



Let me show you how it works the offset litho printing and at the same time the digital colour printing:

Spot Colour Printing an explanation

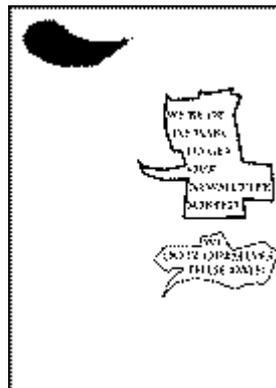
Spot colour is for when you wish to have just one or two colours on your printed page. This method is more economical as you need just one or two plates. So long as you use less than four colours (including black) the job will be cheaper than full colour which uses four plates.

To use spot colour in your layout you must save pictures as greyscale and set all colours in the palette to Spot. Items which you want to print in a colour are highlighted and applied to a colour from the palette. Print out the artwork with "Separations" selected, you will get one page of artwork for each colour.

How this works



To print this page two pieces of artwork are needed



Which are printed in these colours



Onto the same page to produce



This kind of printing is not possible in digital printing (inkjet or laser), commonly is only possible with the spot colour in black to make a black printing with the background colour of the paper, with good ideas and nice artwork you can make short prints of products playing with the black print with colour paper.

The reason why we cannot make this works in digital are simple: the digital printers have ink jet cartridges or toner with the four primary colour (at the present are some ink jet printer with more colours), and the spot colour can we taken from the hundreds of Pantone colours. There another machines called Copyprinters that make a cheap and quick print, but you must have the colour toner you need for print.

Full Colour Printing

An explanation

To reproduce a colour photograph precisely in a print process you must use offset litho printing.

To prepare your artwork for this process you must save all colour pictures as CMYK, not RGB. This allows filters within the software to separate the colours into the percentages of Cyan, Magenta, Yellow and Black which, when printed exactly on top of each other will reproduce full colour.

This is how it works

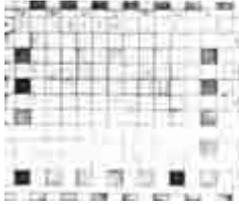
This colour photograph is scanned and saved as a CMYK colour picture.



When printing out as artwork select "separations" which will enable the filters to separate the artwork for the four ink colours which make up the picture

These are the four pieces of artwork

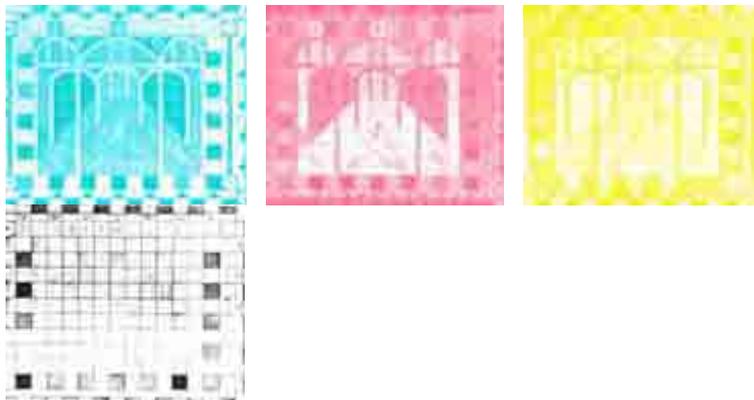




The you make a plate for each primary colour: Cyan, Magenta, Yellow and Black (CMYK)

The screens of the computers works in RGB colour, and some programs let you to choose to work in RGB or CMYK files; the risk of work in RGB are that the colour print can be not the same like you wonder in your artwork.

Which print the following colours



Which will combine on the page to produce...



Can You Be An Ethical Printer ?

The commercial print process that is totally "green" has not been invented yet. All print shops use paper - and paper manufacture (even if the end result is 100% recycled) uses a lot of energy and water and produces waste products. Most inks used in the printing industry are still petroleum based and those used in full colour printing can contain a nasty cocktail of solvents and heavy metals. Add to this the results of some printing processes - waste paper, chemical wash downs, used fixer, ink sludges, and harmful fumes - and the picture is not bright.

So, should you, the customer, despair?

No, you should come to marc!

At Marc we try to reduce any negative impact on the environment to a minimum. Our print process uses digital machines called Risographs. This process avoids all the worst aspects of the printing procedure. The ink is soya-based and contains none of the solvents that cause volatile organic emissions. There is no waste ink, no fixers, no wash downs, no disposable aluminium plates. The Risograph printer uses very little energy as there is no heat involved - it is a wet ink process. Also, 99% of our printing is done on A4 and A3 paper instead of the usual oversized stock that then has to be trimmed to size. This means that there is very little paper waste generated by Marc. All of the waste paper that we (or our DIY customers!) do produce is re-used as scrap for the machines and then graded for recycling by a local company - Emerge.

As far as paper is concerned, we have one of the widest selections of recycled papers in the North - and they are really recycled. Our standard white 80g and 100g stock papers are 100% post consumer waste recycled. We also have a wide range of 100% recycled coloured papers and card. We do not print on glossy paper. China clay is often used in the production of glossy paper and is obtained from open cast mining - which is about just as environmentally unfriendly as it gets. In fact, 80% of all china clay mined is used in the paper making business.

Marc also has a role in educating people about the benefits of our printing process and the environmental benefits that result. We encourage the use of recycled products wherever we can. We try to increase the understanding of the various print processes so that individuals and groups can make informed choices when producing their printed material. We will continue to look at our work practices and extend our policy of trying to minimise Marc's environmental impact.

We are proud that organisations such as the Ethical Consumer Research Association (ECRA) and Friends of the Earth use our services, and that so many of our customers come to us because of our ecological and social concerns.

The Print Process

There are many ways of printing, all with their own characteristics. Humans have been printing in one form or another for thousands of years and have probably been a cause of anxiety for authorities for the whole of that time. Caxton's invention of the modern printing press with its threat of freedom of information to the masses caused the same consternation as the world wide web does today. At MARC we aim to help the voluntary sector, by providing cheap access to short to medium print runs.

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So why isn't all printing done on Risographs? The major reasons are that you can't do full colour work (see [full colour vs spot colour](#)), and that the reproduction is not as good as Offset Litho. However, see [Ethical Printers](#), for the drawbacks in using full colour.

Here is brief description of the two processes:

Risograph printing is a modern version of the old duplicating machines which work on the same principle as silk screen. A layer of mesh is wrapped around a drum containing ink and the ink is forced through the gaps onto a sheet of paper which is fed into the machine and pressed against the drum. This process has the advantage of being an automatic system and is very cost effective on short to medium runs. You may also add spot colours to the pages.

Offset litho printing is more complicated than the others, using plates made from metal, or paper. The area to be printed is greasy and accepts ink. The rest

is clean and is coated with water so that it resists ink. From the plate the ink is transferred to a rubber blanket wrapped around a cylinder and is then transferred to the paper. This process is far more accurate and precise than other processes, and the machines much quicker, so that long runs are cheaper with a greater variety of inks available and the possibility of full colour printing.

