

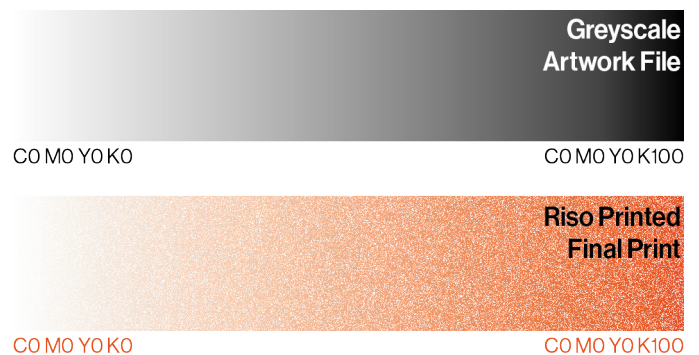
What is Risograph?

Risograph printing is a relatively unknown alternative printing method combining the economy of offset printing, the ease of use of digital printing and the visual impact of screen printing, all the while being a truly eco-friendly process through the use of vegetable oil based inks and low energy consumption.

Risograph printing is a fairly old process, dating from mid-80's Japan, however has enjoyed a resurgence among illustrators, artists and designers over the last decade. It also appeals to individuals and organisations who want their printing to have the least environmental impact possible.

Similar to screen printing, the process uses *spot colour* inks. This means that the Risograph can achieve incredibly bright and vibrant results, but makes it difficult to match colours exactly or to reproduce full colour photos with great accuracy. Unlike a home printer which mixes Cyan, Magenta, Yellow and Black (Key) inks to produce a range of printable

colours, Risograph printers use pre-mixed inks in a huge variety of colours. These inks can be further mixed to come up with an even greater range! See the ink colours that we stock [here](#). Our Risograph is a *single drum machine* which means that each ink layer must be printed separately, one at a time with the *ink drum* changed between each pass. The intensity of each ink is based upon the darkness (value of K from 0-100) of the original artwork.



What can you Risograph?

Risograph printing is fairly adaptable. We often print fine art multiples for artists and illustrators, as well as zines which we can also assemble in house. The process is also great for flyers, pamphlets and posters due to its low cost.

We've printed everything from envelopes to business cards to beer bottle labels and love taking on weird and wonderful projects so if you're after something different [give us a shout](#) and see what we can do for you!



A5 Flyers printed in Green and Purple on Context Natural 135gsm 100% Recycled Paperstock for Grapes Hill Community Garden, Norwich
[@grapeshillcommunitygarden](#)



A3 Fine Art Prints in Medium Blue and Fluorescent Pink on Fedrigoni Freelifelife Vellum Ivory 215gsm for Lorna Dunn/Lesser Than Three
[@lesser_than_three](#)



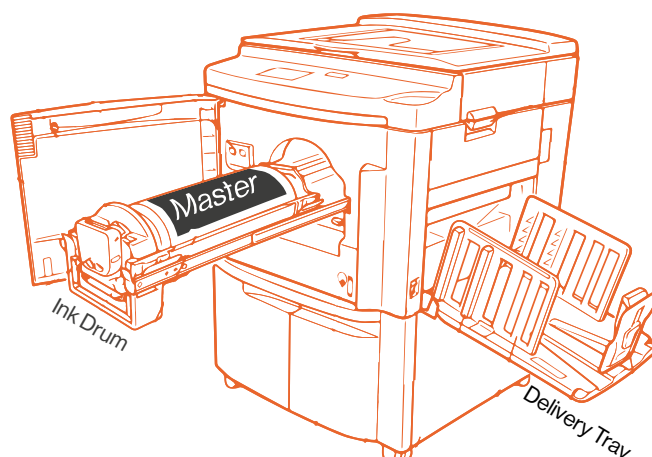
A5 Zines and C5 Envelopes in Fluorescent Pink and Black on Pink Copier 80gsm for TBA Artist Collective. Artwork by Chris Geale Richford
[@tba_artist_collective](#) / [@chrisrichford](#)

How does the Risograph work?

The risograph works a little bit like a photocopier, a little bit like an offset press and a little bit like a silkscreen print.

Digital files are sent to the Risograph which burns small holes in a sheet of thin waxed paper which correspond to the image in the file. This is called a *master*. This master is then wrapped around an *ink drum*. These ink drums will each contain ink of a specific colour. For each colour to be printed the ink drum must be removed from the machine and another one inserted. The print must then be run through the machine again for each subsequent layer.

When printing, the ink drum spins around inside the machine and paper is fed through, coming into contact with the ink drum. Ink is forced out of the drum, through the holes in the master and onto the sheet of paper which is then ejected from the machine.



What is the maximum print size?

Our Risograph can print up to A3, however a margin of **at least 10mm** must be left on each edge. We recommend a margin of **at least 25mm** on the leading edge (the edge that goes through the printer first) in order to reduce printing marks. If this is not possible, we highly recommend reducing the ink coverage as much as possible in this area.

We can produce full bleed prints in sizes smaller than A3, however please note that all crop marks must fit within the area detailed above. If you would prefer to leave crop marks

off to maximise the final print size, let us know the dimensions you would like the print trimmed to. Please note that full bleed prints require a **bleed of at least 3mm** and we recommend a **safe area of 5mm**.

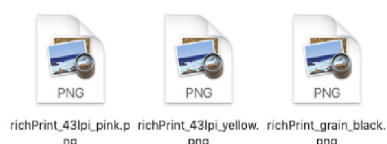
For zines the same restrictions apply - saddle stitched (stapled) zines can be up to A4 (A3 folded in half) with a margin or 197x135 mm full bleed. If you would like to bind your zines in a different way, for example coil bound, it is possible to produce larger publications (up to A3 landscape).

How do I send my files?

We accept both vector and raster files for Risograph printing.

Vector files can include .AI and .PDF files and raster files include .JPG, .TIFF and .PSD.

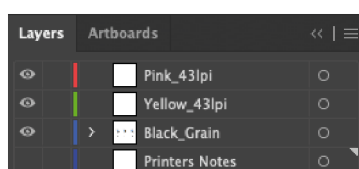
All files must be **greyscale and labelled** with the colour in which they will be printed and the image processing style (more on this later).



Three raster files making up a single 3 colour print are shown to the left.

AI and PSD files can be sent as a single file with the separate ink colours on **different, labelled layers**.

Three labelled layers in a single AI file. The 'Printers Notes' layer is an area to add any additional notes and will not be printed.



Each colour that you print will require a separate file or layer as detailed above.

All raster images should be at least 300dpi, however we can print in black up to 600dpi.

The naming standard should be as follows;

yourName_title_imageProcessing_colour.png/tiff/jpg

For example the below where 71lpi refers to a halftone screen of 71 lines per inch and orange refers to the colour to be printed.

richardRizzo_risoGuide_71lpi_orange.png

Layered files need only be named with your name and title.

We only accept zine submissions as **PACKAGED** InDesign files with **FACING PAGES**. If you are unsure about this or do not have access to InDesign drop us a line and we can discuss possible options.

How do I set up my artwork?

Artwork can be sent as either raster or vector files as described above. Photoshop or Illustrator files with separate labelled layers are preferred.

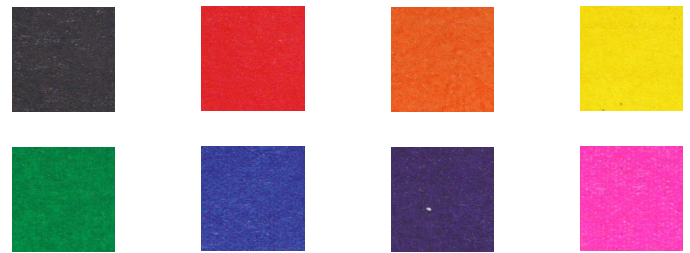
Please set the file up with a 3mm bleed if you would like it to be trimmed to a full bleed (the image to run right to the edge of the sheet). We also recommend leaving a 5-10mm margin of safe area within the final trim area free of any important content such as text.

Please set your artwork to greyscale colour mode or, if using vector files ensure that all objects are coloured between 0 and 100 black (K) only - C, M & Y channels should all be set to 0. Please do not change the **opacity** of any objects - everything should have an opacity of 100%.

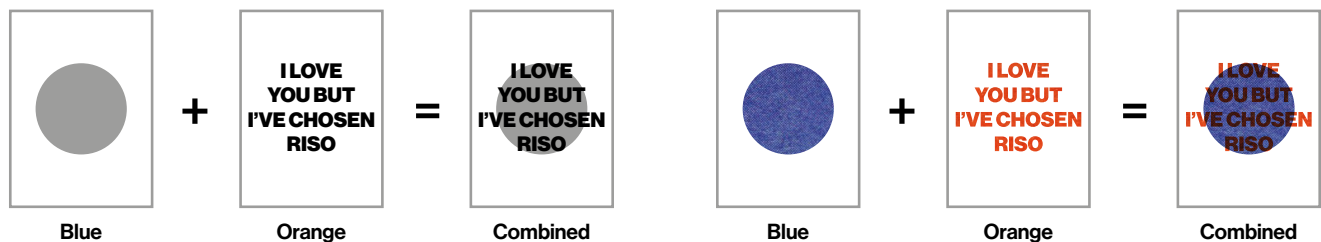
If you can it always helps to have an additional full colour mockup to give us an idea of what you expect the final print to look like.

Colours

Our Risograph is currently printing in 8 colours; Black, Red, Orange, Yellow, Green, Blue, Purple and Fluorescent Pink. We print one colour at a time and usually recommend printing no more than 4 colours per sheet (that's two on each side if you want a double sided print). The more times you pass the sheet through the printer, the higher the risk of printing marks. The greater the ink coverage, the higher the likelihood of tearing sheets or jamming the printer.



When setting up your files you will need to create separate artwork for each colour and save it as a separate file or layer. You can see how this works below;



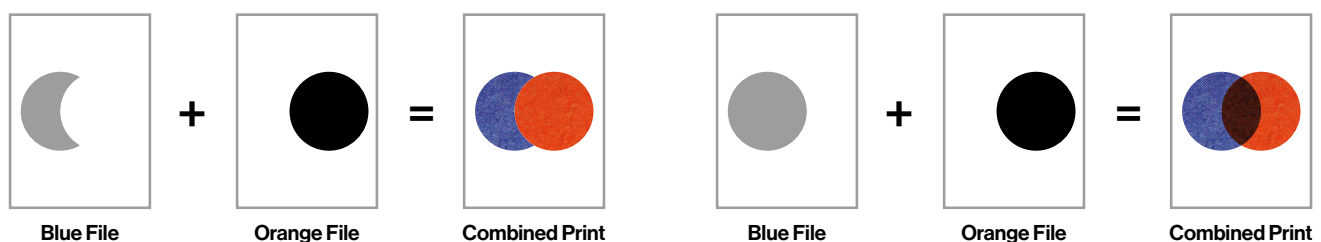
The ink coverage can be varied by varying how dark the areas of your artwork are as shown in the image below;



Knockout vs Overprint

When setting up your files you must decide whether you want your artwork to be 'knocked out' or 'overprinted'. Knocking out means that only one layer of ink will be printed in a particular area of the page, as shown below;

Overprinting works because the Risograph inks are semi transparent. If you print an area of the page with two colours the inks will mix to produce a third colour as shown below;



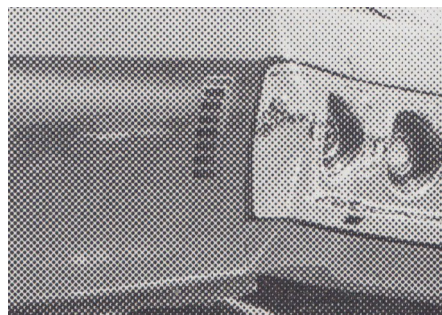
The style that you choose will depend on the effect that you would like to achieve and you can mix both styles within one file.

Image Processing

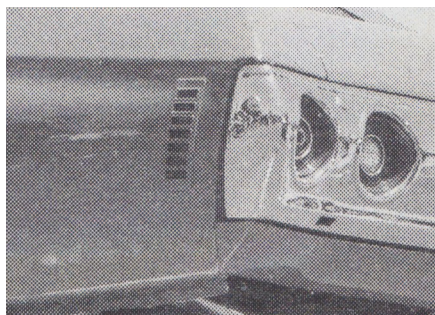
When the Risograph prints images it can process them in one of two ways; Halftone Screen or Grain Touch.

Halftone Screen processing produces a similar effect to a standard halftone used in screen printing and other traditional printing processes. Tonal variation is presented

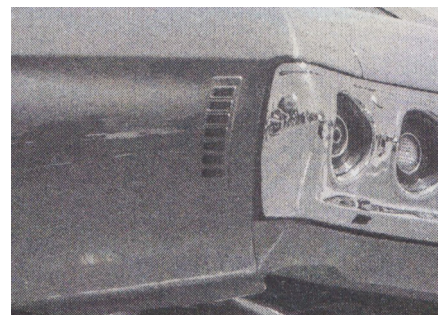
by using a uniform grid of dots with the sizes of these dots varying depending on the value of light or shadow. You can choose from a halftone 'coarseness' of either 43, 71 or 106 lines per inch (lpi). The below pictures give an example of a photo processed at these three settings.



Halftone Screen 43lpi

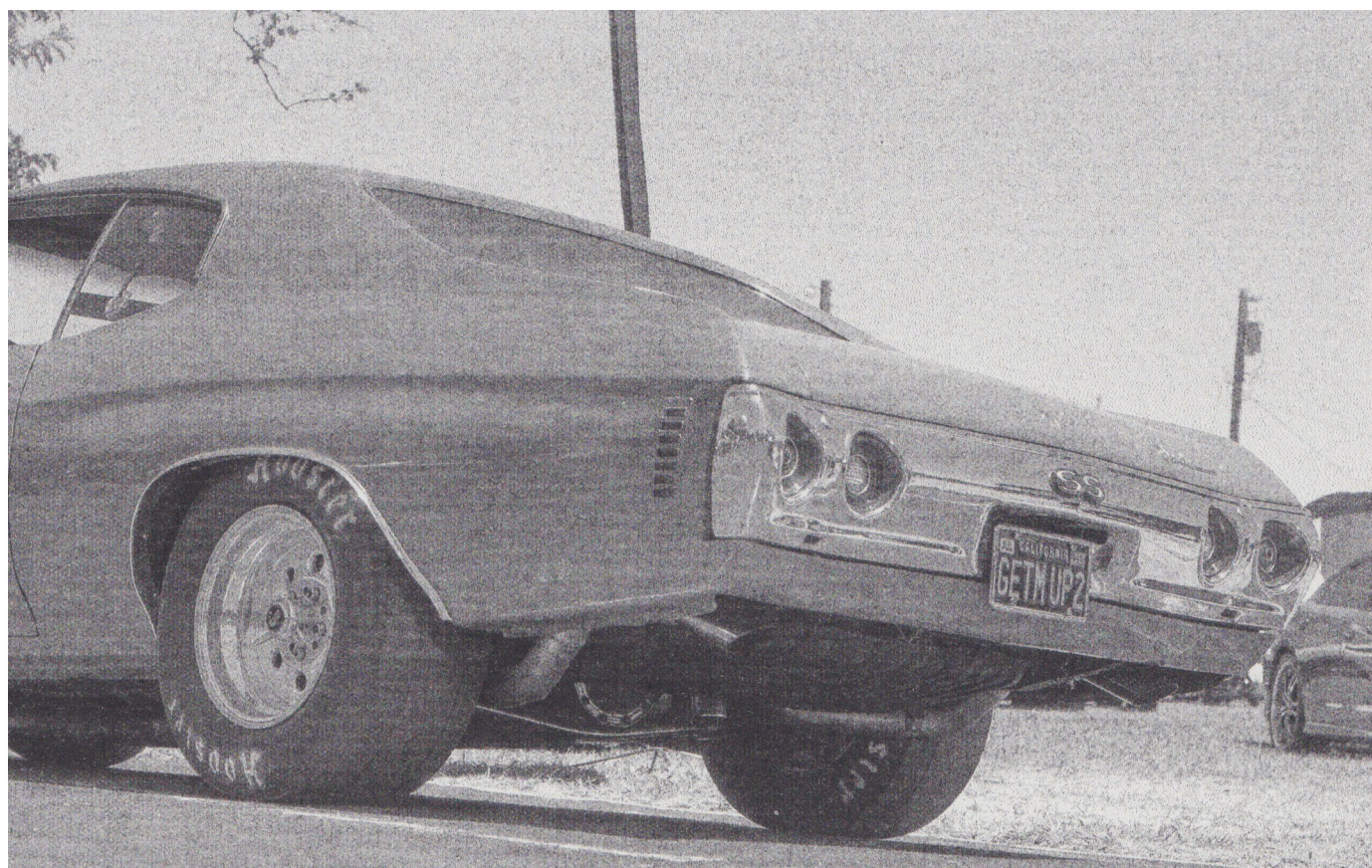


Halftone Screen 71lpi



Halftone Screen 106lpi

Grain Touch processing produces many tiny dots which are clumped closer (darker tones) or further away from each other (lighter tones). Think of this a bit more like a grainy 35mm photo. You can see how this looks below.



If you do not specify how you would like your image processed we will use GRAIN TOUCH as standard.

When labelling your files/layers please use the following conventions in the file names;

Grain Touch - Grain
Halftone Screen 43lpi - 43lpi
Halftone Screen 71lpi - 71lpi
Halftone Screen 106lpi - 106lpi

Sizes

We always try to print in as few passes as possible, lowering the cost of each job. This means that we sometimes arrange artwork 2 or 4 'up' (2 or 4 prints on a single A3, for example 2 A4 or 4 A5) and cut it to size after printing. We still need to account for the maximum print area of the Risograph and therefore adequate margins must be left. You can download templates showing maximum printed areas [here](#).

If you are after full bleed printing please bear in mind that the largest full bleed prints that we can accommodate are 270x394mm (taking into account a 10mm border on all sides and an additional 3mm bleed). Bleed is the area that overlaps the trim lines of a finished print. This ensures that there are no white gaps at the edges of your print if you want the image to run to the very edges of the page. Files should all be set up with a 3mm bleed if you would like full bleed prints.

Quirks of the Process

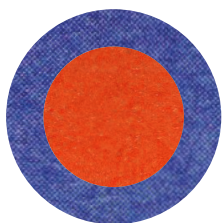
Risograph printing can be an imperfect process, but sometimes those imperfections are what makes it so perfect!

Registration

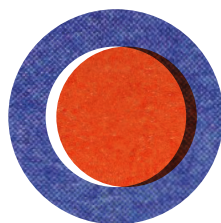
Risograph printing is valued by artists, designers, illustrators and other creative souls for its bright colours and analog, almost hand made feel. The machines were never designed for printing more than one layer and therefore *registration* (the process of lining up separate layers so that they match) cannot be guaranteed to be pin perfect. We always do our best to get things lined up as well as possible but registration can drift even once it's dialled in. Expect layers to be out of alignment by around 1mm, usually a lot less, though we can get misregistrations of up to 3mm.

Depending on your design, misregistration may cause white gaps to appear between coloured elements of your design as shown in the example below left.

By using a process called trapping you can reduce this effect in cases of misregistration. Trapping is the name given to making printed elements on different layers overlap slightly. We recommend expanding the lighter colour so that it overlaps the darker colour. 1mm is usually enough of an overlap. This can be seen in the example below right.

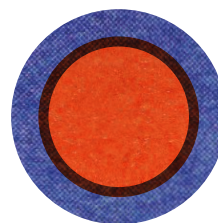


Perfect Registration

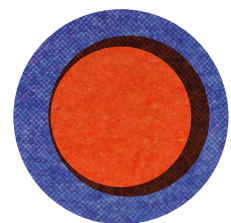


Misregistration

An example of an untrapped image printed in perfect register and with a slight misregistration. You can see a white gap between the two colours.



Perfect Registration



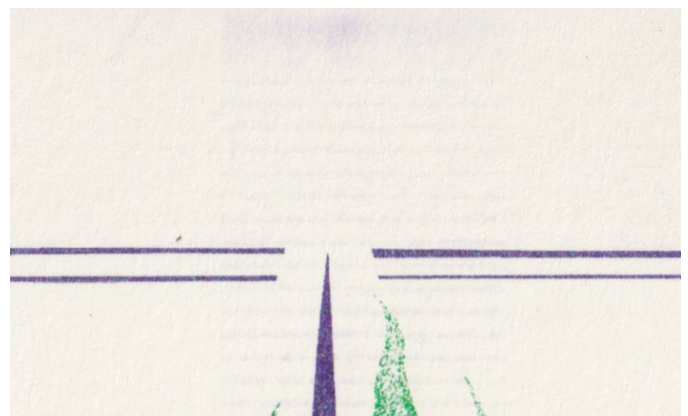
Misregistration

An example of an trapped image printed in perfect register and with a slight misregistration. You can no longer see this white gap between the colours.

Tyre Tracks

The Risograph uses rubber tyres to feed paper into the machine. These can pick up ink on multiple passes and leave marks down the middle 3 inches of the paper. You can reduce the risk of this happening by reducing the ink coverage on the leading edge of the sheet (the edge of the paper that is fed into the printer first) and, if possible, on areas of the paper that are in the path of the feed rollers.

If you do find that there are tyre tracks present on your prints they can usually be erased with a regular pencil rubber.



Separator Finger Scratches

On prints with very heavy inking or using heavy paperstocks, the separator finger (a small hook that separates the sheet from the ink drum) can make contact with the print, leaving a narrow (~0.5mm) white or inked line down the centre of the print. Try to avoid areas of 100k ink coverage where possible, especially in the centre of the print. This can be seen in the picture on the right, highlighted by the orange bracket.



Setoff (Dirty Backs)

Again, on prints with very high ink coverage it is possible that some ink will transfer from the front of one print to the back of the print above as they are stacked in the delivery tray of the printer. If this is something that concerns you either reduce

the ink coverage of your prints (aim for around 80k or below for each layer) or speak to us about using blotting paper between prints to absorb any extra ink.

Uneven Coverage

Risograph printers struggle to maintain an even coverage of solid ink across large areas (for example printing a large background across a whole sheet of paper). Some people

don't mind this but if you need consistent ink coverage on large areas try reducing the density to 80K or below.

Disclaimer

Although we do everything possible to reduce tyre tracks and other printing marks, these are sometimes unavoidable and are part of the process of Risograph printing. By going ahead with your order you acknowledge that there is a possibility of these marks and that this is part of the beauty

of using an unpredictable process like Risography. We will always try to highlight potential problems with any artwork that we receive and of course we do our best to ensure the highest quality results, however we unfortunately cannot offer refunds for the quirks outlined above.

Colour Charts

RED レッド			ORANGE オレンジ			YELLOW イエロー		
Pantone		Warm Red U	Pantone		Orange 021 U	Pantone		Yellow U
CMYK		0, 60, 63, 0	CMYK		0, 58, 82, 0	CMYK		0, 9, 100, 0
RGB		255, 102, 94	RGB		255, 108, 47	RGB		255, 232, 0
HEX		FF665E	HEX		FF6C2F	HEX		FFE800
	10K	10K		10K	10K		10K	10K
	20K	20K		20K	20K		20K	20K
	30K	30K		30K	30K		30K	30K
	40K	40K		40K	40K		40K	40K
	50K	50K		50K	50K		50K	50K
	60K	60K		60K	60K		60K	60K
	70K	70K		70K	70K		70K	70K
	80K	80K		80K	80K		80K	80K
	90K	90K		90K	90K		90K	90K
+		100K	+		100K	+		100K

Colour Charts

GREEN グリーン			MEDIUM BLUE ミディアムブルー			PURPLE パープル		
Pantone		354 U	Pantone		286 U	Pantone		2685 U
CMYK		73, 0, 81, 0	CMYK		87, 59, 0, 0	CMYK		61, 73, 0, 0
RGB		0, 169, 92	RGB		50, 85, 164	RGB		118, 91, 167
HEX		00A95C	HEX		3255A4	HEX		765BA7
	10K	10K		10K	10K		10K	10K
	20K	20K		20K	20K		20K	20K
	30K	30K		30K	30K		30K	30K
	40K	40K		40K	40K		40K	40K
	50K	50K		50K	50K		50K	50K
	60K	60K		60K	60K		60K	60K
	70K	70K		70K	70K		70K	70K
	80K	80K		80K	80K		80K	80K
	90K	90K		90K	90K		90K	90K
+		100K	+		100K	+		100K

Colour Charts

