



# Symbol Editor

## User's Guide

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# Conventions used in this guide

## Typographical conventions

The following typographical conventions are used in this guide:

Font	Usage
<b>Bold</b>	Any text that you see in the user interface appears in <b>bold</b> . This font is used, for example, for window and dialog box titles, box and button names, and list items.
<i>Italic bold</i>	New terms are in <i>italic bold</i> when they appear in the current context for the first time.
Monospace	Extracts of program code, HTML, or other material that you would normally edit in a text editor, appear in <code>monospaced font</code> .  This font is also used for file names and folder paths, and for any text that you should type yourself.

## Noteboxes

The following types of noteboxes are used in this guide:



A **tip** might introduce a shortcut, or suggest alternative ways of doing things.



A **note** draws attention to details that you might easily overlook. It can also point you to other information in this guide that you might find useful.



You should always read very **important notes and warnings**, like this one. They will help you avoid making serious mistakes, or wasting your time.



This symbol indicates **advanced or highly technical information** that is usually of interest only to advanced or technically-oriented readers.

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# 1

## About Symbol Editor

Symbol Editor is for creating, modifying and managing symbols and symbol files in your products.

Find out more:

[Main features of Symbol Editor](#) (7)

[What are primitives?](#) (7)

[What are symbols?](#) (8)

[What are symbol files?](#) (9)

### 1.1 Main features of Symbol Editor

With Symbol Editor you can do the following:

- View and modify symbol and font files.
- Create symbols whose line, color, fill or other properties are determined by the product at run-time when the symbol is used at run-time.
- Fine-tune the drawing order of the symbol primitives.
- Import graphics from AutoCAD and MicroStation files.
- Use a background image as a drawing aid to draw a symbol that is available only in bitmap format.

**See also** [Symbol files](#) (19)

[Modifying primitive attributes](#) (39)

[Modifying transparent primitives](#) (42)

[Importing AutoCAD or MicroStation files](#) (47)

[Using a bitmap file as a background image](#) (48)

### 1.2 What are primitives?

Primitives are the building blocks of symbols.

A symbol is made up of primitives and their combinations such as lines, polygons, arcs, circles, rectangles, filled areas, and text.

Primitives have properties such as line color, fill color or size. The properties of the primitives determine the final appearance and are defined with attributes.

**See also** [Symbol primitives](#) (29)

## 1.3 What are attributes?

Attributes define various properties of symbols in Symbol Editor. Attributes determine things such as the size, color, font and output options of a primitive. You can modify attributes through primitive-specific property dialog boxes.

The attributes can be fixed in the symbol file or they can be defined at run-time by the product. The run-time defined attributes are called *transparent attributes*. Transparency allows the product to display the symbol, for example, in different colors for different contexts on the screen.

Here are the terms you should be familiar with.

Term	Description
Current attributes	Attributes of the currently selected primitive i.e. properties of line, fill or font. Attribute values can be fixed or transparent.
Default attribute value	If you select the <b>Default</b> value for an attribute instead of using one of Symbol Editor's preset values or a product-specific value, you make the attribute transparent, and the product determines the value for this attribute at run-time.
Fixed attributes	A fixed attribute value is specified in Symbol Editor. It applies to the selected primitive and all the primitives below the selected one in the <b>Primitive List</b> down to a primitive that defines another fixed value. Fixed values override transparent values
Selection attributes	Attributes of the selected primitive.
Transparent attributes	A transparent attribute is specified by the product when it uses the symbol. In Symbol Editor transparent attributes appear in Symbol Editor default values and do not have an effect on the final symbol.

- See also**
- [Opening the attributes dialog box](#) (39)
  - [Setting attributes for new primitives](#) (40)
  - [Making an attribute transparent](#) (40)
  - [Modifying line color, type and width](#) (41)
  - [Modifying fill color and type](#) (41)
  - [Modifying font color, type and dimensions](#) (42)

## 1.4 What are symbols?

Symbols are used for a variety of different purposes, for example to represent parts used in a construction assembly, to denote electrical network items such as distribution stations or utility poles; or to represent buildings, highways or parks.

You create symbols with Symbol Editor and save them in a symbol file with the file extension .sym.

You use symbols in your product. The output options of symbols may vary between different products. Basically symbols can be output on the screen, to a printer or to a file.

**See also** [Symbols](#) (23)

## 1.5 What are symbol files?

A symbol file is a collection of individual symbols. A symbol file can contain up to 256 symbols. Individual symbols are identified with numbers from 0 to 255.



**NOTE:** Do not modify the standard symbol files delivered with your product. If you need to modify any symbols, copy the original symbol file and work on the copy and keep the original symbol file intact.

**See also** [Symbol files](#) (19)



# 2

## User interface overview

This is an overview of the Symbol Editor user interface and its basic features.

Find out more:

[Interface components](#) (11)

[Setting up the drawing grid](#) (14)

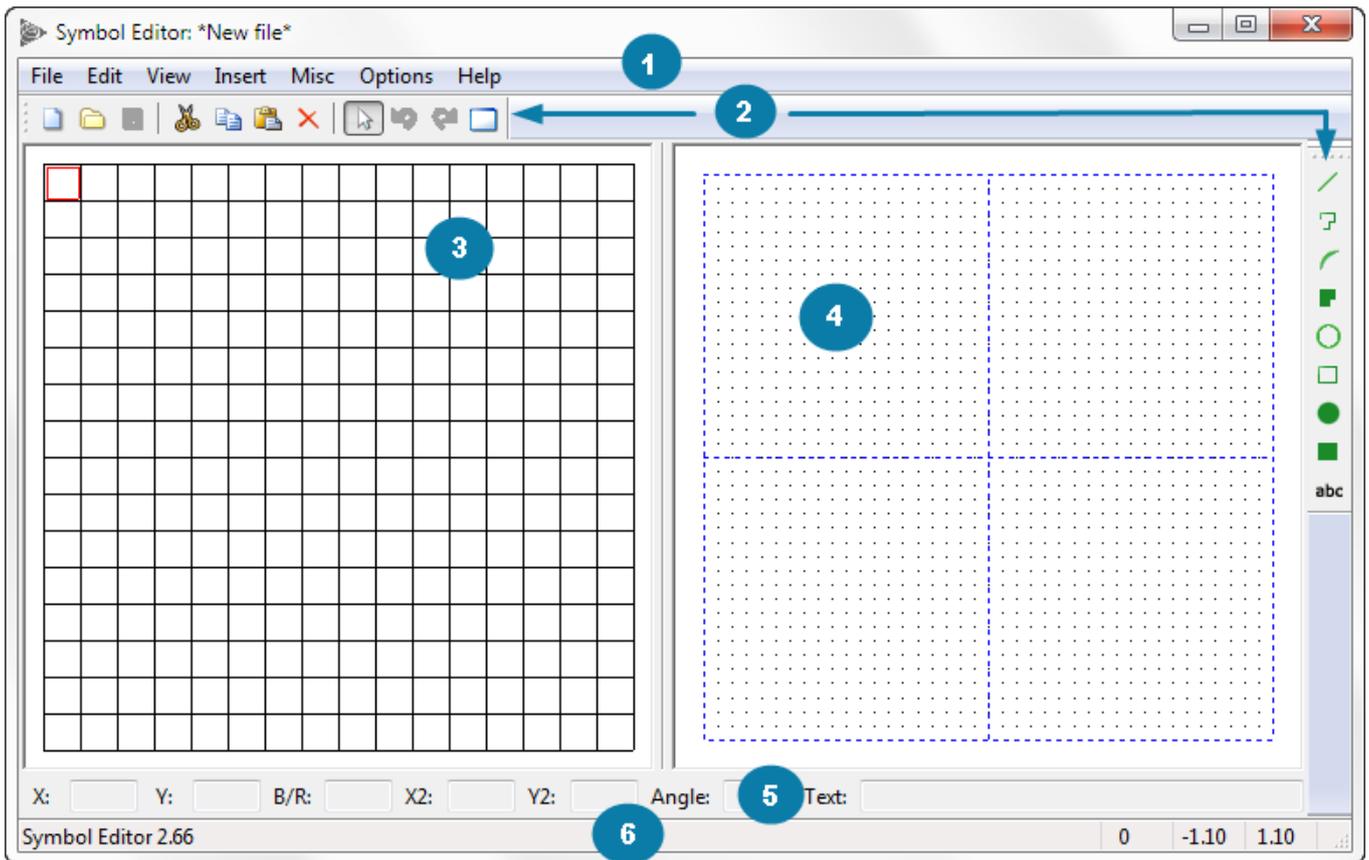
[Symbol Editor windows](#) (15)

### 2.1 Interface components

This is an overview of the Symbol Editor user interface components.

1. The title bar displays the Symbol Editor program name and the name and path of the currently loaded file. If no file is open at the moment, it displays the text \*New file\*. The menu bar contains program commands.
2. The toolbars are shortcuts to the most common file, drawing and modifying operations.
3. The **Library workarea**.
4. The **Edit workarea**.
5. The **Value bar**.

## 6. The Status bar.



Find out more:

[Library workarea](#) (12)

[Edit workarea](#) (13)

[Value bar](#) (13)

[Status bar](#) (13)

[Toolbars](#) (14)

### Library workarea

The **Library workarea** shows the contents of the current symbol file, so you can select a symbol to modify. There are 256 symbol slots, indexed from 0 to 255, each containing a single symbol.

Symbols are identified by the index number of the slot. Click a symbol in the library to see the index number in the **Status bar**.

**See also** [Creating a new symbol](#) (24)

[Selecting a symbol to modify](#) (24)

[Cutting, copying, pasting and deleting symbols](#) (26)

[Status bar](#) (13)

[Arranging symbols](#) (25)

## Edit workarea

The **Edit workarea** shows the symbol that you have selected in the **Library workarea** so you can create new primitives or modify the existing ones. The sizes and distances are measured in world units.

The size of the **Edit workarea** is 2x2 world units. The coordinate system is a regular Cartesian coordinate system:

- the origin ( $x=0$  and  $y=0$ ) is in the center of the workarea
- $x$  is the horizontal distance from the origin in world units
- $y$  is the vertical distance from the origin in world units
- values increase up and right and decrease down and left from the origin.

The world units do not determine the final size of the symbol. Instead, they define the proportions so you can enlarge or reduce the symbol in your product with a constant scaling rate, or set the size in pixel units.

For more details on using symbols in your product, refer to the product documentation.

**See also** [Symbol primitives](#) (29)  
[Modifying the text primitive size](#) (36)

## Value bar

The **Value bar** appears below the workareas in the Symbol Editor main window. You can view and modify the fields that describe the location, size and some primitive-specific properties of the primitive that you have selected in the **Edit workarea**.

Field	Description
X	Sets the X-coordinate of the selected primitive's starting point.
Y	Sets the Y-coordinate of the selected primitive's starting point.
X2	Sets the X-coordinate of the selected primitive's ending point.
Y2	Sets the Y-coordinate of the selected primitive's ending point.
B/R	Applies only to lines, arcs and circles. Sets the bulge factor if a line or an arc is selected, or radius if a circle is selected.
Angle	Applies only to text primitives. Sets the rotation angle of the selected text primitive.
Text	Applies only to text primitives. Sets the text string of the selected text primitive.

**See also** [Modifying the text primitive string](#) (36)

## Status bar

The **Status bar** appears at the bottom of the main window. As you move the mouse pointer in the main window, you see:

- tool tips for the selected command

- the index number of the symbol that the mouse pointer is on
- x- and y-coordinates of the mouse pointer in the **Edit workarea**.

## Toolbars

You can select the most common file and modification operations from the toolbars in the Symbol Editor main window.

To view or hide the **File** toolbar, click **View > Toolbars > File**.

To view or hide the **Primitive** toolbar, click **View > Toolbars > Primitive**.

A check mark in front of the toolbar name indicates that the toolbar is visible.

## 2.2 Setting up the drawing grid

This covers the options in Symbol Editor that allow you to customize drawing grid options, such as specifying the dimensions, visibility and dynamics of the drawing grid.

Find out more:

[Activating the grid](#) (14)

[Setting grid size and pick tolerance](#) (14)

[Showing or hiding the grid](#) (15)

### Activating the grid

The drawing grid is an aid for drawing primitives in the **Edit workarea**. When the grid is active, each click snaps to the nearest grid point, so you can easily draw regular shapes.

To activate or deactivate the grid, click **Options > Grid > Active**.

A check mark in front of the option indicates that the grid is activated.

**See also** [Setting grid size and pick tolerance](#) (14)

[Showing or hiding the grid](#) (15)

[Snapping a primitive to the grid](#) (38)

### Setting grid size and pick tolerance

Set the grid size and the pick tolerance in order to facilitate the drawing of symbols and to customize the drawing interface.

To set the size of the drawing grid and the tolerance in picking operations:

1. Click **Edit > Preferences...** to open the **Preferences** dialog box.
2. In the **Pick** section drag the scale pointers or type in new values for grid size and tolerance.

Set the distance between the grid points in the **Edit workarea** in world units. The distance can be 0,01-0,20 units.

Set how close to a grid point you have to click in order to snap to it. The tolerance is given in pixel units, and it can be 1-20 screen pixels.

3. Choose one of the following to end the operation:

- Click **OK** to save the settings.
- Click **Cancel** to discard the changes.

- Click **Apply** to retain the current settings.

Grid settings are saved across sessions.

**See also** [Activating the grid](#) (14)  
[Showing or hiding the grid](#) (15)  
[Snapping a primitive to the grid](#) (38)  
[Selecting multiple primitives with one click](#) (33)

### Showing or hiding the grid

Activating the grid does not automatically make it visible. On the other hand, the grid may be visible without being active.

To show or hide the grid, click **Options > Grid > Visible**.

The check mark next to the option indicates that the grid is visible.

**See also** [Activating the grid](#) (14)  
[Setting grid size and pick tolerance](#) (14)

## 2.3 Symbol Editor windows

The Symbol Editor main window displays the symbols of the currently loaded file in the **Library workarea** and if you select a symbol you can view and modify it in the **Edit workarea**. You can open one file at a time. You can create zoom windows from either one of the workareas in order to work with symbol details. Here you will find out more about zoom windows and browsing in Symbol Editor windows.

Find out more:

[Creating a new zoom window](#) (15)  
[Panning](#) (16)  
[Zooming in and out](#) (16)  
[Browsing through the view history](#) (17)  
[Restoring the original view](#) (17)  
[Turning a zoom window into magnifier](#) (17)

### Redrawing a window

Redrawing an active Symbol Editor window is useful if you are working on a slow computer and cannot use the automatic redraw option.

To redraw the active main window, click **Misc > Redraw (Ctrl + L)**.

The windows are then redrawn.

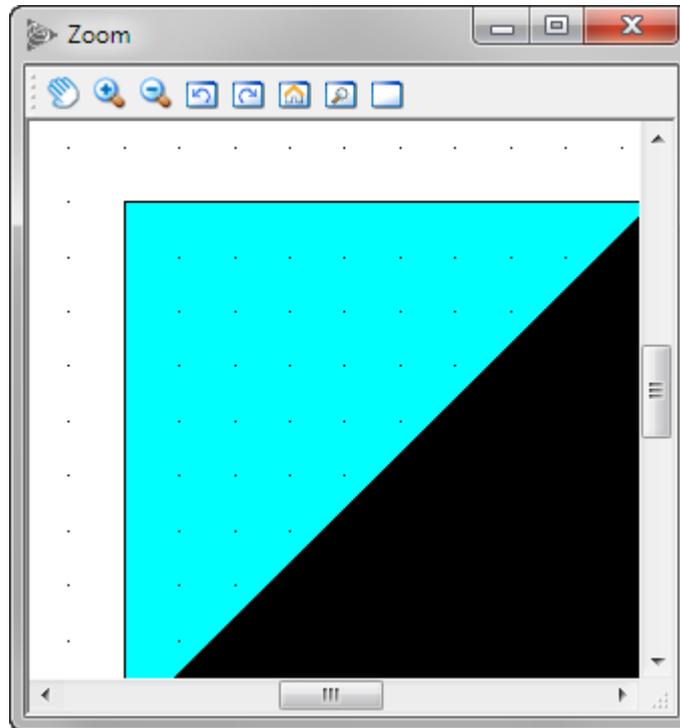
### Creating a new zoom window

You can create independent zoom windows for both Symbol Editor workareas. This allows you to modify a symbol in an enlarged workarea. The zoom window functionality is inherited from the workarea.

In the **Library workarea** window you can select symbols. In the **Edit workarea** window you can modify symbols.

To create a new zoom window:

1. Click the **New Zoom Window** button.
  2. Then do one of the following:
    - Drag over the area you want to view in the new window.
    - Click a symbol, centering the display around the point you click.
- The zoom window opens and displays the selected area or symbol.



**See also** [Zooming in and out](#) (16)

## Panning

Panning is the easiest way to position the view in a Symbol Editor window.

To pan in a zoom window:

1. Click the **Pan** button in the **Zoom** toolbar.
2. Drag in the zoom window to pan, or click to set the center point of the viewing window.

**See also** [Restoring the original view](#) (17)

## Zooming in and out

Enlarge the current zoom window to see symbols in more detail.

To enlarge the display in the current zoom window:

1. Click the **Zoom In** button in the **Zoom** toolbar.
2. Drag over the area you want to zoom in, or click to zoom in to the next preset percentage.

The display is centered around the point you click.

To zoom out and reduce the display in the current zoom window:

1. Click the **Zoom Out** button in the **Zoom** toolbar.

2. Click to zoom out to the previous preset percentage.  
The display is centered around the point you click.

**See also** [Restoring the original view](#) (17)

### **Browsing through the view history**

Browse through history of your actions when you need to review your work. You must have a zoom window open in order to view the history.

Do the following:

- Click the **Previous View** button to go forward in the viewing history in the zoom window.
- Click the **Next View** button to go forward in the viewing history in the zoom window.

**See also** [Creating a new zoom window](#) (15)

### **Restoring the original view**

Click the **Original View** button in the zoom window to return to the original view in a zoom window.

The zoom window view will be restored to what it was when you first opened that specific zoom window.

**See also** [Creating a new zoom window](#) (15)

### **Turning a zoom window into magnifier**

You can turn a zoom window into a magnifier and magnify a part of either the **Library** or the **Edit workarea** in the zoom window.

You can magnify only one workarea at a time, i.e. the workarea that is displayed in this zoom window.

To turn a zoom window into a magnifier:

1. Click the **Magnifier** button in the **Zoom** toolbar.
2. Move the mouse into the workarea displayed in the zoom window. The view in the zoom window changes as you move the mouse.
3. Click to end the command.

**See also** [Browsing through the view history](#) (17)

[Restoring the original view](#) (17)

## **2.4 Setting the environment path for fonts**

Use an environmental variable to specify the location of fonts that will be used in Symbol Editor.

1. Click **Edit > Preferences**. This opens the **Preferences** dialog box.
2. Click ... to open a dialog box to specify the folder.

3. Choose the folder and click **OK**.

Symbol Editor loads the fonts immediately and you can use them in your symbol.

**See also** [Setting a font list for the symbol file](#) (19)

# 3

## Symbol files

This is an overview of symbol files and discusses how they are created and modified.

Find out more:

[Setting a font list for the symbol file](#) (19)

[Creating a new symbol file](#) (20)

[Opening a symbol file](#) (21)

[Saving a symbol file](#) (21)

### 3.1 Setting a font folder in Symbol Editor

Symbol Editor can access only the font files in the same directory as the program file SymEd.exe or in the directory specified with the \DXK\_Fontpath environment variable.

You can also select the by setting the preferences.

1. Click **Edit > Preferences**.

The **Preferences** dialog box opens.

2. Click ... to open the location from which you want to select the folder.
3. Select the folder and click **OK**.

You have to restart Symbol Editor in order for the preferences to take effect.



Symbol Editor does not support TrueType, OpenType or PostScript font technologies.

**See also** [Setting a font list for the symbol file](#) (19)

### 3.2 Setting a font list for the symbol file

Each symbol file must define a font list that determines the fonts to use with text primitives. Symbol Editor accepts only the proprietary font files (\*.FON). They are delivered with your product, for example romsim.fon and fixfont.fon. You can use up to 20 different fonts in a symbol file.

If you do not define the font list, you can use only the default font of your product. We recommend that you set the font list before you create symbols and use those fonts with your text primitives.

To set or modify the font list of the currently open symbol file:

1. Click **Misc > Font List**. This opens the **Font List** dialog box.
2. In the **Name** column, click on the line that you want to modify.  
The number in the left most column is the font index.
3. Type in the name of the font, for example "romsim" or "fixfont".  
The name must be exactly the same as the base name of the corresponding font file.
4. Repeat steps 2 and 3 to define all the fonts that you want to use in symbols of the current symbol file.
5. Click **Close**.

Symbol Editor loads the fonts immediately and you can use them in your symbol.

Symbol Editor can access only the font files in the same directory as the program file **SymEd.exe** or in the directory specified with the `\DXK_Fontpath` environment variable.



Symbol Editor does not support TrueType, OpenType or PostScript font technologies.



When using fonts in symbols be sure that your product has the correct settings for exporting content. Consult your product documentation for more information.

**See also** [Modifying font color, type and dimensions](#) (42)

### 3.3 Creating a new symbol file

It is a rare occasion that you will create a symbol file from scratch.

In case you need to, do the following:

1. Click **File > New** or click the **New** button.  
This creates a new, empty symbol file. If you already have a symbol file open, Symbol Editor asks if you want to save changes to the current file.
  - Click **OK** to save the changes and close the current file before creating a new file.
  - Click **No** to close the current file without saving changes and to create a new file.

- Click **Cancel** to return to work with the current symbol file and cancel the creation of a new file.
2. Set the font list for the new file.
  3. You can now begin to create a new symbol in an empty slot of the symbol file, by clicking a primitive on the toolbar.

**See also** [Setting a font list for the symbol file](#) (19)  
[Saving a symbol file](#) (21)  
[Creating a new symbol](#) (24)

## 3.4 Opening a symbol file

Open a symbol file in order to modify symbols and primitives.

To open a symbol file:

1. Click the **Open** button, which opens the file selection dialog box.
  2. Select the file to open and click **OK**.  
If you already have a file open, Symbol Editor asks if you want to save changes to the current file. Choose the desired option.  
Be sure you have set the font file before getting started.
  3. Now you can modify and add to the symbol file.
- With Symbol Editor you can also view and modify font files (\*.FON).

**See also** [Setting a font list for the symbol file](#) (19)  
[Saving a symbol file](#) (21)  
[Symbols](#) (23)  
[Symbol primitives](#) (29)  
[Bitmaps and pictures in Symbol Editor](#) (47)

## 3.5 Saving a symbol file

Save a file to keep the contents intact.

To save a symbol file:

1. Click the **Save** button.  
To save a symbol file with a new name, location or format:, click **File > Save As**.
  - For a symbol file, add the extension **.SYM** after the file name.
  - For a font file, add the extension **.FON** after the file name.
2. When you save the file for the first time, the file selection dialog box opens so you can specify the name and location for the file.  
If you specify an existing file name, Symbol Editor will overwrite the existing file without a warning. Make sure all files you want to keep intact are write-protected (read-only).
3. Click **OK**.

**See also** [Creating a new symbol file](#) (20)  
[Opening a symbol file](#) (21)



# 4

## Symbols

Here you will find out more about creating and modifying symbols.

Find out more:

[Using symbols in products](#) (23)

[Selecting items in Symbol Editor](#) (23)

[Creating a new symbol](#) (24)

[Selecting a symbol to modify](#) (24)

[Deselecting a symbol](#) (25)

[Arranging symbols](#) (25)

[Magnifying and modifying a symbol](#) (26)

[Cutting, copying, pasting and deleting symbols](#) (26)

### 4.1 Using symbols in products

Use Symbol Editor files in products for creating user interface items. Some products (Tekla Structures, for example) use symbol files directly, others (Trimble NIS, for example) use a combination of symbol and presentation files created with Presentation Editor (PresEd). To find out how your product uses symbol files, refer to the product documentation.

You can adjust symbols for your own needs by modifying symbol files and introduce your own customized symbols without making changes in the product.

**NOTE:** Do not modify the standard symbol files delivered with your product. If you need to modify any symbols, copy the original symbol file and work on the copy. Keep the original symbol file intact.

### 4.2 Selecting items in Symbol Editor

Here you find out more about the options in Symbol Editor that affect selecting symbols or primitives.

Find out more:

[Extending or reducing the amount of selected items](#) (24)

[Setting the options for selecting symbols](#) (24)

## Extending or reducing the amount of selected items

In Symbol Editor you can use the common Windows shortcut keys to extend or reduce the amount of the selected items.

To...	Do this...
Extend the selection by selecting more items	Hold down the <b>Ctrl</b> key while selecting.
Select several items sequentially	Hold down the <b>Shift</b> key and click the first and the last item of the sequence that you want to select. This applies when selecting items in the <b>Primitive List</b> .
Deselect an item	Hold down the <b>Ctrl</b> key and click a selected item. To deselect all selected items, click outside the grid.

**See also** [Selecting a primitive in the Edit workarea](#) (34)  
[Selecting a primitive in the Primitive List](#) (34)  
[Selecting multiple primitives with one click](#) (33)  
[Selecting primitives partially inside the drag frame](#) (33)

## Setting the options for selecting symbols

In Symbol Editor you can specify how to select symbols to modify in the **Library workarea**. By default you have to double-click a symbol, but you can also enable symbol modification after a single click by clicking **Options > Single Click Select**.

A check mark next to the menu option indicates that it is on, and you can select a symbol to modify by clicking it once in the **Library workarea**.

## 4.3 Creating a new symbol

Create new symbols if they do not already exist in the currently open symbol file.

Be sure you have set the font file before creating a new symbol.

To add a new symbol to the currently open symbol file:

1. Click **End Command**.
2. Double-click an empty symbol slot in the **Library workarea**.  
A red outline in the slot indicates that you can modify the symbol in the **Edit workarea**.
3. Draw the symbol by inserting primitives, importing AutoCAD or MicroStation files, or to draw a copy of an image in a bitmap file, use it as a background image in Symbol Editor.

Save the changes you made in the current file by clicking **File > Save**.

**See also** [Bitmap files Symbol Editor can display as background image](#) (48)  
[Importing AutoCAD or MicroStation files](#) (47)

## 4.4 Selecting a symbol to modify

Open a symbol file to start modifying symbols.

To select a symbol to modify:

1. Click **End Command**.
2. Double-click the symbol you want to modify in the **Library workarea**.  
You can also hold down the Shift key and use the arrow keys to move around the **Library workarea** slot by slot.

A red outline in the slot indicates that you can modify the symbol in the **Edit workarea**.

If you turn on the **Single Click Select** option, you will be able to select a symbol to modify with one click.

**See also** [Selecting items in Symbol Editor](#) (23)  
[Magnifying and modifying a symbol](#) (26)

## 4.5 Deselecting a symbol

Deselect symbols to disable modifying operations.

To deselect symbols:

1. Click **End Command**.
2. To deselect all symbols, click outside the symbol grid in the **Library workarea** or in an empty area in the **Edit workarea**.

To deselect one symbol, hold down the **Ctrl** key and click the symbol slot.

Note that if you want to change the symbol that you are modifying in the **Edit workarea**, simply select a new symbol to modify.

**See also** [Selecting a symbol to modify](#) (24)

## 4.6 Arranging symbols

Arrange symbols in the **Library workarea** when you want to reorder them according to your preferences. Note that products identify each symbol by the symbol id, which is determined by the symbol's location in the **Library workarea**.

To arrange symbols do the following:

1. Click **End Command**.
2. Click the symbol that you want to move to a different slot. A black outline around the selection indicates that you can proceed.
3. Drag the selected symbol to the desired slot. You must start dragging on top of the symbol, or you will end up making an area selection.

If you select several symbols, other symbols are moved with the one that you drag, keeping the relations between slots intact.



Arranging symbols also changes the symbol ids in Symbol Editor and in the products that use the symbol library in question. This will affect the output in your product,

**See also** [Extending or reducing the amount of selected items](#) (24)

## 4.7 Magnifying and modifying a symbol

Enlarge a symbol when you need to see it in more detail.

To enlarge the symbol view:

1. Select the symbol you want to modify.
2. Create a zoom window that displays the **Edit workarea**.
3. Resize the zoom window to suit your needs.  
Take care that you can see the drawing tools of the Symbol Editor main window.
4. Zoom in and pan the view in the zoom window to your liking.
5. Modify the symbol in the zoom window. You can select drawing tools and menu commands from the Symbol Editor main window, and select, insert and modify primitives in the zoom window.

**See also** [Symbol Editor windows](#) (15)

## 4.8 Cutting, copying, pasting and deleting symbols

You can cut or copy symbols and paste them into another location. Symbol Editor saves the most recently cut or copied symbol in the symbol cut buffer. Symbol Editor maintains cut buffers until you exit the program. You can copy symbols across symbol files by opening symbol files during a Symbol Editor session. Delete a symbol from a file when you no longer need it.

To cut, copy, paste and delete symbols, do any of the following:

To...	Do this...
Cut a symbol	Select the symbol and click the <b>Cut</b> button. If you want to delete a symbol without adding it to the cut buffer, click the <b>Delete</b> button.
Copy a symbol	Select the symbol and click the <b>Copy</b> button.
Paste a symbol	To paste a symbol, click the <b>Paste</b> button, and select a target slot in the <b>Library workarea</b> or vice versa.
Delete a symbol	To delete a symbol, select a symbol in the <b>Library workarea</b> and click the <b>Delete</b> button.

**See also** [Selecting items in Symbol Editor](#) (23)

[Selecting a symbol to modify](#) (24)

[Cut buffer](#) (26)

### Cut buffer

All cut or copied objects (whole symbols or primitives) are stored in the Symbol Editor cut buffers. They can be retrieved in Symbol Editor with the **Paste** command. The **Library workarea** and the **Edit workarea** both have their own cut buffers that are not connected to each other. If you cut or copy a whole symbol in the **Library workarea** you can only paste it into another symbol slot. If you cut or copy individual primitives you can only paste them into the **Edit workarea**.

**See also** [Cutting, copying, pasting and deleting symbols](#) (26)





# 5

## Symbol primitives

Here you will find out more information about inserting and modifying primitives and primitive attributes.

Find out more:

[Symbol Editor primitives](#) (29)

[The Primitive List](#) (30)

[Inserting primitives](#) (32)

[Selecting primitives](#) (33)

[Modifying primitives](#) (34)

[Modifying primitive attributes](#) (39)

[Modifying transparent primitives](#) (42)

### 5.1 Symbol Editor primitives

Individual primitives are basic geometric shapes: lines, arcs, circles, text strings and filled areas.

Primitive groups are shapes that consist of primitives: rectangles (four lines), polylines and polygons (groups of lines) and free forms (groups of lines and arcs).

The primitives of a symbol are listed in the **Primitive List**. Use this list as an aid while drawing and modifying primitives.

If you want to draw with the help of the grid, ensure the grid is active.

Here is a list of the primitives and any exceptions that apply to them. To insert primitives, click the related toolbar button.

Primitive	Notes
Line	Click at both ends of the line or insert by dragging.
Polyline	Move the mouse and click to define each vertex point, double-click to end drawing.  The lines building the polyline or polygon appear in the <b>Primitive List</b> as separate line primitives. To modify the attributes of the polyline or polygon, select all of its lines.

Primitive	Notes
Rectangle	Click to give two opposite corner points or draw by dragging. The lines building the rectangle appear in the <b>Primitive List</b> as separate primitives. To modify the rectangle, you must modify the separate lines.
Circle	Click to define the center point and click to define the radius. You can also draw by dragging.
Arc	Click at both ends of the arc, then move the mouse and click to define the bulge of the arc.
Filled rectangle	Insert the same way as a Rectangle. A filled rectangle appears in the <b>Primitive List</b> as a "Fill area".
Filled circle	Insert the same way as a circle. A filled circle appears in the <b>Primitive List</b> as a "Fill area".
Filled area	Click to define a vertex point, and continue until you have clicked all vertex points. If you want to arch the line starting from the most previously given vertex, do not click but drag to give the next vertex point. This both arches the line and inserts the new vertex. The point where you start dragging becomes the next vertex point. Click the starting point to finish drawing.
Text	Enter text into the dialog box that appears and click <b>OK</b> . Double-click in a symbol slot to define the lower left corner of the text.

- See also**
- [Activating the grid](#) (14)
  - [Setting a font list for the symbol file](#) (19)
  - [Making a fill area from lines](#) (35)
  - [Modifying the text primitive string](#) (36)
  - [Modifying the text primitive size](#) (36)
  - [Making lines from a fill area](#) (35)
  - [Rotating primitives](#) (38)
  - [Modifying line color, type and width](#) (41)
  - [Modifying font color, type and dimensions](#) (42)

## 5.2 The Primitive List

The **Primitive List** displays the symbol primitives that appear in the **Edit workarea**. Symbol Editor adds new primitives at the end of the list as you draw them.

*Transparent primitives* are effective only when they appear at the top of the list. You can use the list as an aid when selecting primitives to modify or when arranging the transparent primitives at the top of the list after drawing them.

Symbol Editor updates the primitive list automatically when you create or delete primitives.

Find out more:

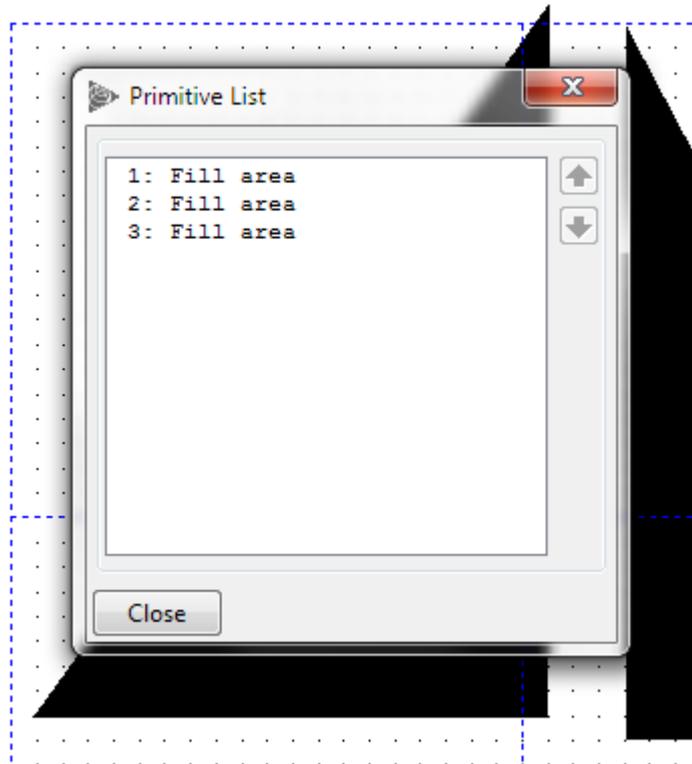
[Displaying the Primitive List \(31\)](#)

[Arranging primitives in the list \(31\)](#)

## Displaying the Primitive List

To display the primitive list of the current symbol, click **Misc > Primitive List**.

For example, when you create a rectangle, Symbol Editor adds four line primitives to the list. The following shows an example of the **Primitive List** dialog box displaying three fill areas:



**See also** [Arranging primitives in the list \(31\)](#)

[Selecting a primitive in the Primitive List \(34\)](#)

## Arranging primitives in the list

The order of primitives in the **Primitive List** has a significant effect on their appearance. Transparent primitives are effective only if they appear at the top of the list before primitives that have fixed attributes. Symbol Editor adds new primitives at the end of the list as you draw them so you may need to arrange their order in the list later on.

To arrange the order of primitives in the current symbol:

1. Click **Misc > Primitive List** to display the list of primitives in the current symbol.
2. Select the primitive that you want to order.  
The selection is highlighted both in the **Primitive List** and in the **Edit workarea**.
3. Order the selected primitive by moving it up or down in the list by clicking the **Move Up** or **Move Down** arrow.

If you select an existing primitive before you draw a new one, Symbol Editor adds the new one in the **Primitive List** before it.

**See also** [Selecting primitives](#) (33)  
[Opening the attributes dialog box](#) (39)  
[Making an attribute transparent](#) (40)

## 5.3 Inserting primitives

Find out more about inserting primitives.

Find out more:

[Inserting a primitive](#) (32)  
[Draw several primitives running with one tool](#) (32)  
[Draw several primitives running with all tools](#) (33)

### Inserting a primitive

Insert primitives to complete the design of the symbol you are working on.

To insert primitives in the selected symbol:

1. Select the primitive you want to insert from the **Primitive** toolbar.
2. Drag or click to specify the size for the primitive in the **Edit workarea**.  
The definition of starting point and ending point depends on the primitive type.  
Note that you can rotate line, arc and text primitives while dragging.
3. If you use both transparent and fixed primitives, arrange the **Primitive List** so that the transparent ones are at the top of the list, and fixed primitives after them.

**See also** [User interface overview](#) (11)  
[Symbol Editor primitives](#) (29)  
[Setting attributes for new primitives](#) (40)  
[The Primitive List](#) (30)  
[Cutting, copying, pasting and deleting primitives](#) (35)

### Draw several primitives running with one tool

If the continuous drawing mode is switched off, you must repeatedly click a primitive button in order to draw new primitives.

You can make a single drawing tool of the **Primitive** toolbar temporarily continuous. This way you can draw several primitives of the same type in succession without selecting the tool again.

To turn continuous drawing on and then draw the same primitive repeatedly:

1. Select an empty slot in the symbol file.
2. Select the primitive you want to draw from the **Primitive** toolbar.
3. Click **Misc > Continuous**.
4. Draw the primitives.
5. Click **End Command** to end continuous drawing.

If you click another primitive in the toolbar, continuous drawing is turned off.

**See also** [Draw several primitives running with all tools](#) (33)

## Draw several primitives running with all tools

You can draw several items in succession with any tool in the **Primitive** toolbar without having to reselect it when the continuous drawing mode is on.

When continuous drawing is on, you must click the **End Command** button or press **Esc** to end the current command before you can select symbols or primitives to modify.

To turn continuous drawing on and then draw different types of primitives:

1. Click **Options > Continuous**.  
The check mark next to the option indicates that the continuous drawing is on.
2. Select an empty slot in the symbol library.
3. Select the primitive you want to draw from the **Primitive** toolbar.
4. Draw the primitives in the **Edit workarea**, using as many primitive types as you require.
5. Click **End Command** to end continuous drawing.
6. Save the symbol file.

**See also** [Draw several primitives running with one tool](#) (32)

## 5.4 Selecting primitives

Here you find out more on how to select and deselect primitives.

Find out more:

[Selecting multiple primitives with one click](#) (33)

[Selecting primitives partially inside the drag frame](#) (33)

[Selecting a primitive in the Edit workarea](#) (34)

[Selecting a primitive in the Primitive List](#) (34)

### Selecting multiple primitives with one click

To pick multiple primitives with one mouse click, click **Options > Pick > Multiple**.

A check mark next to the menu option indicates that the multiple pick option is on, and a single mouse click in the **Edit workarea** selects all primitives within the pick tolerance, not only the nearest one.

**See also** [Selecting primitives partially inside the drag frame](#) (33)

[Setting grid size and pick tolerance](#) (14)

### Selecting primitives partially inside the drag frame

To select all primitives that are either completely or partially inside the drag frame click **Options > Pick > Partially**.

A check mark next to the option indicates that the pick partially option is on, and primitives that are completely or partially inside the drag frame get selected, not just the ones that are completely inside.

**See also** [Selecting multiple primitives with one click](#) (33)

## Selecting a primitive in the Edit workarea

Select primitives in the **Edit workarea** as a precursor to modifying them.

To select a primitive:

1. Click **End Command**.
2. Click the primitive that you want to select.

You can also drag to select several primitives inside a rectangular area.

All selected primitives are highlighted and you can see their resize handles.

You can also select a primitive to modify in the **Primitive List**. This is useful, for example, when you modify a symbol that is made up of several overlapping primitives.

**See also** [Extending or reducing the amount of selected items](#) (24)

[Selecting a primitive in the Primitive List](#) (34)

## Selecting a primitive in the Primitive List

You can select a primitive to modify in the **Primitive List**. This is useful when you modify a symbol that is made up of several overlapping primitives. This also speeds up your work if you need to arrange the drawing order of primitives.

To select a primitive in the primitive list:

1. Click **Misc > Primitive List**. This opens the **Primitive List** dialog box.
2. Click a primitive in the list.

You can also drag to select several subsequent primitives.

Selected primitives are also highlighted in the **Edit workarea** so you can see their resize handles.

Click **End Command** to deselect a primitive.

To deselect all primitives, click outside the symbol grid in the **Library workarea** or in an empty area in the **Edit workarea**.

To deselect one primitive, hold down the **Ctrl** key and click the primitive that you want to deselect.

**See also** [Extending or reducing the amount of selected items](#) (24)

[Arranging primitives in the list](#) (31)

[Selecting a primitive in the Edit workarea](#) (34)

## 5.5 Modifying primitives

This section covers the different ways to modify Symbol Editor primitives.

Find out more:

[Cutting, copying, pasting and deleting primitives](#) (35)

[Making a fill area from lines](#) (35)

[Making lines from a fill area](#) (35)

[Modifying the text primitive string](#) (36)

[Modifying the text primitive size](#) (36)

- [Moving a primitive by dragging](#) (37)
- [Snapping a primitive to the grid](#) (38)
- [Resizing the primitive by dragging](#) (37)
- [Moving or resizing primitives with exact coordinate values](#) (37)
- [Rotating primitives](#) (38)
- [Modifying the shape of a primitive](#) (38)

## Cutting, copying, pasting and deleting primitives

You can cut and copy primitives in Symbol Editor and paste them to another slot in the same symbol file or in another symbol file. Delete primitives when you no longer need them.

To...	Do this...
Cut a primitive	Select the primitive and click the <b>Cut</b> button. If you want to delete a primitive without adding it to the cut buffer, click the <b>Delete</b> button.
Copy a primitive	Select the primitive and click the <b>Copy</b> button.
Paste a primitive	Click the <b>Paste</b> button, and click in the <b>Edit workarea</b> to give the exact insertion point for the primitive.
Delete a primitive	To delete a primitive, select it in the <b>Edit workarea</b> and click the <b>Delete</b> button.

- See also** [Selecting items in Symbol Editor](#) (23)  
[Cut buffer](#) (26)

## Making a fill area from lines

You can convert a sequence of line primitives into a filled area. This is useful, for example, when you need to group primitives that are imported from AutoCAD or MicroStation images and treat them as one object.

You can set the fill color and fill type before you select the command.

Do the following:

1. Select the line primitives you want to convert into a filled area. Note that selected lines must form a closed shape.
2. Click **Insert > Fillarea From Lines**.

The lines are converted into a fill area.

- See also** [Setting attributes for new primitives](#) (40)  
[Making lines from a fill area](#) (35)

## Making lines from a fill area

You can convert a filled area to lines.

You can set the line color, type and width of the new line primitives before you select the command.

Do the following:

1. Select the fill area primitive you want to convert to line primitives.
2. Click **Insert > Lines From Fillarea**.

The fill area is converted into lines.

**See also** [Setting attributes for new primitives](#) (40)

[Making a fill area from lines](#) (35)

## Modifying the text primitive size

You can modify the size of a text primitive by setting the height or width of a character.

Before modifying the size you must set the scaling properties of the text primitive. It can be either scalable or have a fixed pixel size. Scalable text is scaled together with the rest of the symbol, and pixel-sized text always appears in the given size regardless of the scaling of the symbol.

To modify the text primitive size do the following:

1. Select the text primitive you want to modify.
2. Click **Misc > Current Attributes**.

This opens the **Selection Attributes** dialog box, where you can modify the font.

3. To set the scaling of the text, choose appropriately in the **Unit** field:
  - **World** sets the text to be scalable. This means that you will use world units to set the height and the width of text (steps 3 and 4). The characters are scaled when the symbol is scaled in a product.
  - **Pixel** sets the text to a fixed size. You will use pixel units to set the height and the width of text (steps 3 and 4). The characters are not scaled in a product, even though the rest of the symbol would appear scaled. Note that the view in the **Library workarea** may appear distorted: the text might not fit in the symbol slot because the view in there is scaled.
4. In the **Height** field, type in the new height to apply to the text primitive. The capital letters inherit the given height and lowercase characters are scaled accordingly.
5. In the **Width** field, type in the new width to apply to a single character. Each character consumes the given amount of space.

**See also** [Modifying the text primitive string](#) (36)

[Snapping a primitive to the grid](#) (38)

[Moving or resizing primitives with exact coordinate values](#) (37)

## Modifying the text primitive string

Modify the text in a string when you need to make corrections or add or remove information.

To modify the text string of a text primitive:

1. Select the text primitive.
2. In the value bar at the bottom of the **Edit workarea**, click in the **Text** field and modify the contents.
3. Press **Enter** to save changes and update the text.

**See also** [Snapping a primitive to the grid](#) (38)

[Modifying the text primitive size](#) (36)

## Moving a primitive by dragging

You can move primitives by dragging them.

Do the following:

1. Click **End Command**.
2. Select the primitive that you want to move.
3. Middle-drag to move the selection around the **Edit workarea**.

If you drag with the left mouse button, you must start dragging on top of a selected object, otherwise you will make a new area selection.

**See also** [Selecting a primitive in the Edit workarea](#) (34)

[Moving or resizing primitives with exact coordinate values](#) (37)

## Resizing the primitive by dragging

You can resize symbol primitives by dragging them, but you cannot resize text primitives in this manner.

To resize primitives:

1. Select the primitive(s) that you want to resize.
2. Hold down the **Shift** key and drag to resize.

Note that if you use the left mouse button, you must place the mouse pointer on top of a selected primitive when you start dragging.

If you use the middle mouse button in dragging, you can start resizing anywhere.

You see a temporary resize box. Resizing starts when you cross any of its borders and ends when you release the mouse button.

**See also** [Modifying the text primitive size](#) (36)

[Moving or resizing primitives with exact coordinate values](#) (37)

## Moving or resizing primitives with exact coordinate values

You can move, resize or reshape primitives by specifying exact coordinate values in world units.

You can give an exact rotation angle in degrees for text primitives.

Do the following:

1. Click **End Command**.
2. Select the primitive that you want to modify.
3. Type in the new coordinates in the value bar that appears right below the workareas of the Symbol Editor main window. Symbol Editor updates the primitive as you change the values and move to the next field.

**See also** [Selecting a primitive in the Edit workarea](#) (34)

[Moving a primitive by dragging](#) (37)

[Resizing the primitive by dragging](#) (37)

## Snapping a primitive to the grid

You can move primitives onto the closest grid point in the **Edit workarea**.

Do the following:

1. Set the grid size.
2. Select the primitive or primitives that you want to snap to the grid.
3. Click **Edit > Snap To Grid**.

The selected objects move onto the closest grid points.

Both the starting point and the ending point are placed on the closest grid points so this may also change the size or proportions of the primitive, especially if its dimensions are smaller than the distance between grid points. Coordinates are rounded, the accuracy depends on the grid size.

**See also** [Setting grid size and pick tolerance](#) (14)  
[Selecting a primitive in the Edit workarea](#) (34)

## Rotating primitives

Rotate the primitives in a symbol when you need to reposition them.

To rotate primitives:

1. Select the primitive(s) that you want to rotate.
2. Hold down the **Control** key and drag to rotate.
3. Save the file.

Note that if you use the left mouse button, you must place the mouse pointer on top of a selected primitive when you start dragging. The point where you start dragging is the anchor point while rotating.

If you use the middle mouse button for dragging, you can start rotating anywhere. To select the anchor point, middle-click it before you start to rotate by dragging.

You can also rotate a text primitive by typing in a new angle in the value bar that appears right below the workareas in the main window.

**See also** [Selecting primitives](#) (33)

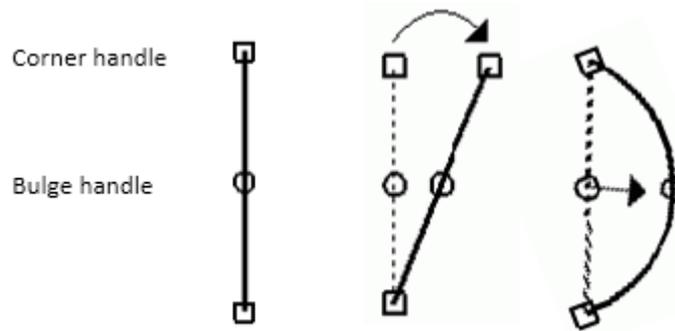
## Modifying the shape of a primitive

You can modify the shape of a primitive by dragging the resize handles, that appear when you select the primitive. Corner handles appear in starting and ending points of the primitive, and curved lines also have a bulge point.

To modify the shape of a primitive:

1. Click a primitive to select it.  
Corner handles appear as small boxes, and bulge handles as small circles within the selected primitive.
2. Move the mouse pointer on a handle.  
Drag a corner handle to move a starting, ending or vertex point.  
Drag a bulge handle to change the curvature.

The following figure illustrates the handles of a single straight line:



You can also modify primitive shapes by typing in new coordinates and bulge values in the value bar.

**See also** [Selecting a primitive in the Edit workarea](#) (34)

## 5.6 Modifying primitive attributes

Primitive attributes define the following properties of the primitive:

- line width, color and type
- fill color and type
- font face, color, measurement unit, height, width, slant and thickness

When you modify primitive attributes, be aware that fixed attribute values override transparent attributes across primitives. You can avoid this by ordering transparent primitives at the top of the **Primitive List**.



If you create a symbol file, which contains symbols with default attributes (**read**: transparent attributes) and save it as such; when you use the symbol file in another product, the settings for symbols in the product will override the attributes assigned in Symbol Editor.

Find out more:

[Opening the attributes dialog box](#) (39)

[Setting attributes for new primitives](#) (40)

[Making an attribute transparent](#) (40)

[Modifying line color, type and width](#) (41)

[Modifying fill color and type](#) (41)

[Defining a color with the color index](#) (41)

[Modifying font color, type and dimensions](#) (42)

### Opening the attributes dialog box

You can modify primitive attributes by opening the **Selection Attributes** dialog box.

Do one of the following:

- Double-click the primitive you want to modify.
- Select the primitive you want to modify, and select **Misc > Current Attributes**.

This opens the **Selection Attributes** dialog box.

Modify the attribute values to your liking. Symbol Editor updates the appearance of the primitive on the screen as you select new values.

- See also** [Making an attribute transparent](#) (40)  
[Modifying line color, type and width](#) (41)  
[Modifying fill color and type](#) (41)  
[Modifying font color, type and dimensions](#) (42)

## Setting attributes for new primitives

When you draw a new primitive, Symbol Editor inserts it with the current attributes that determine the line, fill or font properties.

To view and modify the current attributes:

1. *Double-click* on empty area within the **Edit workarea**  
This opens the **Current Attributes** dialog box.
2. Modify the attribute values.
3. Click **Close** when you are done.

All new primitives are now added with the given attributes. Be aware that transparent attributes are overridden if preceding primitives in the **Primitive List** have **fixed values** for those attributes.

If you select the **Default** value for an attribute instead of using one of Symbol Editor's preset values or a product-specific value, you make the attribute transparent, and the product determines the value for this attribute at run-time.

- See also** [Opening the attributes dialog box](#) (39)

## Making an attribute transparent

Make the attributes of a primitive transparent when you want the product to adjust the attributes at run-time.

To make an attribute transparent:

1. Double-click the primitive you want to modify. This opens the **Selection Attributes** dialog box.
2. Set the value of the attribute that needs to be adjustable to **Default**.
3. Click **Close**.

When you are working in Symbol Editor, the default value is displayed with Symbol Editor's transparent attribute setting.

**Primitives with an outline** can have transparent line color, type or width. Any of the attributes may be transparent, while some of them may be fixed.

**Filled primitives** can have transparent fill color and type. Both attributes must be transparent, if you want to use transparency with a filled primitive.

**Text primitives** can have transparent font color, type and dimensions. All attributes must be transparent, if you want to use transparency with a text primitive.

- See also** [Modifying line color, type and width](#) (41)  
[Modifying fill color and type](#) (41)  
[Modifying font color, type and dimensions](#) (42)  
[Modifying transparent primitives](#) (42)

## Defining a color with the color index

Symbol Editor has eight preset colors, indexed from 0 to 7, which you can apply to line, fill or font. Some products use a wider selection of colors, with product-specific index numbers.

To set the color index for a primitive attribute:

1. Choose the symbol you want to work with and double-click the primitive you want to modify.  
The **Selection Attributes** dialog box opens.
2. Determine what you are going to modify: line, fill or font.
3. Type the color index number in the field to the right of the **Color** list.
4. When you are done, click **Close**.
5. Save the symbol file.

Note that Symbol Editor may not be able to display product-specific colors correctly.

## Modifying line color, type and width

You can modify the color, line type and line width of lines, arcs, polylines and circles.

Do the following:

1. Double-click the primitive you want to modify.  
This opens the **Selection Attributes** dialog box.
2. Modify the fields in the **Line** area of the dialog box.
  - **Color** - Sets the line color. Select from eight (8) preset colors, or use a product-specific color index.
  - **Type** - Sets the line type. Select a solid line or a dotted line from four preset dotted lines.
  - **Width** - Sets the line width in pixels.

You can select **Default** in any field instead of using one of Symbol Editor's preset values. This makes the line transparent and thus adjustable in your product.

The symbol is updated as you make the changes.

3. When you are done, click **Close**.
4. Save the symbol file.

**See also** [Defining a color with the color index \(41\)](#)

## Modifying fill color and type

You can modify the fill color and type of fill area primitives.

Do the following:

1. Double-click the primitive you want to modify.  
This opens the **Selection Attributes** dialog box.
2. Modify the fields in the **Fill** area of the dialog box.
  - **Color** - Sets the fill color as well as the outline color. You can select from eight (8) preset colors, or use a product-specific color index.
  - **Type** - Sets the fill type. You can select a solid fill or a fill pattern from four preset patterns.

You can select **Default** in any field instead of using one of Symbol Editor's preset values. This makes all fill attributes transparent, and thus adjustable in your product.

The symbol is updated as you make the changes.

3. When you are done, click **Close**.
4. Save the symbol file.

**See also** [Defining a color with the color index](#) (41)

## Modifying font color, type and dimensions

You can modify the font color, type and dimensions of text primitives.

Do the following:

1. Double-click the text primitive you want to modify.

This opens the **Selection Attributes** dialog box.

2. Modify the fields in the **Font** area of the dialog box.

You can select **Default** in any of the first three fields instead of using one of Symbol Editor's preset values. This makes *all* text attributes **transparent**, and thus adjustable in your product.

- **Color** - Sets the font color. Select from eight (8) preset colors, or use a product-specific color index.
- **Font** - Sets the font type. Select from the font list of the current symbol file.
- **Units** - Defines the measurement unit to apply to this text primitive, world units or pixel units.
- **Width** - Sets the width of one character in world units or pixels, depending on the value of the **Units** field.
- **Height** - Sets the height of one character in world units or pixels, depending on the value of the **Units** field.
- **Slant** - Sets the slanting of font, allowing you use italic typeface. Negative values (from -1 to -11) slant the text to the right.
- **Thickness** - Sets the thickness of font in pixels, allowing you to use bold typeface.

The symbol is updated as you make the changes.

3. When you are done, click **Close**.
4. Save the symbol file.

**See also** [Setting a font list for the symbol file](#) (19)

[Defining a color with the color index](#) (41)

## 5.7 Modifying transparent primitives

When you insert new primitives into a symbol, Symbol Editor automatically uses transparent line, fill and font. This means that the product can adjust the line, fill or font properties of the symbol at run-time.

If you have modified the line, fill or font of any primitive in the symbol, or are working with an existing symbol, there may be transparency overrides so you need to make sure that transparency works the way you want in the final symbol. Here you find out more about transparency.

Symbol Editor settings for transparent attributes do not affect the final appearance of symbols. Products adjust and determine the final appearance, when symbols with transparent attributes are used.

Find out more:

[Setting appearance of transparent attributes](#) (43)

[Making a primitive transparent](#) (43)

[Removing transparency from a primitive](#) (44)

[Highlighting transparent primitives](#) (44)

[Troubleshooting transparency problems](#) (45)

## Setting appearance of transparent attributes

Symbols that have transparent attributes can be adjusted by your product at run-time. You can test how the symbol will appear at run-time, when you change the way transparent attributes, (i.e.) adjustable line, fill and font, appear in Symbol Editor.

To change the way transparent line, fill and font show in Symbol Editor:

1. Click **Misc > Transparent Attributes**.  
This opens the **Transparent Attributes** dialog box.
2. Modify the attribute values. Symbol Editor updates the appearance of primitives on the screen as you select new values.
3. Click **Close** when you are done.

The transparent attribute settings are Symbol Editor's internal settings so they do not determine the appearance of the final symbol but assist you when making primitives transparent and testing how it works. The product sets the final appearance of transparent lines, fills and fonts at run-time.

**See also** [Troubleshooting transparency problems](#) (45)

[Making an attribute transparent](#) (40)

[Modifying line color, type and width](#) (41)

[Modifying fill color and type](#) (41)

[Modifying font color, type and dimensions](#) (42)

## Making a primitive transparent

You can make a primitive transparent and adjustable when the symbol is used in your product.

Do the following:

1. Select and double-click the primitive to open the **Selection Attributes** dialog box.
2. Decide which attributes should be transparent:

- Primitives with an outline can have transparent line color, type or width. Any of the attributes may be transparent, while some of them may be fixed.
  - Filled primitives can have transparent fill color and type. Both attributes must be transparent, if you want to use transparency with a filled primitive.
  - Text primitives can have transparent font color, type and dimensions. All attributes must be transparent, if you want to use transparency with a text primitive.
3. Modify the primitive attributes to make the selected attributes transparent.
  4. Click **Close**.
  5. Click **Save** to save the symbol file.

**See also** [Making an attribute transparent](#) (40)  
[Troubleshooting transparency problems](#) (45)

## Removing transparency from a primitive

Modify the transparency of a primitive when you want to change how it appears at run-time.

To remove transparency of a primitive and fix its properties in Symbol Editor:

1. Click **Misc. > Transparent Attributes** to open the **Transparent Attributes** dialog box.
2. Select the primitive whose line, fill or font you want to fix so that the product cannot change it at run-time.
3. Modify the line, fill or font by selecting a pre-defined line, fill or font.
4. Click **Close** to close the **Transparent Attributes** dialog box.
5. Save the symbol file.

If transparency of the other primitives does not work the desired way after this operation, you will have to troubleshoot the problem.

**See also** [Modifying line color, type and width](#) (41)  
[Modifying fill color and type](#) (41)  
[Modifying font color, type and dimensions](#) (42)  
[Troubleshooting transparency problems](#) (45)

## Highlighting transparent primitives

You can use any color or style to highlight the transparent primitives of a symbol in Symbol Editor. Highlighting does not affect the final symbol in any way but makes it easy for you to check how transparency works.

Do the following:

1. Select the symbol you want to modify.
2. Click **Misc. > Transparent Attributes** to open the **Transparent Attributes** dialog box.  
 Modify the settings for transparent line, fill and font so that they differ from the current appearance of your symbol as much as possible.

For example, if you want to check which primitives have transparent fill settings in a symbol that currently appears in black, choose a bright fill color that makes the transparent fill area primitives stand out. Now you can concentrate on working with the fill areas that do not act the way you want them to.

3. Examine the results and make any other modifications as needed.
4. Click **Close** when you are done to close the dialog box.

Note that saving the file has no effect on the symbol file. When you exit and restart Symbol Editor the file will exist as it when you opened it in the prior session

**See also** [Setting appearance of transparent attributes](#) (43)  
[Troubleshooting transparency problems](#) (45)

## Troubleshooting transparency problems

If symbol transparency does not work in the way that you expected, the problem is most likely that a fixed line, fill or font attribute is overriding the transparency.

To remove the overrides and restore the effectiveness of the transparent primitives:

1. Highlight the transparent primitives of the symbol.
2. Make sure that all the primitives with transparent attributes are at the top of the **Primitive List**.

Be aware that transparency overrides can also occur across partially transparent primitives. A partially transparent primitive has both transparent and fixed attributes. For example, a line primitive can have a transparent line color while its line width is fixed. Any primitives that have transparent line width will be drawn with this fixed width, if they appear below this line primitive in the **Primitive List**. To avoid this, list primitives with solely transparent attributes topmost, and primitives that have both transparent and fixed attributes after them. Primitives that only have fixed attributes should appear last in the **Primitive List**.

**See also** [Arranging primitives in the list](#) (31)



# 6

## Bitmaps and pictures in Symbol Editor

This covers how to use graphics with other file types for symbols. You can import AutoCAD or MicroStation files and use bitmap pictures as a drawing aid in the background of the **Edit workarea**.

Find out more:

[Importing AutoCAD or MicroStation files \(47\)](#)

[Mappings and limitations of file imports \(48\)](#)

[Using a bitmap file as a background image \(48\)](#)

### 6.1 Importing AutoCAD or MicroStation files

You can use AutoCAD (DXF or DWG) files and MicroStation (DGN) files in Symbol Editor. Symbol Editor imports the files and converts the contents into primitives that you can modify.

To import a file:

1. Click **File > Import transform** to set the scaling and the initial positioning of the file to import.
2. Enter the values for scaling the imported image and shifting the x and y coordinates.
  - **Scale:** Type in the scaling rate. A value of **1** means that the image is imported in its original size. A value of **2** means that the image is imported twice as large as the original.
  - **Translate x:** Shifts the imported image in a horizontal direction. Negative values shift the image to the left, and positive values to the right. Values are in world units.
  - **Translate y:** Shifts the imported image in a vertical direction. Negative values shift the image down, and positive values up. Values are in world units.

If the value of both translation fields is 0, the origin of the imported image is placed on the origin of the **Edit workarea**.
3. Click **OK**.
4. In the **Library workarea**, select the symbol into which you want to import the image.
5. Click **File > Import**. This opens the standard file selection dialog box.

6. Select the file to import and click **OK**.

The image is converted to Symbol Editor primitives that are inserted into the selected symbol. Scaling and positioning are set according to the settings you specified in step 2.

You can group the primitives of the image and handle them as one object.

**See also** [Mappings and limitations of file imports](#) (48)  
[Making a fill area from lines](#) (35)

## 6.2 Mappings and limitations of file imports

This describes how AutoCAD and MicroStation files are converted into Symbol Editor drawing primitives.

**Object mappings** The following object types are imported from the original file to the symbol: ARC, LINE, CIRCLE, CELL, CURVE, SHAPE, SOLID, TEXT, TRACE, INSERT, POLYLINE, LWPOLYLINE, LINESSTRING and HATCH.

**Fill type mappings** The fill type of a filled object is converted as follows:

Fill style name in DWG/DXF/DGN file	Fill type in Symbol Editor
NONE	transparent
SOLID	solid fill
SINGLEHATCH	diagonal lineation
DOUBLEHATCH	diagonal lineation
all other fill types	transparent

**Text limitations** The fonts used in text objects are mapped to Symbol Editor fonts. This may slightly distort the font alignment within the text box as the original font geometry is not available in Symbol Editor.

**Other limitations** User-defined line styles and world unit line widths from AutoCAD files are not imported.

## 6.3 Using a bitmap file as a background image

You can use a background image in Symbol Editor as a drawing aid to draw a symbol that is available only in bitmap format. You cannot import bitmap files.

Find out more:

[Bitmap files Symbol Editor can display as background image](#) (48)

[Setting a bitmap file as the background image](#) (49)

[Show or hide background image](#) (49)

### Bitmap files Symbol Editor can display as background image

Click **File > Background Image** to choose a background image.

A file selection dialog box opens for selecting a bitmap file (GIF, JPEG or TIF) that you can use as a drawing aid to draw a symbol that is available only in bitmap format.

The bitmap image will appear as a background for all symbols in the current symbol file in the modification phase, but it does not show in the final symbols.

## Setting a bitmap file as the background image

When a background image is used it does not appear in final symbols. It is intended as an aid for drawing symbols from bitmap files.

To set a bitmap file as the background image:

1. Click **File > Background Image**.  
The file selection dialog box opens.
2. Select the file you want to use as a background image and click **OK**.
3. Proceed with drawing the symbol.

The bitmap is displayed in the background of **Edit workarea**, and it appears there for all the symbols of the current symbol file.

You can control the visibility of the background image by selecting **Options > Background Image**.

**See also** [Show or hide background image](#) (49)

## Show or hide background image

If you have selected a background for a symbol file, it appears in the **Edit workarea** for all the symbols of the file.

To show or hide the background image, select **Options > Background Image**.

A check mark next to this menu option indicates that the background image is visible.

Note that the background does not appear in zoom windows, regardless of this visibility setting.

**See also** [Setting a bitmap file as the background image](#) (49)

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