Screen Printing on Garment Dyed Shirts

Garment dyeing is a process where the shirts are dyed after the entire shirt has been manufactured, rather than dyeing the fabric before cutting and sewing the garments. There are two types of garment dyes: Pigment and Reactive dyes. The properties of garment dyed shirts are colors that are easy on the eye and soft to the touch, but there are a few things to consider when printing.

SCREEN PRINTING PROCESS
Screen printing has a steep learning curve that requires knowledge and skill. For successful screen printing on garment dyed fabric, follow these recommendations.

IMAGE DESIGN:
Create a customized graphic using professional graphics software. The graphic must be separated by color, with each color printed on its own clear film positive. Fewer colors mean a simpler set-up, resulting in lower costs. To enhance the softness of the shirt and to avoid printing problems as well, tone on tone artwork and utilizing the shirt color as a background color in the design are good artwork tips.

SCREEN MAKING:
Following a process that requires the use of a darkroom and photographic chemicals, a stencil, known as a screen, is made for each color in the graphic image.

PRINTING:
When printing garment dyed shirts, it is recommended to use inks and methods that avoid dye migration. Dye migration occurs when the dyes applied to the fabric move off the surface of the fabric into the inks applied. Testing for dye migration is always recommended. Most manufacturers have inks that prevent dye migration. We advise that you use them as necessary. Since there are many colors, many weather conditions, a variety of types of dryers and flashes, and artwork changes, there is no one “right” way to print these garments. In some cases a “low bleed” formulation will be effective, if problems still persist you need to use a dye blocking grey ink. In general use as little heat as possible while still curing the ink, that is both in terms of flashing and in your oven. In certain cases a longer flashing or drying time and lower heat levels are recommended. Additionally, the soft fibers of the shirts shorten the adhesion time to your platens. In order to maintain registration, reapplication of adhesive may have to be done more often.

DRYING:
Most inks fully cure when the entire ink reaches 320°F. We advise that you follow the specific guidelines provided by the ink manufacturers which usually define the optimal curing/ drying temperature and dwell time. Temperatures higher and 320°F and dwell times beyond the recommended settings can cause damage to the garments and/or inks. This time and temperature can change dramatically depending on the ambient temperature and the humidity of the shirts and based on the type of equipment. Ghosting is a possible problem at this stage, (not only on garment dyed shirts) that can happen when curing the ink, and again depends on ink, conditions and equipment. Typical solutions are use of non-ghosting whites (consult your ink rep), longer outfeed or fans on your dryer, or laying the shirts in multiple stacks when taking them off the dryer.

SAFE WORK ENVIRONMENT:
It is strongly recommended not to overheat the garments at any stage of the screen printing process. Please ensure adequate ventilation in your screen printing facility and make sure to clean and maintain your equipment regularly.

CARE INSTRUCTIONS:
• Due to the nature of the dyeing process employed with Comfort Colors pigment dyed shades, loose pigments may remain on the surface of the garments. We therefore strongly recommend washing these garments only with like-colored garments, as some of the pigment dyes may stain light or white colored garments in the wash cycle.
• Washing the garments in cold water will reduce the possibility of staining.

CONSIDERATIONS:
• Dye migration occurs when the dye color in the garment absorbs into the screen printed ink.
• Ghosting is when printed shirts are stacked too soon during the drying process before being adequately cooled. This causes a chemical reaction which creates a ghosted image of a white screen print on the back of the shirt stacked on top.