



DESIGN GUIDE

CUSTOM BOTTLES

Artwork File Formats

Artwork for custom bottle printing may be received in both vector or raster file formats depending on the type of artwork. Artwork will be determined by Custom Bottles production artists to determine if it is usable for bottle art production and feedback will be given based on whether the art is usable or not.

Vector Artwork

Vector graphics are comprised of points, lines, and curves that are easily scalable and transferable without issues of distortion or pixelation.

Vector artwork is recommended for logos, line art, and text.

Vector Formats: .ai, .eps, .svg

Raster Artwork

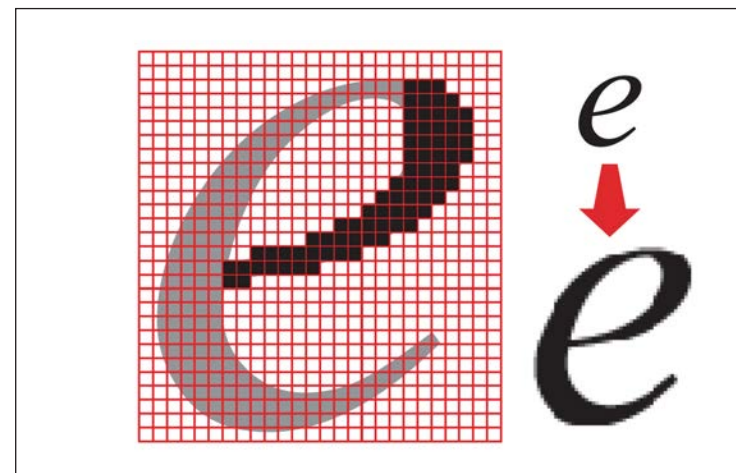
Raster images are made of millions of tiny pixels that can be extremely complex in matching colors and scaling artwork onto a finalized product. When scaling raster artwork, images can become easily blurred or distorted. To ensure maximum print quality, raster artwork is required to have a resolution of 300ppi at actual print size.

Raster artwork is recommended for photographs.

Non-Vector Formats: .psd, .jpeg, .tiff, .png, .bmp



VECTOR ARTWORK SCALING
Easily Scalable - Zero Distortion at all sizes



RASTER ARTWORK SCALING
Distortion when scaled beyond 100%

Color Models

Specialized Custom Bottles uses both spot color and CMYK inks to reproduce artwork on bottles. Depending on the type of artwork submitted, either spot colors and/or CMYK (process colors) will be assigned.

Spot Colors

A spot color refers to any ink that is printed using a single ink. Spot colors are typically used when printing vector graphics. All spot color artwork must use colors from the Pantone Solid Coated Plus Series color book. If artwork is submitted without Pantone or incorrect Pantone colors assigned, the colors will be converted to the nearest matching color from the Pantone Solid Coated Plus series color book. Pantone colors should not be changed from the default L*A*B* values that are assigned in the design program. Changing these values will cause the Pantone color to become inaccurate when viewed on the computer monitor.



Spot White



PMS 7481 C

Green



PMS 877 C

Silver



Spot Black

CMYK (Process Colors)

CMYK (Process Colors) refers to the four individual semi-opaque process inks used in color printing: Cyan, Magenta, Yellow, and Key (Black). When layered together using halftoning, CMYK allows for a full continuous range of colors. CMYK is ideal for printing raster graphics, like full color photographs.



Magnified detail of
process color halftones



Cyan



Magenta



Yellow



Black

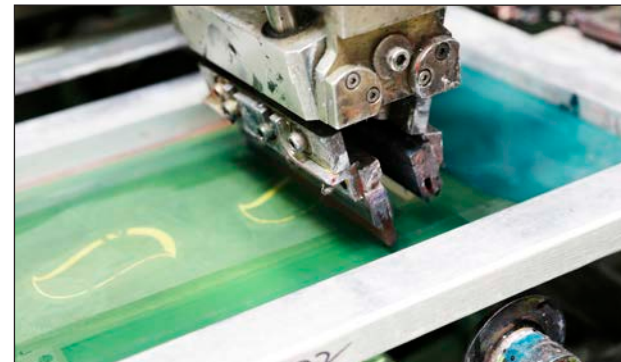
Printing Processes

Specialized Custom uses two types of printing techniques for reproducing artwork on bottles: screen printing and digital direct sublimation. Each printing process has its own strengths and weaknesses which should be considered when designing artwork.

Screen Printing

Screen printing is a process where ink is forced through a mesh screen with a rubber squeegee onto the printing surface. A negative stencil is applied to the screen so that ink will only pass through the correct areas of the screen to print the desired artwork. The ink is then cured with UV lamps to ensure a durable finish on the printed surface. Screen printing is best used when precise color matches, line art logos, and/or crisp text is needed. Screen printing is most often used when printing on non-flat surfaces or when a durable print is desired.

Screen printing is used for Purist, 2G Big Mouth, 1G Big Mouth, Hydroflo, Team, and Keg bottles



Dye Sublimation

Dye sublimation is a process where digital artwork is printed using specific CMYK formulated inks on top of special film coated transfer paper. Once printed, the artwork is transferred directly to the fabric using a heat press. This step of the process permanently presses and embeds the inks from the transfer paper into the fibers of the fabric. Dye sublimation is best used when detailed artwork with multiple colors on the print surface is desired. This process is one of the most commonly used methods of printing within the sportswear industry.

Dye sublimation is used for the Purist Insulated bottle with Chromatek liner.



Screen Printed Bottle Design Considerations

Screen printing requires special design requirements for optimal artwork reproduction.

Colors

Artwork for screen printing can be set up for either spot color or CMYK printing. Printing with spot colors allows for the best color accuracy in matching Pantone colors. Spot colors also print with very clean lines and separation between different ink colors. Spot colors are limited to a maximum of 8 unique colors on the body and 2 unique colors on the neck of the bottle. CMYK printing allows for a wide gamut of colors to be printed on the bottle, however color accuracy cannot be guaranteed with this process. CMYK prints will also be less clean because they require coarse halftone dots when screen printed.

Neon and metallic inks are available for screen printing. Listed are some of the popular neon and metallic inks:



PMS 877 C



PMS 871 C



PMS 801 C



PMS 803 C



PMS 805 C



PMS 809 C



Spot color print



CMYK print

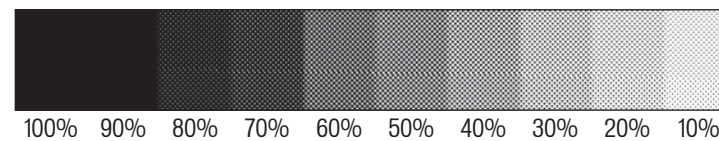
Stroke Weights

The minimum stroke weight for a positive stroke is 0.5 pt. The minimum stroke weight for a reversed stroke is 0.75 pt. It is recommended to make reverse strokes wider than the minimum to ensure that lines do not fill in with ink when screen printed onto the bottle surface.



Halftones

Halftones may be used for screen printing. It is recommended that halftone percentages do not exceed 75% because ink spread will cause the halftone area to fill in and become a solid. It is also recommended when using various halftone percentages of the same color to give large variations between the halftone percentages, for example: 20%, 35%, 50%, 70%.

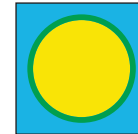


Screen Printed Bottle Art Adjustments

After artwork is submitted, the production art team will evaluate and make any necessary pre-production adjustments. Artwork may be slightly modified with trapping, stroke weight, and/or the addition of a white underlay to ensure screen printing compatibility. An official proof will then be drafted and sent for approval.

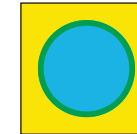
Trapping

Trapping is an integral pre-production step to printing multi-colored vector graphics. Mis-registration causes unsightly gaps on the final printed work. Trapping involves creating overlays (spreads) or underlays (chokes) of objects during the print production process to eliminate mis-registration on the press. The minimum thickness is 2pt in order to be properly trapped.



Spread

The yellow circle becomes bigger



Choke

The yellow square makes the cyan circle in the middle smaller



Example of a trap

Stroke Weight

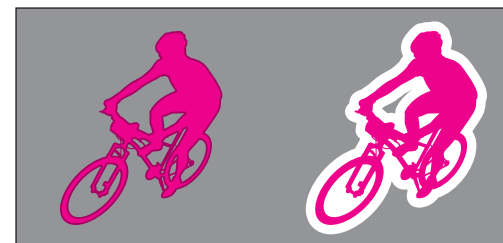
Artwork which contains an outlined stroke weight thinner than 2pt will need to have that stroke thickened or removed entirely for optimal printing.



Example of a thickened stroke

White Underlay

When light colored artwork is printing on a dark colored bottle, a white underlay is strongly recommended, in order to prevent ink from darkening. A white underlay is a separate white ink layer which is printed below the artwork, which helps prevent color(s) from darkening. Depending on the type of graphic, the underlay can either be hidden or visible.



Example of hidden and visible white underlays

Dye Sublimated Chromatek Liner Design Considerations

Dye Sublimation is similar to traditional CMYK printing but has special requirements due to printing on fabric.

Colors

The dye sublimation process can only be printed with CMYK. Artwork can be submitted with Pantone colors, these colors will be printed to the nearest match with CMYK inks. The dye sublimation process can replicate most Pantone colors, the fabric of the liner can influence the tone of the color however and some colors may not perfectly match the Pantone color chip. CMYK or RGB files can be reproduced with dye sublimation as well. Artwork will generally be closely matched to the on-screen appearance of the file, however if colors in the artwork fall outside of the printing gamut, then color accuracy cannot be guaranteed, just like when spot colors are used.

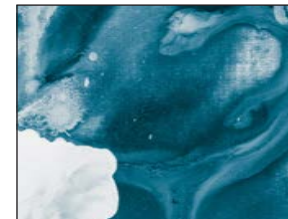
Special colors such as neons or metallics cannot be printed with the dye sublimation process currently.



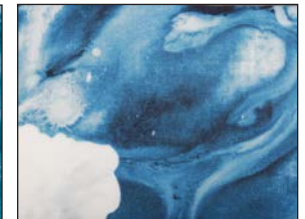
Close color match



Bad color match



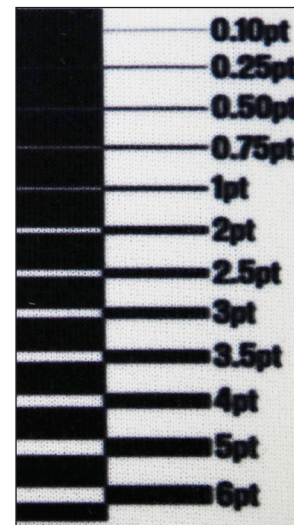
Original art file



Sublimated artwork

Stroke Weights

The porous nature of fabric causes ink to expand more when compared to other printing surfaces. The minimum line weight of knockout strokes is 2pt and the minimum line weight of printed strokes is 0.25 pt. Printed text should be measured against these line weights to ensure that they will be legible when sublimated.



Dye Sublimated Chromatek Liner Design Considerations continued

Minimum Font Size

Here are examples of the minimum point sizes of some popular fonts in order to print clearly on the Chromatek liner.

Helvetica Regular (26pt Helvetica Regular)

Helvetica Light (40pt Helvetica Light)

Arial Regular (27pt Arial Regular)

Myriad Pro Regular (32pt Myriad Pro Regular)

Futura Book (26pt Futura Book)

Vonnes Book (38pt Vonnes Book)

Vonnes Bold Condensed (25pt Vonnes Bold Condensed)

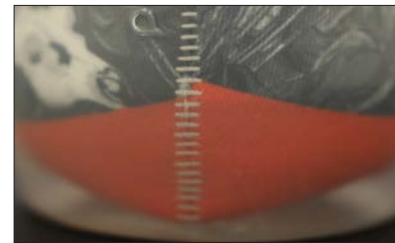
Din Pro Regular (38pt Din Pro Regular)

Garamond Pro (60pt Garamond Regular)

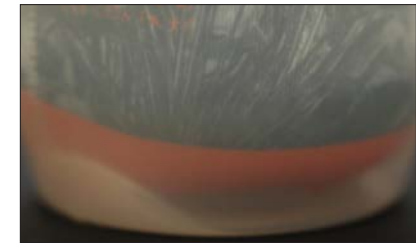
Dye Sublimated Chromatek Liner Design Considerations continued

Image Distortion

Artwork located near the bottom of the bottle will experience distortion due to the curvature of the bottle as well as the stretch of the liner inside the bottle. To minimize the impact of liner distortion on the artwork, vertical and horizontal lines should be avoided in this area. Best practice is to fill this area with a pattern or solid color where the distortion can be hidden by the design of the artwork.



Distortion caused by liner stretch



Distortion caused by bottle curvature



Logo Placement

Logos can be placed on the neck and/or the body of the bottle. Logos placed on the neck are safe from image distortion. Logos placed on the body are recommended to be above the halfway mark of the body print area to minimize distortion. Logos should be placed so that they are not too close to the top, throat, and bottom of the bottle to avoid being cut off or distorted due to bottle curvature or liner stretch.

Bottle Effect

Liner artwork may be affected by the transparency of the bottle. Lighter colors will not be affected much when the liner is placed in the bottle and stay fairly true to the actual color, however darker colors will become less vibrant when the liner is placed in the bottle. Artwork should be designed with these effects in mind.

