

## General Screen Printing Questions:

### What is Screen Printing?

- Screen printing is a method of decorating custom apparel using inks, which are passed through a mesh screen to achieve your design. In screen printing, your logo or design is exposed onto the screen, washed out, set-up on our press, and using a squeegee-type blade the ink is passed through the screen onto the shirt.
- It is a 'spot color' process which means that each color is printed using its own screen to transfer the portion of the image requiring that color to the garment

### What is Plastisol Ink?

- Plastisol inks, commonly used for textile printing and especially for t-shirts, are a PVC-based ink composed of a clear, thick plasticizer fluid and PVC resin. The full name for PVC is polyvinyl chloride.
- They are easy to print, do not dry in the screen, can be very opaque on dark garments, and will adhere to most textiles.
- They will not dry, or cure, at normal temperatures. For a complete cure, they must reach 290-330° F (143-166° C).
- Plastisol inks do not color the fibers like a dye. Instead the ink wraps around the fibers and makes a mechanical bond with the fabric. For this reason, they will not adhere to non-porous substrates such as plastic, metal, and glass. They also will not adhere well to woven, waterproofed nylon material without adding a bonding agent.

### What is Water-based ink?

- Water based ink is any ink which uses water as a solvent base to carry the pigment. There are a few different varieties of water based ink that make up the full list. From ready for use (RFU) inks, which come pre-mixed and ready to use in a number of standard colors, to newer formulations like High Solid Acrylic (HSA) inks which have a thickening binder added to create a formula more akin to plastisol ink which allows for more complexity in the print and brighter colors.
- Generally water-based inks have a softer 'hand' than plastisol but can look faded if not applied properly



Above: Half Tone

Below: 4 Color Process

### What is 'soft hand' screen printing?

- Soft Hand screenprints are much softer than regular plastisol prints – often the print feels like part of the fabric. The inks used soak into the surface of the fabric, instead of sitting on top of it. This can be achieved by incorporating an additive into plastisol ink or using water-based inks or discharge printing. It is more difficult to achieve a soft hand feel on dark garments if bright colors are required due to the underbase that's needed.

### What is a 'half-tone'?

- Halftones are tiny dots used to recreate shades of an ink colour on press - A halftone is an array of different size dots which allows screen printers to simulate tonal variation when printing with a single ink on press. A halftone allows printers to use one ink colour in one screen, and approximate various shades of that ink colour. The eye blends these tiny dots into smooth tones

### What is 4 Color Process?

- The technique of printing a full spectrum of colors using halftones of only 4 ink colors layered over each other: Cyan, Magenta, Yellow, and Black (or, CMYK). These 4 transparent ink colors can be used in combination, with varying degrees of transparency, to create any color. This method is primarily used to print photographic images, and this process works best on light colored shirts, like white or natural, because the transparent CMYK inks tend to pick up the hue of the shirt underneath them.



## What is Discharge printing?

- Discharge printing is a screen printing process where the same techniques and equipment are used but instead of normal ink, discharge inks are used, which remove the shirt's dye instead of putting a color on top of the shirt. It is somewhat similar to bleaching in a design, except it doesn't damage the fibers like bleaching would. It results in an extremely soft print, and shows the weave of the shirt. It can be used by itself, as an underbase for other colors to be put on top, or with pigments added. Pigmenting discharge can be difficult to achieve exact color results, because it's impacted by how well the dye in the shirt is discharged. So no PMS matching is possible. It can only be done on natural fibres, so 50/50 shirts and tri-blends don't work well. Certain colors, such as royal blue, are also more difficult to discharge.



Above: Discharge Printing

## What is dye sublimation?

- Dye sublimation is not a screen print process - the inks are a disperse dye suspended in a liquid solvent, like water. The images are initially printed on coated heat-resistant transfer paper as a reverse image of the final design, which is then transferred onto polyester fabric in a heat press.



Above: Dye Sublimation

Below: All-Over Print

## What is an 'all-over print'?

- All-over-print is a print composed of a design that is repeated across the entire surface of a garment. The image is on both the front and back. Often, such prints are screen-printed on machines with much larger platens and screens than regular screen print machines.

## What is an "under base" and a "flash"?

- An under base is a base of white ink that is laid on a colored shirt before applying the other ink colors on top. This is similar to painting a primer coat on a wall before you paint it the final color. The white under base helps the colored inks appear more vibrant. An under base requires an additional set up and screen, so there is a charge for it (can be called a "colored garment fee")
- A flash is a "flash of heat" that is used in between printing stages to quickly dry the inks while the shirt is still on the pallet. This is done after the under base is applied so the colored ink can begin to be printed more quickly



## What is 'wet on wet' screen printing?

- Printing layers of ink without curing them between colors, so the previous layer is still wet when the next is put down. This can save time during the production process but requires attention to the order in which the ink colors should be printed and may result in a dulling of colors as the print run goes on.