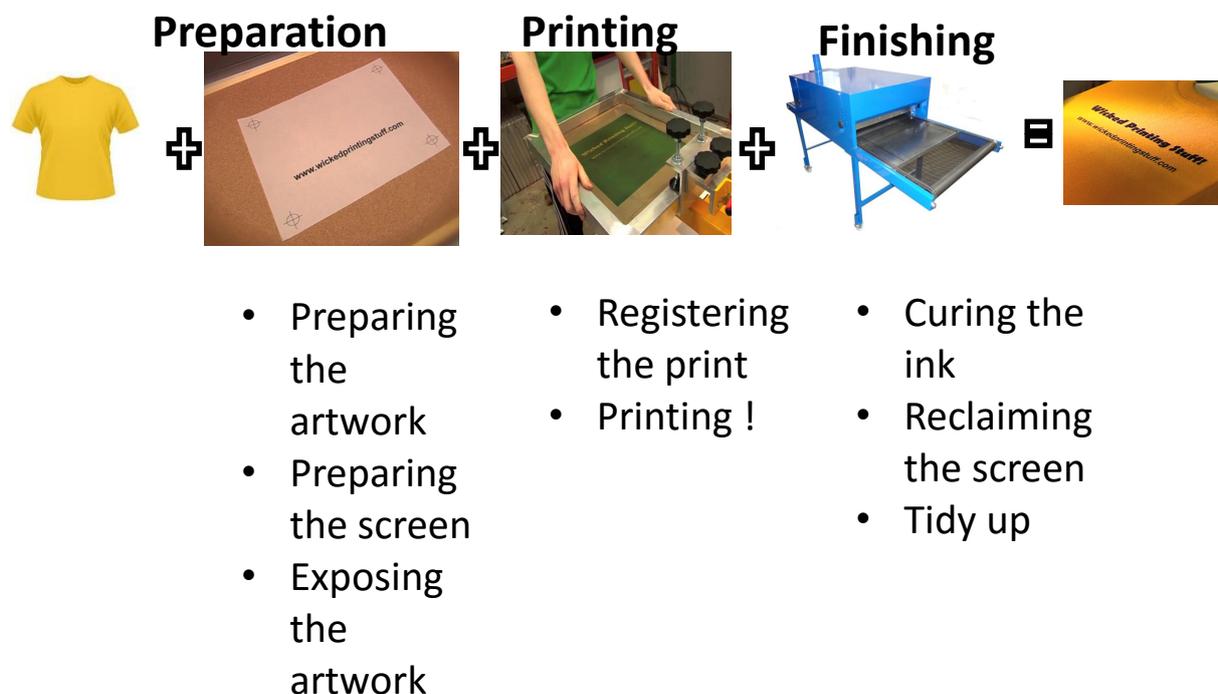


Is Screen Printing for me?

The purpose of this article is to take you through the high level screen printing processes. If you are a hobbyist, artist or large commercial printer, the key screen printing processes are pretty similar. We are going to work through the process of taking a blank T Shirt to produce the finished product a T Shirt with a printed logo.

Successful efficient printing requires a bit of planning and a little discipline, especially when it comes to keeping the studio nice and tidy. At a high level the first set of 'preparation' steps (traditionally known as pre press) cover preparing the artwork, getting your screens ready and exposing the artwork to the screen. The second set of 'printing' steps (traditionally known as 'Press') are about preparing your bench / carousel / clamp and getting printing, with the final set of steps 'finishing' (traditionally known as 'Post Press') covering curing the ink, reclaiming the screen so that you can use it again for different artwork and of course tidying up.

We highly recommend that you take a look on our YouTube tutorial which can be accessed from the tutorials page on our website www.wickedprintingstuff.com



Preparing the artwork: most printers normally use software such as Adobe and Corel Draw to create the artwork. There are some great online tutorials on YouTube which cover the software settings and the things you need to do to prepare your artwork, in this example we have stuck to a simple logo. When starting to screen print, start with single colour work and gradually introduce more complicated multi colour prints.

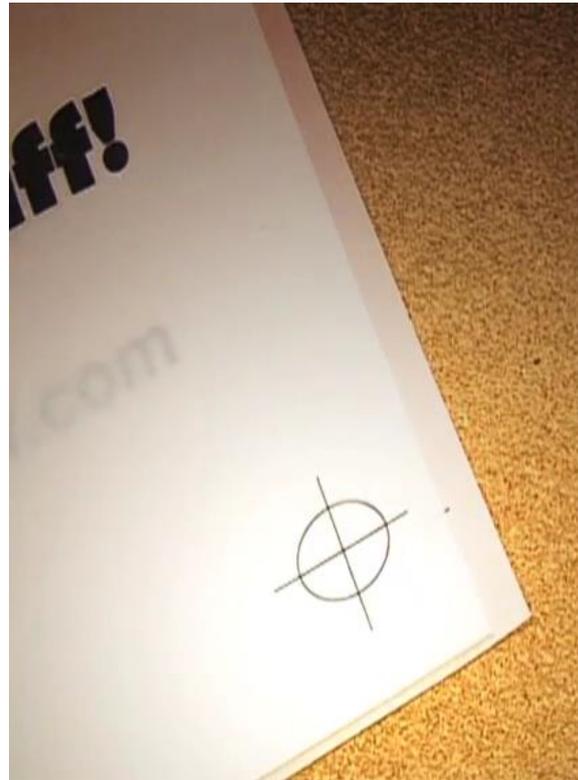
We have printed the logo onto a special transparency film using a standard inkjet printer. When printing the artwork make sure you have set the printer to produce the images as black as possible, as a tip you can print two films of the same artwork and stick it together with invisible tape to make

the artwork completely black when you expose the screen. Alternatively you can use inkjet printers which specialise in specialist inks to increase the level of opacity of ink e.g. Blacquer ink

The images are showing registration marks, these are useful when creating multi colour artwork as you produce a screen per colour and when you come to print the registration marks help you to align the print.



Preparation

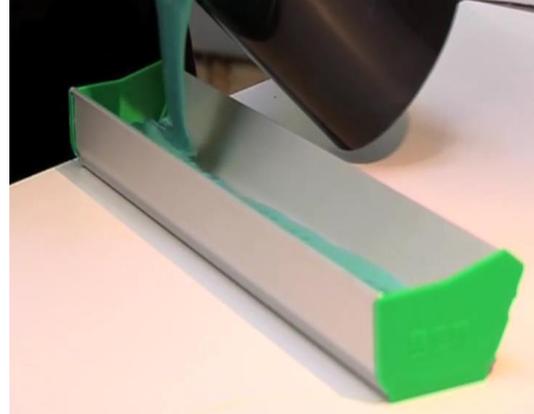


Creating your Film
For multi colour jobs use software like Photoshop, Corel, Separation Studio etc to separate the colours . You can use registration marks to align the prints

So we have prepared the artwork and now we need to get our screens ready. Sometimes you hear screen printing referred to as silk screen printing, years ago silk was used to cover the screen but now we cover the screens in a 'man made mesh', the mesh is at different resolutions often referred to as the mesh count. The lower the count, the lower the resolution of print, common mesh counts are 43T for T Shirt printers and higher mesh counts for detailed artwork such as 90T. There is a lot to be said about choosing the right mesh count, the type of inks to print with and the type of squeegee you should use but this is a little beyond the scope of this article.

Before we expose the artwork we need to coat the screen in photo sensitive emulsion, always follow the manufacturer's instructions to sensitise the emulsion. In a subdued lit room pour the emulsion into the coating trough and coat the screen – when printing textiles we suggest coating both sides as

it is important to create a stencil on the screen that will last. If you are using inks such as plastisol, vinyl and other solvent based inks make sure you use solvent resistant emulsion if you are using water based inks choose a water resistant emulsion. If you get the combination the wrong way round your stencil may start to disappear when you start to print.



Choose the right Mesh Count - popular textile counts are 32T / 43T / 55T graphic prints typically higher counts. Degrease the screen before coating the photo sensitive emulsion. Make sure there is a good even coat.



When you have coated the screen leave it to dry in a darkened area, you can use a fan heater (with gentle heat) to speed up the process but don't use a hair dryer as they emit light.

When the emulsion is dry you are now ready to expose the screen. There are lots of different types of exposure units and lamps – if you are creating lots of screens per day it may be worth investing in a more industrial unit, but if you are only creating screens on an occasional basis then you could use a basic exposure lamp. Exposing screens is probably the most challenging area for a novice but stick with it, expect some mistakes with your first exposures but practice makes perfect. The UV light given out by the exposure unit cures and hardens the emulsion – the light does not go through the artwork so the emulsion remains water soluble so you can wash it out leaving the stencil.

We highly recommend you check out our online tutorial on how to set up an exposure lamp – you will need a piece of glass to help create the vacuum between the screen, artwork and the light. When using a lamp you will need to expose in subdued light, the more industrial self contained units include vacuum pump, timers and covers so you can expose screens in the studio in normal lit conditions.

Always check out the instructions which come with your emulsion as you will need to follow the timings based on the type of light you are using. There are lots of different types to choose from.

When you have exposed the screen, spray water at a medium pressure on the screen which removes the emulsion leaving the stencil. Once the screen has dried, tape around the edges of the screen using brown tape to make sure that the ink will only go through the areas of the screen not covered in emulsion.



Preparation

Lots of different ways to expose your screen – biggest determining factor is time to expose, number of screens per day and budget. Exposure units come in all shapes and sizes.



You can see in the pictures where we have placed the brown tape, for maximum effect cover both sides of the screen. When starting to print you need to register the print to make sure the print on the garment is exactly where you want it. Use Hitak spray or platen adhesive to make sure the garment does not move when you are printing.

Add the ink to the screen with a palette knife then 'flood' the stencil with ink. Keep the screen two inches above the garment and use the squeegee to cover the stencil with a fine layer of ink. When you are ready to print place the screen over the garment, put both hands on the squeegee, hold it at

a slight angle and applying pressure, push down on the squeegee and pull it towards you with a firm even motion, pushing the ink through the mesh onto the garment. Go over the stencil stopping before you get to the taped area. If you lift the screen you will see that the image is now on the artwork.

Sometimes you may need to do a second pull especially if you are using thick ink. Touch dry the garment using a flash dryer or heat gun.

The type of squeegee you use and the hardness of the blade has an effect on the amount of ink the squeegee pushes through the mesh. The softer the blade the more ink is pushed through the mesh, the harder the blade the less ink goes through the mesh.

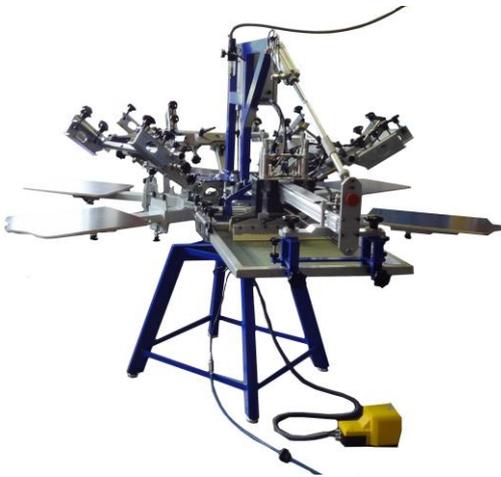
If you are printing with waterbased inks, don't let the ink dry in the screen. You can use retarder to keep the ink wet for a limited period of time but it is important to keep printing. If you are printing with plastisol inks you won't have the same challenge.

Printing



There are a lot of different printing machines on the market, ranging from simple clamps costing a few pounds, fabric tables and hand benches through to full automatic carousels which can print hundreds of garments per hour with a price to match. The key thing to remember is that all of them follow the core screen printing processes it is more about choosing the right machine for the job (or budget).

Our online tutorial uses one of our simple tabletop carousels which are ideal for small workshops and classrooms.





When you have printed the garment you need to cure the ink otherwise when the garment goes through the wash you will notice that it fades, cracks and in some circumstances disappears altogether. There are some inks that are air dry but popular inks such as plastisol and waterbased inks need to be cured.

Red (don't use)

Hair Dryers – they are not hot enough so dry the ink rather than cure it

Iron – Don't give an even heat and most are not hot enough to cure the ink fully

Heat Guns – With a lot of patience and skill you could cure the ink but you are likely to scorch the garment. You can use a heat gun to touch dry the ink prior to printing the next colour

Amber (can use but limited)

Flash Dryers – normally used for touch drying the ink between prints, it is possible to use a flash dryer to cure the ink but can be time consuming

Green (Can use)

Heat Presses – are fine for curing low numbers of garments, most modern presses have timers making it easier to manage

Tunnel Dryers – the best solution to cure large numbers of garments in a short space of time

Curing the Ink – What is the best equipment to use?



Once the ink has been cured, you should now have your printed garment



When you have finished printing, always remove the excess ink, palette knives and mixing sticks are great for this. If you are using plastisol ink you need to use a solvent such as screenwash to clean down your screen or if you are using waterbased inks you need to use water to clean the screen. Just remember to dispose of waste responsibly.

You can re use the screen time and time again, if you want to remove the image completely you will need to use a chemical known as stencil strip (or decoating agent) which removes the artwork and the emulsion on the screen so that you can use the screen for other designs.

