

Your SignLab package includes an *Installation Manual* that describes the various methods of sending jobs to cutters and printers. In this chapter, we want to highlight the **File | Print and Cut** command. However, please note that the **Print and Cut** command is not available with *SignLab Vinyl* or *Vinyl Pro* packages.

When using this method, we want to make use of SignLab's PostScript Level 3 RIP technology to control print layout, speed, quality, and color integrity. The **Print and Cut** method is preferred when printing large images that require fast

processing, and where the print quality and color integrity are important.

Both “print only” and “print and cut” jobs can be processed through the **Print and Cut** command. A “print and cut” job is like a regular print job, except that contour cutting lines are applied after the print portion of the job. For example, stickers are commonly created through a “print and cut” process.



Using the **Print and Cut** command, all workspace shapes are considered to be print-only objects, except contour cut shapes that represent cut-only objects. Under the **Cut** menu, contour cut shapes are created with either the **Contour Cut**, **Contour Cut On/Off**, or **Die Cut** commands.

Cut menu – Creating contour cut shapes

- Contour Cut
- Contour Cut On/Off
- Die Cut

Workflow for “Print and Cut”

The workflow for “print and cut” jobs varies according to the type of printer that is being used. For a traditional printer that does not support cutting operations, then a separate cutter must be used to perform the “cut” portion of the “print and cut” job. If a hybrid printer is used (i.e. a printer that supports cutting operations), then both the “print and cut” portions of the job will be performed by that hybrid printer.

“Print and cut” with separate printer and cutter

- a. The media is loaded into the printer
- b. For cutter alignment purposes, registration marks are added to the design
- c. The print portion of the job is printed
- d. The media is loaded into a cutter, where the registration marks are used for alignment

Using a hybrid printer that includes cutting functionality

- i. The media is loaded into the hybrid printer
- ii. The print portion of the job is printed
- iii. The cut portion is then performed, with alignment performed automatically by the printer



Print-Laminate-Cut

The Print and Cut command is used to send lamination jobs from SignLab. For lamination work, the lamination step takes place after the print portion of the job, but before the cut portion. As such, the queue settings must place the cut portion of print and cut jobs on hold, until the lamination portion of the job has been completed.

Schedule settings for print-laminate-cut

1. In the queue (Print and Cut Manager), choose **Setup** from the **Queue** menu
2. For the **Scheduling** setting, verify that the “print and cut” jobs will “**Cut later**”
3. In SignLab, use the **Print and Cut** command to send the print and cut job
4. In the queue, print the job, and note that the cut portion of the job has been put on hold
5. Load the print job into the laminator and complete the lamination
6. Load the laminated job for cutting, and then send the cut portion of the job

Configuring the Printer and/or Cutter



Under the **File** menu, the **Print and Cut Setup** is used to configure a printer and/or cutter for the **Print and Cut** command.




Important configuration settings

- The **Printer Page** tab is used to select the printer
- The **Page Setup** tab is used to specify the page or roll dimensions, including margins and tile overlap settings
- The **Cutter Page** tab is used to select the cutter and set the machine limits of the cutter
- On the **Printer Page** tab, the **Printer cutter alignment** setting is used to automatically create registration marks in **Print/Cut Preview** mode
- On the **Printer Page** tab, choose the **Print Mode** that best corresponds to the inks and media that will be used when printing
- On the **Options** page, confirm that the printer settings are correct. For these settings, the printer's Operator Manual should be consulted.
- On the **Options** page, confirm that the **Sampling** is set to produce the desired balance of spooling the job quickly versus output quality.

Previewing the Print and Cut Job

From the **File** menu, choose the **Print and Cut** command to preview the design in **Print/Cut Preview** mode. The printer and cutter names will be displayed at the far-left of the SmartBar.

To send the job, the **Print/Cut Toolbox** has three output buttons: **Cut**, **Print**, and **Print and Cut**.

-  **Cut** – Send only the cut data portion of the design
-  **Print** – Send only the print portion of the design
-  **Print and Cut** – Send both the print and cut portions as a combined job.

After an output button has been clicked, the queue (i.e. the **Print and Cut Manager**) will now launch, and the job will be in the **Active List**. The job will be a cut, print, or combined print & cut job, depending on which output button was clicked.



Viewing the Spool File

For print jobs, the queue has an additional viewing tool that allows you to view a graphical representation of the spool file.

View the spool file:

1. In the **Active List**, right-click the print job and choose **Spool Only** from the context menu
2. The spool file for the job will be generated, but the file will not be sent to the printer
3. Right-click the print job and choose **View Raw Data** from the context menu

Please note that viewing the spool file is useful as a means of confirming the contents of the print job. However, the colors in the preview will not be an accurate representation of how they would appear when printed upon the media.

Printing or Cutting from the Queue

Before sending a print and/or cut job, confirm that the printer and/or cutter is ready to receive data. From the **Active List**, right-click the job and choose either Print, Cut, or Print and Cut from the context menu.



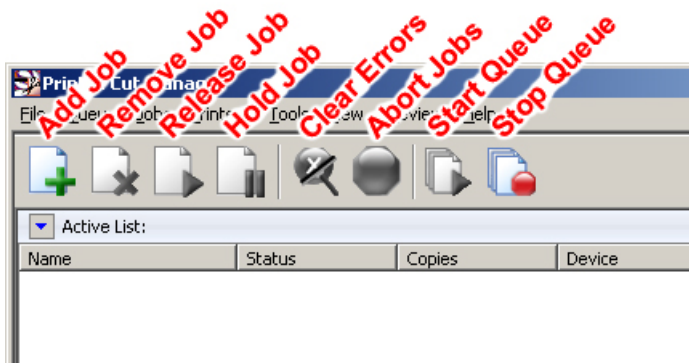
The Print and Cut Manager

In practice, the term “queue” is used interchangeably with that of “Print and Cut Manager.” For any workstation that has been installed with the Print and Cut Manager, that workstation can also be referred to as a “queue.”

When printing and/or cutting jobs to the queue, the queue will automatically open. Alternatively, the queue may be opened by choosing **Launch Print & Cut Manager** from the **File** menu, or by choosing **Print & Cut Manager** from the Windows **Start** menu.

The queue window provides real-time control over print jobs as they are sent from SignLab to local or networked printers. The queue can collect similar print jobs until there are a sufficient number to proceed with a series of print runs.

In the queue toolbar are the **Start Queue** and **Stop Queue** buttons. If the **Start Queue** button is clicked, then print and/or cut jobs will begin according to the **Scheduling** settings. If the **Stop Queue** button is clicked, then all print and/or cut jobs will be placed on hold. In the latter case, right-click the print and/or cut job and choose either the Print, Cut, or Print and Cut from the context menu.



From the **Queue** menu, choose **Setup** to review the queue properties.

Queue Settings:

- **Queue Name** – If you have two-or-more queues on a network, then it is helpful to distinguish each queue with a meaningful name. Otherwise, all queues will have the default “My Queue” designation.
- **Default Printer** – Used if a received print job does not have an assigned printer.
- **Default Print Mode** – The print mode that will be used with the default printer.
- **Hot Folder** – The queue will monitor this directory. Any print and/or cut files placed in this directory will be added to the Active List as new jobs.



- **Scheduling** – Job Scheduling is used to automatically place print and/or cut jobs on hold, such that the jobs are not processed until you can verify that the printer and/or cutter is ready.
- **Archiving** – After a print and/or cut job has been completed, archiving will store the job files for reuse. Note that the properties of **spooled** print jobs will not be editable.
- **Page Setup** – These controls are used to scale, invert, mirror, or rotate the job.
- **Color Adjustments** – Adjust the color levels of the print job, either for an artistic effect, or as a means of compensating for using non-standard media and inks.
- **Separation Curves** – These controls are used to adjust the color levels when printing color separations. These controls are available with the *Color Separations* module.
- **Max Ink** – The maximum ink levels control the overall volume of ink that is available when printing. If these settings are too high for your media, then pools of ink can form.
- **Image Adjustments** – These controls are used in addition to the Color Adjustment controls.
- **ICC Profile** – Choose the color mapping profiles to use instead of the print mode settings.

- **Halftones** – Adjust the frequency, angle, and spot shape of halftone screens to prevent undesirable patterns from appearing in the print.
- **Printer Options** – These printer-specific options are defined within the print mode, such as plane order, knife speed, etc. Please note that these options vary according to the printer model. For more information about these settings, please consult the operator manual that was provided with the printer.
- **In RIP Cutting** – When printing from third-party software graphic applications like CorelDraw or Illustrator, the queue can be set to interpret line art (of a specific RGB or CMYK color) as being cutting path information.
- **Performance** – If your computer is requiring an extraordinary amount of time to complete the print job, then an option would be to reduce the image resolution.

Choosing the Vinyl Type and Color

The Sheet Layer Palette is used to indicate the type and color of vinyl that is being printed and cut. To choose the vinyl, double-click the sheet layer.

Once the vinyl has been chosen, its color will be previewed as the sign blank color. To turn off this preview, refer to the View menu and remove the checkmark that is beside the **Show Substrate** option.



For shapes on a "Print and cut" layer, those shapes will be given a **blue** highlight. For shapes that are on a "Cut only" layer, those shapes will be given a **red** highlight. To enable or disable these highlights, use the "**Highlight selected objects**" option on the **Selection Settings** dialog.

If more than one sheet layer has been created, then shapes can be arranged upon different layers. For example, different layers could be used for artwork and text.

Modifier Keys

- **[Shift + Click]** to select all shapes on that layer
- **[Ctrl + Click]** to disable the layer
- **[ALT + Click]** to disable all other layers

Registration Marks

When a “print and cut” job involves a separate printer and cutter, then registration marks must be included with the print portion of the job. These registration marks are used for alignment when the printed media is loaded into the cutter.

Registration marks are purely functional, and their appearance varies according to the manufacturer. Some cutter models include a sensor that can recognize the registration marks and align the job automatically. For cutters that do not include a sensor, the operator will be prompted to manually align the cutter tool with each registration mark. In either case, please consult the cutter’s Operator Manual for the proper style and usage of registration marks.

In SignLab, you’ll find that there are several methods of creating registration marks. The method that you use for creating registration marks will depend upon your particular workflow.

Registration marks for “Print and Cut” jobs:

1. From the **Shape Tools** flyout, the **Registration Mark** tool is used to manually place registration marks about the artwork.
2. From the **Shape Tools** flyout, the **Multi-Registration Mark** tool is used to manually offset registration marks about the artwork.



3. From the **Print and Cut Setup** dialog, the **Cutter Page** tab has a **Printer cutter alignment** setting. This setting will automatically create registration marks in **Print/Cut Preview** mode.
4. From the **Print/Cut Preview** mode, the **Print/Cut Toolbox** has a **Registration Mark** button. Right-click the **Registration Mark** button to choose the position, size, and offset of the registration marks. Left-click the **Registration Mark** button to place the specific type of registration marks.

For (3) above, the following is a summary of the automatic registration mark options that are available:

- **None** – No alignment required.
- **Printer self-registration** – Printer creates and detects its own registration marks.
- **One point automatic** – Create one mark for manual alignment on tractor feed devices.
- **Two point automatic** – Create two marks for manual alignment on pinch feed devices.
- **Three point automatic** – Creates three marks to support skew with pinch feed devices.
- **Mutoh** – Automatically recognized and used for alignment by supported plotters.

- **OPOS** – Automatically recognized and used for alignment by supported plotters.
- **Type 1** – Create four L-shape arrowhead marks pointing inward.
- **Type 2** – Create four L-shape arrowhead marks pointing outward.
- **Type 1 array set** – Create set of Type 1 marks around each repeat or decal.
- **Type 2 array set** – Create set of Type 2 marks around each repeat or decal.

Print Modes

A print mode is a pre-set calibration file that is used to maintain color consistency when spooling a print job. For each printer that was installed from the **Print and Cut Manager** Printers CD, a library of print modes were included for that printer. Each print mode is representative of a specific type of media and set of inks that are loaded into the printer.

The name of each print mode generally suggests the qualities of that print mode. Choose the print mode that best matches the media and inks that are loaded into the printer. Examples of possible print mode terms are:



- "CMY," "CMYK," and "Hexachrome" indicate that process colors are being used
- "Mono" indicates that spot colors are being used
- "SuperScreen" indicates the type of halftone
- After the term "SuperScreen," the printer DPI will be indicated
- "High Quality Gloss" indicates a glossy media

The calibrations that are provided with the queue are designed to give the best possible overall color matching that can be produced for a given printer and media. If the media or inks being used are non-standard, then the colors will not be as consistent.

Setting the print mode

1. Under the **File** menu, choose **Print and Cut Setup**
2. On the **Printer Page** tab, select the **Printer**
3. To the right of the **Print Mode** field, click the ellipsis button (...)
4. Choose the print mode that best corresponds to the loaded inks and media

Halftones

A halftone is a dot pattern that is used to control how colorants (inks, foils, etc.) are laid upon the media. An important aspect of halftones is to prevent unexpected patterns or imperfections from appearing within the printed output. Sometimes, the

effect of a halftone on the print job can be subtle, but it makes the difference between a graphic that looks crisp, versus a graphic that has visible aliasing (pixel staircasing).

The choice of print mode includes a halftone pattern that should be appropriate for the indicated resolution. However, some print modes have extra qualifiers that indicate usage with certain types of line art. For example, the names of some print modes can include terms like:



- General Purpose
- Long Gradients + Images
- Photos
- Small text + Short Gradients

In the case of an artwork that has a large amount of small text shapes, the “Small text + Short Gradients” print mode should be selected. For artwork that includes a montage of photographs, choose the “Photos” print mode. As such, the choice of print mode is a judgement call that is based on what you feel is best for the given job.

The Halftone Palette

In addition to the halftone information that is contained within the print mode, the **Halftone palette** is used to set halftone information for both

individual shapes, and entire categories of shapes (line art, bitmap, etc.).

When SignLab is installed, several default halftones are provided within the **Halftone palette**.



Default halftones included with SignLab

- Extra Long
- Long Gradients and Images
- Midsize Graphics
- General Purpose
- Photos
- Small Text and Short Gradients
- Extra Small Lettering

These halftones can be applied to shapes in the same manner as colors: left-click to apply to a shape fill, right-click to apply to a shape stroke.



From the **Print and Cut Setup** dialog, the **Halftone Overrides** tab is used to specify the halftone for bitmaps, line art, and linked EPS files. The halftones listed here correspond to the halftones in the **Halftone palette**.

Filter By Color

The **Filter By Color** option is used to send only one color layer as output to the cutter. This feature is typically used when cutting shapes from different colors of vinyl. If thick line styles are in the design, then the line colors will also be filtered.

In **Print/Cut Preview** mode, the **Filter By Color** button is on the **Print/Cut Toolbox**. Click the **Filter By Color** button and choose the color layer that will be filtered.

When filtering colors, registration marks are used to maintain alignment between each layer of vinyl. To allow registration marks to be cut with all layers, leave the **Filter Registration Marks** option checked.



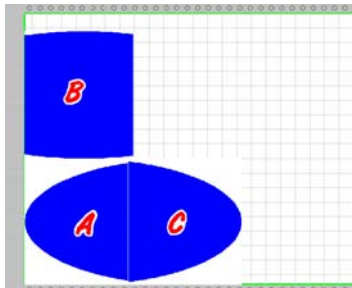
Tile Settings

When creating a design in SignLab, the dimensions of the loaded media should be considered, and one should be mindful of the maximum physical limits of the printer or cutter. For example, consider a roll of tractor-fed media. Not only is the width of the media a constraint, but the teeth of the tractor-feed also restricts the width. As a general rule, consult the Operator's Manual to confirm the physical limits of the printer and/or cutter.



If the limits of either the printer, cutter, or media are exceeded, then the job must be divided into tiles. Each tile may then be output as a separate job.

Depending on the dimensions of the loaded media, the tiles may also be “stacked” in order to conserve material.



By stacking the tiles, wasted material may be reduced.

Creating tiles in Print and Cut Preview mode

1. From the **File** menu, choose **Print**
2. Click **Tile** in the **Print/Cut Toolbox**
3. Drag tiling lines to form tiles
4. To print only some of the tiles, click the tiles that should be printed. An 'X' indicates that the tile will be printed.
5. Click **Apply** to return to the preview
6. Drag the tiles to reposition them upon the media

PRINTING FROM THIRD-PARTY GRAPHIC SOFTWARE APPLICATIONS

Third-party graphic software applications, such as CorelDraw or Adobe Illustrator, can send print jobs to SignLab's print engine. This allows these other applications to take advantage of SignLab's PostScript Level 3 RIP technology to control print layout, speed, quality, and color integrity.

Before printing, the queue printer must be added to the Windows **Control Panel**. There are two ways of doing this, as follows:

A. To print to the queue on this local workstation

- i. In the **Print & Cut Manager**, choose **Manage Printers** from the **Printers** menu
- ii. Beside the printer, put a checkmark in the **Control Panel** option
- iii. Click **OK**, and the printer will be installed in the Windows **Control Panel**



B. To print remotely across a network to the queue

- a. Browse to the workstation that has **Print & Cut Manager**, and locate the RPIWiz.exe file in the PCut Manager directory



- b. Double-click the RPIWiz.exe file to launch the wizard
- c. The wizard allows you to install a printer in your Windows **Control Panel**

In either case, the properties of the queue printer will indicate that it is a “Print & Cut Manager” port, which means that print jobs sent to this printer will be received by the queue. The properties of the printer can be checked from the Windows **Control Panel**.

Once a queue printer has been installed, it will be available from the **File | Print** dialog of all Windows applications.

Example of printing from CorelDraw to the queue

1. In CorelDraw, create a shape
2. From the **File** menu, choose **Print**
3. In the **Print** dialog, choose the queue printer
4. Click the **Print** button
5. If the queue isn’t already open, then it will launch now
6. The print job should now be in the **Active List** of the queue
7. Before continuing, confirm that your printer is ready to receive data
8. From the **Active List**, right-click the job and choose either Print, or Print and Cut from the context menu

Using In-RIP Cutting

For third-party graphic software applications that support line art, the queue can be set to interpret RGB or CMYK line art as being cutting line data. Hybrid printers (i.e. printers that support cutting) will then be able to print and cut the job.

The color used to represent the cutting line should not be used in any other part of the artwork, since all line art of the cutting line color will be cut.

A good cutting line color is CMYK Black (C = 100%, M = 100%, Y = 100%, K = 100%) because it is rarely otherwise used in designs.

In the queue

1. In the queue (Print & Cut Manager), choose **Setup** from the **Queue** menu
2. In **Queue Setup**, choose **In Rip Cutting**
3. Set the **Select Mode** to Print and Cut
4. Set the color space to CMYK
5. Set the **Line color** to C = 100%, M = 100%, Y = 100%, K = 100%
6. Click **OK** to accept the hot folder settings

In CorelDraw or Illustrator

1. Create a rectangle around your print shape
2. For the rectangle fill color, assign NO FILL
3. For the rectangle, set a stroke that has the color C = 100%, M = 100%, Y = 100%, K = 100%
4. From the **File** menu, choose **Print**
5. In the **Print** dialog, choose the queue printer



6. Click the **Properties** button, and then click the **Advanced** button
7. Set the **Cutter Control** option to “Print n Cut”
8. Click **OK**, click **OK** again, and then click **Print**
9. The job should now be in the **Active List** of the queue
10. Before continuing, confirm that your printer is ready to receive data
11. From the **Active List**, right-click the job and choose either Print, Cut, or Print and Cut from the context menu

Tiling from CorelDraw

In CorelDraw, tiles must first be previewed, and then each tile can be printed individually to the queue.

Print a tile from CorelDraw

1. From the **File** menu, choose **Print**
2. In the **Print** dialog, choose the queue printer
3. Click the **Layout** tab
4. Check the **Print tiles pages** option
5. Set the **Tile overlap** as desired
6. Click the **Print Preview** button
7. Right-click the each tile and choose **Print This Sheet Now** from the context menu
8. The tiles will now be printed to the queue

Tiling from Adobe Illustrator

In Adobe Illustrator, there is a **Tile Imageable Areas** option that must be enabled before printing tiles to the queue.

In the queue

1. Verify that the queue is STOPPED, so that you have control over all of the tiles that will be sent to the queue



In Adobe Illustrator

2. From the **File** menu, choose **Document Setup**
3. Click the **Tile Imageable Areas** option
4. Click **OK** to close the **Document Setup** dialog
5. From the **File** menu, choose **Print**
6. In the **Print** dialog, choose the queue printer
7. Click the **Print** button

Each tile will now be listed as a separate job in the queue.

Print-Laminate-Cut

To print, laminate and cut a job from a third-party graphic software application, the printer's properties must be set to "Print-Laminate-Cut."



In CorelDraw or Illustrator

1. From the **File** menu, choose **Print**
2. In the **Print** dialog, choose the queue printer
3. Click the **Properties** button, and then click the **Advanced** button
4. Set the **Cutter Control** option to "Print-Laminate-Cut"
5. Click **OK**, click **OK** again, and then click **Print**
6. The job should now be in the **Active List** of the queue

Comment about Auto Scheduling

When the printer properties have been set to "Print-Laminate-Cut", this will override the queue's **Auto Scheduling** for print and cut jobs. The cut portion of the job will automatically be put on hold, so that the lamination can be completed prior to cutting.