ENFOCUS



GRIFFIN

Griffin User Guide

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1. Intro

Griffin is a powerful automatic layout solution for wide format printers. Its primary goals are to increase efficiency and reduce errors by automating repetitive tasks and bring down material waste through the use of a sophisticated nesting algorithm.

1.1. Installing Griffin

To get started with Griffin, you will first need to download and run the installer.

Proceed as follows:

1. Check the system requirements on *enfocus.com*.
2. Double-click the installer provided to you by your local reseller.
   The Windows installer is an MSI file, the Mac installer is a DMG file.
3. Do one of the following:
   - On Windows, follow the steps in the installation wizard. During installation, you are given the option to create a desktop shortcut for Griffin.
   - On Mac, once installed, drag the Griffin app to your Applications folder.

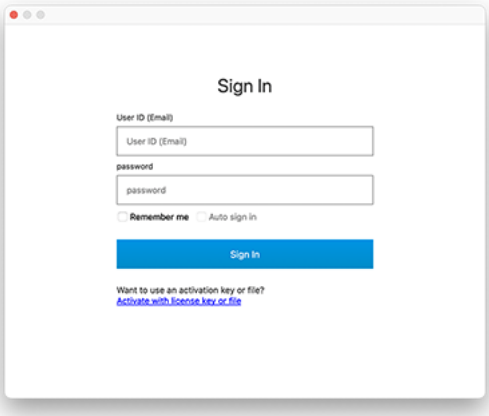
1.2. Activating Griffin

After successfully installing Griffin, you are ready to activate your license.

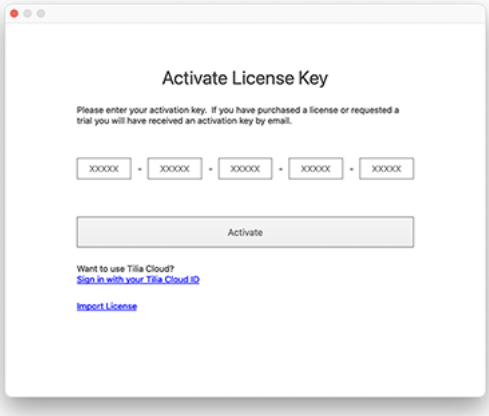
Griffin supports both traditional activation keys as well as cloud licenses. Tilia Cloud licenses allow you to float and centrally manage your licenses across your teams.

Proceed as follows:

1. Launch Griffin.
   When launching the application for the first time you are presented with a licensing dialog.



2. Do one of the following:
   - If you have purchased a key, copy and paste the license key provided to you by your local reseller and click **Activate**.
   - If you have purchased a tilia Cloud license, click **Sign in with your Tilia Cloud ID**.
   - If you have received a license file, click **Import License**.



   Your license is activated. You can now start using the software.

3. Click **Done**.
   The *Start window* is displayed.

Read more about the *main Griffin windows* or learn how to *create and configure a job*.

1.3. Closing Griffin

To close the application

Do one of the following:

- On Windows, click **File** > **Exit**.
- On Mac, click **Enfocus Griffin** > **Quit Enfocus Griffin**.

You will be prompted if any Job windows contain unsaved jobs.

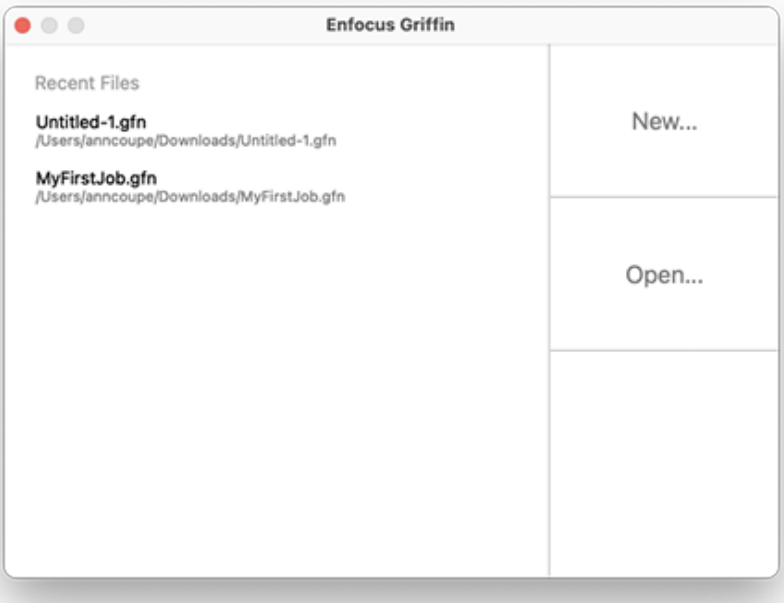
Closing all the Job windows in Griffin will pull up the Start window again. If you close the Start window:

- On Windows, the application will close down.
- On Mac, the application will remain open. Griffin is still accessible at that point from the standard Mac menu bar.

2. The Griffin user interface

2.1. Start window

When you first start Enfocus Griffin you are presented with the following start window:

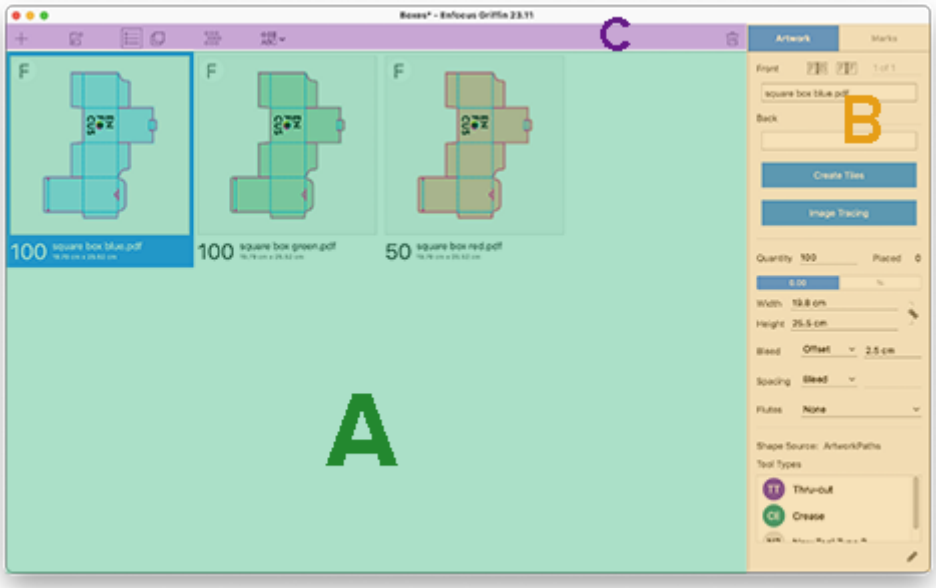


This window gives you a list of recent jobs and buttons for creating a new job or opening an existing job from the file system. The start window will close once a new or existing job is opened and reappear when all job windows are closed.

2.2. Job windows

Job windows are where all your work building layouts is done. New and existing jobs are opened in their own job window. Griffin allows multiple job windows to be open so you can work on different jobs at the same time.

The diagram below shows the sections that make up a job window:



Main view (A)
The green section labeled 'A' is the main view. The main view takes up most of the job window and displays the list of artwork or layout items in the job depending on what view you are in. You can also drill into a specific artwork or layout item to interact directly with items, change zoom, and more.

Sidebar (B)

The orange section labeled 'B' on the right-hand side of the job window is the sidebar. The sidebar is where you can view and edit properties for the currently selected item(s) in the main view.

Toolbar (C)

The purple section labeled 'C' above the main view is the toolbar. The toolbar lets you switch between Artwork list and Layout list. It also lets you edit the job properties, launch the Nesting tool, add marks, and add or remove artwork and layout items. More actions are available when you drill into a specific artwork or layout item such as tool path edit tools and zoom controls.

Button		Description
	Add Artwork	Edit job properties.
	Job Properties	Edit job properties.
	Artwork/Layout List	Toggle between Artwork list and Layout list.
	Nesting	Launch the Nesting tool to generate layouts.

Button		Description
	Marks	Add new marks to the selected artwork(s) or layout(s).
	Remove Artwork/Layout	Remove all selected artwork or layout items from the job.

2.3. View modes

One of the most important concepts in Griffin is the current view mode.

In the job window, you are always working with *either artwork or layout items*, and for each there are two modes: *List mode and View mode*.

When the job window first appears, it will be in Artwork list, where you manage the artwork items in your job. Layout list, on the other hand, lets you manage the layout items in your job.

Artwork view and Layout view are detailed views of a specific artwork or layout item respectively.

To switch between Artwork list and Layout list, click the respective icons in the toolbar:

Artwork list selected



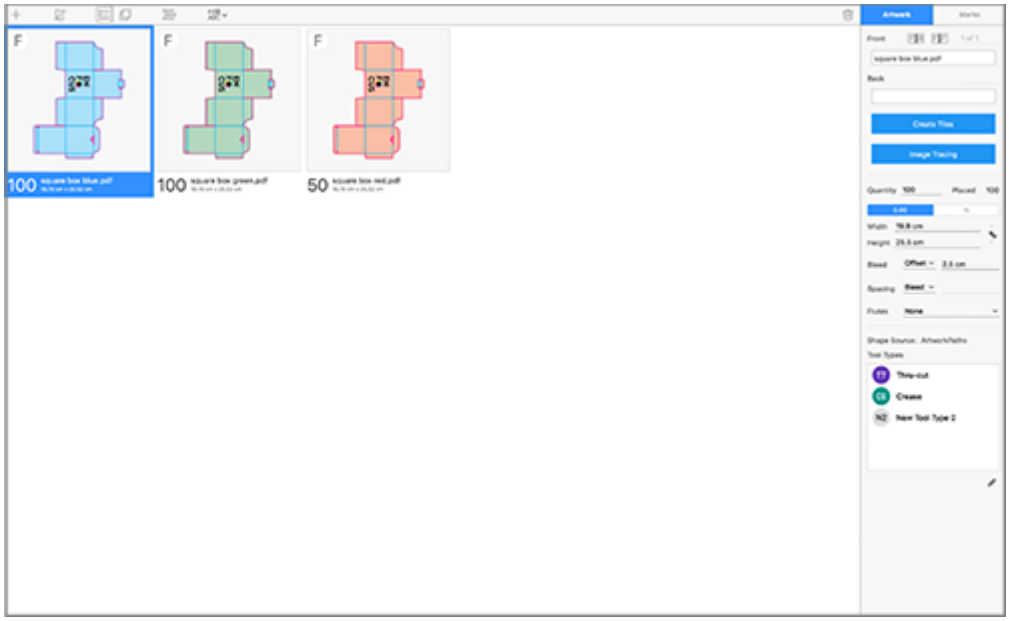
Layout list selected



2.3.1. Artwork list and Artwork view modes

Artwork list mode

Artwork list is where you can see a **list of your current artwork** as well as add, remove, edit, and drill into individual artwork items.

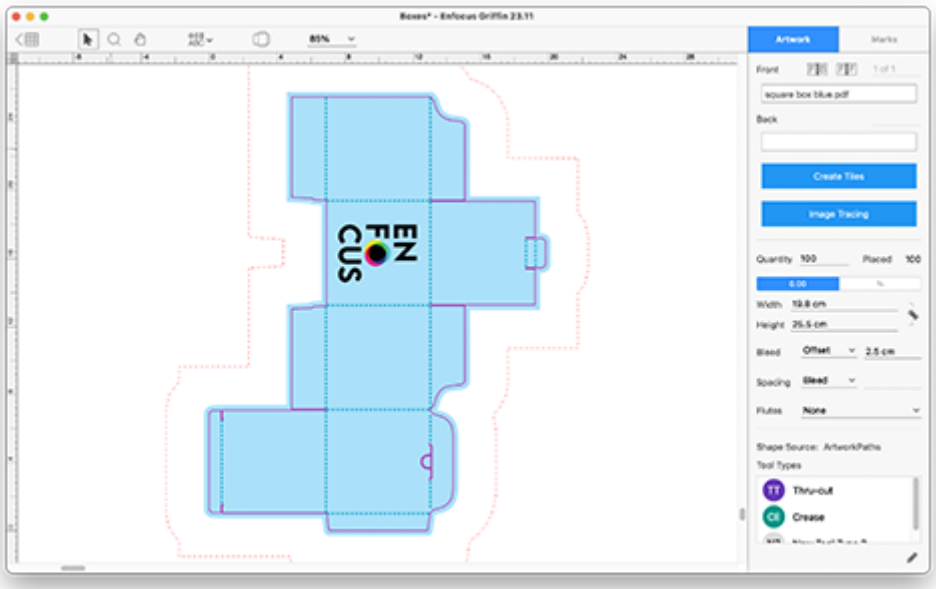


When you first open a new job window you will be in Artwork list mode which displays a list of artwork items in the current job. For an overview of the tools, refer to the description of the toolbar in *Job windows* on page 7.

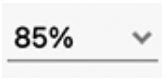
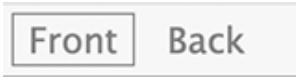
Artwork view mode

If you want to view or edit an artwork item in more detail, double-click the artwork item in the list to enter the Artwork view for the given artwork item.

The main view will now contain an interactive view of the artwork item.



The toolbar will change to the following set of actions:

	Button	Description
	Return to List	Go back to the list of all artwork items in the job.
	Select Tool	Select artwork marks in the main view.
	Zoom Tool	Click + drag to zoom into a specific area of the artwork in the main view.
	Hand Tool	Click + drag to move around the main view and scroll in/out to zoom.
	Marks	Select a mark type from the dropdown menu to add a mark to the artwork.
	Edit Tool Paths	Edit the tool paths of the artwork directly. See *Tool path editing* on page 47.
	Zoom %	Select from the drop down to change zoom amount in the main view.
	View Front/Back	Toggle between viewing the front and back of the artwork.

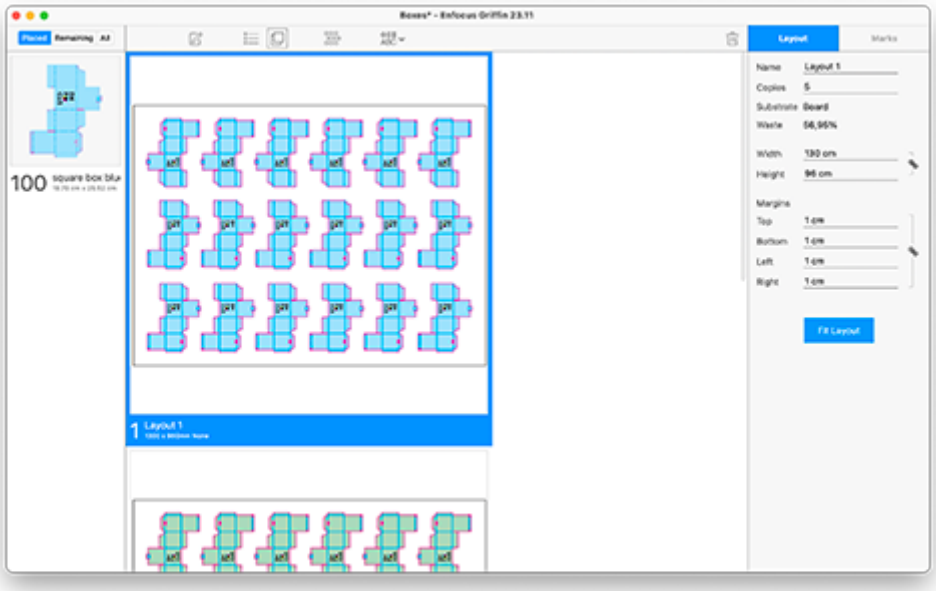
2.3.2. Layout list and Layout view modes

Layout list mode

Layout list and Layout view operate in the same way as their artwork counterparts. When you click on the Layout list button  in the toolbar you are presented with a list of all current layout items in the job.



Note: Before running the Nesting tool this list will be empty. Once you have generated layouts, you will see them in this view.



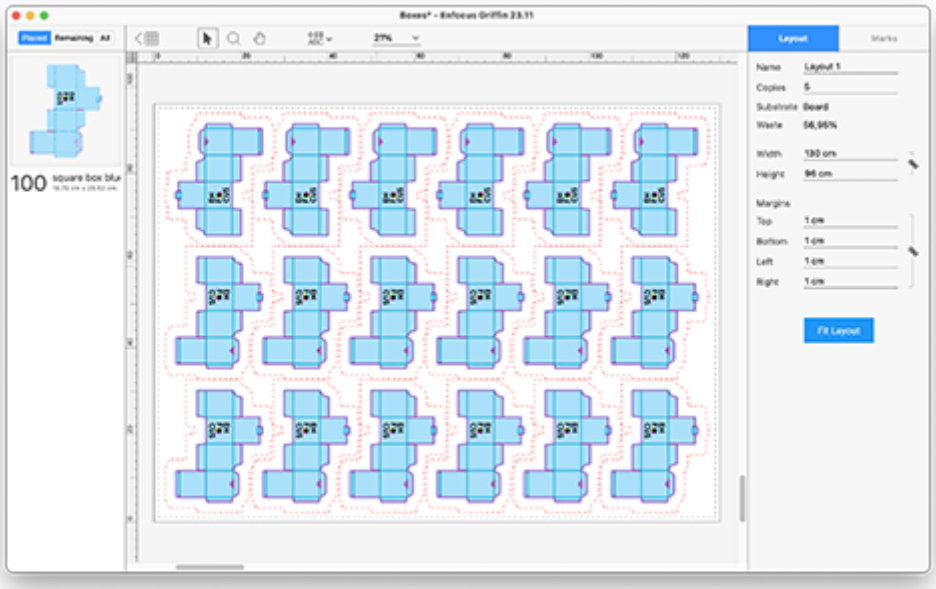
Layout view mode

Once you have generated layouts, you can select them to edit properties in the sidebar or double-click on one to enter Layout view for that specific layout item.

In Layout view, the toolbar will change as it does in Artwork view. You are given the same set of actions minus the Edit Tool Path action. See *Artwork list and Artwork view modes* on page 9.

Using the select tool, you can move artwork and marks directly in Layout view around by clicking and dragging.

Note: The **shift key works as a modifier** while moving artwork in the Layout view to lock movement only in a horizontal or vertical direction.



2.4. Nesting tool

The other major component of Griffin is the Nesting tool. This tool automatically creates efficient, nested layouts from the artwork in your job for either roll- or sheet-fed environments.

To launch the Nesting tool, click the Nesting icon in the toolbar while you are in artwork list or layout list mode.

Once the Nesting tool is opened, you can select the substrate you want to nest artwork onto, change nesting settings if needed, and add mark presets that will be applied to the generated layouts. Next simply click **Start** and let Griffin go to work.

For more information, refer to *Creating layouts* on page 18.



Note: While you can have multiple job windows open at a given time, Griffin only allows you to run one Nesting tool session at a time.

2.5. Menus

Menus are the other way of interacting with Griffin. On Windows, the menu bar appears at the top of each window of the application, while on Mac the standard Mac menu bar at the top of the desktop is utilized.



The following menus are available:

Menu	Description
Enfocus Griffin (on Mac)	Check the About panel, set the preferences or close the application.
File	Create, open, and close jobs. Import artwork. Export printing and cutting files.
Edit	Undo/redo, cut/copy/paste, remove, select/deselect, and - only on Windows - launch Preferences.
View	Fit in view, zoom, show rulers, show bleed paths.
Window	Manage Substrates, Tool Types, Mark Presets, and Tiling Presets. Minimize. Switch windows.
Help	Check the info about your license, deactivate your license as required, or consult the user guide and - only on Windows - the About panel.

3. Setting up a Griffin job

3.1. Creating a Griffin job

To create a new Griffin job, proceed as follows:

1. Launch Griffin.
   The *Start window* appears.
2. Do one of the following:
   - In the upper right part of the start window, click **New**.
   - Click **File** > **New**.

   A new *job window* appears. The *Artwork list* in this window is empty.

Proceed with the configuration of your job: set the job properties, add artwork, and create the layouts as described further.

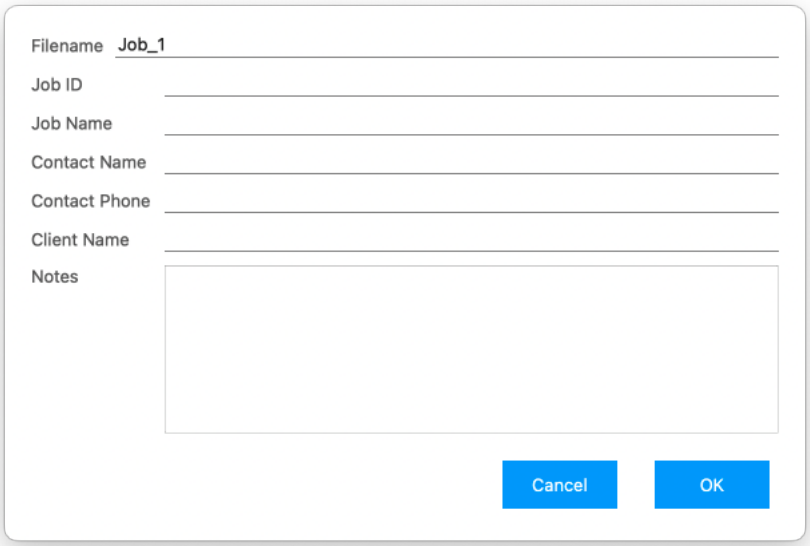
3.2. Setting the job properties

Info about the current job (such as the job name and the client contact details) can be recorded in the Job properties window. Note that this information can be used in dynamic text and barcode marks.

Note: Setting the job properties is optional. If no filename is defined, the job will be named Untitled-<number>.

To set the job properties

1. In the toolbar of the job window, click the **Job properties** button .
   The job properties window appears.



2. Enter the job info.
3. Click **OK**.
   The window is closed and you're back in the job window. The entered filename is displayed in the header of the job window.

3.3. Adding artwork

Enfocus Griffin supports PDF and PDF-based Illustrator (AI) formats, as well as TIFF, BMP, PNG, JPG, and GIF image artwork formats.

To add artwork to your job

1. Do one of the following:
   - In the toolbar of the job window, click the **Add Artwork** button and select your artwork.
   - From the menu, select **File** > **Import Artwork** and select your artwork.
   - Drag your artwork directly into your job window from Finder (macOs) or Explorer (Windows).

   Note: Griffin supports **up to 100 artwork files** in a job.

   The added artwork is shown in the main view, in Artwork list mode.
2. Check and configure the artwork properties as required, for example the quantity, the dimensions, the needed bleed, spacing, flutes, etc.
   a. Select the artwork of which you want to edit the properties.
   b. Switch to the artwork tab on the right of the window (as required).
   c. Edit the artwork properties.

Note that the property values are applied immediately, when changes are made. For example, when you change the quantity, it's also updated in the right part of the job window.

Note: If you select multiple artwork items in the Artwork list, changing the property values in the sidebar will update all selected items simultaneously!

3.3.1. Artwork properties

Property	Description
Front	The artwork file and page number to use for the front side content of this artwork item.
Back	The artwork file and page number to use for the front side content of this artwork item.
F | B button	Mirror Front to Back: When clicked, a mirrored copy of the front side artwork content will be used on the back side of the artwork item.
F | F button	Front to Back: When clicked, the front side artwork content will be used on the back side of the artwork item as well.
Create Tiles button	Create tiles from the selected artwork. When clicked, the tiling view will appear allowing you to change tiling settings with a live preview of the tiles. See *Tiling* on page 48 and *Managing tiling presets* on page 40.
Image Tracing button	Generate tool paths around image contours automatically. When clicked, the image tracing view will appear allowing you to fine-tune settings and preview the generated shape path. See *Image tracing* on page 52.
Quantity	Number of artwork items needed in this job, used by the Nesting tool to ensure your orders are all placed onto layouts.
Placed	(Read only) The current total number of placed copies of this artwork item across all layouts in this job.
Width / Height	The dimensions of the artwork item. Both width and height can be edited which will cause the artwork item to be scaled automatically. When the percentage sign is selected (%) the dimensions are determined based on the percentage of original artwork content on the front side of the artwork item.
Bleed	The type of bleed mask to apply to the artwork item: • **Offset**: In this case, you can change the bleed mask distance from the shape of the artwork item in the field to the right of the bleed type. • **None**
Spacing	The type of spacing the Nesting tool will use to determine how close to place artwork items together when generating layouts: • **Tool**: Tool spacing will use the Cutting Width of the tool type of the cut paths in the artwork item to determine the necessary spacing.

Property	Description
	• **Bleed**: Bleed spacing uses the bleed masks in the artwork item for spacing, ensuring bleed masks do not overlap. • **Offset**: When Offset is used, you can change the spacing distance from the shape of the artwork item in the field to the right of the spacing type.
Flutes	The required flute (= grain) direction for this artwork item: • Horizontal • Vertical • None
Shape Source	(Read only) A description of where the shape of the artwork item came from.
Tool Types	A list of all the tool types in selected artwork item(s). Click the edit icon below the list to change tool type mappings for all selected artwork items. See *Managing tool types* on page 28.

3.4. Creating layouts

Layouts are created using the *Nesting tool*.

Proceed as follows:

1. In the toolbar of the job window, click the **Nesting tool** button .
   The Nesting tool is opened.
2. Select the substrate and the board/roll you wish to use.
3. Edit the layout properties as required.
   These settings are used by the Nesting tool to create the layout. For a detailed overview, refer to *layout properties*.
4. Select the **Close when done** checkbox.
   If not selected, you have to close the window yourself after the layouts are generated, by clicking the X button in the top right corner of the job window.
5. Click **Start**.
   The generated layouts are shown in the Layout list.

Once you have created a layout, you may want to make manual adjustments:

- *Make layout adjustments*

- *Add barcodes and/or camera marks to your layouts*

3.4.1. Layout properties (Nesting tool properties)

Note: You can manually change the below options for a particular job. Alternatively, you can configure default values for these options in the substrate. See *Managing substrates* on page 27 on how to define substrates.

Property	Description
Substrate	The substrate to use.
Board / Roll	The board or roll size from the substrate to use.
Margins	The amount of empty space needed from the edges of the board or roll. The Nesting tool will not place any artwork item cut paths within these margins. **Note:** Artwork bleed can go outside the margins - the margins only account for area where cut paths will not be placed.
Strategy	The type of layout to generate based on your cutting requirements. • **Free Nesting**: Enables the Nesting tool to nest artwork items in any way to produce the tightest packed layouts. • **Grid Nesting**: Ensures artwork items are placed in nested, repeating grid patterns. • **Guillotine**: Produces layouts that can be cut out by a guillotine cutting device.
First Cut	For Guillotine layouts, set whether the first cut needs to be horizontal, vertical, or either.
Rotation	Allowed rotation of artwork items being placed: Orthogonal, Any, or None.
Placement	The placement of artwork items relative to the board or roll.
Roll Cut-off	Minimum and maximum lengths allowed for rolls.
Double Sided	Whether double sided handling is turn or tumble based. When the Nesting tool places double-sided artwork items on a layout it will automatically mirror the layout on the back side based on this setting to ensure alignment between front and back.
Allow multiple layout copies	Whether to allow multiple layout copies. When artwork item quantities are two or more times higher than the amounts placed on a layout, the Nesting tool will increase the number of copies of the given layout instead of generating new layouts to fulfill those artwork items.
Separate single and double sided	When enabled, single- and double-sided artwork items in the job are always placed into separate layouts.

Property	Description
Mark Presets	A list of pre-defined marks to automatically add to generated layouts. See *Managing mark presets* on page 30.

3.4.2. Making layout adjustments

The Nesting tool is designed to produce efficient, print-ready layouts, but you can also go into individual layouts at any point and adjust artwork and mark item positions manually.

1. In the Layout list, double-click on the first layout to enter the Layout view.
   In Layout view, you can move the artwork items as required and add, edit, or remove marks from the layout as required.
2. To move an artwork item, select it and move it with the mouse or the arrow keys.

   Note: You can also select and move several artwork items in one go!
3. To change layout properties, change the properties on the Layout tab and click **Fit layout**.
   See also *Layout properties (Nesting tool properties)* on page 19.
4. To add, edit or remove marks, click the Marks tab and do one of the following:
   - To add a pre-defined mark preset, click the plus sign and select one of the available mark presets.

     Note: If the list of mark presets, is empty, you still need to add mark presets to the mark presets library.
   - To add a new mark, click the Marks icon in the toolbar (in either list or view mode) and choose the appropriate mark type. Change the properties of the chosen mark type as required.
   - To edit a mark, select the mark concerned and change the properties as required.
   - To remove a mark, select the mark concerned and click the recycle bin icon.

   For a detailed overview of all mark properties, refer to *Managing mark presets* on page 30.
   The changes are immediately applied in the Layout view.

3.4.3. Adding marks and barcodes to your layouts

Marks can be added to artwork or layout, in both list or view mode.

Proceed as follows

1. Select the artwork or layout concerned.
2. Do one of the following:

- In the toolbar, click the Marks icon  and select the type of your choice. The chosen mark is added, you can see it in the sidebar, in the list at the top of the Marks tab.
- In the sidebar, switch to the Marks tab and click the + button. You can now select a mark preset. Note that you can only add mark presets, so not all marks are available in this list! See *Managing mark presets* on page 30.

3. Click the mark you have added by clicking the Marks icon in the toolbar.
   The mark's properties are displayed.
4. Edit the properties as required.
   For an overview of all properties, refer to *Managing mark presets* on page 30.

3.5. Exporting the layout

Once the layout is complete and all marks have been added, the job layouts can be exported.

3.5.1. Exporting files for printing

Once the layout is complete and all marks have been added, the job layouts can be exported for printing.

To export an imposed printing PDF

1. From the menu, select **File** > **Export for Printing**.
   This opens the Export dialog.
2. Choose a preset or select the type of export you need.
   For an overview of the properties, refer to *Export for printing properties* on page 21
3. To save the new settings to a new template that you can use later on:
   a. Click **Save Preset**.
   b. Choose a name for you new preset.
   c. Click **OK**.
      The new preset will appear in the list of Presets.
4. To export the PDF, click **OK**.
5. Enter a name and select a folder to save the PDF.
6. Click **Save**.

3.5.1.1. Export for printing properties

Properties	Description
Preset	Options are:

Properties	Description
	• An available preset (the Default Printing Preset or an earlier defined preset). The other properties in this dialog are filled in automatically based on the chosen preset. • **Custom**. In that case, you have to configure the other properties explained below and click **OK** to print the PDF.  **Note:** If you want to re-use the chosen settings, you can save them as a new custom preset. Click **Save Preset** and choose a name for your new preset. It will appear in the list of presets.
Export as	Options are: • **Single File**: All sides of every layout are contained in a single multi-page PDF. • **One File per Layout**: One PDF file is created for each layout. If the layout is double sided, the PDF for that layout will be two pages with the first and second pages containing the front and back sides of the layout respectively. • **One File per Side**: One PDF file is created for each layout side.
Create page for each layout copy	When enabled, this option creates a separate PDF file or page for each copy of the layout that is needed to fulfill quantities. **Example:** If a layout contains 10 instances of an artwork item that has a quantity of 100, the number of copies of that layout is 10. If Create page for each layout copy is NOT enabled, the layout sides are exported once. However, if enabled, each side of the layout will be exported 10 times, one time for each of the 10 layout copies.
Remove dielines	When enabled, original dieline paths are removed from the artwork content during export.  **Note:** Currently Griffin can only remove dielines defined using spot colors in the PDF or AI file, not PDF layer-based dielines.
Use PDF 1.6 'UserUnit' when layout bigger than 200 inches	Use this option if you are working with layouts with dimensions over 200 inches (roughly 5 meters) and your RIP supports the PDF 1.6 'UserUnit' field to address size limitations in the PDF specification.

3.5.2. Exporting files for cutting

To export the imposed PDF for cutting

1. From the menu, select **File** > **Export for Cutting**.
   This opens the Export dialog.
2. Choose a preset or select the format you need.
   Griffin supports 3 formats:
   • PDF

- DXF
- Zund Cut Center (ZCC)

The other properties depend on the chosen format.

3. To generate the right cutting data for your devices, configure the common and format-specific settings.

   For an overview of the properties, refer to *Export for cutting properties* on page 23.

4. To save the new settings to a new template that you can use later on:
   a. Click **Save Preset**.
   b. Choose a name for you new preset.
   c. Click **OK**.
      The new preset will appear in the list of presets.

5. To export the cutting file(s), click **OK**.

6. Enter a name and select a folder to save the cutting file(s).

7. Click **Save**.

3.5.2.1. Export for cutting properties

Properties	Description
PDF **PDF cutting files are compatible with several industry standard cutting tables.**	
Export as	There are two options: • **Single File**: All layouts are contained in a single multi-page PDF. • **One File per Layout**: One PDF file is created for each layout.
Use PDF 1.6 'UserUnit' when layout bigger than 200 inches	Use this option if you are working with layouts with dimensions over 200 inches (roughly 5 meters) and your cutting device supports the PDF 1.6 'UserUnit' field to address size limitations in the PDF specification.
Include Marks	Indicate which marks if any to include in cutting output. Options are: • **Barcode** • **Camera** • **Fill** • **Text** • **Border**

Properties	Description
	• **Cornet** • **Grommet**
Tool Type Mappings	Table of mappings from tool types to colors and PDF layers expected by your cutting device. Click the icons below the table to add, edit, or delete mappings.
DXF **DXF (Drawing Exchange Format) is an open standard CAD format used by several hardware manufacturers.**	
Version	DXF version to use. Options are: • **R13** • **2007**
Units	Indicate which units to use in DXF path and dimensions data.
Encoding (*R13 only*)	For the older R13 DXF version you need to specify the character encoding to use during export. DXF version 2007 and above always uses UTF-8 encoding which supports all Unicode characters.
Include Marks	Indicates which marks if any to include in cutting output. Options are: • **Barcode** • **Camera** • **Fill** • **Border** • **Cornet** • **Grommet** Text marks are not supported in DXF.
Tool Type Mappings	Table of mappings from tool types to DXF layer names and DXF colors expected by your cutting device. Click the icons below the table to add, edit, or delete mappings.
Zund Cut Center (ZCC) **ZCC cutting export format for tight integration with Zund Cut Center for customers using Zund cutting tables.**	
Griffin records various useful information into the ZCC cutting file that is not included in generic cutting PDFs: • Name of the substrate • Number of required copies of the layout	

Properties	Description
• Flutes direction • The job name which can be defined using dynamic keywords This metadata can be leveraged in Zund Cut Center to choose the correct blades and speeds for the given cutting table and to report useful information to the operator.	
Job Name	The Job Name field in Zund Cut Center. You can use dynamic keywords to record properties from the current job or layout along with date and time. Refer to *Keywords overview* on page 54
Cutting Mode	The cutting mode to use in Zund Cut Center: • **Standard** • **Quality** • **Speed**
Tool Type Mappings	Table of mappings from tool types to Zund methods. Mappings are read-only to ensure correct tool mappings are used.

3.5.3. Exporting files for multiple use (printing + cutting)

You can export both printing and cutting files in a single shot by using the Export Multiple feature.

1. From the menu, select **File** > **Export Multiple**.
   The Export Multiple dialog opens. This dialog is divided into Printing and Cutting sections, which can be set up independently.
2. Select or clear the **Printing** and **Cutting** section checkbox as required.
3. Configure the settings in each section as required.
   For an overview of the properties, refer to *Export Multiple properties* on page 25
4. To save the new settings to a new template that you can use later on:
   a. Click **Save Preset**.
   b. Choose a name for you new preset.
   c. Click **OK**.
   The new preset will appear in the list of presets.
5. To export the file(s), click **OK**.

3.5.3.1. Export Multiple properties

Properties	Description
Preset	The pre-defined printing or cutting preset you want to use during export.

Properties	Description
Folder	Output folder to save exported files to. This can be a hot folder for your RIP or cutting table software for example.
Filename	The filename of the exported files. You can use dynamic keywords to automatically generate filenames containing job properties, layout name or ID, current date/time and more. See *Keywords overview* on page 54

4. Managing presets

You can boost your productivity by custom tailoring the Enfocus Griffin application to match your production environment. This is done by setting up your substrates, tool types, mark presets, and tiling presets.

4.1. Managing substrates

Substrates represent the different kinds of media that you work with, the board or roll sizes that are available, and printing margins. In addition, you can define default nesting settings and mark presets for printing and cutting marks that you always use with the given substrate.

To manage substrates

1. From the menu, select **Window** > **Substrates**.
   This opens the Substrates dialog, which contains a list of all pre-defined substrates and their settings.
2. To add a substrate, proceed as follows:
   a. Click the plus sign below the list of substrates.
      A menu with two available substrate types appears.
   b. Select the appropriate substrate type:
      - Board-based Substrate
      - Roll-based Substrate
   c. Configure the properties.
      For an overview, see *Substrate properties* on page 27.
3. To edit a substrate that is available in the library, select it and change the properties as required.
   For an overview, see *Substrate properties* on page 27.
4. To remove a substrate from the library, select it and click the trash can icon below the list of substrates.

4.1.1. Substrate properties

Properties	Description
Name	The name you want to give the substrate.
Vendor	Optional vendor name of the substrate.
Color	Click the square color icon to change the display color used for the icon for this substrate. Color does not affect export in any way or appearance of the substrate in Layout view.

Properties	Description
Thickness	Substrate thickness. Thickness is included in Zund Cut Center (ZCC) cutting output to automatically match the substrate with the corresponding material in Zund Cut Center.
Board Sizes / Roll Widths	A list of available board sizes or roll widths. To add a new board or roll, click the plus icon below the Board Sizes or Roll Widths list. Use the settings to the right of the list to configure the new or existing board/roll.
Width	Width of the board or roll.
Height	Height of the board.
Flutes	Flutes (i.e. grain) direction for the board if any. Flutes are defined by which dimension is longer or shorter.
Margins	The amount of spacing from the edges of the board or roll required. The Nesting tool will not place any artwork item cut paths within this margin.
Settings	Nesting related default settings for this substrate. See *Layout properties (Nesting tool properties)* on page 19.
Mark Presets	A list of pre-defined marks that will be automatically added to layouts in the Nesting tool. For example, you might always want to use a specific set of camera marks or a barcode for the given substrate. See *Managing mark presets* on page 30.

4.2. Managing tool types

Tool types represent the various tools used by your cutting devices to cut, score, crease, etc. Each tool type defines tool properties as well as a list of mappings from artwork spot colors or PDF layer names to automatically map paths in your artwork to the correct tool type.

To manage tool types

1. From the menu, select **Window** > **Tool Types**.
   This opens the Tool Types dialog, which contains a list of all current tool types and their settings.
2. To add a tool type, proceed as follows:
   a. Click the plus sign below the list of tool types.
   b. Configure the properties of the new tool type in the right part of the screen.
      For an overview, see *Tool type properties* on page 29.
3. To edit a tool type that is available in the library, select it and change the properties as required.
   For an overview, see *Tool type properties* on page 29.
4. To remove a tool type from the library, select it and click the trash can icon below the list of tool types.

Note: You can order the tool types in the list via drag and drop. The mappings are searched in order of the tool type from top to bottom of the list.

4.2.1. Tool type properties

Tool types

Properties	Description
Name	The name you want to give for the tool.
Subtitle	Optional additional information you want to add for this tool.
Color	Click the square color icon to change the color used to draw tool paths of this type in Artwork view and Layout view as well as the icon for this tool type. Color does not affect export in any way.
Category	The tool category this type belongs to: • General • Cut • Crease • Annotation Cut tool types are used to determine the shape of the artwork item and additional properties that can affect nesting.
Cutting Width (*Cut category only*)	The width of the cutting tool. This property can be used to define the spacing distance between items the Nesting tool uses if the artwork item's spacing type is set to 'Tool'.
Use as default cutting tool (*Cut category only*)	Set this cutting tool as the default tool for cutting. When no paths in the artwork match any cut tool types, the rectangular dimensions of the artwork are used as the shape (Trimbox for PDF and AI formats) with the default cutting tool used as the tool type for the shape.
Mappings	A mapping automatically maps paths in the artwork content to the correct tool type when new artwork is added to your jobs. To add a new mapping, click on the plus icon below the Mappings list. You will be presented with a mapping dialog. The settings in this dialog are explained in the table below.

Mappings - properties

If you add a new mapping (to automatically map paths in the artwork content to the correct tool type when new artwork is added), you must configure the following properties:

Properties	Description
Source	The source of the mapping for PDF-based artwork formats. Options are: • Spot • Layer
Text	The type of mapping rule you want to use: • Equals + text to match: This will match the given text exactly with spot or layer names in the artwork content. • Starts with + text to match: This will match the given text with the beginning of the spot/layer name. • Contains + text to match: This will match the text with any portion of the spot/layer name. **Note:** All text matching is case insensitive.
Offset (*Cut category only*)	An optional offset to apply to the shape. Negative offset values will cause the shape to be reduced while positive values will increase the shape path. For example, this setting is useful to prevent a wider cutting tool from cutting into artwork content.
Join Style (*Cut category only*)	The style used to join path segments in the shape when an offset is applied. Options are: • Miter • Bevel • Round
Miter Limit (*Cut category only*)	In cases where an offset is defined and the join style is 'Miter' the miter limit defines the distance beyond the end of the joined path segments where mitering is clipped to avoid long spikes on sharp corners.

Note: Once you have defined some mappings you can move them around in the list by dragging and dropping them with the mouse. The order of mappings can be important because once a stop color or layer name matches a tool type mapping, the other mappings below the matching one are not checked against that name. To ensure correct matching it is best to move mappings with more unique names higher in the mapping tables, with general catch-all names like 'cut' further down in the list.

4.3. Managing mark presets

Mark presets can help streamline your workflow by defining commonly needed marks once and reusing them. When paired with substrates, marks are added automatically when layouts are created with the Nesting tool, further reducing time and possible errors.

To manage mark presets

1. From the menu, select **Window** > **Mark Presets**.

This opens the Mark Presets dialog, which contains a list of all current mark presets and their settings. Mark presets are separated into two categories: Artwork and Layout. The currently active category is mentioned below 'Mark Presets'.

2. To change between artwork and layout mark preset lists, click the dropdown to select **Artwork** or **Layout** as required.

3. To add a mark preset, proceed as follows:
   a. Click the plus sign below the list of mark presets.
   You will be presented with a menu with all supported mark types depending on whether you are adding artwork or layout mark presets.
   b. Select the appropriate mark preset type.
   c. Configure the properties of the new mark preset in the right part of the screen.
   For an overview, see:
   - *Common mark properties* on page 31
   - *Barcode properties* on page 32
   - *Border mark properties (only in Layout view)* on page 33
   - *Camera mark properties* on page 34
   - *Corner mark properties* on page 36
   - *Fill mark properties* on page 37
   - *Grommet mark properties* on page 38
   - *Text mark properties* on page 39

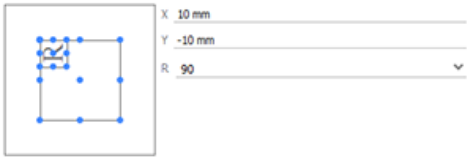
4. To edit a mark preset that is available in the library, select it and change the properties as required.
   For an overview, see higher (3rd substep of step 3).

5. To remove a mark preset from the library, select it and click the trash can icon below the list of mark presets.

4.3.1. Common mark properties

The following are a list of properties shared among two or more different mark types.

Properties	Description
Name	The mark preset name.
Subtitle	Optional additional information you want to add for this mark preset.
Color	Click the square color icon to change the display color used for the icon for this mark preset. Color does not affect export in any way or appearance of the mark in Artwork view or Layout view.

Properties	Description
Smart Placement (*Barcode, Text*)	The placement rule to use when positioning the barcode or text mark into the artwork or layout. Use the 9-point selector to change which point on the mark (small square) is aligned to which point of the artwork or layout (large square). Use the 'X' and 'Y' values to define offsets from these anchor points with positive values moving the mark left and up respectively. You can also change the rotation of the mark by selecting the 'R' dropdown. 
Layer	Optional PDF layer name. When specified the marks will be placed in a PDF layer of the same name during printing and cutting export.
Stroke (Border, Camera, Corner, Grommet)	The stroke color and thickness of the camera or grommet mark. To change color, click on the square color icon.
Fill (Border, Camera, Barcode, Text, Fill)	The fill color of the mark content for camera and fill mark types and barcode and text color for barcode and text marks. To change color, click the square color icon.

4.3.2. Barcode properties

Barcodes are available in four standard formats: Code 39, Code 128, POSTNET and QR Code. Barcodes can be applied to both artwork and layouts. All four formats have support for dynamic keywords for encoding job, layout, date, and artwork properties into barcodes automatically.

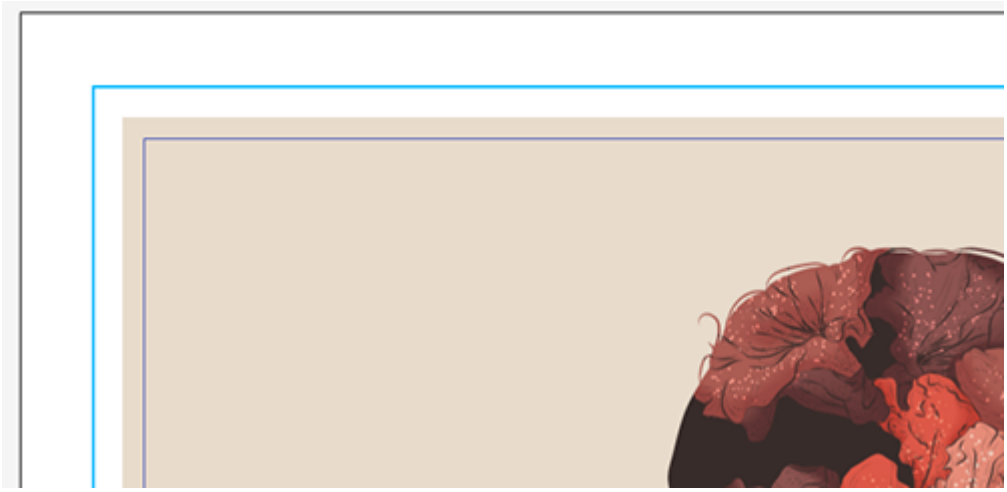


Below is a list of properties to control the size and content of barcodes, in addition to the common properties described in *Common mark properties* on page 31.

Properties	Description
Format	Options are: • Code 39 • Code 128 • POSTNET • QR Code
Data	Click in the text area to enter the content you want the barcode to contain. To add a dynamic keyword, click the **Keyword** button and select the desired keyword from the menu that appears. For an overview of the keywords, refer to *Keywords overview* on page 54.
Show Human-Readable *(Code 39, Code 128)*	If enabled, plain text of the data content will be included below the barcode.
Scale	Scale factor to apply to the barcode to increase or decrease its size.

4.3.3. Border mark properties (only in Layout view)

Border marks are rectangular paths drawn at a given margin from the edge of the layout. Border marks are used for certain cutting devices such as Mimaki cutters.



Border mark paths can be both stroked and filled. Stroke color and thickness and fill color are defined via the common Stroke and Fill properties (see *Common mark properties* on page 31).

Additionally, the following margin settings control the dimensions and placement of the border mark.

Properties	Description
Top	Distance from the top edge of the sheet in the downward direction to draw the top edge of the border mark.
Bottom	Distance from the bottom edge of the sheet in the upward direction to draw the bottom edge of the border mark.
Left	Distance from the left edge of the sheet in the right direction to draw the left edge of the border mark.
Right	Distance from the right edge of the sheet in the left direction to draw the right edge of the border mark.

4.3.4. Camera mark properties

Camera marks are needed by camera-based cutting table registration systems. Griffin camera marks are flexible and should support all major cutting table vendors.



Camera marks support both circular and cross shapes. Circular shapes can be both stroked and filled. There is also an intelligent auto distribute feature with various options to automatically place camera marks near artwork items throughout the layout.

Below is a list of camera mark properties in addition to the common properties described in *Common mark properties* on page 31.

Properties	Description
Shape Type	Three options: • Circle • Square • Cross
Size	The size of each camera mark instance.
Offset	The offset to place camera marks from the shape of artwork items.
Auto Distribute	Whether to automatically place camera marks throughout the layout. When disabled, only corner camera marks are placed.
Mode	Distribute mode to use when auto distributing: • Spacing: Marks will be distributed throughout the layout at certain spacing interval. • Quantity: A specific number of marks will be played in the layout.
Min Spacing *(when Mode = Spacing)*	The minimum distance allowed between camera marks when using Spacing auto distribute mode. Increasing this number will reduce the number of camera marks placed in the layout.
Quantity *(when Mode = Quantity)*	The specific number of marks to add when using Quantity auto distribute mode. This is useful in cases where you know how many extra marks you want Griffin to automatically add regardless of the layout size. **Note:** It is not guaranteed that the quantity target can be met if the amount of empty space in the layout is limited.
Add Corners	Whether to place camera marks in the four corners of the layout.
Double Corner	Whether to include a second corner mark in the lower-right corner of the layout. If enabled, the second corner mark placed to the left of the right corner camera mark by the specified distance.
Margins	Two options: • **Layout Margins** ensures camera marks are not placed outside the allowed content region of the layout.

Properties	Description
	• **Custom Margins** allows to define custom distances from each sheet edge where camera marks can be placed.
Mirror to Back	When enabled, camera marks are automatically mirrored to the back side of the layout. This is useful for cases when the layout will be getting cut face down on the cutting table.

4.3.5. Corner mark properties

Corner marks are placed at the four corners of the given artwork or layout. Corner marks are used by certain cutting devices such as Mimaki cutters.



Corner marks come in two flavors: Type 1 and Type 2. Both types are simple "L" shaped stroked marks, with Type 1 corner marks facing towards the artwork or layout and Type 2 facing outwards.

Type 1	
Type 2	

Below is a list of corner properties in addition to the common properties described in *Common mark properties* on page 31.

Properties	Description
Width	Width of each corner mark, i.e. the distance from the corners to extend the horizontal lines.
Height	Height of each corner mark, i.e. the distance from the corners to extend the vertical lines.
Horizontal Distance	Optional distance to offset the corner mark in the horizontal direction. Positive values will move the corner point away from the artwork or layout while negative values will move the corner point inside the artwork or layout.
Vertical Distance	Optional distance to offset the corner mark in the vertical direction. Like Horizontal Distance, positive values will move the corner point away while negative values with move the corner point inside the artwork or layout.

4.3.6. Fill mark properties

Fill marks are used in artwork to place ink below the shape of the artwork item. To configure a fill mark, set the common Fill color property as well as the Margin offset value if you want the fill mark to extend beyond the shape of the artwork item. See also *Common mark properties* on page 31.



4.3.7. Grommet mark properties

Grommet marks are placed evenly across edges of artwork or the layout. Often, they are used to denote grommet or punch hole locations for hanging pieces. Grommets can be crosshair, circle, or cross shaped.



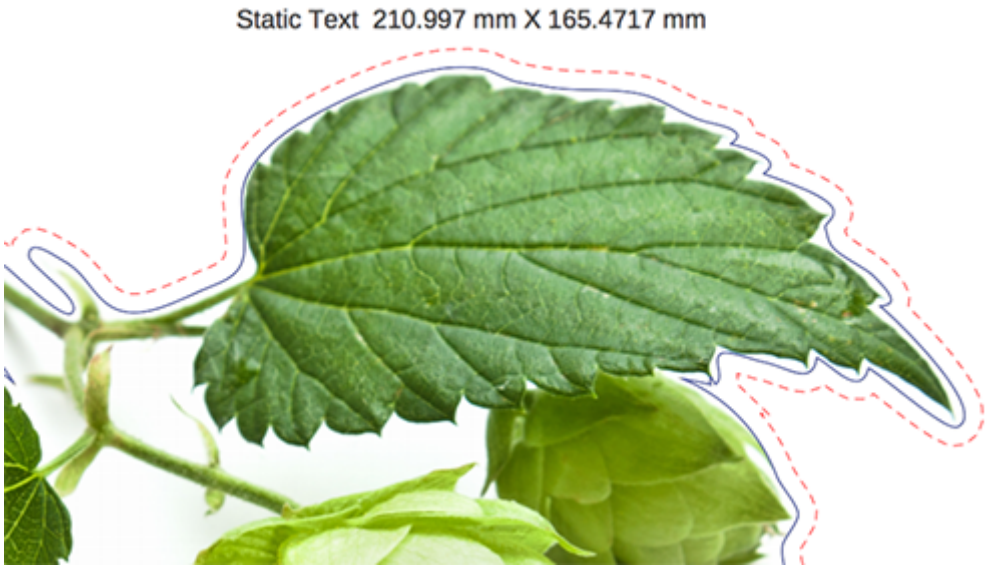
Use the Stroke common property to define stroke color and thickness (see *Common mark properties* on page 31). In addition, there are a number of properties specific to grommet marks:

Properties	Description
Shape Type	Choose between • Crosshair • Circle • Cross
Size	The size of each grommet mark instance.

Properties	Description
Circle Diameter *(Crosshair Shape)*	The diameter of the inner circle in crosshair shaped grommet marks.
Margin	The margin offset to place grommet marks from the bounds of the artwork or layout.
Hem	The width of the hem.
Marks on hem	If enabled, grommet marks will be mirrored onto the hem so they line up when the edges are folded.
Spacing Type	This property controls how grommet marks are distributed across the edges: • **Max Spacing**: will evenly place marks placing them as far apart as possible up to the max spacing distance. • **Quantity**: will place exactly number of marks defined in the horizontal and vertical quantity properties.
Edges	Include or exclude specific edges.

4.3.8. Text mark properties

Text marks can be used in both artwork and layouts, and can contain static text, dynamic text keywords or a combination of both.



Text color is controlled by the common Fill property (see *Common mark properties* on page 31). Text marks also include the following properties that allow you to control text content and appearance:

Properties	Description
Font	Select the font you want to use from the font dropdown.

Properties	Description
Font Size	Select the font size you want to you from the size dropdown.
Font Style	Choose what font style you want the text mark to appear as. Options vary depending on the font you are using, but most fonts support 'Normal', 'Normal Italic', 'Bold', and 'Bold Italic' styles.
Content	Click in the text area to enter the content you want for the text mark. To add a dynamic keyword, click on the **Keyword** button and select the desired keyword from the menu that appears. See *Keywords overview* on page 54.

4.4. Managing tiling presets

Tiling presets are pre-defined tiling settings that you can quickly select when using the Griffin tiling feature. If you are creating tiles using the same or similar settings on multiple occasions, then defining presets can save you time and reduce errors.

To manage tiling presets

1. From the menu, select **Window** > **Tiling Presets**.
   This opens the Tiling Presets dialog, which contains a list of all current tiling presets and their settings.
2. To add a tiling preset, proceed as follows:
   a. Click the plus sign below the list of tiling presets.
   b. Configure the properties of the new tiling preset in the right part of the screen.
      For an overview, see *Tiling preset properties* on page 40.
3. To edit a tiling preset that is available in the library, select it and change the properties as required.
   For an overview, see *Tiling preset properties* on page 40.
4. To remove a tiling preset from the library, select it and click the trash can icon below the list of tiling presets.

4.4.1. Tiling preset properties

Tiling presets are pre-defined tiling settings that you can quickly select when using the Griffin tiling feature. If you are creating tiles using the same or similar settings on multiple occasions, then defining presets can save you time and reduce errors.

Properties	Description
Name	The tiling preset name.
Subtitle	Optional additional information you want to add for this tiling preset.

Properties	Description
Color	Click the square color icon to change the display color used for the icon for this tiling preset. Color does not affect export in any way or appearance of the tiling in Artwork view or Layout view.
Start Corner	Tiling preset settings to use.
Tile Order	The order to perform tiling, horizontal or vertical, snake or zigzag.
Default Cut Tool	Cut tool to use for tiles when artwork is non-rectangular.
Horizontal Tiling | Vertical Tiling	Method defining the tiles in the given direction. Options are: • Fixed number: The exact number of tiles is specified, and Griffin creates equally divided tiles in the specified dimension • Fixed size: The size of each tile is specified, and Griffin will create as many tiles of this size to fit the length of the artwork, with the last tile filling any remaining space less than the tile size • Variable sizes: A comma-separated list of tile sizes is entered, and Griffin creates tiles of this size either from left to right (if horizontal tiling) or top to bottom (if vertical tiling). • None: No tiling is done in the specified dimension. See also *Tyling types: examples* on page 49.
Tiles | Size | Sizes	The number of tiles or size(s) of tiles in the given direction.
Uniform Final Size	When defining a fixed number of tiles, enabling this option ensures the final tile sizes are uniform regardless of gap or overlap settings. When not enabled, inner and edge tile sizes can differ because uniform tile sizes are then calculated before gap or overlap rules are applied.
Tiling Method	Tiling method to use in the given direction if any. Options are: • Gap • Overlap
Overlap Rule	Rule defining what edge(s) of tiles will overlap with neighboring tiles.
Overlap	Distance beyond tile edge to extend the tile in the given direction to create overlap.
No-Image	Width of the section at the end of the overlap where no artwork content is allowed, e.g. glue strips.
Gap	Gap distance between tiles in the given direction.
Extension	Amount of extra artwork content beyond the tile gap edge to extend in the given direction.

Properties	Description
Direction	Rule defining which direction(s) the gap is extended for each tile.

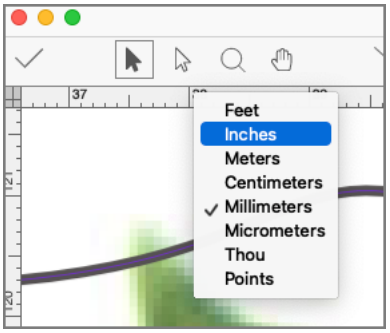
5. Managing the application preferences

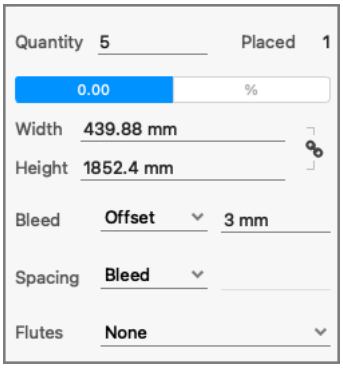
5.1. Configuring the preferences

To edit the application preferences

1. From the menu, select:.
   - On Windows: **Edit** > **Preferences**.
   - On Mac: **Enfocus Griffin** > **Preferences**.
2. Select the category of your choice and configure the preferences.
   - *General*
   - *Artwork*
   - *Presets*
   - *Diagnostics*
3. Close the dialog.

5.1.1. General preferences

Preferences	Description
Units	Default units to use when creating new jobs. **Note:** You can also change the units used for a given job by right-clicking the main view ruler in Artwork view or Layout view. 
Display Precision	The number of decimal places to display for floating point based properties.

Preferences	Description
	For example, in the example below which shows the dimensions of the artwork, the display precision is set to 2. 
Use PDF 1.6 'UserUnit' when layout bigger than 200 inches	Use this option if you are working with layouts with dimensions over 200 inches (roughly 5 meters) and your RIP supports the PDF 1.6 'UserUnit' field to address size limitations in the PDF specification.

5.1.2. Artwork preferences

Preferences	Description
Default Bleed	When artwork items are created, an offset bleed mask is automatically generated. Default Bleed controls the default offset of the bleed mask from the artwork item shape. Bleed offset and type can be changed at any time by editing artwork item properties. See also *Artwork properties* on page 17.
Default Gap Margin	The gap margin is an advanced setting used when determining the overall shape of the artwork item from cutting tool paths in the artwork content. It represents the maximum distance allowed between two disjoint paths for them to be considered connected. The default value is well suited for most environments but if the correct shape of the artwork items are sometimes not being detected correctly, increasing this margin might help. **Note:** Setting this value too high can affect performance and lead to path segments being incorrectly connected during shape analysis.
Multi-page File Handling	This setting controls what happens when selecting a multi-page artwork file when adding new artwork. Options are: • **One item per page** • **One item per two pages**

Preferences	Description
	Note: This is the best option if you work with two page artwork files containing the front and back sides of the artwork files.
Shape Handling	This setting controls what happens when there is more than one shape within a single PDF or AI artwork page. Options are: • **Largest** (default value): The largest shape on the page is selected as artwork shape. • **Multiple**: Each shape on the page is imported as a separate artwork piece. **Note:** Designers creating multiple shapes on a single artwork page is a common scenario, especially for multi-piece products like free-standing display units, clothing, racing decals, etc. In these scenarios, importing all shapes directly from the PDF page can be a big time saver.
Detect external artwork changes (checkbox)	When enabled, Griffin will watch for changes to artwork files in the job and prompt you when changes are detected to see if you would like to reload the artwork contents.

5.1.3. Preset preferences

Presets preferences allow you to delete presets (for exporting the layout) you have created. Refer to the topics under *Exporting the layout* on page 21.

To remove a preset:

1. Select the type of the preset you would like to remove from the Presets list. Options are:
   - Export for Printing Presets
   - Export for Cutting Presets
   - Export Multiple Presets
2. Select the preset you would like to remove.
3. Click the trash icon below the list.

5.1.4. Diagnostics preferences

Diagnostics are useful for troubleshooting problems occurring in the application and exporting/importing library configuration between different workstations.

Preferences	Description
Diagnostic Mode	When enabled, additional logging is performed. Typically this mode is only used when support personnel are troubleshooting unexpected behavior.

Preferences	Description
	Note: Diagnostic mode can affect performance, so it is better to leave it **Off**.
Export Technical Report	Export a report of the current state of the application and log messages to help support personnel troubleshoot problems.
Import Configuration	Import the libraries and settings from this or another Enfocus Griffin installation. The supported file format is the Griffin library archive (GFNLIB) that was exported via the Export Configuration action.
Export Configuration	Save the current libraries and settings from this Griffin instance. This option is useful for backups or for sharing libraries across different workstations. It can also be useful for support personel to reproduce problems. The export format is a Griffin library archive (GFNLIB). This file can then be used by the Import Configuration action.

6. Advanced topics

6.1. Tool path editing

Griffin provides powerful editing tools to create or edit tool paths in artwork items.

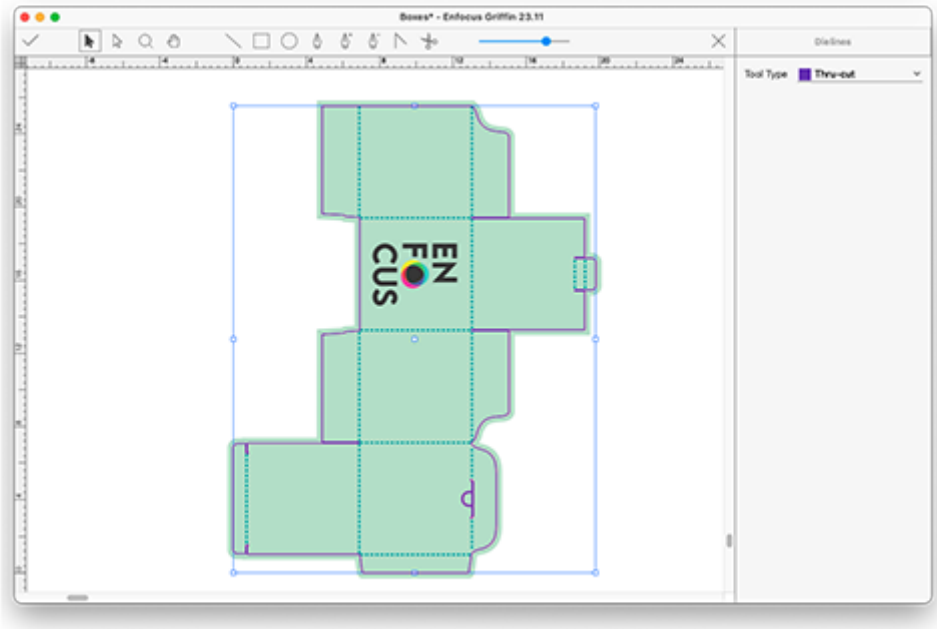
How to enable the tools

To edit an artwork item's tool paths

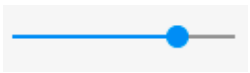
1. To open the artwork in Artwork view mode, double-click the artwork item in the Artwork list.
2. In the toolbar, select the **Edit Tool Paths** button .

Tools

You can directly manipulate the artwork tool paths by using the tools from the toolbar:



Icon	Tool	Description
	Accept Changes	Commit the changes that were made during this editing session.
	Selection Tool	Select tool paths in the main view.

Icon	Tool	Description
	Direct Selection Tool	Select and move individual control points on a path.
	Zoom Tool	Zoom in and out of the main view.
	Hand Tool	Grab the main view to move around and scroll to zoom in and out.
	Line Tool	Draw lines directly into the main view.
	Rectangle Tool	Draw rectangles directly into the main view.
	Ellipse Tool	Draw ellipses directly into the main view.
	Pen Tool	Draw paths (lines and curves) directly in the main view.
	Add Anchor Points	Add anchor points to an existing path.
	Remove Anchor Points	Remove anchor points from an existing path.
	Anchor Point Tool	Select anchor points and manipulate the handles to change the curve shape.
	Cut Tool	Split a path segment.
	Transparency tool	Move the slider to change the transparency of the artwork item.
	Reject Changes	Exit out of Tool Path Edit mode without applying any changes made in the edit session. In Tool Path Edit mode you can also change the tool type for any tool path by *selecting* the path(s) and choosing a different 'Tool Type' in the sidebar.

6.2. Tiling

Griffin includes powerful tiling capabilities with several options controlling how artwork is split up into individual tiled pieces.

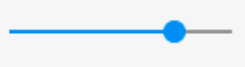
Tiling can be controlled independently in horizontal and vertical directions. Also, in both directions you can also optionally define gaps or overlaps between tiles with options for extending gaps and masking off no-image overlap regions.

Griffin tiling also supports internal cut lines. When artwork contains internal cut lines, these cuts will be preserved in the corresponding tiles, allowing you to handle multi-step panel installations like non-rectangular peal-offs.

6.2.1. Creating tiles from artwork

To create tiles from artwork

1. In the Artwork list, select the artwork item you want to tile.
2. In the sidebar, switch to the Artwork properties tab as required.
3. Click the big blue **Create Tiles** button.
   The Tiling view opens where you can see a live preview of how the tiles will be created with the current settings. Tile dimensions, order, and gap/overlap regions are all displayed in the preview.
4. Move the Transparency slider as required.

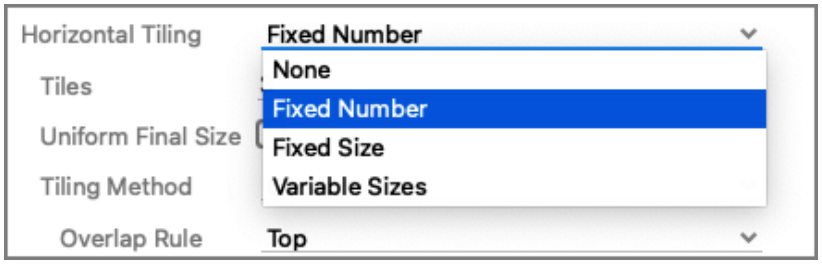
   The slider controlls the visibility of the artwork content under the tiles being previewed. This feature is especially useful in cases where the tile preview colors are similar to the artwork content making it hard to preview the tiles.
5. Edit the settings as required.
   See *Tiling preset properties* on page 40.

   Note: The list at the top lists the available tiling presets. See *Managing tiling presets* on page 40.
6. Once you have finalized the settings, click **Apply**.

Each tile will be assigned a number based on the tiling order. You can reference the current tile number and total number of tiles in artwork text and barcode marks using the <artwork.tile> and <artwork.tile-count> dynamic keywords. See also *Griffin keywords* on page 54.

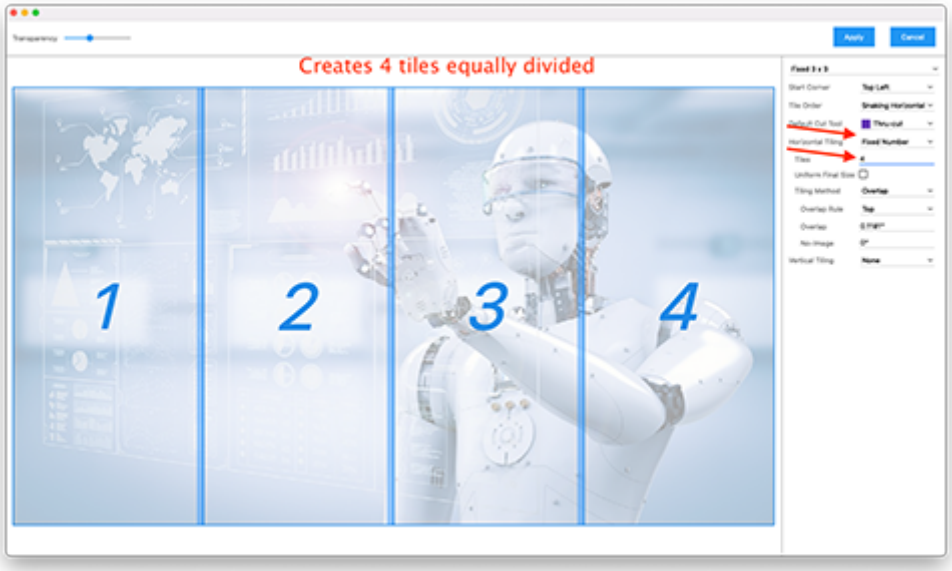
6.2.2. Tyling types: examples

The size of tiles can be defined with the **Horizontal Tiling** and **Vertical Tiling** parameter. The different options are explained below.



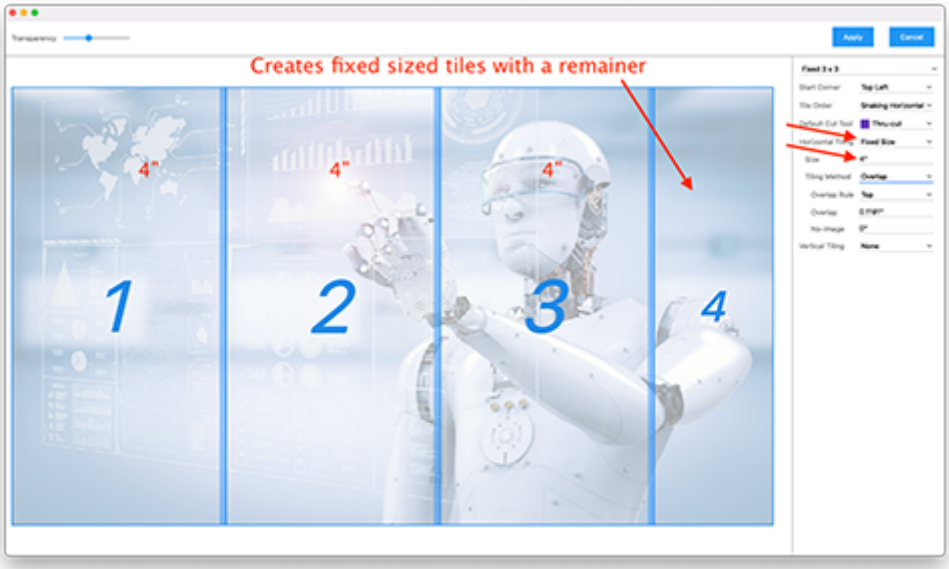
Fixed number

The exact number of tiles is specified, and Griffin creates equally divided tiles in the specified dimension.



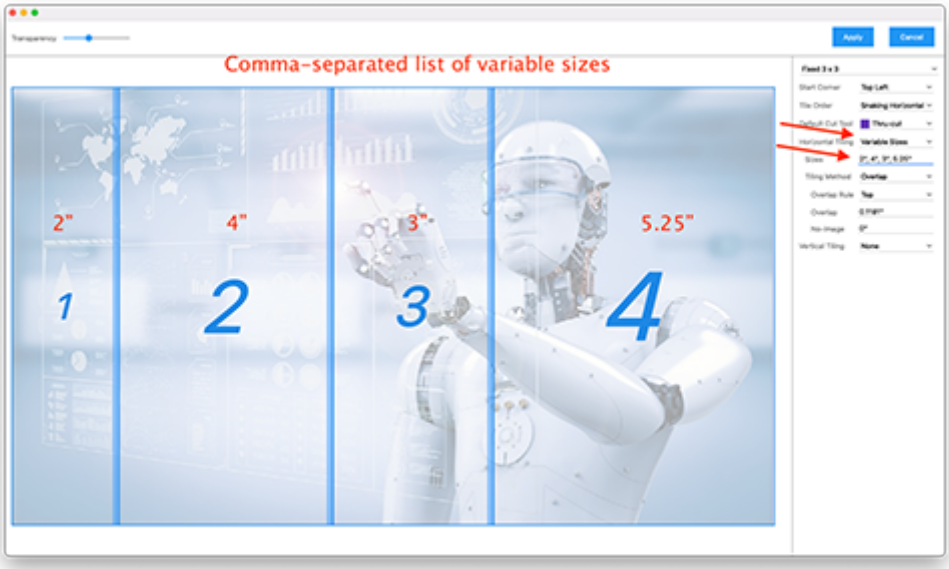
Fixed size

The size of each tile is specified, and Griffin will create as many tiles of this size to fit the length of the artwork, with the last tile filling any remaining space less than the tile size.



Variables sizes

A comma-separated list of tile sizes is entered, and Griffin creates tiles of this size either from left to right (if horizontal tiling) or top to bottom (if vertical tiling).



None

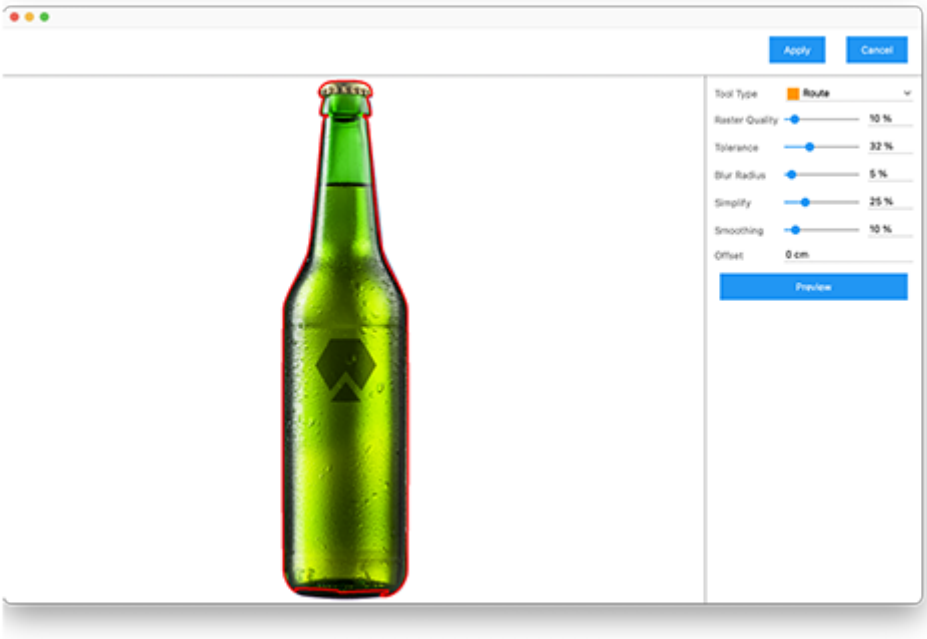
No tiling is done in the specified dimension.



6.3. Image tracing

The Griffin Image Tracing feature automatically generates precise cut tool paths around artwork content in cases where no shape paths have been specified in the artwork.

Image Tracing is designed to be very fast while producing high quality shape tracings and works equally well with artwork imported from image-based formats, PDF, and AI formats. There are multiple settings providing fine-grained control over contour generation, and fast live previews allow you to find the ideal settings quickly before applying.



6.3.1. Generating a cut path

To generate a cut path from image contours

1. In the Artwork list, select the artwork piece you want to trace.
2. In the sidebar, switch to the Artwork properties tab as required.
3. Click the **Image Tracing** button.
   The Image Tracing view opens where you can view a live preview of the generated cut tool path.
4. In the sidebar on the right, change the settings to control the path generation as required.
   For more info, refer to *Image tracing settings* on page 53.
5. To see the effect of your changes, click **Preview**.
6. Repeat the previous two steps until you're happy with the result.
7. To apply the new shape path to the artwork, click **Apply**.

Tip: Image tracing works well in conjunction with *tool path editing* in Artwork view where you can make final tweaks to the generated tool paths if needed.

6.3.1.1. Image tracing settings

Settings	Description
Tool Type	Cutting tool type to use for the generated cut tool path.

Settings	Description
Raster Quality	Quality of the raster image to use for generating the cut tool path. A value of 100% will rasterize the image at full size up to a limit of 10 megapixels. Lower values will scale the image down for faster processing and in some case preferred results as less detail is used for tracing.
Tolerance	Amount of color difference to allow before adjacent colors are considered different. A value of 0% means no tolerance in color differences is allowed while 100% is the maximum allowed tolerance in color differences.
Blur Radius	The amount of blurring to apply to edges that are encountered during edge detection. A higher blur radius means more blurring is applied during edge detection which can lead to less jagged paths.
Simplify	The amount of simplification to apply to the generated path. Simplify works by removing points on the path that are within a certain tolerance. A value of 0% disables path simplification while a value of 100% will use the highest allowed tolerance when removing points.
Smoothing	Smoothing converts individual points on the generated path to Bezier curves to produce smoother paths. A value of 0% disables path smoothing while a value of 100% will perform the most aggressive path curve smoothing.
Offset	Additional offset distance to expand the generated path.
Preview	Updates the generated path preview with the current settings.

6.4. Griffin keywords

Dynamic keywords are special text strings that are replaced with properties in artwork, layout, job, date, or time. Keywords can be used in marks to create dynamic text marks and barcodes. For example, you can create a QR code that encodes the artwork name or layout ID for use by operators on the press floor.

Dynamic keywords can also be used to define properties for some export types and dynamic filenames when creating printing and cutting files using *Multiple Export.*

6.4.1. Keywords overview

Below is a list of all keywords available in Griffin:

Keyword	Description
<artwork.height>	The height of the current artwork item.
<artwork.name>	The name of the current artwork item.
<artwork.page-count>	The total number of pages of the artwork file the current artwork item came from.

Keyword	Description
<artwork.page-number>	The page number of the artwork file the current artwork item came from.
<artwork.path>	The filesystem path of the artwork file the current artwork item came from.
<artwork.quantity>	The quantity of the current artwork item.
<artwork.tile>	The tile number for the current artwork item if this item was created using the Tiling tool.
<artwork.tile-count>	The total number of tiles created if this item was created using the Tiling tool.
<artwork.width>	The width of the current artwork item.
<date.iso>	The current date in ISO 8601 format. Example: 2024-01-26
<date.long>	The current date in long format. Example: January 26, 2024
<date.medium>	The current date in medium format. Example: Jan 26, 2024
<date.short>	The current date in short format. Example: 1/26/2024
<job.client>	The Client Name of the current job as defined in Job Properties.
<job.contact>	The Contact Name of the current job as defined in Job Properties.
<job.id>	The Job ID of the current job as defined in Job Properties.
<job.name>	The Job Name of the current job as defined in Job Properties.
<job.notes>	The Notes of the current job as defined in Job Properties.
<layout.artwork-files>	A comma-delimited list of all artwork filenames being used in the current layout.
<layout.copies>	The number of copies being produced of the current layout.
<layout.copy>	The current copy of the layout being printed.
<layout.dimensions>	The width and height of the current layout. Example: 800 x 1200 mm
<layout.index>	The index number of this layout. Numbering starts at 1.
<layout.name>	The name of this layout
<layout.placed>	The number of artwork items placed on this layout
<layout.random>	The unique random ID generated for this layout
<layout.side>	The current layout side: Front or Back
<layout.substrate>	The name of the substrate being used in the current layout
<layout.waste>	The percentage of waste on the current layout
<time.iso>	The current time in ISO 8601 format. Example: 21:30:49
<time.long>	The current time in long format. Example: 11:30:49 PM EST

Keyword	Description
<time.medium>	The current time in medium format. Example: 11:30:49 PM
<time.short>	The current time in short format. Example: 11:30 PM

7. Griffin automation

7.1. About Griffin Auto

Griffin Auto allows you to **run Griffin in an automated way**, either via a RESTful API, complete with Live Docs, or through the Griffin Switch App in Enfocus Switch.

Griffin Auto is a separate application from Griffin. If you need to use the User Interface, you'll want to use the Griffin.app (or .exe). If you're automating, whether through Switch or the API, you'll want to use Griffin Auto.

7.2. Griffin Auto REST API

Manually starting the Griffin Auto API

To start the API, simply run the following command in Terminal, substituting your license for the dummy example ABCDE-FGHIJ-KLMNO-PQRST-UVWXY:

MacOS:

```
/Applications/tilia\ Griffin\ Auto.app/Contents/MacOS/GriffinAuto -k ABCDE-FGHIJ-KLMNO-PQRST-UVWXY
```

Windows:

```
"C:\Program Files\Tilia Labs\Griffin Auto\GriffinAuto.exe" -k ABCDE-FGHIJ-KLMNO-PQRST-UVWXY
```



Note: Optionally you can run the command without the license key or with the -h flag to show all available arguments for Griffin Auto.

Command line options

```
--datafolder
  Optional custom data folder to place libraries and log files.  When not
  specified, a standard OS-dependent app data folder is used.
-h, --help
  Print usage and exit
-i, --inactivity
  Optional inactivity timeout in seconds.  When set, this application will
  exit when no new requests have been received within the given timeout
  duration
-k, --key
  License key when using key-based licensing
-l, --library
  Optional path to library archive to load before server is started.  If
  not specified, the current library on this server is used.
-pw, --password
  Tilia Cloud user password used to authenticate this server
-p, --port
  Optional TCP port number for the server to run on (default: 8022)
```

```
--portscan
  Whether to allow port scanning when specified port is not available.
  Argument is a path to a file that the final port will be recorded into.
-u, --user
  Tilia Cloud user name used to authenticate this server
```

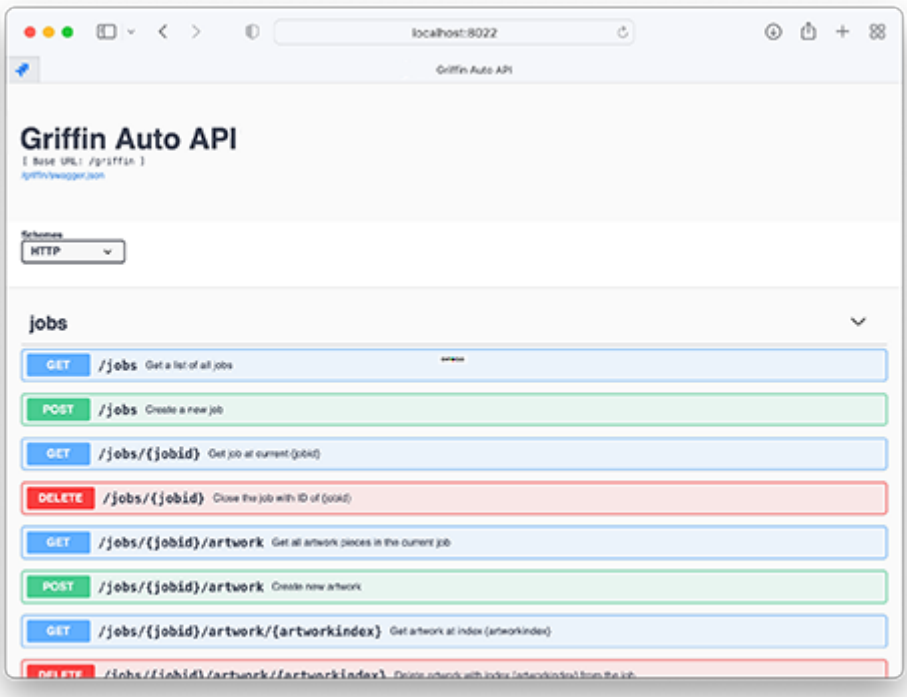
After running with a valid license, the terminal will return the following:

```
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.codehaus.groovy.reflection.CachedClass$3$1
 (file:/Applications/tilia%20Griffin%20Auto.app/Contents/Java/groovy-all-1.8.5.jar) to
 method java.lang.Object.finalize()
WARNING: Please consider reporting this to the maintainers of
 org.codehaus.groovy.reflection.CachedClass$3$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective
 access operations
WARNING: All illegal access operations will be denied in a future release
Jun 15, 2022 9:56:38 AM org.glassfish.grizzly.http.server.NetworkListener start
INFO: Started listener bound to [0.0.0.0:8022]
Jun 15, 2022 9:56:38 AM org.glassfish.grizzly.http.server.HttpServer start
INFO: [HttpServer] Started.
```

Note:

You can ignore the warnings, and find the address where Griffin Auto is running. By default, this is

localhost:8022 or 0.0.0.0:8022. If you visit that address in the browser, you can visit the open API live documentation for Griffin Auto.



7.3. Griffin Auto through Switch

If you are running Griffin through Enfocus Switch, you simply need to download and install the Griffin Auto application, then control everything through the *Griffin Switch App*.

Note: You do not need to manually start the Griffin REST API.

Documentation and sample flows can be found on *the Griffin App page* on the Enfocus Appstore.

7.3.1. Getting started with the Griffin app

Before you start, make sure to obtain a valid license for Griffin Auto.

To get started with the Griffin App in Switch, proceed as follows

1. Run the installer to install Griffin Auto.

   Note: Make sure you install Griffin Auto on the same computer that Enfocus Switch is running on.

2. Download and install the free *Griffin Switch App* from the Enfocus Appstore:
   a. Browse to *https://www.enfocus.com/en/appstore/product/griffin*.
   b. Click **Get it now**.
   c. Select the Switch installation(s) on which you want to use the app.
   d. Click **Start free app**.
   e. Go to Switch and, in the Flow elements pane, click the Refresh apps icon. 
   The Griffin app can be found in the Apps section of the Flow elements pane.

3. Create a new flow in Switch and drag and drop the Griffin app onto the canvas.

   Note: To learn how to work with Switch, refer to the *eLearning* and the *documentation* on the Enfocus website.

4. Configure the properties of the Griffin app.

   Note: You need to enter a **valid Griffin Auto license key** into the License key property in every instance of the Griffin app. Also, if you installed Griffin Auto to a custom location during the install process, you will need to specify the install location by setting the "Install location" property to "Custom" and selecting your custom install directory in the "Install folder" property.

For an overview of all properties, refer to *Griffin app documentation*

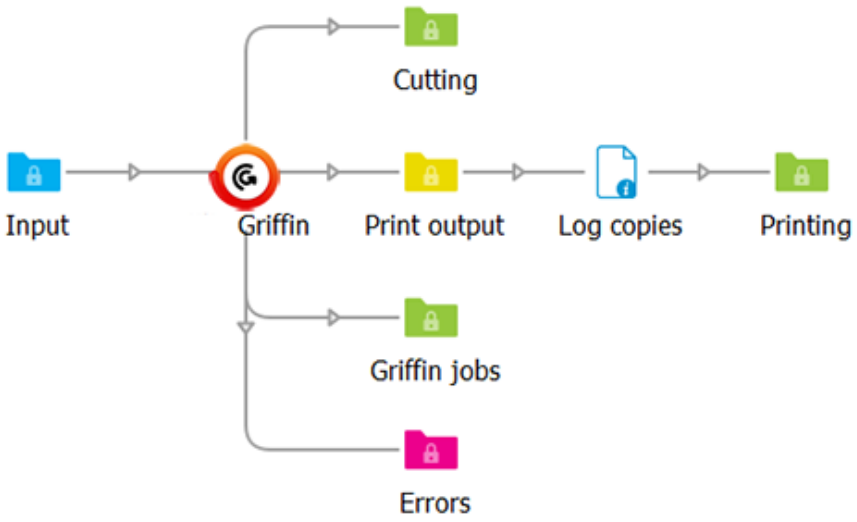
7.3.2. Griffin app documentation

7.3.2.1. Griffin

Griffin Auto packs many features into a single solution, giving you an automation toolbox for stepping up, image tracing, tiling, nesting, and ganging your artwork onto sheets or rolls and generating production ready output for your printers and cutters.

The Griffin app gives you full access to the power of Griffin Auto. This app contains over 300 properties. Detailed descriptions of all properties are found below. Each property also has detailed tooltips in Switch. We recommend utilizing them as you work with the app.

Almost all properties can be set using variables and script expressions to utilize the rich set of data available in Switch like job properties, folder hierarchies, metadata fields, and database entries.



Compatibility
Switch 17 update 1 and higher

Compatibility third-party application

This app relies on the presence of Griffin Auto 2.2 or higher. Griffin Auto must be installed on the same computer running Switch and a valid license is required.

Input files

The Griffin app collects artwork files from a single input connection until certain trigger event(s) occur at which point the files are processed. The app supports PDF and PDF-based AI formats as well as TIFF, PNG, BMP, JPG, and GIF image formats.

The input handling logic is similar to the built-in "Assemble job" flow element. You can wait for N or more files to enter the input folder or wait N minutes after the first file has arrived. In Advanced mode you can also write a custom trigger condition, and control which artwork files are to be included together during processing by using a trigger identifier. More details about triggers are found in Advanced Mode, described in depth below.

Connections

You can create as many **outgoing connections** as you like. For each connection you can choose whether to generate output files or to send along input files using the **Data** property.

Data property - Chosen value	Description
Output files When selecting "Output files" for the Data property you are presented with options to output for printing, output for cutting, output job file. One or more of these options must be selected within a single connection to produce output.	
Output for printing	Generates imposed PDF(s) of the layouts generated by Griffin. When enabled, there are properties to control whether to produce a single multi-page PDF or separate PDFs for each layout and whether to create a separate PDF page for each copy required. Other options include whether to remove tool paths from the original artwork and whether to use PDF 1.6 UserUnit for layouts above 200 inches in width or height.
Output for cutting	Generates vector PDF, DXF, or Zund Cut Center (ZCC) cutting output containing all tool paths in the imposed layout(s). For PDF output, you can choose whether to generate a single cutting file containing all generated layouts, or individual PDF files for each layout. Other options include which marks to include in output and how to map tool types to colors and layer names.
Output job file	When enabled, a Griffin job file, GFN, will be created. This allows you to open the job in the Griffin desktop application to do further adjustments to layouts if needed. This option is also useful for archiving the generated layouts for future reprint or revision update.
XML dataset name	The app will attach an external XML dataset to each file created on the given output files connection. This XML data contains information about how many layout copies are required to produce, which artwork files were placed on each layout, and other statistics about each layout like sheet usage. The XML dataset name property allows you to customize the name of this dataset.
Input files	

Data property - Chosen value	Description
When selecting "Input files" for the Data property you can select which scenario you want to send input files through this connection via the Move property.	
Move	Options: • **On Error**: This is the most common use case. When this option is selected, only input files that could not be placed in layouts are sent to this connection. The most common scenario is artwork files that are too big to fit on the board or roll. If no "On error" connection has been setup, these input files are sent to the Problem jobs folder. In either scenario, the error is logged in Messages. • **On success**: Only input files that were successfully placed in layouts will be sent to this connection. • **Always**: All input files, regardless of success or failure, will be sent to this connection. Note that error situations are still logged as errors in Messages. **Note:** If there are no matching input files connections for a given input file, it will be deleted.

App properties detailed info (high-level properties)

Properties	Description
Job ID	ID of the job
Units	Indicates which units are used.
Install location	Location
License type	Options are: • License key (key) • Cloud License (User ID & Password)
Mode	With so much functionally packed into the app, there are over 220 flow element properties total. To make it easy to get started with the app, there are two modes to choose from: • Basic Mode: Basic mode provides a minimal set of 12 high-level properties. • Advanced Mode See below for a full description.

Basic mode

The table below lists the subproperties available in Basic Mode.

Basic mode provides a minimal set of 12 high-level properties. Even with this limited subset, you can create print-ready layouts on rolls or boards while controlling rotation, sheet margins, and the

cutting tool paths. You can also include and customize dynamic barcodes, camera marks, and text marks.

Basic mode always performs free nesting appropriate for cutting tables. Barcodes are always placed in the upper-left corner of the layout while text marks are placed in the center of the top edge. There is some control over mark content while Advanced mode provides many more properties.

Basic Mode Properties	Description
Trigger every N files	The total number of artwork files needed before starting processing in Basic mode. An empty or 0 value disables this option.
Trigger after N minutes	Start processing current set of artwork pieces N minutes after first artwork arrived in Basic mode regardless of whether required number of artwork pieces has been reached. An empty or 0 value disables this option.
Substrate	Select the substrate type you need (predefined board or roll size to use for imposition).
Margin	Enter the required margin. Distance from bottom
Quantity	Enter the required quantity.
Rotation	Options are: • Any • Orthogonal • None
Cutting tool	Enter the required cutting tool.
Barcode	Select a barode. Options are: • Code 39 • Code 128 • QR Code • None You also have to specify the data you want to use for the barcode. Select the option of your choice: Layout random ID, Layout name, Layout index, Layout dimensions, Job ID, Date (ISO or long format), Time (ISO or long format).
Camera marks	Options are: • None • Corners • Auto distribute • Corners and Auto distribute You also need to specify the quantity.
Text mark	Select the option of your choice: None, Layout random ID, Layout name, Layout index, Layout

Basic Mode Properties	Description
	dimensions, Job ID, Date (ISO or long format), Time (ISO or long format).

Advanced mode

Due to the number of limitations in Basic mode, most users will opt to use Advanced mode instead which gives you full control of all features in the Griffin app. Below is a list of Advanced mode capabilities beyond what is possible in Basic mode:

- Artwork tiling
- Artwork scaling
- Image tracing for automatic cut line generation
- Artwork and board flutes directions
- Multi-page handling options
- Artwork front repeat or mirror to back
- Artwork barcode, text, fill, and grommet marks
- Nest for guillotine cutters or cutting tables
- Custom roll and board sizes
- Turn vs. tumble for double-sided layouts
- Custom trigger conditions
- Trigger identifiers to control which artwork files are processed together
- Up to four different tool types can be imported at a time
- Content margins defined independently for each sheet edge
- Options to control artwork bleed clipping path offsets and spacing
- Mark position and other mark customization options

Advanced mode properties are classified into three categories - **Trigger conditions, Layout properties, and Artwork properties**. Each category is represented by a read-only property with all related properties defined as child nodes of the property.

Trigger conditions

Trigger conditions define when artwork files being collected in the input folder are processed by Griffin. You can trigger processing when N or more files arrive, N minutes after the first file has arrived, or on a custom trigger condition. You can also control which artwork files are to be included together during processing by using a Trigger identifier. When multiple trigger condition properties are configured, the first trigger event that occurs will cause all input jobs with the same trigger identifier value to be processed.

Advanced mode - Trigger conditions	Description
Trigger every N files	The total number of artwork files needed before starting processing in Advanced mode. An empty or 0 value disables this option.
Trigger after N minutes	Start processing current set of artwork pieces N minutes after first artwork arrived in Advanced mode regardless of whether required number of artwork pieces has been reached. An empty or 0 value disables this option.
Trigger on condition	Processing is started whenever this condition is true regardless of whether N files or N minutes rules have been met. This

Advanced mode - Trigger conditions	Description
	condition is re-evaluated for each new job in the context of that job. A value of None means this option is disabled.
Trigger identifier	A string value evaluated in the context of each incoming job that determines which artwork files should be processed together. If set, Griffin will include only jobs with the same Trigger Identifier and the "Trigger every N files" and "Trigger after N minutes" properties will only consider other jobs with the same Trigger identifier value when determining whether procesing should start. A value of None means this option is disabled.

Layout properties

Layout properties control how artwork pieces are placed on layouts, substrate type and sizes, double sided handling, margins, and layout placement.



Note: Barcode and text mark have options for using dynamic keywords.

Advanced mode - Layout properties	Description
Strategy	This option dictates the kind of layouts that are created. Options are: • **Free nesting**: This is the most aggressive nesting strategy and is ideal for cutting tables. • **Grid nesting**: This also nests irregular shapes while keeping same shaped items together on the sheet in step and repeat groups. • **Guillotine**: This will place pieces in strips that can be cut out with a guillotine cutter. This strategy triggers a subordinate property: *First cut*: This is the direction of the first cut, either Horizontal, Vertical or Either.
Rotation	Rotation along with Flutes for board substrates and the Flutes property in Artwork properties control the allowed rotations for artwork pieces in the layout. Options are: • **Any**: This option lets artwork pieces be placed at any angle unless the artwork and board both have flutes directions in which case only rotations that align flutes directions are allowed. • **Orthogonal**: This type of rotation allows 0, 90, 180, and 270 degree rotations unless flutes need to be honored. • **None**: This will ensure that artwork pieces are not rotated on the layout.
Allow multiple layout copies	Indicates whether or not to allow multiple copies of layouts generated by the nesting tool.

Advanced mode - Layout properties	Description
Substrate type	Type of substrate to nest onto. Options are: • **Board** • **Roll** Subordinate properties are: • *Width*: Width of board or roll to nest artwork onto. • *Height*: Height of board to nest artwork onto. • *Flutes*: Flutes direction of board if any. Long means flutes run in the direction of the long edge of the board, while Short means flutes run along the short edge of the board. • *Min roll cut-off*: Min roll cutoff height. • *Max roll cut-off*: Max roll cutoff height. • *Name*: Optional name of substrate used in reporting and Zund Cut Center (ZCC) cutting output. • *Thickness*: Optional substrate thickness. Thickness is included in reporting and Zund Cut Center (ZCC) cutting output to automatically match the substrate with the corresponding material in Zund Cut Center.
Double sided	Work style when handling double-sided work.
Horizontal placement	Horizontal position on the layout to align nested artwork pieces.
Vertical placement	Vertical position on the layout to align nested artwork pieces.
Top margin	Amount of space on top edge of layout to ensure that no artwork pieces are placed into in Advanced mode.
Bottom margin	Amount of space on bottom edge of layout to ensure that no artwork pieces are placed into in Advanced mode.
Left margin	Amount of space on left edge of layout to ensure that no artwork pieces are placed into in Advanced mode.
Right margin	Amount of space on right edge of layout to ensure that no artwork pieces are placed into in Advanced mode.
Camera marks	Whether or not to add camera marks to each generated layout in Advanced mode. If set to Yes, a number of subordinate properties are shown: • *Shape*: Shape of the camera marks: circle or cross. This triggers the following properties: • *Stroke color*: Camera mark stroke color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for camera mark stroke color. In case of a spot name: optional

Advanced mode - Layout properties	Description
	spot name for camera mark stroke color. When specified, this custom color is treated as a spot color instead of a process color. • *Stroke thickness*: Camera mark stroke thickness • *Fill color* (only for circle marks): Camera mark fill color. • *Size*: The size of each camera mark instance. • *Layer*: Optional layer name for this camera mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Min distance*: The minimum distance to place camera marks from the shape of items in the layout. • *Add corners*: Whether to place camera marks in the four corners of the layout. This triggers: • *Double corner*: Whether to include a second corner mark in the lower-right corner of the layout. If enabled, the second corner mark is placed to the left of the right corner mark by the double corner offset. If enabled, this triggers *Double corner offset*: Distance to place the second corner mark from the lower-right corner mark. • *Margins*: • Use *Layout margins* to ensure camera marks are not placed outside the allowed content region of the layout. • Use *Custom margins* to define custom distances from each sheet edge where camera marks can be placed. • *Mirror to back*: When enabled, camera marks are automatically mirrored to the back side of the layout. This is useful for cases when the layout will be getting cut face down on the cutting table. • *Auto distribute*: Mode to use to automatically place camera marks throughout the layout. Options are: • None: Only corner camera marks are placed. • Spacing: A minimum spacing distance is used. • Quantity: A specific number of marks is added. This quantity is not guaranteed since there are situations where space is too limited.
Barcode	Whether or not to add a barcode mark to each generated layout in Advanced mode. Following options are triggered:

Advanced mode - Layout properties	Description
	• *Fill color*: Layout barcode color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for layout barcode fill color. In case of a spot name: optional spot name for layout barcode fill color. When specified, this custom color is treated as a spot color instead of a process color. • *Layer*: Optional layer name for this layout barcode. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Format*: Layout barcode format type. This triggers *Show human-readable*: If enabled, plain text of the barcode content is included below the barcode for 1D barcode formats such as Code 39 and Code 128. • *Data*: Dynamic keyword for barcode content or any custom text when using the 'Custom' option in Advanced mode. Each keyword option has a corresponding text value that can be used and combined in the custom text value. See Dynamic keywords table below. • *Scale*: Scale factor to apply to the layout barcode to increase or decrease its size. The default value of 1.0 signifies 100% meaning no scaling is performed on the barcode. • *Mark reference point*: Reference point in this layout barcode to align layout placement point to. • *Layout reference point*: Point within layout to place barcode mark alignment point to. • *Horizontal offset*: Additional horizontal offset to move the layout barcode from the placement point. Positive scalar values move the barcode to the right while negative values move the barcode to the left within the layout. • *Vertical offset*: Additional vertical offset to move the layout barcode from the placement point. Positive scalar values move the barcode up while negative values move the barcode down within the layout. • *Rotation*: Rotation of the barcode in the layout.
Text mark	Whether or not to add a text mark to each generated layout. • *Color*: Layout text mark color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for layout text mark. In case of a spot name: optional spot name for layout text mark. When specified, this custom color is treated as a spot color instead of a process color.

Advanced mode - Layout properties	Description
	• *Layer*: Optional layer name for this layout text mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Text*: Dynamic keyword for layout text content or any custom text when using the 'Custom' option in Advanced mode. Each keyword option has a corresponding text value that can be used and combined in the custom text value. See Dynamic keywords table below. • *Font*: Name of font to use in this layout text mark. Use 'Select from library' to view a list of available fonts. • *Font size*: Size of text in points (pt) for this layout text mark. • *Font style*: Font style of layout text mark. Note that some fonts do not support all styles. When a style is chosen that is not available for the given font, the style will default to Normal and a warning message will be logged in Switch. • *Mark reference point*: Reference point in this layout text mark to align layout placement point to. • *Layout reference point*: Point within layout to place layout text mark alignment point to. • *Horizontal offset*: Additional horizontal offset to move the layout text mark from the placement point. Positive scalar values move the mark to the right while negative values move the mark to the left within the layout. • *Vertical offset*: Additional vertical offset to move the mark from the placement point. Positive scalar values move the layout text mark up while negative values move the mark down within the layout. • *Rotation*: Rotation of layout text mark within layout
Border mark	Whether or not to add a border mark to each generated layout. • *Stroke color*: Border mark stroke color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for layout border mark. In case of a spot name: optional spot name for layout border mark. When specified, this custom color is treated as a spot color instead of a process color. • *Stroke thickness*: Stroke thickness of border lines. • *Fill color*: Border mark fill color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for layout border mark. In case of a spot name: optional spot name for layout

Advanced mode - Layout properties	Description
	border mark. When specified, this custom color is treated as a spot color instead of a process color. • *Layer*: Optional layer name for this border mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Top*: Distance from the top edge of the sheet in the downward direction to draw the top edge of the border mark. • *Bottom*: Distance from the bottom edge of the sheet in the upward direction to draw the bottom edge of the border mark. • *Left*: Distance from the left edge of the sheet in the right direction to draw the left edge of the border mark. • *Right*: Distance from the right edge of the sheet in the left direction to draw the right edge of the border mark.
Corner mark	Whether or not to add a corner mark to each generated layout. • *Stroke color*: Corner mark stroke color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for layout corner mark. In case of a spot name: optional spot name for layout corner mark. When specified, this custom color is treated as a spot color instead of a process color. • *Stroke thickness*: Stroke thickness of corner mark lines. • *Layer*: Optional layer name for this layout corner mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Corner type*: Corner mark flavors: Type 1 or Type 2. Both types are simple "L" shaped stroked marks, with Type 1 corner marks facing towards the layout and Type 2 facing outwards. • *Width*: Width of each corner mark, i.e. the distance from the corners to extend the horizontal lines. • *Height*: Height of each corner mark, i.e. the distance from the corners to extend the vertical lines. • *Horizontal distance*: Optional distance to offset the corner mark in the horizontal direction. Positive values will move the corner point away from the layout while negative values will move the corner point inside the layout. • *Vertical distance*: Optional distance to offset the corner mark in the vertical direction. Like Horizontal Distance, positive

Advanced mode - Layout properties	Description
	values will move the corner point away while negative values with move the corner point inside the layout.

Artwork properties

Artwork properties control how each individual artwork file is handled in Griffin. Here you can define the order quantity, flutes direction, cutting tools mappings from PDF paths, bleed mask offsets, and placement spacing.

You can also optionally scale the artwork using the Scaling property. Scaling can be defined as a percentage of the original size or a fixed size.

Artwork properties also include the Multi-page file handling property that allows you to control how to interpret multi-page artwork files. "One item per two pages" will interpret even numbered pages as the back side content of the previous page. "One item per page" will treat each page as a different single-sided artwork piece and gives you the option of duplicating the artwork to the back or mirroring the front to the back with the Back side content child property.

Artworks properties also include the options to add a Barcode, Text, Corner, Grommet, and Fill marks to the artwork. Like layout marks, each mark type has several child properties controlling content, placement, and color.

Advanced mode - Artwork properties	Description
Quantity	Order quantity for this artwork.
Flutes	Flutes direction of this artwork if any.
Multi-page file handling	This option affects how multi-page artwork files are interpreted. Options are: • **One item per page** This option triggers *Back side content*: Content to use for back side if any. Front artwork can be duplicated on back or mirrored to back. • **One item per two pages** This is the best option if you work with two page artwork files containing the front and back sides of the artwork files.
Shape handling	Shape handling mode to use when finding closed path shapes from the dielines in the artwork. Options are: • **Largest** • **Multiple**: This mode will create a new artwork item for each closed path shape detected in the artwork.
Default cut tool	Main tool being used to cut artwork item. Depending on the chosen tool, following subordinate properties are displayed: • *Spot color names*: List of names to match with spot color names in the artwork that define paths for default cut tool type. Matching is case insensitive.

Advanced mode - Artwork properties	Description
	• *Layer names*: List of names to match with layer names in the artwork that identify paths for default cut tool type. Matching is case insensitive. • *Text match*: Type of text matching to use for default cut tool. 'Equals' matches the text exactly with the spot or layer name, 'StartsWith' matches the text with the beginning of the name, and 'Contains' matches the text with any portion of the name. • *Cutting width*: Width of the main cutting tool. This property can be used to define the spacing distance between items the Nesting Tool uses when the artwork item spacing type is set to 'Tool' to ensure the cutting tool does not affect other items in the layout. • *Offset*: Optional scalar offset to apply to the shape for the default cut tool. Negative offset values will cause the shape to be reduced while positive values will increase the shape size. • *Join style*: The style used to join path segments in the shape when a cutting offset is applied for the default cut tool. If set to *Miter*, *Miter limit*is triggered: For Cut category tools with a cutting offset and 'Miter' join style, this limit defines the distance beyond the end of the joined path segments where mitering is clipped to avoid long spikes on sharp corners.
Additional tool 1-3	Optional tools to define in addition to the default cut tool when more than one tool is used with the artwork. For a description of the subordinate properties, refer to the explanation of 'Default cut tool'.
Scaling	Whether to scale the artwork to make the content and shape bigger or smaller. Scaling can be defined by percentage of original artwork shape size or by specific dimensions. Subordinate properties: • *Width*: Horizontal scaling defined as percent of original artwork width. For example, 50% is half of the original artwork shape width while 100% results in no scaling. Percent sign '%' is not required. • *Height*: Vertical scaling defined as percent of original artwork height. For example, 50% is half of the original artwork shape height while 100% results in no scaling. Percent sign '%' is not required. • *Scale proportionally*: When either width or height are not specified, this property controls whether the unspecified dimension is scaled proportionally to the other dimension. When turned off, only the dimension that is specified is scaled.

Advanced mode - Artwork properties	Description
Bleed	Type of bleed mask to apply to this artwork piece's content: • **Offset**: This option creates a uniform offset path from the artwork piece shape. You must determine the exact offset: offset from artwork piece shape to generate bleed clipping mask with. As with all other scalar value properties, units may be specified (e.g. 3mm) and if omitted, the default units are assumed • **None** will not apply a bleed mask.
Spacing	Artwork piece spacing type used when placing piece in layouts during nesting. Options: • **Bleed** • **Offset**: This option triggers a property *Offset*where you can specify the amount of offset. As with all other scalar value properties, units may be specified (e.g. 3mm) and if omitted, the default units are assumed. • **Tool**

Tiling	Tiling mode for artwork:
	• **None**: This option disables tiling.
	• **Direct**: Allows you to define properties to control tiling behavior in the horizontal and vertical directions. This option triggers the following subordinate properties:
	  • *Start corner*: The corner of the artwork where the first tile is to be placed. This property plus tile order define the exact order tiles are to be placed.
	  • *Tile order*: Tile placement order. This property plus start corner define the exact order tiles are to be placed.
	  • *Horizontal tiling*: Rule for splitting up artwork into tiles in the horizontal direction. Used to divide the artwork into multiple items to be produced separately. Depending on the chosen option, following subordinate properties are shown:
	  • *Number of tiles*: Number of tiles to create in the horizontal direction. Tiles are evenly spaced across the width of the artwork.
	  • *Uniform final size*: When defining a fixed number of tiles, enabling this option ensures the final tile sizes are uniform in the horizontal direction regardless of gap or overlap settings. When not enabled, inner and edge tile sizes can differ because uniform tile sizes are then calculated before gap or overlap rules are applied.

Advanced mode - Artwork properties	Description

	• *Tile width*: Fixed width of tiles in horizontal direction.
	• *Tile widths*: List of all tile widths in the horizontal direction.
	• *Tiling method*: Tiling method to use in horizontal direction in any: Gap or Overlap.
	  • *Gap*: Gap distance between tiles in the horizontal direction.
	  • *Extension*: Amount of extra artwork content beyond the tile gap edge to extend in the horizontal direction.
	  • *Extension direction*: Rule defining which horizontal direction(s) the gap is extended for each tile.
	  • *Overlap*: Distance beyond tile edge to extend the tile horizontally to create overlap.
	  • *Overlap rule*: Rule defining what horizontal edge(s) of tiles will overlap with neighboring tiles.
	  • *No-image*: Width of the section at the end of the overlap where no artwork content is allowed. This no image section can be used for example to create a glue strip area on the tile piece.
	• *Vertical tiling*: See Horizontal tiling. Same properties but in the vertical direction.

Image tracing	Whether to perform image tracing on the artwork to automatically generate precise cut paths around artwork content. If enabled, following subordinate properties are enabled: • *Tool type*: Name of the cutting tool to use for the generated cut tool path. • *Raster quality*: Quality of the raster image to use for generating the cut tool path from 1 to 100. A value of 100 (i.e. 100%) will rasterize the image at full size up to a limit of 10 megapixels. Lower values will scale the image down for faster processing and in some case preferred results as less detail is used for tracing. • *Tolerance*: Amount of color difference to allow before adjacent colors are considered different. A value of 0 means no tolerance in color differences is allowed while 100 is the maximum allowed tolerance in color differences.

Advanced mode - Artwork properties	Description
	• *Blur radius*: The amount of blurring to apply to edges that are encountered during edge detection between 0 and 100. A higher blur radius means more blurring is applied during edge detection which can lead to less jagged paths. • *Simplify*: The amount of simplification to apply to the generated path. Simplify works by removing points on the path that are within a certain tolerance. A value of 0 disables path simplification while a value of 100 will use the highest allowed tolerance when removing points. • *Smoothing*: Smoothing converts individual points on the generated path to Bezier curves to produce smoother paths. A value of 0 disables path smoothing while a value of 100 will perform the most aggressive path curve smoothing. • *Offset*: Additional offset distance to expand the generated path.
Barcode	Whether or not to add a barcode mark to this artwork piece. Following options are triggered: • *Fill color*: Artwork barcode color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for artwork barcode fill color. In case of a spot name: optional spot name for artwork barcode fill color. When specified, this custom color is treated as a spot color instead of a process color. • *Layer*: Optional layer name for this artwork barcode. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Format*: Artwork barcode format type. This triggers *Show human-readable*: If enabled, plain text of the barcode content is included below the barcode for 1D barcode formats such as Code 39 and Code 128. • *Data*: Dynamic keyword for barcode content or any custom text when using the 'Custom' option in Advanced mode. Each keyword option has a corresponding text value that can be used and combined in the custom text value. See Dynamic keywords table below. • *Scale*: Scale factor to apply to the artwork barcode to increase or decrease its size. The default value of 1.0 signifies 100% meaning no scaling is performed on the barcode. • *Artwork reference point*: Reference point in this artwork barcode to align artwork placement point to. • *Artwork reference point*: Point within artwork to place barcode mark alignment point to.

Advanced mode - Artwork properties	Description
	• *Horizontal offset*: Additional horizontal offset to move the artwork barcode from the placement point. Positive scalar values move the barcode to the right while negative values move the barcode to the left within the artwork. • *Vertical offset*: Additional vertical offset to move the artwork barcode from the placement point. Positive scalar values move the barcode up while negative values move the barcode down within the artwork. • *Rotation*: Rotation of the barcode in the artwork.
Text mark	Whether or not to add a text mark to this artwork. • *Color*: Artwork text mark color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for artwork text mark. In case of a spot name: optional spot name for artwork text mark. When specified, this custom color is treated as a spot color instead of a process color. • *Layer*: Optional layer name for this artwork text mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Text*: Dynamic keyword for artwork text content or any custom text when using the 'Custom' option in Advanced mode. Each keyword option has a corresponding text value that can be used and combined in the custom text value. See Dynamic keywords table below. • *Font*: Name of font to use in this artwork text mark. Use 'Select from library' to view a list of available fonts. • *Font size*: Size of text in points (pt) for this artwork text mark. • *Font style*: Font style of artwork text mark. Note that some fonts do not support all styles. When a style is chosen that is not available for the given font, the style will default to Normal and a warning message will be logged in Switch. • *Mark reference point*: Reference point in this artwork text mark to align artwork placement point to. • *Artwork reference point*: Point within artwork to place artwork text mark alignment point to. • *Horizontal offset*: Additional horizontal offset to move the artwork text mark from the placement point. Positive scalar values move the mark to the right while negative values move the mark to the left within the artwork. • *Vertical offset*: Additional vertical offset to move the mark from the placement point. Positive scalar values move the

Advanced mode - Artwork properties	Description
	artwork text mark up while negative values move the mark down within the artwork. • *Rotation*: Rotation of artwork text mark within the artwork.
Corner mark	Whether or not to add a corner mark to this artwork piece. Subordinate properties are: • *Stroke color*: Corner mark stroke color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for artwork corner mark. In case of a spot name: optional spot name for artwork corner mark. When specified, this custom color is treated as a spot color instead of a process color. • *Stroke thickness*: Stroke thickness of corner mark lines. • *Layer*: Optional layer name for this artwork corner mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Corner type*: Corner mark flavors: Type 1 or Type 2. Both types are simple "L" shaped stroked marks, with Type 1 corner marks facing towards the artwork and Type 2 facing outwards. • *Width*: Width of each corner mark, i.e. the distance from the corners to extend the horizontal lines. • *Height*: Height of each corner mark, i.e. the distance from the corners to extend the vertical lines. • *Horizontal distance*: Optional distance to offset the corner mark in the horizontal direction. Positive values will move the corner point away from the artwork while negative values will move the corner point inside the artwork. • *Vertical distance*: Optional distance to offset the corner mark in the vertical direction. Like Horizontal Distance, positive values will move the corner point away while negative values with move the corner point inside the artwork.
Grommet marks	Whether or not to add grommet marks to this artwork piece. Subordinate properties are: • *Stroke color*: Artwork grommet mark color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for artwork grommet mark color. In case of a spot name: optional spot name for artwork grommet mark. When specified, this custom color is treated as a spot color instead of a process color. • *Stroke thickness*: Stroke thickness of grommet mark lines.

Advanced mode - Artwork properties	Description

	• *Layer*: Optional layer name for this artwork grommet mark. When specified, the mark's content will be placed in a PDF layer with the given name during export.
	• *Shape*: Shape of each grommet mark (Target, Cross, Circle). You must also determine the size (width and height of each grommet mark instance) and the circle diameter (= this is the diameter of the inner circle in Target shape grommet marks).
	• *Margin*: The margin offset to place grommet marks from the bounds of the artwork.
	• *Hem*: The width of the hem for artwork grommet marks.
	• *Marks on hem:* If enabled, grommet marks are mirrored onto the hem so they line up when the edges are folded.
	• *Spacing type*: This property controls how artwork grommet marks are distributed across the edges.
	  • **Max spacing** will evenly place marks as far apart as possible up to the max spacing distance.
	  • **Quantity** will place the exact number of marks defined in the horizontal and vertical quantity properties.
	• *Top edge/bottom edge/left edge/right edge*: Whether to add grommet marks to the specified edge of the artwork.

Fill mark	Whether or not to add a fill mark to this artwork piece. Subordinate properties are: • *Color*: Fill mark color. Cyan/Magenta/Yellow/Black component of custom color from 0 to 100 for artwork fill mark color. In case of a spot name: optional spot name for artwork fill mark. When specified, this custom color is treated as a spot color instead of a process color. • *Layer*: Optional layer name for this artwork fill mark. When specified, the mark's content will be placed in a PDF layer with the given name during export. • *Margin*: Margin offset from the artwork piece shape to create the fill mark

Dynamic keywords that can be used for barcodes (overview)

Value	Keyword	Description
Date ISO format	**<date.iso>**	The current date in ISO 8601 format Example: 2024-01-26

Value	Keyword	Description
Date long format	**<date.long>**	The current date in long format Example: January 26, 2024
Date medium format	**<date.medium>**	The current date in medium format Example: Jan 26, 2024
Date short format	**<date.short>**	The current date in short format Example: 1/26/2024
Job ID	**<job.id>**	The Job ID of the current job as defined in Job Properties
Time ISO format	**<time.iso>**	The current time in ISO 8601 format Example: 21:30:49
Time long format	**<time.long>**	The current time in long format Example: 11:30:49 PM EST
Time medium format	**<time.medium>**	The current time in medium format Example: 11:30:49 PM
Time short format	**<time.short>**	The current time in short format Example: 11:30 PM
Following keywords apply to layouts (not available in the Artwork properties)		
Layout copies	**<layout.copies>**	The number of copies being produced of the current layout.
Layout current copy	**<layout.copy>**	The current copy of the layout being printed
Layout dimensions	**<layout.dimensions>**	The width and height of the current layout Example: 800 x 1200 mm
Layout index	**<layout.index>**	The index number of this layout Numbering starts at 1.
Layout name	**<layout.name>**	The name of this layout
Layout placed	**<layout.placed>**	The number of artwork items placed on this layout
Layout random ID	**<layout.random>**	The unique random ID generated for this layout
Layout side	**<layout.side>**	The current layout side: Front or Back
Layout waste	**<layout.waste>**	The percentage of waste on the current layout
Layout width	**<layout.width>**	The width of the layout
Layout height	**<layout.height>**	The height of the layout

Value	Keyword	Description
Following keywords apply to artwork (not available in the Layout properties)		
Artwork name	**<artwork.name>**	The name of the artwork
Artwork quantity	**<artwork.quantity>**	The quantity of the artwork
Artwork width	**<artwork.width>**	The widht of the artwork
Artwork height	**<artwork.height>**	The height of the artwork
Artwork path	**<artwork.path>**	The filesystem path of the artwork file the current artwork item came from.
Artwork page number	**<artwork.page-number>**	The total number of pages of the artwork file the current artwork item came from.
Artwork page count	**<artwork.page-count>**	The total number of pages of the artwork file the current artwork item came from.

Dealing with errors

There are a few different types of errors that can occur in the Griffin Switch App. The best way to find out what is causing an error is to look to the Griffin log file, found here:

- On MacOS:

```
Users/[user]/Library/Application Support/Enfocus/Switch Server/ScriptData/
com.tilia.griffin.app/log/rolling.log
```

- On Windows:

```
C:\Users\[user]\AppData\Roaming\Enfocus\Switch Server\ScriptData
\com.tilia.griffin.app\log\rolling.log
```

Most of the time, the log will point directly to the error, for example:

```
'The license on this machine has been activated on another machine. Please activate a
 valid license in order to continue using Griffin Auto on this machine.'
```

In any event, this log will be helpful in diagnosing the issue.