

everything you need
to know about

SAIC SERVICE BUREAU

Risograph Printing



What's Risograph printing?

48
hours

2-color Riso Prints take 48 hours

For a single sided print

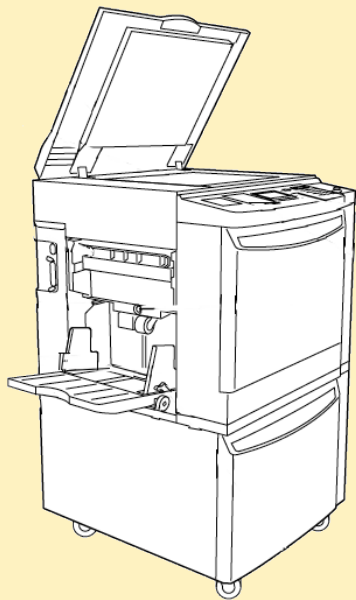
Add 24 hours for each additional color and side

Turnaround times are dependant on drying time between printing each color and side. There are no Rush options for Risograph.

Similar to screen printing, the Risograph uses single colors to print designs from a master stencil.

Riso sits between screen printing and offset lithography. Using a stencil-based printing process and soy based inks gives riso-prints a result similar to silkscreen with vibrant bright colors. Great for bold designs, posters, comic art, pretty much anything with a graphic quality to it.*

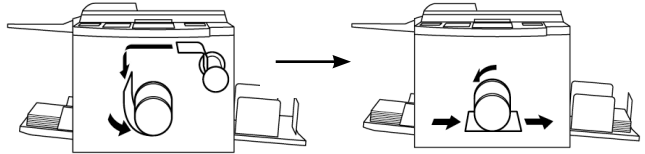
**If you're looking for photographic quality reproduction, we recommend using our Inkjet or Laser printing services instead.*



HOW IT WORKS



Document Data
●●●●●●●●●●



The file is sent from a computer to the machine. A **master** is created for each color by burning a negative image onto a waxed sheet.

This master is then wrapped around a drum and ink is forced through the voids of the master.

The paper runs flat through the machine while the drum rotates at high speed to transfer each image on the paper.

Our machine is an MZ-1090 and has two drums, which allows it to print two colors in a single pass.



COLORS + OVERLAY

We currently have 15 colors. We show you here an approximation of the RGB color and the Pantone reference information.

Risograph ink is translucent, so its final appearance depends on the color of the paper it is printed on and the layering of each ink.
















Colors can be overprinted to create new ones. It is possible to blend any combination of tints together to produce color variants.

→ Metallic Gold is not like the other riso inks.

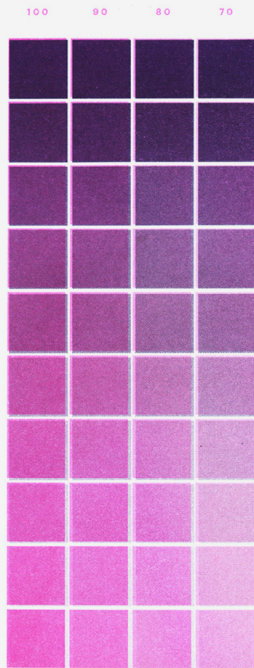
It looks fantastic on black and any dark paper. It is a thicker consistency and does not mix as expected due to the metals in the ink.

It does not matter what color is printed first, Metallic Gold will always look like it has been printed on top.

We recommend not mixing it with other colors.

Black / PMS- Black U Hex #000000	
Burgundy / PMS- 235U Hex#914E72	
Fluorescent Pink / PMS- 806 U Hex #FF48B0	
Bright Red / PMS- 185 U Hex #F15060	
Flo-Orange / PMS- 805 U Hex #FF7477	
Sunflower / PMS- 116 U Hex #FFB511	
Yellow/ PMS- Yellow U Hex #FFE800	
Lime Green / PMS- 380 U Hex #D4E356	
Green / PMS- 354 U Hex #00A75C	
Light Teal / PMS- 320 U Hex #009DA5	
Mint Hex #82D8D5	
Cornflower / PMS- 292 U Hex #62A8E5	
Blue / PMS- 3005U Hex #0075BF	
Purple / PMS- 275U Hex #5D5580	
Metallic Gold / PMS- 872 U Hex #AC936E	

100% Purple
100% Pink



10% Purple
100% Pink

Keep in mind when producing prints with multiple colors/ heavy coverage, smudging and unwanted marks can occur by the feeding tire picking up ink from the previous print and transferring it onto the next sheet of paper.

We recommend NO MORE THAN 4 passes or 2 when using heavy ink coverage or dark colors.

**FOR BEST RESULTS....
LESS IS MORE.**

PAPERS WE STOCK

Our Riso can print on 11x17 or 8.5x11 uncoated paper.

Standard uncoated white + colored papers are available in text and cover weights.

Come by and view our sample wall before placing your order.

We offer a selection of papers from standard text weight to our heaviest option at 80gsm.

Anything thicker can become an issue and tends to stick or jam in the printer. For this reason, we will not print on anything heavier than 80gsm.

You are welcome to bring your own paper if it fits these guidelines. We recommend bringing in a sample for the technicians to check before purchasing.

RISOGRAPH INKS + PAPER

The risograph is an enviro-friendly and cost effective soy ink printer.

Each screen is made from banana paper and the printing process itself is highly energy efficient—generating only a minimum amount of biodegradable waste.

The soy based inks do not contain a drying agent so will never quite dry. They “dry” only by absorption so only work on uncoated stocks.

Keep this in mind when planning your project, especially if it will be handled extensively.

MAXIMUM PRINTABLE AREA

The Riso MZ1090 can print 2 colors in one pass on 11x17 and 8.5x11 size paper.

Letter - Printable Area: 7.75 x 10.25

Tabloid - Printable Area: 16.25 x 10.25

For full bleed designs, add a security bleed of at .125in or 4mm around your artwork.

Do not make your file exactly 11x17 or 8.5x11 if content goes to edge.

The printer does not print well at the very edges of the stencil. If you require a full bleed we will ask that you add a bleed and cut marks.

More about crop marks and cutting later in this booklet.

3/8" / 9.525 mm

3/8" / 9.525 mm

3/8" / 9.525 mm

Tabloid

11 x 17in

279.40 x 431.8mm

Printable Area

16.25in x 10.25in

412.75 x 260.35mm

3/8" / 9.525 mm

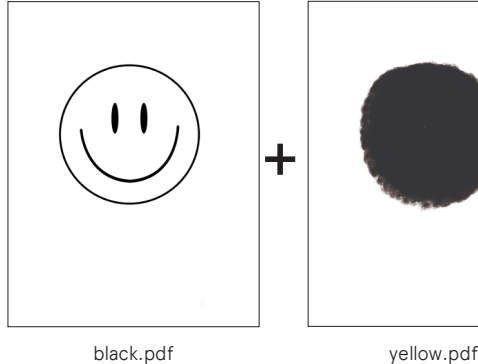
PREPARING FILES

Your print can start as a hand drawing that is scanned, a vector based illustration in Adobe Illustrator, or a photograph.

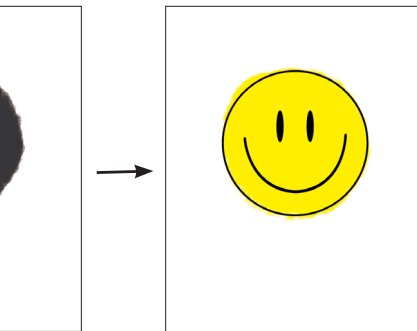
When building your file no matter what software or process you use we recommend keeping each element on separate layers. This will help when exporting PDF's later.

In our example file, we have a smily face that will print as black, and background

When this file is submitted we will have 3 files: black.pdf, yellow.pdf and a composite.pdf.



Use layers to design for each color!



Printed
/composite.pdf

Relationship between grays and ink opacity

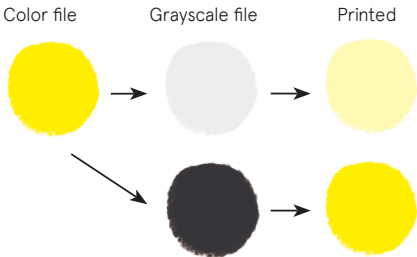
It is possible to make your files using color, but remember simply converting them to grayscale may not work.

If you convert a yellow to grayscale, it ends up looking like a light gray. A small amount of yellow ink will be printed which may be hard to see because yellow ink is already very light.

If you want a bright yellow, those parts of your files should look BLACK when submitted.

This example shows the relationship between gray values and opacity.

The darker the gray or black, the more ink is printed.



PRINTING DOUBLE SIDED + INK PLACEMENT

It is very difficult to achieve a perfectly aligned two sided print. Keep this in mind in your design process when attempting to align front and back.

Slight track marks from paper feeding rollers can also appear, especially when printing more than two layers and areas with heavy inking.

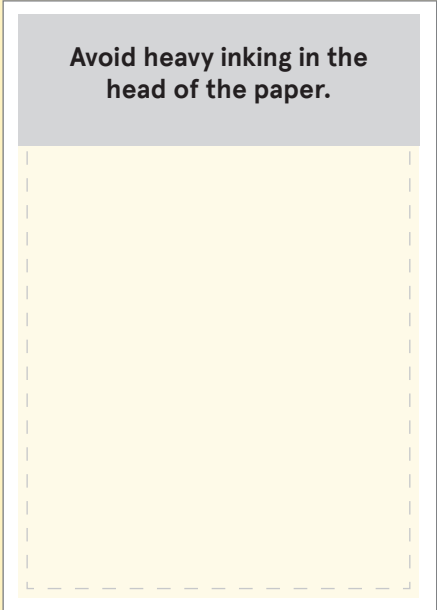
These can easily be rubbed off with an eraser.

The risograph does NOT print homogenous large color areas very well and they can also cause print marks and paper jams.

Place your designs on the bottom of the page if possible.

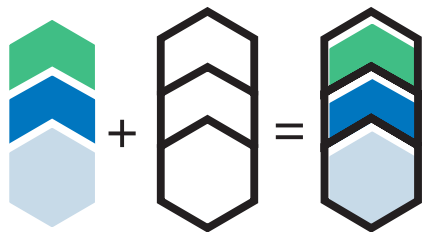
Do not use 100% density in this area.

Avoid heavy inking in the head of the paper.

A diagram of a sheet of paper with a dashed border. The top portion of the page is shaded gray and contains the text 'Avoid heavy inking in the head of the paper.' The rest of the page is white.

REGISTRATION + INACCURACY

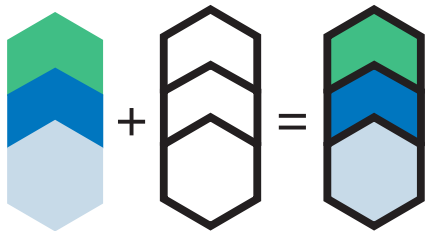
The Risograph has limits of accuracy. The overlaps can be adjusted manually in the printing process but misregistration WILL happen. Keep this in mind when designing your work.



Surfaces should overlap under lines.

Otherwise, white gaps may be visible on your artwork.

Line work printed over solid blocks of color will usually look best.



SERVICE BUR

Text should be only on one layer.

INK COVERAGE - SUGGESTIONS FOR BEST RESULTS

One of the biggest issues we see with submissions are files with too much ink coverage.

This causes paper to stick to the drum + jam the printer. Heavy ink can also cause your artwork to smudge, as the paper is separated from the drum at an uneven rate.

Large areas of ink set between 90-100% can result in a visibly uneven print consistency due to ink flooding across the stencil.

HOT TIP: We recommend using a colored paper or inverting artwork instead of printing a colored background.

Print using 50% coverage across the entire page.

Avoid large areas of ink at the paper feed area.

Limit the number of inks or passes made through the machine.

Reduce areas of solid ink to a 70% or 85% opacity.

Use a thicker paper when printing with lots of ink!

These issues are especially important to note if you are doing double sided and have multiple layers.

FULL BLEED + CROP MARKS + CUTTING OPTIONS

The Riso can never print all the way to the edge of the paper.

We ask that you not make your files exactly the size of the paper for this reason.

For a full bleed finish, we would require crop marks and a bleed area. We will cut your order once it is completed printing.

Items that are Full Bleed will need to have a .125in / 4mm extra area used to ensure a clean cut.

This portion will be cut off and is used to ensure no white edges are left exposed and the image continues to

A bleed is required on any print that will be trimmed to size.

Crop marks should be added.



Crops are touching.

Bleed has been added + crop marks are positioned away from the corners.



No bleed has been added + crops are touching

Bleed has been added + crop marks are positioned away from the corners.



No bleed has been added.

CUTTING OPTIONS: WHAT REQUIRES CROP MARKS?

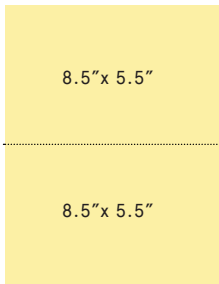
To save paper and stencils, and to keep cost down you can interlock your smaller projects onto 8.5x11 and 11x17 sheets.

For No Bleed designs you can simply mark cutting and let us know the measurements we are cutting in relation to the file.

NO BLEED CUTTING

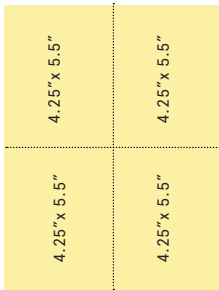
If your files are set up as No Bleed with multiples arranged on a single sheet you do not require crop marks for cutting. Examples below show an 8.5x11 sheet divided evenly for smaller works.

2UP



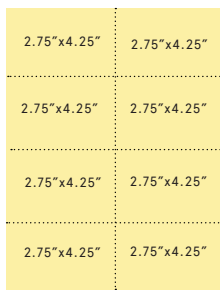
Yields 2 - 8.5" x 5.5"

4UP



Yields 4 - 4.25" x 5.5"

8UP



Yields 8 - 2.75" x 4.25"

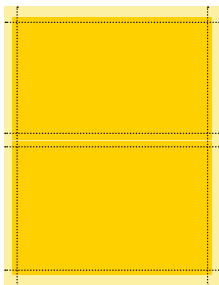
FULL BLEED CUTTING

Our guillotine can trim custom dimensions as small as 2 inches.

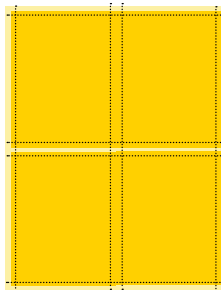
You will set the crop marks + bleed according to the size of your artwork and we will trim to those marks.

All of these need to fit in the printable area.

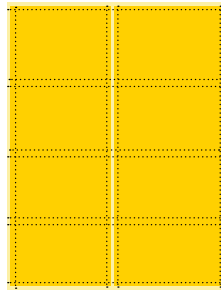
2UP



4UP



8UP



For Full Bleed cutting you are still getting the same number of pieces but they will be smaller due to the space taken up by the bleed and crop marks. Keep in mindthe artwork, crop marks and bleed will need to fit on the printable area. Crop marks cannot be outside the printable area.

Measurements may not be totally precise. We have a 1/16th of an inch cutting tolerance due to the nature of the guillotine and the movement in the riso's registration. A bleed added to your file should solve any mis-alignment.

FILE NAMING CONVENTIONS FOR SUBMISSION

Because of the nature of Risograph, the number of files needed for printing and the limitations of our Digital Storefront we are going to require our users to upload jobs and name their files in a specific way when submitting.

Each file you submit should follow the naming convention below.

Types of screens that can be applied to the file.

HTL = Halftone Large

HTS = Halftone Small

G= Grain

L = Line

Keep it short, please.

LastName_Filename_Color_Quality_Side.pdf

This should be easy!

The color you intend using for that file.

It should correlate to a specific color we stock.

Black, Blue, FloPink, MetGold, BrightR, Orange, Yellow, Light Teal, Cornflower, LimeGreen, Blue, Purple, White.

You will use A or B to indicate the front or back of a 2 sided document.

SINGLE VS. DOUBLE SIDED FILE NAMING

When checking out through the Digital Storefront we will require you to mark if your order is **Single** or **Double Sided**.

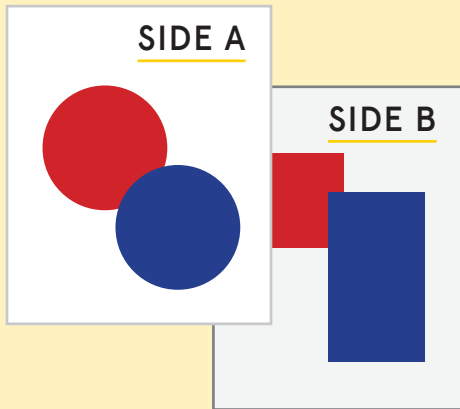
Single sided artworks will not need to contain any information about sides in the filename.

We will see you have selected Single Sided and assume all the files submitted will be printed on one side of the paper selected.

For double sided artworks, include sides indicated with **A for front** and **B for back**.

Below is how this might work for this specific job with 4 print files total + 1 composite file.

1. McKitten_Red_A.pdf
 2. McKitten_Blue_A.pdf
 3. McKitten_Red_B.pdf
 4. McKitten_Blue_B.pdf
- +
5. McKitten_A_Composite.pdf -> this can be a double sided pdf.



SUBMISSION GUIDELINES VIA DIGITAL STOREFRONT

DIGITAL FILES

You will be using our online Digital Storefront submission process. Below are general guidelines and a link to instructions on file naming and file upload with the DSF interface.

For print, artwork should be:

Flattened PDF (no layers or transparencies.)

Set to Grayscale / B&W

Resolution = 300dpi

Each color layer saves as a separate file.

Because of the nature of Risograph, the number of files needed for printing and the limitations of our Digital Storefront we are going to require our users to name their files in a specific way when submitting.

Please follow the link below for detailed instructions on file naming. If you submit without following our naming conventions we will ask that you resubmit which may result in your job being delayed.

[Riso Submission Guidelines](#)

We would require that each file you are going upload to have printed use following naming convention: Lastname_Filename_Color_Quality_Side.pdf

SUBMISSION GUIDELINES VIA DIGITAL STOREFRONT

AVAILABLE SERVICES:



BEGIN ORDER SUBMISSION

RISOGRAPH - PRINTS/POSTERS/SHEETS

For prints, posters, cards and single sheet artworks.

To start your order navigate to the Risograph section of the Digital Storefront. Once you land on a page with two products.

PRINTS/POSTERS/SHEETS

This should be used for Single Sided art work or Double Sided artwork that is not a Saddle Stitch Booklet.

Files will include A or B in the file name to designate front and back for double sided on the same sheet.

PRINTS/POSTERS/SHEETS

This product is for Booklets ONLY!

These files should be set up correctly for double sided booklet printing. This means that ALL your files are imposed or paginated for booklet printing.

You can submit your booklets as a multi-page PDF or as single PDF's for each size and color of your artwork.



BEGIN ORDER SUBMISSION

RISOGRAPH - ZINES/BOOKLETS

For all zine and booklet submissions.

SUBMISSION GUIDELINES VIA DIGITAL STOREFRONT

Risograph

Documents

Add Files

* Last Name, First Name !

* Quantity

10

* Pages

1

Documents/Composite File Upload:
Here is where you will be uploading the color composites of your files.

DO NOT UPLOAD you print files in this location!

This will affect the overall price of your order and appear more expensive.

The Composite should be the same number of pages as your final artwork.

Our minimum quantity is 10.

Because of the way Riso works we do not allow for tests. If you would like to try a few different types of paper as your 10 please make a note of that in the special instructions with paper type and quantity.

SUBMISSION GUIDELINES VIA DIGITAL STOREFRONT

Print Options

Paper Size + Weight + Color Selection

Media(Size/Weight/#Colors)

Media

Weight

Media Weight



8.5x11 Cover - 2 Color

8.5x11 Cover - 3 Color

8.5x11 Cover - 4 Color

11x17 Text - 1 Color

11x17 Text - 2 Color

Media (Size/Weight/Color):

Here we are asking you to choose the *size of paper you want us to print on, the number of colors you are using in the whole order + the weight of paper you are using in your job.*

There are paper sizes and weight for each option we offer.

Example:

You are submitting a poster that uses 2 colors (Red and Blue) and you would like to use a 8.5x11 cover weight paper.

Answer: 8.5x11 Cover - 2 Color

SUBMISSION GUIDELINES VIA DIGITAL STOREFRONT

Paper Type



Paper Selection

[Choose Media](#)



Choose Media

Not shown in preview



Accent Opaque Vellum ...

Not shown in preview



Construction Blacktop

Not shown in preview



Construction Factory Gr...

Not shown in preview



Construction Fuse Green

Not shown in preview

Paper Selection:

This is the type of paper for your job. It will be the name of the specific paper we have in stock.

These are all available to view on our Sample Wall outside the Service Bureau on the 11th floor of Sharp.

Print File Upload



Print File Upload

[Load your B/W print files here.](#)



Print File Upload: Add your print files will be uploaded here.

This will be ALL of the Grayscale files for your order. You can upload multiple files at once so if they are all in the same place you can select them all and hit upload.

CHECK YOUR FILE SIZE BEFORE SUBMITTING

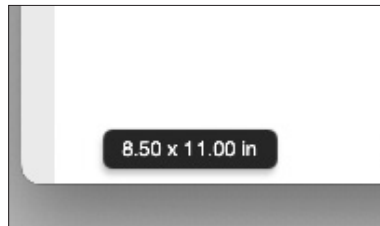
Before submitting or uploading your print files please be sure to open each file and check that the size is correct.

ProCreate + Spectrolite

ProCreate and Spectrolite can be especially tricky. Be sure you have the appropriate size when creating your documents and when exporting.

File sizing issues can cause your artwork to appear blurry or pixelated when printed.

We suggest opening your files with Adobe Acrobat. Acrobat allows you to roll over the bottom left hand corner of the window and see the final size of your file.



HELPFUL LINKS + TUTORIALS

Software Tutorials:

Olivia + Pindot You Tube Channel

<https://www.youtube.com/channel/UCpz-5TuvqI2ur0IP62kl6AQ>

Rissolve Studio

<https://risolvestudio.com/pages/file-set-up>

Spectrolite:

Spectrolite is a Mac desktop app by ANEMONE to make colorful risograph prints and zines more easily.

<https://spectrolite.app/>

A few of our Riso friends:

Clay Hickson - www.clayhickson.com

Perfectly Acceptable - www.perfectly-acceptable.com

Issue Press - www.issue.press

37 S Wabash
room 1111

p: 312 629 9155

e: servicebureau@saic.edu

w: sites.artic.edu/servicebureau