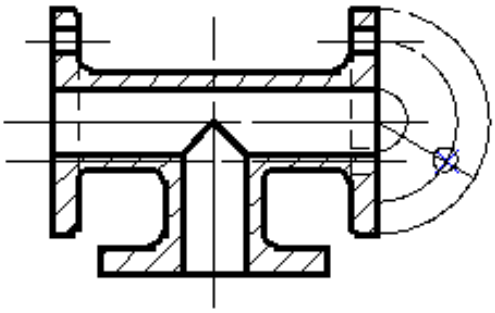
DaoDesign



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Version 1.0

The drawing becomes a game.

Table of contents

1 Presentation....6
1.1 For who is the software?....6
1.2 What are the system requirements?....6
2 My first steps....7
2.1 How to get the documentation and software?....7
2.1.1 Documentation....7
2.1.2 Software....8
2.1.2.1 Windows....8
2.1.2.2 Windows Mac and Linux....8
2.2 How do I install the software?....8
2.2.1 Under Windows with setup.exe....8
2.2.2 Windows Mac or Linux with DaoDesign.zip....11
2.3 How to run the software?....11
2.3.1 Windows with setup.exe....11
2.3.2 Windows Mac or Linux with generic installation....11
2.4 How to configure the software?....12
2.4.1 Presentation....12
2.4.2 The setup wizard screen....12
2.4.2.1 Choice of parameters 12
2.4.2.2 Manual Configuration....12
2.4.2.3 Configuration screen type....13
2.4.2.3.1 Selection screen type....13
2.4.2.3.2 Entering the screen size....13
2.4.2.4 Open Application....13
3 Document Management....14
3.1 How to create a new document?....14
3.2 How to open a document?....16
3.3 How do I save a document?....17
3.3.1 The Save As command....17
3.3.2 The Save command....18
3.4 How to print a document?....18
3.5 How to exit the program?....20
3.6 How to cancel or restore action?....20
3.6.1 How to cancel an action?....20
3.6.2 How to restore an action?....20
3.7 How to cut a selection?....21
3.8 How to Copy a selection?....21
3.9 How to Paste a selection?....21
4 The display management....22
4.1 How to zoom in the document?....22
4.2 How to scale 1 a document?....23
4.3 How to full page?....23
4.4 How to center the document?....23
4.5 How do I cancel or restore the display points?....24
4.6 How to turn on the grid?....24
4.7 How to display the cartridge?....25
4.8 How to display the document in portrait?....25
4.9 How to display the document in landscape?....26
4.10 How to change page size?....26
5 Management landmark....27
5.1 What is the function of the landmark?....27
5.2 How to select the landmark?....27

5.3 How to move the landmark?....27
5.4 How to shift the landmark?....28
5.5 How to center the marker ?....28
5.6 How to hide or show the landmark?....29
6 Particular points....30
6.1 What is a particular point?....30
6.2 What are the different particular points for the segment? 30
6.3 What are the different particular points for the circle? 30
6.4 What are the different particular points for the ellipse? 31
6.5 What are the different particular points for the arc? 31
6.6 What are the different particular points for the arc of an ellipse? 31
7 My first drawing elements....32
7.1 What fast objects?....32
7.2 How to draw a horizontal line?....32
7.3 How to draw a vertical line?....33
7.4 How to draw a line at an angle to the nearest degree?....33
7.5 How to draw a segment?....34
7.6 How to draw a circle whose radius is accurate to the millimeter?....35
7.7 How to draw a rectangle?....35
7.8 How to draw an ellipse?....36
7.9 How to delete a drawing item?....37
7.9.1 The classic delete....37
7.9.2 The quick delete....37
8 Selection....39
8.1 How to select an item?....39
8.1.1 How to select a single object?....39
8.1.2 How to select multiple objects individually?....39
8.1.3 How to select a group of objects?....40
8.1.4 How to deselect?....40
8.2 What are the possibilities of the selection tool?....40
8.2.1 How to do a translation to the millimeter?....40
8.2.2 How to rotate?....41
8.2.3 How to scaling?....41
8.2.4 How to delete?....42
8.2.5 Why use the CTRL key?....42
8.3 How to group or ungroup objects selected?....43
8.3.1 How to group selected objects?....43
8.3.2 How to ungroup objects selected?....43
9 Lines....44
9.1 How to create a continuous line?....44
9.2 How to create a dotted line?....45
9.3 How to create a double line?....46
9.4 How to select a line type?....47
9.5 How to change the line style of a design element?....47
10 Points....48
10.1 How to plot a point with the mouse?....48
10.2 How to plot a point on the keyboard?....48
10.3 How to plot a point in cartesian coordinates?....48
10.4 How to plot a point in polar coordinates?....50
10.5 How to draw a middle of two points?....51
10.6 How to draw several equidistant from each other points? 51
10.7 How to draw an intersection point?....53
11 Straight line....54
11.1 How to draw a straight line between two points?....54
11.2 How to draw a straight line with an angle?....54
11.3 How to trace a remote line to a straight element?....55

11.4 How to draw a straight line parallel to a straight element?....56
11.5 How to draw a straight line orthogonal to a straight element?....57
11.6 How to draw the perpendicular bisector of two points?....58
11.7 How to draw the bisector of an angle?....59
11.8 How to draw a tangent to a circle through a point? 60
11.9 How to draw the tangent to two circles?....61
12 Circles....63
12.1 How to draw a circle with a radius?....63
12.2 How to draw a circle passing through one point?....64
12.3 How to draw a circle through two points?....64
12.4 How to draw a circle through three points?....65
12.5 How to draw a circle with a center and a tangent?....66
12.6 How to draw a circle with a radius and two tangents?....67
13 Transformations....70
13.1 How to do a translation? 70
13.2 How to do a rotation?....71
13.3 How to do a scaling?....72
13.4 How to do a symmetry with respect to a point?....73
13.5 How to create a symmetry with respect to a straight line?....74
14 The text....76
14.1 How to write?....76
14.2 How to bold ?....76
14.3 How to italic ?....76
14.4 How to underline ?....77
14.5 How to align text to the left ?....77
14.6 How to align text in the center ?....77
14.7 How to align text to the right ?....77
14.8 How to justify the text ?....78
14.9 How to change the font ?....78
14.10 How to change the size of the font ?....78
15 Hatching....79
15.1 How to select a hatch?....79
15.2 How to hatch?....79
15.3 How to create a hatch?....81
15.4 How to change a hatch?....83
16 Color....84
16.1 How to choose color?....84
16.2 How to fill the inside of an outline?....85
16.3 How to change the color of a line?....85
16.4 How to change the color of a hatch?....85
16.5 How to set an object to the foreground?....86
16.6 How to set an object to the background?....86
16.7 How to change transparency?....87
16.8 How to change the color of a line?....87
16.9 How to change the color of a hatch? 87
17 Advanced functions....88
17.1 Point....88
17.1.1 Centroid of a simple surface....88
17.1.2 Centroid of a complex surface....88
17.2 Quick....89
17.2.1 Tangent Function....89
17.2.2 Shift Function....90
17.2.3 Extend Function....91
17.2.4 Attach function....92
17.2.5 Function Connect....92
17.3 Action....93

17.3.1 Function Cut....93
17.3.2 Function chamfer....94
17.3.3 Around function....95
17.3.4 Function Cross....97
17.3.5 Function Information....98
17.3.6 Function Surface....99
18 General Notes....100
18.1 ESC....100
18.2 The preview....100
18.3 The multi-choice....100
18.4 Internationalization....100

1 Presentation

1.1 For who is the software?

This software is for anyone who wants to make all types of designs, in a timely manner. It is by no means a direct competitor to more specialized commercial software.

1.2 What are the system requirements?

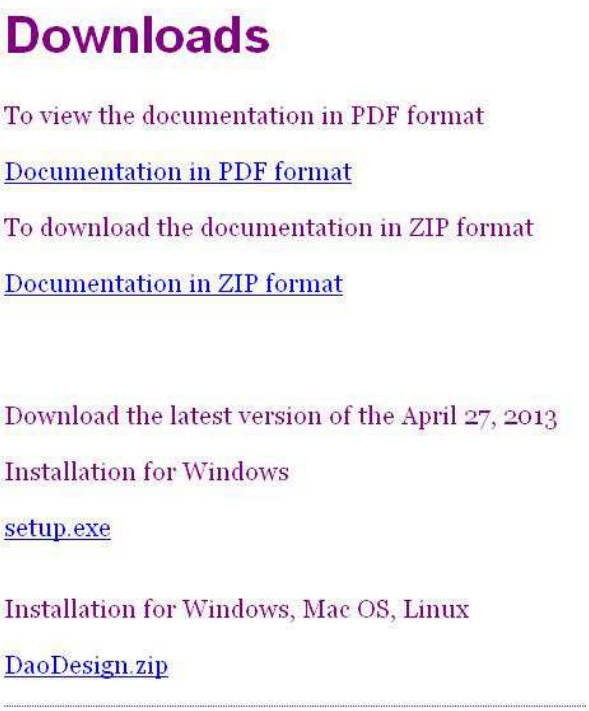
In general, any system that has a graphical user interface with a Java version 6 or later.

- Operating system
  - Windows XP, Windows Vista, Windows 7, Windows 8
  - Mac OS
  - Linux
- a keyboard
- a mouse
- A minimum 17-inch display
- RAM 512MB available
- Space required on the hard disk 15MB
- Processor: non-critical resource
- Graphical configuration: non-critical resource

2 My first steps

2.1 How to get the documentation and software?

To get the software, simply visit the official website of software at www.daodesign.fr and go to the download page.



From this page, you can download either the documentation or the software.

2.1.1 Documentation

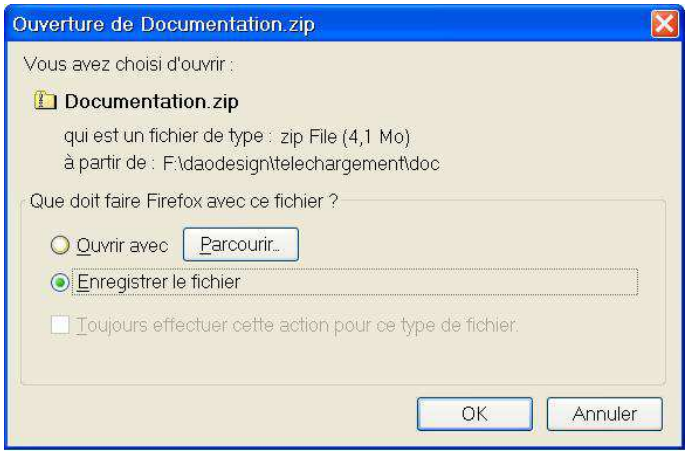
There are two ways to download documentation :

- Click Documentation in PDF

  Documentation opens and then you can save it.

- Click Documentation in ZIP format

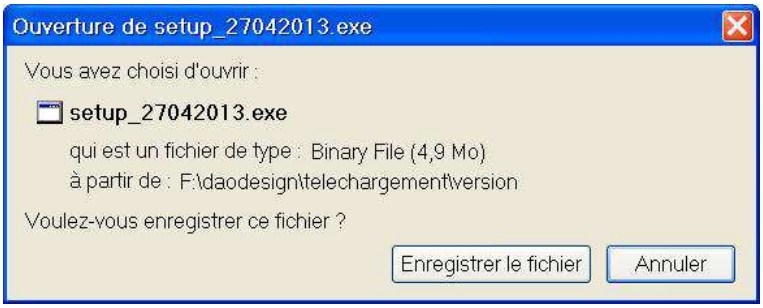
  The download box opens and offers to download the documentation.



2.1.2 Software

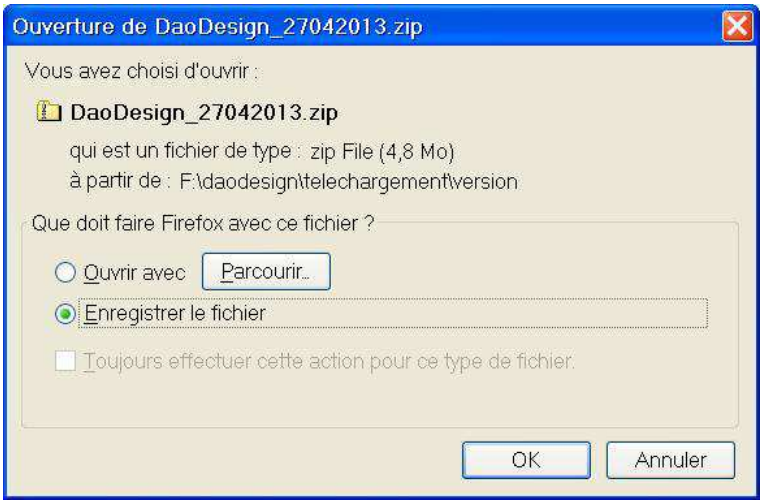
2.1.2.1 Windows

To download the installation software for Windows, simply click on the **setup.exe** link. This opens the download box.



2.1.2.2 Windows Mac and Linux

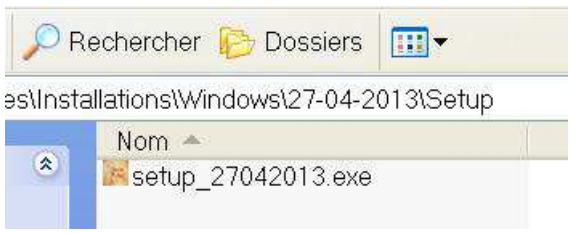
To download the generic installation, valid for Windows and Mac or Linux, simply click on the link **daodesign.zip**. This opens the download box.



2.2 How do I install the software?

2.2.1 Under Windows with setup.exe

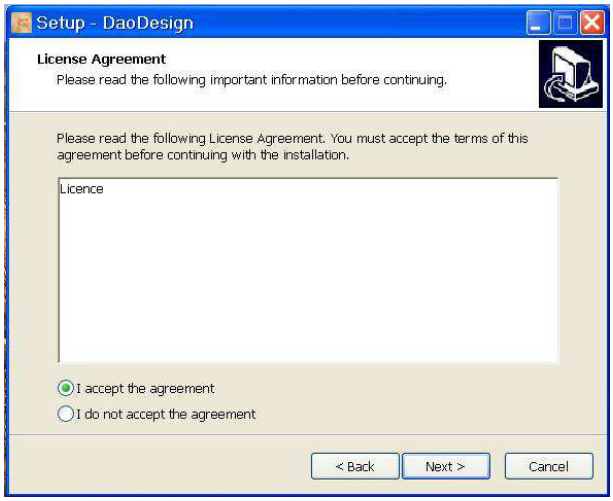
1. run setup.exe



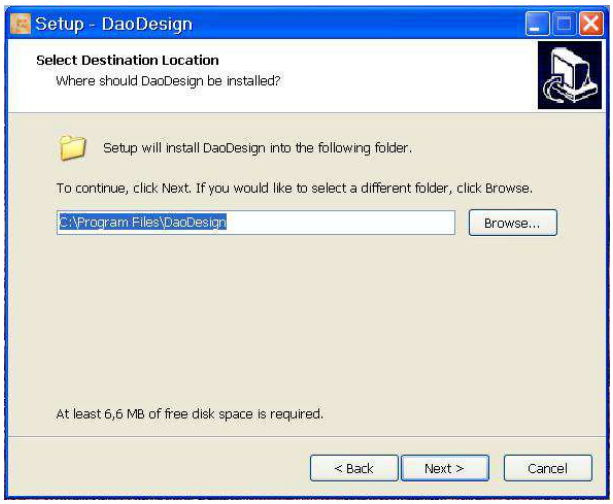
2. Launch the installation wizard

3. Choice of language, then press OK

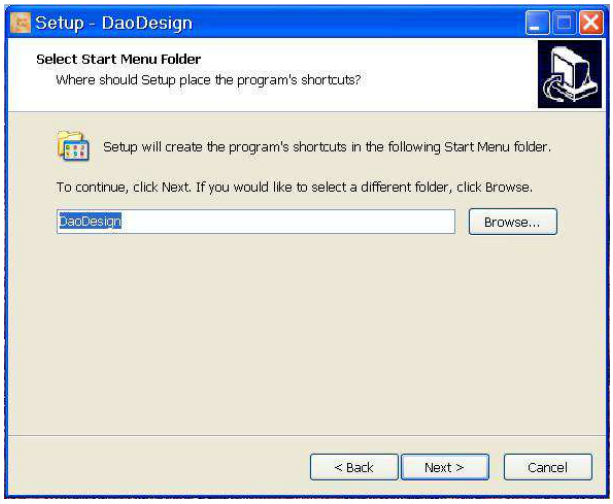
4. Click Next



5. Select “I understand and accept the terms of the license agreement” and then press Next

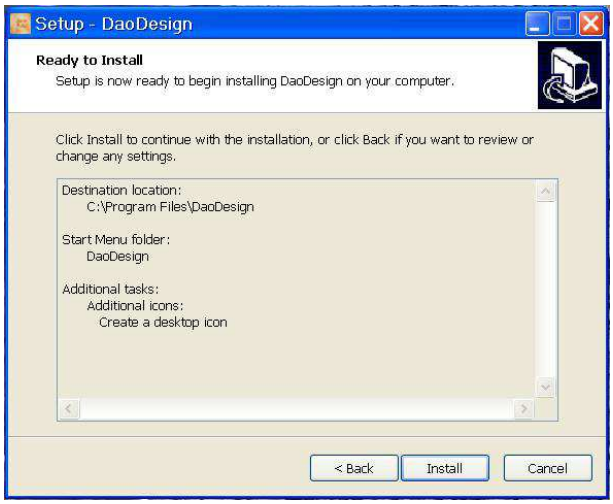


6. Change the installation directory if necessary, then press Next



7. Click Next

8. Select “Create a desktop icon” then click Next



9. Click Install

2.2.2 Windows Mac or Linux with DaoDesign.zip

1. Select the directory where you want to install the software
2. Copy **DaoDesign.zip** file in the newly directory created
3. Unzip the file
4. You get the following tree:

2.3 How to run the software?

2.3.1 Windows with setup.exe

To launch the software, simply double click the icon on the desktop. This icon has been added by the installer.

2.3.2 Windows Mac or Linux with generic installation

Double click on the file **daodesign.jar** found in the **exe** directory

2.4 How to configure the software?

2.4.1 Presentation

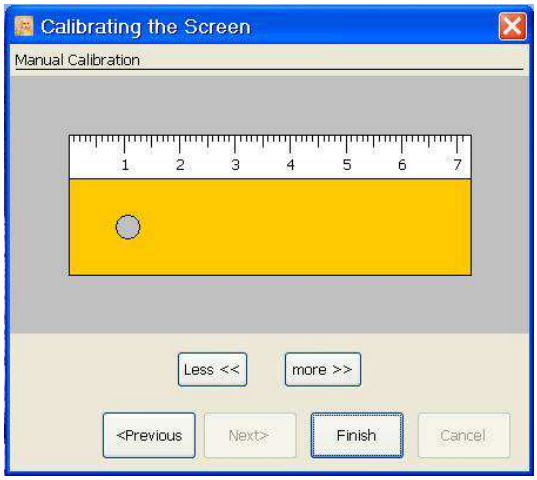
When you first launch the application, a wizard guides you to the setup screen. This setting allows the software to meet the real dimensions of page size. It also allows the software to better adapt to different types of screens and screen size, it can go from 17 inches 4/3 to 27 inches 16/9 and more.

2.4.2 The setup wizard screen

2.4.2.1 Choice of parameters

There are two ways to make the setting. Or use the manual setting, or use the setup screen type. The manual setting is certainly easier for people who do not know the parameters of their computer screen, but it is also the most time consuming method.

2.4.2.2 Manual Configuration



This is to match the dimensions of the virtual ruler with the dimensions of a true ruler.

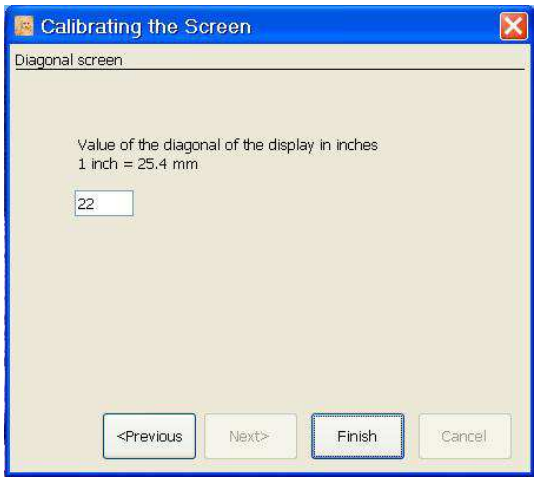
For this it is necessary to modify the virtual set using the buttons more or less. Once done, click Finish.

2.4.2.3 Configuration screen type

2.4.2.3.1 Selection screen type

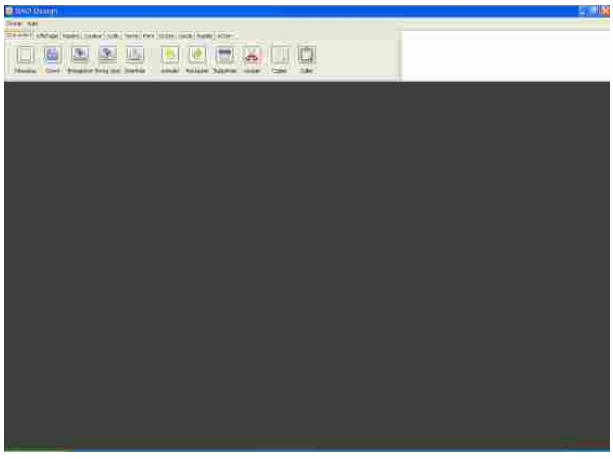
There are four screen sizes available, those are the standard formats. Choose the size of your screen, then click Next.

2.4.2.3.2 Entering the screen size



Enter the size of the diagonal of the display in inches, then click Finish.

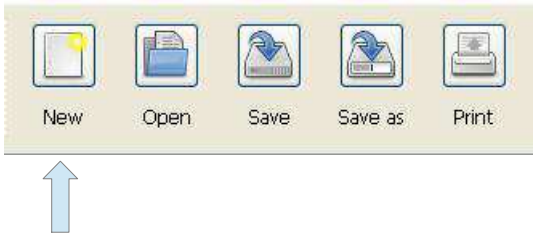
2.4.2.4 Open Application

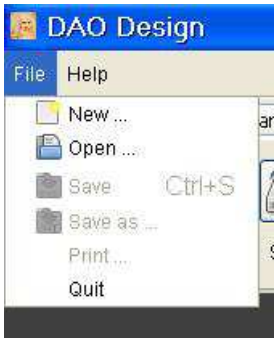


3 Document Management

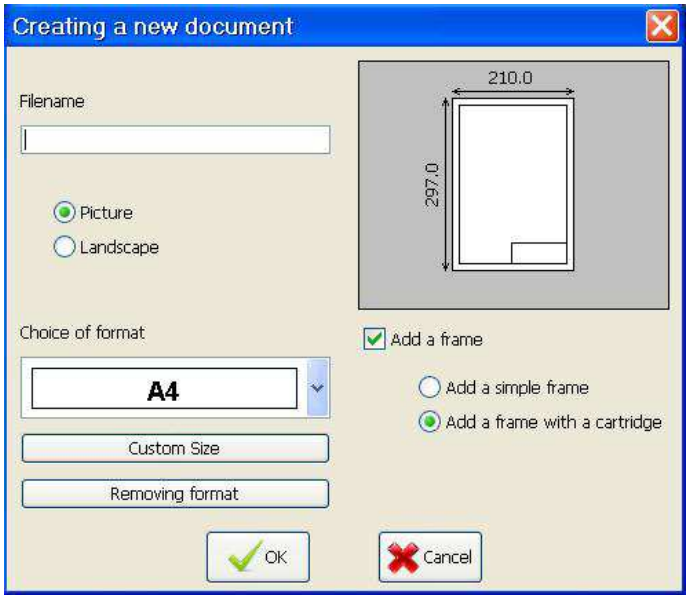
3.1 How to create a new document?

There are two ways to create a new document, or use the command **New** of **Document** tool bar, or use the **File / New** menu.



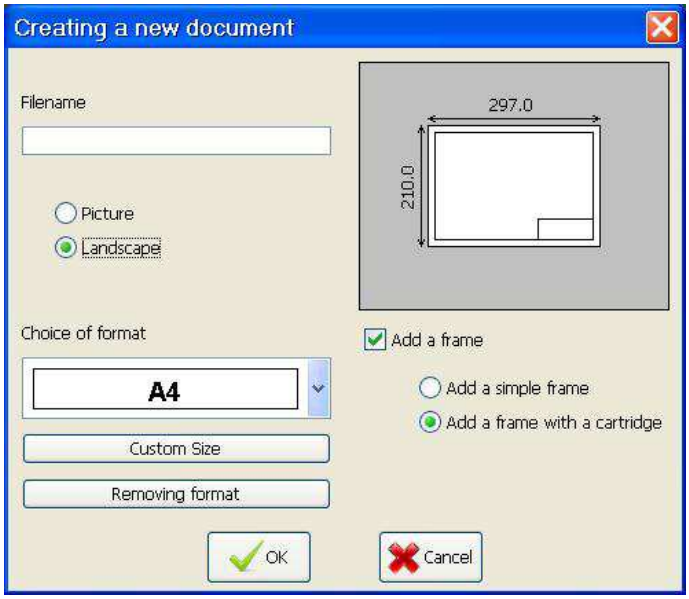


This command will open a dialog box to enter the parameters and configure the new document.



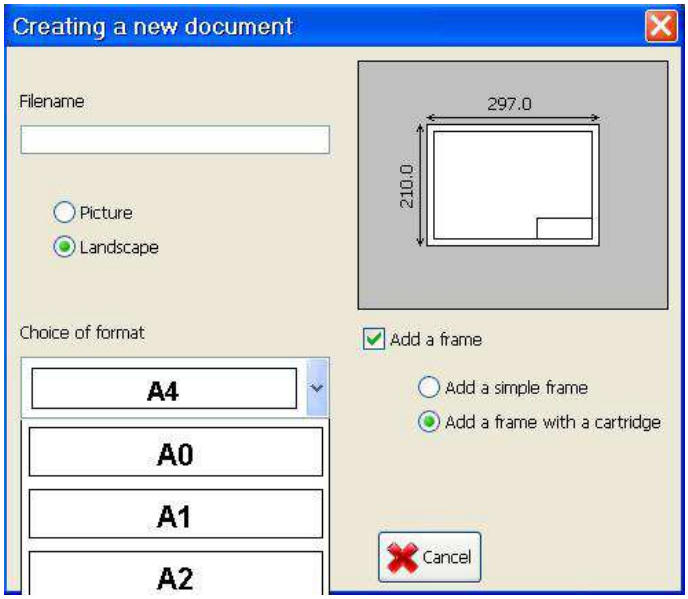
The **File Name** field: This field is required. It is the name of the document.

The buttons **Picture** and **Landscape**: This field has the default value **Picture**.



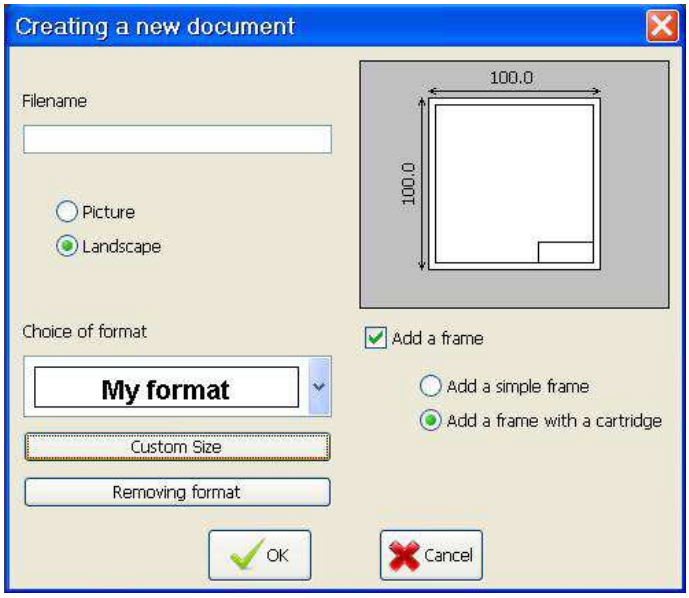
Choice format field: This field allows you to choose among several defaults values. These defaults value are A4, A3, A2, A1 and A0. The default value pre-selected is A4.

It is possible to create your own custom format. For this you must use the Custom Size button. This button opens a dialog box for entering the parameters of this new format.

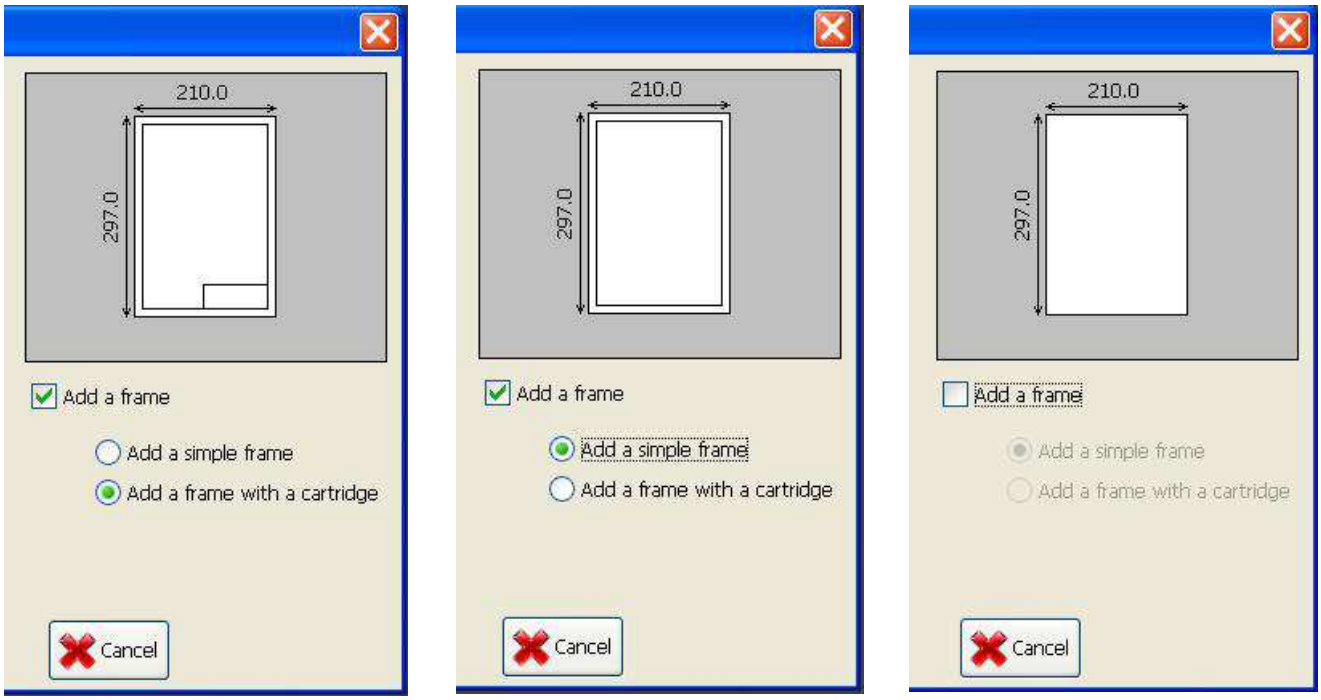


- The field **Name format**: This field is required. It lets you enter the name of the new page size.
- The field **Width of the document**: This field can not be zero. It sets the width of the page.
- The field **Height of the document**: This field can not be zero. It sets the height of the page.

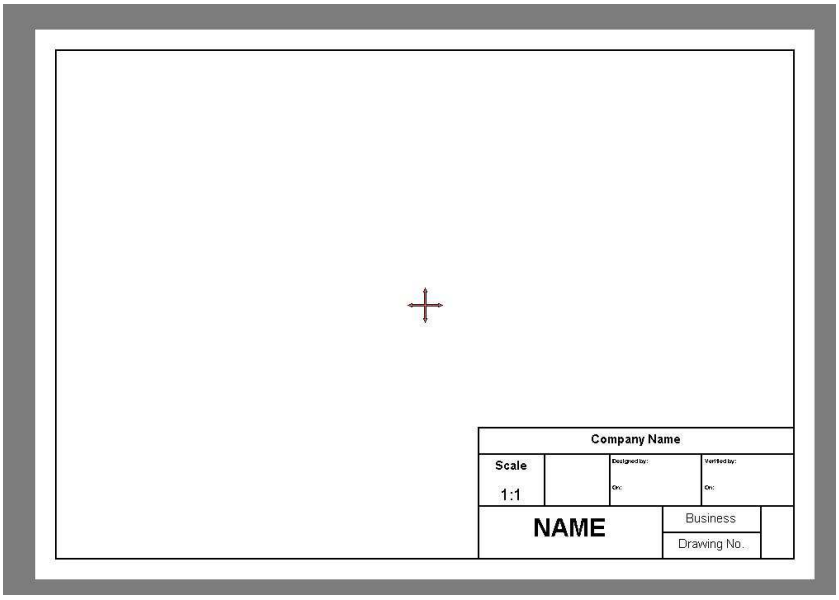
You can later delete a custom format. To do this, use the **Delete format** button. Using this button will delete the selected custom size in the selection box located above. The default formats are not deletable.



It is possible to add a document frame, either a single or with a cartridge. The default configuration is a frame with a cartridge.

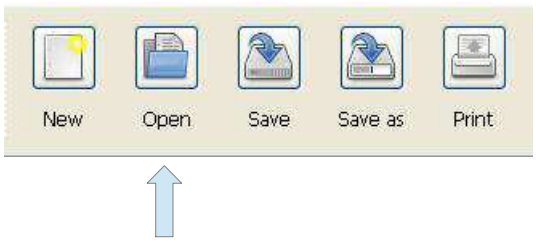


Opening a new document gives access to a blank page representing the workspace. It is in this space that you can draw.



3.2 How to open a document?

There are two ways to open a document, or use the command **Open** of the **Document** tool bar, or use the **File / Open** menu.

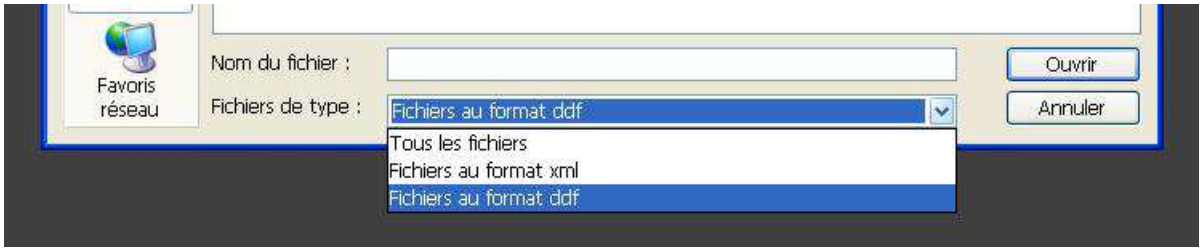


This command will open a dialog box for entering the name of the document to open, and its type.

This dialog box is for the Windows operating system.

It allows you to navigate through the file system directory and enter the file to be opened depending on its type.

There are two possible types of files for the software. A first **ddf** format recommended because less bulky space on the hard disk or the second **xml** format.

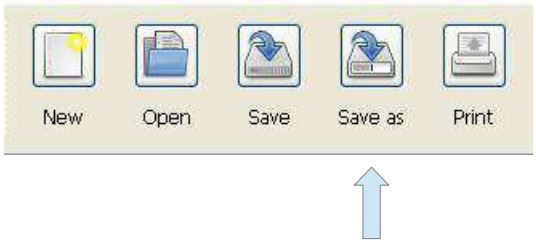


After selecting the file to open, press the open button to open the document. The document appears in the state it was recorded.

3.3 How do I save a document?

3.3.1 The Save As command

There are two ways to save a document, or use the command **Save as** of the **Document** tool bar, or use the **File / Save as** menu.

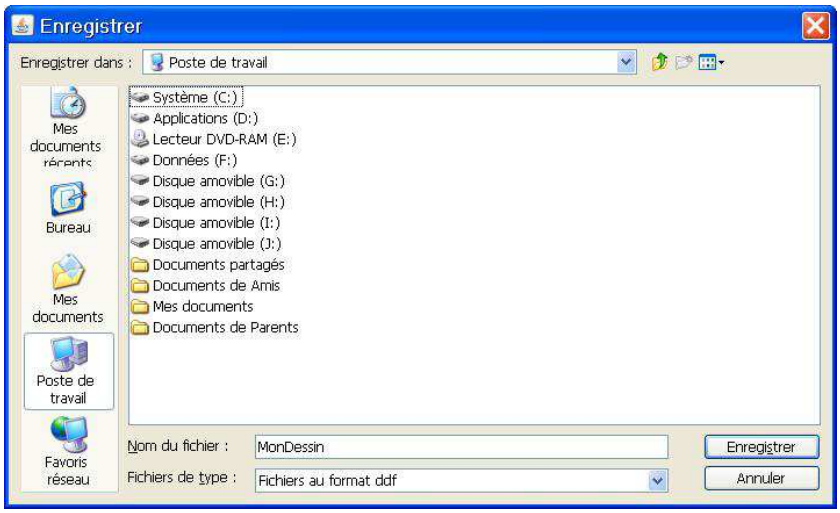


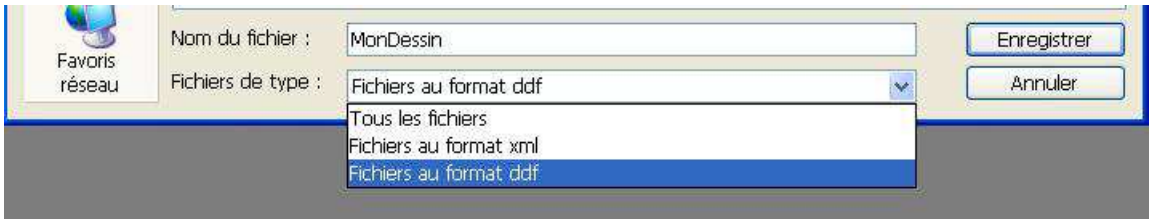
This command will open a dialog box for entering the name of the document to be saved and its type.

This dialog box is for the Windows operating system.

It allows you to navigate through the file system directory and enter the file to be saved depending on its type.

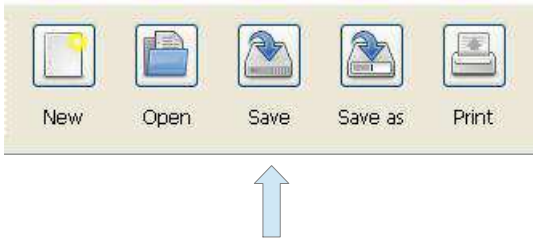
There are two possible types of files for the software. A first **ddf** format recommended because less bulky space on the hard drive or second **xml** format.





3.3.2 The Save command

There are two ways to save a document, or use the command **Save** of the **Document** tool bar, or use the **File / Save** menu.

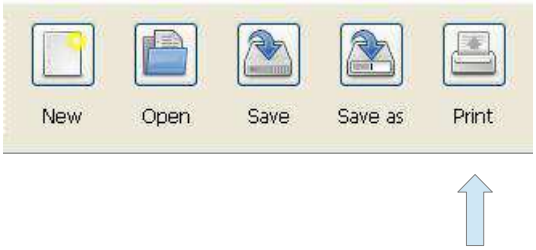


It presents two cases :

- You set the file type in the name when you create the new document. It is. Xml or. Ddf, and in this case the software directly saves the document in the current directory. In this case the current directory is the directory to install the software.
- You have not set type and in this case the software opens a Save As dialog. This dialog box lets you choose the type of file you want to save and the directory on the hard disk.

3.4 How to print a document?

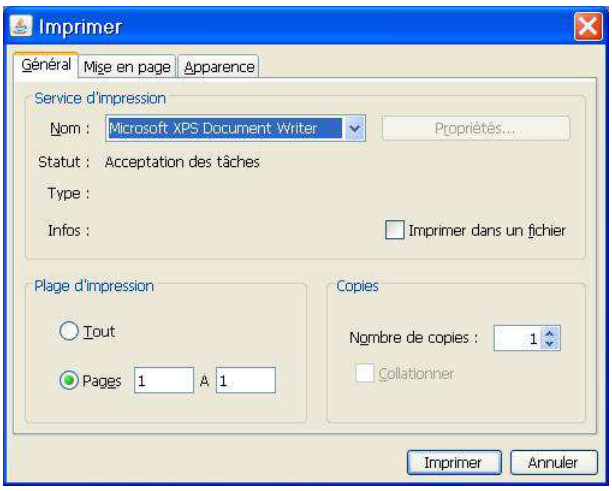
To print a document, use the **Print** command from the **Document** toolbar.



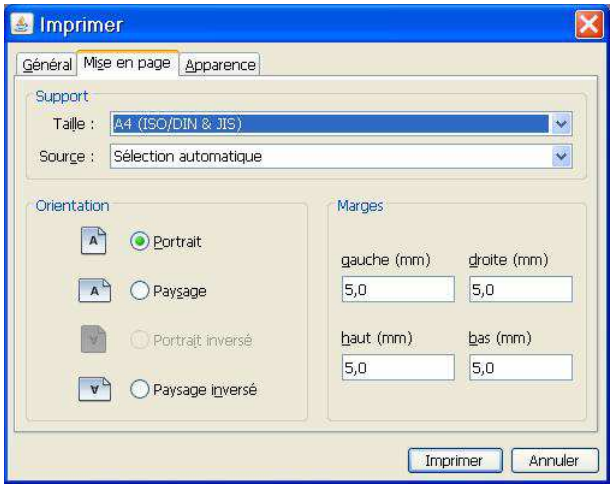
This command will open a dialog box to define the various print settings. This dialog box is the same on all operating systems.

It consists of three tabs:

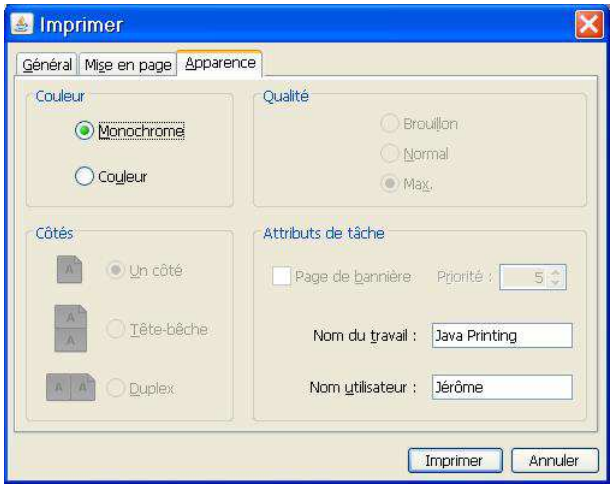
- The **General** tab



- The **Layout** tab



- The **Appearance** tab

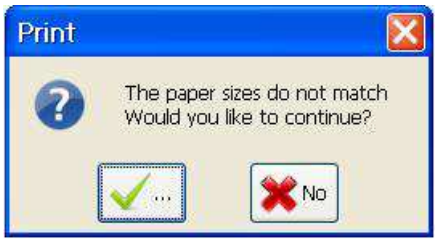


The dialog is normally set correctly by default. The only information to learn from you are:

- Field **Name**: This is the printer you want to print.
- Field **Size**: This is the paper format. The default size is A4. You will need to change in case you want to print on a different format.

In case the size of the document does not match the paper size of the printer, a dialog box appears to warn you.

If you choose to continue, the software will adapt to better scale and position of the document on the page.



3.5 How to exit the program?

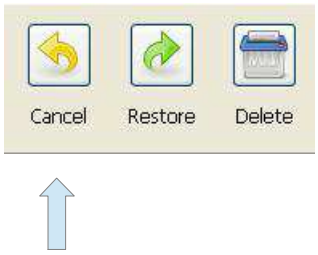
To do this, simply go to the File menu and select the Exit command.

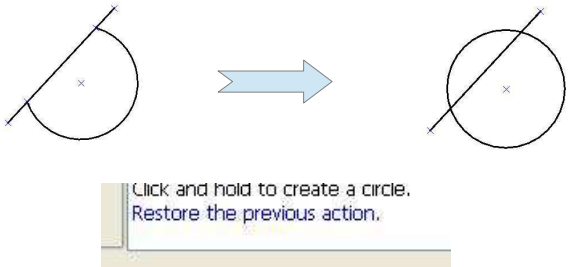
If an open document needs to be saved, a dialog box will ask for confirmation.

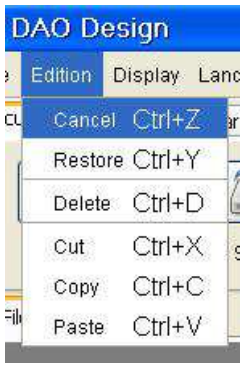
3.6 How to cancel or restore action?

3.6.1 How to cancel an action?

There are two ways to cancel an action in a document, or use the command **Cancel** of the **Edit** tool bar, or use the **Edit / Cancel** menu.

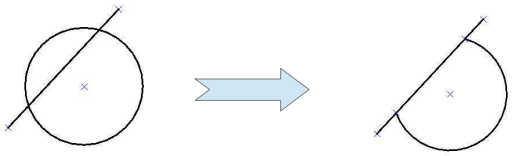


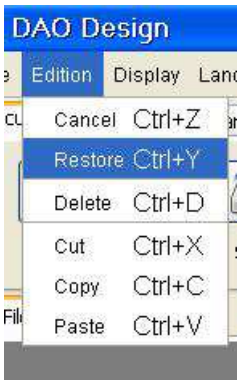




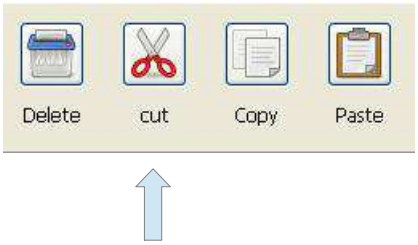
3.6.2 How to restore an action?

There are two ways to restore an action in a document, or use the command **Restore** of the **Edit** tool bar, or use the **Edit / Restore** menu.





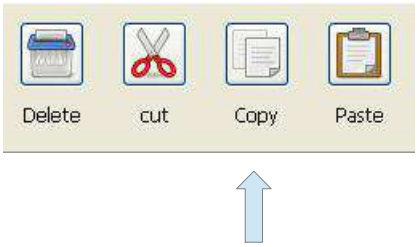
3.7 How to cut a selection?

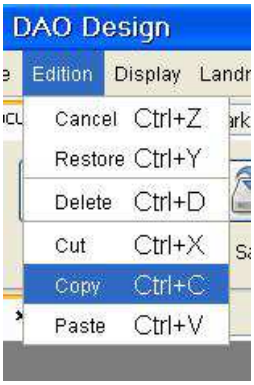


Must initially select the object or group of objects to be cut.

There are two ways to cut a selection in a document, or use the command **Cut** of the **Edit** toolbar, or use the **Edit / Cut** menu.

3.8 How to Copy a selection?

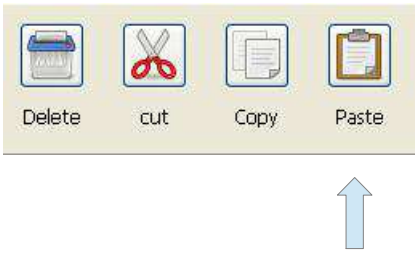


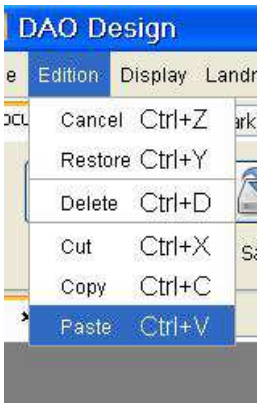


Must initially select the object or group of objects to copy.

There are two ways to copy a selection in a document, or use the command **Copy** of the **Edit** tool bar, or use the **Edit / Copy** menu.

3.9 How to Paste a selection?





There are two ways to paste a selection in a document, or use the command **Paste** of the **Edit** toolbar, or use the **Edit / Paste** menu.

4 The display management

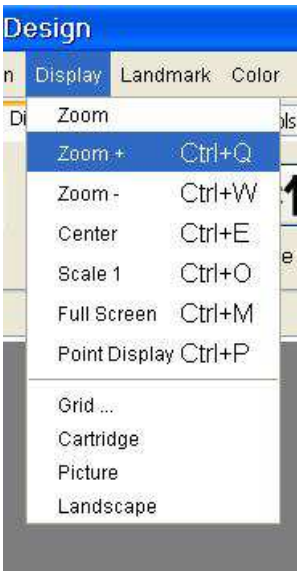
4.1 How to zoom in the document?

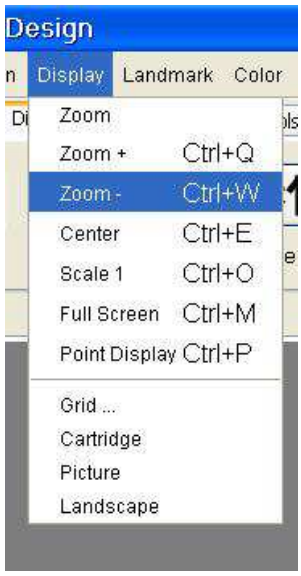
It is possible to zoom into the document using the Zoom toolbar. This toolbar is located in the Display tab.

In the center is the display of the zoom. The 100 means 100% which corresponds to a scale of 1 to display the document.

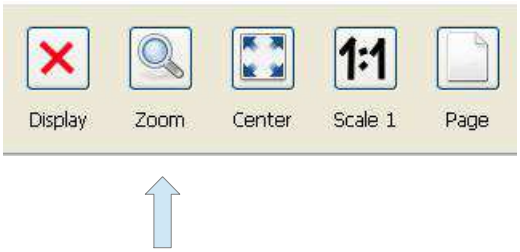
The left button allows you to zoom out, and thus view the document smaller, the right button zooms and thus view the document bigger.

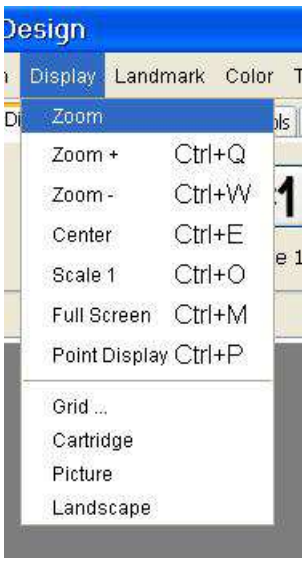
You can use the menu View / Zoom+ and the menu View / Zoom -.



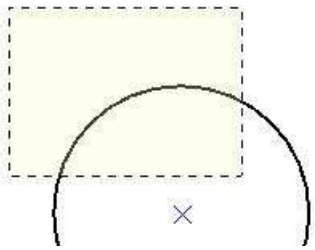


It is also possible to zoom using the zoom control.
There are two ways to zoom in the document, or use the command **Zoom** of the **Display** tool bar, or use the **View / Zoom** menu.

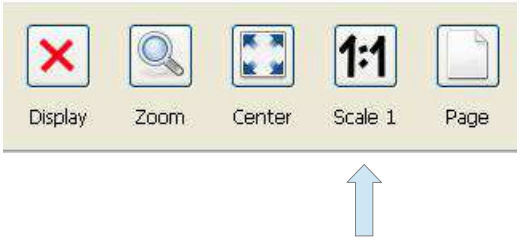


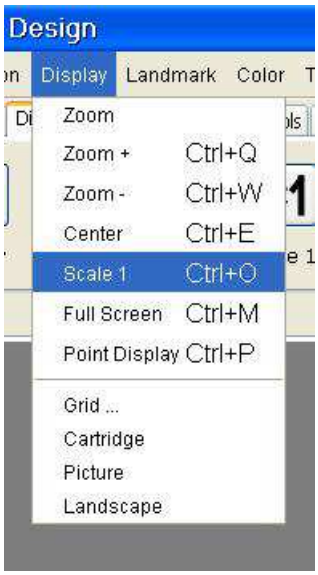


The zoom control allows you to zoom in the document using the mouse.



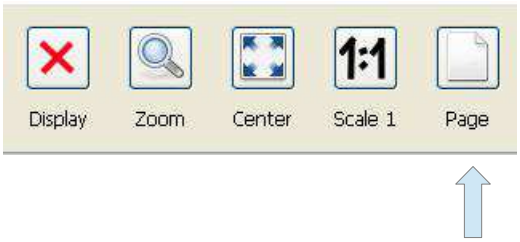
4.2 How to scale 1 a document?

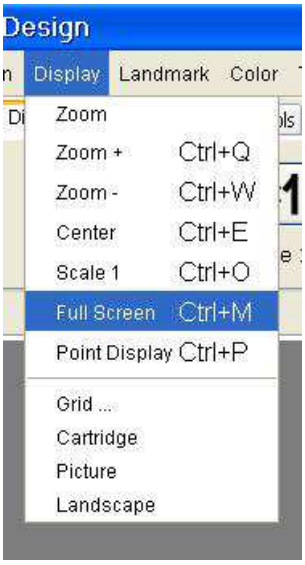




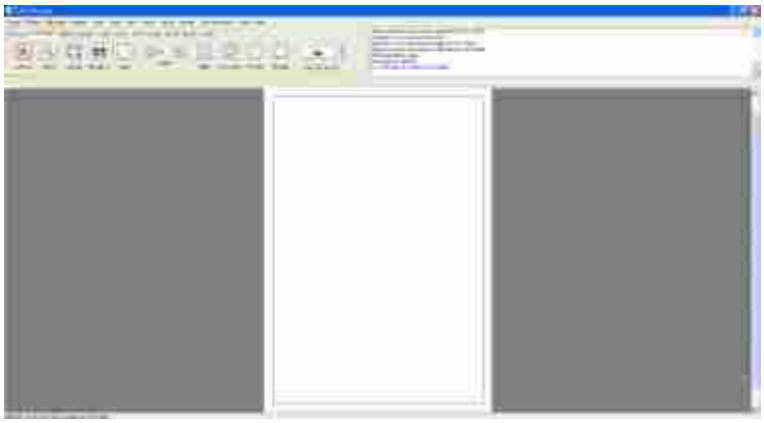
There are two ways to put a document on the scale one, or use the command **Scale 1** of the **Display** tool bar, or use the **Display / Scale 1** menu.

4.3 How to full page?

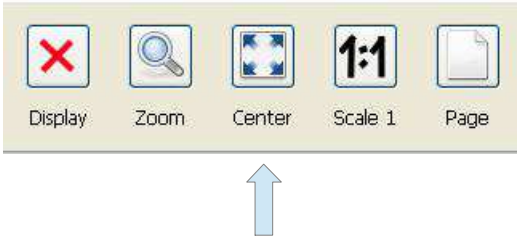


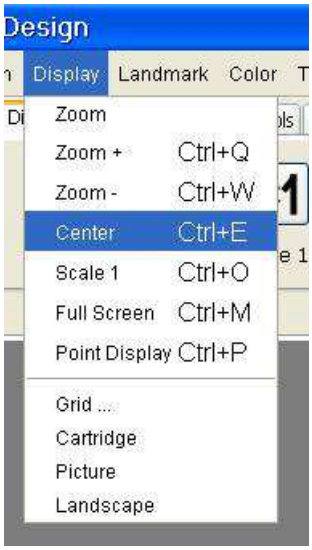


There are two ways to put a document in full screen, or use the command **Page** of the **Display** tool bar, or use the **Display / Full Screen** menu.



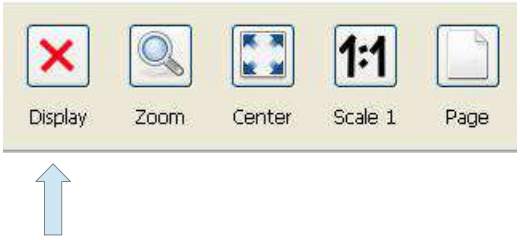
4.4 How to center the document?

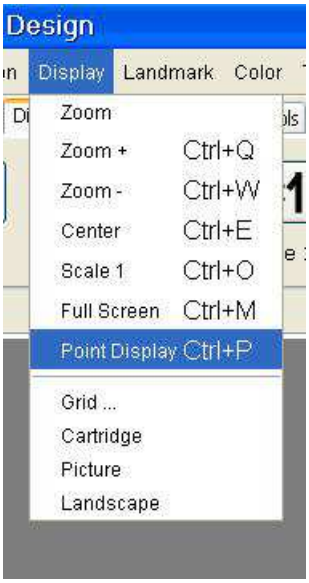




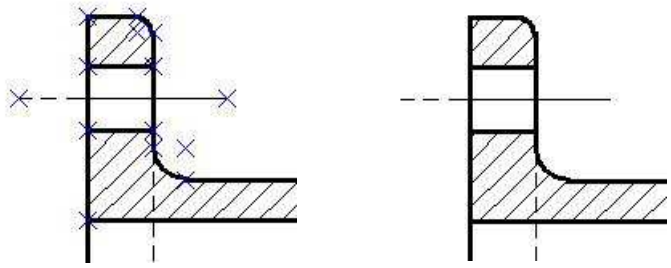
There are two ways to center a document or use the command **Center** of the **Display** tool bar, or use the **Display / Center** menu.

4.5 How do I cancel or restore the display points?

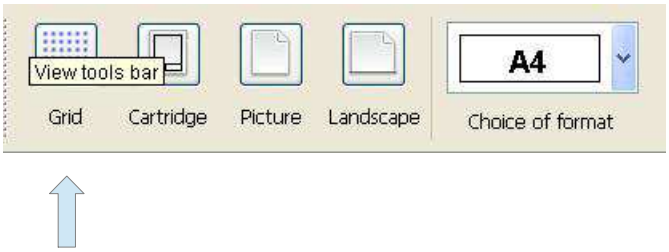


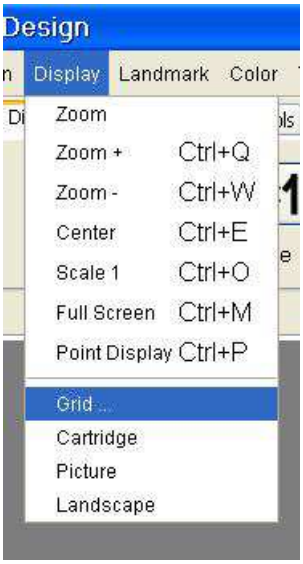


There are two ways to cancel or restore the display points in a document, or use the command **Display** of the **Display** tool bar, or use the **Display / Display points** menu.



4.6 How to turn on the grid?



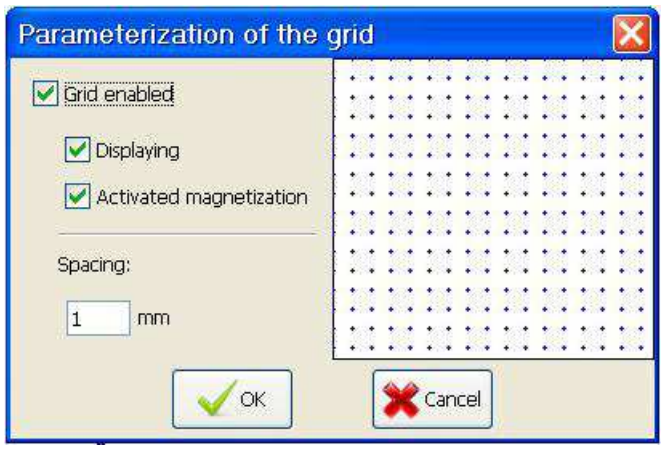


There are two ways to access the configuration of the grid of a document, or use the command **Grid** of the **Display** toolbar, or use the **Display / Grid** menu.

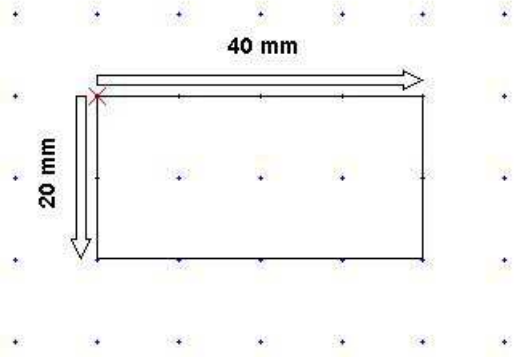
This command will open a dialog box to enter and configure the grid.

The dialog box is divided into two parts, one to the left to enter and configure the grid, and some on the right to see the grid.

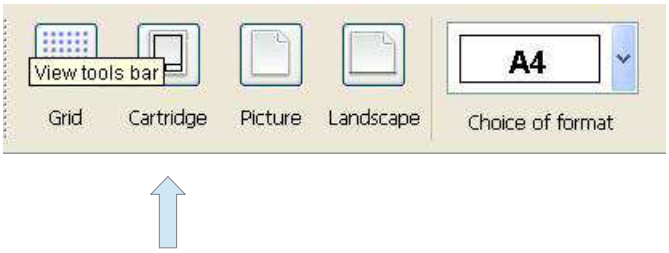
- The **Grid enabled** field: This field is used to enable or disable the grid and take into account whether or not the set of parameters defined for it.
- The field **Viewing**: This field enables the visualization of the grid through blue dots.
- The **Activated magnetization** field: This field allows drawing elements from sticking to the grill.
- The field **Spacing**: This field corresponds to the pitch of the grid.

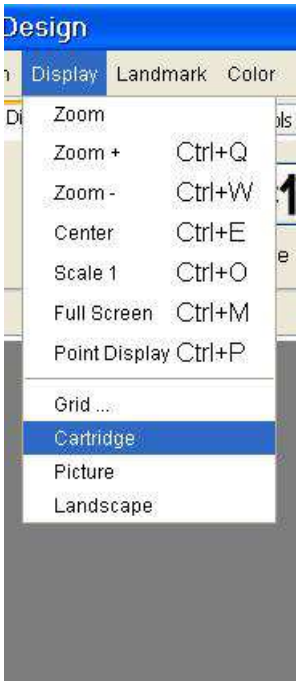


Here is an example of drawing a rectangle on a magnetic grid of 10 mm.



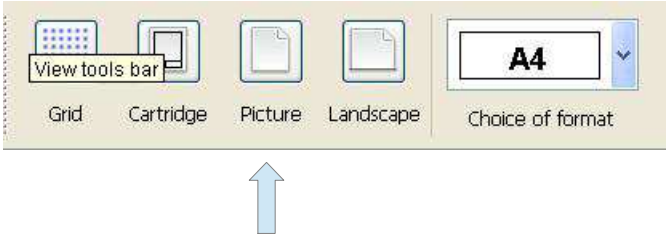
4.7 How to display the cartridge?

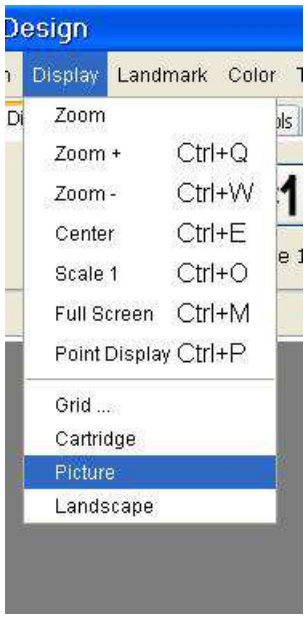




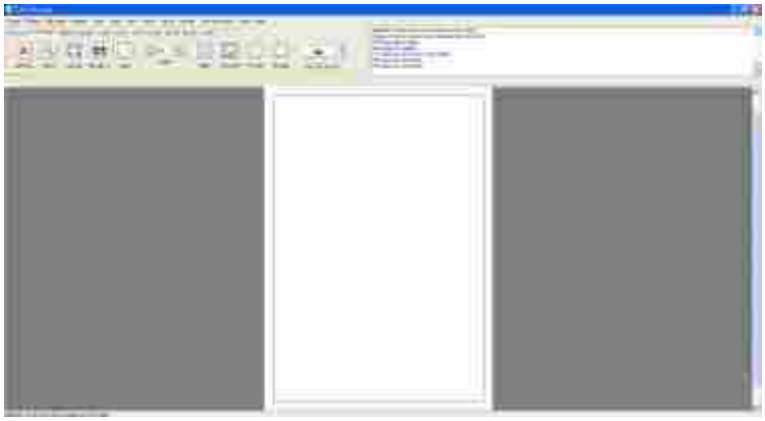
There are two ways to display or hide the display of the cartridge into a document, or use the command **Cartridge** of the **Display** tool bar, or use the **Display / Cartridge** menu.

4.8 How to display the document in portrait?

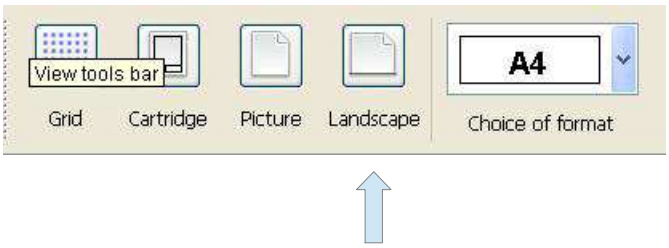


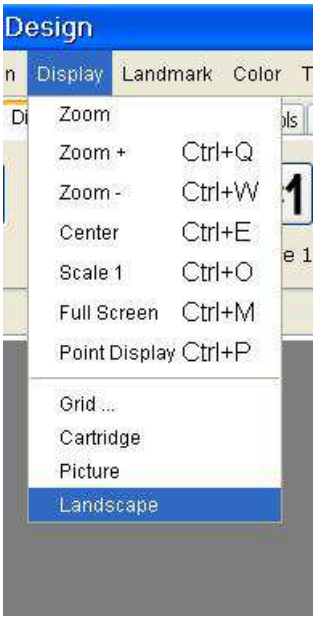


There are two ways to display the document in picture or use the command **Picture** of the **Display** toolbar, or use the **Display / Picture** menu.

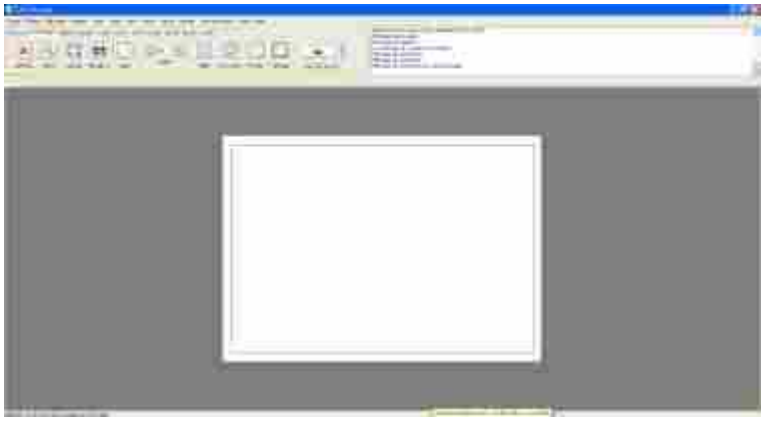


4.9 How to display the document in landscape?



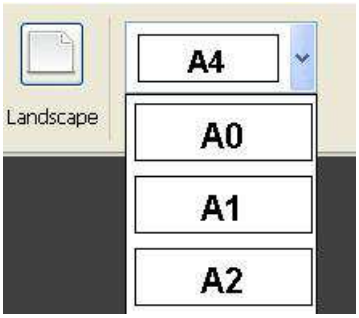


There are two ways to display the document in landscape or use the command **Landscape** of the **Display** toolbar, or use the **Display / Landscape** menu.



4.10 How to change page size?

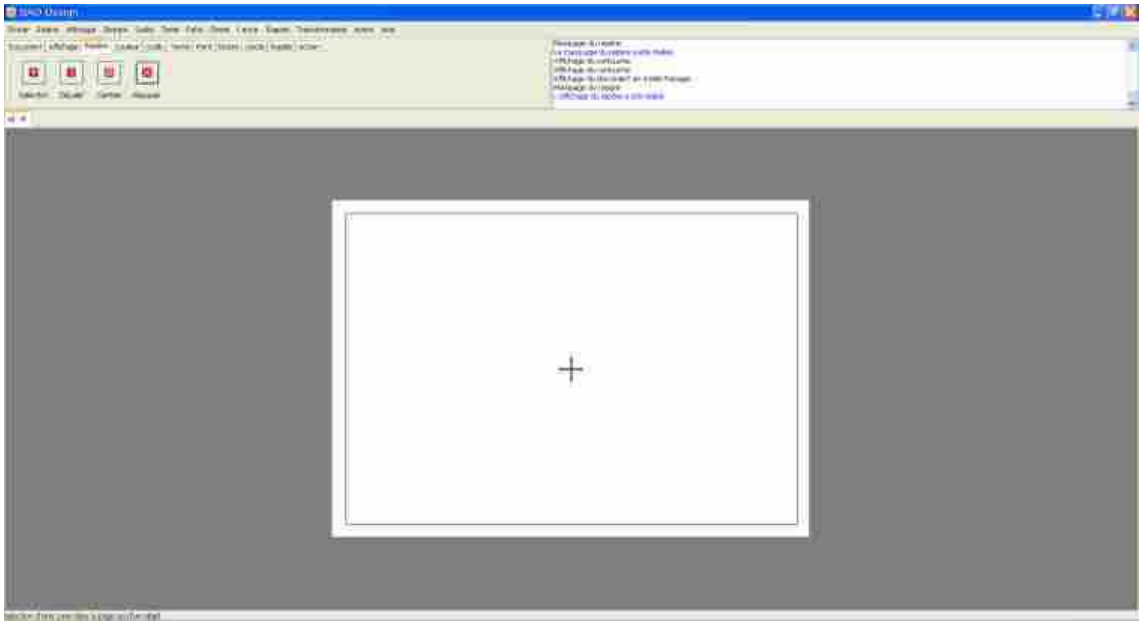
Just use the box for selecting the **Display** toolbar.



5 Management landmark

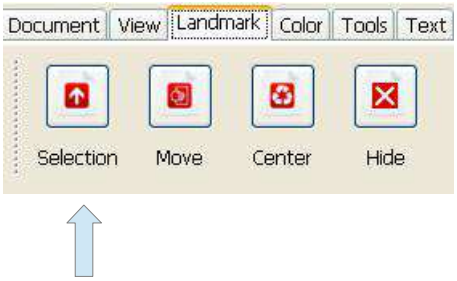
5.1 What is the function of the landmark?

The function of the landmark is to realize the position of the point (0, 0) on the page. The landmark can be selected to be moved. It can also be hidden.



5.2 How to select the landmark?

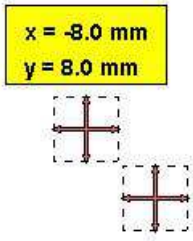
There are two ways to select the landmark, or use the command **Selection** of the **Landmark** toolbar or use the **Landmark** / **Selection** menu.

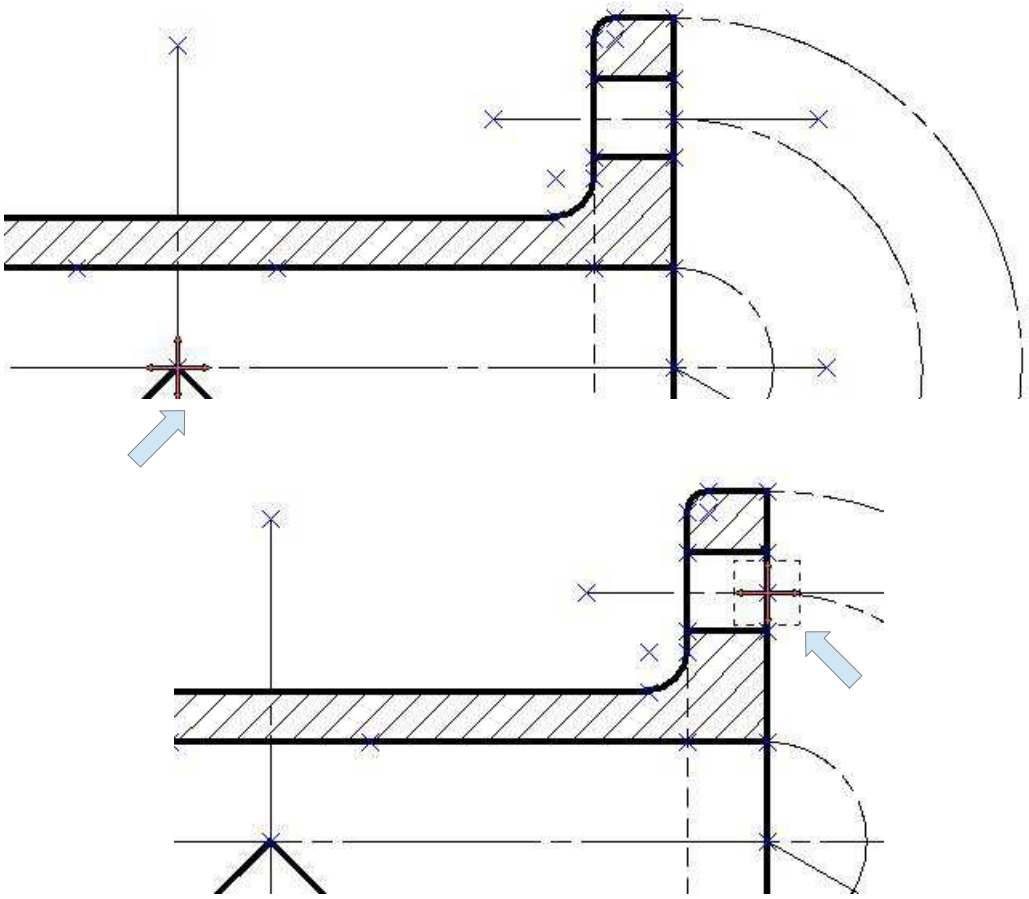


5.3 How to move the landmark?

To move the landmark, you must initially select it, then move it with the mouse.

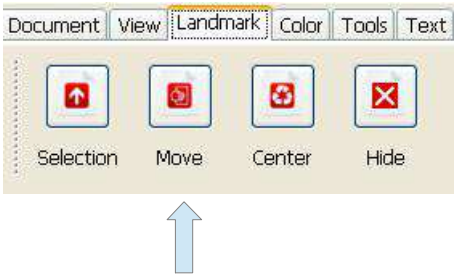
The landmark is attracted to different parts of the drawing. This allows to place precisely at the desired location.





5.4 How to shift the landmark?

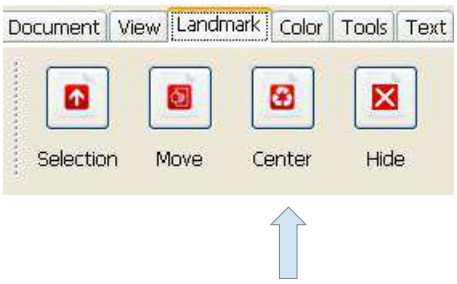
There are two ways to move the landmark, or use the command **Move** of the **landmark** tool bar, or use the **Landmark / Move** menu.



This gives access to a dialog box to enter the values of the desired movement.

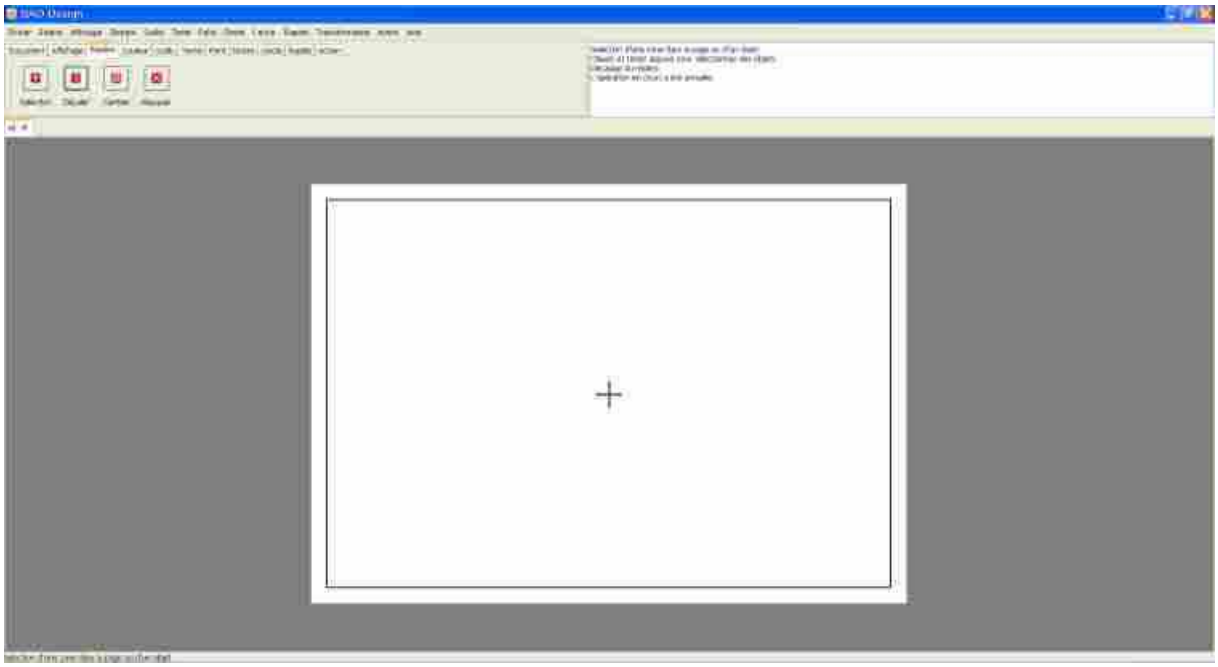
5.5 How to center the marker ?

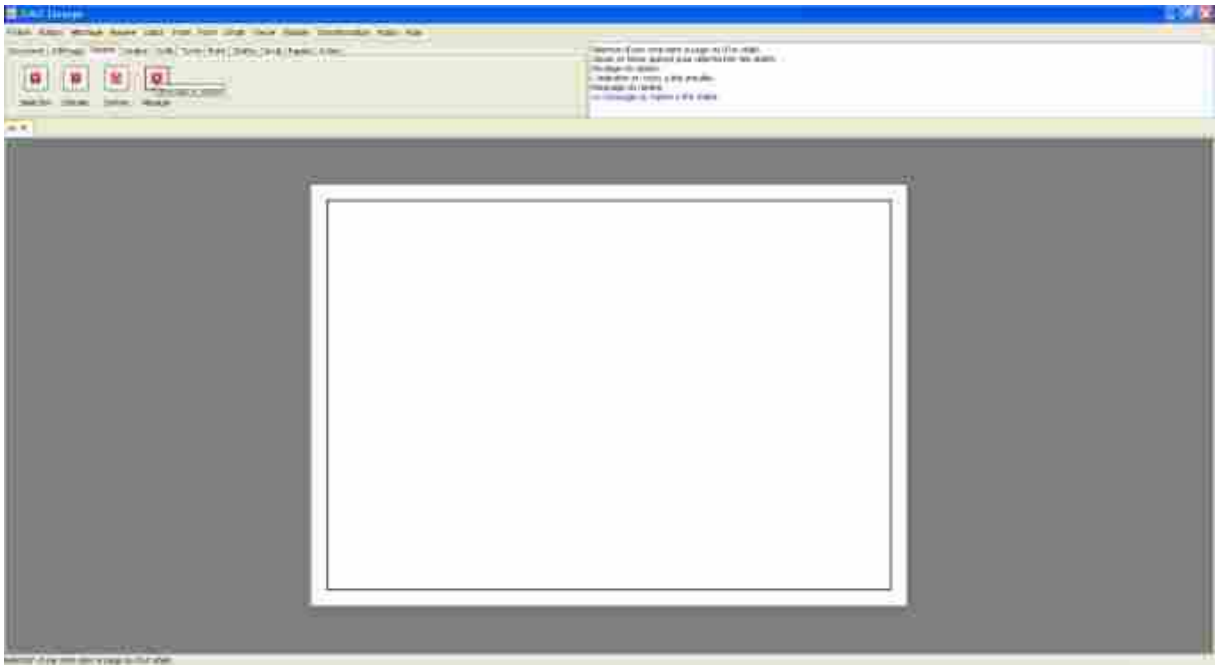
There are two ways to center the mark or use the command **Center** of the **Landmark** toolbar or use the **Landmark / Center** menu.



5.6 How to hide or show the landmark?

There are two ways to hide the marker or use the command **Hide** of the **Landmark** tool bar, or use the **Landmark / Hide** menu.



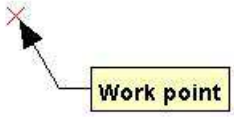


6 Particular points

6.1 What is a particular point?

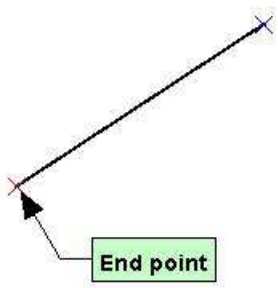
This is a point such as the midpoint of a segment.

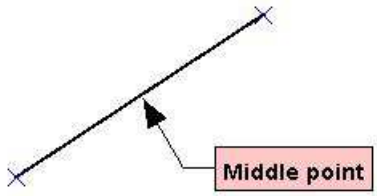
A single point is a particular point, it will be called point construction.



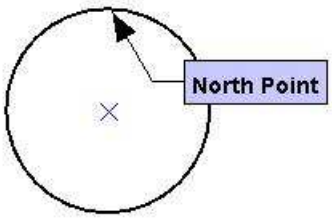
These points have the distinction of being magnetized. Their presence greatly facilitates and accelerates the efficiency of the user.

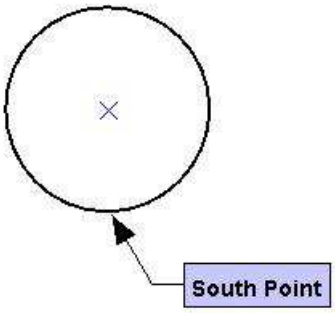
6.2 What are the different particular points for the segment?

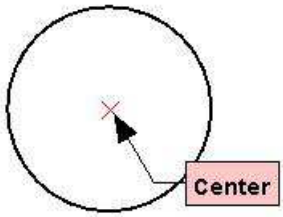


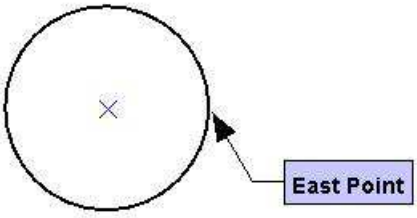


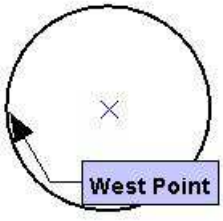
6.3 What are the different particular points for the circle?



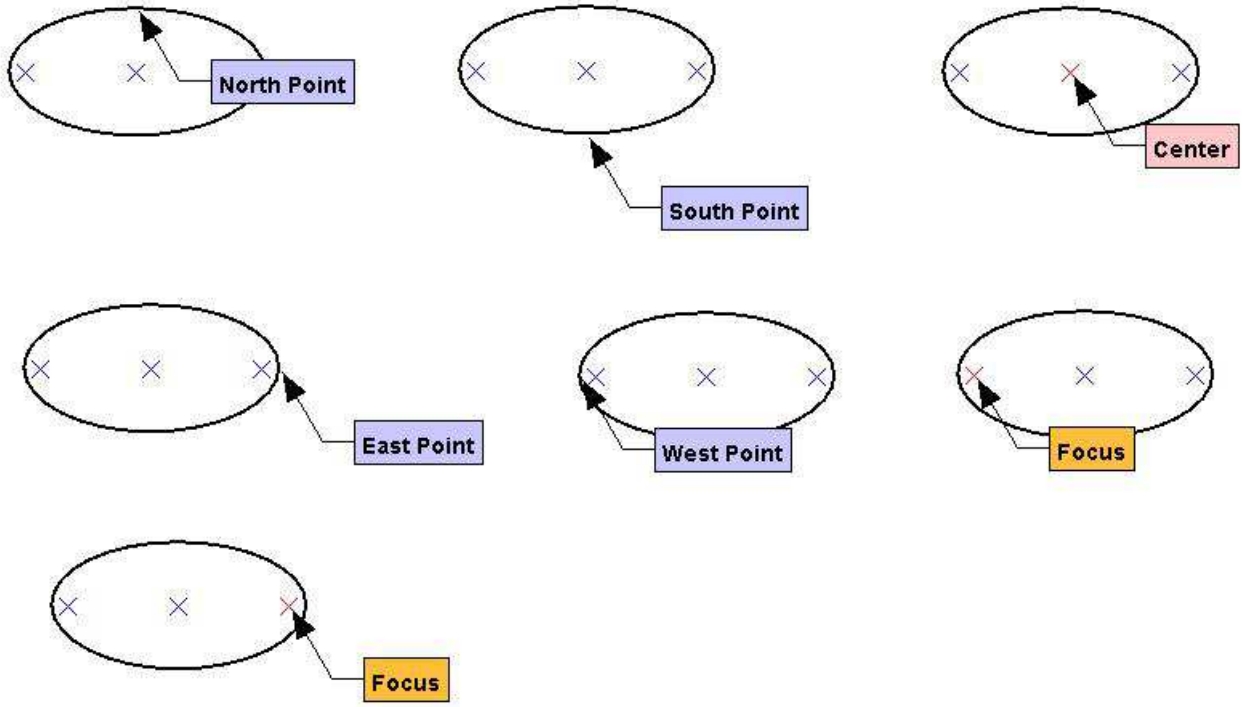




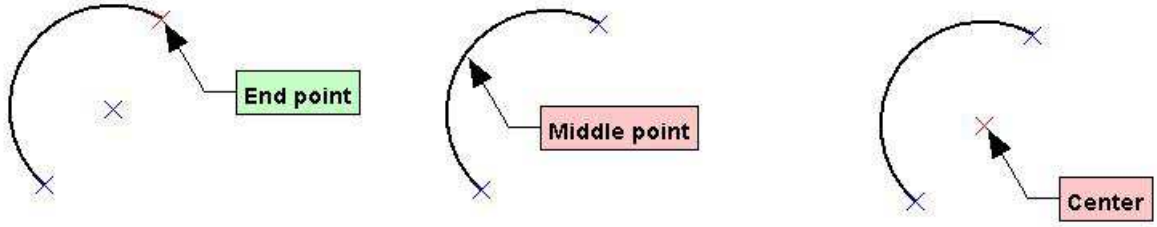




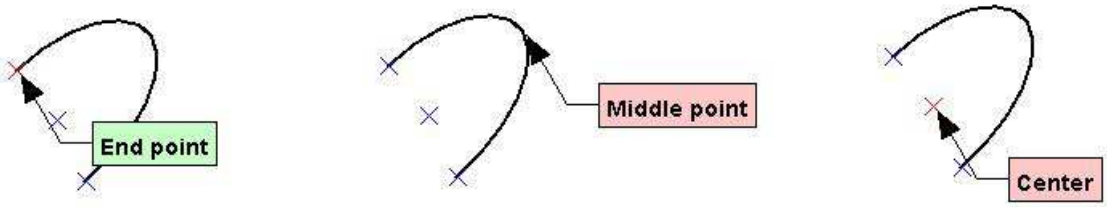
6.4 What are the different particular points for the ellipse?



6.5 What are the different particular points for the arc?



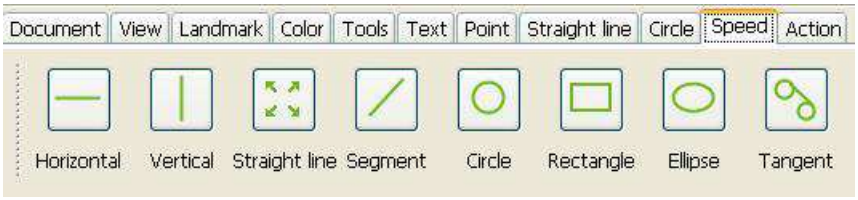
6.6 What are the different particular points for the arc of an ellipse?

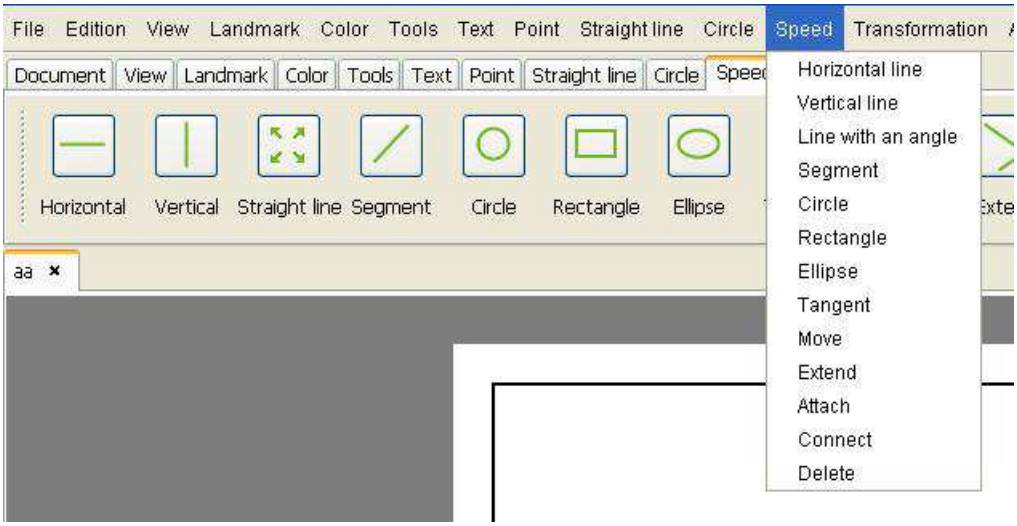


7 My first drawing elements

7.1 What fast objects?

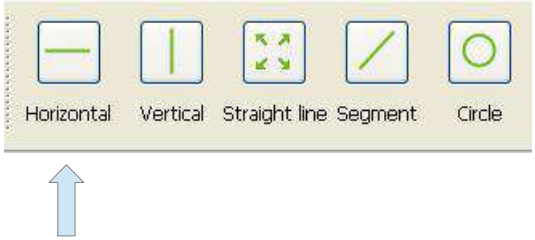
Fast objects are functions to draw faster design elements. These functions are available in the **Speed** Tools bar or the **Speed** menu.

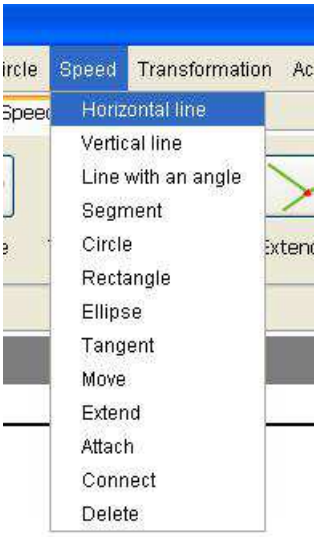




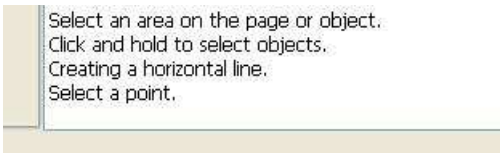
7.2 How to draw a horizontal line?

There are two ways to draw a horizontal line in a document, or use the command **Horizontal** of the **speed** tool bar, or use the **Speed / Horizontal line** menu.



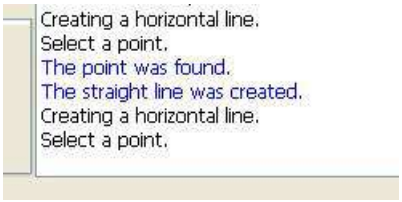


What is the procedure?



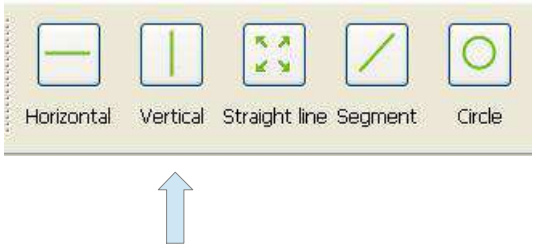
Select a point:

To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.

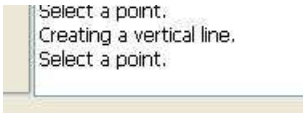


7.3 How to draw a vertical line?

There are two ways to draw a vertical line in a document, or use the command **Vertical** of the **Speed** tool bar or use **Speed / Vertical line** menu.

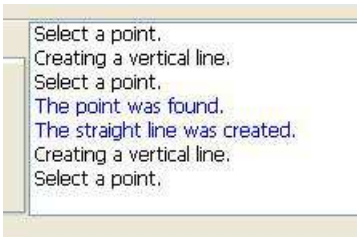


What is the procedure?



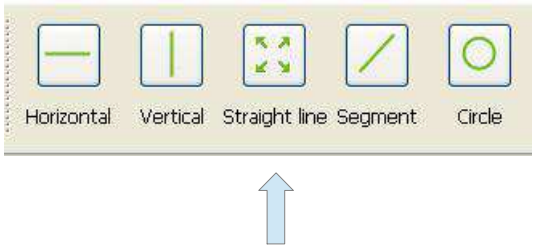
Select a point:

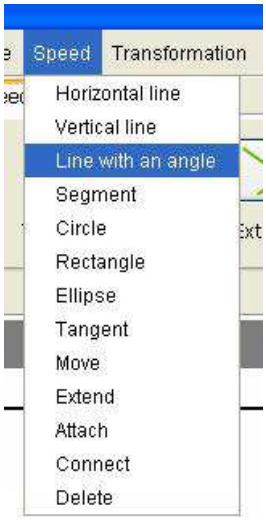
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.



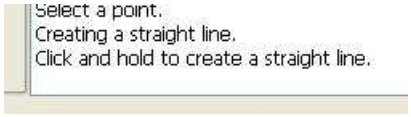
7.4 How to draw a line at an angle to the nearest degree?

There are two ways to draw a line with an angle in a document, or use the command **Line** of the **Speed** tool bar, or use the **Speed / Line with an angle** menu.



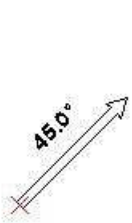


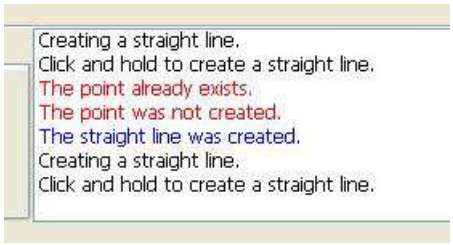
What is the procedure?



Select a point:

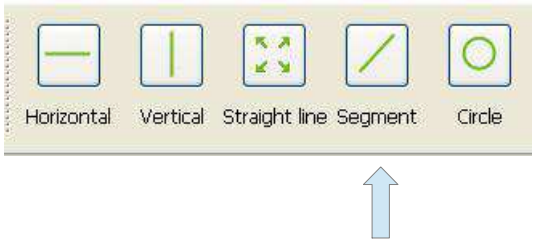
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.

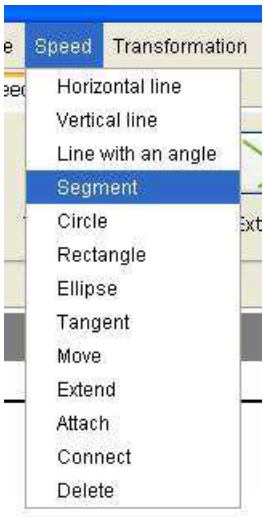




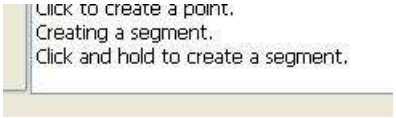
7.5 How to draw a segment?

There are two ways to draw a segment in a document, or use the command **Segment** the **Speed** tool bar, or use the **Speed / Segment** menu.



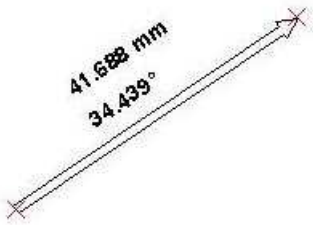


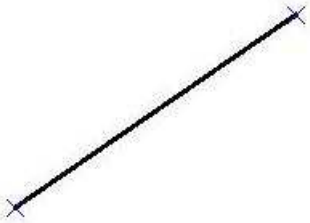
What is the procedure?

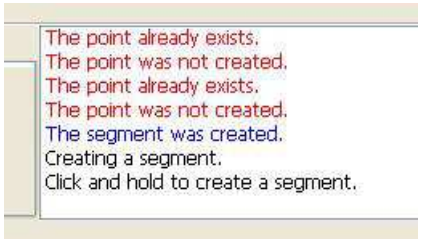


Select a point:

To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.

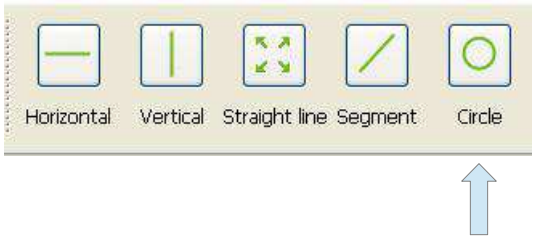




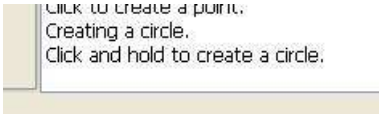


7.6 How to draw a circle whose radius is accurate to the millimeter?

There are two ways to draw a circle within a millimeter in a document, or use the command **Circle** of the **Speed** tool bar or use **Speed / Circle** menu.

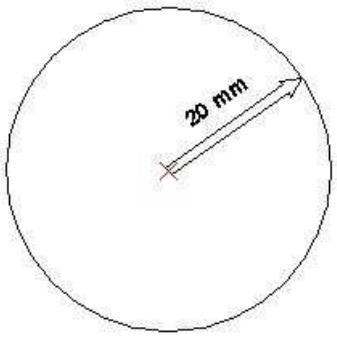


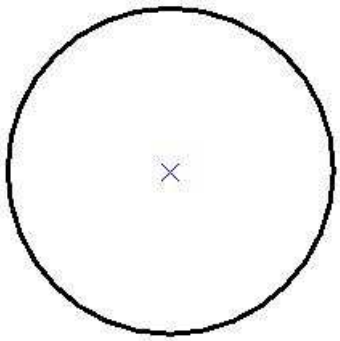
What is the procedure?

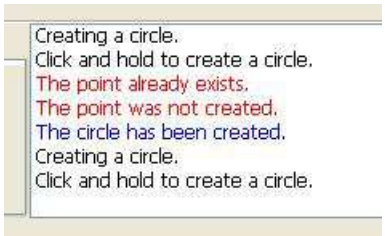


Select a point:

To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.

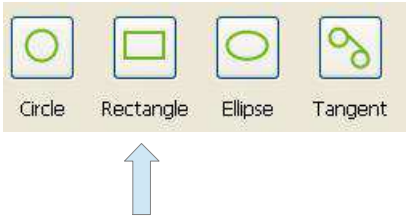




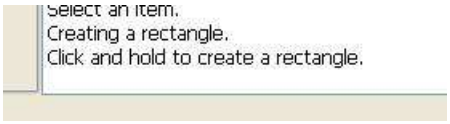


7.7 How to draw a rectangle?

There are two ways to draw a rectangle to the nearest millimeter in a document, or use the command **Rectangle** of the **Speed** toolbar, or use the **Speed / Rectangle** menu.

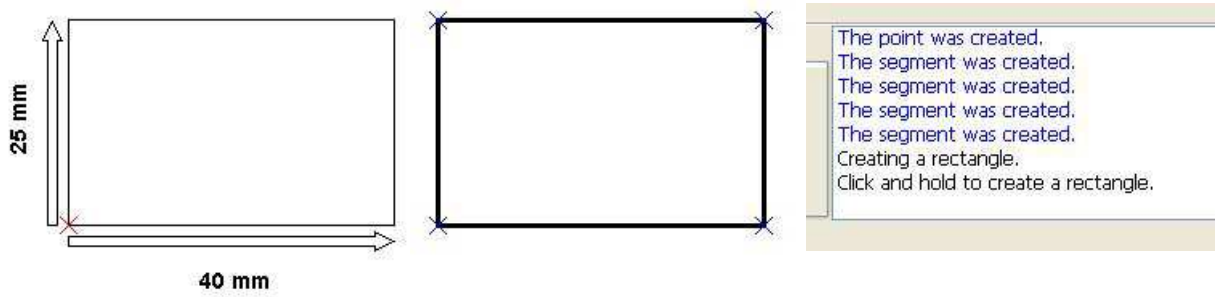


What is the procedure?



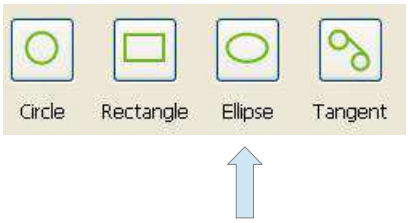
Select a point:

To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, the point will be created.

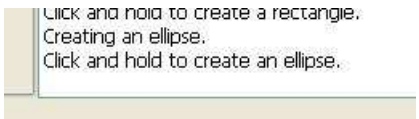


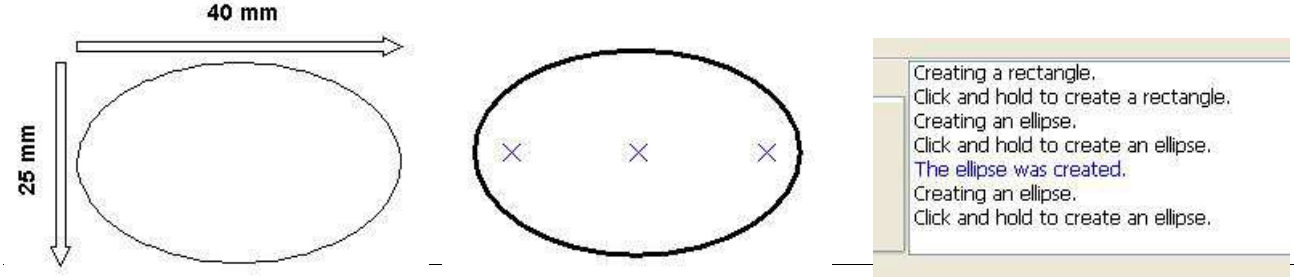
7.8 How to draw an ellipse?

There are two ways to draw an ellipse to the nearest millimeter in a document, or use the command **Ellipse** of the **Speed** tool bar or use **Speed / Ellipse** menu.



What is the procedure?





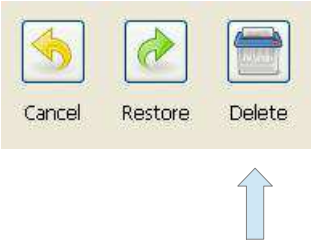
7.9 How to delete a drawing item?

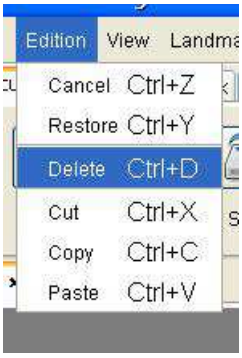
7.9.1 The classic delete

The classic delete removes a drawing item in its entirety. It may be the following items:

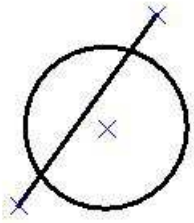
- A line
- A half-line
- A segment
- An arc
- An ellipse arc
- A circle
- An ellipse
- A point

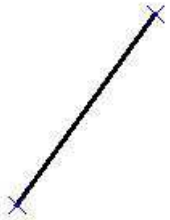
To use the classic delete, use the command **Delete** from the **Edit** tool bar or the **Edit / Delete** menu.





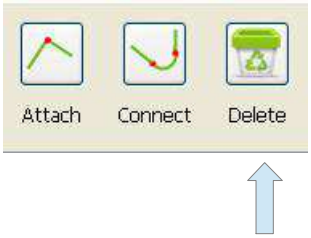
Here is an example of removing a circle. In this case the circle is removed entirely.

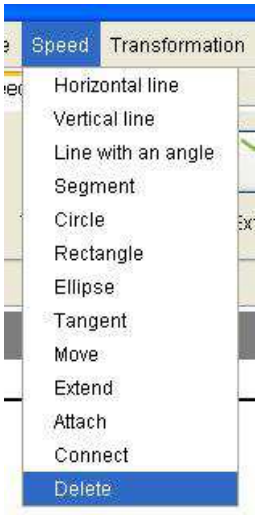




7.9.2 The quick delete

The quick delete removes a portion of an element. This function does not remove a point. To use the quick delete, use the command **Delete** from the **Speed** toolbar or **Speed / Delete** menu.



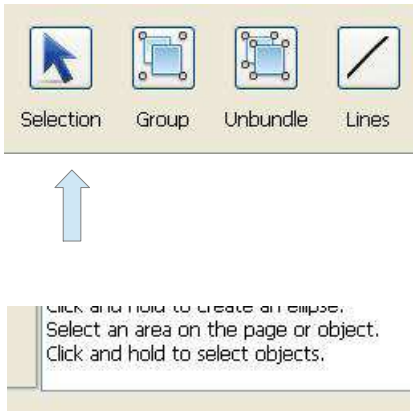


Here the example of delete of a portion of a circle.

8 Selection

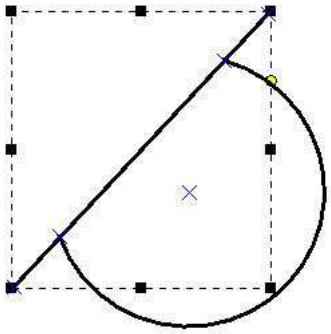
8.1 How to select an item?

There are two ways to select an object in a document, or use the command **Select** from the **Tools** toolbar, or use the **Tools / Selection** menu.



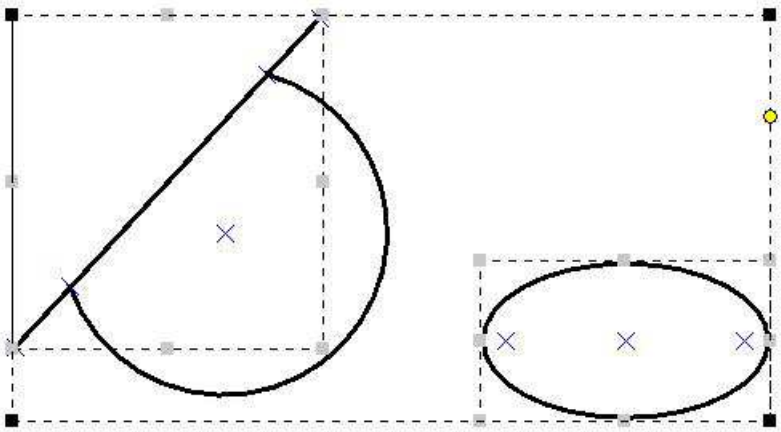
8.1.1 How to select a single object?

To do this, simply click on the object you want to select.



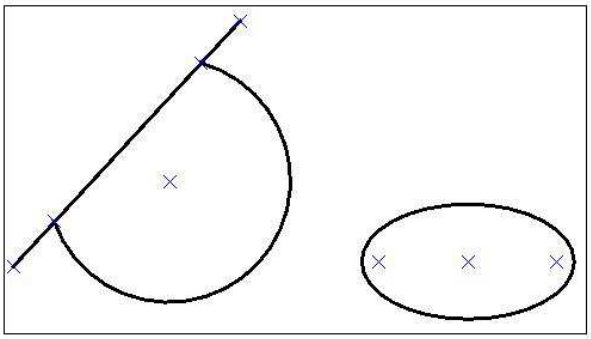
8.1.2 How to select multiple objects individually?

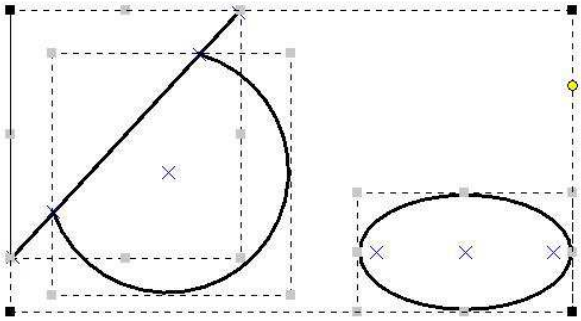
To do this, simply click on each of the objects you want to select by holding the CTRL key.



8.1.3 How to select a group of objects?

You just have to supervise all the objects you want to select with the selection rectangle with the mouse.





8.1.4 How to deselect?

To do this just click outside the selection area.

8.2 What are the possibilities of the selection tool?

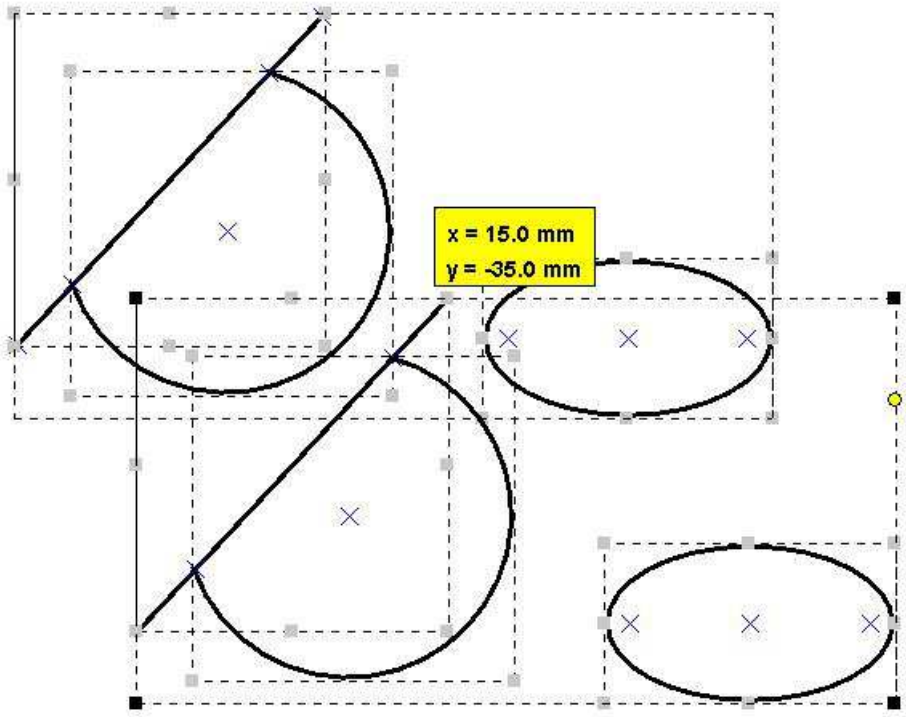
Once a set of objects selected, it is possible to perform a number of operations directly on that selection.

These are the following operations:

- Translation
- Rotation
- Scaling
- Delete

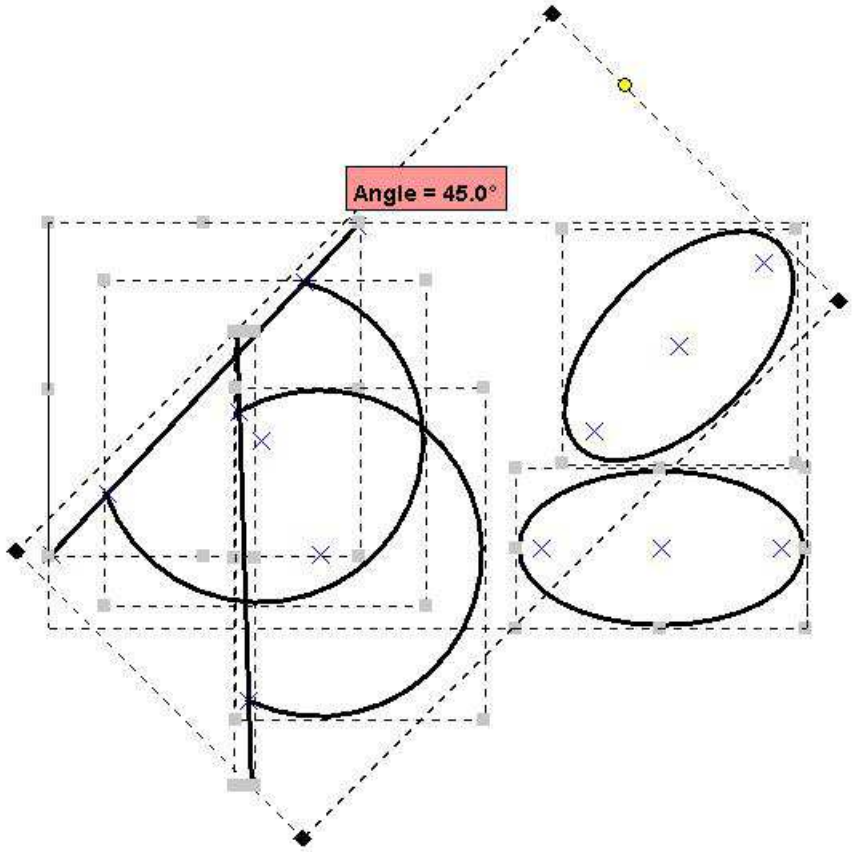
8.2.1 How to do a translation to the millimeter?

To do this, simply click on the selection and move the mouse horizontally and vertically according to the information provided by the viewing box information.



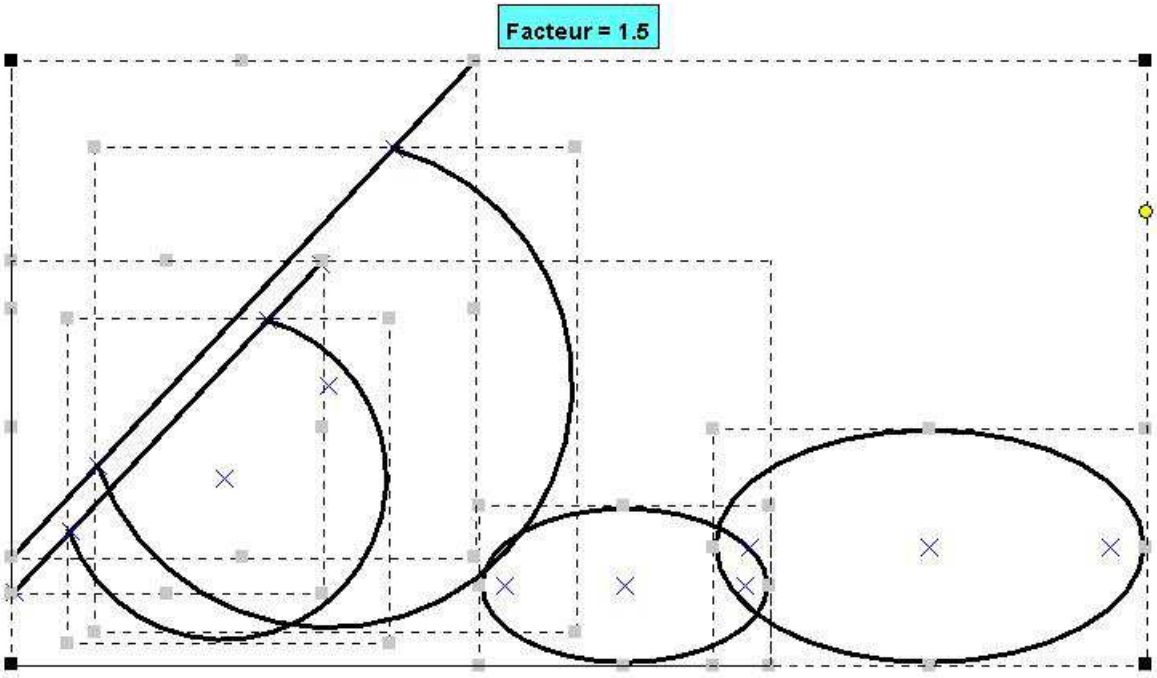
8.2.2 How to rotate?

To do this, simply click on the yellow circle to the selection and move the mouse horizontally and vertically according to the information provided by the viewing box information.



8.2.3 How to scaling?

To do this, simply click on one of the black handles the selection and move the mouse horizontally and vertically according to the information provided by the viewing box information.

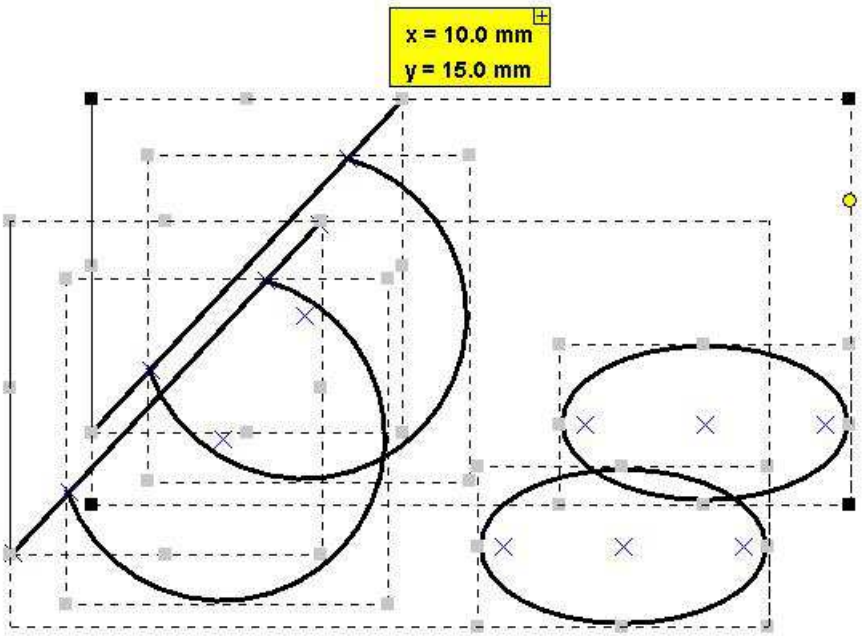


8.2.4 How to delete?

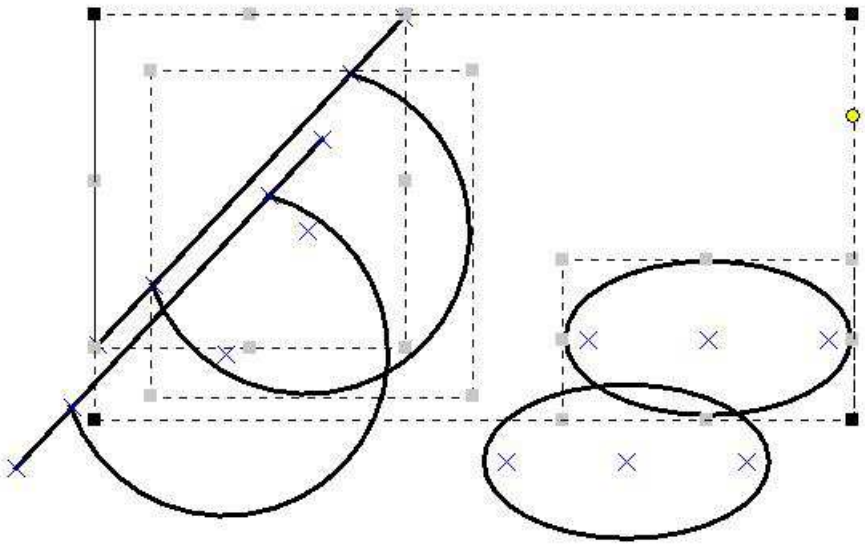
To delete the selected objects, simply press the Delete key.

8.2.5 Why use the CTRL key?

In a translation, a rotation, or scaling, pressing the CTRL key to do a duplicate. A small plus sign appears in the viewing box information.



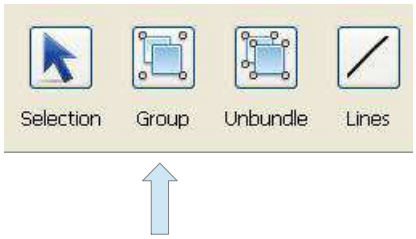
The result is as follows.

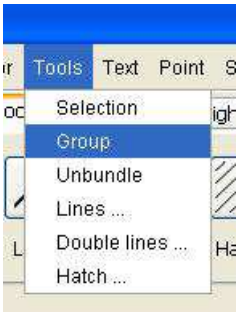


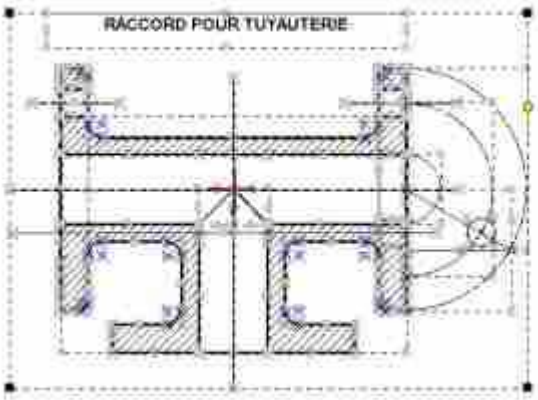
8.3 How to group or ungroup objects selected?

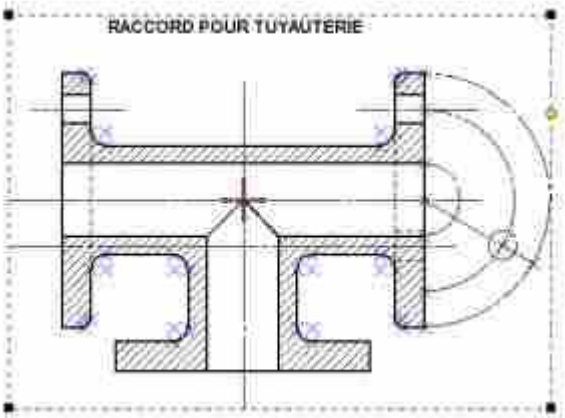
8.3.1 How to group selected objects?

There are two ways to group objects in a document, or use the command **Group** from the **Tools** toolbar, or use the **Tools / Group** menu.



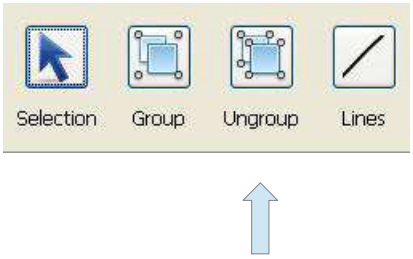


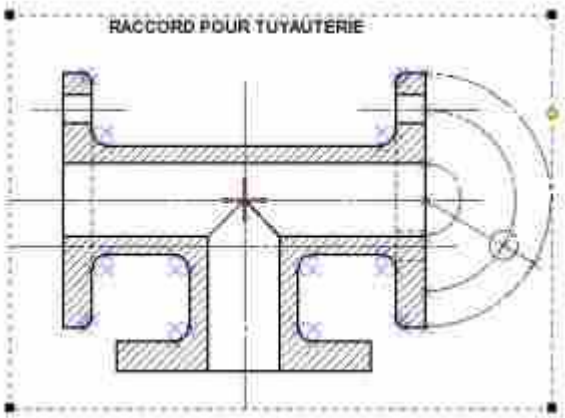


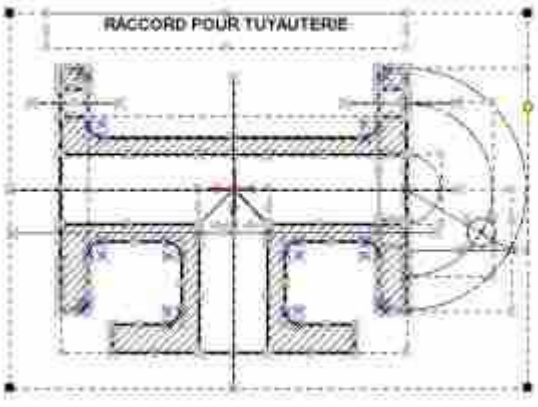


8.3.2 How to ungroup objects selected?

There are two ways to ungroup objects in a document, or use the command **Ungroup** from the **Tools** toolbar, or use the **Tools / Ungroup** menu.

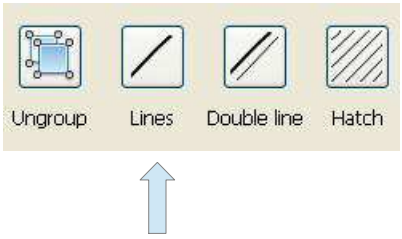


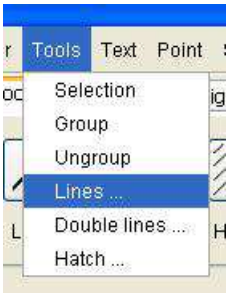




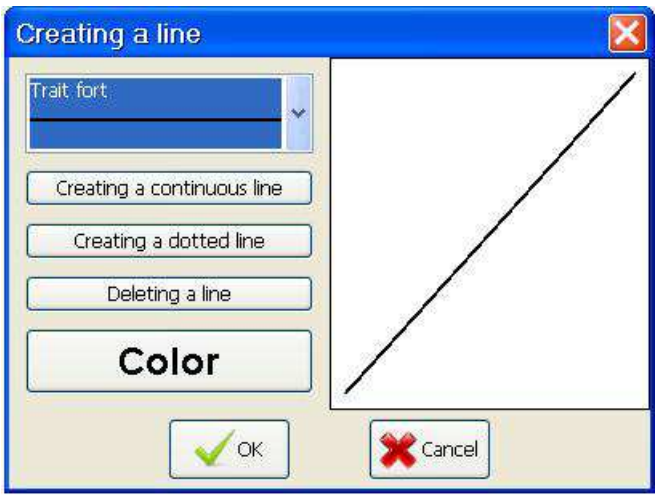
9 Lines

There are two options for accessing the creation of a line type or use the command **Line** from the **Tools** toolbar, or use the **Tools / Line** menu.





This command will open a dialog box for creating a new type of line.

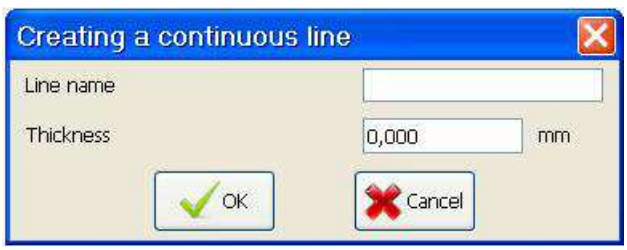


The dialog box is divided into two parts, one on the left giving access to a number of actions, and some right to view the selected line.

- **The choice box**: It lets you choose the type of line that you want to view or delete. Exists in a number of software pre-defined features. These types of terms are not removable, only line types created by user are deletable by it.
- **The creation of a continuous line button**: This button opens a dialog box for creating a continuous line type.
- **The creation of a dotted line button**: This button opens a dialog box for creating a dotted line type.
- **The Delete button on a line**: This button allows you to delete a line type created by the user. The types of features provided by default by the software are not deletable.

9.1 How to create a continuous line?

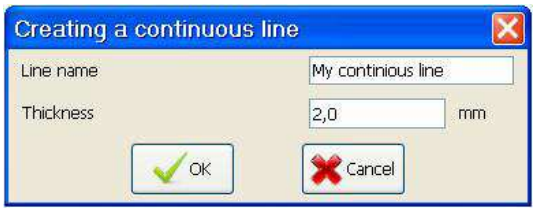
It should firstly press the Create button in a continuous line of Creation dialog box. This will open a dialog box for entering the information needed to create the type of baseline.

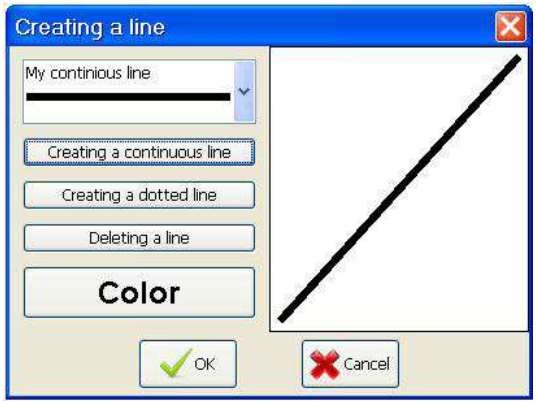


This dialog has two fields:

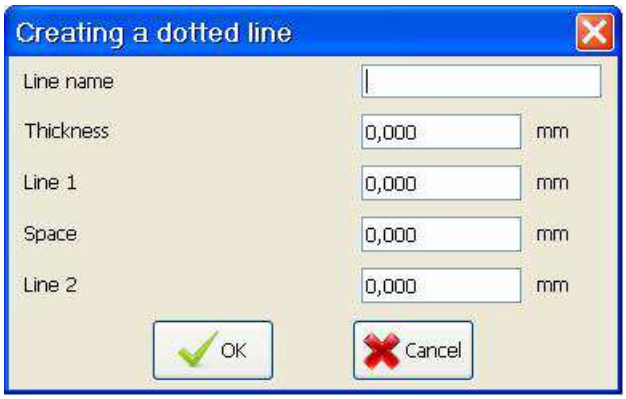
- **The name line field**: This field is required and inform to the name of the line type.
- **The thickness field**: This field can not be zero. It defines the line thickness in millimeters.

Example of a continuous line.





9.2 How to create a dotted line?

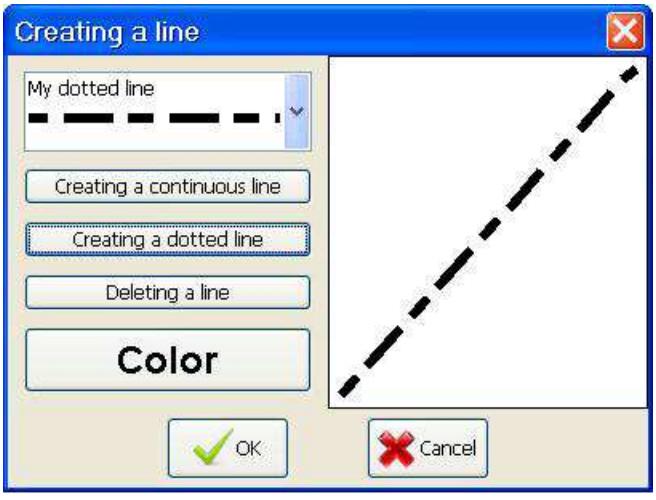


It should firstly press the Create button a dotted line of Creation dialog box. This will open a dialog box for entering the information needed to create the type of dotted line.

This dialog has five fields:

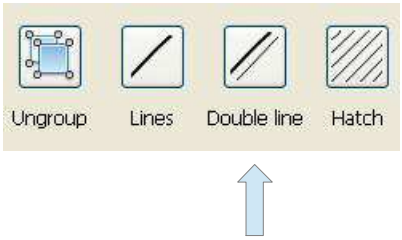
- **The name line field**: This field is required and inform to the name of the line type.
- **The thickness field**: This field can not be zero. It defines the line thickness in millimeters.
- **The Line 1 field**: This field can not be zero. It defines the length of the first dash millimeter.
- **The space field**: This field can not be zero. It defines the length of the space between the two dashes in millimeters.
- **The Line 2 field:** This field can not be zero. It defines the length of the second dash millimeter.

Example dotted line.



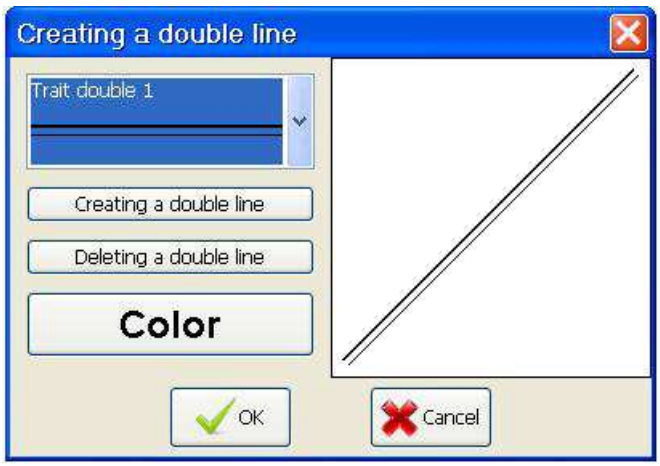
9.3 How to create a double line?

There are two options for accessing the creation of a type of double line, or use the command **Double line** the **Tools** toolbar, or use the **Tools / Double Line** menu.



This command will open a dialog box for creating a new type of double line.

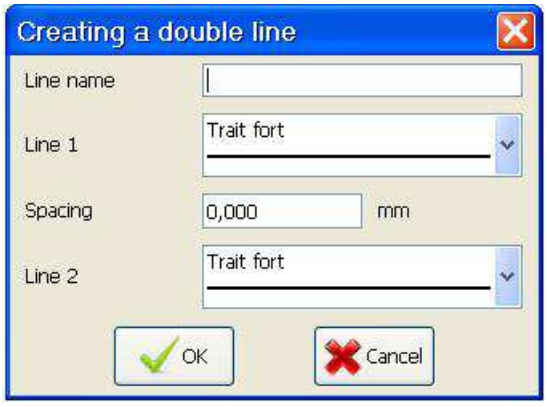
The dialog box is divided into two parts, one on the left giving access to a number of actions, and some right to view the selected line.



- **The choice box**: It lets you choose the type of double line that you want to view or delete. Exists in a number of software features dual predefined. These types of double lines are not removable, only two types of feature set by the user are deletable by it.
- **The button Creating a double line**: This button opens a dialog box for creating a kind of double line.
- **The button Deleting a double line**: This button allows you to delete a type of double line created by the user. The types of double line provided by default by the software are not deletable.

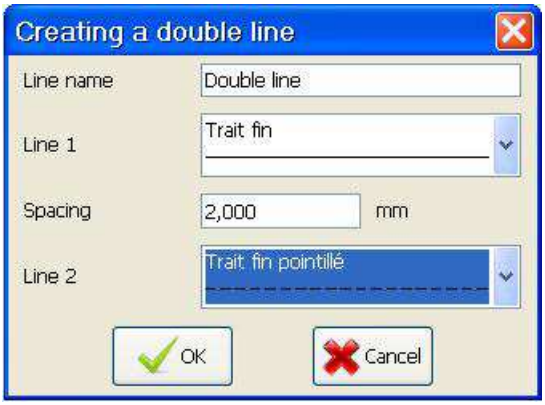
To create a type of double line, you must initially press the Create button with a double line of the dialog box Creating a double line. This will open a dialog box for entering the information needed to create the type of double line.

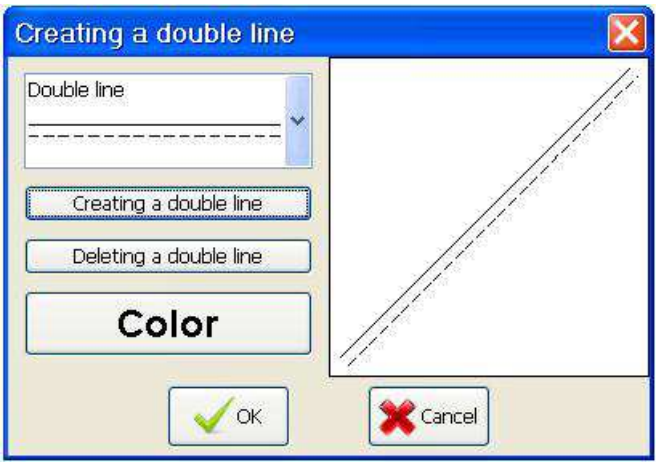
This dialog box has four fields:



- **The Name line field**: This field is required and information on the type name double line.
- **The Trait 1 Field**: It defines the type of line the first line. It can be a solid line or a dotted line.
- **The Spacing field**: This field can not be zero. It defines the distance in millimeters between the two types of line.
- **The Trait 2 Field**: It defines the type of line the second line. It can be a solid line or a dotted line.

Example of double lines.

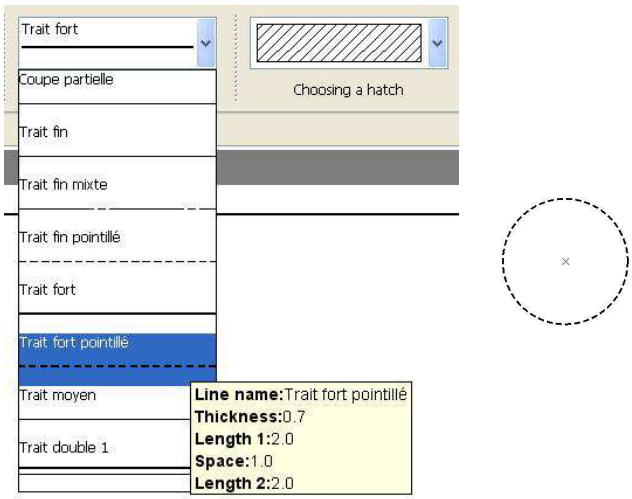


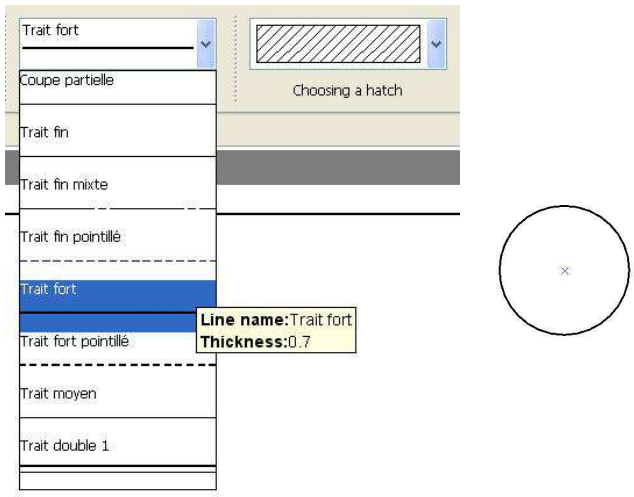


9.4 How to select a line type?

To select a particular type of feature, simply select the type of line in the list of choices **Choosing a line** in the **Tools** tab.

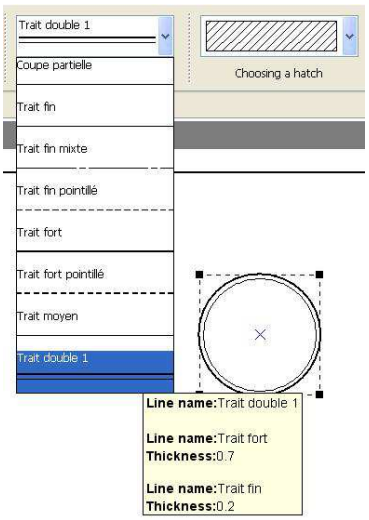
The tool tip gives all the necessary information on the selected line type.

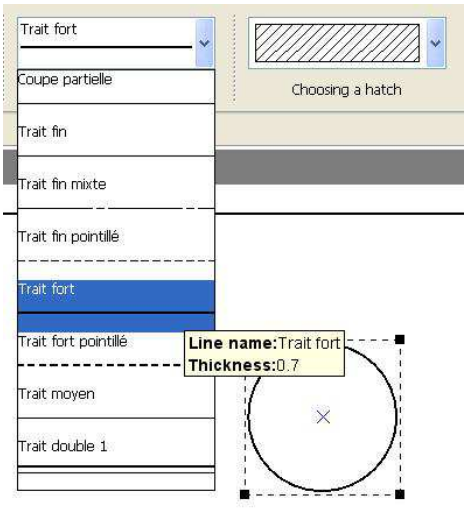




9.5 How to change the line style of a design element?

To change the line style of an element of design, it is first necessary to select the design element, then select the new type of line in the list of choices **Choosing a line** of the **Tools** tab.



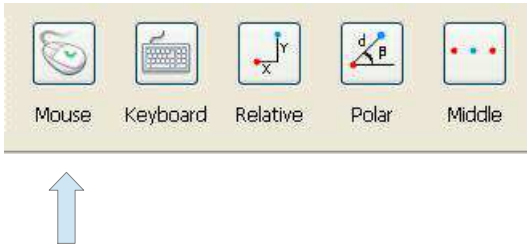


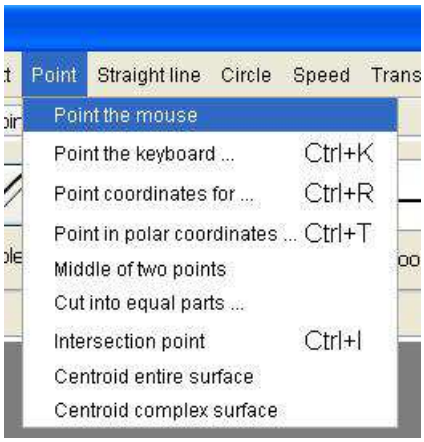
10 Points

10.1 How to plot a point with the mouse?

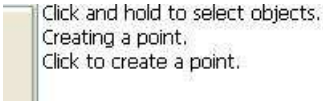
This feature is useful when you have activated the grid.

There are two ways to create a point with the mouse, or use the command **Mouse** of the **Point** toolbar, or use the **Point / Mouse** menu.



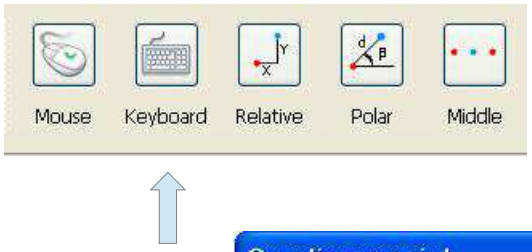


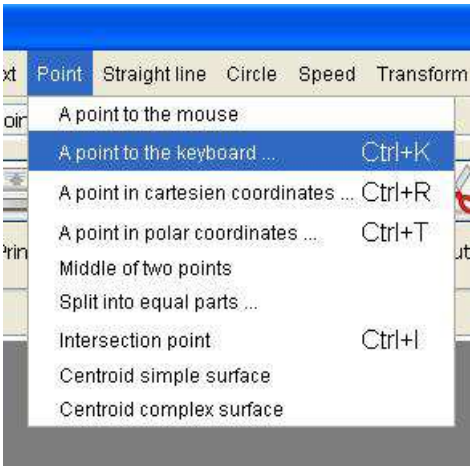
What is the procedure?



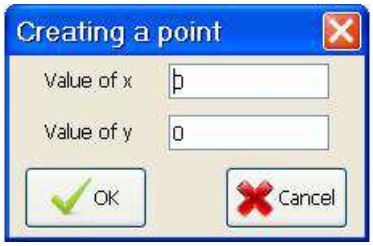
10.2 How to plot a point on the keyboard?

There are two ways to create a point on the keyboard or use the command **keyboard** of the **Point** toolbar, or use the **Point / Keyboard** menu.





This command will open a dialog box to create the point.



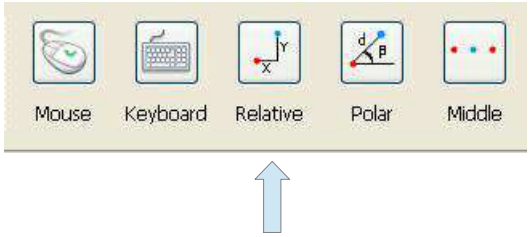
This dialog box consists of two fields:

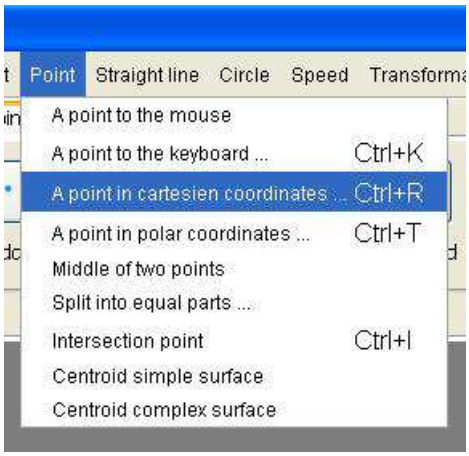
- **The field Value of x**: This is the abscissa of the point.
- **The field Value of y**: This is the ordinate of the point.

The point (0,0) is the center of a document.

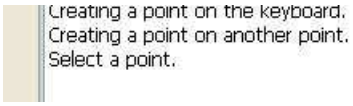
10.3 How to plot a point in cartesian coordinates?

There are two ways to create a point relative to another point, or use the command **Relative** of the **Point** toolbar, or use the **Point / A point in cartesian coordinates** menu.

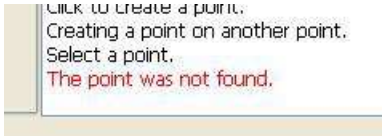




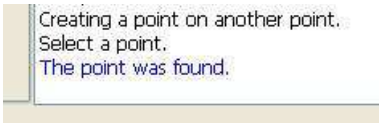
What is the procedure?



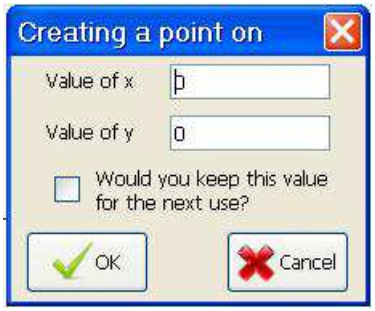
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



Otherwise a message will indicate that the point has been found.

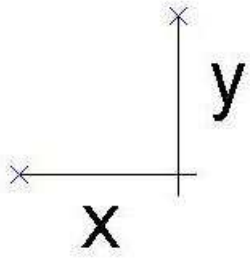


This command will open a dialog box to create the point.



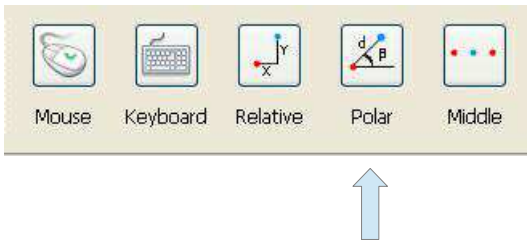
This dialog box consists of two fields:

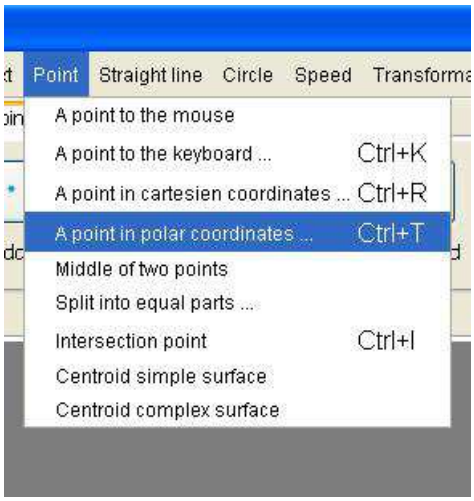
- **The field Value of x**: This is the relative abscissa of the point.
- **The field Value of y**: This is the relative ordinate of the point.



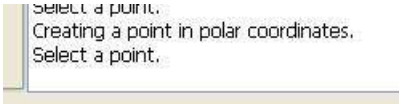
10.4 How to plot a point in polar coordinates?

There are two ways to create a point in polar coordinates, or use the command **Polar** in **Point** toolbar, or use the **Point / A point in polar coordinates** menu.

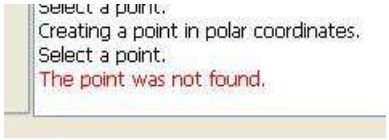




What is the procedure?

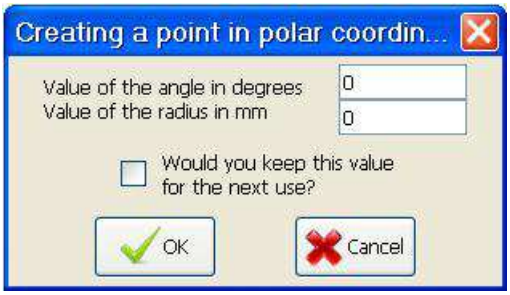


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



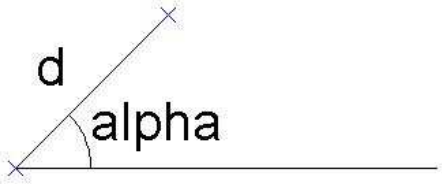
Otherwise a message will indicate that the point has been found.

This command will open a dialog box to create the point.



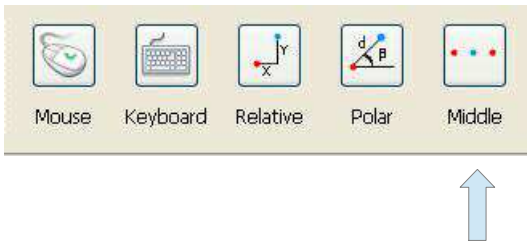
This dialog box consists of two fields:

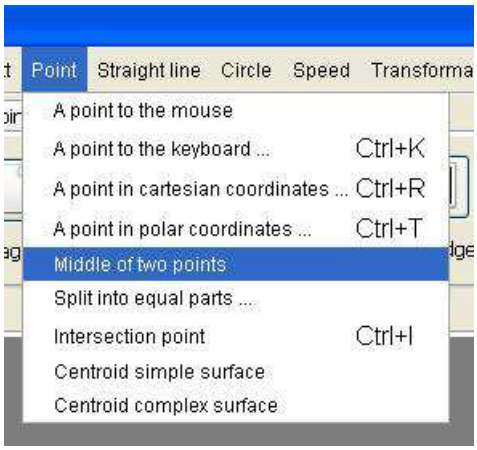
- **The field Value of the angle in degrees**: This is the angle that the line through the two points with the horizontal.
- **The field Value of the radius in millimeters**: This is the distance between the two points.



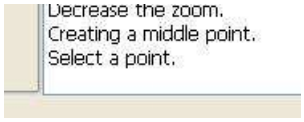
10.5 How to draw a middle of two points?

There are two ways to create a midpoint of two points, use the command **Middle** in the **Point** toolbar, or use the **Point / Middle two points** menu.

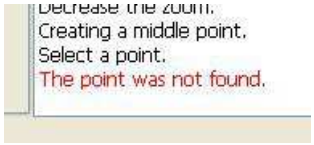




What is the procedure?



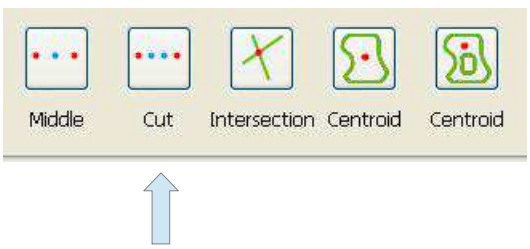
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

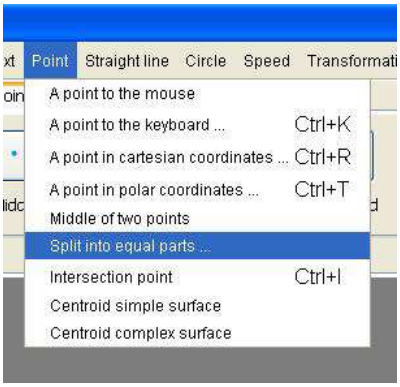


To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

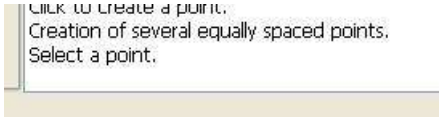
10.6 How to draw several equidistant from each other points?

There are two ways to create equidistant from each other points, use the command **Cut** from the **Point** toolbar or use the menu **Point / Cut into equal parts**.

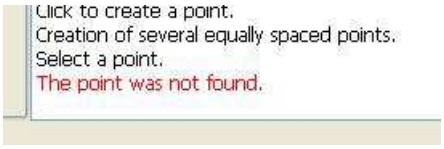




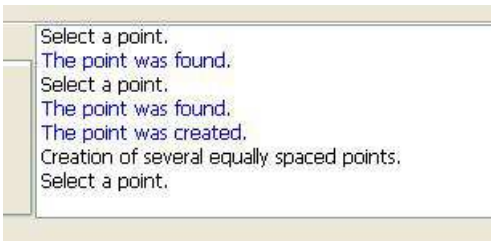
What is the procedure?



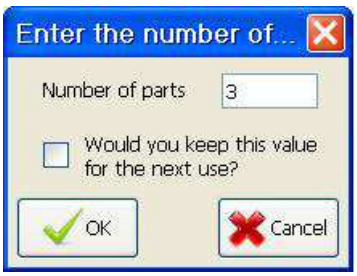
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

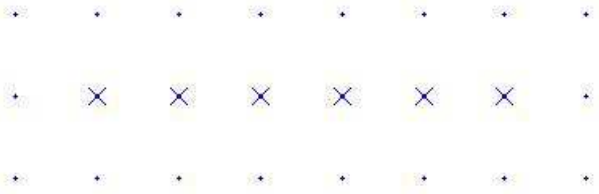


This command will open a dialog box to create the points.



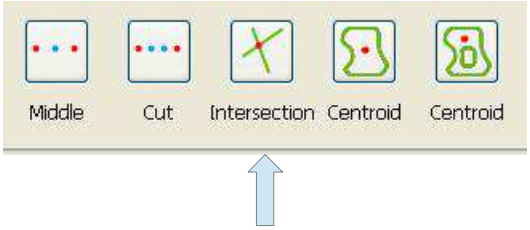
This dialog box consists of one field:

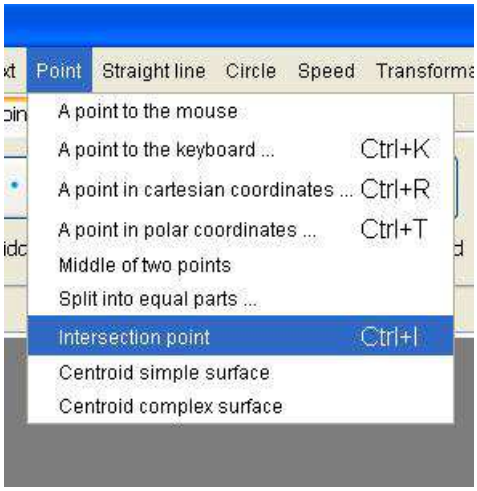
- The field Number of parts: This is the number of equal parts into which the distance is cut between the two points.



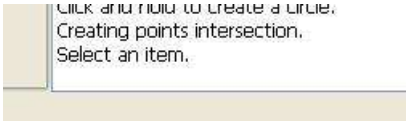
10.7 How to draw an intersection point?

There are two ways to create an intersection point of two items, use the command **Intersect** of the **Point** tool bar, or use the **Point / Intersection point** menu.

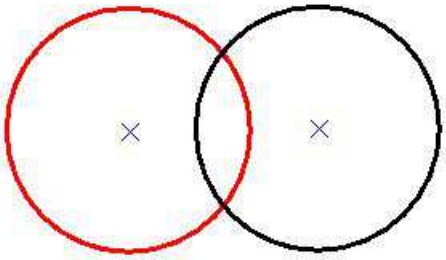


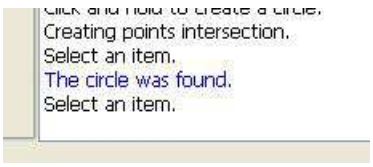


What is the procedure?

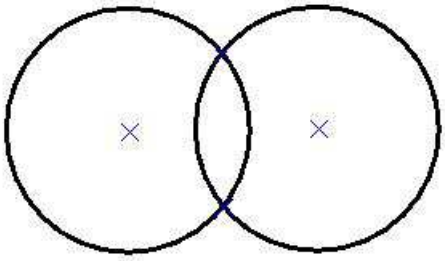


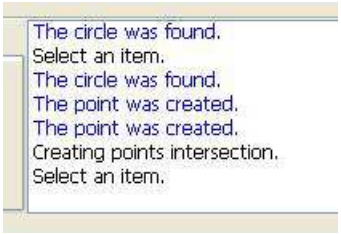
To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.





To select the second drawing, just click with the mouse (left click) where is the design element in the document.

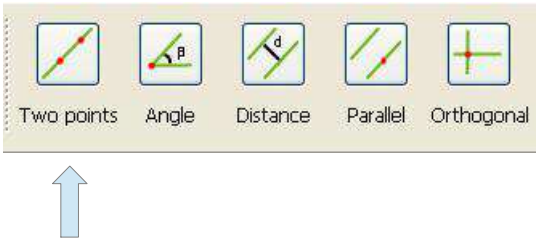


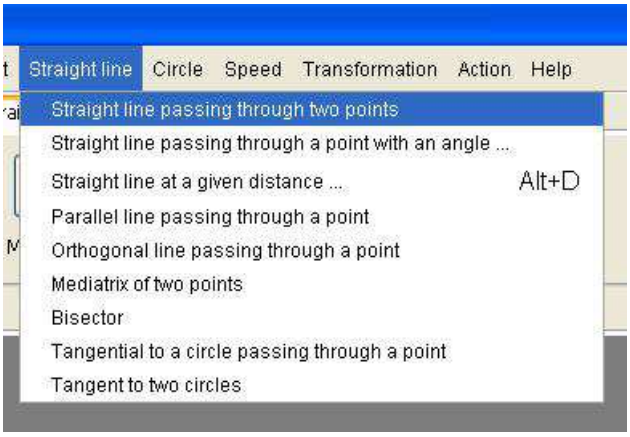


11 Straight line

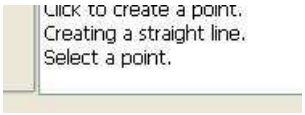
11.1 How to draw a straight line between two points?

There are two ways to create a line through two points, use the command **Two points** of the **Straight line** toolbar or use the **Straight line / Line through two points** menu.

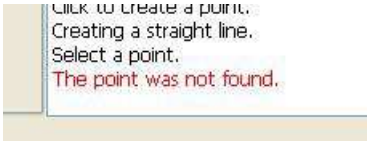




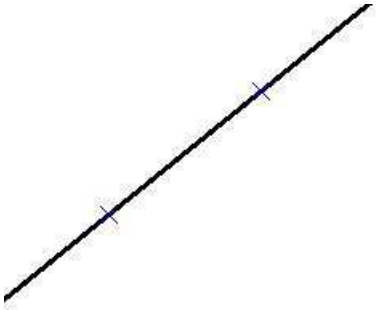
What is the procedure?

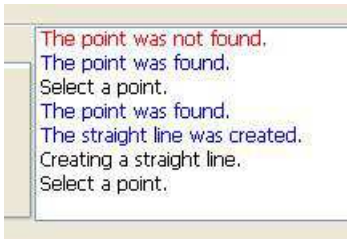


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



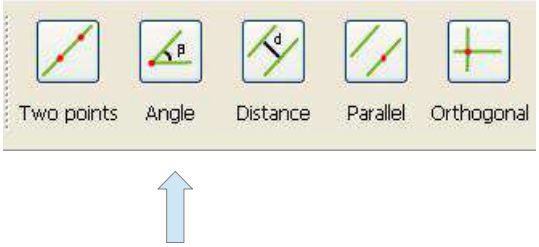
To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

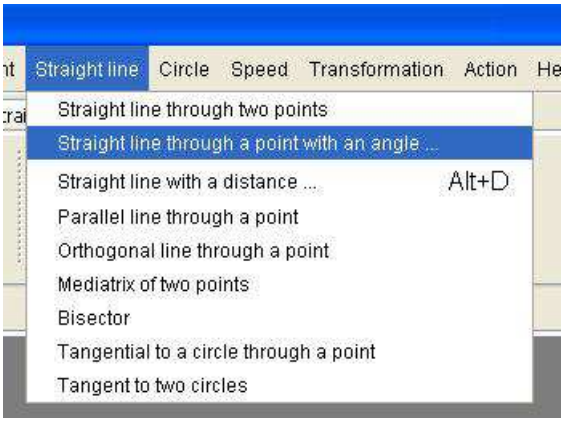




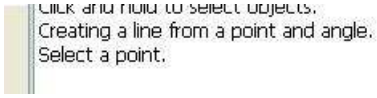
11.2 How to draw a straight line with an angle?

There are two ways to create a straight line through a point with an angle or use the command **Angle** the **Straight line** toolbar or use the menu **Straight line / Straight line through a point with an angle**.

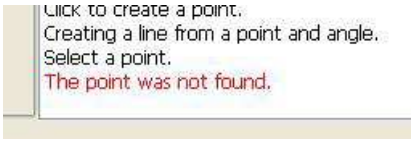




What is the procedure?



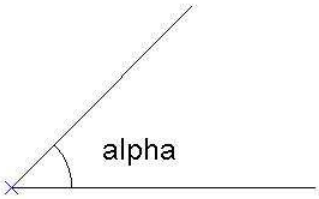
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



This command will open a dialog box to create the straight line.

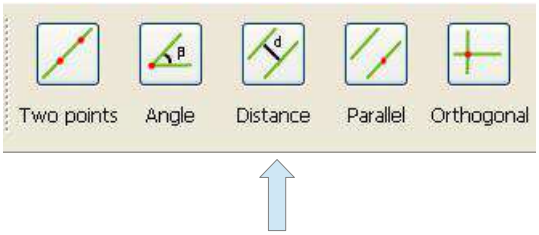
This dialog box consists of a field:

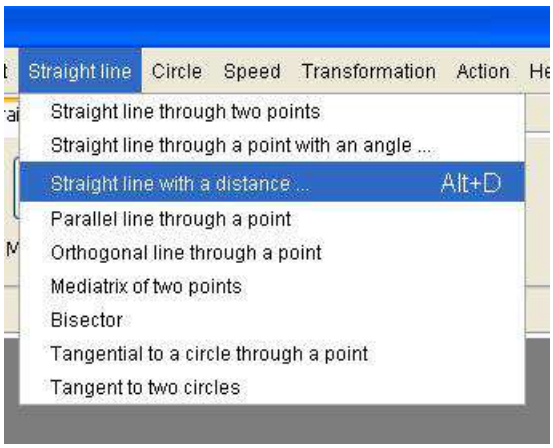
- **The field angle in degrees**: This is the angle that the line passing through the point with the horizontal.



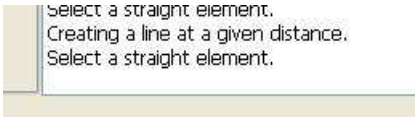
11.3 How to trace a remote line to a straight element?

There are two ways to create a remote line of a straight line or use the command **Distance** of the **Straight line** toolbar or use the **Straight line / Straight line with a distance** menu.





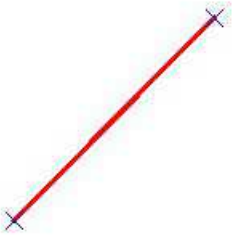
What is the procedure?

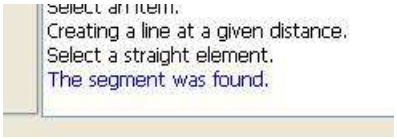


To select a drawing element, just click with the mouse (left click) where is the drawing element in the document. The drawing element turns red when selected.

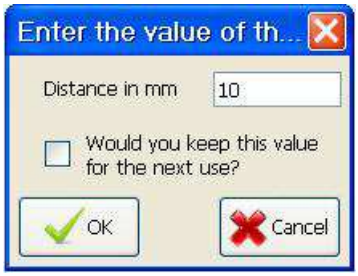
A straight element can be of three types:

- A straight line
- A half straight line
- Segment



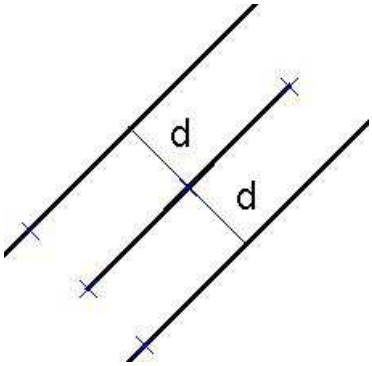


This command will open a dialog box to create the two lines.



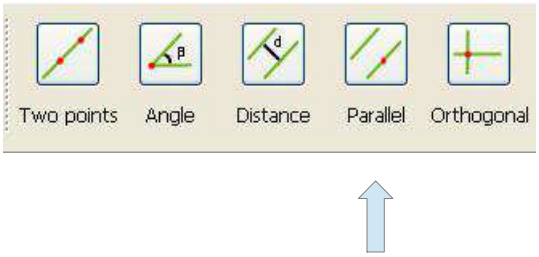
This dialog box consists of one field:

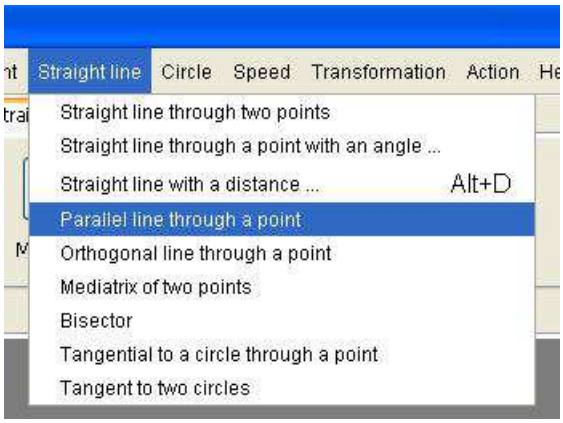
- **The field distance in mm**: This is the distance between the straight element and the straight line.



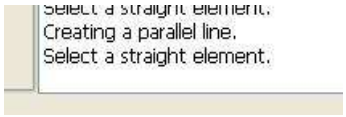
11.4 How to draw a straight line parallel to a straight element?

There are two ways to create a parallel line through a point to a straight element, or use the command **Parallel** of the **Straight line** toolbar or use the menu **Straight line / Straight line parallel through a point**.





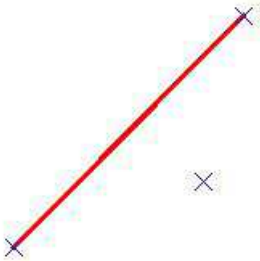
What is the procedure?

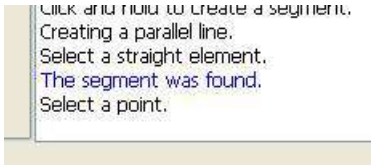


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

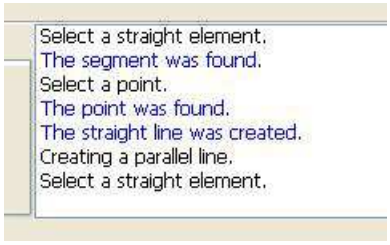
A straight element can be of three types:

- A straight line
- A half straight line
- A segment



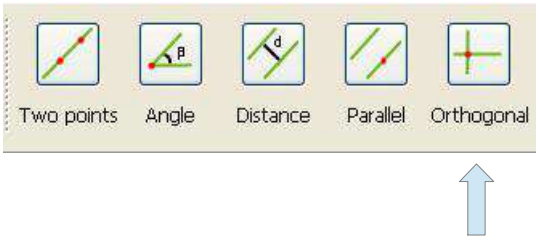


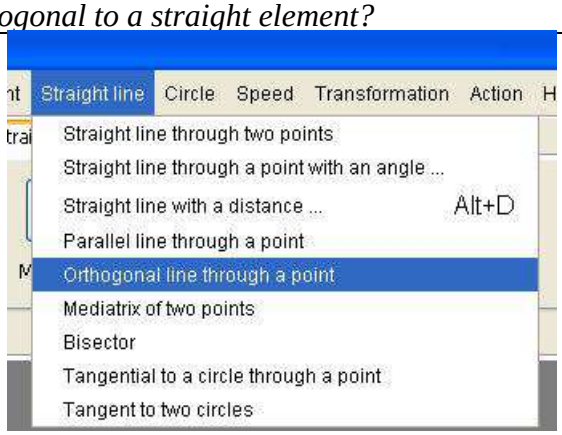
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



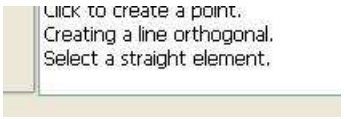
11.5 How to draw a straight line orthogonal to a straight element?

There are two ways to create an orthogonal line passing through a point to a straight element, use the command **Orthogonal** of the **Straight line** tool bar, or use the menu **Straight line / Straight line orthogonal through a point**.





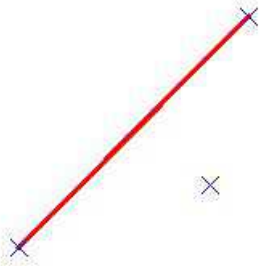
What is the procedure?

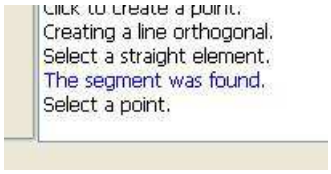


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

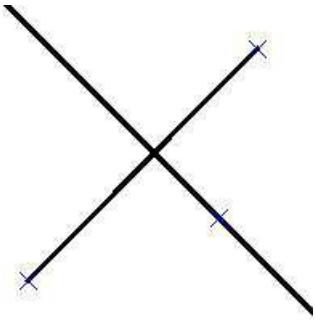
A straight element can be of three types:

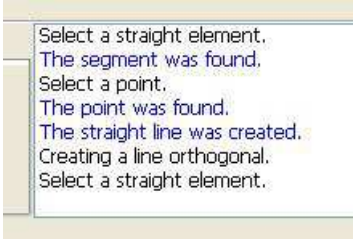
- A straight line
- A half straight line
- A segment





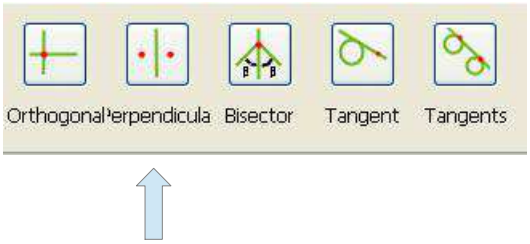
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

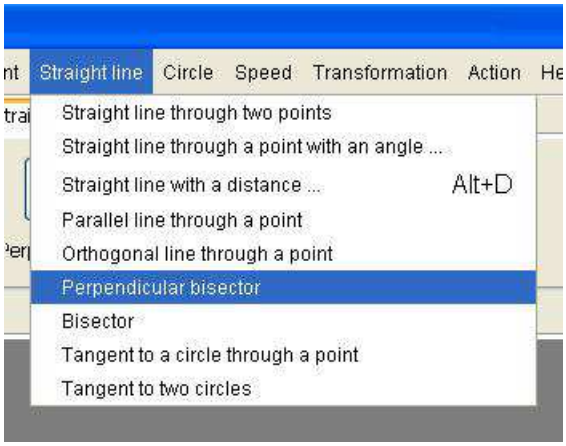




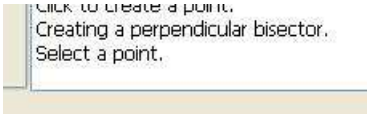
11.6 How to draw the perpendicular bisector of two points?

There are two ways to create a perpendicular bisector, or use the **Perpendicular** command of the **Straight line** toolbar or use the menu **Straight line / Perpendicular bisector**.

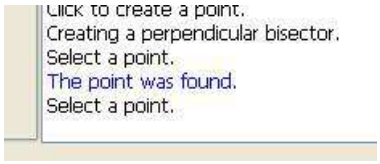




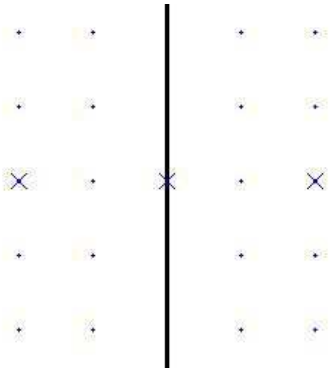
What is the procedure?

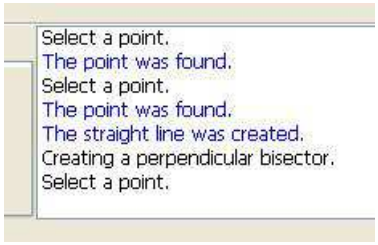


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



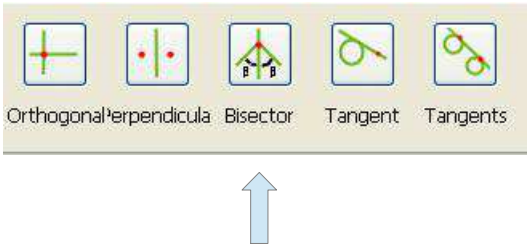
To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

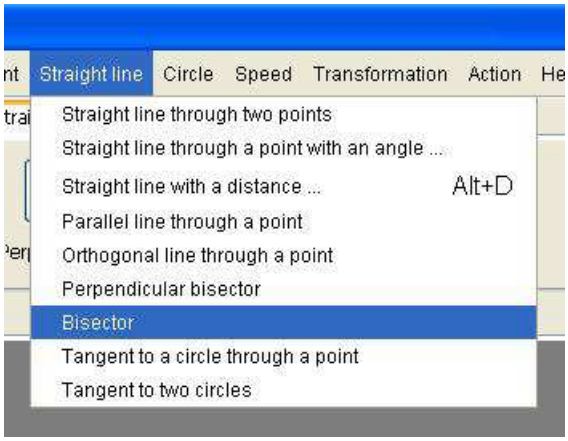




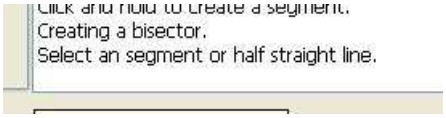
11.7 How to draw the bisector of an angle?

There are two ways to create a bisector, or use the **Bisector** command of the **Straight line** toolbar or use the menu **Straight line / Bisector**.

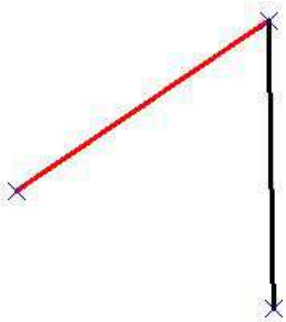


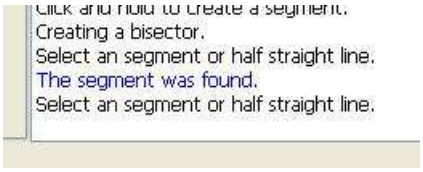


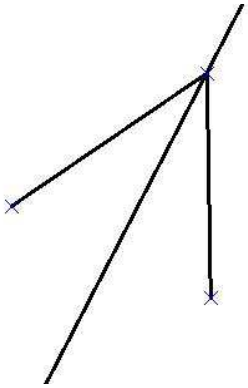
What is the procedure?

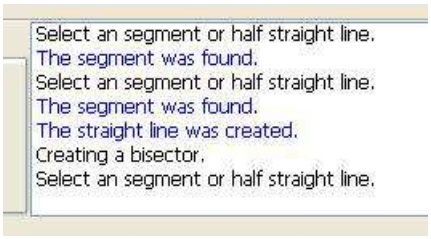


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.



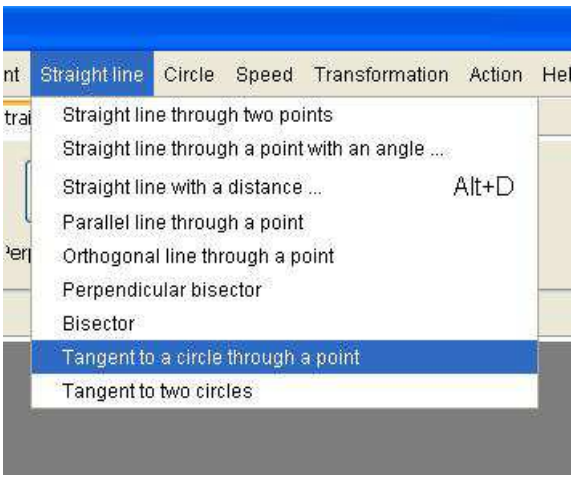




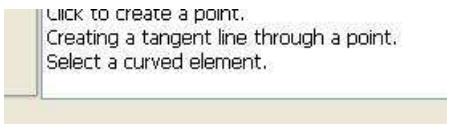


11.8 How to draw a tangent to a circle through a point?

There are two ways to create a line tangent to a circle through a point, or use the command **Tangent** of the **Straight line** toolbar or use the menu **Straight line / Tangent to a circle through a point**.



What is the procedure?

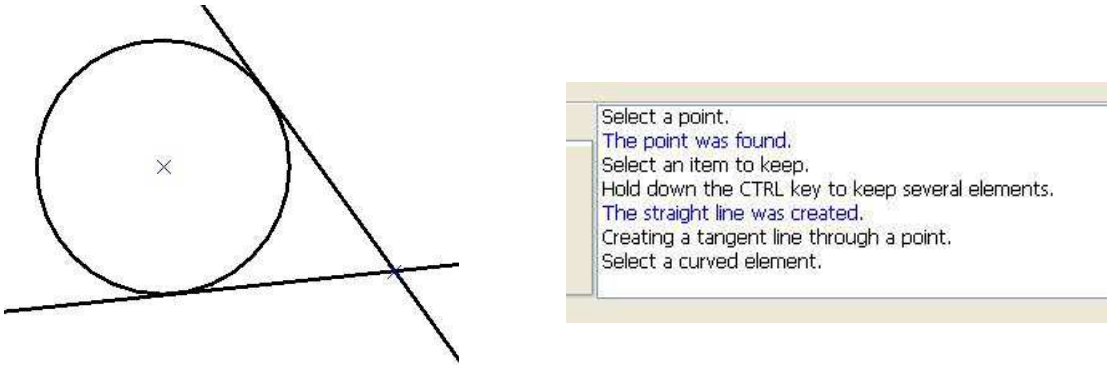


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

A straight element can be of two types:

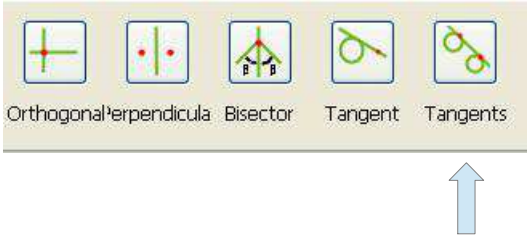
- A circle
- An arc

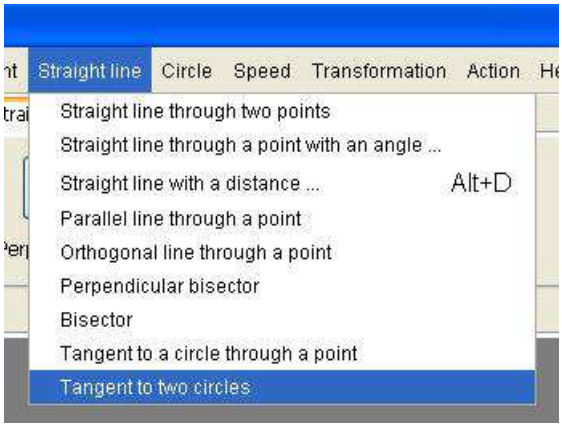
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



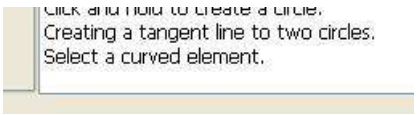
11.9 How to draw the tangent to two circles?

There are two ways to create a line tangent to two circles, or use the Tangent command of the Straight line toolbar or use the menu Straight line / Straight line tangent to two circles.





What is the procedure?



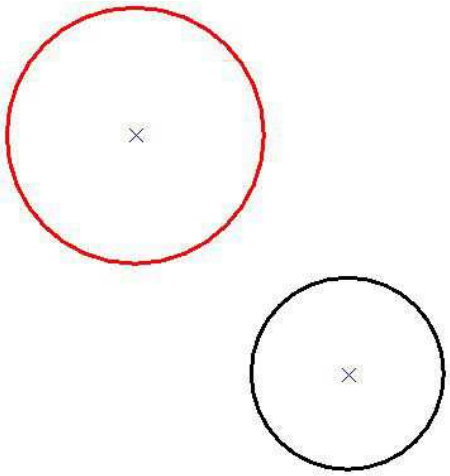
To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

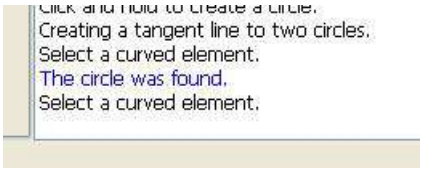
The element can be of two types:

- A circle

- An arc

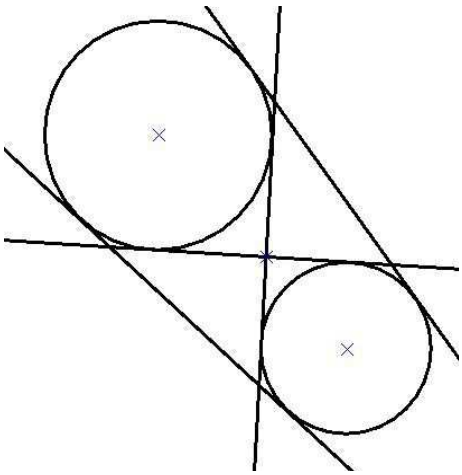
To select a second drawing element, just click with the mouse (left click) where is the design element in the document.

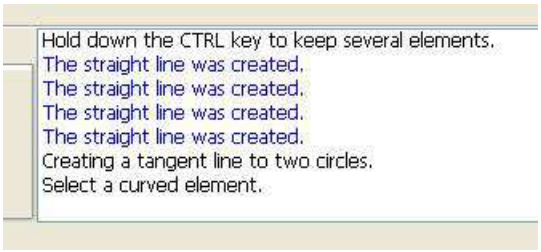




The element can be of two types:

- A circle
- An arc

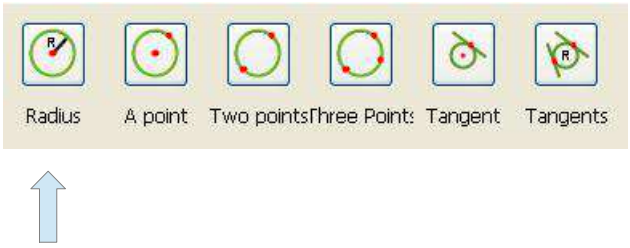


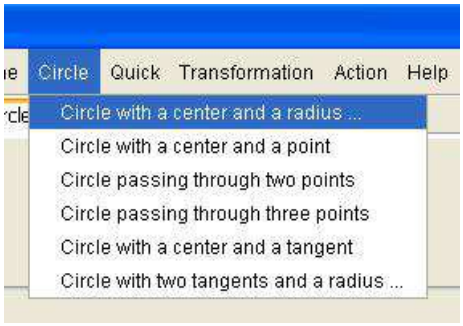


12 Circles

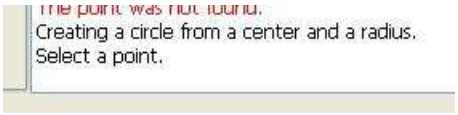
12.1 How to draw a circle with a radius?

There are two ways to create a circle with a radius, or use the command **Radius** of the **Circle** tool bar, or use the menu **Circle / Circle with a center and a radius**.

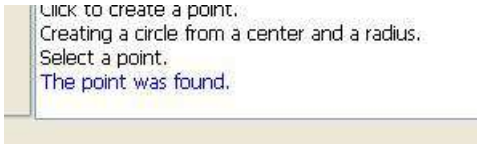




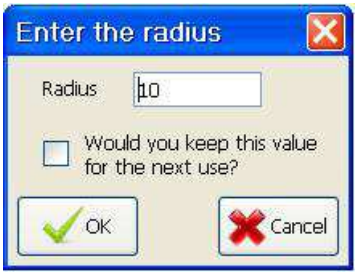
What is the procedure?



To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

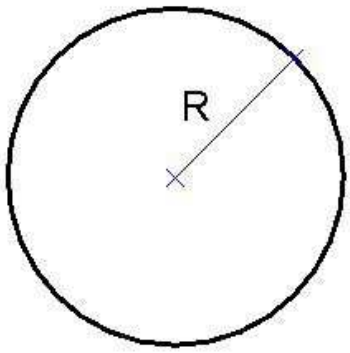


This command will open a dialog box to create the circle.



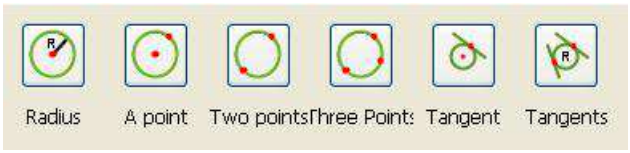
This dialog box consists of one field:

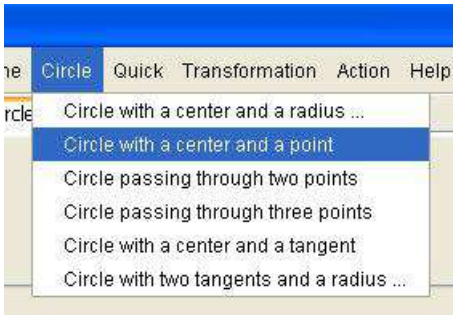
- **The field Radius**: This is the radius of the circle in millimeters.



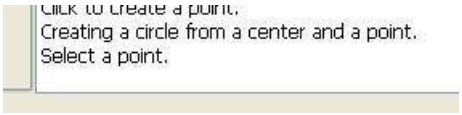
12.2 How to draw a circle passing through one point?

There are two ways to create a circle passing through a point or use a command **Point** of the **Circle** tool bar, or use the menu **Circle / Circle with a center and one point.**

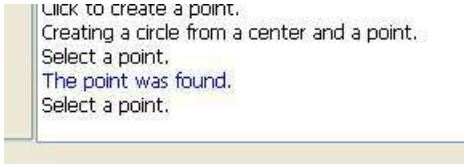




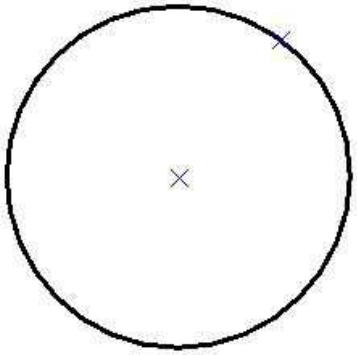
What is the procedure?

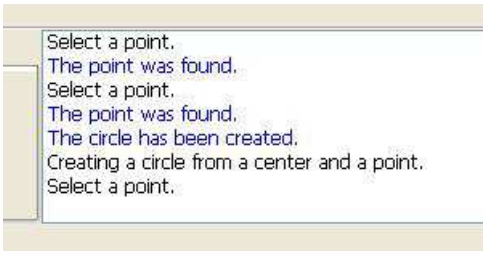


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



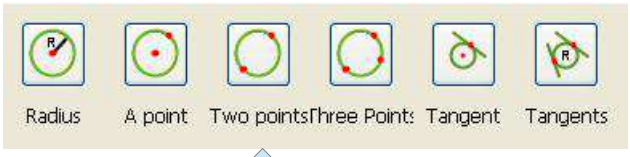
To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

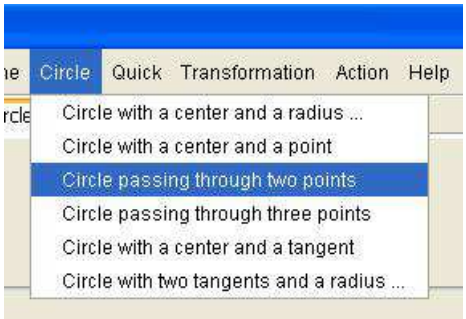




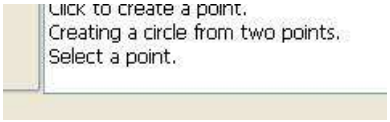
12.3 How to draw a circle through two points?

There are two ways to create a circle through two points, or use the command **Two points** of the **Circle** toolbar or use the menu **Circle / Circle through two points**.

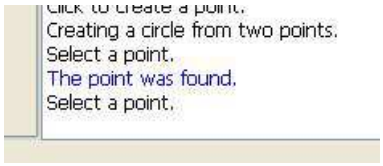




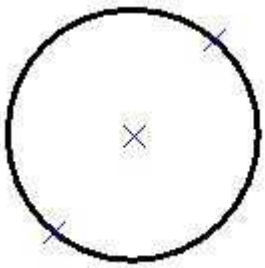
What is the procedure?

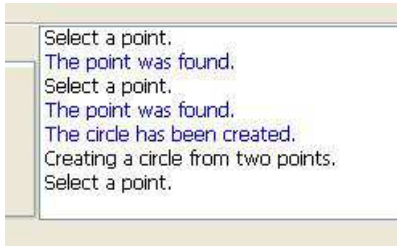


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



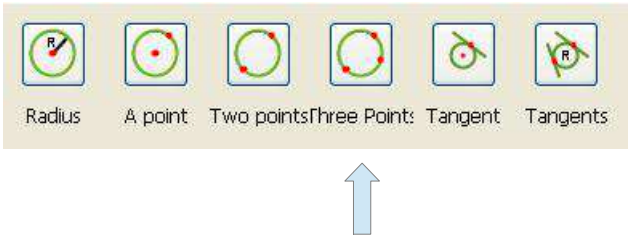
To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

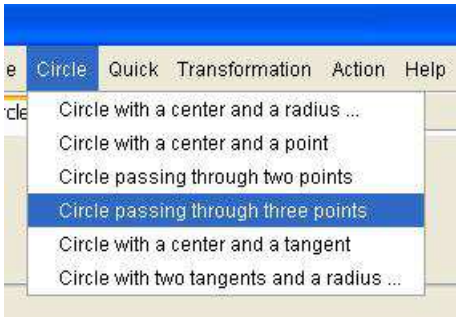




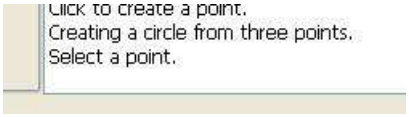
12.4 How to draw a circle through three points?

There are two ways to create a circle through three points, or use the command **Three points** of the **Circle** toolbar or use the menu **Circle / Circle through three points**.

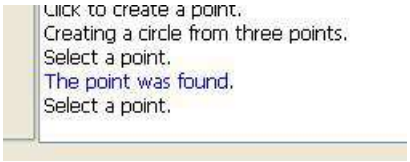




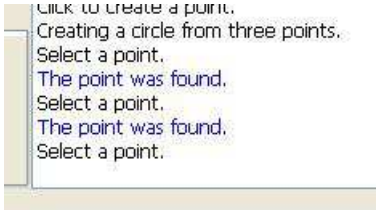
What is the procedure?



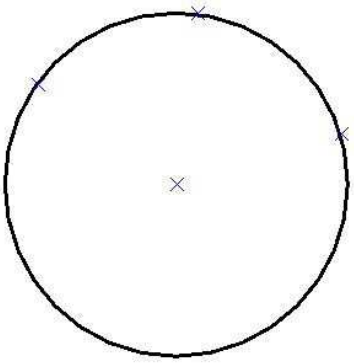
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

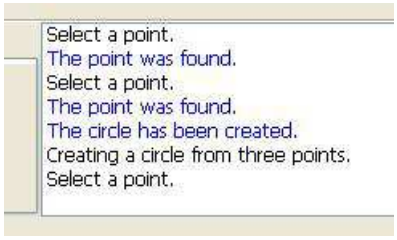


To select a second point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



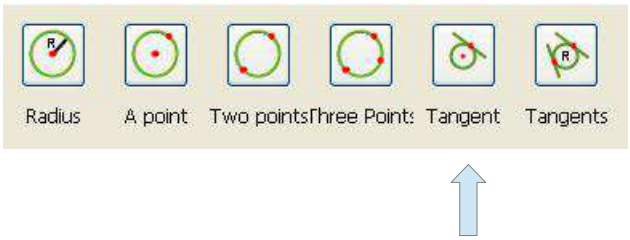
To select a third point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

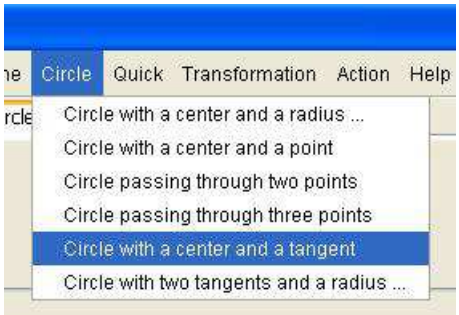




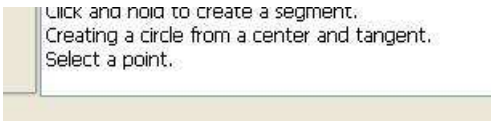
12.5 How to draw a circle with a center and a tangent?

There are two ways to create a circle with a center and a tangent, or use the command **Tangent** from the **Circle** toolbar or use the menu **Circle / Circle with a center and a tangent**.

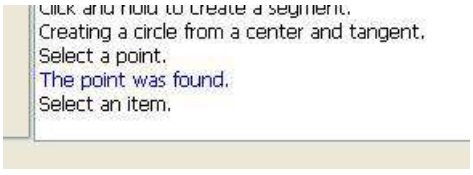




What is the procedure?



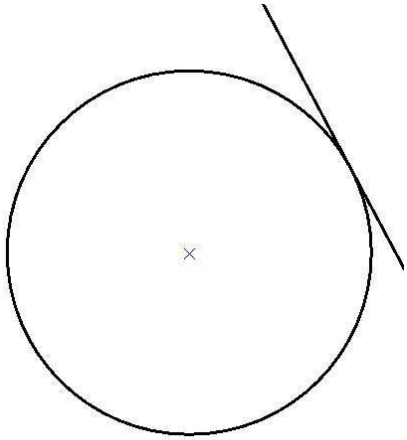
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

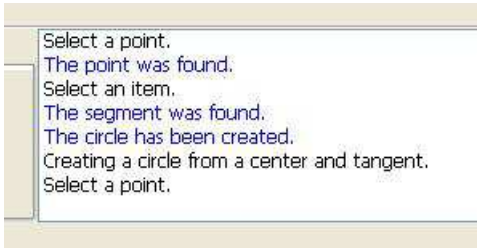


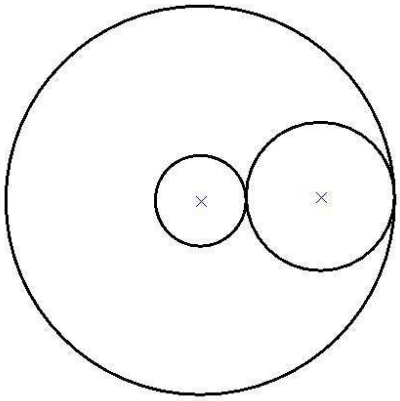
To select a drawing element, just click with the mouse (left click) where is the design element in the document.

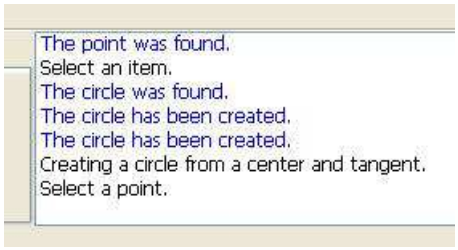
A straight element can be of two types:

- A circle
- An arc
- A straight line
- A half straight line
- A segment



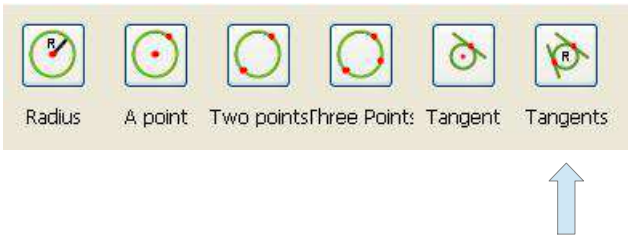


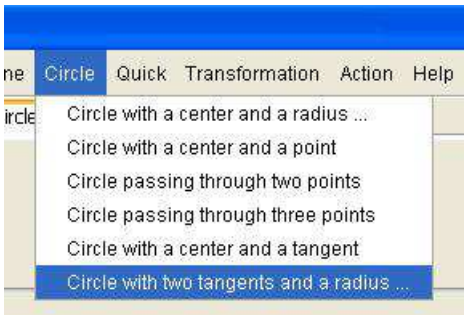




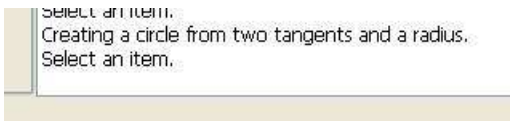
12.6 How to draw a circle with a radius and two tangents?

There are two ways to create a circle with two tangents and a radius, or use the command **Tangents** from the **Circle** toolbar or use the menu **Circle / Circle with two tangents and a radius**.





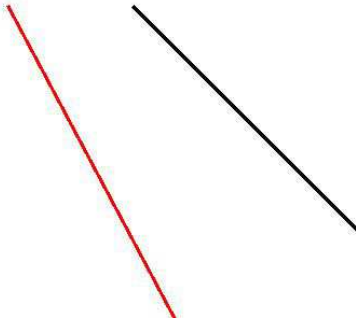
What is the procedure?

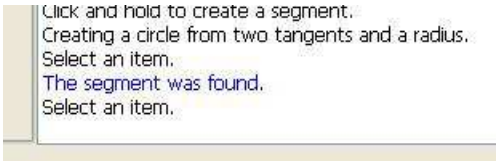


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

The element can be of seven different types:

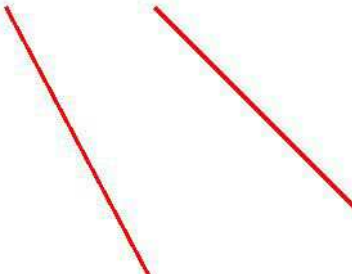
- A circle
- An arc
- An ellipse
- An ellipse arc
- A straight line
- A half straight line
- A segment

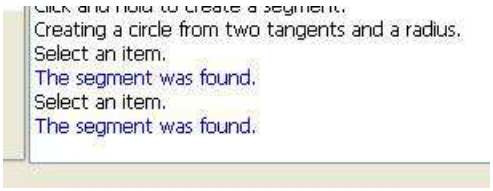




The second element can be of seven different types:

- A circle
- An arc
- An ellipse
- An ellipse arc
- A straight line
- A half straight line
- A segment

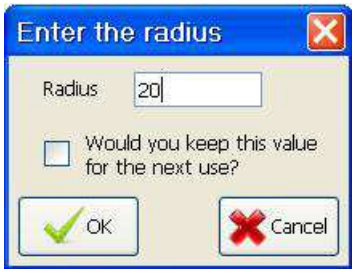


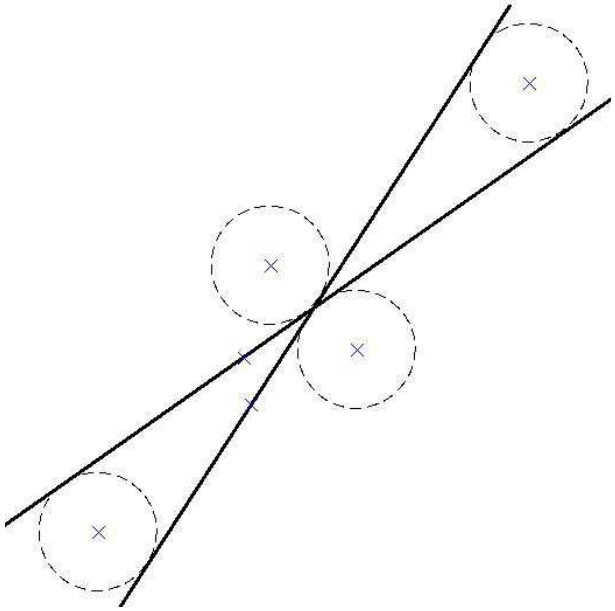


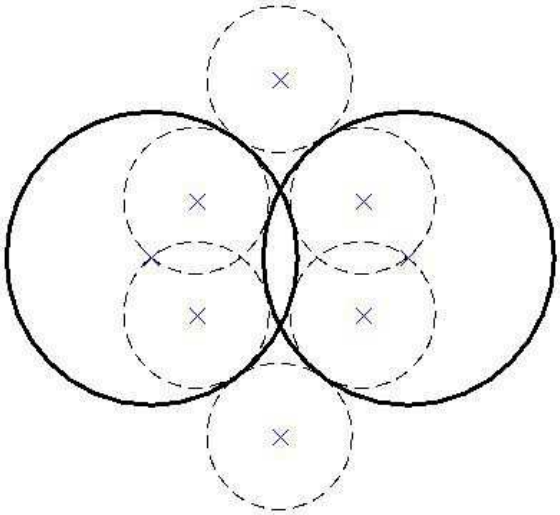
This command will open a dialog box to create the circle.

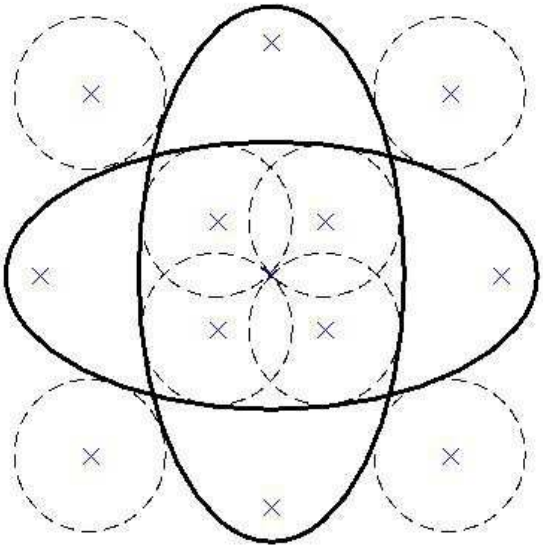
This dialog box consists of one field:

- **The field Radius**: This is the radius of the circle in millimeters.







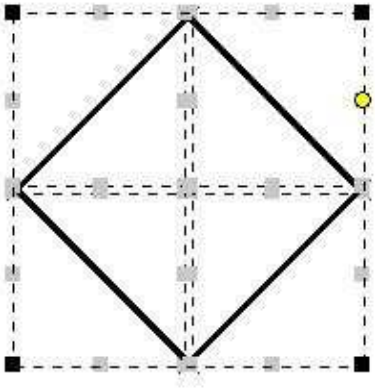


13 Transformations

To perform a transformation, it is first necessary to select the elements to transform. All items are not selectable. This is the case of:

- The straight line
- The half straight line

As against the elements such as text or hatching are selectable and therefore may be a transformation.

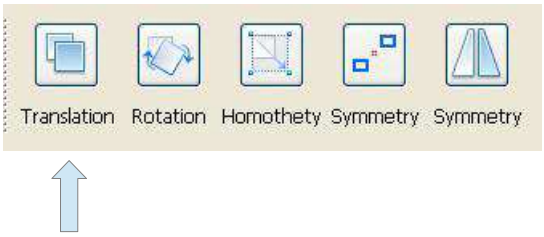


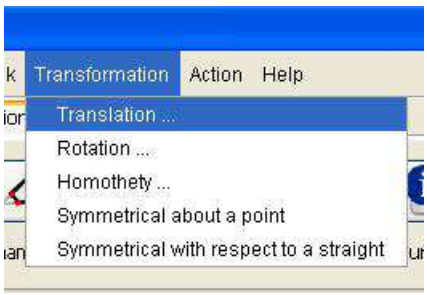
There are five possible types of transformations:

- The translation
- The rotation
- The scaling
- The symmetry with respect to a point
- The symmetry with respect to a straight line

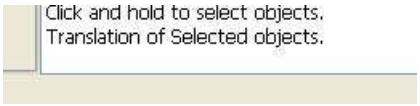
13.1 How to do a translation?

There are two ways to do a translation, or use the command **Translation** from the **Transform** tool bar, or use the menu **Transform / Translation**.





What is the procedure?

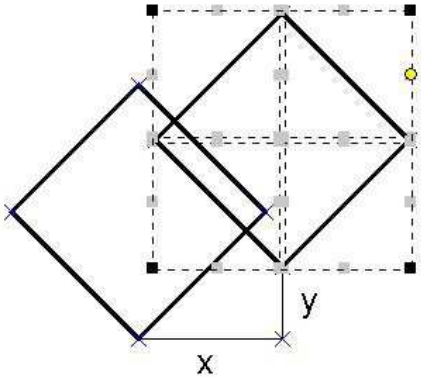


This command will open a dialog box to perform the translation.

This dialog box consists of two fields:

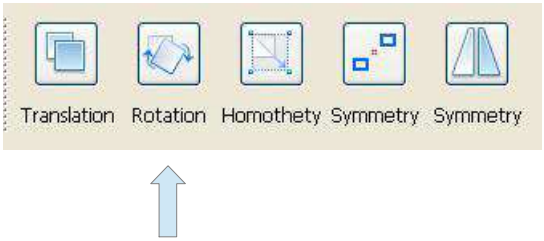
- **The field Value of x**: This is the value in millimeters of the translation along the x-axis.
- **The field Value of y**: This is the value in millimeters of the translation along the axis.

The check box allows you to duplicate the selected objects.

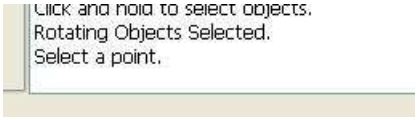


13.2 How to do a rotation?

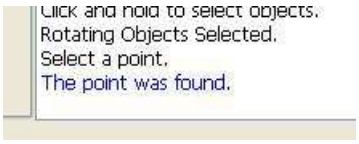
There are two ways to perform a rotation, or use the command **Rotation** from the **Transform** tool bar, or use the menu **Transform / Rotation**.



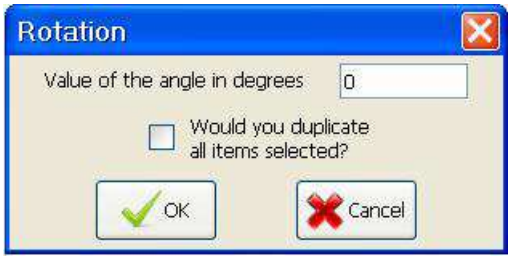
What is the procedure?



To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



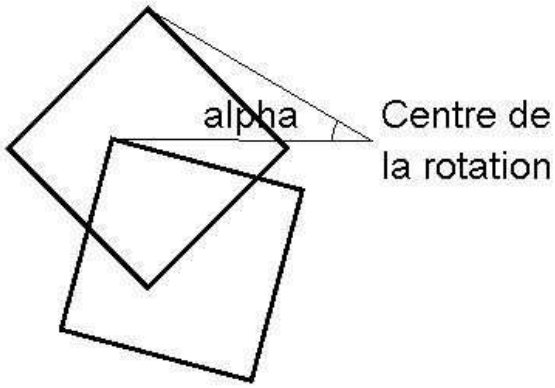
This command will open a dialog box to perform the rotation.



This dialog box consists of one field:

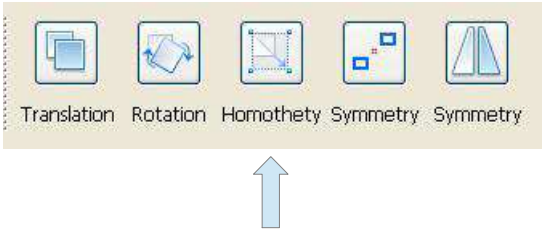
- **The field Value of the angle in degrees**: This is the value in degrees of the angle of rotation.

The check box allows you to duplicate the selected objects.

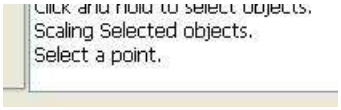


13.3 How to do a scaling?

There are two ways to do a scaling, or use the command **Scaling** of the **Transform** tool bar, or use the menu **Transformation / Scaling**.



What is the procedure?



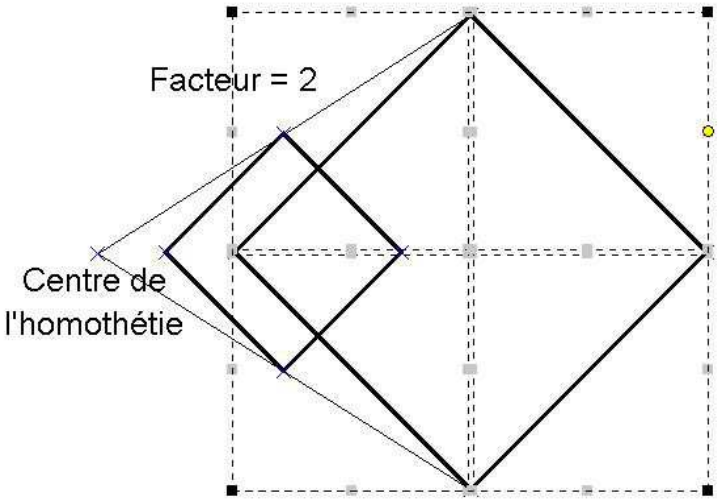
To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.

This command will open a dialog box to perform the scaling.

This dialog box consists of a field:

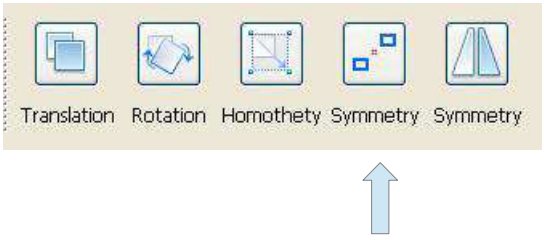
- **The field Value of scaling**: This is the value of scaling.

The check box allows you to duplicate the selected objects.

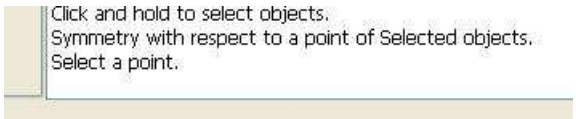


13.4 How to do a symmetry with respect to a point?

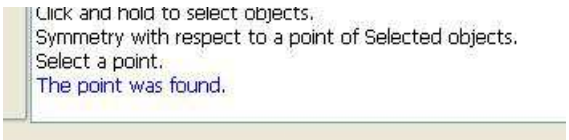
There are two ways to achieve symmetry with respect to a point, or use the command **Symmetry** of the **Transform** tool bar, or use the menu **Transformation / Symmetry with respect to a point**.



What is the procedure?

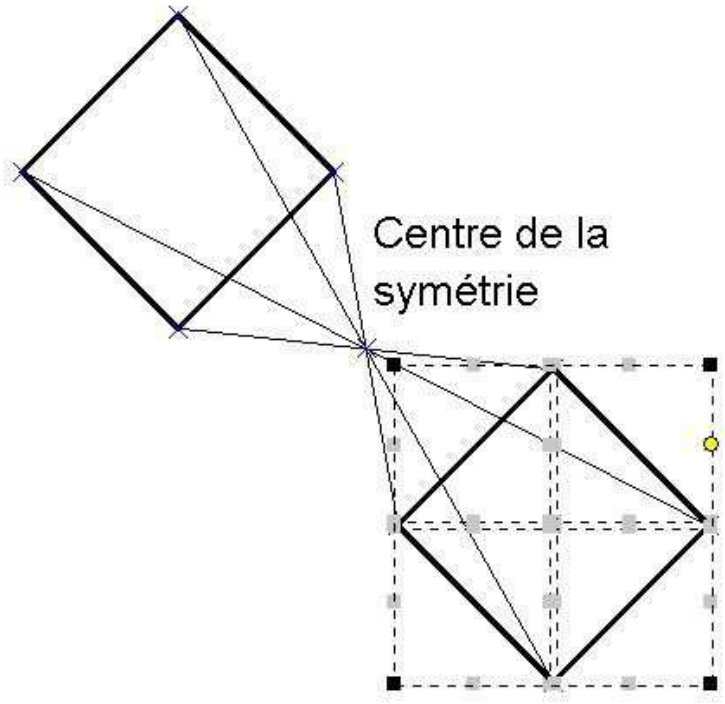


To select a point, just click with the mouse (left click) where is the point in the document. If you click in a place where there is no point, a message will indicate that the point was not found.



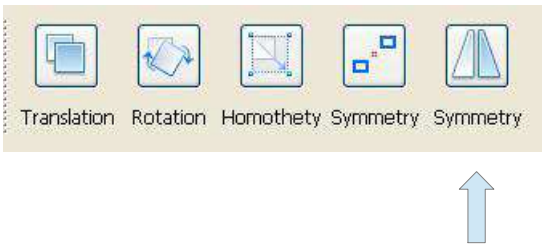
This command will open a dialog box to achieve symmetry.

The check box allows you to duplicate the selected objects.

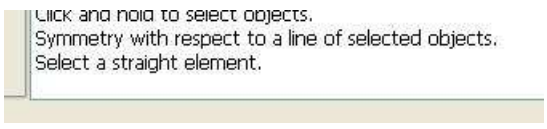


13.5 How to create a symmetry with respect to a straight line?

There are two ways to achieve symmetry with respect to a line or use the command **Symmetry** of the **Transform** tool bar, or use the menu **Transformation / Symmetry with respect to a straight line**.



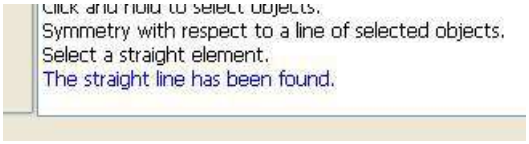
What is the procedure?



To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

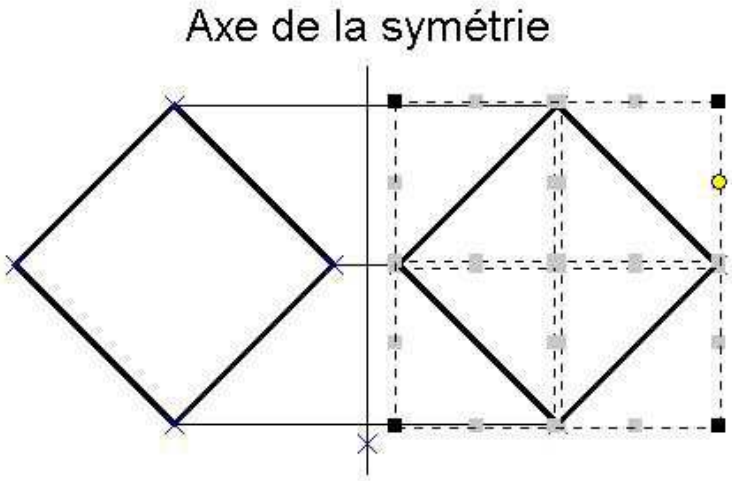
The element can be of seven different types:

- A straight line
- A half straight line
- A segment



This command will open a dialog box to achieve symmetry.

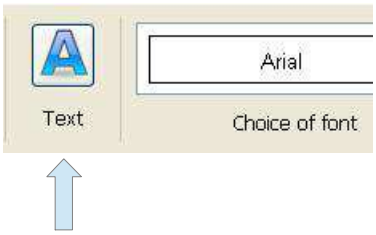
The check box allows you to duplicate the selected objects.

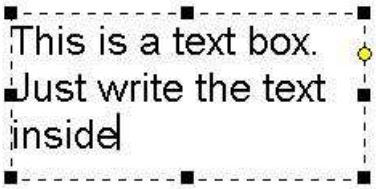


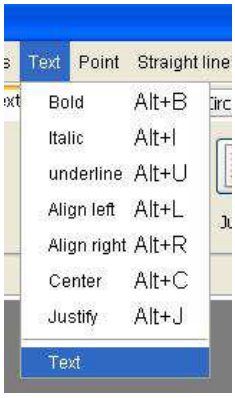
14 The text

14.1 How to write?

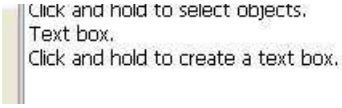
There are two ways to write text or use the command **Text** from the **Text** toolbar, or use the menu **Text / Text**.







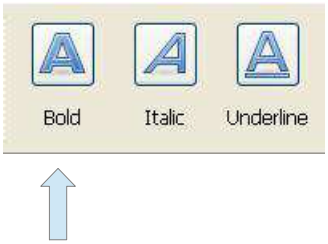
What is the procedure?

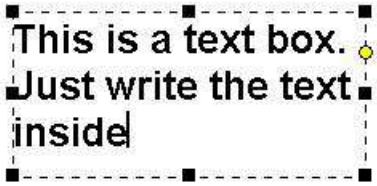


Using the handles, it is possible to resize the size of the text box. It is also possible to move it at any time.

14.2 How to bold ?

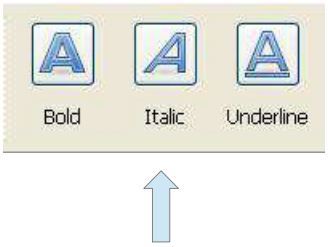
There are two ways to do text bold or use the command **Bold** in the **text** toolbar, or use the menu **Text / Bold**.

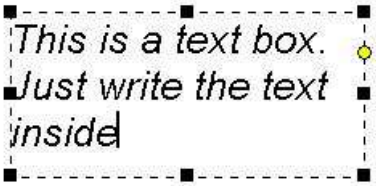




14.3 How to italic ?

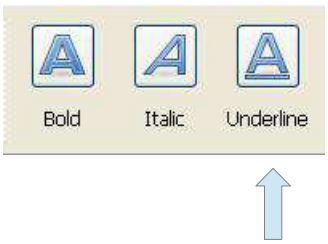
There are two ways to put text in italics or use the command **Italic** of the **text** toolbar, or use the menu **Text / Italic**.

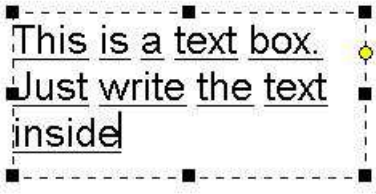


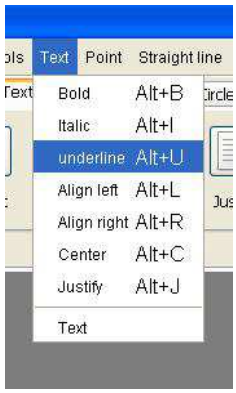


14.4 How to underline ?

There are two ways to put text underlined or use the command **Underline** in the **Text** toolbar, or use the menu **Text / Underline**.

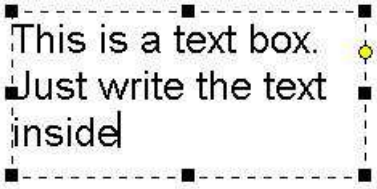


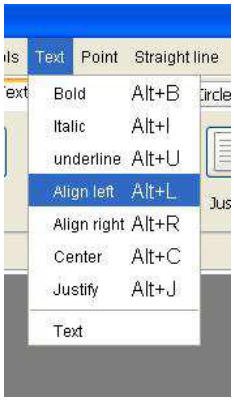




14.5 How to align text to the left ?

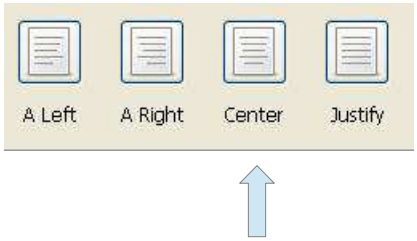
There are two ways to align text to the left or use the command **Left** of the **Text** toolbar or use the menu **Text / Align left**.

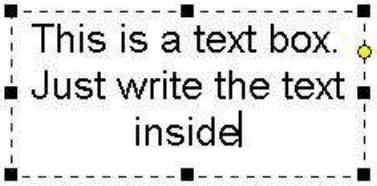


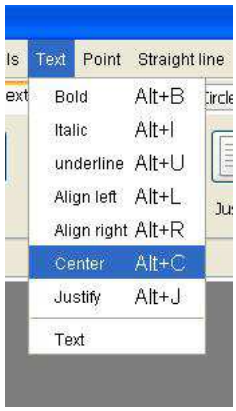


14.6 How to align text in the center ?

There are two ways to align text in the center, or use the command **Center** of the **Text** toolbar, or use the menu **Text / Center**.

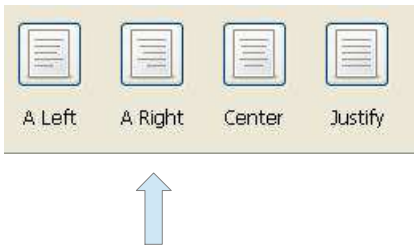


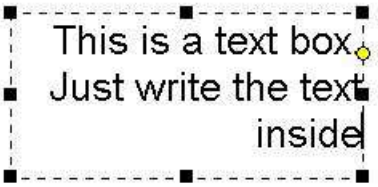




14.7 How to align text to the right ?

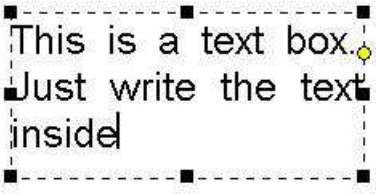
There are two ways to align text to the right or use the command **Right** of the **Text** toolbar or use the menu **Text / Align right**.





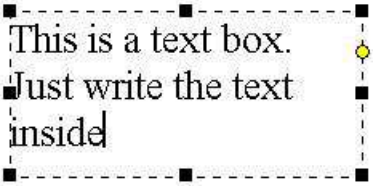
14.8 How to justify the text ?

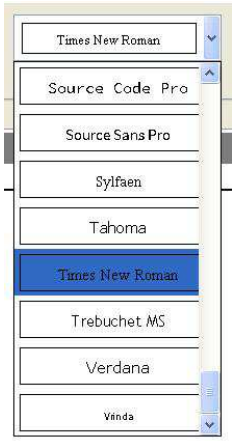
There are two options to justify text or use the command **Justify** in the **Text** toolbar, or use the menu **Text / Justify**.



14.9 How to change the font ?

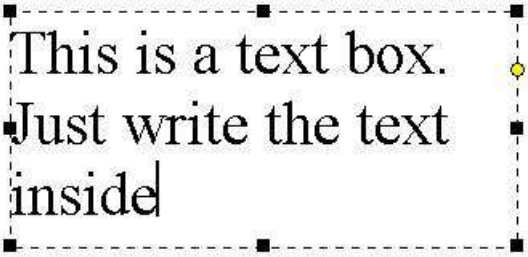
To change the font, you must go to the text tool bar and scroll box of choice. Click the name of the font you want to change it in the text box selected.

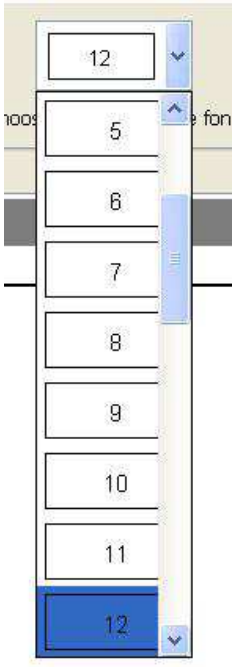




14.10 How to change the size of the font ?

To change the size of the font, you must go to the text tool bar and scroll box of choice. Click the size you want to change it in the text box selected.

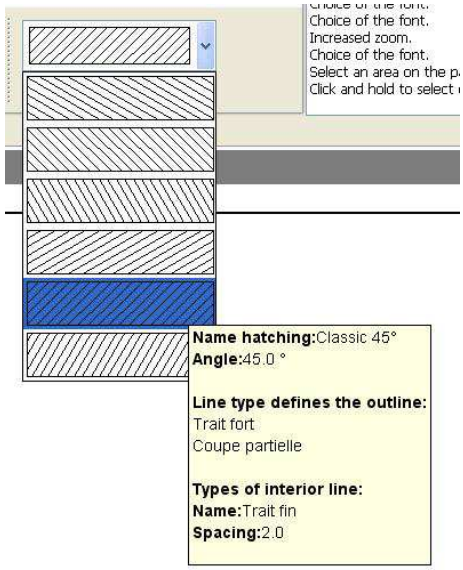




15 Hatching

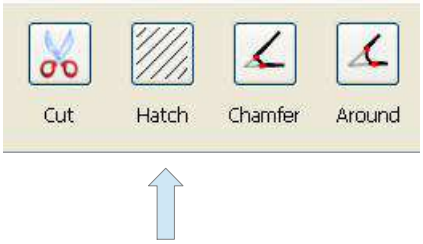
15.1 How to select a hatch?

Just click on the hatch that you want in the drop-down list in the Tools toolbar.

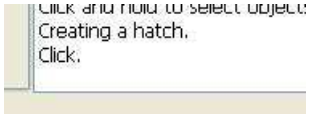


15.2 How to hatch?

There are two ways to do a hatch or use the command **Hatch** from the **Action** toolbar, or use the menu **Action / Hatch**.



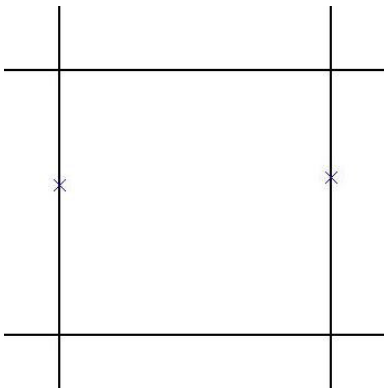
What is the procedure?

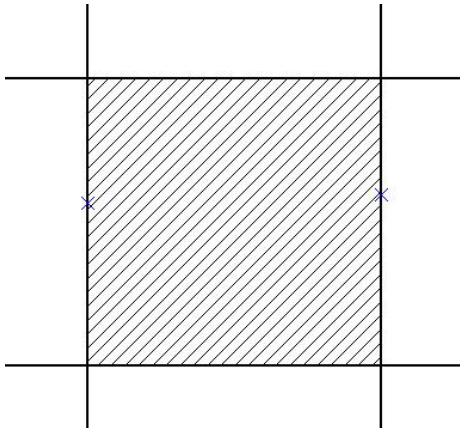


To hatch an area, simply click inside the surface.

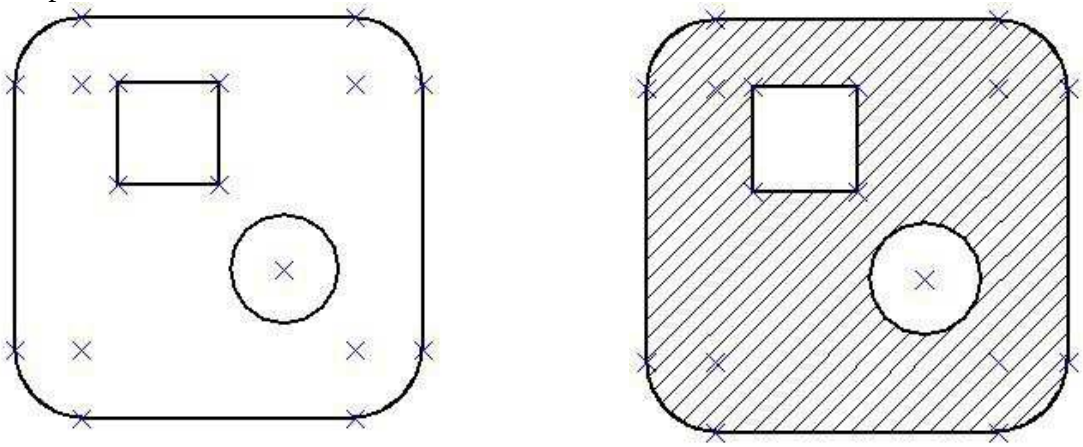
Here are a number of examples.

- Example 1: Intersection of lines

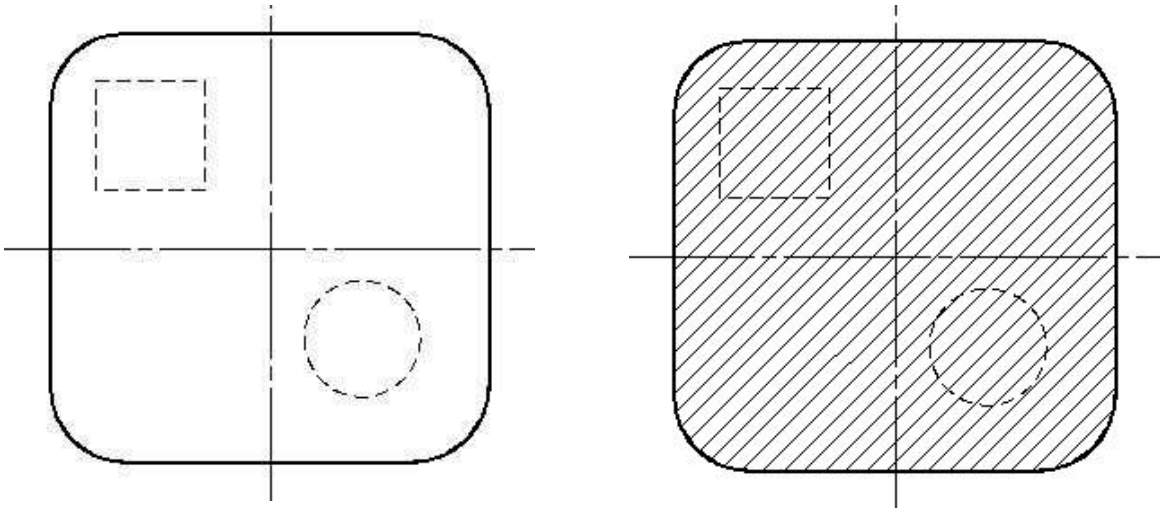




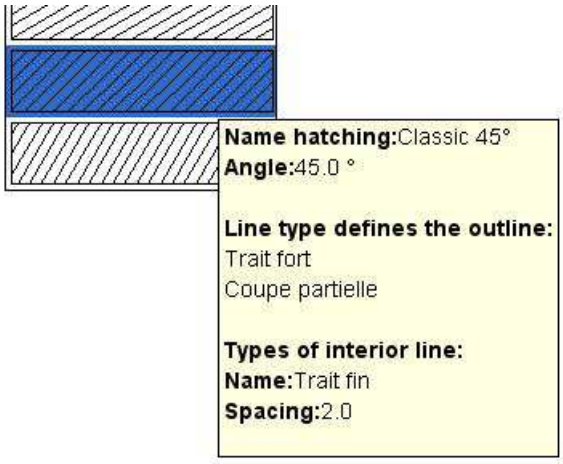
- Example 2: Surface with inner contours



- Example 3: Surface with several types of features, it is an example with strong lines, dotted lines and axes.



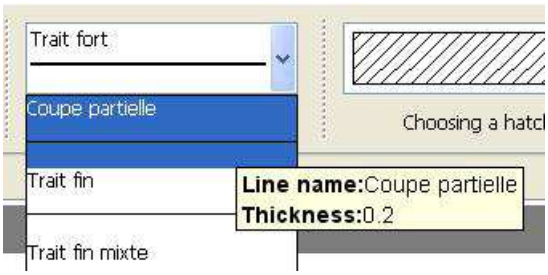
You may notice that the hatch does not include dashes and axes lines. This is due to the definition of hatching.

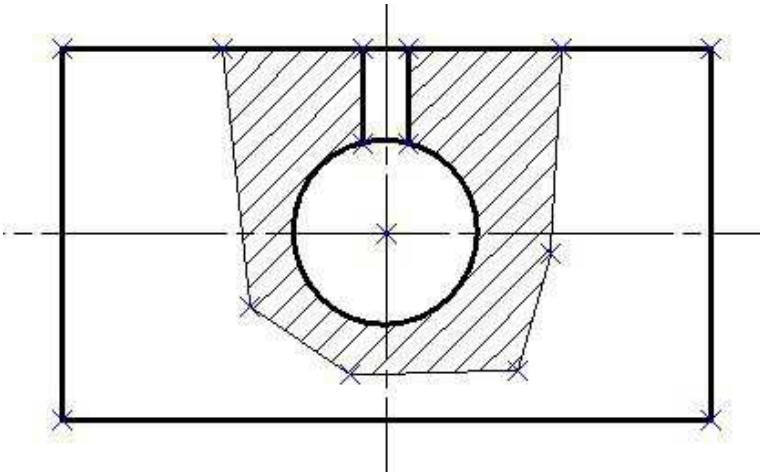


You may notice here that the definition of hatching, the features defining the contours are strong traits and features partial Cup, and in any case the fine lines, the dotted lines or dashed lines.

- Example 4: Surface with a partial section

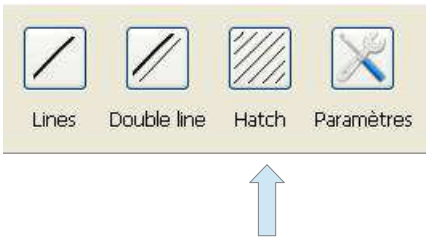
To do this, use the partial section line and not the fine line.

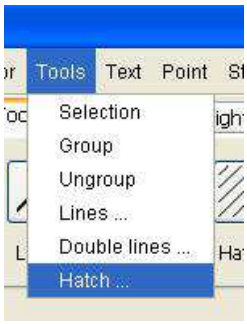




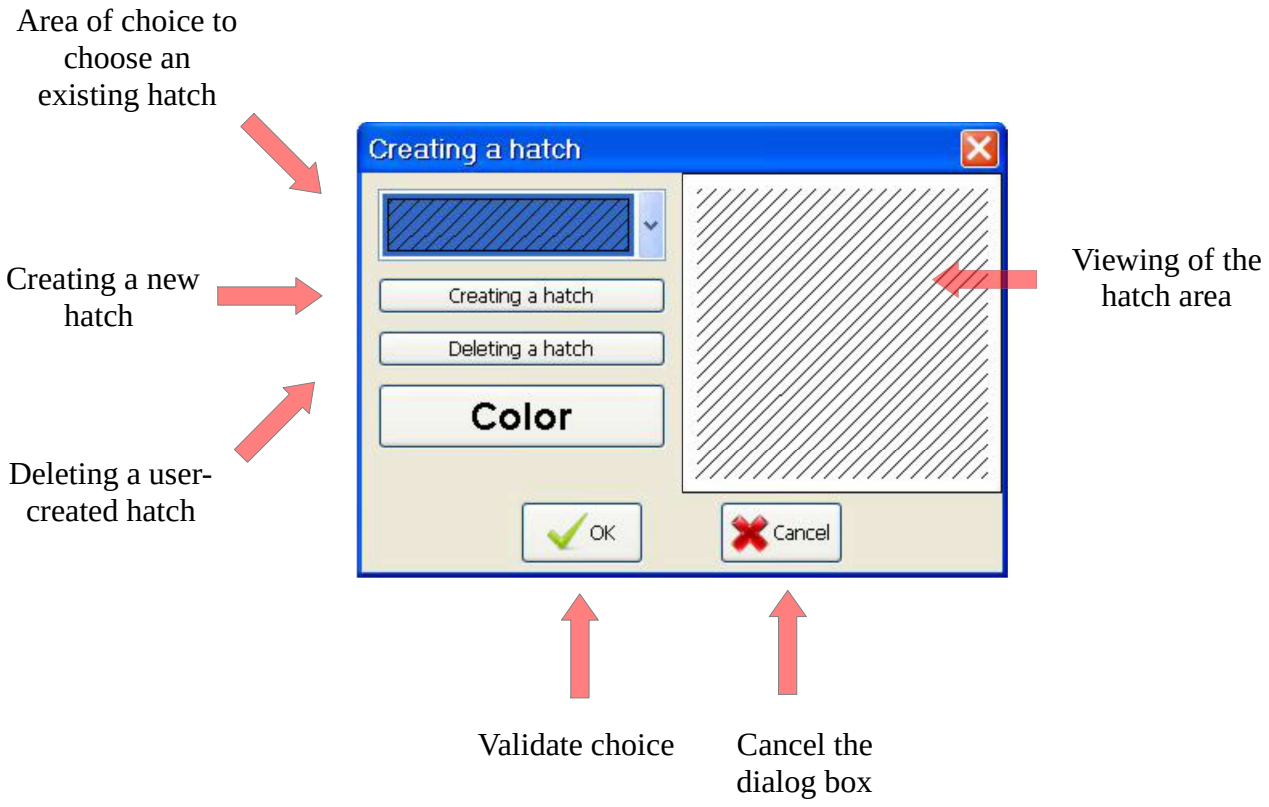
15.3 How to create a hatch?

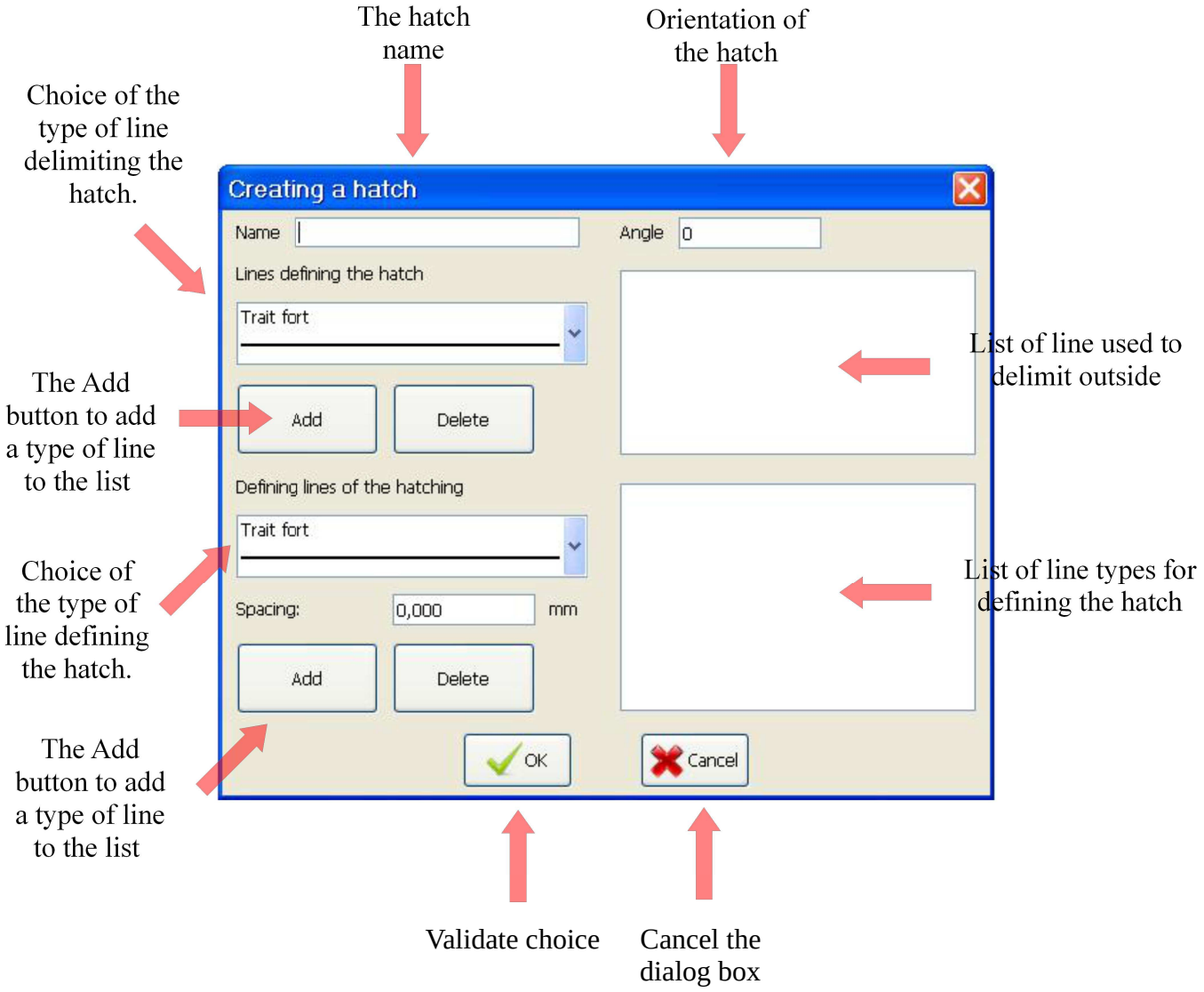
There are two ways to create a hatch or use the command **Hatch** from the **Tools** toolbar, or use the menu **Tools / Hatching**.



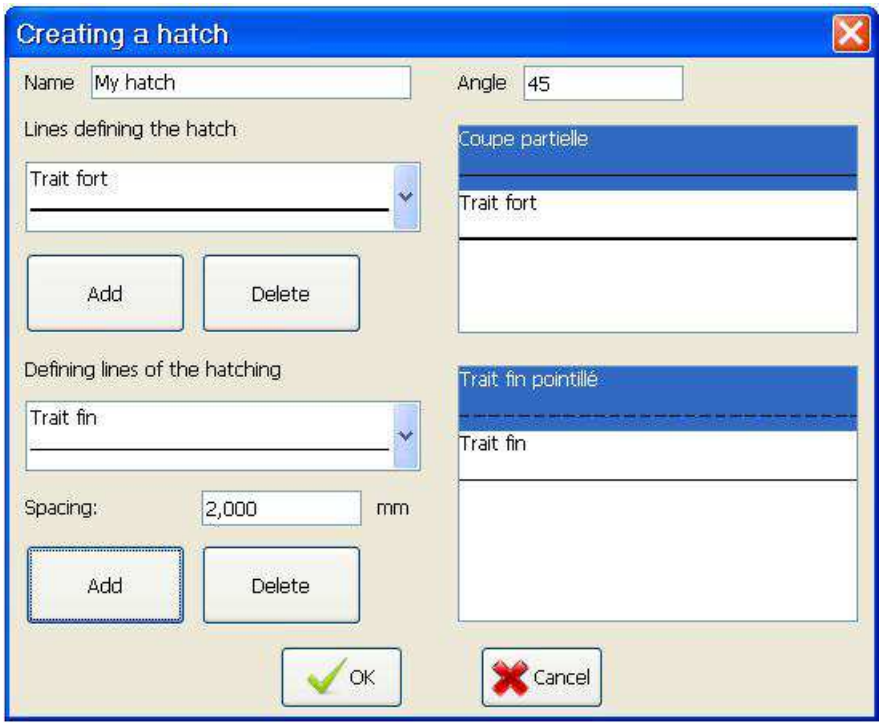


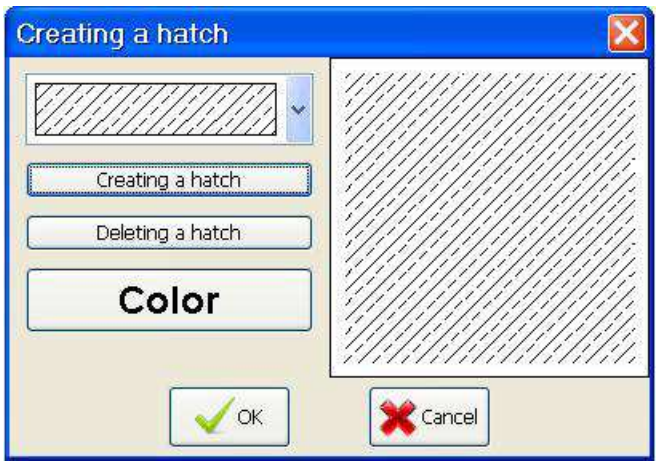
This gives access to the following dialog box:





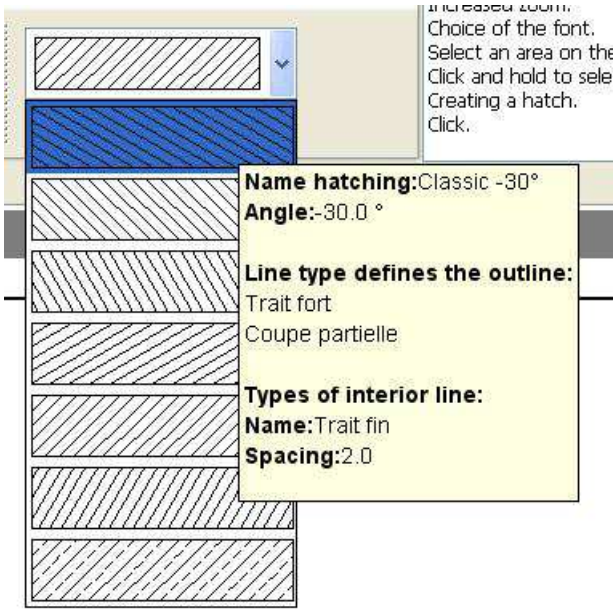
Example of user-defined hatch

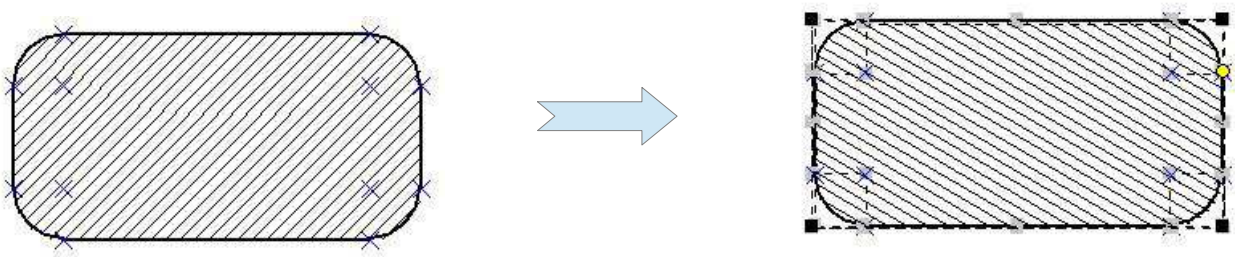




15.4 How to change a hatch?

To change a hatch, it must be selected with the selection tool, then select the desired option from the list of hatching.

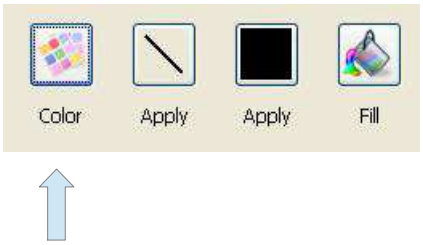


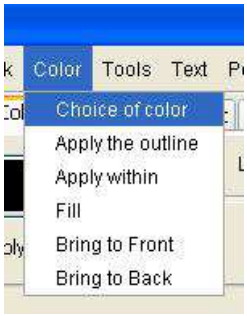


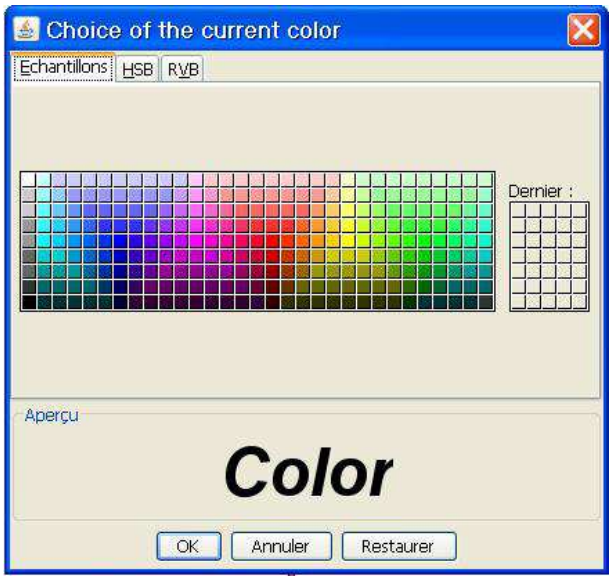
16 Color

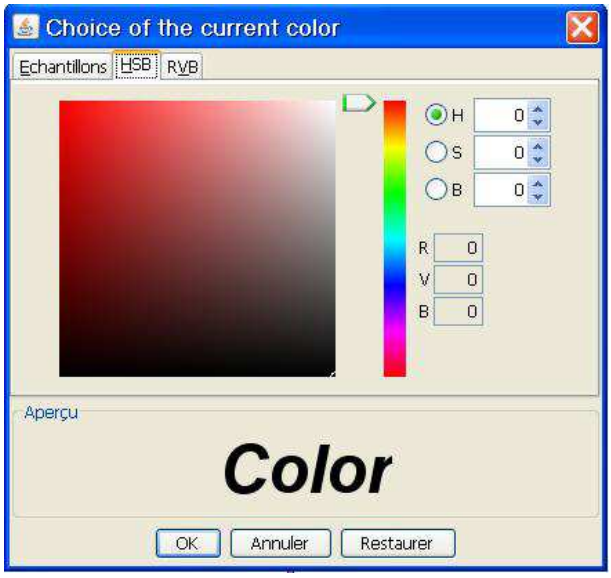
16.1 How to choose color?

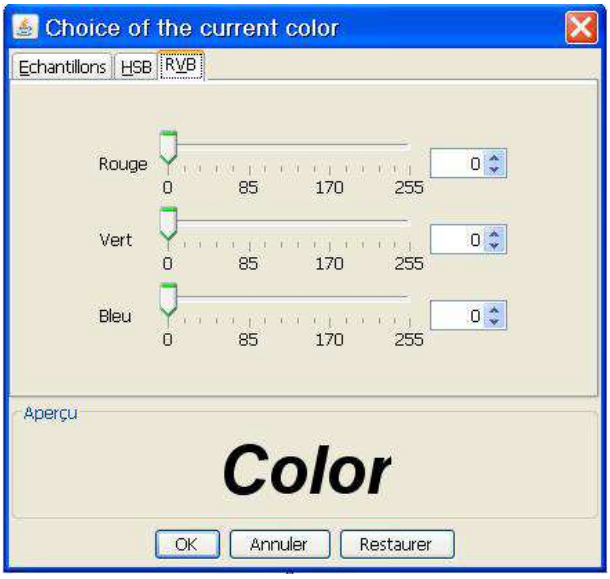
Two possibilities exist to access the dialog box to choose the color, or use the command **Color** from the **Color** tool bar, or use the menu **Color / Choice of color**.

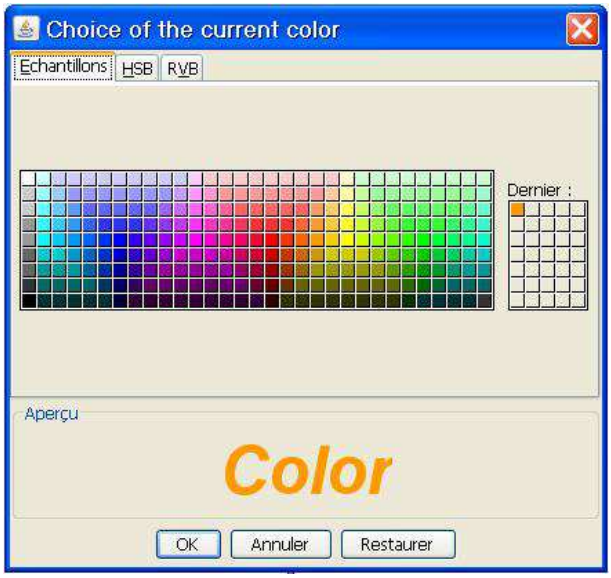






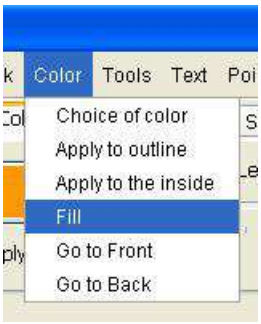


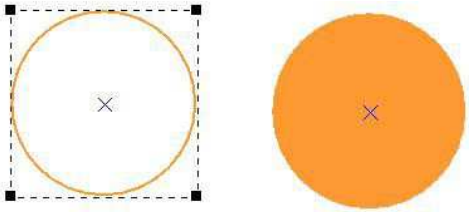




16.2 How to fill the inside of an outline?

There are two ways to fill the inside of an outline, or use the command **Fill** of the **Color** tool bar, or use the menu **Color / Fill**.

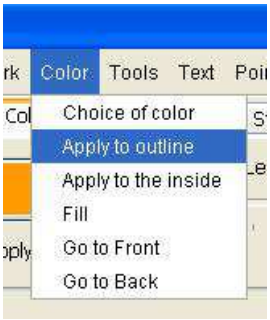


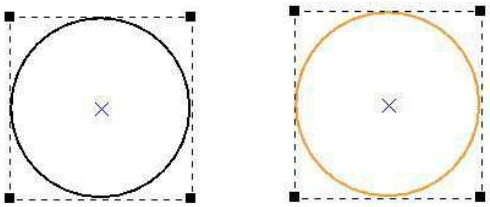


To fill a closed shape, just click inside it.

16.3 How to change the color of a line?

There are two ways to change the color of a line or use the command **Apply** of the **Color** toolbar or use the menu **Color / Apply the contour**.

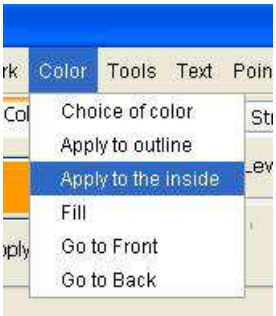


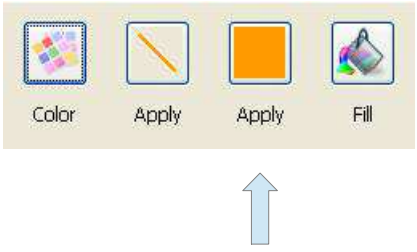


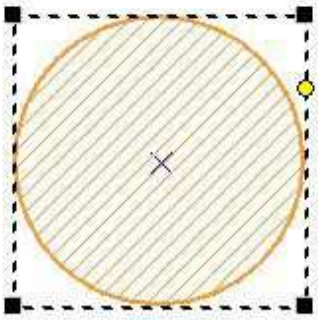
To change the color of a line, it is necessary to select the item. You can select multiple items at the same time apply for their chosen color.

16.4 How to change the color of a hatch?

There are two ways to change the color of a hatch or use the command **Apply** of the **Color** toolbar or use the menu **Color / Apply within**.



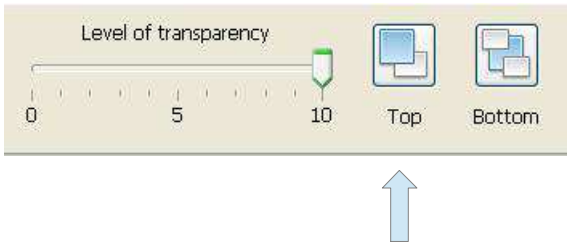


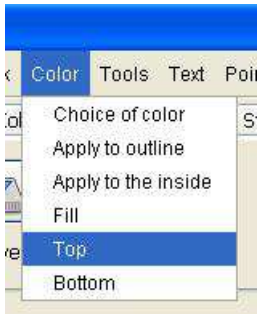


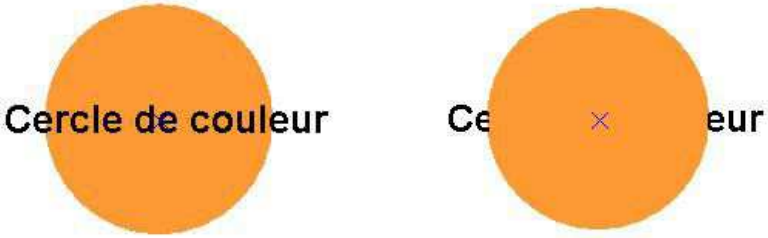
This is the same procedure to change the color of a filling

16.5 How to set an object to the foreground?

There are two ways to set an object to the foreground, or use the command **Top** of the **Color** tool bar, or use the menu **Color / Top**.

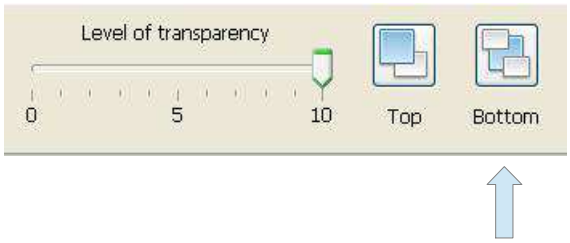


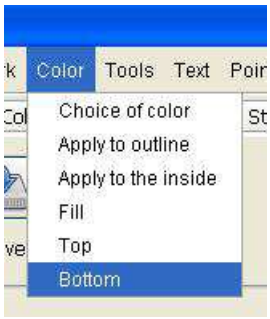


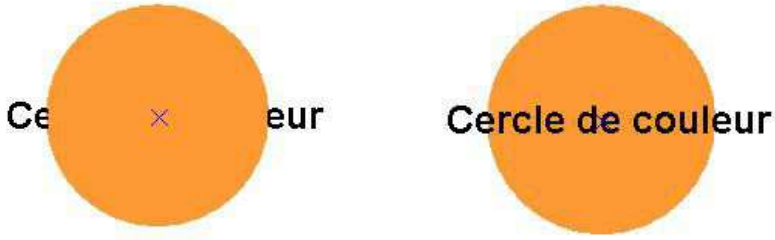


16.6 How to set an object to the background?

There are two ways to set an object to the background, or use the command **Bottom** the **Color** toolbar or use the Menu **Color / Bottom**.

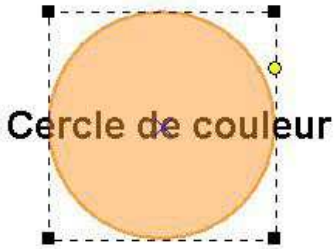




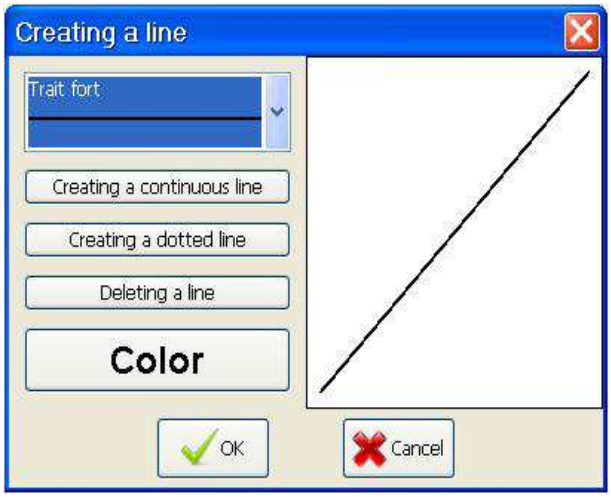


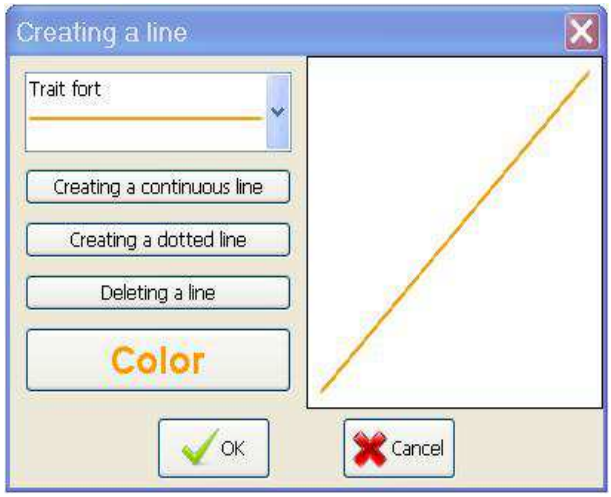
16.7 How to change transparency?

To change the transparency of a fill, it is necessary to select the item, then varying the cursor Color toolbar.

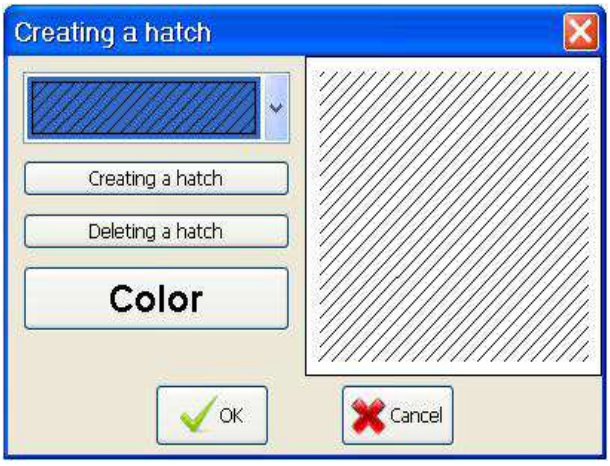


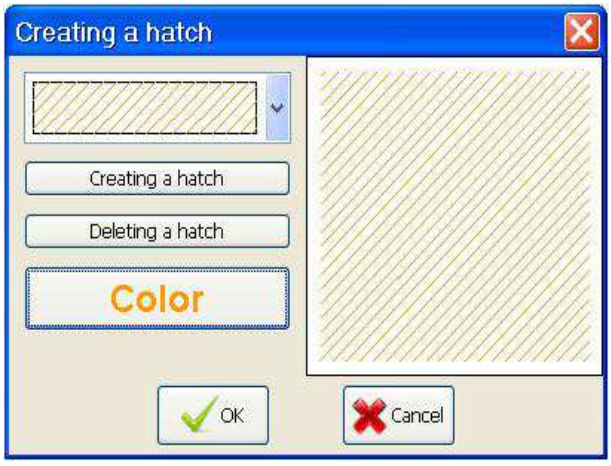
16.8 How to change the color of a line?





16.9 How to change the color of a hatch?



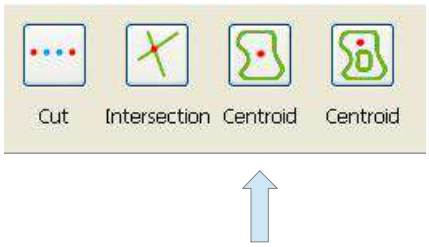


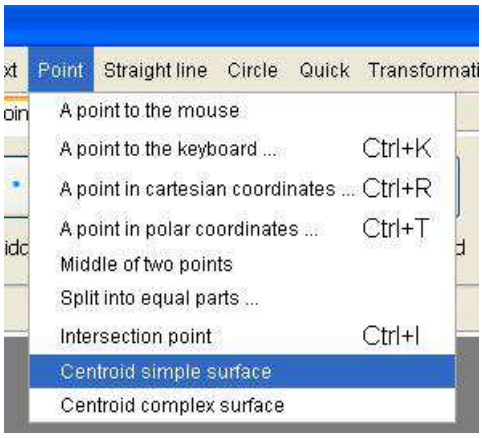
17 Advanced functions

17.1 Point

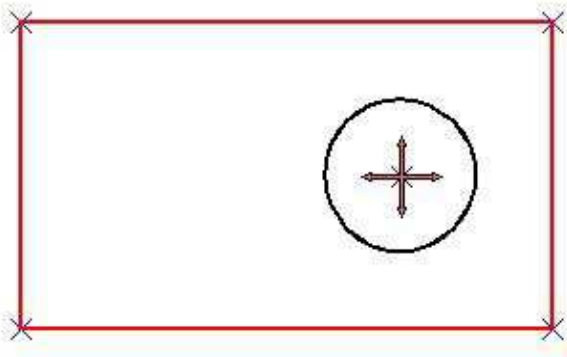
17.1.1 Centroid of a simple surface

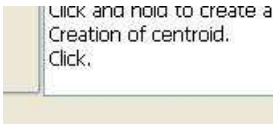
There are two ways to create a centroid of a simple surface or use the command **Centroid** of the **Point** toolbar or use the menu **Point / Centroid simple surface**.

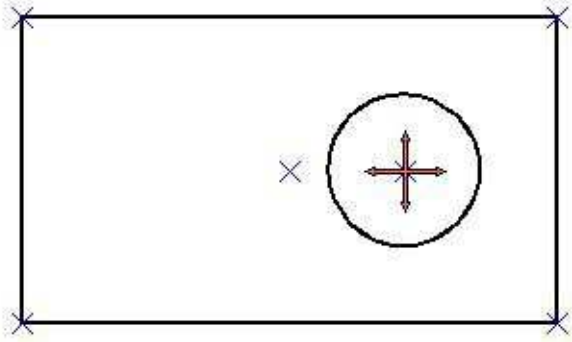


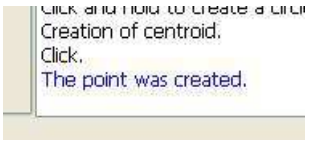


A single surface or a whole surface is a surface containing no inner shape.



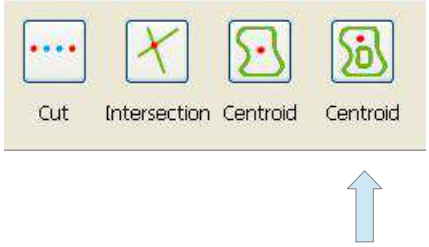


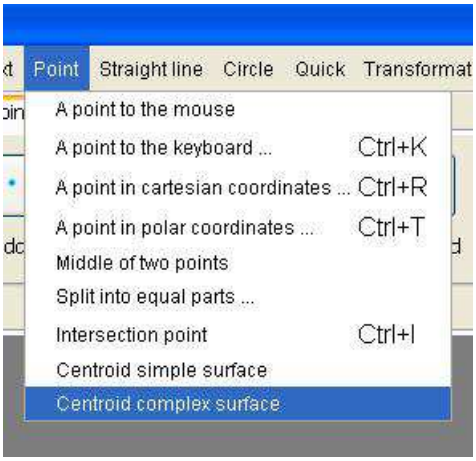




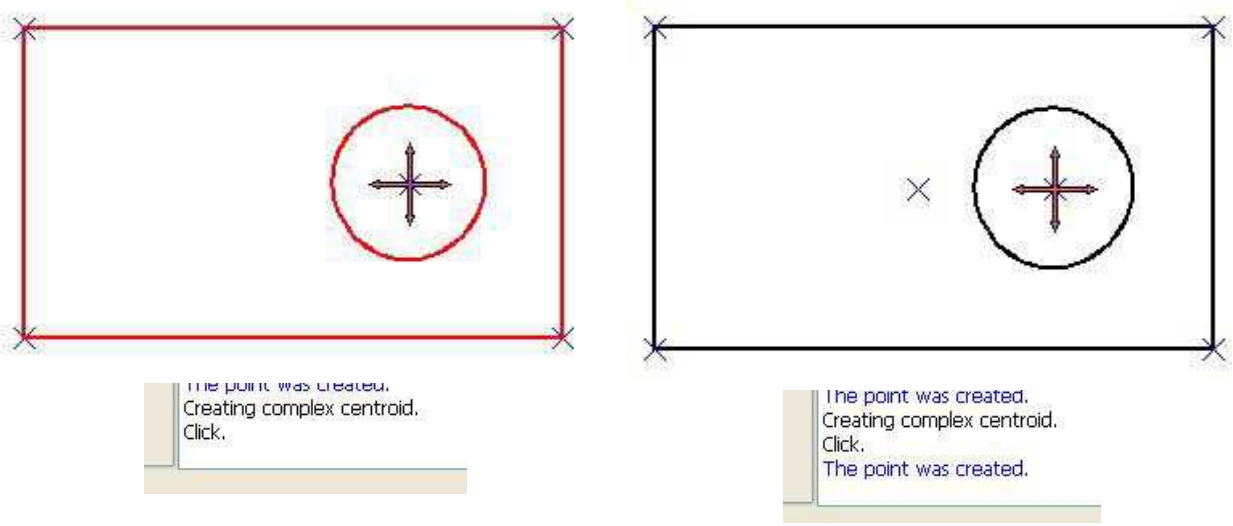
17.1.2 Centroid of a complex surface

There are two ways to create the centroid of a complex surface or use the command **Centroid** of the **Point** toolbar or use the menu **Point / Centroid complex surface**.





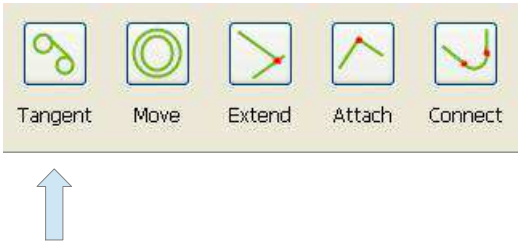
A complex surface is a surface containing inner shape.



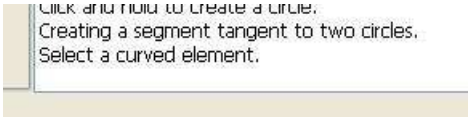
17.2 Quick

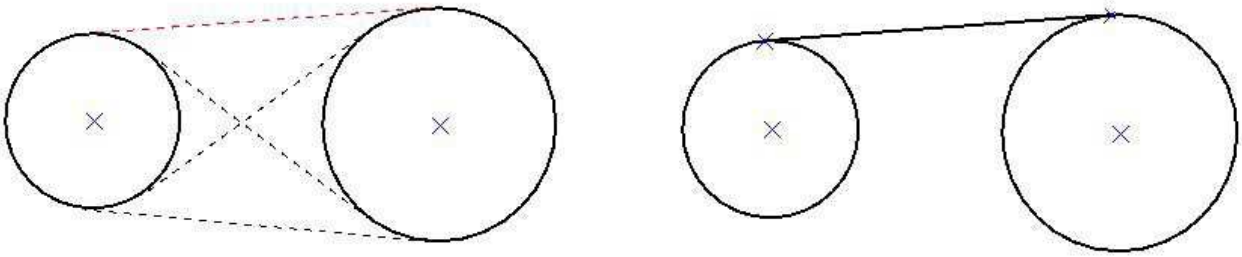
17.2.1 Tangent Function

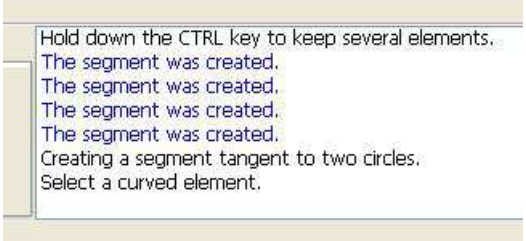
There are two ways to create a segment tangent to two circles, or use the command **Tangent** of the **Quick** tool bar or use menu **Quick / Tangent**.



What is the procedure?

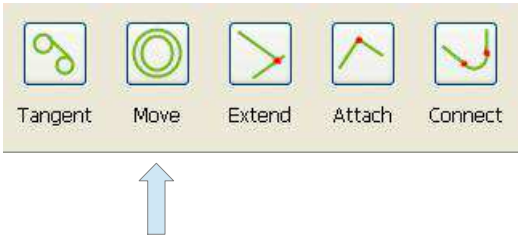


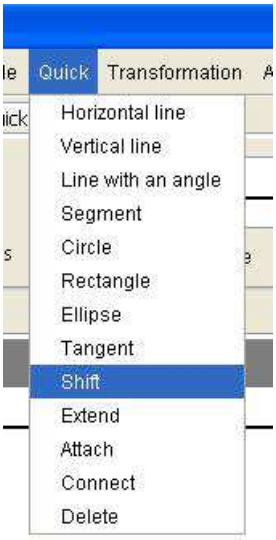




17.2.2 Shift Function

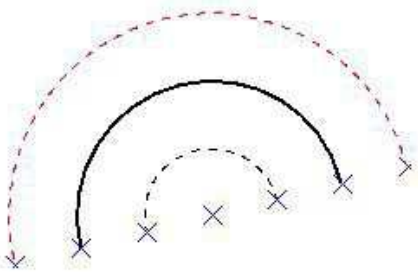
There are two ways to shift an element, or use the command **Shift** to the **Quick** tool bar, or use the menu **Quick / Shift**.

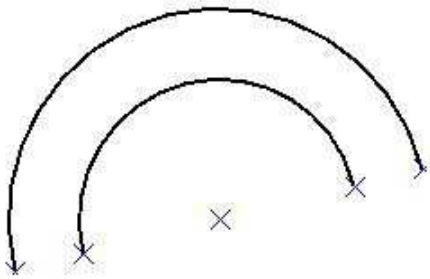




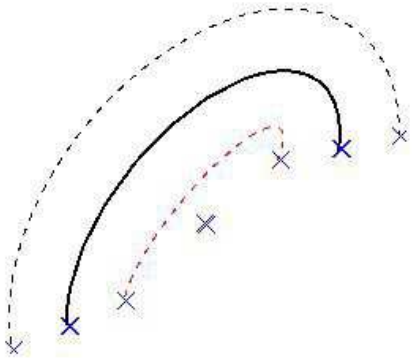
For a segment

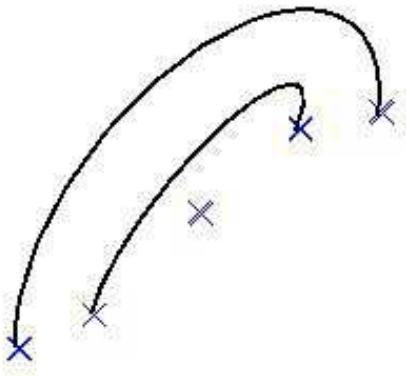
For an arc



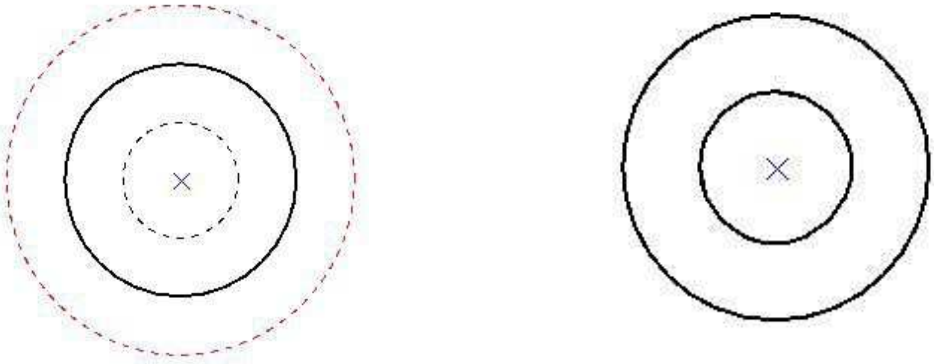


For an arc of ellipse

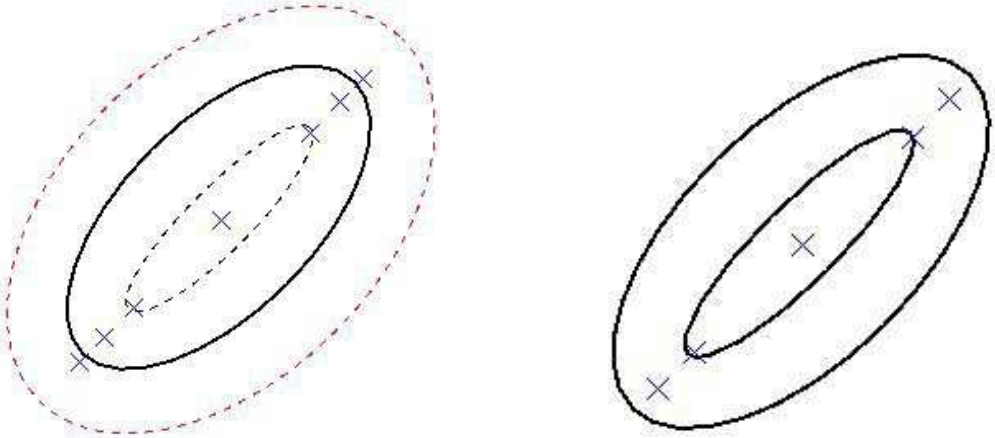




For a circle

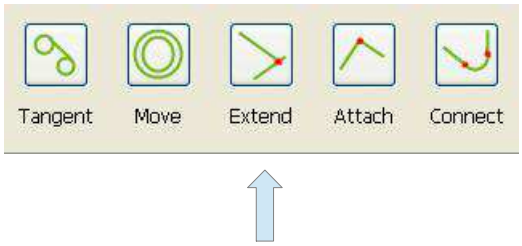


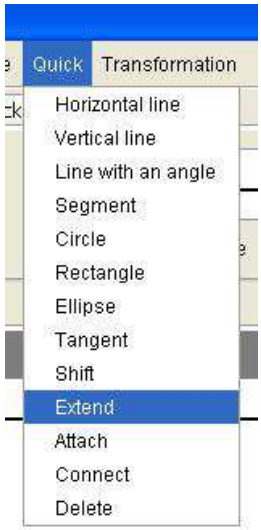
For an ellipse



17.2.3 Extend Function

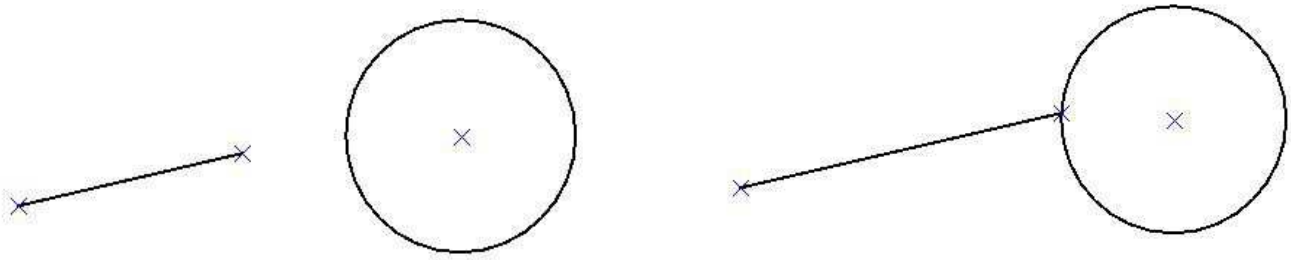
There are two ways to extend an item or use the command **Extend** of the **Quick** tool bar, or use the menu **Quick / Extend**.





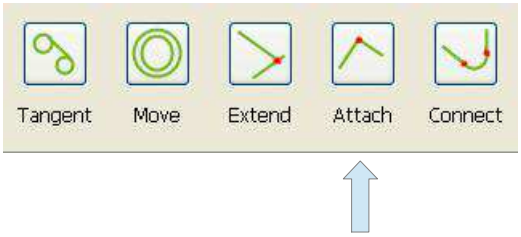
Considering both elements, the element 1 and element 2, the element 1 extend relative to the element 2 consists of the expansion element 1 so that it has an intersection with the element 2 . It may be necessary to enlarge the element 2 if it is too short for there to be an intersection.

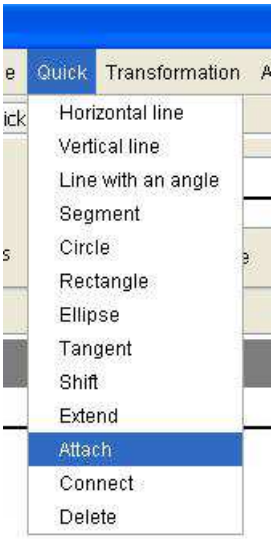
Example of extension of a segment on a circle.



17.2.4 Attach function

There are two ways to attach two items, use the command **Attach** of the **Quick** tool bar or use menu **Quick / Attach**.



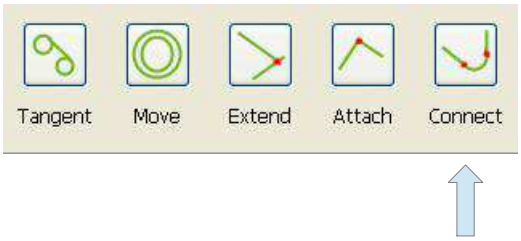


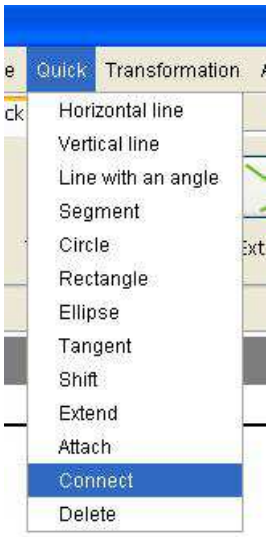
If we consider two elements, element 1 and element 2, the Attach function extends the two elements so that they touch at a point of intersection.

Example for two segments.

17.2.5 Function Connect

There are two ways to connect two items, using the command **Connect** from the **Quick** tool bar or use menu **Quick / Connect**.





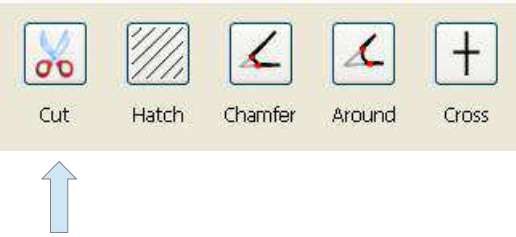
If we consider two elements, element 1 and element 2, the Connect function as its name suggests connecting the two elements by a fillet radius configurable.

Example of connecting two segments

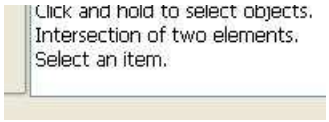
17.3 Action

17.3.1 Function Cut

There are two ways to cut two items of drawing, or use the command **Cut** of the **Action** toolbar, or use the menu **Action / Cut**.



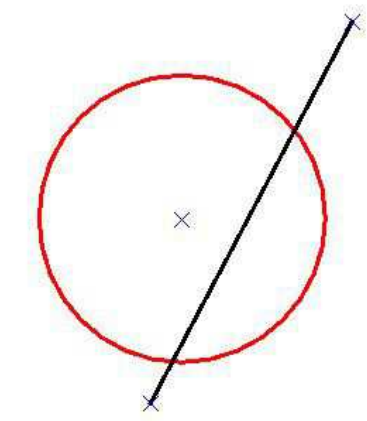
What is the procedure?

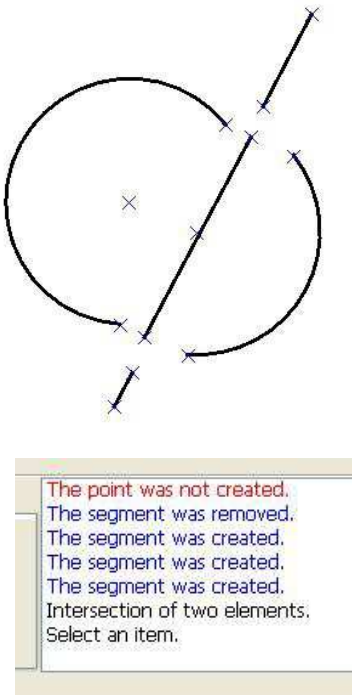


To select a drawing element, just click with the mouse (left click) where is the design element in the document. The drawing element turns red when selected.

The element can be of seven different types:

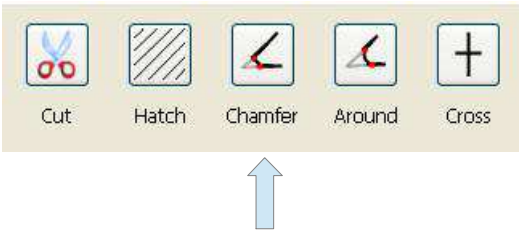
- A circle
- An arc
- An ellipse
- An ellipse arc
- A straight line
- A half straight line
- A segment



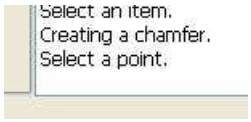


17.3.2 Function chamfer

There are two ways to do a chamfer or use the command **Chamfer** in the **Action** toolbar, or use the menu **Action / Chamfer**.



What is the procedure?

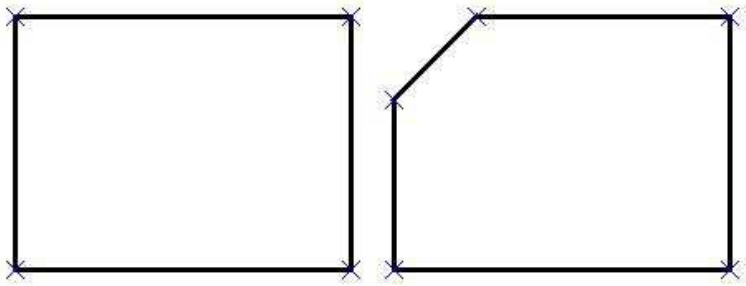


The selected point should be at the junction of two simple elements. A single element being one of the following:

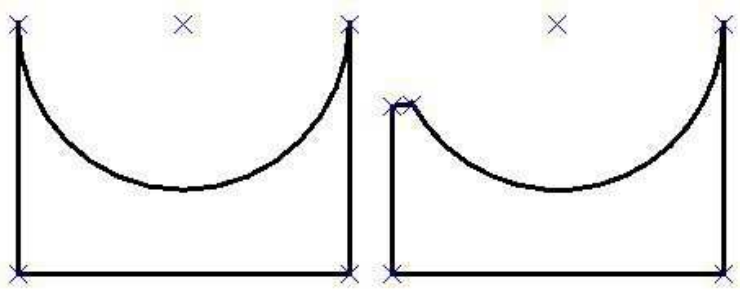
- Straight segment
- An arc

All combinations of these simple elements of design are possible. They are:

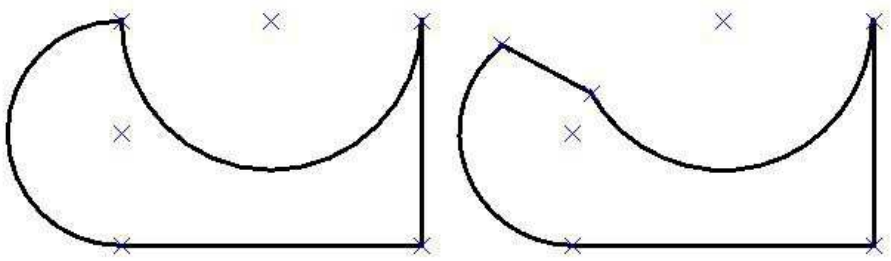
Example 1: Between segment and segment



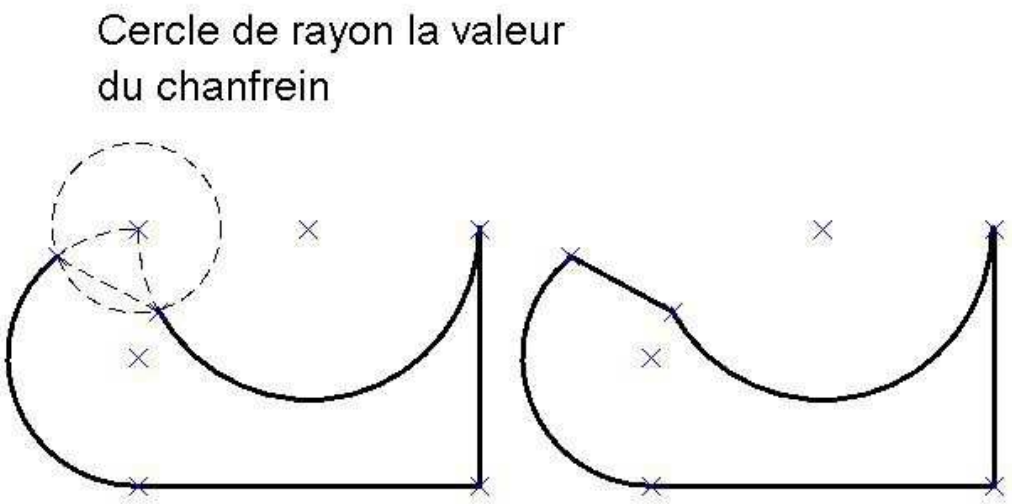
Example 2: Between segment and arc



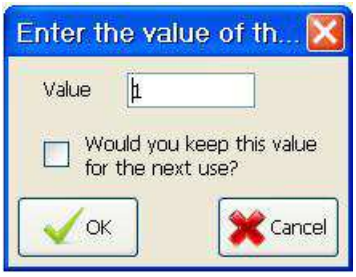
Example 3: Between arc and arc



Construction methods



Point selection provides access to a dialog box to enter the value of the chamfer.



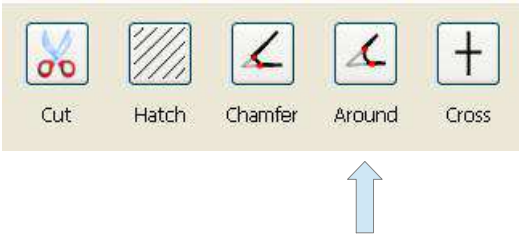
This dialog box consists of a field:

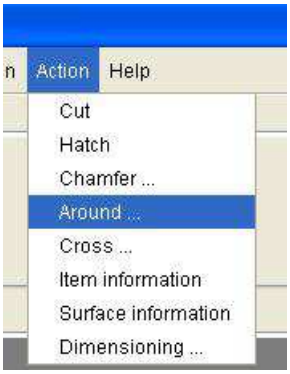
- **The field Value**: This is the value of the chamfer.

The check box will keep the value in the case of multiple uses after this command.

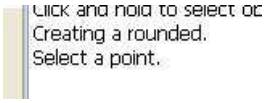
17.3.3 Around function

There are two ways to do an around, or use the command **Around** of the **Action** toolbar, or use the menu **Action / Around.**





What is the procedure?

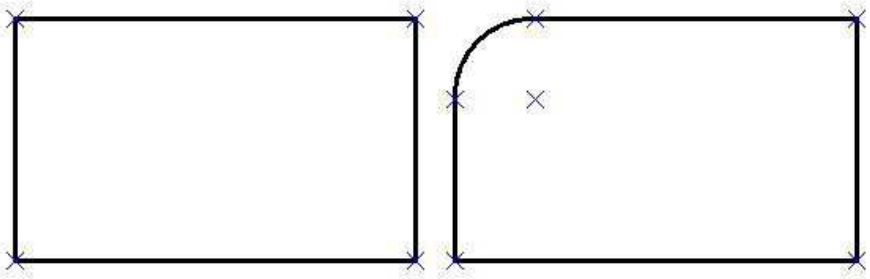


The selected point should be at the junction of two simple elements. A single element being one of the following:

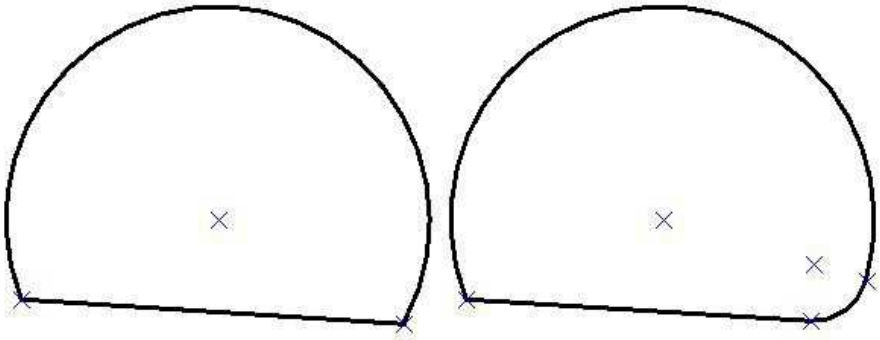
- A segment
- An arc

All combinations of these simple elements of design are possible. They are:

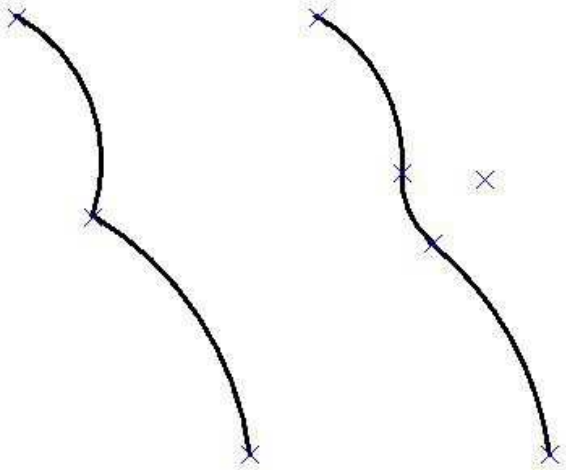
Example 1: Between line segment and the line segment



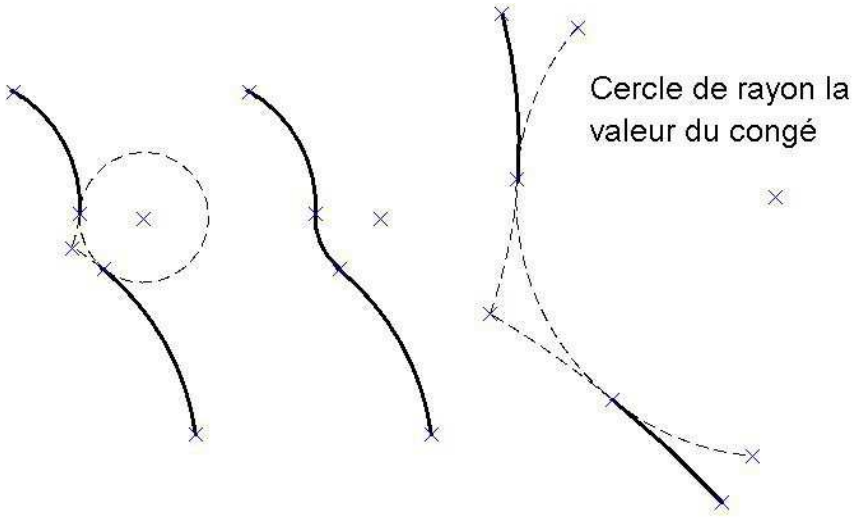
Example 2: In the segment and arc



Example 3: Between arc and arc



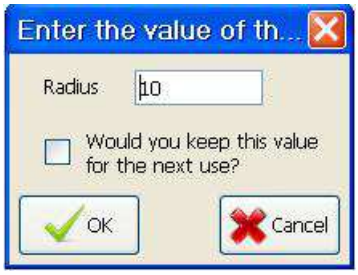
Construction methods



Point selection provides access to a dialog box to enter the value of the around.

This dialog box consists of a field:

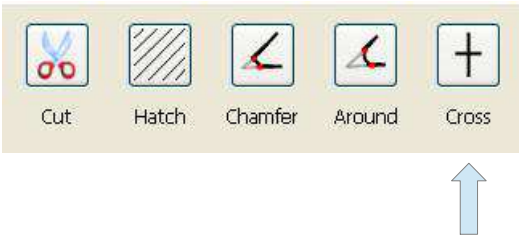
- **The field Value**: This is the value of the around.

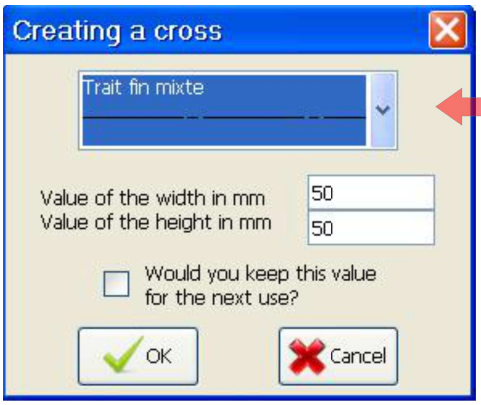


The check box will keep the value in the case of multiple uses of this command.

17.3.4 Function Cross

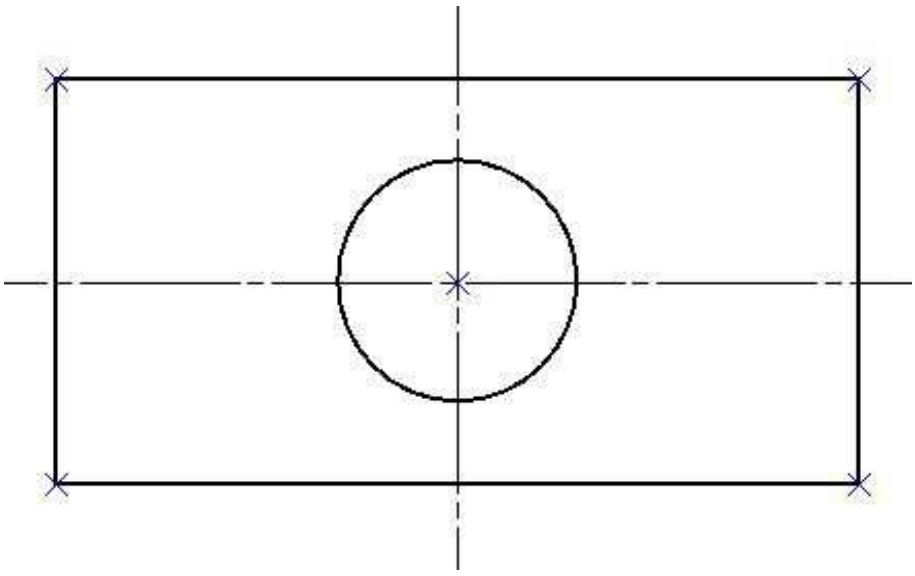
There are two ways to do a cross or use the command **Cross** of the **Action** toolbar, or use the menu **Action / Cross**.





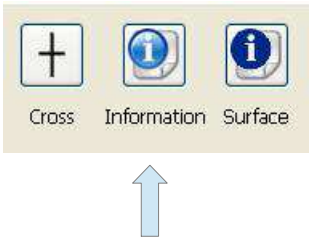
It is an area of choice to select the desired for the cross stroke type

It comes here to set the horizontal and vertical cross dimensions

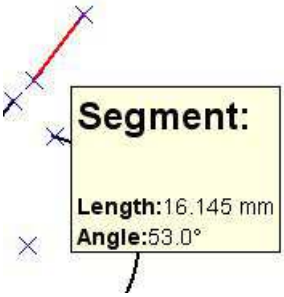


17.3.5 Function Information

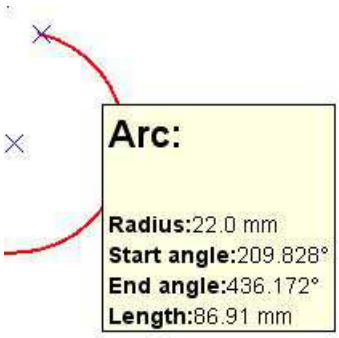
There are two ways to view information about a design element, or use the command **Information** of the **Action** toolbar, or use the menu **Action / Item information**.



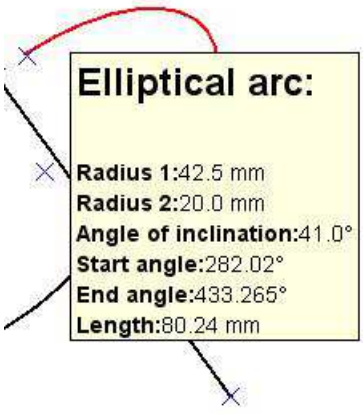
Information about a segment



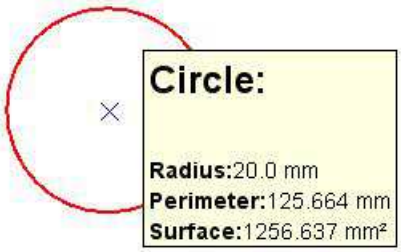
Information about an arc



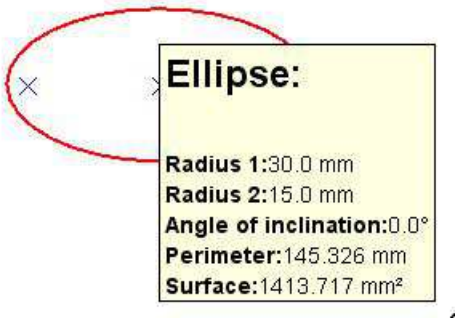
Information about an elliptical arc



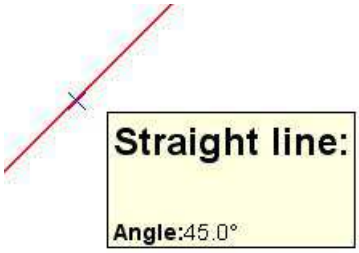
Information about a circle



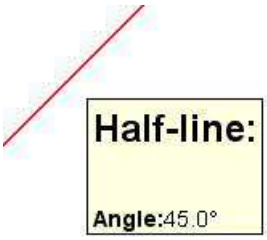
Information about an ellipse



Information about a straight line

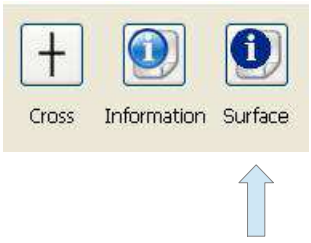


Information about a half-line

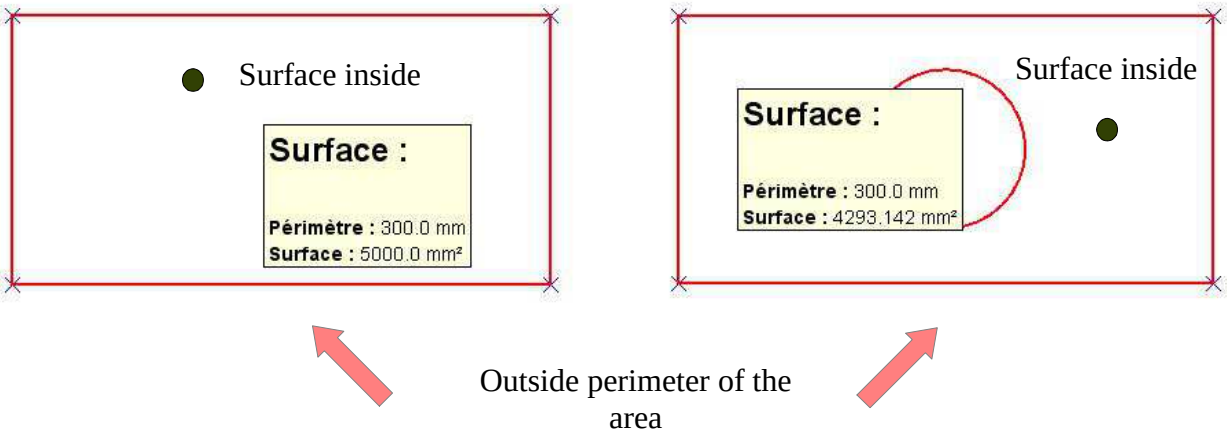


17.3.6 Function Surface

There are two ways to calculate the surface of an area or use the command **Surface** in the **Action** toolbar, or use the menu **Action / Surface information**.



Surface feature provides two pieces of information, the first area in mm², but also the value of the outer perimeter in mm.



18 General Notes

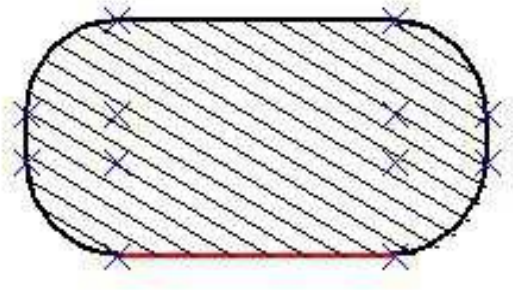
18.1 ESC

ESC key to cancel the current action.

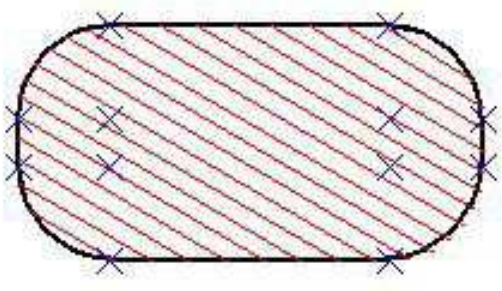
The current action is automatically re-initialized. This allows the user to start the current action from the beginning.

18.2 The preview

Previewing allows you to view in advance which item in the current action will be taken into account. This allows the user to be more precise in its handling and avoid errors.



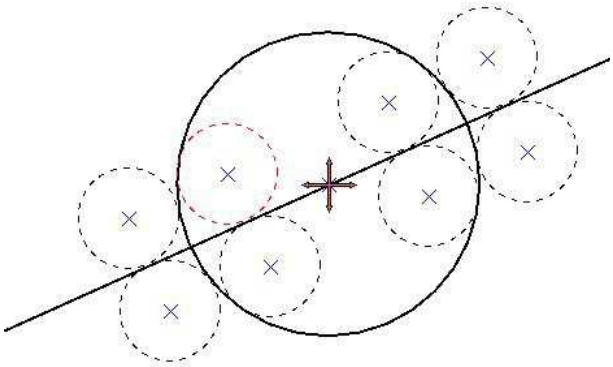
Preview of the removal of the segment

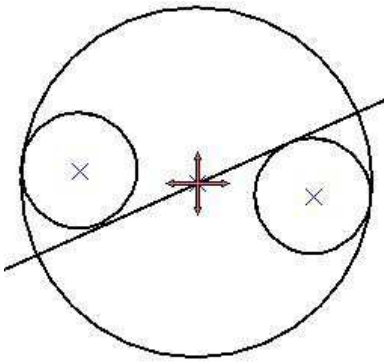


Preview of the removal of the hatch

18.3 The multi-choice

In an action with multiple possible outcomes, multi-choice makes it possible for the user to choose between different options. The various possibilities are shown in dotted lines. Just the user to click on the solution of choice. If the user is pressing the **CTRL** key while it is able to choose several options simultaneously.





18.4 Internationalization

The software is available in French and English. The language management is automatic. If the operating system is in French, that is to say with a local fr, then the software will be in French. In all other cases, the software is in English.