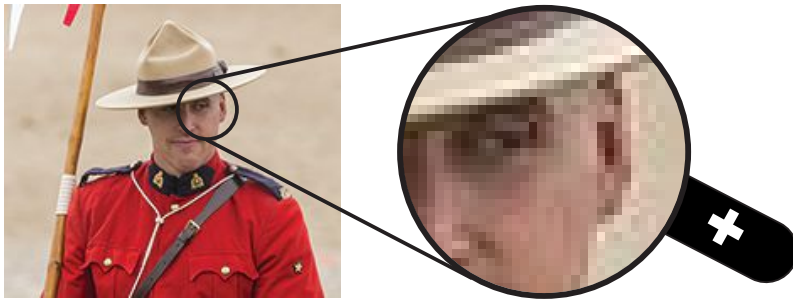


# Artwork Guide

## Understanding Vector & Bitmap Artwork Files

There are two basic types of digital artwork. Bitmap (Raster) & Vector. Both can be used for print files, but vector artwork has certain advantages. Logos & text, for example, benefit from the crisp lines and scalability of vector art. Bitmap artwork is used for photographic images and its quality depends on the ppi (pixels per square inch) resolution.

### Bitmap (Raster) Artwork



Most people are familiar with bitmap images. They are made up of a grid of tiny squares of colour, called pixels. If you zoom in very close, you can see that a digital photo is composed of these tiny squares. Viewed at a distance, the pixels blend together to create a picture.

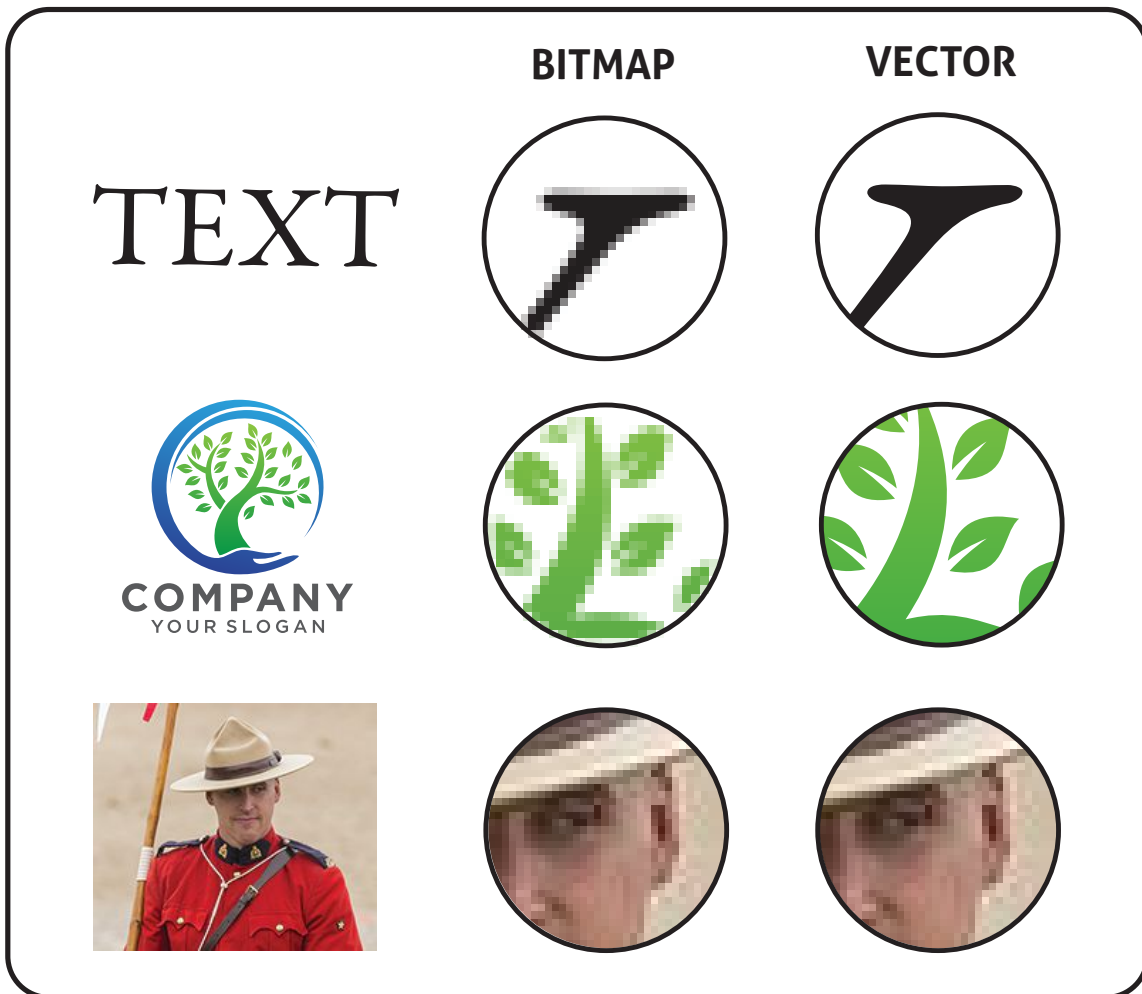
### Vector Artwork



Vector artwork is created using illustration software such as Adobe Illustrator or CorelDraw. This software produces line art, text & geometric shapes that are encoded mathematically. Vector files retain their sharpness at any magnification, whereas a bitmap will appear jagged/pixelated when enlarged. This is why we recommend using vector graphics whenever possible — the end result is a crisp clear image no matter how large the print.

## Comparing Bitmap & Vector Art

Now let's compare the two different formats using the same image, so you can see how text, logos & line art are sharper with vector graphics.



As you can see text & illustrations are much better with a vector file. Note that bitmaps can be embedded into vector files, but they retain the same resolution as the original photo/bitmap. For artwork that uses a combination of photos, illustrations/logos & text, it is preferable to combine the elements into a vector file.



### Please Continue Reading – However...

Not everyone has the time or interest to learn the details of artwork preparation. Know that we have your back! Contact us if you need help, or if you need us to create the artwork files for you. We have designers on staff who can assist. Additional artwork charges may apply.

## Artwork File Formats:

**Bitmap:** .tif .psd .jpg .gif .png

**Vector:** .ai .eps .cdr .svg

Convert fonts to outlines/paths if possible.

Note about PDFs: A pdf file can be either vector or a bitmap, it depends on the software used to create the artwork.

Certain production processes require vector files. Cut vinyl graphic & contour cut graphics need a vector path for our digital cutting systems to follow. Screen print colour separations, clear stickers with white or spot colour specification may also require vector only files. Please contact us, if you need help with specialty artwork setups.

## Bitmap Image Quality Explained

For photos and other complex visual imagery, bitmap artwork is needed. There are two main factors which affect the quality of the image — **Resolution & Compression**

### Resolution

The pixels per inch (PPI), often referred to as DPI, (dots per inch) describes the resolution of the image. A common resolution for print production is 300 ppi. Website graphics are often 72 or lower, which will be pixilated when enlarged.

Below is a visual to help you see the difference in resolution:



HIGH

LOW

!!!REALLY LOW!!!

Appropriate resolution for print media depends on several factors including the detail in the graphic, and the size of the print. For small stickers with fine type, we recommend 300-600 ppi. For large displays and window graphics, 50 ppi is more than sufficient --- Larger graphics are viewed further away. Higher resolutions are not necessary, and they often produce gigantic file sizes that are difficult to manage.

## Compression

Website graphics, jpgs in particular, are often compressed to save file size and improve download times. Compressing files degrades the image quality. Random “artifacts” appear, halos along image edges, & colour fidelity is reduced. See the examples below.



NONE

MODERATE

!!!HEAVY!!!

## Artwork Colour Space Explained — CMYK vs RGB?

Please choose CMYK as your colour space for submitting artwork files.

CMYK is the standard colour space for printing, Cyan, magenta, yellow & black (K), are the basic ink colours required to print full colour images.

The CMYK mode in Illustrator & Photoshop attempts to mimic printed colour on your monitor. The difficulty is that monitors display colour differently than printed paper. All displays use the RGB, or additive colour space. Because they are backlit, monitors and cell phones display colour more brightly than what is possible printing inks on a white surface.

**GAMUT** — Gamut is a term used to describe the range of colour that is possible in a given colour space. CMYK has a smaller gamut compared to RGB. Furthermore, different printers also have different gamut capabilities.

Extremely bright RGB colours for example, are not possible to print on any printer. In the illustration below, un-printable RGB values are converted to cmyk in photoshop. The results are pretty dramatic



RGB converted to CMYK in Photoshop

## Pantone Matching System (PMS)

Pantone colour matching system is a universal colour standard for matching colour across different printing methods. It uses physical colour swatches as a reference (just like at the paint store) to establish colour consistency from one print shop to another.

Pantone was founded in 1963 as an ink mixing system, pre-dating the digital era in graphics by over 2 decades. Graphics software has had to contend with displaying Pantone standards on a computer monitor as best as they can. Just like the cmyk vs rgb display problem, PMS colours look different on screen.

When specifying colours please use the **Pantone Solid Coated** (ex. 072C) for most products. Do not use the uncoated numbers (ex. 072U), unless you are adding a matte laminate. Note that the same PMS number looks quite different in the coated vs uncoated PMS books:



Uncoated PMS Book  
(matte)

Coated PMS Book  
(satin/gloss)



Uncoated PMS Book  
(matte)

Coated PMS Book  
(satin/gloss)

**Don't specify PMS numbers based on your monitor's display alone.** If you don't have a physical Pantone book to compare with, your expectations might not be met.

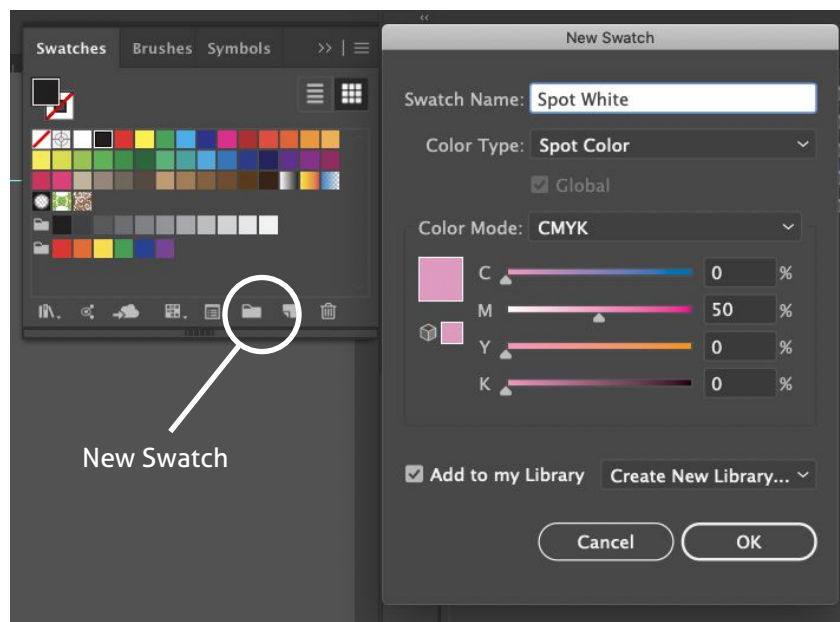
**Pantone & CMYK printer Gamut.** The Pantone system was originally developed as a system to mix pure pigment colours, and as such, is able to create brighter colours than what is possible with a cmyk digital printer. Our Epson printers can hit 97% of PMS colours, but there are a few special cases where the colours won't be quite as bright as the PMS book.

## White Ink Artwork Setup

There are a few extra steps involved in setting up your artwork to print a spot white colour. Following is the recommended method in Adobe Illustrator.

Place the white objects on a separate layer in your file. Define a white spot colour and apply it as a fill to all the objects. You can pick any colour to represent the white. Using a colour other than white makes it easy to see on the page.

In Adobe Illustrator: open the Swatches palette, choose new swatch. Pick a colour, such as the light pink shown below, Name the swatch "Spot White". Change the "Color Type" to "Spot Color". Apply the swatch to all the objects that should print white.



You can use the same method to define other specialty spot colours such as gold and silver metallic, glow in the dark, spot UV clear, etc.

## Kiss Cut or Through Cut?

Many of our products can be shape cut to circles or custom shapes. There are two options here. We can either cut straight through the sticker and the liner - a **through cut**, or we can cut through just the sticker and leave the backing sheet rectangular - a **kiss cut**.



## Kiss Cut or Through Cut?

Many of our products can be shape cut to circles or custom shapes. There are two options here. We can either cut straight through the sticker and the liner - a **through cut**, or we can cut through just the sticker and leave the backing sheet rectangular - a **kiss cut**.



For very detailed shape cuts, we recommend kiss cutting. Kiss cutting generates a very clean cut that can follow tight contours details.

Through cuts are not quite as accurate as kiss cutting, but many customers prefer this format for its appearance, especially as a handout at events & promotions.

# *That's Not Going to Work!!!*

## **Myths & Misunderstandings**

**Can't you just pull my logo off my website?** 99% of logos on websites are too low in resolution for printing.

**Don't put a bitmap file inside a vector file and expect that it is now "vector".** The jpg, gif, png or tif will still be a bitmap. It is simply embedded in a vector file.

**You can't improve the quality of a low resolution file by upsampling it in Photoshop.** Example: Change the image size from 72 ppi to 300 ppi. This increases the file size, but doesn't improve the image quality — there is no easy fix to a low resolution file.

**Can't you just auto-trace my logo?** While there are some circumstances where this might work, most of the time auto-trace produces unwanted distortions and inaccuracies.

**Changing the file name or extension doesn't change the file.** You can't turn a jpg into in ai, by changing the extension.

**A photo of your old sticker or your business card is not output ready artwork.**

**Why won't you print a Budweiser logo for my beer fridge?** We respect copyright and do not print unauthorized artwork without consent from the copyright holder. Sorry, no Jets logo for the hood of your Camaro.

**Google Images.** Copyright issues aside, most images from google image searches are low quality.