Title:
Printing Your T-shirts: An Overview

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573

Summary:
You've picked your textiles, created a t-shirt design and placed your order. So what happens next? The first step in getting your design onto a t-shirt involves printing films for the various colors used. A graphic artist will look at your artwork and determine the best method of printing the colors.

Keywords:
t-shirts, printing, silkscreen, design, custom, CMYK, shirts, screen printing, color

Article Body:
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The first step in getting your design onto a t-shirt involves printing films for the various colors used. A graphic artist will look at your artwork and determine the best method of printing the colors.

The two main methods of printing colors are spot colors and four-color process. Spot colors are individual colors that are printed separately. There are 100's of pre-mixed colors and an infinite number of colors that can be mixed to specification (e.g. Pantone Matching System colors).

Four-color process physically blends four colors (Cyan (sky blue), Magenta (hot pink), Yellow and Black) on the textile to create a large variety of colors. Four-color process, also known as CMYK, is used to simulate photographic work and graphics with sophisticated shading and textural effects. A hybrid form of printing known as simulated process is sometimes used, combining components of both process and spot color printing.

The graphic artist creates transparent acetate films of each color and prints them in black along with registration marks and identifying information. The films are then collected into an envelope with printing instructions and sent to the be burned onto screens.

Each color of your t-shirt design is then exposed via a high-intensity lightbox

onto a fine mesh screen that has been coated with photosensitive emulsion. These screens were initially made from silk, thus the origin of the term silkscreen. When the emulsion is exposed, it hardens and becomes insoluble to water. The black sections of the acetate film prevent light from getting to the emulsion immediately beneath them. Those sections not exposed will dissolve in water. The screen is placed in a high-pressure washing unit where the unexposed sections of emulsion are washed out of the screen. What remains is, in effect, an intricate stencil for that particular color of ink.

While the Art Department is working on your films, your t-shirts are being ordered from wholesalers. Sometimes this can be a challenge; calls can be made all across the country looking for a particular size or color of t-shirt. When the textiles arrive, they are counted in and checked against the order for accuracy and then taken to the screen printers.

A multiple-head press holds a number of screens from as few as four to as many as sixteen. The screens are arranged radially and rotate over palettes that the t shirts are loaded on. There are both automatic and manual presses; on automatics the rotation is handled by pneumatics while smaller manual presses are physically rotated by the printer. Each screen is placed onto a bracket, or head, and locked into place. The printer then carefully adjusts the printed images from each screen until they are all in correct alignment for the final, combined image. The correct color of ink is added to each screen and is forced through the screen's openings by pulling a squeegee from the bottom of the screen to the top. A number of different factors affect the final silkscreen print result, including the hardness of the squeegee, the angle and force of the pull used, and the type of ink used.

After printing, your t-shirts are run through a high-temperature dryer to cure the ink so it will bind to the fibers of the material. A final test print is approved by the graphic artist working on your design, and the run of t-shirts is printed.