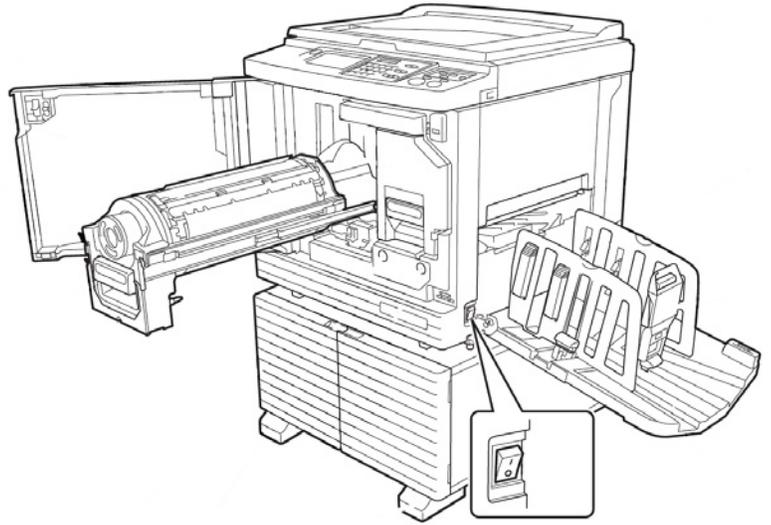


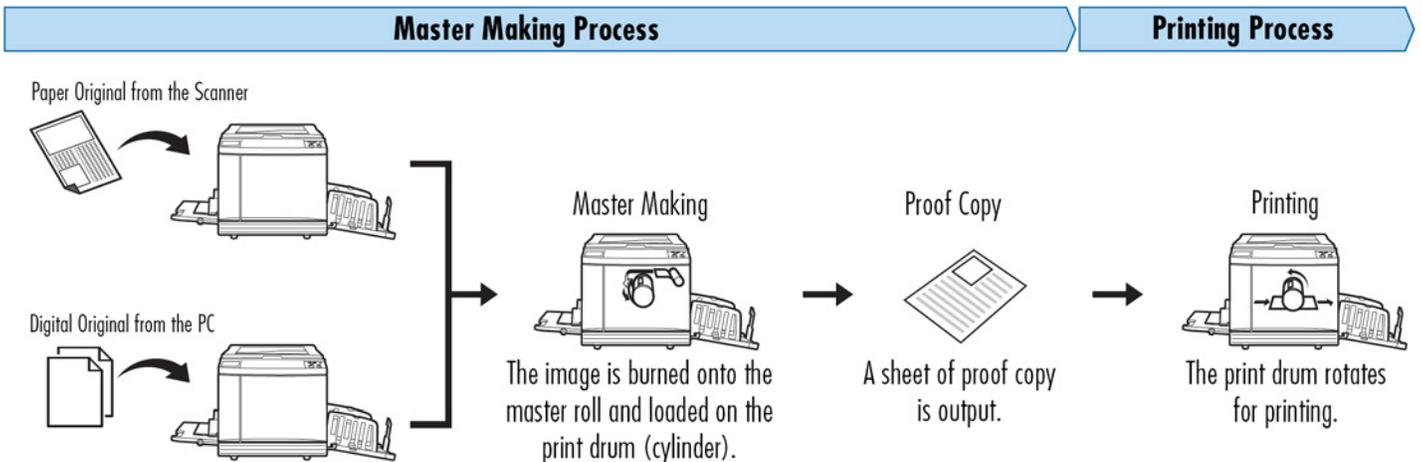
What's a Risograph?

The Risograph is a stencil duplicator. Think of it as a cross between screen printing and photocopying. The Riso prints one color at a time in bright, vibrant colors. It is ideal for posters, graphic prints, zines, comics, and other graphic arts.

(If you're looking for accurate, photo-quality printing, try the inkjet or laser printers).



How does it work?



An image is sent either digitally from the attached PC, or from a physical original via the scanner bed. The master is created by burning the image onto the master roll inside the printer. This stencil is then wrapped around the ink drum.

The machine feeds paper under the ink drum as it rotates and ink is pushed out through the stencil to create an impression.

Pricing

Riso prints are charged at a flat rate of **\$.06 per impression**.

For example, that means, if you run a page through twice to get a two-color print, that page will have cost you \$.12

Paper

We stock two types of uncoated white tabloid paper:

Cover Weight - Domtar Earthchoice Colors Brite White Vellum Bristol 67lb

Text Weight - Domtar Husky Smooth Finish 70lb

You may provide your own paper if you wish to print on different colored stocks. The following papers work well with the Risograph process:

French Paper Co.

Domtar Earthchoice Colors

Mohawk Via Vellum

Neenah Exact Vellum Bristol or Astrobrights

Paper Weight: 60-300gsm

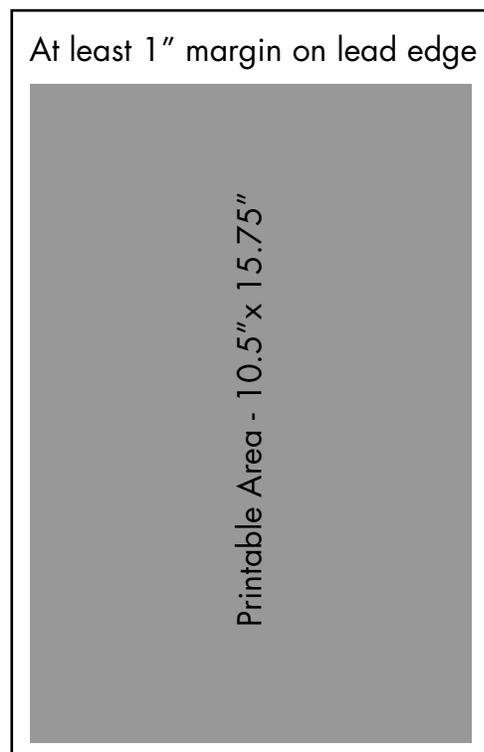
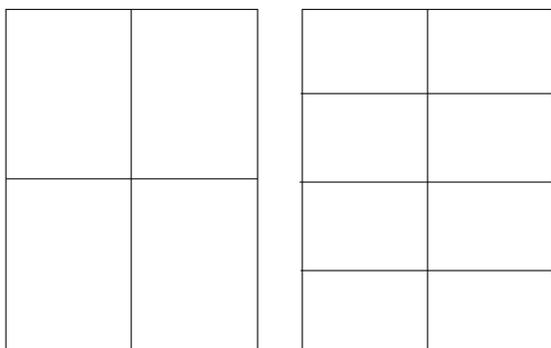
Coated papers such as inkjet or laser paper, or papers with very smooth or glossy surfaces do NOT work well with the Risograph.

Printable Area

Leave a 1/4" margin on 3 sides around your artwork, and at least a 1" margin on the lead edge of the paper.

Trying to print ink outside of the printable area will lead to paper jams and unsuccessful prints.

Since we only stock tabloid-sized paper, if your design is small, consider placing multiple copies of it on a single sheet to save on printing costs.



Tabloid Paper - 11"x17"

Ink

The Risograph uses a rice oil-based ink that does not contain a drying agent. As a result, the ink never fully dries. Like newsprint, rubbing the ink with your finger, even after it is “dry”, can result in smudging.

Prints that will be heavily handled (such as book covers) can be finished with spray fixative to help prevent smudging. Ink smudges and roller marks can often be lightly erased with a plastic eraser.

The nature of the ink can also present some issues when printing, especially when printing multiple layers of different colors. Here are some common problems and solutions:

Problem: Ink transfer from heavily inked areas on to the back of the next sheet.

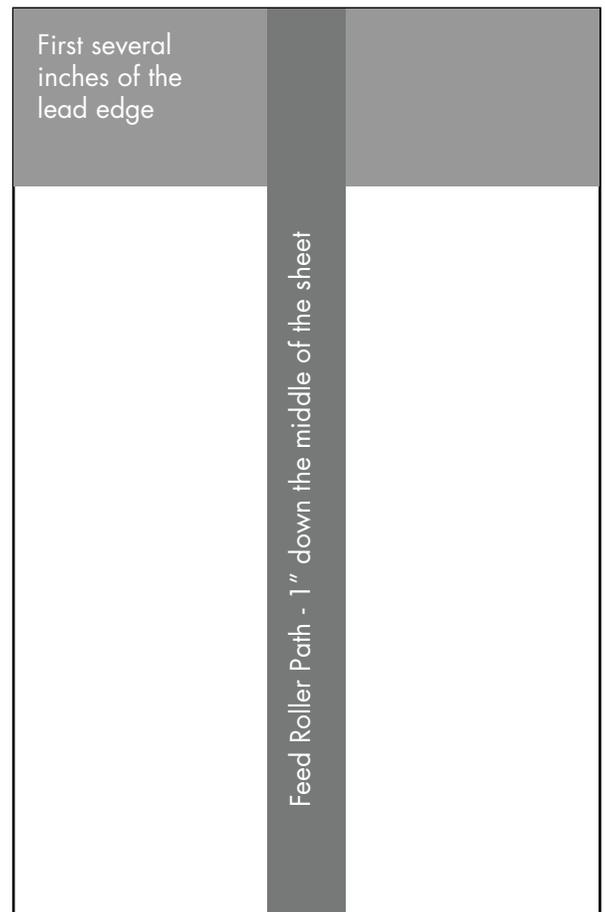
Possible Solutions:

- Be sure that Print Speed and Print Density are both set to Level 1.
- If you have large flat areas of 100% ink coverage, try making them 80-90% black and recreating the master.
- Slow down the printing speed by using **Interval Printing** (in the functions tab on the printer). A higher interval setting will make for more of a delay between printing sheets.

Problem: Roller marks in the middle of the sheet.

Possible Solutions:

- Print light colors (yellow or pink) first and save darker colors (blue or black) for the final passes through the machine.
- Allow more dry time between printing color layers. Overnight is ideal, but at least an hour for layers with substantial ink coverage.
- Clean the feed rollers using the provided Citrusolv and paper towels. (After cleaning, you may want to send through several pieces of scrap paper to pick up any ink/solvent residue left on the rollers)
- Avoid heavily inked areas in the feed roller path if possible.



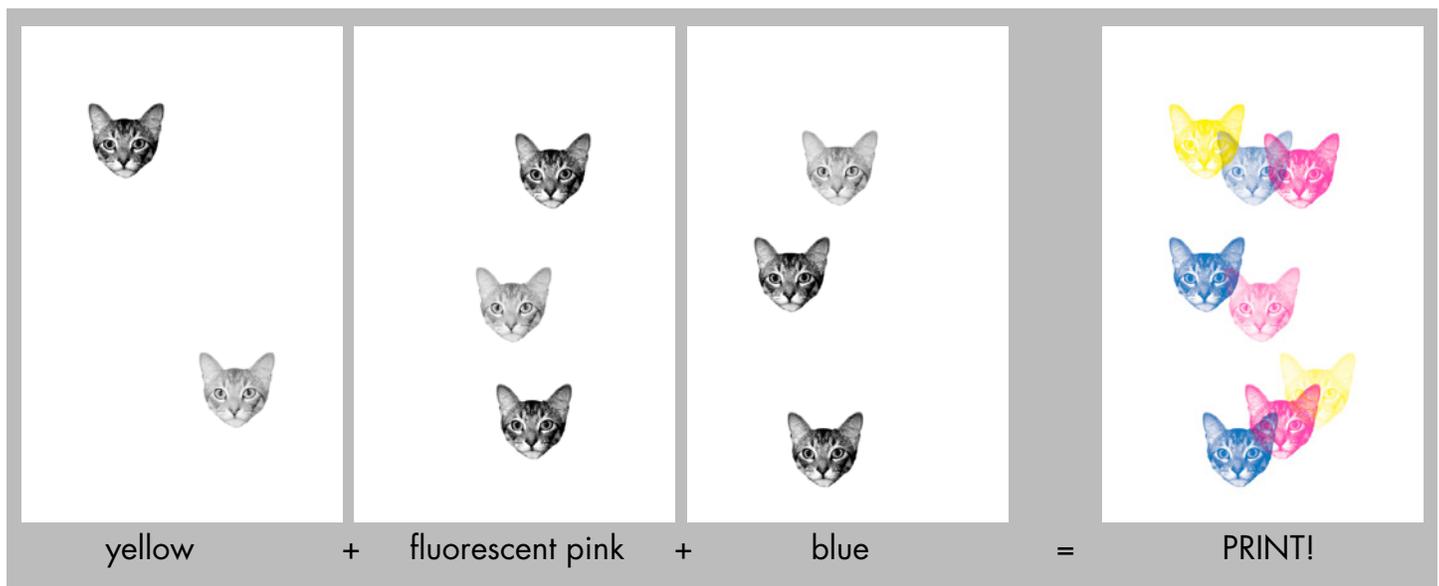
Avoid heavy ink coverage in these areas - especially when printing double-sided - to reduce the chance of smudges or roller marks.

File Preparation

The Risograph prints one color at a time. Therefore, your final print files should be separated into individual grayscale images for each color that is to be printed. This is similar to preparing files for screen printing. 100% black in each color layer, will print out as 100% of whichever color you are printing. 90% black will print as 90% and so on.

For images prepared in **Photoshop**, separate out each color layer or channel into individual grayscale files.

For images prepared in **Illustrator/InDesign**, separate out each color layer into individual grayscale **PDFs** that can be printed from **Acrobat**.



Your final file should be **11x17** in **portrait** orientation. The top of your file is the lead edge of the paper when loaded in the printer.

When working with a **CMYK** file in **Photoshop**, when your file is ready to print, open the **Channels Menu** and select **Split Channels**. This will create new grayscale files, one for each color channel from your template.

Alternatively, if you have prepared your color separations in layers instead of channels, you can use the **File > Export > Layers to Files** function to split them into individual files. Then open each file, convert it to grayscale, and print it.

See the **File Preparation Guides** at <http://go.illinois.edu/artRiso> for more detailed information about different methods of file preparation.

Half-toning Options

When sending your print, you have several "Screening" options in the Image tab. This will control how the Risograph half-tones your image to convert it from a digital file to a physical stencil.

Grain-touch is a randomized diffusion dither pattern.

Screen-Covered creates classic halftone patterns. **Screen Frequency** will control the size of the dots produced (higher numbers = smaller dots). **Screen Angle** will control the angle that the pattern is set to.

Note: For CMYK process prints, you will want to vary the Screen Angle to avoid moire patterns. A good rule of thumb is:

Yellow: 0%

Pink: 75%

Blue: 15%

Black: 45%

For more information on working with half-tones: <http://the-print-guide.blogspot.com/2009/05/halftone-screen-angles.html>



Grain-Touch



Screen-Covered: Frequency 40, Angle 45



Screen-Covered: Frequency 72, Angle 15



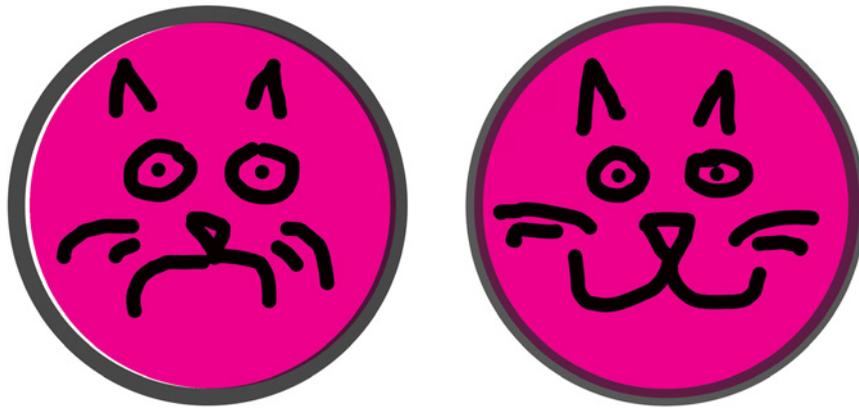
Screen-Covered: Frequency 106, Angle 75

Registration/Trapping

Because each successive color layer requires a separate pass through the printer, registration on multi-color Risograph prints will never be perfect. It is recommended that you add registration marks to your image to aid in lining up multiple layers. These can also double as trim marks if you plan on cutting down your print to size after it is printed.

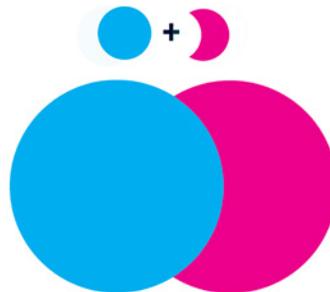
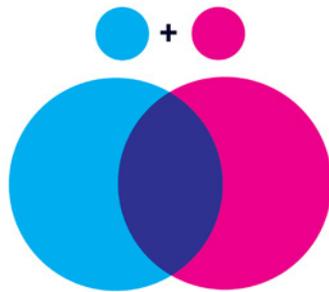
There are a few steps you can take to make your registration better and make the off-registration of the machine less noticeable:

- **Jog your paper** well before putting it in the paper tray to make sure the stack is even. Fan your stack of paper as if you were flipping through a flip-book, then knock the stack on edge on a flat surface to make it even.
- **Trapping** is the practice of adding a little bit of overlap between adjacent colors to make sure there are no white gaps between them even when registration is a little uneven.



Overprinting vs. Knockout

Overprinting is when colors are printed over each. This creates new colors as the colors are blended.



Knockout is when you cut out overlapping colors from the lower layers so that you only print with the pure spot colors.

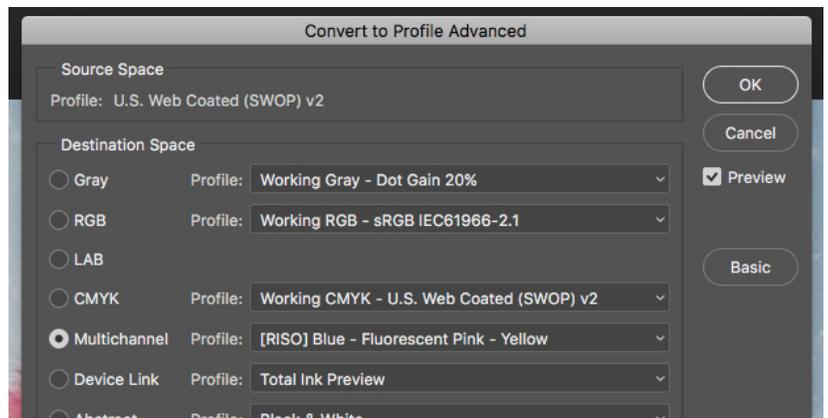
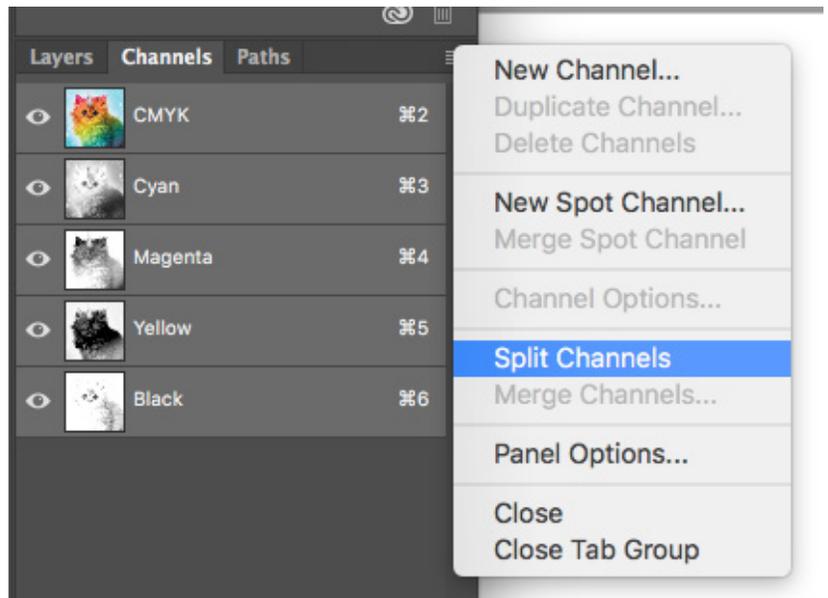
Photos/CMYK

Risograph printing was designed to take advantage of spot colors. However, with Blue, Fluorescent Pink, Yellow, and Black, you can approximate CMYK process printing for photographs or other full-color images.

The most direct method for making your color separations is to open your image in **Photoshop** and convert it to **CMYK**. You can adjust each channel manually using the **Levels** adjustment or the **Channel Mixer** tools in Photoshop. Once your image is ready, select **Split Channels** from the **Channels Menu** to generate your individual grayscale files for printing.

The Channel Mixer tool is also effective for mixing full-color images down to just two or three channels for printing **duotone** or **tritone** images.

Alternatively, there are several pre-made profiles available in the A+D labs for making 2- or 3-color prints on the Risograph. To use these, open your image in Photoshop. Select **Edit > Convert to Profile**. Click **Advanced**. Select one of the **[RISO]** options under the **Multi-Channel** drop down and click ok. Then use the **Split Channels** tool in the **Channels Menu** to separate out your color layers.



3-color photo made using the [RISO] Blue - Fluorescent Pink - Yellow profile.

