

Design Considerations in Creating T-Shirt Artwork for Direct-to-Garment Digital Printing

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Figure 1: *An example of complex t-shirt art designed for a dark garment.*

1 Introduction

With the increased popularity of direct-to-garment printing, as well as crowdsourcing t-shirt design and printing websites, more individual designers may want to expand their skillset to include t-shirt design.

Designing for t-shirts and other casual apparel has specific considerations that need to be taken into account. These differ from conventional graphic design for prepress and desktop publishing. When working with digital, direct-to-garment printers, additional variables are involved.

This class will detail design elements that need to be taken into account when working with direct-to-garment printers, and how those differ from conventional graphic design, as well as traditional screen printing processes. Participants are strongly encouraged to bring high-resolution raster image files and prepared vector artwork. Files created in the class will be printed in the Studio on t-shirts, afterward. T-shirts will be provided free-of-charge.

2 Method

Direct-to-garment technology is a purely digital process and allows for greater ease-of-use for the individual when compared to traditional screen printing. When screen printing, a film positive and multi-channel separations are required in order to create a negative screen for final printing. This creates certain limitations when artwork includes radial blends or gradations. Additionally, the screens must be registered to ensure good image quality. In direct-to-garment printing, a digital file is sent directly to an inkjet-based print engine that then uses RGB pixel data to print the image in a similar manner as an inkjet photo printer prints a photograph. Since there are no separations or screens, much smoother gradations and blends can be reproduced. Much finer detail can also be achieved with this process.

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The printer is treated as an RGB device by both Mac and Windows operating systems, so the first consideration we have is to build the file in an RGB working space. This will allow for a broader range of colors.

Always start with a transparent background, and build your files using layers. This will allow for more flexibility when considering a final shirt color. It's a good idea to determine what color of shirt we will be printing on, dark or light. This has large implications in the design process.

When designing for a light shirt, build a background layer that is white to act as an underbase for simulation. For a white shirt, design is fairly similar to doing standard design for normal print. There are a couple of exceptions.

1. Non-white, non-neutral, light colored shirts (e.g. pink) can be challenging to print different colors on, since you'll be working with additive colors. You can't print cyan on a yellow shirt or green on a pink shirt, since they'll combine into a dark brownish.

2. Light color elements (e.g. yellow text) surrounded by dark printed backgrounds. This may cause bleeding since there is much higher ink density in the dark area, and the ink will want to flow to a lower density area. The printing process can be adjusted to reduce the wicking, but it's best to avoid these combinations.

When designing for a dark shirt, build a black background layer that will be used as your simulated base. For a dark shirt, the most important thing to remember is that white is a color, and the dark part of the image, including shadows and gradients should be part of the background. The best way to do this is to draw them as a gradient to transparency. This isn't always realistic, however, and most direct-to-garment printing software will allow you to "knock out" to background colors.

When working with file elements and layers, it's best to work in a program that can handle both raster and vector data easily. I find that layered TIFF with transparency support is a very versatile file format to work with, since it is treated as a raster file format by DTG software, yet is flexible enough to handle raster and vector elements in separate layers and still supports transparency.

When working creatively on a shirt, try to keep in mind the size of elements, and where you think the audience will be viewing your shirt. Consider how far away people will generally be when they see the shirt. This will directly impact the size of the elements and complexity of the design. We've found that some of the most popular shirts have a simple vector design, and include short, clever statements or word play. Striking, high contrast, and complex designs can also be very visually arresting.

Finally, once your artwork design takes shape, you may want to consider adding a stroke element to increase the amount of contrast between your artwork and the garment.