in Columns dialog box**:  click in the **Advanced Text palette**.
5.  Key in the **Text height**.
6. Click the text in columns creation **Mode**:
  - Setting on baseline to make columns**
  - Setting in table to make a table**
7. Key in the parameters of the text in columns
8. Set the engraving parameters for the **borders around the text**.
9. **Finish** Click to generate the Text in Columns object.
10. **Type the text**.
11. Display engraving paths.





**Horizontal line parameters are calculated in relation to the columns, and not in relation to the composition.**



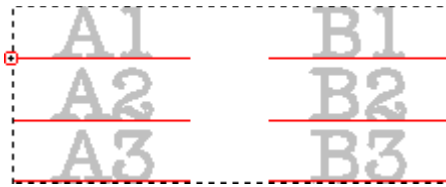
**How do you convert a Text object into a Text in Columns object?**

---

1.  Click the Text object.
2.  Click in the Advanced Text palette.
3. Key in the parameters for the text in columns by executing the procedure above from **step 5**.



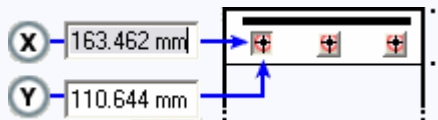
## Setting columns of text



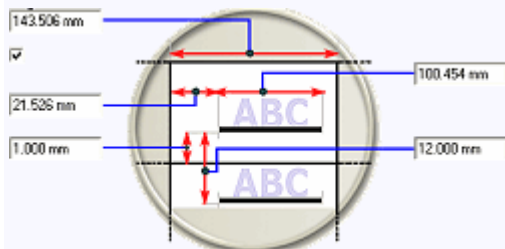
From the first line of text in the first column, the lines of text are distributed across several columns. The lines can be framed using borders.

1. **Next>** Go to step Setting on baseline in the Text in Columns dialog box.

2. In zone **First baseline**, enter the position for the first line of text and the total number of lines of text:



3. In **Columns area**, enter the properties for each column created:



You need **no Borders**:

You are engraving the **Borders** of the columns:

a. Click the origin of the first line of text (center, left or right) and key in its coordinates **X** **Y**

b. Key in the **Number of rows** and the **Number of columns**

a. Key in the **Column width**. To obtain different width-columns:

- Click box  **Same column width**.
- Select the **Column #** using the cursor
- Key in each **Column width**.

b. Key in the **Text width** less than the column width.

c. Key in the **Line spacing** between two consecutive baselines less than the text height.

d. Click the **Text alignment** on its baseline

e. Untick box  **Borders**.

f. **Finish** Click.

g. **Type the text**.

e. Click box  **Borders**.

f. Key in the **Left margin** between the left end of the baseline and the column's left border.

g. Key in the **Bottom margin** between the baseline and the horizontal border separating it from the next line.

h. **Next>** Click to add **borders**.



## Setting text in a table

A1	B1
A2	B2
A3	B3

Each line of text is displayed in a table cell. You define the columns and the rows. The borders are added automatically.

1. **Next>** Go to step Setting in a table in the Text in Columns dialog box.

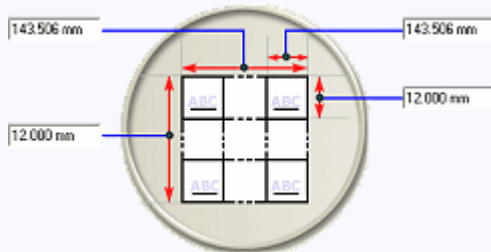
2. In zone **Setting in table**, enter the position of the first cell and the total number of cells:

X  Y  Z

a. Click the origin of the first line of text (center, left or right) and key in its coordinates **X** **Y**

b. Key in the **Number of rows** and the **Number of columns**

3. In **Columns area**, enter the table properties:



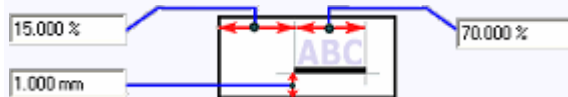
a. Key in the table's **Frame width**.  
**or**  
 the **Column width**. To obtain different width-columns:

- Click box  **Same column width**.
- Select the **Column #** using the cursor
- Key in each **Column width**.

b. Key in the table's **Frame height**.  
**or**  
 the **Cell height**.

c. Click the **Text alignment** in the column

4. In zone **Cell**, enter the cell parameters:





a. Key in the **Left margin**, which is by default equal to 15% of the column width.  
**or**  
 the **Text width**, which is by default equal to 70% of the column width.

b. Key in the **Bottom margin** between the baseline and the cell's lower border.

5. **Next>** Click to add the table's **borders**.



## ◀ Adding borders to text in columns

1. Place the text **in columns** or **in a table**.
2. Go to step **Strokes and borders** in the Text in Columns dialog box.
3. Click 
  - ✓ the type of **lines** to be marked out or masked
  - ✓ the border to be marked out or masked (a masked border is shown as a dotted line).
4.  Select the **Path** that will be used to machine the borders of the text in columns.
5.  Click to generate the columns or the table.
6. **Type the text.**




## Typing text in columns

### Typing by column

Text in columns is displayed from top to bottom and from left to right.

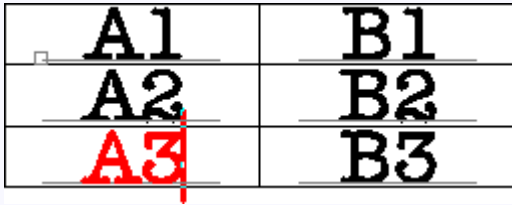



1. Click the first line's baseline.
2. Type the text.

3.  Press to type the text on the following line.

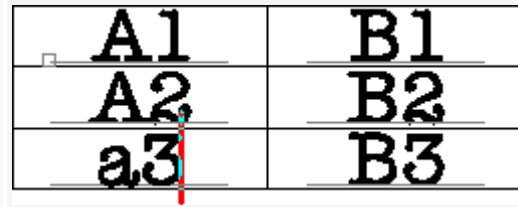
### Selecting a line

You can edit the text independently of the other lines.



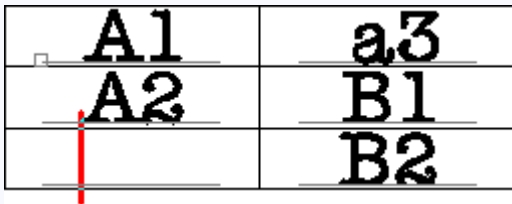
- ✓  Press until the pointer is placed on the baseline.

- ✓ Click its baseline.





### Offsetting text to the right

From the line selected onwards, the text in each line replaces the text on the following line.

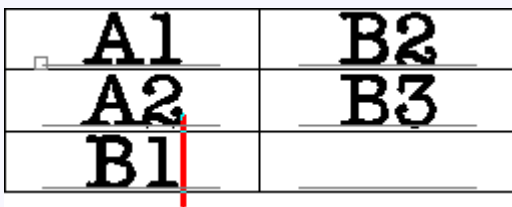


1. Select a line.

2. With the  key depressed, press .

### Offsetting text to the left

From the line selected, the text in each line replaces the text on the preceding line.



1. Select a line.

2. With the  key depressed, press .

## Font Editor



Option for ALL levels

### Managing your fonts in the Font Editor




This option allows you to create your own fonts based on a standard Gravograph font or a set of logos.

1. Run the **Font Editor:**  click in the Advanced Text palette.
2. **Create new font** or **select a font to be edited.**

 **You are working in an unlimited work area** 



## Creating a font

1. Open the **Font Editor dialog box**:  click in the Advanced Text palette.
2.  Click a **Gravograph font** if you are creating from a model.
3.  Click.
4. In the **New Font dialog box**, type the **Font Name** (11 characters maximum).  
The font is saved as a file stored in the  **FONTS folder**. The file name includes **FE**, followed by the name of the font and the **.chr** extension.

5.  Click.

6. **Edit the new font.**

This appears at the end of the font menu.

Its name is followed by **FE**, which identifies it as a font created using the Font Editor.




The next time GravoStyle is run, the new font will be listed in alphabetical order.



**Each time you select a Gravograph font to create your own font, the Font Editor saves a copy of the Gravograph font. You can use a Gravograph font without modifying it.**



## ◀ Editing a font

1. Open the **Font Editor dialog box**:  click in the Advanced Text palette.
2.  Click a **font** with **FE** in its name (these letters distinguish fonts you created in the Editor from Gravograph fonts).
3.  Click.
4. In the **RapidFont dialog box**, click the button relating to the procedure that you are going to execute:



Create a character





Add a character



Delete a character







Auto-kerning

5.  Click: the selected font is updated.
6.  Click to close the Font Editor.

 **To rename the font selected, type the new Font name in the RapidFont dialog box.**



## ◀ Creating a character

1. Open the **Font Editor dialog box**:  click in the Advanced Text palette.
2.  Click a **font** with **FE** in its name (these letters distinguish fonts you created in the Editor from Gravograph fonts).
3.  Click.
4. Delete all the objects in the composition and delete all the guides.
5. If you are creating a character based on a Gravograph character:
  - a.  Click in the **RapidFont dialog box**.
  - b. Select a Gravograph font.
  - c. In the List of characters, double-click on the character that is going to be used as a model.
6. Create the character following the recommendations below.
7. **Add the character.**

**!** Whether or not you are creating a character with a model, adhere to the following specifications in order to create an attractive character. Each character is a curved object that you can manipulate as needed.

The character is placed in the lower left-hand corner of the composition.

The composition's bottom edge is used as the baseline.

The horizontal marker delimits its nominal width, including the left and right spaces around the character.

The vertical marker delimits its nominal height, including spaces above and below the character.

If you create a character without a model, you have a standard surface area of 100 x 100 mm available.

All Gravograph characters have a nominal height of 100 mm.

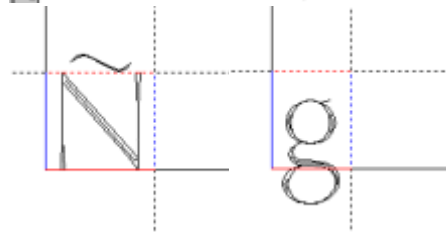
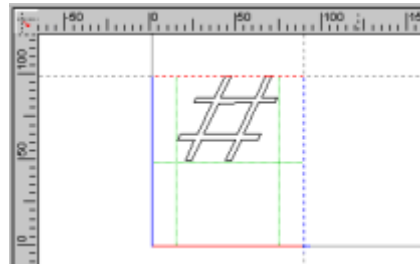
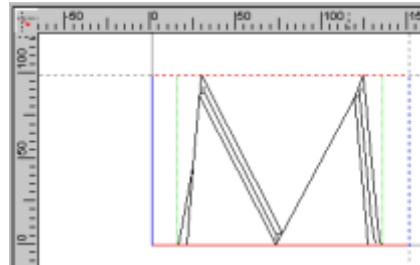
Retain this standard value to obtain a character with an F12 height that equals 10 mm.

**!** Check that the dimensions of the new character do not exceed 199x199 mm.




If you are using a Gravograph character as a model, retain its characteristics to create the new character (nominal width and height, position in relation to the baseline, spaces around the character). These characteristics are set up so that the character will display consistently in text.

For an accented uppercase letter, place the accent above the horizontal marker.




For a lowercase letter with a descender (g, p, or q), place the descender part of the letter beneath the baseline.





## Managing a font's characters

1. Open the **Font Editor dialog box:**  click in the Advanced Text palette.
2.  Click a **font** with **FE** in its name (these letters distinguish fonts you created in the Editor from Gravograph fonts).
3.  Click.

### Adding a character

1. Create the character.
2.  Click in the **RapidFont dialog box**.
3. Provide the Unicode or Keyboard **Reference** used to type the character:
  - ✓ Key in its **Unicode** number in the left-hand editing zone: type a six-digit figure that starts with "0x".
  - ✓ Click in the right-hand editing zone and type the key on the **Keyboard**.
4.  Click. If the character already exists in the font, a message asks if you want to replace it:
  - Yes** The new character is saved in the font.
  - No** Add the character under a different reference.
5.  Click: the selected font is updated.



### Deleting a character

1.  Click in the **RapidFont dialog box**.
2. In the **List of characters**, click the character to be deleted.
3.  Click.
4.  Click: the selected font is updated.



## ◀ Editing a font's auto-kerning

Auto-kerning is used to improve the legibility of the characters and the text.


1. Open the **Font Editor dialog box:**  click in the Advanced Text palette.
2.  Click a **font** with **FE** in its name (these letters distinguish fonts you created in the Editor from Gravograph fonts).

3.  Click.




4.  Click in the **RapidFont dialog box**.

5. In the **Visual Kerning dialog box**, set the auto-kerning to the character pairs of your choice.

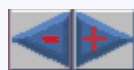
0x 30	o	0x 34	4	-0.043750
0x 30	o	0x 37	7	-0.043750
0x 31	1	0x 31	1	0.037500
0x 37	7	0x 34	4	-0.143750
0x 37	7	0x 3a	:	-0.075000


6.  Click to close the dialog box.

### Setting the auto-kerning for a pair of characters

- a. Designate **Character 1** in the **Visual Kerning dialog box**:
  - ✓  Click and double-click on the character in the **List of characters**.
  - ✓ Key in its **Unicode** number: type the six-digit figure starting with "0x".
- b. Repeat the procedure to designate **Character 2**.
- c. Set the auto-kerning:
  - ✓  Click to reduce or increase the value by 1/160th of a mm.
  - ✓ Key in a positive or negative value.
- d.  Click to update the auto-kerning table:
  - If there is not one, the pair of characters is added to the table.
  - If the pair of characters features in the table, its auto-kerning value will be modified.

### Editing the Auto-kerning Table



-  Click a pair of characters in the **Visual Kerning dialog box**.  
This list contains the auto-kerning table for the font, which defines the standard spacing for different pairs of characters.

Set the auto-kerning for a pair of characters ([see the procedure above](#)).



Click to delete the pair of characters selected.



Click here to restore the standard auto-kerning table.



Click here only to delete the whole auto-kerning table for a font containing logos. Unlike character fonts, left and right-hand spaces are not necessary for logos.








## Drawing mode

# Working in Drawing mode




















This mode basically allows geometrical shapes to be placed in the composition.

Each shape is a curve object consisting of one or two **vectorial contours** which lines may be warped by effects or edited in **Point mode**.

-  Click in the toolbox to activate the **Drawing mode**.
- In the Shapes palette or in the Modify/Shapes menu, click the shape to be drawn. The tool selected is displayed near the pointer 

- Draw the shape using the mouse, or key in the parameters displayed using the function key 

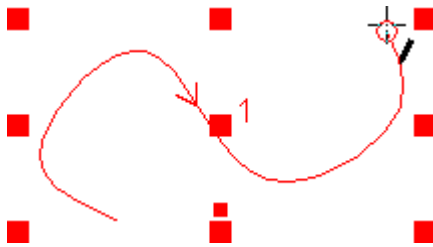
Each shape is drawn from a reference point that can match the start point, the center of the shape, or a point on its contour.

Tools which draw a closed contour	Tools which draw an open contour
 <b>Arrow</b>  <b>Rectangle</b>  <b>Rectangle rounded or broken</b>  <b>Polygon</b>  <b>Star</b>  <b>Ellipse</b>  <b>Circle</b>  <b>3-point circle</b>	 <b>Circle Arc</b>  <b>3-point Arc</b>  <b>Chord Arc</b>  <b>Tangent Line</b>  <b>Tangent Arc</b>
Tools which draw a closed/open contour	Special tools
 <b>Curve</b>  <b>Simple Line</b>  <b>Double line</b>	<p>Use these tools to quickly retouch contours obtained by <b>importing a vector file</b> or by <b>vectorizing a bitmap image</b>.</p>  <b>Marker</b>  <b>Crop on intersection</b>  <b>Extend an open contour</b>  <b>Auto-connect</b>



## ◀ Viewing shape contours

### Displaying contour direction and order



1. Select the contour display mode:



✓ Type the hotkey.

✓ Click command **Contour direction or Wire direction** in View menu.

2. Click **Arrow direction in View menu.**



When you draw, each contour has

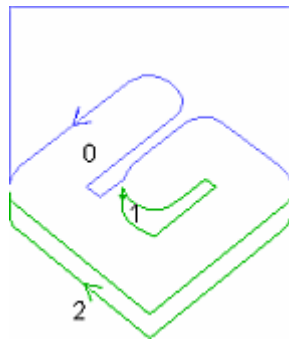
- an **arrow** that shows its lines direction.
- a **number** that indicates in which order it has been drawn, when several contours are created at the same time (double line, ridge, etc.).



When you select several contours, a number indicates in which order each contour has been selected.

When you duplicate a contour, a number indicates in which order each copy has been created.

With no selection, a number indicates in which order each contour has been created.

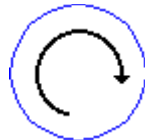


### ◀ Displaying the contour direction

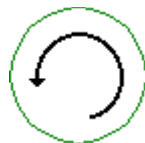
The color of the contour direction can be modified in the Colors window of the Options dialog box.

✓ Click command **Contour direction.**

✓ Tick option  **Contour direction** in the Display window of the Options dialog box.



A **closed contour drawn clockwise** is displayed in blue.



A **closed contour drawn counterclockwise** is displayed in green.

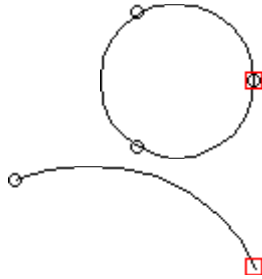


An **open contour** is displayed in black. To see the contour's direction, locate its **start point**.

## Displaying contour points

### Displaying start points

The **start point** is the control point that marks the start of a contour. It is always represented by a **large square**.



Tick option  **Start points** in the Display window of the Options dialog box.

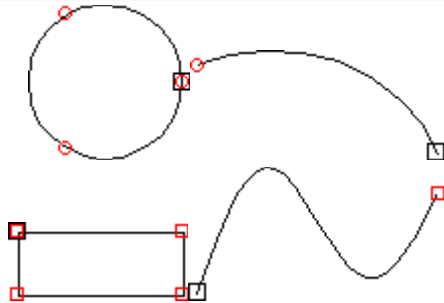
The **end point** is the control point that marks the end of a contour.

**On a closed contour (circle, ellipse, rectangle, polygon, star, arrow, curve),** the start point and the end point merge.

**On an open contour (circle arc, line, curve),** the start point and the end point are two distinct extremities.

### Displaying control points

Contours are drawn from a series of **control points**.



Tick option  **Control points** in the Display window of the Options dialog box.

**Contours that have curves (ellipses, curves, circles, arcs of a circle) are also constructed from point handles.**

For contours that have regular curves (**ellipses, circles, arcs of a circle**), the control points are represented by **small circles**.

For other contours (**rectangles, polygons, stars, arrows, lines, curves**), the control points are represented by **small squares**.




## ◀ Placing markers

The Marker tool is used to place a non-engraved marker, either used by itself or as part of a pair so that certain procedures may be executed (mirror along an axis, markings for drilling and overlap zones...).


**i** A single marker is a Marker object. A set of grouped markers forms a composite object.

### Choosing a marker





1. With the  key depressed,  click in the Shapes palette.
  2. In the **Draw a Marker dialog box**, type the number matching the type of marker.
  3.  Click.
- 1 2 3 4 5 6 7 8 9 10 11 12 13**
- + + □ □ ○ ○ ■ ■ ● ● ○ ○ ○

### Drawing with the mouse

1.  Click in the Shapes palette.
2. Click the marker's position in the composition.




### Key in the parameters

1.  Click in the Shapes palette.
2.  Key in the XY coordinates for the marker.

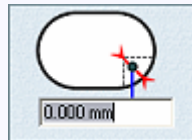






## ◀ Drawing rectangles

### Drawing a simple rectangle with the mouse

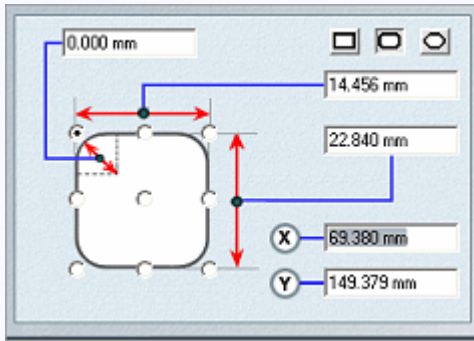
-  Click in the Shapes palette.
  - Click the position of the start point in the composition.
  - Slide the pointer to form a rectangle.
- With the  key depressed, draw from the center.
- With the  key depressed, draw a square.
- Click when the shape has the desired size and position.












### Drawing a rounded/broken rectangle with the mouse



-  Click in the Shapes palette.
- In the **Rounded/chamfered rectangle dialog box**, click the **type** of rectangle and key in the **radius** (a radius of zero produces a simple rectangle).
  -  **Rounded edges:** key in
    - a positive radius for outer rounded edges.
    - a negative radius inner rounded edges.
  -  **Broken edges:** key in a positive radius.
-  Click.
- Draw the rectangle with the mouse (**steps b to d**).

 **Key in the parameters**

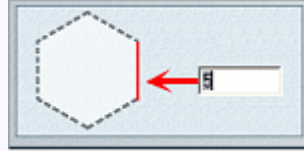




1.  Click in the Shapes palette.
2.  Click in the Shapes palette.  Click.
3.  Open the **Rectangle dialog box**.
4.  Click the **center of gravity's position**.
5.  Key in the **center of gravity's coordinates** in the work area.
6.  Key in the rectangle's **width and height**.
7. Click the **type** of rectangle you want and key in the corresponding **radius**, if needed.
  -  **Sharp edges** (radius zero)
  -  **Rounded edges:** key in
    - a positive radius for outer rounded edges.
    - a negative radius inner rounded edges.
  -  **Broken edges:** key in a positive radius.
7.  Click.




## ◀ Drawing polygons

### Drawing with the mouse

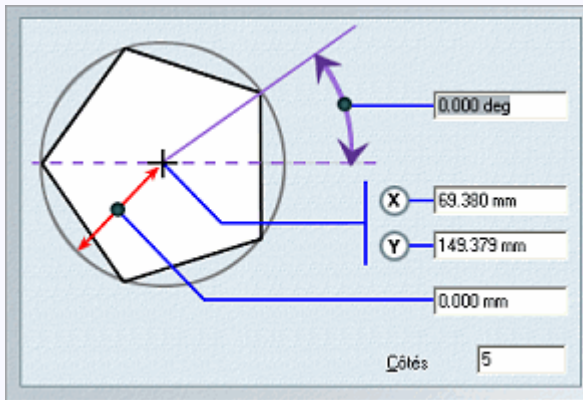









1.  Click in the Shapes palette.
2. Click the center of gravity's position in the composition.
3. Key in a **number of sides greater than or equal to 3** (triangle).  Click.
4. Slide the pointer to form a rectangle.

With the  key depressed, draw from the center of gravity.

5. Click when the shape has the desired size and position. You mark the **start point's** position simultaneously.

### Key in the parameters





1.  Click in the Shapes palette.
2.  Click.
3.  Open the **Polygon dialog box**.
4. Key in  the **center's coordinates** in the work area  the polygon's **radius**  the polygon's **angle of rotation**
  - a number of **Sides** greater than or equal to 3.
5.  Click.

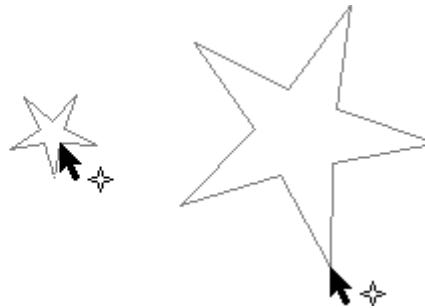


## ◀ Drawing stars

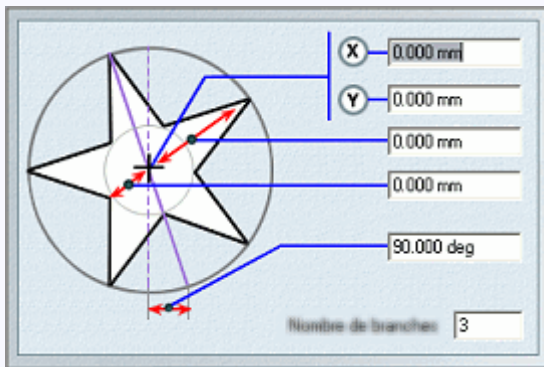
### Drawing with the mouse











1.  Click in the Shapes palette.
2. Key in a **number of vertices greater than or equal to 3**.  Click.
3. Slide the pointer to draw the reference circle.
4. Click when the circle has attained the desired size and position.
5. Slide the pointer inwards or outwards to form the star's vertices.
6. Click when the star has the desired size and position.



### Key in the parameters





1.  Click in the Shapes palette.
2.  Click.
3.  Open the **Star dialog box**.
4. Key in  the **coordinates for the center** of the star in the work area
  -  the **distance from the tip of one branch to the center of the star**
  -  the **distance from the base of one branch to the center of the star**
  -  the **star's angle of rotation**, calculated from its center
    - a number of **Vertices** greater than or equal to 3.
5.  Click.

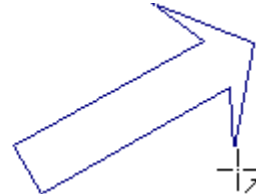
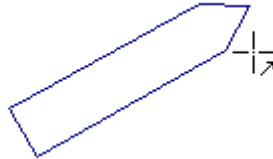
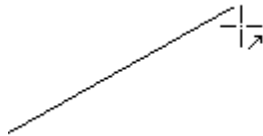


## ◀ Drawing arrows

### Drawing with the mouse















1.  Click in the Shapes palette.
2. In the **Type of Arrow dialog box**, click shape you want (**simple, orthogonal, filar**).  Click.
3. Click the position of the start point in the composition.
4. Slide the pointer to adjust the arrow's length and direction.
5. Click the position of the arrow's tip (**if you are drawing a filar arrow, go directly to step 8**).
6. Slide the pointer to adjust the width of the arrow and its arms.
7. Click when the body of the arrow has reached the desired size.
8. Slide the pointer to adjust the length and aperture of the branches.
9. Click when the branches have the desired size and position.

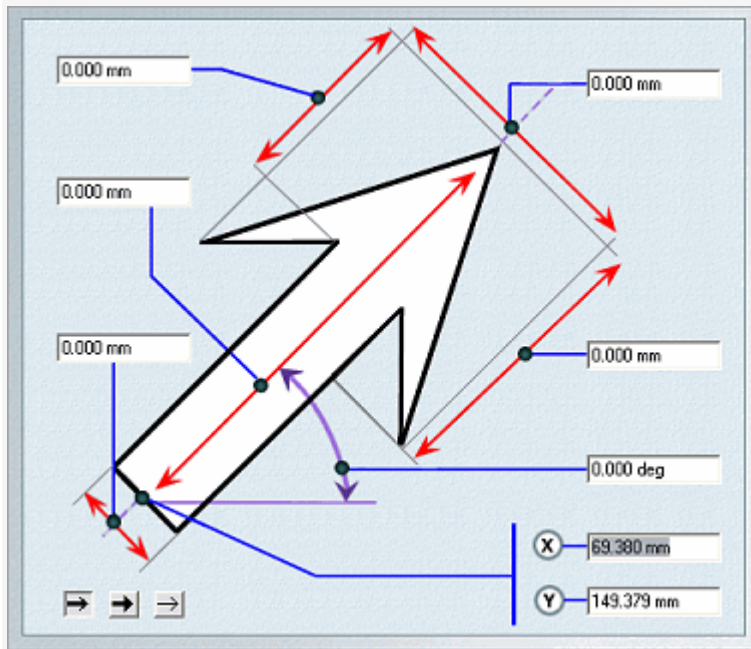


### Drawing an arrow that has the same profile as the last one drawn

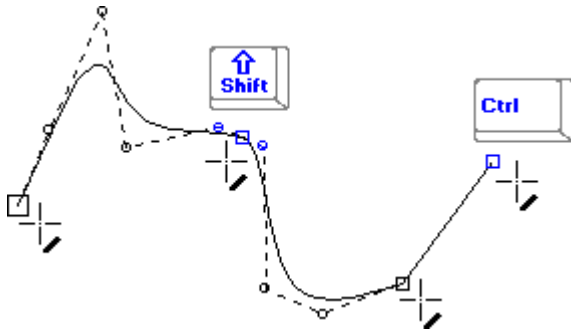
1. Click the start point's position in the composition.
2. Slide the pointer to adjust the arrow's length and direction.
3. Double-click on arrow's tip.

 **Key in the parameters**





1.  Click in the Shapes palette.
2.  Click.
3.  Open the **Arrow dialog box**.
4.  Click the **type** of arrow you want.
5. Key in
  -  the **coordinates for the arrow's origin** in the work area
  -  the **length** of the arrow's body
  -  the **width** of the arrow's body (not applicable to filar arrows)
  -  the arrow's **angle of rotation**
  -  **the distance from the apex of a branch to the arrow's apex**
  -  **the distance between the two branches' apices**
  -  **the distance from the base of a branch to the arrow's tip**  
(not applicable to orthogonal or filar arrows)
6.  Click.



## ◀ Drawing curves



**i** To draw a curve with a single point, convert a marker into a curve.

1.  Click in the Shapes palette.
2. Click the position of the start point in the composition.
3. Slide the pointer onto the next point's position.
  - ✓  Key in the point's XY coordinates.
4. Click to mark the point.
  - Simple Click: To mark the apex of a curve
  - With the key  depressed and clicking: To mark the end of a line
  - With the key  depressed and clicking: To mark the end of a curve
5. Repeat steps 3 and 4 depending on the shape you want.
6. Mark the end of the shape:
  - Double-click for an open contour.
  - Click the start point for a closed contour.



## ◀ Drawing lines

### Drawing with the mouse

a. In the Shapes palette,



click to draw a single line.



click to draw a double line.

b. Click the position of the start point in the composition.

c. Slide the pointer onto the next point's position.



Key in the point's XY coordinates.

d. Click to mark the point's position and the direction of the line.

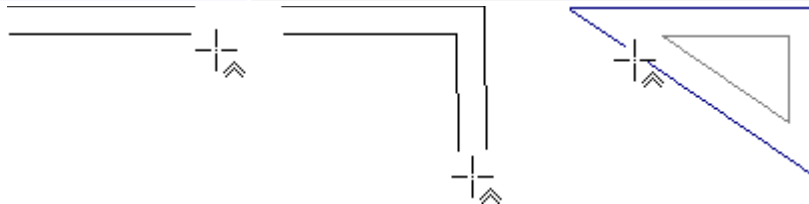


With the **Shift** key depressed: Horizontal or vertical line

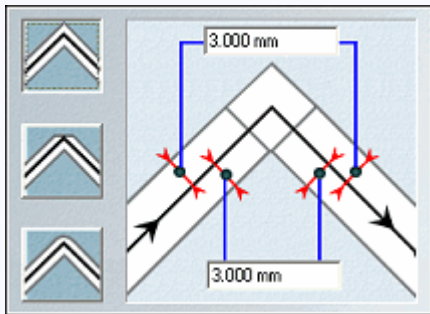
e. Repeat steps 3 and 4 depending on the shape you want.

f. Mark the end of the shape:

- Double-click for an open contour.
- Click the start point for a closed contour.



### Drawing a double line



1. With the **Ctrl** key depressed, click in the Shapes palette.

2. In the **Double line dialog box**, click the **type of line angle (sharp, broken, rounded)**.

3. Key in the **distance for each line in relation to the pointer's path**.

4. Click the **type of link between ends:**



**none** (two open contours running in opposite directions)



**angle** (closed contours)



**rounded** (closed contours)






5. Click.

6. Draw the shape with the mouse **(steps b to f)**.

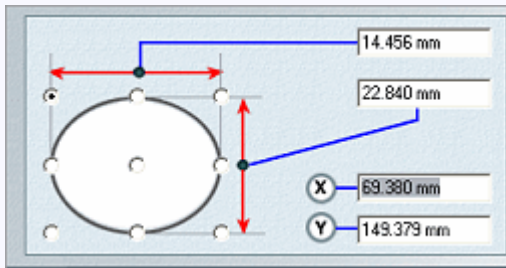








## ◀ Drawing ellipses

### Drawing with the mouse

-  Click in the Shapes palette.
  - Click the center of gravity's position in the composition.
  - Slide the pointer to form the ellipse.
- With the  key depressed: To draw a circle
- With the  key depressed: To draw from the center
- Click when the shape has the desired size and position.

### Key in the parameters




-  Click in the Shapes palette.
-  Open the **Ellipse dialog box**.
-  Click the **center of gravity's position**.
-  Key in the **center of gravity's coordinates** in the work area.
-  Key in the ellipse's **width and height**.
-  Click.



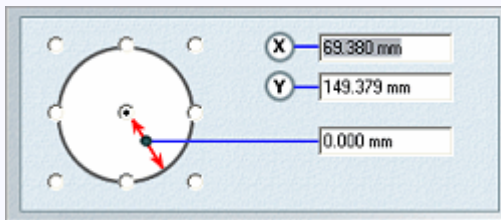
## ◀ Drawing circles







- i** Regardless of the procedure chosen,
- the start point is placed at the base of the circle.
  - the circle is drawn clockwise.

### Drawing with the mouse

1.  Click in the Shapes palette.
2. Click the center of gravity's position in the composition.
3. Slide the pointer to form the circle.
4. Click when the circle has the desired size and position.

### Key in the parameters

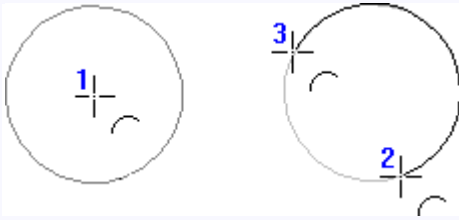



1.  Click in the Shapes palette.
2.  Open the **Circle dialog box**.
3.  Click the **center of gravity's position**.
4.  Key in the **center of gravity's coordinates** in the work area.
5.  Key in the circle's **radius**.
6.  Click.

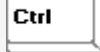


## ◀ Drawing circle arcs

### Drawing with the mouse



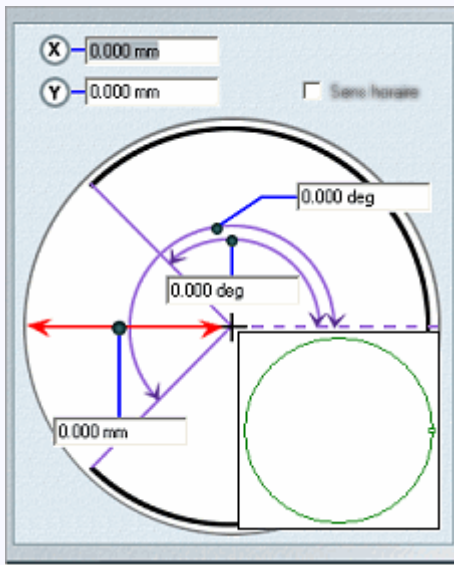
1.  Click in the Shapes palette.
2. Click the position of the arc's center in the composition.
3. Slide the pointer to draw the reference circle.
4. Click to mark the arc's diameter and start point.
5. Slide the pointer to form the arc.






With the  key depressed, draw clockwise.

6. Click to mark the arc's end point.

### Key in the parameters



1.  Click in the Shapes palette.
2.  Open the **Arc dialog box**: the lower right preview displays the arc built.
3.  Key in the **coordinates of the arc's center** in the work area.



4. Key in the arc's **radius**.

5. Click to draw the arc  Clockwise or  counterclockwise. According to the direction chosen, the preview displays the arc in green or in blue.

6.  Key in **the arc's start angle and end angle** (from 0° to 360°).




7. Click.



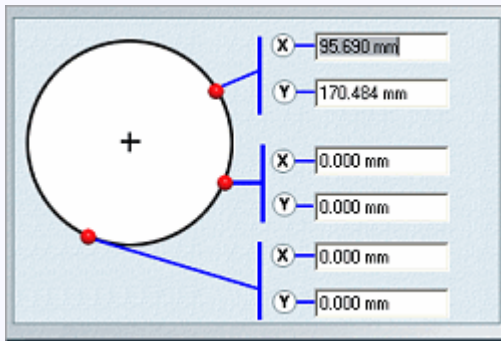
## ◀ Drawing arcs and circles based on 3 points





### Circles based on 3 points

#### Drawing with the mouse

1.  Click in the Shapes palette.
2. Click the position of the start point in the composition.
3. Click the second point.
4. Slide the pointer to form the circle.
5. Click the third point.

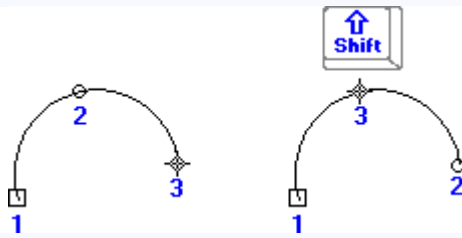
#### Key in the parameters




1.  Click in the Shapes palette.
2.  Open the **Circle from 3 points dialog box**.
3.  Key in the **coordinates for each point** in the work area.
4.  Click.


### Arcs based on 3 points

#### Drawing with the mouse

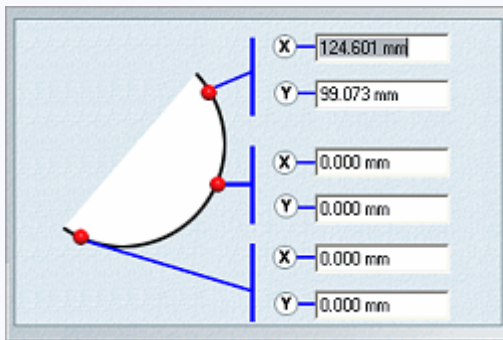





1.  Click in the Shapes palette.
2. Click the position of the start point in the composition.
3. Click the arc's second point.
4. Slide the pointer to form the arc.
5. Click the **end point**.

or

1. Click the start point.
2. Click the second point used as the end point.
3. With the  key depressed, slide the pointer to form the arc.
4. Click the position of the arc's apex.

#### Key in the parameters



1.  Click in the Shapes palette.
2.  Open the **Arc from 3 points dialog box**.
3.  Key in the **coordinates for each point** in the work area.



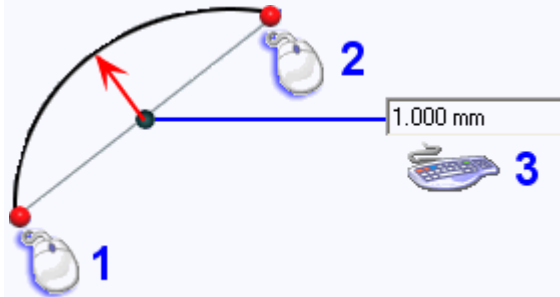
## ◀ Drawing arcs using the chord



Click in the Shapes palette.



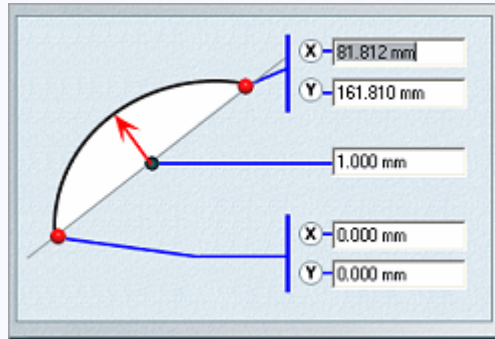
**Drawing with the mouse**



1. Click the position of the start point in the composition.
2. Click the **end point**; the chord is the distance between the arc's extremities.
3. Key in the **Arrow** or arc height in the **Arc from chord dialog box**.



**Key in the parameters**



1. Open the **Arc from chord dialog box**.

2. Key in the **coordinates of each point**



- 
 the **arc height**



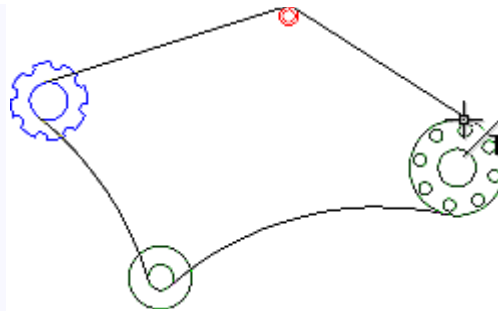
3. Click.



## ◀ Drawing tangent lines/arcs


Draw two shapes which lines include curve segments (ellipses, arcs, circles, curves).

Link these shapes with a tangent line or arc.



### Tangent line


**i** The line will not be drawn if it is not tangent to the objects selected.

1.  Click in the Shapes palette.
2. On the first object, click the point the tangent is being applied to.
3. On the second object, click the point the tangent is being applied to.

### Tangent arc

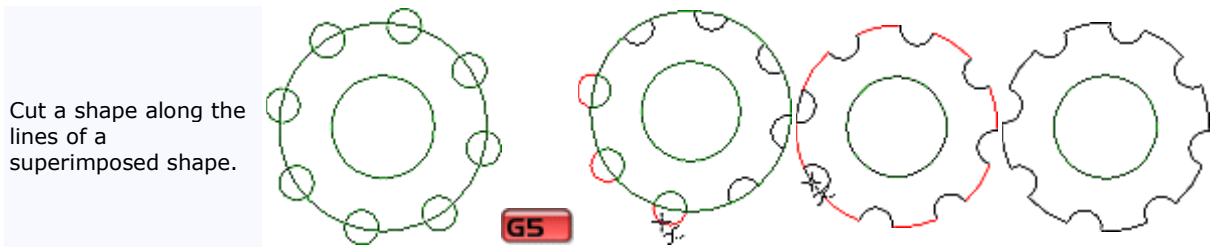


If a message indicates that the arc is not tangent to the objects selected, click and correct the arc's radius.


1.  Click in the Shapes palette.
2. Key in the arc's **Radius**: it must be at least equal to the distance between the two points the tangent is being applied to. Validate.
3. On the first object, click the point the tangent is being applied to.
4. On the second object, click the point the tangent is being applied to.



## ◀ Cropping two shapes where they intersect



1. Draw two superimposed shapes.

2.  Click in the Shapes palette.

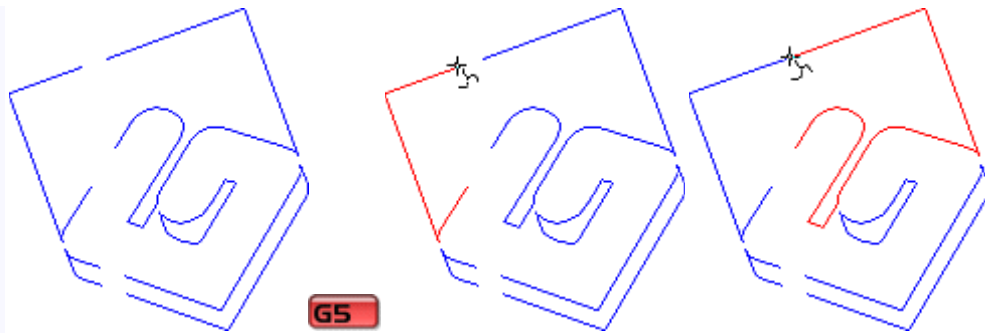
3. Click the portion of the shape to be cropped. Its contour is eliminated up to the point where it intersects with another shape.


** If you crop a closed contour, the result is an open contour.**



## ◀ Extending an open contour

Stretch an open contour with a line onto the opposite contour.



1.  Click in the Shapes palette.
2. Click the contour's end point.
3. Click the contour where the selected one should stop:
  - a line extends the previous segment (same direction).
  - the new end point is set on the second contour which is displayed in red.

**i** If an error message indicates that the open contour will not be extended, position its end point in Point mode.



## ◀ Auto-connecting open contours



### Auto-connecting an open contour



Selection



Auto-connection

Connect the ends of an **open contour** to close it.



#### Example for auto-connection settings

1. Switch to



Drawing mode.

or



Point mode.

2. Click an open contour.



3. Click in the Shapes palette **or** in the Points palette.



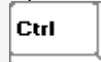
### Configuring the auto-connection




The dimensions featured in the graphics are produced using the **Dimension tool**.

Regarding the in-between distance, decide how you will connect the ends.

1. Open the **Auto-connexion dialog box**: key



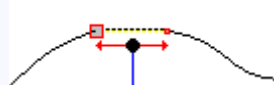
depressed,  click.

2. Set parameters in relation to the auto-connection mode you choose (linking or merging):

**Ends will merge into a single point:**



**Ends will be linked with a curve:**



**Ends will be merged or linked:**



a.  Untick box **Separately**.

b. Key in the **merging distance** at least equal to the distance between ends.

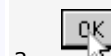
a.  Tick box **Separately**.

b. Key in the **linking distance** greater than the distance between ends.

a.  Untick box **Separately**.

b. Key in the **merging distance**.


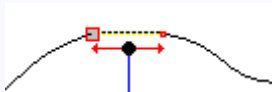


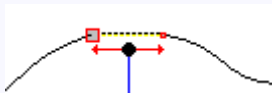

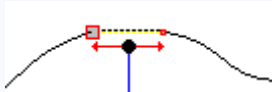

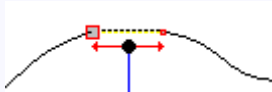
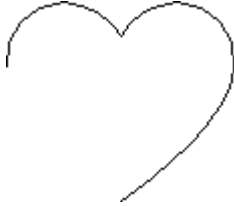
c. Key in the **linking distance** greater than the merging distance.



3. Click.

 Setting the auto-connecting of an open contour (example) 



Distance between ends	Merging distance	Linking distance	Result
Smaller than merging distance	 <p>= 17</p>	 <p>= 20</p>	 <p>Merging into a single point</p>
Between merging distance and linking distance	 <p>= 15</p>	 <p>= 20</p>	 <p>Connection with a line</p>
Smaller than linking distance	 <p>= 20</p>		 <p>Connection with a curve</p>
Greater than linking distance	 <p>= 15</p>		 <p>No connection</p>


















## Selection mode

### Working in Selection mode

This working mode basically allows you to place and manipulate **objects to be engraved** in the composition.

 Click in the toolbox to activate the Selection mode.

 Using this pointer, **select some objects** so that the following actions can be applied to them:

Simple operations	Advanced operations
 <b>Cutting/Pasting, Copying/Pasting</b>	 <b>Duplicating</b>
 <b>Deleting</b>	 <b>Measuring</b>
 <b>Grouping/Ungrouping</b>	 <b>Converting into curves</b>
 <b>Positioning in workspace</b>	 <b>Effects</b>
 <b>Transforming</b>	
 <b>Aligning</b>	
 <b>Exporting</b>	



## ◀ Placing objects in the composition

Enhance the composition with text, shapes or images.

You can also **import objects** designed using external programs (bitmap images, vectorial drawings, volume surfaces).

» <b>Simple text objects</b>	These objects are lines or paragraphs of horizontal text which you type.
» <b>Advanced text objects</b>	Bring up the Advanced Text functions to display the text on a non-horizontal baseline.
» <b>Geometric shapes</b>	Use the Drawing tools to draw rectangles, circles or stars.
» <b>Symbols</b>	Use the library of standard objects.
» <b>Task tool objects</b>	Use the Task tools to produce professional objects.
» <b>Bitmap images</b>	Using a scanner, reproduce an image printed out on paper or on film on-screen.

When you select one or several objects, the properties of the selection are displayed in the status bar.

1 Curve object (W 14.245 mm, H 16.670 mm, D 0.000 mm)[ Cx 17.117 mm Cy 25.173 mm Cz 0.000 mm ]

<b>Text/Curve/Composite/Image</b>	<p><b>Type of the selected object</b></p> <p>This will provide you with information on how you can edit the object.</p> <p>For a multiple selection, this definition is replaced by the number of objects (2 at least).</p>
<b>{W, H, D}</b>	<p><b>Width, Height, Depth</b></p>
<b>[Cx Cy Cz]</b>	<p><b>Centre coordinates</b> useful to align, warp or shift the object in <b>the work area</b>.</p> <p>These data will not appear for a multiple selection.</p>





## Placing symbols






The program offers a symbols library that you can enhance with your own creations. Any symbol stored in the library can easily be found and placed in the composition.





### Opening the Logos dialog box

1.  Click in the toolbox.  
 ✓ Click the **Symbols** command in the **Modify menu**.
2.  Click in the **Symbols dialog box**: the list of symbols folders available is displayed.



### Placing a symbol in the composition


1.  Open the **Symbols library**.
2.  Click the **folder** (MARKERS, **ENVELOP**, CONNECTOR).
3. Click the **symbol** in the right preview.
4.  Click.
5. Click in the composition to place the symbol.


### Adding a symbol to the library


1. Click the object (except for bitmap images) to be converted to a symbol.
2.  Open the **Symbols library**.
3.  Click the **folder** where the symbol will be stored.
4.  Click.
5. Type the **Name** of the symbol in the dialog box open.
6.  Click.

### Managing symbols



1.  Open the **Symbols library**.
2.  Click the **folder** which contains the symbol desired.
3. Click the **symbol** in the right preview.

**Move within the library**  Drag and drop the symbol onto a folder and validate.

 Click and validate.

 Click: type the new name and validate.



### Add a folder

1.  Open the **Symbols library**.
2. **Right-click**.
3. Click the **Add a folder** command in the contextual menu.
4. Type the **Name** of the folder in the dialog box open.
5.  Click.
6. Move or add the symbols of your choice into the new folder.

### Delete a folder



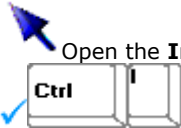





**This operation also deletes all the symbols stored in the folder.**

1.  Open the **Symbols library**.
2.  **Right-click** the folder to be deleted.
3. Click the **Delete a folder** command in the contextual menu.




## ◀ Importing objects

The Import command allows **objects** designed in external programs (2D or 3D CAD, bitmap drawings, vectorial drawings) to be placed in the composition.

1.  Open the **Import dialog box**:  
 ✓  Type the hotkey.  
 ✓  Click the **Import** command in the File menu.
2. Locate the spot where the file to be imported is ( **DRAWS** is the default folder).
3.  Click the file format.
4. Select the file to be opened: click its name or type it in the **Name** box.  
To search quickly, click in the list and type the first character of the name.
5.  Click.
6. Click in the composition to place the object.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**

### **How to import a vectorial drawing from Corel Draw using Copy/Paste**

- a. Open the **Corel Draw file** which encloses the drawing to be recovered.
- b. Check that it contains **10000 objects maximum**; if needed, simplify the drawing to decrease the number of objects.
- c. **Select all** the objects in the drawing.
- d. **Copy** the selection.
- e. Click the **GravoStyle window**.
- f. In the composition, click where you want to **paste** the selection.
- g.  Click in the main toolbar: the drawing is imported under **Windows MetaFile** format which accepts vectorial contours.

To edit the objects comprising this drawing, convert it into curves.

### **What can you do if the vectorial contours in an imported WMF file are not correctly reproduced?**

You may recover the bitmap image possibly used as a model to draw these, if you saved it in the WMF file.

- a. Click the **Insert object command in the File menu**.
- b. Open the WMF file.
- c. Redraw contours using the **Vectorize image** function or **Drawing tools**.



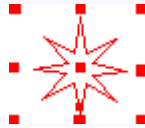
## ◀ Selecting objects

Click a snap mode for a sharp selection.



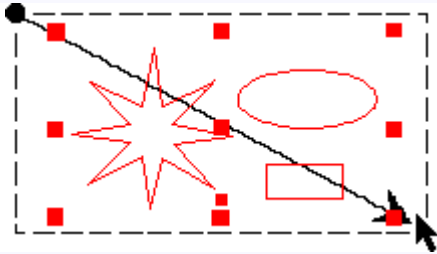
Consult the status line which displays the selection's properties.

### Selecting an object



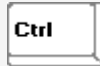
Click the object's contour: its contour and the selection handles are displayed in red. The selection color can be modified in the Colors window of the Options dialog box.

### Selecting a group of objects



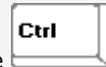
1. Slide the pointer so that all the objects to be selected are framed. Check that the objects' contours are fully included within the dotted selection frame.
2. Release the selection: selection handles should appear around the group of objects.

or



With the **Ctrl** key depressed, click the contour of each object to be selected.

### Selecting all the objects in the composition



✓ With the **Ctrl** key depressed, press key

✓ Select the **Select All** command in the Edit menu.

### Deselecting an object or a group of objects that have been selected

Click outside the object or the group of objects.

### Deselecting an object in a multiple selection



With the **Ctrl** key depressed, click the contour of the object selected.

### Viewing the selection

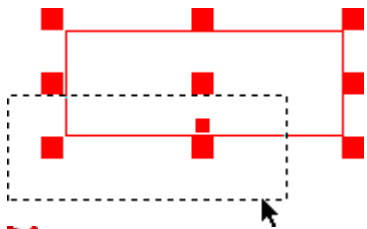
**i** To speed up each procedure, avoid clicking the **View Object** command.



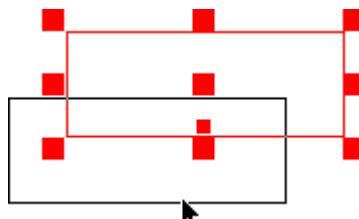
Click the **View Object** command in the Edit menu.



✓ Press the key.



**X** View object: only the selection's frame is displayed.



**✓** View object: the selection remains visible.



## Copying/Cutting/Pasting - Deleting objects

Select some objects.



### Copying/Pasting

Duplicate an object in the composition.

1. Copy the selection:  click in the main toolbar.

2.  Click.

3. Move the copy superimposed on the selection.

4.   Use the keyboard shortcut to display the copy and the selection.

### Cutting/Pasting

Move an object in the composition.

1. Cut the selection:  click in the main toolbar.

2.  Click.

### Deleting

- ✓ Click the **Delete** command in the Edit menu.

- ✓  Press the key.



## Grouping objects


Use the **Group** command to manipulate several objects as a single object. If the selection contains

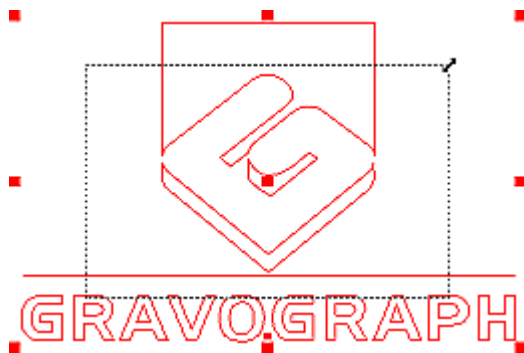
- different types of objects, you will obtain a composite object.
- curve objects, you will obtain a curve object.

Ungroup to manipulate each object separately.


### Group


1. Select some objects.

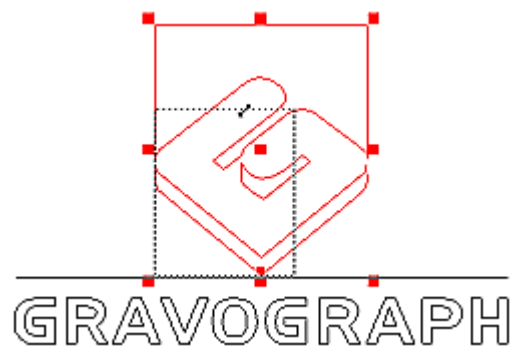
2.  Click in the toolbox.



### Ungroup

1.  Click the group of objects.

2.  Click in the toolbox.





### Grouping by engraving path

Group several objects so they can be assigned the **engraving path** of the first object selected.  
If you ungroup the objects, each one will retain the path assigned to the group.

The path of the first object selected is applied to any selected.

### Grouping selected objects and retaining each engraving path:

With the  key depressed,  click in the toolbox.

### Grouping by surface

Group two superimposed **closed contours** when they delimit a surface to be engraved.

The surface of the curve object obtained is equal to the surface of the grouped objects, minus where they intersect.

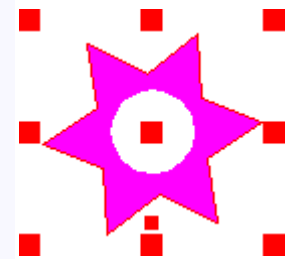
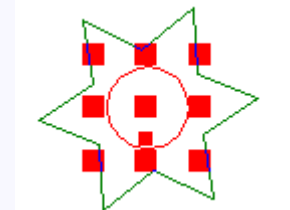
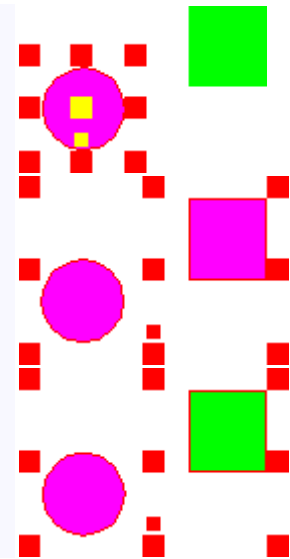
You can thus engrave an object in relief by giving it an external contour and an internal contour.

### Grouped objects

The path of the first object selected is assigned to the curve object obtained.

### Non-grouped objects

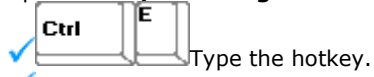
Each object has its own engraving path.





## ◀ Exporting objects

This function allows objects placed in the composition to be run in external programs (2D or 3D CAD, bitmap drawing, vectorial drawing, text processing).

1. Select the objects to be exported.
2. Open the **Export dialog box**:



- Click the **Export** command in the File menu.
3. Locate the folder where the file will be saved ( **DRAWS** is the default folder).
4.  Click the file format.
5. Type the file name in the **Name** box.


6.  Click.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**



## Converting into curve object Function

1. Select the object to be converted.

2.  Click in the Advanced Text palette.



Use this function to

### Manipulate a text object like a curve object

Each character becomes an independent curved object.



**You will no longer be able to edit the text.**

### Convert a marker into a curve with a single point

Edit various objects comprising a complex object



**You will no longer be able to edit the object's properties.**

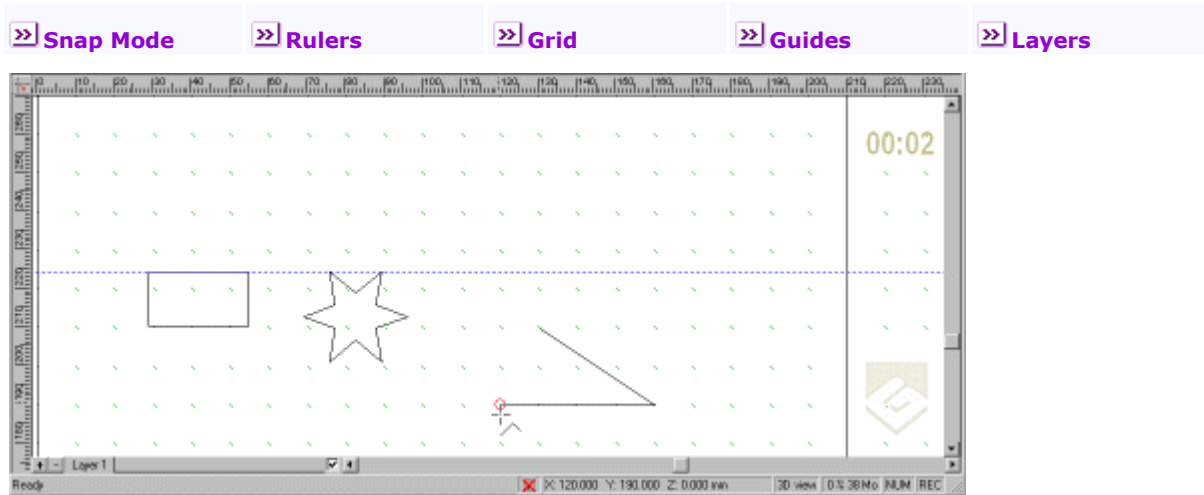



 To separate the objects comprising it, ungroup the converted object as many times as necessary.






## Set in work area

### Placing objects in the work area



 The work area is the place where you create and manipulate objects in the composition. Its background color can be modified in the Colors window of the Options dialog box.  
In the status bar, click icon:

-  to limit the work area's surface area to the **zone between the composition's margins**.  
You can only create and manipulate objects between the margins. Should any objects overflow the work area, the icon becomes red .
-  to work in an **unlimited work area**.  
Objects can be created and manipulated outside the composition, but you must place them within the composition's surface area and thickness to engrave them.






## View in the work area


**i** Display XY 2D view before activating a work mode.

### Displaying a predefined view

✓ Click a **View** in the View menu.

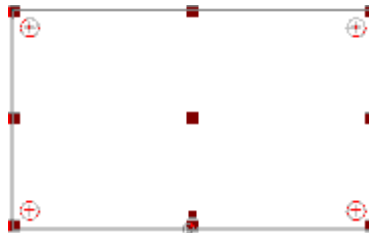
✓ With the  key depressed, press the key related to the view number ( to ).

### Displaying a customized view

1. Click the **View** box in the status bar.  
✓ Click the **View** command in the View menu.
2. Click the view to be displayed.
3. Key in the viewing angle for each axis.
4.  Click.

**e** 2D views are used to place and manipulate objects in the composition.

### 2D XY: flat view of the composition's surface



### 2D YZ: sectional view of the composition's height and thickness



### 2D XZ: sectional view of the composition's length and thickness

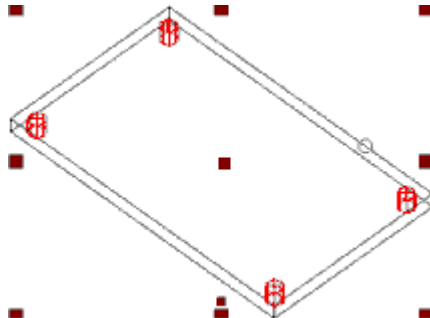


**e** 3D views are recommended for perspective viewing of objects and engraving paths.

### 3D XYZ engraver: 10° angle view



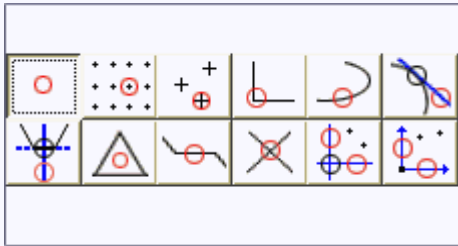
### 3D ISO XYZ: 45° angle view




## ◀ Snap mode

To perform certain procedures such as selection, you have to snap the pointer, or in other words, position it over an element displayed in the work area (guide, point, or contour).

To facilitate this action, several snap modes are available.



### Customizing the snap distance

1.  Display the **Snap palette**.
2. Click the button for the mode you want. Each mode designates the element capable of snapping or attracting the pointer.
3. Move the pointer onto an active snap element.
  - A circle will be displayed as soon as the pointer enters the snap element's magnetic field.
 If the pointer is not correctly positioned, click another button in the palette.

This parameter delimits the magnetic field around the snap element. The default distance is 8 mm. The lower this value is, the harder it is to position the pointer on the snap element.

1. In the Options dialog box, click the **Display tab**.
2. Key in a **Snap distance** falling between 1 and 10 mm.



## Rulers

The work area is a plan.

- **its origin (0,0,0)** is set by default in the lower **left-hand corner of the composition**.
- **its XYZ axes** are respectively located on the composition's length, height and thickness.

### Display the horizontal and vertical rulers

They allow you to view the origin and XY axes of the work area.

Tick box  **Rulers** in the Display window of the Options dialog box.

Follow the pointer's movements tracked by the shifting indices displayed in rulers: they indicate its XY coordinates, in accordance with the active measuring unit.

### Modifying the work area's origin

1. Display the rulers.

2.  Click.

3. Slide the dotted axes.

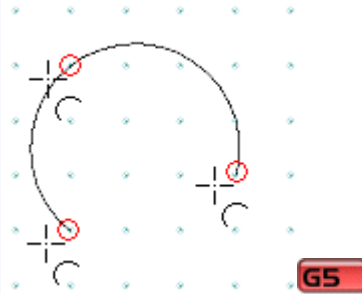
4. Release them when the origin reaches the desired position.



## Grid



The grid is a series of dotted lines that allow objects to be positioned precisely in the work area.

Use grid points to draw shapes with the mouse (here, a circle from 3 points).



### Using the grid

The grid's color can be modified in the Colors window of the Options dialog box.

1.  Display the **Snap palette**.
2.  Click snap mode.
3. Click the **Grid** tab in the Options dialog box.
4.  Tick box **Enabled**.
5.  Tick box **Visible**.

### Customize the default grid

The default grid interval is 1 mm along each axis and its origin (0, 0, 0).

1. Click the **Grid** tab in the Options dialog box.
2. Key in
  - the **XYZ Step** (distance between two points in the grid) on each axis.
  - the **XYZ Start** coordinates for the grid's origin.




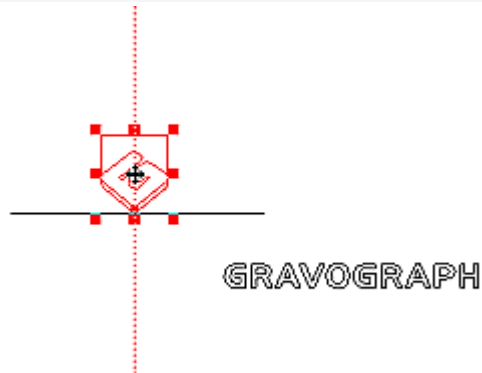
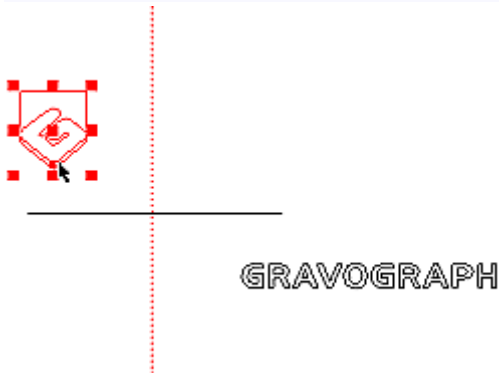
## Guide lines

### Using guide lines



Use guide lines to align objects with the mouse.

1. Create as many guide lines as necessary. Their color can be changed in the Colors window of the Options dialog box.
2. Activate the guide lines: click snap mode 
3. Move an object over a guide line using the mouse: the object pauses momentarily each time its edges or center touch the guide line.



### Creating a guide line using the mouse

1. Display the rulers.
2. Slide a horizontal/vertical guide line, working from the horizontal/vertical rulers.
3. Release the guide line when it reaches the desired position.



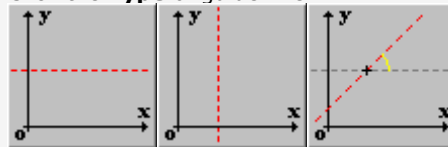
Key in the coordinate **X** for a vertical guide line, **Y** for a horizontal guide line.

### Entering the parameters for each guide line

Click to exit the dialog box.

1. Open the **Edit Guide lines dialog box**. Select the **Guide lines** command in the Modify menu.

2. Click the **Type** of guide line



3. Key in the **Position** for the new guide line.
4.  Click.
5.  Click to add the following guide line, click and repeat the procedure from **step 2 onwards**.

### Moving a guide line

Slide the guide line within the work area.

**or**

1. Double-click on an existing guide line.
2. In the **Edit Guide lines dialog box**, key in the new **Position**.
3. **Edit** Click.

### Deleting a guide line

Slide the guide line on the ruler.










**or**

1. Double-click on an existing guide line.
2. **Delete** Click in the **Edit Guide lines dialog box**.  
**Delete all** Click to delete all the guide lines created.



## ◀ XYZ coordinates

To position certain elements (guides, an object's origin, determining points in a shape's line), you can set their coordinates in the work area.

 <b>Marking with the mouse</b>	<ol style="list-style-type: none"> <li>1. Display the rulers.</li> <li>2. Move the pointer while using the shifting indices displayed in the rulers as references.</li> <li>3. Click when the pointer reaches its new position. Its <b>XYZ</b> coordinates are displayed in the status bar.</li> </ol>
 <b>Entering the coordinates</b>	<ol style="list-style-type: none"> <li>1.  Open the <b>Position a Point dialog box</b>.</li> <li>2. Click box <input type="checkbox"/> <b>Relative coordinates</b> to place the point in relation to its initial position.</li> <li>3.  Place the point: key in <ul style="list-style-type: none"> <li>• either the Cartesian coordinates </li> <li>• or the Polar coordinates, radius  and angle </li> </ul> </li> <li>3. Key in <b>Coordinate</b> </li> <li>4.  Click.</li> </ol>




## Layers


Use layers to superimpose objects. You can place certain objects in front of or behind others, depending on the order of the layers.

There is no limit either to the number of layers or to the number of objects placed on each layer.

Logo Line Gravograph Layers are selected and managed in the work area's **Layer bar**.

### Adding a layer

 Click in the Layer bar: the new layer is stacked on top of the preceding layer and becomes the active layer.

 Click to delete the active layer and all the objects it contains.

### Selecting a layer

Click the **Layer** in the Layer bar: you can manipulate the objects placed on the active layer, without modifying the other layers.

No procedure on the other layers is possible, and these are inactive.

Inactive layers and their objects are invisible.

### Editing a layer properties

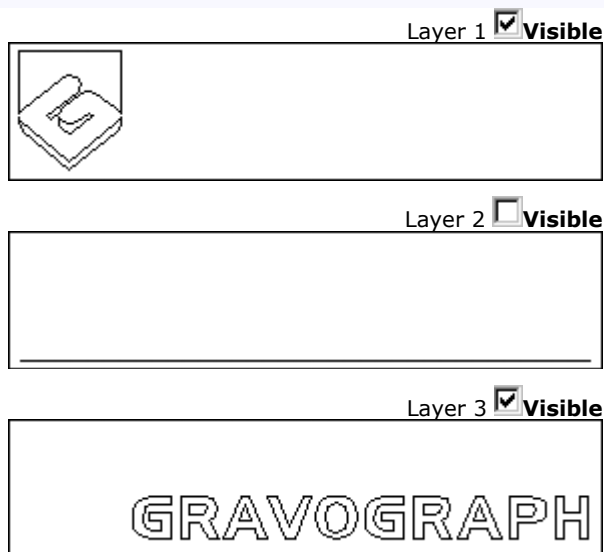
Double-click a layer:

- Type the **Layer name** that will be shown in Layer bar.

- Tick box **Visible**

to hide the layer that will remain invisible, even when you display all layers.

to display it with all visible layers.



### Displaying visible layers

Tick box at the end of the **Layer bar**: all visible layers and their objects are shown.

You work only on the active layer.





Logo Line Gravograph  
Here, layer 2 is invisible.

### Displaying the active layer

Tick box at the end of the Layer bar: the other layers will be hidden.

 Display all the layers in the engraving preview.

### Moving objects from one layer to another

1. Select some objects.
2. Cut the selection:  click in the main toolbar.
3. Click the layer where you want to paste the selection.
4.  Click.



# Transform



## Transforming an object

1. Select an object.
2. In the Transform palette or in the Modify/Transform menu, click the tool for the transformation to be carried out. The tool selected will be displayed near the pointer.
3. Execute the transformation either with the mouse, or by entering the parameters displayed using function



key

Certain transformations are calculated from the center of warping in the object selected.

⊕ This reference point can be the same as the start point or the center of the object, but can also be a point outside the object's contour.



Move



Resize



Pivot



Stretch



Horizontal mirror



Vertical mirror



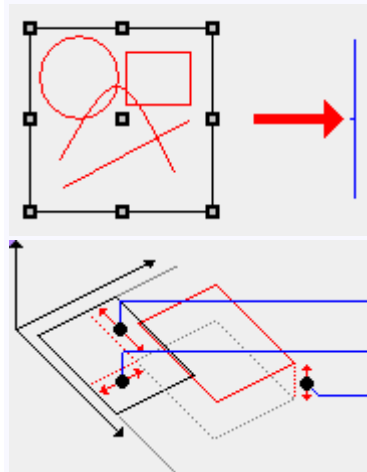
Mirror along an axis




## ◀ Moving an object


Check the movement distance in the status line.

### Moving using the mouse




1. Select an object.
2. Slide the object.

With the  key depressed, move the object either horizontally or vertically.

With the  key depressed, move a copy of the object.

3. Release the object when it reaches its position.

With the  key depressed, in the **Precise Positioning dialog box**, set the object's new position. Validate.

- a. Click  **Move to** in order to calculate the movement in relation to the work area's origin.
- b. Click to designate  **the origin** of the object.
- c. Key in its coordinates on the **XY axes or the Z axis**.

- a. Click  **Relative distance** to calculate the movement in relation to the object's lower left-hand corner.
- b. Key in movement distances on the **XY axes or the Z axis**.

### Moving using the Move tool


1. Select an object.



2. Click in the Transform palette.

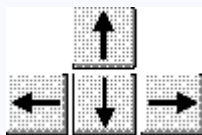
3. Click the object.

4. Slide the object.

With the  key depressed, move either horizontally or vertically.

5. Click when the object has reached its position.

### Moving using the keyboard



Press the arrow keys in the numeric keypad to move the selected object 1 mm vertically or horizontally.

#### Customizing the movement distance:

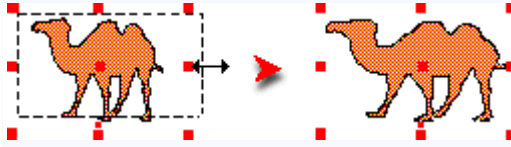
1. In the Options dialog box, click the **Display** tab.
2. Key in an **Arrow movement** between 1 and 10 mm.



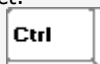



## ◀ Resizing/Stretching an object



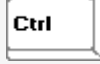
Check the scale coefficient in the status line.

### Resizing using the mouse



1. Select an object.
2.  Point on a selection handle, located
  - in a corner: to retain the proportions.
  - on an edge: to modify the length or height.
3. Slide the object.
  - With the  key depressed, resize from the center of the object.
  - With the  key depressed, make the object's size vary in increments of 100%.
4. Release the object when it has attained the desired size.
  -  In the **Scale dialog box**, key in
    - either the **Scale** coefficient on each axis.
    - or a dimension **Width/Height/Depth**. Click the  **Keep proportions** box to retain the ratio between the dimensions.
 Validate.

### Resizing using the Scale tool

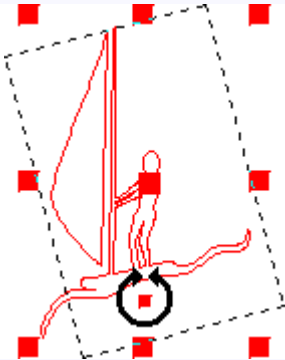
1. Select an object.
2.  Click in the Transform palette.
  -  The scale center is displayed in the center of the object.
  - To move it, slide the scale center and release it when it has reached the desired position.
3. Click the object.
4. Slide the object.
  - With the  key depressed, make the object's size vary in increments of 100%.
5. Click when the object has attained the desired size.






## ◀ Pivoting an object





Check the angle of rotation in the status line.

### Pivoting using the mouse



1. Select an object.
2.  Place the pointer on the rotation handle.
3. Slide the object.  
 With the **Ctrl** key depressed, make the object pivot in increments of 15°.
4. Release the object when it reaches its position.  
 **F2** Key in the angle in the **Rotation dialog box**. Validate.

### Pivoting using the Rotation tool

1. Select an object.
2.  Click in the Transform palette.  
 The center of rotation is displayed in the center of the object. To move it, slide the center of rotation and release it when it has reached the desired position.
3. Click the object.
4. Slide the object.  
 With the **Ctrl** key depressed, make the object pivot in increments of 15°.
5. Click when the object has reached its position.  
 In the **Precise Rotation dialog box**, key in
  - the angle of rotation
  - the **XY** coordinates of the center of rotation. Validate.



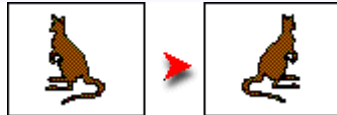
## ◀ Mirroring an object


### Vertical or horizontal mirroring

1. Select an object.
2. In the Transform palette, click the button for the desired symmetry.



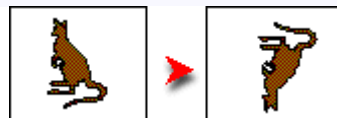
With the key **Shift** depressed, mirror a copy of the selection.



 **Vertical mirror: vertical symmetry on the center of the object**



With the key **Ctrl** depressed, vertical symmetry on the selection's right-hand edge.

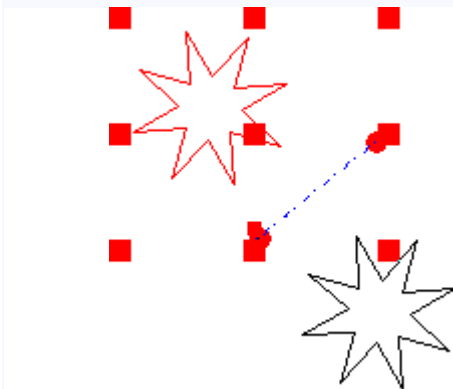


 **Horizontal mirror: horizontal symmetry on the center of the object**



With the key **Ctrl** depressed, horizontal symmetry on the selection's bottom edge.

### Mirroring along an axis you have defined



1. Place two markers to form the axis of symmetry.
2. Select the object, and then the markers.



3. Click in the Transform palette.



With the key **Shift** depressed, mirror a copy of the selection.



# Align



## Aligning objects

1. Select some objects.
2. In the Align palette or in the **Modify/Order menu**, select the tool related to the operation to be executed:



Horizontal centring



Vertical centring



Align on top



Align on bottom



Align on left



Align on right



Horizontal balancing



Vertical balancing



Width spacing



Height spacing



Vertical auto-sizing



Horizontal auto-sizing



Full auto-sizing



Align on the horizontal axis



Align on the vertical axis



Align on the Z axis

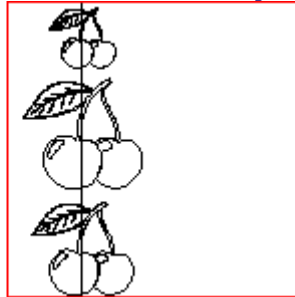
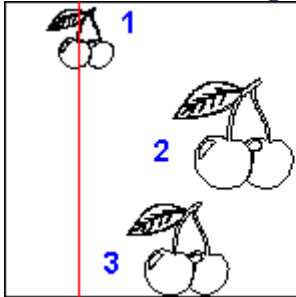


## ◀ Centering objects

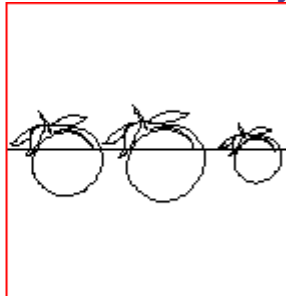
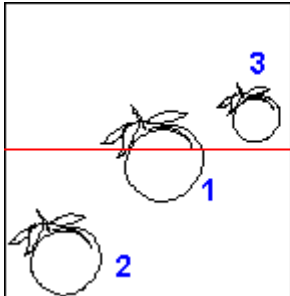
1. Select some objects.
2. In the Align palette, click the button for the centering you want.



**Vertical centering on the center of the first object selected**



**Horizontal centering on the center of the first object selected**



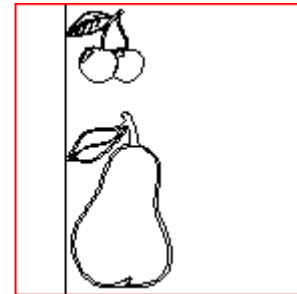
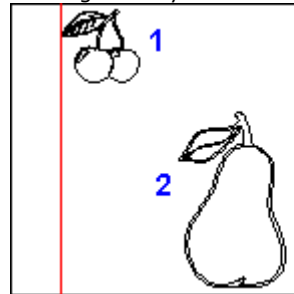
**i** To center objects in terms of their XY coordinates, click each button.



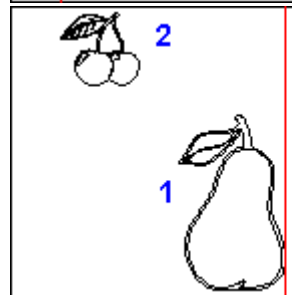
## ◀ Aligning objects on an edge

1. Select some objects.
2. In the Align palette, click the button for the alignment you want.

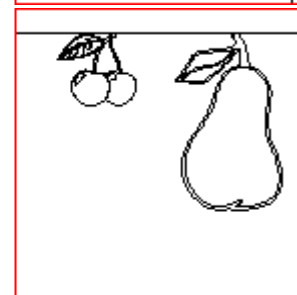
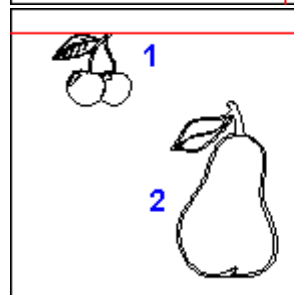

**Left alignment**  
 on the left end of the first object  
 selected.





**Right alignment**  
 on the right end of the first object  
 selected.




**Top alignment**  
 on the top of the first object selected.




**Bottom alignment**  
 on the base of the first object  
 selected.

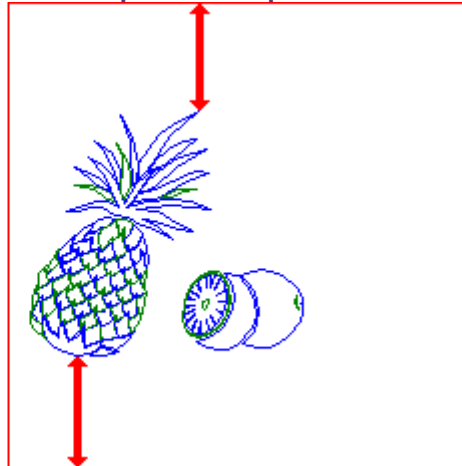
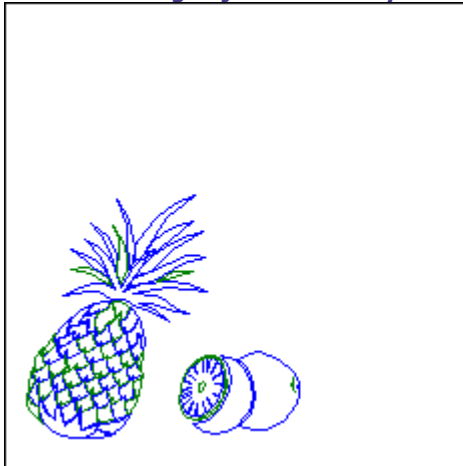


## ◀ Balancing objects in the composition

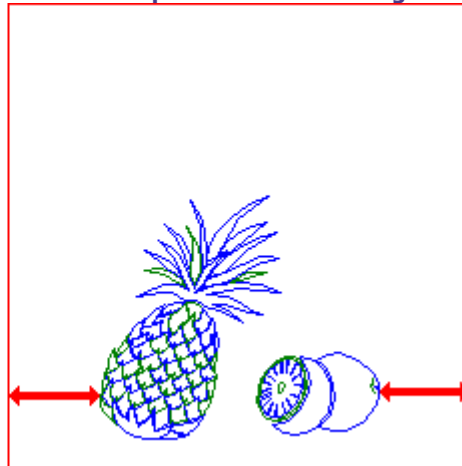
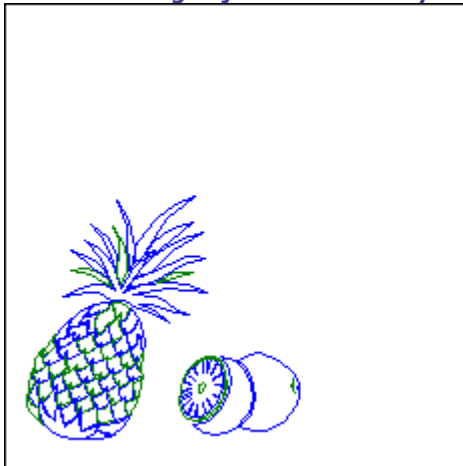
1. Select some objects.
2. In the Align palette, click the button for the layout you want.



**Balancing objects vertically between the composition's top and bottom edges**



**Balancing objects horizontally between the composition's left and right edges**

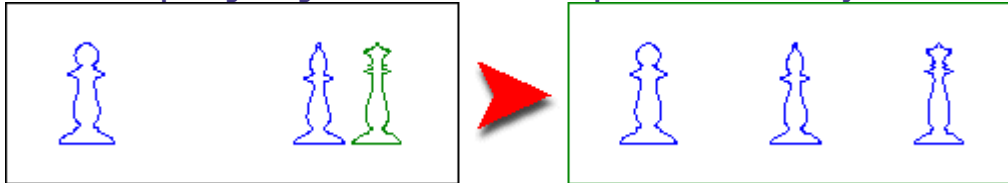


## ◀ Spacing objects

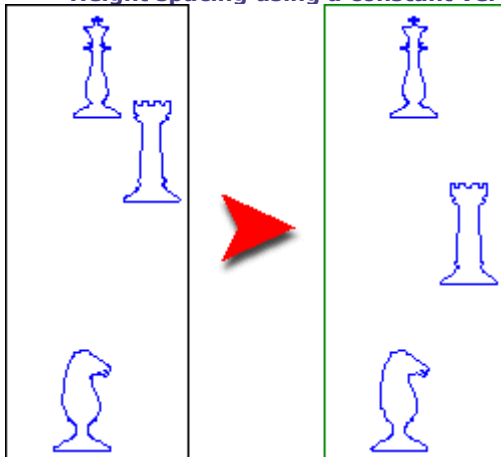
1. Select some objects.
2. In the Align palette, click the button for the distribution you want.



Width spacing using a constant horizontal space between the objects selected.



Height spacing using a constant vertical space between the objects selected.



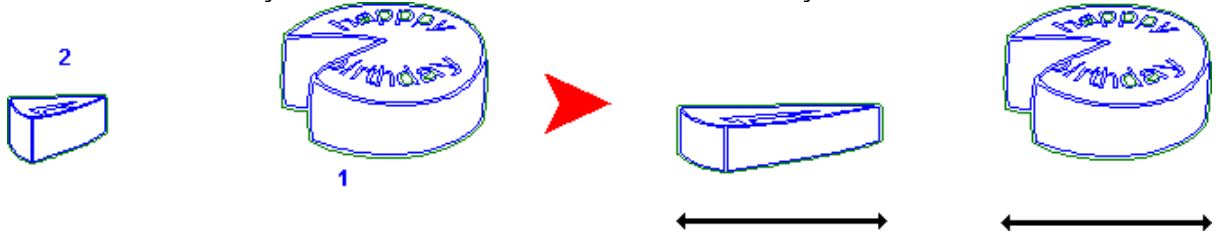
## ◀ Auto-sizing to match an object

1. Select some objects.
2. In the Align palette, click the button for the resizing you want.



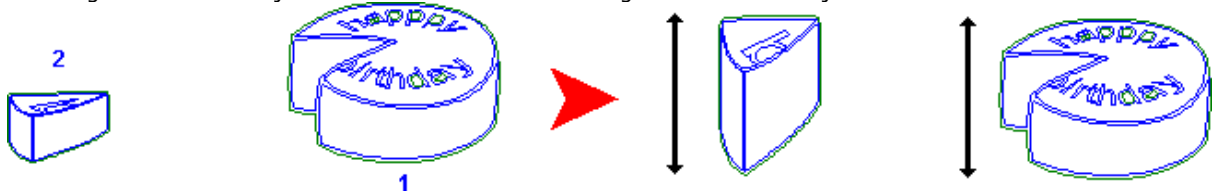
### Horizontal auto-sizing

The width of the first object selected determines the width of the other objects selected.



### Vertical auto-sizing

The height of the first object selected determines the height of the other objects selected.



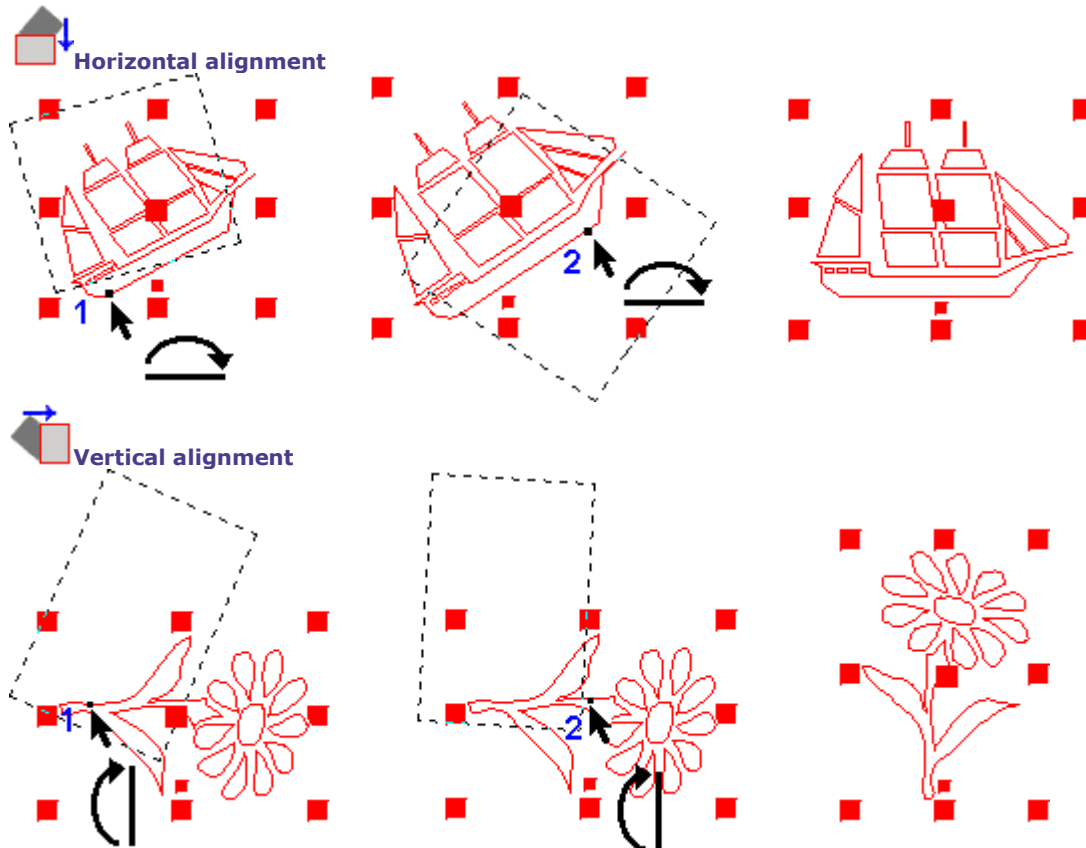
### Full auto-sizing

The dimensions of the first object selected determine the size of the other objects selected.




## ◀ Aligning an object on an axis

1. Select an object.
2. In the Align palette, click the button for the alignment you want.
3. On the object's contour, click the first point to be aligned.
4. Click the second point to be aligned.



## ◀ Aligning objects on the Z axis

1. Select objects.

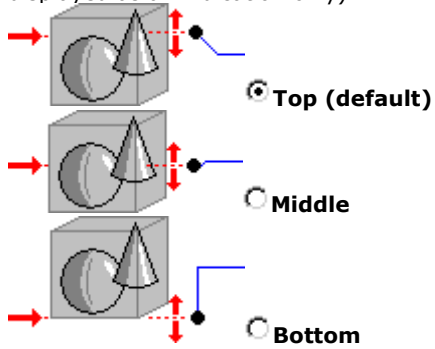
2.  Extend the work area.

3. Display a 2D view.



4. Click in the Align palette.

5. In the **Z Alignment dialog box**, click the start zone for the Z movement (the Z position for each zone is displayed as an indication only):



6. Key in the new **Z coordinate** in box **Move towards**.



7. Click.



## Duplication



### Duplicating an object



Function



In the Duplicate palette or in the Modify/Duplicate menu, select the tool for the duplication to be executed:



Free duplication



Linear duplication



Circular duplication



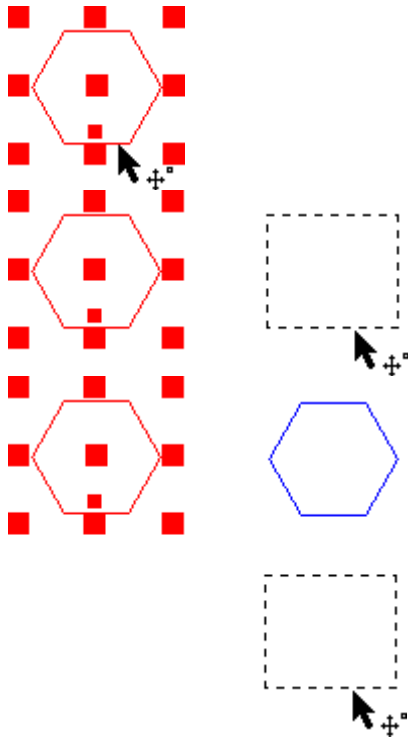
Duplication on a curve




Duplication with shading



## ◀ Free duplication

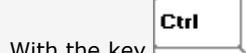


1. Select an object.

2.  Click in the Duplicate palette.

3. Click the contour of the object.

4. Slide the copy.



With the key **Ctrl** depressed, duplicate either horizontally or vertically.

5. Click when the copy has reached the desired position.



Key in the copy's XY coordinates.

6. Repeat steps 4 and 5 as needed.

7. Double-click to complete the duplication.

**i** You can also move a copy of the selection using the Move tool.



## ◀ Linear duplication

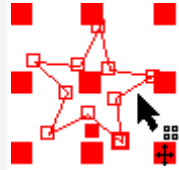
1. Select an object.

2. Open the Linear **Duplication dialog box**:  click in the Duplicate palette.

3. Key in the **columns and rows** in the Linear Duplication dialog box.

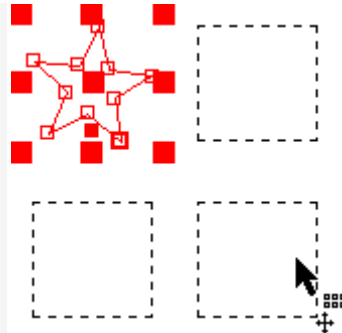
4.  Click.

5. Click the selection.

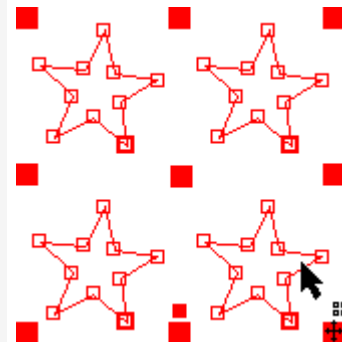



 **Duplicating with the mouse**



6. Slide the copies with dotted contours.

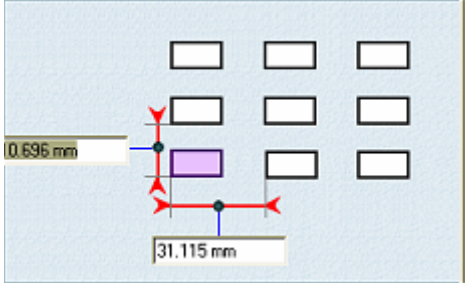
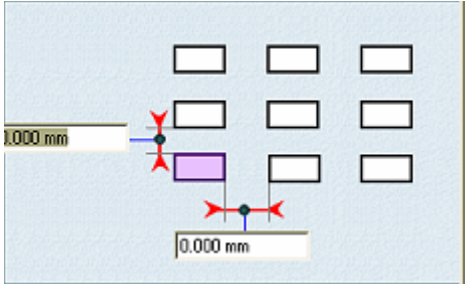
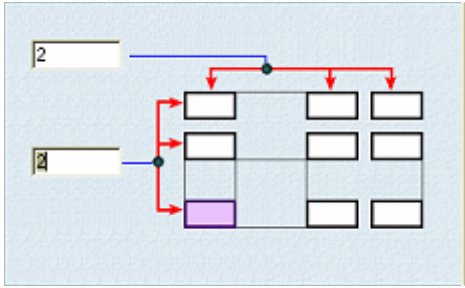


7. Release them when you have reached the desired position.

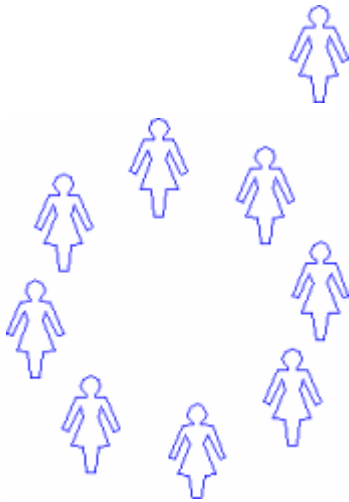



 **Entering the duplication parameters**

6.  Open the **Linear Duplication dialog box**.
7. Click the **Columns/Rows** tab: key in the number of **columns and rows**.
8. Set the **distance between copies**:
  - ✓ Click the **Delta** tab and key in the horizontal/vertical distance between 2 copies.
  - ✓ Click the **Offset** tab and key in the horizontal/vertical distance between the bottom left-hand corners of the 2 copies.
9.  Click.



## ◀ Circular duplication

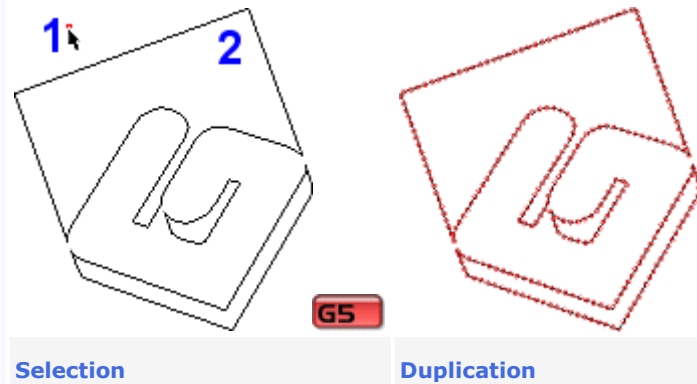


1. Select an object.
2.  Click in the Duplicate palette.
3. In the Circular Duplication dialog box, click box **Rotation** to  retain the duplicated object's initial direction.  pivot each copy of the object.
4. Key in the number of **copies** desired. Validate.
5. Click the contour of the object to be duplicated.
6. Slide the copies with dotted lines.
7. Release them when you have reached the desired position.





## ◀ Duplication on a curve

Duplicate an object following a regular progression on one or several contours (useful to distribute drill points along a signage logo lighted with LED bulbs).



1. Draw a shape.
2. Draw the open contour which is used as the duplication support (arc, curve, line).
3. Check that the direction of this contour matches the duplication direction. If needed, invert the contour's direction.

4. With the  key depressed, click the shape, and then the open contour.

5. Open the Duplication on curve dialog box:  click in the Duplicate palette.
6. Key in the **Distance** between the centers of the two copies or the **Number** of copies desired (initial shape and shapes duplicated).
7. Click box **Rotation** to
  - retain the duplicated object's initial direction.
  - pivot each copy of the object.

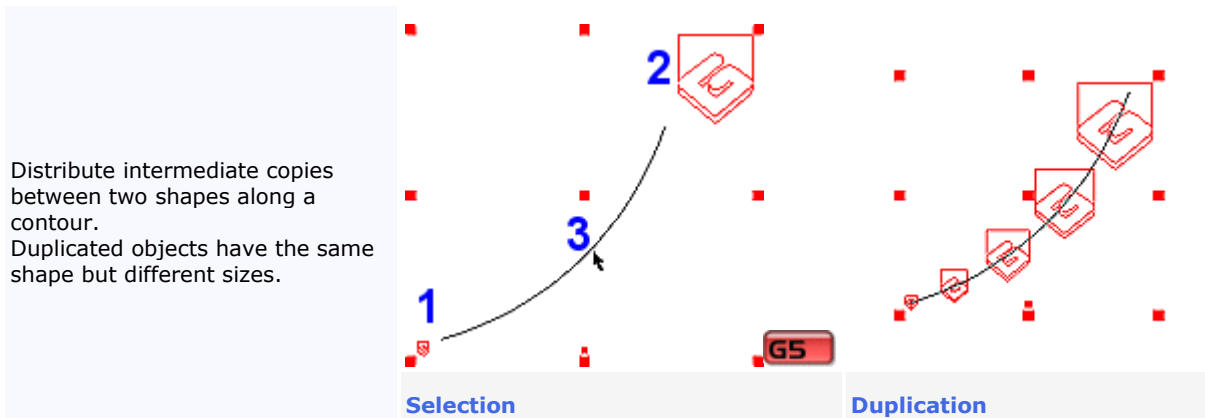
8.  Click.

**i** The initial shape will be automatically centred on the open contour's start point.





## ◀ Duplication on a curve with shading

Distribute intermediate copies between two shapes along a contour.  
Duplicated objects have the same shape but different sizes.



1. Draw two shapes with the same type, but different sizes.
2. Draw the open contour which is used as the duplication support (arc, curve, line).
3. Check that the direction of this contour matches the duplication direction. If needed, invert the contour's direction.

4. With the  key depressed, click the first shape, the second shape, and then the open contour.

5. Open the Duplication resizing on a curve dialog box:  click in the Duplicate palette.
6. Key in the **Number** of copies (start and end shapes, intermediate shapes).

7. Click box **Rotation** to
  - retain the duplicated object's initial direction.
  - pivot each copy of the object.

7. Click box  **Equidistant copies** to place them at equal distances on the curve.

8.  Click.

**i** The start and end shapes will be automatically centred on the open contour's start and end point.



## Measure



### Measuring an object



1. Click snap mode for precise measurement.
2. In the Measure palette, select the tool for the procedure to be executed:



Distance



Perimeter



Angle



Footprint



Bounding box



Surface area



Dimension



Tool simulation




## Measuring the size

### Footprint

The dimensions are displayed in the status line.




1.  Click in the Measure palette.
2. Slide the pointer so that the objects are included in the crossed frame.

### Surface area



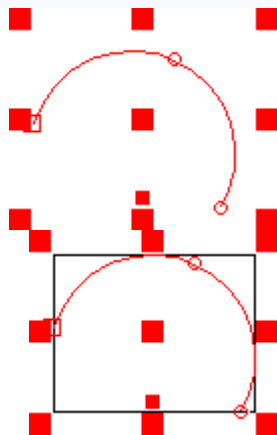
Area : 1181.62 mm x mm


1.  Click in the Measure palette.
2. Click the object and read the measure in the status line.

### Bounding box

Correct a contour dimensions with the bounding box, if the selection frame overflows the actual object size.

You will handle the contour with more precision.



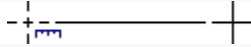
1.  Click in the Measure palette.
  2. Click the object. You will obtain a frame.
  3. Delete the bounding box, which is now superfluous.
- Use this function to correct this calculation error caused by the wrong position of point handles.**




## ◀ Measuring a distance/perimeter/angle

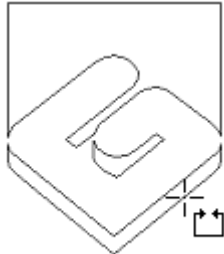
### Distance

The distance is displayed in the status line.




1.  Click in the Measure palette.
2. Click a first point.
3. Slide the pointer onto the second point.

### Perimeter

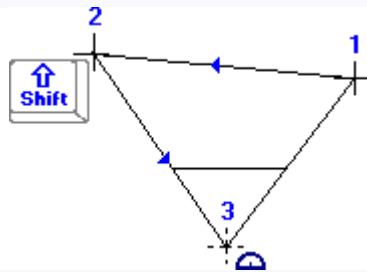




Perimeter: 383.263 mm

1.  Click in the Measure palette.
2. Click the object and read the measure in the status line.

### Angle

The angle is displayed in the status line.



1.  Click in the Measure palette.
2. Click a first point.
3. Slide the pointer onto the second point.
4. With the  key depressed, point at the angle to be measured.
5. Click the angle's apex.

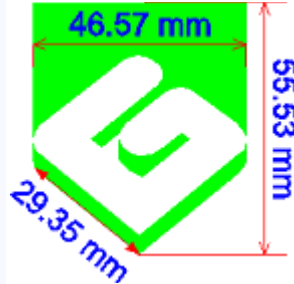


## Dimension



### Measuring a dimension

Measure a distance and draw the corresponding dimension at the same time.



### Drawing with the mouse

You will obtain a Dimension object with lines featuring the following:

- a dimension **line** that ends in two symbols (pink).
- a dimension **mark** at each end of the line (green).
- a dimension **value** (blue).

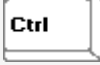


Double-click on the object to edit its properties in the **Dimension options dialog box**.



1. Click in the Measure palette.
2. Click the first point.
3. Slide the pointer onto the second point.
4. Slide the dimension mark so it is positioned in relation to the object measured.
5. Click when the dimension mark reaches the position needed.
6. Display the engraving paths.



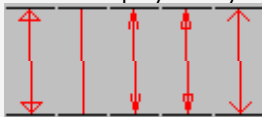
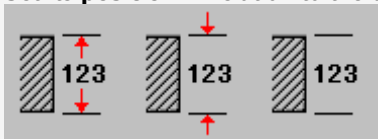
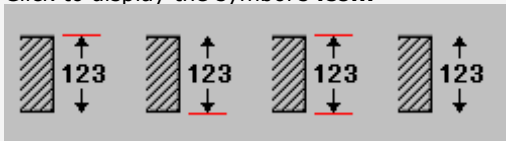


### Defining dimension properties

1. Open the **Dimension options dialog box**: key  depressed,  click in the Measure palette.
2. **Set the dimension line's properties.**
3. **Set the dimension value's properties.**
4.  Click.





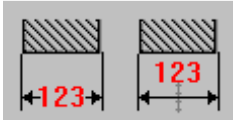
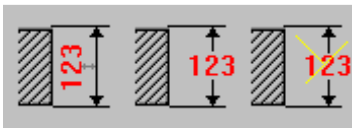




## Setting the dimension line properties

1. Open the **Dimension options dialog box**: key  depressed,  click in the Measure palette.
2. Click tab **Geometrical properties**.
3. Click the **Dimension type** in relation to the distance measured
  - horizontal**
  - vertical**
  - aligned**
4. Define the appearance of the **Dimension symbol** at each end of the dimension line.
  - a. Click to display the symbol's **icon**:
 
  - b. Key in the **Size** of the symbol.
5. Define the properties of the **Dimension line**.
  - a. Set its **position** in relation to the dimension marks:
 
  - b.  Assign the **engraving path color** to the dimension line and symbols.
6. Define the properties of the **Extension line**.
  - a. Click to display the symbol's **icon**:
 
  - b.  Assign the **engraving path color** to the marks.
  - c. Key in the **Line extension** beyond the dimension line.
  - d. Key in the **Line offset** in relation to the measurement's start point.
7. **Set the dimension value's properties.**



## Setting the dimension value properties

1. Open the **Dimension options dialog box**: key  depressed,  click in the Measure palette.
2. Click tab **Text properties**.
3. Define the **Dimension text apperency**.
  - a.  Select a **font**.
  - b.  Assign the **engraving path color** to the text.
  - c. Key in the **Height** of the text.
4. Click the **Text position** in relation to the dimension line.
 
5. Click **Text orientation** in relation to the dimension line.
 
6. Define the content of the **Additional Text**.
7. **Set the dimension line's properties**.
  - a. Type the **Prefix** or **Suffix** the dimension value.
  - b.  Click the **Precision** of the dimension value (number of digits following the decimal point).
  - c.  Select the **Unit** of the dimension value.



## Effects



### Applying an effect to contours



Function



The Effects tools enable the contours of curve objects to be transformed.



**To apply an effect to text, convert it into curves first.**

In the Effects palette or in the Modify/Effects menu, select the tool for the effect to be applied. The tool selected is displayed near the pointer.



Union



Intersection



Subtraction



Exclusion



Offset



Placing into an envelope



Convert into a shape



Segmentation



Vectoring



Reversing contour direction



Overlap markers



## Boolean effects between contours

These tools enable curve objects to be generated from the intersection of two or more contours.

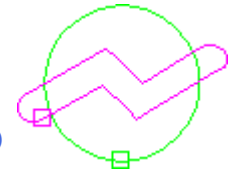
### **i** Ungroup these objects to make them independent.

1. Display the start points to view the curve objects generated by the effect.
2. Select two objects which contain contours.
3. In the Effects palette, click the button for the desired effect.

**Selection:**

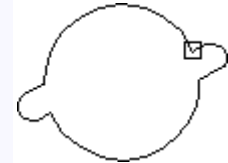
**Circle (green)**

**Double closed line (pink)**



#### Union

This effect joins the objects selected together into a single object.



#### Intersection

This effect creates a new object where the objects selected intersect.



#### Subtraction

This effect hollows out the first object selected, following the second object's contours.

Select the objects in the correct order.

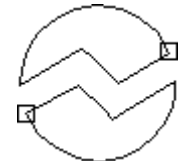
**Object 1: closed double line (pink)**

**Object 2: circle (green)**



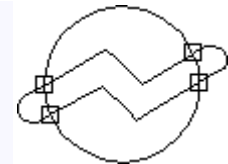
**Object 1: circle (green)**

**Object 2: closed double line (pink)**





#### Exclusion

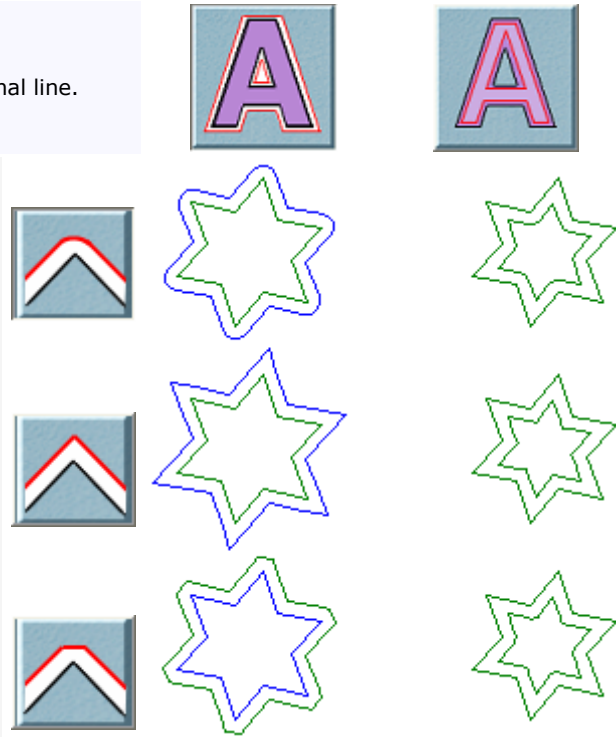
This effect creates new objects by hollowing out the selected objects.



## ◀ Offset on contours

This function reproduces a contour's internal or external line.

1. Select an object which contains contours.
2. Open the **Offset dialog box:**  click in the Effects palette.
3. To keep the object intact, click box  **Keep initial curves.**
4. Key in the **Offset** distance in relation to the origin contours.
5. Click the type of contours.
6. Click the type of angle.
7.  Click.



## ◀ Placing an object in an envelope

Use this function to force an object's contours to assume a predefined shape.

### Placing an envelope



1. Click in the toolbox.
2. Double-click the **Symbols** folder.
3. Click the **Envelop** folder.
4. Click an envelope in the library.



5. Click.

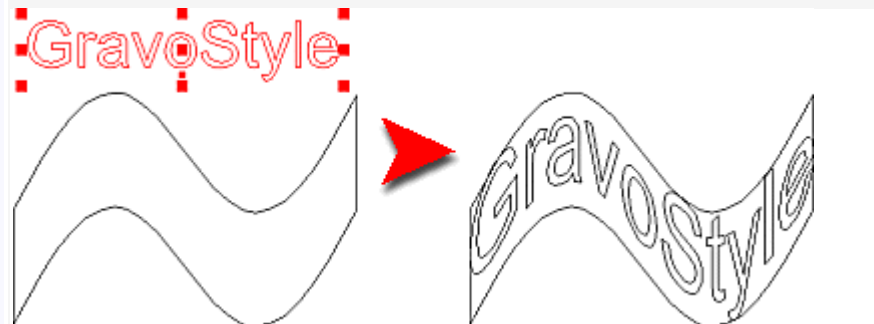
Placing an object in an envelope

**i** Convert the text into curves.

1. Select the object and then the envelope.



2. Click in the Effects palette.
3. Delete the envelope if it is no longer needed.



**💡** How do you force the object to faithfully follow the envelope?

- a. Segment the envelope to refine the precision of its line.
- b. Place the object in the envelope.



### Creating an envelope

1. Draw 4 open contours.
2. Center the start and end points to give the appearance of a closed contour.
3. Select the contours in the following order: 1 + 2 + 3 + 4
4. Group the selection.
5. **Add the new symbol** in the **Envelope** folder of the **Symbols** folder.



## ◀ Converting into a shape

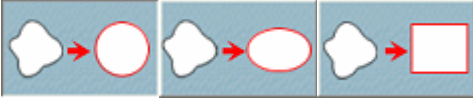
This function converts a contour into a simple shape.

1. Select an object which contains contours.



2. Click in the Effects palette.

3. Click the desired shape:

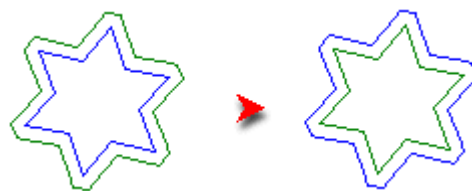


4.  Click.



## ◀ Reversing the direction of contours


This command reverses the direction of each contour selected.



Selection

Reversal

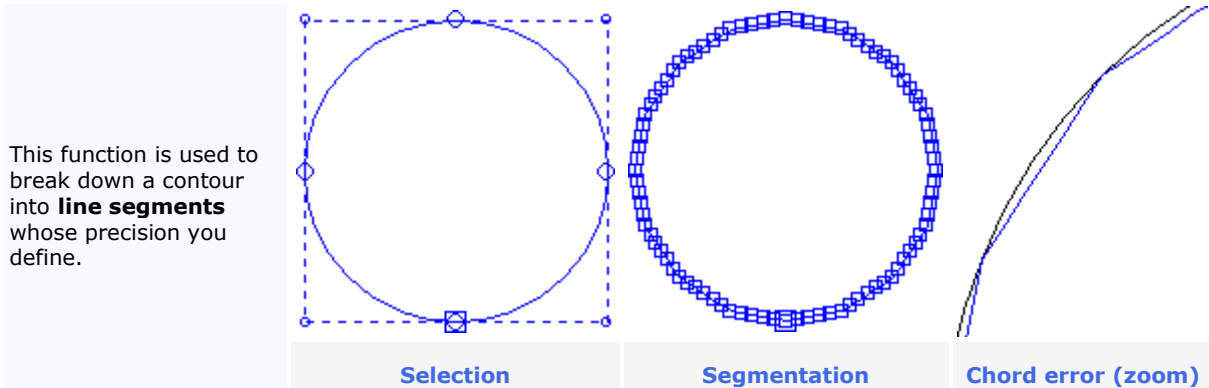
1. Display contour direction.
2. Select an object which contains contours.

3.  Click in the Effects palette.




## ◀ Segmenting a contour

This function is used to break down a contour into **line segments** whose precision you define.



1. Select an object which contains contours.

2.  Click in the Effects palette.

3. In the Segmentation dialog box, key in
  - **the Max. length (L1, L2, L3)** of a segment generated from a curve.
  - **the Max. chord error (E1, E2, E3)** or maximum offset for a segment in relation to the initial curve.

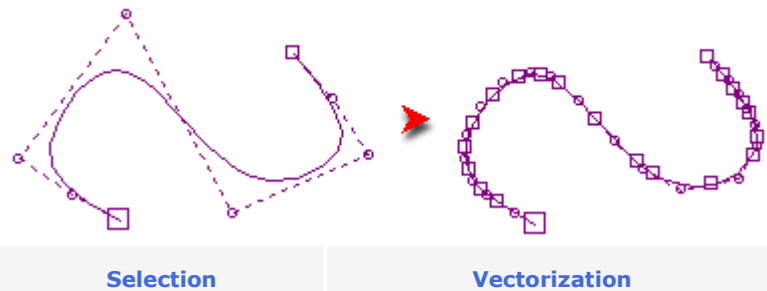
4.  Click.

-  **Display control points to view the new segments.**




## ◀ Vectoring a contour

This function is used to break down a contour into **curved segments** whose precision you define.



1. Select an object which contains contours.

2.  Click in the Effects palette.

3. Key in the Chord error or maximum offset for a segment in relation to the initial curve.


4.  Click.

 **Switch to Point mode to view the new segments and their point handles.**



## ◀ Locating contour overlaps

1. Select an object which contains contours.

2.  Click in the Effects palette: a marker will appear on each overlap point.

A single marker is a Marker object. A set of grouped markers forms a composite object.



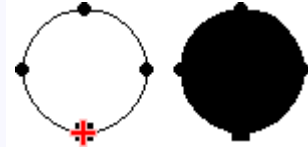
### Use this function

#### To locate contours to be closed

When you assign an engraving path to a **closed contour**, you may view on screen that the surface area it delimits will not be engraved.

That means that the contour is still open: close it using functions **Connect/Auto-connexion**.

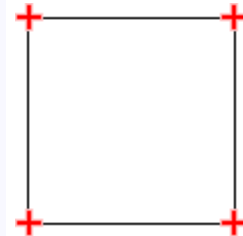
In the case opposite, engraving paths are displayed: the right circle is plain, the left one remains empty and has a marker. Actually, its ends are perfectly superimposed but not linked.



#### To identify superimposed curve objects

In the case opposite, four markers appear above the rectangle. Actually, two similar rectangles are perfectly superimposed.

This mistake often happens when you copy and paste: the copy is pasted above the selection, you view only one object on screen. Move the copy just after you have pasted it.



#### Locating overlaps on a contour line

This phenomenon generates engraving errors in each zone delimited by the contour.

-  **Retouch the object in Point mode to eliminate overlaps.**

In this case, a **filling path** is assigned to a closed curve: only the lower surface area is hollowed out, as the curve's line forms a loop.


To solve this problem, you can **cut the curve into two closed contours** on the overlap marker (in red).



## Point mode

# Working in Point mode Function

This mode allows you to retouch a vectorial contour line by editing its **points**.

 Click in the toolbox to activate the Point mode.


























► Using this pointer, you can

» **Select points**

» **Move a point**

» **Modify a point's attributes**

• By clicking a tool in the Points palette, you can:

Manage points	Connect points	» Manage contours
 <b>Add</b>  <b>Delete</b>  <b>Refine a contour</b>  <b>Simplify a contour</b>	 <b>Connect</b>  <b>Disconnect</b>  <b>Auto-connect</b>	 <b>Move</b>  <b>Delete</b>
» Modify the nature of a point	» Produce an angle from a point	» Convert a segment
 <b>Continuous point</b>  <b>Start point</b>	 <b>Rounded</b>  <b>Chamfered</b>	 <b>Into a line</b>  <b>Into an angle</b>  <b>Into the arc of a circle</b>  <b>Into a curve</b>
» Align points	Cut a contour	» Project a point onto a guide
 <b>Vertically</b>  <b>Horizontally</b>	 <b>Cut</b>  <b>Cut and crop</b>  <b>Divide</b>	 <b>horizontally</b>  <b>vertically</b>  <b>orthogonally</b>



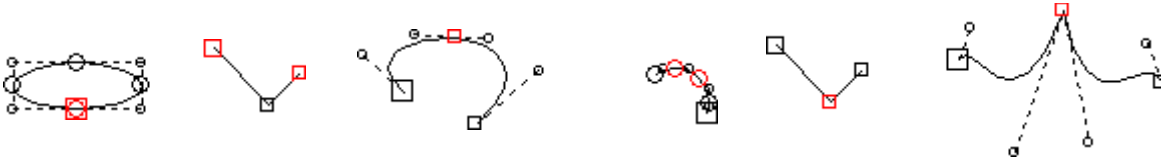
## ◀ Characteristics of a point



Click a contour: the **direction** and the **control points** of the contour selected are displayed.

### Control points

These points are located on the contour. The section of a contour in between two control points forms a **segment**.



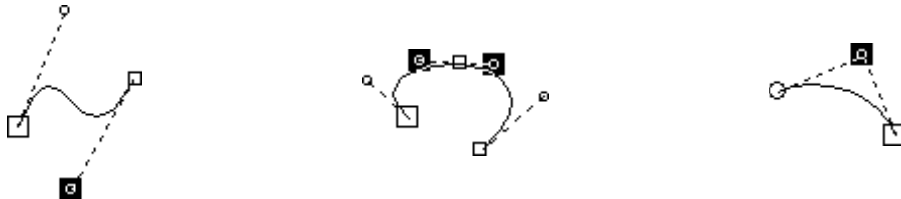
**The start point** is the control point which marks the start of a contour.  
**The end point** is the control point that marks the end of a contour.

**A tangent point** is a control point located between two segments of an arc.

**An angle point** is a control point on which two segments form an angle.

### Point handles

If the contour selected has curve segments, the curve handles are displayed. These points are represented by small circles located outside the contour. Adjust the curvature and the lines of adjacent segments by sliding the handles.

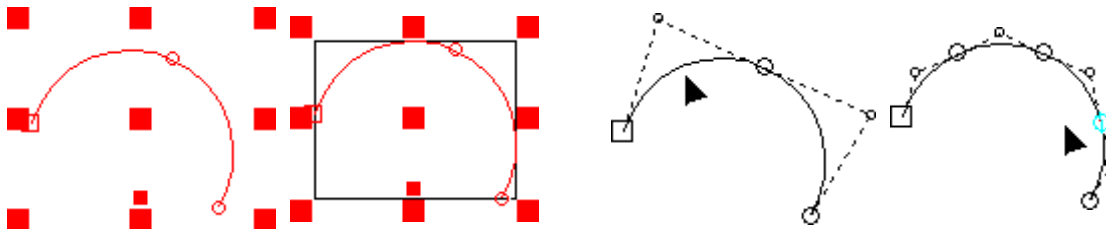


Single handle

Double handle

Curve handle

**i** **Handles must not warp the contour's size. If this calculation error occurs, add control points or generate a bounding box.**



Selection

Actual size of the contour

Editing in Point mode

Addition of points



## ◀ Selecting points



Click the snap mode



to select a contour.




to select a point.

### Selecting a contour

Click the contour.  
If the contour is grouped, you automatically select all the group's contours.

### Selecting contours belonging to different objects

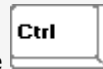


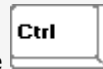
With the  key depressed, click each contour.

### Selecting a point

Click the point, which is displayed contrasted on a black background.

### Selecting points




- ✓ With the  key depressed, click each point.
- ✓ Slide the pointer so that all the points to be selected are framed.

### Deselecting a point or a selection of points

Click outside the selection.

### Deselecting a point in a selection of points



With the  key depressed, click a point selected.

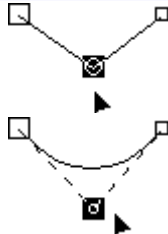


## ◀ Changing a point's attributes



Click a contour.

### Position in relation to the contour



1. Double-click on a point.
2. In the **Point Attributes dialog box**, click option

**Control on contour**, to make it a control point.

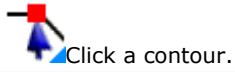
**Handle out of contour**, to make it a curve handle.

### XYZW coordinates

1. Double-click on a point.
2. In the **Point Attributes dialog box**, key in its **XYZ** coordinates in the work area.
3. Key in the **W** coordinate, if a point handle is involved. This coordinate determines the curvature of the segment checked by the handle. Key in a value:
  - near 0, to obtain a line.
  - at least equal to 1, to accentuate the curve by bringing its apex closer to the handle.



## ◀ Changing the nature of a point



Click a contour.

### Designating the start point for a closed contour

**i** You cannot designate a new start point for an open contour. However, you can reverse the contour's direction in order to reverse the start point and the end point.

1. Click the control point selected as the start point.



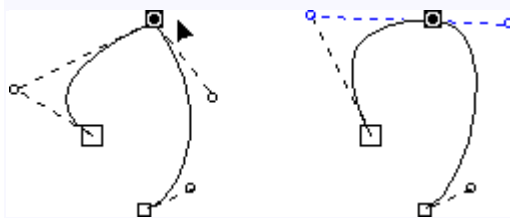
2. Click in the Points palette.

### Converting into a control point/point handle

1. Click a point.
2. Modify the **point's position in relation to the contour** in the **Point Attributes dialog box**.

### Converting into a continuous point

This command transforms a control point into a tangent point.



1. Click a control point between two curve segments.

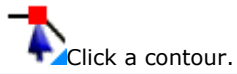


2. Click in the Points palette.

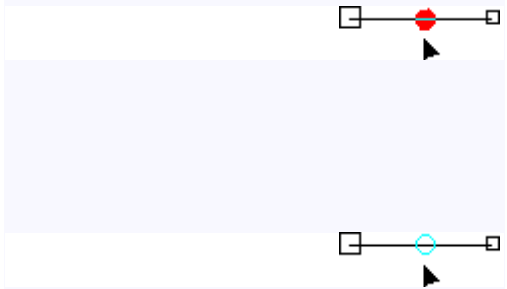
Each handle is repositioned so it is tangent to the adjacent segments.




## ◀ Adding/Deleting a point



### Add



1. Click the position of the new point: a guide will appear on the contour.

2.  Click in the Points palette.




The new point is represented by a blue circle.

### Delete

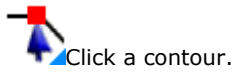
**!** The start and end points cannot be deleted.

1. Select the point to be deleted.

2.  Click in the Points palette.



## Positioning points



Click a contour.

### Moving a point using the mouse

1. Slide a point.
2. Release the point when it reaches its new position.



Key in the point's XYZ coordinates.

**i** You can key in the point's XYZ coordinates in the Point Attributes dialog box.

### Aligning points

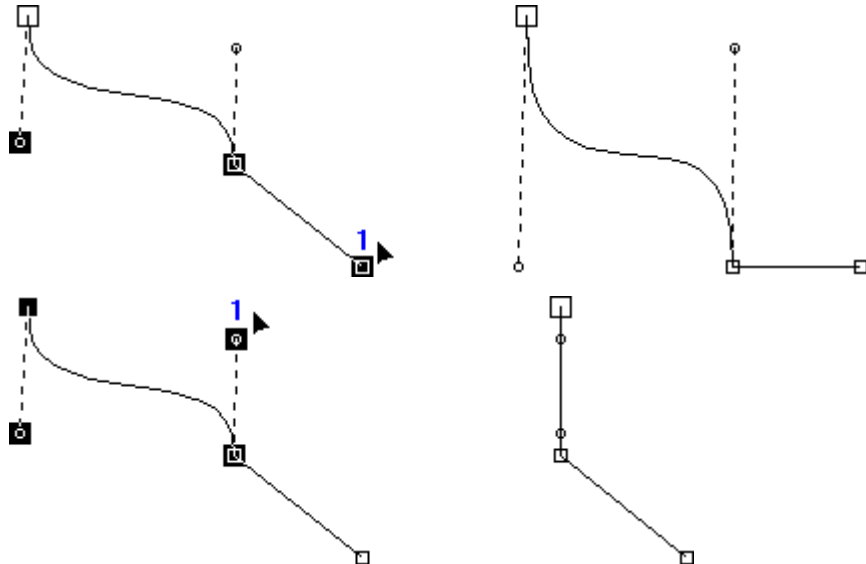


Aligning horizontally on the Y coordinate of the first point selected



Aligning vertically on the X coordinate of the first point selected

1. Select at least two points.
2. Click the button for the alignment you want in the Points palette.




### Centering two points

- ✓ Align the points vertically and horizontally.
- ✓ Key in the same XYZ coordinates.



## ◀ Projecting a point onto a guide

1. Create guides which will be used as projection axes.
2.  Click a contour.
3. Select some points.
4. In the Points palette, click the button for the type of projection you want.
5. Click the guide on which the points are going to be aligned.



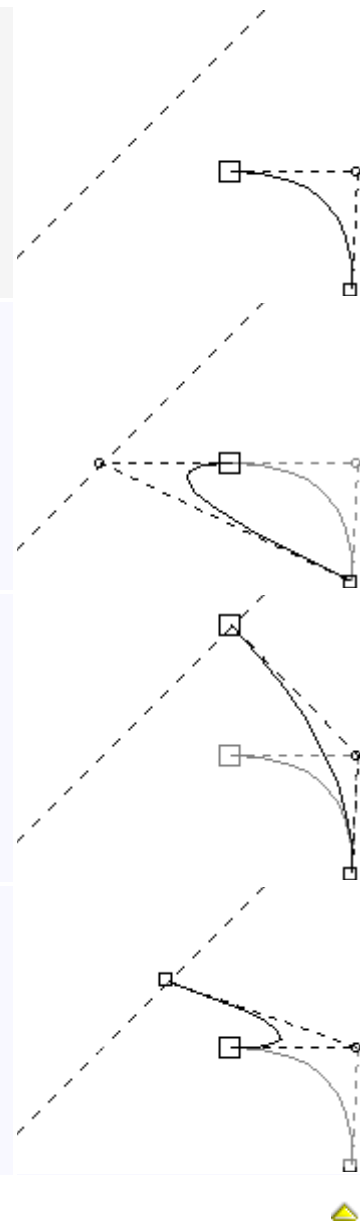
**Horizontal projection of the curve handle**



**Vertical projection of the start point**



**Orthogonal projection of the end point**



## ◀ Producing a segment from a point

The new segment replaces the point selected.



Click a contour.

### Producing an arc segment

This function generates control points at the ends of the segment, as well as the **handle** that will control its curvature.

1. Click an angle point.

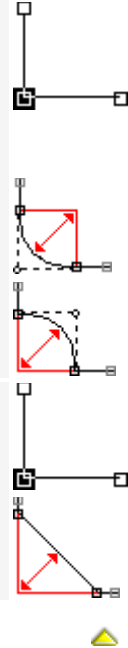


2. Click in the Points palette.

3. Key in the segment's **Radius**:

Key in a **positive** radius to orient the segment towards the outside of the contour.

Key in a **negative** radius to orient the segment towards the inside of the contour.



### Producing a line segment

This function generates control points at the ends of the segment.

1. Click an angle point between two line segments.

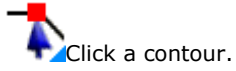



2. Click in the Points palette.

3. Key in a positive **Radius**. Validate.




## ◀ Transforming a segment





1.  In the Points palette, click the icon for the segment to be produced.
2. Click each end of the segment.
3. Slide the pointer to form the new segment.
4. Click when the segment attains the desired position and size.





## ◀ Managing contours

 Click a contour.

### Move

- 
1.  Click in the Points palette.
  2. Click a contour.
  3. Slide the contour.
  4. Click when the contour reaches the desired position.

### Delete

- 
1.  Click in the Points palette.
  2. Click a contour.



## ◀ Connecting/Disconnecting two points



Click a contour.

### Connecting

Use this command to

- close an open contour.
- connect two open contours.



To connect several contours in one operation, use **Auto-connect function**.

### Disconnecting

Use this command to

- cut an open contour into two open contours.
- open a closed contour.



To disconnect all the points of a contour in one operation, use **Divide function**.

1. Select two open contour ends.



2. Click in the Points palette.

1. Click a control point, between two control points.



2. Click in the Points palette.



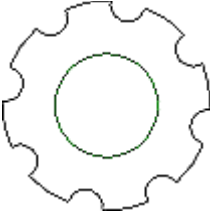
Ungroup these objects to make them independent.



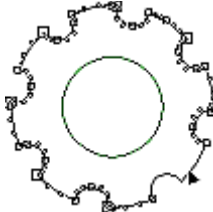
## Auto-connecting open contours



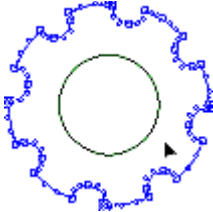
**Auto-connecting different open contours**



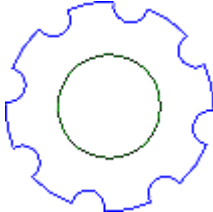
**Serie of black contours**



**Multiple selection**



**Auto-connection**





**Single blue contour**

Connect their ends

- to close each contour.
- to link contours together.



Use this function to close all open contours of an **imported vector file** (for example, DXF objects designed using Autocad).

**Example for auto-connection settings**

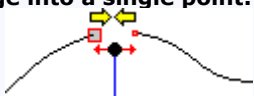
- Check that each contour has the same direction. If needed, invert the contour's direction.
-  Switch to Point mode.
- Select contours in the contour order expected.
-  Click in the Points palette.



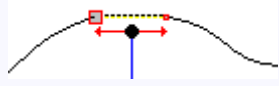
Regarding the in-between distance, decide how you will connect the ends.

- Open the **Auto-connexion dialog box**: key **Ctrl** depressed,  click.
- Set parameters in relation to the auto-connection mode you choose (linking or merging):
  - Untick box **Separately**.
  - Key in the **merging distance** at least equal to the distance between ends.
- Tick box **Separately**.
  - Key in the **linking distance** greater than the distance between ends.
- Untick box **Separately**.
  - Key in the **merging distance**.
  - Key in the **linking distance** greater than the merging distance.
-  Click.

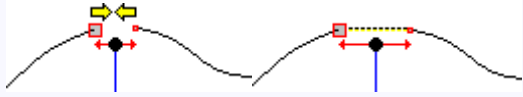
**Ends will merge into a single point:**



**Ends will be linked with a curve:**

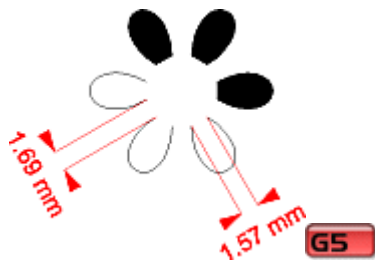


**Ends will be merged or linked:**


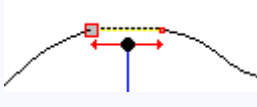
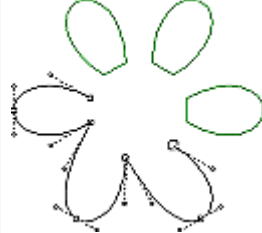

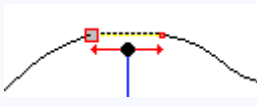
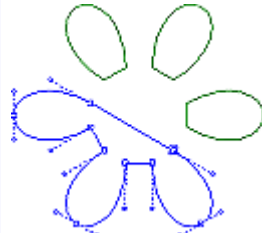
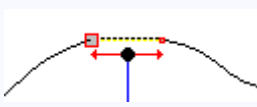
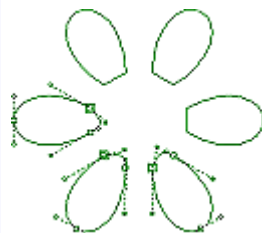
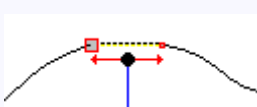
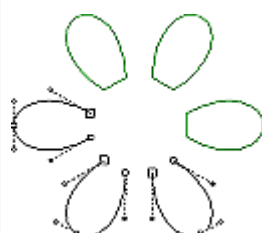




Setting the auto-connecting of different open contours (example) 

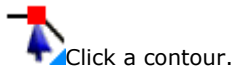


Auto-connection settings

Distance between ends	Merging distance	Linking distance	Result
Smaller than merging distance	 <p>= 2</p>	 <p>= 3</p>	 <p>Merging into a single point</p>
Between merging distance and linking distance	 <p>= 1</p>	 <p>= 7</p>	 <p>Connection with a line</p>
Smaller than linking distance	 <p>= 2</p>	<input checked="" type="checkbox"/> Separately	 <p>Connection with a curve</p>
Greater than linking distance	 <p>= 1</p>	<input checked="" type="checkbox"/> Separately	 <p>No connection</p>



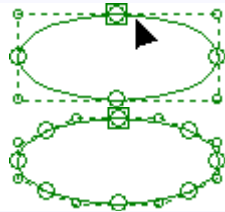
## ◀ Refining/Simplifying a contour



Click a contour.

### Refining a contour

Add points according to a regular progression.



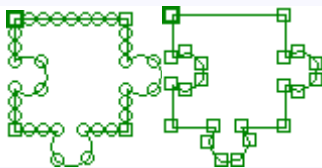
Click in the Points palette.

Each new point appears mid-way between two control points. If the contour has curve segments, a point handle is also added between two control points.



### Simplifying a contour

Delete superfluous points, particularly to lighten the contours of a vectorized image or of a text converted into curves.

**To delete points according to a regular progression:**



Click in the Points palette.

1. Key  depressed,  click in the Points palette.
2. Key in a **Precision** level that respects the contour's original line; a value that is too high may warp the initial curves or replace them with lines.

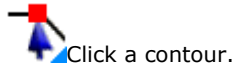
3.  Click.



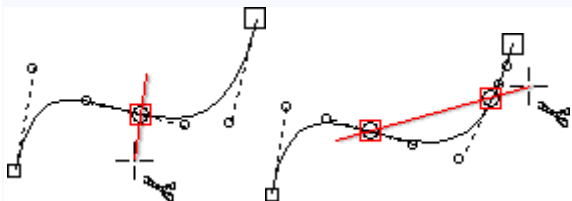
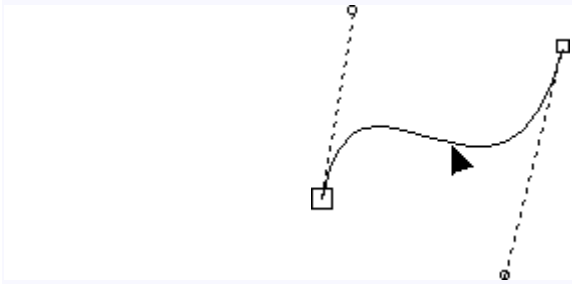
## ◀ Cutting a contour

This procedure allows the contour selected to be cut into open or closed contours. A start point appears at the start of each contour generated.

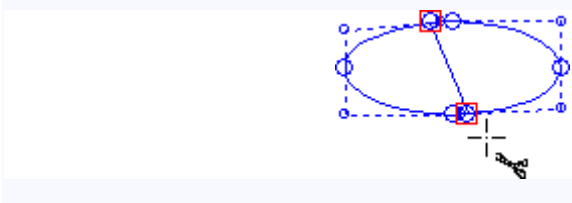
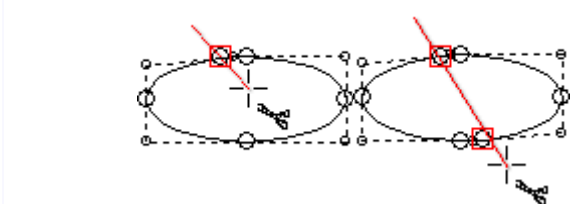
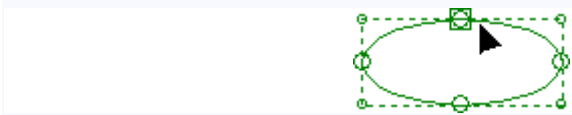
**i** Ungroup these objects to make them independent.




### Cutting an open contour




### Cutting a closed contour



-  Click in the Points palette.
- Slide the pointer onto the contour.

If you slide the cutter onto a point of the contour, you will obtain 2 open contours.



To obtain several open contours, slide the cutter over 2 or more points of the contour.

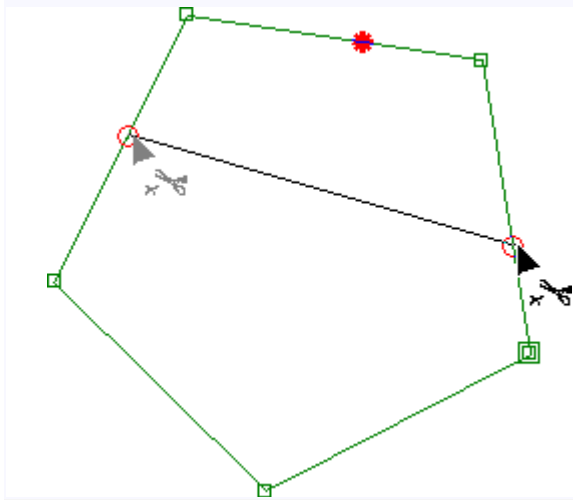
-  Click in the Points palette.
- Slide the pointer onto the contour.


If you slide the cutter onto a point of the contour, you will obtain 2 open contours.

To obtain several contours, slide the cutter over 2 or more points of the contour.

#### To obtain closed contours:



- With the  key depressed,  click in the Points palette.
- Slide the cutter over 2 or more points on the contour.

**Cutting and cropping**

  **Click in the Points palette.**

1. Click the first cutting point.
2. Click the second cutting point.

 **If you cut a closed contour, the deleted contour is indicated using a red asterisk.**

To delete the opposite contour,  click while keeping  pressed.




## ◀ Dividing a contour

Disconnect each point of the selected contour in one operation: each segment becomes an open contour.



1.  Click a contour.

2.  Click in the Points palette: each segment between two control points becomes an open contour.

**i** Ungroup these objects to make them independent.



## Using an image

### GravoStyle5 Using a bitmap image

A bitmap image is a photo or drawing generated from a pixels grid, or points on the screen, with different colors.

#### Placing the image in the composition

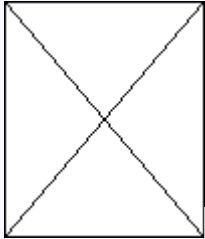
>> **Import the relevant file** (that the image is saved in a recognized bitmap format).

>> **Digitize the original on paper using a scanner.**

>> **Create a blank image using the Bitmap Editor.**

#### Displaying the image in the work area

**i** For optimal use, the image must have **16.7 million colors and a minimum resolution of 300 DPI. If needed, improve the quality of the image in the Bitmap Editor.**



Bitmap Images

1. Click the **Display** tab in the Options dialog box.
2. Tick option  **Bitmap Images**, unless you are manipulating a bulky image on-screen (the image is replaced by a crossed frame, display will be faster).



Bitmap Images

#### Processing the image for engraving

>> **Vector the image as contours.**

>> **Process the image using PhotoStyle.**





## Scanning an image



The scanner allows a printed image to be reproduced on paper or film in the form of a grid of colored points called pixels.

### Selecting the scanner

If you have plugged a TWAIN-compatible scanner into your computer, the program will identify it automatically.


1. Select the **Select scanner** command in the File menu.
2. In the **Select Source dialog box**, click the scanner used.



3. Click.

### Start digitization

Once the procedure has been executed, the image is displayed in the program.

1. Start the digitization program that controls your scanner:
  - ✓  Click in the toolbox (only click once: give the scanner time to start up).
  - ✓ Click the **Digitize** command in the File menu.
2. Specify the digitization parameters. The final image quality depends on:
  - the quality of the original
  - the scanner's technology
  - the settings selected (brightness, contrast, resolution in DPI)



# Vectorize




## Vectorizing an image



Function

This function is used to reproduce a bitmap image as contours.

1.  Place the image in the composition.
2. Click the image to select it.
3. Launch vectorization:
4. **Set the vectorization parameters.**
5. **Configure the color reduction.**



**If no image is selected, digitization will automatically run before vectorization.**



Click in the toolbox.



Click the **Vectorize** command in the File menu.

The **Vectorization dialog box** indicates the execution of the procedure (✕ click to cancel):

- the percentage of contours executed out of the total number.
- the number of the current contour and the vectorization stage.

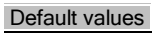
You will obtain a composite object.






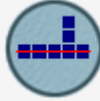





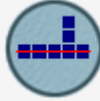





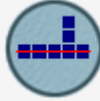





## Setting the vectorization parameters

✓ Click the **Vectorization parameters** command in the File menu.

✓ With the  key depressed,  click in the toolbox.

 Click to restore the recommended values.

**!** Check that the following parameters do not create a number of points likely to slow down vectorization, display, manipulation and engraving calculations.

<p><b>Quality</b></p> <p>Key in a value between</p> <p><b>Allowance</b> Precision of the contour line to 1/10th of a pixel</p> <p><b>Noise filtering</b> Eliminating interference pixels</p> <p><b>Smoothing (Curve/Angle)</b> Vectorization into curves or angles</p>	<table border="0"> <thead> <tr> <th style="text-align: left;">min.</th> <th style="text-align: right;">max.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">  0.1                 </td> <td style="text-align: center;">  3                 </td> </tr> <tr> <td style="text-align: center;">  0                 </td> <td style="text-align: center;">  3                 </td> </tr> <tr> <td style="text-align: center;">  -1                 </td> <td style="text-align: center;">  +1                 </td> </tr> </tbody> </table>	min.	max.	 0.1	 3	 0	 3	 -1	 +1
min.	max.								
 0.1	 3								
 0	 3								
 -1	 +1								
<p><b>Mode</b></p>	<ol style="list-style-type: none"> <li>Click <b>Center line</b> to vectorize the image   in contours.   in lines (tick <input checked="" type="checkbox"/> <b>Fast</b> to simplify and speed up vectorization).</li> <li>Key in the <b>Max. thinning</b>, or maximum thickness of the line to vectorize as a line. Lines with a greater thickness are vectorized as contours.</li> </ol>								
<p><b>Zone</b></p>	<ol style="list-style-type: none"> <li> In the <b>Spot filtering</b> setting, key in the width of the zones that are not to be vectorized.</li> <li>Click to vectorize   on the black or color parts of the drawing.   on the black, white or color background.</li> </ol>								



## ◀ Reducing the colors to be vectorized

1. Vectorize the image selected.
2. Designate the colors to be vectorized in the **Color reduction dialog box**.  
 The number of initial colors is displayed in the box.  
 Click to restore the initial colors.

<b>Automatic reduction</b>	<ol style="list-style-type: none"> <li>3. Open the <b>Setup color reduction dialog box</b>: <input type="button" value="Options"/> click in the Color reduction dialog box.</li> <li>4. <input type="button" value="Sensitivity"/> Adjust the <b>Sensitivity</b> or tolerance in terms of color recognition.</li> <li>5. Click box <b>Contour destruction</b>  <input type="checkbox"/> to limit the color zone to its exact contour.  <input checked="" type="checkbox"/> to extend the color zone to the neighboring pixels;  <input type="button" value="Sensitivity for contour destruction"/> Set the <b>Sensitivity for contour destruction</b>.  <input type="button" value="Sensitivity of fusing areas"/> Set the <b>Sensitivity of fusing areas</b> for the shades with the dominant color.</li> <li>6. Click box to <input type="checkbox"/> deactivate or <input checked="" type="checkbox"/> activate the <b>Preprocessing</b> <ul style="list-style-type: none"> <li>• <b>Suppression of anti-aliasing</b>: connect the transition shades between 2 colors to one of these colors.</li> <li>• <b>Noise suppression</b>: eliminate interference pixels</li> </ul> <input type="button" value="OK"/></li> <li>7. <input type="button" value="OK"/> Click. The number of colors is recalculated following implementation of the preceding settings.</li> </ol>
<b>Manual reduction</b>	<ol style="list-style-type: none"> <li>3. In the <b>Nb of colors</b> box, key in the number of colors to be vectorized.</li> <li>4. Select the <b>colors to be merged</b>: key <input type="button" value="Ctrl"/> depressed, click each color in the color chart or in the image preview.</li> <li>5. <input type="button" value="Fusion"/> Click. The image is recalculated depending on the dominant colors.</li> <li>6. Select the <b>colors to be vectorized</b>: key <input type="button" value="Ctrl"/> depressed, click each color in the color chart or in the image preview.</li> <li>7. <input type="button" value="OK"/> Click.</li> </ol>



## PhotoStyle



### Processing an image in PhotoStyle

Option for ALL levels

This option allows a bitmap image (photo, drawing, plan) to be reprocessed so the object to be engraved can be produced.

Depending on its color, each pixel in the image on-screen is converted:

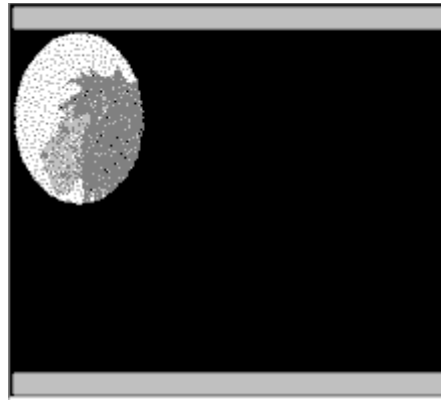
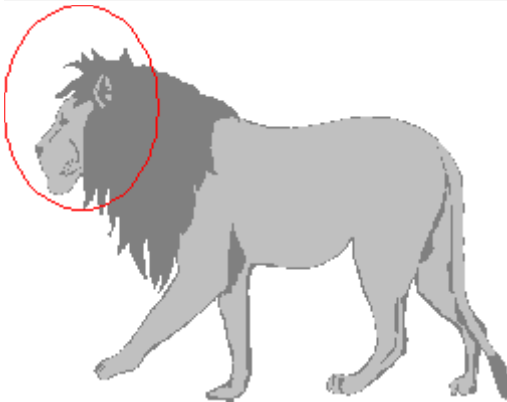
- into a white pixel or an engraving point.
- into a black pixel or an unengraved point.









**How do you delimit the surface of the image to be processed?**

Draw a closed contour around this zone.  
Select the image and the mask.

Launch PhotoStyle: the portion of the image located outside the **mask** is converted into an unengraved black background.

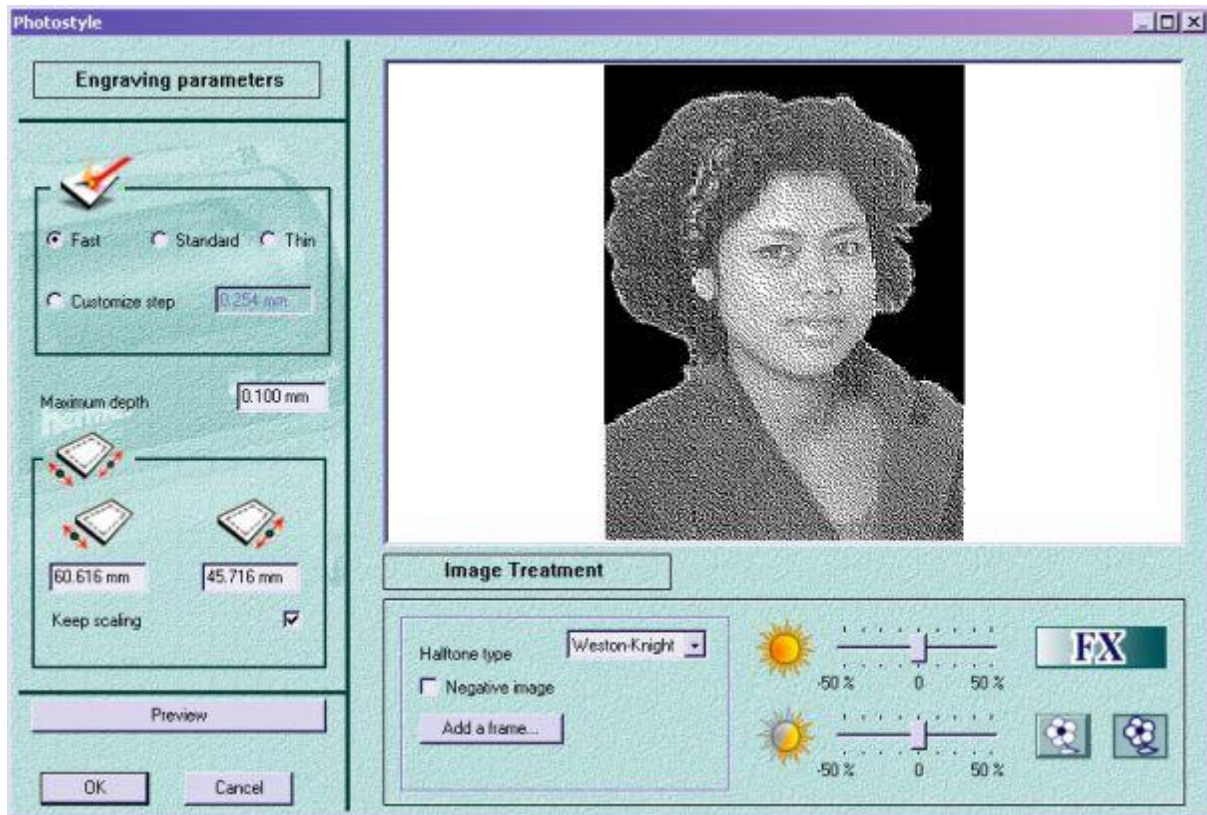


1.  Place the image in the composition.
2. Click the image to select it.
3. Run PhotoStyle:
4. Apply the opposite settings in the **PhotoStyle dialog box**:
5.  Click to see the result.
6.  Click. The logo is displayed in the work area.

- ✓  Click in the toolbox.
  - ✓ Click the **PhotoStyle** command in the Modify menu.
  - ⓘ **If no image is selected, the PhotoStyle Wizard will automatically run before PhotoStyle.**
- In the **PhotoStyle Wizard dialog box**,
-  click and digitize the image.
  -  click and import the image.
- » **Setting engraving parameters**
  - » **Making image treatments**
  - ⓘ **Depending on whether the settings applied increase or decrease the final number of points, the object may be displayed in a size that is quite different from the size of the original image. The size of the object on-screen is not representative of its engraving size.**
  - ⓘ **Perform an engraving test to assess the quality of the logo. If the result is not acceptable, delete the logo and restart the procedure.**



## ◀ PhotoStyle dialog box



## ◀ Setting engraving parameters

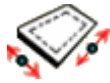


Each engraving **resolution** corresponds to a step distance between two engraved points. A 1.25 mm step produces 8 points/mm. The more you increase the step, the more you reduce the number of points/mm and the quality of the engraving.

Click an engraving resolution in the PhotoStyle dialog box.

Click option  **Customize step** and key in the step value.

- Standard
- Fast
- Thin
- Step = 0.425 mm



The image default dimensions display in the PhotoStyle dialog box.

Click box **Keep scaling**

to enter the engraving height and width.

to enter one dimension only. PhotoStyle calculates the other dimension proportionally.



**For an optimum engraving, resize the image in PhotoStyle and keep the final logo size in the composition.**



## ◀ Making image treatments

### Converting colors



This procedure allows you to simulate each image color by using a geometric pattern in black and white.

Click **Halftone type** in the PhotoStyle dialog box:

Bethesda

Weston Knight

Northfolk

### Applying effects



Negative

Depending on the material used, click to process the logo as a negative.

By reversing the engraving points (white) and unengraved points (black), this command allows contrast effects to be engraved on a two-layer material with a light surface and a dark background (for example, Gravoply white on black) or on light paper with a stylus tool: the engraved points appear in the dark color and the unengraved points in the light color.



#### Brightness

Slide the cursor from -50% to +50% to regulate the level of image luminosity.



#### Contrast

Slide the cursor from -50% to +50% to regulate the variation in luminosity between light and dark zones.



#### Soften

Click to decrease the transition between light and dark zones.



#### Sharpen

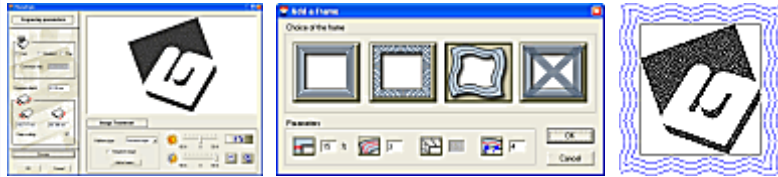
Click to increase the transition between light and dark zones.



## ◀ Adding a frame to the image

Add a frame around the logo designed in PhotoStyle.

**i** For quick machining, this frame is made of contours that you edit in **Point mode**.












**Add a frame** Click in the PhotoStyle dialog box.


1. Click a frame.



Click to delete the frame

2.  Key in the **margin percentage** occupied by the frame in the final image surface.
3. Enter the parameters for the type of frame:

		Key in the <b>number of concentric curves</b> around the image.
		Key in the <b>number of intervals per side</b> between 2 frame corners.
		Key in the <b>number of concentric curves</b> around the image.
		Key in the <b>period number</b> between 2 frame corners.

4.  Click.
5. **Preview** Click in the PhotoStyle dialog box.










# Bitmap Editor



## Retouching an image in Bitmap Editor

Option for ALL levels

1.  Place the image in the composition.
2. Click the image to select it.
3. Display the image in **Bitmap Editor**.
4. Retouch the image:
5. **Save the image.**
6.   Exit Bitmap Editor: the image retouched is displayed in the work area.

-  **If no image is selected, create a blank image automatically displayed in Bitmap Editor.**
1.  Click in the toolbox.
  2. Enter the properties of the **New Image**:
    - a. Key in the **Width and Height** (64x48 mm are default). Tick box  **Keep ratio** to retain the width/height ratio.
    - b. Click the number of **Colors**  **2, 256 or 16.7 millions**. Select 16.7 million colors so you can have access to all of the Bitmap Editor's functions.
  3.  Click and move to **step 4.**
- ✓ Double-click the image.
- ✓  Click in the toolbox.
- ✓ Click the **Bitmap Editor** command in the **Modify menu**.
- » **Edit the image**
- » **Modify colors**
- » **Select the zone to edit with a mask**



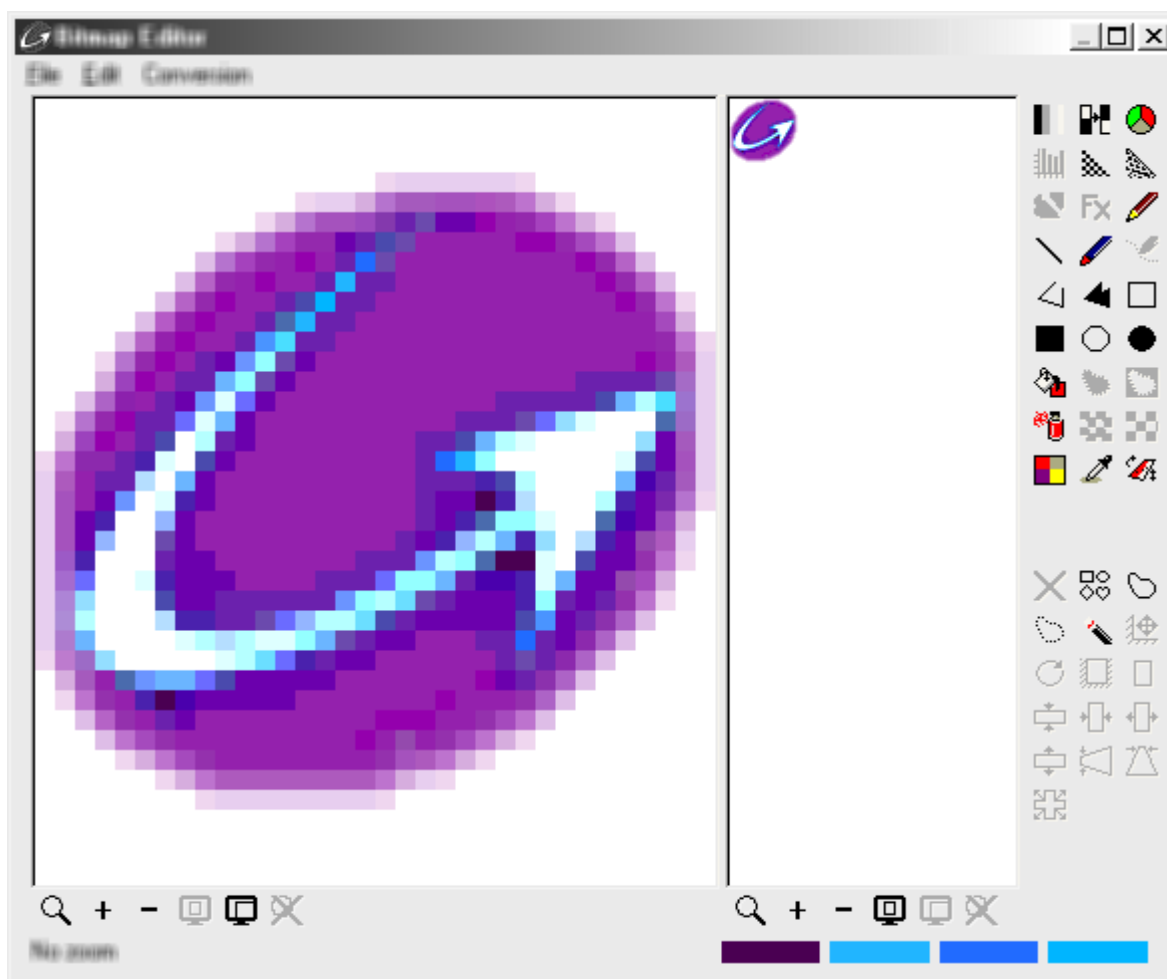
## Guided tour of Bitmap Editor

>> [Editing an image](#)

>> [Managing images](#)

>> [Editing colors](#)

>> [Using a mask](#)



## ◀ Bitmap Editor Menus

### 🔗 File menu

<b>New</b> <b>Open</b> <b>Save</b> <b>Save as</b>	<b>New image</b> <b>Opening a .bmp file</b> <b>Saving when working</b> <b>Saving an image</b>
<b>Info Image</b> <b>Print preview</b> <b>Print</b>	<b>Characteristics of the current image</b> <b>Printing the image</b>
<b>Exit</b>	Closing the window and quitting the program

### 🔗 Edit menu

<b>Undo</b>	<b>Undo the last procedure</b>
<b>Cut</b> <b>Copy</b> <b>Paste</b>	<b>Editing the selection</b>

### 🔗 Conversion menu

<b>8-bit grayscale levels</b> <b>Conversion into 32 bits</b>	<b>Grayscale levels</b> <b>Increasing the number of colors</b>
---	---



## ◀ Bitmap Editor Toolbars

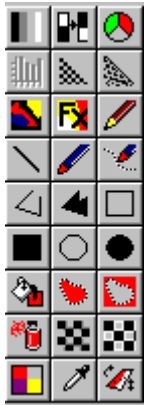






Image bar

### >> Edit an image



#### Selecting the active color

-  in the colors palette
-  with the dropper

#### Drawing

-  a line
-  a broken line
-  a filled polygon
-  a rectangle
-  a filled rectangle
-  an ellipse
-  a filled ellipse








#### Painting

-  using the fine brush
-  with the brush
-  with the spray
-  with the paint pot





#### Manipulating

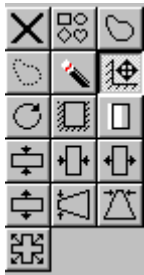
-  Warp
-  Sharpen
-  Soften
-  Effects

### >> Adjust colors

-  Setting the number of colors
-  Greyscale
-  Histogram
-  Halftone
-  Halftone with diffusion
-  Negative
-  Correction






### >> Edit the selection

-  Drawing the contour
-  Filling the selection
-  Filling outside the selection
-  Cropping the image












Mask bar

### >> Create a mask

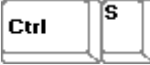











-  with the magic wand
-  from a symbol
-  from a polygon
-  from a free-form shape
-  Delete the mask

### >> Warp the mask

-  Move
-  Rotate
-  Horizontal alignment
-  Vertical alignment
-  Stretch horizontally
-  Stretch vertically
-  Vertical projection
-  Horizontal projection
-  Vertex



## Common tasks in Bitmap Editor

<p><b>Saving while working</b></p>	<p>Save regularly if you are creating a time-consuming or complex image, or if you have to stop in the middle of work.</p> <p> Use the keyboard shortcut.</p> <p>If the image has already been saved, the .bmp file of the same name is updated with the latest changes. Otherwise, <b>save the image</b> using the dialog box that opens.</p>
<p><b>Undoing the last procedure</b></p>	<p> Use the keyboard shortcut.</p>
<p><b>Zooming</b></p>	<p><b>Zoom using the mouse's right-hand button</b></p> <p> Click to double the size of the image on-screen.</p> <p><b>Click a tool in the Zoom bar:</b></p> <p> Slide the pointer so the zone to be enlarged is framed.</p> <p> Increase the zoom</p> <p> Decrease the zoom</p> <p> Display the image at its maximum size</p> <p> Display the image at its initial size</p> <p> Cancel the zoom</p>
<p><b>Print the image</b></p>	<ol style="list-style-type: none"> <li>1. Select the <b>Print</b> command in the <b>File menu</b>.</li> <li>2.  Click to configure the active Windows printer.</li> <li>3. Define the printing parameters.</li> <li>4.  Click.</li> </ol>
<p><b>Print preview</b></p>	<ol style="list-style-type: none"> <li>1. Select the <b>Print preview</b> command in the <b>File menu</b>.</li> <li>2. Click box <input checked="" type="checkbox"/> <b>Full page</b> to print the whole image at the center of the page, regardless of its dimensions.</li> <li>3. Set the size of the image to be printed: click box <b>Keep ratio</b> to       <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> retain the ratio between the dimensions and to key in one of the dimensions.</li> <li><input type="checkbox"/> key in the <b>Width</b> and the <b>Height</b>.</li> </ul> </li> <li>4. Click box <input checked="" type="checkbox"/> <b>Center image</b> to       <ul style="list-style-type: none"> <li>• center the image on the page.</li> <li>• print only the portion of the image displayed in the Bitmap Editor window.</li> </ul> </li> <li>5.  Click.</li> </ol>



## Image files



### Managing images



**New image**



**Saving an image**



**Opening a .bmp file**

#### Characteristics of the current image

---

1. Open the **Image Info dialog box**: select the **Image info** command in the **File menu**. You will see:
  - the file access path
  - the image's dimensions in points
  - the image's dimensions in millimeters
  - the number of colors in the image: 256 colors or 16.7 million colors (True colors).



2. Click.



## New image

### Creating a blank image

**Save the image** under a name other than [UNTITLED], which is assigned by default to each new image.

1. Select the active color which will be the background color.


2. Activate the **New** command:



✓ Use the keyboard shortcut.

✓ Select the **New** command in the **File menu**.

3. Key in image's dimensions.

4. Click the number of colors desired  **2, 256, 16.7 millions**. Select 16.7 million colors so you can have access to all of the Bitmap Editor's functions.

For a 16 or 256 grayscale image, click box  **Grayscale**.



5. Click.

### Creating an image based on an existing image

You will obtain a copy that you can modify while keeping the original intact.

1. Open a .bmp file.

2. **Save the image** under a different name.





## Saving the image

Save the image on a diskette or a hard drive so it can be retained and modified subsequently. The image is saved as a .bmp file with the same name.

1. Open the **Save As dialog box**:



Use the keyboard shortcut.

- ✓ Select the **Save as** command in the **File menu**.
2. Locate the folder where the file will be saved ( **DRAWS** is the default folder).
3. Type your comments.
4. Type the name of the image in the **Name** box.
  - ✓ To replace an existing file, click its name in the list.
  - ✓ To save a new file, delete the "\*" character and key in a new name.
5.  Click: the file name will be displayed in the title bar.

 **To bring up the Windows contextual help, click this box, then a zone in the dialog box.**




## Opening a BMP file

### Opening one of the last four files opened

Click its name in the **Recent File List** of the **File menu**.

### Opening a composition or a model

 To bring up the Windows contextual help, click this box, then a zone in the dialog box.

#### 1. Open the **Open dialog box**:



Use the keyboard shortcut.

Select the **Open** command in the **File menu**.

#### 2. Locate the spot where the file to be opened is ( **DRAWS** is the default folder).

#### 3. Select the **.bmp file** to be opened:

Click the file name. To search quickly, click in the list and type the first character of the name.

Type its name in the **Name** box.


















#### 4. Click: the file name will be displayed in the title bar.



## Image









### Editing an image

>> Selecting the active color	>> Drawing
 in the colors palette  with the dropper	 a line  a broken line  a filled polygon  a rectangle  a filled rectangle  an ellipse  a filled ellipse
>> Painting	Manipulating
 using the fine brush  with the brush  with the spray  with the paint pot	 Warp  Sharpen  Soften  Effects








## ◀ Selecting the active color

<p><b>Available colors bar</b></p> 	<ul style="list-style-type: none"> <li>✓ Click one of the four colors.</li> <li>✓ Press the Space key to switch the colors, the first one being the active color.</li> </ul>
<p><b>Dropper</b></p>	<ol style="list-style-type: none"> <li>1.  Click in the Image palette.</li> <li>2. Place the dropper on the color you want to select.</li> <li>3. Click. The color selected will become the active color.</li> </ol>
<p><b>Creating a shade</b></p> <p>The resulting shade is displayed in the available colors bar.</p>	<p>With the  key depressed, click each color to be mixed. Release the key before clicking the last color to be mixed.</p>
<p><b>256-color image</b></p>	<ol style="list-style-type: none"> <li>1.  Click in the Image palette.</li> <li>2. Click the box which contains the color you want.</li> </ol>
<p><b>16.7-million color image</b></p>	<ol style="list-style-type: none"> <li>1.  Click in the Image palette.</li> <li>2. In the <b>Color correction dialog box</b>, select a color:             <ul style="list-style-type: none"> <li>✓ Click a zone in the color wheel.</li> <li>✓ Key in the <b>RGB Parameters</b>:                 <ul style="list-style-type: none"> <li><b>R</b> (red) between 0 and 255</li> <li><b>G</b> (green) between 0 and 255</li> <li><b>B</b> (blue) between 0 and 255</li> </ul> </li> </ul> </li> <li>3. Select a shade in this color (the shade obtained is displayed in the <b>Chosen Color box</b>):             <ul style="list-style-type: none"> <li>✓ Click a shade in the color range.</li> <li>✓ Key in <b>HSV Parameters</b>:                 <ul style="list-style-type: none"> <li><b>H</b> (hue) between 0 and 359</li> <li><b>S</b> (saturation) between 0 and 255</li> <li><b>V</b> (brightness) between 0 and 255</li> </ul> </li> </ul> </li> <li>4.  Click.</li> </ol>



## Drawing in the image

1. Select the active color (the surface of the filled shapes is filled in using the active color).
2. Click the tool for the appropriate shape to be drawn in the Image palette.
3. Draw the shape:

 <b>Line</b>	<ol style="list-style-type: none"><li>a. Click to mark the start of the line.</li><li>b. Slide the pointer to the other end.</li><li>c. Release it to mark the point's position.</li></ol>
 <b>Rectangle</b>  <b>Circle/Ellipse</b>	<ol style="list-style-type: none"><li>a. Click to mark the shape's start.</li><li>b. Slide the pointer to draw the shape.</li><li>c. Release it when the shape attains the desired size and position.</li></ol>
 <b>Broken line</b>  <b>Polygon</b>	<ol style="list-style-type: none"><li>a. Click to mark the shape's start.</li><li>b. Slide the pointer to the next point.</li><li>c. Click to mark the point's position.</li><li>d. Repeat steps 2 and 3 as many times as necessary.</li><li>e. Click using the mouse's right-hand button to mark the end of the line.</li></ol>



## Painting the image

### Painting with:



The **Paint pot** replaces a color with the active color.



The **Fine brush** paints a 1-pixel line.






The **Brush** paints a line based on a series of filled circles.






The **Spray** gives you the impression you are painting using a spray gun or can.

### Configuring the Brush

1. Select the active color.
2. Click the tool in the Image palette.
3. Click the zone where you want to pour the paint.
3. Place the pointer on the spot where you want to start painting.
4. Slide the pointer onto the zone to be painted. Release it at the end of the procedure.





1. Open the **Brush Configuration dialog box**: key  depressed,  click in the Image palette.
2. Set the **Brush Size**, between 1 and 64: you can view the line thickness in the preview.
3.  Click.

### Configuring the Spray

1. Open the **Spray Configuration dialog box**: key  depressed,  click in the Image palette.
2. Set the **General parameters**:
  - **Spray size**, between 1 and 64 pixels
  - **Spray rate**: slide the cursor or click the ruler to set the paint's flow rate.
3. **If you are in the 16.7 million colors setting**, key in a **Number of colors** that falls between 1 and 16 and define each color in the **Color list**.
  - a. Click a color.
  - b. Click box **Chosen color** to change the color in the Color correction dialog box.
  - c. Set the **Color weight** in relation to the other colors in the list. Slide the cursor or click the ruler.
4.  Click.



## ◀ Warping the image








1. Open the **Image deformation dialog box**:  click in the Image palette.
2. Click the **Operation** and key in the warping **Parameters**.
3.  Click to preview the result. The image **Size** is displayed in millimeters and pixels.  
 Click to change the result, and restart the procedure.
5.  Click at the end of the procedure. The dialog box will close and the warping is applied to the image.

Operation	Key in	Key in (in pixels or in mm)
<b>Resize</b> This procedure duplicates or deletes the pixels required to obtain the dimensions entered.	coefficient <b>Variation X</b> , over the image's width <b>Variation Y</b> , over the image's height	dimension <b>Size X</b> or the image's width <b>Size Y</b> or the image's height
<b>Resample</b> This procedure minimizes defects (staircase effects) caused by resizing. It calculates the position and the color of the missing pixels.	coefficient <b>Variation X</b> , over the image's width <b>Variation Y</b> , over the image's height	dimension <b>Size X</b> or the image's width <b>Size Y</b> or the image's height
<b>Horizontal skew</b>	coefficient <b>Offset X</b>	distance <b>Offset X</b>
<b>Vertical skew</b>	coefficient <b>Offset Y</b>	distance <b>Offset Y</b>
<b>Rotation</b>	an <b>Angle</b> between 0° and 360°.	
<b>Vertical or horizontal mirror/flip</b>		



## Applying an effect in Bitmap Editor

 Check that the image has 16.7 million colors.

<p><b>Soften</b></p>	<ol style="list-style-type: none"> <li> Click in the Image palette to soften the image.</li> <li>Slide the pointer onto the zone to be smoothed out. The shade of the pixels is adapted to create a transition between two colors.</li> </ol>
<p><b>Sharpen</b></p>	<ol style="list-style-type: none"> <li> Click in the Image palette to sharpen the image.</li> <li>Slide the pointer onto the zone to be accentuated. The shade of the pixels is modified to increase the contrast between two colors.</li> </ol>
<p><b>Filters</b></p>	<ol style="list-style-type: none"> <li>Open the <b>Image filtering dialog box:</b>  click in the Image palette.</li> <li> Select an effect:                     <ul style="list-style-type: none"> <li><b>Embossing</b> Creates a relief effect</li> <li><b>Soften</b> Softens the image by creating transition shades between 2 colors</li> <li><b>Color pencil effect</b> Finds the contours</li> <li><b>Edge enhance</b> Enhances contours</li> <li><b>Sharpen</b> Sharpens the image by eliminating transition shades between 2 colors</li> <li><b>Laplace</b> Not yet documented.</li> </ul> </li> <li> Click to preview the result.   Click to change the result, and apply another effect.</li> <li> Click at the end of the procedure.</li> </ol>



## Colors



### Editing image colors



Setting the number of colors



Greyscale



Histogram



Halftone



Halftone with diffusion



Negative



Correction



## Setting the number of colors

### Increasing



This procedure increases the number of colors to 16.7 million. Execute this conversion to apply an effect to the image.

Select the **Convert into 32 bits** command in the **Conversion menu**.

### Reducing






Open the **Color reduction dialog box**:  click in the Image palette.  
**Reset** | Click to restore the initial colors.

#### Automatic reduction

1. Select the colors to be processed: key  depressed, click each color in the current **Palette** or in the image preview.
2. Process the colors selected:  
**Delete** | Click to delete them.  
**Fusion** | Click to merge them and generate a dominant color.
3. **Automatic reduction** | Click.
4.  Click.

#### Manual reduction

**Default values** | Click to restore the initial settings.

1. Open the **Options dialog box**: **Options** | click.
2.  Adjust the **Sensitivity** or tolerance in terms of color recognition.
3. Click box **Contour destruction**  
 to limit the color zone to its exact contour.  
 to extend the color zone to the neighboring pixels;  
 Set the **Sensitivity for contour destruction**.  
 Set the **Sensitivity of fusing areas** for the shades with the dominant color.
4. Click box to  deactivate or  activate the **Preprocessing**
  - **Suppression of anti-aliasing**: connect the transition shades between 2 colors to one of these colors.
  - **Noise suppression**: eliminate interference pixels
5.  Click.
6. **Reduce colors** | Click in the **Color reduction dialog box**: the number of colors is recalculated following implementation of the preceding settings.
7.  Click.



## Grayscale

### Conversion into grayscale

This procedure converts the number of colors to an equal number of grays.

### Reduction to 256 grayscale

This procedure reduces the number of colors to 256 grayscale.



Click in the Image palette.


Select the **Grayscale 8 bits** command in the **Conversion menu**.



## Histogram

This graphic shows the image's grayscale distribution. The vertical axis indicates the percentage of pixels for which the color matches a grayscale indicated on the horizontal axis. The functions relating to the histogram allow the image's brightness to be modified.

1. Convert the image into grayscale.


2.  Click in the Image palette.

3. Click the function that you want to apply.

<input checked="" type="radio"/> <b>Equalization</b>	This function modifies the color of the pixels so they can be redistributed equally between dark and light grayscale tones.
<input type="radio"/> <b>Specification</b>	This function allows a bitmap image to be opened which has a grayscale distribution that will be applied to the current image.
<input type="radio"/> <b>Stretching</b>	This function modifies the color of the pixels so that the image contains all the grayscale tones.

4. Click the **Histogram view** which you want to examine

- classic:** weight of each grayscale tone
- simultaneous:** total grayscale weight

5.  Click to display the result in the preview.

6.  Click.



## ◀ Halftones

### Halftone in black and white

This procedure converts the colors into black and white motifs.



Click in the Image palette.

### Halftone with diffusion

This procedure converts the colors into grayscale motifs.



1. Click in the Image palette.

2. Key in a number of gray tones **between 2 and 64**.



3. Click.



## **Negative**




Switching to a negative for an image or zone selected replaces each color with its opposite. The effect obtained is comparable to that of a photographic negative.



Click in the Image palette.



## Color correction

1. Open the **Correction of colors dialog box:**  click in the Image palette.
2. Click the tab for the correction function.
3. Key in the parameters for the correction function.
4.  Click to preview the result.
5.  Click.

### Brightness/Contrast

<b>Brightness</b>	Lightens/Darkens the image +100% = pure white -100% = pure black
<b>Contrast</b>	Increases/Decreases the variation in luminosity between light and dark zones.

### HSV

On-screen, a color may be defined from three components: Increases/Decreases

<b>H</b> (hue) between 0 and 100%	Shade of the color or gray Shifts all the colors up or down the red/green/blue range.
<b>S</b> (saturation) between 0 and 100%	Color's purity 0 = bright colors 100% = grayscale
<b>V</b> (luminance) between 0 and 100%	Brilliance of the color on a scale running from black to white 0 = pure black 100% = pure white

### RGB

On-screen, a color is reproduced from three primary colors: Increases/Decreases the level of

<b>R</b> between 0 and 100%	red
<b>G</b> between 0 and 100%	green
<b>B</b> between 0 and 100%	blue








## Mask












### Using a mask

The mask is a closed contour which is used to select a part of the image so it can be edited.





#### >> Creating a mask

-  with the magic wand
-  from a symbol
-  from a polygon
-  from a free-form shape
-  Delete the mask

#### >> Warping the mask










-  Move
-  Rotate
-  Horizontal alignment
-  Vertical alignment
-  Stretch horizontally
-  Stretch vertically
-  Vertical projection
-  Horizontal projection
-  Vertex

#### >> Editing the selection

-  Drawing the contour
-  Filling the selection
-  Filling outside the selection
-  Cropping the image



## Creating a mask

<p><b>Creating a polygonal mask</b></p>	<ol style="list-style-type: none"> <li> Click in the Mask palette.</li> <li>Click to mark the start of the shape.</li> <li>Slide the pointer onto the next point.</li> <li>Click to mark the point's position.</li> <li>Repeat steps 2 to 4 as many times as necessary.</li> <li><b>Right-click</b> to mark the end of the line.</li> </ol>
<p><b>Creating a free-form mask</b></p>	<ol style="list-style-type: none"> <li> Click in the Mask palette.</li> <li>Click the image.</li> </ol>
<p><b>Creating a mask with the magic wand</b></p>	<ol style="list-style-type: none"> <li> Click in the Mask palette.</li> <li>Click the color to be selected.</li> <li>Key in the selection parameters in the <b>Magic Wand dialog box:</b> <p><b>Preview</b>   Click to preview the mask.</p> <ol style="list-style-type: none"> <li>Click box to <input type="checkbox"/> deactivate or <input checked="" type="checkbox"/> activate the <b>Preprocessing</b> <ul style="list-style-type: none"> <li>• <b>Suppression of anti-aliasing:</b> connect the transition shades between 2 colors to one of these colors.</li> <li>• <b>Noise suppression:</b> eliminate interference pixels</li> </ul> </li> <li>In the <b>Parameters</b> zone,  adjust the <b>Sensitivity</b> or tolerance in terms of color recognition.           <p>Click box <b>Contour destruction</b></p> <input type="checkbox"/> to limit the color zone to its exact contour.  <input checked="" type="checkbox"/> to extend the color zone to the neighboring pixels.         </li> <li>Indicate if 1-pixel <b>thin contours</b> will be           <ul style="list-style-type: none"> <li><input checked="" type="radio"/> <b>Drawn</b> in the line of the mask</li> <li><input type="radio"/> <b>Ignored</b></li> </ul> </li> </ol> <p> Click.</p> </li> </ol>
<p><b>Choosing a mask from the collection</b></p> <p><b>Symbol library</b>   Click and open the <b>.hpg file under HPGL Vectors format you will use as a mask.</b></p>	<ol style="list-style-type: none"> <li> Click in the Mask palette.</li> <li>Double-click on a shape.       <p>If you select a polygon, key in the <b>Number of edges</b> and click </p> </li> <li>Slide the pointer onto the image to draw the mask.</li> <li>Release it when the mask attains the desired size and position.</li> </ol>
<p><b>Displaying/Hiding the mask</b></p>	<p> Click in the Mask palette.</p>
<p><b>Deleting the mask</b></p>	<p> Click in the Mask palette.</p>



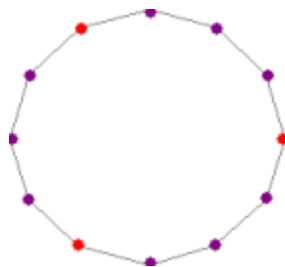
## ◀ Warping the mask

	Move	1. Create a mask.
	Rotate	2. Click a warping tool in the Mask palette.
	Horizontal alignment	3. Click the mask.
	Vertical alignment	4. Slide the pointer to warp the mask. Release it at the end of the procedure.
	Stretch horizontally	<b>i</b> You can move the mask using any tool in the Mask palette.
	Stretch vertically	
	Vertical projection	
	Horizontal projection	
	Vertex	

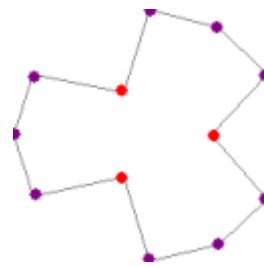
### Configuring Vertex tool

This tool is used to warp the mask from the points selected. It allows a star-shaped or cross-shaped mask to be created from a circle or polygon.

1. Create a mask.
2. Click in the Mask palette.
3. In the **Ngon mask dialog box**, key in
  - **every** in a series of points (in this case, 4)
  - the number of points to **Select** (in this case, 1)
  - **from point #** (number of the first point) **to point #** (number of the last point)
4. Validate.
5. Click the mask's contour.
6. Slide the pointer to warp the mask.



Selection



Warping



## Editing the mask selection


Create a mask.

### Cropping the image



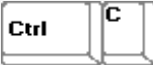
Click in the Mask palette: the selection using the mask becomes the current image.

### Copying/Pasting

1. Copy the selection:  use the keyboard shortcut.
2. Move the mask to the spot where you want to duplicate the selection.

3. Paste the selection in the mask:  use the keyboard shortcut.

### Cutting/Pasting

1. Cut the selection:  use the keyboard shortcut.
2. Move the mask to the spot where you want to move the selection.

3. Paste the selection in the mask:  use the keyboard shortcut.

### Painting

1. Select the active color.
2. Click the tool in the Image palette:



**Drawing the contour with the brush**



**Filling the selection**



**Filling outside the selection**





## Create Task objects

### Creating Task objects

In the Tasks palette or in the Modify/Tasks menu, click the tool for the object to be created.



**Constructing dials**

The Dials option allows linear, circular or free-form graduations to be produced.



**Placing drilling points**

This function enables guides to be placed in the composition so that fastening holes can be drilled.



**Defining Text variables**

Using variables simultaneously allows a series of identical plates to be created and allows text entry for all of these plates to be automated.



**Producing a Matrix series**

The Matrix function allows a series of identical small plates to be engraved on a single large plate. The composition is used as a model to create the series of plates.



**Optimizing cutting in advanced mode**

This option distributes the objects to be cut in accordance with parameters set by the user.



**Optimizing cutting in automatic mode**

This option distributes objects to be cut within the composition so that losses of material can be reduced.



**Writing in Level 2 Braille**

This option allows a word to be typed and translated into its Braille equivalent in accordance with American A.D.A. standards.



**Producing a bar code**

This option allows text to be typed and transcribed into bar codes.





**Producing a ridge**


This option generates a surface from a contour.



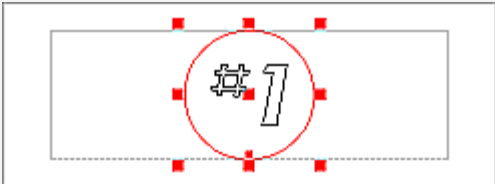
## Placing drilling points

-  Open the **Drilling dialog box:**  click in the Tasks palette.
- Click the drilling **zone:**

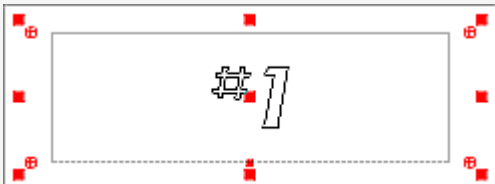
**On material**



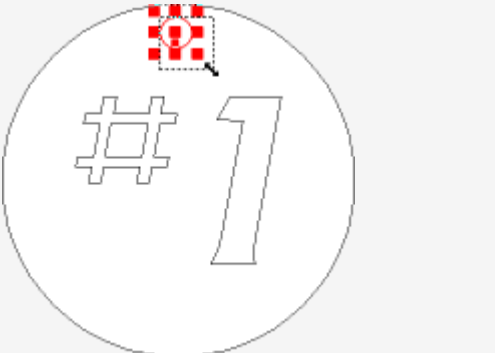
**On selection** G5

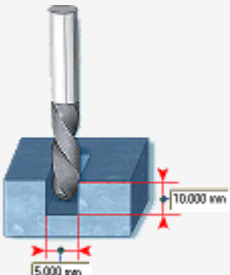

- Click the drilling **type:**

**Standard drilling**



**resizable Circles to be cut**


- Key in the drilling **depth and width.**

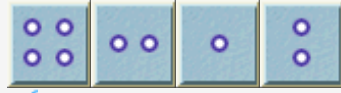


5. **Place** the drilling points:

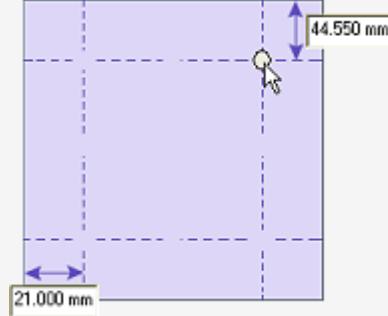
**Preset layout**

a. Add or delete the points of your choice:

✓ Click a type of point.



✓ Click in the preview.



b. Key in the **distance** from drilling points to

- top and bottom edges of the composition (by default, equal to top margin).
- left and right edges (by default, equal to left margin).



c. Click.

**Free setting**



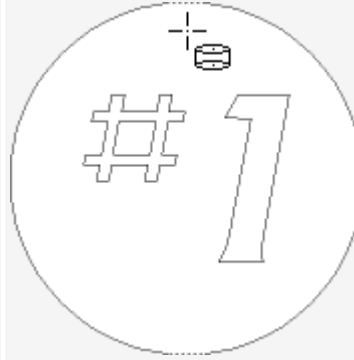
a. Click.

b. Position the drilling point:

✓ Click in the composition.



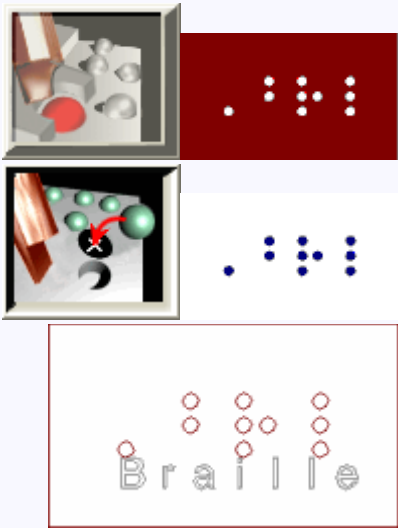
✓ Key in its XY coordinates.





## ⠠⠠⠠ Writing in Level 2 Braille Option

### Creating a Braille object

The set height for Braille text is 18 points, or approximately 8.5 mm. The text will be machined, hollowed out or in relief, in accordance with a predefined tool path.



1.  Open the **Level 2 Braille dialog box:**  click in the Tasks palette.
2. A message asks whether manual mode should be activated:  click.
3.  Designate the Braille standard in relation to your geographic zone.
4. Type the text in the editor.
5. Click the engraving path:

### Raised engraving with tool #9

The frame delimits the surface area to be hollowed out. The cell points are machined as smooth domes on the material's surface.

### Indented engraving with tool #8

The cell points are drilled. Fiberglass beads are embedded in the points to form the text's relief.


6.  Click. You will obtain a complex object. The original text is displayed as an indication only.
7. Display engraving paths.

### Transcribing text in Level 2 Braille

1. Select the text. Even if you only select one line in a paragraph, all the lines will be converted into Braille.
2. Execute the [Creating a Braille object procedure](#). The text selected is displayed in the editor in the Level 2 Braille dialog box.

To retain standard text, click box  **Keep the original text.**

### Reestablishing the original text

1. Double-click on the Braille object.
2. **Right-click** in the editor of the **Level 2 Braille dialog box**.
3. In the contextual menu, click **Select All**.
4. **Right-click** in the text editor.
5. In the contextual menu, click **Copy**.
6.  Click.
7. Paste the text:  click in the main toolbar.





## Producing a ridge

 Function

Create a closed contour around a contour.

- Ridge an open contour, you will obtain a closed contour which follows the same line.
- Ridge a closed contour, you will obtain a curve object consisting of two closed contours.

Then you can engrave surfaces obtained from


- text typed a 1 line-Gravograph font
- single lines drawing

 **The text is automatically converted into curves.**

**Object: Text typed with the Gravograph-New Hermes AVANT GARDE 1L filar font.**




**Cutter: the surface of the characters can be engraved.**


1.  Click the object to select it.

2. Open the **Ridge dialogue box:**  click in the Tasks palette.

3. To keep the object intact, click box  **Keep current curves.**

4.  Click the type of line angle.

5.  Enter the distance of each of the surface's edges in relation to the contour line.

6.  Click the type of angle at the ends.

7.  Click.



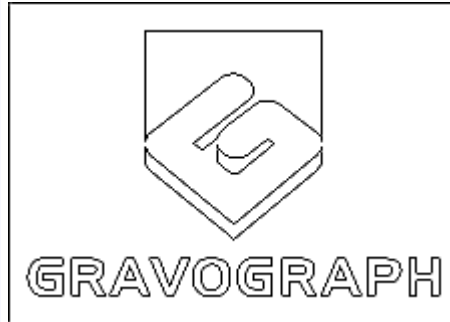


## Automatic material optimization


 Option

Reduce material scrap by setting pieces to be cut over a defined area.

Run an automatic optimization to distribute objects from the bottom left corner of the composition, using 10°-rotation with a fixed spacing of 0.5 mm.



1. Convert the text into curves: optimization is applied only to curved objects.
2. Select the objects to be cut.

3.  Click in the Tasks palette.





## Advanced material optimization



Distribute the objects to be cut in defined area using your optimization settings:

- optimisation surface (composition or selected shape)
- object orientation (rotation, symmetry, embedding, spacing)



1. Convert the text into curves: optimization is applied only to curved objects.
2. Decide what the optimization surface will be:
3. Open the **Material Optimization dialog**

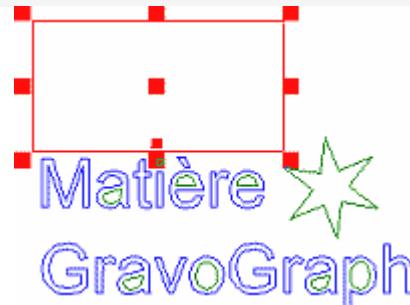


**box:** click in the Tasks palette.

- Optimization is performed **in the composition**: select the objects to be optimized.

- Optimization is performed within a **predefined surface area**:

- a. **Draw the closed contour** that defines the optimization area.
- b. Select this area, then the objects to be optimized.



Here, the rectangle is the optimization area containing the characters converted to curves, and a star.

4. Click the **optimization surface**:



### On material (by default)

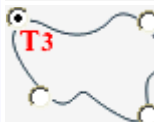
The objects are distributed within the surface area delimited by the composition's margins.



### On first contour selected

The objects are distributed within the closed contour you drawn.

5. Click the **optimization origin**:



Optimisation starts by default in the **top left corner of the selected surface**.

6. Click the **distribution direction in the optimization surface:**



**Horizontal distribution (by default)**



**Vertical distribution**

7. Click the **optimization options:**



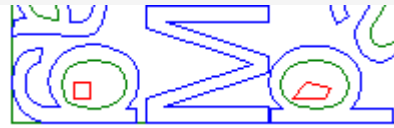
**Mirror**

Using symmetry, an object may be turned around or reversed within the optimization surface.



**In-hole**

Small objects may be placed into non-engraved areas, inside larger objects.



The top part of an accented or punctuated character (letters i, è) may be embedded in another character (letters g, p).

8. Click the **type of rotation:**



**Free (by default)**

Each object pivots according to an ideal angle for occupying the optimization surface.



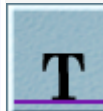
**Step angle: key in the angle.**

With an interval of 5°, objects pivot according to an angle taken from the series 0°, 5°, 10°, 15°, 20° up to 360°.



**Angle list**

Key in one or more imposed **Angles** by separating two values using the (;) character.



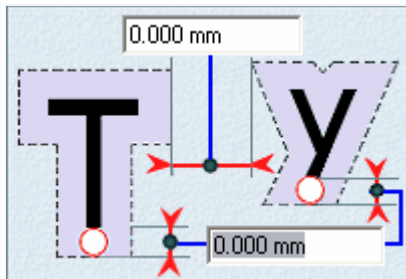
**None**

Each object retains its original orientation.

9. Set the **space between two objects:**

10.  Set the **Resolution between 0.1 and 0.6**, for **fine or fast** optimization.

11.  Click.

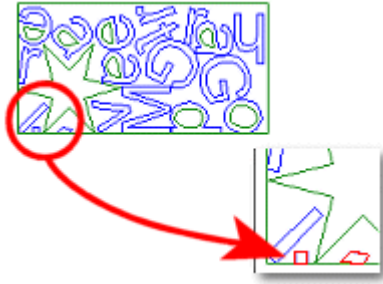


a. Key in the **tool diameter**.

b. Key in the **clearance**, or distance between 2 cuttings.



To perform a different optimisation, keep objects selected and edit settings in Material Optimization dialog box.



Accented or punctuated characters (i, è) are partially ungrouped so that the whole optimization surface may be filled.



If the optimization surface is insufficient, several objects will be rejected.

Either define more efficient optimization or **resize the optimization surface**.






## Dials



Option for ALL levels

### Producing a dial

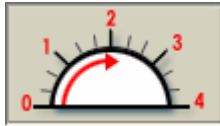
>> For a free-form scale

- a. Draw the shape that is going to be used as the scale support.
- b.  Click the shape to select it.
1.  Open the **Dials Wizard dialog box:**  click in the Tasks palette. The preview allows you to view the object's construction. Click in to update the preview.
2. **Set the properties of the scale support.**
3. **Configure the scaling marks.**
4. **Set the dial's engraving properties.**
5. **If needed, key in the dial's text.**
6. **Finish** Click to generate the Dial object.
7. Display engraving paths.



## ◀ Properties of the scale support

1. Go to **step 1** in the Dials Wizard.
2. Enter the parameters for the **Support and the Scaling mode chosen (free shape, line or circle)**.
3. Click the **direction of the support**, which determines the start point's and the scale direction.



clockwise (default direction)



counterclockwise

4.  **Click to configure the scaling marks.**



**Free shape (unavailable when no selection)**

This support is enabled if you select the shape before creating the dial.



- a. Enter the **parameters** for the **Scaling mode authorized**:
  - **Distance between 2 strokes**
  - **Number of strokes**



- b. Move on to **step 4**.



**Line (default support)**

- a. Key in the XY coordinates for the line's **Origin**.
- b. Key in the line's slant **Angle**.
- c. Click a **Scaling mode**.
- d. Key in the **parameters** in relation to the mode chosen:

Mode	Parameters keyed in	Parameter auto-calculated (in red)
	<b>Distance between 2 strokes</b> <b>Number of strokes</b>	 <b>Support length</b>
	<b>Distance between 2 strokes</b> <b>Support length</b>	 <b>Number of strokes</b>
	<b>Support length</b> <b>Number of strokes</b>	 <b>Distance between 2 strokes</b>



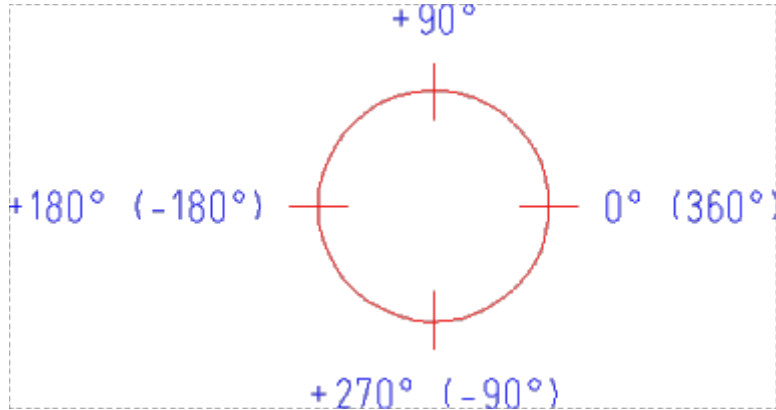
**Circle**

- Key in the XY coordinates for the arc's **Centre** (default is the composition's lower left corner).
- Key in the arc' **Radius**.
- Click a **Scaling mode**.
- Key in the **parameters** in relation to the mode chosen:


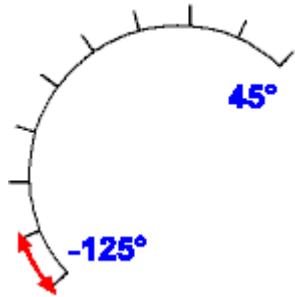

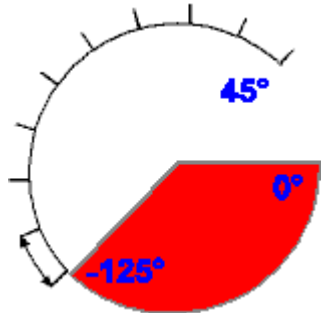
The arc begins on the start angle and finishes on the end angle, which determine the aperture and the length of the arc.

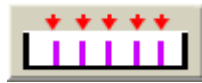
The default support is a semi-circle: the start angle is 0, the end angle is 180°.

Use the trigonometry guide opposite to enter the start and end angles.

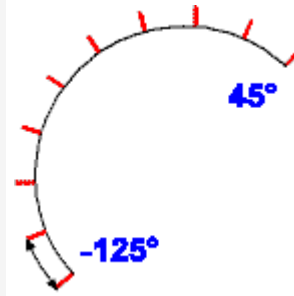


**i** To have a circle, enter equal angles.

	Mode	Parameters keyed in	Parameter auto-calculated (in red)
			Clockwise Arc with <ul style="list-style-type: none"> <li>starting angle of +45°</li> <li>end angle of +225° (or -125°)</li> </ul>
		Start angle End angle Number of strokes	 <p>Distance between 2 strokes</p>
		Start angle Distance between 2 strokes Number of strokes	 <p>End angle</p>



**Start angle**  
**End angle**  
**Distance between 2 strokes**

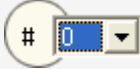


Number of strokes





## Properties of the scaling marks

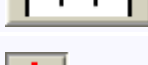
- Go to **step 2** in the Dials Wizard.
- Define the **properties for each set of marks**:

**a.**  Select the **number #** of the set.


**b.** Click the **Position** on the support:



**outside (by default)**



**centred**



**inside**

**c.** Click the **Profile**:



**linear (by default)**



**triangular**


**flat**


**rectangular**

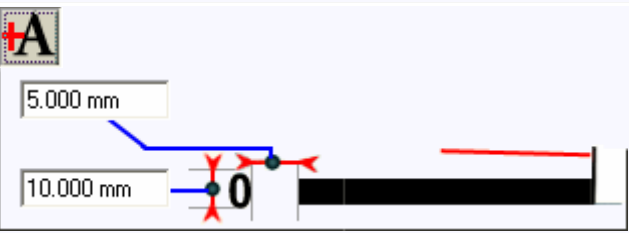
**d.** Key in the **Scale Height and Width** (except for linear marks).



**e.**  Click to **add text** to the set of marks.

**f.** Key in the **Text height**.

**g.** Key in the **Text/Scale Space**.





**Repeat this procedure for each set of marks (10 maximum).**

- Enter the **Sequence** of marks which make up the scale: type in order the number # of each set.



**Linear dial with 11 strokes, built from 2 sets of marks according to sequence 001**


Set	Profile	Position	Height	Width
#0			5 mm	—
#1			4 mm	2 mm

- Next>** Click to define the dial's engraving properties.

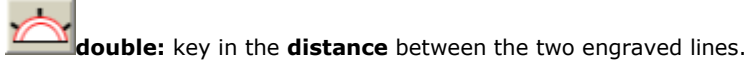




## ◀ Dial engraving properties

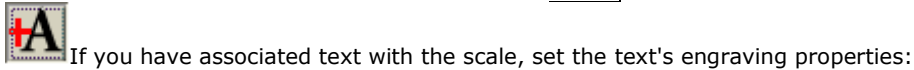
1. Go to **step 3** in the Dials Wizard.

2.  Enter the **Toolpath**.

3.  Click **Underline** to machine the scale support:



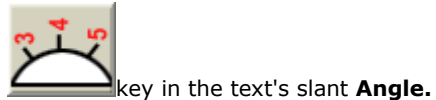
4.  If there is no text, click to generate the dial 




- a.  Click the **text's alignment** in relation to the scale:



- b.  Click the **text's orientation** in relation to each scaling mark:



- c.  Select the **font** that will be used to display the text.

- d.  Select the **toolpath** that will engrave the text.

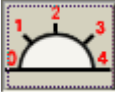


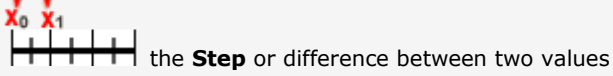




- e.  **Click to input the scale text.**



## ◀ Dial text

1. Go to **step 4** in the Dials Wizard.
2. Provide the text you want to associate with the scale.
3. **Finish** Click to generate the dial.

- i** The text is displayed over the graduation depending on
- the support's direction (clockwise or counterclockwise)
  - the engraving properties (alignment and orientation)

 <p><b>Automatic numbering</b></p>	 <p>a. Click to generate a logical series of numbers.</p> <p>b. Key in</p>    <p>c. Click box</p> <p><input checked="" type="checkbox"/> <b>Numbering each stroke</b> to number all the scaling marks, even if no text is associated with them: numbers are not displayed for <b>marks which do not accept text</b>.</p> <p><input checked="" type="checkbox"/> <b>Delete non-significant zero</b> to eliminate superfluous decimals.</p>
 <p><b>Text variables</b></p> <p><b>!</b> Add usable variables before associating them with a dial.</p>	 <p>a. Click to load an existing text variable.</p> <p>b. <input type="checkbox"/> Select a <b>list of names</b> or an <b>incrementation</b>.</p> <p>Each value in the variable (number or line of text) is attached to a scaling mark.</p>
 <p><b>No text</b></p>	<p>Click to pull up each button.</p>



## Text variables


### Using text variables

Using text variables enables you to simultaneously create a series of identical plates and to automate text entry for all of these plates.

1. Produce the composition which is used as a model for the series of plates. The plates share the parameters and the text of the master plate.

2.  Open the **Variables dialog box:**  click in the Tasks palette.

3. **Add the text variables.**

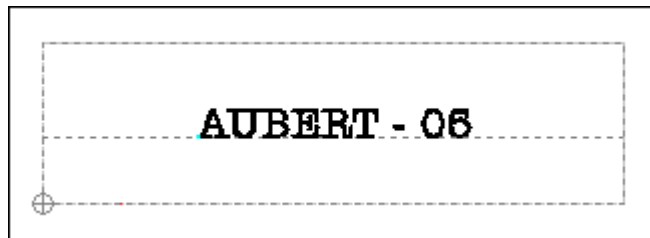
4.  Save these variables.

5. **Insert the variables created in the text.**

To engrave a set of plates for apartment doors, you create:

- a **list of names** that contains the name of each occupant in an apartment.
- an **incrementation** that corresponds to the numbering of the apartments.

After inserting the two variables in the master plate's text, each plate in the series will display a name extracted from the list of names and an apartment number produced using the incrementation.



## Creating a list of names

This variable is a list of values relating to the same subject and is typed as a series of lines of text.

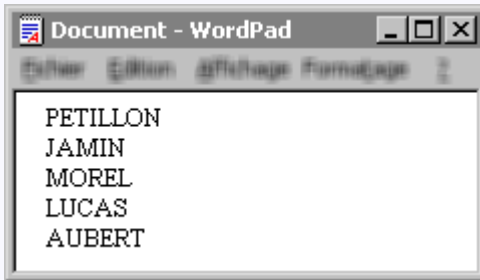
### Creating a list of names in the variables table

	Nom	Apt
1	PETILLON	01
2	JAMIN	02
3	MOREL	03
4	LUCAS	04
5	AUBERT	05
6		06
7		07
8		08
9		09
10		10

1. Add the variable.
2. In each cell in the column, type a value to be inserted in each plate.

**Opposite, Name variable is a names list which groups 5 apartment occupants.**

### Extracting a list of names from a text file




1. Create the text file:
  - a. Open the WordPad text editor.
  - b. Type a value. If you group several lists of names (for example, names and ages), type a value for each list, typing a space between two values to separate them.
  - c. Type the lines separator: input a line break (or carriage return).
  - d. Repeat steps a and b until you have entered the final piece of data in the list. Do not key in a line break at the end of the text.
  - e. Save the text as a .txt file.
  - f. Click to exit WordPad.
2. Click in the Variables dialog box and import the .txt file.
3. A message will ask if you want the list of names to be extracted automatically.

**You request automatic extraction:**



Click. The list of names will be added to the variables table.

**You want to perform manual extraction:**

 **Manual extraction is recommended if the file combines several lists of names.**

 Click. The text is displayed in the **View file** zone.

4. In the **Extraction mode** zone, key in the **Starting line** where the extraction will begin. Each line of values is preceded by a row number.

5. Tick the values extraction mode. Click:

**Separator**

The values are extracted column by column. Each column, which is delimited by a separator character, corresponds to a new list of names.



Click a **Column separator** character.




Click a **Line separator** character.


**Constant width**

The values are extracted line by line. Each line is limited by a number of characters which you define.

Key in the number of characters in the **Column format** box.  
If the lines have different widths, key in the number of characters for each line, separated by a comma.

6.  Click to view the values extracted in the **Extraction preview**.







7.  Click. Each list of names is added to the variables table.




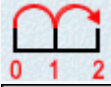


## Creating an incrementation

This variable is a logical series of numbers calculated based on its first and last numbers, and its step, which determines the difference between two consecutive numbers.


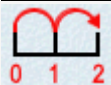
1. Add the variable.
2. Open the **Series dialog box**:  click.
3. Click the **Incrementation format**:

	<b>Numeric</b> (default setting): series of numbers Pull up buttons <b>Alphabetical</b> and <b>Alphanumeric</b> .
	
	<b>Alphabetical</b> : series of letters
	<b>Alphanumeric</b> : series of numbers consisting of letters and figures (useful for generating serial numbers)



4. Key in the incrementation **parameters**:  
❗ **If you do not follow each procedure, the Start and End numbers will automatically be reversed.**

	<b>Start</b> value
	<b>Step</b>
	<b>End</b> value <b>or</b> <b>Number</b> of numbers (click the parameter used)
	

### Generating increasing incrementation

	Key in an <b>End</b> value higher than the <b>Start</b> value.
	Key in a positive <b>Step</b> .

### Generating decreasing incrementation

	Key in an <b>End</b> value lower than the <b>Start</b> value.
	Key in a negative <b>Step</b> .

5. Key in the incrementation **options**:

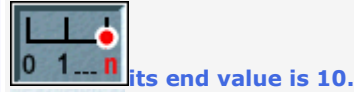
**Setting a fixed number of figures per number**

	Nom	Apt
1	PETILLON	01
2	JAMIN	02
3	MOREL	03
4	LUCAS	04
5	AUBERT	05
6		06
7		07
8		08
9		09
10		10

a.  Click box **Constant number of digits** in the Series dialog box.

b. **###.##** Type a character # per figure in the **Format** box.

**Opposite, Apt variable is a numeric incrementation:**



**###.##** each number has 2 characters (##).

**Inserting text**

Type the text **###ABC** before or **ABC###** after each value.

6.  Click to check the list of numbers:

**Example with a numeric incrementation**



The incrementation stops on the last multiple preceding the **End** value, if this is not a multiple of the **Step**.

18	25	2	18, 20, 22, 24
----	----	---	----------------

The incrementation stops on the **Start** value if the **Step** is greater than the difference between the Start and **End** values.

18	19	2	18
----	----	---	----



7. Click. The variable column is filled in with the list of numbers.

**Editing the incrementation**

1. **Right-click** its name in the first row of the variables table.
2. Click the **Series** command in the contextual menu.



## ◀ Managing text variables

Open the Variables dialog box: place the pointer on the variables table.

### 🔍 Variables

The first row of the table displays the name of the variables ready for insertion in the master plate's text: each column contains values for the variable.

#### Adding

The values for the new variable will fill the corresponding column in the variables table.

1. **Right-click.**
2. Click the **Add a variable** command in the contextual menu. A blank column is displayed in the variables table.
3. Type the name of the variable (VAR is the default name). Validate.
4. Create a **list of names** or **incrementation**.

#### Deleting

The column selected will disappear from the variables table.


1. **Right-click** the name of the variable to be deleted.
2. Click the **Delete a variable** command in the contextual menu.

#### Renaming

1. **Right-click** the name of the variable to be renamed.
2. Click the **Rename a variable** command in the contextual menu.
3. Type the new name for the variable. Validate.

## Values





The first column in the table will display the number of plates in the series: each row contains values that may appear in the text of one plate from the series.

<p><b>Editing a value</b></p>	<ol style="list-style-type: none"> <li>1. Double-click on the value's cell.</li> <li>2. Type the new value.</li> </ol>
<p><b>Selecting a value</b></p>	<p>Click the cell containing the value.</p>
<p><b>Selecting a series of values</b></p> <p>The selection can spread across several columns and over several rows.</p>	<p>Slide the pointer from the first cell to the last cell.</p>
<p><b>Selecting a row of values</b></p>	<p>Click the row number.</p>
<p><b>Deleting</b></p>	<ol style="list-style-type: none"> <li>1. Select one or more values.</li> <li>2. <b>Right-click.</b></li> <li>3. Click the <b>Delete</b> command in the contextual menu.</li> </ol> <p>or</p>  <ol style="list-style-type: none"> <li>2. Press the key.</li> </ol>
<p><b>Duplicating</b></p> <p>Duplicating a row of values allows several series of identical plates to be produced simultaneously</p> <p>To view the number of copies per row duplicated, click box <input checked="" type="checkbox"/> <b>Resume.</b></p>	<ol style="list-style-type: none"> <li>1. Select one or more values.</li> <li>2. <b>Right-click.</b></li> <li>3. Click the <b>Copy</b> command in the contextual menu.</li> <li>4. Click the cell from which the selection will be duplicated.</li> <li>5. <b>Right-click.</b></li> <li>6. Click the <b>Paste</b> command in the contextual menu.</li> </ol>
<p><b>Moving</b></p>	<ol style="list-style-type: none"> <li>1. Select one or more values.</li> <li>2. <b>Right-click.</b></li> <li>3. Click the <b>Cut</b> command in the contextual menu.</li> <li>4. Click the cell from which the selection will be inserted.</li> <li>5. <b>Right-click.</b></li> <li>6. Click the <b>Paste</b> command in the contextual menu.</li> </ol>




## ◀ Inserting a variable in the text

### Inserting in the text

1. Add the variables.
2.  In the master plate's text, click the spot where you want to insert a variable.
3. Define the variable's attributes.
4.  Click in the Tasks palette.
5. Click the name of a variable (incrementation or list of names).
6.  Click: the name of the variable is displayed between brackets ||
7.  In the **Show state** list in the Variables dialog box, click the number of the plate to be displayed (0 for the master plate): the name of each variable is replaced by the value associated with the plate displayed.

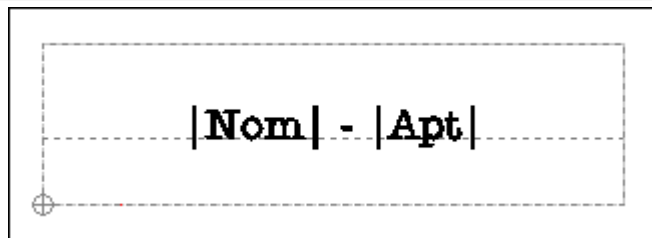
### Deleting a variable inserted in the text

The variable's values will no longer be featured in the series text, but the variable will still be in the variables table.

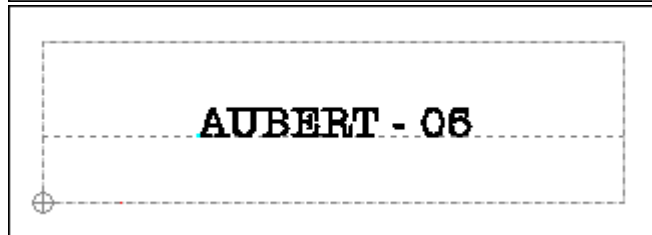
1. Display the master plate. Double-click on the plate displayed.
2. Select the name of the variable and the brackets || around it.
3.  Press the key.

The composition opposite is used as a master plate. The text contains

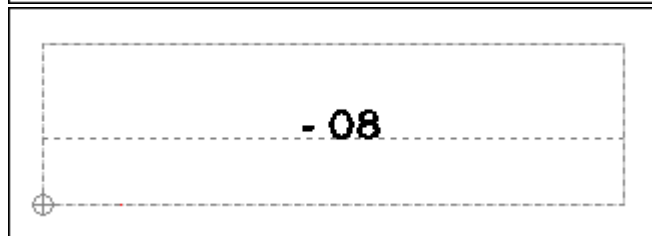
- the list of names |Nom|
- the incrementation |Apt|
- fixed text " - " separating the two variables



Here, plate 6 is displayed.



If a variable does not contain a value associated with the plate displayed, the zone that is reserved for it will remain blank.





## Matrix Series



### Producing a Matrix Series

The Matrix function allows a series of identical elementary plates to be engraved on one or more support plates.

1. Produce the composition, which is used as a master plate for producing the Matrix series. The elementary plates share the master plate's parameters and text.
2. **Configure the master plate** in Material dialog box. **Info zone** displays the **Maximum number of plates** in the engraving area in relation to the **dimensions** and the **orientation** of the master plate (0°, 180° or 90°).
3. If needed, **insert an incrementation or a list of names in the text.**  
Using a variable lets you automate the numbering or the text typing over the plates series.

4.  Open the Matrix dialog box:  click in the Tasks palette.



If you clicked a **90°-orientation**, you will be asked if you want to apply this parameter immediately.

Yes Click: elementary plates are correctly rotated in Matrix preview.

5. **Distribute the elementary plates over each support plate.**  
You can choose a distribution in either static mode or dynamic mode, depending on whether you want to edit the text for certain plates or the distribution of all the plates.
6. **Set the cutting parameters for the elementary plates.**
7. **Generate the plates in the series.**

Plates are displayed using the active engraving orientation. No need to set their orientation when you will the engraving properties.



The composition below illustrates each stage of configuration in Matrix mode on an IS200 machine (225x80 mm).

This master plate with dimensions of 30 x 10 mm contains the text of the incrementation |NUM1|. This variable automatically numbers the plates in the series.



## ◀ Distributing elementary plates for a Matrix series

The preview in the Matrix dialog box displays the distribution and the orientation of the elementary plates on each support plate.

You will view

- the size of a support plate (dark grid), by default equal to the dimensions of the active engraving area.
- the final number of elementary plates needed (white rectangles), between 1 and the maximum number of elementary plates.

After setting the **distribution parameters**, you will

» **Set the cutting parameters for the elementary plates**

» **Generate the plates in the series**

1. Activate the **distribution mode** for the elementary plates: click box **Dynamic Matrix**, depending on whether you want a static or dynamic distribution.

**Dynamic Matrix: dynamic distribution** (by default)  
Select dynamic mode to produce a series with over 500 identical plates. You can change the distribution of the elementary plates at any time, but the text remains fixed. It displays a single support plate for quickly checking the series on-screen.

**Dynamic Matrix: static distribution**  
It is preferable to select static mode if you are producing a small series of plates, some of which have to be customized. Although the distribution of the plates remains fixed, you can change the text, size or position of an elementary plate independent of the other plates. Static mode displays all of the support plates, which can slow down display of the series of plates.

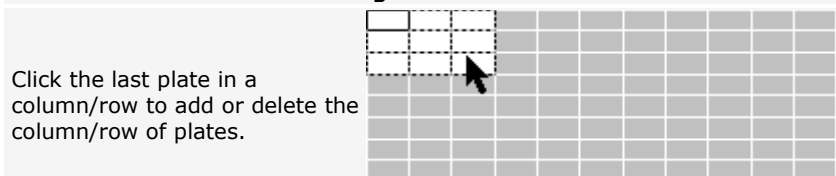
2. Key in the **dimensions of a support plate**:



3. Set the **number of elementary plates per support plate**:



**If you key in a higher number per row or column, the maximum number of plates is retained.**



Click the last plate in a column/row to add or delete the column/row of plates.

or

- Key in **Nb. X** at most equal to the number of plates per row displayed in the preview.
- Key in **Nb. Y** at most equal to the number of plates per column displayed in the preview.

4. Key in **Nb. of Layers** or number of support plates.

Upon machining, the machine is commanded to pause so the support plate can be changed.

**1** **To delete the current series, key in a number equal to 1 in the Nb. X, Nb. Y and Nb. Layers boxes.**

5. Select the **type of distribution** for elementary plates in the **Optimization** zone:

Click  **Yes** for standard distribution.



Click  **No** to choose a distribution. Click the **Presentation** required:



from top to bottom, left to right (by default)



from top to bottom, right to left



from bottom to top, left to right



from bottom to top, right to left

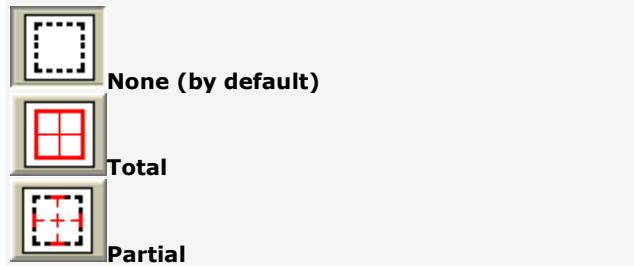


## ◀ Cutting elementary plates for a Matrix series

1. **Define the distribution of the elementary plates on each support plate.**
2. In the Matrix dialog box, set the **cutting parameters**, that will change the distribution of elementary plates.
3. **Generate the plates in the series.**

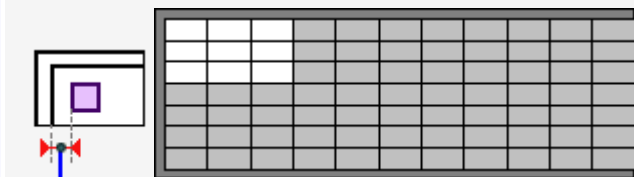
a. Click the type of **Cutting Axes**.

b.  Click a **Tool** path for a **total or partial cutting**.

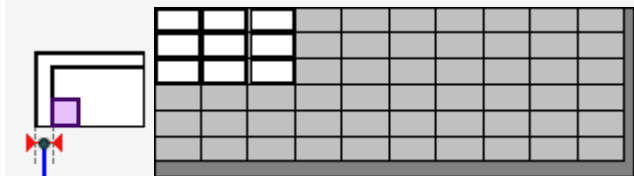


c. Key in the **Border** to offset the elementary plates in relation to the top and left edges of the support plate.

This makes it possible to avoid having the cutting tool cut the accessory that holds the support plate (in particular a clamping table).

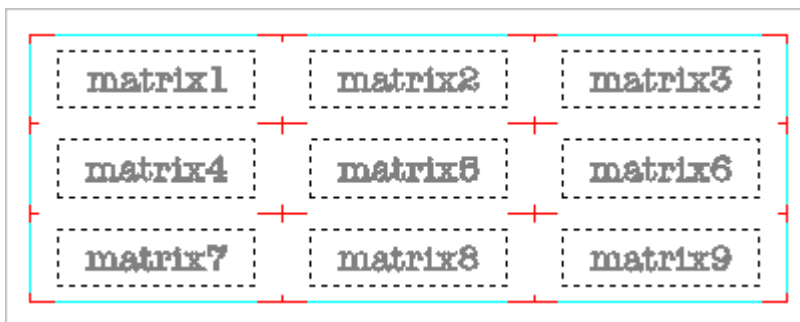


d. Key in the **Space between plates** so that the cutting tool can pass through.



**If the cutting parameters increase the support plate's surface area and make it larger than the active engraving area, the Matrix distribution will be corrected:**

- the number of elementary plates per support plate is reduced.
- the number of support plates is increased so it equals the total number of elementary plates.



Partial cutting with a border and spacing between the plates



## Generating the plates for a Matrix series

Display engraving paths.

### >> Static series



**To edit the Matrix parameters, immediately cancel the creation of the series.**

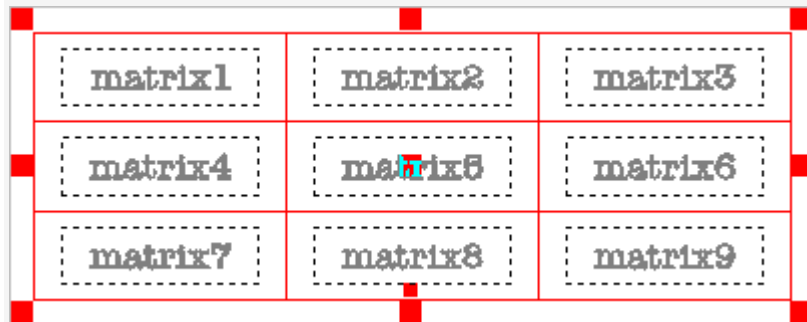


**Click in the main toolbar until the master plate is displayed again.**

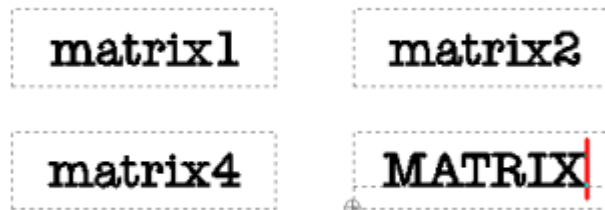
1. Set the **distribution** and the **cutting** for the elementary plates in the **Matrix dialog box**.



2. Click: a number of layers equal to the number of support plates is created in the work area.
3. In the **Layer bar**, click the layer for the support plate to be displayed. This contains
  - a Text object for each elementary plate.
  - possibly, a complex object grouping the cutting axes.



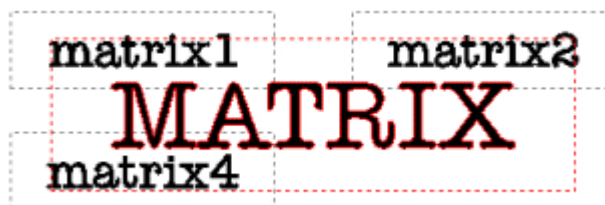
Click the appropriate Text object to edit the text for an elementary plate.



Click the appropriate Text object to manipulate an elementary plate (delete, move, resize, etc).



**This kind of operation alter the distribution of the elementary plates in the support plate displayed.**



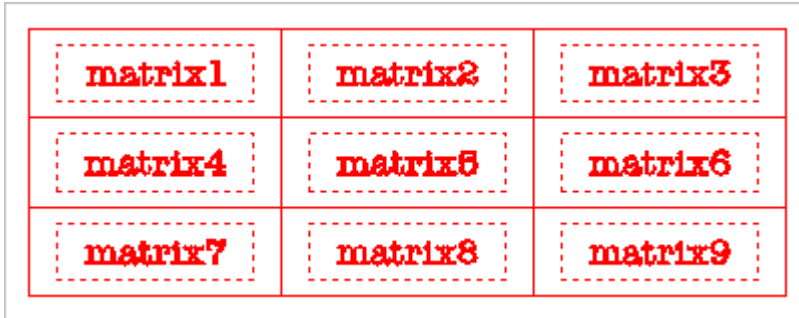
>> **Dynamic series**

1. Set the **distribution** and the **cutting** for the elementary plates in the **Matrix dialog box**.
2. Key in the support plate's **number** in the **Layer View** box.



3. Click: the support plate contains a complex object that groups together the text of the elementary plates and possible cutting axes.

Double-click on this object to edit its properties. The text remains fixed for the whole series.



- i** View the whole series of plates in the engraving preview: the numbered support plates are displayed in the order in which they are engraved.





## Bar Code



### Producing a Bar Code



This option allows text to be typed and transcribed for bar codes.

1.  Open the **Bar Codes dialog box:**  click in the Tasks palette.
2. Set the **bar code's properties.**
3. Set the **code's advanced parameters.**
4. **Type the text** to be transcribed in the bar code.
5. **Finish** Click: you will obtain a complex object. Double-click on the object to edit its properties.
6. Display engraving paths.



## ◀ Setting code properties

1.  In the Bar Code/Choice of standard dialog box, click the **Code**.  
Note that certain codes require a **Required nb of characters** in the text to be coded.
2. Key in the **position or XY** coordinates of the object's origin.  
The object's origin is its bottom left-hand corner. The default setting matches the work area's origin (coordinates 0,0).
3.  Click the code's **Orientation**.
4.  Assign the **Color** for the bar filling.  
 Tick option **Invert Color** to obtain raised bars by hollowing the external surface area.
5. To see the start and end of the code, click box  **Margin Indicator**.  
If box  **Show text** is ticked in the **Advanced parameters dialog box**, the characters <> are displayed for indicative purposes under the bar code.
6.  Click.



## ◀ Setting bar parameters

1. In the **Advanced Parameters dialog box**, set the parameters associated with the code selected:

<b>Size Y</b>	Bar height
<b>Min. bar width (1mm is default)</b>	Proportional variation of bar width and space interleave
<b>Space interleave (0 is default)</b>	Automatic interval between bars

2. Click box  **Show text** to display the following under the bar code for indicative purposes:
  - the margins indicators.
  - the text and the optional characters.
 Key in **Text Height** (12 pixels is default).
3.  Click.

### ⦿ DataMatrix parameters

<b>Min. bar width</b>	Size
<input checked="" type="checkbox"/> <b>Square</b>	Tick the box to generate squared or rectangular symbols.
<b>Security level</b>	Key in a value adapted to the symbol shape.



## ◀ Keying in bar code text

1. Key in the text to be coded in the **Code** zone of the **(Code name) Advanced Norme dialog box:**

- ✓ Type the text.
- ✓ Use a text variable.

2.  Click the related box to add the optional characters (checksum, space, asterisk, etc.).  
If box  **Show text** is ticked in the **Advanced parameters dialog box**, some characters are displayed for indicative purposes under the bar code.

3. **Finish** Click.

**Finish** The button will not be available, if the text does not comply with the **entry instructions and the number of required characters** set by the code selected. Make the corrections required to create the object.

### Using a Text variable

---

This text entry mode allows you to code a series of serial numbers generated from an **incrementation** or from a **names list**.



**Add the usable variable prior to transcribing it into a bar code.**

- a. Click box  **Use text variable:** you will no longer be able to type text in the **Code** zone.
- b.  Select a variable: its name is displayed in the **Code** zone. If you have not added the variable to be coded, select the default variable, called CODEB1.  
**Add this variable** which is automatically displayed in the variables table.
- c. **Verify** Click to check that each value complies with the bar code standards (letters or numbers supported, uppercase or lowercase, number of characters required, etc.).  
The report in the **Verify norm dialog box** lists the wrong values overall the values of the variable.  
Edit these values in the variables table according to norm specifications described at the top of the report.



## Engrave the composition



# Engraving the composition with an IS machine

<b>&gt;&gt; Assigning a toolpath to an object</b>	Decide which process is to be used for engraving an object by associating it with a tool.
<b>&gt;&gt; Defining the engraving properties</b>	Set the mechanical parameters involved in the physical execution of the engraving.
<b>&gt;&gt; Advanced engraving management</b>	Create and assign professional tool paths to curve objects.
<b>&gt;&gt; Tool Database</b>	This library references each tool available for engraving, as well as its physical and mechanical properties.
<b>&gt;&gt; Engraving preview</b>	View the composition in the engraving area and examine the engraving paths assigned to the objects selected.
<b>&gt;&gt; Engraving on a long plate</b>	This option allows a composition with a surface area that exceeds the area of the machine to be configured.
<b>&gt;&gt; Engraving on a cylinder</b>	The Cylinder Engraving mode allows a composition intended for engraving on a cylinder to be configured.
<b>&gt;&gt; Wysiwyre 2D render</b>	Simulate the engraving of the composition in the material of your choice.
<b>&gt;&gt; Transferring for engraving</b>	Transfer the composition data from the computer to the engraving machine.





## Engraving path



### Assigning an engraving path to an object



#### Assigning a tool path



1. Open the **Machining tools palette**:  click in the toolbox.  
 Each color corresponds to a path.
2. Define the properties of each path.
3. Display engraving paths.
4. **Group contours by engraving surfaces.**
5. **Select an object** or select text.
6. Double-click a color in the Machining tools palette. Laser Colors palette.
7. Repeat **steps 4 and 5** for each object to be engraved.

#### Defining a tool path properties

- i** Changing the tool currently engraving is indicated by the tool name being displayed on the machine's LCD screen.

- a. Click a **Tool** path in the Tool properties dialog box.
  - b. **Select the path type.**
  - c. **Set the machining properties.**
  - d.  Click.
-  Save these properties.

#### Displaying engraving paths



Type the hotkey or click the command in the View menu:



**Wire contours** to display the contours in the color of the path that is assigned to it.



**Filled contours** to display the surfaces and contours in the color of the path that is assigned to it.

- i** Engraving paths are also displayed in the engraving preview.

#### Renaming a path

1. **Right-click** its name in the **Machining tools** palette (Tool followed by a number is the default name).
2. Type a name that states the path executed (plotting, drilling or filling). Validate.



## ◀ Designating the type of tool path

1. Click a Tool color in the Path Properties dialog box.

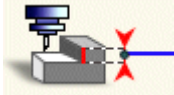


2. Click the **Path Type** tab.

3. Click a tool in the list of **Available tools**: the **Tool profile** displays the features of the tool selected (diameter, truncation, etc).

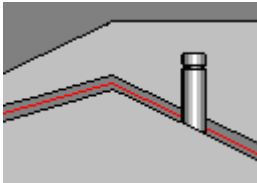


If you need, click to **add a tool**.



4. Key in the **engraving depth**.

5. Click the **path type**:



### Plotting

The tool only engraves the object's contours.



### Drilling

The tool drills the material at **drilling points** or on **markers**.



### 2D at bottom

#### 2D on surface

The tool hollows out the surface of the object and then engraves the finishing contours. **Key in the 2D filling parameters**.



6. Click.




## ◀ Creating a filling path Function

This tool path allows surfaces delimited by closed contours to be engraved.

Check the filling in the engraving preview. The path is correct when:

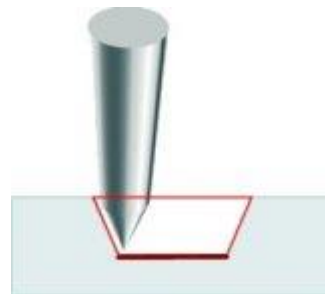
- the object's line is accurately reproduced.
- the surface of the object does not contain any white zone that has not been hollowed.
- the hollowing appears regular and uniform.



1. Designate the tool path type: perform **steps 1 to 4**, then indicate if contours are reproduced on the surface or at the bottom, especially for conical tools which cut is wider on surface than at bottom.  Click the **path type**:

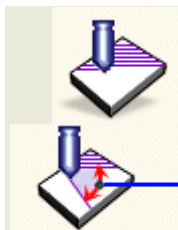
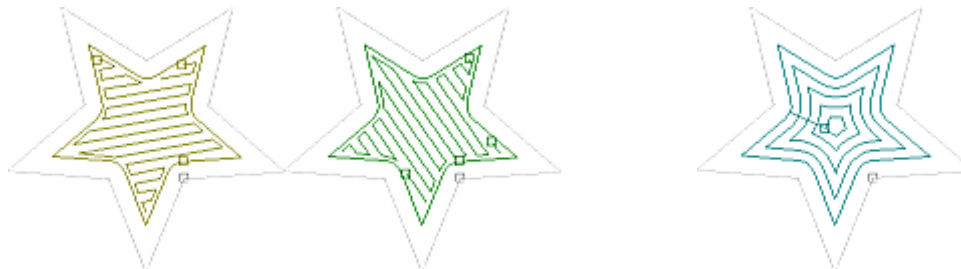


**2D on the surface** reproduces the object's contours at the engraving tip.



**2D at the bottom** reproduces the object's contours at the bottom of the engraving when using a material that has a transparent surface (Gravoglas).

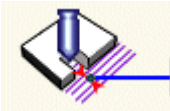
2. Click the **2D Filling** mode:



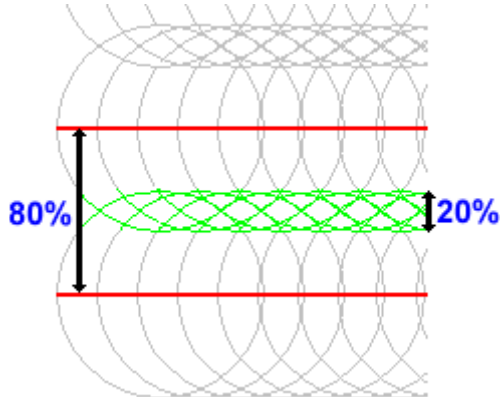
**Hatch** using **rectilinear** paths oriented according to a sweep **angle** between 0° and 90°.



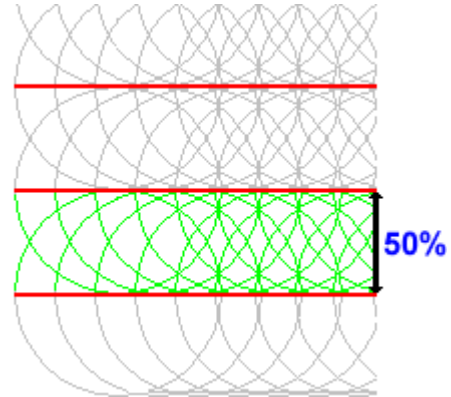
**Island** using **concentric** paths outwards from the centre with **connection between contours**.



3. Key in an **Overlap** between 10% and 80%. This percentage determines the extent to which a hollowing line overflows onto the preceding line, proportional to the tool's diameter. The difference between this percentage and 100% provides the **pass width**, or the distance between 2 hollowing lines.



Pass width = 80%  
Overlap = 20%



Pass width = 50%  
Overlap = 50%




## ◀ Defining the toolpath machining properties

1. Click a Tool color in the Tool Properties dialog box.



2. Click the **Machining Properties** tab.

3. Define the machining properties in the passes table: the default table settings are the parameters set in the Machining parameters window of the Options dialog box.

- a. Set the **number of passes to be executed** (pass  is executed by default). Each tool path is engraved on one or more passes in accordance with a set of parameters and options that depend on the mechanical performance of your machine.


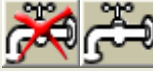

A pass is the equivalent of a tool path for engraving the objects to which it is assigned. Several passes may be required to clear away the chips produced during preceding passes or for gradually achieving a given depth (engraving on fragile material).

- Click next number to create a pass (4 maximum).
- Click previous number to delete a pass.

- b. Set the **machining parameters for each path pass:**

	<p><b>Speed on the XY axes</b></p>
	<p><b>Speed on the Z axis</b></p>
	<p>Click to select the desired speed.</p>
	<p><b>Engraving depth</b></p>
<p>Key in a suitable value depending on whether the engraving is executed with or without a nose.</p>	
	<p><b>Low time-dwell</b></p>
	<p>Click to select the length of the time-dwell.</p>

- c. Click the related button to activate or deactivate a **machining option**:

	<p><b>Spindle motor rotation</b></p> <p>Material is taken out by the rotation of the tool, which is driven by the spindle motor. Tool rotation is not necessary for engravings where there is no drilling, or where no material is taken out.</p> <p>For example, engraving with a diamond, where the tool scratches the material's surface, or with a pen, where the line is marked in ink.</p> <p><b>The tool only physically begins rotating if the spindle motor's rotation is activated in the Machining dialog box and execution of the engraving is started on the machine.</b></p>
	<p><b>Lubrication</b></p> <p>This option triggers the lubrication system, which is useful for extending the tool's lifespan and for improving the engraving quality.</p>
	<p><b>Pause between tools</b></p> <p>This option generates an automatic pause between the paths executed featuring in the Tools list.</p>



## Tool engraving properties

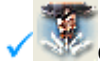


### Defining the engraving properties with an IS machine

1. Open the **Machining dialog box**:



Type the hotkey.



Click in the **main toolbar**.



Click the **Machining** command in the **Machining menu**.

2. **Define the toolpath engraving properties** (speeds, depth, dwell, etc.):
3. **Define the general engraving properties** (origin, orientation, options, etc.):



Click to validate the new properties.



Click to display the engraving preview.



Click to **transfer the composition to the machine**.



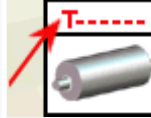
## ◀ Defining the general engraving properties

- A. Open the **Machining dialog box**.
- B. Set the engraving **parameters**:

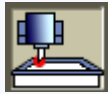
### Flat engraving or Engraving on a cylinder

Engraving on a cylinder is automatically activated if you have defined the cylinder parameters in the **Material dialog box**.

**TS** **TC** To modify the cylinder engraving parameters, click the button with the name of the accessory in the **Machining dialog box**.



Click **Flat** To restore flat engraving (vice, low-pressure or clamping table).



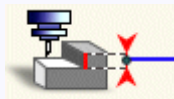
**Origin**

1. Click to select an origin different from the one chosen in the **Material dialog box**.
2. If you have chosen a **floating origin**, key in its coordinates
  - X**, distance from the origin to the 0 point on the X axis.
  - Y**, distance from the origin to the 0 point on the Y axis.



**Orientation**

Click to select an orientation from the one chosen in the **Material dialog box**.



**Z-clearance**

Measured from the Zref point, this parameter defines the distance over which the tool is raised between an engraved line and the following line. To understand the effect of the Zref setting on clearance, refer to the user manual enclosed with your IS machine.

Key in a movement value that is at least equal to the material's maximum thickness.

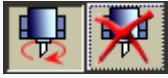
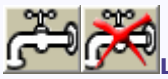

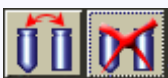
- To engrave a planar surface, key in a movement value that is low but is sufficient to avoid engraving a line between two independent lines.
- To engrave a surface with several reliefs, key in a maximum movement value so that the tool will never come into contact with the material during its horizontal movements.



This parameter can be edited in **Machining dimensions**.

**!** **Key in a clearance value that complies with the technical characteristics of your engraving machine. Adapt the Z-clearance to each new Zref setting.**

C. Set the engraving **options**:

 <p><b>Spindle motor rotation</b></p> <p><b>i</b> The tool only physically begins rotating if the spindle motor's rotation is activated in the Machining dialog box and execution of the engraving is started on the machine.</p>	<p>Click to start or stop the spindle motor.</p> <p>Material is taken out by the rotation of the tool, which is driven by the spindle motor. Tool rotation is not necessary for engravings where there is no drilling, or where no material is taken out. For example, engraving with a diamond, where the tool scratches the material's surface, or with a pen, where the line is marked in ink.</p>
 <p><b>Lubrication</b></p>	<p>This option triggers the lubrication system, which is useful for extending the tool's lifespan and for improving the engraving quality.</p>
 <p><b>Automatic plates loader (A.P.F.)</b></p>	<p>This option becomes available as soon as you have produced a <b>Matrix series</b>.</p> <p>Click to activate the automatic loading of the plates for the series.</p>
 <p><b>Tool changer</b></p>	<p><b>Not yet documented.</b></p>



## Toolpath properties

### ◀ Defining toolpath engraving properties



1. Click a **Tool** color in the list in the Machining dialog box: each path used in the composition is identified by its color and number in the Tool properties dialog box.
2. Define its machining properties in the passes table: the default table settings are the parameters set in the Machining window in the Tool Properties dialog box.
  - a. Set the number of passes to be executed.
  - b. Set the machining parameters for each path pass.
  - c. Set the machining options.



## Description of toolpath engraving parameters

These parameters must be adapted to the mechanical performance characteristics of your Gravograph machine, as well as to the characteristics of

- the material engraved (thickness, strength, flatness)
- the engraving tool (diameter, type, grinding angles)
- the composition (series production, fonts, height of the characters).



**Set these parameters in accordance with the technical characteristics of your IS machine. Refer to the Gravograph manual enclosed with the machine.**



### Speed on the XY axes

This parameter defines the tool's horizontal movement speed (in mm per sec.) when marking the material.



### Speed on the Z axis

This parameter defines the tool's drop speed (in mm per sec.) when drilling the material.



### Engraving depth

This parameter, which is measured from the Zref point, defines the distance the tool drills into the material. Refer to the installation guide delivered with your Gravograph-New Hermes machine to understand the influence of the Zref setting on the engraving depth and to make this mechanical adjustment to the machine.

Use of a nose is advised, unless the nose poses the risk of scratching the engraved material. The depth-regulating nose does not require a precise Zref adjustment and allows a precise, constant engraving depth to be created over the whole engraved surface (materials with variable thicknesses).



### Low time-dwell

This parameter defines a stand-by time (in seconds) between the end of the drilling and the start of marking the material.

As soon as the engraving depth is attained, the low time-dwell is triggered. The tool holder remains immobile, while the tool's rotation removes chips produced by drilling the material. At the end of the time-dwell, the tool holder will move horizontally to engrave the line.

### Modifying the current speeds

1. Click the icon in the passes table.
2. Key in **Speed XY** or **Z Min. Med. Max.**  
**Default** If this button is present, click it to restore the standard values.



3. Click.



**For an engraving with a depth-regulating nose, key in a value of 0.00 in the passes table and adjust the engraving depth on the machine.**



**For an engraving without a depth-regulating nose, key in a value between 0.01 and the material thickness in the passes table. Adjust the engraving depth to each new Zref setting.**

### Modifying the current time-dwell

1. Click the icon in the passes table.
2. Key in **time-dwell Min. Med. Max.**  
**Default** If this button is present, click it to restore the standard values.



3. Click.



## ⚠ Customizing toolpath engraving parameters



**Set the parameters below in accordance with the technical characteristics of your IS machine. Refer to the Gravograph manual enclosed with the machine.**

1. In the Options dialog box, click the **Machining parameters** tab. This window allows the following parameters to be customized:

» **Speed on the XY axes**

» **Speed on the Z axis**

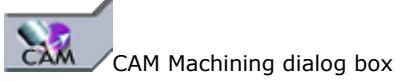
» **Low time-dwell**

2. If you wish to trigger this time-dwell, click box  **Activate**.  
Otherwise, do not modify the values for this parameter.
3. For each parameter, key in the **minimum, medium** or **maximum** value.
4. For each parameter, click the active default value in the passes table:  **min**,  **medium** or  **max**.

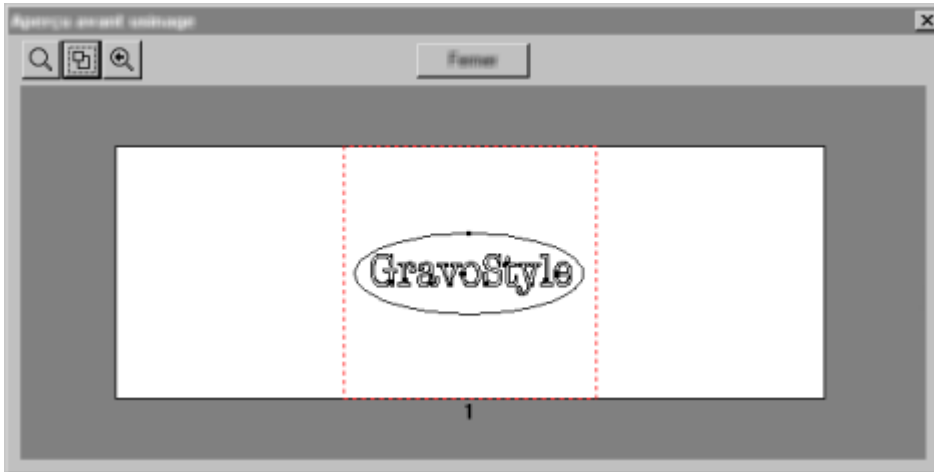


## ◀ Displaying the engraving preview

**Preview** Click in the



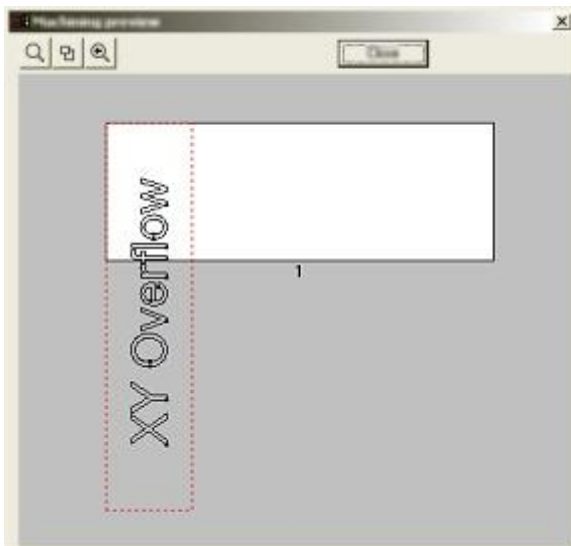
The engraving area is represented by a white rectangle.  
The composition's surface is delimited by a dotted red frame.



For complex compositions, the engraving preview can display the engraving order of

- **the support plates for a Matrix series**
- **the panels for a long plate**

The engraving preview also helps you to check any overflows outside the engraving area.  
This problem may be caused by the positioning of an object outside the composition or an incorrect configuration of the composition.



## Long plate

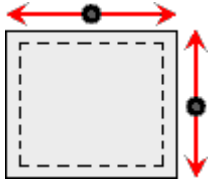


### Producing a composition on a long plate

This configuration enables a composition to be engraved that has

- a surface area which is, at most, equal to the engraving area.
- a dimension which exceeds the height of the engraving area.

#### 1. Configure the composition:



Key in the dimensions.

- If the **length** is greater than the height of the engraving area, you will obtain a **horizontal long plate**.
- If the **height** is greater than the height of the engraving area, you will obtain a **vertical long plate**.



The **engraving orientation** is

**normal** for a horizontal long plate.

**90°-rotation** for a vertical long plate.



The **engraving origin** must be the **machine's left-hand corner**.



In the **Info zone**, a message will warn you that the long plate configuration is activated automatically (the **maximum number** of plates is **zero**).

2. **Place the objects to be engraved in the composition.**
3. **Define the long plate.**
4. **Execute the panels engraving.**

The composition below illustrates each step involved in long plate configuration.

What is involved is a horizontal long plate with dimensions of 300x80 mm, engraved on an IS200 machine (225x80 mm).



**Configuration on a cylinder and Matrix series are not allowed in Long Plate mode.**



## ◀ Defining the long plate

After placing objects in the long plate, open the



GravoStyle Machining dialog box



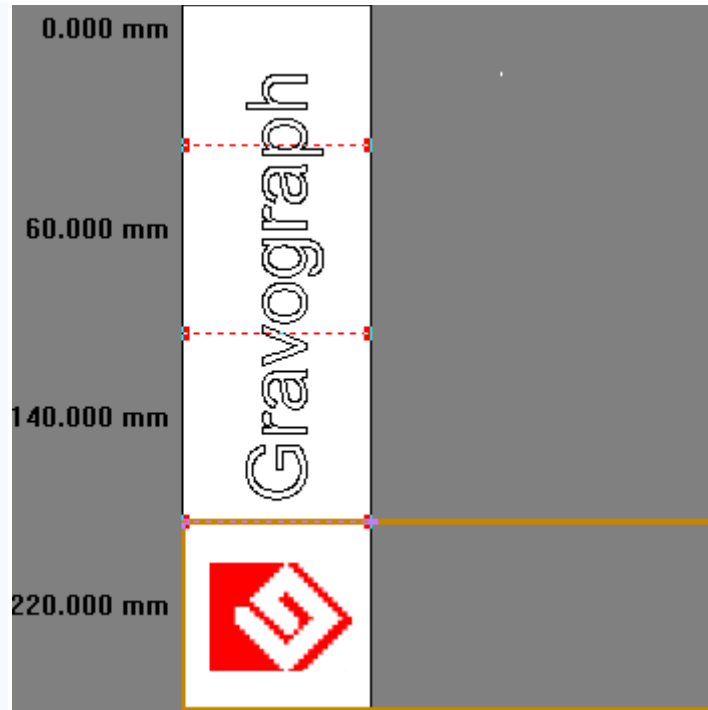
CAM Machining dialog box

The **Long plate definition dialog box** will open. This preview allows you to:

- check the long plate's positioning in the engraving area.
- manage the number of panels required to execute full engraving.
- reposition the cutting lines between the panels.

The engraving area is represented by a brown frame.

Each **panel** is delimited by a **dotted red cutting line** which is its top edge.

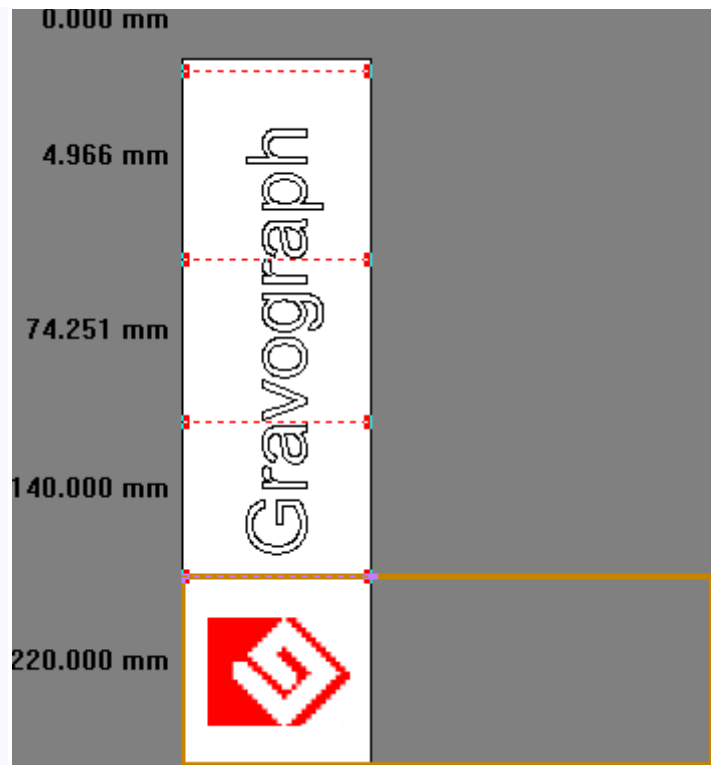


4 panels in the initial definition

Edit the cutting lines to redefine the size of a panel and avoid having certain objects straddling two panels.



Click to validate the new panels.




5 panels after editing the cutting lines

**Preview** In the **Machining dialog box**, click to display the engraving preview. The numbered panels are displayed in the order of engraving.

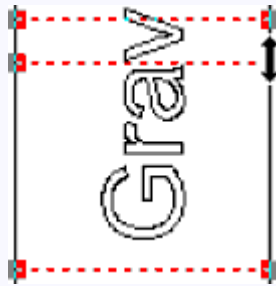



## ◀ Editing the cutting lines

1. Zoom in the Long plate definition dialog box.
2. Create or reposition a **cutting line**. Following these procedures, the number of panels is recalculated for full engraving of the composition

3.  Click to validate the new panels.

### Moving a cutting line using the mouse



- a. Click right-hand end of an existing cutting line:  the pointer indicates that you can move the cutting line.
- b. Slide the right-hand end of the cutting line vertically.
- c. Click to mark its position on the right-hand edge of the composition.
- d. Validate.

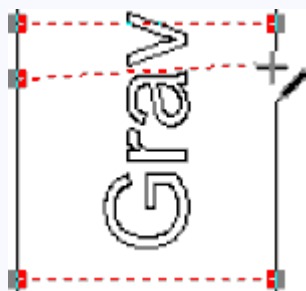
**i** The position of the cutting line is set as soon as the size of the panel equals the engraving area.



### Entering the position of a cutting line

- a. Double-click on the value that is displayed near the left-hand edge of the panel.
- b. In the **Edit Cutting Line dialog box**, key in the cutting line's new position.

- c.  Click.

### Drawing a straight cutting line



- a. Click the left-hand end of an existing cutting line:  the pointer indicates that you can create a new panel.
- b. Slide the left-hand end of the new cutting line vertically.
- c. Click to mark its position on the composition's left-hand edge.
- d.  Slide the pointer to draw the cutting line.

**i** If the new cutting line is near an existing cutting line and if the size of the panel does not exceed the engraving area, the preceding cutting line will be deleted.

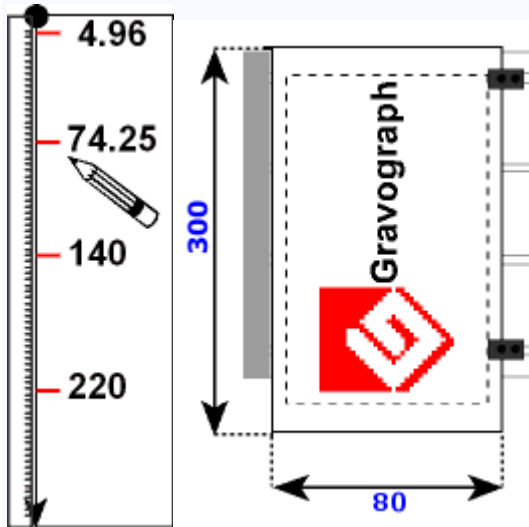
### Drawing a broken cutting line

- a. Click several times to draw a broken line avoiding the objects' contours.
- b. Click to mark the position of the right-hand end on the plate's right edge.



## ◀ Engraving on a long plate

### Preparing the engraving



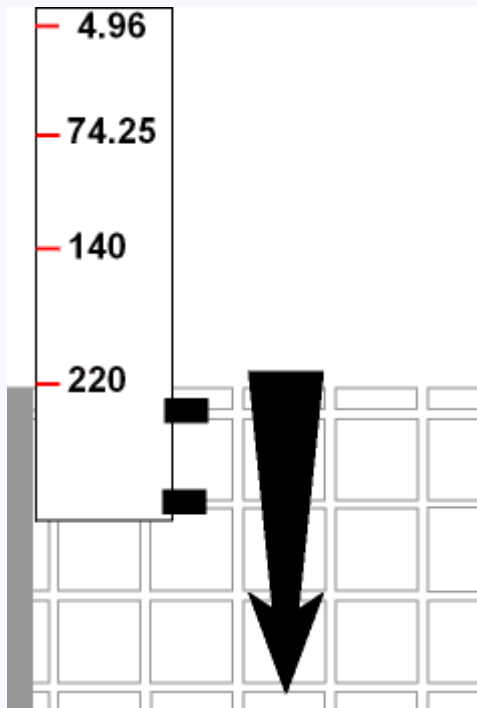
1. On the plate, mark the cut line coinciding with the top edge of each panel using the felt marker.
2. On the machine, fit the specific long plate engraving table (consult your Gravograph distributor).
3. Set up sufficient space for moving the plate at the front and rear of the machine.
4. Set the plate so that the largest dimension is parallel to the table's left edge.

### Executing transfer before engraving

### Transfer the composition to the machine.

**Tool path sel** If you select the paths to be transferred, note that the panels featuring the paths are selected by default. Each path has the name and number of the **Tool**, and the number of the layer **[ ]**, followed by the number of the panel **Pan** on which it is located.

### Launching engraving on the machine




1. Key in a maximum value for the **TIME OUT**. This period allows the machine to be kept in receive status while the transfer is being performed. To set the TIME OUT, consult the Gravograph manual enclosed with your machine.



2. Hit the key to launch the engraving. The LCD screen will display the following message:

**<OFFSET PLATE>**  
xxxx,xx mm

3. Release the plate.
  4. Align the top edge of the first panel on point 0 in the table.
  5. Set the plate.
- 
6. Press the key once again.

The machine will engrave the panel and then stop (the tool will return to the engraving origin).

For the following panels, repeat the procedure from **step 2**.



If you note a fault during engraving, immediately press this key to suspend the engraving.



Press a button on the joystick to execute a new pass on the current panel.

**!** **These actions are only possible during engraving.**



## Wysiwyre 2D render



### Displaying Wysiwyre rendering on the material

#### New render

If needed, **compare several renders.**

1. Display the current composition in the **Wysiwyre window:**



- ✓ Click in the toolbox.
- ✓ Click command **Wysiwyre** in the **Modify menu**.

2. Set the **rendering parameters:**

- » **Material**
- » **Engraving width**
- » **Background color**
- » **Fill color**
- » **Shape of the plate**

GravoStyle

#### Wysiwyre preferences

Save the rendering parameters as preferences so they can be applied to each new render.

1. Open the **Preferences dialog box:**



- ✓ Use the keyboard shortcut.
- ✓ Select the **Preferences** command in the **File menu**.



2. Click.



## ◀ Wysiwyre window

>> Displaying a render

>> Comparing renders



## ◀ Wysiwyre menus

### 🔗 File menu

<b>Close</b> <b>Print</b>	<b>Close the active render</b> <b>Print the active render</b>
<b>Info</b> <b>Preferences</b>	<b>Information on the active render</b> <b>Save the rendering parameters as preferences</b>
<b>Recent files</b>	List of the last four files open
<b>Exit</b>	Close and quit the program's window

### 🔗 Materials menu

### 🔗 Tools menu

<b>Engraving width</b>	<b>Set an engraving width equal to the size of the tool</b>
------------------------	---

### 🔗 Display menu

<b>Tool bar</b> <b>Status bar</b>	Display or hide the tool bar Display or hide the status bar
<b>Background color</b> <b>Fill color</b> <b>Shape</b>	<b>Adjust the background color</b> <b>Adjust the finishing color</b> <b>View the shape of the plate</b>

### 🔗 Window menu

<b>New window</b> <b>Reorganize the icons</b> <b>Cascade</b> <b>Tile</b>	<b>Compare several renders for the same composition</b>
---	---

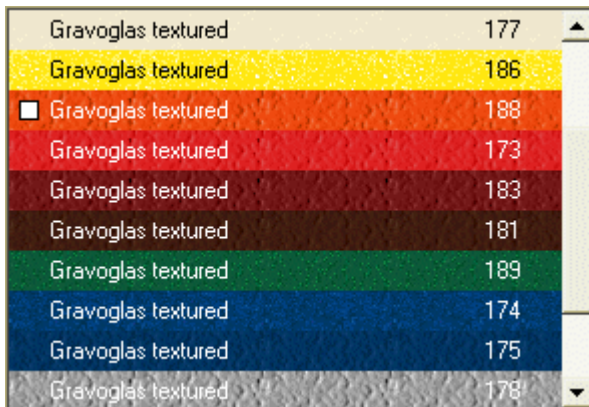
### 🔗 Help menu

<b>Help sections</b>	Open the on-line Help
<b>About Wysiwyre</b>	Information about the program



## ◀ Choosing the material to be engraved

















1. Open the **Material Choice dialog box**:
  - ✓ Click on the range in the tool bar.
  - ✓ Click the generic name in the **Materials menu**, and then on the range in the related sub-menu.
2. In the dialog box for the range, click the material you want (in this case, Gravoglas textured ref.188). Note that the characteristics of the material are displayed (properties, applications, engraving depth).

























3. Click. The material selected is displayed in the name of the active render.






 **EEC materials**

 GravoPLY I	 GravoGLAS Sub-surface Mat
 METaLeX indoors	 GravoGLAS Sub-surface Glossy
 METaLeX outdoors	 Gravoply Design Translucid
 METaLeX hard coat	 GravoXAL
 MELaMINE	 GravoSTRal
 GravoGLAS Surface Mat	 GravoMETal
 GravoGLAS Surface Glossy	 GravoFOIL
 GravoGLAS TEXTure	 GravoPLaST

 **USA materials**

 2-PLeX Matte surface	 GravoPLY.020 &.040
 2-PLeX Glossy surface	 Gravotac
 2-PLeX Metallics surface	 PHENOLIC
 2-PLeX Textured	 Fluorescent Acrylic
 2-PLeX Matte sub-surface	 ACRYLIC
 2-PLeX Glossy sub-surface	 SANDMASK
 2-PLeX Metallics sub-surface	 Calendered VYNIL
 ARCHitectural GAUGe	 Reflect VINYL
 GravoPLY	 Trophy Brass
 METaLeX II	 COLOred ALUminium
 METaLeX	 COLOred STEel

 **Shared materials**

 GravoPLY II	 Gravoply Design/II Tech Patterns
 Gravoply Design/II Granites	 ALUminium ANOdisal
 Gravoply Design/II Mat Decor	 Premium Lead Brass
 Gravoply Design/II Woods	



## ◀ Setting the engraving width

1. Open the **Tool Size dialog box**:



✓ Click in the toolbar.

✓ Click the **Engraving Width** command in the **Tools menu**.

2. Key in a value between 0.01 and 10mm, depending on the tool's diameter and the engraving depth.




3. Click.

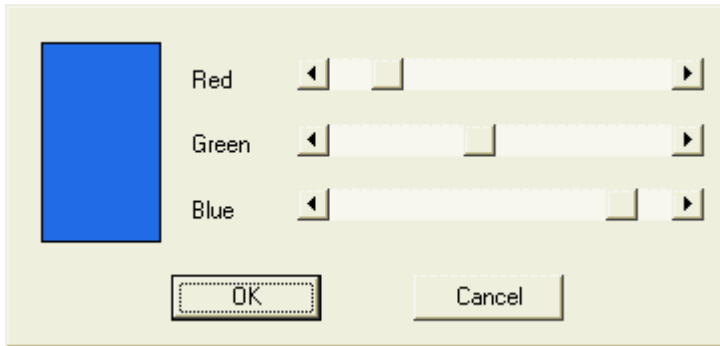


## ◀ Displaying the background color

1. Open the **Color dialog box**:

- ✓  Click in the toolbar.
- ✓ Click the **Background Color** command in the **Display menu**.

2.  Slide the Red/Green/Blue cursors until you obtain the color you want in the color chart.





3.  Click.

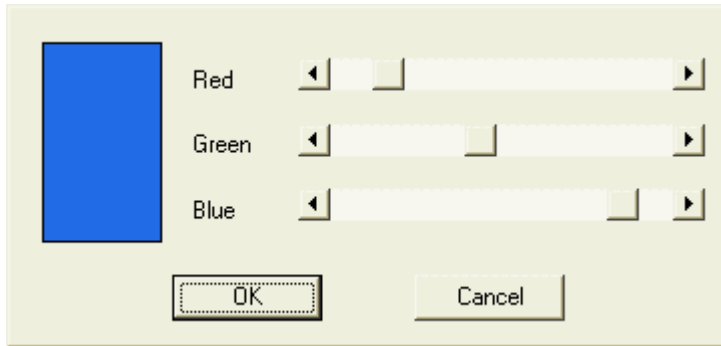



## ◀ Filling in the finishing color

1. Open the **Fill Color dialog box**:

- ✓  Click in the toolbar.
- ✓ Click the **Fill color** command in the **Display menu**.


2.  Slide the Red/Green/Blue cursors until you obtain the color you want in the color chart.



3.  Click. The objects engraved are filled in using the finishing color (simulation for BRASS or GRAVOGLAS materials).



## ◀ Viewing the shape of the plate

1. Open the **Shapes dialog box**. Select the **Shape** command in the **Display menu**.
2.  Click the shape required (default shape: **Rectangle**).
3. Click box  **Plate contour** to delimit the composition using a dotted line around the plate.

4.  Click.



-  If the objects spill out of the plate, exit Wysiwyre and correct the composition.



## ◀ Comparing several Wysiwyre renders




### Displaying renders

To activate a render, click its window or its name in the list in the Window menu. The render selected is displayed in the foreground.

1. Click the **New Window** command in the **Window menu**.
2. Define the parameters of the new render.
3. Arrange the windows in cascade or tile mode.



### Information about the active render

This command displays the dimensions of the composition and the **material**.

1. Open the **Information dialog box**:
  - ✓  Click in the toolbar.
  - ✓   Use the keyboard shortcut.
  - ✓ Select the **Info** command in the **File menu**.

2.  Click.

### Printing the active render

1.  Click in the toolbar.
  - ✓ Click the **Print** command in the **File menu**.
2.  Click to configure the active Windows printer.
3. Define the print parameters.

4.  Click.



## Transfer for engraving



### Transferring the composition to the IS machine

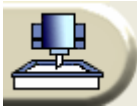



**Before making the transfer, check that:**

- the computer and your machine are correctly connected.
- your machine is powered up.
- your machine is not in the process of making an engraving.

**If you have not installed your machine, follow the installation procedure and advice provided in the Gravograph manual enclosed.**

1. Select the objects to be engraved (all by default).
2. Open the Machining dialog box.



3.  Designate the active target machine; choose the machine that is actually going to engrave the current composition.

If there is none, **add this target machine.**

4. **Select paths to be transferred.**
5. **Configure the transfer.**
6. Define the properties for **tool engraving.**
7. **Run** | Click: the progression bar indicates the percentage of data transferred.



To stop the transfer

8. On the engraving machine, execute the pre-engraving settings (consult the Gravograph manual for your machine).



9. Run the engraving from your machine's control panel.



**The order of creation and selection of the paths determines the engraving order. In terms of engraving, closed contours are given priority over open contours.**



**Changing the tool during engraving is indicated by the tool's name being displayed on the machine's LCD screen.**



**Any modification made to the composition will only apply to the engraving following a new transfer that deletes the previous one.**



## ◀ Selecting the engraving paths to be transferred

1.  Click in the



GravoStyle Machining dialog box: the **Path selection dialog box** displays the list of tool paths assigned to the objects selected. Each path has the name and number of the **Tool**, well as the number of the layer **[ ]** on which it is located.



CAM Machining dialog box: the **Path selection dialog box** displays the list of tool paths assigned to the objects preselected.

2. Select the paths to be engraved (all by default): key  depressed, click to deselect or select a **Toolpath**.

Click to select all the paths.

Click to deselect all the paths.



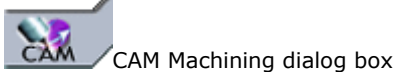
3.  Click.

4.  Click to see the paths in the engraving preview.



## ◀ Configuring transfer to the machine

These options determine the conditions under which transfer of the composition takes place once you have clicked **Run** in the



### Transfer mode

Click the mode you want.

**Test:** the data transferred are displayed in the Test window.  
Click to close the window **Close**

**Port:** you will send the composition to the active target machine.

### Grouping paths by transfer file



1. **Collate** Click.

2. Click the box for the type of grouping:

**None** to transfer to a single file the paths selected in the **Path selection dialog box**.

**By layer** to transfer to a distinct file the paths in each layer.

**All layers** are transferred to a single file.

### Managing transfer files

If you have carried out several consecutive transfers, you can define their order of engraving.

1. **Spooler** Open the Windows manager window for the target machine.

2. **Right-click** an engraving file.

3. In the contextual menu, click

- **Suspend** printing to temporarily interrupt transfer to the machine.
- **Cancel** printing to cancel the transfer.

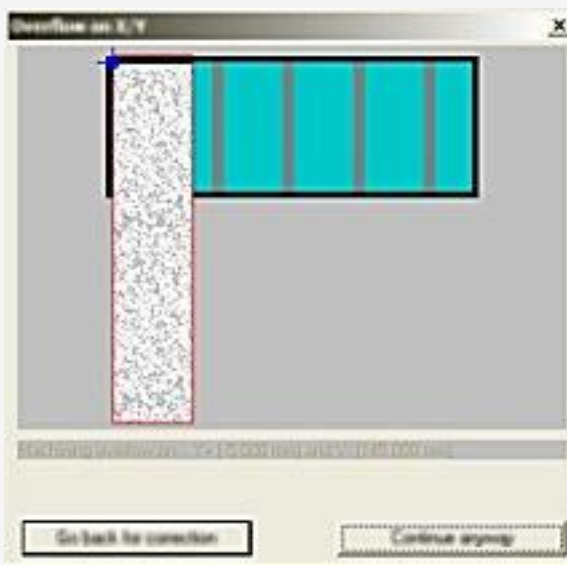
### XY overflow

During transfer, this simulation indicates any overflow of the composition in relation to the engraving area.

This problem may be caused by positioning of an object outside the composition or an incorrect configuration.



**Back for correction** Click to edit the composition.

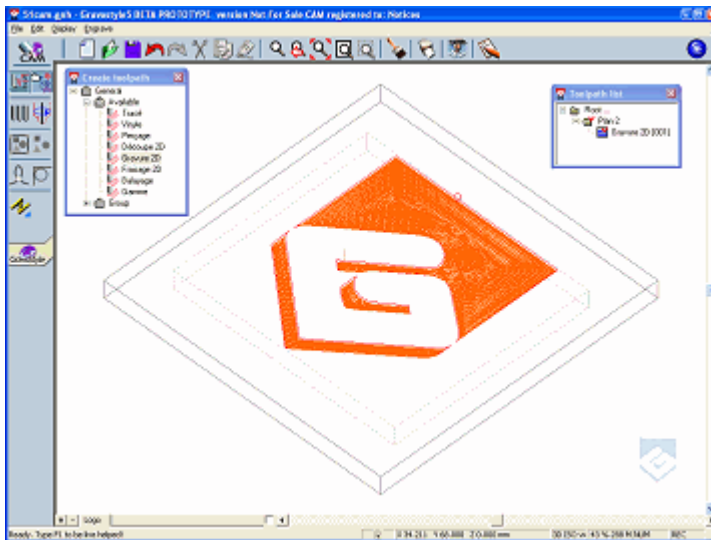
**Continue** Click to force the transfer.





# Advanced tool engraving management

-  **Produce your composition.**
- Convert to curves the text objects and complex objects.
-  Click in the toolbox. The composition is displayed in the **CAM window**.



This environment grants you more flexibility and more productivity in managing, optimizing and **simulating toolpaths**.

The **toolbox** offers a quick access to path creation, **tool management** and control over objects to be machined.

Add as many paths as required from **Create toolpath window**.

Manage paths in **Toolpath list**. Show or hide some paths to combine or compare them and to **transfer the paths to be machined**.

**Define the path calculation preferences** to assign your personal parameters and options to each new tool path.



## ◀ CAM Toolbox

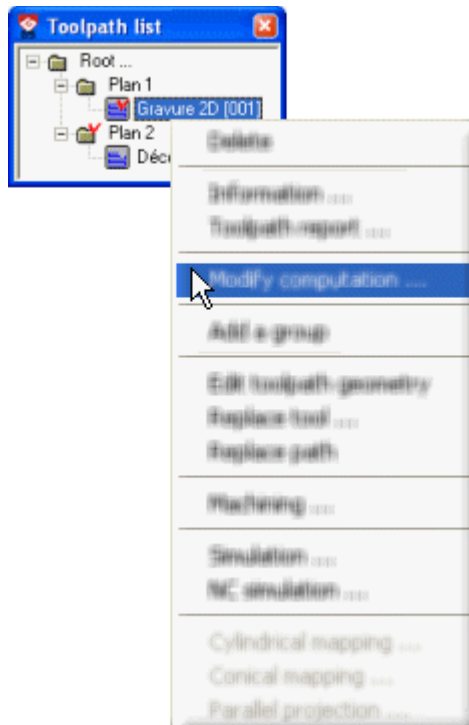
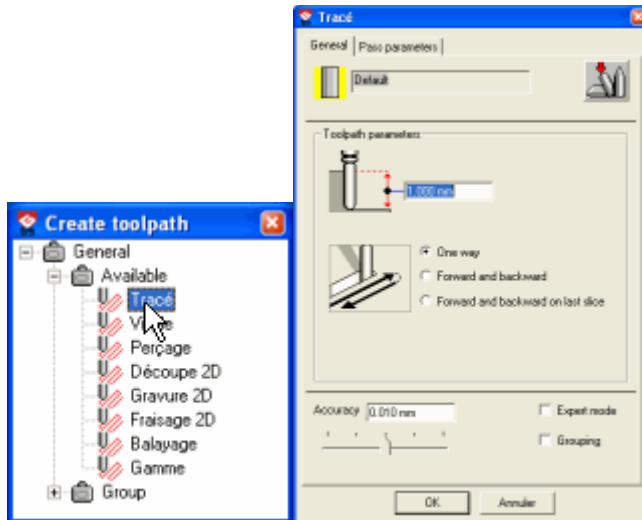
	<b>Creating a toolpath</b>
	<b>Managing toolpaths</b>
	<b>Using Tools Database</b>
	<b>Creating a special tool</b>
	<b>Grouping/Un grouping objects</b>
	<b>Locating overlaps in contours lines</b>
	<b>Optimizing tool choice</b>
	<b>Measuring objects</b>
	<b>Editing contours to be machined</b>



# Toolpath



## Creating a toolpath



1. Using the CAM pointer, select the objects you want to assign the future path to (all the objects in each layer are selected by default).
2. Open the **Create toolpath dialog box**: click in the toolbox.
3. Open a **library of available paths** (click to display or hide the types of path).
4. Add each useful tool path.
  - a. Select its **type**: Double-click the **path**. **Right-click** a **path**, and then the **Compute** command in the contextual menu.
  - b. Define the path's properties.

Open the **Toolpaths list**: click in the toolbox.

Each new **path** is stored in the **group** for the layer on which the selection is placed.

**Manage your paths** in the **Toolpaths list**:

1. Right-click a path in **Toolpath list**.
2. Click an operation in context menu: change path properties, run path simulation at screen or send it to machining.

Test a path

- in the **Tool Choice Optimization dialog box**.
- in the work area using the **tool cursor**.

**Each path created is saved in the DRAWS folder as a file with the name of the composition, followed by the path creation number (plate.000, plate.001, etc.).**




## Machining properties

### ◀ Defining toolpath machining properties

1. **Set the path calculation preferences.**
2. Create a new path or edit the properties of an existing path.
3. In the **dialog box for the path**, click the tab displaying the properties to be defined (depending on the path, the dialog box will propose a variable number of tabs).
  - a. **Set the standard properties** (tool choice, depth, group or object machining, resolution).
  - b. **Key in the pass parameters** (number or depth, conventional or climb milling, pass width, etc.).
  - c. **Set the tangent entry or exit properties** (Expert mode with collision control).

4.  Click.

 For further information on the properties specific to a path, click the type of path.

 **Plotting**

 **Vinyl**

 **Drilling**

 **Cutting**

 **Milling**

 **Sweeping**

 **Contouring**

 **Simple sequence**



## Setting the standard toolpath properties

In the dialog box for the path created, click the **General** tab.

Designate the engraving **tool**. If there is none, **add the tool**.

**i** Only tools capable of machining the path created are displayed. To see if the tool is suitable for the path, optimize the choice of tool.



1. Click to open the **Tool Database**.



2. Display the **Available tools**.



For a quick selection, display the tools in terms of profile.




3. Double-click a **tool**.

Adjust the path's **resolution** depending on its complexity and the machining quality required.

For a small object, a message which suggests increasing the precision automatically may appear.

✓ Key in a **Accuracy** with a value between 1 and 0.0001 mm (maximum resolution).

✓  Slide the cursor to shift the value.

A value of around 0.0001 increases the path's fineness by multiplying the number of machining segments.

Decide whether the path calculation has to take the **selection** into consideration as a unit or as a series of different objects.

Click to activate or deactivate the **Grouping** option.

**i** Activating this option is pointless if you are grouping the objects in terms of surface area. The objects are independent. A path is calculated for each object.

**Grouping**

The objects are independent. A path is calculated for each object.

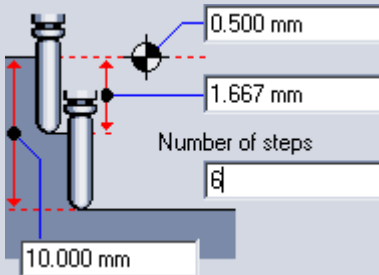






**Grouping**

The objects become joined. A single path is generated for the selection.

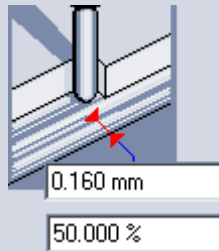


## Entering the pass parameters for a toolpath

In the dialog box for the path created, click the **Pass parameters** tab.

<p><b>Passes</b></p>  <p>10.000 mm</p> <p>0.500 mm</p> <p>1.667 mm</p> <p>Number of steps</p> <p>6</p>	<ol style="list-style-type: none"> <li>1. Key in the <b>maximum Z</b> or machining tip for the material if you are machining several paths, or maximum thickness if the material has different reliefs.</li> <li>2. Key in the <b>Pass depth or the Number of steps</b>: the total depth divided by the depth per pass gives the number of passes, and vice versa.</li> <li>3. If needed, key in the <b>Total engraving depth</b> (the default setting is for this to be equal to the depth keyed in the General tab). If the path is machined with a conical tool, key in the depth that produces the expected cutting width on the surface.</li> <li>4. Choose the <b>machining direction</b> in relation to the tool's forward movement in the material:           <table border="1"> <tbody> <tr> <td>  </td> <td>  </td> </tr> <tr> <td> <p><input checked="" type="radio"/> <b>Conventional milling:</b> the tool rotates in the opposite direction from its movement direction and pushes back the material as it moves forward (chips are dragged with the tool). Conventional milling produces a poor engraving, but needs a low spindle power. It is particularly well-suited to roughing, because it reduces the chips ejection.</p> </td> <td> <p><input type="radio"/> <b>Climb milling:</b> the tool rotates in the direction of its movement and the material passes through underneath it as it moves forward (chips are thrown in front of the tool). Climb milling ensures a better finition (due to the absence of vibration), but requires a high spindle power.</p> </td> </tr> </tbody> </table> </li> </ol>			<p><input checked="" type="radio"/> <b>Conventional milling:</b> the tool rotates in the opposite direction from its movement direction and pushes back the material as it moves forward (chips are dragged with the tool). Conventional milling produces a poor engraving, but needs a low spindle power. It is particularly well-suited to roughing, because it reduces the chips ejection.</p>	<p><input type="radio"/> <b>Climb milling:</b> the tool rotates in the direction of its movement and the material passes through underneath it as it moves forward (chips are thrown in front of the tool). Climb milling ensures a better finition (due to the absence of vibration), but requires a high spindle power.</p>
					
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<p><b>Overthickness</b></p>	<p>Material to be machined on the next pass</p>				
<p><input type="checkbox"/> <b>Skip external</b></p>	<p>This option is suited to relief engraving. The finishing tool does not engrave the external frame, which saves time and avoids unnecessary usage of the tool.</p>				

### Distance between steps(or pass width)



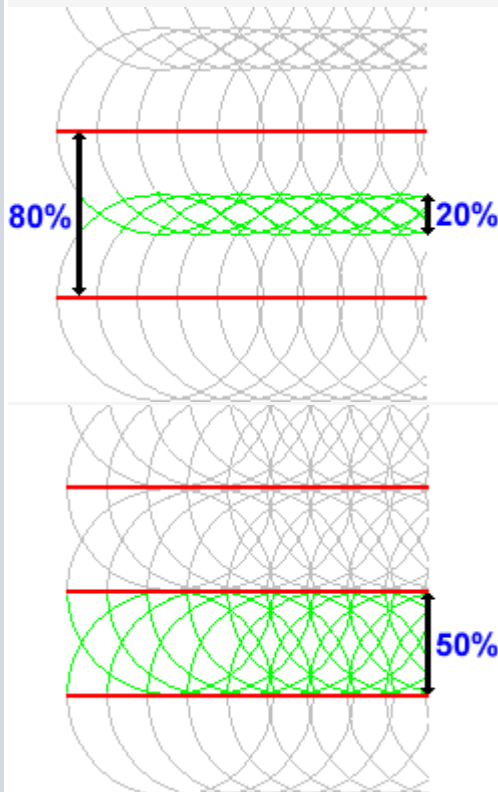
Pass width = 80%  
Overlap = 20%

Pass width = 50%  
Overlap = 50%

The horizontal distance between two consecutive passes is measured from the center of the tool.

- ✓ Key in the **distance** in the unit chosen.
- ✓ Key in a **percentage** (the default setting is 50% to machine all the material)
  - of the **radius** for a cylindrical tool.
  - of the **truncation** for a conical tool.

The difference between the distance between passes and the tool's diameter represents the **pass overlap**.



## Setting the tangent entry or exit properties for a toolpath



This option allows you to machine a **tangent curve** upon entry or exit from a path assigned to a closed contour.

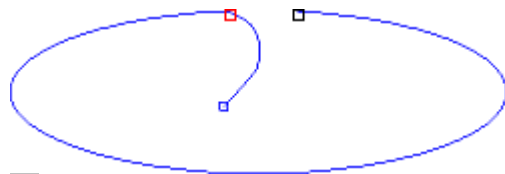
The tangent entry/exit curve is calculated based on three key parameters:

- (D) the entry/exit distance** between the entry/exit point and the contour connection point.
- (R) the transition radius** in relation to the machined contour.
- (r) the drilling radius** around the entry/exit point.

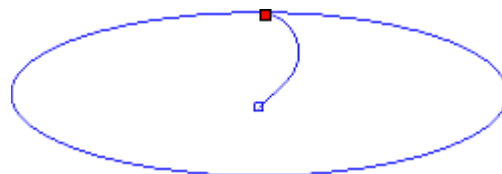
The line of the tangent curve is subject to a check intended to prevent collisions between the tool and the material during machining.

If a collision is detected within the drilling radius, a new connection point is sought to eliminate the problem.

1. In the dialog box for the path created, click the **Tangent Entry/Exit**.
2.  Tick box **Tangent Attack/Exit** to edit or activate the relevant parameters.
3. Key in the parameters for the tangent curve.
  - a. Key in an **Entry/exit distance (D)** that is at most equal to double the connection radius.
  - b. Key in a **Transition radius (R)** that is at least equal to the **radius** for a cylindrical tool or to the **truncation** for a conical tool.
  - c. Key in an **Drilling radius (r)** less than the entry/exit distance.
- d. Click to machine the tangent curve upon the  **entry** or  **exit** from the path.
- e. Tick box  **With remaining material** to key in the distance for the unmachined **Remaining material**, between the connection point and the opposite end of the path. This option ensures the part does not drop at the end of cutting.



**With remaining material**

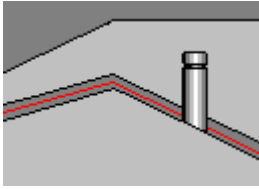


**With remaining material**

- 
4. Key in the collision control parameters.
- a. Tick box **Control drilling**  **In** or  **Out** to perform the check at the start or end of the path.
  - b. Key in a **Lookup speed** between 0.05 and 0.95 so that a new connection point can be located in the event of a collision. An interval with a low value will extend the search time, but will increase the chances of finding the correct connection point.
  - c. Set the **Elimination filter** for the search for a new connection point.
    - Key in the elimination **distance** (0.001 is the default setting).
    - Designate the elimination **mode**:
      - Total control** performed on the contours nearby
      - Limited control** performed on the machined contour



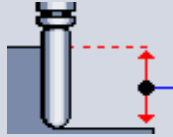
## Plotting



This path, which is particularly well-suited to Gravograph filar fonts, machines open contours and closed contours by following their lines. The center of the tool is aligned exactly on the theoretical path.

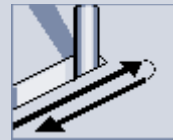
 Create the path and set its properties in the **Plotting dialog box**.

1. **Set the general path properties.**
2. Set the **general Plotting properties**: click the **General** tab.



Key in the total engraving **depth**.

With a conical tool, the cutting width at the engraving tip depends on the entry depth.



Click to designate the **trajectory of the tool** for the path:

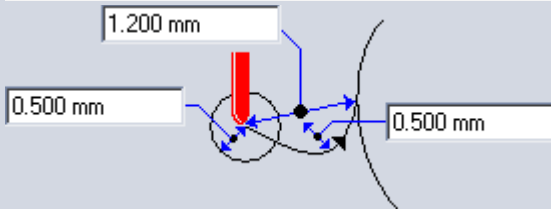
- One way (by default)
- Forward and backward
- Forward and backward on last slice**

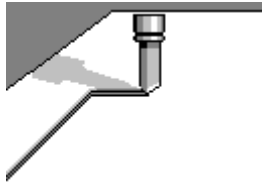
**Expert Mode**

This option allows you to machine a tangent curve upon entry or exit from a path assigned to a closed contour.

Click to display the **Tangent Entry/Exit tab** in the dialog box.

3. **Key in the pass parameters.**
4. You have clicked the **Expert Mode in the General tab**: **set the tangent entry/exit properties.**

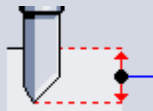


 Vinyl


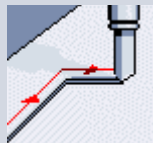
 Create a **quarter round tool** that is suitable for this path.

 Create the path and set its properties in the **Vinyl dialog box**.

1. **Set the general path properties.**
2. Set the **general Vinyl properties**: click the **General** tab.



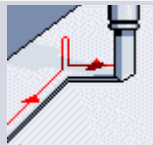
Key in the cutting **depth**.



Click the **Kind of cutting**:

**Plotting**

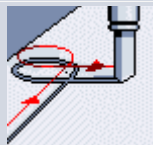
The tool remains fixed and follows the contour.



**Driven cutter**

The tool remains fixed and follows the contour.  
At each angle, the cutter is raised, changes direction and descends once again into the material.

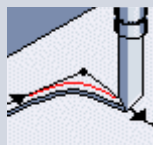
Define the angles between which the tool is raised and is repositioned in the **Advanced** tab.



**Floating cutter**

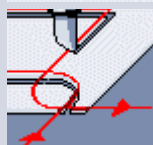
The tool is mobile and follows the contour via successive tangents.  
Upon each sharp angle, it machines a loop tangent to the outside of the material so it can reposition itself on the path.

Define the angles between which the tool executes a loop in the **Advanced** tab.



**Rounded inner angles**

Inactivated option



Tic box **Tangential entry/exit** to machine an **entry/exit tangent** to the path.

Set the tangent entry/exit parameters in the **Advanced** tab.

3. You have selected a **driven cutter or a floating cutter in the General tab**: click the **Advanced** tab and key in the advanced properties.

**Driven and floating cutter parameters**

Key in the angles between which the tool will change its trajectory.



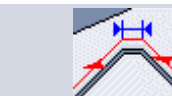

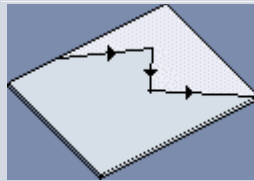
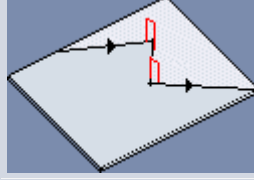
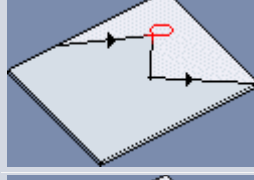
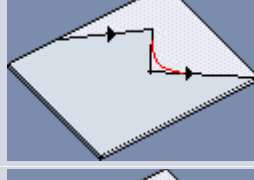
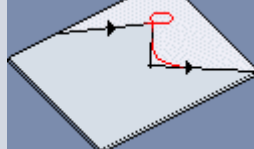
For any angle greater than the **Minimum side angle**:

- the floating cutter machines a loop.
- the servo-cutter is raised and repositions itself.



For any angle greater than the **Maximum side angle**:

- the floating cutter machines a loop.
- the servo-cutter is raised and repositions itself.

	<p>For any angle with a width lower than the <b>Minimum length for sides</b>, the tool machines a tangent.</p>
	<p>These <b>tangent entry/exit</b> parameters which are dedicated to the floating cutter, allow the size of the loop machined upon each angle to be set.</p> <p>Key in the <b>Transition</b> radius.</p> <p>Key in the <b>Entry/exit distance</b>.</p>
<p><input type="checkbox"/> <b>Check intersections</b></p>	<p><input checked="" type="checkbox"/> Click this option, which is dedicated to the <b>floating cutter</b>, to check the machined loops do not interfere with the original path. If they do, the size and orientation of the loops are automatically adapted to avoid any collisions between the path and the cutting geometry.</p>
<p><b>For open contours</b></p>     	<p>These options, which are dedicated to the <b>floating cutter</b>, determine the way the tool adapts its machining trajectory.</p> <p><input checked="" type="radio"/> <b>Normal</b> The tool remains fixed and follows the contour.</p> <p><input type="radio"/> <b>Driven tool</b> The tool is raised at each angle, and then descends into the material.</p> <p><input type="radio"/> <b>Arcs on exterior angles</b> A repositioning loop is machined at each external angle.</p> <p><input type="radio"/> <b>Arcs on inner angles</b> A repositioning loop is machined at each internal angle.</p> <p><input type="radio"/> <b>Arc on all angles</b> A repositioning loop is machined at each angle.</p>



## Drilling

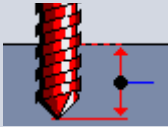



 To view the drilling, display a **surface render** or a **realistic render**.

 Create the path and set its properties in the **Drilling dialog box**.



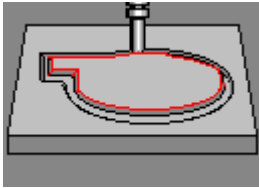
1. **Set the general path properties.**
2. Set the **general Drilling properties**: click the **General** tab.

<p>Multi-pass drilling allows the material to be removed.</p> 	<p><b>Mode</b> Click</p> <p><input checked="" type="radio"/> <b>Spot drill</b> in a single pass</p> <p><input type="radio"/> <b>Multi-steps with Z up</b> between two passes</p> <p><input type="radio"/> <b>Multi-steps without Z up</b> (possible Z clearance)</p> <p>Key in the drilling <b>depth</b>.</p>
<p><b>Raising the tool</b></p> <p>As soon as the drilling depth is attained, the tool is raised at engraving speed and is pointed at the next spot to be drilled.</p>	<p>Key in the <b>Z up position</b>, the maximum raising distance above the material after drilling.</p> <p>Key in the <b>Delay</b> so the tool can pause at the end of drilling (spot facing).</p> <p><input checked="" type="checkbox"/> Tick box <b>High speed clear move</b> so that the tool can be raised at high speed (defined in the <b>Machining tab for the tool</b> selected).</p>
<p> The path created is represented by a curve consisting solely of a start point.</p> <p><b>Selection filter</b></p>	<p>Designate the points to be drilled. Click</p> <p><input type="checkbox"/> <b>Markers</b> (including drilling points)</p> <p><input type="checkbox"/> <b>Start point</b> for an open contour</p> <p><input type="checkbox"/> <b>End point</b> for an open contour</p> <p><input type="checkbox"/> <b>Start/End points</b> for a closed contour</p> <p><input type="checkbox"/> <b>Braille</b> or the center of a closed contour</p>

3. **Key in the pass parameters** (for spot drilling, key in the maximum Z).



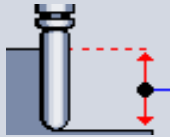
## 2D Cutting



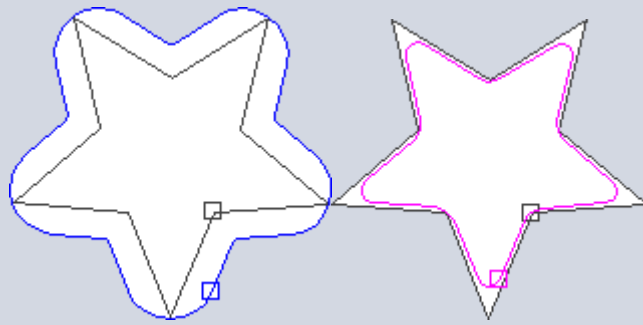
**i** To cut with a true angle at the bottom, click this option in the Options dialog box.

**U** Create the path and set its properties in the **2D Cutting dialog box**.

1. **Set the general path properties.**
2. Set the **general 2D Cutting properties**: click the **General** tab.



Key in the total cutting **depth**.



The default setting is for the cutting to be machined around the theoretical path at a distance equal to the tool's radius, depending on the entry depth.

Click to machine an **Internal** cut inside the theoretical path.

Key in a negative or positive **Added offset** to offset the cutting in relation to the theoretical path.

Key in the radius of the **Rounded angles** (the zero value produced by angles that are almost sharp).

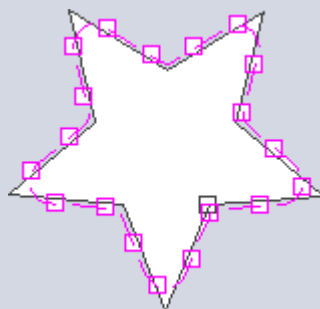
**or**

Tick box **Fit for tool** to machine the roundness in accordance with the tool's profile.

### Machining a Tangent entry/exit

In the pull-down list, click **Automatic** to machine a predefined tangent entry. **Manual** to set the properties in the **Tangential entry/exit** tab in the dialog box. **None** to deactivate the tangent entry.

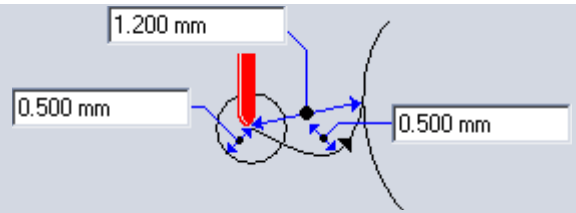
### Machining a precut



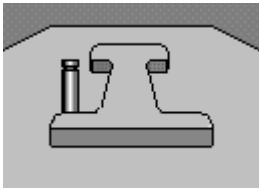
The path calculated is displayed as a contour with a dotted line.

- a.  Tick box **Add links**.
- b. Key in the **Length** and **Width** of a link.
- c. Key in the **Distance between links**.

3. **Key in the pass parameters.**
4. You have selected a **Manual Tangent Entry/Exit** in the **General tab**: **set the properties of the tangent entry or exit.**



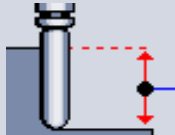
## 2D Milling



This path machines the surface of closed contours. Then, it machines open contours, following their lines.

 Create the path and set its properties in the **2D milling dialog box**.

1. **Set the general path properties.**
2. Set the **general 2D Milling properties**: click the **General** tab.



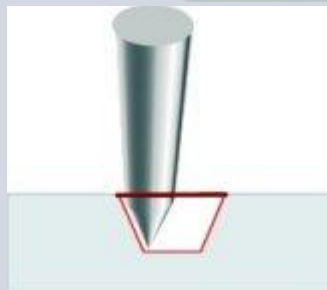
Key in the total engraving **depth**.

### Engraving mode

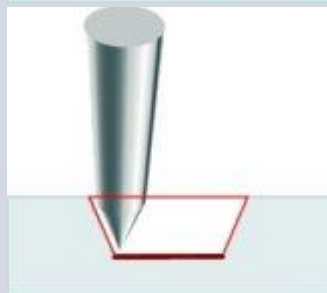
Click



**Center-line** plots the theoretical path lines from tool-centre.



**2D on surface** hollows out the theoretical path at the engraving tip.



**2D at bottom** hollows out the theoretical path at the bottom of the engraving when using a material that has a transparent surface (Gravoglas).



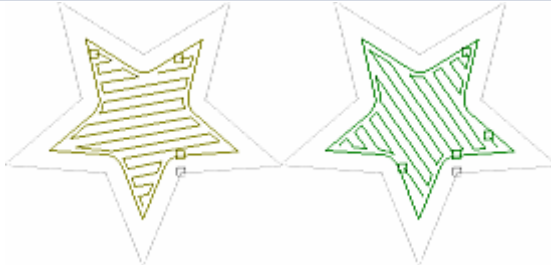
For a 2D machining, click the **milling method**. Regardless of the method chosen, the path is completed by contouring the perimeter of the machined surface.

**Island** using **concentric** paths outwards from the center, with connection between contours. This method optimizes the machining time and the engraving conditions.

**Hatch** using **rectilinear** paths oriented according to the sweep angle entered.



Key in an **angle** between 0° and 360°. This angle enables the clearance of the tool outside the material to be limited.



Machining a **tangent entry/exit** using predefined parameters

Use sensor nose

Click to machine a **Tangential**  **entry** or  **exit** on the contouring for the machined surface's perimeter.

The sensor nose prevents the tool from dropping into zones that have already been machined.

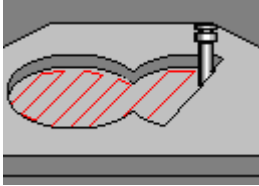
Click the box if your tool is equipped with this type of nose.

**Island** is the only milling allowed.

3. **Key in the pass parameters.**



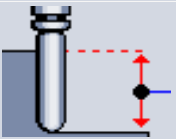

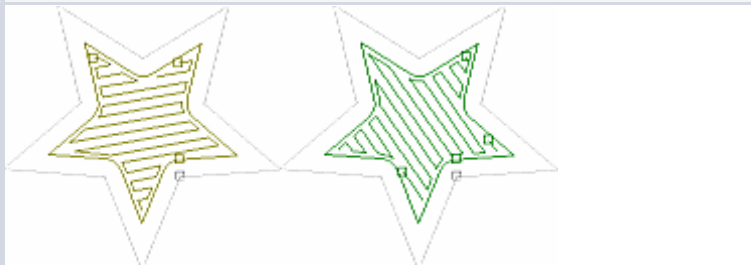
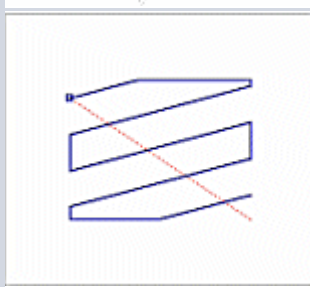
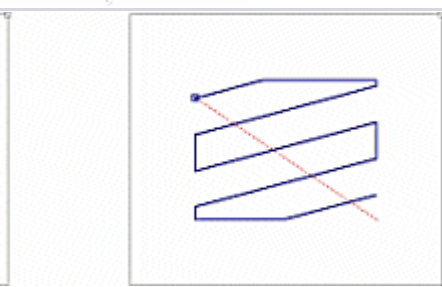
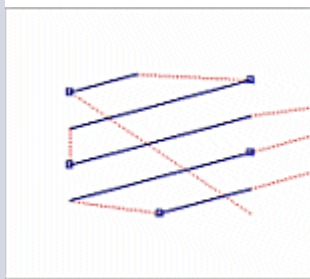
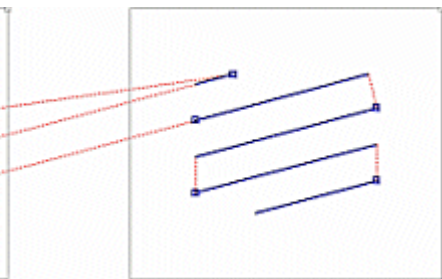
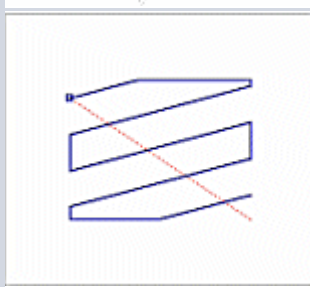
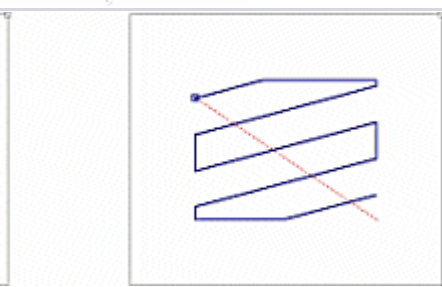
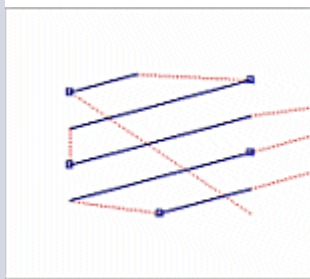
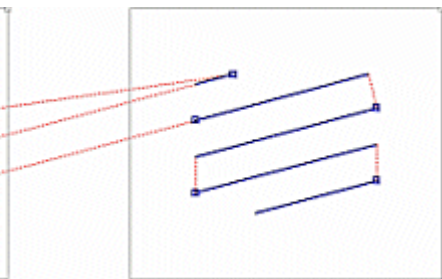
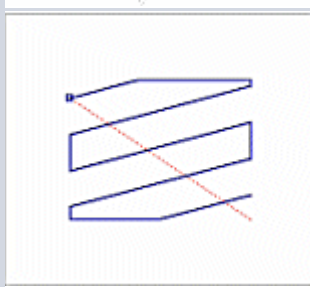
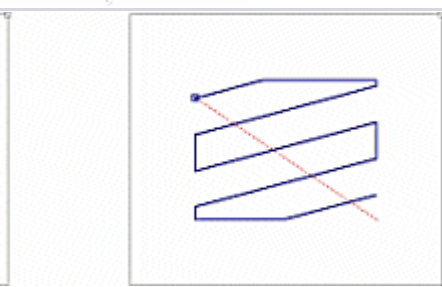
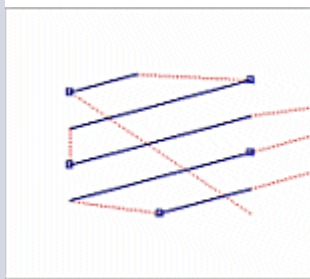
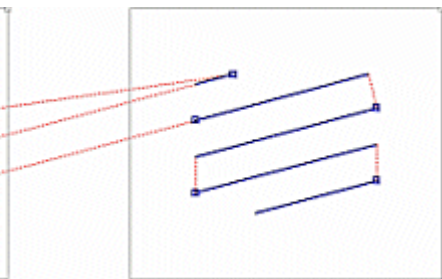
## Sweeping




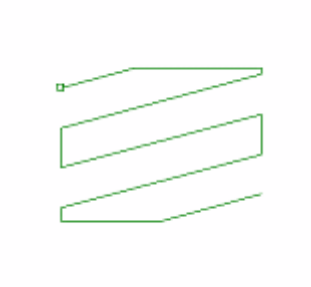

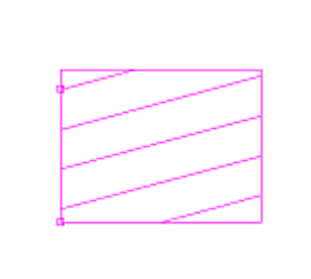

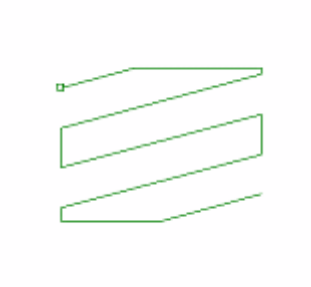

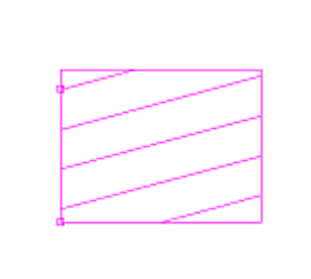

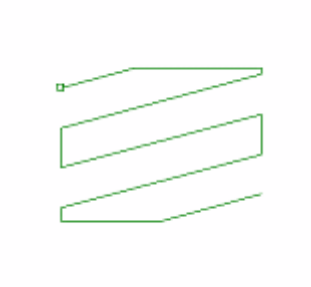

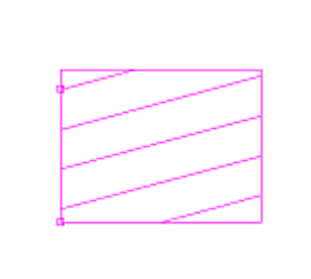



This roughing path hollows out the surface of a closed contour using **rectilinear** paths oriented according to the sweep angle.

 Create the path and set its properties in the **Sweeping dialog box**.

1. **Set the general path properties.**
2. Set the **general Sweeping properties**: click the **General** tab.

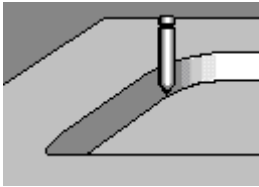
	Key in the total engraving <b>depth</b> .					
		Key in an <b>angle</b> between 0° and 360°. This angle enables the clearance of the tool outside the material to be limited.				
<p><b>Sweeping type</b></p> <p>Indicate whether the sweeping is executed pocket by pocket or over all the pockets. Click</p>	<table border="1"> <tr> <td>  </td> <td>  </td> </tr> <tr> <td>  </td> <td>  </td> </tr> </table>					<p><input checked="" type="radio"/> <b>By area</b>: the tool will completely hollow out each pocket, which reduces the tool's clearance outside the material and the machining time.</p> <p><input type="radio"/> <b>Island jumping</b>: the tool simultaneously hollows out all the pockets by quickly jumping between two pockets at a time (dotted red line).</p>
						
						

<p><b>Sweeping mode</b></p> <p>Designate the <b>machining direction</b> in relation to the tool's forward movement in the material. Click</p>	 <p><input checked="" type="radio"/> <b>Forward and backward:</b> the tool machines the material continuously by going back and forth without being raised.</p>  <p><input type="radio"/> <b>Conventional milling:</b> the tool rotates in the opposite direction from its movement direction and pushes back the material as it moves forward (chips are dragged with the tool). Conventional milling produces a poor engraving, but needs a low spindle power. It is particularly well-suited to roughing, because it reduces the chips ejection.</p>  <p><input type="radio"/> <b>Climb milling:</b> the tool rotates in the direction of its movement and the material passes through underneath it as it moves forward (chips are thrown in front of the tool). Climb milling ensures a better finition (due to the absence of vibration), but requires a high spindle power.</p>						
<p><b>Angle breaking</b></p> <p>Indicate whether the path should include a broken angle or not, either before or after the sweep. Click</p>	<p>This sweeping hollows out a pocket by leaving the material in the angles. The <b>angle breaking</b> handles the angles by contouring.</p> <p><b>i</b> The Conventional/Climb milling option in the Pass parameters tab applies to the angle breaking machining.</p> <table border="1"> <tr> <td>  </td> <td>  </td> <td> <p><input checked="" type="radio"/> <b>None</b></p> </td> </tr> <tr> <td>  </td> <td>  </td> <td> <p><input type="radio"/> <b>Before</b></p> <p><input type="radio"/> <b>After</b></p> </td> </tr> </table>			<p><input checked="" type="radio"/> <b>None</b></p>			<p><input type="radio"/> <b>Before</b></p> <p><input type="radio"/> <b>After</b></p>
		<p><input checked="" type="radio"/> <b>None</b></p>					
		<p><input type="radio"/> <b>Before</b></p> <p><input type="radio"/> <b>After</b></p>					

3. **Key in the pass parameters.**



## Contouring

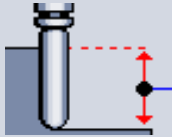


This roughing path hollows out the surface of a closed contour using concentric paths outwards from the center of the theoretical path, with connection between contours.

 Create the path and set its properties in the **2D Engraving dialog box**.

If the tool is not suited to contouring, the path may not be displayed on-screen.

1. **Set the general path properties.**
2. Set the **general 2D Engraving properties**: click the **General** tab.



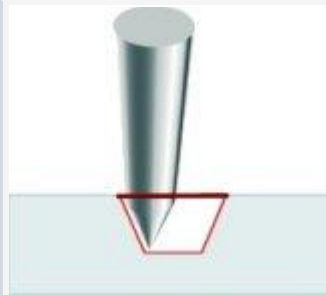
Key in the total engraving **depth**.

3. **Key in the standard pass parameters.**
4. Key in the **2D Engraving pass parameters**.

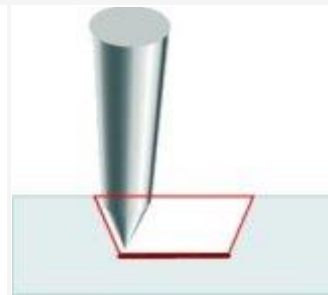
### Passes

Indicate if the theoretical path is hollowed out at the engraving tip or at the bottom, especially for conical tools which cut is wider on surface than at bottom.

Click

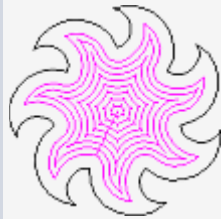
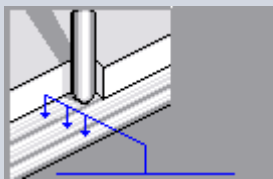


**2D on surface** hollows out the theoretical path at the engraving tip.

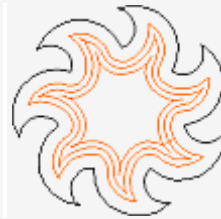


**2D at bottom** hollows out the theoretical path at the bottom of the engraving when using a material that has a transparent surface (Gravoglas).

### Distance between steps



The contouring is full by default: the tool hollows out the whole surface of the theoretical path.



To partially hollow out the surface from its perimeter:

Tick box **Limited number of steps** and key in the number of concentric paths to be machined. Validate.



## Standard machining sequence




This function allows you to combine three machining paths:

- **the roughing path** is a fast 2D filling, usually far from the theoretical path.
- **the semi-roughing path** will clean in 2d the islands remaining in the material.
- **the finishing path** is a 2.5D contouring, very close to the theoretical path.

 Create the path and set its properties in the **Sequence dialog box**.

1. **Set the general path properties.**
2. Set the **general Sequence properties**: click the **Sequence** tab.


### List of tools

 **The two last tools must have the same coning half-angle. The truncation of the finishing tool should not be less than half of the semi-roughing tool's truncation.**

Designate the tool suited to each path:

- Cylindrical tool for **roughing**
- Conical tool for **semi-roughing**
- Conical tool for **finishing**



- a. Click the path, then  (or double-click the path).
- b. Select the tool in the Tool Database.

The dialog box displays the tab, which allows you to set the pass parameters for each tool.

### Automatic overthickness

Tick the box

to retain for each path a thickness of material equal to 10% of the finishing tool's truncation.

to key in the **Allowance on roughing and Allowance on finishing**. The semi-roughing tool will machine all areas between these two limits.

### Roughing

Click the **filling method**:

### Semi-roughing

**Contouring** using **concentric** paths outwards from the center, with connection between contours. This method optimizes the machining time and the engraving conditions.

**Sweeping** using rectilinear paths oriented according to the hatch angle between 0° and 360°. This angle enables the clearance of the tool outside the material to be limited.


3. Click the tab associated to each tool and **key in its pass parameters**.

 **Automatic filling is particularly efficient if the engraving depth is the same for all the selected tools.**





## Optimizing a toolpath

1. Create the useful tool paths.

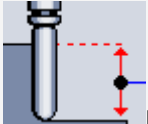
2.  Select an object to which you have assigned a path.


3. Open the **Preview of remaining material dialog box**:  click in the toolbox.

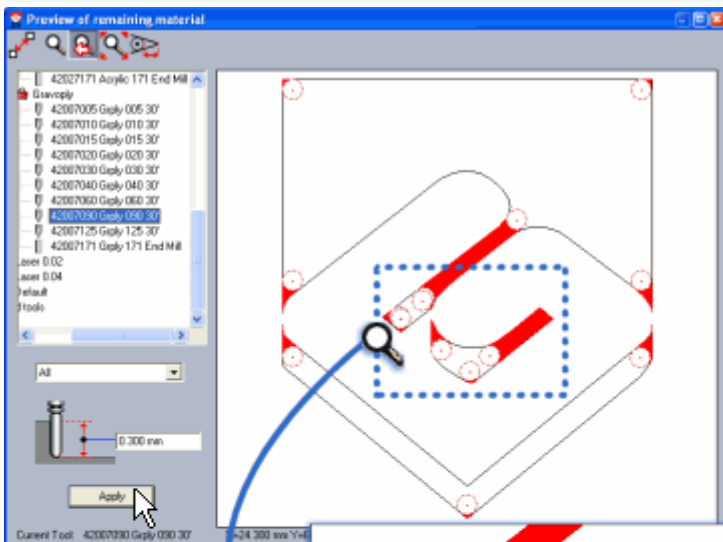
4. Designate the tool in the **Tool Database**.

a.  Display the **Available tools**.  
 For a quick selection, display the tools in terms of profile.

b.  Click a **tool**.

5.  Key in the **machining depth**.

6.  Click.






In the 2D XY view in the dialog box, the path's **critical zones** are indicated:

- by the tool using a dotted red line (its diameter is calculated for the depth entered).
- by the unmachined surfaces, displayed in red.

In the event of a machining error, the **Preview of remaining material dialog box** allows you to test the following immediately:

- another tool.
- a different machining depth.
- new tolerance parameters between the theoretical path and the machined path.


**Edit the path's properties** depending on the solutions adopted.



	<b>Setting the display size using the Zoom tools</b>
	<b>Measuring a distance</b>
	<b>Setting the optimization preferences</b> <ol style="list-style-type: none"><li>1. Click in the <b>Preview of remaining material dialog box</b>.</li><li>2. Select the view <b>Color Settings</b>:<ol style="list-style-type: none"><li>a. Click the <b>Unmilled area</b> (red by default) or <b>Background</b> (white by default).</li><li>b. Click the color in the <b>Windows palette</b>.</li></ol></li><li>3. In the <b>Parameters</b> zone, key in the dimensions of each segment machined from a curve in the theoretical path:<ul style="list-style-type: none"><li>• the <b>Corner error</b> or maximum height.</li><li>• the <b>Discretization</b> or maximum length.</li></ul></li><li>4. <input type="button" value="Apply"/> Click.</li></ol>




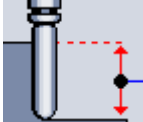
## ◀ Viewing the tool cursor


1. Create the useful tool paths.
2. Open the **Tool simulation dialog box:**  click in the **Measure palette**.
3. Designate the tool (if needed, **add the tool**):

a.  Click to open the **Tool Database**.

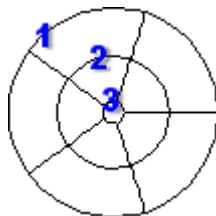
b.  Display the **Available tools**.  
 For a quick selection, display the tools in terms of profile.

c.  Double-click a **tool**.

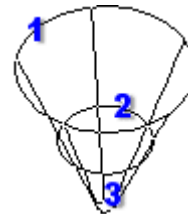
4.  Key in the **machining depth**. To deactivate the cursor tool, key in a zero value.

5.  Click. The tool cursor is displayed in the work area.

### >> Conical Tool cursor



- 1 Fixed tool shank diameter
- 2 Tool's diameter at the set machining depth
- 3 Truncated tool tip

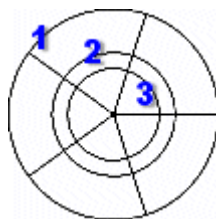


2D XY view

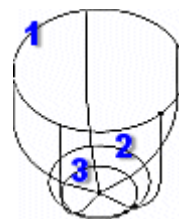
Description

3D ISO view

### >> Cylindrical Tool cursor



- 1 Fixed tool shank diameter
- 2 Diameter of the round-tipped tool at the set machining depth
- 3 Radius at the tip of the rounded end tool



2D XY view

Description

3D ISO view

To locate the path's **critical zones**, move the tool cursor along the theoretical path.

The **Tool simulation dialog box** allows you to immediately test:

- another tool.
- a different machining depth.

Depending on the solutions adopted, you may



**edit the contours to be machined.**





**edit the path's properties.**




## ◀ Reading tool paths information

1. Create the useful tool paths.

2.  **Right-click** a **path** in the Toolpaths list 


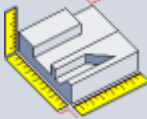
3. In the contextual menu, click the **Information** command.

4.  In the **Path information dialog box**, click the tab displaying the information you are looking for:



» **General**

» **Pass parameters**

» **Toolpath information** 

<p><b>Path name</b> C:\GravoStyle\DRAW5\gnh1.029</p>	<p>Location of the file in which the tool path is saved. This file has the composition's name, followed by the number matching the path creation order.</p>
<p><b>Name</b> <b>Machining length</b>  <b>Fast machining length</b> <b>Machining time</b></p>	<p>Type of path Total distance covered by the tool in the material Distance for movements carried out by the tool on the XYZ axes Machining time estimated in line with the characteristics entered in the Tools Database</p>
<p> <b>XMin YMin ZMin</b> <b>XMax YMax ZMax</b> <b>Depth</b></p>	<p>Tool path's minimum coordinates on the XYZ axes Tool path's maximum coordinates on the XYZ axes Engraving depth defined during the tool path calculation</p>

**>> Toolpath report** 

1. **Right-click** a  **path** or on a  **group** to obtain a report on all the paths it contains.
2. In the contextual menu, click the **Toolpath Report** command.

**Copy** Click to copy the report and paste it into a personal document.

**Paste** Click to edit the report in Word.

<b>Path</b>		<b>Toolpath</b>	Name of the path
		<b>Toolpath filename</b>	Location of the file in which the tool path is saved. This file has the composition's name, followed by a number matching the path creation order.
		<b>C:\GravoStyle\DRAWs\gnh1.029</b>	
		<b>Toolpath type</b>	Type of path
<b>Machining</b>		<b>Machining length</b>	Total distance covered by the tool in the material
		<b>Fast machining length</b>	Distance for the movements carried out by the tool on the XYZ axes
		<b>Machining time</b>	Machining time estimated in line with the characteristics entered in the Tools Database
<b>Bounding box</b>		<b>Minimum:</b>	Tool path's minimum coordinates on the XYZ axes
		<b>Maximum:</b>	Tool path's maximum coordinates on the XYZ axes
<b>Precision</b>			<b>Resolution</b> depending on the complexity and quality of the machining required
<b>Tool</b>	Tool name: Default Type: Cylindrical Diameter: 4.000 mm Half angle: 20.000 deg Radius: 0.000 mm Tool tip: 0.300 mm		<b>Profile of the tool</b> assigned to the path
<b>Execution parameters</b>			<b>Execution parameters</b> entered in the General tab in the dialog box associated with the path
<b>Milling parameters</b>	Top Z: 0.000 mm Milling depth: 2.000 mm Bite steps: 2.000 mm Step number: 1		<b>Pass parameters</b> entered in the Pass Parameters tab in the dialog box associated with the path


## Managing toolpaths

1. Create the useful tool paths.

2. Open the **Toolpaths list:**  click in the toolbox.

This window displays

 **the paths assigned to objects** in the current composition.

 **the groups** in which these paths are stored.





Click to  display or  hide the paths in the list.

### Managing paths

#### Displaying paths

If you assign several paths to the same selection, compare their lines by hiding them or displaying them.

Double-click

- a **path** to make it  visible or  invisible.
- a **group** to make its paths either  all visible or  all invisible.

#### Editing a path

1. Select the objects to which the path is assigned, otherwise it is recalculated for all the objects.

2.  **Right-click** a **path**.

3. In the contextual menu, click command

- **Modify computation** to edit the **path's properties**.
- **Replace tool** to edit the **advanced machining or correction parameters for the tool**.

#### Renaming a path

1.  Click the **path**.

2. Click its **name**.

3. Type the new name.

#### Deleting a path

1.  **Right-click** a **path**.

2. Click the **Delete** command in the contextual menu.

#### Duplicating a path

1.  **Right-click** a **path**.




2. Click the **Copy** command in the contextual menu.

1.  **Right-click** the **Duplicate** command in the contextual menu.







#### Displaying the properties of a path

1.  **Right-click** a **path**.

2. In the contextual menu, click the **Information** or **Report** command to **read the path's properties**.

<b>Transferring a path for engraving</b>	<ol style="list-style-type: none"> <li>1.  <b>Right-click</b> a <b>path</b>.</li> <li>2. In the contextual menu, click the <b>Machining</b> command to <b>define the path's engraving parameters</b>.</li> </ol>
<b>Manipulating a path</b>	<ol style="list-style-type: none"> <li>1.  <b>Right-click</b> a <b>path</b>.</li> <li>2. In the contextual menu, click command <ul style="list-style-type: none"> <li>• <b>Edit toolpath geometry</b> command to convert the path into a curve object in GravoStyle.</li> <li>• <b>Replace path</b> to delete the theoretical path.</li> </ul> </li> </ol>
<b>Displaying a path's render</b>	<ol style="list-style-type: none"> <li>1.  <b>Right-click</b> a <b>path</b>.</li> <li>2. In the contextual menu, click the <b>Simulation</b> or <b>NC Simulation</b> command to <b>simulate the path</b>.</li> </ol>

### **Managing groups**

<p><b>Adding a group</b></p> <p>Organizing the tool paths by group is useful for classifying them by type or machining range.</p>	<ol style="list-style-type: none"> <li>1. Create the group: <ol style="list-style-type: none"> <li>a.  <b>Right-click</b> the <b>group</b> which is going to receive the path group.</li> <li>b. Click the <b>Add a group</b> command in the contextual menu.</li> </ol> </li> <li>2. Store the tool paths of your choice in the new group:  drag and drop each path onto the <b>group</b> </li> </ol>
<p><b>Deleting a group</b></p> <p> <b>This procedure deletes all the group's tool paths.</b></p>	<ol style="list-style-type: none"> <li>1.  <b>Right-click</b> the <b>group</b> to be deleted.</li> <li>2. Click the <b>Delete</b> command in the contextual menu.</li> </ol>
<b>Renaming a group</b>	<ol style="list-style-type: none"> <li>1.  Click the <b>group</b>.</li> <li>2. Click its <b>name</b>.</li> <li>3. Type the new name.</li> </ol>

## Calculation preferences



### Defining toolpath calculation preferences

1. Open the **Options dialog box**:



✓ Press the key.

✓ Click the **Options** command in the **Edit menu**.

2. Click the **Calculation parameters** tab.

3. Set the preferences of your choice.



4. Click.

» **Contours sorting**

» **Auto-merging**

» **Connection between contours**


» **True angle**

» **Cutting order Op1**

» **Other preferences**



## ◀ Designating the machining order

1.  Open the **Options dialog box**.
2. Click the **Calculation parameters** tab.
3. Click the **Sort of contours** that determines their machining order:

<input type="radio"/> <b>Manual</b>	The order of creation/selection determines the order the contours are machined in.
<input checked="" type="radio"/> <b>Minimum distance (active default mode)</b>	The pockets are machined in order of closeness, from the Xmin to the Xmax coordinate.
<input type="radio"/> <b>Surface min. -&gt;max.</b>	Small surface areas (the inside of letters, for example) are given priority in terms of machining. This mode is automatically activated for a Cutting path.
<input type="radio"/> <b>Surface max. -&gt; min.</b>	Large surface areas are given priority in terms of machining.
<input type="radio"/> <b>Warning none</b>	No sorting



## ◀ Connection between contours

This active default option optimizes machining by **contouring** (concentric paths outward from the theoretical path's center).

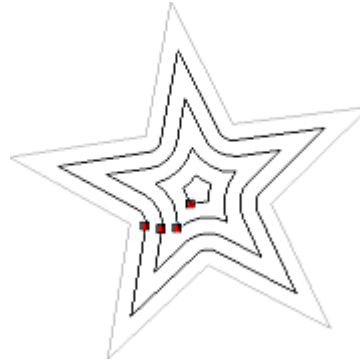


1. Open the **Options dialog box**.
2. Click the **Calculation parameters** tab.
3. Click to deactivate or activate the **Connected profiles**.



**Connected profiles**

Contouring with a connection is continuous. The machining contours are connected by a line.



**Connected profiles**

Without a connection, the tool is raised between two machining contours, which extends the path time.



## Auto-merging



1. Open the **Options dialog box**.
2. Click the **Calculation parameters** tab.
3. Click to deactivate or activate the **Auto-merging**.

Auto-merge allows you to delimit the surfaces to be machined on superimposed **closed contours**.

### Auto-merging

The default setting is for this option to be inactive. Each closed contour produces a pocket, or in other words a surface for machining.

### Auto-merging

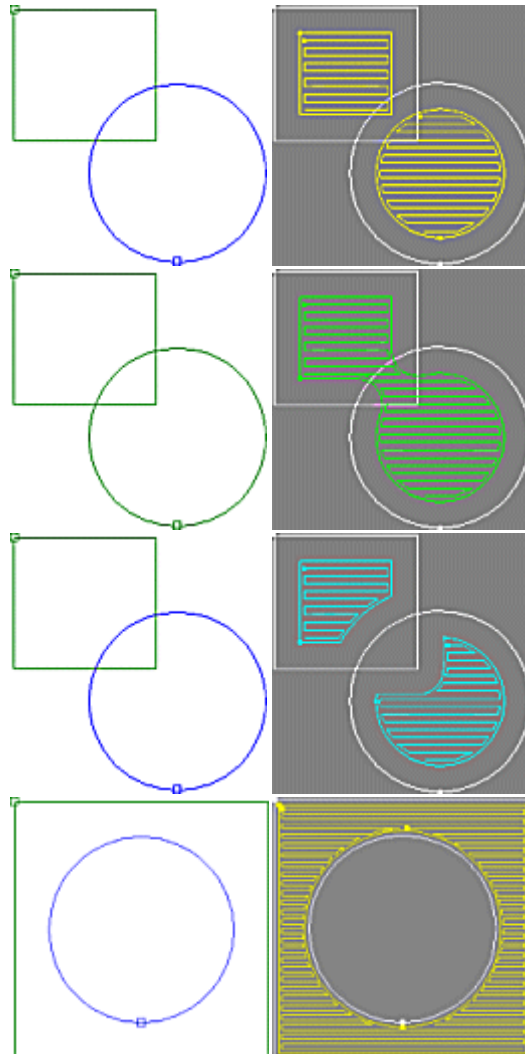
Auto-merging contours with the same direction produces a pocket that integrates the surface of the contours.

### Auto-merging

Auto-merging **contours in opposite directions** produces two pockets that exclude where they intersect.

### Auto-merging does not apply to embedded closed contours.

The surface between the two contours produces a pocket. The internal circle forms an island, or in other words, a surface area that is not to be machined.



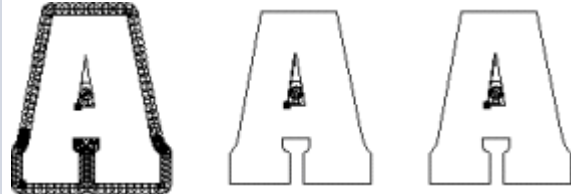
## ◀ Designating the Op1 cutting order



1. Open the **Options dialog box**.
2. Click the **Calculation parameters** tab.
3. Key in an **Op1 value falling between 0 and 3** depending on the cutting order chosen.

### Op1 = 0 Standard cutting

Small surfaces are given priority in terms of cutting.



### Op1 = 1 Unit cutting

All the objects are independent and are cut one by one. For each object, the internal contour is given priority in terms of cutting.

This fast mode is applied to cutting objects that are spaced sufficiently, as it cannot handle tools collisions.



### Op1 = 2 Cutting piece by piece

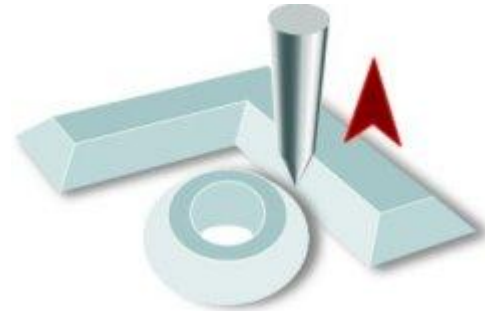
The order of creation/selection defines the order in which objects are cut.

For each piece, the internal contours are given priority in terms of cutting.

This mode is recommended for partially cutting pieces with collision management (word or first name using the Jewellery option).



- i** A tool collision occurs when the current path spills over onto a path that has already been machined (between two letters for example). Collision management causes the tool to be raised at each angle.



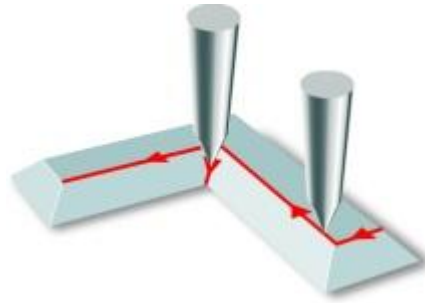
## ◀ True angle

True angles allow the machining of angles to be refined and makes it possible to eliminate machining flaws.




### True angle at top

Re-entrant angle finishing by raising the tool



### True angle at bottom

Re-entrant or outward angle finishing by lowering the tool


1.  Open the **Options dialog box**.
2. Click the **Calculation parameters** tab.
3.  Click to activate the finition by a **True angle at bottom**.
4. Key in the **minimum and maximum angles** between which a true angle is executed.



## Other preferences for toolpath calculation



1. Open the **Options dialog box**.
2. Click the **Calculation parameters** tab and key in the following parameters:

<b>Z Limit</b>	Maximum raising distance away from the 3D machining material (particularly for true angle)	
<b>Critical angle</b>	Maximum angle above and beyond which the <b>true angle at top</b> is not executed	
<b>Discretization</b>	Maximum length of a segment machined from a curve on the theoretical path, if the segmentation is activated in the <b>Cote dialog box</b> .	
<b>Chordal error</b>	Maximum height of a segment machined from a curve on the theoretical path, if the segmentation is activated in the <b>Cote dialog box</b> .	
<b>Multi-passes on Z axis Op0</b>	<b>Op0 = 3</b>	Deactivated option
	<b>Op0 = 17</b>	Activated option
	<b>Op0 = 19</b>	For the Sweeping path, this Op0 value requires a fixed rotation of the tool between each pass.
<b>Va0, Va1</b>	 <b>Any modification made to these parameters automatically renders the manufacturer's and distributor's warranty to the user null and void.</b>	

3. Click the **Specific parameters** tab and key in the following parameters for angle machining:

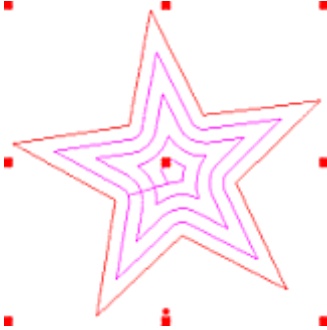
<b>Max. angle for intaglio</b>	Maximum angle above which the true angle at top is not executed (135° is default, max. value = 180°)
<b>Max. angle for uncut material</b>	According to the angle's aperture and the pass width, the tool's extended penetration may be required to remove the material remaining in a sharp angle. The path will be extended inside the angle, when this is lower than the value keyed in (135° is default, max. value = 180°).
<b>Plunged angle of tool</b>	Key in a value from 1° to 89°.



## Simulation

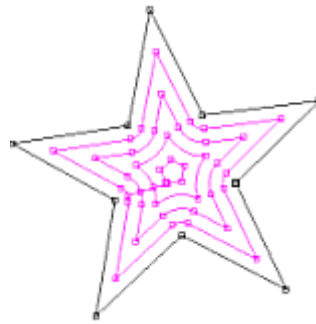
### Gravo Style5 Simulating tool paths

Create the useful tool paths.



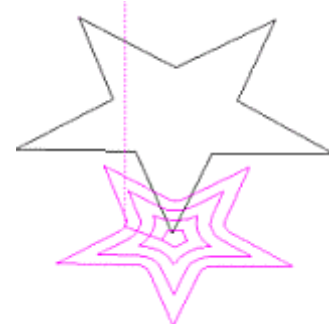
The path created is displayed automatically on the selection to which it is assigned.

The selection's contours form the **theoretical path**.

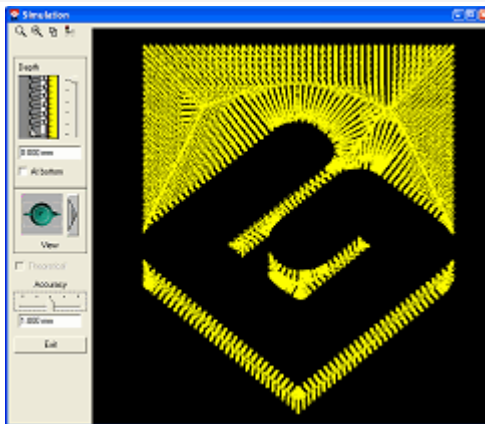


The path consists of **vectorial contours**.

Each **start point** indicates the high-speed movement of the tool on to the next contour.

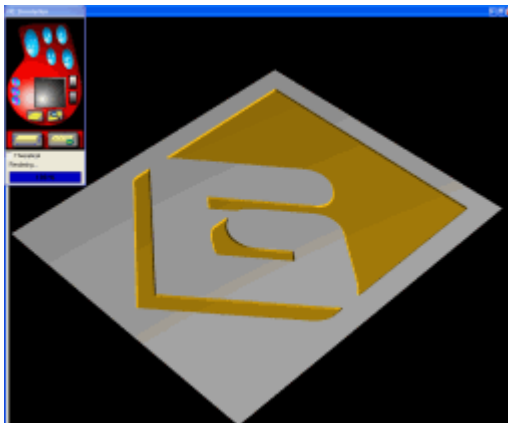


The raising of the tool at the end of the path is represented by a vertical dotted line.



#### >> Surface render

Display surface simulation to view material machining in relation to the tool diameter at the depth keyed in.






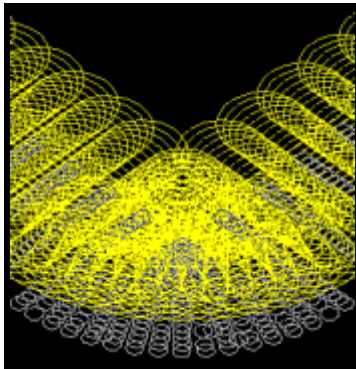
#### >> Realistic render

Run NC simulation to watch the live tool path and the machining progression which ends with the realistic render in material.



## ◀ Displaying surface rendering for a toolpath

1. **Right-click** a  **group** or a  **path** in the Toolpaths list 
2. In the contextual menu, click the **Simulation** command.



The path's course is represented by a series of yellow circles, the diameter of which is the tool's diameter at the requested depth.



Hit the key to stop the simulation.



Click to recalculate the path.



Click to display the **Theoretical** path in red (select the machined object before opening the simulation).

### Setting the render size



Use **Zoom tools**.

✓ **Right-click** to double the size on-screen.

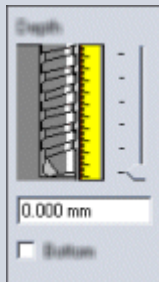
### Setting the render resolution

✓ Enter a **Precision** between 1 and 0.0001 mm (maximum resolution).



Slide the cursor to alter the value.

### Setting the render depth



✓ Enter a negative **Depth** that is at most equal to the total engraving depth.



Slide the cursor to alter the value.



Click **Background** so that the path is displayed in the engraving's background.

The path's course is represented by a series of a grey circles, the radius of which is equal

- to the **radius** for a cylindrical tool.
- to the **tip** for a conical tool.

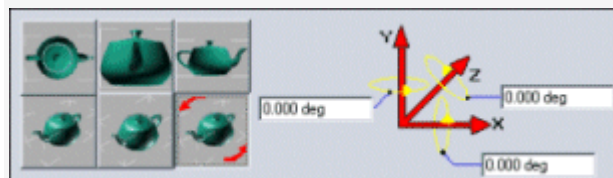
### Orienting the render
















1. Click to open the **View dialogue box**.
2. Click a view (2D XY is the default view).



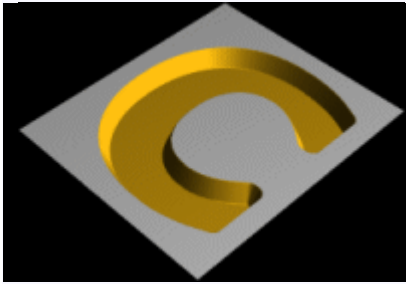
Validate.



## ◀ Displaying realistic rendering for a tool path

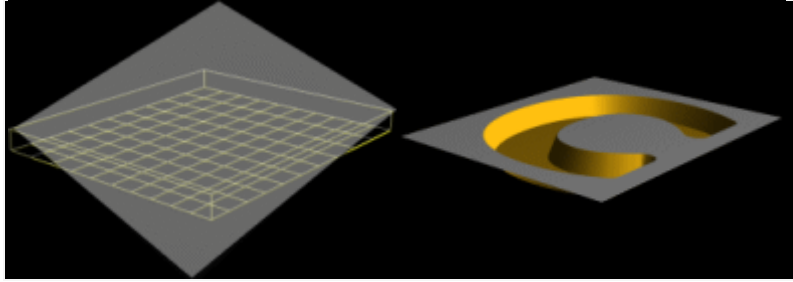
1.  **Right-click** a  **group** or a  **path** in the Toolpaths list 
2. In the contextual menu, click the **NC simulation** command. The **Simulation window** and the **NC panel** will be displayed.
3.  Click to display the **Theoretical** path in red (select the machined object before opening the simulation).
4. Click the render **resolution**:
  -  High
  -  Medium
  -  Low
5. Click the render **colors**:
  - Grayscale
  - Metallic effect
6. Click the simulation **mode**. The rendering calculation starts automatically.
  -  The full simulation displays
    - the block of material's size in red
    - the path's plotting in brown
    - the tool's path in white
  -  The partial simulation displays the path's plotting and the block of material's size.
  -  The quick simulation displays the block of material's size.
  -  Click to suspend the simulation.
  -  Click to cancel the simulation. 

**Orienting the render in the simulation**




Slide the pointer to make the render tilt or pivot.

**Right-click** to slide the pointer vertically in the simulation to set the size of the render.



**Simulating the machining on a zone of the material**

1.  Click in the NC panel.
2. Slide the pointer onto the render. Release it when the zone to be enlarged is framed.
3. Run the rendering calculation.




Click to display the whole block.

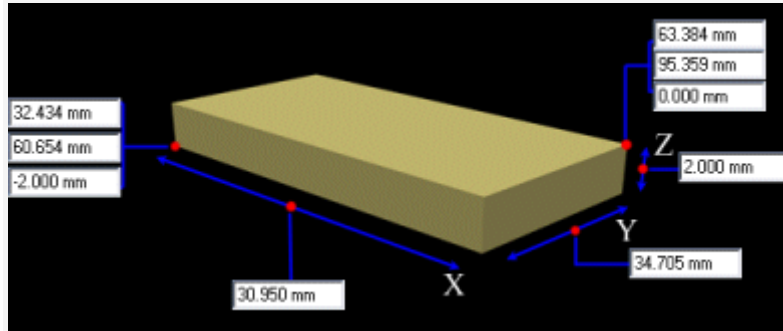
**Defining the block of material**

**i** To define the block of material before the simulation, press the

**Ctrl**

key when you click NC Simulation in the contextual menu.

1.  Click in the NC panel.
2. Key in the **XYZ dimensions or XYZ machining coordinates.**



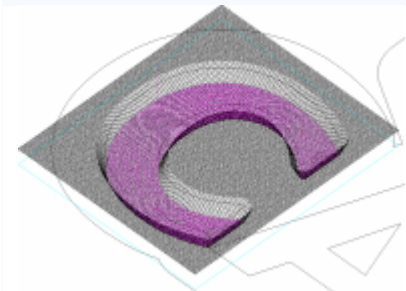
**Box of paths**



Click to adjust the block of material depending on the paths calculated.

**Clip to zero**

Click to place the maximum Z coordinate at the zero point on the surface of the block of material.

**Converting the render into a Styl'Art object**



1.  Click in the NC panel.
2.  Close the simulation. The volumic surface is generated in the work area.

## Transfer for machining



### Transferring machining toolpaths to an IS machine



**Before performing the transfer, check that:**

- The computer and the IS machine are correctly connected.
- The IS machine is powered up.
- The IS machine is not in the process of executing an engraving.

**If you have not installed the IS machine, follow the installation procedure and the advice provided in the Gravograph manual enclosed with the machine.**

1. Select the paths to be machined (all by default): **right-click** a  **group** or a  **path** in the Toolpaths list



2. Open the CAM Machining dialog box:
  - ✓ Click the **Machining** command in the contextual menu.



- ✓ Type the hotkey.



- ✓ Click in the main toolbar.



3. Designate the **active target machine**. Select the machine that is actually going to engrave the current composition.  
If there is none, **add this target machine**.

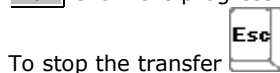
4. **Set the standard engraving parameters and options.**

5. Set the CAM machining properties.

6. **Select paths to be transferred.**

7. **Configure the transfer.**

8. **Run** Click: the progression bar indicates the percentage of data transferred.



To stop the transfer

9. On the engraving machine, execute the pre-engraving settings (consult the Gravograph manual for your machine).



10. Run the engraving from your machine's control panel.

- i** Designate the machining order in the Options dialog box. In terms of engraving, closed contours are given priority over open contours.

- i** Changing the tool during engraving is indicated by the tool's name being displayed on the machine's LCD screen.





**Any modification to the CAM paths will only occur in the engraving following a new transfer, which will delete the preceding one.**



## General properties

### ◀ Setting the CAM machining properties

Set the machining properties in the CAM Machining dialog box.

<p><b>X Y Z</b> <b>Machining coordinates</b></p> <p>This table displays the XYZ coordinates for the tool at the start and end of the engraving, in relation to the 0 point of the machine.</p> <p>The Delta values represent the difference between the maximum and minimum coordinates, and consequently the engraving's footprint.</p>	<ol style="list-style-type: none"> <li> Click to gain access to the <b>XYZ</b> values.</li> <li>Key the <b>Min., Max., Medium</b> coordinates to reposition the <b>floating origin</b> of the composition. Modifying a value will recalculate the related values.</li> </ol> <p> Click to lock them.</p>
<p><b>Multi Z...</b> <b>Multi-passes machining</b></p>	<p>Redefining the number of passes required to machine a <b>sequence's</b> paths</p>
<p><b>Cote...</b> <b>Machining dimensions</b></p>	<p>Configuring the movements for a <b>sequence's</b> machining</p>
<p><b>OK</b> Click to validate the new properties.</p>	



## ◀ Multi-passes machining for a sequence



**If you want the multi-Z option to be activated, key in the 19 value to the parameter Op0 in the Calculation parameters of the Options dialog box.**

1.  Click in the CAM Machining dialog box.
2. Click to select the calculation mode for the number of passes.

<input checked="" type="radio"/> <b>None</b>	The machining is executed according to the number of passes set for each toolpath's computing.
<input type="radio"/> <b>Tool info</b>	The machining is executed according to the <b>cutting depth</b> for the tool used.
<input type="radio"/> <b>Manual</b>	The machining is executed according to the <b>Z step</b> cutting you have keyed in.

3.

## Setting the machining dimensions for a sequence

**Cote...** Click in the CAM Machining dialog box.

<b>Attack-speed falling into the material</b>	
<b>Fast-speed movements over the material</b>	
<b>Material</b>	
<b>Output curves as segments</b>	<input checked="" type="checkbox"/> Tick this box to machine the theoretical path as small segments, instead of curves. The maximum dimensions of a machined segment will be set in the <b>Discretization and Chordal error</b> in the Calculation parameters of the Options dialog box.
<b>Z1</b>	<b>Initial position</b> <b>Ending position</b>
<b>Change tool position</b>	
<b>Z4</b>	<b>Z security beginning of machining</b> Minimum and maximum machining movements The Z security value at the start of machining must be at least equal to the Z max. coordinate in the CAM Machining dialog box.
<b>Z5</b>	<b>Z security end of machining</b>
<b>Z2</b>	<b>Z between contours (absolute value/machining file)</b> Maximum rising for the tool between two machined contours This value must be greater than the Z max. coordinate in the CAM Machining dialog box.
<b>Z3</b>	<b>Z approach (relative value/piece)</b> Maximum drop speed distance for the tool





## Tool Database


### Gravo Style5 Using the Tool Database

Select the **Tools Database** command in the **Machining menu**.

The **Tools Database dialog box** displays the libraries

 **Tool Database** where the available tools are stored.

 **Tools used** for engraving the paths in the current composition.

 Each tools **group** corresponds to an engraving profile (braille, finishing, diamond, etc.).

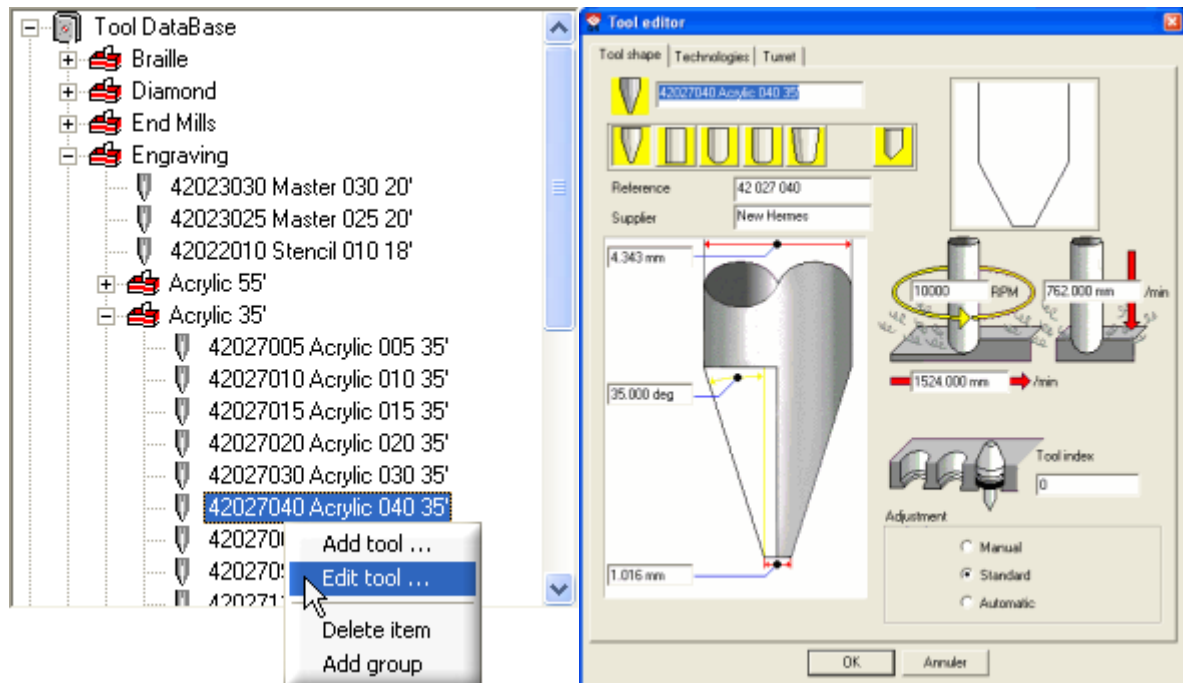
Click to **display** or **hide the contents** of a library or a group.

1.  Right-click a tool.
2. Click an operation in context menu: edit tool properties, add a tool or create a group to order your tools.

**>> Managing engraving tools in the Tool Database**

**>> Setting the properties for an existing tool in the Tool Editor**

**>> Creating a special tool**



## ◀ Managing the engraving tools




Open the **Tool Database dialog box**.







At the end of the operation, click in the **Tool Database dialog box**.

### ▮ Managing the available tools ▲


#### Adding a tool

1.  Open the **Tool Database**.
2.  If the tool belongs to a group, open the **group**.
3.  Click.
4. Set the tool's properties.





#### Editing a tool

1.  Open the **Tool Database**.
2.  If the tool belongs to a group, open the **group**.
3. Select the tool:
  - a.  Click the **tool**.
  - b.  Click in the **Tool Database dialog box**.


**or**

  - a.  **Right-click** the **tool**.
  - b. Click the **Edit tool** command in the contextual menu.
4. Edit the tool's properties.


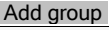
#### Deleting a tool

1.  Open the **Tool Database**.
2.  If the tool belongs to a group, open the **group**.
3. Select the tool to be deleted:
  - a.  Click the **tool**.
  - b.  Click in the **Tool Database dialog box**.




**or**

  - a.  **Right-click** the **tool**.
  - b. Click the **Delete** command in the contextual menu.


 **Managing groups of tools** 
**Adding a group**

1. Create the group of tools:
  - a.  Click the **library** which will contain the group.
  - b.  Click in the **Tool Database dialog box**.


**or**




  - a.  **Right-click** the **library** which will contain the group.
  - b. Click the **Add group** command in the contextual menu.
2.  Arrange the tools of your choice in the group: drag and drop each tool onto the **group** 

**Renaming a group**


1.  Click the **group**.
2. Click the **name** of the group.
3. Type the new name.

**Deleting a group**

 **This procedure also deletes the tools belonging to the group.**

1.  Open the **library** which contains the group of tools.
2. Select the group:
  - a.  Click the **group** to be deleted.
  - b.  Click in the **Tool Database dialog box**.


**or**

  - a.  **Right-click** the **group** to be deleted.
  - b. Click the **Delete** command in the contextual menu.

## Tool properties



### ◀ Defining the properties of an engraving tool

1. Add or edit a tool.
2. Set the properties of the tool selected in the **Tool Editor**:
  - a. **Describe the tool's profile.**
  - b. **Key in the advanced machining parameters.**
  - c. **Key in the correction parameters** when you use a tool changer.

3.  Click in the Tool Editor.



## ◀ Describing the tool's profile

1. Add or edit a tool.
2. In the **Tool Editor**, click the **Tool shape** tab.
3. Type the **Name** of the tool, its **Reference** and its **Supplier**.
4. Click the **profile** 
5. Key in the **grinding parameters** (except for the quarter round tool) 
  - a tool diameter of 3.17 mm
  - a coning half-angle of 22.5°
  - a truncation of 0.32 mm (these values are calculated for a cutting depth of 0.33 mm).



### Diameter of the tool

The distance between the engraving contour and the center of the tool is equal to its radius.



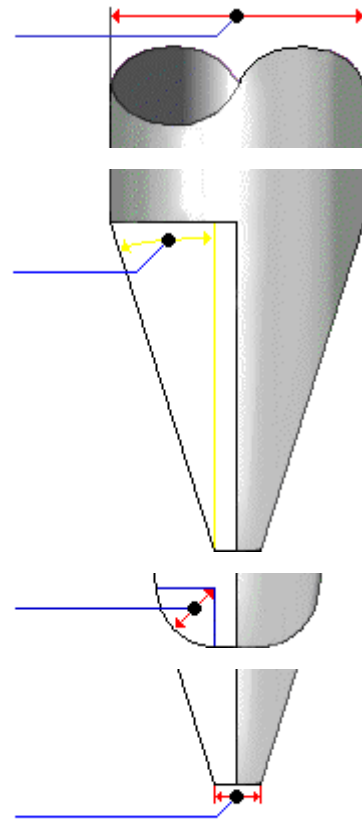
The **coning half-angle** defines half of the cutting angle.



The **radius** determines the roundness of the engraving.



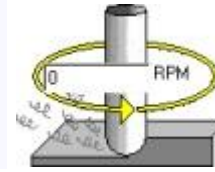
The **truncation** defines the cutting width at the machining tip (Z=0).



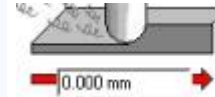
6. Key in the **standard machining parameters** 

 The parameters are the same for the quarter round tool, although the representation of the tool may be different.


Rotation speed in RPM (rotations per minute)

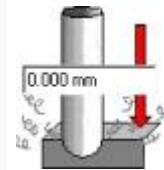


Forward speed in mm per minute



Attack speed in mm per minute

Click the  **Automatic Adjustment** to obtain a value equal to half the forward speed.

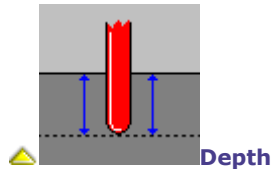


Number in the tool changer



## ◀ Entering the advanced machining parameters for a tool

1. Add or edit a tool.
2. In the **Tool Editor**, click the **Technologies** tab.
3. Key in the **advanced machining parameters**:



**Max.**  
**Min.**

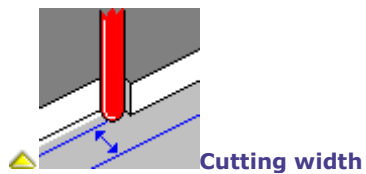
Maximum/minimum engraving depth

Key in an engraving depth that is between the maximum depth and the minimum depth defined for the tool.

**Of Cut**

Maximum pass depth, between 0.01 mm and the maximum depth.

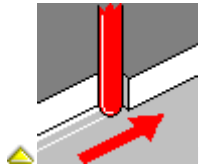
The number of passes required for the engraving is equal to the engraving depth divided by the cutting depth.



**Max.**  
**Min.**

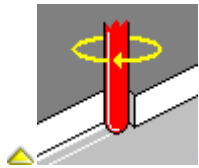
Maximum/minimum distance between 2 passes

The difference between them matches the overlap value in terms of the calculation of the tool path.



Feed rate

<b>Nominal speed F = (A x a x S)</b>	Engraving speed
<b>Fast speed</b>	Forward speed with the spindle over the material
<b>Max. Min.</b>	Maximum/minimum nominal speed To lock the engraving speed for the tool selected, key in the same value for the Min. and Max. speeds.
<b>Descending feed rate</b>	Maximum drop speed allowed with the spindle over the material, if (F) is higher
<b>Plunge speed</b>	Maximum speed allowed for attacking the material, if (F) is higher
<b>Cutting speed (V)</b>	Linear advance speed of the cutting edge, at least equal to 0.01 mm/min
<b>Flying angle</b>	Maximum drop angle (referenced in relation to the horizontal plane)
<b>Vol. of chips</b>	Volume of chips which the tool can manage
<b>Nb of teeth (a)</b>	Value at least equal to 1
<b>Feed/tooth (A)</b>	Chip thickness which the tool can manage



Rotation speed




<b>Nominal S = (1000 x V) / (P x D)</b>	Spindle rotation speed (D: tool diameter) For a conical tool, take the average value for the cutting depth entered.
<b>Max. Min.</b>	Maximum/minimum rotation speed To set the rotation speed for the tool selected, key in the same value for the Min. and Max. speeds.



**The rotation and engraving speeds are limited by the post-processor for the machine equipped with the tool selected.**


## ⚡ Entering the tool correction parameters

1. Add or edit a tool.
2. In the **Tool Editor**, click the **Turret** tab.
3. Key in the **correction parameters** in the line associated with the tool (double-click on the box which you want to modify the value for).

<b>Tool index</b>	Number assigned in the <b>Profile tab</b>
<b>Corrector</b>	<p>Physical location in the tool changer</p> <p>The default setting is for the number of the tool to always match its position in the changer.</p> <p>Click box  <b>Index=Corrector</b> to key in different values. By way of an example, you can place tool 7 in row 3 of the tool changer.</p>
<b>Max length</b>	<p>Maximum engraving distance allowed</p> <p>If this is exceeded, the path is cut into as many sections as are necessary.</p>
<b>Used length</b>	<p>Total of the engraving distances covered</p> <p>When the Maximum Distance and the Machined Distance are the same, this means the tool is worn and should be replaced.</p>
<b>Initializing the correction parameters</b>	<ol style="list-style-type: none"> <li>1. Click the heading of a column.</li> <li>2.  Click to edit all the column's values.</li> <li>3. Key in the default column <b>Value</b>.</li> <li>4.  Validate.</li> </ol>



## Creating a special engraving tool




1. Draw the open contour which represents the **tool's profile**.
2. Centre vertically two markers to form the **tool's axis**.
3.  For this type of tool, check that the distance between the profile base and the axis is at most equal to half the truncation.
4. Select the profile, and then the markers.



5. Click in the toolbox to display the selection in the CAM window.



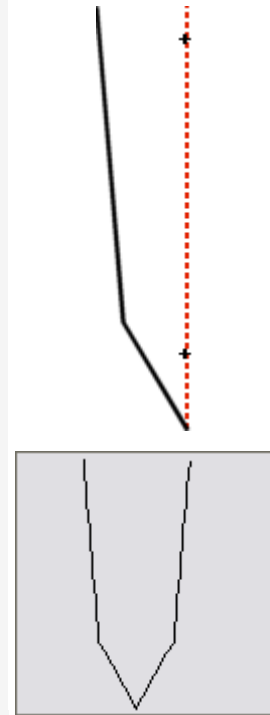
6. Click in the toolbox.

 The tool is automatically added into the  **Special tools** group in the  **Tool Database**.

7. Set the properties of the special tool in the **Tool Editor** in which the preview displays the cutting expected:
  - a. **Key in the standard machining parameters.**
  - b. **Key in the advanced machining parameters.**
  - c. **Key in the correction parameters** when you use a tool changer.



8. Click in the Tool Editor.



## Customize the program



# Defining your program preferences

The more you use the program, the more you will need to adapt it to your work habits. The simplest way is to assign your personal values to the parameters and options that you use regularly. That way, they will automatically be applied to each new composition.

1. Open the Options dialog box:



✓ Press the key.

✓ Click the **Options** command in the **Edit menu**.

2. Click the tab for the preferences to be modified.

3. Set the preferences of your choice.



4. Click.

>> **General**

>> **Display**

>> **Colors**

>> **Grid**

>> **Material**

>> **Text attributes**

>> **Spell Checker**

>> **Fonts**




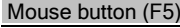
>> **Mouse buttons**

>> **Machining parameters**



## ◀ Setting the general preferences

1. Click the **General** tab in the Options dialog box.
2. Click the option or customize the parameter of your choice:

<b>Undo level</b>	To set the number of procedures saved in the <b>Undo/Redo memory</b> , key in an <b>Undo level</b> between 1 and 100.
<b>Auto save</b>	To set the <b>automatic save period</b> , key in an <b>Auto save every ... minutes:</b> <ul style="list-style-type: none"> <li>• a number of minutes between 1 and 60.</li> <li>• a zero value to deactivate the automatic save.</li> </ul>
<input checked="" type="checkbox"/> <b>Sound</b>	The activation of certain commands produces a sound. Click the box to use this function.
<input type="checkbox"/> <b>Save a *.VNX copy</b>	Tick the box to automatically create a <b>.vnx type neutral file</b> , each time <b>you save the composition</b> . This format converts all the objects into vectorial contours and allow the composition to be opened in any version of GravoStyle or Type3.   <b>Text objects and complex objects are converted into curves and no more editable.</b> <b>Bitmap images and surfaces are retained intact.</b>
 <b>Unit</b>	Click a measuring unit.
 <b>Language</b>	Click your language.
 <b>Mouse button (F5)</b>	Click to <b>configure your mouse</b> .



## ◀ Customizing the display


1. Click the **Display** tab in the Options dialog box.
2. Click the option or customize the parameter of your choice:

<input checked="" type="checkbox"/> <b>Show ruler</b>	To display the <b>horizontal and vertical rulers</b>
<input checked="" type="checkbox"/> <b>Show bitmap</b>	To display a <b>bitmap image</b>
<input checked="" type="checkbox"/> <b>Show start point</b>	To display a <b>contour's start point</b>
<input checked="" type="checkbox"/> <b>Show control point</b>	To display a <b>contour's control points</b>
<input checked="" type="checkbox"/> <b>Show direction</b>	To display a <b>contour's direction</b>
<b>Arrow move</b>	To set the <b>movement distance for an object</b> using the arrow keys in the numeric keypad
<b>Snap distance</b>	To delimit the magnetic field around a <b>snap element</b>
<input checked="" type="checkbox"/> <b>Display timer</b>	To display the time spent on the current composition
<b>Toolbars configuration</b>	<b>To organize floating palettes</b>



## ◀ Customizing colors

1. Click the **Colors** tab in the Options dialog box.

2.  Click the color desired:

Neutral	black
Open contour	black
Counterclockwise closed contour	green
Clockwise closed contour	blue
Background	white
Baseline	grey
Engraving path	black
Fast movement	black
Material	black
Snap distance	red
Selection	red
Margins	grey
Grid	dark grey
Guide lines	black



## ◀ Customizing text attributes

1. Click the **Text attributes** tab in the Options dialog box.
2. Customize the attribute of your choice:

 Font
 Height
 Width
 Text slant
 Exponent/index text
<b>Bubble time</b> <b>Zoom period during text entry</b>
<b>Control +/-</b> <b>Sets manual auto-kerning</b> , by adding +/- spaces with each keyboard shortcut.



## ◀ Configuring the mouse

Adapt the mouse behaviour to your work habits.  
Click your preferences in **Mouse use dialog box**:



Click the action performed with the **central wheel**:



Click the action performed with the **right button**:



Press the key.

or

- a. Click the **General** tab in the Options dialog box.
- b.  Click.



**Zoom in/out**



**Scroll up/down**



**Zoom** to double the display size



**Undo, to cancel the last procedure performed**



**No action**



## References


### Gravo Style5 **References**

»» <b>.gnh Files</b>	How to manage the compositions saved on your computer?
»» <b>Object Types</b>	What are the objects with which you can enhance a composition?
»» <b>File formats</b>	What are the external file formats: <ul style="list-style-type: none"><li>• that you can import and use in the program?</li><li>• in which you can export a composition so it can be used in another program?</li></ul>
»» <b>Fonts</b>	How to manage the fonts used to display the text in the composition?






## .gnh Files

Open the **Open the Find File dialog box**: click the **Find** command in the **File menu**.

 Click to close the dialog box.

### Find

1. Open the **Find File dialog box**.
2. Designate the drive you want to look for .gnh files on:  
 Click if you are searching on the [c] hard drive. Otherwise, click the drive name ([a] for the floppy-disk drive, or [d] for the CD-ROM drive).
3. Click the name of a directory available on the drive.  
 Click to go back to the upper level in the tree.
4.  Click to find .gnh files stored in the directory selected. If no name is displayed, restart the search from step 1.
5. If several .gnh files are displayed, click a sorting criterion in the **Sort by** zone (name, creation or modification date, etc.). The files contained in the selected directory appear in the specified sort order.

### Manage

1. Perform a search in the **Find File dialog box**.
2. Click the file name in the list of .gnh files found; the composition selected is previewed.
3. Click the button which runs the procedure you want on the file selected. The procedure is applied to the .gnh file and to the files that are related to it (tool path, Styl'Art shape, etc):



**To open the .gnh file**





Click in the **Delete a .gnh File dialog box**.


- a. Click the name of the drive to which the file is going to be moved or copied: ([a] for the floppy disk drive, [c] the hard drive).
- b. Click the directory name.



- c. Click.



## Available types of objects (non-contractual list)

### Text objects

These objects consist of one single line of text or a paragraph.

To edit the text



in Selection mode: double-click the object.



in Text mode: click the object.

To modify a line parameter or a text attribute, click the relevant command in the Text palette or in Rapido palette.

- >> Horizontal text
- >> Text in an arc
- >> Slant text
- >> Vertical text
- >> Text on a curve
- >> Text in a rectangle
- >> Text in Columns
- >> Static Matrix series

### Curve objects

These objects consist of one or more vectorial contours.

To edit the contours comprising this type of object, ungroup them. You can **retouch their lines** without ungrouping them.

- >> Geometric shapes (except Markers)
- >> Objects converted into curves
- >> Symbols
- >> Bounding box

### Marker object

This object is used as a marker for a dimension or a drilling point

- >> Marker
- >> Single drilling point

### Composite objects

These objects are **groups** of different types of objects.

To edit the objects comprising this type of object, ungroup them. If the composite object contains contours, you can **retouch their lines** without ungrouping them.

- >> Symbols
- >> Cutting axes for a static Matrix series
- >> Drilling points
- >> Vectorized images
- >> Overlap markers

### Complex objects

These objects are **groups** of different types of objects. You cannot transform this type of object.

To modify its parameters, double-click on the object in Selection



mode

To edit the objects comprising this type of object, convert it into curves if possible.

- >> Level 2 Braille Text
- >> Dynamic Matrix Series
- >> Dials
- >> Bar Codes
- >> Dimensions

### Images

These objects are obtained from:

- digitizing a photo or a drawing on paper using a scanner.
- importing files produced with a bitmap drawing program.

To retouch this type of object in the Bitmap Editor, double-click on the



object in Selection mode


- >> Bitmap Images




## ◀ Using Gravograph fonts Option for ALL levels








### Installing a Gravograph font

 **The fonts in Pack 1 are available as a standard feature. Fonts created in Font Editor can be used immediately.**



1. To use a font, first install the Pack it belongs to: execute **First Installation** steps 1 to 9.
2. In the **Setup Type dialog box**, click  **Custom**.
3. Proceed the installation in Custom mode.
4. Execute **First Installation** steps 11 to 14.
5. **Order and activate this option.**
6. After activating the Pack, you can **select the fonts**.










### Deleting Gravograph Fonts

 **To use a deleted font, reinstall the Pack it belongs to. If this Pack has already been activated, the font will be available immediately. Otherwise, you have to order and activate this option.**

1.  Launch Windows **Explorer**.
2.  Locate the drive on which you have installed the program (C: is the default drive).
3.  Double-click on the **GravoStyle folder**.
4.  Double-click on the **FONTS folder**.
5.  Double-click on the **Gii folder**.
6.  Click the **.CHR** type file, which features the name of the font to be deleted.
7.  Press the key.

### Installing Braille fonts in Windows

 **Execute this procedure if the Ttf fonts  Braille, NHBraille, Simbraille do not appear in the font menu.**

1.  In the Windows Task Bar, click **Start**.
2.  In the Start menu, click command **Settings (Windows 98/NT)**.
3.  In the Parameters menu, click command **Control panel**.
4.  In the Control Panel, double-click icon **Fonts**.
5. In the Add Fonts dialog box, click command **Install a new font** in the File menu.
6.  In the Drives list, click the **drive** where you have installed the program (c: is the default drive).
7.  In the Folders list, click **folder GravoStyle**.
8.  In this folder, click **folder Ttf of FONTS directory**.
9. Click box  **Copy all fonts** into the Windows FONTS directory.
10.  Click.



## File formats recognized

[Click to locate a format.](#)

Vectors (*.eps, *.ai, *.dxf, *.plt, *.igs, *.iso, *.stl, *.hpg)	Bitmap (*.bmp, *.wmf, *.tiff)
Gravograph-New Hermes (*.vnd, *.job, *.ejo, *.lgo)	GravoStyle (*.gnh, *.vna, *.syb)

### Vector files

#### Image generated from a combination of geometrical shapes

##### Before importing:

- Convert text into curves. You can no longer correct it, but you can apply geometric warping.
- Smooth contours, whether they consist of lines or curves.
- Export the file in one of the following formats:

#### IMPORT EXPORT



**HPGL**  
(\*.hpg)

##### Standard Hewlett-Packard Format

This format, which is commonly found in the CAD sector, reproduces the contours in the form of small vectors. The quality can be decreased, particularly in curve smoothness.



**HPGL**  
(\*.plt)

If the drawing's import is not correct, export it again under HPGL Vectors format. This draws contours with line segments. Lines are simplified, but more faithfully reproduced.



**EPS**  
(\*.eps)

##### Standard PostScript Format

This faster and optimized process programs contours and characters as Bezier curves, producing fewer elements for analysis.



**EPS** (\*.ai)

When you import EPS files, the **EPS Import dialog box** opens.

Click option **Autoconnected imported file** to automatically close open contours and delimit surfaces to be engraved over the imported drawing.









**If you fail to open this type of file correctly, import it under generic PostScript format:**

1. Exit the program.
2. Explore **folder GravoStyle**.
3. Rename **folder FILTRES under DPS name**.
4. Create **new FILTRES folder**.
5. **Copy file dicogen.pda** from DPS folder.
6. **Paste the file** into FILTRES folder.
7. Run the program and **import the PostScript file again**.

After importation, restore initial filters. Rename

- folder FILTRES under DICOGEN name.
- folder DPS under FILTRES name.

✓	✓	✓	✓	✓	<p><b>DXF (*.dxf)</b></p> <p><b>Standard Autocad Format</b></p> <p> <b>How to import a DXF file that contains text?</b></p> <ul style="list-style-type: none"> <li>If the text has been typed with an <b>Asian font</b>, <b>select the country</b> it belongs to.             <ol style="list-style-type: none"> <li>Open Local Options in Control Panel.</li> <li>Click the <b>geographic zone in Standards and Formats</b>.</li> <li> Click.</li> </ol> </li> <li>In GravoStyle, <b>select the font</b> which will replace the fonts missing to display text of the imported DXF file.</li> </ul> <p>When you import 2D DXF files, the <b>2D DXF Import dialog box</b> opens.</p> <ol style="list-style-type: none"> <li>In zone <b>Scaling</b>, click the active measure unit:             <ul style="list-style-type: none"> <li><input checked="" type="radio"/> <b>Automatic or</b> default unit</li> <li><input type="radio"/> <b>from millimeters</b></li> <li><input type="radio"/> <b>from inches</b></li> </ul> </li> <li><input checked="" type="checkbox"/> Click option <b>Autoconnected imported file</b> to automatically close open contours and delimit surfaces to be engraved over the imported drawing.               </li> <li> Click.</li> <li>Use <b>overlap markers</b> to check that contours are correctly closed. If needed, close open contours using <b>auto-connexion</b>.</li> </ol>
✓	✓	✓	✓	✓	<p><b>IGES (*.igs)</b></p> <p><b>Standard 4CAM surface description format</b></p>
✓	✓	✓	✓	✓	<p><b>ISO (*.iso)</b></p> <p><b>Surface recognition format</b></p> <p>When a Digitized ISO file is imported, the <b>Digitized ISO dialog box</b> opens.</p> <ol style="list-style-type: none"> <li>Depending on the level of precision desired, key in <b>NbX</b>, the number of grid points on the X axis. <b>NbY</b>, the number of grid points on the Y axis.</li> <li> Click.</li> </ol>
✓	✓	✓	✓	✓	<p><b>Digitized ISO</b></p> <p><b>Vector</b></p>
✓	✓	✓	✓	✓	<p><b>STL (*.stl)</b></p> <p><b>Surface recognition format</b></p> <p>When an .stl file is imported, the <b>STL Import dialog box</b> opens.</p> <p>Click a view (<b>Top</b> is the default setting).</p> <p><b>or</b></p> <ol style="list-style-type: none"> <li>Click <b>Customize</b> and orient the surface projection:             <ol style="list-style-type: none"> <li>Key in the <b>Alpha, Beta or Gamma</b> rotation angle.</li> <li>Key in the projection's <b>Resolution</b>.</li> </ol> </li> <li> Click.</li> </ol>
	✓	✓	✓	✓	<p><b>ASCII</b></p>
	✓	✓	✓	✓	<p><b>binary</b></p>

### ▲ Bitmap files

IMPORT	EXPORT	Image generated from a pixel grid, or points on the screen, with different colors	
✓	✗	<b>BMP (*.bmp, *.dib)</b>	Standard format for Windows images
✓	✗	<b>PNG (*.png)</b>	Commonly-used format for Web images
✓	✗	<b>TIFF (*.tif)</b>	Commonly-used format for exchanging images between MacOS and Windows programs
✓	✗	<b>Windows Metafile (*.wmf)</b>	Format for Windows images integrating bitmap data and vectorial data

### ▲ GravoStyle files

IMPORT	EXPORT	Files related to the composition (.gnh files)	
✓	✓	<b>ISO (*.u??)</b>	Engraving saved in the form of a file transferred to the machine subsequently
✓	✓	<b>Geometric tool path (*.O??, *.P??)</b>	CAM toolpath
✓	✓	<b>Vision Numeric TypeArt (*.vna)</b>	Styl'Art Shape
✗	✓	<b>Symbol (.syb)</b>	Logo stored in the <b>Symbols</b> library

### ▲ Gravograph files

IMPORT	EXPORT		
✓	✗	<b>*.ejo, *.lgo</b>	Documents created and saved in the Open Software program
✓	✗	<b>GravoStyle97 (*.job)</b>	Composition created and saved in the GravoStyle 1 & 2 for Windows 3.1/95 program
✓	✗	<b>Vision Numeric (*.vnd)</b>	Composition created and saved in previous versions of GravoStyle or Type3





### ▲ Text files (ascii)

IMPORT	EXPORT		
✓	✗	<b>*.txt</b>	Commonly used format for exchanging raw text between programs Used to create a <b>list of names</b> or to associate text with graduations in a <b>dial</b> .



## Install the program

### Installing the program on your computer

-  **Plugging the dongle**
-  **First setup**
-  **Install mode**
-  **After setup-Operations**



**You are allowed to install the program onto several computers, but it will only operate on a computer with the dongle plugged into it.**



## Plugging the dongle into your computer

This protection key checks your codes and user rights to the program (last installation date, program version, **program level and the options integrated into this level**).



**Unplug any USB key from the back of your computer. During installation, a message will remind to remove this kind of dongle.**

1. Power down the computer and peripherals (printer, scanner).
2. Unplug the printer cable and any other peripheral connected to the computer's parallel port (LPT).
3. Connect the plug end of the dongle to this parallel port.
4. Plug the printer cable and the other peripherals into the dongle.
5. Power up the peripherals (the printer must be running and plugged in at all times).

























**If the dongle is not recognized, carry out the procedure again.**



## ◀ Successfully completing the first installation

1. Check that your computer has the minimum configuration required.

PC	Minimum	Recommended
<b>Microprocessor</b>	Pentium III	Pentium IV
<b>Frequency</b>	500 MHz	800 MHz
<b>RAM</b>	128 MB	256 MB
<b>1 internal hard drive</b>	100 MB available	400 MB
<b>1 internal CD-ROM drive</b>	x16	x32
<b>1 mouse</b>	Windows compatible	
<b>1 clavier</b>	extended (105 keys)	
<b>LPT parallel ports</b>	1	2
<b>COM serial ports</b>	1	2
<b>1 graphics card</b>	65535 colors, 24 bits	16.7 million colors, 32 bits
<b>1 SVGA monitor</b>	17", resolution 768x1024	20", resolution 1024x1280
<b>Other peripherals</b>	1 internal 3.5" HD floppy disk drive	1 printer 1 TWAIN scanner 1 sound card 1 ZIP drive
<b>Software environment</b>	 Windows 98	 Windows 2000  Internet Explorer 5  Acrobat Reader 5  Word 97/98  Windows Multimedia Player  Arial, Microsoft Sans Serif Regular, Verdana Fonts
<b>Engraving machine</b>	Gravograph IS or L-Solution 2D Equipment (laser, vinyl cutter or water jet)	3D Machine

2. Plug the dongle into the back of your computer.
3. Place disk **GravoStyle** in the CD-ROM drive.
4. Wait until the installation panel is displayed.  
 If this panel does not open, double-click the drive.
5.  In the **Welcome dialog box**, click to start the installation.  
Back to the previous dialog box 
6. Type your **Name** and your Address in the Coordinates dialog box.  
 Click.
7. Type your **Phone number, Fax number and your Email address**.  
 Click.
8. The **Choose Destination Location dialog box** will inform you that the program is going to be installed in the **GravoStyle** folder, created by default on hard drive  C:.  
 Click.
9. In the **Setup Type dialog box**, click the installation mode (  **Typical** is the default mode).  
 Click.
10. Installation begins. The progress panel and bar show the state of progress in terms of the procedure. To cancel installation,  click in the current dialog box, then on  in the Exit Setup dialog box.
11. Check that you have unplugged any **USB dongle** from the back of your computer.  
 Click.
12. **Install L-Solution Printers driver** to simplify the connection between the software and your laser machine.
13. In the **Setup Complete dialog box**, click  **Yes, I want to restart my computer now**, and then on 
14. Restart your computer and run the program:  click the icon set on **Desktop**.
15. **Have your first contact with the program.**



## ◀ Selecting an installation mode

### Typical mode

Convenient for most users, this default mode installs the components required for the program to operate (program, messages, documentation in your language). It suits to a major part of users.

### Compact mode

This mode only installs the program in your language and limits the space required for installation.

### Custom mode

This mode allows the space required for installation to be managed by allowing you to

- install only the useful components.
- add components, following prior installation of the same program version.

In the **Select Component dialog box**, click the component to  install or  ignore (see the table belows).







**Next>** Click after component selection and complete the setup.

<input checked="" type="checkbox"/> <b>Gravograph Software</b>	GravoStyle engraving program
<input type="checkbox"/> <b>Additional Languages</b> By default, the program is in your language.	Click the component to install: <input checked="" type="checkbox"/> <b>Resources</b> <input checked="" type="checkbox"/> <b>Documentation</b>
<input type="checkbox"/> <b>Fonts</b> to install the sets that contain the fonts with which you type text. Each font Pack is an option.	Click to install the fonts of your choice: <input checked="" type="checkbox"/> <b>Gravograph Font Pack 1, 2 or 3</b> <input checked="" type="checkbox"/> <b>Vision Font JPN/PRC/KR (Japan, China, Korea)</b>
<input type="checkbox"/> <b>Others to</b> install more components.	Click the component to install: <input checked="" type="checkbox"/> <b>Symbols:</b> graphics library (symbols, logos, envelopes, connectors) <input checked="" type="checkbox"/> <b>Windows 98:</b> driver for L-Solution machine <input checked="" type="checkbox"/> <b>Windows NT/2000/XP:</b> driver for L-Solution machine



## ◀ Updating program

To take full advantage of new features and other improvements to the software, ask your Gravograph distributor for the latest update.

1. Place disk **GravoStyle** in the CD-ROM drive.
  2. Wait until the installation panel is displayed.  
 If this panel does not open, double-click on the drive.
  3. The Install Wizard asks you which operation you will carry out:  click **Remove**.  
 Click.
  4.  Confirm the program's final deletion from your computer.  

  5. Click at the end of the operation.
  6. Install the new program version according to the **First setup**.
-  **Install no target machine because your existing target machines are retained.**



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